Pulse Valve Valve for Dust Collector

Solenoid Valve Type | SMARTVENT Type | Air Operated Type

RoHS

IP67/IP65

For details, refer to page 4.

Air

ATEX Compliant

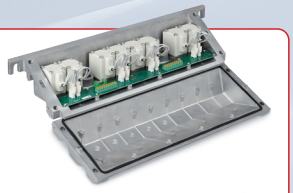
56-JSXF Series p. 39

55-JSXFA Series p. 41

New

- **A pilot valve enclosure has been added.** p. 2

  Built-in solenoid valve for air operated drive



- **A bulkhead fitting has been added.** p. 5

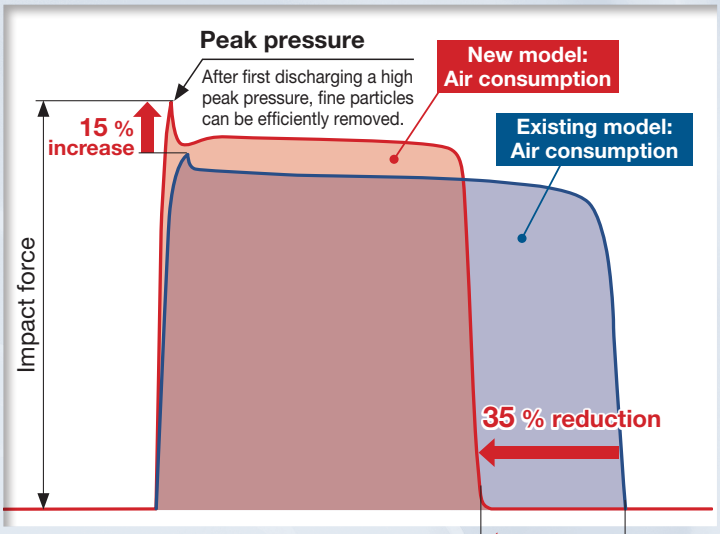


10 million cycles*1 or more

*1 Based on SMC's specific testing conditions (JSXF□□□-06)

High peak pressure and low air consumption

Peak pressure	15 %*2 increase
Air consumption	35 %*2 reduction



*2 When the solenoid valve or pilot valve mounted on the JSXF□□□-06 is energised for 100 ms (ON time)

Fluid temperature: –40 to 60 °C

Can be used in a wide range of temperatures

Variations

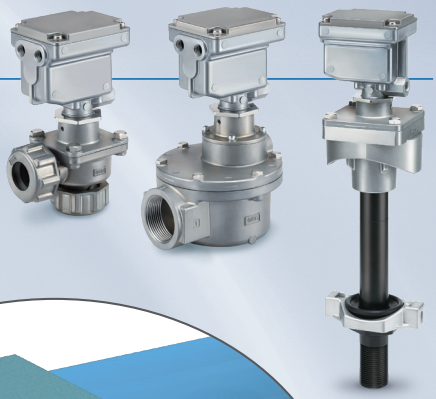
Type		Port size				Orifice diameter [mm]				
		3/4 (20A)	1 (25A)	1 1/2 (40A)	2 (50A)	Ø 32	Ø 40	Ø 45	Ø 50	Ø 55
Solenoid valve type **JSXF Series** p. 7	Compression fitting type	●	●	●	●	●	●	●	●	●
	Direct piping type	●	●	●	●	●	●	●	●	●
	Immersion type	●	●	●	●	●	●	●	●	●
SMARTVENT type **JSXF-P□ Series** p. 19	Compression fitting type	●	●	●	●	●	●	●	●	●
	Direct piping type	●	●	●	●	●	●	●	●	●
	Immersion type	●	●	●	●	●	●	●	●	●
Air operated type **JSXFA Series** p. 25	Compression fitting type	●	●	●	●	●	●	●	●	●
	Direct piping type	●	●	●	●	●	●	●	●	●
	Immersion type	●	●	●	●	●	●	●	●	●

JSXF/JSXFA Series

SMC

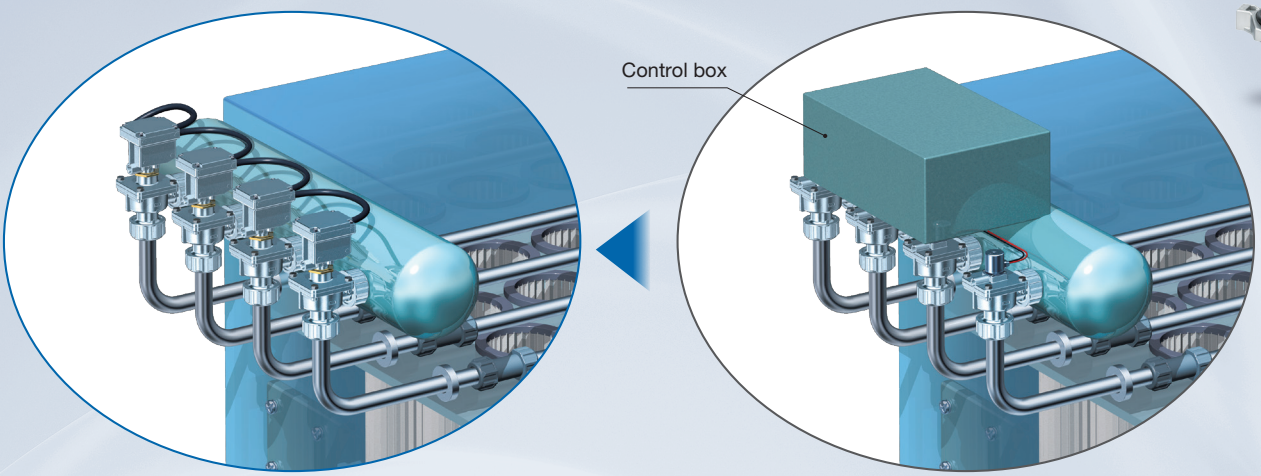
CAT.EUS70-57F-UK

SMARTVENT Type

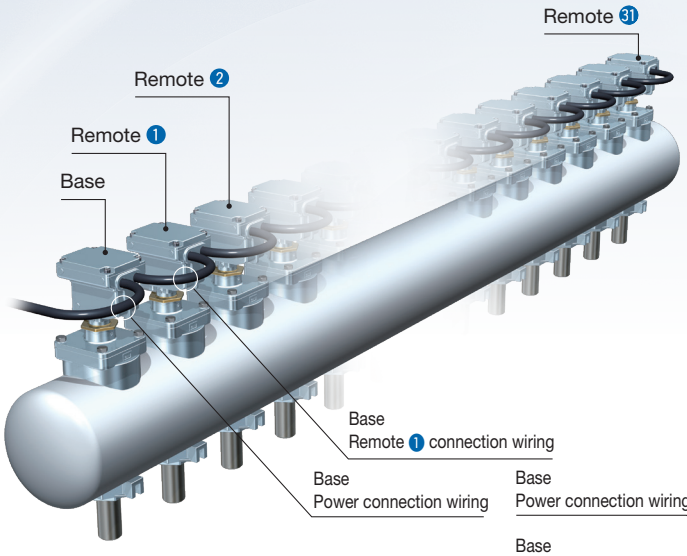


No control box required
Allows for reduced wiring

The solenoid valve type features a built-in control board.



A single base valve can control up to max. 31 remote valves!

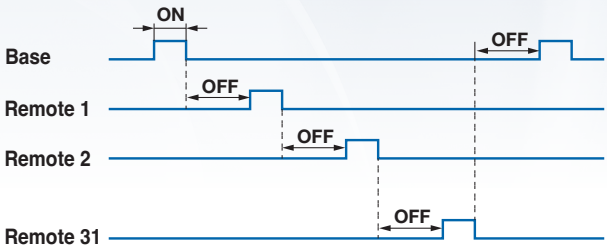


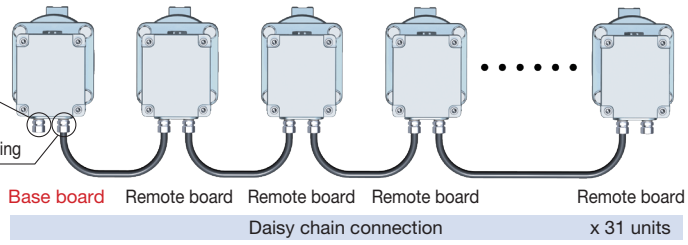
The pulse sequence order can be changed.

The base valve collectively controls the response time.

ON time: 10-step setting is possible (Setting range: 100 to 234 ms)
OFF time: 16-step setting is possible (Setting range: 4 to 29 s)

Operating sequence example

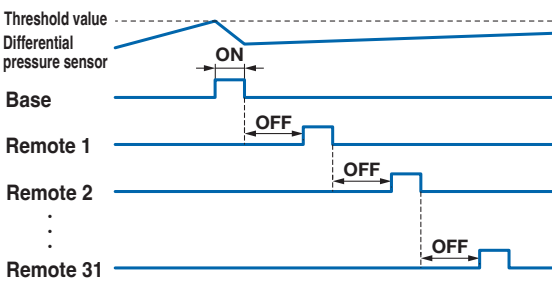




Filter clogging can be detected when used in combination with a differential pressure sensor (provided by the customer).

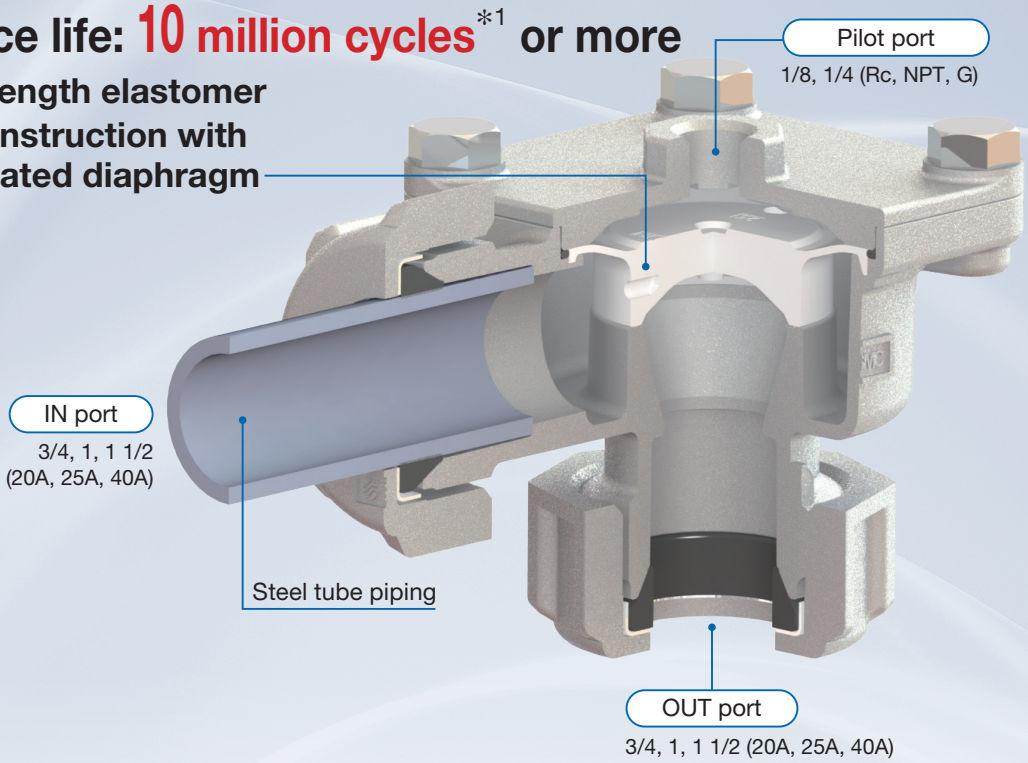
Differential pressure sensor installation

Operation sequence diagram



Long service life: 10 million cycles*1 or more

Uses high-strength elastomer
Springless construction with a valve-integrated diaphragm



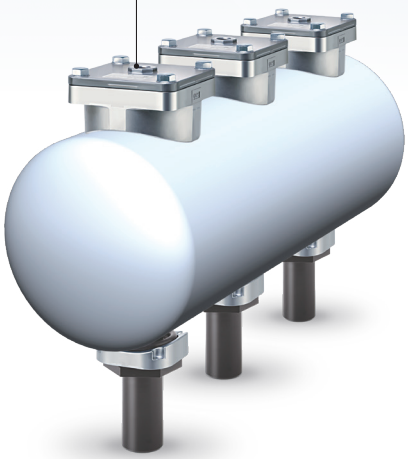
OFF response time: 45 %*1, *2 reduction

No need to weld the tank piping



Immersion type

* The tank should be provided by the customer.



Easier maintenance

The springless diaphragm allows for easy maintenance of the valve. A main valve and sub-valve (for 40A) are included in the maintenance kit.

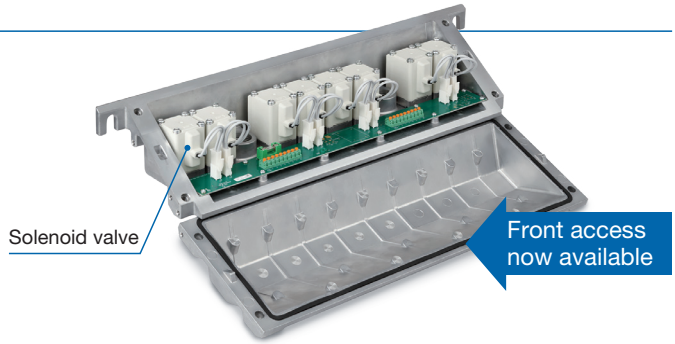
Flow rate characteristics: 40 %*1, *2 increase

Optimal design for the internal geometry

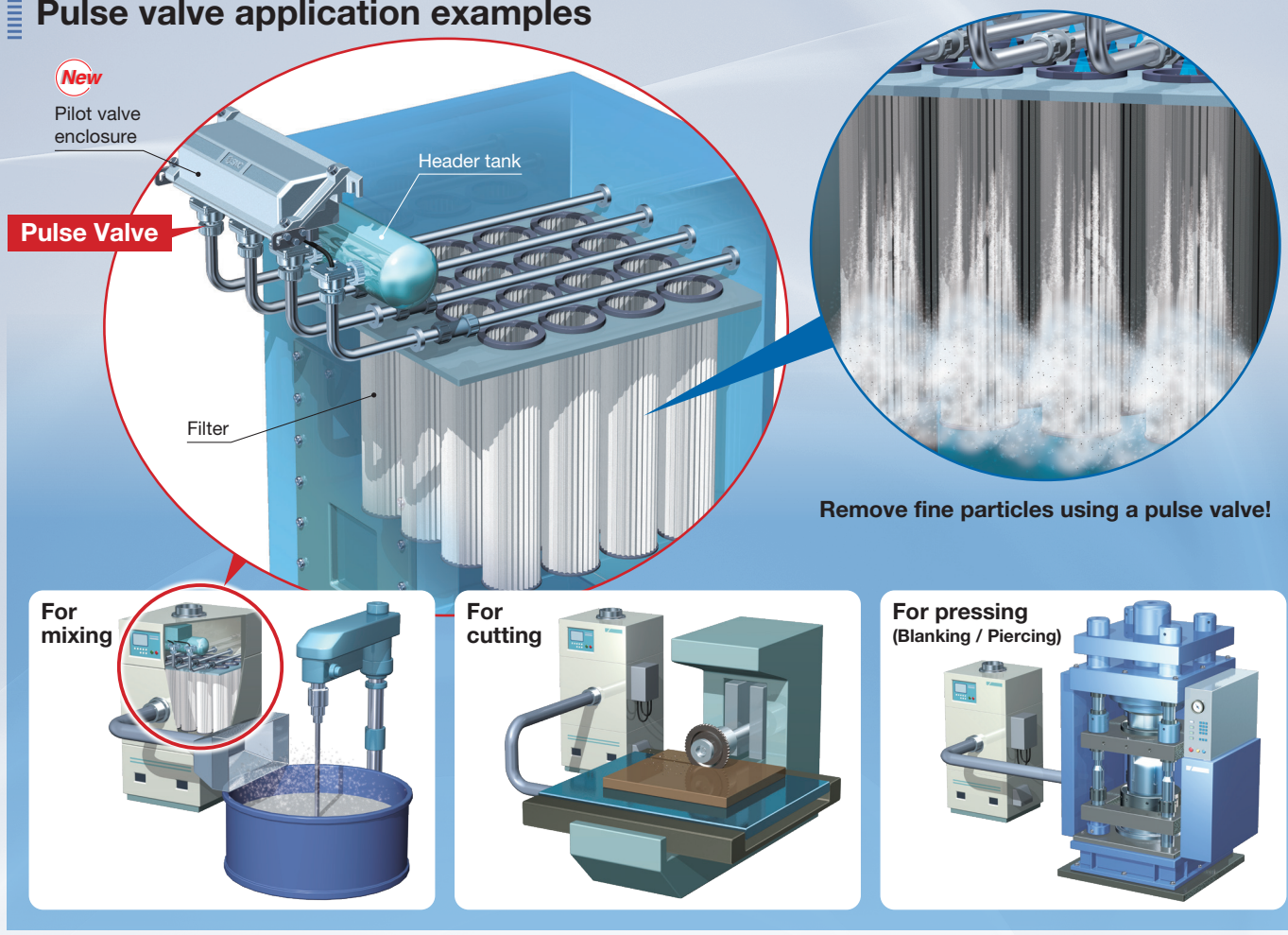
*1 Based on SMC's specific testing conditions (JSXFA-06, Pilot valve orifice of Ø 5 mm or larger, Excludes made-to-order option "A")
*2 Compared with the existing SMC model

New A pilot valve enclosure has been added.

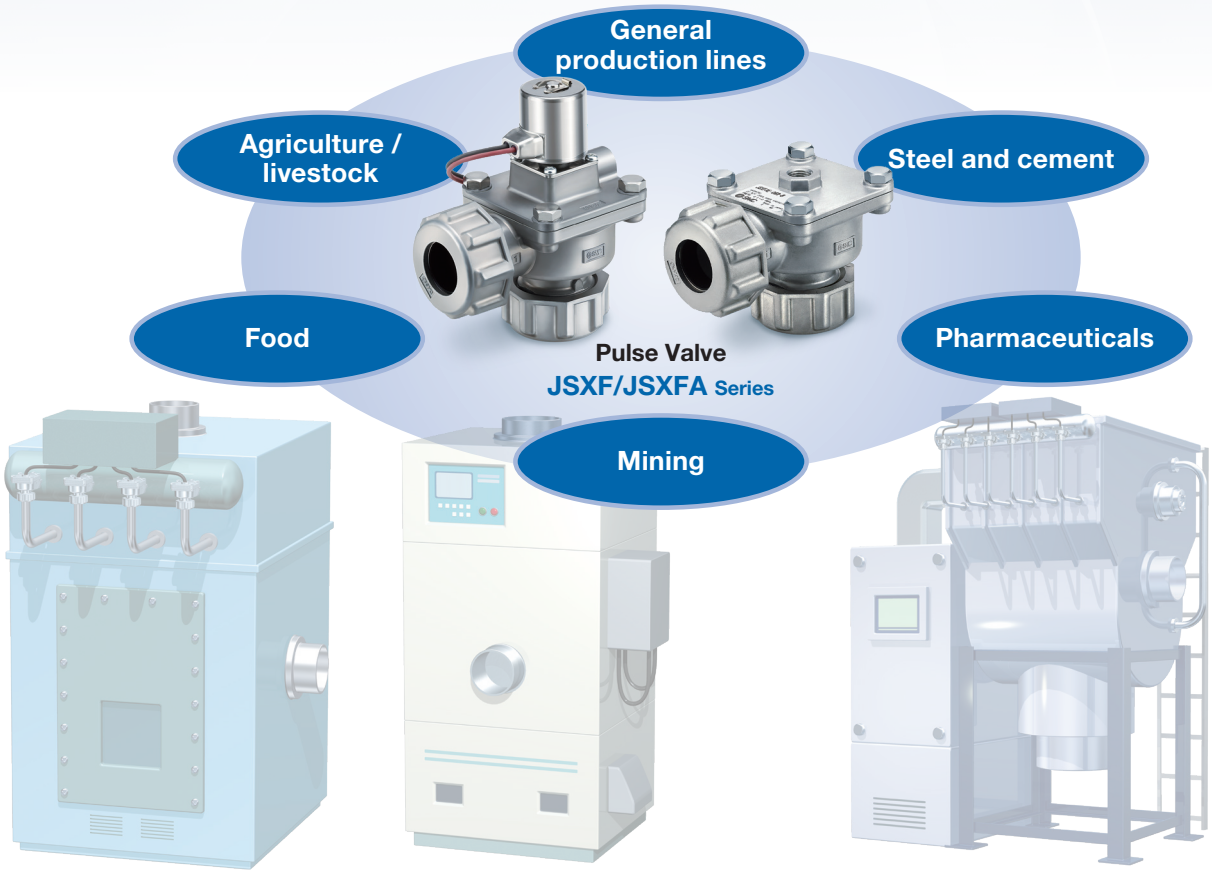
- Access to the front allows for greater maintainability.
- Compatible with 6/8 stations



Pulse valve application examples



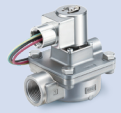
Pulse blow can be used in various industries!



Series Variations

Solenoid Valve Type p. 7

1 (IN) 2 (OUT)

Piping	Port size	Orifice diameter (Ø 32 / Ø 40 / Ø 45 / Ø 50 / Ø 55)	Thread type	Options/ Made to order	Standards (CE *1, UKCA *1, ATEX compliant)	Enclosure (IP67, IP65, NEMA4)
Compression fitting type  **(56-)JSXFE Series**	3/4 (20A)	Ø 32	Rc NPT G	Options · Silencer (3/4, 1, 1 1/2, 2) p. 15 · Cable for M12 connector (1000, 2000, 5000 mm) p. 17 Made to order · Tank hole dia.: Ø 76 (1 1/2 6-inch tank) p. 37	p. 39	*2
	1 (25A)	Ø 40			p. 39	*2
	1 1/2 (40A)	Ø 50			p. 39	*2
Direct piping type  **(56-)JSXFF Series**	3/4 (20A)	Ø 32			p. 39	*2
	1 (25A)	Ø 40			p. 39	*2
	1 1/2 (40A)	Ø 50			p. 39	*2
Immersion type  **(56-)JSXFH Series**	3/4 (20A) Tank size: 4, 5 inch	Ø 32			p. 39	*2
	1 (25A) Tank size: 5, 6 inch	Ø 40			p. 39	*2
	1 1/2 (40A) Tank size: 6, 8 inch	Ø 45			p. 39	*2
	2 (50A) Tank size: 8, 10 inch	Ø 55			p. 39	*2

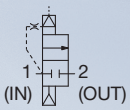
*1 Differs depending on the voltage and electrical entry. For details, refer to page 7. *2 Only the DIN connector

SMARTVENT Type p. 19

1 (IN) 2 (OUT)

Piping	Port size	Orifice diameter (Ø 32 / Ø 40 / Ø 45 / Ø 50 / Ø 55)	Thread type	Options/ Made to order
Compression fitting type  **JSXFE Series**	3/4 (20A)	Ø 32	Rc NPT G	Option · Silencer (3/4, 1, 1 1/2, 2) p. 23 Made to order · Tank hole dia.: Ø 76 (1 1/2 6-inch tank) p. 37
	1 (25A)	Ø 40		
	1 1/2 (40A)	Ø 50		
Direct piping type  **JSXFF Series**	3/4 (20A)	Ø 32		
	1 (25A)	Ø 40		
	1 1/2 (40A)	Ø 50		
Immersion type  **JSXFH Series**	3/4 (20A) Tank size: 4, 5 inch	Ø 32		
	1 (25A) Tank size: 5, 6 inch	Ø 40		
	1 1/2 (40A) Tank size: 6, 8 inch	Ø 45		
	2 (50A) Tank size: 8, 10 inch	Ø 55		

Series Variations



Air Operated Type p. 25

Piping	Port size	Orifice diameter Ø 32	Ø 40	Ø 45	Ø 50	Ø 55	Thread type	Options/ Made to order	Standards CE UKCA ATEX compliant	Enclosure IP67	IP65	NEMA4
Compression fitting type  **(55-)JSXFAE Series**	3/4 (20A)	Ø 32					Rc NPT G	Option · Silencer (1 1/2, 2) p. 35 Made to order · Tank hole dia.: Ø 76 (1 1/2 6-inch tank) p. 37 · Special pilot valve orifice diameter (3/4, 1) p. 25	p. 41			
	1 (25A)		Ø 40						p. 41			
	1 1/2 (40A)				Ø 50				p. 41			
Direct piping type  **(55-)JSXFAF Series**	3/4 (20A)	Ø 32							p. 41			
	1 (25A)		Ø 40						p. 41			
	1 1/2 (40A)				Ø 50				p. 41			
Immersion type  **(55-)JSXFAH Series**	3/4 (20A) Tank size: 4, 5 inch	Ø 32							p. 41			
	1 (25A) Tank size: 5, 6 inch		Ø 40						p. 41			
	1 1/2 (40A) Tank size: 6, 8 inch			Ø 45					p. 41			
	2 (50A) Tank size: 8, 10 inch					Ø 55			p. 41			

Pilot Valve Enclosure p. 43

	Number of enclosure stations	Port size IN port	Port size Conduit port	Thread type IN port	Thread type Conduit port	Option	Enclosure IP66	Enclosure NEMA4
New  **JSXFM Series**	6 stations	1/8	1/2 (1 port)	Rc NPT G	NPT G	· Lid catch mechanism · Bracket	●	●
	8 stations		3/4 (2 ports)					

∗1 Only applicable to the 24 VDC rated voltage type

Bulkhead Fitting p. 49

	Piping	Port size	Max. plate thickness [mm]	Mounting hole diameter [mmØ]
New  **JSXFN Series**	Double Single	3/4 (20A)	8	Ø 42 to Ø 51
		1 (25A)		Ø 54 to Ø 62
		1 1/2 (40A)		Ø 69 to Ø 78

CONTENTS

Pulse Valve **Valve for Dust Collector**


Compression fitting type


Direct piping type


Immersion type


Compression fitting type


Direct piping type


Immersion type

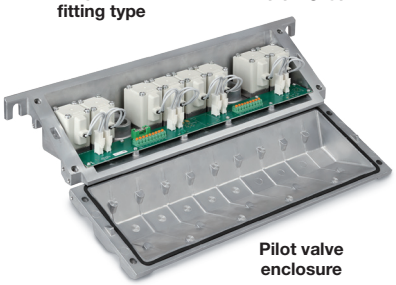

Compression fitting type

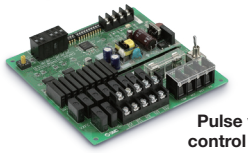

Direct piping type


Immersion type


Compression fitting type


Direct piping type


Pilot valve enclosure


Pulse valve control board



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  - How to Order ····· p. 7
  - Specifications ····· p. 8
  - Construction ····· p. 9
  - Dimensions ····· p. 11
  - Replacement Parts ····· p. 15
  - Option ····· p. 17
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  - Option ····· p. 24
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  - Construction ····· p. 27
  - Dimensions ····· p. 29
  - Replacement Parts ····· p. 35

Working Principle ····· p. 36

- **Semi-standard Valves**
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  - ATEX Compliant Solenoid Valve Type **56-JSXF Series** ····· p. 39
  - ATEX Compliant Air Operated Type **55-JSXFA Series** ····· p. 41
- **Pilot Valve Enclosure JSXFM Series**
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- **Dedicated Controller for Operation VXFC Series** ··· p. 47
- **Bulkhead Fitting JSXFN Series**
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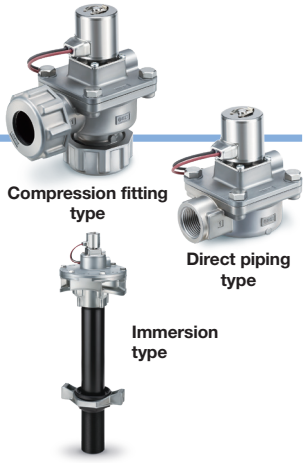
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Specific Product Precautions ····· p. 52

Pulse Valve Valve for Dust Collector

Solenoid Valve Type

JSXF Series

SMARTVENT Type ▸ p. 19
Air Operated Type ▸ p. 25



How to Order

		❶	❷	❸		❹	❺		❻	❼	❽	❾		❿
Compression	JSXF		E		–	06	R	–		5	CS	B	–	S
Direct Piping	JSXF		F		–	06	R	–		5	CS	B	–	S
Immersion	JSXF		H	4	–	06	R	1	–	5	CS	B	–	S

❶ Valve type

—	Solenoid valve

❷ Piping

E	Compression fitting type*1	
F	Direct piping type	
H	Immersion type*2	

*1 Seals and washers are included.
*2 The valve and pipe do not come assembled.

❸ Tank size (JSXFH only)

4	4 inch
5	5 inch
6	6 inch
8	8 inch
10	10 inch

❹ Port size*1

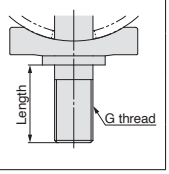
06	3/4 (20A)
10	1 (25A)
14	1 1/2 (40A)
20*2	2 (50A)

*1 For port size selection, refer to the "Variations for Port Size and Option" table below.
*2 Port size 20 is only available for the JSXFH.

❺ Thread type

R	Rc
N	NPT
F	G

❻ OUT port piping configuration (JSXFH only)

Symbol	Length	G thread	Appearance
1	Short	None	
2	Long		
3	Short	Yes	
4	Long		

❼ Rated voltage

AC

Symbol	Rated voltage
1	100 VAC
2	200 VAC
3	120 VAC (110 VAC)
4	220 VAC
7	240 VAC
J	230 VAC

DC

Symbol	Rated voltage
5	24 VDC

❽ Electrical entry

Symbol	Electrical entry		Rated voltage
G	Grommet		24 VDC
GS	Grommet with PCB (With surge voltage suppressor)		100 VAC / 24 VDC
CS	Conduit (With surge voltage suppressor)		All voltages
DS	DIN terminal (With surge voltage suppressor)		All voltages
DZ	DIN terminal with light (With surge voltage suppressor)		All voltages
DN	DIN terminal without connector (With surge voltage suppressor)		All voltages
WN	M12 connector*1 (With surge voltage suppressor)		All voltages

*1 A cable for the M12 connector is not included with the product. Refer to "Option" on page 17 to order it separately.

❾ Fluid and ambient temperatures

B	–40 to 60 °C

❿ Silencer

—	Without
S	With

Shipped together with the product
Refer to "Replacement Parts" on page 15.

Made to Order

Tank hole dia.: Ø 76 (Port size 14, 6-inch tank)	p. 37

Variations for Port Size and Option

Model	Tank size	Port size			
		06	10	14	20
JSXFE	—	●	●	●	—
JSXFF	—	●	●	●	—
JSXFH	4 inch	●	—	—	—
	5 inch	●	●	—	—
	6 inch	—	●	●	—
	8 inch	—	—	●	●
	10 inch	—	—	—	●
Silencer		●	●	●	●

Specifications

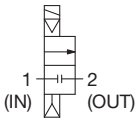
Common Specifications

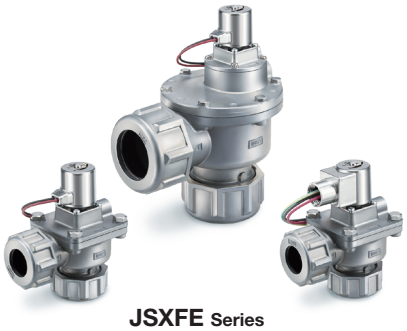
Valve specifications	Valve construction		Pilot operated diaphragm
	Valve type		Normally closed (N.C.)
	Fluid		Air
	Withstand pressure [MPa]		1.5
	Min. operating pressure differential [MPa]		0.1
	Max. operating pressure differential [MPa]		0.9
	Max. system pressure [MPa]		0.9
	Fluid temperature [°C]		–40*1 to 60
	Ambient temperature [°C]		–40 to 60
	Enclosure		IP67 (IP65 for the DIN connector)*2
	Standards		CE/UKCA
Coil specifications	Allowable voltage fluctuation		±10 % of the rated voltage
	Allowable leakage voltage	AC	5 % or less of the rated voltage
		DC	2 % or less of the rated voltage
	Apparent power*3, *4	AC	18 VA
	Power consumption*3	DC	12 W

∗1 No condensation
∗2 If water enters the product, it may result in operation failure or breakage.
Therefore, take appropriate measures to prevent water from entering the product when used in an environment where it is constantly exposed to water.
∗3 Power consumption/Apparent power: The value at an ambient temperature of 20 °C and when the rated voltage is applied (Variation: ±10 %)
∗4 There is no difference in the frequency and the inrush and energised apparent power, since a rectifying circuit is used in the AC.

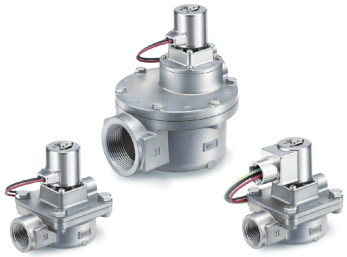
Be sure to read "Specific Product Precautions" before handling.

Symbol





JSXFE Series



JSXFF Series

Individual Specifications: Compression Fitting Type / Direct Piping Type

Series		JSXFE/F		
		06	10	14
Orifice diameter [mm]		Ø 32	Ø 40	Ø 50
Port size		3/4	1	1 1/2
Weight*1 [g]	Compression	740	1,230	2,100
	Direct piping	560	820	1,480

∗1 Indicates case of grommet type
Add 20 g for grommet with PCB, 70 g for conduit, 50 g for DIN terminal, and 15 g for M12 connector.



JSXFH Series

Individual Specifications: Immersion Type

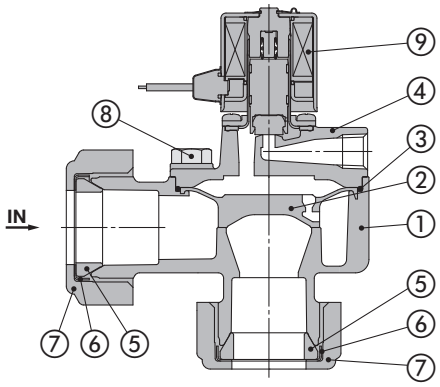
Series			JSXFH							
			06		10		14		20	
Orifice diameter [mm]			Ø 32		Ø 40		Ø 45		Ø 55	
Port size			3/4		1		1 1/2		2	
Tank size		ANSI	4	5	5	6	6	8	8	10
Weight*1 [g]	Piping configuration	1	1,380	1,390	2,050	2,110	2,960	3,080	4,670	4,840
		2	1,410	1,430	2,100	2,210	3,120	3,310	4,990	5,150
		3	1,380	1,390	2,050	2,110	2,960	3,080	4,670	4,840
		4	1,410	1,430	2,100	2,210	3,120	3,310	4,990	5,150

∗1 Indicates case of grommet type
Add 20 g for grommet with PCB, 70 g for conduit, 50 g for DIN terminal, and 15 g for M12 connector.

Construction

JSXFE/Compression Fitting Type

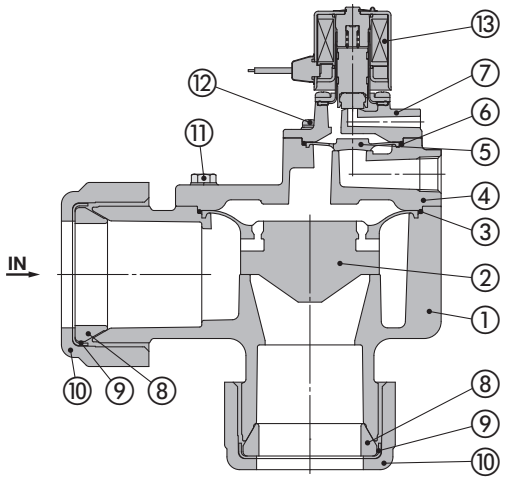
Port sizes 06, 10



Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Seal**	NBR
6	**Washer**	Fe (Chromating)
7	**Compression nut**	ADC
8	**Hexagon bolt**	Stainless steel
9	**Pilot valve**	—

Port size 14



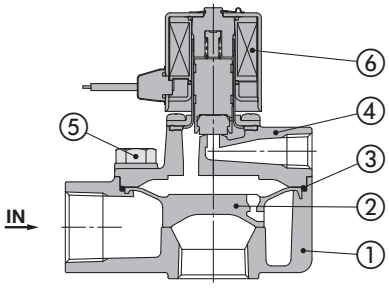
Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Sub-valve**	Resin
6	**O-ring**	NBR
7	**Bonnet**	ADC

No.	Description	Material
8	**Seal**	NBR
9	**Washer**	Fe (Chromating)
10	**Compression nut**	ADC
11	**Hexagon bolt**	Stainless steel
12	**Cross recessed round head screw**	Stainless steel
13	**Pilot valve**	—

JSXFF/Direct Piping Type

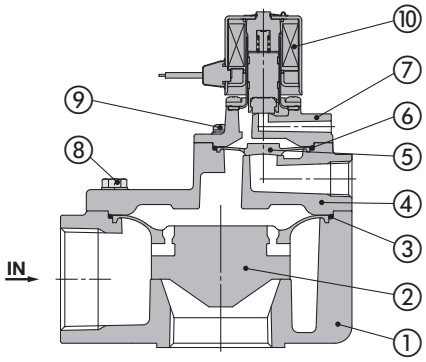
Port sizes 06, 10



Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Hexagon bolt**	Stainless steel
6	**Pilot valve**	—

Port size 14



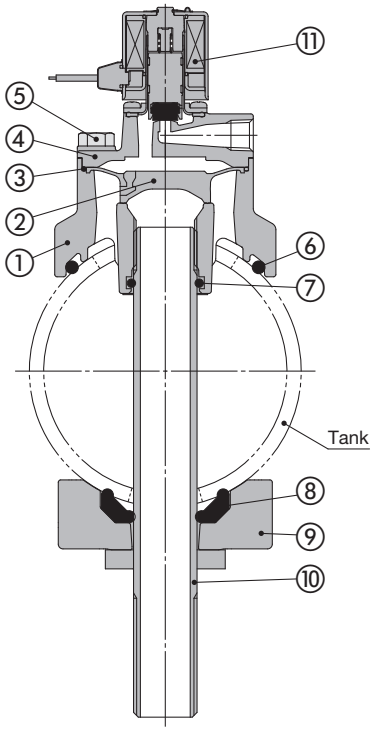
Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Sub-valve**	Resin
6	**O-ring**	NBR
7	**Bonnet**	ADC
8	**Hexagon bolt**	Stainless steel
9	**Cross recessed round head screw**	Stainless steel
10	**Pilot valve**	—

Construction

JSXFH/Immersion Type

Port sizes 06, 10

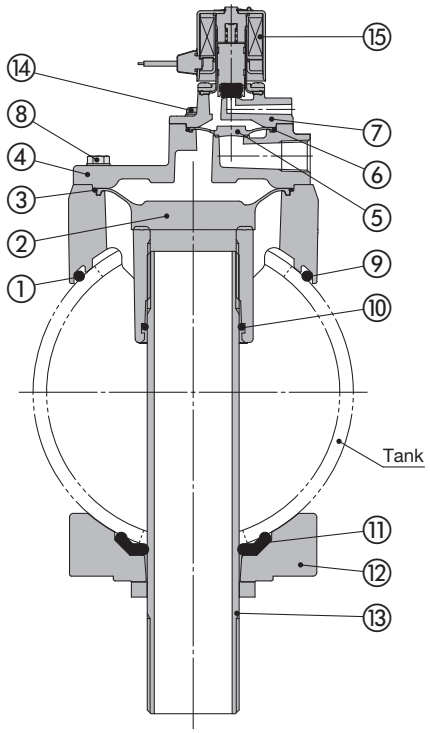


∗ The tank should be provided by the customer.

Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Hexagon bolt**	Stainless steel
6	**O-ring**	NBR
7	**O-ring**	NBR
8	**Gasket**	NBR
9	**Bottom support**	ADC
10	**Outlet pipe assembly**	STKM + SS400
11	**Pilot valve**	—

Port sizes 14, 20



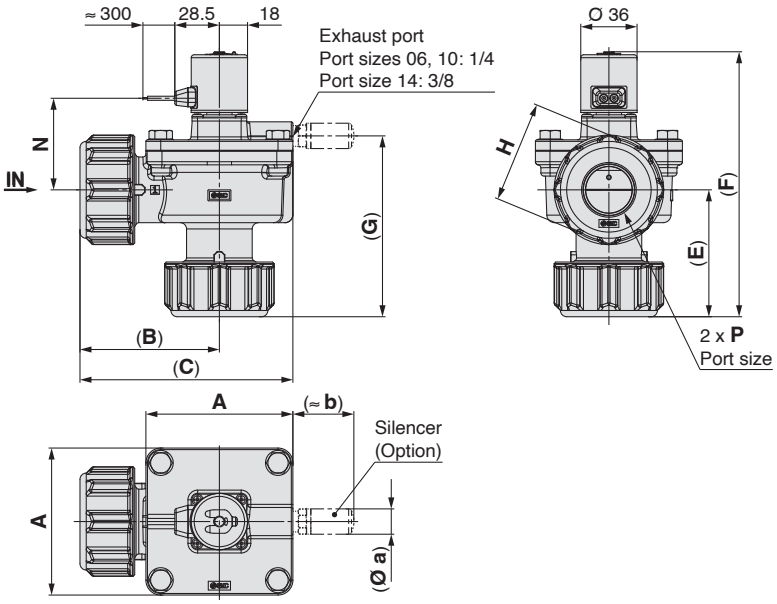
∗ The tank should be provided by the customer.

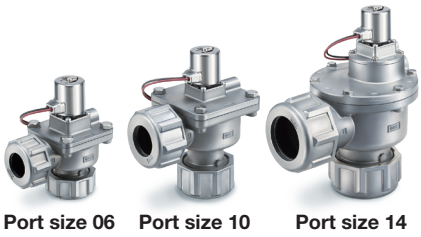
Component Parts

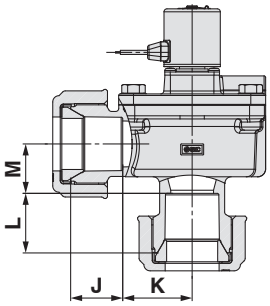
No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Sub-valve**	Resin
6	**O-ring**	NBR
7	**Bonnet**	ADC
8	**Hexagon bolt**	Stainless steel
9	**O-ring**	NBR
10	**O-ring**	NBR
11	**Gasket**	NBR
12	**Bottom support**	ADC
13	**Outlet pipe assembly**	STKM + SS400
14	**Cross recessed round head screw**	Stainless steel
15	**Pilot valve**	—

Dimensions: JSXFE/Compression Fitting Type

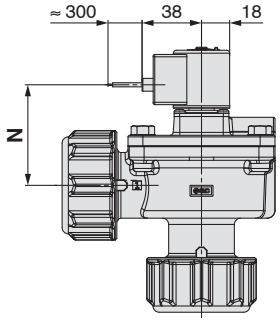
G: Grommet



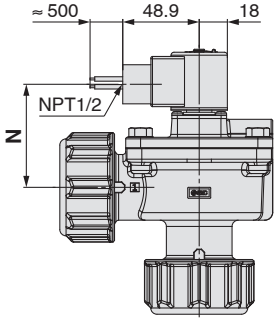




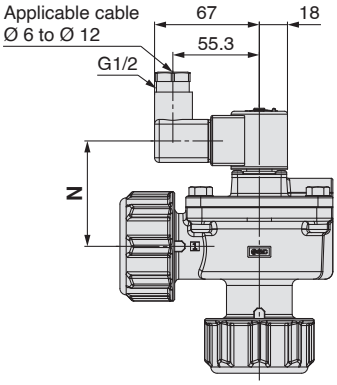
GS: Grommet with PCB



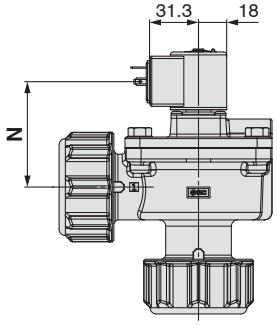
CS: Conduit



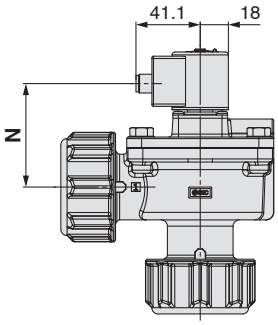
DS: DIN terminal
DZ: DIN terminal with light



DN: Without DIN connector



WN: M12 connector



Dimensions

[mm]

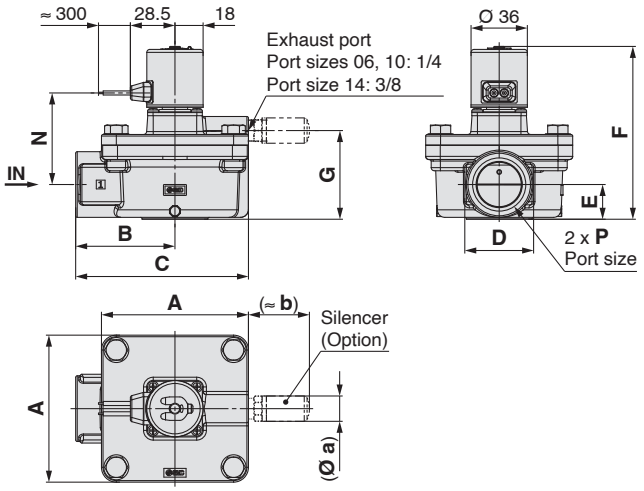
Model	Port size P	A	(B)	(C)	(E)	(F)	(G)	H	J	K	L	M
JSXFE-06	3/4	74	76	113	54	136	82	54	25.4	41.3	25.4	18.8
JSXFE-10	1	94	90	137	82	170	116	65	33.3	44.4	38.1	31.6
JSXFE-14	1 1/2	Ø 126	117	178	92	217	139	80	51.3	50.7	45	33

The dimensions in ( ) show the dimensions after tightening.

Model	Port size P	Grommet	Grommet with PCB	Conduit	DIN terminal	Without DIN connector	M12 connector	With silencer	
		N						a	b
JSXFE-06	3/4	52.6	58.3	59.9	61.4	61.4	60.2	16.5	39
JSXFE-10	1	58.6	64.3	65.9	67.4	67.4	66.2		
JSXFE-14	1 1/2	95.6	101.3	102.9	104.4	104.4	103.2	20	52

Dimensions: JSXFF/Direct Piping Type

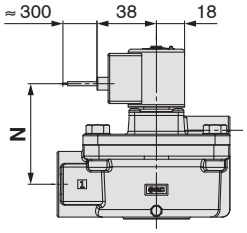
G: Grommet



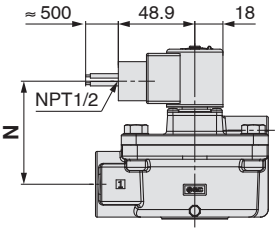


Port size 06 Port size 10 Port size 14

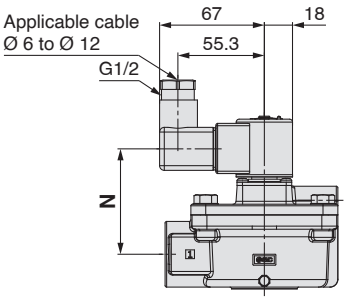
GS: Grommet with PCB



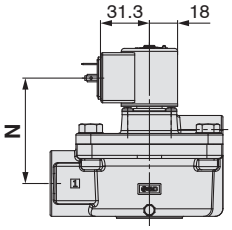
CS: Conduit



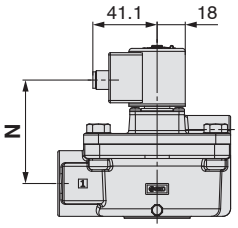
DS: DIN terminal
DZ: DIN terminal with light



DN: Without DIN connector



WN: M12 connector



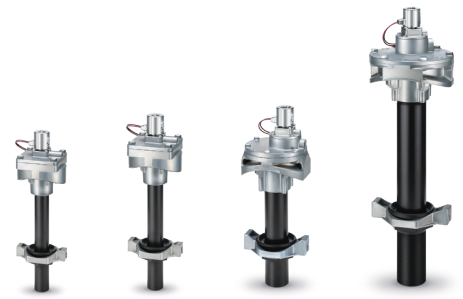
Dimensions

[mm]

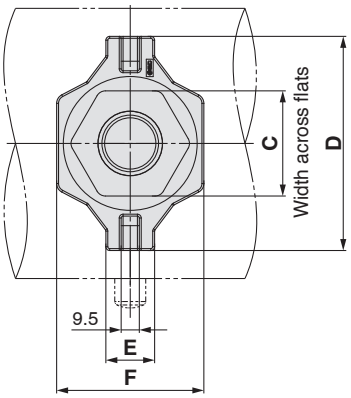
Model	Port size P	A	B	C	D	E	F	G
JSXFF-06	3/4	74	55.5	92.5	36	19.3	101.6	47.8
JSXFF-10	1	94	63.5	110.5	44	22.2	110.5	56.7
JSXFF-14	1 1/2	Ø 126	75.1	136.6	65	32	157.3	79

Model	Port size P	Grommet	Grommet with PCB	Conduit	DIN terminal	Without DIN connector	M12 connector	With silencer	
		N						a	b
JSXFF-06	3/4	52.6	58.3	59.9	61.4	61.4	60.2	16.5	39
JSXFF-10	1	58.6	64.3	65.9	67.4	67.4	66.2		
JSXFF-14	1 1/2	95.6	101.3	102.9	104.4	104.4	103.2	20	52

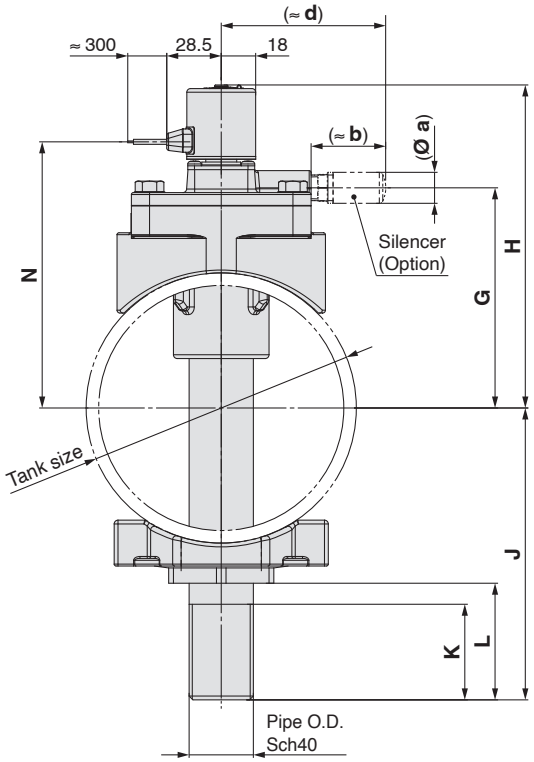
Dimensions: JSXFH/Immersion Type

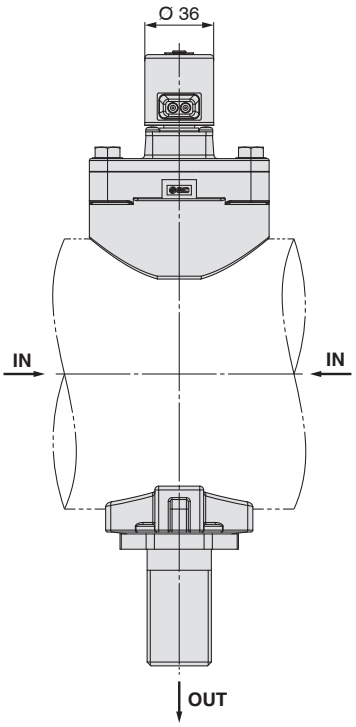


Port size 06 | Port size 10 | Port size 14 | Port size 20



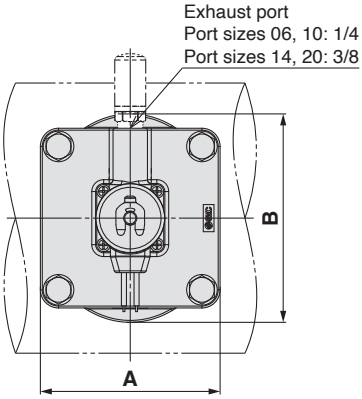
G: Grommet





Dimensions

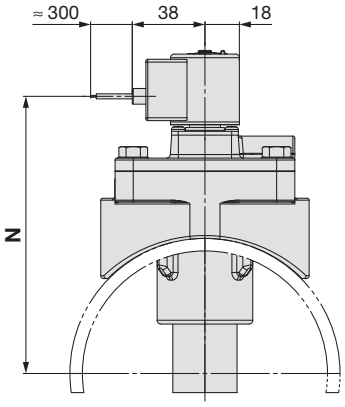
Model	Port size	Tank size	Pipe O.D.	A	B	C	D	E	F	G	H
JSXFH4-06	3/4	4 inch (ANSI 4")	Ø 26.7 (ANSI 3/4")	90	93	46	90	25.5	63	99	153
JSXFH5-06		5 inch (ANSI 5")								113	166
JSXFH5-10	1		Ø 33.6 (ANSI 1")	94	109	55	112	25.5	77	115	168
JSXFH6-10		6 inch (ANSI 6")								128	182
JSXFH6-14	1 1/2		Ø 48.3 (ANSI 1 1/2")	131	131	65	130	34.5	90	124	202
JSXFH8-14		8 inch (ANSI 8")								150	228
JSXFH8-20	2		Ø 60.3 (ANSI 2")	168	170	80	160	34.5	108	165	243
JSXFH10-20		10 inch (ANSI 10")								192	270



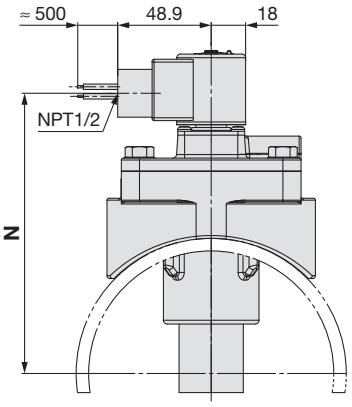
Model	Port size	OUT port piping configuration											
		1			2			3			4		
		J	K	L	J	K	L	J	K	L	J	K	L
JSXFH4-06	3/4	146 ±5		62	164 ±5		80	146 ±5	G3/4" x 50	62	164 ±5	G3/4" x 70	80
JSXFH5-06		153 ±5		56	173 ±5		76	153 ±5	G3/4" x 50	56	173 ±5	G3/4" x 70	76
JSXFH5-10	1	153 ±5		61	173 ±5		81	153 ±5	G1" x 50	61	173 ±5	G1" x 70	81
JSXFH6-10		173 ±5	–	68	213 ±5	–	108	173 ±5	G1" x 50	68	213 ±5	G1" x 90	108
JSXFH6-14	1 1/2	169 ±5		61	209 ±5		101	169 ±5	G1 1/2" x 50	61	209 ±5	G1 1/2" x 90	101
JSXFH8-14		198 ±5		65	258 ±5		125	198 ±5	G1 1/2" x 50	65	258 ±5	G1 1/2" x 110	125
JSXFH8-20	2	197 ±5		60	257 ±5		120	197 ±5	G2" x 50	60	257 ±5	G2" x 110	120
JSXFH10-20		224 ±5		60	284 ±5		120	224 ±5	G2" x 50	60	284 ±5	G2" x 110	120

Dimensions: JSXFH/Immersion Type

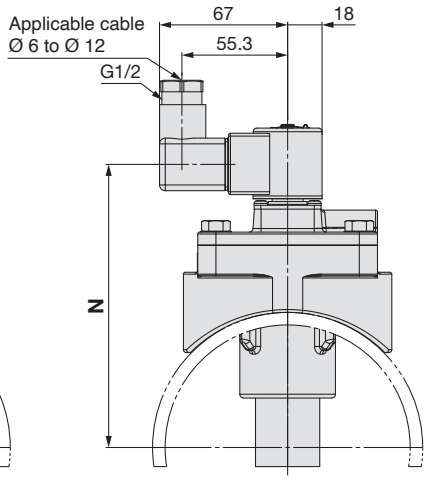
GS: Grommet with PCB



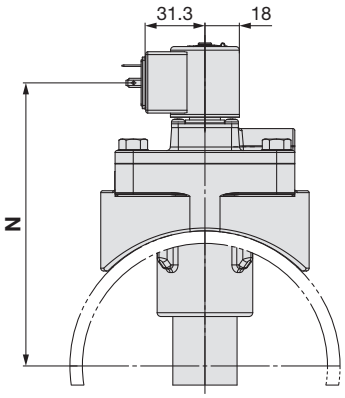
CS: Conduit



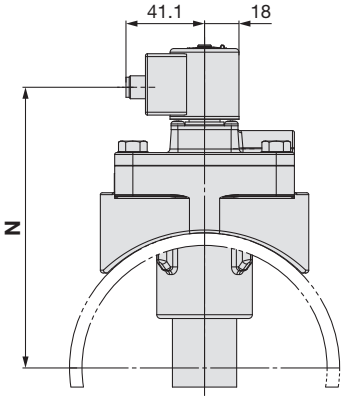
DS: DIN terminal
DZ: DIN terminal with light



DN: Without DIN connector



WN: M12 connector



Dimensions

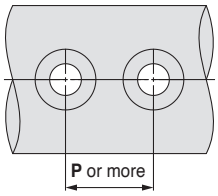
[mm]

Model	Port size	Grommet	Grommet with PCB	Conduit	DIN terminal	Without DIN connector	M12 connector	With silencer		
		N						a	b	d
JSXFH4-06	3/4	123	129	131	132	132	131	16.5	39	76
JSXFH5-06		137	142	144	146	146	144			
JSXFH5-10	1	139	144	146	148	148	146			86
JSXFH6-10		152	158	160	161	161	160			
JSXFH6-14	1 1/2	173	178	180	182	182	180	20	52	114
JSXFH8-14		198	204	205	207	207	206			
JSXFH8-20	2	213	219	220	222	222	221			95
JSXFH10-20		240	246	247	249	249	248			

Recommended Tank Dimensions

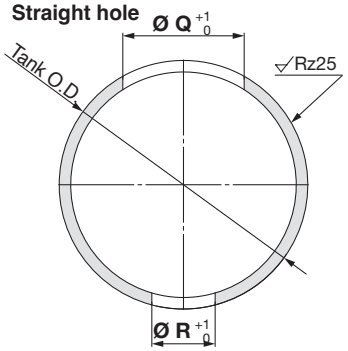
∗ The tank should be provided by the customer.

Tank hole pitch

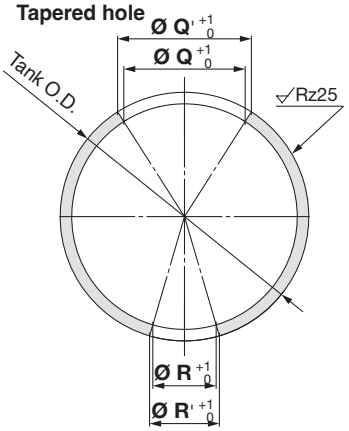


Tank hole machining

Straight hole



Tapered hole



Recommended Tank Dimensions

[mm]

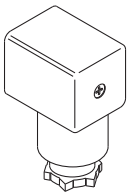
Model	Port size	Tank size	Tank O.D.	Tank hole pitch	Straight hole		Tapered hole			
				P	Q	R	Q	Q'	R	R'
JSXFH4-06	3/4	4 inch (ANSI 4")	Ø 114.3 +1.6 −0.8	95	55	28	55	61.5	28	31.3
JSXFH5-06		5 inch (ANSI 5")	Ø 141.3 +1.6 −0.8							
JSXFH5-10	1			100	69	36	69	76	36	39.7
JSXFH6-10		6 inch (ANSI 6")	Ø 168.3 +1.6 −0.8							
JSXFH6-14	1 1/2			135	95	52	95	104	52	56.8
JSXFH8-14		8 inch (ANSI 8")	Ø 219.1 +1.6 −0.8							
JSXFH8-20	2			175	117	62	117	126	62	67
JSXFH10-20		10 inch (ANSI 10")	Ø 273.1 +2.4 −0.8							

Replacement Parts (Solenoid Valve Type/JSXF□)

Port size	Model	Replacement part number			
		Main valve assembly (Main valve + O-ring)	Sub-valve assembly (Sub-valve + O-ring)	Silencer	Solenoid coil*1
06	**JSXF(E, F, H)□-06□-□□B-(S)**	JSXF-06B-KT	—	Rc, G thread: AN20-02 NPT thread: AN20-N02	JSXF□□-□□-□□B-KT1 Valve part number
10	**JSXF(E, F, H)□-10□-□□B-(S)**	JSXF-10B-KT	—		
14	**JSXF(E, F)□-14□-□□B-(S)**	JSXF-14B-KT	JSXF-14B-KT2	Rc, G thread: AN30-03 NPT thread: AN30-N03	
	JSXFH□-14□-□□B-(S)	JSXF-14B-1-KT			
20	**JSXFH□-20□-□□B-(S)**	JSXF-20B-KT	JSXF-14B-KT2		

*1 The solenoid coil has a name plate with the product part number printed on it. In addition, the name plate has the marks of all applicable standards printed on it.
For the solenoid coil, eligibility for CE marking standard certification varies depending on the electrical entry type and the rated voltage.
When ordering a solenoid coil with different specifications than the valve currently in use, refer to “How to Order” in the catalogue to confirm the status of standard compliance.

DIN Connector Part Nos.



Electrical option	Rated voltage	Connector part no.
None	24 VDC	**3G-GDM2A**
	100 VAC	
	120 (110) VAC	
	200 VAC	
	220 VAC	
	230 VAC	
	240 VAC	
With light	24 VDC	**GDM2A-L5**
	100 VAC	**GDM2A-L1**
	120 (110) VAC	**GDM2A-L1**
	200 VAC	**GDM2A-L2**
	220 VAC	**GDM2A-L2**
	230 VAC	**GDM2A-L2**
	240 VAC	**GDM2A-L2**

Gasket Part No. for DIN Connector

VCW20-1-29-1

Clip

VX021N-10S

Replacement Parts (Solenoid Valve Type/JSXF□)

Disassembly/Assembly Procedure

⚠Caution

1. Before disassembly, be sure to turn OFF the power supply and pressure supply, and then release the residual pressure.

2. Confirm that the solenoid coil temperature has dropped sufficiently before removing the product.

Disassembly

1) Remove the clip, and then remove the solenoid coil.
2) Loosen the hexagon bolts (cross recessed round head screws), and remove the bonnet assembly (bonnet), O-ring, and the main valve (sub-valve).

Assembly

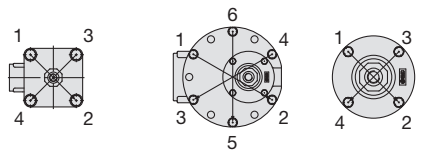
1) Attach the main valve (sub-valve) to the body. The main valve (sub-valve) has a predetermined mounting direction. **Assemble the valve referring to Fig. 1.** If the valve is assembled incorrectly, it can cause a malfunction.
2) Mount the O-ring to the body groove. (See Fig. 2.) After mounting the O-ring, check to make sure that the O-ring is fitted properly into the groove. If it is not in the groove, external leakage and/or operation failure may occur.
3) Attach the bonnet assembly (bonnet) to the body.
4) Tighten the hexagon bolts (cross recessed round head screws) diagonally. (See Table 1 for the tightening torque.)
5) Secure the solenoid coil with a clip. (For details, refer to "Specific Product Precautions" on page 57.)

Table 1. Proper Tightening Torque [N·m]

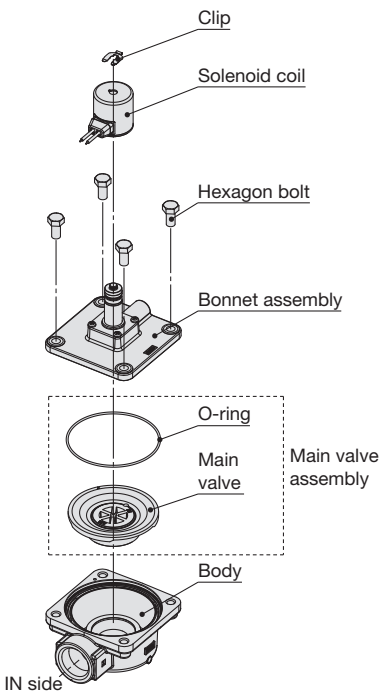
JSXF□-06□		M8	12.5 to 13.8
JSXF□-10□		M8	12.5 to 13.8
JSXF□-14□	Main valve	M6	5.2 to 5.7
	Sub-valve	M4	1.5 to 1.7
JSXF□-20□	Main valve	M8	12.5 to 13.8
	Sub-valve	M4	1.5 to 1.7

Port sizes 06, 10 **Port sizes 14, 20**

Main valve **Main valve** **Sub-valve**



Port sizes 06, 10



Port sizes 14, 20

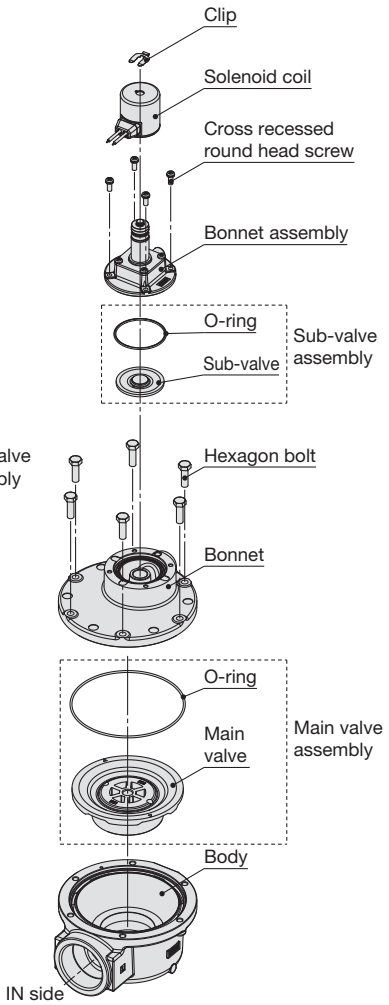


Fig. 2 O-ring position

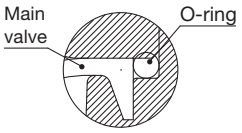
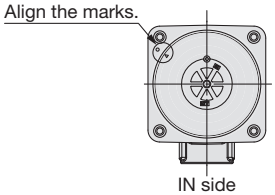
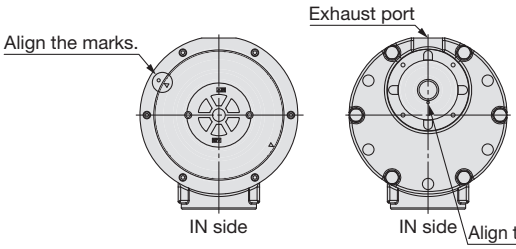


Fig. 1 Valve position

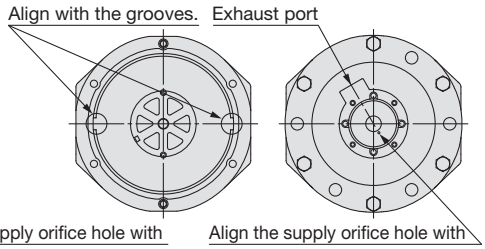
Port sizes 06, 10
Main valve position



Port size 14
Main valve position **Sub-valve position**



Port size 20
Main valve position **Sub-valve position**



Cable for M12 Connector (Female Connector with Cable)

The solenoid valve does not come with a cable for the M12 connector.
Please order it separately if necessary.

JSX022 – 30 – 1 – 1

Specification

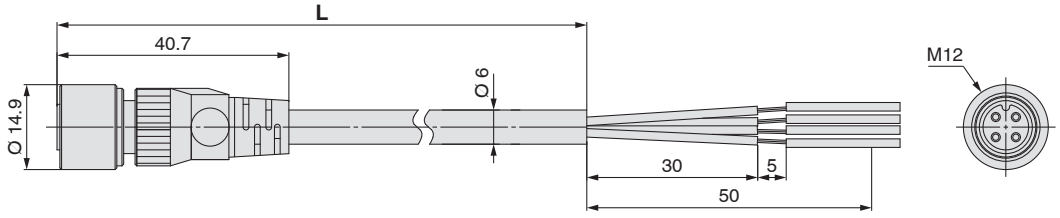
1	For DC voltages
2	For AC voltages

Cable length L [mm]

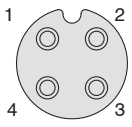
1	1000
2	2000
5	5000

Specifications

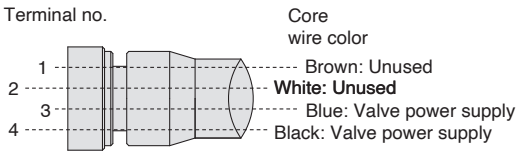
Part number		JSX022-30-1-□	JSX022-30-2-□
Key type		A-coded	B-coded
Rating/Performance	**Rated current**	4 A	
	Rated voltage	250 V	
	Contact resistance	40 mΩ or less	
	Insulation resistance	1000 MΩ or more	
	Withstand voltage	1500 VAC	
	Operating temperature range	–25 to 70 °C	
	Min. bending radius (Fixed)	50 mm	
	Protection class	IP67 (Only with screw tightened)	
	Allowable repeated insertion/withdrawal	200	
Material	**Material of knurl**	Brass (Ni plating)	
	Contact (Surface treatment)	Copper alloy (Au plating)	
	Connector material	PBT	
	Cover	Soft PBT	



For DC voltages (A-coded)

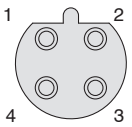


Socket connector pin arrangement

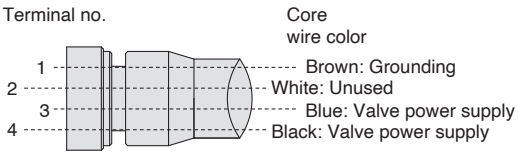


Connections

For AC voltages (B-coded)



Socket connector pin arrangement



Connections

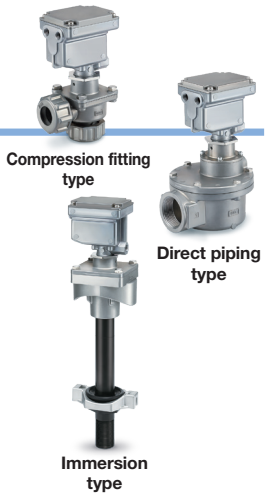
∗ The solenoid valve has no polarity for DC voltages.

Pulse Valve

SMARTVENT Type

JSXF-P□ Series

Solenoid Valve Type ▸ p. 7
Air Operated Type ▸ p. 25



How to Order

		❶	❷	❸		❹	❺		❻	❼	❽	❾	❿	⓫
Compression	JSXF	□	E		–	06	G	–		5	PR	B	– S	2
Direct Piping	JSXF	□	F		–	06	G	–		5	PR	B	– S	2
Immersion	JSXF	□	H	4	–	06	G	1 –		5	PR	B	– S	2

❶ Valve type

–	Solenoid valve

❷ Piping

E	Compression fitting type*1	
F	Direct piping type	
H	Immersion type*2	

*1 Seals and washers are included.
*2 The valve and pipe do not come assembled.

❸ Tank size (JSXFH only)

4	4 inch
5	5 inch
6	6 inch
8	8 inch
10	10 inch

❹ Port size*1

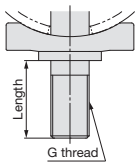
06	3/4 (20A)
10	1 (25A)
14	1 1/2 (40A)
20*2	2 (50A)

*1 For port size selection, refer to the "Variations for Port Size and Option" table below.
*2 Port size 20 is only available for the JSXFH.

❺ Thread type

R	Rc
N	NPT
F	G

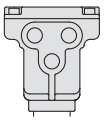
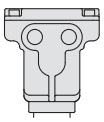
❻ OUT port piping configuration (JSXFH only)

Symbol	Length	G thread	Appearance
1	Short	None	
2	Long		
3	Short	Yes	
4	Long		

❼ Rated voltage

Symbol	Rated voltage
5	24 VDC

❽ Electric control

Symbol	Board type	M12 connector	External input (Differential pressure sensor)	
PP*1	Base	–	●	 3 holes
PB			–	 2 holes
PR	Remote		–	
PBW*1, 2	Base	●	(●)	
PRW*2	Remote		–	

*1 When using a differential pressure sensor (provided by the customer), select PP or PBW for the base valve. For base valves with an M12 connector, select PBW regardless of whether or not there is a differential pressure sensor. Either can be used.
Use a 2-wire type 4 to 20 mA specification differential pressure sensor.
*2 Use a straight wiring cable.
* A connector cable is available. For details, refer to page 24.

❾ Fluid and ambient temperatures

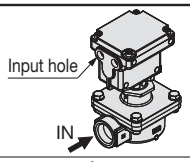
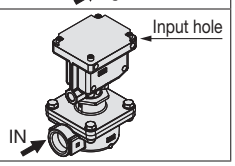
B	–40 to 60 °C

❿ Silencer

–	Without
S	With

· Shipped together with the product
· 2 pcs. for 40A and 50A
Refer to "Replacement Parts" on page 23.

⓫ Electrical entry

–	IN side	
2	180° Inverted	

· It can be changed by the customer.
For details, refer to page 54.

Made to Order

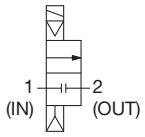
Tank hole dia.: Ø 76 (Port size 14, 6-inch tank)	p. 37

Variations for Port Size and Option

Model	Tank size	Port size 06	10	14	20
JSXFE	–	●	●	●	–
JSXFF	–	●	●	●	–
JSXFH	4 inch	●	–	–	–
	5 inch	●	●	–	–
	6 inch	–	●	●	–
	8 inch	–	–	●	●
	10 inch	–	–	–	●
Silencer		●	●	●	●

For more information on using SMARTVENT types, refer to the operation manual. Download it from our website: https://www.smc.eu

Symbol





JSXFE Series



JSXFF Series



JSXFH Series

Specifications

Common Specifications

Valve specifications	**Valve construction**		Pilot operated diaphragm
	Valve type		Normally closed (N.C.)
	Fluid		Air
	Pilot valve orifice dia.	**[mm]**	Ø 4.5
	Withstand pressure	**[MPa]**	1.5
	Min. operating pressure differential	**[MPa]**	0.1
	Max. operating pressure differential	**[MPa]**	0.9
	Max. system pressure	**[MPa]**	0.9
	Fluid temperature	**[°C]**	–40*1 to 60
	Ambient temperature	**[°C]**	–40 to 60
	Enclosure*2		IP67, NEMA4
	Standards		CE/UKCA
Coil specifications	**Rated voltage**	**[V]**	24 VDC
	Allowable voltage fluctuation		±10 % of the rated voltage
	Allowable leakage voltage		2 % or less of the rated voltage
	Power consumption*3	**[W]**	18
Board specifications	**ON time**	**[ms]**	100 to 234
	OFF time	**[s]**	4 to 29
	Current consumption	**[mA]**	Base: 25 or less Remote: 15 or less*4

∗1 No condensation
∗2 For IP67 and NEMA4, wired components must be installed in an input hole or the holes must be plugged.
∗3 Power consumption: The value at an ambient temperature of 20 °C and when the rated voltage is applied (Variation: ±10 %)
∗4 Current consumption per remote valve (It is added to match the number of valves.)
Be sure to read "Specific Product Precautions" before handling.

Weight

Model			06		10		14		20	
JSXFE			1,240		1,680		2,620		—	
JSXFF			1,060		1,270		2,000		—	
JSXFH*1	**Tank size**		4	5	5	6	6	8	8	10
	Piping configuration	**1**	1,880	1,890	2,500	2,560	3,480	3,600	5,190	5,360
		2	1,910	1,930	2,550	2,660	3,640	3,830	5,510	5,670
		3	1,880	1,890	2,500	2,560	3,480	3,600	5,190	5,360
		4	1,910	1,930	2,550	2,660	3,640	3,830	5,510	5,670

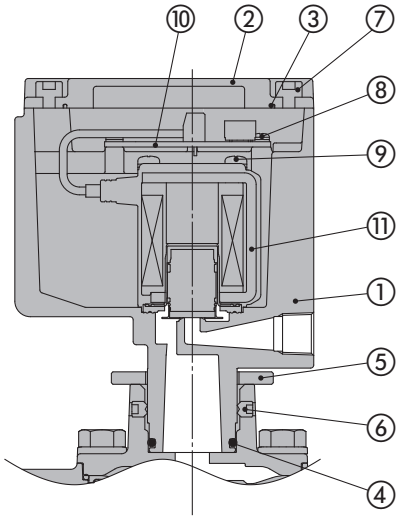
∗1 The tank weight is not included in the weight table.
∗ Add 30 g to the weight for the type with an M12 connector.

M12 Connector Specifications

Key type	A-coded
Rated current	4 A
Rated voltage	250 V
Contact resistance	10 mΩ or less
Insulation resistance	100 MΩ or more
Operating temperature range	–40 to 85 °C
Protection class	IP67
Material	Copper alloy
Base	IN: 2(4)-core OUT: 3-core
Remote	IN: 3-core OUT: 3-core

Construction

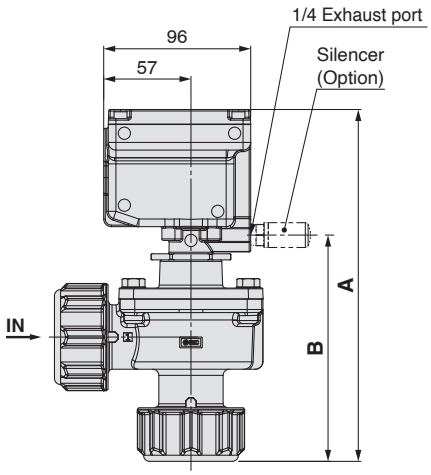
Components other than those shown below are the same as those of the air operated type.

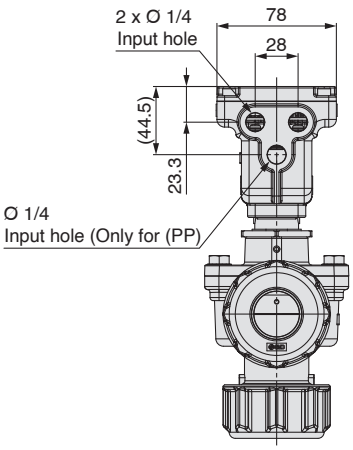


Component Parts

No.	Description	Material
1	**Box**	ADC
2	**Cover**	ADC
3	**Gasket**	NBR
4	**O-ring**	NBR
5	**Nut**	Stainless steel
6	**Hexagon socket head set screw**	Stainless steel
7	**Hexagon socket head cap screw**	Stainless steel
8	**Cross recessed round head screw**	Stainless steel
9	**Cross recessed round head screw**	Fe
10	**Board assembly**	—
11	**Pilot valve**	—

Dimensions (Dimensions other than those shown below are the same as those of the air operated type.)



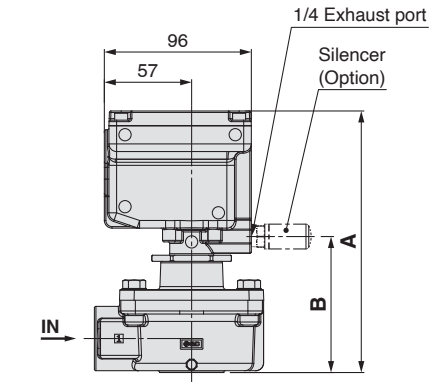


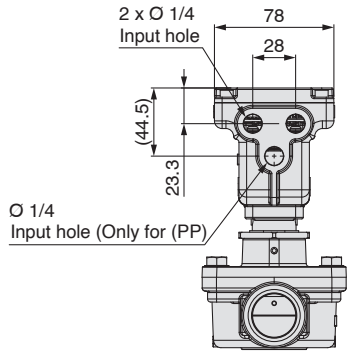
Dimensions [mm]

Model	Port size	A	B
JSXFE-06	3/4	196	114
JSXFE-10	1	230	148
JSXFE-14	1 1/2	280	198

The dimensions indicate the values after screw tightening.

JSXFF/Direct piping type



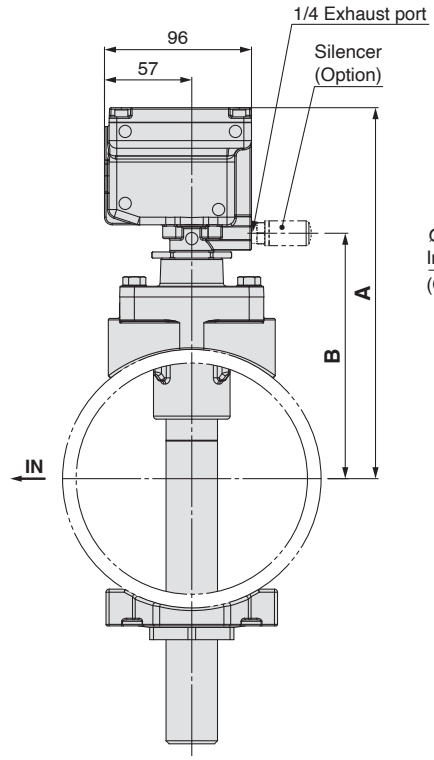


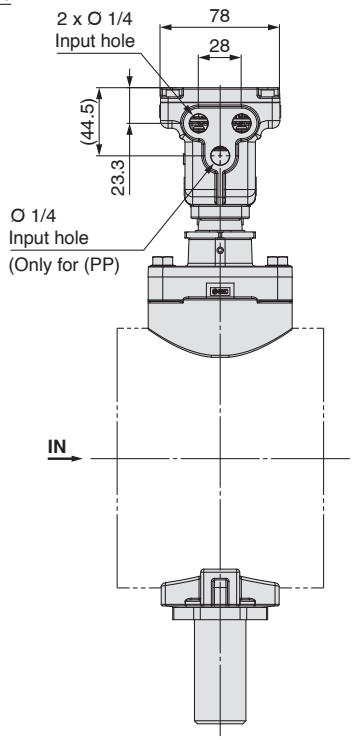
Dimensions [mm]

Model	Port size	A	B
JSXFF-06	3/4	162	80
JSXFF-10	1	171	89
JSXFF-14	1 1/2	221	139

The dimensions indicate the values after screw tightening.

JSXFH/Immersion type





Dimensions [mm]

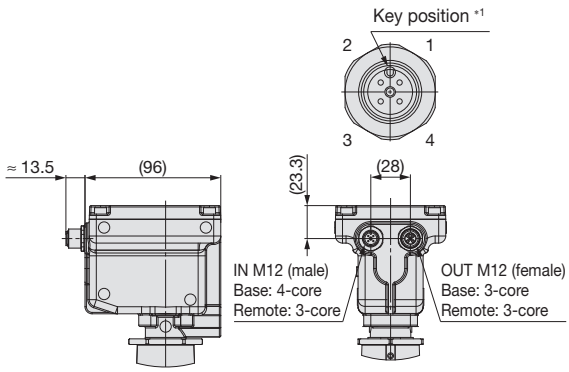
Model	Port size	A	B
JSXFH4-06	3/4	213	131
JSXFH5-06		227	145
JSXFH5-10	1	229	147
JSXFH6-10		242	160
JSXFH6-14	1 1/2	266	184
JSXFH8-24		291	209
JSXFH8-20	2	306	224
JSXFH10-20		333	251

The dimensions indicate the values after screw tightening.

With M12 Connector

Dimensions other than those shown below are the same as those of the SMARTVENT type.

Pin no.	Differential pressure sensor		Lead wire colour
	Without (2-core)	With (4-core)	
1	DC(+)	DC(+)	Brown
2	—	LINE(+)	White
3	DC(–)	DC(–)	Blue
4	—	LINE(–)	Black



*1 L connectors cannot be used as the key position is not always the same. Be sure to use a straight connector.

* There are 4 cores regardless of whether or not there is a differential pressure sensor.

* Use as a reference when option VXF20-53-□ is selected.

Replacement Parts (SMARTVENT Type/JSXF)

Port size	Model	Replacement part number			
		Main valve assembly (Main valve + O-ring)	Sub-valve assembly (Sub-valve + O-ring)	Silencer ①	Silencer ②
06	**JSXF(E, F, H)□-06□-5P□B-(S)**	JSXF-06B-KT	—	Rc, G thread: AN20-02 NPT thread: AN20-N02	—
10	**JSXF(E, F, H)□-10□-5P□B-(S)**	JSXF-10B-KT	—		
14	**JSXF(E, F)□-14□-5P□B-(S)**	JSXF-14B-KT	JSXF-14B-KT2	Rc, G thread: AN20-02 NPT thread: AN20-N02	Rc, G thread: AN30-03 NPT thread: AN30-N03
	JSXFH□-14□-5P□B-(S)	JSXF-14B-1-KT			
20	**JSXFH□-20□-5P□B-(S)**	JSXF-20B-KT	JSXF-14B-KT2		

Disassembly/Assembly Procedure

⚠Caution

1. Before disassembly, be sure to turn OFF the power supply and pressure supply, and then release the residual pressure.

Disassembly

1) Loosen the hexagon bolts, and remove the bonnet assembly (bonnet), O-ring, and the main valve (sub-valve).

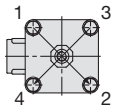
Assembly

1) Attach the main valve (sub-valve) to the body. The main valve (sub-valve) has a predetermined mounting direction. **Assemble the valve referring to Fig. 1.**
If the valve is assembled incorrectly, it can cause a malfunction.
2) Mount the O-ring to the body groove. (See Fig. 2.)
After mounting the O-ring, check to make sure that the O-ring is fitted properly into the groove. If it is not in the groove, external leakage and/or operation failure may occur.
3) Attach the bonnet assembly (bonnet) to the body.
4) Tighten the hexagon bolts (hexagon socket head cap screws) diagonally.
(See Table 1 for the tightening torque.)

Table 1. Proper Tightening Torque [N·m]

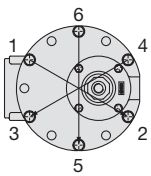
JSXF□-06□		M8	12.5 to 13.8
JSXF□-10□		M8	12.5 to 13.8
JSXF□-14□	Main valve	M6	5.2 to 5.7
	Sub-valve	M4	1.5 to 1.7
JSXF□-20□	Main valve	M8	12.5 to 13.8
	Sub-valve	M4	1.5 to 1.7

Port sizes 06, 10

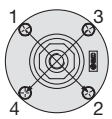


Main valve

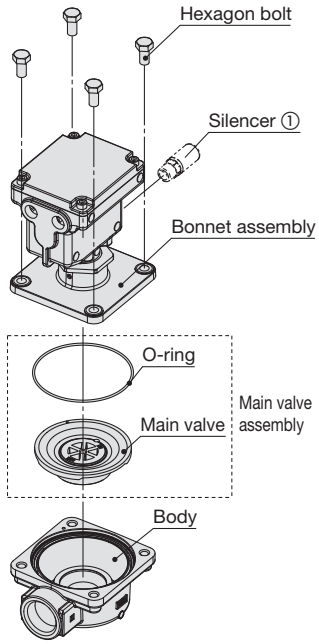
Port sizes 14, 20



Sub-valve



Port sizes 06, 10



Port sizes 14, 20

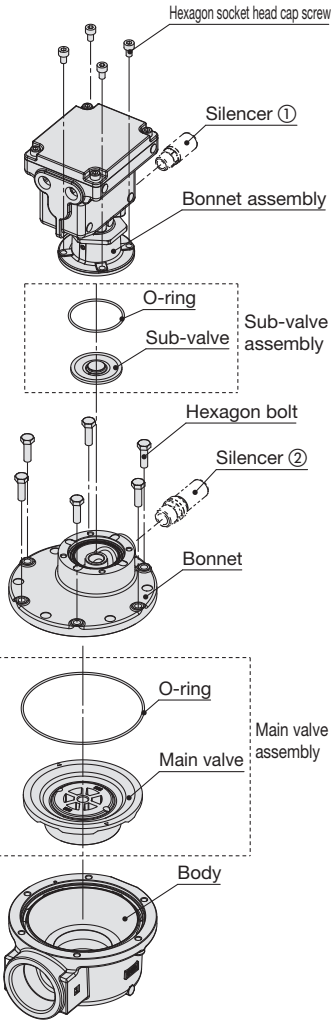


Fig. 2 O-ring position

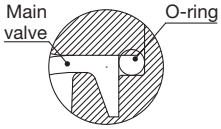
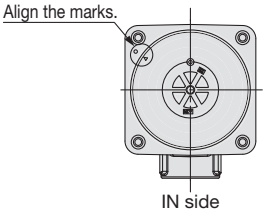
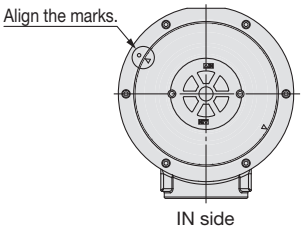


Fig. 1 Valve position

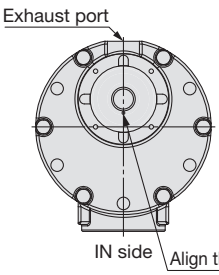
Port sizes 06, 10
Main valve position



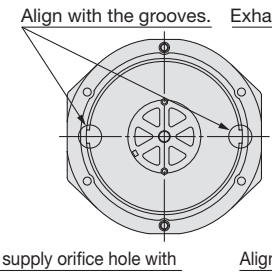
Port size 14
Main valve position



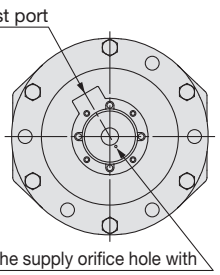
Sub-valve position



Port size 20
Main valve position

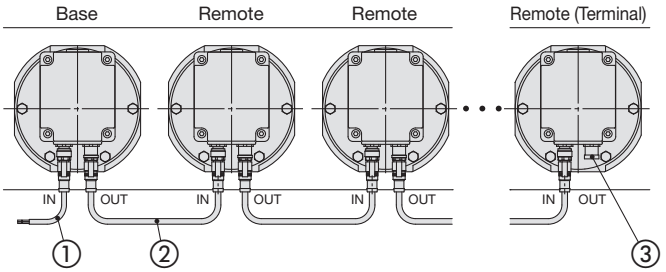


Sub-valve position



JSXF-P□ Series
Option

The following options are available for wiring as shown below.



Cable Specifications

Key type		A-coded
Rating/ Performance	Rated current	4 A
	Rated voltage	250 V
	Insulation resistance	100 mΩ
	Operating temperature range	–25 to 90 °C
	Protection class	IP67 (Only with screw tightened)
	Durability	100 cycles
Material	Material of knurl	Zinc die-cast, Brass, Nickel plated
	Terminal	Cu, Sn, Gold plated
	Housing	TPU
	Cable jack	PVC

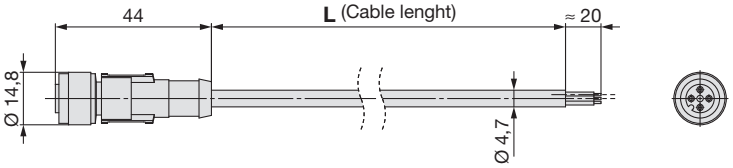
① M12 connector cable (female 4-core) for power supply/differential pressure sensor and base valve “IN” connection

VXF20 – 53 – 10

＊ Refer to the “With M12 Connector” section on page 22 for wiring.

Cable length

Symbol	L cable length
10	1 m
30	3 m
50	5 m

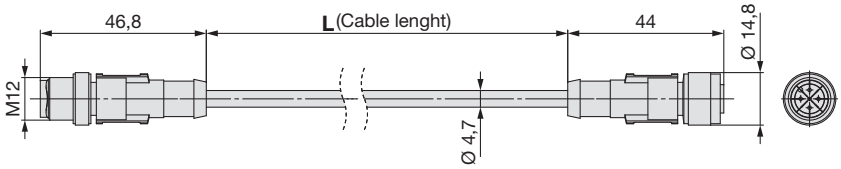


② M12 connector cable (male 4-core to female 4-core) for base/remote valve “OUT” and remote valve “IN” connection

VXF20 – 54 – 10

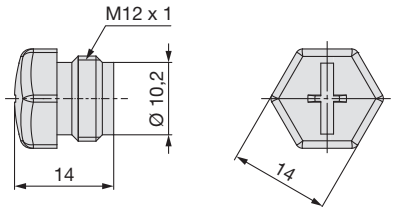
Cable length

Symbol	L cable length
05	0.5 m
10	1 m



③ Remote valve plug (terminal)

EX9 – AWTS (10 pcs.)



Pulse Valve Valve for Dust Collector

Air Operated Type

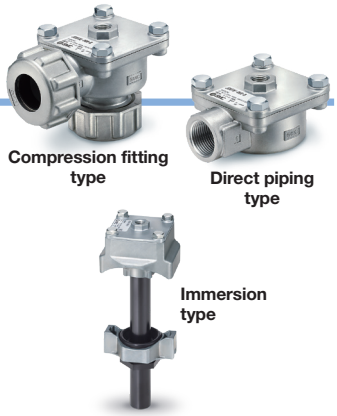
JSXFA Series

RoHS

Solenoid Valve Type ▸ p. 7
SMARTVENT Type ▸ p. 19

How to Order

Compression	JSXF	A	E		– 06	R	– B –		1
Direct Piping	JSXF	A	F		– 06	R	– B –		1
Immersion	JSXF	A	H	4	– 06	R	1	– B –		1
		❶	❷	❸	❹	❺	❻	❼	❽	❾



❶ Valve type

A	Air operated

❷ Piping

E	Compression fitting type*1	
F	Direct piping type	
H	Immersion type*2	

*1 Seals and washers are included.
*2 The valve and pipe do not come assembled.

❸ Tank size (JSXFAH only)

4	4 inch
5	5 inch
6	6 inch
8	8 inch
10	10 inch

❹ Port size*1

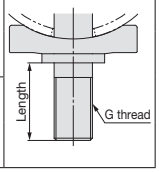
06	3/4 (20A)
10	1 (25A)
14	1 1/2 (40A)
20*2	2 (50A)

*1 For port size selection, refer to the "Variations for Port Size and Option" table below.
*2 Port size 20 is only available for the JSXFAH.

❺ Thread type

R	Rc
N	NPT
F	G

❻ OUT port piping configuration (JSXFAH only)

Symbol	Length	G thread	Appearance
1	Short	None	
2	Long		
3	Short	Yes	
4	Long		

❼ Fluid and ambient temperatures

B	–40 to 60 °C

❽ Silencer (Only port size 14 and 20 can be selected.)

–	Without
S	With

Shipped together with the product
Refer to "Replacement Parts" on page 35.

❾ Pilot port size

–	1/4
1	1/8

Made to Order

Tank hole dia.: Ø 76 (Port size 14, 6-inch tank)	p. 37

⚠ Caution

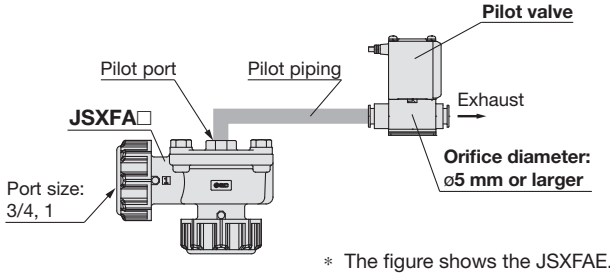
Pilot Valve Selection (JSXFA series common)

For the pilot valve orifice diameter, Ø 5 mm or larger is recommended.

The product may not operate correctly if the pilot valve orifice diameter is inadequate. (Port size: 3/4, 1)

Depending on the pilot piping port size*1 or length, the valve may not operate correctly.

*1 The I.D. of the pilot piping must be larger than the pilot valve orifice diameter to use. The max. pilot piping I.D. is 10 mm.



* The figure shows the JSXFAE.

Made to Order (JSXFA series common)

When the pilot valve orifice diameter is Ø 3 mm or larger and less than Ø 5 mm, put "**A**" to the end of the product number for made-to-order.

Pilot valve orifice diameter: Special specification

A	For Ø 3 mm to Ø 5 mm	Port size: 06, 10

JSXFA □□ – □□ – B – □□ **A**

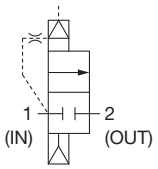
Enter the standard product number.

Variations for Port Size and Option

Model	Tank size	Port size			
		06	10	14	20
JSXFAE	–	●	●	●	–
JSXFAF	–	●	●	●	–
JSXFAH	4 inch	●	–	–	–
	5 inch	●	●	–	–
	6 inch	–	●	●	–
	8 inch	–	–	●	●
	10 inch	–	–	–	●
Pilot valve orifice		●	●	–	–
Silencer		–	–	●	●

SMC

Symbol





JSXFAE Series



JSXFAF Series



JSXFAH Series

Specifications

Common Specifications

Valve specifications	**Fluid**	Air
	Min. operating pressure differential [MPa]	0.1
	Max. operating pressure differential [MPa]	0.9
	Max. system pressure [MPa]	0.9
	Fluid temperature [°C]	–40*1 to 60
	Ambient temperature [°C]	–40 to 60
	Operating environment	Indoor/Outdoor*2

∗1 No condensation
∗2 For outdoor use, be sure to implement sufficient measures to protect the operational pilot valve from rain water.
Refer to “2-Port Solenoid Valves for Fluid Control Precautions” for protective measures.
Be sure to read “Specific Product Precautions” before handling.

Individual Specifications: Compression Fitting Type / Direct Piping Type

Series		JSXFAE/F		
		06	**10**	**14**
Orifice diameter [mm]		Ø 32	Ø 40	Ø 50
Port size		3/4	1	1 1/2
Weight [g]	**Compression**	470	910	1,850
	Direct piping	290	500	1,230

Individual Specifications: Immersion Type

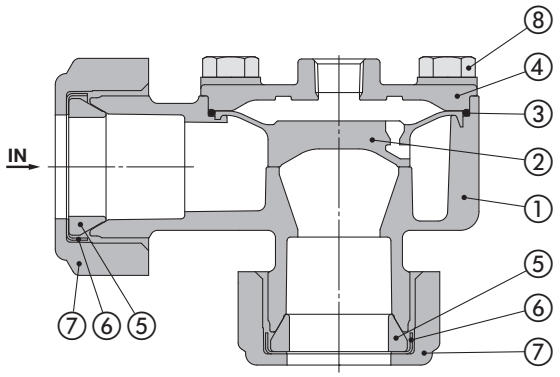
Series			JSXFAH							
			06		**10**		**14**		**20**	
Orifice diameter [mm]			Ø 32		Ø 40		Ø 45		Ø 55	
Port size			3/4		1		1 1/2		2	
Tank size ANSI			4	5	5	6	6	8	8	10
Weight*3 [g]	**Piping configuration**	**1**	1,110	1,120	1,730	1,790	2,710	2,830	4,420	4,590
		2	1,140	1,160	1,780	1,890	2,870	3,060	4,740	4,900
		3	1,110	1,120	1,730	1,790	2,710	2,830	4,420	4,590
		4	1,140	1,160	1,780	1,890	2,870	3,060	4,740	4,900

∗3 The tank weight is not included in the weight above.

Construction

JSXFAE/Compression Fitting Type

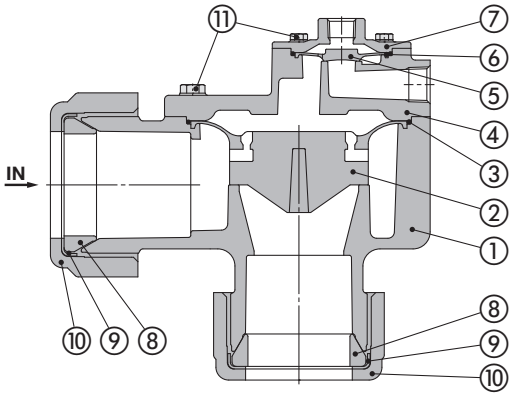
Port sizes 06, 10



Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Seal**	NBR
6	**Washer**	Fe (Chromating)
7	**Compression nut**	ADC
8	**Hexagon bolt**	Stainless steel

Port size 14



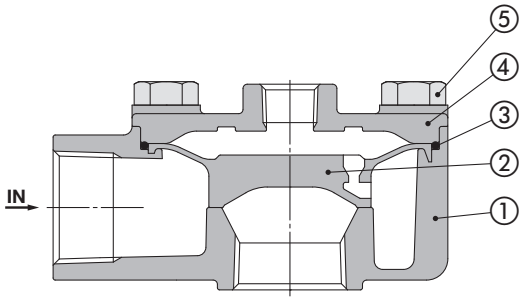
Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Sub-valve**	Resin
6	**O-ring**	NBR
7	**Bonnet**	ADC

No.	Description	Material
8	**Seal**	NBR
9	**Washer**	Fe (Chromating)
10	**Compression nut**	ADC
11	**Hexagon bolt**	Stainless steel

JSXFAF/Direct Piping Type

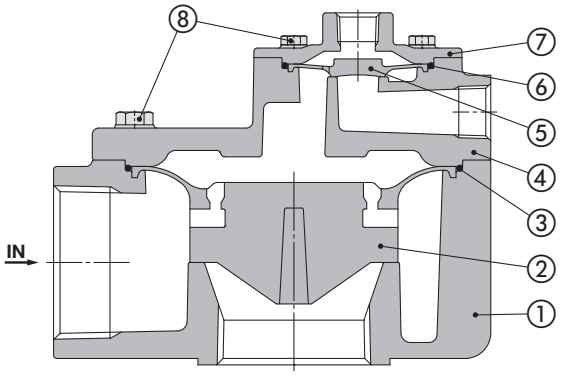
Port sizes 06, 10



Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Hexagon bolt**	Stainless steel

Port size 14



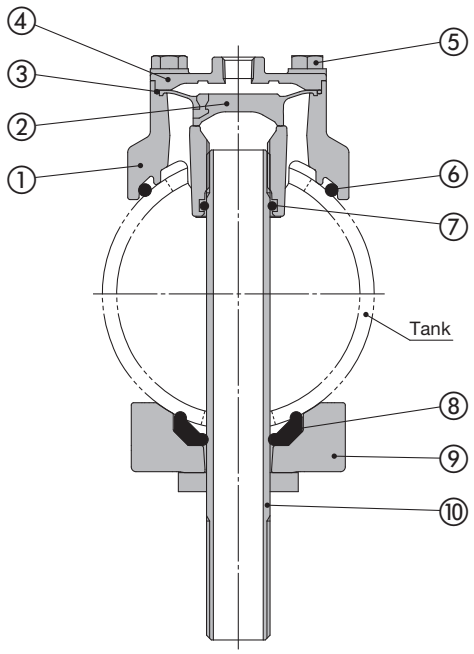
Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Sub-valve**	Resin
6	**O-ring**	NBR
7	**Bonnet**	ADC
8	**Hexagon bolt**	Stainless steel

Construction

JSXFAH/Immersion Type

Port sizes 06, 10

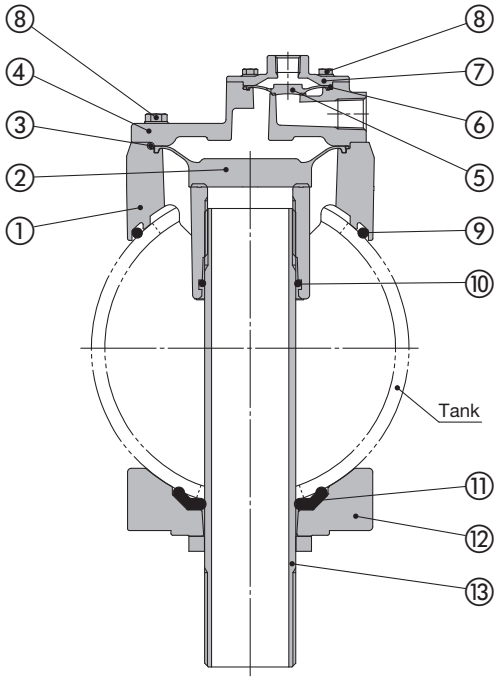


∗ The tank should be provided by the customer.

Component Parts

No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Hexagon bolt**	Stainless steel
6	**O-ring**	NBR
7	**O-ring**	NBR
8	**Gasket**	NBR
9	**Bottom support**	ADC
10	**Outlet pipe assembly**	STKM + SS400

Port sizes 14, 20



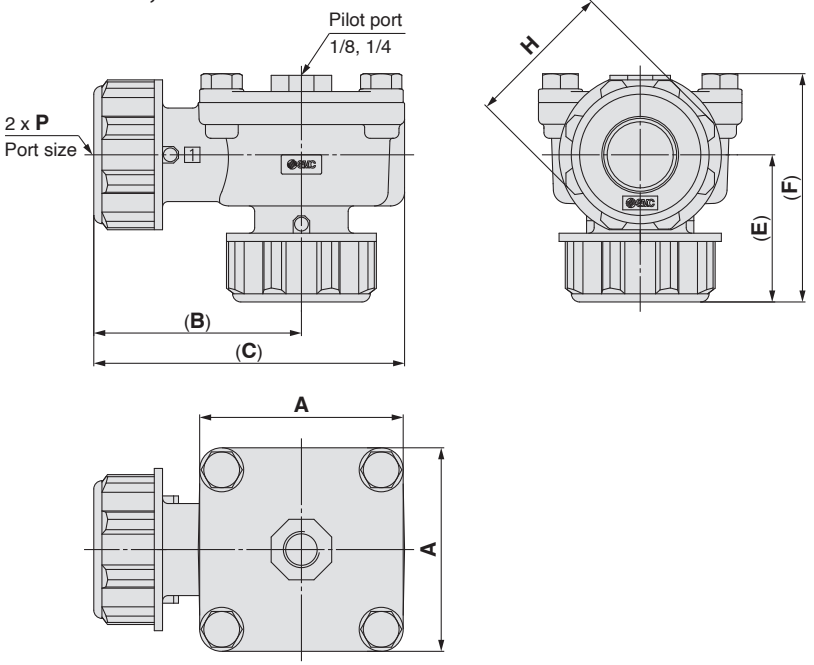
∗ The tank should be provided by the customer.

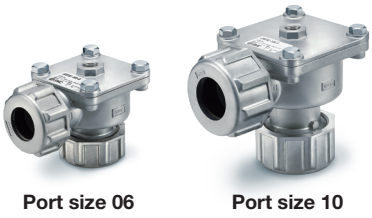
Component Parts

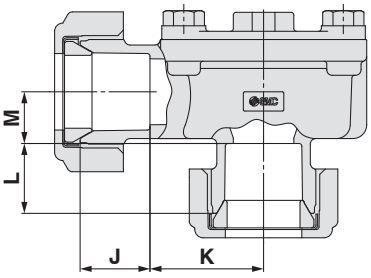
No.	Description	Material
1	**Body**	ADC
2	**Main valve**	Resin
3	**O-ring**	NBR
4	**Bonnet**	ADC
5	**Sub-valve**	Resin
6	**O-ring**	NBR
7	**Bonnet**	ADC
8	**Hexagon bolt**	Stainless steel
9	**O-ring**	NBR
10	**O-ring**	NBR
11	**Gasket**	NBR
12	**Bottom support**	ADC
13	**Outlet pipe assembly**	STKM + SS400

Dimensions: JSXFAE/Compression Fitting Type

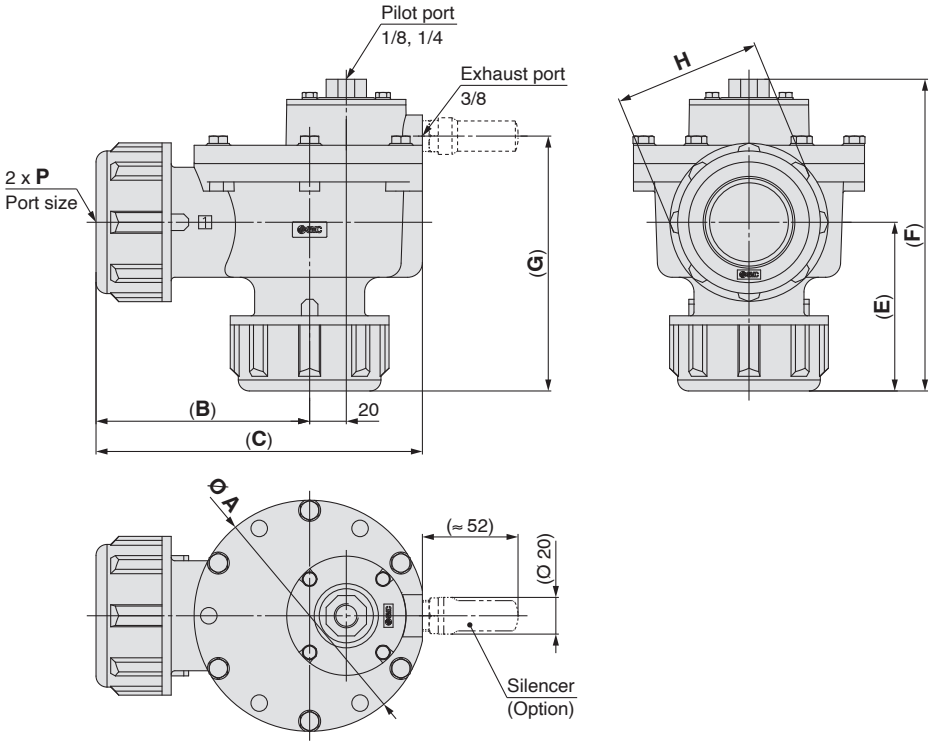
Port sizes 06, 10



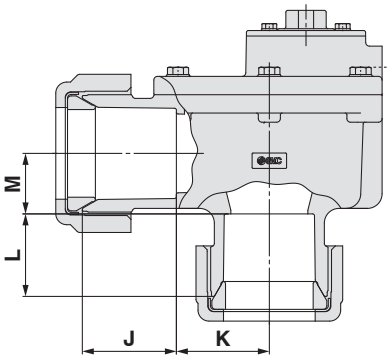

Port size 06 Port size 10



Port size 14




Port size 14



Dimensions

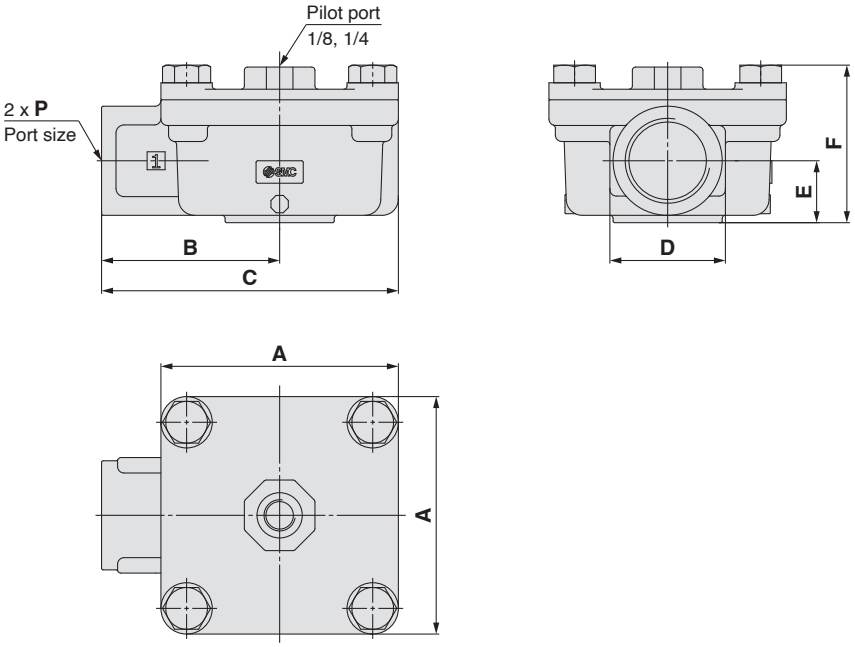
[mm]

Model	Port size P	A	(B)	(C)	(E)	(F)	(G)	H	J	K	L	M
JSXFAE-06	3/4	74	76	113	54	83	—	54	25.4	41.3	25.4	18.8
JSXFAE-10	1	94	90	137	82	120	—	65	33.3	44.4	38.1	31.6
JSXFAE-14	1 1/2	126	117	178	92	170	139	80	51.3	50.7	45	33

The dimensions in ( ) show the dimensions after tightening.

Dimensions: JSXFAF/Direct Piping Type

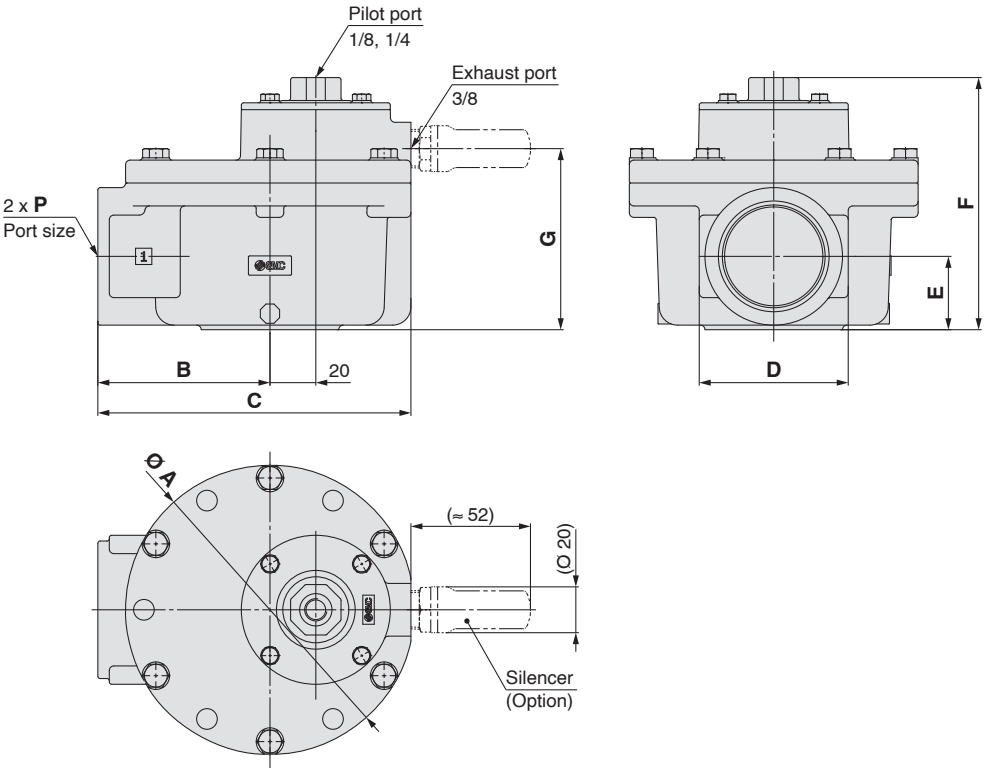
Port sizes 06, 10





Port size 06 Port size 10

Port size 14





Port size 14

Dimensions

[mm]

Model	Port size P	A	B	C	D	E	F	G
JSXFAF-06	3/4	74	55.5	92.5	36	19.3	48.8	—
JSXFAF-10	1	94	63.5	110.5	44	22.2	60.2	—
JSXFAF-14	1 1/2	126	75.1	136.6	65	32	110	79

Dimensions: JSXFAH/Immersion Type

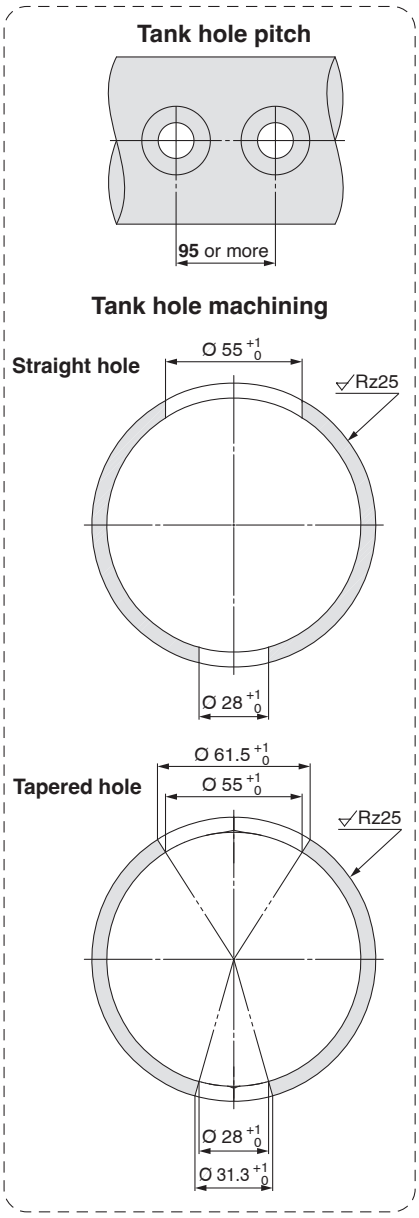
Port size 06



Port size 06

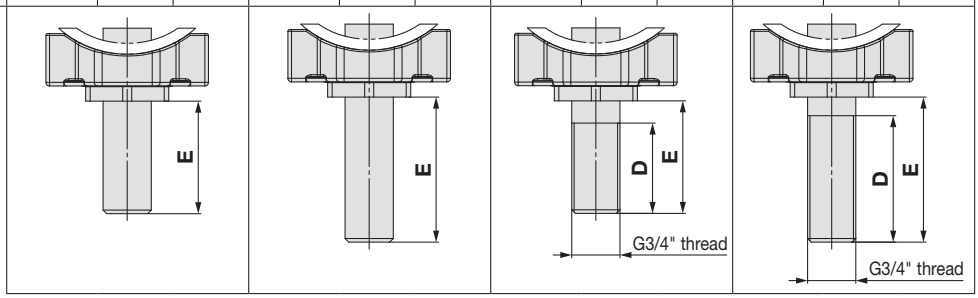
Recommended Tank Dimensions

∗ The tank should be provided by the customer.



Dimensions

Tank size	Tank O.D. Ø	B	OUT port piping configuration											
			1			2			3			4		
			A	D	E	A	D	E	A	D	E	A	D	E
4 inch (ANSI 4")	114.3 $^{+1.6}_{-0.8}$	100	146 ±5	–	62	164 ±5	–	80	146 ±5	50	62	164 ±5	70	80
5 inch (ANSI 5")	141.3 $^{+1.6}_{-0.8}$	114	153 ±5		56	173 ±5		76	153 ±5	50	56	173 ±5	70	76

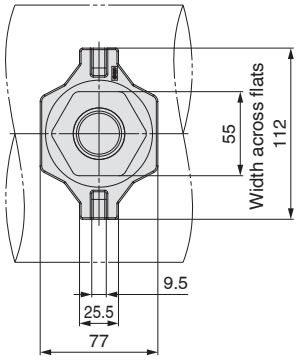


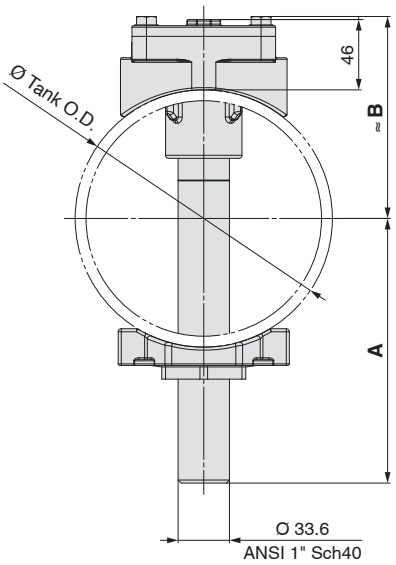
Dimensions: JSXFAH/Immersion Type

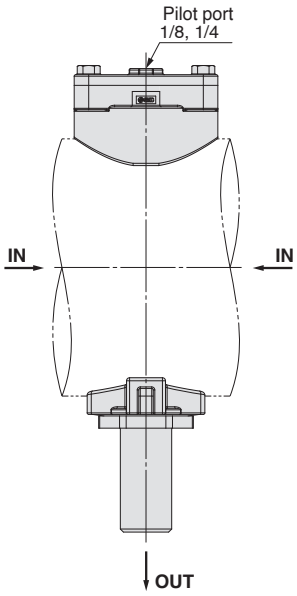
Port size 10

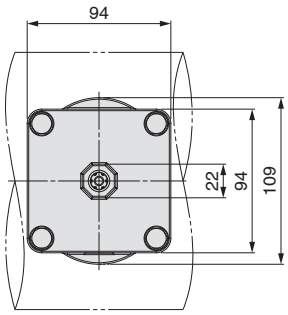


Port size 10





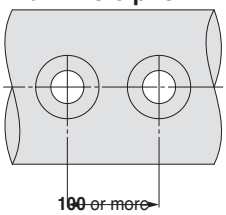




Recommended Tank Dimensions

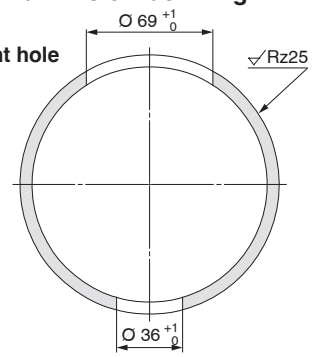
* The tank should be provided by the customer.

Tank hole pitch

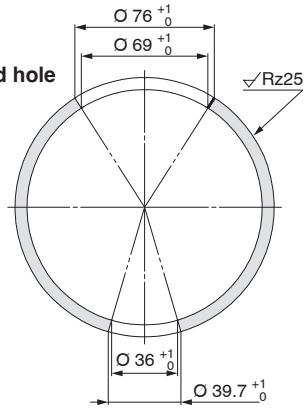


Tank hole machining

Straight hole

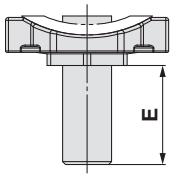


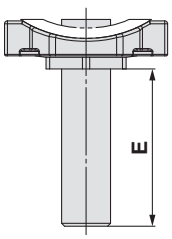
Tapered hole

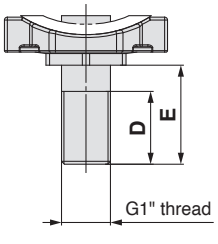


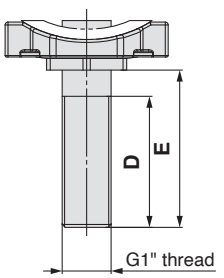
Dimensions

Tank size	Tank O.D. Ø	B	OUT port piping configuration											
			1			2			3			4		
			A	D	E	A	D	E	A	D	E	A	D	E
5 inch (ANSI 5")	141.3 +1.6 −0.8	118	153 ±5	–	61	173 ±5	–	81	153 ±5	50	61	173 ±5	70	81
6 inch (ANSI 6")	168.3 +1.6 −0.8	132	173 ±5		68	213 ±5		108	173 ±5	50	68	213 ±5	90	108







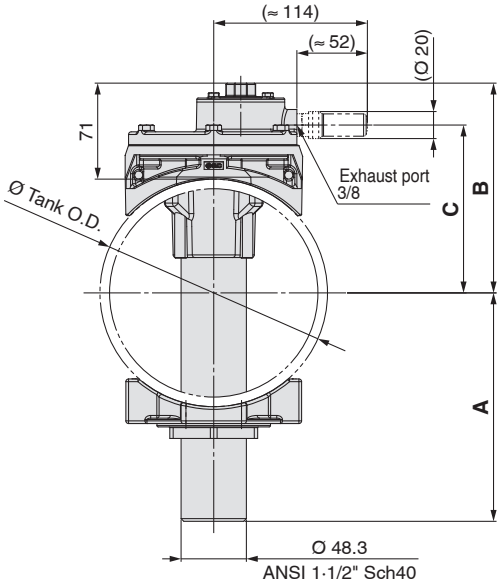


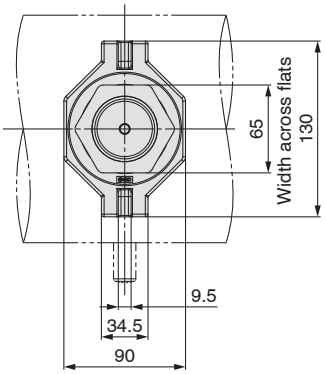
Dimensions: JSXFAH/Immersion Type

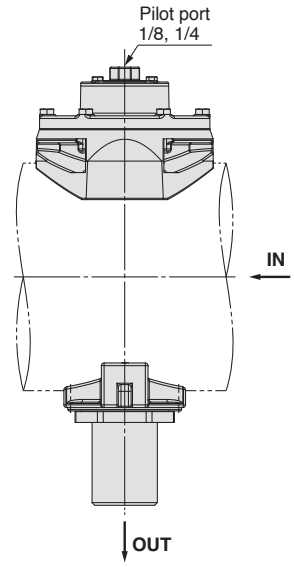
Port size 14

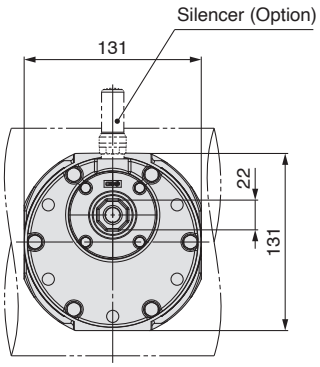


Port size 14





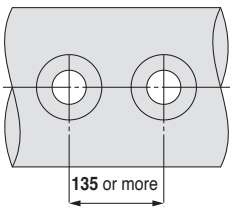




Recommended Tank Dimensions

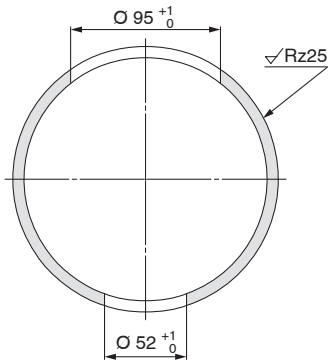
∗ The tank should be provided by the customer.

Tank hole pitch

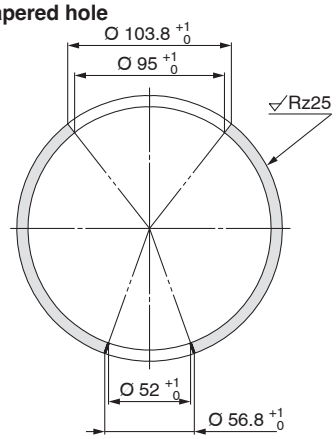


Tank hole machining

Straight hole

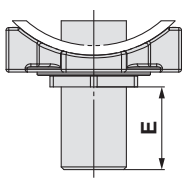


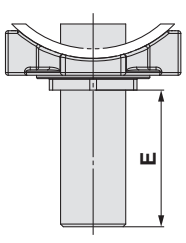
Tapered hole

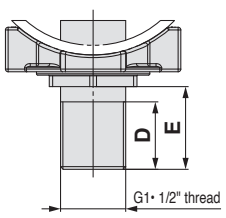


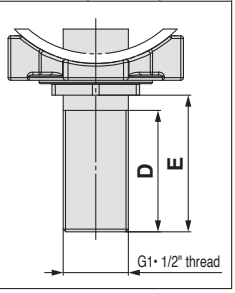
Dimensions

Tank size	Tank O.D. Ø	B	C	OUT port piping configuration											
				1			2			3			4		
				A	D	E	A	D	E	A	D	E	A	D	E
6 inch (ANSI 6")	168.3 $^{+1.6}_{-0.8}$	155	124	169 ±5	–	61	209 ±5	–	101	169 ±5	50	61	209 ±5	90	101
8 inch (ANSI 8")	219.1 $^{+1.6}_{-0.8}$	181	150	198 ±5	–	65	258 ±5	–	125	198 ±5	50	65	258 ±5	110	125







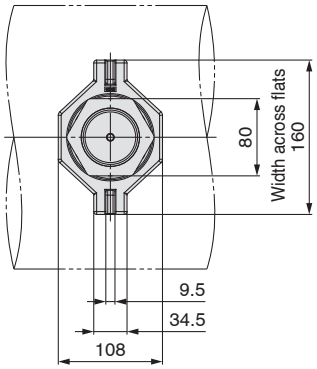


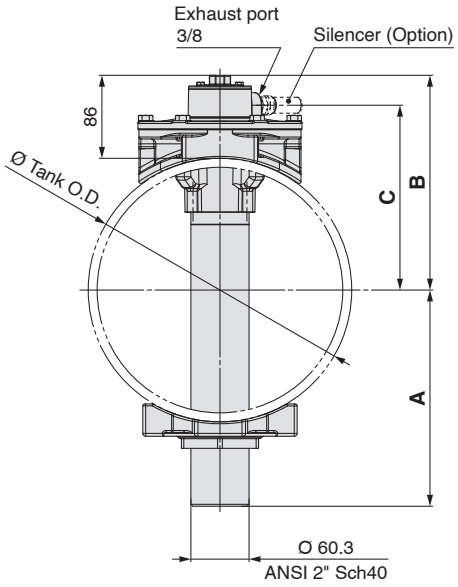
Dimensions: JSXFAH/Immersion Type

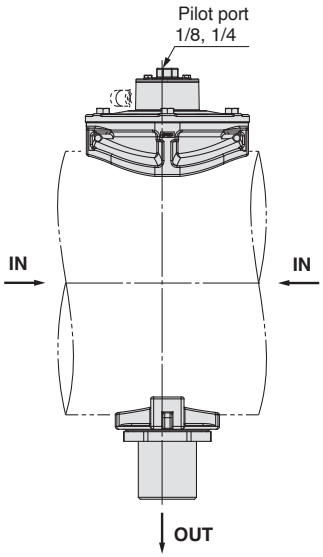
Port size 20

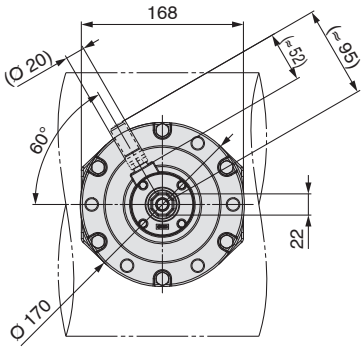


Port size 20





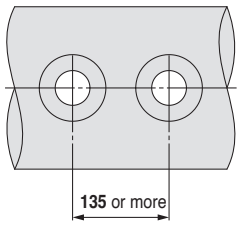




Recommended Tank Dimensions

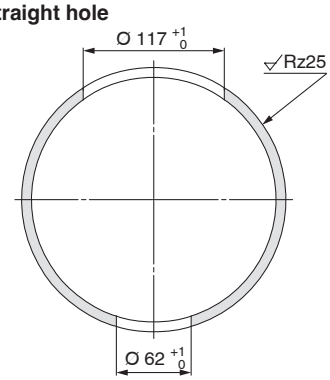
∗ The tank should be provided by the customer.

Tank hole pitch

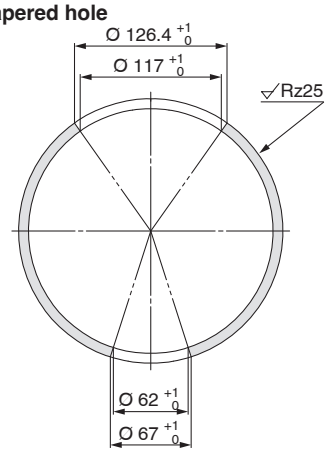


Tank hole machining

Straight hole

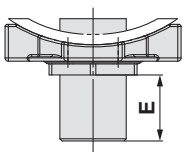


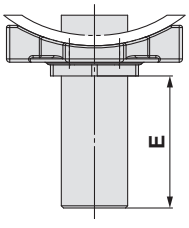
Tapered hole

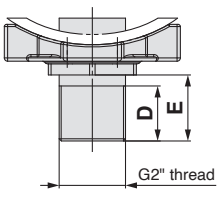


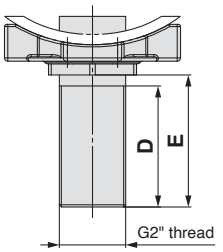
Dimensions

Tank size	Tank O.D. Ø	B	C	OUT port piping configuration											
				1			2			3			4		
				A	D	E	A	D	E	A	D	E	A	D	E
8 inch (ANSI 8")	219.1 $^{+1.6}_{-0.8}$	196	165	197 ±5	–	60	257 ±5	–	120	197 ±5	50	60	257 ±5	110	120
10 inch (ANSI 10")	273.1 $^{+2.4}_{-0.8}$	223	192	224 ±5	–	60	284 ±5	–	120	224 ±5	50	60	284 ±5	110	120









Replacement Parts (Air Operated Type/JSXFA)

Port size	Model	Replacement part number		
		Main valve assembly (Main valve + O-ring)	Sub-valve assembly (Sub-valve + O-ring)	Silencer
06	**JSXFA(E, F, H)□-06□-B-□**	JSXF-06B-KT	—	—
	JSXFA(E, F, H)□-06□-B-□A	JSXF-06B-A-KT	—	—
10	**JSXFA(E, F, H)□-10□-B-□**	JSXF-10B-KT	—	—
	JSXFA(E, F, H)□-10□-B-□A	JSXF-10B-A-KT	—	—
14	**JSXFA(E, F)□-14□-B-(S)□**	JSXF-14B-KT	JSXF-14B-KT2	Rc, G thread: AN30-03 NPT thread: AN30-N03
	JSXFAH□-14□-B-(S)□	JSXF-14B-1-KT		
20	**JSXFAH□-20□-B-(S)□**	JSXF-20B-KT	JSXF-14B-KT2	

Disassembly/Assembly Procedure

⚠Caution

1. Before disassembly, be sure to turn OFF the power supply and pressure supply, and then release the residual pressure.

Disassembly

1) Loosen the hexagon bolts, and remove the bonnet, O-ring, and the main valve (sub-valve).

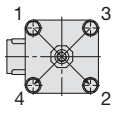
Assembly

1) Attach the main valve (sub-valve) to the body. The main valve (sub-valve) has a predetermined mounting direction. **Assemble the valve referring to Fig. 1.**
If the valve is assembled incorrectly, it can cause a malfunction.
2) Mount the O-ring to the body groove. (See Fig. 2.)
After mounting the O-ring, check to make sure that the O-ring is fitted properly into the groove. If it is not in the groove, external leakage and/or operation failure may occur.
3) Attach the bonnet to the body.
4) Tighten the hexagon bolts diagonally.
(See Table 1 for the tightening torque.)

Table 1. Proper Tightening Torque [N·m]

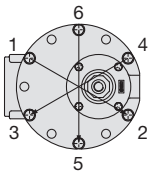
JSXFA□-06□		M8	12.5 to 13.8
JSXFA□-10□		M8	12.5 to 13.8
JSXFA□-14□	Main valve	M6	5.2 to 5.7
	Sub-valve	M4	1.5 to 1.7
JSXFA□-20□	Main valve	M8	12.5 to 13.8
	Sub-valve	M4	1.5 to 1.7

Port sizes 06, 10

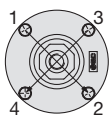


Main valve

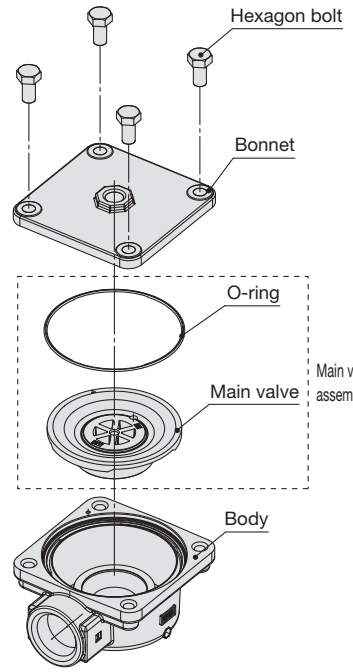
Port sizes 14, 20



Sub-valve



Port sizes 06, 10



Port sizes 14, 20

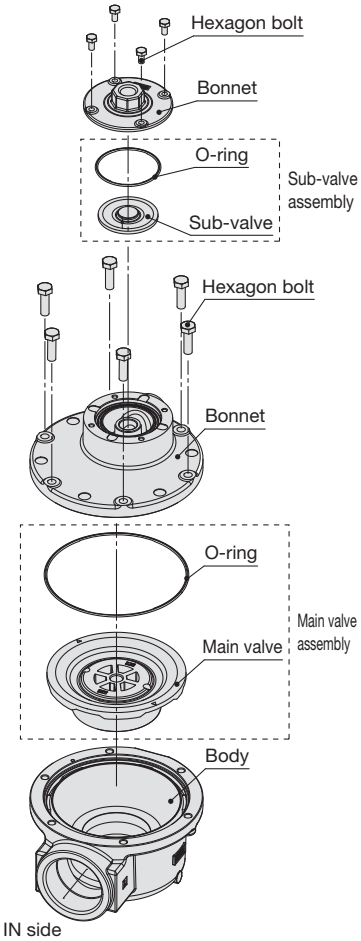


Fig. 2 O-ring position

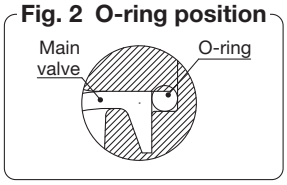
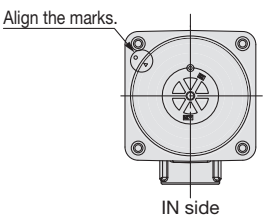
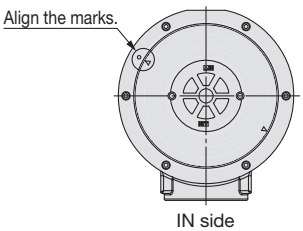


Fig. 1 Valve position

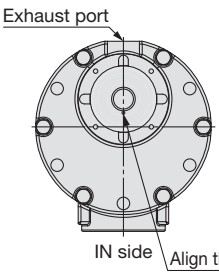
Port sizes 06, 10
Main valve position



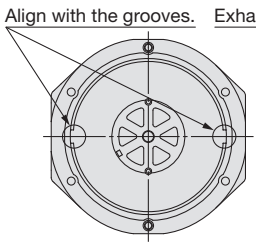
Port size 14
Main valve position



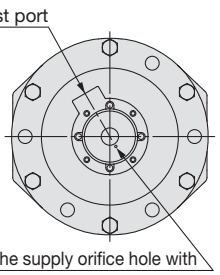
Sub-valve position



Port size 20
Main valve position



Sub-valve position

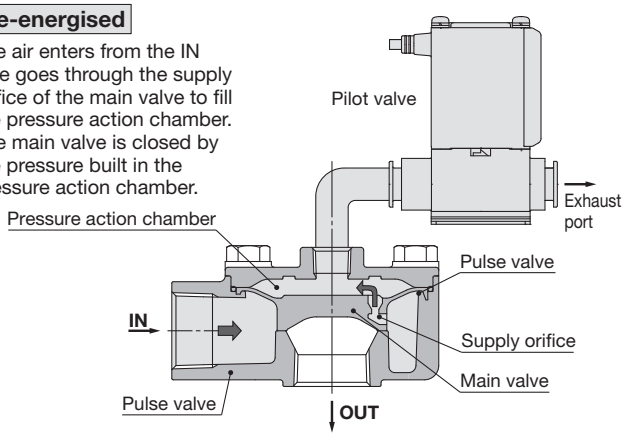


JSXF/JSXFA Series
Working Principle

Port Sizes 06, 10

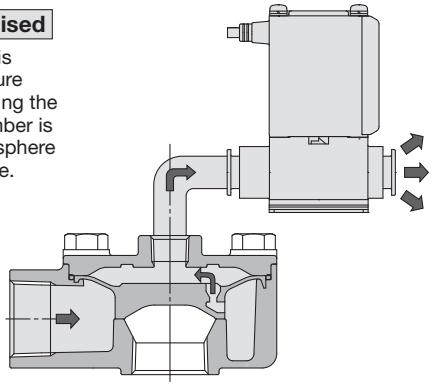
De-energised

The air enters from the IN side goes through the supply orifice of the main valve to fill the pressure action chamber. The main valve is closed by the pressure built in the pressure action chamber.



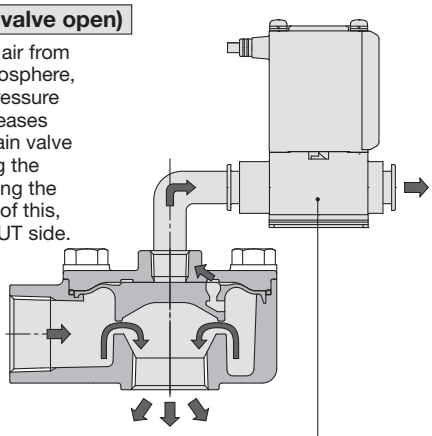
Right after energised

When the pilot valve is energised, the armature opens, and the air filling the pressure action chamber is released to the atmosphere through the pilot valve.



Energised (Main valve open)

Due to the release of air from the pilot valve to atmosphere, the pressure in the pressure action chamber decreases (force pushing the main valve down < force pushing the main valve up), opening the main valve. Because of this, the air flows to the OUT side.

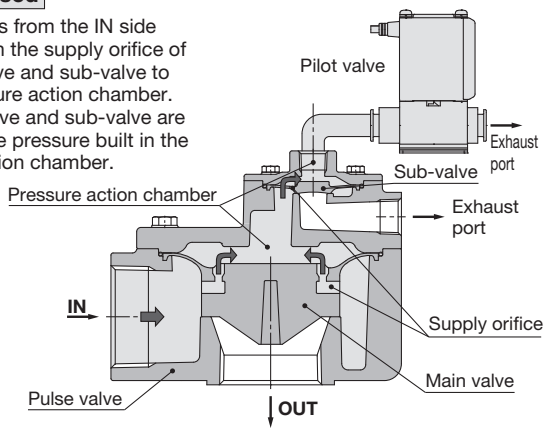


⚠Caution p. 25 Pilot Valve Selection

Port Sizes 14, 20

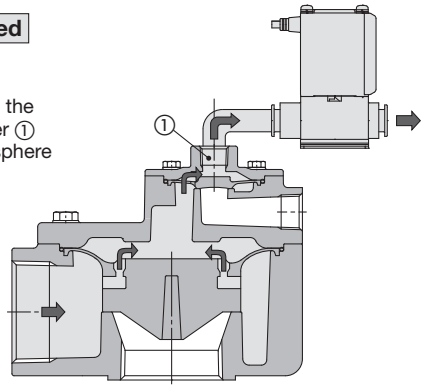
De-energised

The air enters from the IN side goes through the supply orifice of the main valve and sub-valve to fill the pressure action chamber. The main valve and sub-valve are closed by the pressure built in the pressure action chamber.



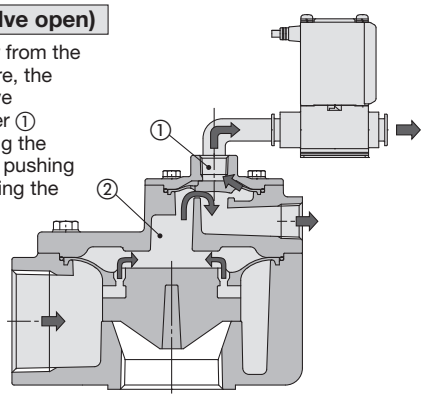
Right after energised

When the pilot valve is energised, the armature opens, and the air filling the pressure action chamber ① is released to the atmosphere through the pilot valve.



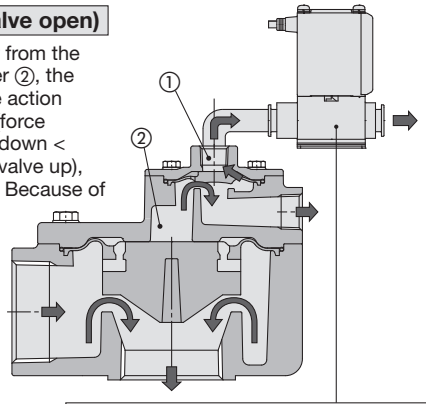
Energised (Sub-valve open)

Due to the release of air from the pilot valve to atmosphere, the pressure in the sub-valve pressure action chamber ① decreases (force pushing the sub-valve down < force pushing the sub-valve up), opening the sub-valve. Because of this, the air filling the pressure action chamber ② is released to the atmosphere from the exhaust port.



Energised (Main valve open)

Due to the release of air from the pressure action chamber ②, the pressure in the pressure action chamber ② decreases (force pushing the main valve down < force pushing the main valve up), opening the main valve. Because of this, the air flows to the OUT side of the pulse valve.

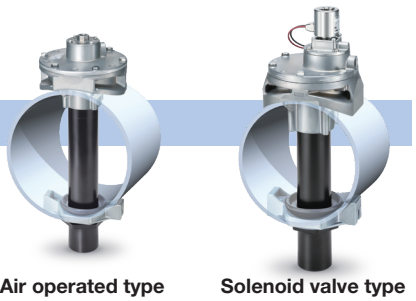


⚠Caution p. 25 Pilot Valve Selection

∗ The figure shows the JSXFAF.

Immersion Type *JSXF/JSXFA Series*
Made to Order

1 Tank Hole Diameter: Ø 76



Air operated type　　Solenoid valve type

How to Order

Solenoid Valve Type JSXFH 6C – 14 N 1 – 5 G B – S

SMARTVENT Type JSXFH 6C – 14 N 1 – 5 PR B – S 2

Air Operated Type JSXFAH 6C – 14 N 1 – B – S 1

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶ Valve type

6C	6 inch Tank hole dia. Ø 76

❷ Port size

14	1 1/2 (40A)

❸ Thread type

R	Rc
N	NPT
F	G

❹ OUT port piping configuration

1	Short	Without
2	Long	
3	Short	With
4	Long	

❺ Rated voltage

AC

Symbol	Rated voltage
1	100 VAC
2	200 VAC
3	120 VAC (110 VAC)
4	220 VAC
7	240 VAC
J	230 VAC

DC

Symbol	Rated voltage
5	24 VDC

❻ Rated voltage (Solenoid valve type) Electric control (SMARTVENT type)

Symbol	Electrical entry		Voltage	Type
G	Grommet		24 VDC	Solenoid valve
GS	Grommet with PCB (With surge voltage suppressor)		100 VAC 24 VDC	
CS	Conduit (With surge voltage suppressor)		All voltages	
DS	DIN terminal (With surge voltage suppressor)		All voltages	
DZ	DIN terminal with light (With surge voltage suppressor)		All voltages	
DN	DIN terminal without connector (With surge voltage suppressor)		All voltages	

Symbol	Electrical entry/Electric control		Voltage	Type
WN	M12 connector*1 (With surge voltage suppressor)		All voltages	Solenoid valve
*3 PP	Base, 3 holes		24 VDC	SMARTVENT
PB	Base, 2 holes		24 VDC	
PR	Remote, 2 holes		24 VDC	
*2, *3 PBW	Base/M12 connector, 2 holes		24 VDC	
*3 PRW	Remote/ M12 connector, 2 holes		24 VDC	

*1 A cable for the M12 connector is not included with the product. Refer to “Option” on page 17 to order it separately.
*2 When using a differential pressure sensor (provided by the customer), select PP or PBW for the base valve. For base valves with an M12 connector, select PBW regardless of whether or not there is a differential pressure sensor. Either can be used. Use a 2-wire type 4 to 20 mA specification differential pressure sensor.
*3 Use a straight wiring cable.

❼ Fluid and ambient temperatures

B	–40 to 60 °C

❽ Silencer

—	Without
S	With

❾ Pilot port size (Air operated type)

—	1/4
1	1/8

❾ Electrical entry (SMARTVENT type)

—	IN side
2	180° Inverted

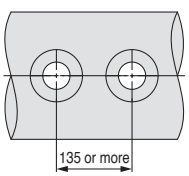
It can be changed by the customer.
For details, refer to page 54.

The specifications and replacement parts are the same as those of the standard model. Refer to pages 8 and 15 for the solenoid valve type, pages 20 and 23 for the SMARTVENT type, and pages 26 and 35 for the air operated type. Add 140 g to the weight of each.

Recommended Tank Dimensions

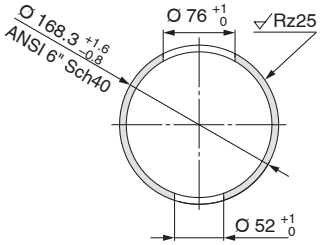
* The tank should be provided by the customer.

Tank hole pitch

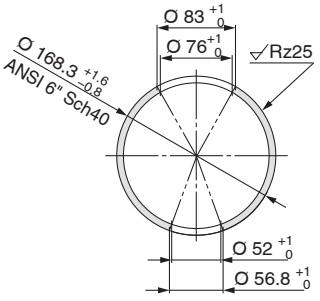


Tank hole machining

Straight hole

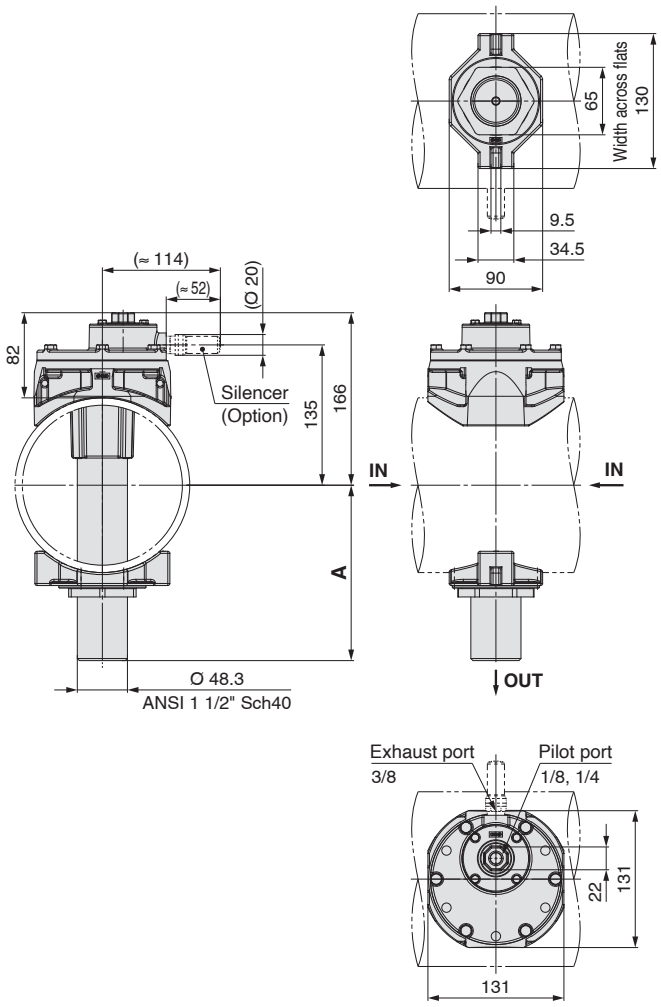


Tapered hole



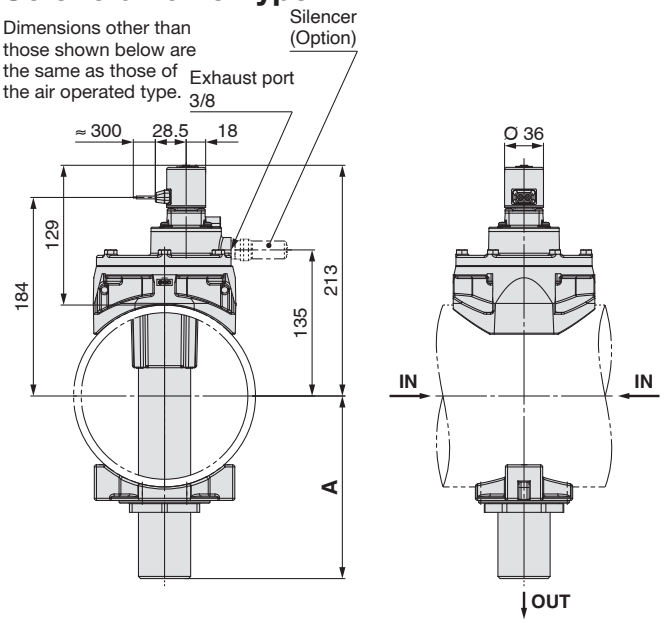
Dimensions

Air Operated Type

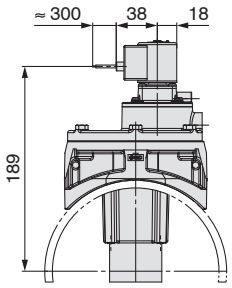


Solenoid Valve Type

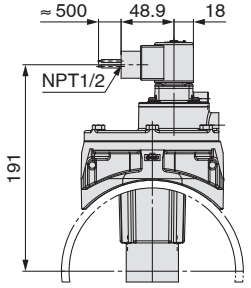
Dimensions other than those shown below are the same as those of the air operated type.



GS: Grommet with PCB

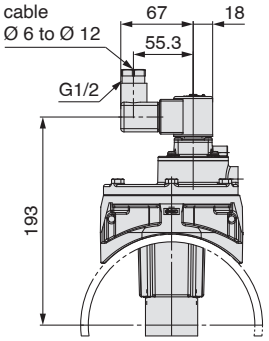


CS: Conduit

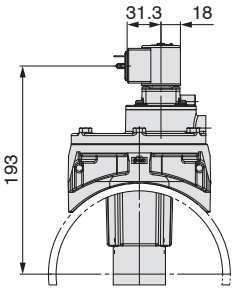


DS: DIN terminal
DZ: DIN terminal with light

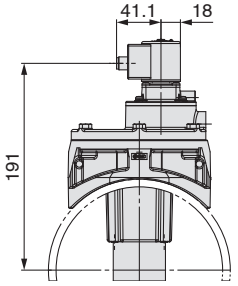
Applicable cable
Ø 6 to Ø 12



DN: Without DIN connector

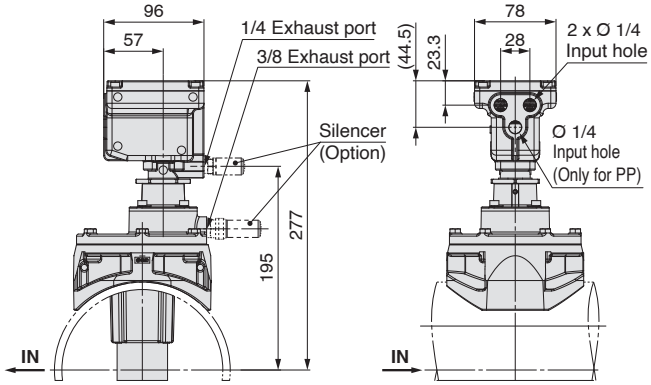


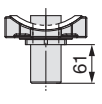
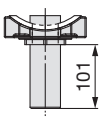
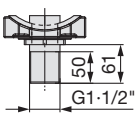
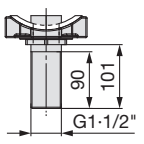
WN: M12 connector



SMARTVENT Type

Dimensions other than those shown below are the same as those of the air operated type.



Dimensions	OUT port piping configuration			
	1	2	3	4
A	169 ±5	209 ±5	169 ±5	209 ±5
				

ATEX Compliant Pulse Valve Valve for Dust Collector

Solenoid Valve Type

56-JSXF Series

RoHS

II 3 G Ex ec h IIB T5 Gc
II 3 D Ex h tc IIIC T84 °C Dc
–20 °C ≤ Ta ≤ +60 °C


Compression fitting type


Direct piping type


Immersion type

How to Order

Compression	56	–	JSXF		E		–	06	R		–	5	DS	B	–	S
Direct Piping	56	–	JSXF		F		–	06	R		–	5	DS	B	–	S
Immersion	56	–	JSXF		H	4	–	06	R	1	–	5	DS	B	–	S
	ATEX category 3			❶	❷	❸		❹	❺	❻		❼	❽	❾		❿

❶ Valve type

–	Solenoid valve	1 (IN) — 2 (OUT)

❸ Tank size (JSXFH only)

4	4 inch
5	5 inch
6	6 inch
6C	6 inch (Ø 76 hole)
8	8 inch
10	10 inch

❹ Port size*1

06	3/4 (20A)
10	1 (25A)
14	1 1/2 (40A)
20*2	2 (50A)

*1 For port size selection, refer to the "Variations for Port Size and Option" table below.
*2 Port size 20 is only available for the JSXFH.

❷ Piping

			Ground terminal*3
E	Compression fitting type*1		Yes 
F	Direct piping type		
H	Immersion type*2		

*1 Seals and washers are included.
*2 The valve and pipe do not come assembled.
*3 A ground terminal is included.

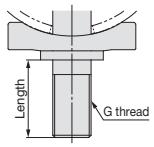
❺ Thread type

R	Rc
N	NPT
F	G

❼ Rated voltage

Symbol	Rated voltage
5	24 VDC

❻ OUT port piping configuration (JSXFH only)

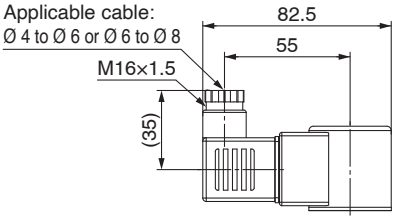
Symbol	Length	G thread	Appearance
1	Short	None	
2	Long		
3	Short	Yes	
4	Long		

❽ Electrical entry

Symbol	Electrical entry	
DS	DIN terminal (With surge voltage suppressor)	
DN	DIN terminal without connector (With surge voltage suppressor)	

* When selecting "DN," be sure to use it with an ATEX-certified nass magnet DIN connector (EVS7060-61).

DIN connector dimensions



Dimensions other than those shown above are the same as those of the standard type.
Refer to pages 11 to 14.

❾ Fluid and ambient temperatures

B	–20 to 60 °C

❿ Silencer

–	Without
S	With

Shipped together with the product

The replacement parts are the same as those for the standard solenoid valve type.
Refer to page 15 for details.
The solenoid coil cannot be replaced.

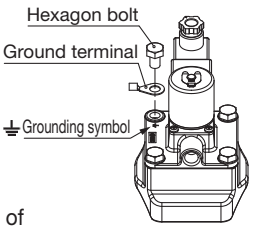
Specifications

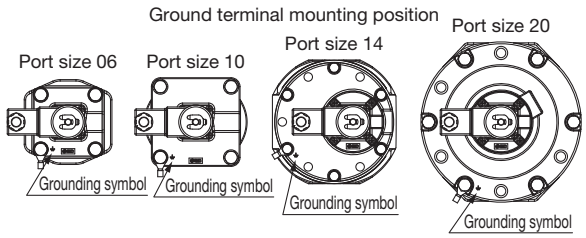
⚠ Caution

Ground terminal (56-)

Be sure to connect the included ground terminal to the hexagon bolt.

- Connect at the point indicated by the grounding symbol.
- Refer to page 16 for the tightening torque.
- Be sure to periodically inspect the hexagon bolt for loosening, and tighten it as necessary.
- A wire with a conductor cross section of 4 to 6.64 mm² is recommended for wiring.





Common Specifications

Valve specifications	Valve construction		Pilot operated diaphragm
	Valve type		Normally closed (N.C.)
	Fluid		Air
	Withstand pressure	[MPa]	1.5
	Min. operating pressure differential	[MPa]	0.1
	Max. operating pressure differential	[MPa]	0.9
	Max. system pressure	[MPa]	0.9
	Fluid temperature	[°C]	–20*1 to 60
	Ambient temperature	[°C]	–20 to 60
	Enclosure		IP65*2
Coil specifications	Allowable voltage fluctuation		±10 % of the rated voltage
	Allowable leakage voltage		2 % or less of the rated voltage
	Power consumption*3	[W]	12

*1 No condensation

*2 If water enters the product, it may result in operation failure or breakage.
Therefore, take appropriate measures to prevent water from entering the product when used in an environment where it is constantly exposed to water.

*3 Power consumption/Apparent power: The value at an ambient temperature of 20 °C and when the rated voltage is applied (Variation: ±10 %)

Be sure to read "Specific Product Precautions" before handling.

Variations for Port Size and Option

Model	Tank size	Port size			
		06	10	14	20
56-JSXFE	–	●	●	●	–
56-JSXFF	–	●	●	●	–
56-JSXFH	4 inch	●	–	–	–
	5 inch	●	●	–	–
	6 inch	–	●	●	–
	6 inch (Ø 76)	–	–	●	–
	8 inch	–	–	●	●
	10 inch	–	–	–	●
Silencer		●	●	●	●

ATEX Compliant Pulse Valve Valve for Dust Collector

Air Operated Type

55-JSXFA Series

RoHS

II 2 G Ex h IIC T6 Gb
II 2 D Ex h IIIC T72 °C Db
–40 °C ≤ Ta ≤ +60 °C


Compression fitting type

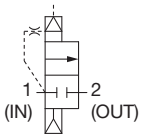

Direct piping type


Immersion type

How to Order

Compression	55	–	JSXF	A	E		–	06	R		–	B	–		1
Direct Piping	55	–	JSXF	A	F		–	06	R		–	B	–		1
Immersion	55	–	JSXF	A	H	4	–	06	R	1	–	B	–		1
	ATEX category 2			❶	❷	❸		❹	❺	❻		❼		❽	❾

❶ Valve type

A	Air operated	

❷ Piping

E	Compression fitting type*1	
F	Direct piping type	
H	Immersion type*2	

*1 Seals and washers are included.
*2 The valve and pipe do not come assembled.

❸ Tank size (JSXFAH only)

4	4 inch
5	5 inch
6	6 inch
6C	6 inch (Ø 76 hole)
8	8 inch
10	10 inch

❹ Port size*1

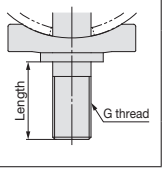
06	3/4 (20A)
10	1 (25A)
14	1 1/2 (40A)
20*2	2 (50A)

*1 For port size selection, refer to the "Variations for Port Size and Option" table below.
*2 Port size 20 is only available for the JSXFH.

❺ Thread type

R	Rc
N	NPT
F	G

❻ OUT port piping configuration (JSXFAH only)

Symbol	Length	G thread	Appearance
1	Short	None	
2	Long		
3	Short	Yes	
4	Long		

❼ Fluid and ambient temperatures

B	–40 to 60 °C

❽ Silencer

(Only port size 14 and 20 can be selected.)

–	Without
S	With

Shipped together with the product

❾ Pilot port size

–	1/4
1	1/8

Made to Order

Pilot valve orifice diameter: Special specification

A	For Ø 3 mm to Ø 5 mm	Port size: 06, 10

55-JSXFA □-□□-B-□□A

Enter the standard product number.

Variations for Port Size and Option

Model	Tank size	Port size			
		06	10	14	20
55-JSXFAE	–	●	●	●	–
55-JSXFAF	–	●	●	●	–
55-JSXFAH	4 inch	●	–	–	–
	5 inch	●	●	–	–
	6 inch	–	●	●	–
	6 inch (Ø 76)	–	–	●	–
	8 inch	–	–	●	●
	10 inch	–	–	–	●
Pilot valve orifice		●	●	–	–
Silencer		–	–	●	●

The specifications, dimensions, replacement parts, and pilot valve selection are the same as those of the standard product. Refer to pages 25 to 35 for details.

Pilot Valve Enclosure

JSXFM Series



How to Order

JSXFM **06** – **03** – **5** – **F** – **B**

❶ ❷ ❸ ❹ ❺

❶ Number of enclosure stations

Symbol	Stations
06	6 stations
08	8 stations

❷ Number of mounted valves

Symbol	6 stations	8 stations
01	1 pc.	1 pc.
02	2 pcs.	2 pcs.
03	3 pcs.	3 pcs.
04	4 pcs.	4 pcs.
05	5 pcs.	5 pcs.
06	6 pcs.	6 pcs.
07	–	7 pcs.
08	–	8 pcs.

∗ For details on mounted valves, refer to Fig. 1.

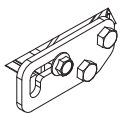
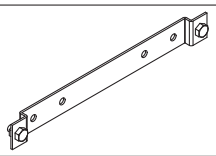
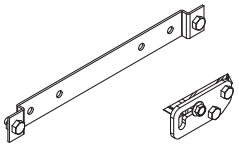
❸ Rated voltage

Symbol	Rated voltage
5	24 VDC

❹ Thread type

Symbol	IN port 1/8	Conduit port	
		6 stations 1/2 (1 hole)	8 stations 3/4 (2 holes)
R	Rc	NPT	
N	NPT	NPT	
F	G	G	

❺ Option

Symbol	Description	
–	None	–
A	Lid catch mechanism	
B	Bracket	
AB	Lid catch mechanism + Bracket	

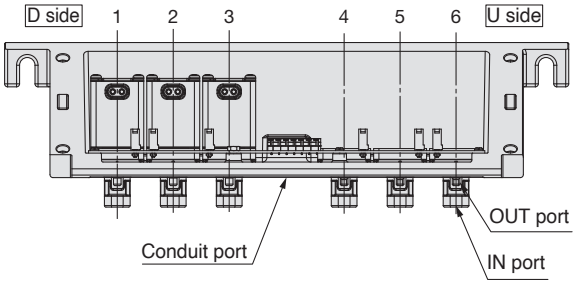


Fig.1

<Ordering Example>
Product part no.: JSXFM06-03-5-F
Stations 1 to 3 · · · 3 valves (24 VDC/G thread)
Stations 4 to 6 · · · 3 blanking plug assemblies

∗1 For the mounted valve arrangement, the valve closest to the D side is considered the 1st station.
∗2 For all stations where a valve is not mounted, blanking plug assemblies will be installed.

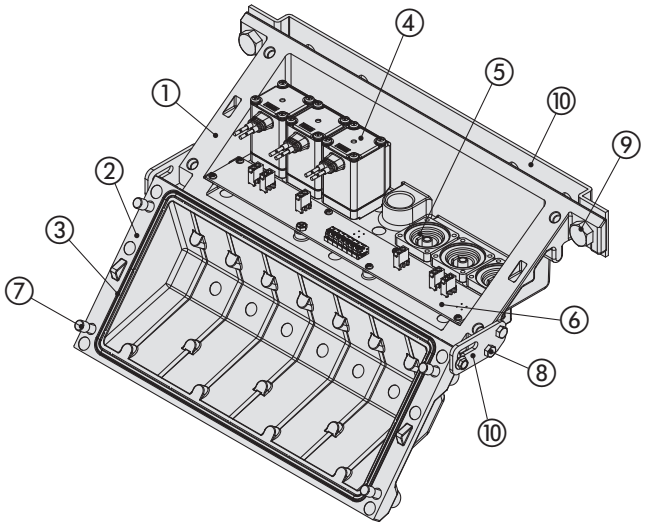
Specifications

Enclosure specifications	**Material**	**Enclosure**	Aluminum die-cast
		Seal	NBR
		Bracket	Stainless steel
	Degree of protection		IP66, NEMA4
	Standards		CE/UKCA
Valve specifications	**Valve construction**		Direct operated poppet
	Valve type		Normally closed (N.C.)
	Fluid		Air
	Orifice diameter	**[mmØ]**	5
	Max. operating pressure differential	**[MPa]**	0.9
	Max. system pressure	**[MPa]**	0.9
	Fluid temperature	**[°C]**	–10 to 60 (No freezing)
	Ambient temperature	**[°C]**	–20 to 60
	Valve leakage	**Internal**	1 cm^3/min or less
		External	1 cm^3/min or less
Coil specifications	**Rated voltage [V]**	**DC**	24
	Allowable voltage fluctuation		±10 % of rated voltage
	Allowable leakage voltage		±2 % of rated voltage
	Coil insulation type		Class B
	Power consumption∗1, ∗2		18 W
Weight [g]	**Enclosure**	**6 stations**	1418
		8 stations	1823
	Valve		353
	Blanking plug		33
	Lid catch bracket		52
	Mounting bracket	**6 stations**	365
		8 stations	471

∗1 The maximum power consumption is equal to the power consumption of the valve multiplied by the number of stations. The recommended number of units in simultaneous operation is two. The table shows values for 1 unit.

∗2 Power consumption: The value at ambient temperature of 20 °C and when the rated voltage is applied. (Variation: ±10 %)

Construction

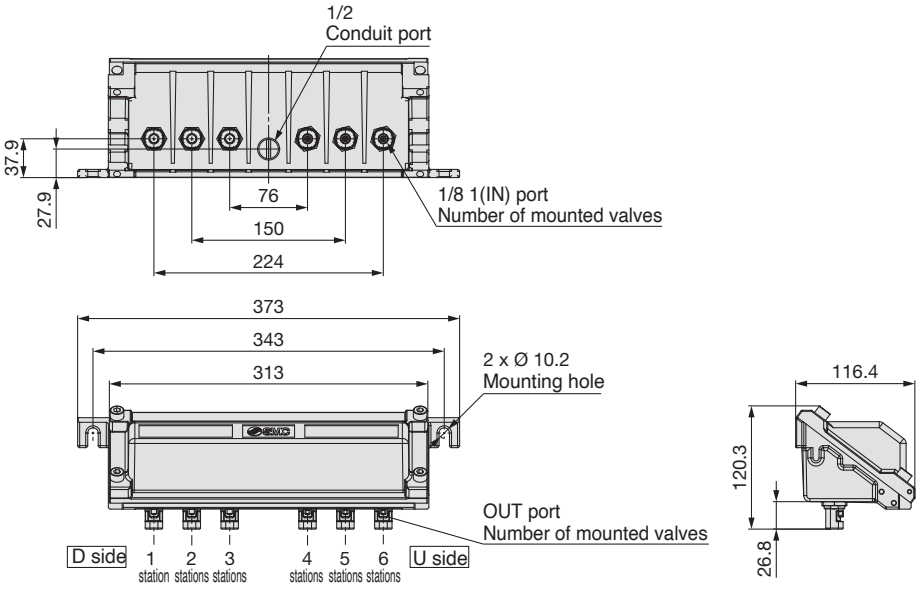


Component Parts

No.	Description	Material
1	**Enclosure**	ADC
2	**Enclosure lid**	ADC
3	**Gasket**	NBR
4	**Solenoid valve**	—
5	**Blanking plug assembly**	ADC
6	**Board assembly**	—
7	**Fall prevention screw**	Stainless steel
8	**Hexagon bolt**	Stainless steel
9	**Hexagon socket head cap screw**	Stainless steel
10	**Bracket**	Stainless steel

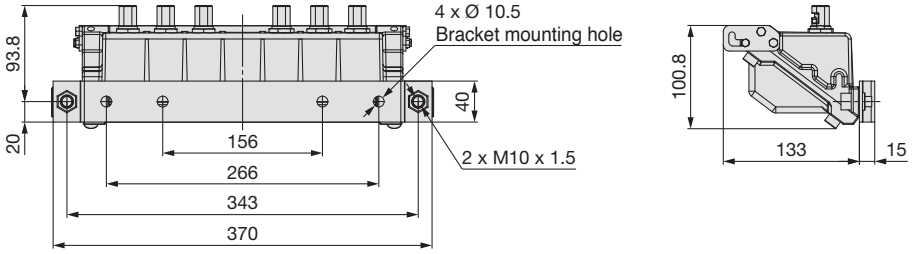
Dimensions JSXFM

6 stations

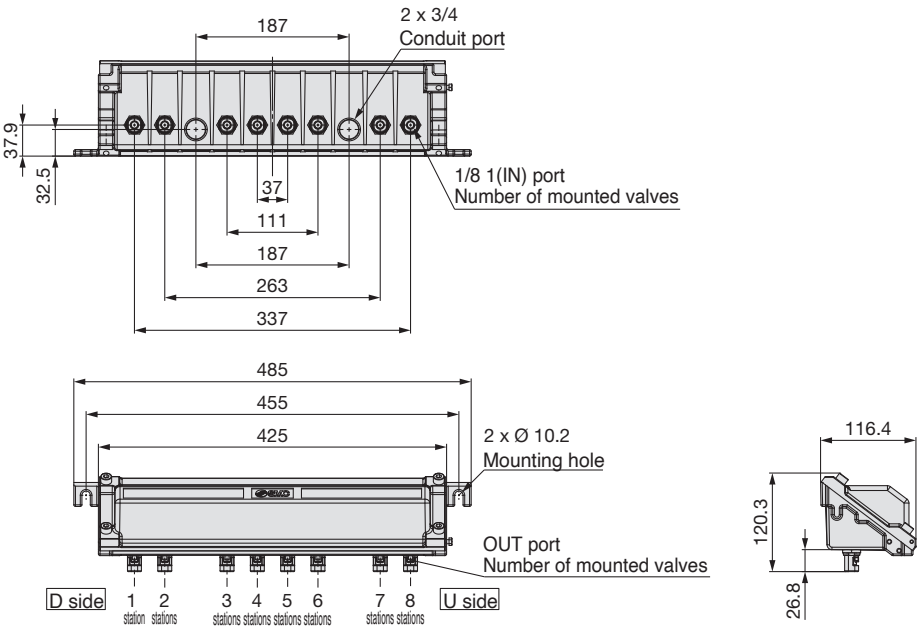


Bracket mounting dimensions

Allow enough space for the lid catch mechanism to open and close when using. For a detail drawing, refer to page 46.

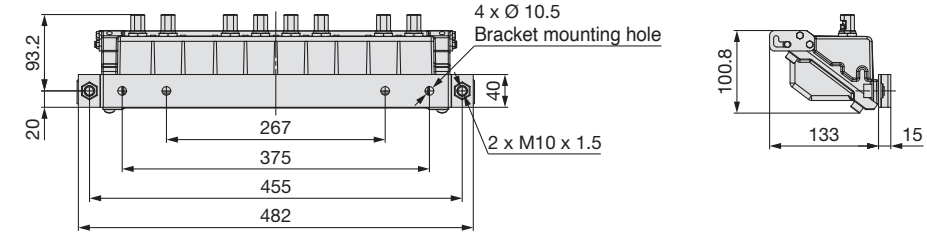


8 stations



Bracket mounting dimensions

Allow enough space for the lid catch mechanism to open and close when using. For a detail drawing, refer to page 46.

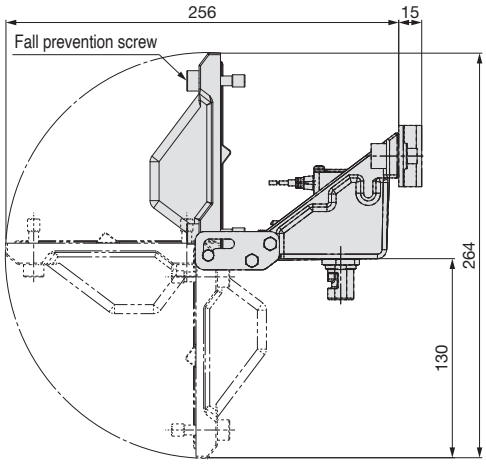


Bracket Mounting

Allow for the space provided in the dimensions below when mounting the bracket.

Opening and closing

1) Loosen the fall prevention screw and remove it from the enclosure.
2) Rotate the enclosure lid towards you while opening.
3) Follow this procedure in reverse to close the lid. For details on the tightening torque for the fall prevention screw, refer to the table below.



Replacement Parts (Pilot Enclosure/JSXFM)

Description	Replacement part no.	
Solenoid valve*1	**VX220ZA□X387**	24 VDC
Blanking plug assembly	**VXF20-60A**	

*1 The □ in the part number indicates the following thread types.
—: Rc thread, **A**: G thread, **B**: NPT thread

Disassembly/Assembly Procedures

⚠ Caution

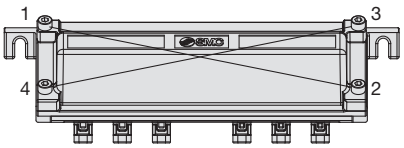
Before starting the disassembly work, be sure to shut off the power supply and pressure supply, and then release the residual pressure.

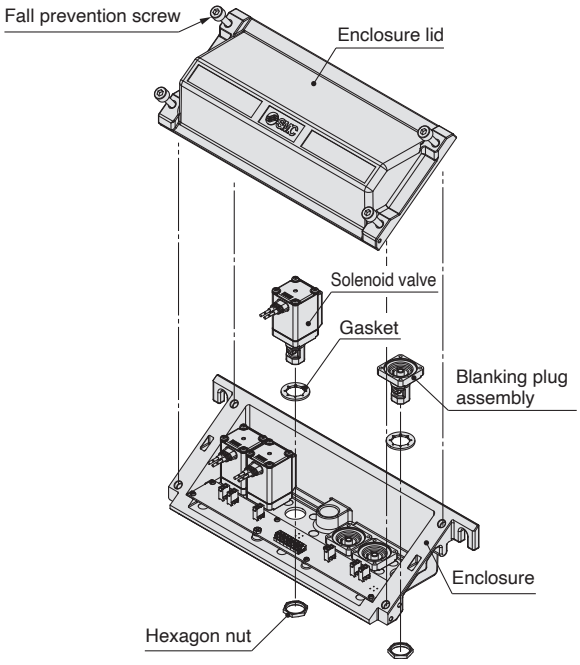
Disassembly

1) Loosen the fall prevention screw and remove it from the enclosure.
2) Open the enclosure lid.
3) Remove the electrical connector from the board.
4) Remove the hexagon nut.
5) Remove the solenoid valve, blanking plug assembly, and gasket.

Assembly

1) Attach the gasket to the solenoid valve and blanking plug assembly.
2) Insert the solenoid valve and blanking plug into the hole at the base of the unit.
3) Fix the solenoid valve into place using the hexagon nut.
4) Wire the electrical connector to the board.
5) Close the enclosure lid.
6) Tighten the fall prevention screws diagonally to secure the lid in place.

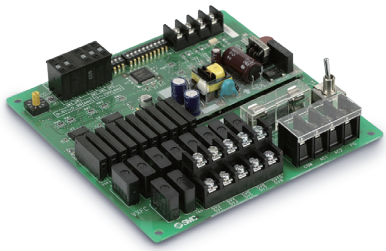




Proper Tightening Torque [N·m]

Description	Size	Proper tightening torque
Fall prevention screw	M8	5.6 to 6.8
Hexagon nut	Width across flats 22	5.4 to 6.6

Dedicated Controller for Operation
VXFC Series



How to Order Controller

VXFC 06 D -X14

Number of output points

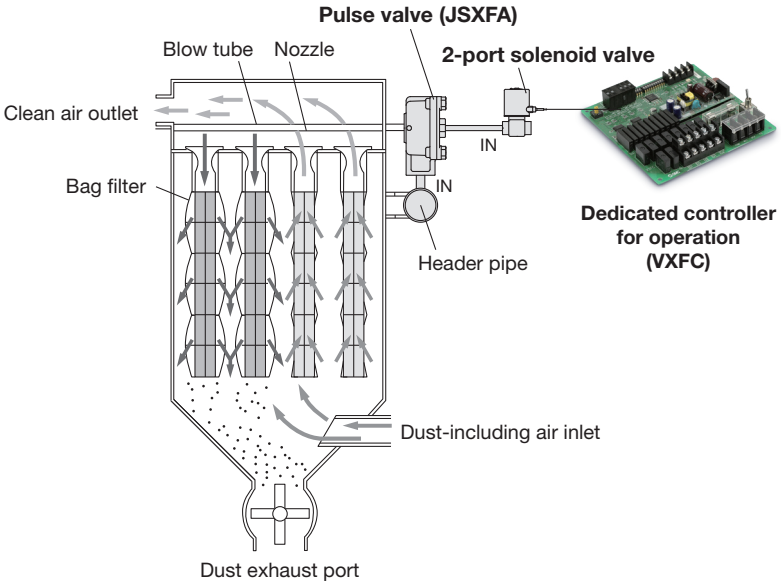
06	6 output points
10	10 output points

Voltage

D	24 to 48 VDC
D-6	12 VDC

Dechlorane Plus-free

[Application example]



Specifications

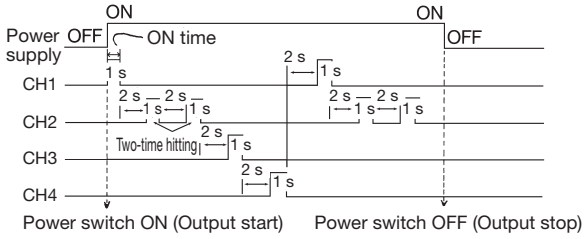
Model		VXFC$^{06}_{10}$D	VXFC$^{06}_{10}$D-6
Input voltage		24 to 48 VDC	12 VDC
Output voltage		Same as input voltage	
Time setting	ON	0.01 to 0.99 s	
	OFF	0 to 299 s	
	Time accuracy	±2 %	
Number of outputs		6 to 10 points	
Operating ambient temperature		0 to 50 °C (No condensation)	
Operating ambient humidity		45 to 80 % (No condensation)	
Output current		0.5 A or less	
Power supply fuse		1 A	

Two-time Hitting Function

A two-time hitting function has been adopted to improve the bag filter dusting efficiency. Turn ON the DIP switch for two-time hitting (OFF for one-time hitting).
(Effective for up to the number of set channels)

Operation sequence diagram

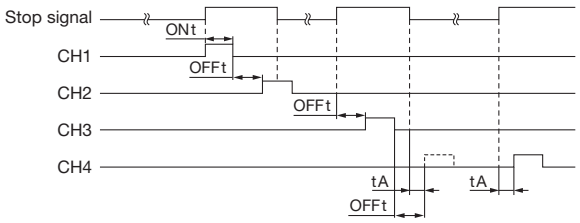
For
- 4 output points
- Two-time hitting only for CH2
- ON for 1 s
- OFF for 2 s



Interrupt Operation Function

Interrupting an operation via an external switch is possible using input signals.

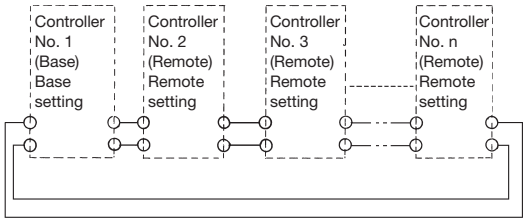
Operation sequence diagram



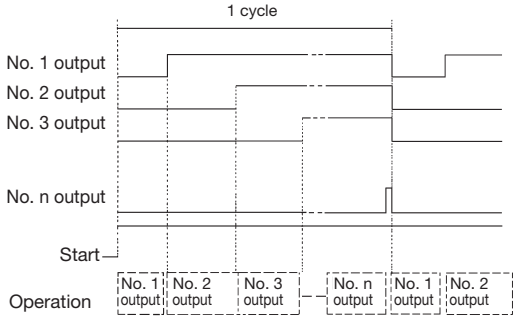
Cascade Connection (Multiple-board connection)

VXFC10: One board only allows 10 output points max., but the points can be increased to 20 or 30 output points by connecting cascades.

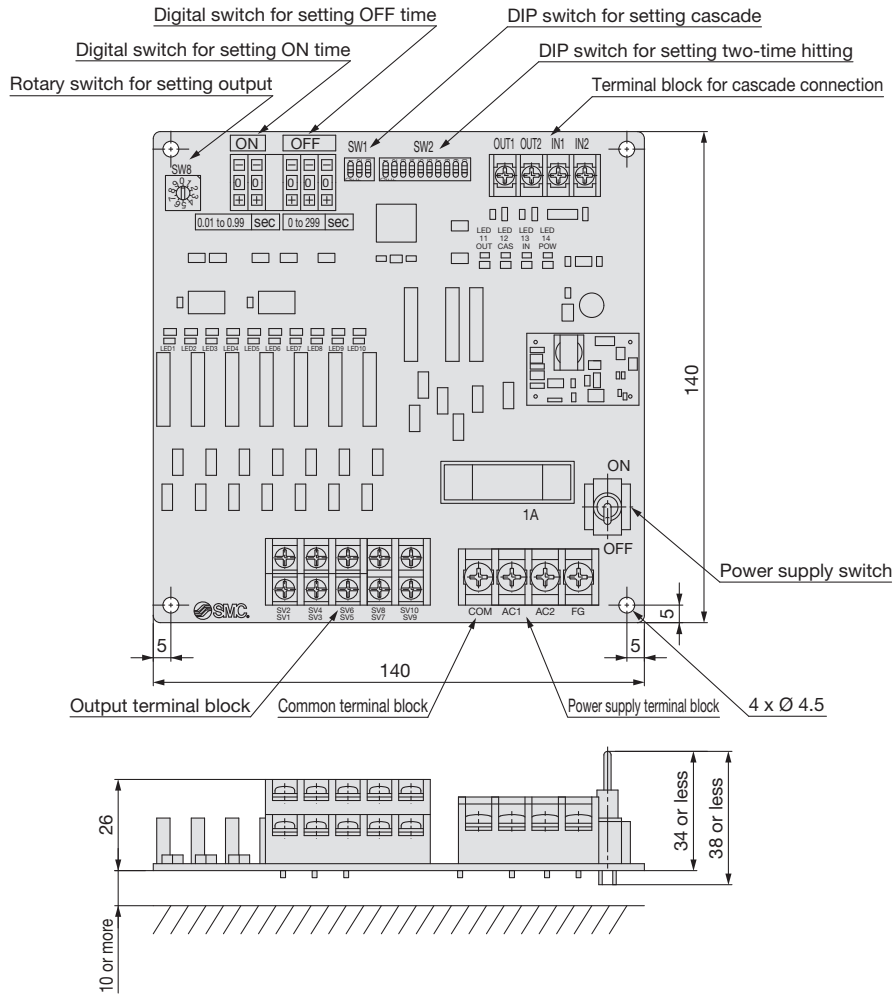
Connection



Operation sequence diagram



Dimensions


Digital switch for setting OFF time
Digital switch for setting ON time
Rotary switch for setting output
DIP switch for setting cascade
DIP switch for setting two-time hitting
Terminal block for cascade connection
ON
OFF
SW1
SW2
OUT1 OUT2 IN1 IN2
SW8
0.01 to 0.99 sec
0 to 299 sec
140
1A
ON
OFF
Power supply switch
COM AC1 AC2 FG
5
5
5
140
Output terminal block
Common terminal block
Power supply terminal block
4 x Ø 4.5
26
10 or more
34 or less
38 or less

Bulkhead Fitting
JSXFN Series

How to Order

JSXFN – S 06 – B

❶ ❷ ❸

❶ Piping

D	Double	
S	Single	

❷ Port size

06	3/4 (20A)
10	1 (25A)
14	1 1/2 (40A)

❸ Fluid and ambient temperatures

B	–40 to 60 °C

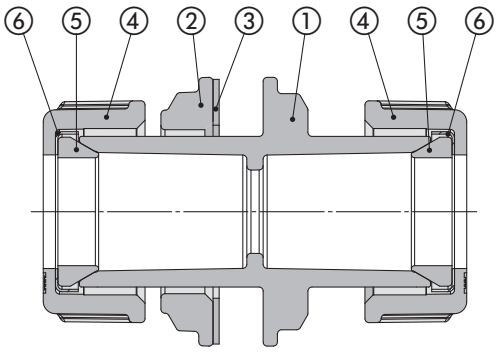
Specifications

Port size		3/4" (20A)	1" (25A)	1 1/2" (40A)
Max. operating pressure [MPa]		0.9		
Withstand pressure [MPa]		1.5		
Ambient temperature [°C]		–40*1 to 60		
Max. plate thickness [mm]		8		
Mounting hole diameter [mmØ]		42 to 51	54 to 62	69 to 78
Weight [g]	**Double**	400	650	940
	Single	260	450	640

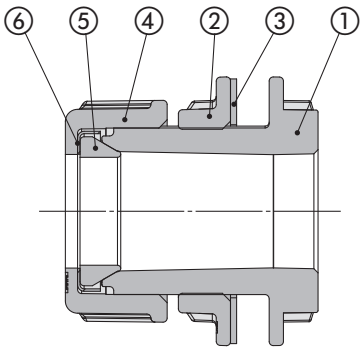
*1 No condensation

Be sure to read "Specific Product Precautions" before handling.

Construction



Double



Single

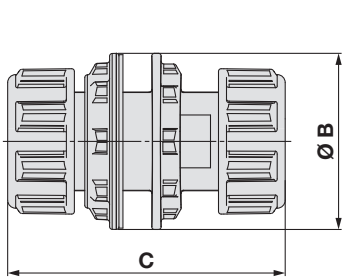
Component Parts

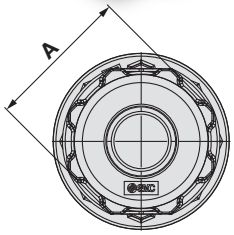
No.	Description	Material
1	Bulkhead fitting	ADC
2	Bulkhead nut	ADC
3	Gasket	Aramid, etc.
4	Compression nut	ADC
5	Seal	NBR
6	Washer	Steel

Dimensions

Double





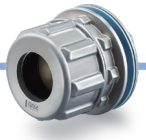


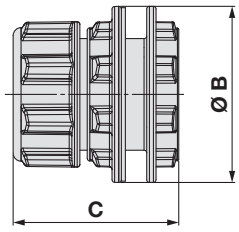
Dimensions [mm]

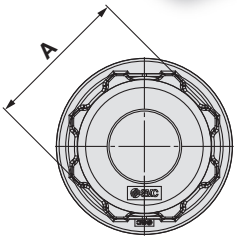
Model	Port size P	A	Ø B	C
JSXFN-D06	3/4	54	66	104
JSXFN-D10	1	65	79	112
JSXFN-D14	1 1/2	80	93	122.6

∗ The C dimensions show the dimensions after tightening.

Single







Dimensions [mm]

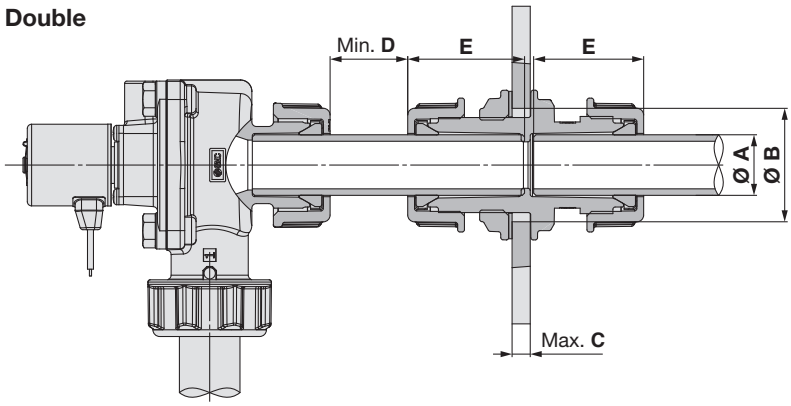
Model	Port size P	A	Ø B	C
JSXFN-S06	3/4	54	66	63
JSXFN-S10	1	65	79	73
JSXFN-S14	1 1/2	80	93	79

∗ The C dimensions show the dimensions after tightening.

Installation Dimensions

∗ Ensure sufficient space for maintenance and inspection.

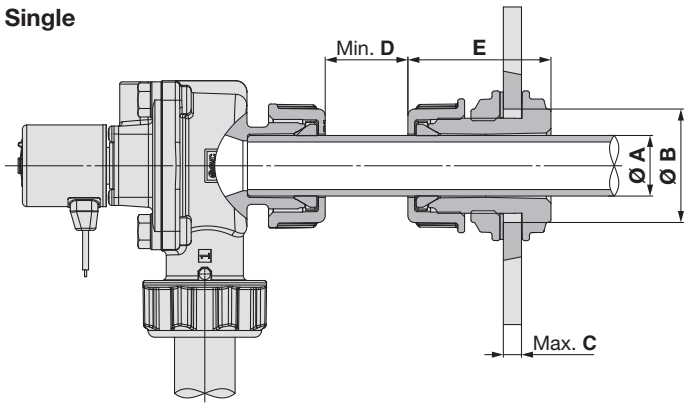
Double



Dimensions [mm]

Model	Pipe dia. Ø A	Mounting hole dia. Ø B	Max. plate thickness C	Min. spacing D	Pipe screw-in depth E
JSXFN-D06	3/4"	42 to 51	8	30	50
JSXFN-D10	1"	54 to 62		40	53.5
JSXFN-D14	1 1/2"	69 to 78		46	59.2

Single



Dimensions [mm]

Model	Pipe dia. Ø A	Mounting hole dia. Ø B	Max. plate thickness C	Min. spacing D	Pipe screw-in depth E
JSXFN-S06	3/4"	42 to 51	8	30	63
JSXFN-S10	1"	54 to 62		40	73
JSXFN-S14	1 1/2"	69 to 78		46	79

JSXF/JSXFA Series
Glossary of Terms

Pressure Terminology

1. Max. operating pressure differential

The max. pressure differential (the difference between the inlet and outlet pressure) which is allowed for operation. When the outlet pressure is 0 MPa, this becomes the max. operating pressure.

2. Min. operating pressure differential

The min. pressure differential (the difference between the inlet pressure and outlet pressure) required to keep the main valve fully open.

3. Max. system pressure

The max. pressure that can be applied inside the pipelines (line pressure).
[The pressure differential of the solenoid valve portion must not exceed the max. operating pressure differential.]

4. Withstand pressure

The pressure in which the valve must be withstood without a drop in performance after holding for one minute under prescribed pressure and returning to the operating pressure range. (value under the prescribed conditions)

Electrical Terminology

1. Apparent power (VA)

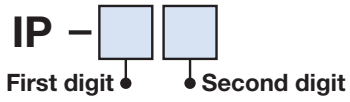
Volt-ampere is the product of voltage (V) and current (A).
Power consumption (W): For AC, W = V·A·cos θ.
For DC, W = V·A.
∗ cos θ shows power factor. cos θ ≈ 0.9

2. Surge voltage

A high voltage which is momentarily generated by shutting off the power in the shut-off area.

3. Degrees of protection

A degree defined in the "JIS C 0920: Waterproof test of electric machinery/appliance and the degree of protection against the intrusion of solid foreign objects."



● **First Digit:**
Degree of protection against solid foreign objects

0	Not protected
1	Protected against solid foreign objects of 50 mmØ and larger
2	Protected against solid foreign objects of 12 mmØ and larger
3	Protected against solid foreign objects of 2.5 mmØ and larger
4	Protected against solid foreign objects of 1.0 mmØ and larger
5	Dust protected
6	Dust-tight

● **Second Digit:**
Degree of protection against water

0	Not protected	–
1	Protected against vertically falling water droplets	Dripproof type 1
2	Protected against vertically falling water droplets when enclosure is tilted up to 15°	Dripproof type 2
3	Protected against rainfall when enclosure is tilted up to 60°	Rainproof type
4	Protected against splashing water	Splashproof type
5	Protected against water jets	Water-jet-proof type
6	Protected against powerful water jets	Powerful water-jet-proof type
7	Protected against the effects of temporary immersion in water	Immersible type
8	Protected against the effects of continuous immersion in water	Submersible type

Others

1. Material

NBR: Nitrile rubber
FKM: Fluororubber
EPDM: Ethylene propylene rubber

2. Symbol

In the symbol (), when the valve is closed, flow is blocked from port 1 to port 2. However, if the pressure in port 2 is higher than port 1, the valve will not be able to block the fluid and it will flow from port 2 to port 1.

JSXF/JSXFA Series
Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For 2-port solenoid valve for fluid control precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Design

⚠Warning

1. Confirm the specifications.
Give careful consideration to the operating conditions, such as the application, fluid, and environment, and use within the specified operating ranges. If the product is used beyond the specification range, this may cause the product to break or malfunction. We do not guarantee against any damage if the product is used outside of the specification range.

2. Cannot be used as an emergency shutoff valve, etc.
This product is not designed for use as an emergency shutoff valve or for use in other safety applications. If the valves are used in this type of system, other reliable safety assurance measures should also be adopted.

3. Cannot be used for pressure (including vacuum) holding
This product is not suitable for holding the pressure (including vacuum) inside of a pressure vessel because air leakage is unavoidable.

4. Extended periods of continuous energisation
1) This is a valve for pulse operation. Do not energise it continuously. Since it consumes a large amount of air, the valve will oscillate (chatter) due to insufficient air supply on the inlet side, and this can lead to failure.
2) As the coil becomes hot when energised, set the energising conditions as shown below. Furthermore, do not touch the coil while it is being energised or right after it has been energised.

Model	Energising time	De-energising time
JSXF(E/F/H) (Excludes the SMARTVENT type *1)	1 s or less	At least twice the energising time
56-JSXF(E/F/H)	0.5 s or less	4 s or more

*1 Refer to the operation manual for the energising time of the SMARTVENT valve.

5. Reverse pressure
If there is a possibility that reverse pressure will be applied, take countermeasures by installing a check valve, etc., on the downstream side.

6. Do not disassemble the product and replacement parts, and do not make any modifications, including additional machining.
Doing so may result in human injury and/or an accident.

Operating Environment

⚠Warning

Do not use the product in such locations as those described below.

1. Locations with atmospheres where water vapour is present or locations where corrosive fluids (chemicals), sea water, or water may come into contact with the product
Implement appropriate protective measures if the product will be in contact with water for long periods of time, even for products which have IP65 or IP67 enclosures. Such water may enter through microscopic gaps in the product's external surfaces, resulting in fire damage or short-circuiting of the solenoid valve coils. If installing the product in close proximity to equipment such as machine tools, processing machines, etc., which use large amounts of liquids or oils, be sure to confirm that liquid dispersal or spatter from the peripheral equipment does not come into contact with the product.

2. Locations with explosive atmospheres
If the product is to be used in an explosive atmosphere, use the 56-JSXF (page 39) or the 55-JSXFA (page 41). Standard products without the "56-" or "55-" prefix cannot be used in explosive atmospheres.

3. Locations subject to vibration or impact

4. Locations where radiated heat will be received from nearby heat sources

5. Locations where freezing may occur within piping lines
1) The product can be used in ambient and fluid temperatures as low as -40 °C. However, take measures to prevent the freezing or solidification of impurities, etc.
2) If the dew point temperature is high and the ambient temperature is low, or a large flow is being used, this may cause freezing. Be sure to periodically drain the product, or conduct drain removal using an air dryer, and retain the heat of the body.

Fluid

⚠Warning

1. Take measures to prevent static electricity since some fluids generate static electricity.

2. Fluid temperature
Operate within the specified operating fluid temperature range.

3. Install a filter to ensure clean fluids.
1) The use of a fluid that contains foreign matter may result in the accelerated wear of the valve seat and armature as well as a malfunction or seal failure caused by the foreign matter adhering to the sliding parts of the armature. Install a filter of 5 μm or less on the upstream side of the valve to remove foreign matter.
2) Replace or clean the filter when the pressure drop reaches 0.1 MPa to prevent it from getting clogged.

Fluid Quality

⚠Warning

1. Air
1) Do not use compressed air that contains chemicals, synthetic oils that include organic solvents, salt, corrosive gases, etc., as it can cause a malfunction or damage.
2) Compressed air that contains excessive drainage may cause the malfunction of valves and other pneumatic equipment. Install an aftercooler or an air dryer on the inlet side of the valve to prevent drainage.
3) If excessive carbon powder is generated by the compressor, it may adhere to the inside of the valves and cause a malfunction. Install a mist separator on the inlet side of the valve to remove any carbon powder.
4) For compressed air quality, refer to the Best Pneumatics No. 6 catalogue.
5) When air with a dew point of –70 °C or lower is used, it may cause the accelerated wear of the inside of the valve, shortening the life of the product.

Mounting

⚠Warning

1. Ensure sufficient space for maintenance and inspection.
In addition, when using a silencer, ensure sufficient space to replace the silencer.

2. When mounting the product, avoid sources of vibration, or change the mounting method to avoid resonance.

3. Do not install the product near a heat source. Be sure to install it in a location where the product will not be affected by radiant heat.

4. If air leakage increases or equipment does not operate properly, stop operation.
After installation or maintenance, check that the product is correctly mounted with appropriate functional and leakage inspections by supplying compressed air and power. Do not use the product if the equipment fails to operate correctly.

5. Do not touch the valve while it is being energised or right after it has been energised.
Valves will reach high temperatures after operation. Use caution as burns may be incurred if a hot valve is touched directly.

JSXF/JSXFA Series
Specific Product Precautions 2

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For 2-port solenoid valve for fluid control precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Mounting

⚠Warning

6. Do not apply external force to the coil section.
When the product is installed, apply a wrench to the outside of the piping connection while making sure that it does not come into contact with the coil.

7. Do not warm the coil section with a heat insulator, etc.
When insulation is used to prevent freezing, the insulation should be limited to the piping and body only. Do not insulate the coil. This can cause the coil to burn out.

⚠Caution

1. Installation of regulators and restrictors
If a regulator or restrictor is installed immediately before the inlet side of the valve or immediately after the outlet side of the valve, the valve will oscillate (chatter), resulting in a malfunction. Install it away from the valve or change the restriction amount.

2. Install a header tank of sufficient capacity on the inlet side of the valve.
This product is a large flow valve, so if the tank capacity is small, valve opening failure or valve oscillation (chattering) may occur due to pressure drop or insufficient air supply, resulting in a malfunction.

3. Painting and coating
Warnings or specifications printed or labeled on the product should not be erased, removed, or covered up.

Piping

⚠Warning

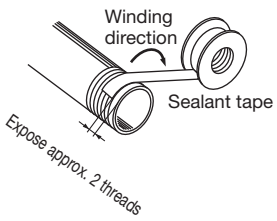
1. There may be cases in which the tubing detaches from the fitting and thrashes around uncontrollably due to tubing degradation or fitting breakage. To prevent this, fit the tubing with a protective cover or secure it in place.

⚠Caution

1. For handling One-touch fittings, refer to the "Fittings and Tubing Precautions" in the Handling Precautions for SMC Products on the SMC website.

2. Preparation before piping
Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil, and other debris from inside the pipe. Install piping so that it does not apply pulling, pressing, bending, or other forces on the valve body.

3. Winding of sealant tape
When connecting pipes, fittings, etc., do not allow any chips from the pipe threads and sealing material to enter the valve. Furthermore, when sealant tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.



4. When using a fitting other than an SMC fitting
Follow the instructions given by the fitting manufacturer.

5. Avoid connecting ground lines to piping as this may cause the electric corrosion of the system.

6. When connecting piping to a product, avoid mistakes regarding the supply port, etc.

Piping

Direct Piping Type Piping Precautions

⚠Caution

1. Use steel tubes for the inlet and outlet piping of the valve.

2. Screw tightening torque for piping
When attaching fittings to valves, tighten within the tightening torque range shown below.

Tightening Torque for Piping

Connection thread	Proper tightening torque [N·m]
1/4	8 to 12
3/8	15 to 20
1/2	20 to 25
3/4	28 to 30
1	36 to 38
1 1/2	40 to 42

Compression Fitting Type and Bulkhead Fitting Piping Precautions

⚠Warning

Do not use the compression fitting to support the valve piping. The piping could disconnect from the valve. Be sure to mount the valve to secured piping. (Compression fittings do not have a valve-holding function.)

⚠Caution

1. Use steel tubes for the inlet and outlet piping of the valve.

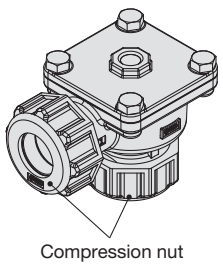
2. Tightening of the compression nut
Be sure to tighten the compression nut sufficiently to prevent the nut from loosening and leakage from occurring.

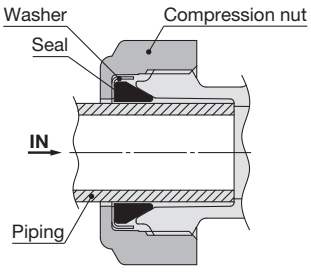
Wrench Tightening Angle after Hand-tightening (Guide for tightening the nut)

Size	Wrench tightening angle
3/4 (20A)	90° to 270°
1 (25A)	135° to 315°
1 1/2 (40A)	150° to 330°

- **Mount the valve to secured piping.**
- **Insert the piping until it stops to prevent the piping from going in at an angle.**
- **Do not expose the piping to oil or moisture. Otherwise, the valve may come off easily.**
- **Sealing performance will decrease due to the deterioration of the seals. Tighten the compression nut regularly.**

Cross section of the nut





JSXF/JSXFA Series
Specific Product Precautions 3

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For 2-port solenoid valve for fluid control precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Piping

Immersion Type Piping Precautions

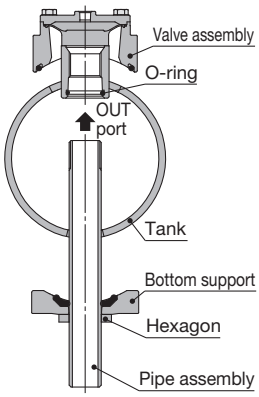
⚠Caution

Installation of the immersion type

Refer to the figures below when installing the valve on a tank provided by the customer.

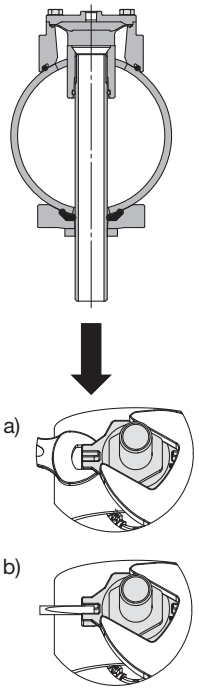
Tighten and check the pipe assembly sufficiently to prevent leakage, looseness, and play.

Step 1) Insert the pipe assembly into the OUT port of the valve assembly and screw it in vertically. (Inserting the pipe at an angle may damage the O-ring inside the valve.)



Step 2) Continue tightening the pipe assembly until the body and the bottom support touch the tank.

1. Tighten with a wrench or other tool so that the bottom support does not rotate. Refer to a). (It can also be secured like in b).) When securing, align the tank with the curved surface of the bottom support.
2. Tighten the hexagonal part of the pipe assembly with a wrench.



Pipe Assembly Tightening Guide (Tightening torque)

Size	Tightening torque [N·m]
3/4 (20A)	30
1 (25A)	50
1 1/2 (40A)	50
2 (50A)	120

* Excessive tightening may damage the valve or deform or damage the tank.
* The pipe assembly may become loose due to vibration when discharging air. Be sure to perform periodic retightening.
* The recommended tank is the ANSI Sch40. If making your own tank, ensure that it has sufficient strength to prevent it from becoming deformed when the valve is being screwed in.

SMARTVENT Type Piping Precautions

⚠Caution

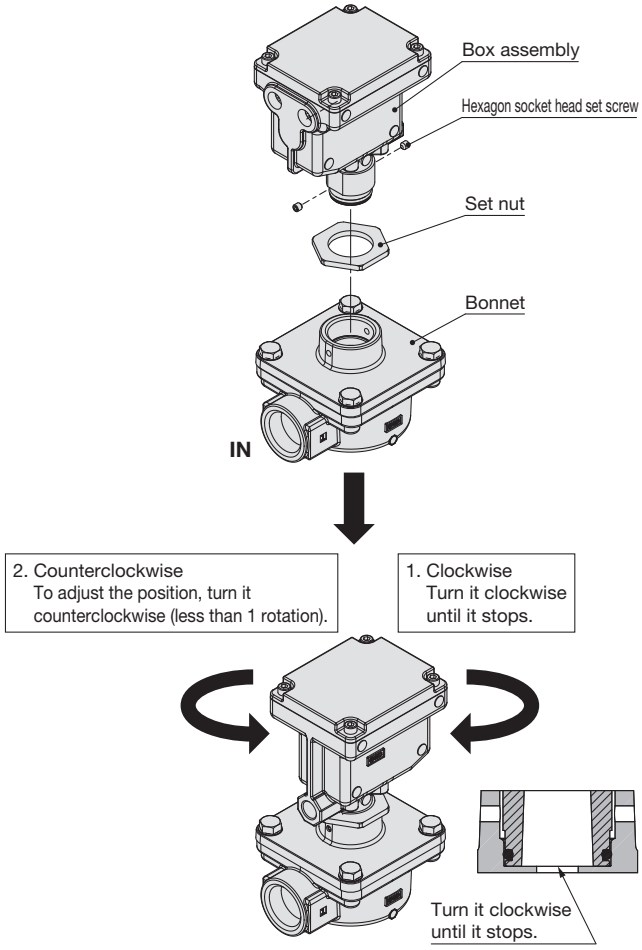
How to change the electrical entry direction

To change the electrical entry direction by yourself when piping, refer to the illustration below.

Before disassembly, be sure to turn OFF the power supply and pressure supply, and then release the residual pressure.

Step 1) Disassembly

1. Loosen the set nut and remove the two hexagon socket head set screws so the box assembly can be rotated.



Step 2) Assembly

1. Turn the box assembly clockwise until it stops.
2. Turn the box assembly counterclockwise to the desired position.
   Caution: Be sure to only turn it less than 1 rotation after it has stopped.
3. Tighten the set nut and then the hexagon socket head set screws. Refer to the table below for the tightening torque.

Table 1

Description	Size	Proper tightening torque
Set nut	Width across flats 46 mm	50 N·m
Hexagon socket head set screw	M5	1.35 to 1.65 N·m

JSXF/JSXFA Series
Specific Product Precautions 4

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For 2-port solenoid valve for fluid control precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Piping

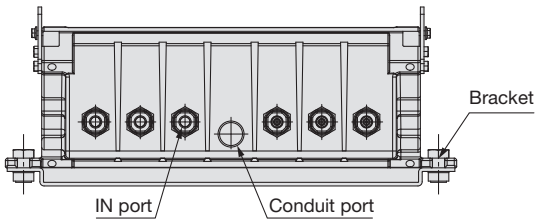
Pilot Valve Enclosure Piping Precautions

⚠Caution

1. Screw tightening torque for piping

When piping to the enclosure, tighten within the proper tightening torque range shown below.

Enclosure bottom surface



Tightening Torque for Piping [N·m]

Piping position	Stations	Size	Proper tightening torque
Conduit port	6 stations	1/2	20 to 25
	8 stations	3/4	28 to 30
IN port	6, 8 stations	1/8	3 to 5
Bracket (Option B)		M10	11 to 14

Wiring

⚠Warning

The solenoid valve is an electrical product. For safety, install an appropriate fuse and circuit breaker before use.

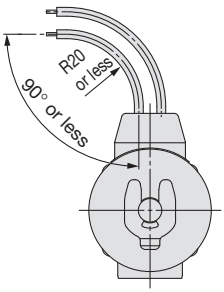
When using multiple solenoid valves, it is not sufficient to merely install one fuse. For protecting the equipment more safely, select an appropriate fuse to each circuit of the solenoid valve.

⚠Caution

1. As a rule, use electrical wire with a cross sectional area of 0.5 to 1.25 mm² for wiring.

2. External force applied to the lead wire

If an excessive force is applied to the lead wire, this may cause faulty wiring. Take appropriate measures so that a force of 10 N or more is not applied to the lead wire. Do not bend the lead wires beyond 90° with a radius of less than 20 mm or damage may occur.



3. Use electrical circuits which do not generate chattering in their contacts.

4. Use voltage which is within ±10 % of the rated voltage. In cases with a DC power supply where importance is placed on responsiveness, stay within ±5 % of the rated value. The voltage drop is the value in the lead wire section connecting the coil.

5. When a surge from the solenoid affects the electrical circuitry, install a surge voltage suppressor, etc., in parallel with the solenoid. Or, use the product with a surge voltage suppressor.

Residual voltage of the surge voltage suppressor

DC specification: Approx. 60 V

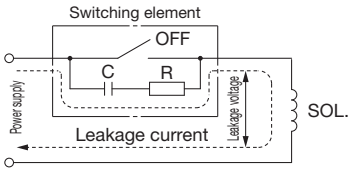
AC specification: Approx. 1 V

Wiring

⚠Caution

6. Leakage voltage

When the solenoid valve is operated using the controller, etc., the leakage voltage should be the product allowable leakage voltage or less. Particularly when using a resistor in parallel with a switching element and using a C-R element to protect the switching element, take note that leakage current will flow through the resistor, C-R element, etc., creating a possible danger that the valve may not turn off.



AC coil: 5 % or less of rated voltage

DC coil: 2 % or less of rated voltage

Electrical Connections

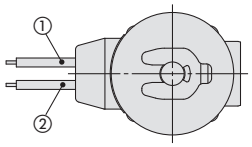
⚠Caution

1. Grommet

Lead wire: AWG20 Insulator O.D.: 2.6 mm

Rated voltage	Lead wire colour	
	①	②
DC	Black	Red

∗ There is no polarity.



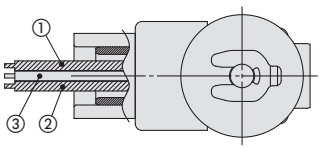
2. Conduit

Lead wire: AWG18 Insulator O.D.: 2.8 mm

Rated voltage	Lead wire colour		
	①	②	③
DC	Black	Red	Green/Yellow
100 VAC	Blue	Blue	Green/Yellow
200 VAC	Red	Red	Green/Yellow
Other AC	Grey	Grey	Green/Yellow

∗ There is no polarity.

∗ ③: Ground wire



Specific Product Precautions 5

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For 2-port solenoid valve for fluid control precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Electrical Connections

⚠Caution

3. DIN terminal

Disassembly

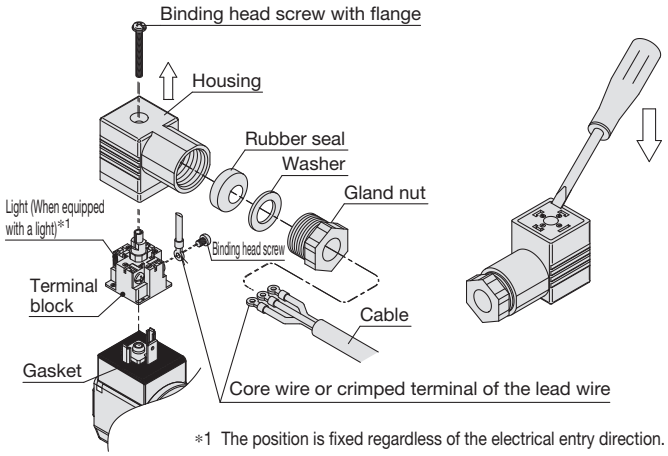
1. After loosening the binding head screw with flange, then if the housing is pulled in the direction of the arrow, the connector will be removed from the solenoid valve.
2. Pull out the binding head screw with flange from the housing.
3. There is a cutout on the bottom of the terminal block. Insert a small flat head screwdriver, etc., into this cutout, and remove the terminal block from the housing. (Refer to the figure below.)
4. Remove the gland nut, and pull out the washer and the rubber seal.

Wiring

1. Pass the cable through the gland nut, washer, and rubber seal in this order, and insert these parts into the housing.
2. Loosen the binding head screw of the terminal block, then insert the core wire or the crimped terminal of the lead wire into the terminal, and securely fix it with the binding head screw. The binding head screw of the terminal block is M3.
   ∗1 Tighten the screw to a torque of between 0.5 and 0.6 N·m.
   ∗2 Cable O.D.: Ø 6 to Ø 12 mm
   ∗3 For an outside cable diameter of Ø 9 to Ø 12 mm, remove the internal parts of the rubber seal before use.

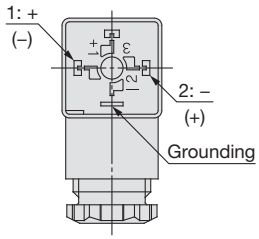
Assembly

1. Pass the cable through the gland nut, washer, rubber seal, and the housing in this order, and connect to the terminal block. Then, set the terminal block inside the housing. (Push in the terminal block until it snaps into position.)
2. Insert the rubber seal and the washer in this order into the cable entry of the housing, and then tighten the gland nut securely.
3. Insert the gasket between the bottom part of the terminal block and the plug attached to the equipment, and then insert the binding head screw with flange from the top of the housing, and tighten it.
   ∗1 Tighten the screw to a torque of between 0.5 and 0.6 N·m.
   ∗2 The orientation of the connector can be changed in steps of 90° by changing the method of assembling the housing and the terminal block.



∗1 The position is fixed regardless of the electrical entry direction.

Internal connections are as shown below. Make connections to the power supply accordingly.

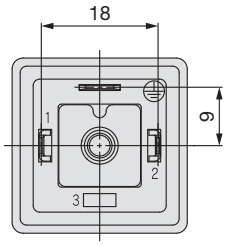


Terminal no.	1	2
DIN terminal	+ (–)	– (+)

∗ There is no polarity.

DIN (EN 175301-803) Terminal

This DIN terminal corresponds to the Form A DIN connector with an 18 mm terminal pitch.



Applicable cable O.D.: Ø 6 to Ø 12

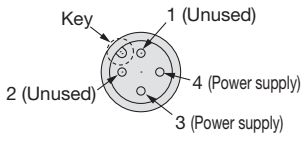
4. M12 connector

1. The IP67 (enclosure) rating of the valve can be obtained by using a cable with a female connector of IP67 specification. Please note that this product cannot be used in water.
2. Do not use a tool to mount the connector as this may cause damage. Only tighten it by hand. (0.39 to 0.49 N·m)
3. Avoid repeatedly bending or stretching the cable and applying heavy objects or force to it.
4. Do not pull the connector or cable unnecessarily.
5. Do not bend the cable at the root of the connector when installed.

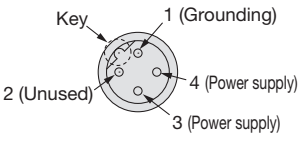
■Coding and pin arrangement of the M12 connector on the valve side

The shape (coding) and pin arrangement of the M12 connector are as follows.

DC specification: A-coded, 4-pin



AC specification: B-coded, 4-pin



∗ The solenoid valve has no polarity for DC voltages.

When using the cable with a female connector, make sure that the coding is correct. When installing the cable, be sure to align the key on the cable side connector (female side) with the key on the valve side connector (male side).
Be careful not to squeeze it in the wrong direction as pin damage, etc., may result.

JSXF/JSXFA Series
Specific Product Precautions 6

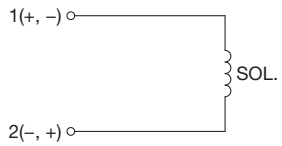
Be sure to read this before handling the products. Refer to the back cover for safety instructions. For 2-port solenoid valve for fluid control precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Electrical Circuits

⚠ Caution

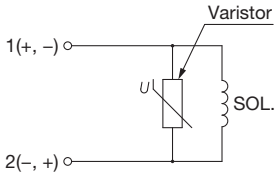
1. DC circuit

● **Grommet**



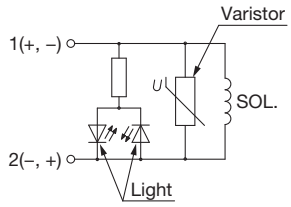
Without electrical option

● **Grommet, Conduit, DIN terminal**



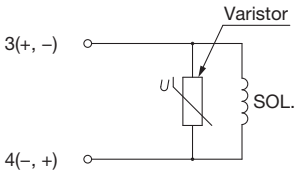
With surge voltage suppressor

● **DIN terminal**



With light/surge voltage suppressor

● **M12 connector**

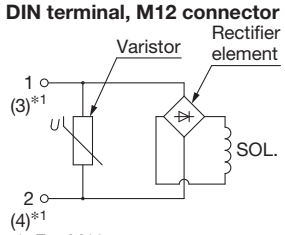


With surge voltage suppressor

2. AC circuit

The standard product is equipped with a surge voltage suppressor.

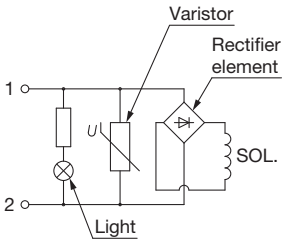
● **Grommet, Conduit, DIN terminal, M12 connector**



*1 For M12 connector

Without electrical option

● **DIN terminal**



With light

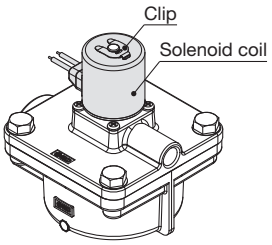
Replacing the Solenoid Coils

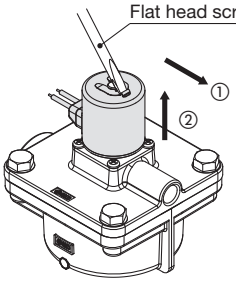
⚠ Warning

1. Before replacing the solenoid coil, turn OFF the power supply.

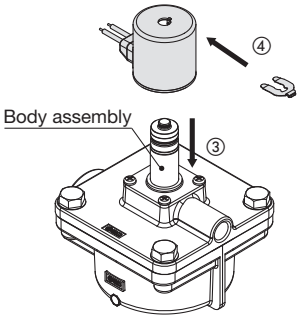
2. Due to the fluid temperature and the operating conditions, the solenoid coil may become extremely hot. Be careful when handling.

⚠ Caution

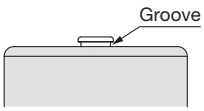




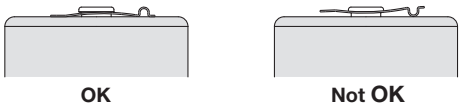
Step 1) Remove the coil.
1) Insert a flat head screwdriver, etc., into the groove in the clip and slide it in the direction of ① to remove it.
2) Remove the coil in the direction of ②.



Step 2) Assemble the coil.
1) Insert the replacement coil into the body assembly in the direction of ③.
2) Insert the clip in the direction of ④ by aligning it with the groove in the top of the body assembly. The clip is directional. Refer to the figures below.



Be sure to confirm the clip direction (back and front) as well as the inserted condition.



OK **Not OK**

Clip direction



OK **Not OK**

Inserted condition

* When inserting the coil, be sure to push it in until the groove in the body assembly is visible.

JSXF/JSXFA Series
Specific Product Precautions 7

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For 2-port solenoid valve for fluid control precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Appearance

⚠Caution

1. Surface treatment is applied to the product to improve corrosion resistance. There may be a spotted pattern on the surface depending on the treatment condition, but this does not affect usage or performance.

2. Rust may be generated on the solenoid coil depending on the operating environment and conditions, but this does not affect usage or performance.

Maintenance

⚠Warning

1. Removal of product

1) Turn OFF the fluid supply, and release the fluid pressure in the system.
2) Turn OFF the power supply.
3) Confirm that the valve temperature has dropped sufficiently before removing the product.

2. Replace or clean filters periodically.

Replace filters after 1 year of use or earlier if the pressure drop reaches 0.1 MPa.

3. Exhaust the drainage from air filters periodically.

If condensation in the drain bowl is not emptied on a regular basis, the bowl will overflow and allow the condensation to enter the compressed air lines. This may result in the malfunction of pneumatic equipment. If the drain bowl is difficult to check or remove, the installation of a drain bowl with an auto drain option is recommended.

4. Silencer

Prolonged use may cause clogging and changes in response characteristics. Replace it after using about 500,000 times. This number is subject to change based on fluid quality and energizing time.

5. Disassembly

Do not disassemble anything other than the main valve and solenoid coil. Doing so may result in a malfunction.
Refer to the "Disassembly/Assembly Procedure" on pages 16, 23, and 35 for part replacement instructions.

6. Low-frequency operation

Switch valves at least once every 30 days to prevent a malfunction. Also, in order to use them under the optimum state, conduct an inspection biannually.

7. Storage

In the case of long-term storage after use, thoroughly remove all moisture and store it in a location where the product is not exposed to sunlight and higher humidity to prevent rust and the deterioration of rubber materials, etc.

8. Perform maintenance and inspection periodically.

Confirm that the product is mounted correctly by conducting suitable function and leakage tests periodically. If air leakage increases or equipment does not operate properly, stop operation.

Dedicated Controller for Operation VXFC Series

Wiring

⚠Warning

1. The controller starts its output the moment the power switch is turned ON. Be aware that even if the power switch is turned OFF, power is connected to the terminal block.

⚠Caution

1. Make sure that the power supply voltage to be input matches the voltage in the controller's specifications. The power supply voltage that has been input becomes the voltage that is output to the solenoid valves.

2. Connect a ground that is rated Class 3 or greater to the power supply terminal block's FG.

3. If the power source is DC, be sure to confirm the polarity. If the polarity is incorrect, it may result in a malfunction or damage.

4. For details, please refer to the separate "Operation Manual."

5. The solenoid valve mounted on the controller should be equipped with a surge voltage suppressor.

Operating Environment

⚠Warning

1. Operate under conditions that are free of vibration and impact.

2. Operate in an ambient temperature range between 0 °C and 50 °C.

3. Operate in an ambient humidity range between 45 % to 80 % (no condensation).

Return of Product

⚠Warning

If the product to be returned is contaminated or is possibly contaminated with substances that are harmful to humans, for safety reasons, please contact SMC beforehand and then employ a specialist cleaning company to decontaminate the product. After the decontamination prescribed above has been carried out, submit a Product Return Request Sheet or the Detoxification/Decontamination Certificate to SMC and await SMC's approval and further instructions before attempting to return the item.
Please refer to the International Chemical Safety Cards (ICSC) for a list of harmful substances.
If you have any further questions, please don't hesitate to contact your SMC sales representative.

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution**," **"Warning"** or **"Danger**." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) [1], and other safety regulations.

⚠ **Danger:**	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
⚠ **Warning:**	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Caution:**	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

1) ISO 4414: Pneumatic fluid power – General rules and safety requirements for systems and their components.
ISO 4413: Hydraulic fluid power – General rules and safety requirements for systems and their components.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Our products cannot be used beyond their specifications.
Our products are not developed, designed, and manufactured to be used under the following conditions or environments.
Use under such conditions or environments is not covered.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

⚠ Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.
Use in non-manufacturing industries is not covered.
Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.
The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. [2] Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Revision History

Edition B	- An immersion type has been added. - The ATEX compliant 55-JSXFA series has been added. - The number of pages has been increased from 16 to 20.	YT
Edition C	- 3/4 (20A), 1 1/2 (40A), and 2 (50A) port sizes have been added to the immersion type. - The number of pages has been increased from 20 to 24.	ZY
Edition D	- A solenoid valve type has been added. - UKCA compliance has been added. - The number of pages has been increased from 24 to 44.	AS
Edition E	- A SMARTVENT type has been added. - The number of pages has been increased from 44 to 52.	AS
Edition F	- A bulkhead fitting has been added. - A pilot valve enclosure has been added. - An M12 connector cable option has been added. - The number of pages has been increased from 52 to 60.	DW

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Specifications are subject to change without prior notice and any obligation on the part of the manufacturer