




ATEX classification: II 2 G Ex h IIB T6 Gb -40°C ≤ Ta ≤ +60°C
II 2 D Ex h IIB T72°C Db
Certificate reference: SMC 19.0013 X
For special conditions of use see section 1.2.

The intended use of this product is to provide a pulse of air in dust collector and similar systems.

1 Safety Instructions


1.1 General 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)^{*)}, and other safety regulations.
^{*)} ISO 4414: Pneumatic fluid power - General rules relating to systems.
ISO 4413: Hydraulic fluid power - General rules relating to systems.
IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots -Safety. etc.

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

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

-  **Warning**
- Always ensure compliance with relevant safety laws and standards.**
 - All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

1.2 Special conditions of use

-  **Warning**
- To avoid the build-up of electrostatic charge:
- Do not mount in areas subject to electrostatic charging mechanisms.
 - Clean only with a damp cloth and allow to dry naturally.

2 Specifications

2.1 Valve specifications

Series	55-JSXFA		
	06	10	14
Orifice diameter (mm)	32	40	50
Port size	3/4	1	1 1/2
Fluid	Air		
Air filtration (µm)	5 (or less)		
Minimum operating pressure differential (MPa)	0.1		
Maximum 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		

⁻¹No condensation allowed


2.2 Production batch codes

Construction Year / Month	Production batch codes											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2019	Xo	XP	XQ	XR	XS	XT	XU	XV	XW	XX	Xy	XZ
2020	yo	yP	yQ	yR	yS	yT	yU	yV	yW	yX	yy	yZ
...
2024	Co	CP	CQ	CR	CS	CT	CU	CV	CW	CX	Cy	CZ


Note: The batch code is included on the product label.

3 Installation


3.1 General


-  **Warning**
- Do not install the product unless the safety instructions have been read and understood.
 - The valve is designed for pulse operation. Do not operate the valve in the open position continuously as it can cause oscillation (chattering) of the diaphragm leading to product failure due to the large amount of air consumed causing insufficient air supply on the inlet side.

3.2 Environment

-  **Warning**
- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
 - Do not expose to direct sunlight. Use a suitable protective cover.
 - Do not install in a location subject to vibration or impact in excess of the product's specifications.
 - Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.
 - The valves are certified to ATEX category 2GD (zones 1, 21).
 - Do not mount in areas subject to electrostatic charging mechanisms.

3.3 Piping


-  **Warning**
- The compression fitting is used to seal the connection between the valve and the pipework. Do not rely on the compression fitting to support the piping as it could become detached. Ensure that inlet and outlet piping is secured with separate fixings.

-  **Caution**
- Before connecting piping make sure to clean up chips, cutting oil, dust etc.
 - When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1 thread exposed on the end of the pipe/fitting.
 - Use steel tubing for the inlet and outlet piping.
 - For details regarding pipe sizes, refer to the standard JSXFA catalogue.
 - Tighten fittings to the specified tightening torque.

Fitting tightening torque	
Connection thread	Tightening torque (N·m)
Rc1/4	12 to 14
Rc3/8	22 to 24
Rc1/2	28 to 30
Rc3/4	28 to 30
Rc1	36 to 38
Rc1 1/2	40 to 42

3 Installation (continued)

3.4 Valve mounting

-  **Caution**
- Mount the valve to fixed metal piping.
 - Insert the piping into the valve body until it stops to prevent misalignment of the piping in relation to the valve body.
 - Tightening of the compression nuts, see fig.1.

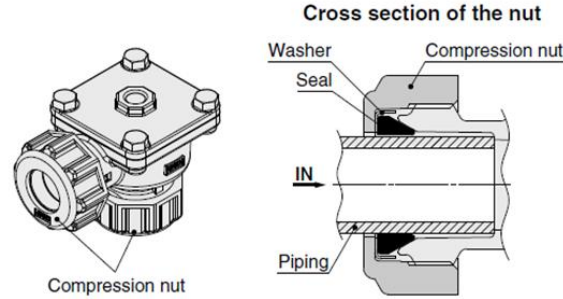


Fig.1

- Tighten the compressor nut sufficiently to prevent nut becoming loose and leakage occurring. Hand tighten, then secure with a wrench.

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

- Ensure that the air supply is sufficient to meet the high flow demand of the valve when operated. If the inlet is restricted or the supply tank capacity low, then the main valve may oscillate (chatter) due to pressure drop or insufficient supply.

4 How to Order

Direct piping type: 55-JSXF-AF-###-B-###

Compression fitting type: 55-JSXF-AE-###-B-###


Please refer to the Web catalogue for specific how to order details.

5 Outline dimensions

The 55-JSXFA valves are dimensionally the same as the standard JSXFA valves. Please refer to the Web catalogue for details.

6 Maintenance


6.1 General Maintenance

-  **Caution**
- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
 - If handled improperly, compressed air can be dangerous.
 - Maintenance of pneumatic systems should be performed only by qualified personnel.
 - Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
 - After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
 - If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
 - Do not make any modification to the product.
 - Do not disassemble the product, unless required by installation or maintenance instructions.
 - Refer to the Disassembly/Assembly procedures in sections 6.4 and 6.5 for the replacement of the main valve (sub-valve).
 - When JSXFAE valves are used, check the tightness of the compression nut regularly to ensure proper sealing between the valve body and the piping.

6 Maintenance (continued)

- When the valves are used for infrequent operation:
 - Switch valves at least once every 30 days to prevent malfunction.
 - To maintain the product in optimum condition, conduct a regular inspection every 6 months.

6.2 Safety


-  **Warning**
- Ensure that the Safety Instructions in section 1 of this document have been read and understood before carrying out maintenance procedures.

6.3 Replacement parts

See list of replacement parts in table below.

Model	Replacement part number	
	Main valve assembly (Main valve + O-ring)	Sub-valve assembly (Sub-valve + O-ring)
55-JSXFA(E,F)-06#-B-#	JSXF-06B-KT	-
55-JSXFA(E,F)-06#-B-#A	JSXF-06B-A-KT	-
55-JSXFA(E,F)-10#-B-#	JSXF-10B-KT	-
55-JSXFA(E,F)-10#-B-#A	JSXF-10B-A-KT	-
55-JSXFA(E,F)-14#-B-#	JSXF-14B-KT	JSXF-14B-KT2

6.4 Disassembly procedure

-  **Caution**
- Before starting the disassembly work, be sure to shut off the power supply and pressure supply, and then release the residual pressure.
 - Loosen the hexagon bolts and remove the bonnet, O-ring and main valve (sub-valve). See Fig.2.

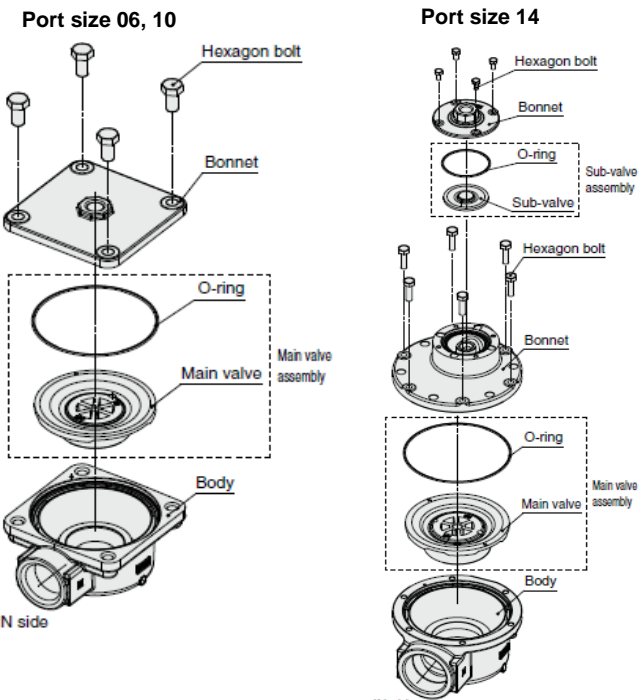


Fig.2

6 Maintenance (continued)

6.5 Assembly procedure

Caution

- Assemble the main valve (sub-valve) to the body, with reference to mounting orientation shown in Figs.3 and 4.
Note: Incorrect assembly can lead to product malfunction.

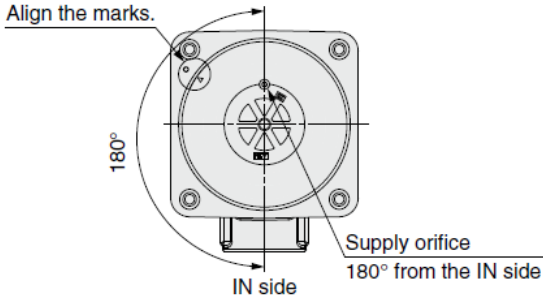


Fig.3 - Main valve position (Port size: 06, 10)

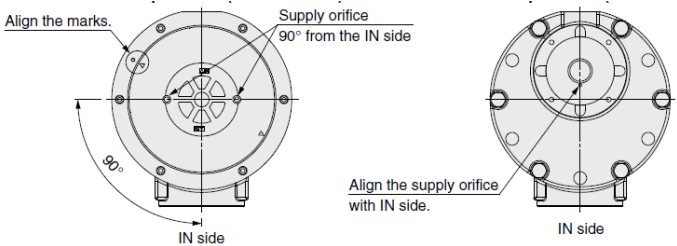


Fig.4 - Main valve and sub-valve position (Port size: 14)

- Mount the O-ring into the groove in the body. See Fig.5.

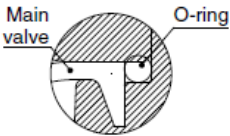


Fig.5 - O-ring position

- Assemble the bonnet onto the body (refer to Fig.2).
- Tighten the hexagon bolts diagonally (see Fig.6) using the correct tightening torque values shown in the table below.

Hexagon bolt tightening torque (N•m)		
55-JSXFA#-06#		12.5 to 13.8
55-JSXFA#-10#		12.5 to 13.8
55-JSXFA#-14#	Main valve	5.2 to 5.7
	Sub-valve	1.5 to 1.7

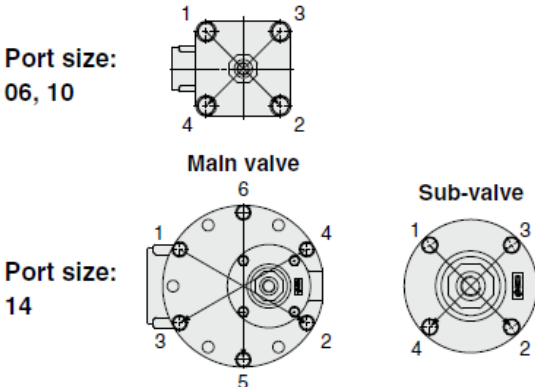


Fig.6 - Hexagon bolt tightening sequence

7 Limitations of Use

7.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

Warning

- Refer to ATEX classification for the product.
- Refer to the 'Special conditions of use', section 1.2.

8 Contacts

Refer to Declaration of Conformity and www.smcworld.com for contacts.

SMC Corporation

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