文書 No.DOC1055592

Operation Manual

Product name

Impact Blow Valve

Model / Series / Product No.

IBV1 Series

SMC Corporation

1.Table of contents

2.How to order

Air operated type with pulse function	IBV12□
Air operated type without pulse function	IBV11□
Solenoid valve type	IBV10□–5L–□

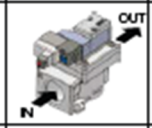
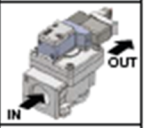
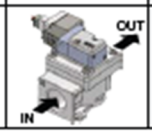
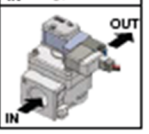
❶ Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

❷ Rated voltage/Electrical entry

Symbol	Rated voltage	Electrical entry
5L	24 VDC	L plug connector, With lead wire (Length 300 mm)
5LO	24 DCV	L plug connector, Without connector
5WA	24 VDC	M8 connector, With connector cable (Length 300 mm)
5WAO	24 VDC	M8 connector, Without connector

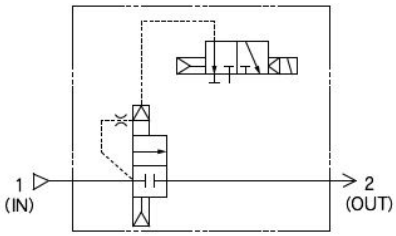
❸ Electrical entry direction

Symbol	Angle	Electrical entry direction	Symbol	Angle	Electrical entry direction
Nil	0°		B	180°	
A	90°		C	270°	

3.Specifications

・Solenoid valve type

Valve specifications	Fluid	Air
	Operating pressure range	0.15 to 0.7MPa
	Ambient temperature	+5 to 50 ℃
	Operating fluid temperature	
	Vibration/ Impact resistance	150/30 m/s²
Coil specifications	Rated voltage	DC24V
	Power consumption	0.35W
	Allowable voltage fluctuation	+/-10% of the rated voltage
	Allowable leakage voltage	3% of the rated voltage or less
Standards		CE / UKCA

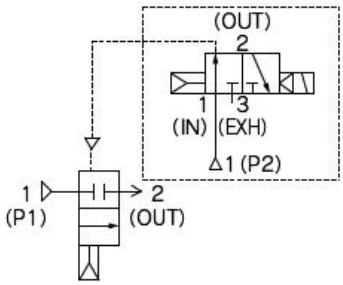


Symbol

3.Specifications

・Air operated type without pulse function

Valve specifications	Fluid	Air
	Operating pressure range	0.1 to 0.5 MPa Note1)
	Pilot pressure range	
	Ambient temperature	+5 to 50 ℃
	Operating fluid temperature	
	Vibration/ Impact resistance	150/30 m/s²



*Pilot valve is not included.

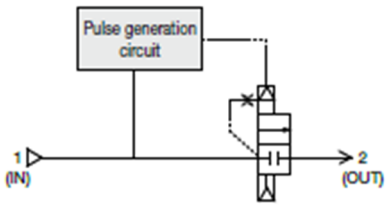
Symbol

Note 1) Use with main pressure and pilot pressure at similar levels.

Note 2) As the pilot solenoid valve is not included, select it referring to the recommended example on page 7 and the relationship between pilot solenoid valve/piping conditions and peak pressure on page 13.

・Air operated type with pulse function

Valve specifications	Fluid	Air
	Operating pressure range	0.3 to 0.7 MPa
	Operating frequency	1 to 8 Hz
	Ambient temperature	+5 to 50 ℃
	Operating fluid temperature	
	Vibration/ Impact resistance	150/30 m/s²



Symbol

4.Discharge pressure adjustment

This product discharges high peak pressure by the outflow of the air in the upstream piping.
The peak pressure is adjustable depending on the upstream piping condition.
It is effective to increase the upstream piping diameter for higher peak pressure.
(Reference) Piping condition and peak pressure　*Refer to the conceptual drawing below.

Upstream piping I.D.	Length(mm)	Peak pressure (Continuous blow ratio)
Φ８	２０００	2 times higher
Φ１０	１３００	2.5 times higher
Φ１３	８００	3 times higher

※ In SMC test conditions.
※ The length in the table is the length in which the upstream side piping volume becomes 100 cc.
※ Refer to page 12 for the relationship between the upstream side piping and peak pressure.
※ For the air-operated type, the peak pressure will be different according to the pilot solenoid valve and piping conditions. Refer to the relationship between the pilot solenoid valve/piping conditions and peak pressure on page 13.
※ The peak pressure will be discharged once when energized. The normal continuous blow will be performed after discharging the peak pressure.　Refer to the conceptual drawing next page.

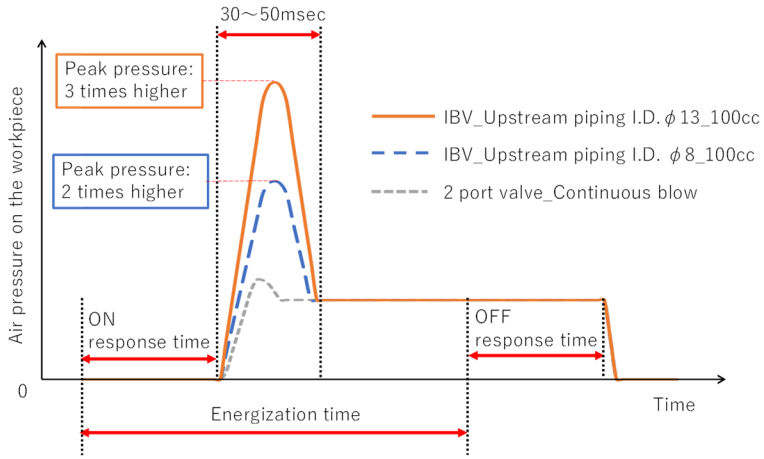
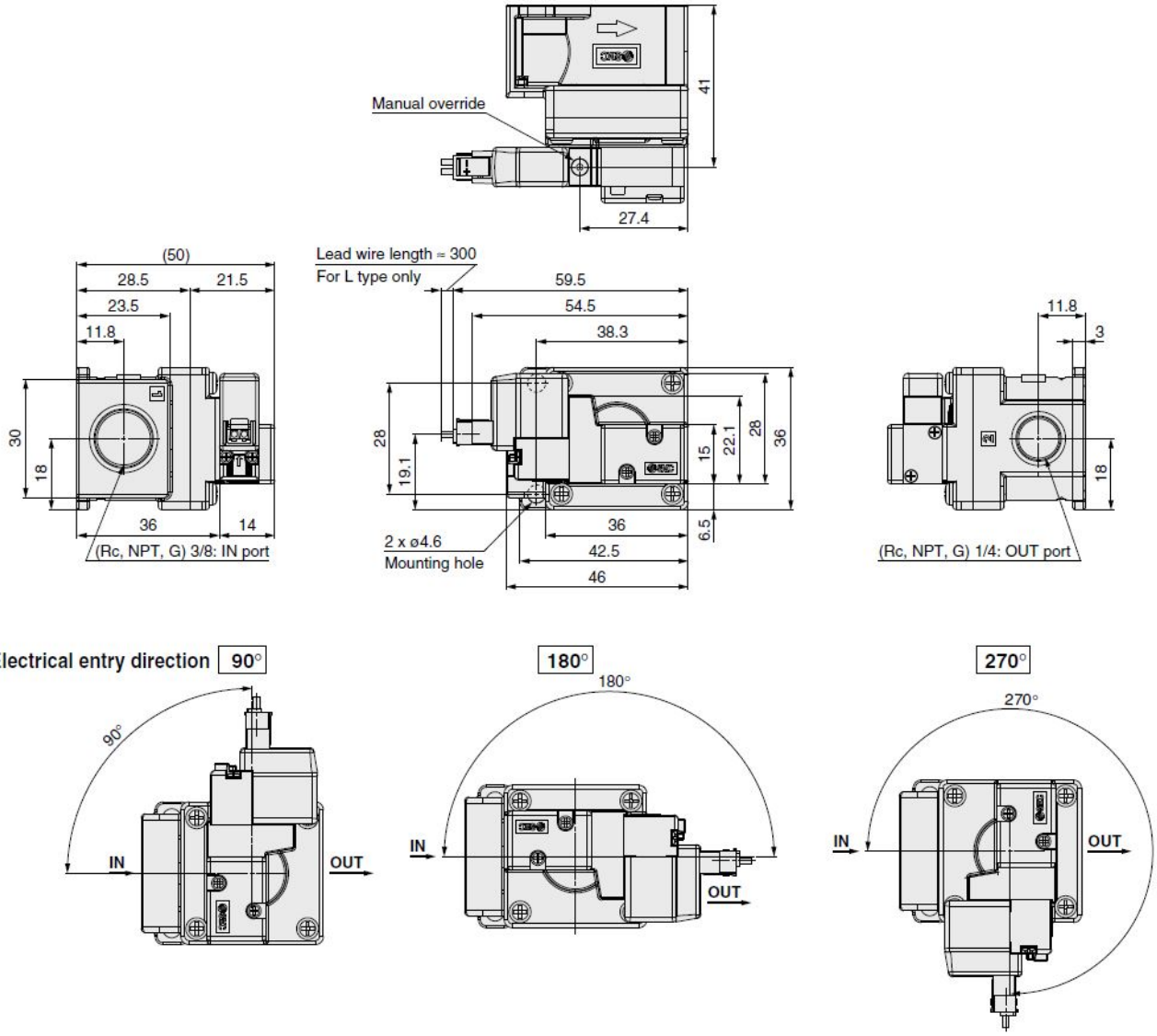


Fig.　Conceptual drawing of the peak pressure waveform

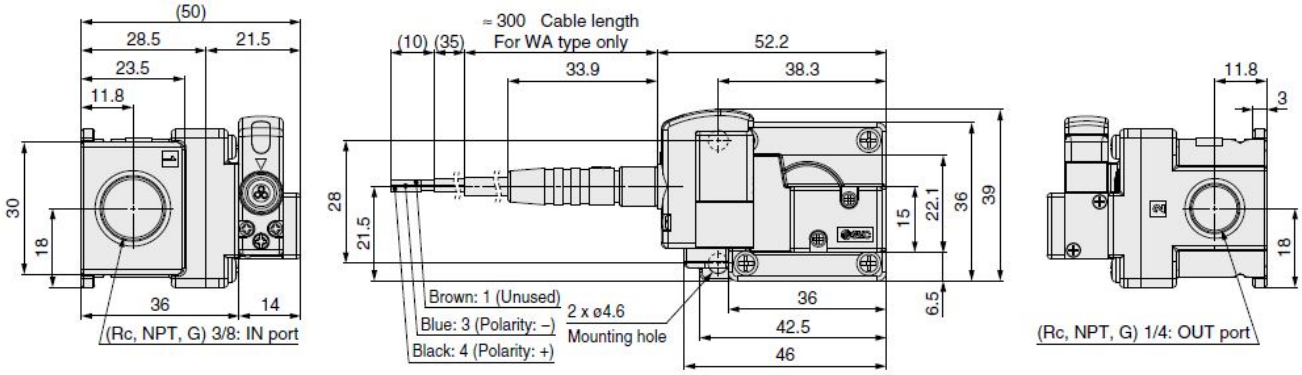
5.External dimensions drawing

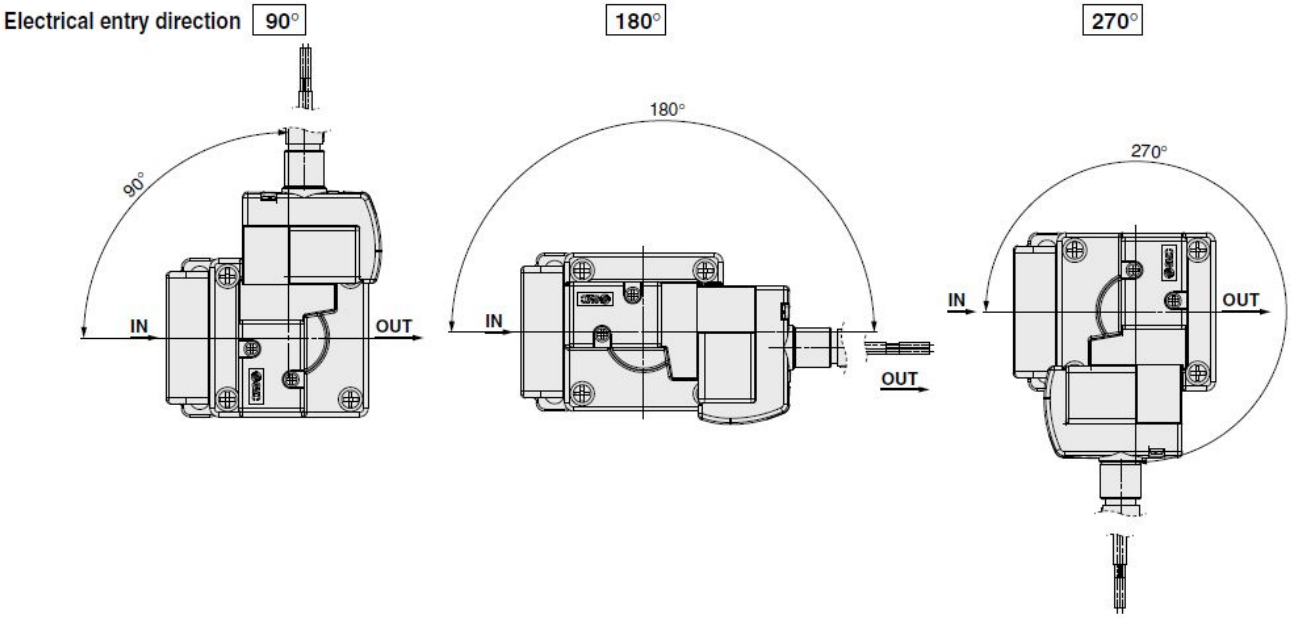
・Solenoid valve type：IBV10*-5L*-*　L plug connector type

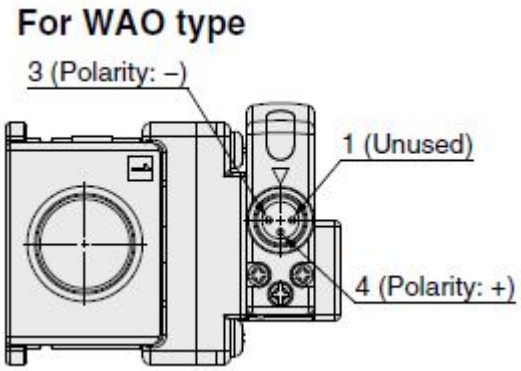


5.External dimensions drawing

・Solenoid valve type：IBV10*-5WA*-*　M8 connector type

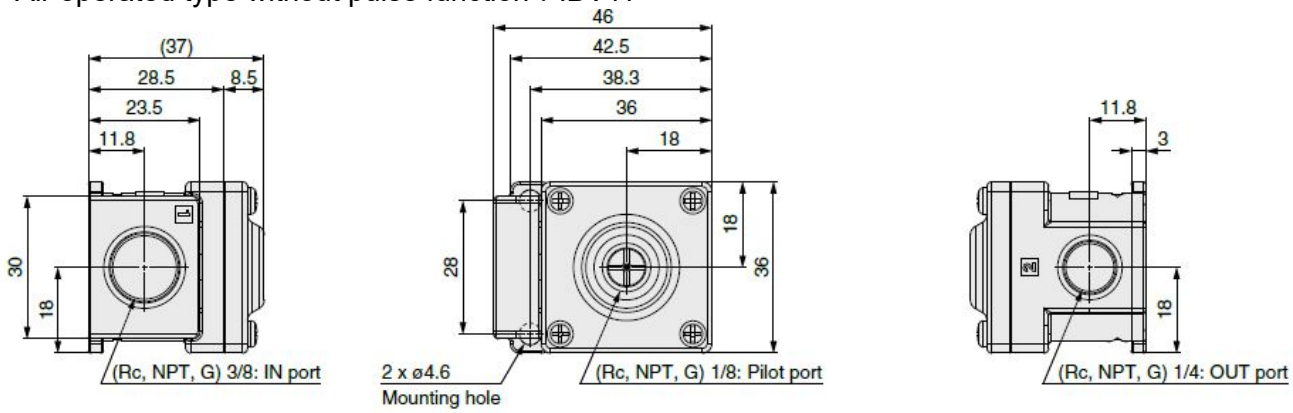






5.External dimensions drawing

・Air operated type without pulse function：IBV11*

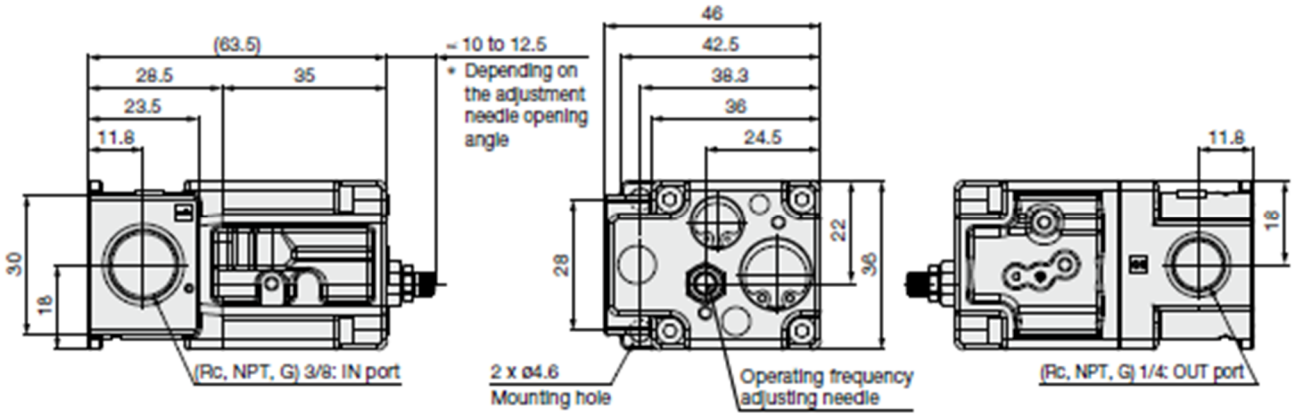


＜Air operated type without pulse function Notes＞

・Be careful not to allow the pilot pressure to drop below the main pressure when blowing.
・Be sure to pressurize the pilot port before pressurizing the main port.
・Air leakage from the main port when pressurizing the pilot port is normal.
・The following pilot valve and piping conditions are recommended.
  ・Pilot valve：3 port N.O. solenoid valve with flow characteristics C = 1.8 [dm3/(s・bar)] or more in flow path 2 → 3(A → R)
  Example) VQZ2(2,4)5 , SYJ72(2,4) , etc.
  ・Pilot pipe inner diameter：Φ4 or Φ5　Example)TU0604 , TU0805 , etc.
  ・Pilot pipe length：1000mm or less

Refer to page 13 for other conditions.

・Air operated type with pulse function：IBV12*

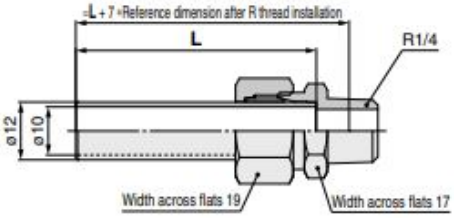


＜Air operated type with pulse function Notes＞

・If the nozzle diameter is small, operating frequency adjustment is difficult.
Therefore, we recommend mounting a dedicated nozzle instead.
・As this product uses compressed air to mechanically perform intermittent operation, the air discharge state may vary depending on the operating frequency, supply pressure, temperature, etc.

6. External dimensions drawing (Option)

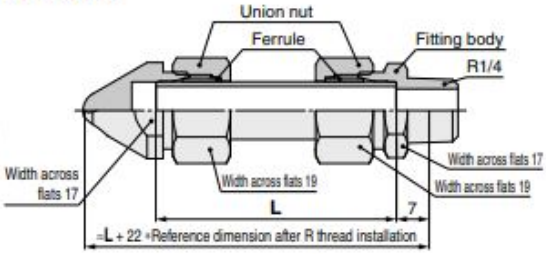
Long nozzle (Option)



[mm]

Part no.	Nozzle I.D.	Connection thread	L
IBG1-12-10-50	ø10	R1/4	50
IBG1-12-10-100			100
IBG1-12-10-150			150
IBG1-12-10-300			300
IBG1-12-10-600-X1			600
IBG1-12-10-1000-X1			1000

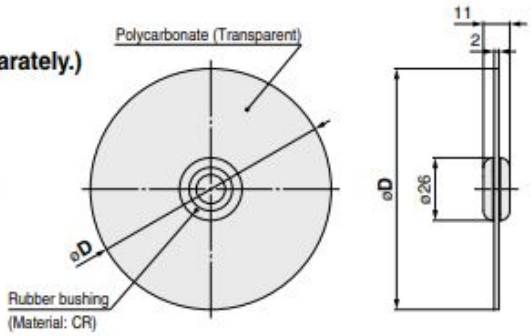
Long nozzle with a silencer (Option)



[mm]

Part no.	L
IBG1-12-10-50S	50
IBG1-12-10-100S	100
IBG1-12-10-150S	150
IBG1-12-10-300S	300
IBG1-12-10-600S-X1	600
IBG1-12-10-1000S-X1	1000

Chip guard (Please order it separately.)



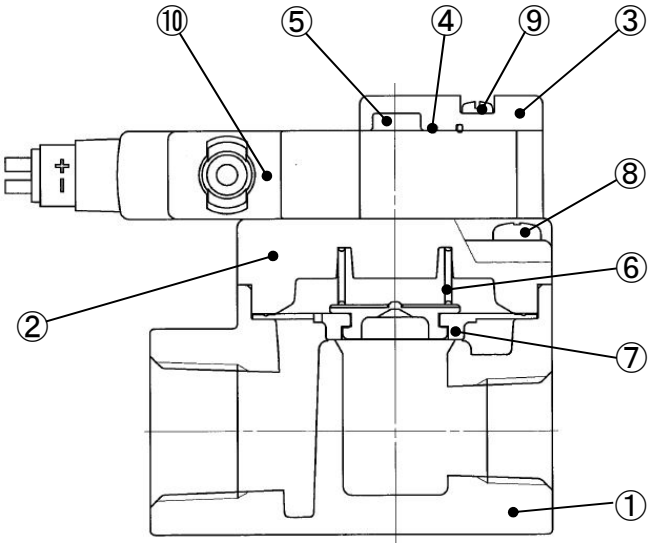
[mm]

Part no.	øD
IBG1-12C	100

* The rubber bushing is shipped together with the product.
* It is possible to use the guard with a silencer, but in that case, mount the guard before mounting the silencer.

7. Component drawing, component material

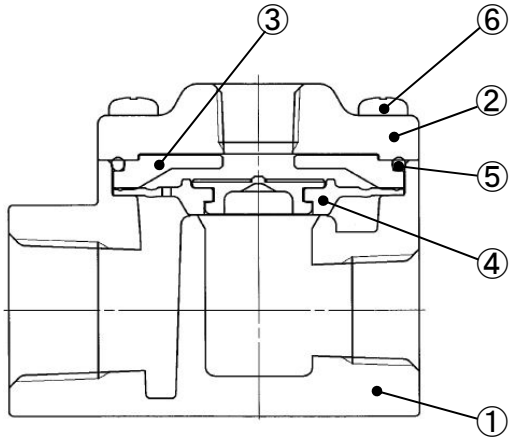
・Solenoid valve type



Components parts

Number	Parts name	Material
1	Body	ADC
2	Bonnet	resin
3	Plate	resin
4	Gasket	HNBR
5	Element	resin
6	Spring	SUS
7	Diaphragm Ass'y	HNBR、resin
8	Screw	SUS
9	Tapping screw	Carbon tool steel (Chromated)
10	3 port valve	—

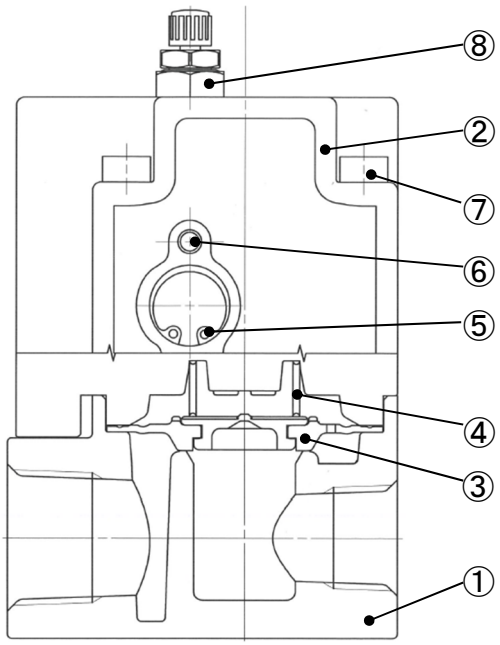
・Air operated type
without pulse function



Components parts

Number	Parts name	Material
1	Body	ADC
2	Bonnet	ADC
3	Guide bushing	resin
4	Diaphragm Ass'y	FKM、resin
5	O-ring	FKM
6	Screw	SUS

・Air operated type with pulse function

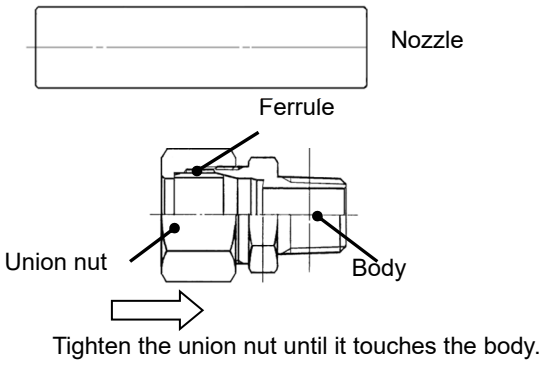
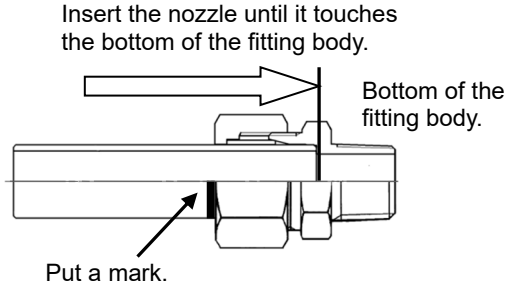
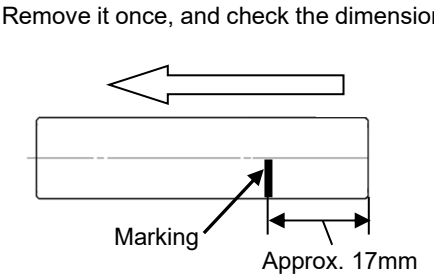
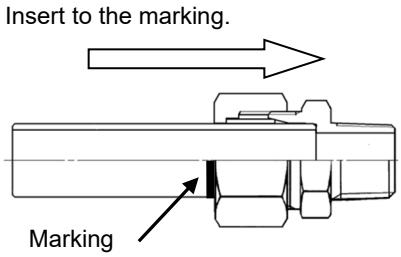
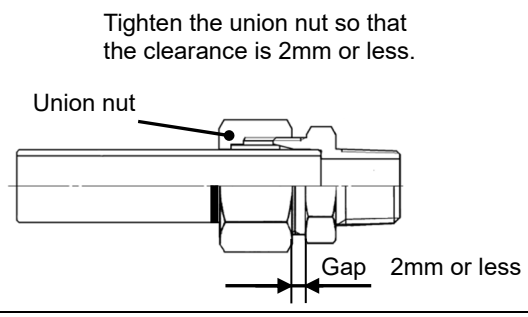


Components parts

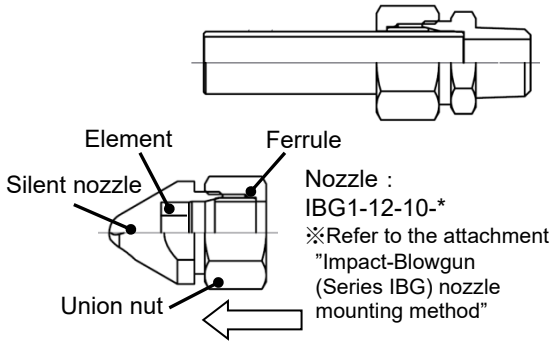
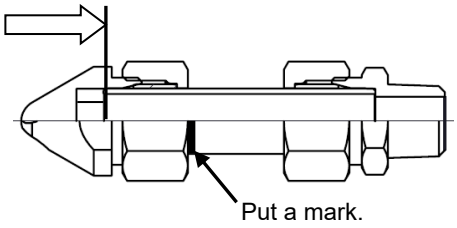
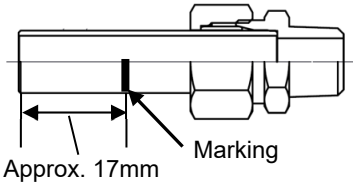
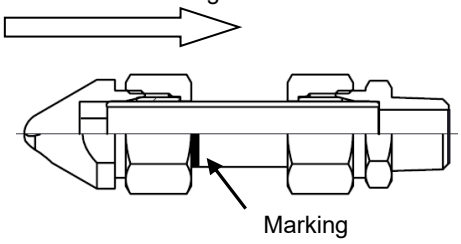
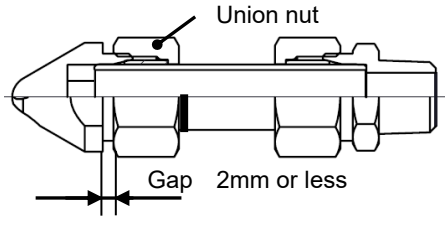
Number	Parts name	Material
1	Body	ADC
2	Bonnet	ADC
3	Diaphragm Ass'y	FKM、resin
4	Spring	SUS
5	Snap ring	SUS
6	Steel ball	SUS
7	Screw	SUS
8	Speed controller	Brass(Electroless nickel plating) FKM

∗ Component composition and structure inside the Bonnet are not disclosed.
∗ Seal material is FKM.
∗ Other materials are AL and resin.

8. How to mount a Nozzle

Preparation	**1.** Check that the ferrule is mounted inside the fitting as shown in figure on the right. Hand-tighten the union nut. Ensure ferrule is aligned properly.	
	2. Insert the nozzle until it touches the fitting body. Then, mark a line on the nozzle at the edge of the union nut.	
	3. Remove the nozzle once, and check the dimension from the end of the nozzle to the marking. If the dimension is different from the 17mm, verify the alignment of the nozzle and adjust.	
Tightening	**4.** After verifying the dimension, insert the nozzle into the fitting body again. Confirm that the nozzle is inserted down to the marking.	
	5. Using the tightening tool, tighten the union nut so that the gap between the fitting body and the union nut becomes 2mm or less. **6.** Pull the nozzle by hand to ensure that the nozzle is secure.	

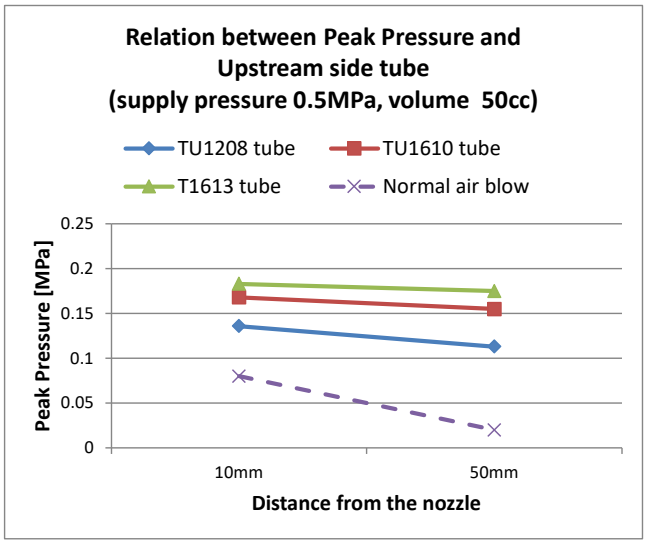
8. How to mount a Nozzle *With a silencer

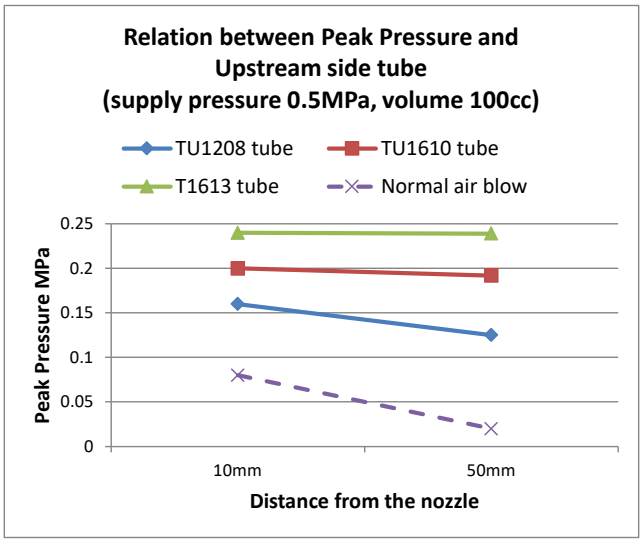
Preparation	**1.** Check that the ferrule and element is mounted inside the silent nozzle as shown in figure on the right. Hand-tighten the union nut. Ensure ferrule is aligned properly.	 Tighten the union nut until it touches the silent nozzle
	2. Insert the silent nozzle until it touches the nozzle. Then, mark a line on the nozzle at the edge of the union nut.	Insert the silent nozzle until it touches the tip of the nozzle 
	3. Remove the silent nozzle once, and check the dimension from the end of the nozzle to the marking. If the dimension is different from the 17mm, verify the alignment of the nozzle and adjust.	Remove the silent nozzle once, and check the dimension. 
Tightening	**4.** After verifying the dimension, insert the nozzle into the fitting body again. Confirm that the nozzle is inserted down to the marking.	Insert to the marking. 
	5. Using the tightening tool, tighten the union nut so that the gap between the fitting body and the union nut becomes 2mm or less. **6.** Pull the nozzle by hand to ensure that the nozzle is secure.	Tighten the union nut so that the clearance is 2mm or less. 

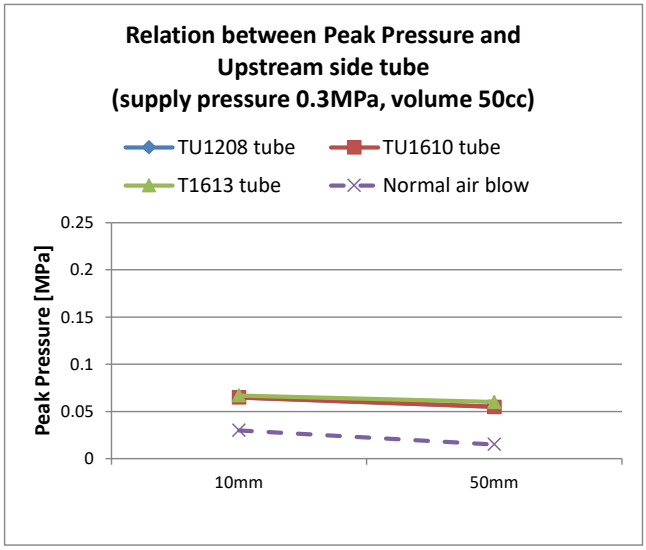
9. Relationship between Upstream Piping and Peak Pressure

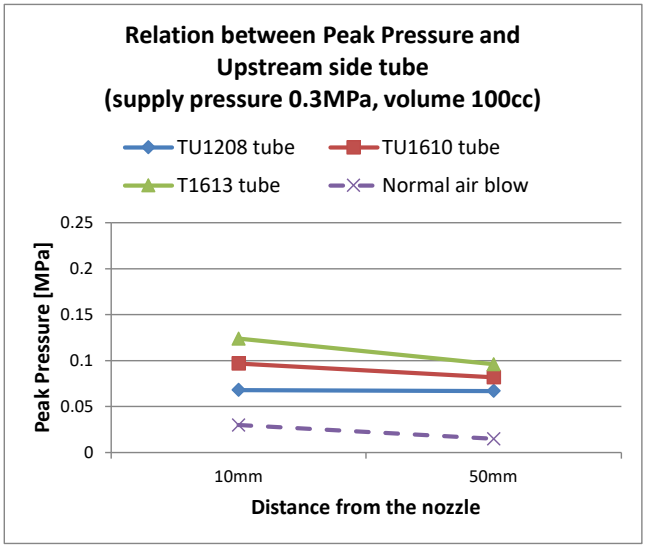
Relationship between Upstream side Tube and Peak Pressure

<Measurement conditions>
Upstream side: Tube T1613, TU1610, and TU1208. The length of the tube is cut so that the pipe volume is 100cc and 50cc.
Downstream side: Standard nozzle (50mm)
Supply pressure: 0.3 MPa, 0.5MPa
Measurement point: 10mm and 50mm from the opening of the nozzle.



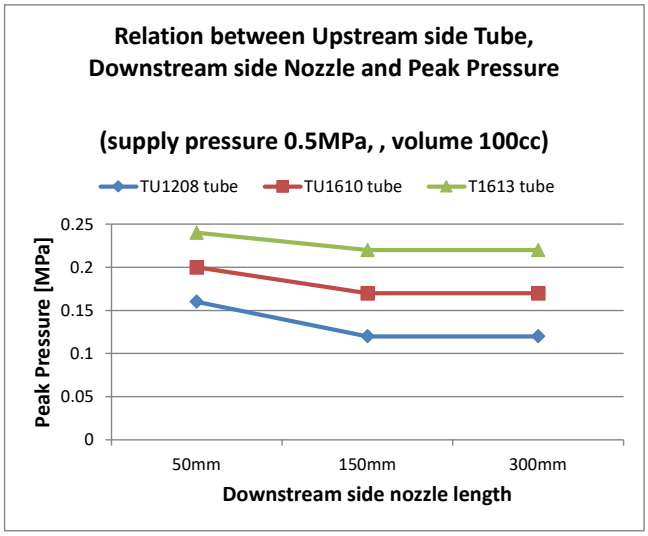






Relationship between Upstream side Tube, Downstream side nozzle and Peak Pressure

<Measurement conditions>
Upstream side: Tube T1613, TU1610, and TU1208. The length of the tube is cut so that the pipe volume is 100cc.
Downstream side: Standard nozzle (50,150,300mm)
Supply pressure: 0.5 MPa
Measurement point: 10mm from the opening of the nozzle.



＊ In SMC test conditions.

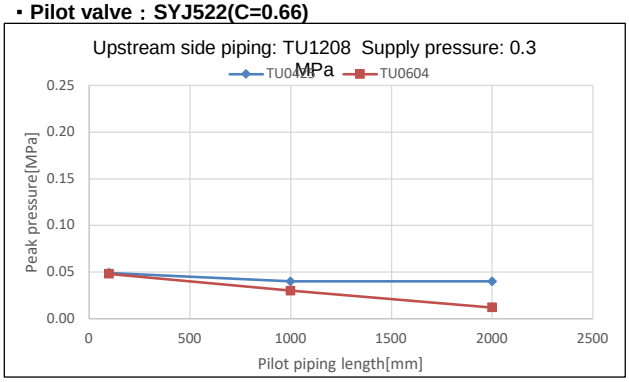
10. Relationship of Pilot Valve/Piping Condition and Peak Pressure (Air Operated Type)

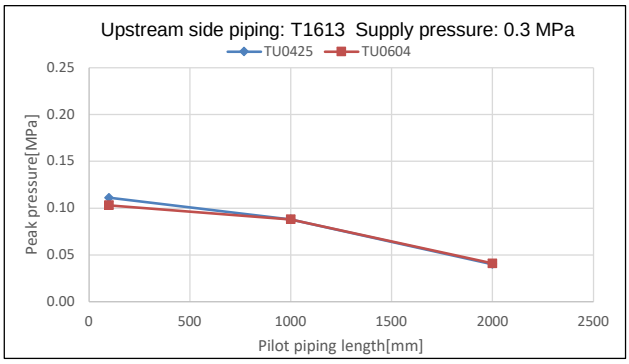
Peak pressure in different pilot valve/piping conditions and upstream side tubes

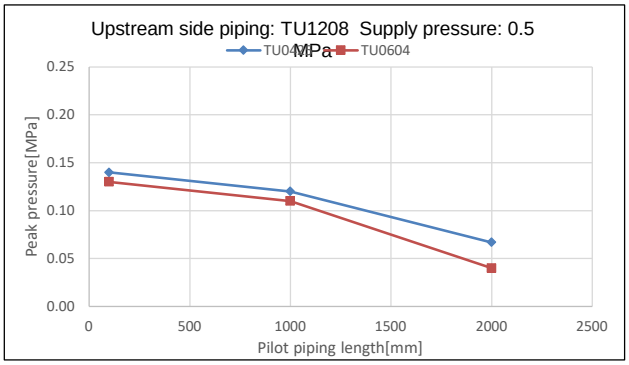
<Peak pressure measurement condition>
Upstream side: Tubes of T1613 and TU1208, equivalent length of piping volume 100 cc
Downstream side: Standard nozzle (length 50 mm)
Supply pressure：0.3MPa、0.5MPa
Measurement position: 10 mm from the nozzle opening

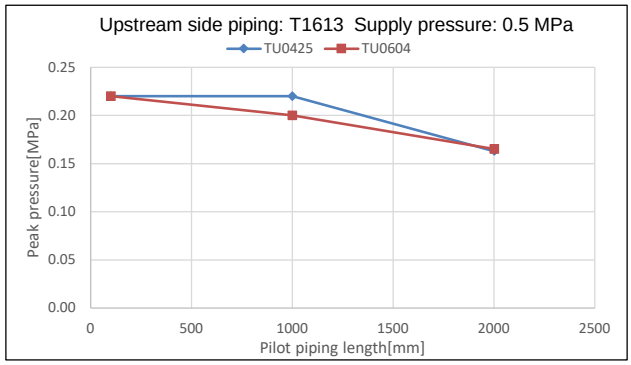
<Pilot valve condition>
Solenoid valve: SYJ522 (C = 0.66), VQZ225 (C = 1.8)
Pilot piping diameter: TU0425, TU0604, TU0805
Pilot piping length: 100, 500, 1000, 2000 mm

・Pilot valve：SYJ522(C=0.66)

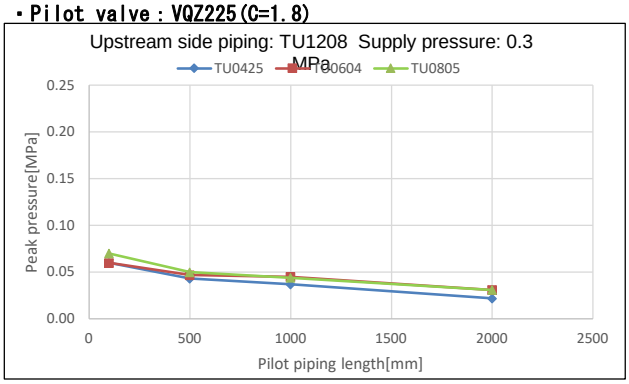


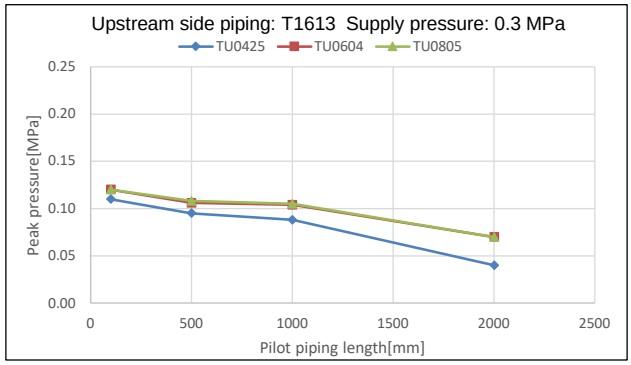


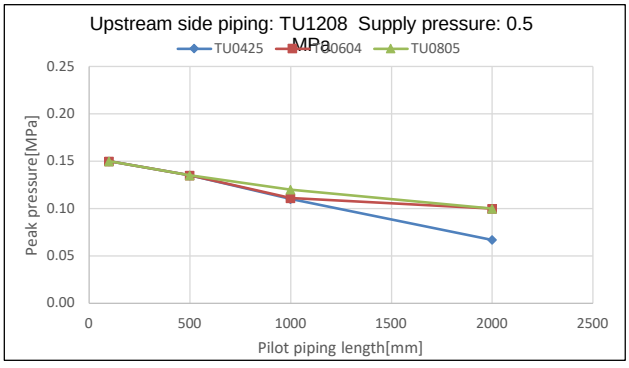


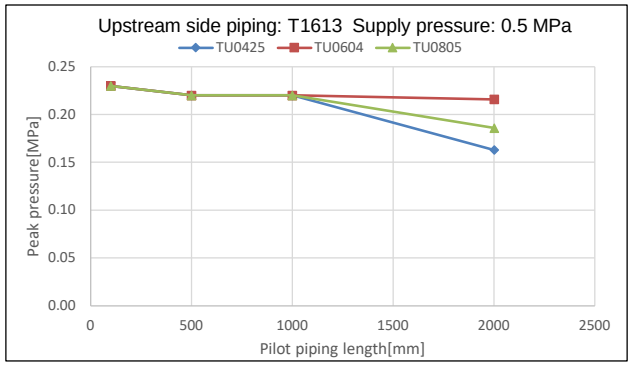


・Pilot valve：VQZ225(C=1.8)









・Image of peak pressure, response time, and pilot condition (reference)

Peak pressure		Low	→	High
Response time		Slow	→	Fast
Pilot valve flow-rate characteristics		Small	→	Large
Piping	I.D.	Small	→	Large
	Length	Long	→	Short

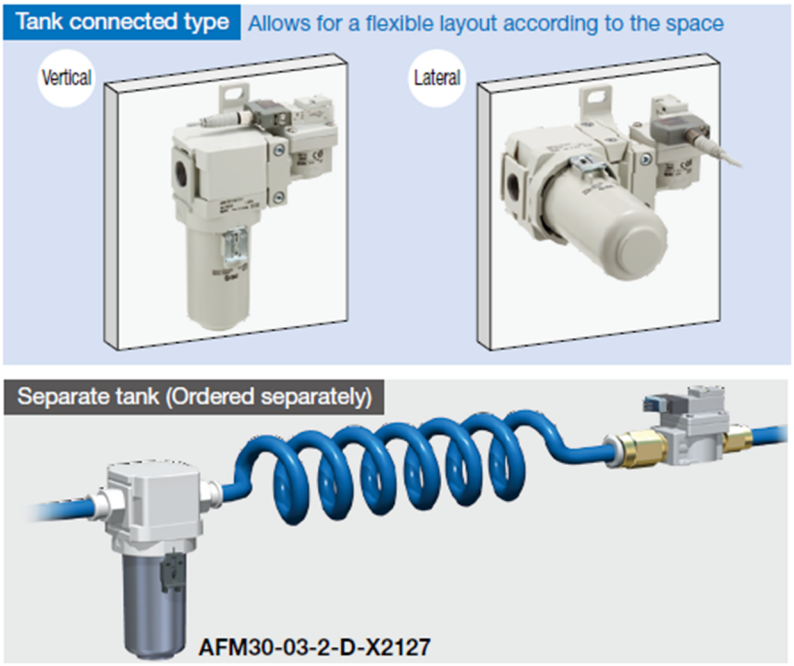
＊In SMC test conditions.

11. Made to order specification　Tank connected type

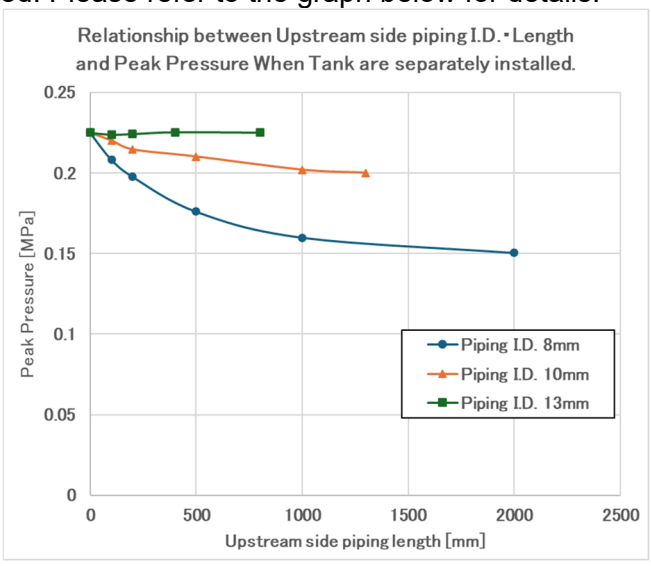
＜Features＞

・Instantaneous inlet tank air discharge, with peak pressure increased by 3 times or more, regardless of the piping conditions.
※Compared with the existing model (continuous blow),according to blow conditions.
・Reduced installation work・・・・Complicated piping management not required
・Simplified equipment design・・・Inlet piping volume selection not required
・Stable discharge pressure・・・・Stable blow possible due to reduced susceptibility to inlet piping effects

＜Allows for a flexible layout according to the space＞



※The individual tank can be used separately, without being connected to the IBV unit.
In such cases, be sure to follow the piping requirements below for the piping between the tank and the IBV.
・Piping I.D. : Φ8 mm or more
・Piping length : Within the recommended piping length
By installing the tank separately and keeping the piping length as short as possible, the peak pressure can be improved. Please refer to the graph below for details.



＜How to order＞

Tank connected type **IBV1 ❶ T ❷ −5 □ − □ −X101**

❶ Action

0	Solenoid valve mounted type
1	Air operated type without a pulse function
2	Air operated type with a pulse function

❷ Tank mounting direction

1	Vertical
2	Lateral

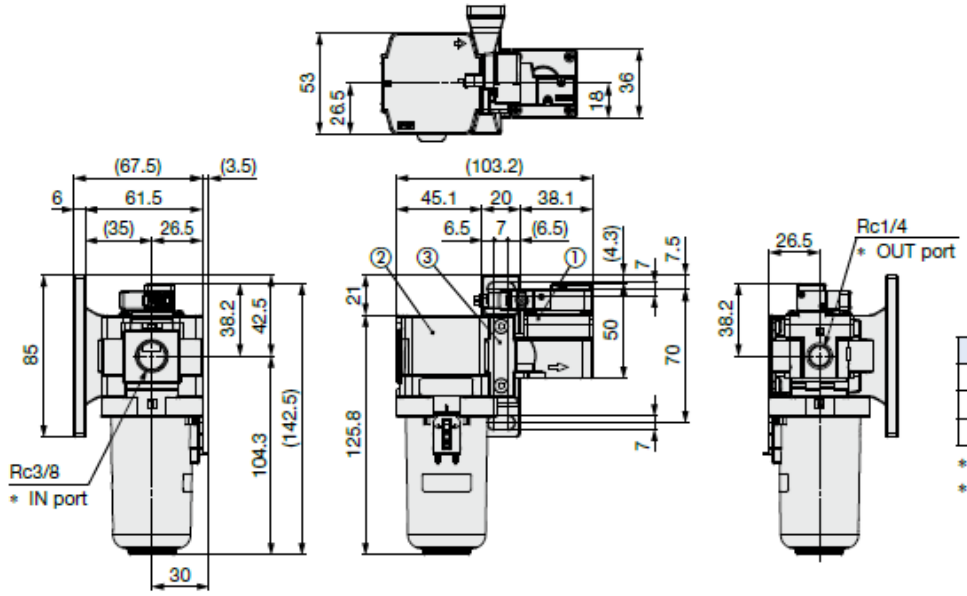
Enter standard product number. (page 3)

* Rated voltage, electrical entry type
  · Only the IBV10 can be selected.
* Electrical entry direction
  · Only the IBV10 can be selected.
  · For the IBV10T2, "Nil" cannot be selected.

＜External dimensions drawing＞

・Solenoid valve type vertical specification：IBV10T1-5*-*-X101

※Drawings show the IBV10T1-5L-X101.
Refer to the IBV10 "Dimensions" page for details on other electrical entry types / directions.

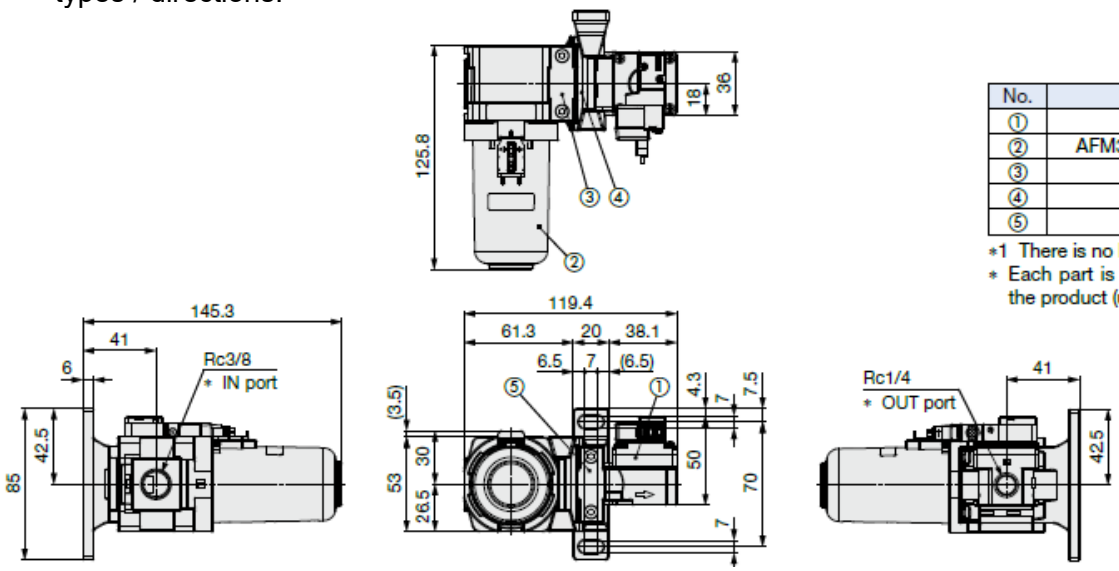


No.	Part no.
①	IBV10-5□-□
②	AFM30-03-2-D-X2127*1
③	Y300T-D

*1 There is no built-in filter element.
* Each part is shipped together with the product (unassembled).

・Solenoid valve type horizontal specification：IBV10T2-5*-*-X101

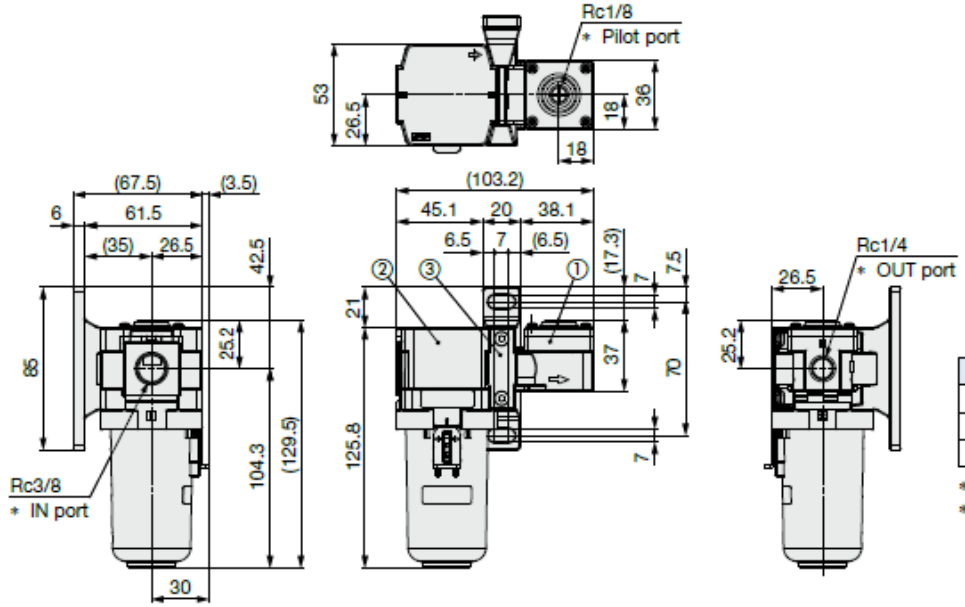
※Drawings show the IBV10T2-5L-C-X101.
Refer to the IBV10 "Dimensions" page for details on other electrical entry types / directions.



No.	Part no.
①	IBV10-5□-□
②	AFM30-03-2-D-X2127*1
③	Y300-D
④	E310T-D
⑤	Y300T-D

*1 There is no built-in filter element.
* Each part is shipped together with the product (unassembled).

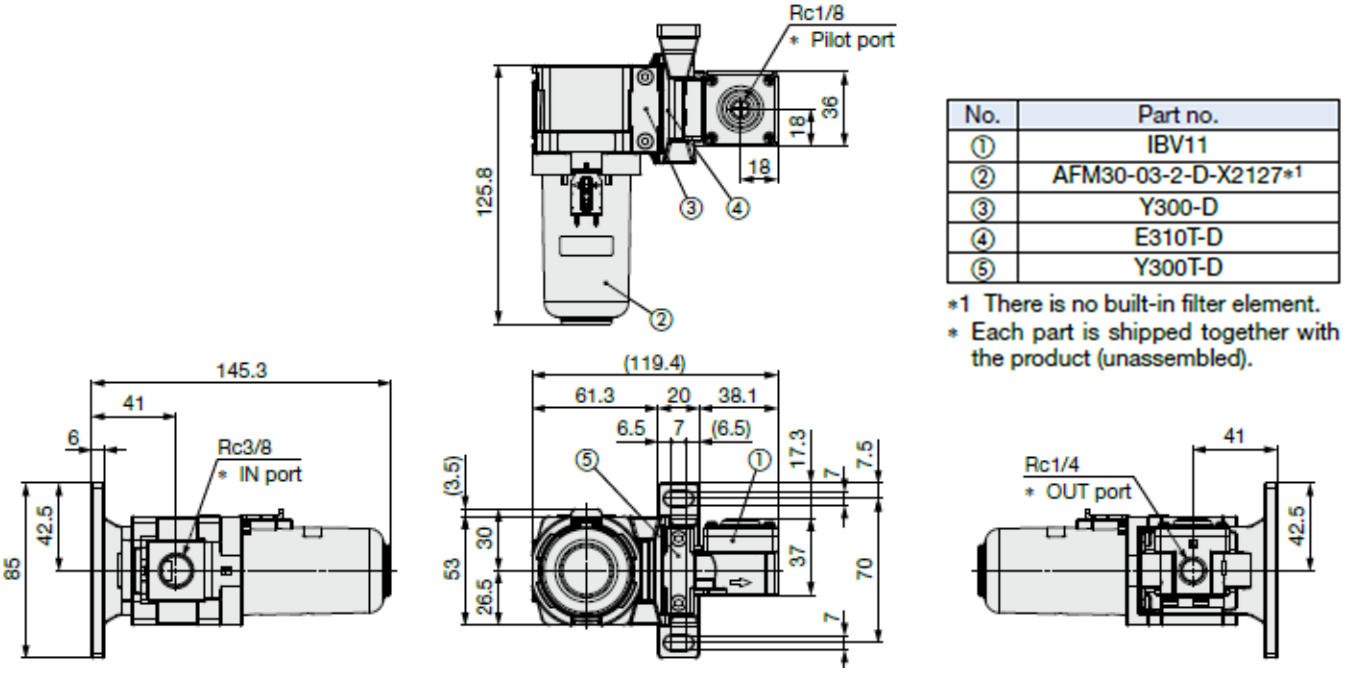
・Air operated type without pulse function vertical specification：IBV11T1-X101



No.	Part no.
①	IBV11
②	AFM30-03-2-D-X2127*1
③	Y300T-D

*1 There is no built-in filter element.
* Each part is shipped together with the product (unassembled).

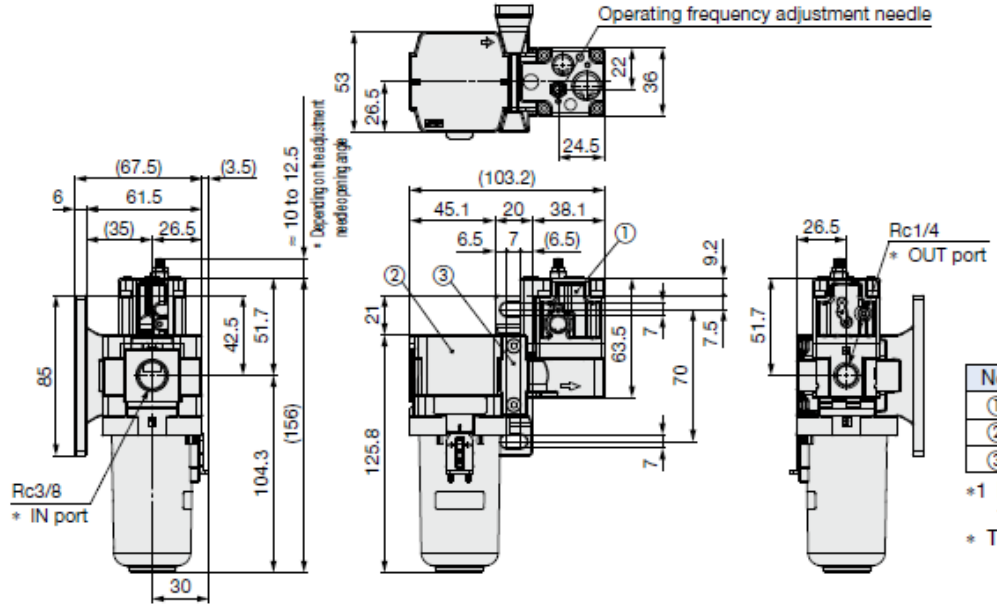
・Air operated type without pulse function horizontal specification：IBV11T2-X101



No.	Part no.
①	IBV11
②	AFM30-03-2-D-X2127*1
③	Y300-D
④	E310T-D
⑤	Y300T-D

*1 There is no built-in filter element.
* Each part is shipped together with the product (unassembled).

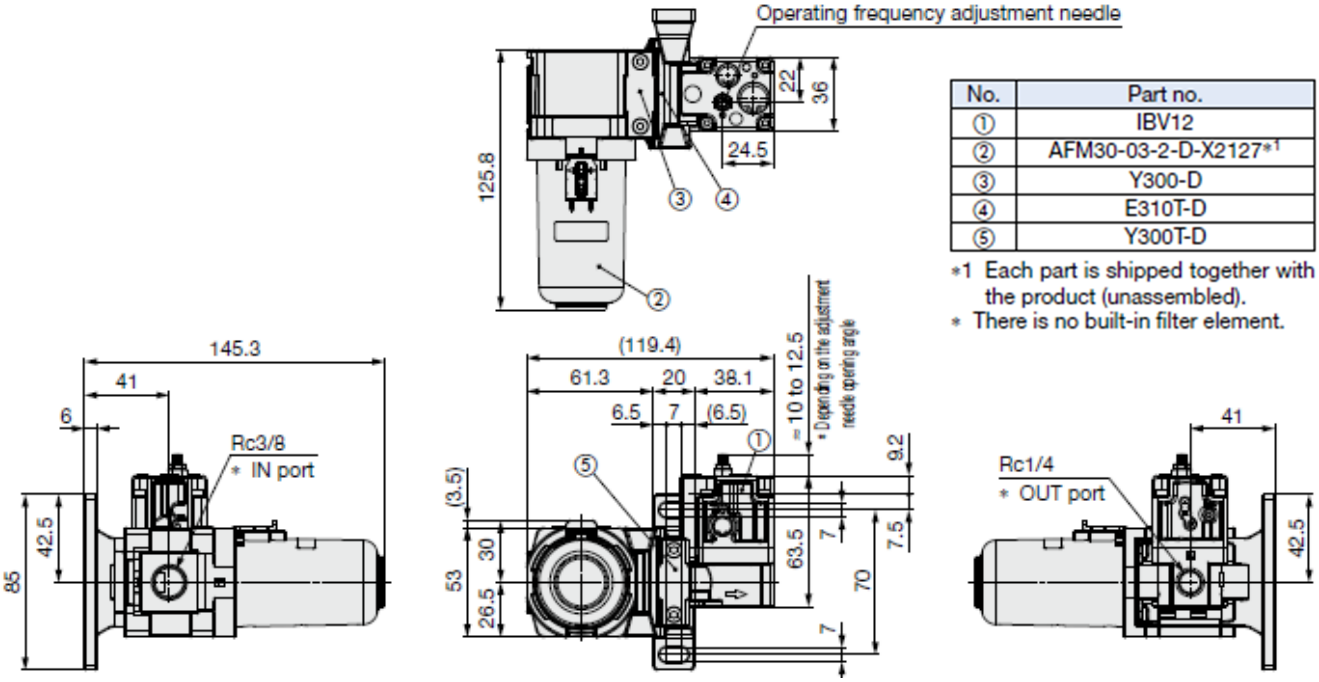
・Air operated type with pulse function vertical specification：IBV12T1-X101



No.	Part no.
①	IBV12
②	AFM30-03-2-D-X2127*1
③	Y300T-D

*1 Each part is shipped together with the product (unassembled).
* There is no built-in filter element.

・Air operated type with pulse function horizontal specification：IBV12T2-X101



No.	Part no.
①	IBV12
②	AFM30-03-2-D-X2127*1
③	Y300-D
④	E310T-D
⑤	Y300T-D

*1 Each part is shipped together with the product (unassembled).
* There is no built-in filter element.

Impact Blow Valve
Safety Instructions

⚠ 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 catalog 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 catalogs 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 business.
Use in non-manufacturing business 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 catalog 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.

⚠ Safety Instructions	Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

IBV Series
Specific Product Precautions 1

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For other precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Prior to Use

⚠Warning

As the pressure of the air blow is quite powerful, do not aim the product at another person during operation. It may cause danger to personnel.
Additionally, the following precautions should be taken before use.

1. **Before use, make sure that the blow pressure, or blow, will not cause surrounding objects to scatter and injure others or damage workpieces, equipment, etc., in the vicinity.**
2. **Wear protective eyewear when operating the product to protect your eyes from scattering debris.**
3. **This product is not a toy. Do not play with the product or use it as an air gun for fun.**
4. **Air pressure may cause the nozzle to fly off during operation if it is not properly tightened. To prevent this, be sure to check the nozzle for loosening by pulling on it with your hands before use.**

⚠Caution

1. **For the solenoid valve type, please refer to the following cautions:**
   If a load is applied to the solenoid valve due to excessive impact or vibration, or if the lead wire is pulled, the mounting screws may loosen, resulting in a malfunction.
   When mounting this product, be sure to also secure the lead wires before use.
   When performing manual operation, be sure to support the solenoid valve to prevent the mounting screws from loosening.
2. **Note the following for the air operated type without a pulse function.**
   Make sure that the pilot pressure does not drop below the main pressure when blowing.
   When supplying pressure, be sure to pressurize the IN port after pressurizing the pilot port.
   When the pilot port is pressurized and the IN port is not pressurized, leakage occurs from the IN port, but it is not abnormal.
   Refer to page 7 and select a model by referring to the guide for a pilot solenoid valve, pilot piping diameter, and length.
3. **Note the following for the air operated type with a pulse function.**
   If the nozzle diameter is small, operating frequency adjustment is difficult. Therefore, we recommend mounting a dedicated nozzle instead.
   As this product uses compressed air to mechanically perform intermittent operation, the air discharge state may vary depending on the operating frequency, supply pressure, temperature, etc.
   Since this product is air-operated, it cannot be stopped by the IBV12 itself.
   Even when the speed controller is fully closed, a small leakage from the speed controller may cause the unit to operate.
   When installing this product, be sure to install a valve for supply pressure ON-OFF control on the primary side.

Selection

⚠Warning

1. **Confirm the specifications.**
   Products represented in this catalog are designed only for use in compressed air systems. Do not operate at pressures, temperatures, etc., beyond the range of specifications, as this can cause damage or malfunction.

⚠Caution

1. **This product enables high peak pressure blowing by instantly discharging air filled in the primary pipework when the main valve is opened, with a dedicated nozzle attached to the secondary side. This air-saving product is based on the concept of using the high peak pressure to perform work in a short time, thereby significantly reducing air consumption and working time.**
   If the secondary side nozzle has a small diameter, the filled air cannot be discharged all at once, so highpeak pressure is not output and the blowing becomes normal continuous blowing. When using a small-diameter nozzle on the secondary side, it is recommended to select a general 2-port valve.
   The high peak pressure is discharged immediately after the main valve opens (page 4), after which the product is in a continuous blowing state at low pressure. Continuous blowing with this product is ineffective and results in high air consumption, so it is recommended that the product is used by repeatedly switching the power on and off and that the continuous blowing time is kept as short as possible.
2. **This product is based on the concept that the piping volume connected to the inlet side can be used in place of a tank, making a built-in tank unnecessary. It is recommended that the inside diameter of the inlet piping be as thick as possible.**
   Example) Inlet volume: 100 cc (piping volume equivalent to IBG1 series)
   · Piping I.D.: ø8 ····· Length: 2000 mm
   · Piping I.D.: ø10 ····· Length: 1300 mm
   · Piping I.D.: ø13 ····· Length: 800 mm
   * The blow pressure discharged can be adjusted by adjusting the inlet side piping conditions.
   * When not enough air is being supplied, the **main valve will oscillate, which may result in a reduced product life**. Therefore, use inlet piping with an inside diameter of ø8 or more, and take measures to prevent the pressure from dropping as much as possible.
3. **For the nozzle to be mounted on the outlet side, a dedicated nozzle is recommended. If operating noise is a concern, a silencing nozzle is also available.**

Nozzle type	Part number
Dedicated nozzle	**IBG1-12-10-□(-X1)**
Silencing nozzle	**IBG1-12S**
Set including the dedicated nozzle and silencing nozzle	**IBG1-12-10-□S(-X1)**

* □: Nozzle length (50, 100, 150, 300, 600, 1000)
  Refer to "Model" on page 8 for details.

The dedicated nozzle supports only taper thread specifications.
If G or NPT thread is required, consider the combination of One-touch fitting and tube. In that case, an inside diameter (I.D.) of ø8 to ø10 for the tube is recommended.

IBV Series
Specific Product Precautions 2

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For other precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smcworld.com

Selection

4. The impact resistance and vibration resistance of this product are 150 [m/s^2] and 30 [m/s^2], respectively. Be sure to prevent impact or vibration exceeding the allowable values from being applied to the product.

5. For the IBV12, high peak pressure can be pulsed by supplying air to the inlet side.

∗ The operating frequency can be adjusted by adjusting the operating frequency adjustment needle.
For this reason, we recommend mounting a 2-port solenoid valve on the inlet side of the impact blow valve.
For the 2-port valve, select a valve with a sonic conductance C value of 8 or more.

Mounting / Piping

⚠Warning

1. When screwing a pipe thread or nozzle, tighten it within the torque range shown in the table below. As a guide, 2 to 3 rotations with a tool are required after hand-tightening.

Be careful that tightening with torque beyond the range in the table below may cause damage to the body.

Number of screw-in connections	Thread size	Tightening torque [N·m]	Note
Pilot port	1/8	7 to 9	Air operated type only
OUT port	1/4	12 to 14	∗1
IN port	3/8	22 to 24	

∗1 Ensure the nozzle is tightened correctly to prevent it from loosening during operation.

Operating Environment

⚠Warning

1. Do not use in an atmosphere where corrosive gases, chemicals, sea water, water, or water steam are present. Do not use in cases where there is direct contact with any of the above.

2. Do not expose the product to direct sunlight for an extended period of time.

3. Do not use in locations where radiated heat will be received from nearby heat sources.

4. Do not use in an environment where static electricity is a problem. It may result in system failure or malfunction. Please contact SMC for use in such an environment.

5. Do not use in an environment where spatters are generated. Spattering may result in a fire hazard. Please contact SMC for use in such an environment.

Handling

⚠Warning

1. When the product is used or stored, confirm that no twisting, turning, or tensile force or moment load is applied to the port or tube. This may cause fittings to fracture or tubes to be crushed, burst, or come loose.

⚠Caution

1. Pressurizing the air blow discharge port may result in the breakage of the product.

2. When blowing continuously for a long time, the main valve may close automatically due to its structure, but this is not abnormal. In that case, turn off the power and then turn it on again to operate normally.

Revision history
1. Addition of notes 2. Delete address 3. Add Air operated type with pulse function 4. Add a made to order specification

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