

Air Saving

Impact Blow Valve

Increased impact force due to higher peak pressure

New



* Solenoid valve type

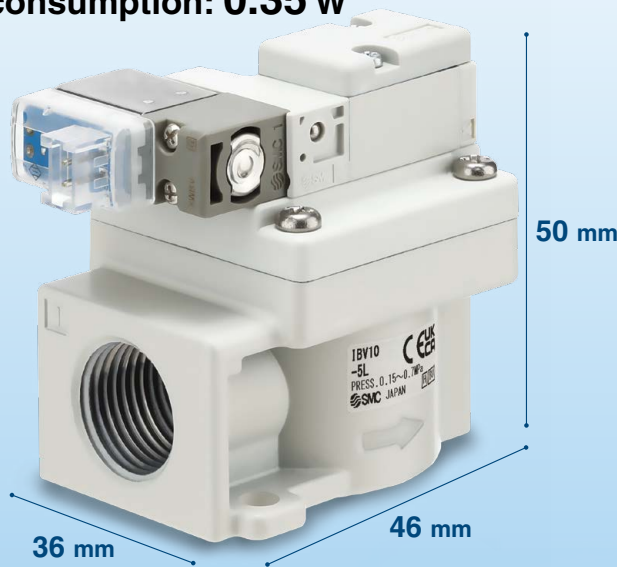


Compact design

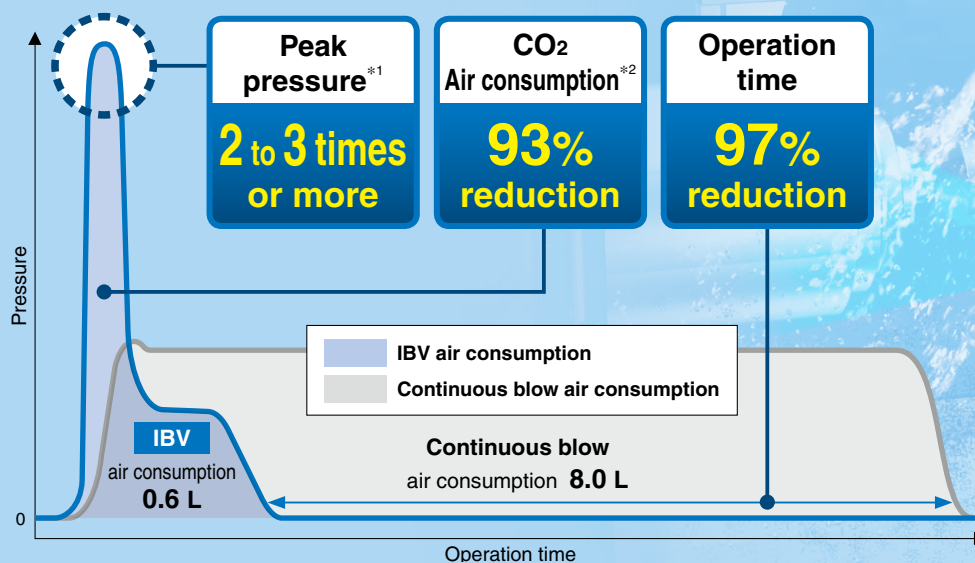
Solenoid Valve Type

Air Operated Type

Power consumption: 0.35 W



Instantaneous air blow reduces CO₂, air consumption, and operation time



*1 Compared with the existing model (According to blow conditions)
*2 Pressure: 0.5 MPa (Based on SMC's specific testing conditions)

IBV Series



CAT.ES70-64A

Operation time and air consumption can be reduced.

Operation time **97% reduction**

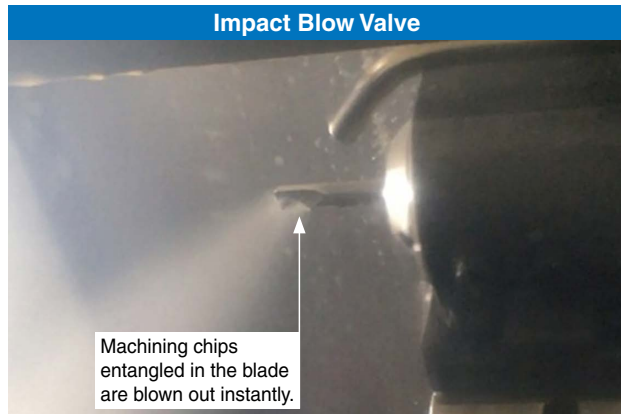
Air consumption **93% reduction**

* Pressure: 0.5 MPa

Remove machine chips inside machining equipment.

Operation time: **0.1 s** Air consumption: **0.6 L**

Operation time: **4 s** Air consumption: **8 L**



Compact design with a tank-less construction

Use of piping instead of tanks

Adjustable peak pressure

The peak pressure can be adjusted by the inlet piping conditions.

Peak pressure (Compared with the existing model)	I.D.	Length [mm]
2 times	ø8	2000
2.5 times	ø10	1300
3 times	ø13	800

* Based on SMC's measurement conditions
 * Oscillation may occur if only a minimal amount of air is supplied. Use inlet piping with an inside diameter of ø8 or more, and take measures to prevent the pressure from dropping as much as possible. (Refer to page 6.)

Weight

100 g (Solenoid valve type/L plug connector)
110 g (Solenoid valve type/M8 connector)
75 g (Air operated type)

Diaphragm material

FKM : Air operated type
HNBR: Solenoid valve type

Nozzle/Chip guard (Please order it separately.)

Long nozzle

Nozzle length:
50/100/150/300/600/1000 mm

Long nozzle with a silencer

80 dB(A) or less

* Based on SMC's measurement conditions

Chip guard

Guards against the blown machining chips and workpiece

* Please order it separately. It is possible to use the guard with a silencer, but in that case, mount the guard before mounting the silencer.

Applications

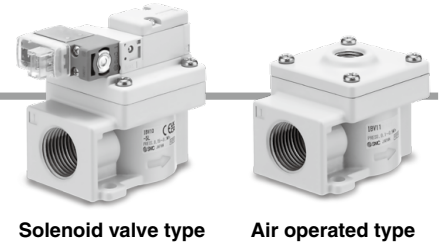
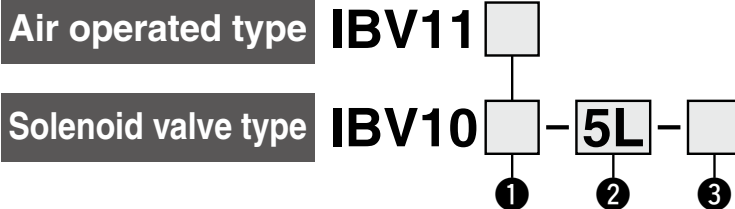
For the separation of workpieces stuck together with oil, etc.

Air operated type for use with coolant

Air Saving Impact Blow Valve IBV Series



How to Order



① Thread type

Symbol	Type
Nil	Rc
N	NPT
F	G

② 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

③ Electrical entry direction

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

Specifications

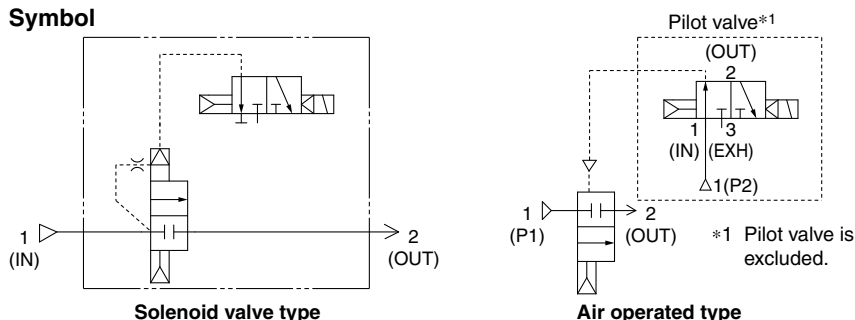
Part no.		IBV10□-5L-□*1	IBV10□-5WA-□*1	IBV11□
Action		Electric type		Air type
Valve specifications	Fluid	Air		
	Operating pressure range	0.15 to 0.7 MPa		0.1 to 0.5 MPa
	Ambient temperature	5 to 50°C		
	Fluid temperature	5 to 50°C		
Coil specifications	Rated voltage	24 VDC*2		—
	Power consumption	0.35 W		—
	Allowable voltage fluctuation	±10% of rated voltage		—
	Allowable leakage voltage	3% or less of rated voltage		—
	Electrical entry	L plug connector	M8 connector	—
Dimension, Weight	Dimensions	36 x 46 x 50 (82.8 cm ³)		36 x 46 x 37 (61.3 cm ³)
	Port size	IN: 3/8 OUT: 1/4 Pilot port: 1/8 * IBV11□ only		
	Product weight	100 g	110 g	75 g

*1 IBV10□: CE/UKCA is a standard feature in the solenoid valve mounted type.

*2 In addition to 24 VDC, voltages supported by the SYJ300 series are also available. Please contact us for details.

* Pilot pressure of the air operated type, should be equivalent to the operating pressure.

Symbol



Nozzle/Chip guard (Please order it separately.) p. 5

Description	Contents
Long nozzle	Nozzle length (mm): 50/100/150/300/600/1000
Long nozzle with a silencer	
Chip guard	Guards against the blown machining chips and workpiece

⚠ Caution

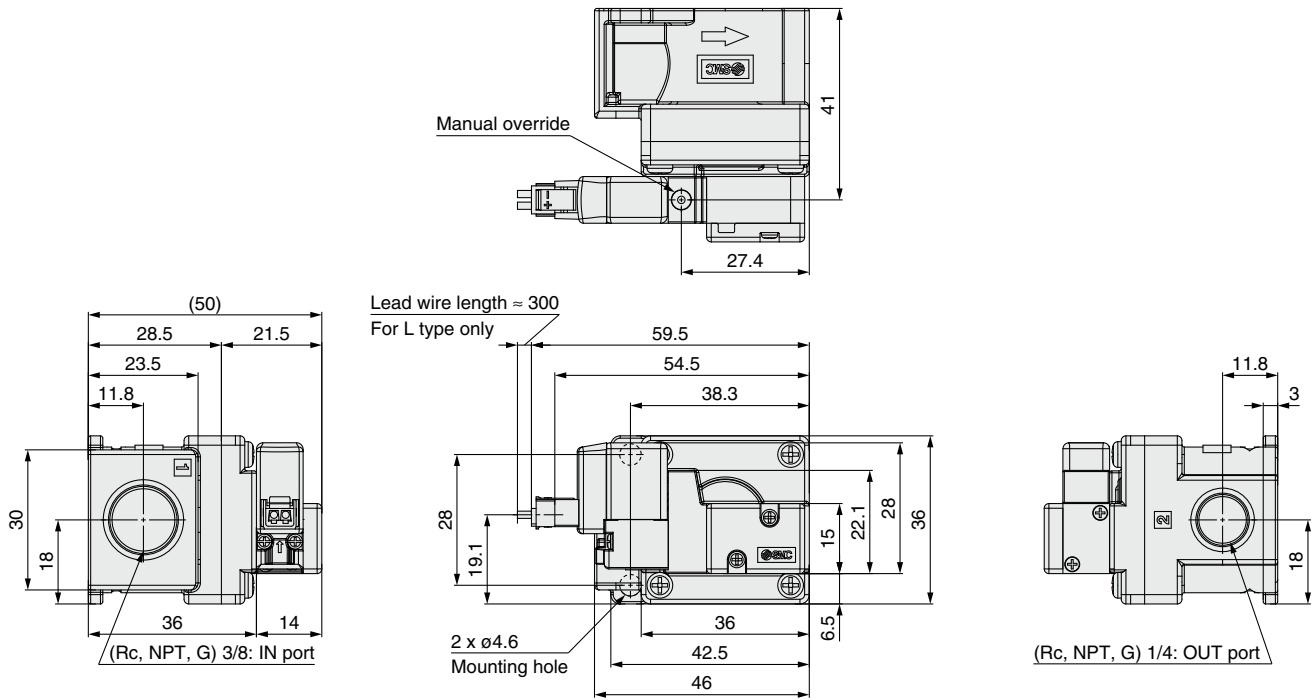
Pilot valves and piping requirements to be used for the air operated type are recommended as follows:

- Pilot valve: 3-port N.O. solenoid valve with the flow path 2 → 3 (A → R) and flow rate characteristics C = 1.8 [dm³/(s·bar)] or more
Model number examples: VQZ225, 245, SYJ722, 724, etc.
 - Pilot piping inside diameter (I.D.): ø4 or ø5
Model number examples: Polyurethane tubing TU0604, TU0805, etc.
 - Pilot piping length: 1000 mm or less
- Refer to the operation manual for other requirements.

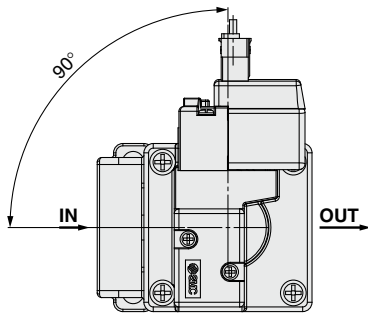
IBV Series

Dimensions

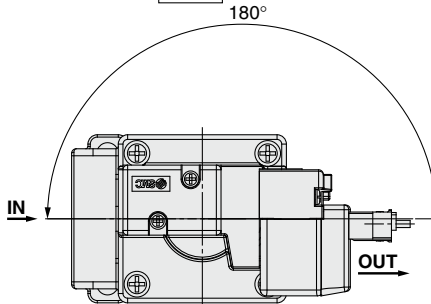
Solenoid valve type: IBV10□-5L□-□ L plug connector specifications



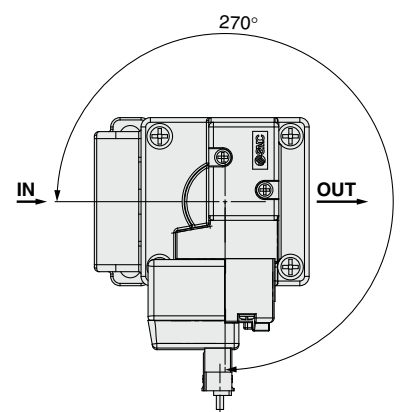
Electrical entry direction **90°**



180°

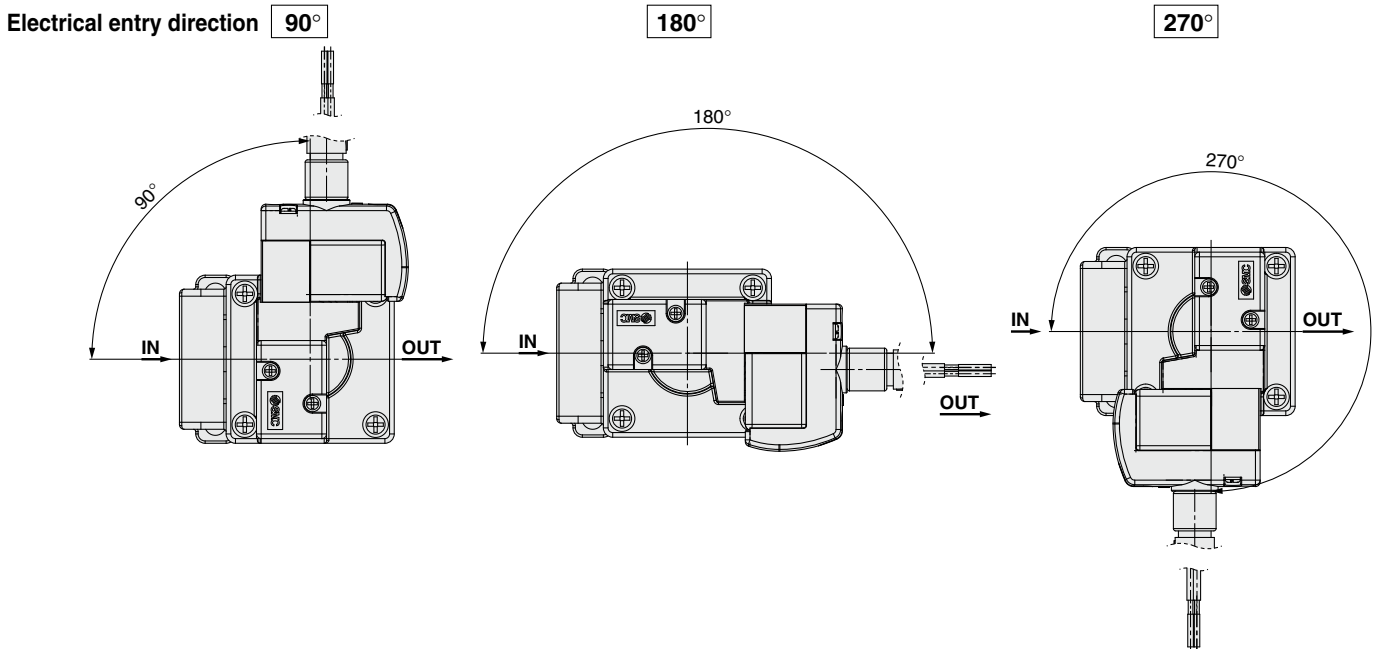
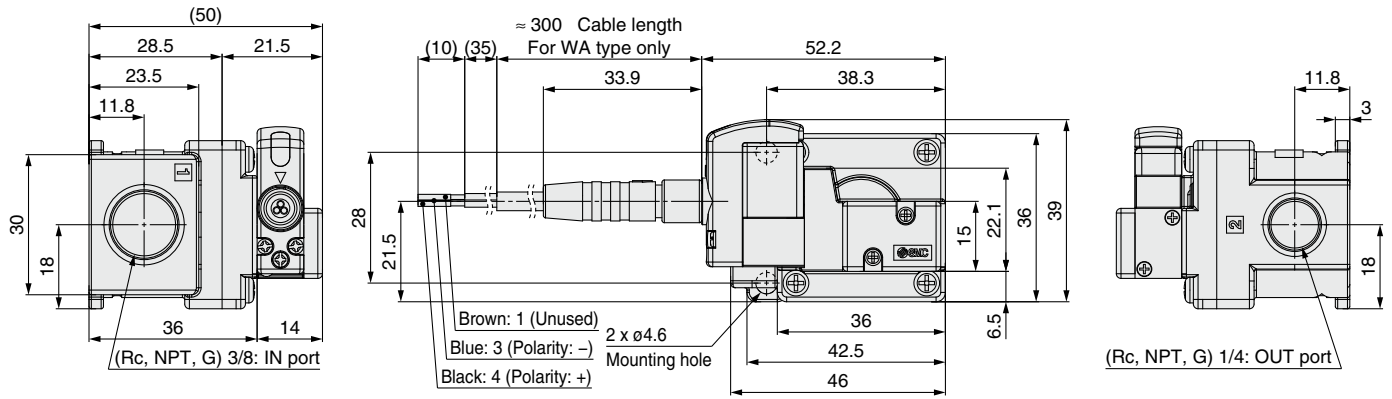


270°

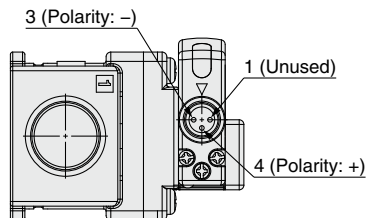


Dimensions

Solenoid valve type: IBV10□-5WA□-□ M8 connector specifications



For WAO type

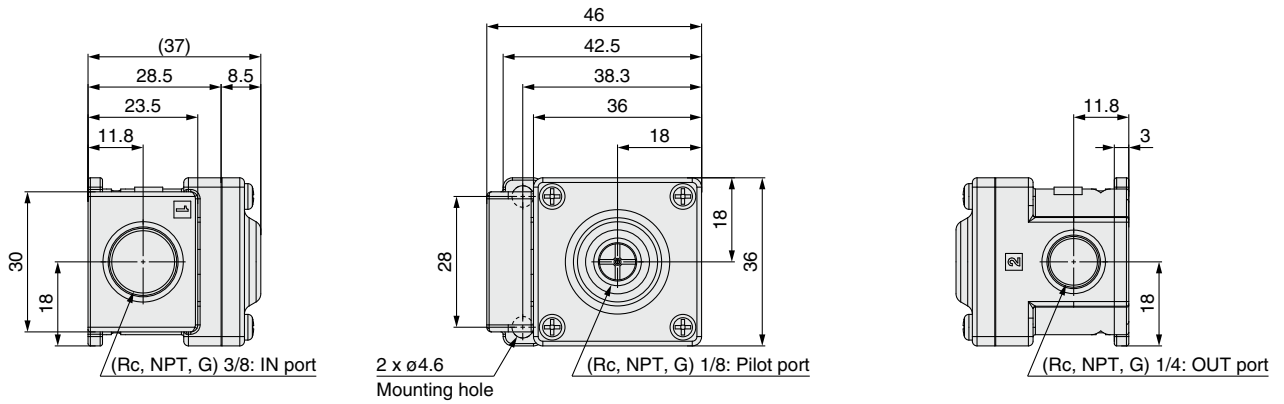


* Please contact us for details on other wiring specifications, voltage, and electric specifications.

IBV Series

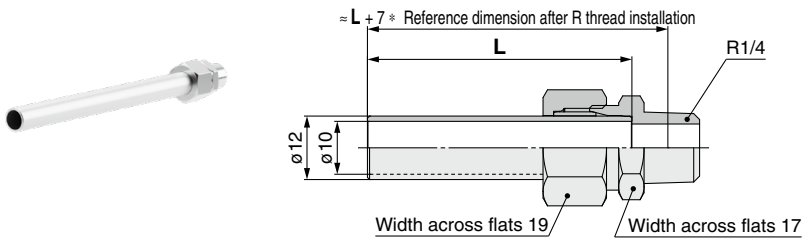
Dimensions

Air operated type: IBV11□



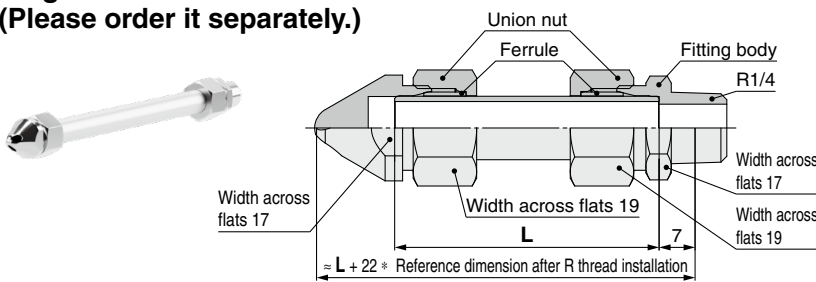
Option

Long nozzle (Please order it separately.)



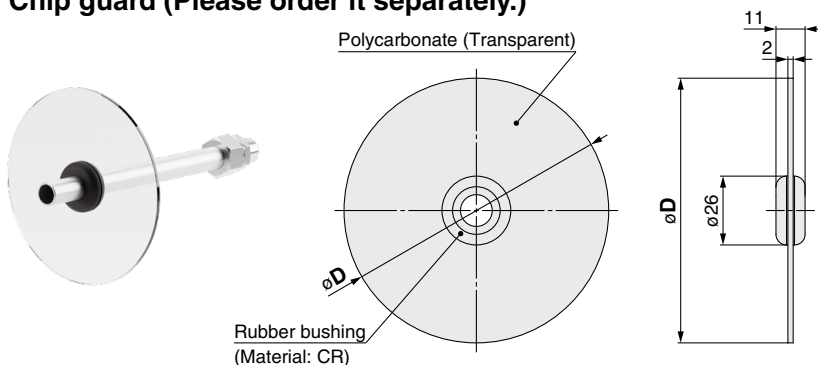
Part no.	Nozzle I.D.	Connection thread	L [mm]
IBG1-12-10-50	$\phi 10$	R1/4	50
IBG1-12-10-100			100
IBG1-12-10-150			150
IBG1-12-10-300			300
IBG1-12-10-600-X1			600
IBG1-12-10-1000-X1			1000

Long nozzle with a silencer (Please order it separately.)



Part no.	L [mm]
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.)



Part no.	ϕD [mm]
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.



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 air operated type, please refer to the following cautions:
 - 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 2 and select a model by referring to the guide for a pilot solenoid valve, pilot piping diameter, and length.
 - Refer to the operation manual for other requirements.

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 high peak 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 (see instruction manual, p. 3), 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.

Selection

Caution

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.: $\phi 8$ Length: 2000 mm
- Piping I.D.: $\phi 10$ Length: 1300 mm
- Piping I.D.: $\phi 13$ 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 $\phi 8$ 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 5 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 $\phi 8$ to $\phi 10$ for the tube is recommended.

4. The impact resistance and vibration resistance of this product are 150 [m/s²] and 30 [m/s²], respectively. Be sure to prevent impact or vibration exceeding the allowable values from being applied to the product.

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.



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>

Operating Environment

Warning

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.

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 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 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.

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