

# AirTAC

## PRODUCTS CATALOG-2024

Control components, Preparation unit, Accessories



# **AirTAC ● Pneumatic Equipment**

**Products Catalog-2024**

**Control components • Preparation unit • Accessories**





## Corporate Profile

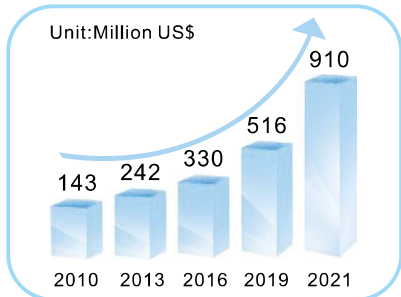


**2019:**  
AirTAC Ningbo the second  
Production base established



**2018:**  
AirTAC USA established

Annual revenue over the years



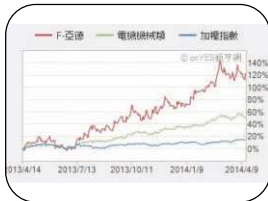
**2016-2018:**  
AirTAC(Guangdong/Tianjin /Fujian) Intelligent Company established



**2012-2015:**  
AirTAC Singapore, AirTAC Japan, AirTAC Malaysia, AirTAC Thailand established



**2015:**  
AirTAC (Jiangsu) established



**2010:**  
AirTAC IPO In Taiwan  
(Stock code: 1590.TW)



**2016:**  
New production base of AirTAC Tainan established

**2011:**  
Expanded China Sales and R&D center



**2008:**  
AirTAC Italy established



**2002:**  
AirTAC Ningbo established

**1988:**  
AirTAC Taiwan established



**1998:**  
AirTAC Guangdong established





## Corporate Profile



● **2019**  
AirTAC Ningbo the second Production base established

AirTAC Ningbo the second Production base  
Land area: 266,667m<sup>2</sup>  
Add: No.89, Nandu Rd., Fenghua District, Ningbo, Zhejiang, China

● **2016**

New production base of AirTAC Tainan established

Taiwan Tainan Production base  
Land area: 71,333m<sup>2</sup>  
Add: No.28, Kanxi Rd., Xinshi District, Tainan, Taiwan



● **2002**  
AirTAC Ningbo established

AirTAC Ningbo the first Production base  
Land area: 240,000m<sup>2</sup>  
Add: No.88, Siming E. Rd., Fenghua District, Ningbo, Zhejiang, China



● **1998**  
AirTAC Guangdong established

AirTAC Guangdong  
Land area: 26,667m<sup>2</sup>  
Add: No.7, Kaixuan Rd., Nanhai District, Foshan, Guangdong, China





## Global Network of Marketing & Service

AirTAC International Group has more than 100 direct sales branches/sales sections in Chinese mainland, and thousands of distributors around the world, mainly located in Europe, the United States and Asia, etc., forming a perfect sales network and after-sales service system, which can provide customers with convenient services at any time.



### Overseas Market

- USA
- Japan
- UK
- France
- Finland
- Germany
- Thailand
- Korea
- Australia
- Mexico
- Argentina
- South Africa
- Italy
- Singapore
- Malaysia
- Greece
- Sweden
- Denmark
- India
- Brazil
- Netherlands
- Sri Lanka
- Colombia
- Jordan
- VietNam
- Indonesia
- Israel
- Turkey
- Kuwait
- Austria
- Saudi Arabia
- Peru
- Canada
- Iran
- Syria
- ...





## Control components

### Solenoid valve

P16



CPV10 Series.....	17
CPV15 Series.....	23
3V1 Series.....	32
3V2 Series.....	34
3V2M Series.....	36
3V3 Series.....	38
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## Manual control valve, Mechanical control valve and other valves

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## Fluid control valve

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## Accessories

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When designing, producing and using pneumatic system devices, one must be familiar with the requests and attentions of pneumatic components and pneumatic system. Use and operate system devices under the situation that necessary examinations have been conducted and the machinery framework, pneumatic control loop and the electrical control system of pneumatic system are ensured to be in safe condition.


For using our AirTAC products safely, the selection, operation and proper maintenance and management of the products are very important!

To guarantee to use safely, please make sure to operate according to this instruction completely!


## Requests of Pneumatic System on Design-Selector and User


- Confirmation of product models and specifications prior to use The designer of pneumatic system and selector of pneumatic components shall consider the security and faults that may occur according to the requests on performance of pneumatic system and decide the specification of pneumatic components according to the latest product catalog and data. If it is necessary, they shall make relevant analysis and experiment. When the system is used in some newly developed industries or special industries, they should cooperate with the manufacturer of pneumatic components to carry out the selection.  **Attention**

- Special attention to the following conditions
  - Once the compressed air is wrongly used, it is dangerous. Thus the assembly, operation and maintenance of the pneumatic equipment shall be done by welltrained person with certain practical experience.
  - Before making sure that it is safe, prohibit to use pneumatic equipment or to disassemble pneumatic components from the equipment. **Danger**

- After confirming that the above safe treatment has been conducted, cut off the power and air source, release the remaining air, and conduct maintenance or disassembly on the equipment.
- Before starting the equipment, make sure that the piston rod will not stick out rapidly.  **Warning**

## Requests of Pneumatic System at Application Environment

- It is not allowed to use the system in the environment that includes corrosive gas, chemicals (such as organic solvent), seawater, water and steam or the place with the above substances.
- It is not allowed to use it in the place with explosive gas. (If necessary, consider adopting explosion-proof measure).
- It is not allowed to use it in the situation with oscillation and impact, or the component capacity to resist to oscillation and impact shall accord with the specification in this catalog.
- It is not allowed to use it in the place that has heat source around or is influenced by radiant heat. Otherwise, it is better to adopt measures to interdict the radiant heat.  **Attention**

- Add shields in the place with direct sunshine.
- In case the system is used in the place with large humidity and much dust or the place with water drop, oil drop, cutting oil and dispersing cooling fluid, proper protective measures shall be taken.
- The cylinder with magnet can not be used in the environment with strong magnetic field.  **Danger**

- In special temperature environment:  
High temperature environment: please use seals resisting high temperature Low temperature environment: moisture in loop may freeze and affect the action, at this moment, the moisture shall be eliminated to avoid freeze.  **Warning**



## Attentions on the Design and Selection of Pneumatic System

- Use the product under the stipulated application condition and scope

This catalogue stipulates the operation scope and condition. Please operate according to it. Any operation beyond the scope and condition may cause fault of and damage to the components, even result in danger and harm. Therefore, please contact our company in case that the products are used under the condition beyond the specified application condition and range, or any other fluid except the compressed air is used.



- Please design and install protective devices in the device part which may cause personal injury. The drive part of the cylinder may cause personal injury, please design and install protective devices to make sure people cannot directly contact the drive part when it works.
- Please effectively fasten the drive part of the cylinder to avoid the looseness of connective part. Especially under the circumstance with high action frequency or larger oscillation, effective fastness must be strengthened.
- Design necessary buffer loop or buffer devices  
When drive objects have higher speed or heavier weight, it is difficult to absorb impact solely by cylinder cushion. Therefore, buffer loop or external buffer must be designed or used to absorb the impact. Moreover, the rigidity of the machinery devices must be considered.

- When designing the system, the devices and personal safety shall be considered under the situation of power failure or air failure. For the clamping framework, if the pressure of system loop declines due to power failure and air failure, it will result in falling off of the components and further the harm on machinery devices and people, therefore, it is necessary to consider designing antifalling loop or devices.
- When designing the system, please consider the possibility that power source may produce faults. Please adopt relevant measures to make sure that the drive devices such as air pressure and electrical power will not result in personal injury or damages of devices when the power source has faults.
- Please make a loop that can prevent it from flying out when designing system. When pneumatic system is debugged or overhauled after releasing the remaining pressure, the system starts to pressurize the piston at one side, and the driven object may be pushed in high speed. In this situation, please design loop or device which can prevent cylinder from rapidly flying out to avoid personal injury or machinery damage.



- When designing the system, please consider the action status in emergency stop situation.

The design shall make sure that the action of cylinder will not cause personal injury or component and device damage under the situation that the system is in abnormal status such as emergency stop or power failure and that the safety devices and the machinery stop.



- When designing the system, please consider the actions during restarting after emergency stop and abnormal stop. The design shall make sure that the system will not cause personal injury or component damage when it restarts. In addition, for safely operation, please design return device.
- Intermediate stop  
When the cylinder stop in the middle position controlled by three-position closed center type valve, due to the compressibility of the air, it is hard to control the precise position of the cylinder. In addition, it can not avoid the air leakage of valve or cylinder absolutely, so the stop position is difficult to keep on for a long time. Therefore, please design necessary devices when a long-term stay in stop position is required.
- Synchronization of several cylinders in the system  
Due to the compressibility of the air, it is difficult to control several cylinders precisely by the same direction control valve. In this situation, special devices or loop shall be taken into consideration when designing.
- Please use the purified dry air in the air loop.  
Do not use the air with synthetic oil (including chemicals and organic solvent), salinity and corrosive gas to avoid component damage or poor action.

## Attention for the Use of Lubricant for Pneumatic System

- Generally, the pneumatic components have been lubricated by grease when producing. Therefore, they can be used without additional lubrication for a long time.
- In case of using additional lubrication, please use turbine oil (without additive) ISO-VG32. Engine oil, spindle oil or other oils are not allowed to avoid soaking and expanding of the seals like NBR.
- If lubrication is stopped in the midway, the original lubricated grease in side may have been flushed off, then the lack of lubrication will cause poor action of elements and accelerate the abrasion of relevant parts. Therefore, please make sure to supply oil constantly and an oil misting device with proper flow shall be equipped.



- When lubricating the compressed air, the oil mist quantity can not surpass 25mg/m<sup>3</sup>.
- When the system runs normally, the oil mist quantity is set as 0.2-1 drop or 0.5-5 drops/1000L.
- The simple method for testing the oil mist quantity is: put one piece of white paper at the port of cylinder control valve which is the most far from lubricator, after a while, the white paper takes on lemon yellow. If there are oil drops falling down from the white paper, it indicates the excessive lubrication.





## Requests of Pneumatic System to Compressed Air

- The compressed air ejected by air compressor can not be directly used in the air loop, since it has certain moisture, oil content and dust, which should be gaseous in the high temperature of about 140-170°C through the compressor.
- Make sure to use compressed air that has been purified
  - ♦ The filtration precision of common machinery and common pneumatic loop is < 40µm;
  - ♦ The filtration precision of logic elements, jet elements and air motors is < 10µm;
  - ♦ The filtration precision of food, medicine, electron, tobacco and liquor and pneumatic bearing is < 5µm;



- The oil mist in compressed air may gather in the container of gas tank, pipeline and pneumatic system and forms combustibles which may cause harm to pneumatic system.
- The degenerative lubricant will make rubber, plastic and seals materials go bad and block the port, which may cause action failure of valve.
- Moisture and dust will cause erosion and rustiness of metal parts, abrade and trap the action parts, block the ports and lead to transmission abnormality of air pressure signal. In cold area, the freezing of moisture will cause freeze and frost-crack of pipeline and the failure of elements and components.
- It is not allowed to use the compressed air with harmful gas (such as acid and alkali). Acid and alkali will cause damage to internal parts of pneumatic components.

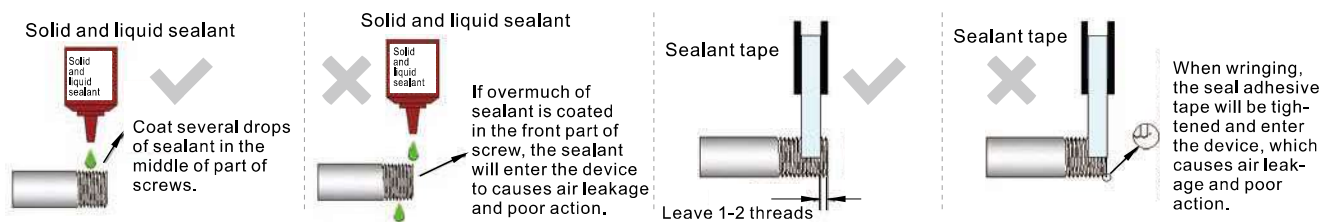


- The compressed air without the content of oxygenated oil of air compressor, tar and carbon shall be used.
- If the oxygenated oil, tar and carbon get into air pressure elements and become additive to them, the resistance of slipping parts will be increased and poor action will be caused. The mixture of oxygenated oil, tar and carbon with lubricant will abrade the slipping parts of air pressure elements.
- It is not suitable to use dry air in air pressure elements. Please use the elements corresponding to ultra-dry air. The ultra-dry compressed air will shorten the service life of air pressure elements.



## Tubing and Installation Pneumatic System

- Please obey the following stipulations on the entwining method of sealant tape when connecting fitting and tube. Please start to entwine sealant tape from 1st-2nd screw thread at the front part of tube thread and on both of positive direction and inverse direction of the thread. If the sealant tape entwines out of the front part of the tubing thread, it will be torn into fragments which will cause faults and wrong action if they get in the system.



- When connecting the tubing, please fasten with proper torque to prevent air leakage and thread damage.

Table one : Reference value of Fasten torque

Unit : N.m

Connective thread	M3	M5	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Fasten torque	0.3~0.6	1.0~1.5	5.0~7.0	6~8	8~10	12~15	28~30	36~40



- Pay attention to the following matters when using nylon tube or polyurethane tube materials:

- Please use flame retardant tube or metal tubing in the environment with high temperature spark;
- The proof pressure is different according to the bore size of tube and the working temperature



Table two : Reference data of maximum proof pressure

(Unit : kgf/cm<sup>2</sup>)

OD/ID(mm)		4/2.5	5/3	6/4	8/6	10/7.5	12/9	14/11	16/12	22/17	28/22
Maximum pressure(-40°C~20°C)	Nylon tube	28	31	25	19	24	18	15	18	15	15
	PU tube	10	11	9	9	9	9	-	-	-	-
Minimum bending radius (mm)	Nylon tube	25	2	30	50	60	75	90	95	125	160
	PU tube	6	7	9	16	17	25	-	-	-	-
Using in different working temperatures, the maximum proof pressure shall multiply the following coefficient.		+30°C		+40°C		+50°C		+60°C		+70°C	
		0.83		0.72		0.64		0.57		0.47	

- The pipeline shall be cleaned with compressed air prior to connecting the tubing and fittings to the pneumatic components.







## Convert American system and British system unit to international (SI) unit

### Length unit

American and british system	Conversion rates	International
1 in	= 25.4	mm
1 ft	= 0.3048	m
1 mile	= 1609.3	m
1 micron	= $10^{-6}$	m

### Quality unit

American and british system	Conversion rates	International
1 lb	= 453.6	g
1 cwt	= 50.8	kg
1 ton(imp)	= 1016	kg
1 ton(us)	= 907.2	kg
1 tonne	= 1000	kg

### Moment unit

American and british system	Conversion rates	International
1 inlb	= 0.113	Nm
1 ft lb	= 1.356	Nm
1 kgm	= 9.807	Nm
1 ft poundal	= 0.0421	Nm

### Temperature unit

American and british system	International
$(F-32) \times 5/9$	= °C
K-273.15	= °C

### Flow unit

Cv value =	It's the constant value of flow, when the water flow(US gal/min)is under 60°F, the D-value of pressure between intake and outlet is 1psi (Cv×1000≈L/min)
kv value =	It's the constant value of flow, when the water flow(L/min)is under 20°C, the D-value of pressure between intake and outlet is 1kgf/cm <sup>2</sup>
KV value =	It's the constant value of flow, when the water flow(m <sup>3</sup> /min)is under 20°C, the D-value of pressure between intake and outlet is 1kgf/cm <sup>2</sup>
S.T.P =	Standard temperature and pressure (0°C and 101.3kPa absolute pressure)
N.T.P =	Normal temperature and pressure (20°C and 101.3kPa absolute pressure)
M.S.C =	Standard of metric system (15°C and 101.3kPa absolute pressure)
ANR =	Temperature : 20°C and relative humidity : 65%

### Equivalence conversion

1 psi	=6.895	kPa	=0.07	kg/cm <sup>2</sup>	=0.06895	bar	=0.0703	atm
1 standard atmosphere	=14.7	psi	=101.3	kPa	=1.01325	bar		
1 kg/cm <sup>2</sup>	=98.07	kPa	=14.22	psi	=28.96	ins mercury		
1 ft lb	=0.13826	kgm	=1.356	Nm				
1 L	=1000	cm <sup>3</sup>	=1.7598	pint	=10 <sup>6</sup>	mm <sup>3</sup>		
1 tonne	=1000	kg	=0.984	ton	=2205	lb		
1 m <sup>3</sup>	=10 <sup>6</sup>	cm <sup>3</sup>						
1 cu ft/min.	=28.3	l/min	=0.0283	m <sup>3</sup> /min				
1 Pa	=1	N/m <sup>2</sup>						

### Area unit

American and british system	Conversion rates	International
1 in <sup>2</sup>	= 6.45	cm <sup>2</sup>
1 ft <sup>2</sup>	= 0.093	m <sup>2</sup>

### Pressure unit

American and british system	Conversion rates	International
1 psi	= 6.89	kPa
1 kgf/cm <sup>2</sup>	= 98.07	kPa
1 bar	= 100	kPa
1 bar	= 14.5	psi
1 atmosphere	= 98.1	kPa
1" (STANDARD)	= 101.33	kPa
1 cm water	= 97.89	Pa
1 in water	= 248.64	Pa
1 mm mercury	= 133.3	Pa
1 in mercury	= 3.39	kPa
1 Torr	= 133.3	Pa
1 ft water	= 0.0298	bar
1 bar	= 33.33	ft water

### Unit of work and energy

American and british system	Conversion rates	International
1 lbft	= 1.356	J
1 Nm	= 1	J
1 kgm	= 9.807	J
1 kW/hr	= 3.6	MJ

### Volume unit

American and british system	Conversion rates	International
1 litre	= 0.001	m <sup>3</sup>
1 cu.ft.	= 0.0283	m <sup>3</sup>
1 cu.in.	= 16.39	cm <sup>3</sup>
1 gal(imp)	= 4.546	L
1 gal(us)	= 3.79	L
1 fluid oz.(imp)	= 28.41	mL
1 fluid oz.(us)	= 29.57	mL

### Force unit

American and british system	Conversion rates	International
1 lbf	= 4.45	N
1 kgf	= 9.81	N
1 kp(kilopond)	= 9.81	N
1 poundal	= 138.3	mN
1 ton force	= 9.964	kM

### Power unit

American and british system	Conversion rates	International
1 lbft/sec	= 1.356	W
1 kgm/sec	= 9.807	W
1 Nm/sec	= 1	W
1 Joule/sec	= 1	W
1 H.P.(imp)	= 745.7	W

### Unit compilation

Unit full name	Abbreviation
Pascal	Pa
Newton	N
metre	m
litre	L
Watt	W
Newton metre	Nm
Jonle	J
Megajoule	MJ
Kelvin	K

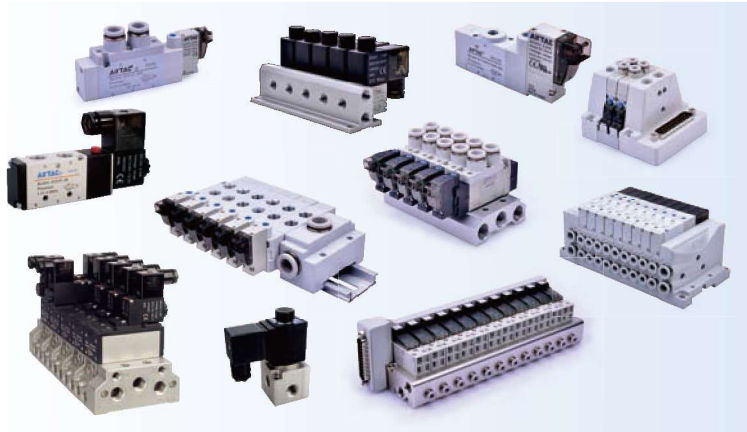


To make system realize the best performance, the control components must be precise and accurate. Component with good performance is the precondition to realize precise and exact action. AirTAC has many types of control components for your choice:

1. Direction control valve—Solenoid valve.
2. Direction control valve—Air valve.
3. Direction control valve—manual control, mechanical control and other valves.
4. Fluid control valve—two way solenoid valve, angle seat valve.

## Solenoid valve

P16



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## The selection of valves

### 1. Form selection

According to application requests and conditions, choose the form of valves: direct acting or pilot.

### 2. Selection of control mode

According to the control requests upon application, choose the control mode: air, electrical, manual or mechanical control.

### 3. Selection of function of valves

The function of valves is selected upon the working requirements: two-position two-way, two-position three-way, two-position five-way and three-position five-way; or middle-sealed, middle leakage and midway pressurizing type, etc.

### 4. Selection of model and specification

Select the model and specification of valves upon the flow requirements of application.

### 5. Selection of installation way

The installation way is selected upon the installation requirement of valves: pipe-joint type or containerized type.

### 6. Selection of electric parameters

Select the electric model of valves upon actual application requirement: voltage, power and grommet type.

## Attentions on Design and Selection

1. Correctly understand and apply midway stop function of reversing valve In the place with three-position middle-sealed or middle-pressure reversing valves to carry out the midway stop of piston in cylinder (double axes or adjustable double axes), as the air has compressibility, it is difficult to have correct and precise position stop. In addition, it is not available to make sure that leakage will not occur in the valves and cylinders, thus it cannot stay in the position of midway stop for a long time. Other ways shall be taken to maintain a long-term stop.
2. Pay attention to the influences of back pressure caused by the consolidation of valves on the system; In the place with consolidation of valves, pay attention to the wrong action of actuators caused by back pressure; especially pay attention to the place using three-position midway leakage reversing valves and the place driving single acting cylinder. Individual intake and exhaust must be carried out in the place that-ay have wrong action.
3. Fully consider the release of remaining pressure between reversing valves and cylinders; Considering the system examination need, the function of releasing remaining pressure shall be set up. Especially in the place using three-position midway leakage reversing valves, the remaining pressure between reversing valves and cylinders must be eliminated.
4. The temporary power supply and air supply of dual controlled valves. Routine dual electric (air) control valves have memory function (except for three-position valves), in the place with temporary power supply, the duration of power supply shall be above 0.1s to make sure that the valve has changed its direction.
5. Application of lowest pressure for air supply. The requirement of lowest application pressure shall be considered for the internal pilot-oriented valves, while direct drive valves or external pilot-oriented valves are not limited by lowest application pressure.
6. Use in vacuum condition  
If the valves are used in the place with vacuum switching, measures to prevent the inhalation of dust from suction cup shall be adopted. Moreover, direct drive or external pilot-oriented reversing valves shall be selected in vacuum condition.



**Attention**

To maintain normal and good working state of pneumatic system, the following maintenance work is necessary in actual use:

1. Examine application pressure: regularly examine whether the pressure is normal in work;
2. Examine the filter situation of the compressed air: regularly examine whether filters and oil misting device work normally and whether their pollution situation is normal;
3. Examine whether system pipeline leaks;
4. Examine whether solenoid valves act slowly and whether the exhaust-situation is normal;
5. Examine whether the adjustment of oil quantity of oil misting device is normal;
6. Please read relative content in this manual about the requirements of solenoid valves to air quality and application environment, the pipeline connection of solenoid valves and the lubrication of solenoid valves;
7. The switching action of valves shall be guaranteed regularly under low-frequency application, at least once switching shall be conducted for each month.
8. About manual operation :
  - 8.1) Ensure no danger, prior to activating manual override;
  - 8.2) For push button option: Activate by push the button in the direction shown(Right drawing);
  - 8.3) For slotted option :  
Activate by push the button in the direction shown.  
With correct size screw driver: Please turn to lock gently(Torque: 0.1N.m).



**Warning**



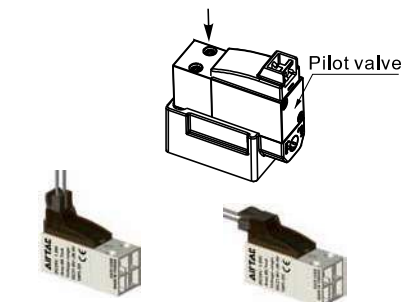
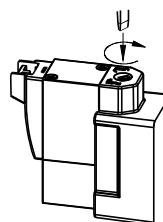
**Attention**



Normal position



Lucked position



Vertical plug wire

Parallel plug wire

- 8.4) Vertical plug type and parallel plug type are the same as plug, please insert wire line as up drawing by practicality.





## The Application of Fluid Control Valves



### Pipeline:

1. Completely clean pipeline to eliminate miscellaneous chip, oil pollution and dust.
2. Miscellaneous chip of whorl and sealed materials shall be prevented from entering the pipeline when installing pipeline connection (when adopting whorl sealant tape, at least one section of thread shall be preserved).
3. Pay attention to connective pipe direction (IN, OUT), IN (entrance) or other marks in each interface.
4. Never make the coils bear outside force, and only use spanner to clinch the installation position in pipeline when revolving into pipeline.
5. The pipeline shall not connect the ground; otherwise galvanic corrosion will be caused.
6. Install overflow valves in circuit to prevent the fluid accumulation in pipeline.

### Wiring:

1. The minimum area of section of the wire is 0.5mm<sup>2</sup>.
2. Electrical circuit shall be adopted to prevent the vibration in connective points.
3. Associate overvoltage suppressor and overvoltage suppressor in coils when electrical components are easily damaged by overvoltage.
4. The allowable voltage scope is within -10% ~ +10% of the rated voltage. If a better response of DC power is required, the voltage scope shall be within ±5% of the rated voltage and voltage drop can be measured at the connective points between the leading wires and coils.
5. When it is AC power, the backswing voltage is 20% or above of the rated voltage. When it is DC power, it is 2% or above of the rated voltage.

### Installation:

1. When installing, the coils shall be made upward. The inlet port and outlet port should be kept horizontal.
2. Never heat coils and insulation components, otherwise they will burn the coils. Anti-freezing heater can only be used in pipeline and valves body.
3. Never install in the place with violent vibration. If it cannot be avoided, the arm length shall be regulated to the minimum to avoid resonance.

### Storage:

1. If the water fluid will be kept for a long time after using, the moisture shall be completely eliminated to avoid corrosion in rubber part.

### Long-term open or stop of the valves:

1. The frequency of switching valves depends on the type and performance of the fluid. When using purified water as standard, the valves shall be switched at least once every ten days. If the period is longer than ten days, system test devices shall be installed. Valves shall not be used in the following working environment such as emergent circuit breaker.

### Temperature of the fluid:

1. Refer to temperature scope of each type and the influences of the factors such as sealed materials, coil insulation, power and air supply. For application in special circumstance, please contact the supplier.

### Applied fluid:

#### 1. Fluid grade

When selecting the valves type, make sure that the fluid is adapted to the materials of valves. Generally speaking, the maximum viscosity of fluid is 50cst. Please contact the supplier for specific data. <Reference> Standard materials Valve body: brass or BC6, seal: NBR, coil: insulated B step. The above valves are used in water, air and oil medium. If they are used in other materials, please refer to "option list" and "adaptable fluid sheet". There will be a small difference in types.

#### 2. Fluid quality

The impurity in fluid will accelerate the abrasion of valve cup and iron core. Granule that adheres to the iron core and slipping plane will decrease the function of valves and cause invalidity of seal function. Filter shall be installed in the front of the entrance of valves to avoid the above problems. Net limit of 80-100 is normally recommended.

#### 3. Lubrication

Lubrication is not necessary for this valve, but lubricated air will extend its life.

#### 4. If the valves are used in inflammable oil and air, the leakage at the entrance and exit shall be prevented.

#### 5. If impurity or oil is not allowed in the fluid, the valves without the need of lubrication shall be applied.

#### 6. In case the application condition approaches the limit of valves, the parameter of the option and fluid may be different from that of routine application. Make proper choice according to actual use situation.



## Installation of Direction Control Valve

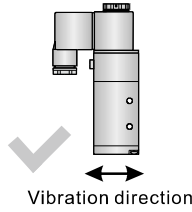
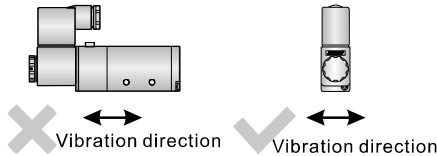
Although direction valves can be installed in any direction, due to the vibration of devices or flowing of liquids such as condensate and oil to the coil part of solenoid valve, poor action of direction valve will be caused.

Please take care during installation.

1. The influence of vibration on sliding column in solenoid valve shall be avoided. During installation, the vibration direction may form a right angle to the action direction (axial direction) of sliding column in solenoid valve to avoid the influence of vibration to sliding column in solenoid valve.

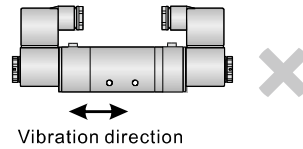
□ Single electric control solenoid valve

○ The coil shall be installed upward or horizontally.

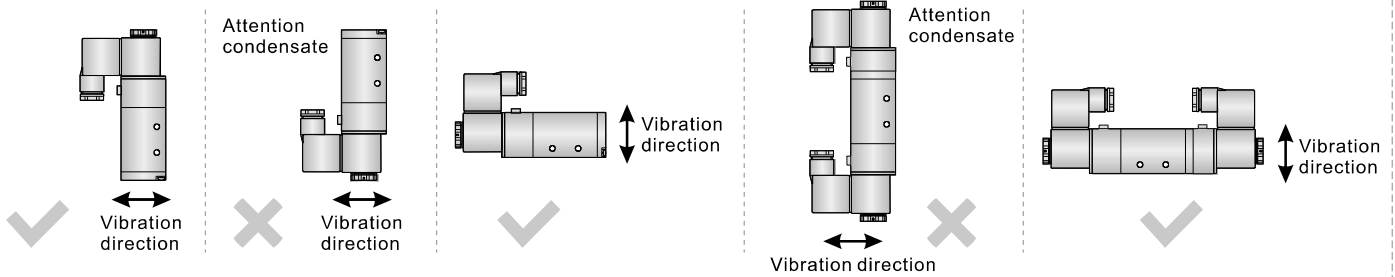


☆ Dual electric control solenoid valve

○ The coil shall be installed horizontally.



2. To prevent condensate and oil from flowing into coil in solenoid valve, you'd better install the coil upward or horizontally. Installation legend:



3. Blow away the miscellanies such as dust, oil pollution and chips in the pipeline to avoid influencing the action and damage of valves.

4. The intake of internal pilot-oriented solenoid valve cannot throttle to prevent wrong action caused by too large pressure drop when switching the direction.

5. Install reversing valves closely to cylinder as possible as you can to reduce air consumption and achieve a quick response.

6. Please make sure completely insert the tubing and use it after confirming that the tubing cannot be pulled out.

7. Although our product coils are set as 100% ED, if the product is energized for a long time, overheating will be caused, insulation will be deteriorated and energy will be lost. Solenoid valve with memory function shall be considered to shorten power supply time and extend the service life of coils and save energy consumption under the situation of long-time constant power supply.

8. Manual button is not allowed to be used when solenoid valve is energized.

9. The application voltage of solenoid valve shall be kept within the specified voltage range to avoid causing poor action of valves or burning coils.

10. As the solenoid valve is installed in the control tank, pay attention to the ventilation and heat dispersing when it is energized for a long time to guarantee that the temperature inside of the tank is within the temperature range for the safe application of solenoid valve;

11. Interlock protection control circuit shall be designed to prevent the two coils of the dual electrical control solenoid valve from being energized at the same time.

12. The blowhole in internal control piston of main valve and exhaust outlet in pilot-oriented valve cannot be jammed or unsmooth.

13. As solenoid valve in DC specification has polar indicator lights, pay attention to the positive and negative poles when wiring. Connect "1" to the positive pole, and "2" to the negative pole. If connection is inversed, the indicator lights will not shine but valves can still work.

In addition: refer to page 9 in this manual for the content on the lubrication, tubing and application environment of solenoid valve.







# Solenoid valve(3/2 way,5/2 way,5/3 way)

## Compendium of Solenoid valve

P17	Product feature	Photo	P23	Product feature	Photo
CPV10 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Can be used monomer or in series</li> <li>•Plug electrical connector</li> <li>•Manifold is optional</li> <li>•3/2 Way</li> </ul>		CPV15 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Can be used monomer or in series</li> <li>•Plug electrical connector</li> <li>•Manifold is optional</li> <li>•3/2 Way</li> </ul>	
P32	Product feature	Photo	P34	Product feature	Photo
3V1 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Coaxial blanking structure and direct acting(NC)</li> <li>•Can be used in series</li> <li>•Affiliated manual devices</li> <li>•3/2 Way</li> </ul>		3V2 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Coaxial blanking structure and direct acting</li> <li>•NC, NO are optional</li> <li>•Affiliated manual devices</li> <li>•3/2 Way</li> <li>•Can be used under vacuum condition</li> </ul>	
P36	Product feature	Photo	P38	Product feature	Photo
3V2M Series Solenoid valve	<ul style="list-style-type: none"> <li>•Coaxial blanking structure and direct acting</li> <li>•NC, NO are optional</li> <li>•Affiliated manual devices</li> <li>•3/2 Way</li> <li>•Be used with manifold</li> <li>•Centralized exhaust and separated exhaust are optional</li> </ul>		3V3 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Coaxial blanking structure and direct acting</li> <li>•NC, NO are optional</li> <li>•Affiliated manual devices</li> <li>•3/2 Way</li> <li>•Can be used under vacuum condition</li> </ul>	
P40	Product feature	Photo	P43	Product feature	Photo
6TV0500~300 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Double control and single control are optional</li> <li>•NO and NC are optional for single control</li> <li>•Manifold is optional</li> <li>•3/2 Way</li> </ul>		3V100~300 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Double control and single control are optional</li> <li>•NO and NC are optional for single control</li> <li>•Manifold is optional</li> <li>•3/2 Way</li> </ul>	
P49	Product feature	Photo	P64	Product feature	Photo
6D0500~200 6DW0500~200 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Horizontal and vertical insertion can freely switch</li> <li>•Push-in fittings options</li> <li>•Manifold is optional</li> <li>•5/2 Way, 5/3 Way</li> </ul>		6V0500~300 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Horizontal and vertical insertion can freely switch</li> <li>•Port threads and push-in fittings options</li> <li>•Manifold is optional</li> <li>•5/2 Way, 5/3 Way</li> </ul>	
P70	Product feature	Photo	P76	Product feature	Photo
6HV0500~300 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Horizontal and vertical insertion can freely switch</li> <li>•Port threads options</li> <li>•DIN guide is optional</li> <li>•5/2 Way, 5/3 Way</li> </ul>		7V0500~300 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Horizontal and vertical insertion can freely switch</li> <li>•Port threads and push-in fittings options</li> <li>•Manifold is optional</li> <li>•5/2 Way, 5/3 Way</li> </ul>	
P82	Product feature	Photo	P90	Product feature	Photo
4V100~400 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Double control and single control are optional</li> <li>•Closed center, exhaust center and pressure center are available for 5/3 Way</li> <li>•Manifold is optional</li> <li>•5/2 Way, 5/3 Way</li> </ul>		4M100~300 Series Solenoid valve	<ul style="list-style-type: none"> <li>•Coaxial blanking structure</li> <li>•5/2 Way</li> <li>•Double control and single control are optional</li> <li>•Closed center, exhaust center and pressure center are available for 5/3 Way</li> </ul>	
P92	Product feature	Photo	P94	Product feature	Photo
Manifold	<ul style="list-style-type: none"> <li>•Can integrate valves of the same series to form valve group</li> <li>•Unified air intake and exhaust and unified wiring</li> <li>•Flexible combination and strong expansion capability</li> </ul>		ESV Series Solenoid valve (ISO Standard)	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Double control and single control are optional</li> <li>•5/2 Way, 5/3 Way</li> <li>•Closed center, exhaust center and pressure center are available for 5/3 Way</li> <li>•The installation size conforms to ISO5599/1 standard</li> </ul>	

## Installation and Application

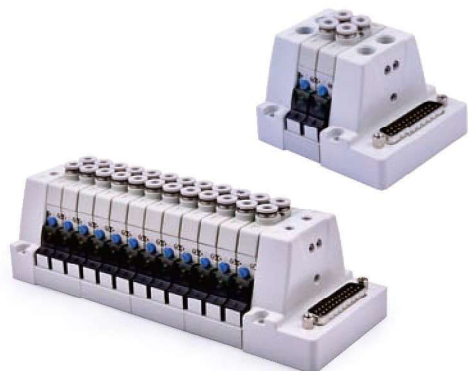
1. Before installing, be sure the valve hasn't been damaged via transportation.
2. It's suggested to use the medium lubricated by 40μm filter element. Be aware of the flow direction and port size.
3. Please notice whether the installation condition accords with technical requirements (such as "voltage", "actuation frequency", "working pressure" and "scope of application temperature"), then the equipment can be installed and used.
4. Notice the flow direction of air during installation, P is the air intake, A (B) is the work port and R (S) is the exhaust outlet.
5. Take measure to avoid vibration and frozen.
6. Before using the fittings and tubes make sure they are clean. When connecting to fittings, be sure the PTFE Thread Seal Tape is used correctly.
7. To keep the dust away, please use the silencer for the exhaust ports. Never forget to install dirt-proof boot in air intake and outlet during dismounting.
8. After installing, please use the manual override to test valve first.



# Integrated solenoid valve (3/2 way)

## CPV10S Series

### Specification



Model	CPV10SB	CPV10SF	
Integrated solenoid valve	Fluid	Air(to be filtered by 40μm filter element)	
	Acting	Direct acting	
	Number of stations	4~24 stations	
	Electrical entry	Terminal, 25pin D-Sub	
	Port size	P/R: M5 A: Φ3.2/ Φ4(Push in fittings)	
	The type of Inlet and exhaust	Centralized inlet and exhaust	
	Operating pressure	0~0.8MPa(0~114psi)	
	Proof pressure	1.2MPa(175psi)	
Coil	Temperature	-20~70°C	
	Protection	Dustproof	
	Standard voltage	DC24V	DC12V
	Scope of voltage	DC±10%	
	Temperature classification	F Class	
Power consumption	DC: 0.7W		

### Product feature

1. Integrated installation of air inlet/exhaust and power socket(25pin D-Sub) to save space and reduce additional accessories.
2. Equipped with manual override for adjustment and troubleshooting.
3. Low starting voltage and long service life.

### Ordering code

CPV10S J04 B 12F



① Model	② Port size	③ Voltage	④ Number of stations [Note]
CPV10S: CPV10S series integrated solenoid valve	J03: Φ3.2mm J04: Φ4.0mm	B: DC24V F: DC12V	4F: 4 stations 6F: 6 stations 8F: 8 stations ..... 24F: 24 stations

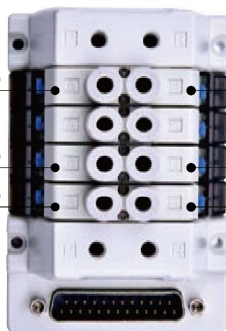
[Note] About stations as follow :

23F : The 12th mini solenoid valve on the left(12A)

.....

3F : The second mini solenoid valve on the left(2A)

1F : The first mini solenoid valve on the left(1A)



24F : The 12th mini solenoid valve on the right(12B)

.....

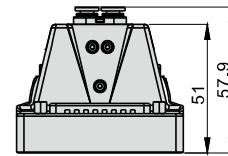
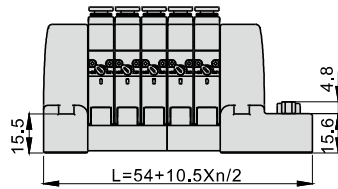
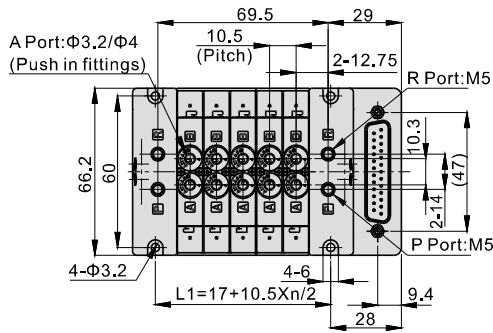
4F : The second mini solenoid valve on the right(2B)

2F : The first mini solenoid valve on the right(1B)

# Integrated solenoid valve (3/2 way)

## CPV10S Series

### Dimensions

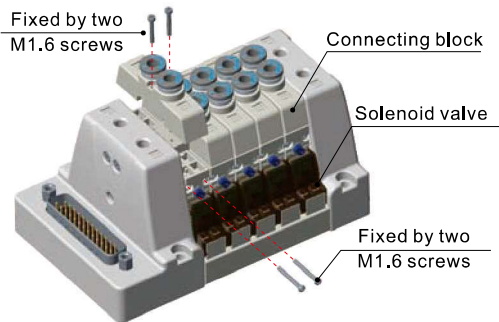


Item\Number of stations	4F	6F	8F	10F	12F	14F	16F	18F	20F	22F	24F
L	75	85.5	96	106.5	117	127.5	138	148.5	159	169.5	180
L1	38	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143

### Installation and Application

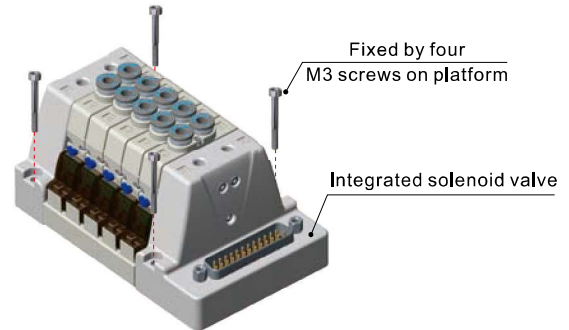
#### Assembly of connecting block and micro-solenoid valve

Mount micro-solenoid valve and connecting block with torque of 0.1~0.15N.m by two M1.6 screws as following.

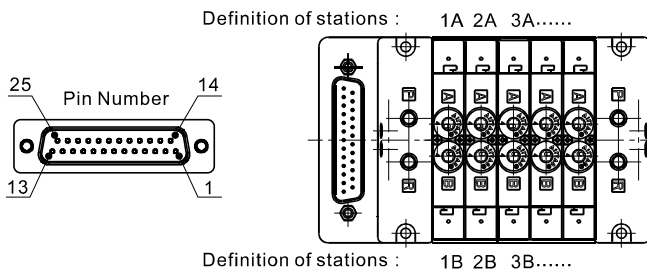


#### Mounting of integrated solenoid valve

Mount integrated solenoid valve by four M3 screws on platform as following.



#### Pin Assignment



Note: Gauge number of cable connecting to D-Sub pin No.13(COM) must be  $\leq 22$ AWG

Pin NO.	Polarity		Control target	Pin NO.	Polarity		Control target
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1A	14	(+)	(-)	1B
2	(+)	(-)	2A	15	(+)	(-)	2B
3	(+)	(-)	3A	16	(+)	(-)	3B
4	(+)	(-)	4A	17	(+)	(-)	4B
5	(+)	(-)	5A	18	(+)	(-)	5B
6	(+)	(-)	6A	19	(+)	(-)	6B
7	(+)	(-)	7A	20	(+)	(-)	7B
8	(+)	(-)	8A	21	(+)	(-)	8B
9	(+)	(-)	9A	22	(+)	(-)	9B
10	(+)	(-)	10A	23	(+)	(-)	10B
11	(+)	(-)	11A	24	(+)	(-)	11B
12	(+)	(-)	12A	25	(+)	(-)	12B
13	(-)	(+)	COM				

# Micro-solenoid valve(3/2 way)

## CPV10 Series



### Specification

Model	CPV10	
Fluid	Air(to be filtered by 40μm filter element)	
Acting	Direct acting	
Nominal diameter	Φ0.55mm	
Effective area	P to A:0.25mm <sup>2</sup> (Cv=0.014) ; A to R:0.35mm <sup>2</sup> (Cv=0.02)	
Valve type	3/2 way	
Weight	micro-solenoid valve	15g
	Terminal wire	050: 4.6g 200: 21.4g
	Screw(2pcs)	0.46g
Operating pressure	0~0.8MPa(0~114psi)	
Proof pressure	1.2MPa(175psi)	
Temperature	-20~70°C	
Standard voltage	AC220V AC110V DC24V DC12V	
Scope of voltage	DC±10%; AC+15%~-10%	
Protection	Dustproof	
Temperature classification	F Class	
Power consumption	DC: 0.7W; AC: 1.5VA	
Electrical entry	Terminal	
Activating time	on<7ms; off<7ms	

### Symbol



### Product feature

1. With anti-surge component can avoid the damage of solenoid valve.
2. Multi-direction installation and polarless circuit design.
3. AC voltage models possess a built-in full wave rectifier circuit to reduce the noise effectively.
4. Various of standard voltages: AC220V, AC110V, DC24V, DC12V.
5. Low starting voltage and long service life.
6. Equipped with a push-turn locking manual override for adjustment and troubleshooting.

### Ordering code

#### Ordering code of valve

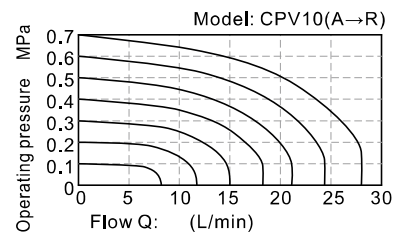
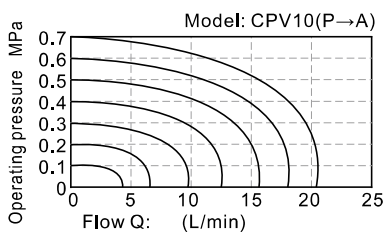
CPV 10 B P-050				
① Model	② Width of body	③ Voltage	④ Code of manual override	⑤ Wire length [Note1]
CPV: CPV series Micro-solenoid valve	10: 10mm	A: AC220V B: DC24V C: AC110V F: DC12V	P: With manual override	050: 0.5m 200: 2.0m

[Note1] Contain two M1.6 screws.

#### Ordering code of terminal wire

CPV T 050		
① Model	② Terminal wire	③ Wire length
CPV: CPV series Micro-solenoid valve	T: Terminal wire	050: 0.5m 200: 2.0m

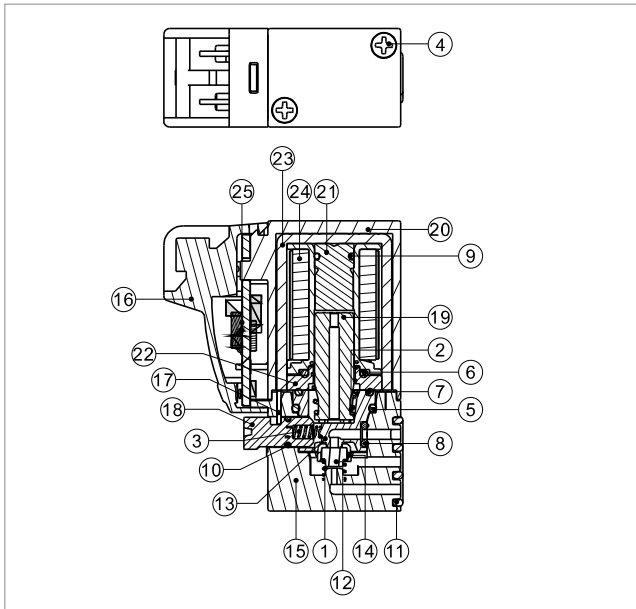
### Flow chart



# Micro-solenoid valve(3/2 way)

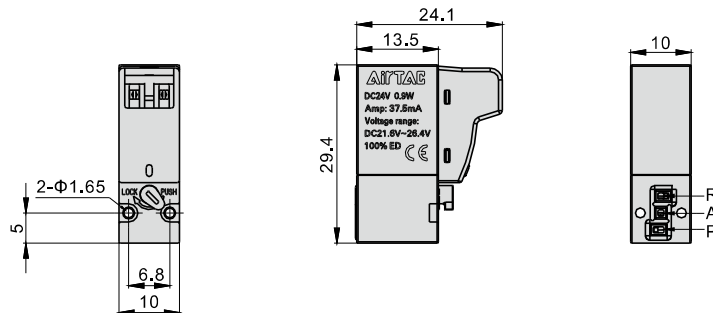
## CPV10 Series

### Inner structure



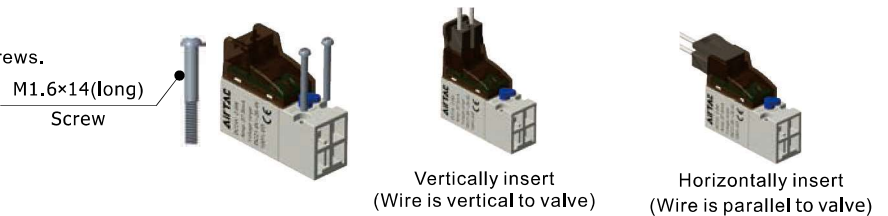
No.	Item	Material	No.	Item	Material
1	Spring	Stainless steel	14	Mandril	Resin
2	Spring	Stainless steel	15	Body	Resin
3	Spring	Stainless steel	16	Connector shell	Resin
4	Screw	Carbon steel	17	Manual pin plate	Stainless steel
5	O-ring	NBR	18	Manual pin	Brass
6	O-ring	NBR	19	Armature	Stainless steel
7	O-ring	NBR	20	Cover	Resin
8	Gasket	NBR	21	Electromagnet	Stainless steel
9	O-ring	NBR	22	Plate	Carbon steel
10	O-ring	NBR	23	U shape bracket	Carbon steel
11	Gasket	NBR	24	Coil	
12	Gasket	NBR	25	PCB assembly	
13	Crater	Resin			

### Dimensions



### Installation and Application

- Micro-solenoid valve assembly:  
Fastened with torque of 0.1~0.15N.m by two M1.6X14L screws.
- Wiring instruction:  
Multi-direction installation and polar less circuit design.  
Note: The terminal wire is non-polarity.
- Prevent to connect AC coils in series with other devices.





# Micro-solenoid valve(3/2 way)

## CPV10 Series — Manifold



### Specification

Model	CPV10MJ□□2F	CPV10MJ□□3F	.....	CPV10MJ□□20F
Fluid	Air(to be filtered by 40μm filter element)			
Temperature	-20~70°C			
Port size	P/R: M5 A: Φ3.2/ Φ4(Push in fittings)			
Applicable valves	CPV10 series micro-solenoid valve			

### Product feature

1. Integrated installation saves space and reduces additional accessories.
2. Centralized air intake, exhaust, and wiring for quick air circuit checking.
3. Fixible combination and expandability for various applications. Blank plates are optional.

### Ordering code

#### Ordering code of manifold

CPV10M J03 - 20F

① ② ③

① Model	② Port size	③ Number of stations
CPV10M: CPV10 series Manifold	J03: Φ3.2 J04: Φ4	2F: 2 stations 4F: 4 stations 6F: 6 stations ..... 20F: 20 stations

#### Ordering code of blank plate

P-CPV10M-R2

① ②

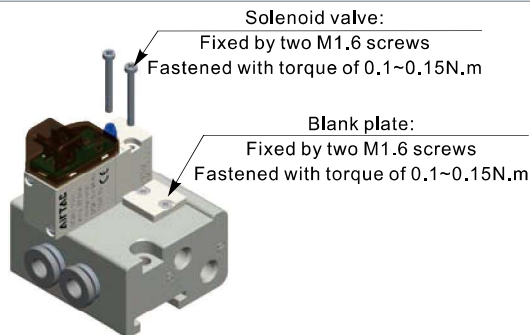
① Model	② Code
CPV10M: CPV10 series Manifold	R2: Blank plate for manifold

[Note] Blank plate kits contains blank plate, gasket and screws.



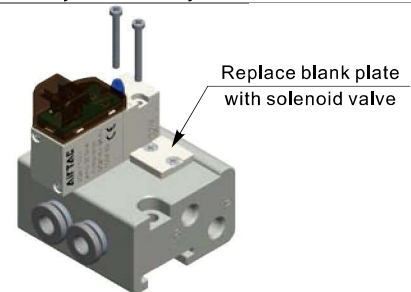
### Installation and Application

#### Assembly of micro-solenoid valve (blank plate) and manifold



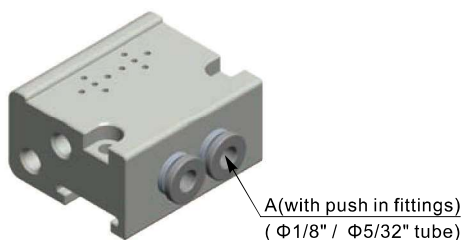
#### Expansion of micro-solenoid valve

Remove blank plate and install solenoid valve by the assembly instruction.



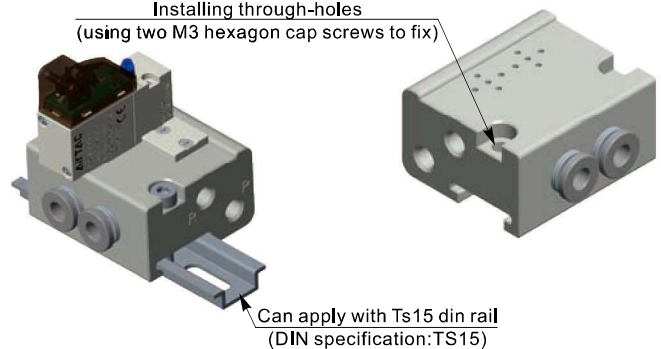
#### A port tubing

A port is at the side of manifold, port size is "Φ3.2 / Φ4"



#### Manifold mounting

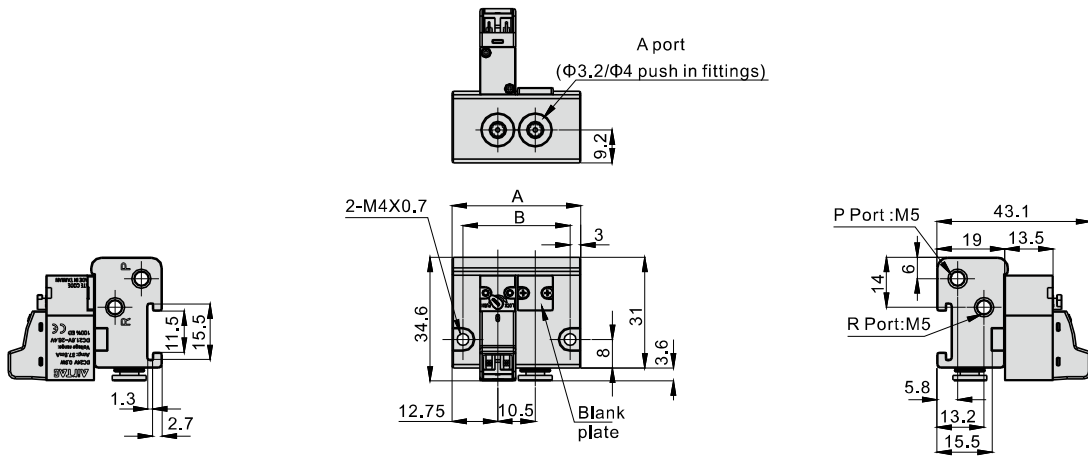
Installing through-holes (using two M3 hexagon cap screws to fix)



# Micro-solenoid valve(3/2 way)

## CPV10 Series — Manifold

### Dimensions



Item\Number of stations	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
A	36	46.5	57	67.5	78	88.5	99	109.5	120	130.5	141	151.5	162	172.5	183	193.5	204	214.5	225
B	30	40.5	51	61.5	72	82.5	93	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219



### Product feature

1. Integrated installation centralizes air intake, exhaust and power(25pin D-Sub)to save space and reduce additional accessories.
2. Flexible combination and expandability for various applications. Blank plates are optional.
3. Equipped with manual override for quick air circuit checking.
4. Low starting voltage and long service life.

### Specification

Model		CPV15SB	CPV15SF	
Integrated solenoid valve	Fluid	Air(to be filtered by 40µm filter element)		
	Acting	Direct acting		
	Number of stations	2 stations ~20 stations, only available in even stations		
	Electrical entry	Terminal, 25pin D-Sub		
	Port size	P/R ports	1/8" [Note1]	
		A Port	PT thread	Φ4mm(Push in fittings)
			G thread	Φ4mm(Push in fittings)
	NPT thread	Φ5/32"(Push in fittings)		
	The type of Inlet and exhaust	Centralized inlet and exhaust		
	Operating pressure	0~0.8MPa(0~114psi)		
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Coil	Protection	Dustproof		
	Standard voltage	DC24V	DC12V	
	Scope of voltage	DC±10%		
	Temperature classification	F Class		
	Power consumption	DC: 1.6W		

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

CPV15S B 20F □



① Model	② Voltage	③ Number of stations	④ Thread type
CPV15S: CPV15S series integrated solenoid valve	B: DC24V F: DC12V	2F: 2 stations 3F: 3stations 4F: 4stations ..... 20F: 20stations	Blank: PT G: G T: NPT

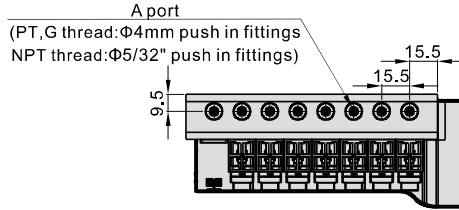
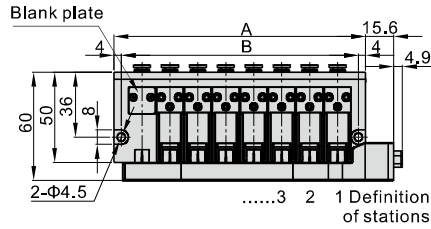
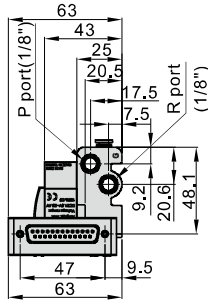
### Installation and Application

Assembly of micro-solenoid valve (blank plate) and manifold	Expansion of micro-solenoid valve
<p>Mount micro-solenoid valve and manifold by two M2.5 screws as following . Mount blank plate and manifold by two M2.5 countersunk screws as following .</p>	<p>Remove blank plate and install solenoid valve by the assembly instruction.</p>
A port tubing	Manifold mounting
<p>A port is at the side of manifold with push in fittings.</p>	<p>Both sides of manifold attach two installing through-holes, using two M4 hexagon cap screws to fix.</p>

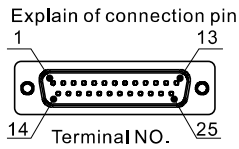
# Integrated solenoid valve (3/2 way)

## CPV15S Series

### Dimensions



Item/Number of stations	2F	4F	6F	8F	10F	12F	14F	16F	18F	20F
A	46.5	77.5	108.5	139.5	170.5	201.5	232.5	263.5	294.5	325.5
B	38.5	69.5	100.5	131.5	162.5	193.5	224.5	255.5	286.5	317.5

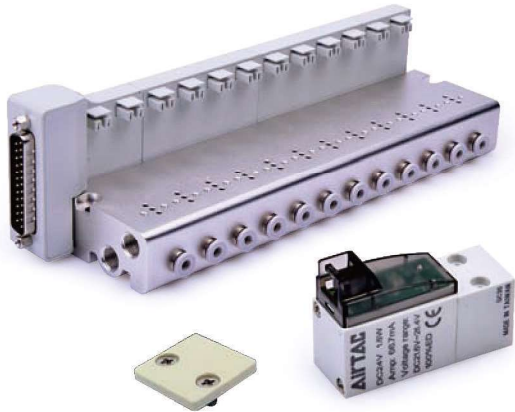


Terminal no.	Polarity		Control object	Terminal no.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	13 station	14	(+)	(-)	1 station
2	(+)	(-)	14 station	15	(+)	(-)	2 station
3	(+)	(-)	15 station	16	(+)	(-)	3 station
4	(+)	(-)	16 station	17	(+)	(-)	4 station
5	(+)	(-)	17 station	18	(+)	(-)	5 station
6	(+)	(-)	18 station	19	(+)	(-)	6 station
7	(+)	(-)	19 station	20	(+)	(-)	7 station
8	(+)	(-)	20 station	21	(+)	(-)	8 station
9		Void		22	(+)	(-)	9 station
10		Void		23	(+)	(-)	10 station
11		Void		24	(+)	(-)	11 station
12		Void		25	(+)	(-)	12 station
13	(-)	(+)	COM				

[Note] The D-sub cable of the corresponding Pin no. 13 (COM) must be ≤22AWG.

# Integrated solenoid valve (3/2 way)

## CPV15S Series—Manifold, solenoid valve and blank plate



### Specification

Model		CPV15S	
Fluid		Air(to be filtered by 40μm filter element)	
Number of stations		2 stations ~20 stations, only available in even stations	
Electrical entry		Terminal, 25pin D-Sub	
Port size	P/R ports		
	A Port	PT ththread	Φ4mm(Push in fittings)
		G ththread	Φ4mm(Push in fittings)
NPT ththread		Φ5/32"(Push in fittings)	
The type of Inlet and exhaust		Centralized inlet and exhaust	
Operating pressure		0~0.8MPa(0~114psi)	
Proof pressure		1.2MPa(175psi)	
Temperature		-20~70°C	
Weight	Integrated valve of 2 stations	158.5g(not include CPV15 valve)	
	Increase when add 2 stations	+97.65g	
	Blank plate kits	0.65g	

[Note1] PT thread, G thread and NPT thread are available.

### Product feature

1. Integrated installation centralizes air inlet, exhaust and power (25pin D-Sub)to save space and reduce additional accessories.
2. Flexible combination and expandability for various applications. Blank plates are optional.

### Ordering code

#### Ordering code for manifold

CPV15S 20F □

① Model	② Number of stations	③ Thread type
CPV15S: CPV15S series integrated solenoid valve	2F: 2 stations 4F: 4 stations 6F: 6 stations ..... 20F: 20 stations	Blank: PT G: G T: NPT

[Note] 1. Ordering code contains solenoid valve, manifold, and blank plate.  
2. Maximum station up to 20 stations.

#### Ordering code for valve

CPV15 B P

① Model	② Voltage	③ Code of manual override
CPV: CPV series micro-solenoid valve	B: DC24V F: DC12V	P: With manual override

#### Ordering code for blank plate

P-CPV15S-R2

① Model	② Code
CPV15S: CPV15S series integrated solenoid valve	R2: Blank plate for manifold

[Note] Blank plate kits contains blank plate, gasket and screw.

### Installation and Application

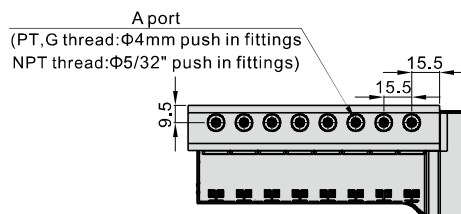
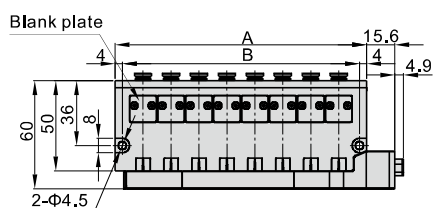
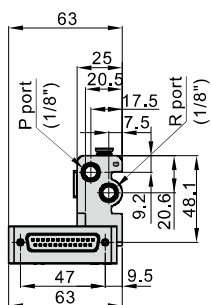
Please refer to the "Installation and Application" instruction of Integrated solenoid valve.



# Integrated solenoid valve (3/2 way)

## CPV15S Series—Manifold, solenoid valve and blank plate

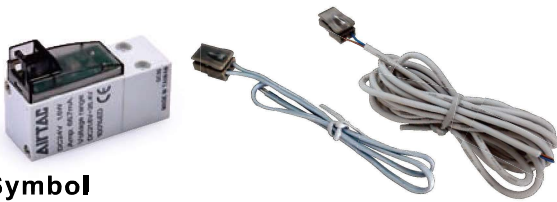
### Dimensions



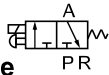
Item\Number of stations	2F	4F	6F	8F	10F	12F	14F	16F	18F	20F
A	46.5	77.5	108.5	139.5	170.5	201.5	232.5	263.5	294.5	325.5
B	38.5	69.5	100.5	131.5	162.5	193.5	224.5	255.5	286.5	317.5

# Micro-solenoid valve(3/2 way)

## CPV15 Series



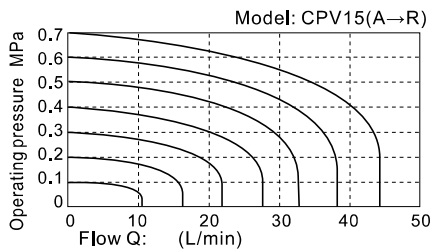
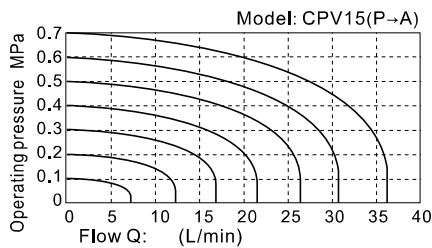
### Symbol



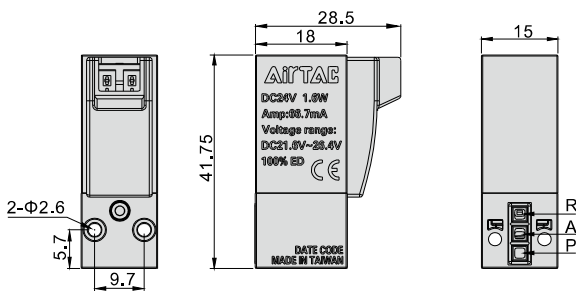
### Product feature

1. None polarity design of DC circuit, the direction(vertical or horizontal) of wiring can be adjusted freely according to the installation demand.
2. Low starting voltage and long service life.
3. There is no buzzing by the usage of AC power supply .
4. With surge device can avoid the damage of solenoid valve by surge voltage.

### Flow chart



### Dimensions



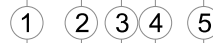
### Specification

Model	CPV15	
Fluid	Air(to be filtered by 40µm filter element)	
Acting	Direct acting	
Orifice size	Φ0.8mm	
Valid area or section	P→A: 0.44mm <sup>2</sup> (Cv=0.024) ; A→P: 0.55mm <sup>2</sup> (Cv=0.03)	
Valve type	3 port 2 position	
Weight	micro-solenoid valve	33.2g
	Wire	050: 4.6g 200: 21.4g
	Screw(2pcs)	1.45g
Operating pressure	0~0.8MPa(0~114psi)	
Proof pressure	1.2MPa(175psi)	
Temperature	-20~70°C	
Standard voltage	AC220V AC110V AC24V DC24V DC12V	
Scope of voltage	DC±10%: AC+15%~-10%	
Protection	Dustproof	
Temperature classification	F Class	
Power consumption	DC: 1.6W ; AC: 2.0VA	
Electrical entry	Terminal	
Activating time	on<10ms ; off<10ms	

### Ordering code

#### Ordering code of valve's body

CPV 15 B P-050



① Model	② Width of body	③ Voltage	④ Code of manual override	⑤ Wire length [Note1]
CPV: CPV series micro-solenoid valve	15: 15mm	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	P: With manual override	050: 0.5m 200: 2.0m

[Note1] Attach the two M2.5 screws.

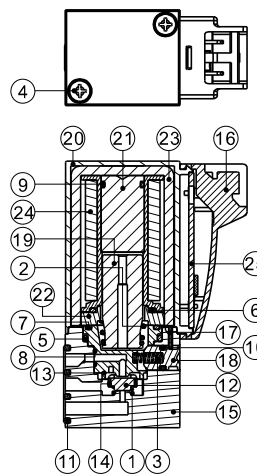
#### Ordering code of wire

CPV T 050



① Model	② Wire	③ Wire length
CPV: CPV series micro-solenoid valve	T: Wire	050: 0.5m 200: 2.0m

### Inner structure



No.	Item	Material	No.	Item	Material
1	Spring	Stainless steel	14	Mandril	Resin
2	Spring	Stainless steel	15	Body	Resin
3	Spring	Stainless steel	16	Connector shell	Resin
4	Screw	Carbon steel	17	Manual pin plate	Stainless steel
5	O-ring	NBR	18	Manual pin	Brass
6	O-ring	NBR	19	Armature	Stainless steel
7	O-ring	NBR	20	Cover	Resin
8	O-ring	NBR	21	Electromagnet	Stainless steel
9	O-ring	NBR	22	Plate	Carbon steel
10	O-ring	NBR	23	U shape bracket	Carbon steel
11	Gasket	NBR	24	Coil	
12	Gasket	NBR	25	PCB assembly	
13	Crater	Resin			

### Installation and Application

1. Valve body installation:  
Use two M2.5 X 19 screws to mount the valve by 0.4~0.45N.m.
2. Wiring instruction:  
Vertical and horizontal insertion share the same terminal port for different practical applications.  
Note: There is no polarity for terminal wire.
3. AC coil is forbidden to connect with other devices.

M2.5×19(long)  
Screw



Vertically insert  
(Wire and body  
is vertical)



Horizontally insert  
(Wire and body  
is horizontal)

# Micro-solenoid valve(3/2 way)

## CPV15 Series — Manifold



### Specification

Model	CPV15M2F	CPV15M3F	CPV15M4F	.....	CPV15M20F
Fluid	Air(to be filtered by 40µm filter element)				
Temperature	-20~70°C				
Port size	A port	P/R ports		1/8"[Note1]	
		PT thread	Φ4mm(Push in fittings)		
		G thread	Φ4mm(Push in fittings)		
		NPT thread	Φ5/32"(Push in fittings)		
Applicable valves	CPV15 series micro-solenoid valve				

[Note1] PT thread, G thread and NPT thread are available.

### Product feature

1. Integrated installation saves space and reduces additional accessories.
2. Centralized air intake, exhaust, and wiring for quick air circuit checking.
3. Flexible combination and expandability for various applications. Blank plates are optional.

### Ordering code

#### Ordering code for manifold

**CPV15M 20F** □

①    ②    ③

① Model	② Number of stations	③ Thread type
CPV15M: CPV15 series manifold	2F: 2 stations 3F: 3 stations 4F: 4 stations ..... 20F: 20 stations	Blank: PT G: G T: NPT

#### Ordering code for blank plate

**P-CPV15S-R2**

①    ②

① Model	② Code
CPV15S: CPV15S series integrated solenoid valve	R2: Blank plate for manifold

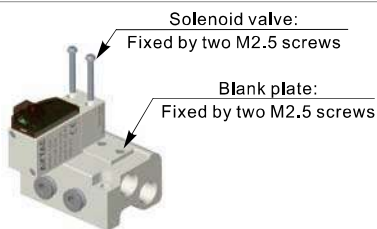
- [Note] 1. Ordering code contains manifold and blank plate.  
2. Maximum station up to 20 stations.  
3. Blank plate kits contain blank plate, gasket and screw.



### Installation and Application

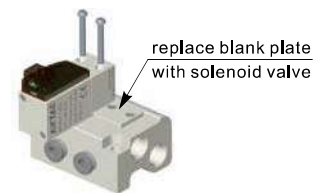
#### Assembly of micro-solenoid valve (blank plate) and manifold

Mount micro-solenoid valve and manifold by two M2.5 screws as following .  
Mount blank plate and manifold by two M2.5 countersunk screws as following .



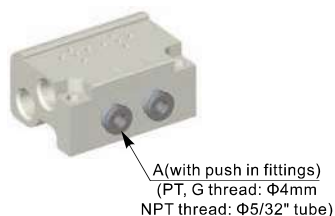
#### Expansion of micro-solenoid valve

Remove blank plate and install solenoid valve by the assembly instruction.



#### A port tubing

A port is at the side of manifold with push in fittings



#### Manifold mounting

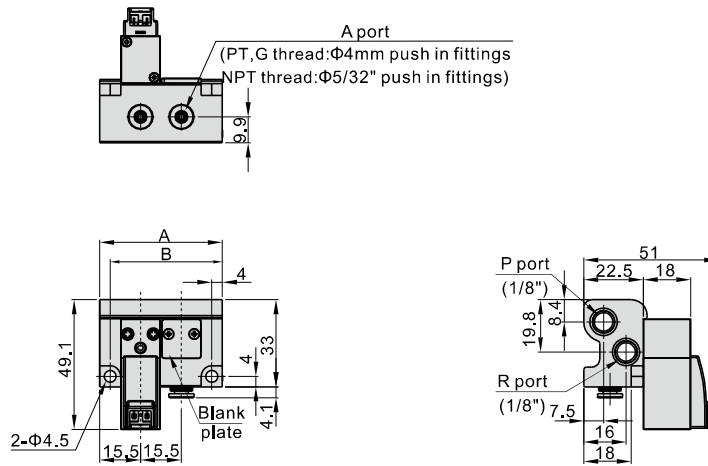
Both sides of manifold attach two installing through-holes, using two M4 hexagon cap screws to fix.



# Micro-solenoid valve(3/2 way)

## CPV15 Series — Manifold

### Dimensions



Item\Number of stations	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
A	46.5	62	77.5	93	108.5	124	139.5	155	170.5	186	201.5	217	232.5	248	263.5	279	294.5	310	325.5
B	38.5	54	69.5	85	100.5	116	131.5	147	162.5	178	193.5	209	224.5	240	255.5	271	286.5	302	317.5

# Integrated solenoid valve's cable

## F-DSUB25/F-DSUB37

### Cable ordering code

F - DSUB 25 F 200

① ② ③ ④



① Model	DSUB: D-SUB Cable			
② Pin Number	25: 25PIN	37: 37PIN		
③ Terminal type	F: Two Females	M: One Female + another male	S: One Female+another wire	
④ Wire length	200: 2m	300: 3m	500: 5m	150: 1.5m 200: 2m 300:3m

### Specification

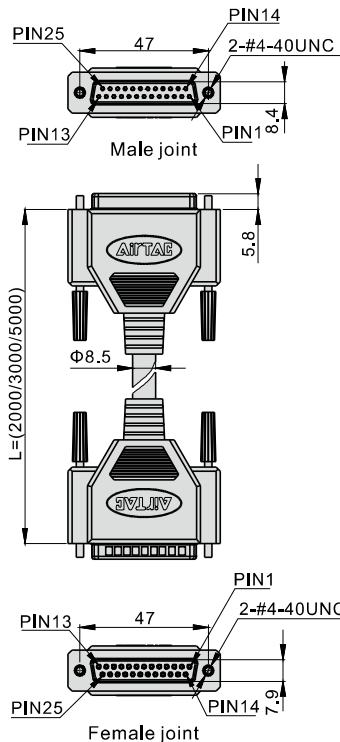
1. Flame resistant grade: UL94 VW-1.
2. Rated temperature: 80°C.
3. Rated voltage: 300V.

### How to select cable

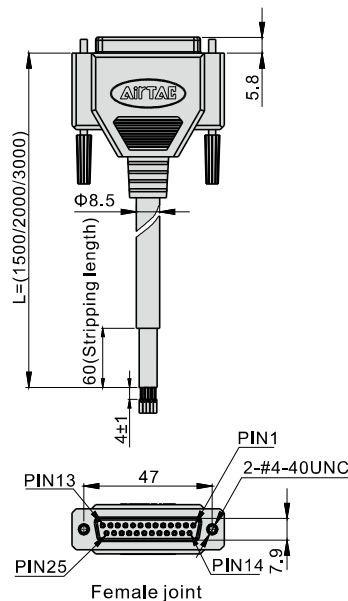
Cable type\Valve type	CPV10S	CPV15S	6D	6DW
F-DSUB25	•	•	•	
F-DSUB37				•

### Dimensions and wire's assignment

#### F-DSUB25F(M)



#### F-DSUB25S



#### Wire's assignment

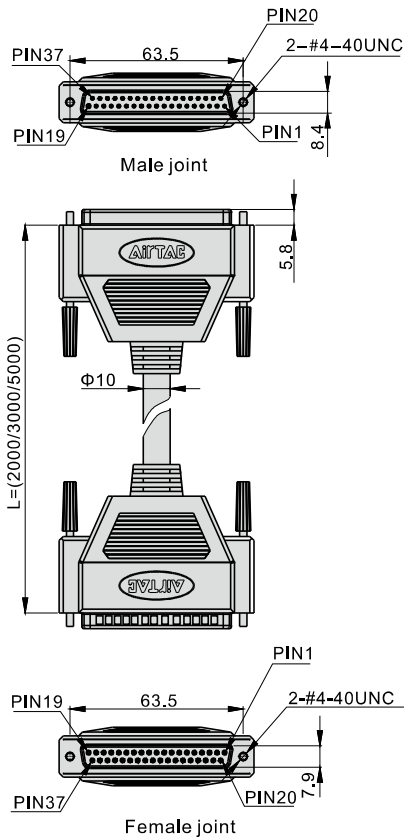
PIN	Color
1	Black
2	Tawny
3	Red
4	Orange
5	Yellow
6	Pink
7	Blue
8	Violet+White
9	Gray+Black
10	White+Black
11	White+Red
12	Yellow+Red
13	Orange+Red
14	Yellow+Black
15	Pink+Black
16	Blue+White
17	Violet
18	Gray
19	Orange+Black
20	Red+White
21	Tawny+White
22	Pink+Red
23	Gray+Red
24	Black+White
25	White



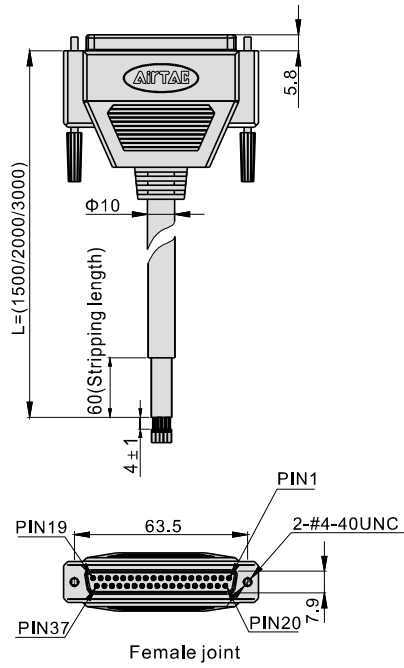
# Integrated solenoid valve's cable

## F-DSUB25/F-DSUB37

### F-DSUB37F(M)



### F-DSUB37S



### Wire's assignment

PIN	Color
1	Red+Black
2	Gray+Black
3	Brown+Black
4	Orange+Black
5	Yellow+Black
6	Green+Black
7	Blue+Black
8	White+Black
9	Violet+Red
10	Silt green+Black
11	Pink blue+Black
12	Pink+Black
13	Red
14	Gray
15	Brown
16	Orange
17	Yellow
18	Green
19	Black
20	Blue
21	White
22	Violet
23	Silt green
24	Pink blue
25	Pink
26	Red+White
27	Gray+White
28	Brown+White
29	Orange+White
30	Yellow+White
31	Green+White
32	Blue+White
33	Violet+White
34	Silt green+White
35	Pink blue+White
36	Pink+White
37	Red+Green

# Solenoid valve(3/2 way)

## 3V1 Series



### Symbol



### Product feature

1. Direct acting type and normally closed mode, flexible in direction change.
2. No need to add oil for lubrication.
3. Several valves can be installed integrately to save installation space.
4. Affiliated manual devices are equipped to facilitate installation and debugging.
5. Several standard voltage grades are optional.

### Specification

Model	3V1-M5	3V1-06
Fluid	Air(to be filtered by 40µm filter element)	
Acting	Direct acting	
Port size [Note1]	M5	1/8"
Valve type	3 port 2 position	
Lubrication	Not required	
Operating pressure	0~0.8MPa(0~114psi)	
Proof pressure	1.2MPa(175psi)	
Temperature	-20~70°C	
Orifice size	Φ1.2mm	
Material of body	Aluminum alloy	

[Note1] PT thread, G thread and NPT thread are available.

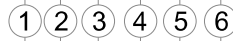
### Coil specification

Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note 1]	10 cycle/sec				

[Note 1] The maximum actuation frequency is in the no-load state.

### Ordering code

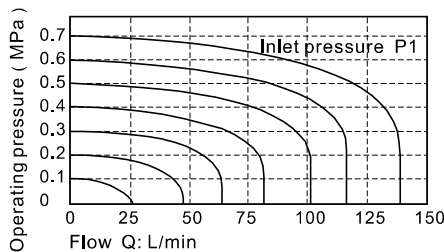
3V 1 06 A □ □



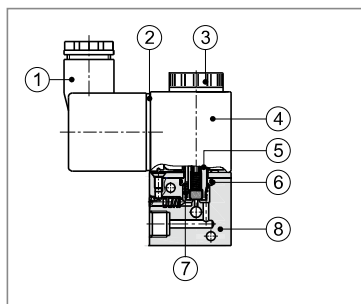
① Model	② Code	③ Port size	④ Standard voltage	⑤ Electrical entry	⑥ Thread type
3V: Solenoid valve (3/2 way)	1: 1 Series	M5: M5 06: 1/8"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	No this code Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

### Flow chart



### Inner structure



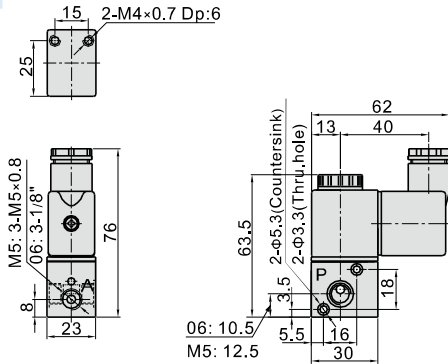
No.	Item	No.	Item
1	Connector	5	Armature
2	Gasket	6	O-ring
3	Coil nut	7	Return spring
4	Coil	8	Body

# Solenoid valve(3/2 way)

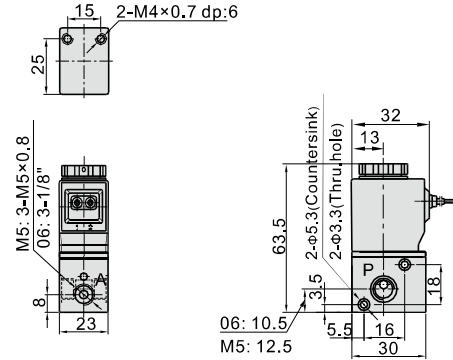
## 3V1 Series

### Dimensions

#### Terminal

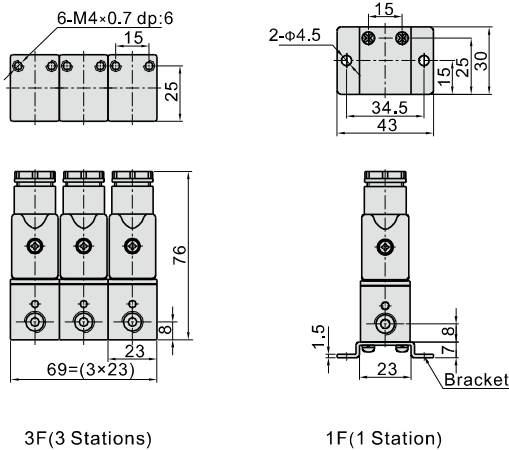


#### Grommet

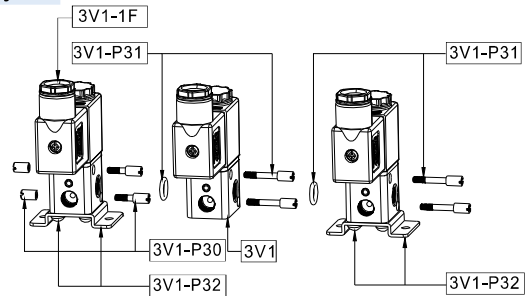


### Series connection

#### Dimensions



#### How to joint



#### Product structure

Connection Amount/Q.TY	3V1	3V1-P30	3V1-P31	3V1-P32
3V1-□-□-1F	1	0	0	1
3V1-□-□-2F	2	1	1	1
.....	.....	.....	.....	.....
3V1-□-□- <i>n</i> F	<i>n</i>	1	<i>n</i> -1	2

Note: "n" is the number of junction valve, and  $n \geq 3$ .

### Ordering code for series

3V 1 06 A □ 3F □

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Code	③ Port size	④ Standard voltage	⑤ Electrical entry	⑥ Number of stations	⑦ Thread type
3V: Solenoid valve (3/2 way)	1: 1 Series	M5: M5	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	1F: 1 Station 2F: 2 Stations 3F: 3 Stations ..... 20F: 20 Stations	Not this code
		06: 1/8"			Blank: PT G: G T: NPT	

[Note] The wire length is 0.5m.

The above codes have included the series accessories, so it is unnecessary to order the accessories specially. But if you like, you could order as follows.

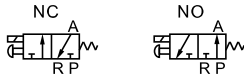
Code of accessories	Accessory name	Part code	Part name	Quantity
3V1-P30	Coupling screw assembly	F-3V1002B	Coupling screw(S)	2
		F-3V1003B	Coupling screw(M)	2
3V1-P31	Coupling screw assembly	GOR20008N75	O-Ring	1
		F-3V1004B	Coupling screw(L)	2
3V1-P32	Bracket assembly	F-3V1001B	Fixed mounting	1
		GSDA04008ZA	Cross round head screw	2

# Solenoid valve(3/2 way)

## 3V2 Series



### Symbol



### Product feature

1. Direct acting type and normally closed mode, flexible in direction change.
2. Normally closed and normally open types are optional.
3. Structure in coaxial blanking mode: leakage proof and large air flow.
4. No need to add oil for lubrication.
5. Affiliated manual devices are equipped to facilitate installation and debugging.
6. Several standard voltage grades are optional.
7. Can be used under vacuum condition.

### Ordering code

#### Ordering code of solenoid valve

3V 2 08 NC A □ □

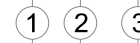


① Model	② Code	③ Port size	④ Acting type	⑤ Standard voltage	⑥ Electrical entry	⑦ Thread type
3V: Solenoid valve(3/2 way)	2: 2 Series	06: 1/8" 08: 1/4"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

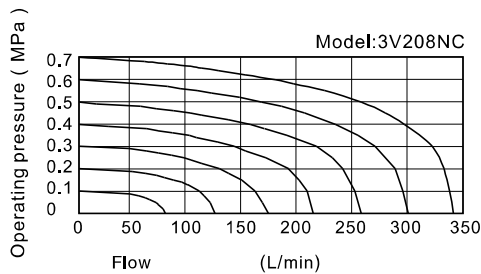
#### Ordering code of accessories

F-3V2 FA

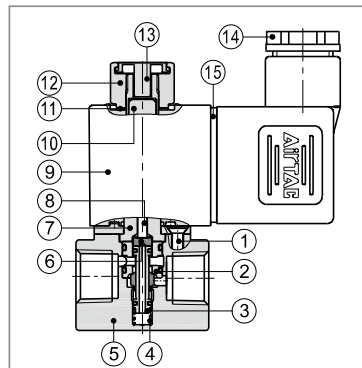


① Accessories code	② Valve type	③ Accessories type
F: Mounting accessories	3V2: Solenoid valve(3/2 way)	FA: FA Bracket

### Flow chart



### Inner structure



No.	Item	No.	Item
1	Pilot screw	9	Coil
2	Spacer	10	Armature
3	Spool	11	Washer
4	Spring	12	Coil nut
5	Body	13	Manual button
6	Washer	14	Connector
7	Electromagnet set	15	Gasket
8	Mandril		

### Specification

Model	3V206	3V208
Fluid	Air(to be filtered by 40μm filter element)	
Acting	Direct acting	
Port size [Note1]	1/8"	1/4"
Valve type	3 port 2 position	
Orifice size	3.2mm <sup>2</sup> (Cv=0.18)	3.4mm <sup>2</sup> (Cv=0.19)
Lubrication	Not required	
Operating pressure	Common	0~0.8MPa(0~114psi)
	vacuum	-102.2kPa~0.1MPa(-1.45~14.2psi)
Proof pressure	1.2MPa(175psi)	
Temperature	-20~70°C	
Material of body	Aluminum alloy	

[Note1] PT thread, G thread and NPT thread are available.

### Coil specification

Item	Specification
Standard voltage	AC220V, AC110V, AC24V, DC24V, DC12V
Scope of voltage	AC: ±15% DC: ±10%
Power consumption	AC: 7VA DC: 7.0W
Protection	IP65(DIN40050)
Temperature classification	B Class
Electrical entry	Terminal, Grommet
Activating time	0.05 sec and below
Max. frequency [Note1]	10 cycle/sec

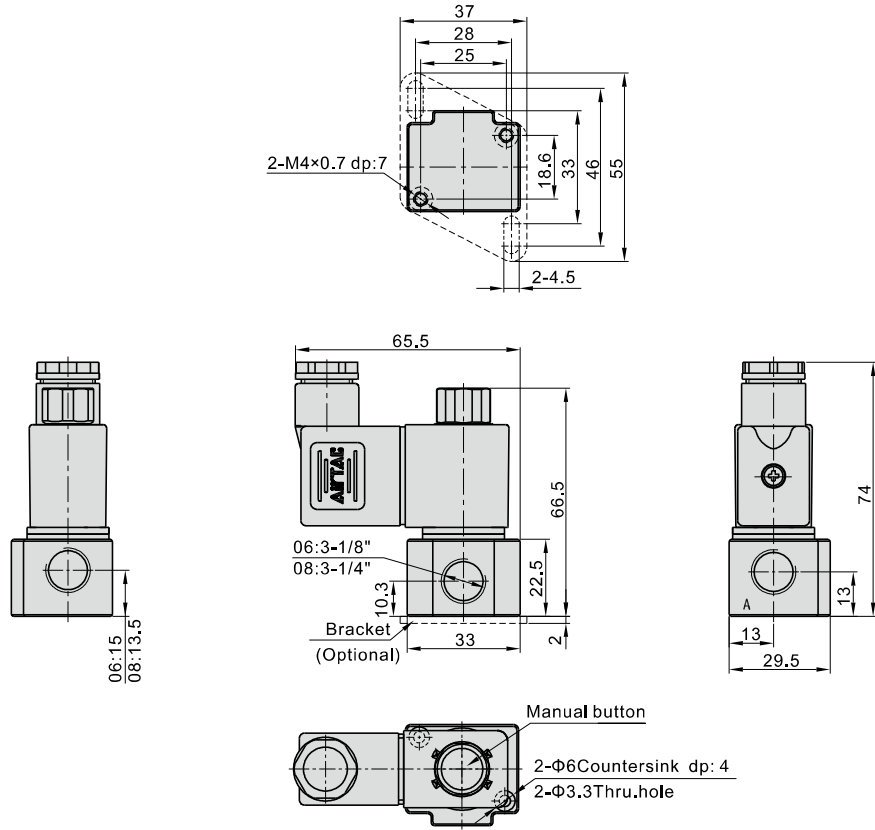
[Note1] The maximum actuation frequency is in the no-load state.

# Solenoid valve(3/2 way)

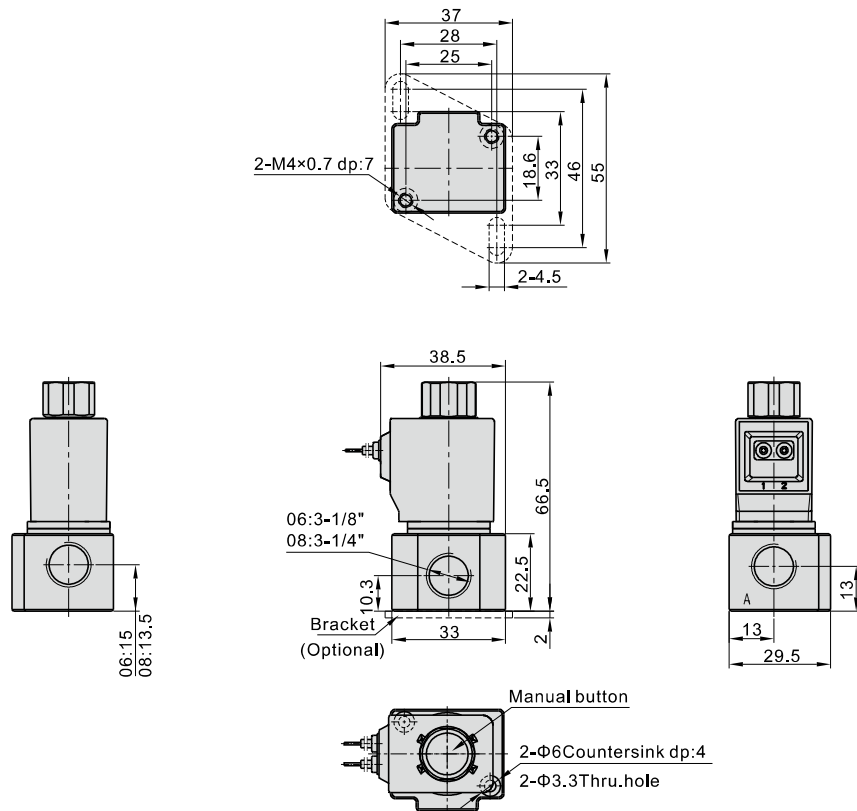
## 3V2 Series

### Dimensions

#### Terminal



#### Grommet

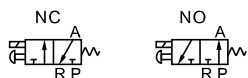




## 3V2M Series



### Symbol



### Product feature

1. Direct acting type and normally closed mode, flexible in direction change.
2. Normally closed and normally open types are optional.
3. Structure in coaxial blanking mode: leakage proof and large air flow.
4. No need to add oil for lubrication.
5. Affiliated manual devices are equipped to facilitate installation and debugging.
6. Valve needs to be used with the sub-base and allows various connection combinations to save space.
7. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
8. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.
9. Special sub-base seal, NC or NO functions can not be converted by flipping seal direction.

### Specification

Model	3V2M
Fluid	Air(to be filtered by 40μm filter element)
Acting	Direct acting
Port size [Note1]	1/8"
Valve type	3 port 2 position
Orifice size	1.7mm <sup>2</sup> (Cv=0.1)
Exhaust type	Centralized exhaust , Separated exhaust
Operating pressure	0~0.8MPa(0~114psi)
Proof pressure	1.2MPa(175psi)
Temperature	-20~70°C
Material of body	Aluminum alloy

[Note1] PT thread, G thread and NPT thread are available.

### Coil specification

Item	Specification
Standard voltage	AC220V, AC110V, AC24V, DC24V, DC12V
Scope of voltage	AC: ±15% DC: ±10%
Power consumption	AC: 7VA DC: 7.0W
Protection	IP65(DIN40050)
Temperature classification	B Class
Electrical entry	Terminal, Grommet
Activating time	0.05 sec and below
Max. frequency [Note1]	10 cycle/sec

[Note1] The maximum actuation frequency is in the no-load state.

### Ordering code

#### Ordering code for valve

3V2M NC A □			
① Model	② Acting type	③ Standard voltage	④ Electrical entry
3V2M: Solenoid valve(3/2 way, with manifold)	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]

[Note] The wire length is 0.5m.

#### Ordering code for manifold

3V2M 5F D □			
① Model	② Number of stations	③ Exhaust type	④ Thread type
3V2M: Solenoid valve(3/2 way, with manifold)	1F: 1 Stations 2F: 2 Stations ..... 20F: 20 Stations	Blank: Centralized exhaust D: Separated exhaust	Blank: PT G: G T: NPT

[Note]: Manifold kits contains manifold, seal and screw.  
The port size is only 1/8".

#### Ordering code for valve's group(valve+manifold)

3V2M NC A □ - 5F D □						
① Model	② Acting type	③ Standard voltage	④ Electrical entry	⑤ Number of stations	⑥ Exhaust type	⑦ Thread type
3V2M: Solenoid valve (3/2 way, with manifold)	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet	1F: 1 Station 2F: 2 Stations 3F: 3 Stations ..... 20F: 20 Stations	Blank: Centralized exhaust D: Separated exhaust	Blank: PT G: G T: NPT

#### Ordering code for blank plate

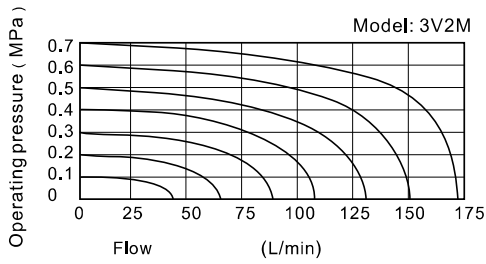
P-3V2M - R2		
① Subassembly type	② Valve type	③ Accessories type
P: subassembly	3V2M: Solenoid valve(3/2 way, with manifold)	R2: Blank plate for manifold

[Note]: Blank plate kits contains blank plate and screw.

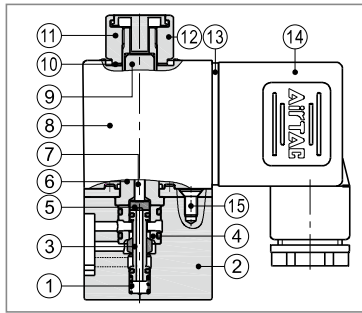
# Solenoid valve(3/2 way)

## 3V2M Series

### Flow chart



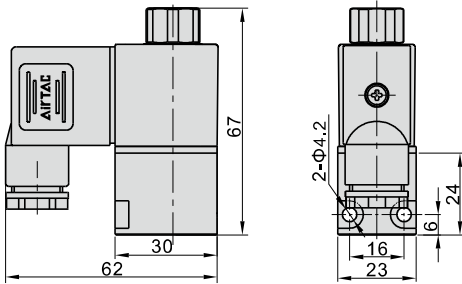
### Inner structure



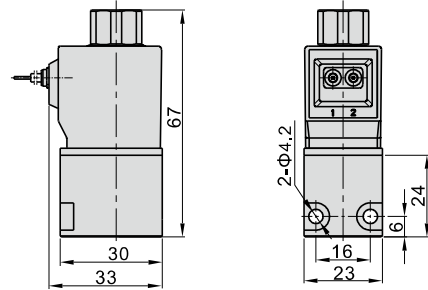
No.	Item	No.	Item
1	Spring	9	Armature
2	Body	10	Washer
3	Spool	11	Coil nut
4	Spacer	12	Manual button
5	Washer	13	Gasket
6	Electromagnet set	14	Connector
7	Mandril	15	Pilot screw
8	Coil		

### Dimensions

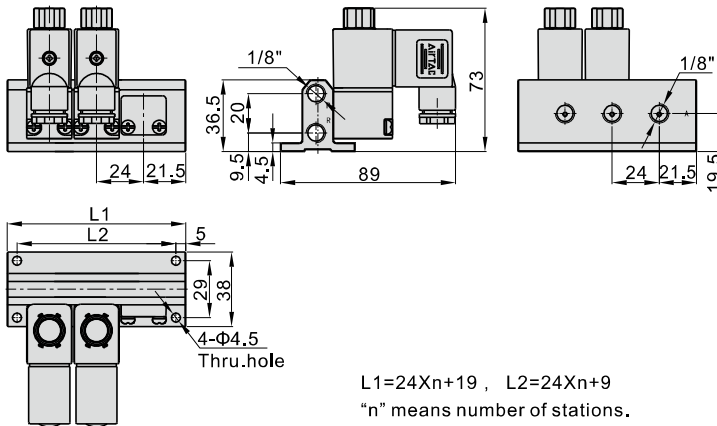
#### Valve(Terminal)



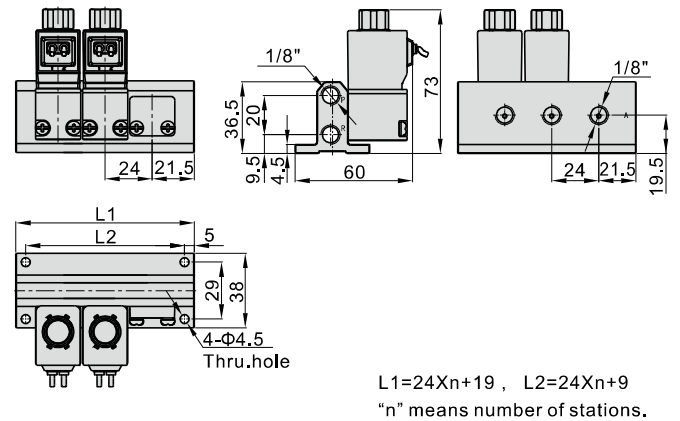
#### Valve(Grommet)



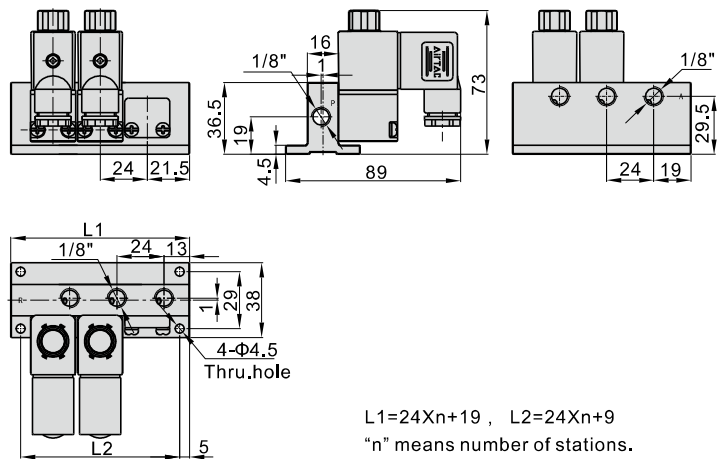
#### Valve's group(Terminal, Centralized exhaust)



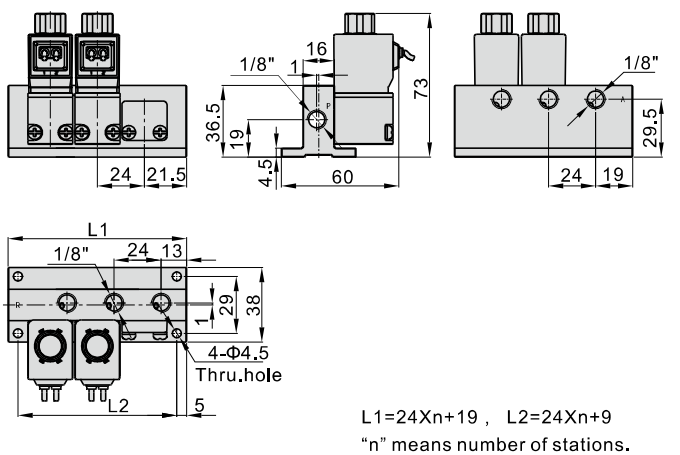
#### Valve's group(Grommet, Centralized exhaust)



#### Valve's group(Terminal, Separated exhaust)



#### Valve's group(Grommet, Separated exhaust)

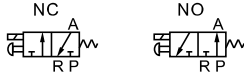


# Solenoid valve(3/2 way)

## 3V3 Series



### Symbol



### Product feature

1. Direct acting type and normally closed mode, flexible in direction change.
2. Normally closed and normally open types are optional.
3. Structure in coaxial blanking mode: leakage proof and large air flow.
4. No need to add oil for lubrication.
5. Affiliated manual devices are equipped to facilitate installation and debugging.
6. Several standard voltage grades are optional.
7. Can be used under vacuum condition.

### Specification

Model		3V308
Fluid		Air(to be filtered by 40µm filter element)
Acting		Direct acting
Port size [Note1]		1/4"
Valve type		3 port 2 position
Orifice size		11mm <sup>2</sup> (Cv=0.62)
Lubrication		Not required
Operating pressure	Common	0~0.8MPa(0~114psi)
	vacuum	-102.2kPa~0.1MPa(-1.45~14.2psi)
Proof pressure		1.2MPa(175psi)
Temperature		-20~70°C
Material of body		Aluminum alloy

[Note1] PT thread, G thread and NPT thread are available.

### Coil specification

Item	Specification
Standard voltage	AC220V, AC110V, AC24V, DC24V, DC12V
Scope of voltage	AC: ±15% DC: ±10%
Power consumption	AC: 10VA DC: 6.5W
Protection	IP65(DIN40050)
Temperature classification	B Class
Electrical entry	Terminal, Grommet
Activating time	0.05 sec and below
Max. frequency [Note1]	10 cycle/sec

[Note1] The maximum actuation frequency is in the no-load state.

### Ordering code

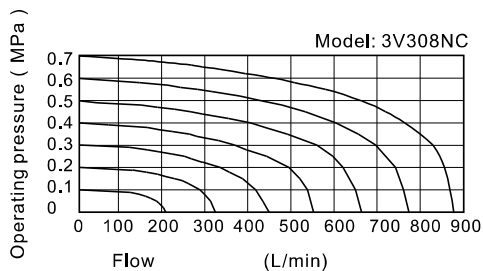
3V 3 08 NC A □ □



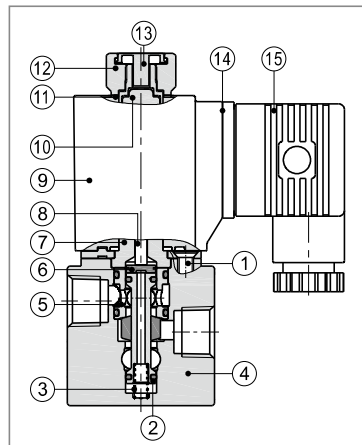
①Model	②Code	③Port size	④Acting type	⑤Standard voltage	⑥Electrical entry	⑦Thread type
3V: Solenoid valve (3/2 way)	3: 3 Series	08: 1/4"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

### Flow chart



### Inner structure



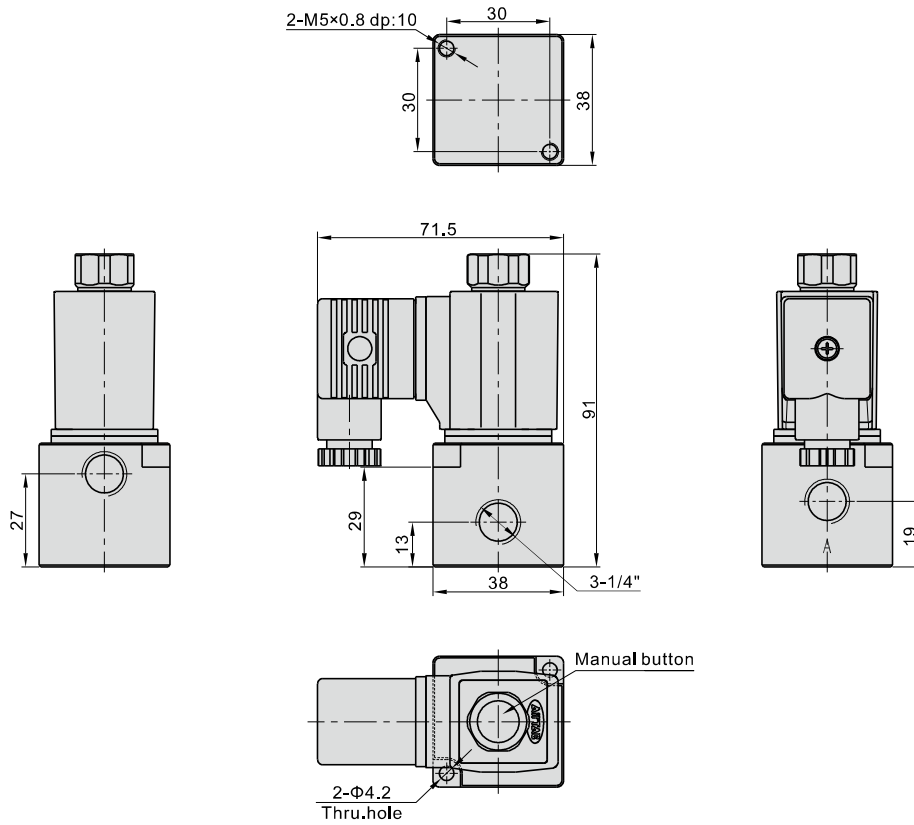
No.	Item	No.	Item
1	Pilot screw	9	Coil
2	Spool	10	Armature
3	Spring	11	Washer
4	Body	12	Coil nut
5	Spacer	13	Manual button
6	Washer	14	Gasket
7	Electromagnet set	15	Connector
8	Mandril		

# Solenoid valve(3/2 way)

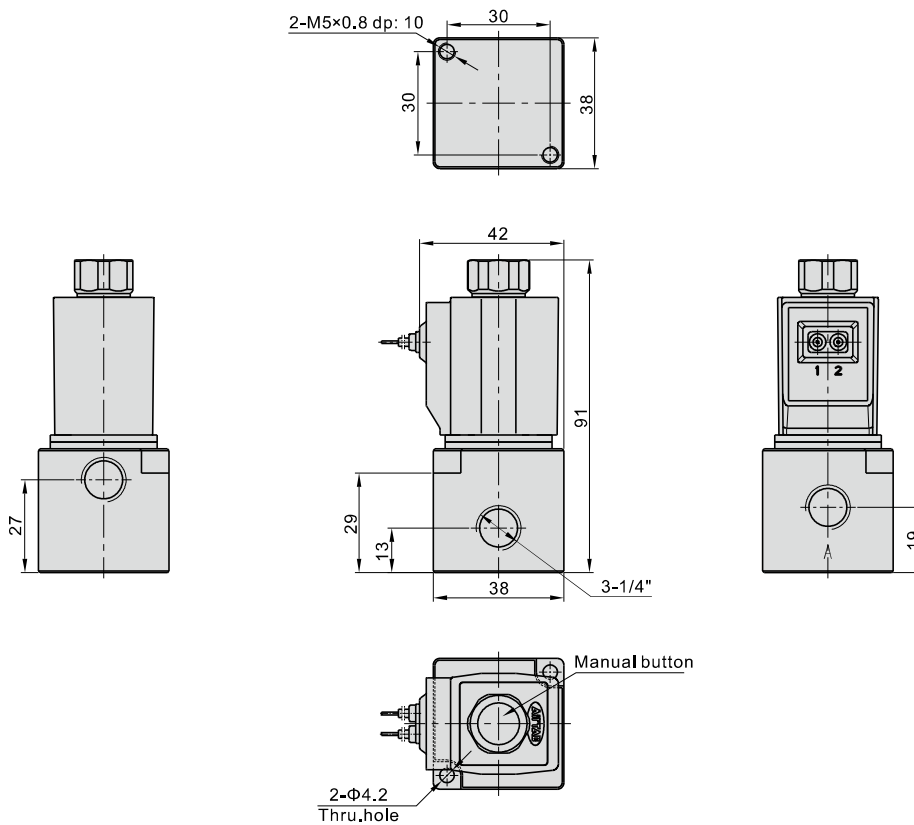
## 3V3 Series

### Dimensions

#### Terminal



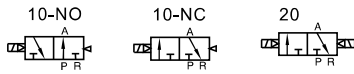
#### Grommet



## 6TV Series



### Symbol

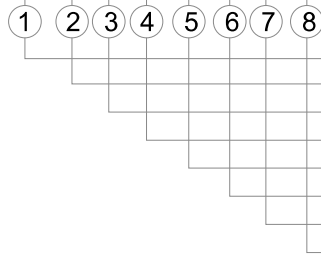


### Product feature

1. Electrical entry is terminal, horizontal and vertical insertion can freely switch.
2. Inner exhaust structure to collect pilot airflow, and then exhaust intensively from R port.
3. The body is extruded by aluminum alloy, and the inner hole is specially processed to increase the flow rate.
4. Threaded type and quick connector type are optional, and can integrate manifold to form valve group to save space.

### Ordering code

6TV 1 10 06 NC B 050 □



① Model	6TV : Solenoid valve (3/2 way)					
② Code	05: 0500 Series	1: 100 Series		2: 200 Series		3: 300 Series
③ Valve type	10: Single solenoid			20 : Double solenoid		
④ Port size	M5: M5	M5: M5	06: 1/8"	06: 1/8"	08: 1/4"	10: 3/8"
⑤ Acting type	NC: Normally closed NO: Normally opened [Note : Double solenoid no this code]					
⑥ Voltage	A: AC220V		B: DC24V	C: AC110V		F: DC12V
⑦ Wire length	050: 0.5m		200: 2.0m			
⑧ Thread type	-		Blank: PT Thread/ G: G Thread / T: NPT Thread			

### Specification

Model	6TV0510	6TV0520	6TV110	6TV120
Port size [Note1]	In=Out=Exh=M5		In=Out=Exh=M5(or=1/8")	
Orifice size(Cv)[Note4]	M5:3.4mm <sup>2</sup> (0.2)		06 : 8.9mm <sup>2</sup> (0.52)	
Weight (g)	28	43	52	67
Model	6TV210	6TV220	6TV310	6TV320
Port size [Note1]	06 : In=Out=Exh=1/8"		In=Out=3/8" Exh=1/4"	
	08 : In=Out=1/4" Exh=1/8"			
Orifice size(Cv)[Note4]	08 : 15.4mm <sup>2</sup> (0.91)		10:38.4mm <sup>2</sup> (2.26)	
Weight (g)	90	105	180	215
Fluid	Air(to be filtered by 40µm filter element)			
Acting	Internal pilot			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Exhaust type of pilot valve	Main valve and pilot valve concentrated exhaust			
Max.frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

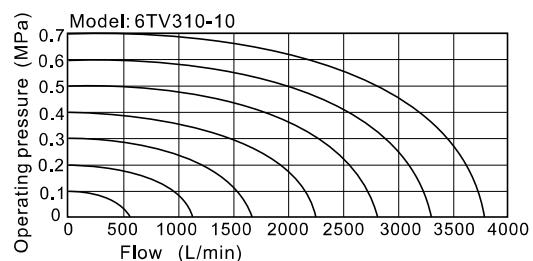
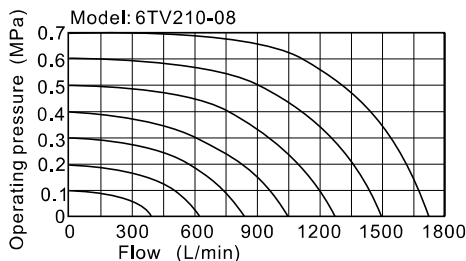
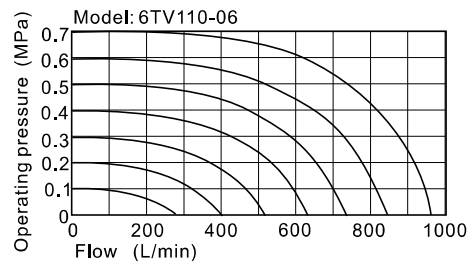
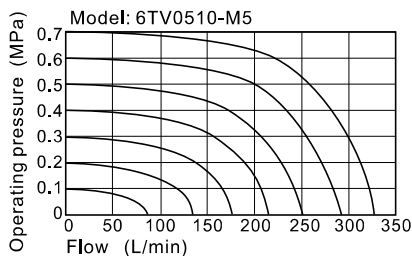
[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

Item	Specification			
Standard voltage	AC220V	AC110V	DC24V	DC12V
Scope of voltage	AC: +15% ~-10%		DC: ±10%	
Power consumption	1.1VA		0.7W	
Protection	Dust-proof			
Temperature classification	F Class			
Electrical entry	Terminal			
Activating time	0.05 sec and below			

### Flow chart



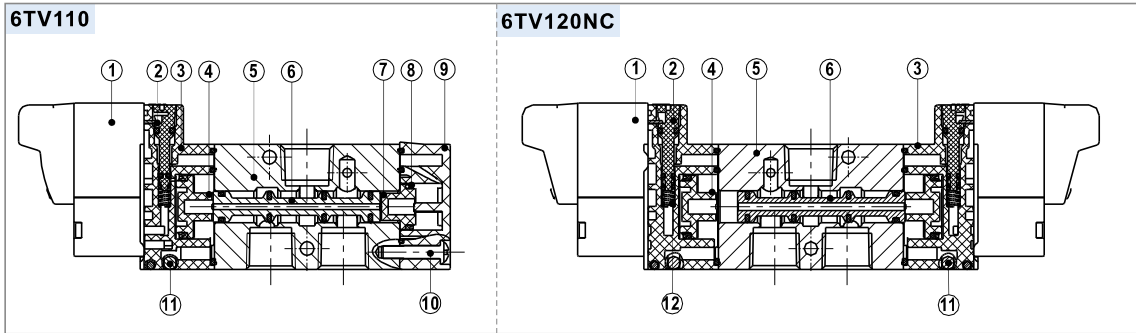
The data in flow rate chart are obtained from AirTAC lab.



# Solenoid valve(3/2 way)

## 6TV Series

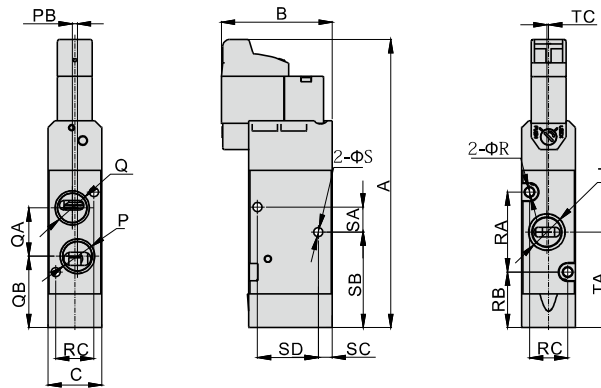
### Inner structure



No.	Item
1	Pilot valve
2	Manual override
3	Pilot kit
4	Big piston
5	Body
6	Spool
7	Small piston
8	Gasket
9	Bottom cover
10	Bolt
11	Steel ball
12	Spring

### Dimensions

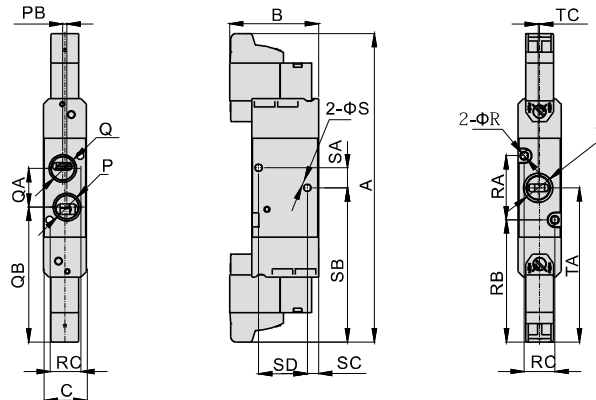
6TV0510  
6TV110  
6TV210  
6TV310



Model\Item	A	B	C	P	PB	Q	QA	QB	R	RA	RB	RC	S	SA	SB	SC	SD	T	TA	TC
6TV0510M5	64.5	30.5	10.6	M5X0.8	1	M5X0.8	9.5	13.5	2.1	14	11.5	7.5	-	-	-	-	-	M5X0.8	18.5	0.5
6TV110M5	83	32	15.5	M5X0.8	-	M5X0.8	14	20.5	2.6	23	16	11	Φ2.6	7.2	27.5	4	17.5	M5X0.8	27.5	-
6TV11006	83	32	15.5	1/8"	1.5	1/8"	14	20.5	2.6	23	16	11	Φ2.6	7.2	27.5	4	17.5	1/8"	27.5	0.5
6TV21006	97	33.5	18.5	1/8"	-	1/8"	18	25.5	3.2	33	18	13.5	Φ3.2	12	34.5	7	21	1/8"	34.5	-
6TV21008	97	33.5	18.5	1/4"	-	1/8"	18	25.5	3.2	33	18	13.5	Φ3.2	12	34.5	7	21	1/4"	34.5	1
6TV31010	116.5	46	23.5	3/8"	-	1/4"	28	29.5	3.2	43	22	18.4	Φ4.3	15	58.5	8	31	3/8"	43.5	-

[Note]: 6TV0510 type no through hole "S" on the side.

6TV0520  
6TV120  
6TV220  
6TV320



Model\Item	A	B	C	P	PB	Q	QA	QB	R	RA	RB	RC	S	SA	SB	SC	SD	T	TA	TC
6TV0520M5	93	30.5	10.6	M5X0.8	1	M5X0.8	9.5	41.5	2.1	14	39.5	7.5	-	-	-	-	-	M5X0.8	18.5	0.5
6TV120M5	110.5	32	15.5	M5X0.8	-	M5X0.8	14	48.5	2.6	23	44	11	Φ2.6	7.2	55.5	4	17.5	M5X0.8	27.5	-
6TV12006	110.5	32	15.5	1/8"	1.5	1/8"	14	48.5	2.6	23	44	11	Φ2.6	7.2	55.5	4	17.5	1/8"	27.5	0.5
6TV22006	125	33.5	18.5	1/8"	-	1/8"	18	53.5	3.2	33	46	13.5	Φ3.2	12	62.5	7	21	1/8"	34.5	-
6TV22008	125	33.5	18.5	1/4"	-	1/8"	18	53.5	3.2	33	46	13.5	Φ3.2	12	62.5	7	21	1/4"	34.5	1
6TV32010	146	46	23.5	3/8"	-	1/4"	28	59	3.2	43	51.5	18.4	Φ4.3	15	73	8	31	3/8"	43.5	-

[Note]: 6TV0520 type no through hole "S" on the side.

## Manifold for 6TV Series



### Specification

Item\Manifold Model	6TV0500M	6TV100M	6TV200M	6TV300M
Fluid	Air(to be filtered by 40μm filter element)			
Temperature °C	-20~70			
Adaptable valve's series	6TV0500 Series	6TV100 Series	6TV200 Series	6TV300 Series

### Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

### Ordering code

#### 6TV100M 5F □ Ordering code for manifold



① Model	6TV0500M: 6TV0500 Series manifold	6TV100M: 6TV100 Series manifold	6TV200M: 6TV200 Series manifold	6TV300M: 6TV300 Series manifold
② Number of stations	1F: 1 Station    2F: 2 Station    3F: 3 Station    .....    20F: 20 Station			
③ Thread type	Blank: PT / G: G Thread / T: NPT Thread			

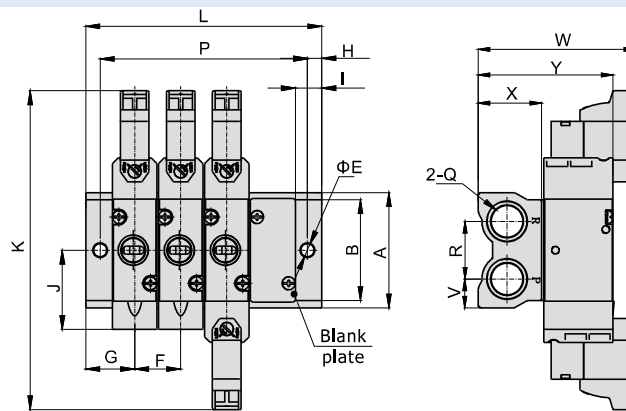
#### P-6TV100M - R2 Ordering code for blank plate



① Model	6TV0500M: 6TV0500 Series manifold	6TV100M: 6TV100 Series manifold	6TV200M: 6TV200 Series manifold	6TV300M: 6TV300 Series manifold
② Code	R2: Blank plate for manifold			

[Note] 1. Manifold kits contains manifold, seal and screw; 2. Blank plate kits contains blank plate and screw.

### Dimensions



Model\Item	A	B	E	F	G	H	I	J	K	Q	R	V	W	X	Y
6TV0500M	33	26	4.5	11	15	5	9.5	18.5	93	1/8"	16.5	8.5	48.5	17	36
6TV100M	40	35	4.5	16	17	5	9	27.5	110.5	1/4"	20	10	54.5	22	47
6TV200M	48	44	4.5	19	18.5	5	9	34.5	125	1/4"	24	12	58	23.5	57
6TV300M	60	54	4.5	24	24	5	12.5	43.5	146	3/8"	32	14	74	27	-

Model\Item	L																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6TV0500M	30	41	52	63	74	85	96	107	118	129	140	151	162	173	184	195	206	217	228	239
6TV100M	34	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
6TV200M	37	56	75	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398
6TV300M	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504

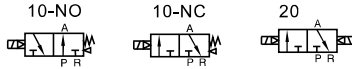
Model\Item	P																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6TV0500M	20	31	42	53	64	75	86	97	108	119	120	141	152	163	174	185	196	207	218	229
6TV100M	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
6TV200M	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388
6TV300M	38	62	86	110	134	158	182	206	230	254	278	302	326	350	374	398	422	446	470	494

# Solenoid valve(3/2 way)

## 3V100 Series



### Symbol



### Product feature

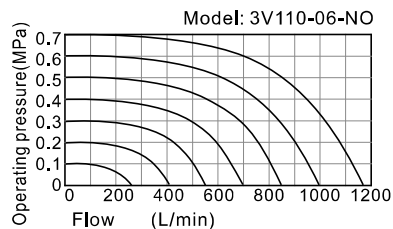
1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Affiliated manual devices are equipped to facilitate installation and debugging.
7. Several standard voltage grades are optional.
8. Integrate with the manifold to save installation space.

### Ordering code

3V 1 10 06 NO A □ □							
① Model	② Code	③ Valve type	④ Port size	⑤ Acting type	⑥ Standard voltage	⑦ Electrical entry	⑧ Thread type
3V: Solenoid valve (3/2 way)	1: 100 Series	10: Single solenoid	M5: M5 06: 1/8"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	M5
		20: Double solenoid		No this code			1/8"

[Note] The wire length is 0.5m. Please refer to 92 for manifold specification and the order way.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Specification

Model	3V110-M5	3V120-M5	3V110-06	3V120-06
Fluid	Air(to be filtered by 40μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	M5		1/8"	
Orifice size(Cv)[Note3]	3V110-06,3V120-06:10.2mm <sup>2</sup> (Cv=0.6)			
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			

[Note 1] PT thread, G thread and NPT thread are available.

[Note 2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

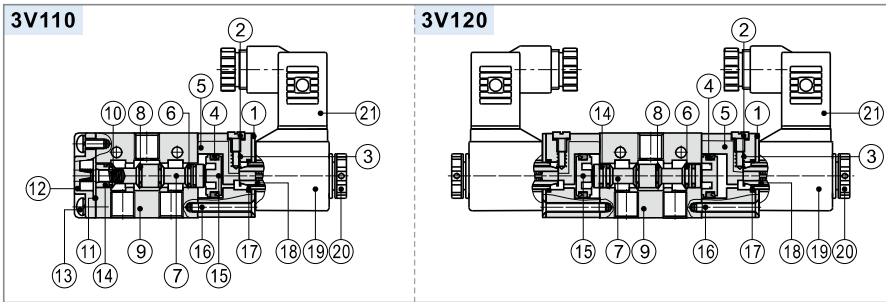
Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	3.5VA	3.5VA	4.0VA	2.8W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note 1]	5 cycle/sec				

[Note 1] The maximum actuation frequency is in the no-load state.

# Solenoid valve(3/2 way)

## 3V100 Series

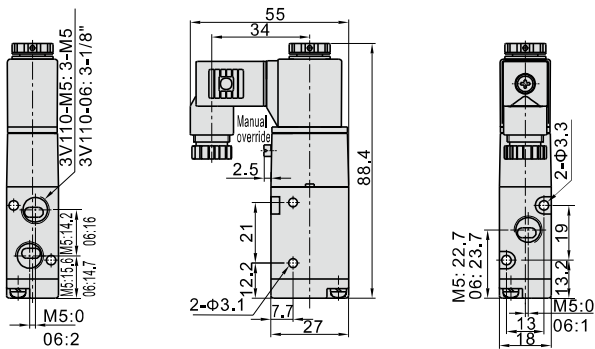
### Inner structure



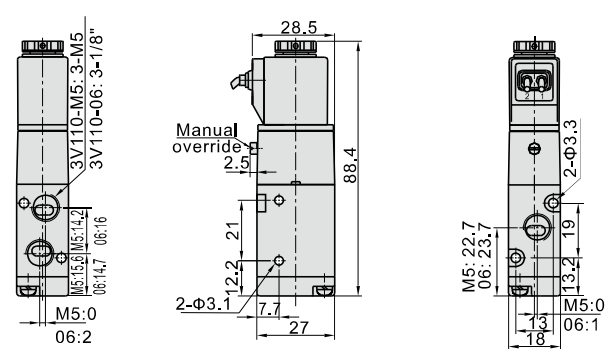
No.	Item	No.	Item	No.	Item
1	Fixed plate	8	O-ring	15	Piston
2	Manual override	9	Body	16	Pilot screw
3	Override spring	10	Spool spring	17	O-ring
4	Piston O-ring	11	Bottom cover gasket	18	Armature
5	Pilot body	12	Bottom cover	19	Coil
6	Spool packing	13	Screw	20	Coil nut
7	Spool	14	Wear ring	21	Connector

### Dimensions

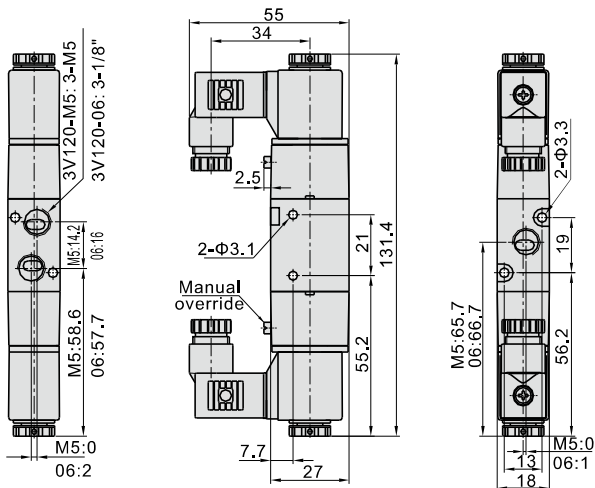
#### 3V110(Terminal)



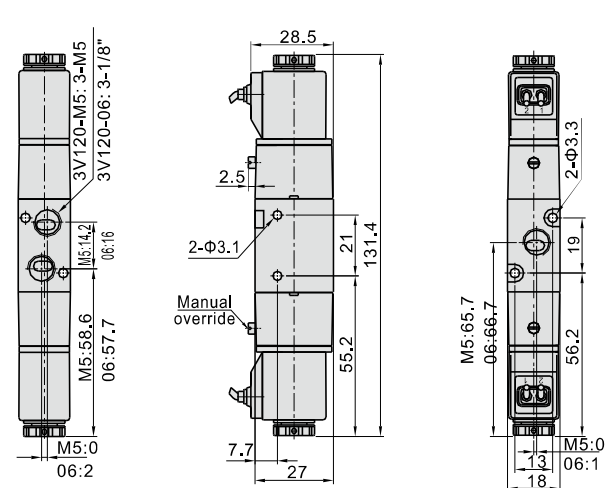
#### 3V110(Grommet)



#### 3V120(Terminal)



#### 3V120(Grommet)

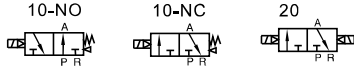


# Solenoid valve(3/2 way)

## 3V200 Series



### Symbol



### Product feature

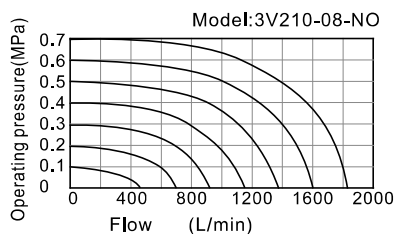
1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Affiliated manual devices are equipped to facilitate installation and debugging.
7. Several standard voltage grades are optional.
8. Integrate with the manifold to save installation space.

### Ordering code

3V 2 10 08 NO A □ □							
① Model	② Code	③ Valve type	④ Port size	⑤ Acting type	⑥ Standard voltage	⑦ Electrical entry	⑧ Thread type
3V: Solenoid valve (3/2 way)	2: 200 Series	10: Single solenoid	06: 1/8" 08: 1/4"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
		20: Double solenoid		No this code			

[Note] The wire length is 0.5m. Please refer to 92 for manifold specification and the order way.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Specification

Model	3V210-06	3V220-06	3V210-08	3V220-08
Fluid	Air(to be filtered by 40μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note 1]	In=Out=1/8"		In=Out=1/4"	
Orifice size(Cv)[Note3]	3V210-08,3V220-08:17.0mm <sup>2</sup> (Cv=1.0)			
Valve type	3 port 2 position			
Lubrication [Note 2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			

[Note 1] PT thread, G thread and NPT thread are available.

[Note 2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note1]	5 cycle/sec				

[Note 1] The maximum actuation frequency is in the no-load state.

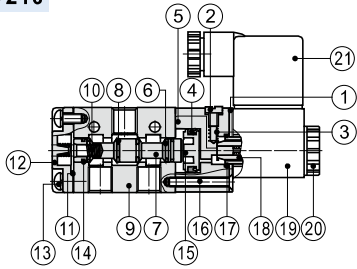


# Solenoid valve(3/2 way)

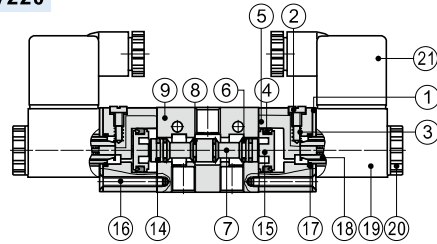
## 3V200 Series

### Inner structure

3V210



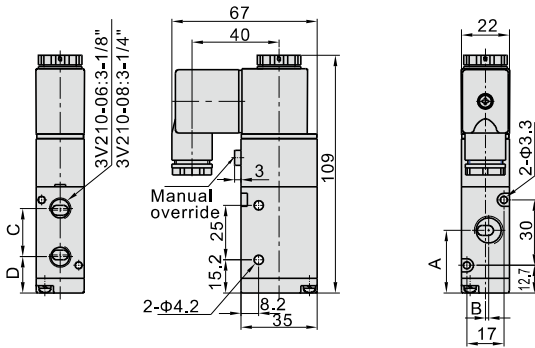
3V220



No.	Item	No.	Item	No.	Item
1	Fixed plate	8	O-ring	15	Piston
2	Manual override	9	Body	16	Pilot screw
3	Override spring	10	Spool spring	17	O-ring
4	Piston O-ring	11	Bottom cover gasket	18	Armature
5	Pilot body	12	Bottom cover	19	Coil
6	Spool packing	13	Screw	20	Coil nut
7	Spool	14	Wear ring	21	Connector

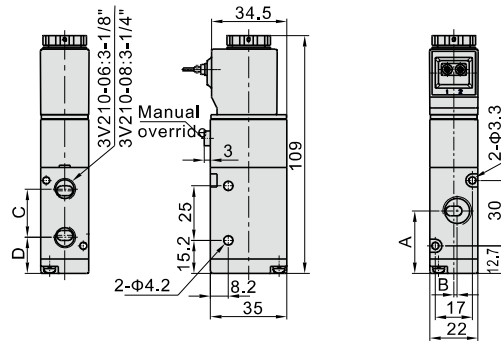
### Dimensions

3V210(Terminal)



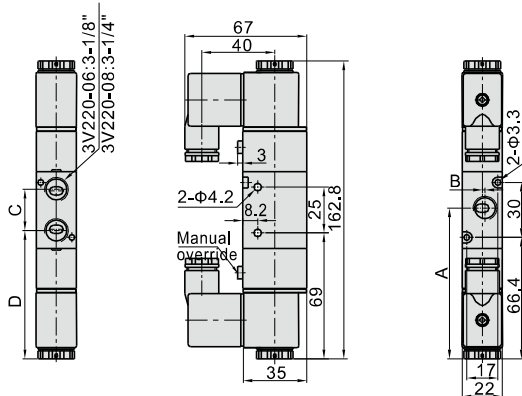
Item\Model	3V210-06	3V210-08
A	27.7	28.7
B	0	1.5
C	22	22.5
D	16.7	16.5

3V210(Grommet)



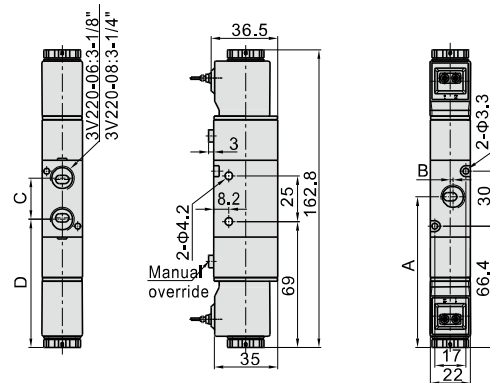
Item\Model	3V210-06	3V210-08
A	27.7	28.7
B	0	1.5
C	22	22.5
D	16.7	16.5

3V220(Terminal)



Item\Model	3V220-06	3V220-08
A	81.4	82.4
B	0	1.5
C	22	22.5
D	70.4	70.2

3V220(Grommet)



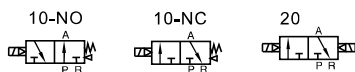
Item\Model	3V220-06	3V220-08
A	81.4	82.4
B	0	1.5
C	22	22.5
D	70.4	70.2

# Solenoid valve(3/2 way)

## 3V300 Series



### Symbol



### Product feature

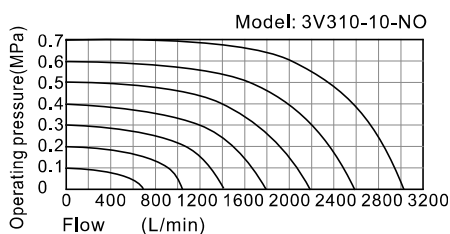
1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Affiliated manual devices are equipped to facilitate installation and debugging.
7. Several standard voltage grades are optional.
8. Integrate with the manifold to save installation space.

### Ordering code

3V 3 10 10 NO A □ □							
① Model	② Code	③ Valve type	④ Port size	⑤ Acting type	⑥ Standard voltage	⑦ Electrical entry	⑧ Thread type
3V: Solenoid valve (3/2 way)	3: 300 Series	10: Single solenoid	08: 1/4" 10: 3/8"	NC: Normally closed NO: Normally opened	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
		20: Double solenoid		No this code			

[Note] The wire length is 0.5m. Please refer to 92 for manifold specification and the order way.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Specification

Model	3V310-08	3V320-08	3V310-10	3V320-10
Fluid	Air(to be filtered by 40µm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note 1]	In=Out=1/4"		In=Out=3/8"	
Orifice size(Cv)[Note3]	3V310-10,3V320-10:28.0mm <sup>2</sup> (Cv=1.65)			
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

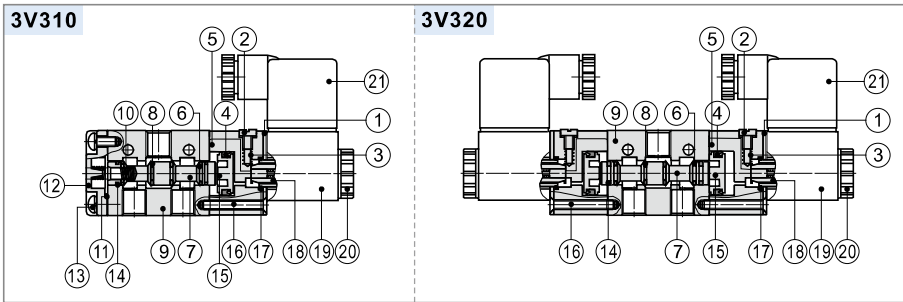
Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				
Max. frequency [Note1]	5 cycle/sec				

[Note1] The maximum actuation frequency is in the no-load state.

# Solenoid valve(3/2 way)

## 3V300 Series

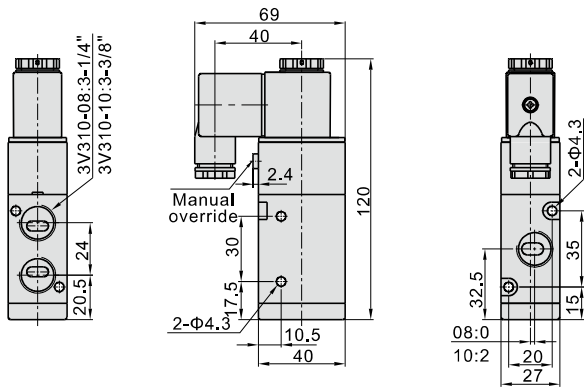
### Inner structure



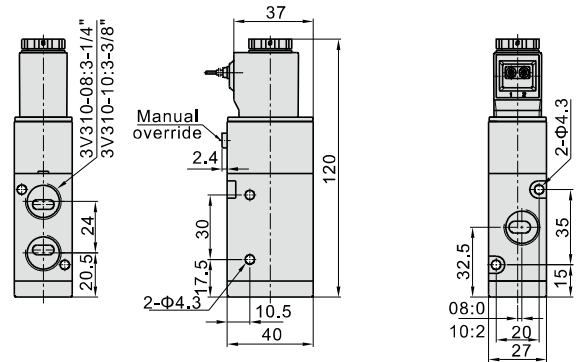
No.	Item	No.	Item	No.	Item
1	Fixed plate	8	O-ring	15	Piston
2	Manual override	9	Body	16	Pilot screw
3	Override spring	10	Spool spring	17	O-ring
4	Piston O-ring	11	Bottom cover gasket	18	Armature
5	Pilot body	12	Bottom cover	19	Coil
6	Spool packing	13	Screw	20	Coil nut
7	Spool	14	Wear ring	21	Connector

### Dimensions

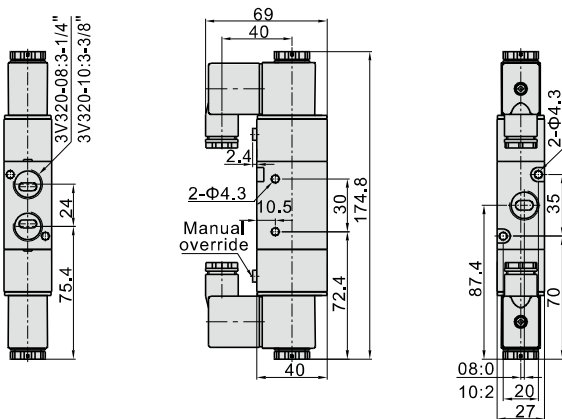
#### 3V310(Terminal)



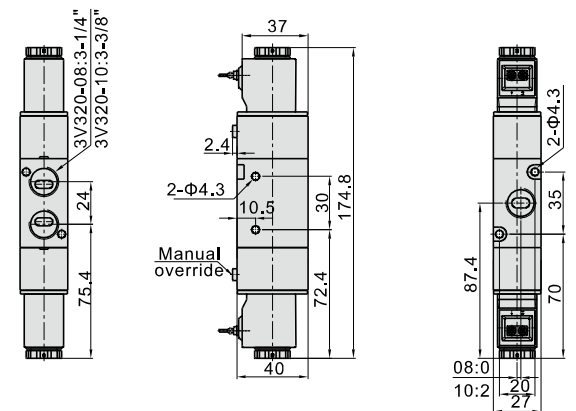
#### 3V310(Grommet)



#### 3V320(Terminal)



#### 3V320(Grommet)

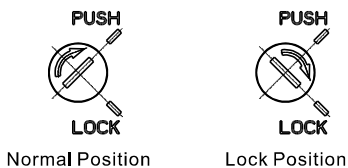


# 6D/6DW Series Integrated solenoid valve (5/2, 5/3 way)

## Compendium of 6D/6DW Series

### Manual Lock Design

1. Manual push does not automatically lock, used for valve installation and debugging.
2. Use caution, prior to activating manual override.
3. With the correct size screw driver: gently press and turn to lock (Torque: 0.1N.m)



### Adaptor design of pilot valve

Easy to install with stable signaling, decreases risk during manual wiring

### Consolidate Input

The D-SUB25PIN(6D) or D-SUB37PIN(6DW) cable, simplifies wiring process and enhances risk-resisting function.

### Multi-series and Multi-port types are optional

6D0500, 6D100, 6D200 series;  
6DW0500, 6DW100, 6DW200 series;  
Φ4、Φ6、Φ8、Φ10 ports for options.

Series/Ports(A/B ports)	Φ4	Φ6	Φ8	Φ10
6D0500/6DW0500	•	•		
6D100/6DW100	•	•	•	
6D200/6DW200			•	•

### Dual Centralized inlet ports

Centralized inlet, convenient piping, saving installation space.

Series	6D0500	6D100	6D200
6DW0500	6DW100	6DW200	
Ports(P)	Φ8	Φ10	Φ12

### Dual Centralized outlet ports

Centralized exhaust, convenient piping, saving installation space.

Series	6D0500	6D100	6D200
6DW0500	6DW100	6DW200	
Ports(R)	Φ8	Φ10	Φ12

### Manifold design

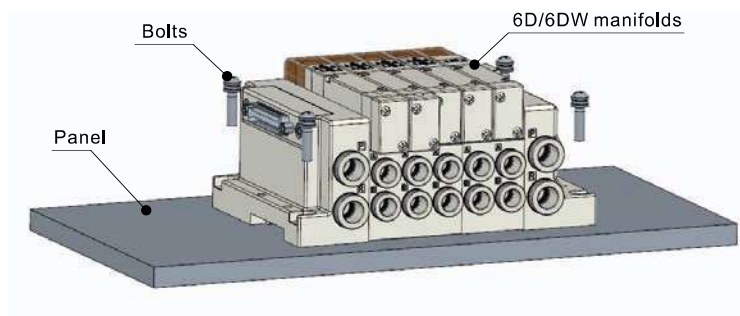
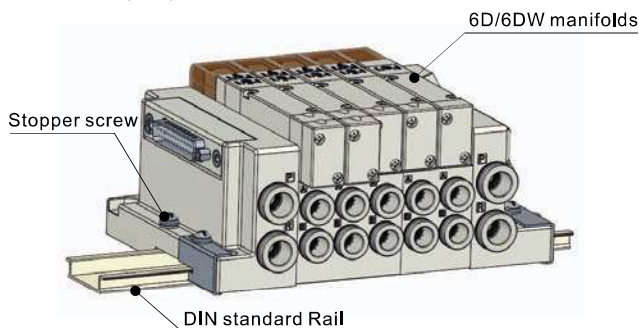
It is convenient and flexible to disassemble and replace.

### DIN rail compatibility

Manifold is compatible with DIN standard rail. 6D/6DW integrated valve can be fixed at any position of rail by stopper screw.

### Diverse installation

With four bolts, it can be fixed anywhere on panel.

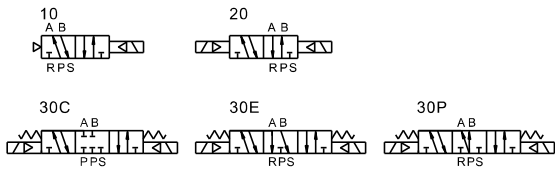


# Integrated solenoid valve (5/2, 5/3 way)

## 6D/6DW Series



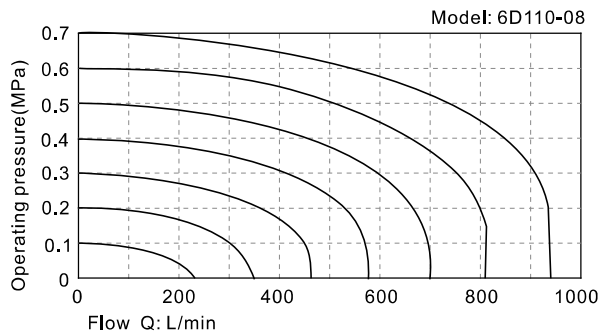
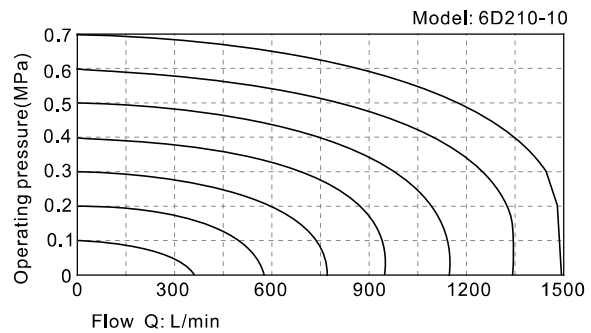
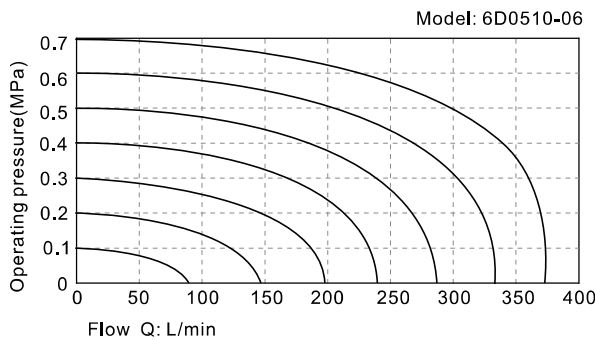
### Symbol



### Product feature

1. Centralized inlets, outlets and signal input(25pin D-SUB or 37pin D-SUB) make it highly simplifies installation and reduces risk during mounting.
2. Flexible combination for various applications.
3. Convenient installation, can be fixed on panel or DIN rail without other accessory.
4. 2 position and 3 position valves can be installed on the same manifold without further accessories.
5. Affiliated manual devices are equipped to facilitate installation and debugging.
6. Low starting voltage and long service life.

### Flow chart



Flow rate data obtained from the AirTAC R&D Lab.

### Specification

Model	6D0500/6DW0500	6D100/6DW100	6D200/6DW200
Fluid	Air(to be filtered by 40μm filter element)		
Acting	Pilot		
Operating pressure	5/3 way	0.2~0.8MPa(29~114psi)	
	Others	0.15~0.8MPa(21~114psi)	
Proof pressure	1.2MPa(175psi)		
Temperature	-20~70°C		
Type of inlet and exhaust	Centralized inlet and exhaust		
Numbers of station	6D	3-21 stations	
	6DW	13-33 stations	
Port size	A, B ports	Φ4/Φ6 tube fitting	Φ4/Φ6/Φ8 tube fitting
	P, R ports	Φ8 tube fitting	Φ10 tube fitting
Electrical entry	Terminal , 25pinD-SUB/37pinD-SUB		

### Coil specification

Item	Specification	
Standard voltage	DC24V	DC12V
Scope of voltage	DC : ±10%	
Power of consumption	DC : 0.7W	
Protection	Dustproof	
Temperature classification	F Class	
Electrical entry	Terminal	
Activating time	0.05 sec and below	

# Integrated solenoid valve (5/2, 5/3 way)

## 6D/6DW Series

### Manifold ports Ordering Code (With Valves,25PIN)

6D1H 8F-J06 B S1 D2 C2 E2 P1 □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩



Without communication module

Without communication module

With communication module

① Model	6D05H: 6D0500 Series integrated Solenoid valve	6D1H: 6D100 Series integrated Solenoid valve	6D2H: 6D200 Series integrated Solenoid valve	
② Number of stations	3F: 3 stations 4F: 4 stations ..... 21F: 21stations			
③ Port size(A/B Port)	J04: Φ4 tube fitting J06: Φ6 tube fitting	J04: Φ4 tube fitting J06: Φ6 tube fitting J08: Φ8 tube fitting	J08: Φ8 tube fitting J10: Φ10 tube fitting	
④ Standard voltage	B:DC24V F:DC12V			
⑤ Single solenoid 5/2 way	Blank: No S1: 1 piece S2: 2 pieces.....S21: 21 pieces			Total number of valves must be ≤21
⑥ Double solenoid 5/2 way	Blank: No D1: 1 piece D2: 2 pieces.....D12: 12 pieces			
⑦ Double solenoid 5/3 way closed center	Blank: No C1: 1 piece C2: 2 pieces.....C12: 12 pieces			
⑧ Double solenoid 5/3 way exhaust center	Blank: No E1: 1 piece E2: 2 pieces.....E12: 12 pieces			
⑨ Double solenoid 5/3 way pressure center	Blank: No P1: 1 piece P2: 2 pieces.....P12: 12 pieces			
⑩ Type of communication module	Blank: Without communication module CPN1: Profinet+PNP CPN2: Profinet+NPN CEN1: EtherNet/IP+PNP CEN2: EtherNet/IP+NPN CEA1: EtherCAT+PNP CEA2: EtherCAT+NPN CLK1: IO-Link+PNP			

Ordering code instruction:

- 6D series comes with D-SUB25PIN.
- Fill in spec, number of stations, port size, voltage in order code accordingly.
- Valve installation sequence : start from D-SUB side.
- Valve installation sequence : (1) Double solenoid 5/3 way(C→E→P). (2) Double solenoid 5/2 way. (3)Single solenoid.
- For empty position, please install provisional block.
- 0500 series in/outlet ports (P/R) is Ø8, 100 series in/outlet ports (P/R) is Ø10, 200 series in/outlet ports (P/R) is Ø12
- Less than 8 stations(inclusive):come with 1 plug type silencer and 2 plugs; More than 8 stations: come with 2 plug type silencers and 1 plug.
- Total number of single solenoids+double solenoids+5/3way(C) + 5/3way(E) + 5/3way(P) must be ≤21
- For station 3~12, total number of ⑥+⑦+⑧+⑨ must be ≤12 (come with double solenoid manifold)
- For station 13-15, total numbers of ⑥+⑦+⑧+⑨ must be ≤9 ; station 16-18, total numbers of ⑥+⑦+⑧+⑨ must be ≤6, station 19-21, total numbers of ⑥+⑦+⑧+⑨ must be ≤3.

### Manifold ports Ordering Code (Without Valves, 25PIN)

6D1H 8F J06

① ② ③



① Model	6D05H: 6D0500 Series manifold	6D1H: 6D100 Series manifold	6D2H: 6D200 Series manifold
② Number of stations	3F: 3 stations 4F: 4 stations ..... 21F: 21stations		
③ Port size(A/B Port)	J04: Φ4 tube fitting J06: Φ6 tube fitting	J04: Φ4 tube fitting J06: Φ6 tube fitting J08: Φ8 tube fitting	J08: Φ8 tube fitting J10: Φ10 tube fitting

Note:

- 6D series comes with D-SUB25PIN.
- For station 3~12, it comes with double solenoid type manifold.
  - On 13 to 15 station valve banks, only the first 9 positions can have double solenoid valves(2 or 3 positions)
  - On 16 to 18 station valve banks, only the first 6 positions can have double solenoid valves(2 or 3 positions)
  - On 19 to 21 station valve banks, only the first 3 positions can have double solenoid valves(2 or 3 positions)
- Valve installation sequence: start from D-SUB side.
- 0500 series in/outlet ports (P/R) is Ø8, 100 series in/outlet ports (P/R) is Ø10, 200 series in/outlet ports (P/R) is Ø12
- Less than 8 stations(inclusive): come with 1 plug type silencer and 2 plugs; More than 8 stations: come with 2 plug type silencers and 1 plug.

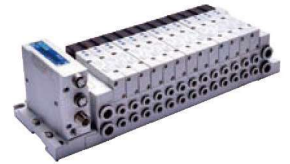


# Integrated solenoid valve (5/2, 5/3 way)

## 6D/6DW Series

### Manifold ports Ordering Code (With Valves, 37PIN)

6DW1H 18F-J06 B S5 D8C2 E1 P2 □



Without communication module

Without communication module

With communication module

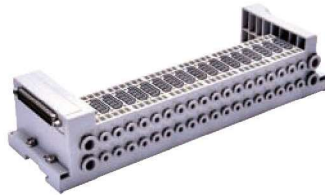
① Model	6DW05H: 6DW0500 Series integrated Solenoid valve			6DW1H: 6DW100 Series integrated Solenoid valve	6DW2H: 6DW200 Series integrated Solenoid valve	
② Number of stations	13F: 13 stations			14F: 14 stations	..... 33F: 33stations	
③ Port size(A/B Port)	J04: Φ4 tube fitting J06: Φ6 tube fitting		J04: Φ4 tube fitting J06: Φ6 tube fitting J08: Φ8 tube fitting	J08: Φ8 tube fitting J10: Φ10 tube fitting		
④ Standard voltage	B:DC24V F:DC12V					
⑤ Single solenoid 5/2 way	Total number of valves	Blank: No S1: 1 piece S2: 2 pieces.....S33: 33 pieces				Total number of valves must be ≤33
⑥ Double solenoid 5/2 way		Blank: No D1: 1 piece D2: 2 pieces.....D18: 18 pieces				
⑦ Double solenoid 5/3 way closed center		Blank: No C1: 1 piece C2: 2 pieces.....C18: 18 pieces				
⑧ Double solenoid 5/3 way exhaust center		Blank: No E1: 1 piece E2: 2 pieces.....E18: 18 pieces				
⑨ Double solenoid 5/3 way pressure center		Blank: No P1: 1 piece P2: 2 pieces.....P18: 18 pieces				
⑩ Type of communication module	Blank: Without communication module CPN11: Profinet+PNP CPN22: Profinet+NPN CEN11: EtherNet/IP+PNP CEN22: EtherNet/IP+NPN CEA11: EtherCAT+PNP CEA22: EtherCAT+NPN CLK11: IO-Link+PNP					

Ordering code instruction:

- 6DW series comes with D-SUB37PIN.
- Fill in spec, number of stations, port size, voltage in order code accordingly.
- Valve installation sequence : start from D-SUB side.
- Valve installation sequence : (1) Double solenoid 5/3 way(C→E→P). (2) Double solenoid 5/2 way. (3)Single solenoid.
- For empty position, please install provisional block.
- 0500 series in/outlet ports (P/R) is Ø8, 100 series in/outlet ports (P/R) is Ø10, 200 series in/outlet ports (P/R) is Ø12
- 6DW series comes with 2 plug type silencers and 1 plug.
- Total number of single solenoids+double solenoids+5/3way(C) + 5/3way(E) + 5/3way(P) must be ≤33
- For station 13~18, total number of ⑤+⑥+⑦+⑧ must be ≤18 (come with double solenoid manifold)  
For station 19-21, total numbers of ⑤+⑦+⑧+⑨ must be ≤15. Station 22-24, total numbers of ⑤+⑦+⑧+⑨ must be ≤12.  
Station 25-27, total numbers of ⑤+⑦+⑧+⑨ must be ≤9. Station 28-30, total numbers of ⑤+⑦+⑧+⑨ must be ≤6.  
Station 31-33, total numbers of ⑤+⑦+⑧+⑨ must be ≤3.

### Manifold ports Ordering Code (Without Valves, 37PIN)

6DW1H 8F J06



① Model	6DW05H: 6DW0500 Series manifold	6DW1H: 6DW100 Series manifold	6DW2H: 6DW200 Series manifold
② Number of stations	13F: 13 stations 14F: 14 stations ..... 33F: 33stations		
③ Port size(A/B Port)	J04: Φ4 tube fitting J06: Φ6 tube fitting	J04: Φ4 tube fitting J06: Φ6 tube fitting J08: Φ8 tube fitting	J08: Φ8 tube fitting J10: Φ10 tube fitting

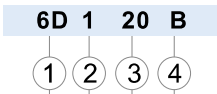
Note:

- 6DW series comes with D-SUB37PIN.
- For station 13~18, it comes with double solenoid type manifold.  
On 19 to 21 station valve banks, only the first 15 positions can have double solenoid valves(2 or 3 positions).  
On 22 to 24 station valve banks, only the first 12 positions can have double solenoid valves(2 or 3 positions).  
On 25 to 27 station valve banks, only the first 9 positions can have double solenoid valves(2 or 3 positions).  
On 28 to 30 station valve banks, only the first 6 positions can have double solenoid valves(2 or 3 positions).  
On 31 to 33 station valve banks, only the first 3 positions can have double solenoid valves(2 or 3 positions).
- Valve installation sequence: start from D-SUB side.
- 0500 series in/outlet ports (P/R) is Ø8, 100 series in/outlet ports (P/R) is Ø10, 200 series in/outlet ports (P/R) is Ø12
- 6DW series comes with 2 plug type silencers and 1 plug.

# Integrated solenoid valve (5/2, 5/3 way)

## 6D/6DW Series

### Solenoid Valve Ordering Code



① Model	6D: 5-port, 2/3-position solenoid valve		
② Code	05: 0500 Series	1: 100 Series	2: 200 Series
③ Valve type	10 : Single solenoid(5/2 Way)	20 : Double solenoid(5/2 Way)	30C : Double solenoid(5/3 way closed center) 30E : Double solenoid(5/3 way exhaust center)
④ Standard Voltage	B: DC24V		F: DC12V

### Provisional Block Ordering Code

#### P - 6D100M - R2



① Accessories	P : Accessories		
② Model	6D0500M: 0500 Series	6D100M: 100 Series	6D200M: 200 Series
③ Provisional block code	R2: 6D series Provisional block		

Note: Orders come with screw bolts.

### DIN Rail Ordering Code

#### F - DINX140

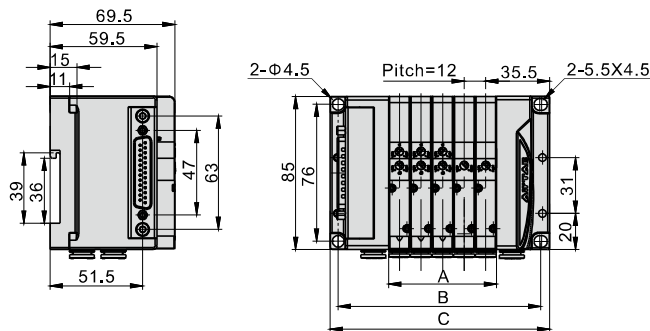


① Accessories	F-DIN: DIN Rail			
② Length of DIN rail	140 : 140mm	175 : 175mm	210 : 210mm	.....1000 : 1000mm

Note: DIN rail add length is 35mm each step.

### Dimensions

#### 6D0500

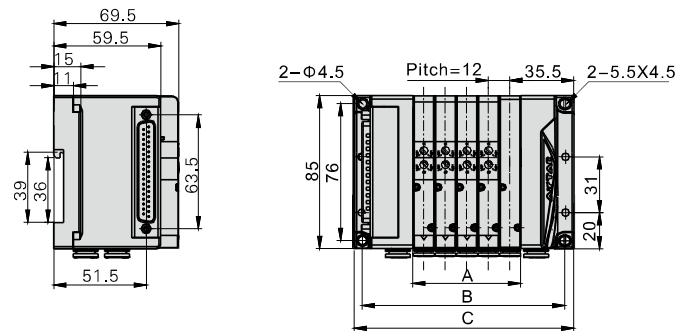


Item/Stations	3F	4F	5F	6F	7F	8F	9F	10F	11F
A	36	48	60	72	84	96	108	120	132
B	88.5	100.5	112.5	124.5	136.5	148.5	160.5	172.5	184.5
C	98	110	122	134	146	158	170	182	194

Item/Stations	12F	13F	14F	15F	16F	17F	18F	19F	20F	21F
A	144	156	168	180	192	204	216	228	240	252
B	196.5	208.5	220.5	232.5	244.5	256.5	268.5	280.5	292.5	304.5
C	206	218	230	242	254	266	278	290	302	314

#### 6DW0500



Item/Stations	13F	14F	15F	16F	17F	18F	19F	20F	21F	22F
A	156	168	180	192	204	216	228	240	252	264
B	208.5	220.5	232.5	244.5	256.5	268.5	280.5	292.5	304.5	316.5
C	218	230	242	254	266	278	290	302	314	326

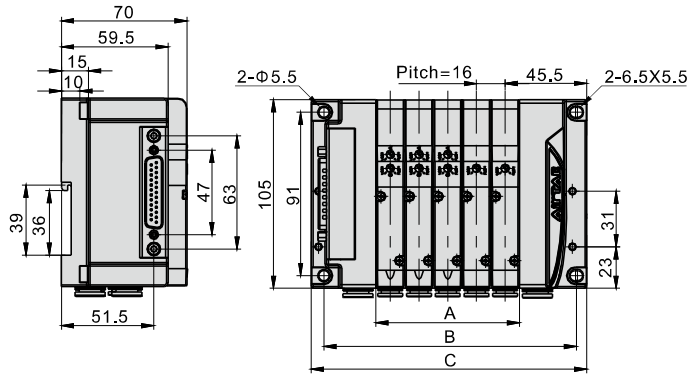
  

Item/Stations	23F	24F	25F	26F	27F	28F	29F	30F	31F	32F	33F
A	276	288	300	312	324	336	348	360	372	384	396
B	328.5	340.5	352.5	364.5	376.5	388.5	400.5	412.5	424.5	436.5	448.5
C	338	350	362	374	386	398	410	422	434	446	458

# Integrated solenoid valve (5/2, 5/3 way)

## 6D/6DW Series

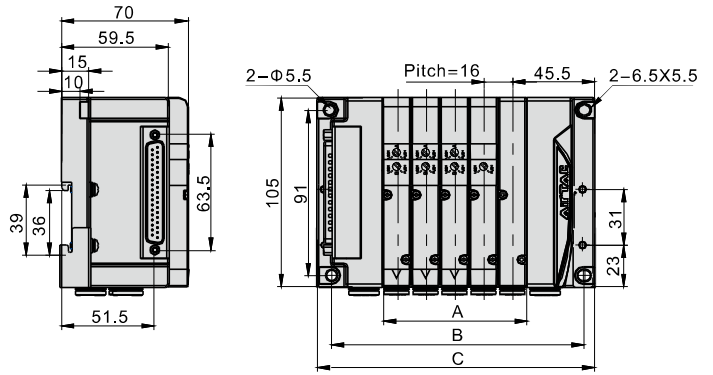
### 6D100



Item\Stations	3F	4F	5F	6F	7F	8F	9F	10F	11F
A	48	64	80	96	112	128	144	160	176
B	108.5	124.5	140.5	156.5	172.5	188.5	204.5	220.5	236.5
C	121.5	137.5	153.5	169.5	185.5	201.5	217.5	233.5	249.5

Item\Stations	12F	13F	14F	15F	16F	17F	18F	19F	20F	21F
A	192	208	224	240	256	272	288	304	320	336
B	252.5	268.5	284.5	300.5	316.5	332.5	348.5	364.5	380.5	396.5
C	265.5	281.5	297.5	313.5	329.5	345.5	361.5	377.5	393.5	409.5

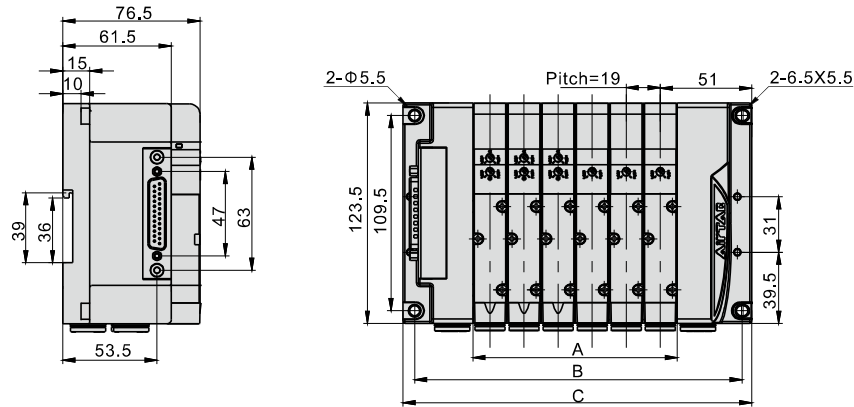
### 6DW100



Item\Stations	13F	14F	15F	16F	17F	18F	19F	20F	21F	22F
A	208	224	240	256	272	288	304	320	336	352
B	268.5	284.5	300.5	316.5	332.5	348.5	364.5	380.5	396.5	412.5
C	281.5	297.5	313.5	329.5	345.5	361.5	377.5	393.5	409.5	425.5

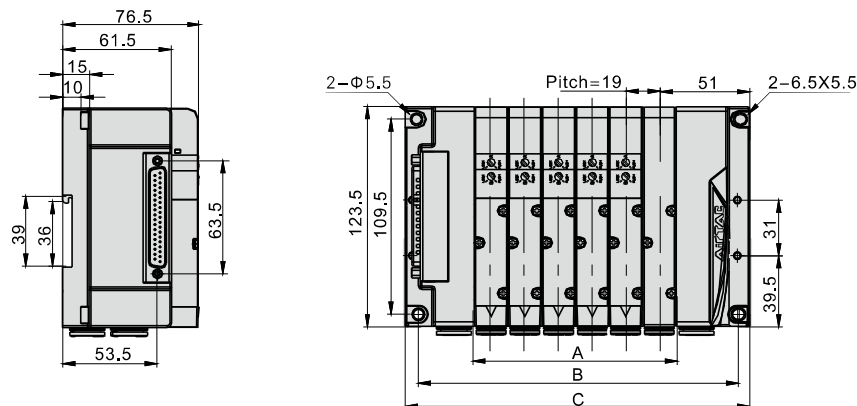
Item\Stations	23F	24F	25F	26F	27F	28F	29F	30F	31F	32F	33F
A	368	384	400	416	432	448	464	480	496	512	528
B	428.5	444.5	460.5	476.5	492.5	508.5	524.5	540.5	556.5	572.5	588.5
C	441.5	457.5	473.5	489.5	505.5	521.5	537.5	553.5	569.5	585.5	601.5

### 6D200



Item\Stations	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F	21F
A	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	399
B	125.5	144.5	163.5	182.5	201.5	220.5	239.5	258.5	277.5	296.5	315.5	334.5	353.5	372.5	391.5	410.5	429.5	448.5	467.5
C	137.5	156.5	175.5	194.5	213.5	232.5	251.5	270.5	289.5	308.5	327.5	346.5	365.5	384.5	403.5	422.5	441.5	460.5	479.5

### 6DW200



Item\Stations	13F	14F	15F	16F	17F	18F	19F	20F	21F	22F	23F	24F	25F	26F	27F	28F	29F	30F	31F	32F	33F
A	247	266	285	304	323	342	361	380	399	418	437	456	475	494	513	532	551	570	589	608	627
B	315.5	334.5	353.5	372.5	391.5	410.5	429.5	448.5	467.5	486.5	505.5	524.5	543.5	562.5	581.5	600.5	619.5	638.5	657.5	676.5	695.5
C	327.5	346.5	365.5	384.5	403.5	422.5	441.5	460.5	479.5	498.5	517.5	536.5	555.5	574.5	593.5	612.5	631.5	650.5	669.5	688.5	707.5

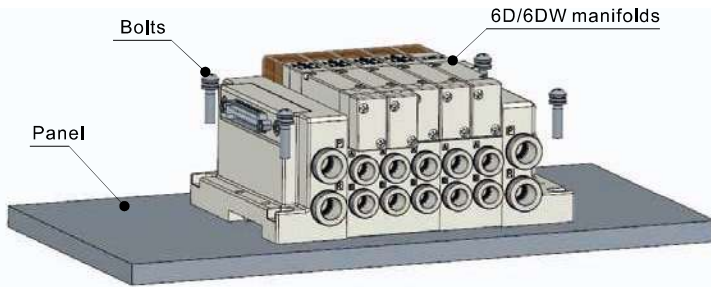
# Integrated solenoid valve (5/2, 5/3 way)

## 6D/6DW Series

### Installation and application

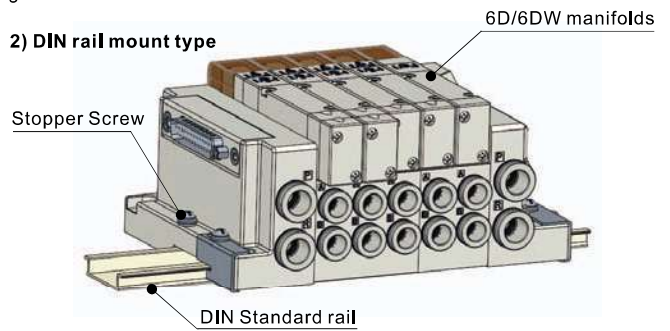
1. Two types of installation are available, choose appropriate type based on working environment.

#### 1) Panel mount type



Four counterbore holes for screw bolts, suitable for panel installation.

#### 2) DIN rail mount type



Compatible with standard DIN rail.

6D/6DW manifolds can be fixed at any position of rail by stop screw.

2. PIR ports connection: Please select the appropriate tube diameter according to the following specification table.

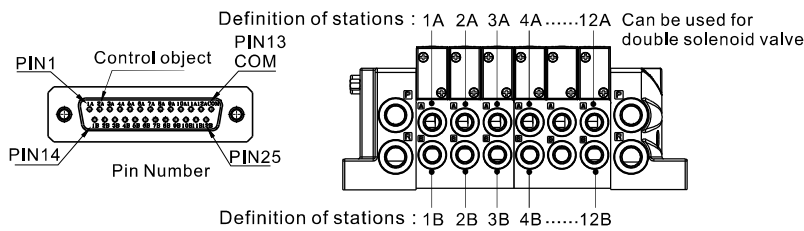
Series	Port (P)	Port (R)
6D0500/6DW0500	Φ8	Φ8
6D100/6DW100	Φ10	Φ10
6D200/6DW200	Φ12	Φ12

3. A/B ports connection: Please select the appropriate tube diameter according to the following specification table.

Series\Ports(A\B ports)	Φ4	Φ6	Φ8	Φ10
6D0500/6DW0500	•	•		
6D100/6DW100	•	•	•	
6D200/6DW200			•	•

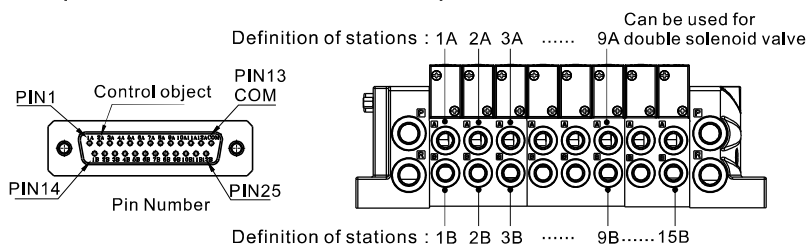
4. PIN assignment of 6D series:

#### Explanation of 3-12 stations connection pin.



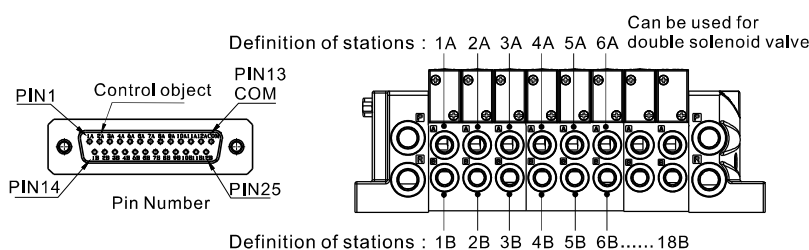
Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	14	(+)	(-)	1A
2	(+)	(-)	2B	15	(+)	(-)	2A
3	(+)	(-)	3B	16	(+)	(-)	3A
4	(+)	(-)	4B	17	(+)	(-)	4A
5	(+)	(-)	5B	18	(+)	(-)	5A
6	(+)	(-)	6B	19	(+)	(-)	6A
7	(+)	(-)	7B	20	(+)	(-)	7A
8	(+)	(-)	8B	21	(+)	(-)	8A
9	(+)	(-)	9B	22	(+)	(-)	9A
10	(+)	(-)	10B	23	(+)	(-)	10A
11	(+)	(-)	11B	24	(+)	(-)	11A
12	(+)	(-)	12B	25	(+)	(-)	12A
13	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

#### Explanation of 13-15 stations connection pin.



Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	14	(+)	(-)	1A
2	(+)	(-)	2B	15	(+)	(-)	2A
3	(+)	(-)	3B	16	(+)	(-)	3A
4	(+)	(-)	4B	17	(+)	(-)	4A
5	(+)	(-)	5B	18	(+)	(-)	5A
6	(+)	(-)	6B	19	(+)	(-)	6A
7	(+)	(-)	7B	20	(+)	(-)	7A
8	(+)	(-)	8B	21	(+)	(-)	8A
9	(+)	(-)	9B	22	(+)	(-)	9A
10	(+)	(-)	10B	23	(+)	(-)	11B
11	(+)	(-)	12B	24	(+)	(-)	13B
12	(+)	(-)	14B	25	(+)	(-)	15B
13	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

#### Explanation of 16-18 stations connection pin.



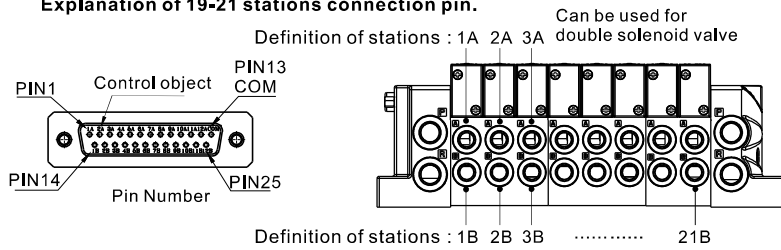
Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	14	(+)	(-)	1A
2	(+)	(-)	2B	15	(+)	(-)	2A
3	(+)	(-)	3B	16	(+)	(-)	3A
4	(+)	(-)	4B	17	(+)	(-)	4A
5	(+)	(-)	5B	18	(+)	(-)	5A
6	(+)	(-)	6B	19	(+)	(-)	6A
7	(+)	(-)	7B	20	(+)	(-)	8B
8	(+)	(-)	9B	21	(+)	(-)	10B
9	(+)	(-)	11B	22	(+)	(-)	12B
10	(+)	(-)	13B	23	(+)	(-)	14B
11	(+)	(-)	15B	24	(+)	(-)	16B
12	(+)	(-)	17B	25	(+)	(-)	18B
13	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

Note: Gauge number of cable connecting to D-Sub pin No.13(COM) must be ≤22AWG

# Integrated solenoid valve (5/2, 5/3 way)

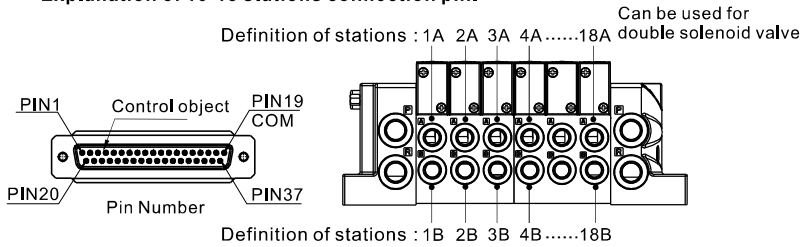
## 6D/6DW Series

### Explanation of 19-21 stations connection pin.

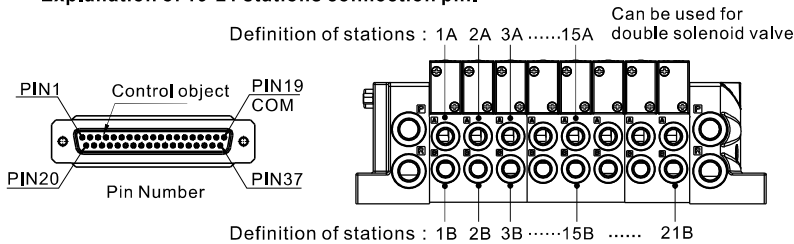


### 5. PIN assignment of 6DW series:

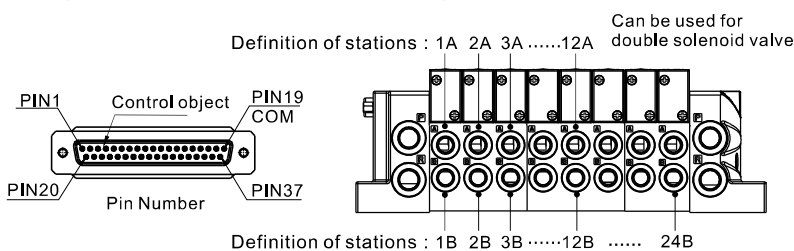
### Explanation of 13-18 stations connection pin.



### Explanation of 19-21 stations connection pin.



### Explanation of 22-24 stations connection pin.



Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	14	(+)	(-)	1A
2	(+)	(-)	2B	15	(+)	(-)	2A
3	(+)	(-)	3B	16	(+)	(-)	3A
4	(+)	(-)	4B	17	(+)	(-)	5B
5	(+)	(-)	6B	18	(+)	(-)	7B
6	(+)	(-)	8B	19	(+)	(-)	9B
7	(+)	(-)	10B	20	(+)	(-)	11B
8	(+)	(-)	12B	21	(+)	(-)	13B
9	(+)	(-)	14B	22	(+)	(-)	15B
10	(+)	(-)	16B	23	(+)	(-)	17B
11	(+)	(-)	18B	24	(+)	(-)	19B
12	(+)	(-)	20B	25	(+)	(-)	21B
13	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	20	(+)	(-)	1A
2	(+)	(-)	2B	21	(+)	(-)	2A
3	(+)	(-)	3B	22	(+)	(-)	3A
4	(+)	(-)	4B	23	(+)	(-)	4A
5	(+)	(-)	5B	24	(+)	(-)	5A
6	(+)	(-)	6B	25	(+)	(-)	6A
7	(+)	(-)	7B	26	(+)	(-)	7A
8	(+)	(-)	8B	27	(+)	(-)	8A
9	(+)	(-)	9B	28	(+)	(-)	9A
10	(+)	(-)	10B	29	(+)	(-)	10A
11	(+)	(-)	11B	30	(+)	(-)	11A
12	(+)	(-)	12B	31	(+)	(-)	12A
13	(+)	(-)	13B	32	(+)	(-)	13A
14	(+)	(-)	14B	33	(+)	(-)	14A
15	(+)	(-)	15B	34	(+)	(-)	15A
16	(+)	(-)	16B	35	(+)	(-)	16A
17	(+)	(-)	17B	36	(+)	(-)	17A
18	(+)	(-)	18B	37	(+)	(-)	18A
19	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	20	(+)	(-)	1A
2	(+)	(-)	2B	21	(+)	(-)	2A
3	(+)	(-)	3B	22	(+)	(-)	3A
4	(+)	(-)	4B	23	(+)	(-)	4A
5	(+)	(-)	5B	24	(+)	(-)	5A
6	(+)	(-)	6B	25	(+)	(-)	6A
7	(+)	(-)	7B	26	(+)	(-)	7A
8	(+)	(-)	8B	27	(+)	(-)	8A
9	(+)	(-)	9B	28	(+)	(-)	9A
10	(+)	(-)	10B	29	(+)	(-)	10A
11	(+)	(-)	11B	30	(+)	(-)	11A
12	(+)	(-)	12B	31	(+)	(-)	12A
13	(+)	(-)	13B	32	(+)	(-)	13A
14	(+)	(-)	14B	33	(+)	(-)	14A
15	(+)	(-)	15B	34	(+)	(-)	15A
16	(+)	(-)	16B	35	(+)	(-)	17B
17	(+)	(-)	18B	36	(+)	(-)	19B
18	(+)	(-)	20B	37	(+)	(-)	21B
19	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	20	(+)	(-)	1A
2	(+)	(-)	2B	21	(+)	(-)	2A
3	(+)	(-)	3B	22	(+)	(-)	3A
4	(+)	(-)	4B	23	(+)	(-)	4A
5	(+)	(-)	5B	24	(+)	(-)	5A
6	(+)	(-)	6B	25	(+)	(-)	6A
7	(+)	(-)	7B	26	(+)	(-)	7A
8	(+)	(-)	8B	27	(+)	(-)	8A
9	(+)	(-)	9B	28	(+)	(-)	9A
10	(+)	(-)	10B	29	(+)	(-)	10A
11	(+)	(-)	11B	30	(+)	(-)	11A
12	(+)	(-)	12B	31	(+)	(-)	12A
13	(+)	(-)	13B	32	(+)	(-)	14B
14	(+)	(-)	15B	33	(+)	(-)	16B
15	(+)	(-)	17B	34	(+)	(-)	18B
16	(+)	(-)	19B	35	(+)	(-)	20B
17	(+)	(-)	21B	36	(+)	(-)	22B
18	(+)	(-)	23B	37	(+)	(-)	24B
19	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

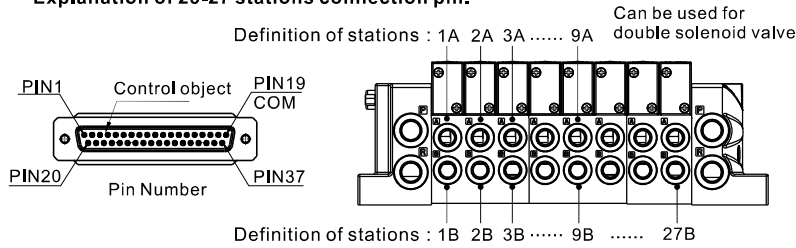
Note: Gauge number of cable connecting to D-Sub pin No.13(19)(COM) must be ≤22AWG



# Integrated solenoid valve (5/2, 5/3 way)

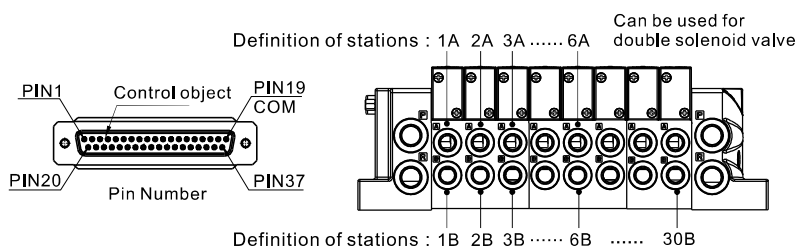
## 6D/6DW Series

### Explanation of 25-27 stations connection pin.



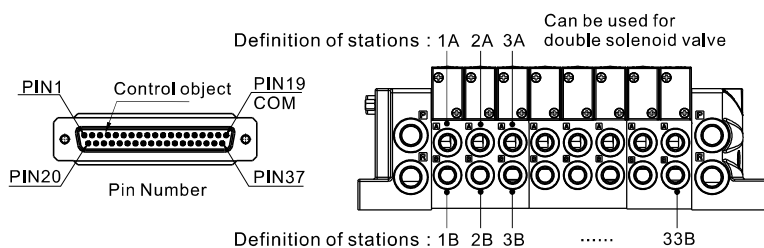
Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	20	(+)	(-)	1A
2	(+)	(-)	2B	21	(+)	(-)	2A
3	(+)	(-)	3B	22	(+)	(-)	3A
4	(+)	(-)	4B	23	(+)	(-)	4A
5	(+)	(-)	5B	24	(+)	(-)	5A
6	(+)	(-)	6B	25	(+)	(-)	6A
7	(+)	(-)	7B	26	(+)	(-)	7A
8	(+)	(-)	8B	27	(+)	(-)	8A
9	(+)	(-)	9B	28	(+)	(-)	9A
10	(+)	(-)	10B	29	(+)	(-)	11B
11	(+)	(-)	12B	30	(+)	(-)	13B
12	(+)	(-)	14B	31	(+)	(-)	15B
13	(+)	(-)	16B	32	(+)	(-)	17B
14	(+)	(-)	18B	33	(+)	(-)	19B
15	(+)	(-)	20B	34	(+)	(-)	21B
16	(+)	(-)	22B	35	(+)	(-)	23B
17	(+)	(-)	24B	36	(+)	(-)	25B
18	(+)	(-)	26B	37	(+)	(-)	27B
19	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

### Explanation of 28-30 stations connection pin.



Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	20	(+)	(-)	1A
2	(+)	(-)	2B	21	(+)	(-)	2A
3	(+)	(-)	3B	22	(+)	(-)	3A
4	(+)	(-)	4B	23	(+)	(-)	4A
5	(+)	(-)	5B	24	(+)	(-)	5A
6	(+)	(-)	6B	25	(+)	(-)	6A
7	(+)	(-)	7B	26	(+)	(-)	8B
8	(+)	(-)	9B	27	(+)	(-)	10B
9	(+)	(-)	11B	28	(+)	(-)	12B
10	(+)	(-)	13B	29	(+)	(-)	14B
11	(+)	(-)	15B	30	(+)	(-)	16B
12	(+)	(-)	17B	31	(+)	(-)	18B
13	(+)	(-)	19B	32	(+)	(-)	20B
14	(+)	(-)	21B	33	(+)	(-)	22B
15	(+)	(-)	23B	34	(+)	(-)	24B
16	(+)	(-)	25B	35	(+)	(-)	26B
17	(+)	(-)	27B	36	(+)	(-)	28B
18	(+)	(-)	29B	37	(+)	(-)	30B
19	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

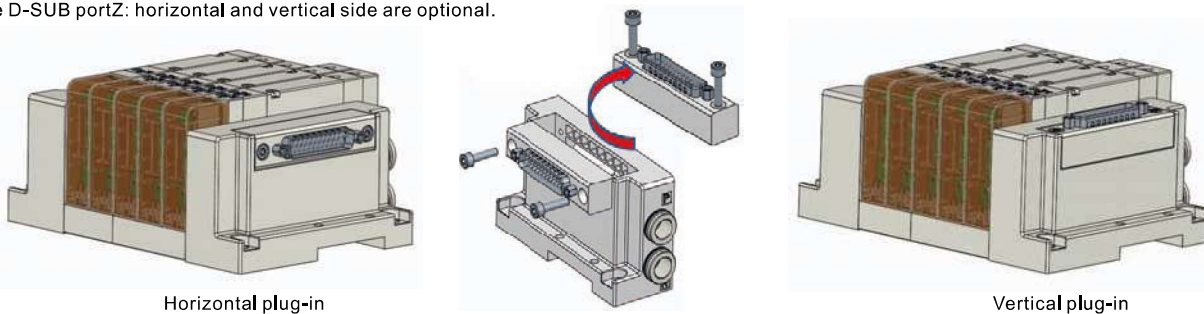
### Explanation of 31-33 stations connection pin.



Pin NO.	Polarity		Control object	Pin NO.	Polarity		Control object
	-COM	+COM			-COM	+COM	
1	(+)	(-)	1B	20	(+)	(-)	1A
2	(+)	(-)	2B	21	(+)	(-)	2A
3	(+)	(-)	3B	22	(+)	(-)	3A
4	(+)	(-)	4B	23	(+)	(-)	5B
5	(+)	(-)	6B	24	(+)	(-)	7B
6	(+)	(-)	8B	25	(+)	(-)	9B
7	(+)	(-)	10B	26	(+)	(-)	11B
8	(+)	(-)	12B	27	(+)	(-)	13B
9	(+)	(-)	14B	28	(+)	(-)	15B
10	(+)	(-)	16B	29	(+)	(-)	17B
11	(+)	(-)	18B	30	(+)	(-)	19B
12	(+)	(-)	20B	31	(+)	(-)	21B
13	(+)	(-)	22B	32	(+)	(-)	23B
14	(+)	(-)	24B	33	(+)	(-)	25B
15	(+)	(-)	26B	34	(+)	(-)	27B
16	(+)	(-)	28B	35	(+)	(-)	29B
17	(+)	(-)	30B	36	(+)	(-)	31B
18	(+)	(-)	32B	37	(+)	(-)	33B
19	(-)	(+)	COM	When mounted with single solenoid valves, A signal is empty			

Note: Gauge number of cable connecting to D-Sub pin No.19(COM) must be ≤22AWG

6. Flip-able D-SUB portZ: horizontal and vertical side are optional.







# 6D/6DW Series Integrated Solenoid Valve—

With Communication Module(5/2,5/3 way)

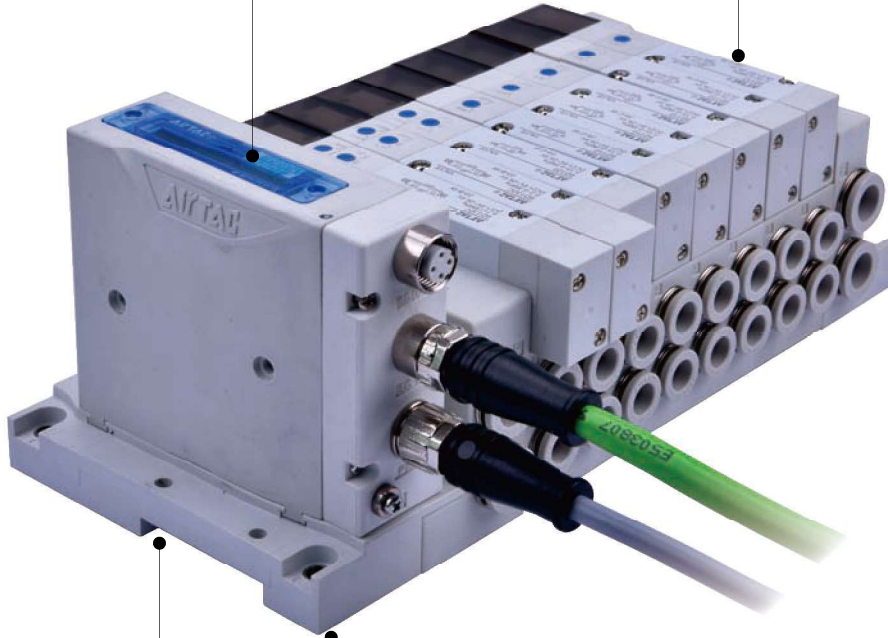
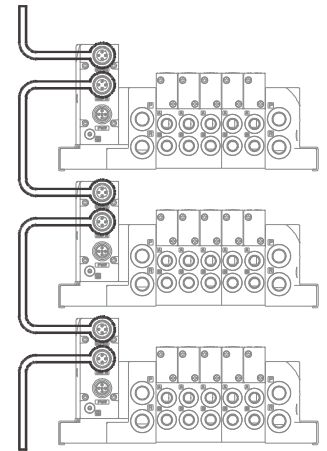
## Compendium of 6D/6DW Series(with communication module)

Multiple communication modules and protocols are optional

Communication module		Applicable model
No.	Protocols	
1	PROFINET	6D0500/6DW0500 6D100/6DW100 6D200/6DW200
2	EtherNet/IP	
3	EtherCAT	
4	IO-Link	

Network Topology

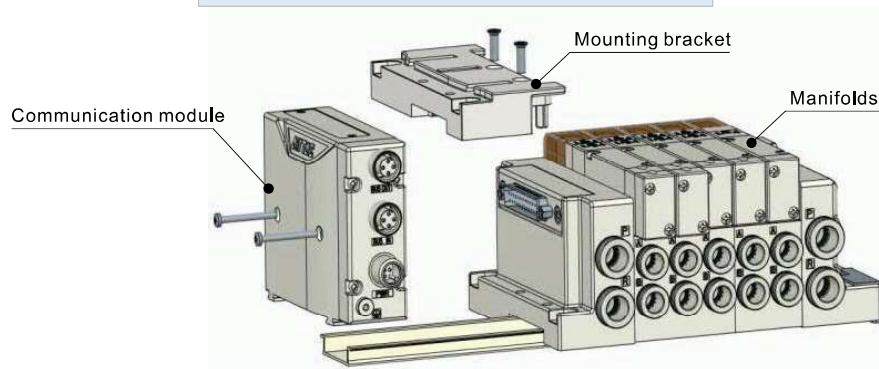
Daisy-chain wiring



Mounting accessory

No.	Ordering code
1	F-6D0500PN-R2
2	F-6D100PN-R2
3	F-6D200PN-R2

Integration design of communication module



## Communication module

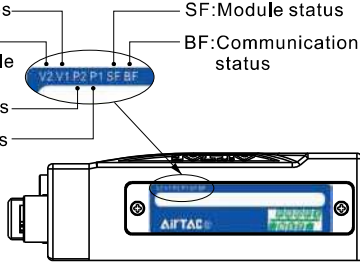


### LED indicator

#### Profinet(C-6DPN□)

V1: Status of power supply for valves  
 V2: Status of power supply for module  
 P2: BUS OUT status  
 P1: BUS IN status

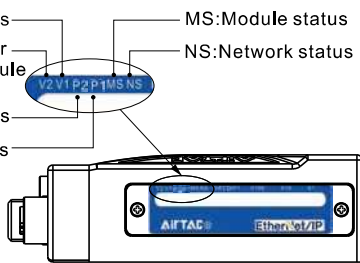
SF: Module status  
 BF: Communication status



#### EtherNet/IP(C-6DEN□)

V1: Status of power supply for valves  
 V2: Status of power supply for module  
 P2: BUS OUT status  
 P1: BUS IN status

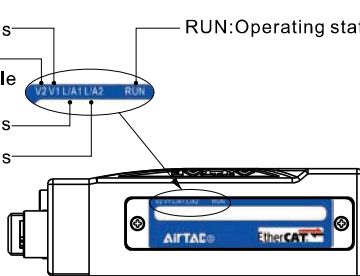
MS: Module status  
 NS: Network status



#### EtherCAT(C-6DEA□)

V1: Status of power supply for valves  
 V2: Status of power supply for module  
 L/A1: BUS IN status  
 L/A2: BUS OUT status

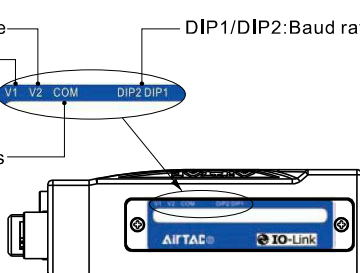
RUN: Operating status



#### IO-Link(C-6DLK□)

V2: Status of power supply for module  
 V1: Status of power supply for valves  
 COM: Network status

DIP1/DIP2: Baud rate status

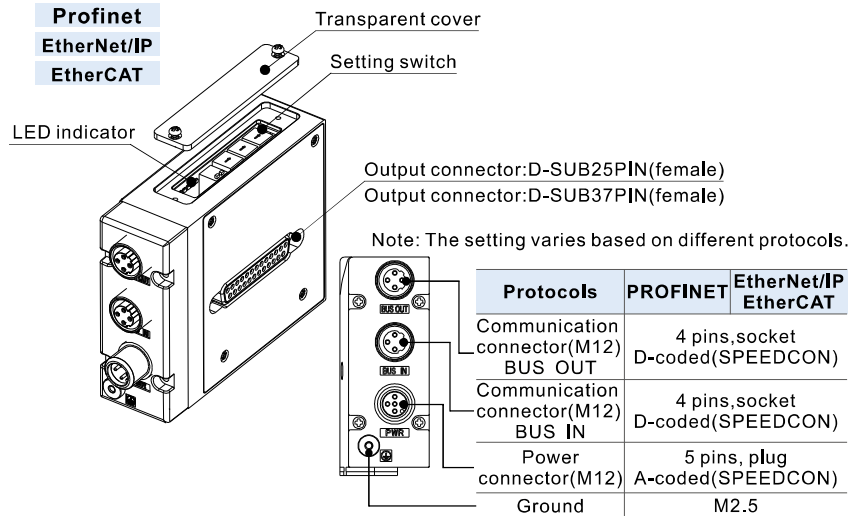


### Specification

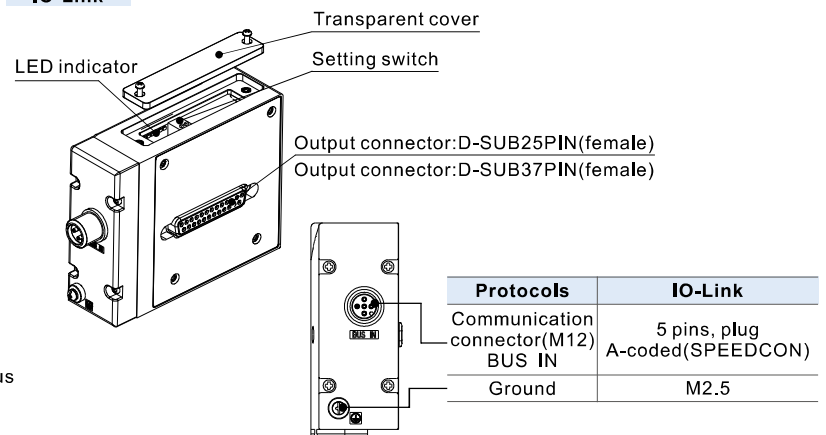
Protocol	PROFINET	EtherNet/IP	EtherCAT	IO-Link
Number of outputs	24 outputs/36 outputs			
Communication speed	100Mbps			COM3/COM2
Configuration file	GSDML file	EDS file	XML file	IODD file
Input power	DC24V ± 10%			
Current consumption	<100mA			
Voltage output	DC24V ± 10%			
Output type	PNP or NPN			PNP
Power connector	M12 plug 5 pins A-coded			M12 plug 5 pins A-coded
Bus connector	2XM12 socket 4 pins D-coded			M12 plug 5 pins A-coded
Protection	Dust proof			
Working temperature	-10~60°C			
Working humidity	35~85% RH			
Withstand voltage	AC500V 1min	Between terminals and housing		
Insulation resistance	>10MΩ (DC500V), Between terminals and housing			
Communication connection	Daisy-chain wiring			No

### Construction and function

Profinet  
 EtherNet/IP  
 EtherCAT



IO-Link



# Integrated solenoid valve (5/2, 5/3 way)

## Communication module

### Ordering Code of communication module

**C-6D PN 1**

① ② ③



① Model	6D : 6D series communication module			
② Protocol type	PN : Profinet	EN : EtherNet/IP	EA : EtherCAT	LK : IO-Link
③ Output type	1 : PNP+24 outputs	2 : NPN+24 outputs	11 : PNP+36 outputs	22 : NPN+36 outputs

Note: IO-Link module doesn't have NPN type.

### Ordering Code of communication cable

**C-M12 RJ PN □ 050**

① ② ③ ④ ⑤

M12 male connector  
D-coded



M12 to M12



RJ45



M12 to RJ45



M12 to wire



① Model	C-M12 : Communication cable (M12 connector)		
② Connector type	Blank : M12 male connectors on both end	M : M12 female connector+M12 male connector	
	RJ : M12 male connector+RJ45 terminal	S : M12 female connector+wire	
③ Protocol type	PN : Applicable to Profinet, EtherNet/IP, EtherCAT		LK : Applicable to IO-Link
④ Cable type	Blank: Cable		
⑤ Cable length	050 : 0.5m	100 : 1m	200 : 2m 300 : 3m 500 : 5m

### Ordering Code of power supply cable

**F-M12 PN □ 150**

① ② ③ ④

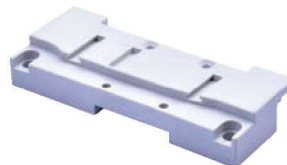


① Model	F-M12 : Power supply cable (M12 female connector)		
② Protocol type	PN : Applicable to Profinet, EtherNet/IP, EtherCAT		
③ Cable type	Blank : Cable		
④ Cable length	150 : 1.5m	300 : 3m	500 : 5m

### Ordering Code of mounting bracket

**F-6D0500 PN - R2**

① ② ③ ④



① Model	F : Mounting accessory		
② Code	6D0500 : 6D0500 Series	6D100 : 6D100 Serie	6D200 : 6D200 Serie
③ Protocol type	PN : For 6D module installation		
④ Output type	R2 : Mounting bracket for communication module		

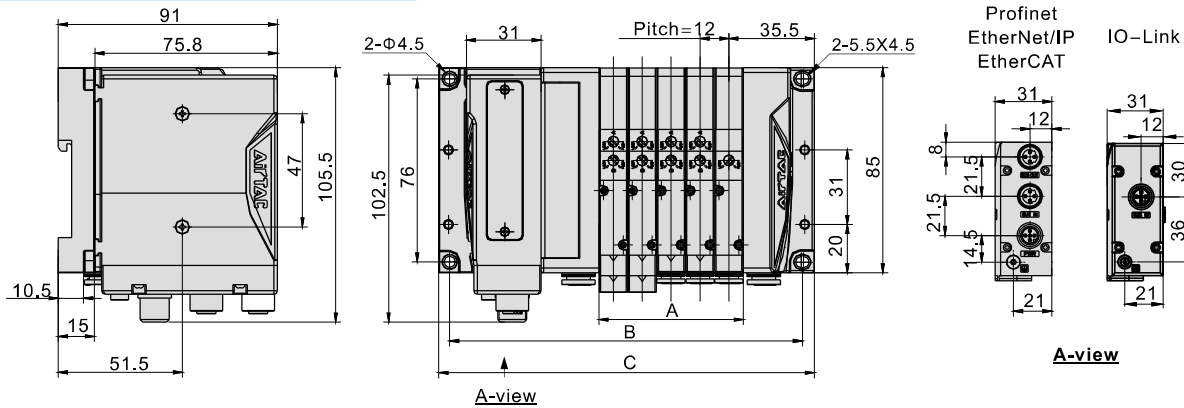
Note: Product comes with mounting screws.

# Integrated solenoid valve (5/2, 5/3 way)

## Communication module

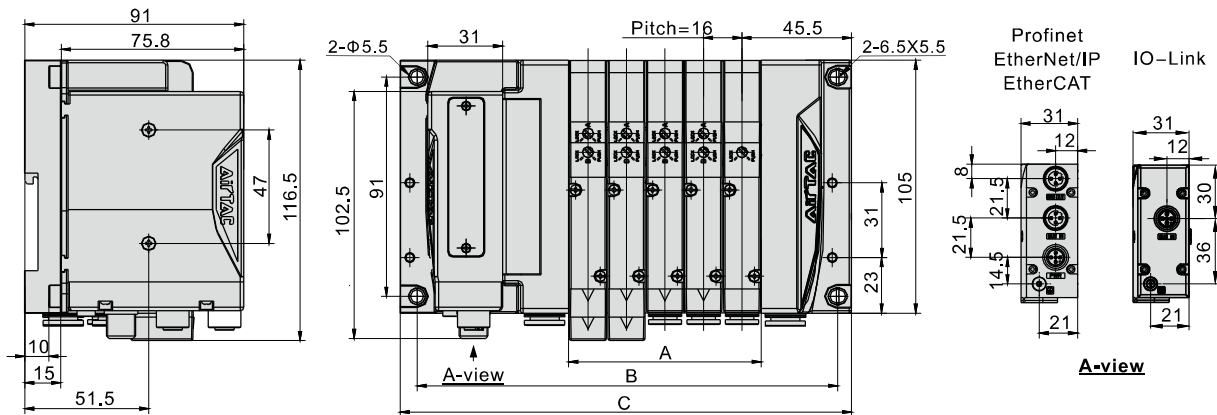
### Dimensions

#### 6D0500 series with communication module



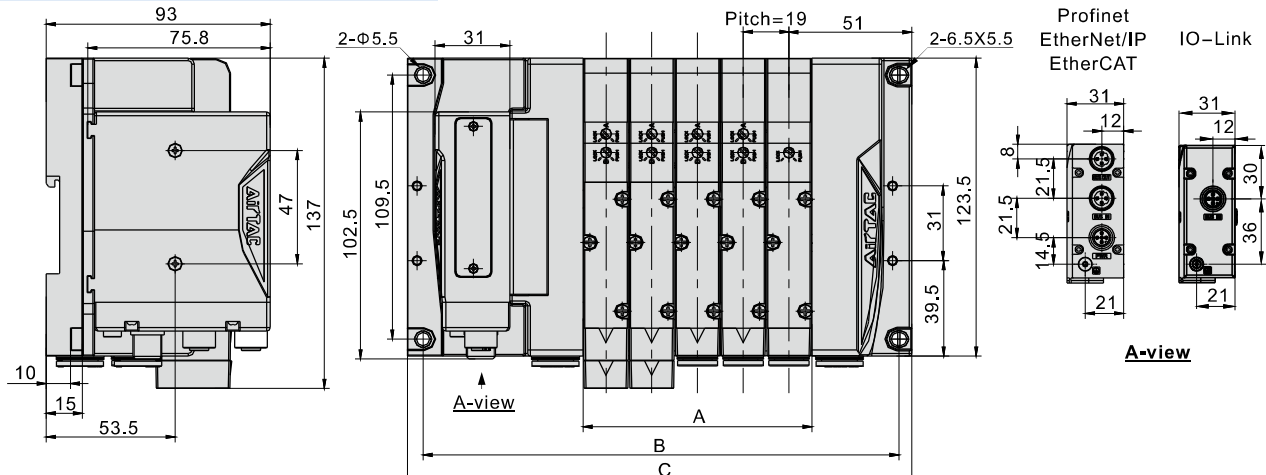
Item\Stations	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F	21F
A	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252
B	122.5	134.5	146.5	158.5	170.5	182.5	194.5	206.5	218.5	230.5	242.5	254.5	266.5	278.5	290.5	302.5	314.5	326.5	338.5
C	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348

#### 6D100 series with communication module



Item\Stations	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F	21F
A	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336
B	142.5	158.5	174.5	190.5	206.5	222.5	238.5	254.5	270.5	286.5	302.5	318.5	334.5	350.5	366.5	382.5	398.5	414.5	430.5
C	155.5	171.5	187.5	203.5	219.5	235.5	251.5	267.5	283.5	299.5	315.5	331.5	347.5	363.5	379.5	395.5	411.5	427.5	443.5

#### 6D200 series with communication module

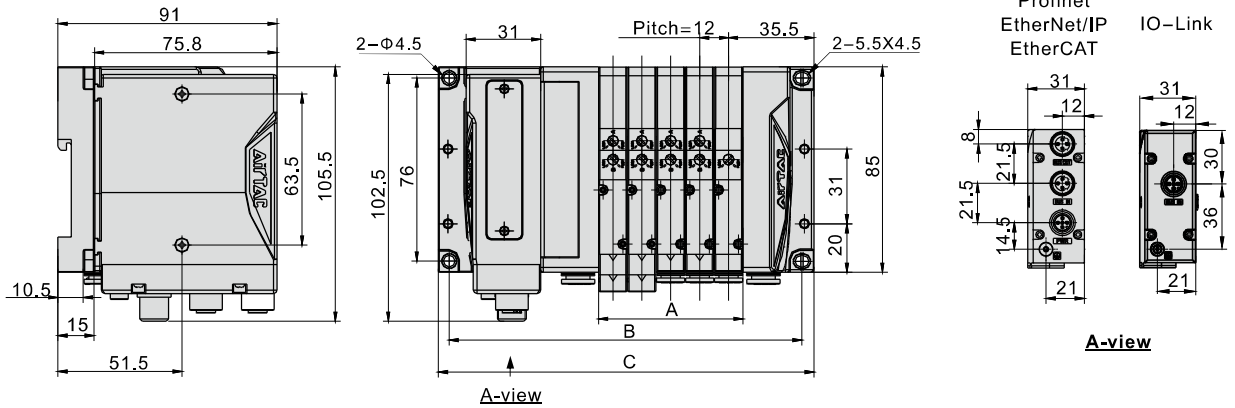


Item\Stations	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F	21F
A	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323	342	361	380	399
B	159.5	178.5	197.5	216.5	235.5	254.5	273.5	292.5	311.5	330.5	349.5	368.5	387.5	406.5	425.5	444.5	463.5	482.5	501.5
C	171.5	190.5	209.5	228.5	247.5	266.5	285.5	304.5	323.5	342.5	361.5	380.5	399.5	418.5	437.5	456.5	475.5	494.5	513.5

# Integrated solenoid valve (5/2, 5/3 way)

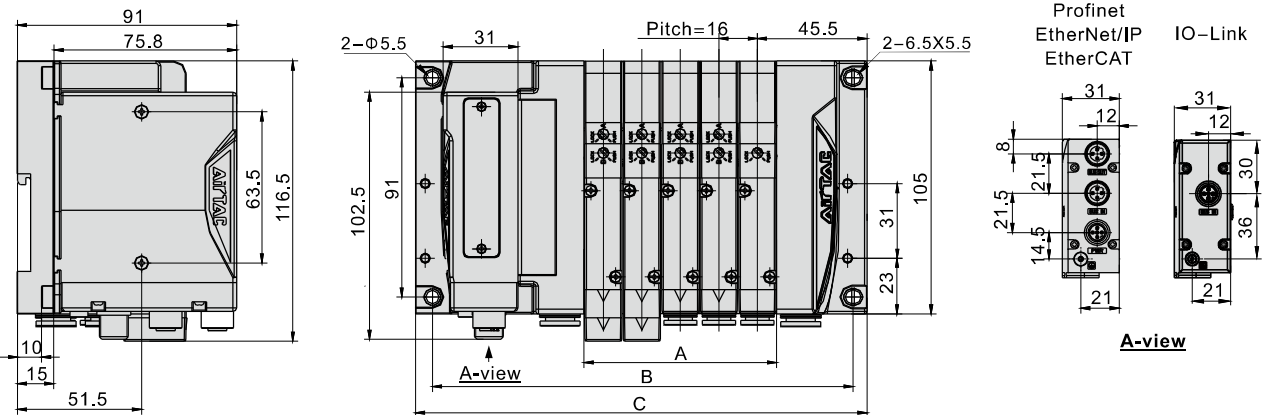
## Communication module

### 6DW0500 series with communication module



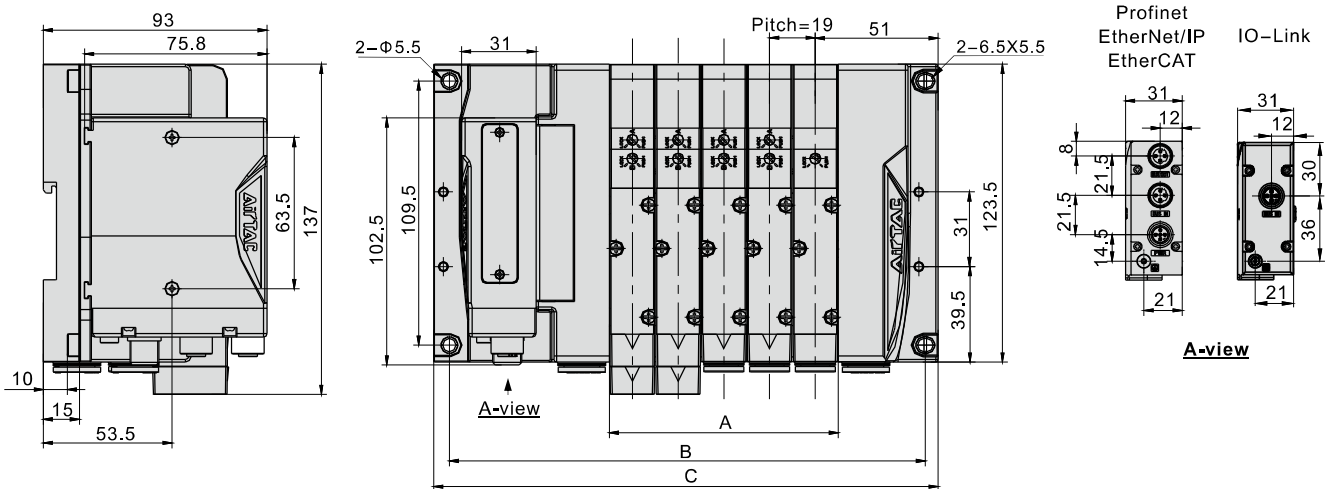
Item\Stations	13F	14F	15F	16F	17F	18F	19F	20F	21F	22F	23F	24F	25F	26F	27F	28F	29F	30F	31F	32F	33F
A	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324	336	348	360	272	384	396
B	242.5	254.5	266.5	278.5	290.5	302.5	314.5	326.5	338.5	350.5	362.5	374.5	386.5	398.5	410.5	422.5	434.5	446.5	458.5	470.5	482.5
C	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456	468	480	492

### 6DW100 series with communication module



Item\Stations	13F	14F	15F	16F	17F	18F	19F	20F	21F	22F	23F	24F	25F	26F	27F	28F	29F	30F	31F	32F	33F
A	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464	480	496	512	528
B	302.5	318.5	334.5	350.5	366.5	382.5	398.5	414.5	430.5	446.5	462.5	478.5	494.5	510.5	526.5	542.5	558.5	574.5	590.5	606.5	622.5
C	315.5	331.5	347.5	363.5	379.5	395.5	411.5	427.5	443.5	459.5	475.5	491.5	507.5	523.5	539.5	555.5	571.5	587.5	603.5	619.5	635.5

### 6DW200 series with communication module

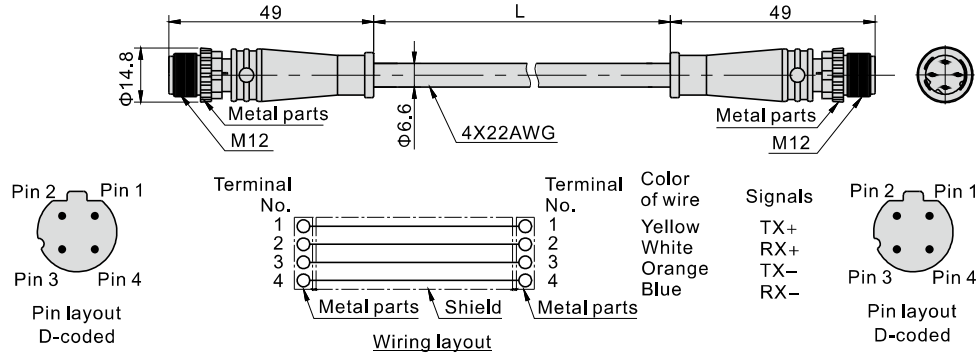


Item\Stations	13F	14F	15F	16F	17F	18F	19F	20F	21F	22F	23F	24F	25F	26F	27F	28F	29F	30F	31F	32F	33F
A	247	266	285	304	323	342	361	380	399	418	437	456	475	494	513	532	551	570	589	608	627
B	349.5	368.5	387.5	406.5	425.5	444.5	463.5	482.5	501.5	520.5	539.5	558.5	577.5	596.5	615.5	634.5	653.5	672.5	691.5	710.5	729.5
C	361.5	380.5	399.5	418.5	437.5	456.5	475.5	494.5	513.5	532.5	551.5	570.5	589.5	608.5	627.5	646.5	665.5	684.5	703.5	722.5	741.5

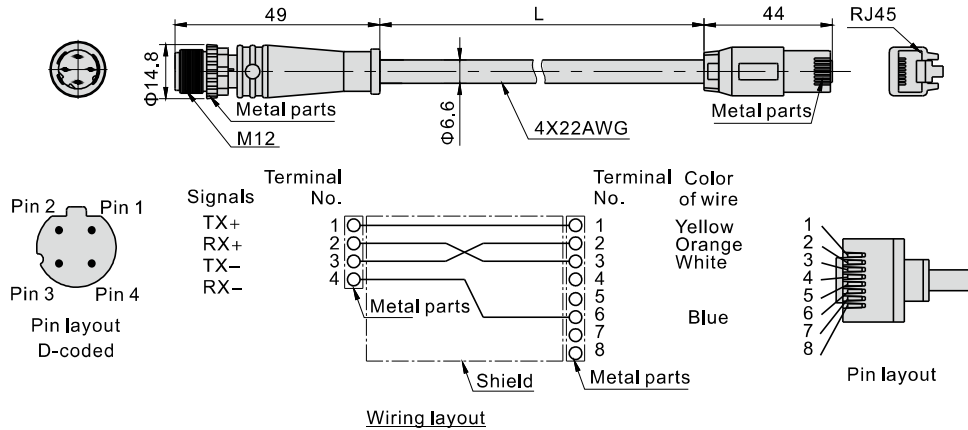
# Integrated solenoid valve (5/2, 5/3 way)

## Communication module

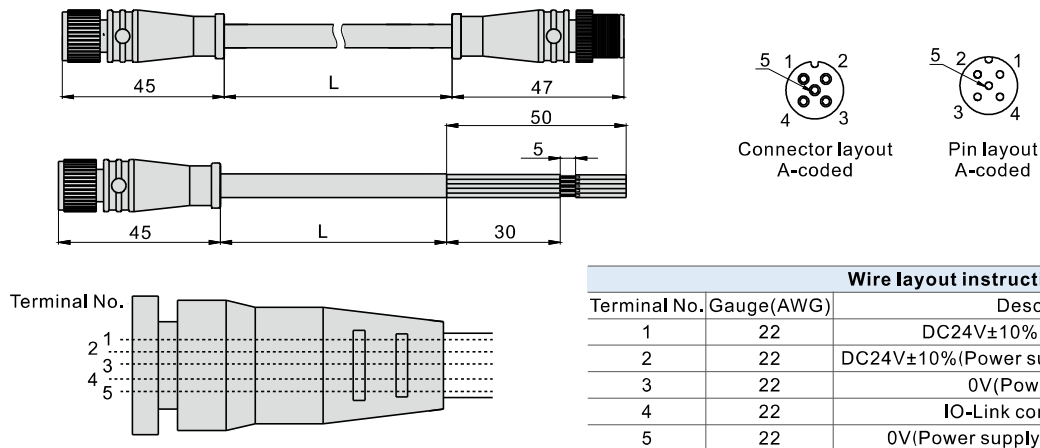
### Communication cable M12 to M12



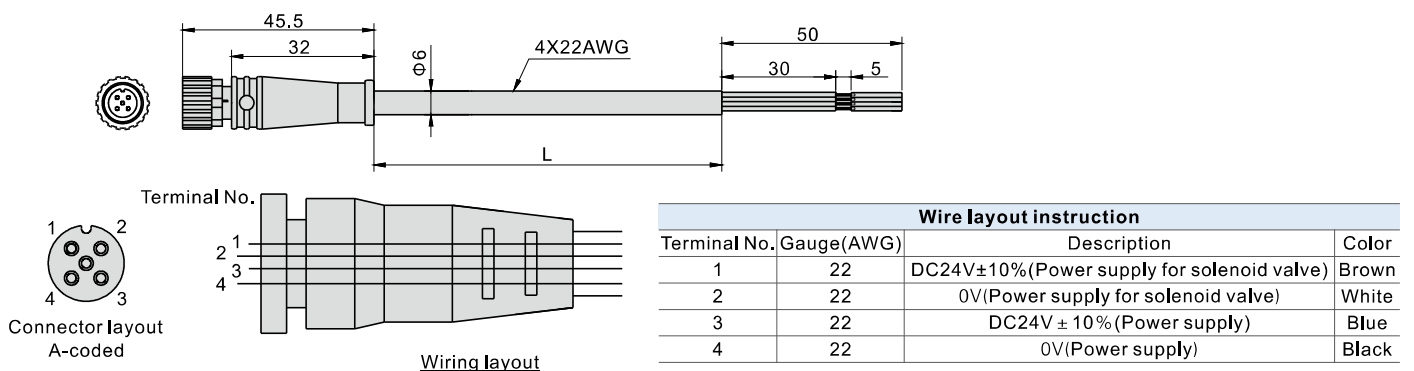
### Communication cable M12 to RJ45



### Communication cable M12 to M12/M12 to wires (IO-Link)



### Power supply cable M12 to wires







# 6V Series solenoid valve (5/2 way, 5/3 way)

## Compendium of 6V Series

### Multi-port types are optional

Threaded type and quick connector type are optional, and can integrate manifold to form valve group to save space.

### Inner exhaust structure

Pilot airflow exhaust intensively from R, S port.

### Terminal

Special design for terminal, horizontal and vertical insertion can freely switch.



### Multi-series and type

6V0500, 6V100, 6V200, 6V300 series are optional.

### Extruded molding with aluminum alloy for body

Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.

## Installation and Application

1. Don't throw or drop the solenoid valve when take it, to avoid breaking valve;
2. Because solenoid pilot valve is sophisticated component, can't crash pilot valve by outside force, otherwise solenoid valve break possibly;
3. Don't dismantle solenoid valve freely, if the screw(M1.6X14) becomes loose, please tighten it by torque 0.1~0.12N.m;
4. About manual operation:

4.1. Ensure no danger, prior to activating manual override;

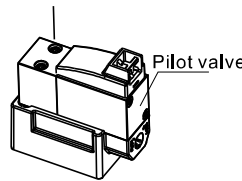
4.2. For push button option:

Activate by push the button in the direction shown

4.3. For slotted option:

Activate by push the button in the direction shown.

With correct size screw driver: please turn to lock gently(Torque : 0.1N.m).



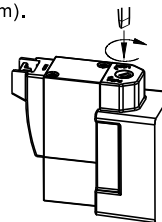
### Attention



Normal position



Lucked position



4.4. Wiring instruction : Vertical plug type and parallel plug type are the same as plug, please insert wire line as up drawing by practicality.



Vertical plug wire



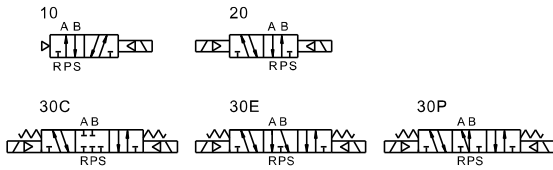
Parallel plug wire

# Solenoid valve (5/2 way, 5/3 way)

## 6V Series



### Symbol



### Specification

Model	6V0510	6V0520	6V0530	6V110	6V120	6V130
Port size	In=Out=Exh=M5			In=Out=Exh=M5(or=1/8")		
[Note1] Thread type	A port=B port=Φ4			A port=B port=Φ4 (or=Φ6) (or=Φ8)		
Orifice size(Cv)	M5:3.4mm <sup>2</sup> (0.2)		6V0530C M5: 2.2mm <sup>2</sup> (0.13)	06:8.9mm <sup>2</sup> (0.52)		6V130C06: 8.0mm <sup>2</sup> (0.47)
[Note4]						
Weight	35g	50g	65g	60g	75g	90g
Model	6V210	6V220	6V230	6V310	6V320	6V330
Port size	In=Out=1/8"(or=1/4")Exh=1/8"			In=Out=3/8" Exh=1/4"		
[Note1] Thread type	A port=B port=Φ6(or=Φ8) (or=Φ10)			-		
Orifice size(Cv)	08:15.4mm <sup>2</sup> (0.91)		6V230C08: 14.2mm <sup>2</sup> (0.84)	10:38.4mm <sup>2</sup> (2.26)		6V330C10: 30.5mm <sup>2</sup> (1.8)
[Note4]						
Weight	100g	115g	130g	230g	265g	305g
Fluid	Air(to be filtered by 40μm filter element)					
Acting	Internal pilot					
Operating pressure	5/3 way		0.2~0.8MPa(29~114psi)			
	5/2 way		0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					
Lubrication [Note3]	Not required					
Pilot valve's Exhaust type	Centralized exhaust type					
Max.frequency [Note2]	5 cycle/sec		3 cycle/sec		5 cycle/sec	
					3 cycle/sec	

[Note1] PT, G, NPT thread are available.

[Note2] The maximum actuation frequency is in the no-load state.

[Note3] Once lubricated air is used, continue with same medium to optimize valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Product feature

1. Electrical entry is terminal, horizontal and vertical insertion can freely switch.
2. Inner exhaust structure to collect pilot airflow, and then exhaust intensively from R, S port.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. Threaded type and quick connector type are optional, and can integrate manifold to form valve group to save space.

### Coil specification

Item	Specification			
Standard voltage	AC220V	AC110V	DC24V	DC12V
Scope of voltage	AC : +15% ~-10%		DC : ±10%	
Power consumption	1.1VA		0.7W	
Protection	Dustproof			
Temperature classification	F Class			
Electrical entry	Terminal			
Activating time	0.05 sec and below			

### Ordering code

6V 2 10 J 08 B 050 □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

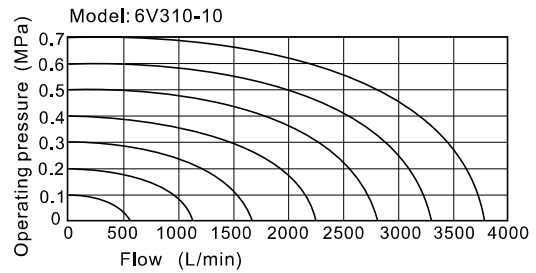
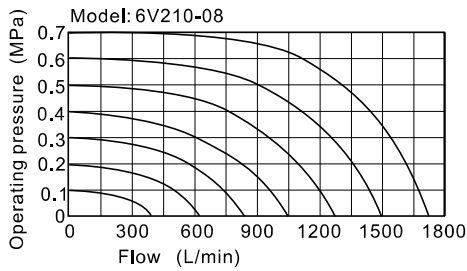
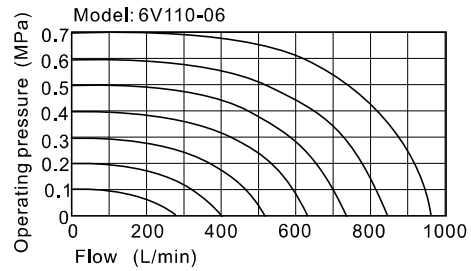
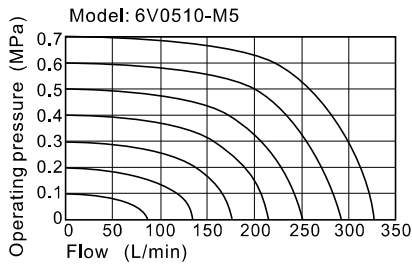
① Model	6V: Solenoid valve (5/2, 5/3 way)					
② Code	05: 0500 Series	1: 100 Series		2: 200 Series		3: 300 Series
③ Valve type	10: Single solenoid 5/2 way		20: Double solenoid 5/2 way			
	30C : Double solenoid 5/3 way closed center		30E : Double solenoid 5/3 way exhaust center			
	30P : Double solenoid 5/3 way pressure center					
④ Port type	Blank: Thread type J: Tube type					
⑤ Port size	M5: M5	M5: M5	06: 1/8"	06: 1/8"	08: 1/4"	10: 3/8"
⑥ Voltage	A: AC220V		B: DC24V		C: AC110V F: DC12V	
⑦ Wire length			050: 0.5m		200: 2.0m	
⑧ Thread type [Note1]	-		Blank: PT Thread / G: G Thread / T: NPT Thread			

[Note]: The base of the tube type solenoid valve is only used with the manifold.

# Solenoid valve (5/2 way, 5/3 way)

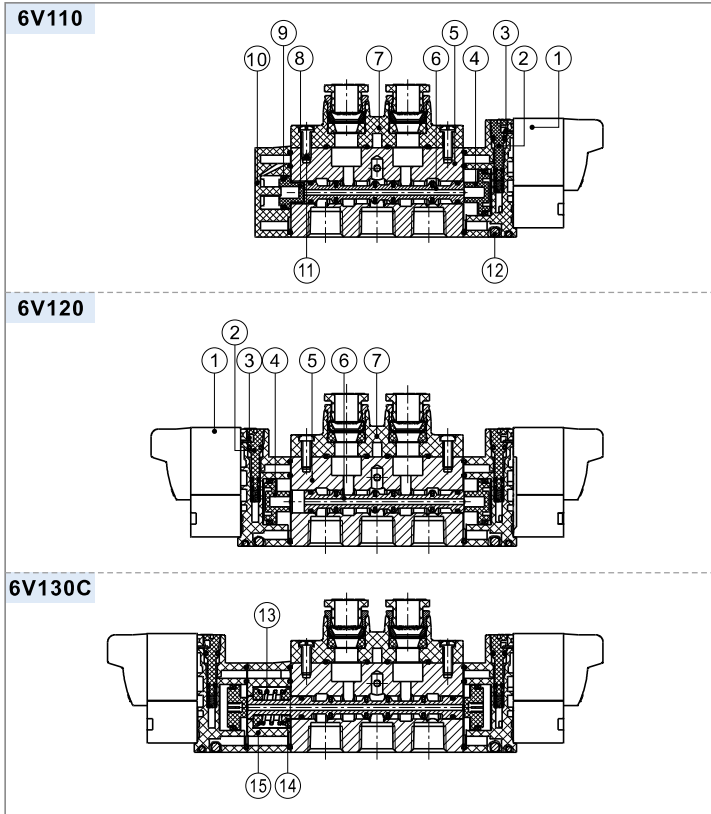
## 6V Series

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Inner structure



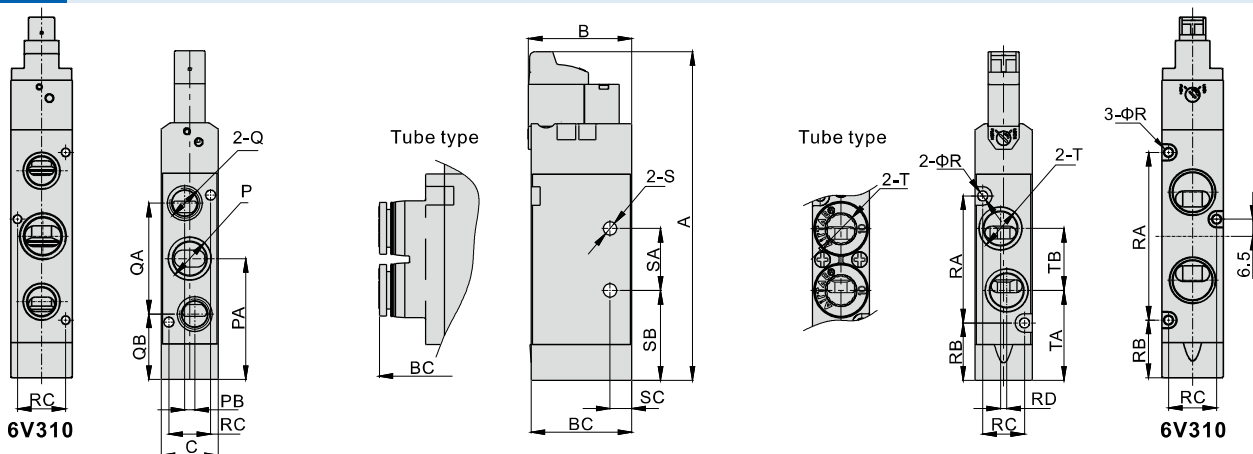
No.	Item	No.	Item	No.	Item
1	Pilot valve	6	Spool	11	Bolt
2	Manual override	7	Connecting block	12	Steel ball
3	Pilot kit	8	Little piston	13	Spring
4	Big piston	9	Gasket	14	Return holder
5	Body	10	Bottom cover	15	Side cover

# Solenoid valve (5/2 way, 5/3 way)

## 6V Series

### Dimensions

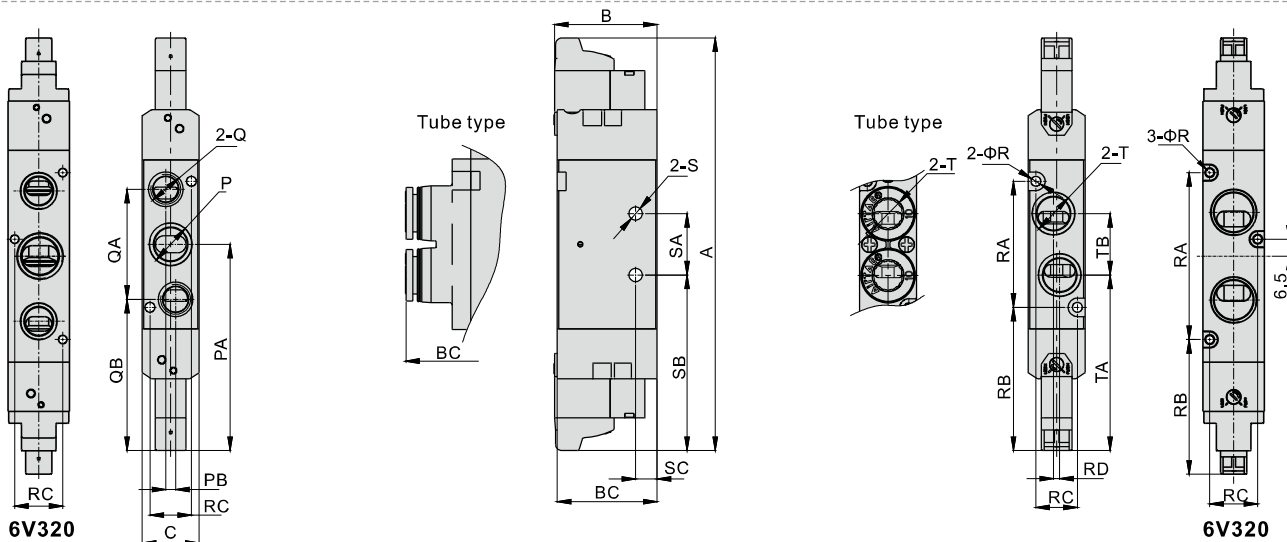
6V0510  
6V110  
6V210  
6V310



Model/Item	A	B	BC	C	P	PA	PB	Q	QA	QB	T	TA	TB	R	RA	RB	RC	RD	S	SA	SB	SC
6V0510M5	73	31	21	10.6	M5X0.8	22.5	1	M5X0.8	19	13	M5X0.8	17.5	10	2.1	22.5	11	7.5	0	Φ2.6	10	17.5	4
6V0510J04			32.5		M5X0.8		-	M5X0.8	29.8	18	M5X0.8	25.2	15.4					-	-	-	-	-
6V110M5			24		M5X0.8						PT1/8								Φ3.2	14	26	4
6V110J04	93.5	32	39.5	15.5	PT1/8	33	2.6	PT1/8	28	19	Φ4(Tube)	24.5	16.5	2.6	34	16	11	0	-	-	-	-
6V110J06			41								Φ6(Tube)								-	-	-	-
6V110J08			42.5								Φ8(Tube)								-	-	-	-
6V21006			32.5		PT1/8						PT1/8	30	18						Φ4.3	20	29	7
6V21008			32.5								PT1/4								-	-	-	-
6V210J06	106	33.5	50.6	18.5	PT1/4	39	3.2	PT1/8	36	21	Φ6(Tube)	29	20	3.2	41	18.5	13.5	2	-	-	-	-
6V210J08			53.5								Φ8(Tube)								-	-	-	-
6V210J10			53.5								Φ10(Tube)								-	-	-	-
6V31010	137.5	46	46	23.5	PT3/8	54	0.5	PT1/4	50	29	PT3/8	37	33.5	3.2	64	22	18.4	0	Φ4.3	25	41.5	8

[Note]: The tube type solenoid valve is only used with the manifold. No through hole "S" on the side.

6V0520  
6V120  
6V220  
6V320



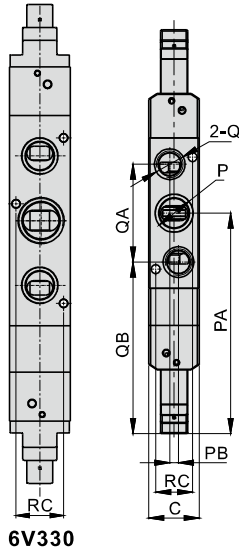
Model/Item	A	B	BC	C	P	PA	PB	Q	QA	QB	T	TA	TB	R	RA	RB	RC	RD	S	SA	SB	SC
6V0520M5	101.5	31	21	10.6	M5X0.8	51	1	M5X0.8	19	41	M5X0.8	45.5	10	2.1	22.5	39.5	7.5	0	Φ2.6	10	45.5	4
6V0520J04			32.5		M5X0.8		-	M5X0.8	29.8	46	M5X0.8	53.7	15.4						-	-	-	-
6V120M5			24		M5X0.8						PT1/8								Φ3.2	14	54	4
6V120J04	121.5	32	39.5	15.5	PT1/8	61	2.6	PT1/8	28	47	Φ4(Tube)	52.5	16.5	2.6	34	44	11	0	-	-	-	-
6V120J06			41								Φ6(Tube)								-	-	-	-
6V120J08			42.5								Φ8(Tube)								-	-	-	-
6V22006			32.5		PT1/8						PT1/8	58	18						Φ4.3	20	57	7
6V22008			32.5								PT1/4								-	-	-	-
6V220J06	134	33.5	50.6	18.5	PT1/4	67	3.2	PT1/8	36	49	Φ6(Tube)	57	20	3.2	41	46.5	13.5	2	-	-	-	-
6V220J08			53.5								Φ8(Tube)								-	-	-	-
6V220J10			53.5								Φ10(Tube)								-	-	-	-
6V32010	167	46	46	23.5	PT3/8	83.5	0.5	PT1/4	50	58.5	PT3/8	67	33.5	3.2	64	51.5	18.4	0	Φ4.3	25	71	8

[Note]: The tube type solenoid valve is only used with the manifold. No through hole "S" on the side.

# Solenoid valve (5/2 way, 5/3 way)

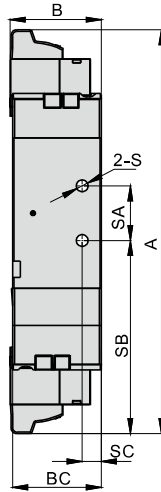
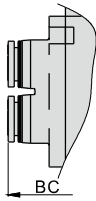
## 6V Series

6V0530  
6V130  
6V230  
6V330

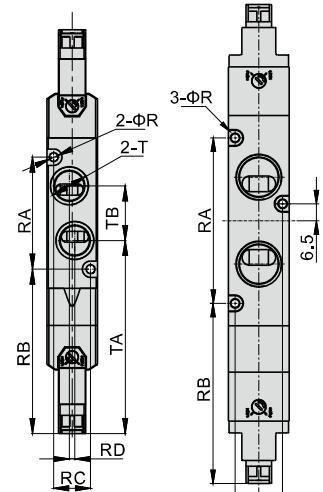
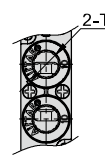


6V330

Tube type



Tube type



6V330

Model/Item	A	B	BC	C	P	PA	PB	Q	QA	QB	T	TA	TB	R	RA	RB	RC	RD	S	SA	SB	SC					
6V0530M5	110	31	21	10.6	M5X0.8	59	1	M5X0.8	19	50	M5X0.8	54	10	2.1	22.5	48	7.5	0	Φ2.6	10	54	4					
6V0530J04			32.5		-						Φ4(Tube)								-	-	-						
6V130M5	133	32	24	15.5	M5X0.8	72.5	-	M5X0.8	29.8	58	M5X0.8	64.7	15.4	2.6	34	55.5	11	0	Φ3.2	14	65.5	4					
6V130J04			39.5		PT1/8						PT1/8								28	59	Φ4(Tube)	64	Φ6(Tube)	-	-	-	-
6V130J06			41		Φ6(Tube)						Φ8(Tube)								-	-	-	-					
6V130J08			42.5		Φ8(Tube)						-								-	-	-	-					
6V23006	148	33.5	32.5	18.5	PT1/8	81	3.2	PT1/8	36	63	PT1/8	72	18	3.2	41	60.2	13.5	2	Φ4.3	20	70.7	7					
6V23008			PT1/4		PT1/4						Φ6(Tube)								Φ8(Tube)	Φ10(Tube)	-	-	-	-			
6V230J06			50.6		Φ6(Tube)						Φ8(Tube)								Φ10(Tube)	-	-	-	-				
6V230J08			53.5		Φ8(Tube)						Φ10(Tube)								-	-	-	-	-				
6V230J10	185	46	46	23.5	PT3/8	101.5	0.5	PT1/4	50	76.5	PT3/8	85	33.5	3.2	64	69.5	18.4	0	Φ4.3	25	89	8					
6V33010																							6V33010				

[Note]: The tube type solenoid valve is only used with the manifold. No through hole "S" on the side.

## Manifold for 6V Series



### Specification

Item\Manifold Model	6V0500M	6V100M	6V200M	6V300M
Fluid	Air(to be filtered by 40μm filter element)			
Temperature °C	-20~70			
Adaptable valve's series	6V0500 Series	6V100 Series	6V200 Series	6V300 Series

### Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

### Ordering code

#### 6V100M 5F □ Ordering code for manifold



① Model	6V0500M: 6V0500 Series manifold	6V100M: 6V100 Series manifold	6V200M: 6V200 Series manifold	6V300M: 6V300 Series manifold
② Number of stations	1F: 1 Station 2F: 2 Station 3F: 3 Station ..... 20F: 20 Station			
③ Thread type	Blank: PT / G: G Thread / T: NPT Thread			

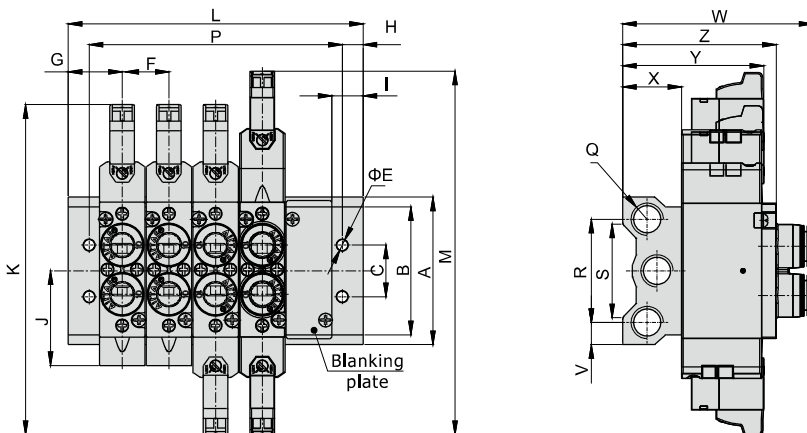
#### P-6V100M-R2 Ordering code for blank plate



① Model	6V0500M: 6V0500 Series manifold	6V100M: 6V100 Series manifold	6V200M: 6V200 Series manifold	6V300M: 6V300 Series manifold
② Code	R2: Blank plate for manifold			

[Note] 1. Manifold kits contains manifold, seal and screw; 2. Blank plate kits contains blank plate and screw.

### Dimensions



Model\Item	A	B	C	E	F	G	H	I	J	K	M	Q	R	S	V	W			X	Y	Z	
6V0500M	46	32	16	4.5	11	15	5	9.5	22.5	102	110	PT1/8	32	26	7	36.2(M5)	50.5(J04)			17	35.5	47.5
6V100M	57.5	43	20	4.5	16	17	5	9.5	33	121.5	133.5	PT1/4	40	36	9	55(M5/06)	62.5(J04)/64(J06)	65.5(J08)	22	46	54	
6V200M	60	52	21	4.5	19	18.5	5	9.5	38.5	134.5	148	PT1/4	42	38	9	58.5(06/08)	75.2(J06)/76.5(J08)	78.5(J10)	24	57.5	62.5	
6V300M	85	75	26	4.5	23.5	24	5	12	54	167	185	PT3/8	57	58	14	-	-	-	27	74	-	

Model\Item	L																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6V0500M	30	41	52	63	74	85	96	107	118	129	140	151	162	173	184	195	206	217	228	239
6V100M	34	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
6V200M	37	56	75	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398
6V300M	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504

Model\Item	P																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6V0500M	20	31	42	53	64	75	86	97	108	119	130	141	152	163	174	185	196	207	218	229
6V100M	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
6V200M	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388
6V300M	38	62	86	110	134	158	182	206	230	254	278	302	326	350	374	398	422	446	470	494





# 6HV Series Integrated solenoid valve (5/2, 5/3 way)

## Compendium of 6HV Series

### Multi-channel gas supply

When multi-valve is used (10 or more), both ends of the guide rail are equipped with an integrated inlet and exhaust module to prevent the gas supply pressure from dropping and causing malfunction.

### Multi-series and Multi-port types are optional

6HV0500, 6HV100 series are optional ;

M5、1/8" port size are optional.

### Concentrated inlet and exhaust

Concentrated intake and exhaust, convenient piping, saving installation space.

### Integrated inlet and exhaust module

The inlet and exhaust module adopts integrated aluminum alloy, which is beautiful and durable, and easy to disassemble.

### Terminal

Special design for terminal, horizontal and vertical insertion can freely switch.

### Integrated structure

The solenoid valve and the DIN rail are connected by a push-pull type, which can be integrated into the valve group with multiple valves. It is convenient and flexible to disassemble and replace.

### Inner exhaust structure

Special structure in the valve body, which can collect pilot airflow, and then exhaust intensively from R, S port.

### DIN standard rail

The guide rails conform to the DIN standard and are highly versatile. The relevant function module can be fixed to any position of the guide rail by stop screw.

## Installation and Application(Solenoid valve)

1. Don't throw or drop the solenoid valve when take it, to avoid breaking valve;
2. Because solenoid pilot valve is sophisticated component, can't crash pilot valve by outside force, otherwise solenoid valve break possibly;
3. Don't dismantle solenoid valve freely, if the screw(M1.6X14) becomes loose, please tighten it by torque 0.1~0.12N.m;
4. About manual operation:

4.1. Ensure no danger, prior to activating manual override;

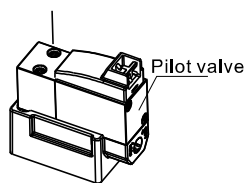
4.2. For push button option:

Activate by push the button in the direction shown

4.3. For slotted option:

Activate by push the button in the direction shown.

With correct size screw driver: please turn to lock gently(Torque : 0.1N.m).



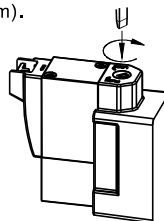
### Attention



Normal position



Lucked position



4.4. Wiring instruction : Vertical plug type and parallel plug type are the same as plug, please insert wire line as up drawing by practicality.



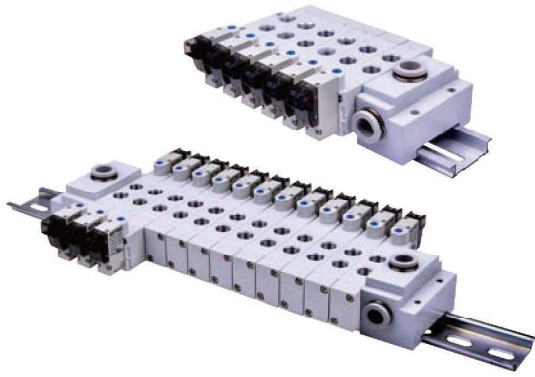
Vertical plug wire



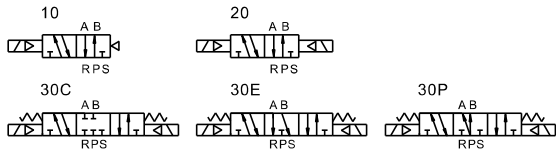
Parallel plug wire



## 6HV Series



### Symbol



### Product feature

1. Electrical entry is terminal, horizontal and vertical insertion can freely switch.
2. Inner exhaust structure, which can collect pilot airflow, and then exhaust intensively from R, S port.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. The solenoid valve and the DIN rail are connected by a push-pull type, which can be integrated into the valve group with multiple valves. It is convenient and flexible to disassemble and replace.

### Specification

Model	6HV0510	6HV0520	6HV0530	6HV110	6HV120	6HV130
Port size [Note1]	In=Out=M5			In=Out=M5(or=1/8")		
Orifice size(Cv)[Note4]	M5:3.4mm <sup>2</sup> (0.2)	6HV0530CM5: 2.2mm <sup>2</sup> (0.13)	06:8.9mm <sup>2</sup> (0.52)	6HV130C06: 8.0mm <sup>2</sup> (0.47)		
Max. frequency [Note2]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3cycle/sec		
Fluid	Air(to be filtered by 40μm filter element)					
Acting	Pilot					
Operating pressure	6HV0530/6HV130		0.2~0.8MPa(29~114psi)			
	Othres		0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					
Lubrication [Note3]	Not required					
Exhaust type of pilot valve	Main valve and pilot valve is centralized exhaust					

[Note1] PT, NPT thread and G thread are available.

[Note2] The maximum actuation frequency is in the no-load state.

[Note3] Once lubricated air is used, continue with same medium to optimize valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

Item	Specification			
Standard voltage	AC220V	AC110V	DC24V	DC12V
Scrop of voltage	AC : +15% ~-10%		DC : ±10%	
Power of consumption	1.1VA		0.7W	
Protection	Dustproof			
Temperature classification	F Class			
Electrical entry	Terminal			
Activating time	0.05 sec and below			

### Ordering code(Solenoid valve)

6HV 1 10 06 B 050 □



① Model	6HV: 5 port 2(3) position solenoid valve			
② Code	05: 0500 Series	1: 100 Series		
③ Valve type	10 : Single solenoid(5/2 Way)	20 : Double solenoid(5/2 Way)	30C : Double solenoid(5/3 way closed center)	
	30E : Double solenoid(5/3 way Exhaust center)	30P : Double solenoid(5/3 way pressure center)		
④ Port size	M5: M5	M5: M5	06: 1/8"	
⑤ Voltage	A: AC220V		B: DC24V	C: AC110V
			F: DC12V	
⑥ Wire length	050: 0.5m		200: 2.0m	
⑦ Thread type	No this code	No this code	Blank : PT thread	G : G Thread T : NPT Thread

### Ordering code(DIN guide rail)

6HV 100M 6F



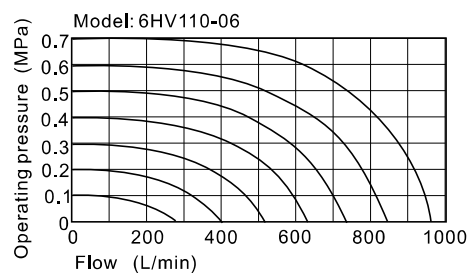
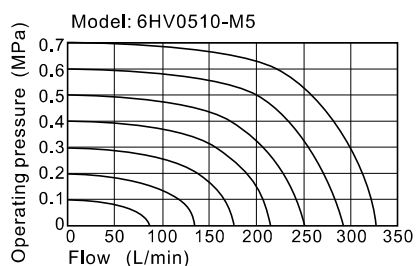
① Model	6HV: 5 port 2(3) position solenoid valve			
② Code	0500M: DIN guide rail for 0500 Series		100M: DIN guide rail for 100 Series	
③ Number of stations	4F: Manifold for 2, 3, 4 stations	4F: Manifold for 2, 3, 4 stations	20F: Manifold for 19, 20 stations	
	7F: Manifold for 5, 6, 7 stations	6F: Manifold for 5, 6 stations	22F: Manifold for 21, 22 stations	
	10F: Manifold for 8, 9, 10 stations	8F: Manifold for 7, 8 stations	24F: Manifold for 23, 24 stations	
	12F: Manifold for 11, 12 stations	10F: Manifold for 9, 10 stations		
	15F: Manifold for 13, 14, 15 stations	12F: Manifold for 11, 12 stations		
	18F: Manifold for 16, 17, 18 stations	14F: Manifold for 13, 14 stations		
	21F: Manifold for 19, 20, 21 stations	16F: Manifold for 15, 16 stations		
	24F: Manifold for 22, 23, 24 stations	18F: Manifold for 17, 18 stations		

[Note] DIN guide rail contents inlet and outlet module or end cover. The detail configuration is: ten and less stations configure one inlet and outlet module and one end cover, ten over stations config two inlet and outlet modules.

# Integrated solenoid valve (5/2, 5/3 way)

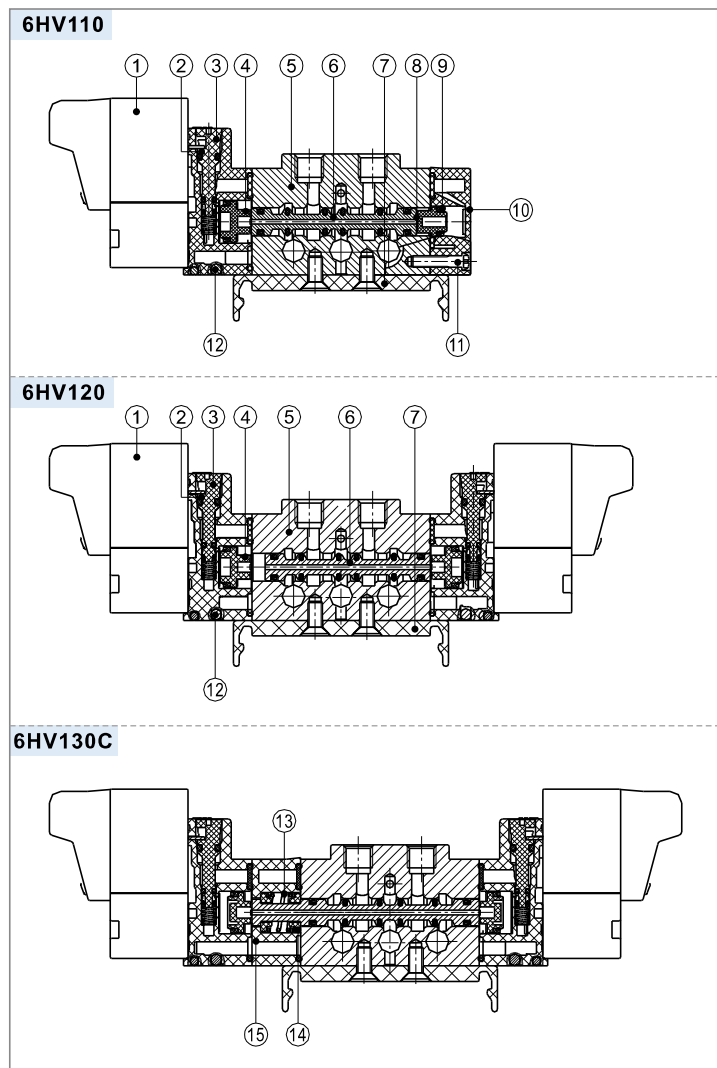
## 6HV Series

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Inner structure



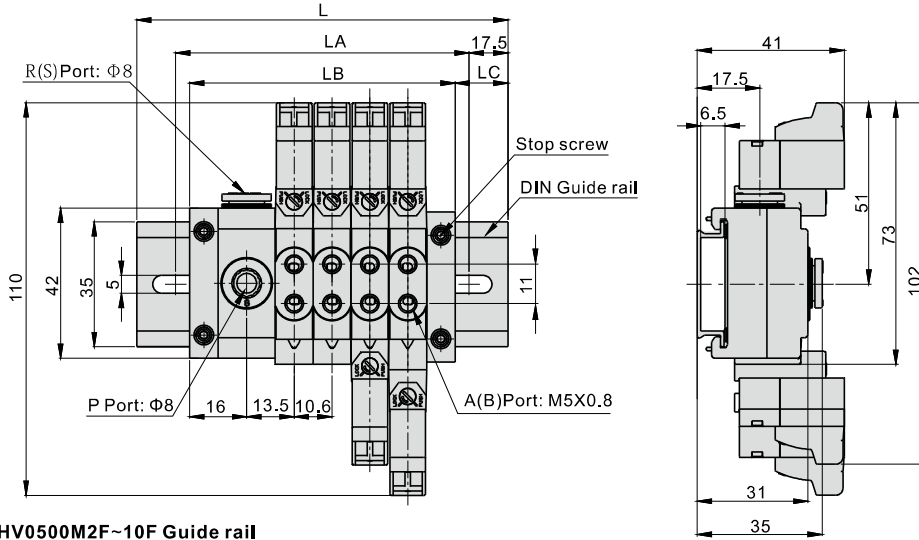
No.	Item	No.	Item	No.	Item
1	Pilot valve	6	Spool	11	Bolt
2	Manual override	7	Bracket	12	Steel ball
3	Pilot kit	8	Little piston	13	Spring
4	Big piston	9	Gasket	14	Return holder
5	Body	10	Bottom cover	15	Side cover

# Integrated solenoid valve (5/2, 5/3 way)

## 6HV Series

### Dimensions

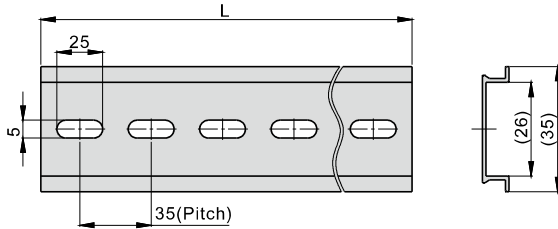
#### 6HV0500+6HV0500M2F~10F



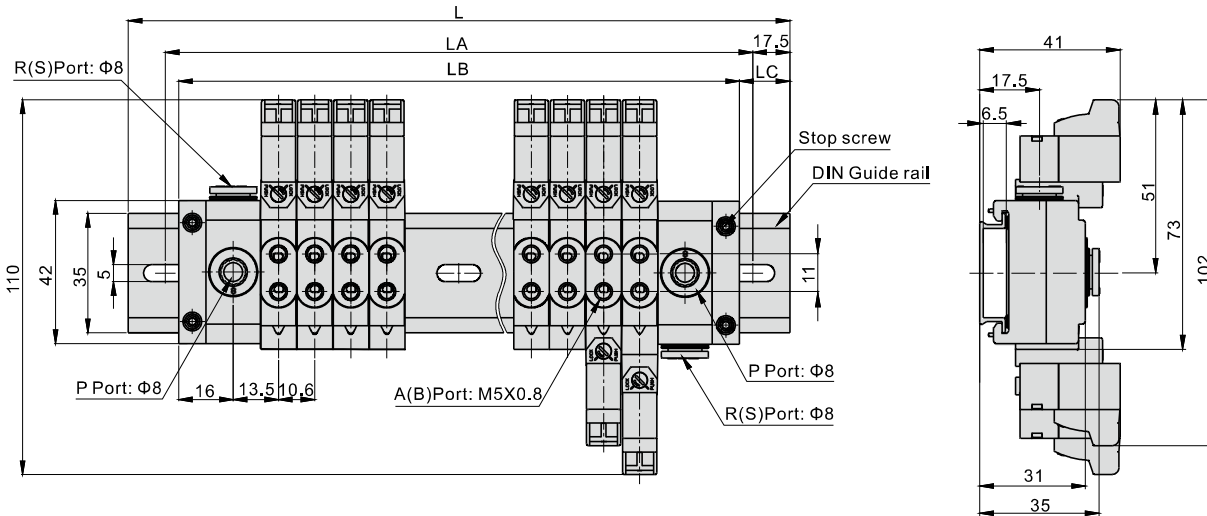
Item\Stations	2F	3F	4F	5F	6F
L	105	105	105	140	140
LA	70	70	70	105	105
LB	53	64	74.5	85	95.5
LC	26	20.5	15	27.5	22

Item\Stations	7F	8F	9F	10F
L	140	175	175	175
LA	105	140	140	140
LB	106	116	127.5	138
LC	17	29.5	23.8	18.5

#### 6HV0500M2F~10F Guide rail



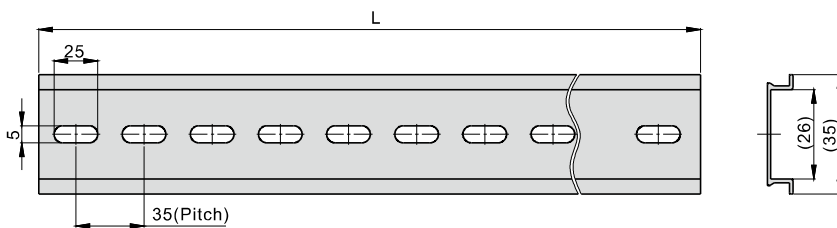
#### 6HV0500+6HV0500M11F~24F



Item\Stations	11F	12F	13F	14F	15F	16F	17F
L	210	210	245	245	245	280	280
LA	175	175	210	210	210	245	245
LB	164.5	175	185.5	196.5	207	217.5	228
LC	23	17.5	30	24	19	31	26

Item\Stations	18F	19F	20F	21F	22F	23F	24F
L	280	315	315	315	350	350	350
LA	245	280	280	280	315	315	315
LB	238.5	249.5	260	270.5	281	292	302.5
LC	21	33	27.5	22	34.5	29	24

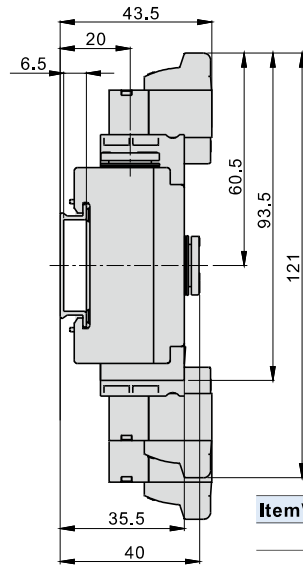
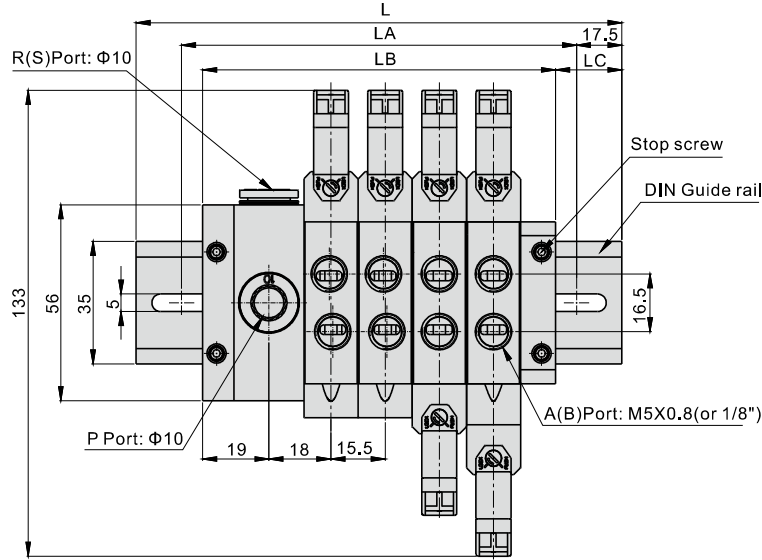
#### 6HV0500M11F~24F Guide rail



# Integrated solenoid valve (5/2, 5/3 way)

## 6HV Series

### 6HV100+6HV100M2F~10F

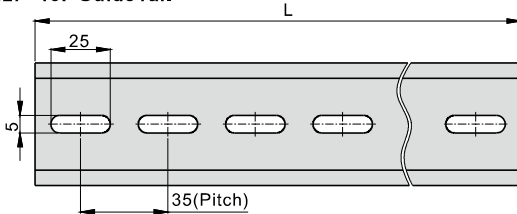


Item\Stations	2F	3F	4F	5F	6F
L	140	140	140	175	175
LA	105	105	105	140	140
LB	70	85.5	101	116.5	132
LC	35	27	19.5	29	21.5

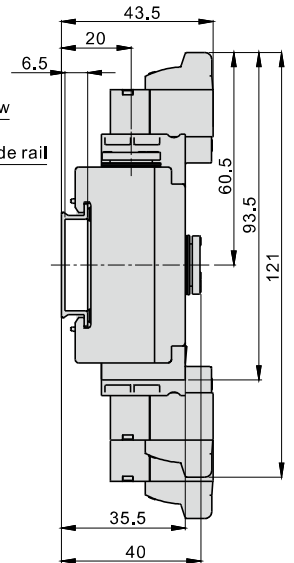
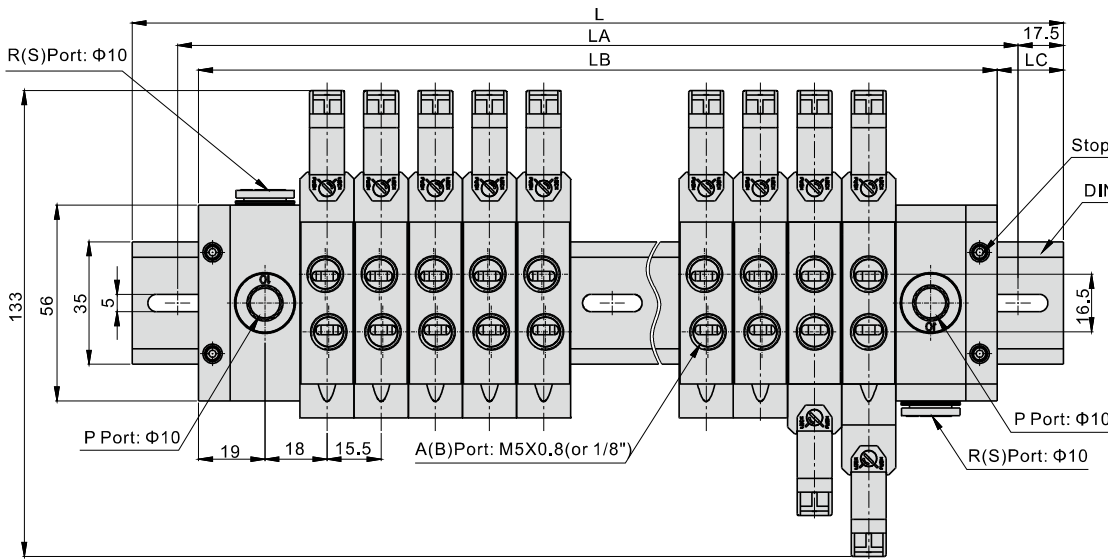
  

Item\Stations	7F	8F	9F	10F
L	210	210	245	245
LA	175	175	210	210
LB	147.5	163	178.5	194
LC	31	23.5	33	25.5

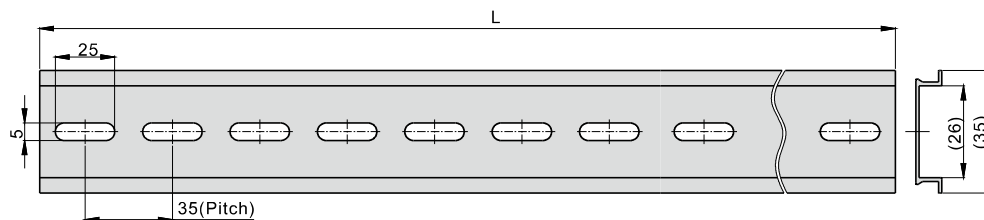
### 6HV100M2F~10F Guide rail



### 6HV100+6HV100M11F~24F



### 6HV100M11F~24F Guide rail

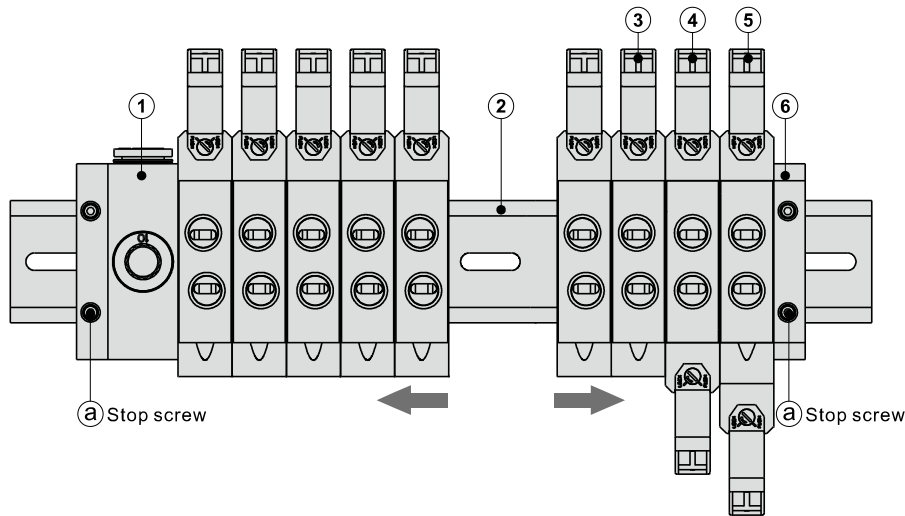


Item\Stations	11F	12F	13F	14F	15F	16F	17F
L	280	280	315	315	350	350	385
LA	245	245	280	280	315	315	350
LB	228.5	244	259.5	275	290.5	306	321.5
LC	28	18	28	20	30	22	32

Item\Stations	18F	19F	20F	21F	22F	23F	24F
L	385	420	420	455	455	490	490
LA	350	385	385	420	420	455	455
LB	337	352.5	368	383.5	399	414.5	430
LC	24	34	26	36	28	38	30

### Installation and Application(Integrated Solenoid valve)



Configurations of integrated solenoid valve:

NO.	Name of module	How to order	Note
①	Inlet and outlet module	Contains in the DIN guide rail, can't be ordered independently	Left and right positions are interchangeable
②	DIN Guide rail	Refer to ordering code for detail	
③	Solenoid valve(Single solenoid(5/2 Way))	Refer to ordering code for detail	It can be installed at any position and can be added or removed at will.
④	Solenoid valve(Double solenoid(5/2 Way))	Refer to ordering code for detail	
⑤	Solenoid valve(5/3 Way)	Refer to ordering code for detail	
⑥	End cover	Contains in the DIN guide rail, can't be ordered independently	Left and right positions are interchangeable

- The integrated solenoid valve group is a highly integrated valve block consisting of a solenoid valve, an inlet and outlet module, a end cover, and a DIN guide rail.
- Each functional module in the integrated solenoid valve group can be freely replaced, the number of stations can be increased or decreased according to demand.
- The method of increasing stations:

① Loosen the stop screw. ②

② Separate the original solenoid valves that you wish to add.

③ The newly added solenoid valve is mounted on the DIN rail according to the "Fig. 1" method.

④ Push the other functional modules to make them tightly connected, then tighten the stop screws ② to complete the increasing stations.

4. Notice :

- 4.1) Stop screw tightening torque : 6HV0500 : 1N.m/6HV100 : 1.4N.m.
- 4.2) Fastening method: first fix one end cover, then push each function module hard so that there is no gap between the valves, then tighten the stop screw at the other end.
- 4.3) When reassembling: If the connection between the valves and the tightening torque of the stop screw are insufficient, air leakage may occur. Before ventilating, please make sure there is no gap between the valves, and firmly fix it on the guide rail before venting.
5. The method of removing the solenoid valve from the DIN rail: Refer to the requirements of "Fig. 2" for details.

Fig. 1: Method of installing the solenoid valve

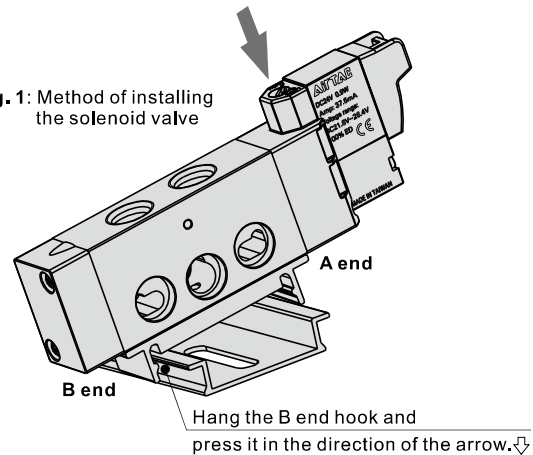
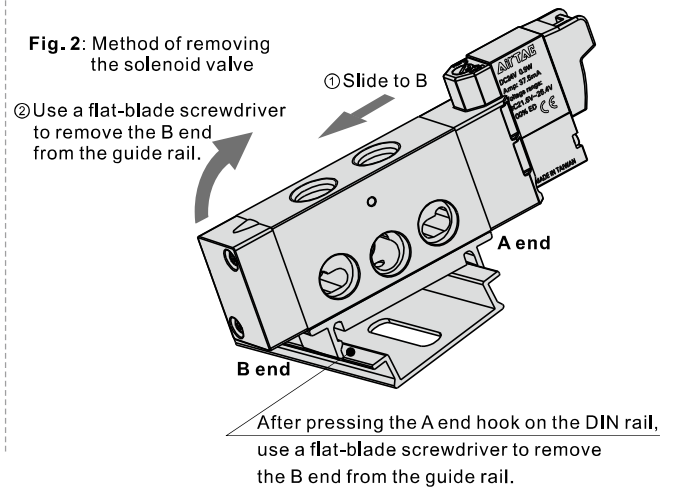


Fig. 2: Method of removing the solenoid valve







# 7V Series Solenoid valve(5/2 way,5/3 way)

## Compendium of 7V Series

**Inner exhaust structure**  
Special structure in the valve body, which can collect pilot airflow, and then exhaust intensively from R, S port.

**Terminal**  
Special design for terminal, horizontal and vertical insertion can freely switch.

**Multi-port types are optional**  
Threaded type and quick connector type are optional, and can integrate manifold to form valve group to save space.

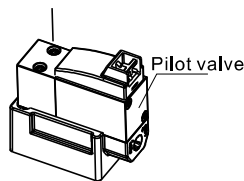
**Multi-series and type**  
7V0500, 7V100, 7V200, 7V300 series are optional.

**Die-cast molding with aluminum alloy for body**  
The shape of cavity is reasonable, which can increase flowing area and valve's flow.

## Installation and Application

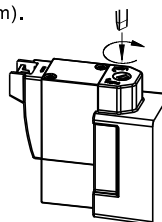
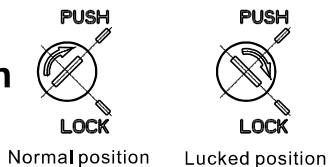
1. Don't throw or drop the solenoid valve when take it, to avoid breaking valve;
2. Because solenoid pilot valve is sophisticated component, can't crash pilot valve by outside force, otherwise solenoid valve break possibly;
3. Don't dismantle solenoid valve freely, if the screw(M1.6X14) becomes loose, please tighten it by torque 0.1~0.12N.m;
4. About manual operation:

- 4.1. Ensure no danger, prior to activating manual override;
- 4.2. For push button option:  
Activate by push the button in the direction shown



- 4.3. For slotted option:  
Activate by push the button in the direction shown.  
With correct size screw driver: please turn to lock gently(Torque : 0.1N.m).

### Attention



- 4.4. Wiring instruction : Vertical plug type and parallel plug type are the same as plug, please insert wire line as up drawing by practicality.



Vertical plug wire



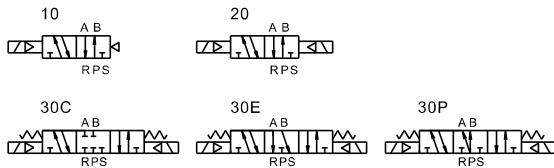
Parallel plug wire

# Solenoid valve(5/2 way,5/3 way)

## 7V Series



### Symbol



### Product feature

1. Electrical entry is terminal, horizontal and vertical insertion can freely switch.
2. Inner exhaust structure, which can collect pilot airflow, and then exhaust intensively from R, S port.
3. Die-cast molding with aluminum alloy for body. The shape of cavity is reasonable, which can increase valve's flow.
4. Threaded type and quick connector type are optional, and can integrate manifold to form valve group to save space.

### Ordering code

7V 2 10 J 08 B 050 □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Model	7V: 5 port 2(3) position solenoid valve			
② Code	05: 0500 Series	1: 100 Series	2: 200 Series	3: 300 Series
③ Valve type	10 : Single solenoid(5/2 Way)    20 : Double solenoid(5/2 Way)		30C : Double solenoid(5/3 way closed center)	
	30E : Double solenoid(5/3 way Exhaust center)		30P : Double solenoid(5/3 way pressure center)	
④ Port type	Blank : Thread type    J : Tube type			
⑤ Port size	M5: M5	06: 1/8"	08: 1/4"	10: 3/8"
⑤ Thread type	04: Φ4mm	04: Φ4mm/06: Φ6mm/08: Φ8mm	08: Φ8mm/10: Φ10mm	-
⑥ Voltage	A: AC220V    B: DC24V    C: AC110V    F: DC12V			
⑦ Wire length	050: 0.5m    200: 2.0m			
⑧ Thread type	No this code	Blank : PT thread	G : G Thread	T : NPT Thread

[Note 1]: The bottom ports of solenoid valve with tube type are oval, without thread type options and can only install with a manifold.

### Specification

Model	7V0510	7V0520	7V0530	7V110	7V120	7V130
Port size [Note1]	Thread type In=Out=Exhaust=M5			In=Out=Exhaust=1/8"		
	Tube type Port A=Port B=Φ4			Port A=Port B=Φ4(or Φ6or Φ8)		
Orifice size (Cv) [Note4]	M5:3.4mm <sup>2</sup> (0.2)		7V0530C0M5: 2.2mm <sup>2</sup> (0.13)	06:8.0mm <sup>2</sup> (0.47)		7V130C06: 7.0mm <sup>2</sup> (0.41)
	Weight	30g	45g	50g	80g	90g
Model	7V210	7V220	7V230	7V310	7V320	7V330
Port size [Note1]	Thread type In=Out=1/4" Exhaust=1/8"			In=Out=3/8" Exhaust=1/4"		
	Tube type Port A=Port B=Φ8(or Φ10)			-		
Orifice size (Cv) [Note4]	08:14.7mm <sup>2</sup> (0.87)		7V230C08: 10.8mm <sup>2</sup> (0.64)	10:38.4mm <sup>2</sup> (2.26)		7V330C10: 30.5mm <sup>2</sup> (1.8)
	Weight	120g	135g	145g	230g	265g
Fluid	Air(to be filtered by 40μm filter element)					
Acting	Pilot					
Operating pressure	7V0530/7V130			0.2~0.8MPa(29~114psi)		
	7V230/7V330			0.15~0.8MPa(21~114psi)		
Others			0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					
Lubrication [Note2]	Not required					
Exhaust type of pilot valve	Main valve and pilot valve is centralized exhaust					
Max. frequency[Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec

[Note1] PT, NPT thread and G thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimize valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

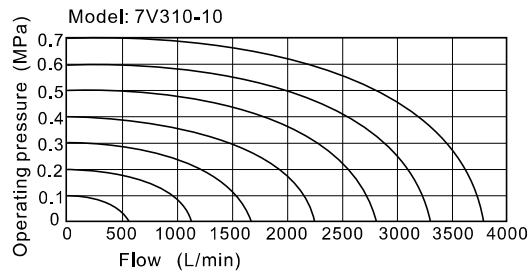
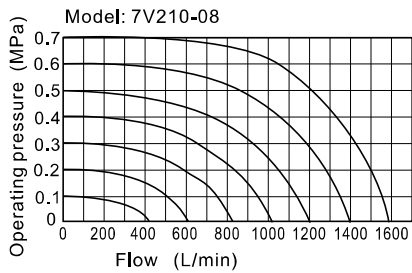
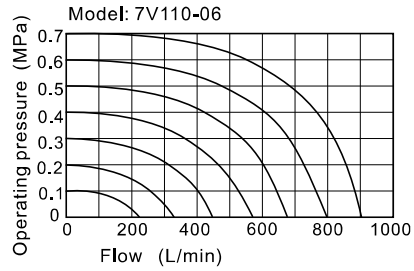
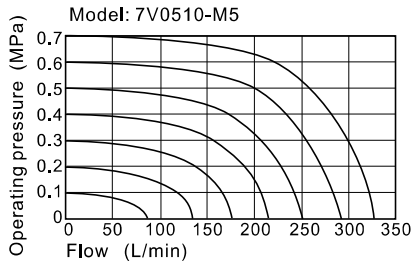
[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

Item	Specification			
Standard voltage	AC220V	AC110V	DC24V	DC12V
Scrop of voltage	AC : +15% ~-10%		DC : ±10%	
Power of consumption	1.1VA		0.7W	
Protection	Dustproof			
Temperature classification	F Class			
Electrical entry	Terminal			
Activating time	0.05 sec and below			

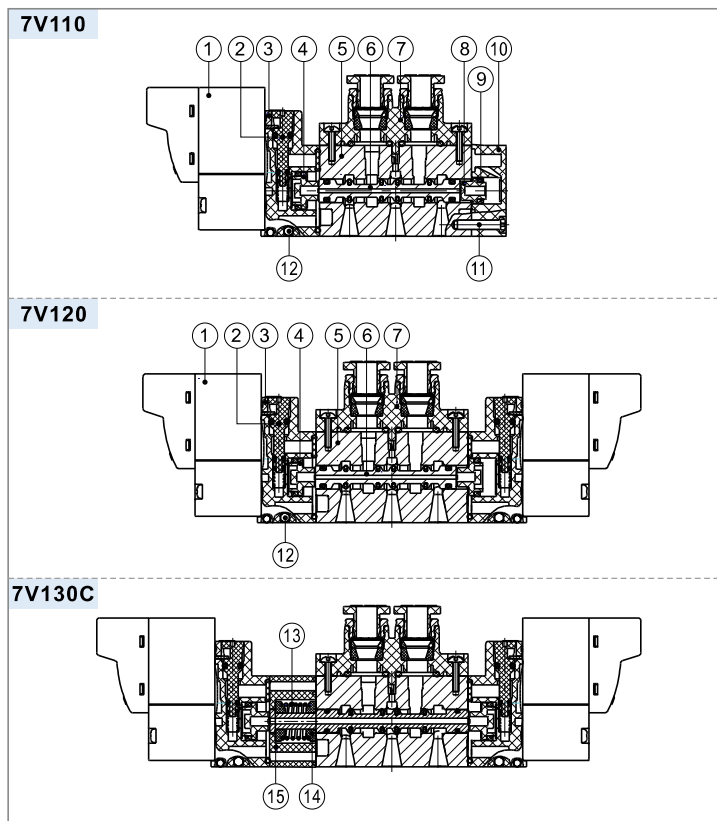
## 7V Series

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Inner structure



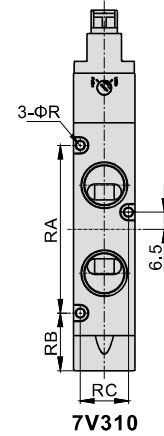
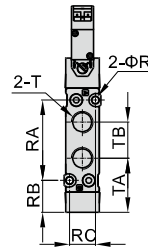
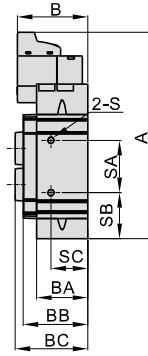
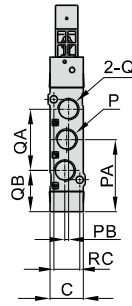
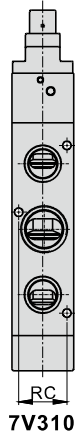
No.	Item	No.	Item	No.	Item
1	Pilot valve	6	Spool	11	Bolt
2	Manual override	7	Connecting block	12	Steel ball
3	Pilot kit	8	Little piston	13	Spring
4	Big piston	9	Gasket	14	Return holder
5	Body	10	Bottom cover	15	Side cover

# Solenoid valve(5/2 way,5/3 way)

## 7V Series

### Dimensions

7V0510  
7V110  
7V210  
7V310



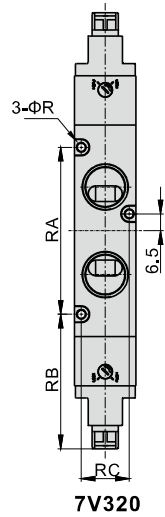
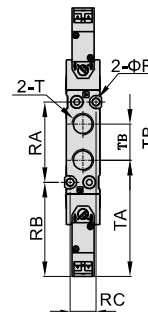
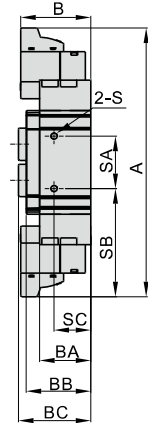
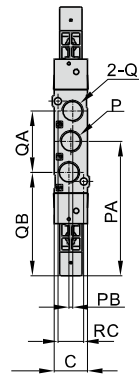
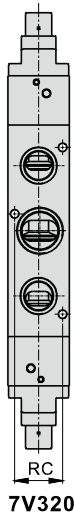
7V310

7V310

Model\Item	A	B	BA	BB	BC	C	P	PA	PB	Q	QA	QB	T	TA	TB	R	RA	RB	RC	S	SA	SB	SC	
7V0510M5	73	30.5	18.5	23	23.5	10	M5X0.8	22.5	1	M5X0.8	19	13	M5X0.8	17.5	10.5	2.1	21.4	12	8.6	M3X0.5dp3	9.5	17.8	4	
7V0510J04					32.5		Oval			Φ4(tube)			-							-				-
7V11006	92.5	32	23	29	32.5	15	1/8"	32.5	1.6	1/8"	27.2	18.5	1/8"	24	16.2	3.2	36	14.5	11.6	M3X0.5dp3	23.5	20.5	16.5	
7V110J04					38.2		Oval			Φ4(tube)			-							-				-
7V110J06					40		Oval			Φ6(tube)			-							-				-
7V110J08					41.5		Oval			Φ8(tube)			-							-				-
7V21008	106	33.5	28	34	40.5	18	1/4"	39	3	1/8"	36	21	1/4"	29	20	4.3	42	18	13.6	M4X0.7dp5	20	29	7	
7V210J08					46.5		Oval			Φ8(tube)			-							-				-
7V210J10					49		Oval			Φ10(tube)			-							-				-
7V31010	137.5	46	-	-	46	23.5	3/8"	54	0.5	1/4"	50	29	3/8"	37	33.5	3.2	64	22	18.4	Φ4.3	25	41.5	8	

[Note]: The bottom ports of solenoid valve with tube type are oval and can only install with manifold (no side installation hole "S").

7V0520  
7V120  
7V220  
7V320



7V320

7V320

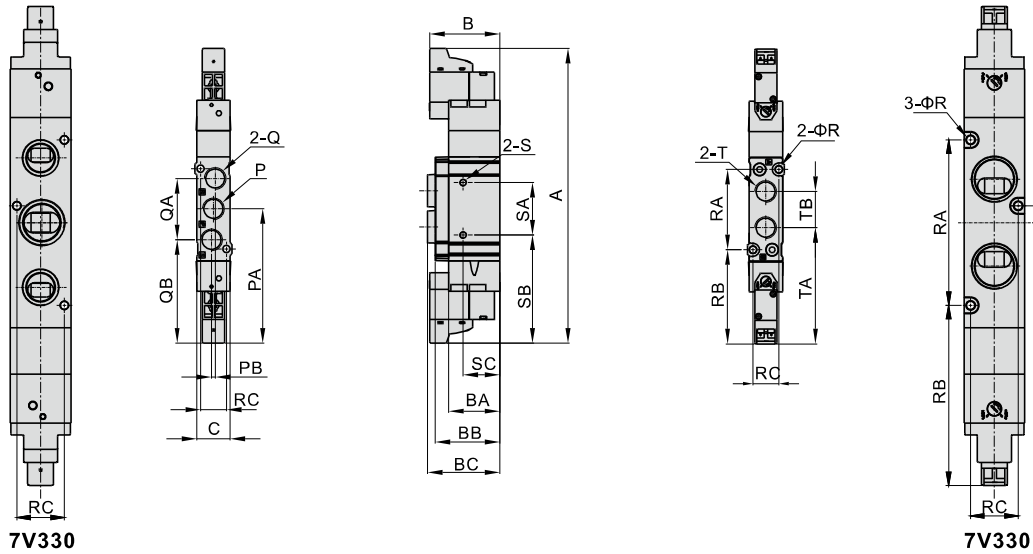
Model\Item	A	B	BA	BB	BC	C	P	PA	PB	Q	QA	QB	T	TA	TB	R	RA	RB	RC	S	SA	SB	SC	
7V0520M5	101.5	30.5	18.5	23	23.5	10	M5X0.8	50.5	1	M5X0.8	19	41	M5X0.8	45.5	10.5	2.1	21.4	12	8.6	M3X0.5dp3	9.5	17.8	4	
7V0520J04					32.5		Oval			Φ4(tube)			-							-				-
7V12006	120.5	32	23	29	32.5	15	1/8"	60.5	1.6	1/8"	27.2	46.5	1/8"	52	16.2	3.2	36	14.5	11.6	M3X0.5dp3	23.5	48.5	16.5	
7V120J04					38.2		Oval			Φ4(tube)			-							-				-
7V120J06					40		Oval			Φ6(tube)			-							-				-
7V120J08					41.5		Oval			Φ8(tube)			-							-				-
7V22008	134	33.5	28	34	40.5	18	1/4"	67	3	1/8"	36	49	1/4"	57	20	4.3	42	18	13.6	M4X0.7dp5	20	57	7	
7V220J08					46.5		Oval			Φ8(tube)			-							-				-
7V22008J10					49		Oval			Φ10(tube)			-							-				-
7V32010	167	46	-	-	46	23.5	3/8"	83.5	0.5	1/4"	50	58.5	3/8"	67	33.5	3.2	64	51.5	18.4	Φ4.3	25	71	8	

[Note]: The bottom ports of solenoid valve with tube type are oval and can only install with manifold (no side installation hole "S").

# Solenoid valve(5/2 way,5/3 way)

## 7V Series

7V0530  
7V130  
7V230  
7V330



Model\Item	A	B	BA	BB	BC	C	P	PA	PB	Q	QA	QB	T	TA	TB	R	RA	RB	RC	S	SA	SB	SC
7V0530M5	110	30.5	18.5	23	23.5	10	M5X0.8	50.5	1	M5X0.8	19	41	M5X0.8	45.5	10.5	2.1	21.4	12	8.6	M3X0.5dp3	9.5	45.8	4
7V0530J04					32.5		Oval			Oval			Φ4(tube)							-	-	-	-
7V13006					38.2		1/8"			1/8"			1/8"							M3X0.5dp3	23.5	48.5	16.5
7V130J04	132	32	23	29	40	15	Oval	60.5	1.6	Oval	27.2	46.5	Φ4(tube)	52	16.2	3.2	36	14.5	11.6				
7V130J06					Φ6(tube)																		
7V130J08					Φ8(tube)																		
7V23008	147	33.5	28	34	40.5	18	1/4"	67	3	1/8"	36	49	1/4"	57	20	4.3	42	18	13.6	M4X0.7dp5	20	57	7
7V230J08					Φ8(tube)																		
7V230J10					Φ10(tube)																		
7V33010	185	46	-	-	46	23.5	3/8"	101.5	0.5	1/4"	50	76.5	3/8"	85	33.5	3.2	64	69.5	18.4	Φ4.3	25	89	8

[Note]: The bottom ports of solenoid valve with tube type are oval and can only install with manifold (no side installation hole "S").

## Accessories—Mounting bracket

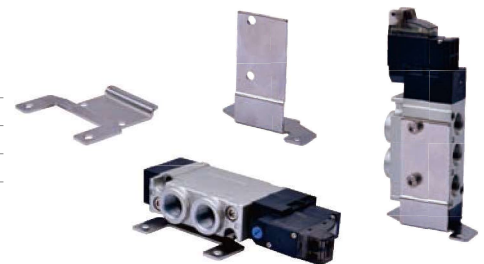
### 1. Ordering code

F-7V100 LB



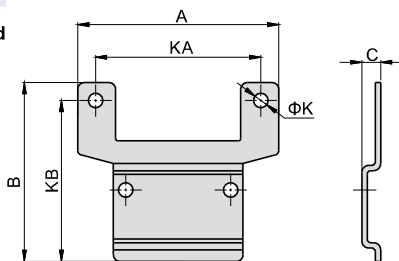
① Accessories code	F: Mounting accessories
② Valve type	7V0500: 0500 Series 7V100: 100 Series 7V200: 200 Series
③ Accessories type	LB: LB Type(Side mounted) LBD: LB Type(Bottom mounted)

Note : 1. Each mounting bracket with 4pcs mounting screws.  
2. Packed in PE bags with blank labels.



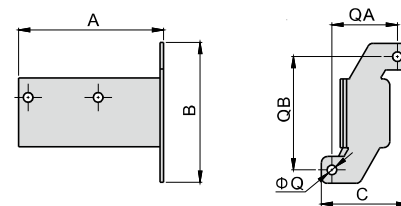
### 2. Dimensions

Side mounted



Model\Item	A	B	C	K	KA	KB
F-7V0500LB	35	35	4.2	3.2	27	31.5
F-7V100LB	45	40	4.2	3.2	37	36
F-7V200LB	66	49	4.2	4.2	52	42

Bottom mounted



Model\Item	A	B	C	Q	QA	QB
F-7V0500LBD	32.5	38	24	3.2	17	31
F-7V100LBD	48.5	47	29	3.2	22	38
F-7V200LBD	57	57	38	4.2	28	46

## 7V Series manifold



### Specification

Item\Manifold Model	7V0500M	7V100M	7V200M	7V300M
Fluid	Air(to be filtered by 40μm filter element)			
Temperature	-20~70°C			
Adaptable valve's series	7V0500 Series	7V100 Series	7V200 Series	7V300 Series

### Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

### Ordering code

#### 7V100M 5F T Ordering code for manifold



① Model	7V0500M : 7V0500 Series manifold	7V100M : 7V100 Series manifold	7V200M : 7V200 Series manifold	7V300M : 7V300 Series manifold
② Number of stations	1F: 1 Station 2F: 2 Station 3F: 3 Station ..... 20F: 20 Station			
③ Thread type	Blank : PT thread G : G Thread T : NPT Thread			

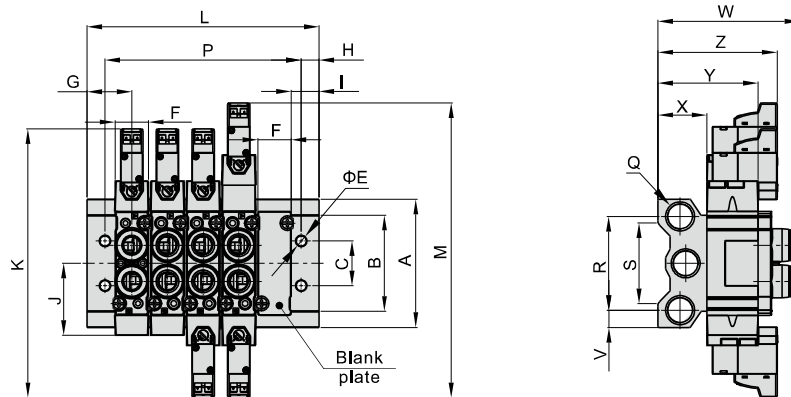
#### P-7V100M - R2 Ordering code for blank plate



① Model	7V0500M : 7V0500 Series manifold	7V100M : 7V100 Series manifold	7V200M : 7V200 Series manifold	7V300M : 7V300 Series manifold
② Code	R2: Blank plate for manifold			

[Note] 1. Manifold kits contains manifold, seal and screw. 2. Blank plate kits contains blank plate and screw.

### Dimensions



Model\Item	A	B	C	E	F	G	H	I	J	K	M	Q	R	S	V	W			X	Y	Z	
7V0500M	46	32	16	4.5	10	17.5	7.5	12.5	22.5	102	110	1/8"	32	26	7	36.2(M5)	50.5(J04)			17	35.5	47.5
7V100M	57.5	43	20	4.5	15	20	8	12.5	32	121	132	1/4"	40	36	9	55(06)	62.5(J04)/64(J06)	65.5(J08)	22	45	53.5	
7V200M	60	52	21	4.5	18	22	8.5	13	39	134	147	1/4"	42	38	9	58.5(08)	76.5(J08)	78.5(J10)	24	52	57	
7V300M	85	75	26	4.5	23.5	24	5	12	54	167	185	3/8"	57	58	14	-	-	-	27	74	-	

Model\Item	L																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
7V0500M	35	40.5	51	61.5	72	82.5	93	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5
7V100M	40	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
7V200M	44	56	75	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398
7V300M	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504

Model\Item	P																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
7V0500M	20	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
7V100M	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
7V200M	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388
7V300M	38	62	86	110	134	158	182	206	230	254	278	302	326	350	374	398	422	446	470	494

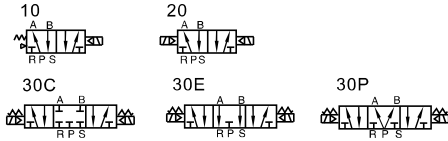


# Solenoid valve(5/2 way, 5/3 way)

## 4V100 Series



### Symbol



### Product feature

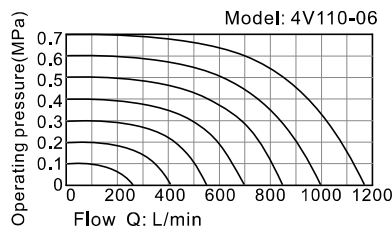
- Pilot-oriented mode: Internal pilot or external pilot.
- Structure in sliding column mode: good tightness and sensitive reaction .
- Three position solenoid valves have three kinds of central function for your choice.
- Double control solenoid valves have memory function.
- Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
- No need to add oil for lubrication.
- It is available to form integrated valve group with the base to save installation space.
- Affiliated manual devices are equipped to facilitate installation and debugging.
- Several standard voltage grades are optional.

### Ordering code

4V 1 10 06 A □ □						
① Model	② Code	③ Valve type	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
4V: Solenoid valve (5/2, 5/3 way)	1: 100 Series	10: Single solenoid 5/2 way	M5: M5	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	No this code
		20: Double solenoid 5/2 way 30C: Double solenoid 5/3 way closed center 30E: Double solenoid 5/3 way exhaust center 30P: Double solenoid 5/3 way pressure center	06: 1/8"			Blank: PT G: G T: NPT

[Note] The wire length is 0.5m. Please refer to P93 for manifold specification and the order way.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Specification

Model	4V110-M5 4V120-M5	4V130C-M5 4V130E-M5 4V130P-M5	4V110-06 4V120-06	4V130C-06 4V130E-06 4V130P-06
Fluid	Air(to be filtered by 40µm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	In=Out=M5		In=Out=1/8"	
Orifice size(Cv) [Note4]	4V110-06,4V120-06:10.2mm <sup>2</sup> (Cv=0.6) 4V130C-06:8.6mm <sup>2</sup> (Cv=0.51)			
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max.frequency [Note3]	5 cycle/sec	3cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4V110-M5:120 4V120-M5:175	200	4V110-06:120 4V120-06:175	200

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

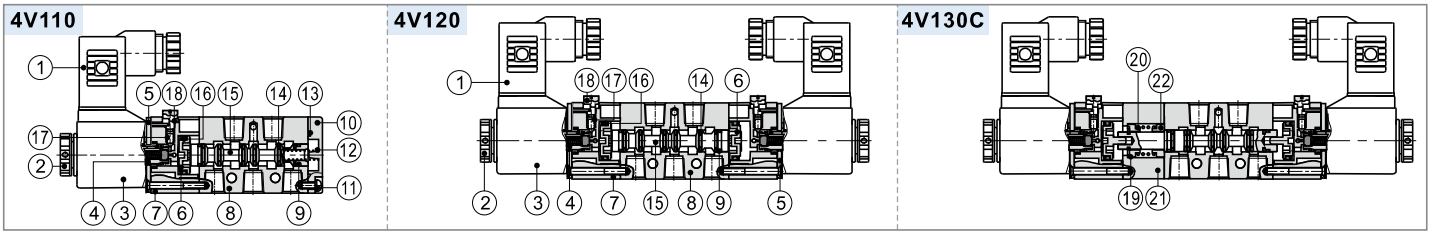
### Coil specification

Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	3.5VA	3.5VA	4.0VA	2.8W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				

# Solenoid valve(5/2 way, 5/3 way)

## 4V100 Series

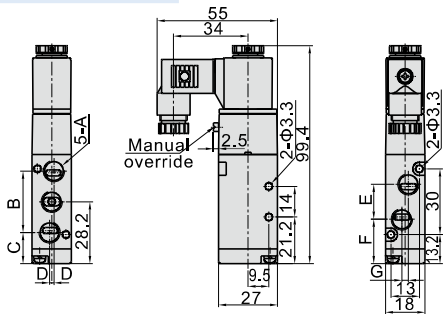
### Inner structure



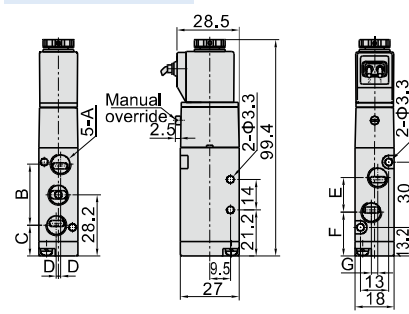
No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Connector	3	Coil	5	Fixed plate	7	Pilot kit	9	Wear ring	11	Fixed screw	13	Bottom cover gasket	15	Spool	17	Override spring	19	Spring holder	21	Side cover
2	Coil nut	4	Armature	6	Piston	8	Body	10	Bottom cover	12	Spool spring	14	Spool O-ring	16	Piston O-ring	18	Manual override	20	Return spring	22	Spring holder

### Dimensions

#### 4V110(Terminal)

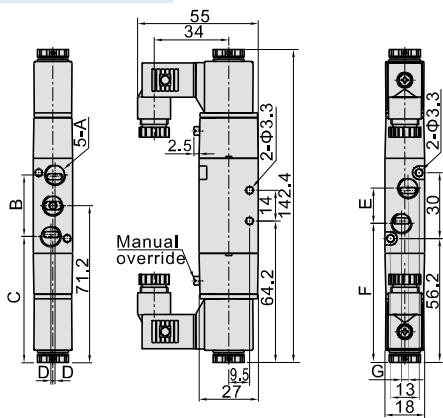


#### 4V110(Grommet)

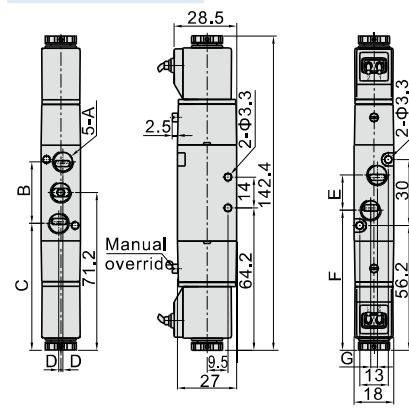


Model\Item	A	B	C	D	E	F	G
4V110-M5	M5x0.8	27	14.7	0	14	21.2	0
4V110-06	1/8"	28	14.2	1	16	20.2	3

#### 4V120(Terminal)

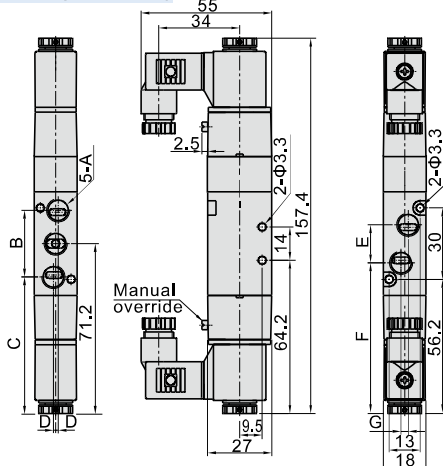


#### 4V120(Grommet)

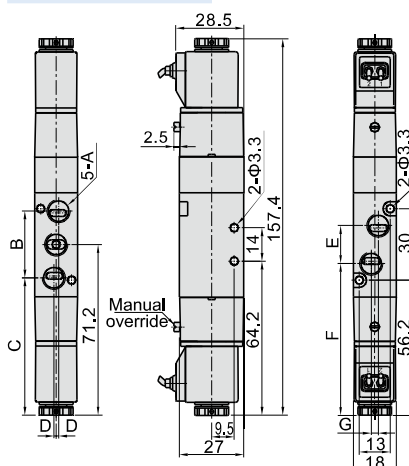


Model\Item	A	B	C	D	E	F	G
4V120-M5	M5x0.8	27	57.7	0	14	64.3	0
4V120-06	1/8"	28	57.2	1	16	63.2	3

#### 4V130(Terminal)



#### 4V130(Grommet)



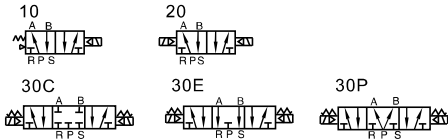
Model\Item	A	B	C	D	E	F	G
4V130-M5	M5x0.8	27	57.7	0	14	64.3	0
4V130-06	1/8"	28	57.2	1	16	63.2	3

# Solenoid valve(5/2 way, 5/3 way)

## 4V200 Series



### Symbol



### Product feature

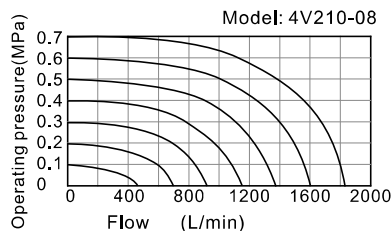
1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Three position solenoid valves have three kinds of central function for your choice.
4. Double control solenoid valves have memory function.
5. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
6. No need to add oil for lubrication.
7. It is available to form integrated valve group with the base to save installation space.
8. Affiliated manual devices are equipped to facilitate installation and debugging.
9. Several standard voltage grades are optional.

### Ordering code

4V 2 10 08 A □ □						
① Model	② Code	③ Valve type	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
4V: Solenoid valve (5/2, 5/3 way)	2: 200 Series	10: Single solenoid 5/2 way 20: Double solenoid 5/2 way 30C: Double solenoid 5/3 way closed center 30E: Double solenoid 5/3 way exhaust center 30P: Double solenoid 5/3 way pressure center	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m. Please refer to P93 for manifold specification and the order way.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### specification

Model	4V210-06 4V220-06	4V230C-06 4V230E-06 4V230P-06	4V210-08 4V220-08	4V230C-08 4V230E-08 4V230P-08
Fluid	Air(to be filtered by 40μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	In=Out=Exhaust=1/8"		In=Out=1/4" Exhaust=1/8"	
Orifice size(Cv) [Note4]	4V210-08,4V220-08:17.0mm <sup>2</sup> (Cv=1.0) 4V230C-08:13.6mm <sup>2</sup> (Cv=0.8)			
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Operating pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4V210-06:220 4V220-06:320	360	4V210-08:220 4V220-08:320	360

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

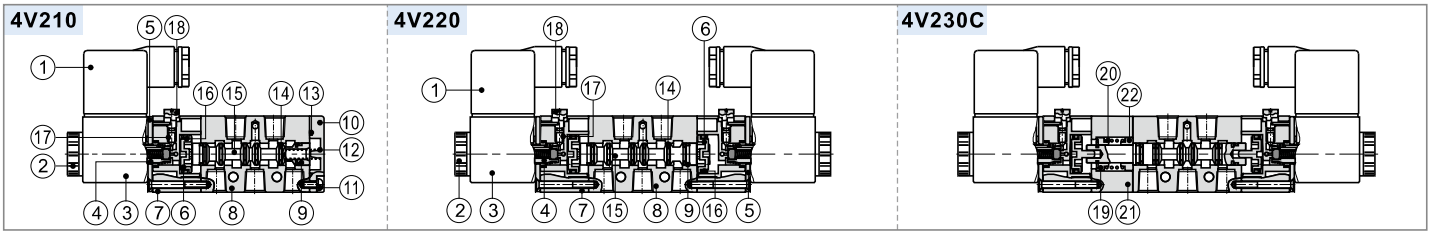
### Coil specification

Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				

# Solenoid valve(5/2 way, 5/3 way)

## 4V200 Series

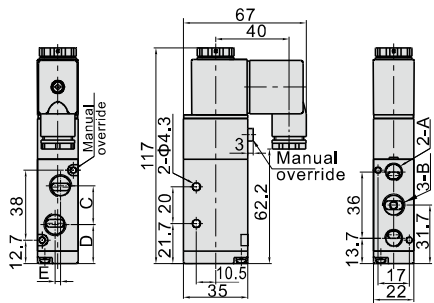
### Inner structure



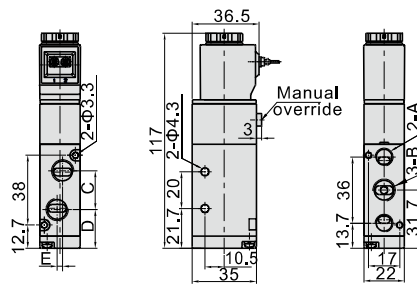
No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Connector	3	Coil	5	Fixed plate	7	Pilot kit	9	Wear ring	11	Fixed screw	13	Bottom cover gasket	15	Spool	17	Override spring	19	Spring holder	21	Side cover
2	Coil nut	4	Armature	6	Piston	8	Body	10	Bottom cover	12	Spool spring	14	Spool O-ring	16	Piston O-ring	18	Manual override	20	Return spring	22	Spring holder

### Dimensions

#### 4V210(Terminal)

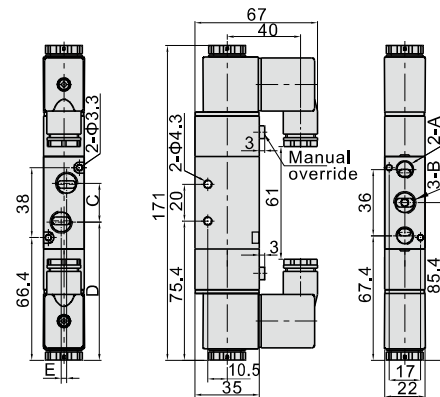


#### 4V210(Grommet)

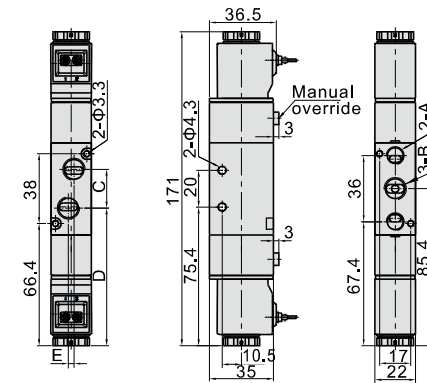


Model/Item	A	B	C	D	E
4V210-06	1/8"	1/8"	18	22.7	0
4V210-08	1/8"	1/4"	21	21.2	3

#### 4V220(Terminal)

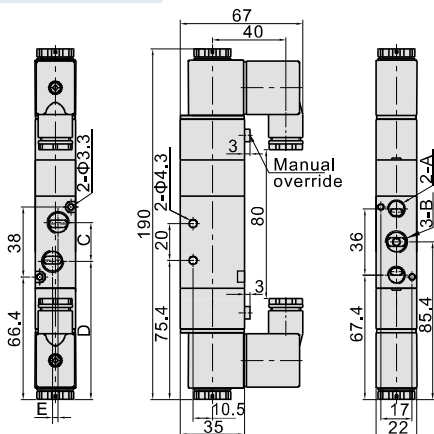


#### 4V220(Grommet)

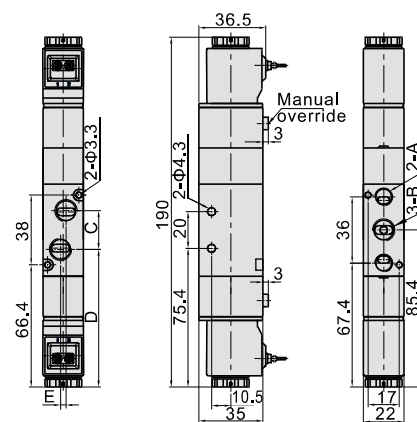


Model/Item	A	B	C	D	E
4V220-06	1/8"	1/8"	18	76.4	0
4V220-08	1/8"	1/4"	21	74.9	3

#### 4V230(Terminal)



#### 4V230(Grommet)



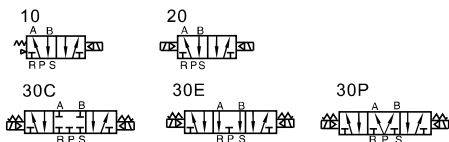
Model/Item	A	B	C	D	E
4V230-06	1/8"	1/8"	18	76.4	0
4V230-08	1/8"	1/4"	21	74.9	3

# Solenoid valve(5/2 way, 5/3 way)

## 4V300 Series



### Symbol



### Product feature

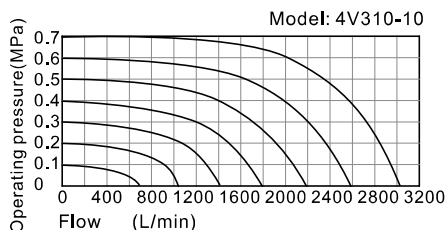
1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Three position solenoid valves have three kinds of central function for your choice.
4. Double control solenoid valves have memory function.
5. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
6. No need to add oil for lubrication.
7. It is available to form integrated valve group with the base to save installation space.
8. Affiliated manual devices are equipped to facilitate installation and debugging.
9. Several standard voltage grades are optional.

### Ordering code

4V 3 10 10 A □ □						
① Model	② Code	③ Valve type	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
4V: Solenoid valve (5/2, 5/3 way)	3: 300 Series	10: Single solenoid 5/2 way 20: Double solenoid 5/2 way 30C: Double solenoid 5/3 way closed center 30E: Double solenoid 5/3 way exhaust center 30P: Double solenoid 5/3 way pressure center	08: 1/4" 10: 3/8"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m. Please refer to P93 for manifold specification and the order way.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Specification

Model	4V310-08 4V320-08	4V330C-08 4V330E-08 4V330P-08	4V310-10 4V320-10	4V330C-10 4V330E-10 4V330P-10
Fluid	Air(to be filtered by 40μm filter element)			
Acting	Internal pilot or external pilot			
Port size [Note1]	In=Out=Exhaust=1/4"		In=Out=3/8" Exhaust=1/4"	
Orifice size(Cv) [Note4]	4V310-10,4V320-10:28.0mm <sup>2</sup> (Cv=1.65) 4V330C-10:21.3mm <sup>2</sup> (Cv=1.25)			
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max.frequency [Note3]	4 cycle/sec	3 cycle/sec	4 cycle/sec	3 cycle/sec
Weight (g)	4V310-08:310 4V320-08:400	450	4V310-10:310 4V320-10:400	450

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data..

### Coil specification

Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15% DC: ±10%				
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				



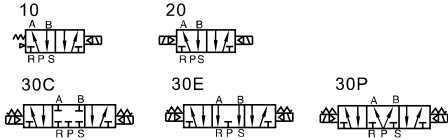


# Solenoid valve(5/2 way, 5/3 way)

## 4V400 Series



### Symbol



### Product feature

1. Pilot-oriented mode: Internal pilot or external pilot.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Three position solenoid valves have three kinds of central function for your choice.
4. Double control solenoid valves have memory function.
5. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
6. No need to add oil for lubrication.
7. It is available to form integrated valve group with the base to save installation space.
8. Affiliated manual devices are equipped to facilitate installation and debugging.
9. Several standard voltage grades are optional.

### Specification

Model	4V410-15	4V420-15	4V430C-15	4V430E-15	4V430P-15
Fluid	Air(to be filtered by 40μm filter element)				
Acting	Internal pilot or external pilot				
Port size [Note1]	In=Out=Exhaust=1/2"				
Orifice size(Cv) [Note4]	4V410-15,4V420-15:48.0mm <sup>2</sup> (Cv=2.82) 4V430C-15:40.0mm <sup>2</sup> (Cv=2.35)				
Valve type	5 port 2 position		5 port 3 position		
Operating pressure	0.15~0.8MPa(21~114psi)				
Proof pressure	1.2MPa(175psi)				
Temperature	-20~70°C				
Material of body	Aluminum alloy				
Lubrication [Note2]	Not required				
Max. frequency [Note3]	3 cycle/sec				
Weight (g)	590	720	770		

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

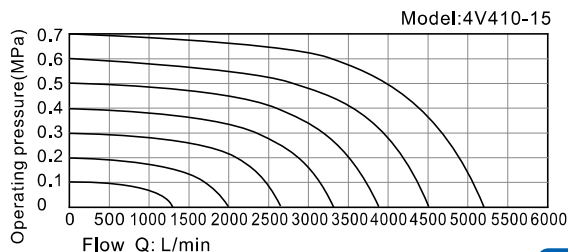
Item	Specification				
Standard voltage	AC220V	AC110V	AC24V	DC24V	DC12V
Scope of voltage	AC: ±15%		DC: ±10%		
Power consumption	4.5VA	4.5VA	5.0VA	3.0W	2.5W
Protection	IP65(DIN40050)				
Temperature classification	B Class				
Electrical entry	Terminal, Grommet				
Activating time	0.05 sec and below				

### Ordering code

① Model	② Code	③ Valve type	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
4V: Solenoid valve (5/2, 5/3 way)	4: 400 Series	10: Single solenoid 5/2 way 20: Double solenoid 5/2 way 30C: Double solenoid 5/3 way closed center 30E: Double solenoid 5/3 way exhaust center 30P: Double solenoid 5/3 way pressure center	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m. Please refer to P93 for manifold specification and the order way.

### Flow chart

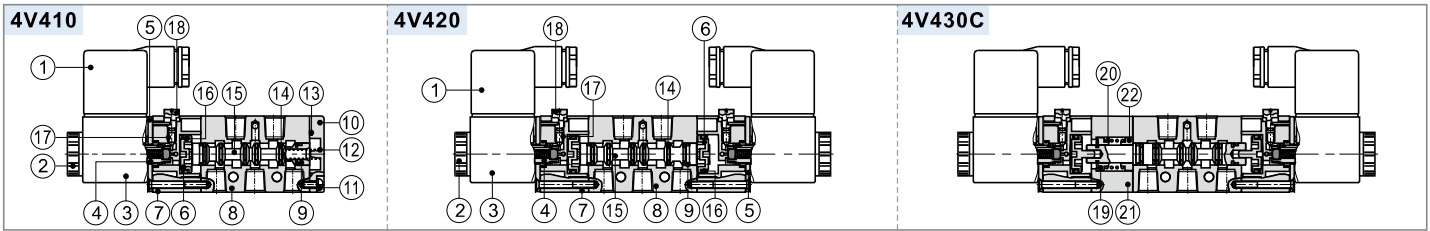


The data in flow rate chart are obtained from AirTAC lab.

# Solenoid valve(5/2 way, 5/3 way)

## 4V400 Series

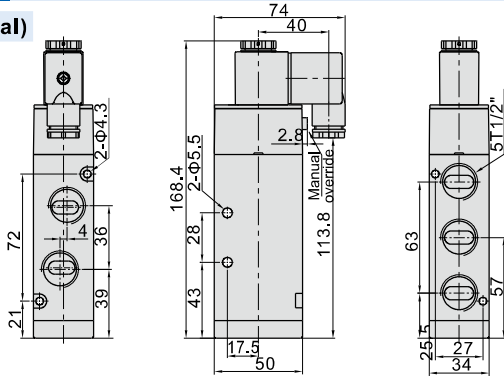
### Inner structure



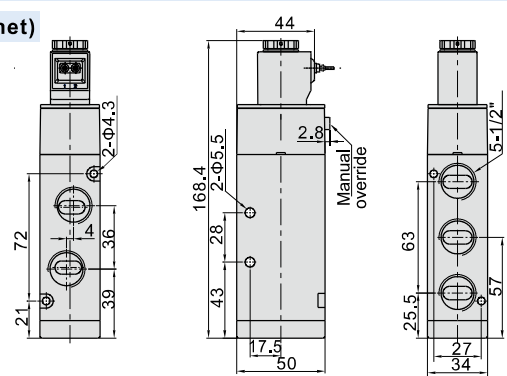
No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Connector	3	Coil	5	Fixed plate	7	Pilot kit	9	Wear ring	11	Fixed screw	13	Bottom cover gasket	15	Spool	17	Override spring	19	Spring holder	21	Side cover
2	Coil nut	4	Armature	6	Piston	8	Body	10	Bottom cover	12	Spool spring	14	Spool O-ring	16	Piston O-ring	18	Manual override	20	Return spring	22	Spring holder

### Dimensions

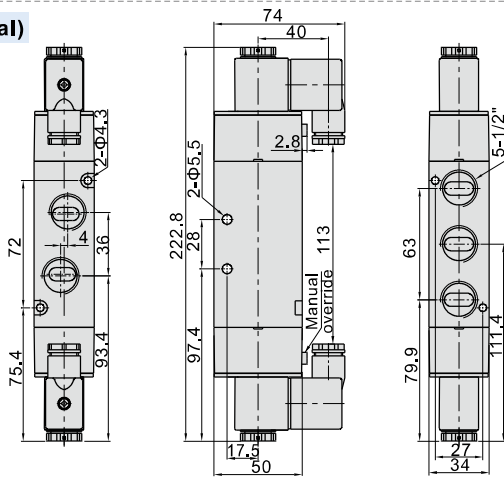
4V410(Terminal)



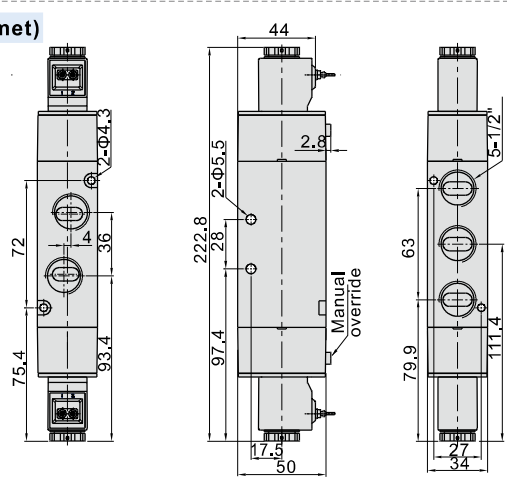
4V410(Grommet)



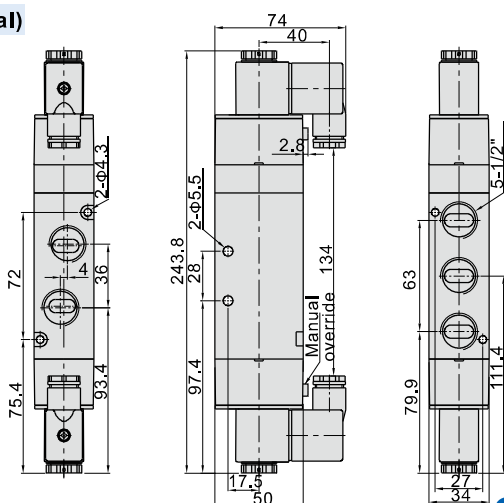
4V420(Terminal)



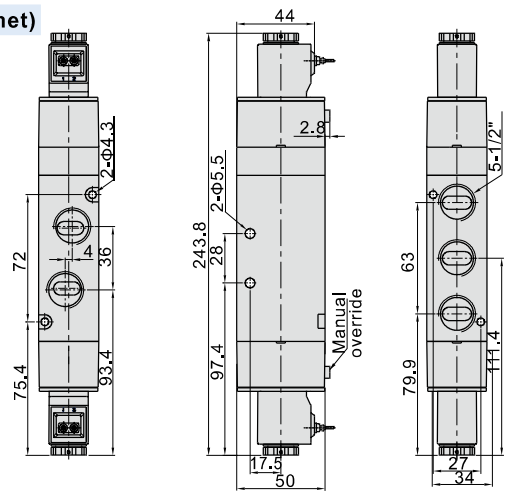
4V420(Grommet)



4V430(Terminal)



4V430(Grommet)

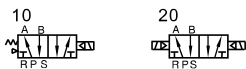


# Solenoid valve(5/2 way)

## 4M(NAMUR) Series



### Symbol



### Product feature

1. Internally piloted structure.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Install in the side plate with the surface upward, which can be used by directly connecting with the actuators.
7. Affiliated manual devices are equipped to facilitate installation and debugging.
8. Several standard voltage grades are optional.

### Flow chart

Please refer to the same types of 4V series solenoid valves.

### Specification

Model	4M110-M5 4M120-M5	4M110-06 4M120-06	4M210-06 4M220-06	4M210-08 4M220-08	4M310-08 4M320-08	4M310-10 4M320-10
Fluid	Air(to be filtered by 40µm filter element)					
Acting	Internal pilot					
Port size [Note1]	In=Out=M5	In=Out=1/8"	In=Out=1/8"	In=1/4" Out=1/8"	In=Out=1/4"	In=3/8" Out=1/4"
Orifice size(Cv) [Note4]	4M110-06,4M120-06: 10.2mm <sup>2</sup> (Cv=0.6)		4M210-08,4M220-08: 17.0mm <sup>2</sup> (Cv=1.0)		4M310-10,4M320-10: 28.0mm <sup>2</sup> (Cv=1.65)	
Valve type	5 port 2 position					
Operating pressure	0.15~0.8MPa(21~114psi)					
Proof pressure	1.2MPa(175psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					
Lubrication [Note2]	Not required					
Max.frequency[Note3]	5 cycle/sec				4 cycle/sec	
Weight (g)	4M110:120	4M120:175	4M210:220	4M220:320	4M310:310	4M320:400

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

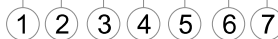
[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

Item	4M110		4M120		4M210		4M220		4M310		4M320	
Standard voltage	AC220V	AC110V	AC24V	DVC24V	DC12V	AC220V	AC110V	AC24V	DVC24V	DC12V		
Scope of voltage	AC: ±15%				DC: ±10%							
Power consumption	3.5VA	3.5VA	4.0VA	2.8W	2.5W	4.5VA	4.5VA	5.0VA	3.0W	2.5W		
Protection	IP65(DIN40050)											
Temperature classification	B Class											
Electrical entry	Terminal, Grommet											
Activating time	0.05 sec and below											

### Ordering code

4M 3 10 10 A □ □

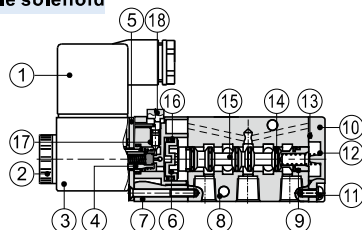


① Model	② Code	③ Valve type	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
4M: Solenoid valve (5/2 way NAMUR type)	1: 100 Series	10: Single solenoid 20: Double solenoid	M5: M5	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	No this code
	2: 200 Series		06: 1/8"			Blank: PT G: G T: NPT
	3: 300 Series		08: 1/4" 10: 3/8"			

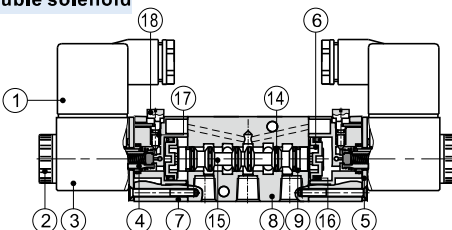
[Note] The wire length is 0.5m.

### Inner structure

#### Single solenoid



#### Double solenoid



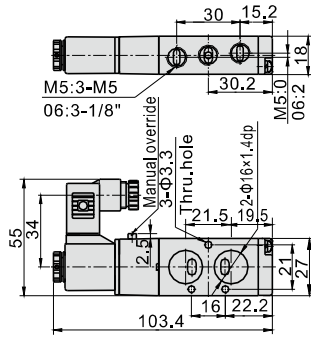
No.	Item	No.	Item
1	Connector	10	Bottom cover
2	Coil nut	11	Fixed screw
3	Coil	12	Spool spring
4	Armature	13	Bottom cover gasket
5	Fixed plate	14	Spool O-ring
6	Piston	15	Spool
7	Pilot kit	16	Piston O-ring
8	Body	17	Override spring
9	Wear ring	18	Manual override

# Solenoid valve(5/2 way)

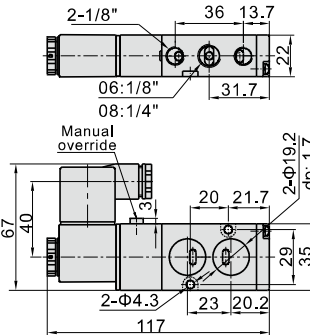
## 4M(NAMUR) Series

### Dimensions

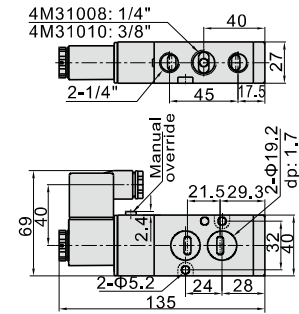
**4M110(Terminal)**



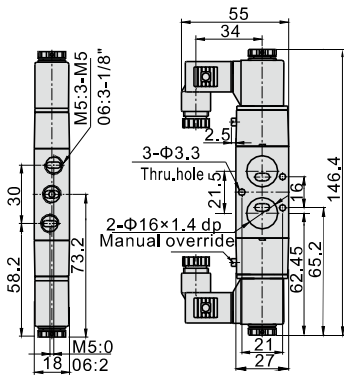
**4M210(Terminal)**



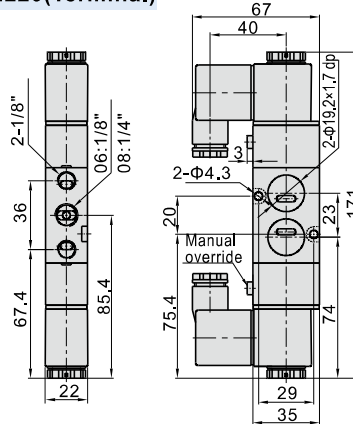
**4M310(Terminal)**



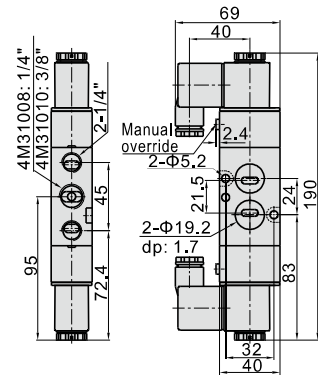
**4M120(Terminal)**



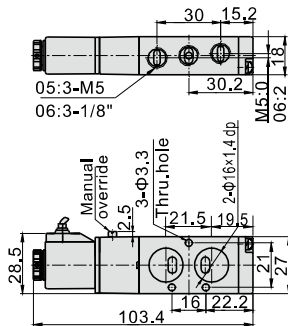
**4M220(Terminal)**



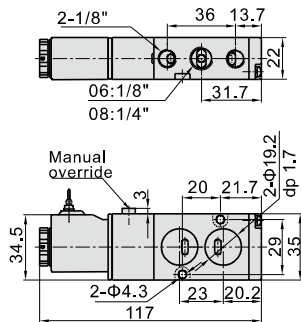
**4M320(Terminal)**



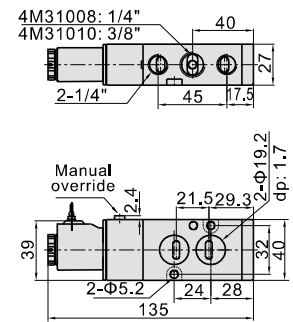
**4M110(Grommet)**



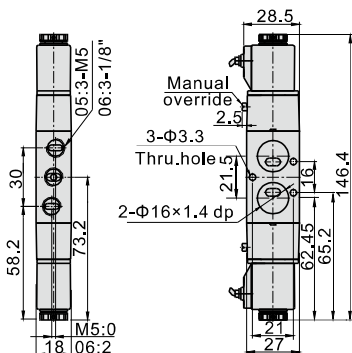
**4M210(Grommet)**



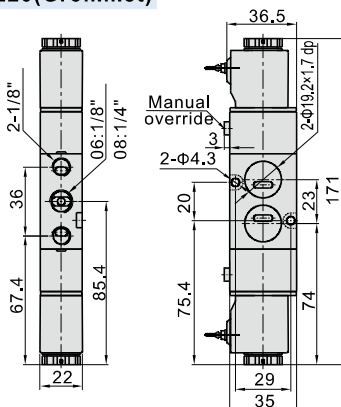
**4M310(Grommet)**



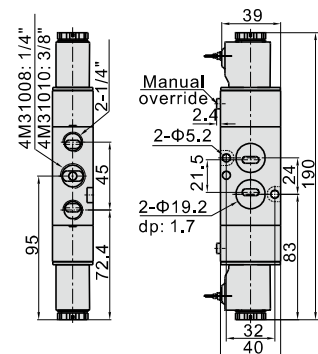
**4M120(Grommet)**



**4M220(Grommet)**



**4M320(Grommet)**



## Manifold



## Specification

Item/Manifold Model	100M	200M	300M
Fluid	Air(to be filtered by 40µm filter element)		
Temperature	-20~70°C		
Adaptable valve's series	3V100 Series	3V200 Series	3V300 Series

## Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

## Ordering code

### Ordering code for manifold

**3V100M 5F □**

①      ②      ③

① Model	② Number of stations	③ Thread type
3V100M: 100 Series manifold 3V200M: 200 Series manifold 3V300M: 300 Series manifold	1F: 1 station 2F: 2 station 3F: 3 station ..... 16F: 16 station	Blank: PT G: G T: NPT

### Ordering code for blank plate

**P-3V100M - R2**

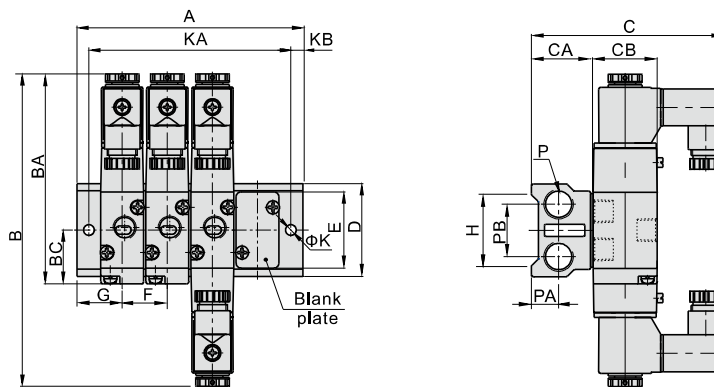
①      ②      ③

① Kits	② Model	③ Code
P: Kits	3V100M: 100Series manifold 3V200M: 200Series manifold 3V300M: 300Series manifold	R2: Blank plate for manifold

- [Note] 1. Ordering code contains manifold and blank plate;  
2. Manifold kits contains manifold, seal and screw.  
3. Blank plate kits contains blank plate and screw.

## Dimensions

### With 3V solenoid valve



Model\Item	B	BA	BC	C	CA	CB	D	E	F	G	H	K	KB	P	PA	PB
3V100M	131,5	88,5	22,7	81	26	27	39	32	19	19	30	4,5	5	1/4"	11,5	22
3V200M	162,5	109	27,7	92,5	26	35	45	40	23	23	35	4,5	6	1/4"	11,5	25
3V300M	175	120	32,5	99	30	40	52	47	28	27	42	4,5	6	3/8"	13,5	28

Model\Item	A															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
3V200M	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391
3V300M	54	82	110	138	166	194	222	250	278	306	334	362	390	418	446	474

Model\Item	KA															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
3V200M	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
3V300M	42	70	98	126	154	182	210	238	266	294	322	350	378	406	434	462

## Manifold



## Specification

Item/Manifold Model	100M	200M	300M	400M
Fluid	Air(to be filtered by 40μm filter element)			
Temperature	-20~70°C			
Adaptable valve's series	4V100 Series	4V200 Series	4V300 Series	4V400 Series
	5V100 Series	5V200 Series	5V300 Series	5V400 Series

## Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

## Ordering code

### Ordering code for manifold

**100M 5F □**

①    ②    ③

① Model	② Number of stations [Note1]	③ Thread type
100M:100 Series manifold	1F: 1 Station	Blank: PT G: G T: NPT
200M:200 Series manifold	2F: 2 Station	
300M:300 Series manifold	3F: 3 Station	
400M:400 Series manifold	.....	
	16F: 16 Station	

### Ordering code for blank plate

**P-100M - R2**

①    ②    ③

① Kits model	② Model	③ Code
P: Kits	100M: 100 Series manifold 200M: 200 Series manifold 300M: 300 Series manifold 400M: 400 Series manifold	R2: Blank plate for manifold

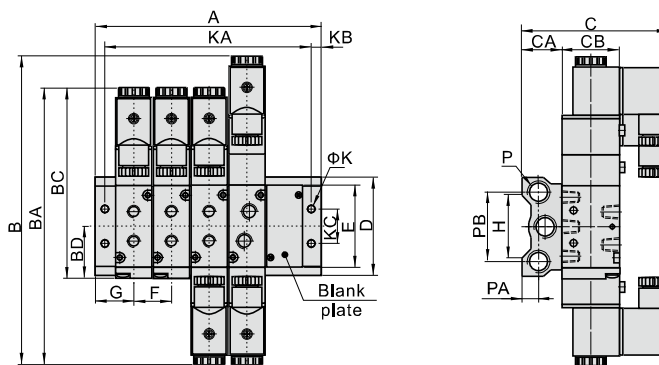
[Note1] 100M, 200M series have a maximum of 16 stations ; 300M series have a maximum of 12 stations; 400M series have a maximum of 8 stations.

[Note] 1. Ordering code contains manifold and blank plate.    2. Manifold kits contains manifold, seal and screw.

3. Blank plate kits contains blank plate and screw.

## Dimensions

### With 4V solenoid valve



Model\Item	B	BA	BC	BD	C	CA	CB	D	E	F	G	H	K	KB	KC	P	PA	PB
100M□F	154.5	142.5	99.5	28	77	22	27	57.5	43	19	19	36	4.5	5	20	1/4"	10	40
200M□F	189	171	117	31.7	91	24	35	60	52	23	22	38	4.5	5	21	1/4"	10	42
300M□F	208	190	135	40	97	28	40	75	64	28	26	54	4.5	5	26	3/8"	13.5	53
400M□F	243	223	168.5	57	107	33	50	100	94	35	30.5	75	5.5	6	32	1/2"	15	68

Model\Item	A															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M□F	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
200M□F	44	67	90	113	136	159	182	205	228	251	274	297	320	343	366	389
300M□F	52	80	108	136	164	192	220	248	276	304	332	360	-	-	-	-
400M□F	61	96	131	166	201	236	271	306	-	-	-	-	-	-	-	-

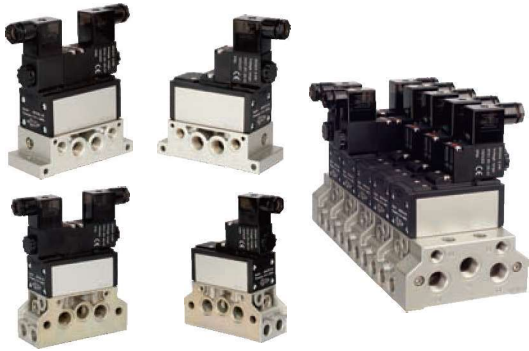
  

Model\Item	KA															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M□F	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
200M□F	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
300M□F	42	70	98	126	154	182	210	238	266	294	322	350	-	-	-	-
400M□F	49	84	119	154	189	224	259	294	-	-	-	-	-	-	-	-



# ISO Standard solenoid valve(5/2 way, 5/3 way)

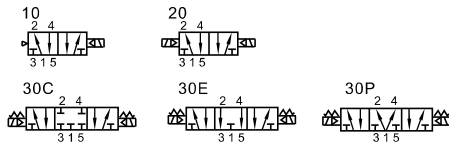
## ESV200, 300, 400, 600 Series



### Specification

Model	200 Series	300 Series	400 Series	600 Series
Orifice size(Cv) mm <sup>2</sup>	32(Cv=1.8)	42(Cv=2.32)	69(Cv=3.85)	108(Cv=6.0)
Fluid	Air(to be filtered by 40µm filter element)			
Acting	Internal pilot or external pilot			
Lubrication [Note1]	Not required			
Operating Pressure	Internal pilot	0.2~1.0MPa(2~10bar)(29~145psi)		
	External pilot	0~1.0MPa(0~10bar)(0~145psi)	0.2~1.0MPa(2~10bar)(29~145psi)	
Control pressure(External pilot)	0.2~1.0MPa(2~10bar)(29~145psi)			
Proof pressure	1.5MPa(15bar)(215psi)			
Temperature °C	-20~70			
Port size(manifold) [Note2]	1/4"	3/8"	1/2"	3/4"
Port size(end plate)	3/8"	1/2"	3/4"	1"
Voltage range	AC: ±15% DC: ±10%			
Power consumption	AC220V/AC110V: 4.5VA AC24V: 5.0VA DC24V: 3.0W DC12V: 2.5W			
Activating time	10\20 Series	33\41ms	42\55ms	50\68ms
	30 C\E\P Series	38\50ms	50\62ms	55\85ms
Insulation	B Class			
Protection	IP65			
Installation size	ISO5599-1 standard			

### Symbol



### Product feature

1. Succinct appearance and compact conformation.
2. The installation size conforms to ISO 5599/1 standard.
3. Because of the special seals, the feature are large flow rate and long lifetime.
4. For 200\300\400 series you can adjust the installation direction of the gasket to change the acting type: internal pilot, external pilot, or air control.
5. You need install the valve together with the sub-base. There are individual and parallel type for manifold sub-base.
6. There are various connection and installation method for manifold. It is easy to use.
7. The manifold of 200\300\400 series have the function of exhaust throttling, so not need to connect another throttle valve.

### Ordering code

Ordering code of manifold: **ESV 20 1M** □ □ □

① ② ③ ④ ⑤ ⑥

① Model	② Code	③ Manifold type	④ Thread type	⑤ External pilot port type	⑥ Port position type
ESV: ISO standard solenoid valve	20: 200 Series 30: 300 Series 40: 400 Series 60: 600 Series	1M: Individual sub-base 	Blank: PT G: G	Blank: Individual pilot port	Blank: Side port B: Bottom port
		2M: Manifold sub-base 		Blank: Individual pilot port W: Centralized pilot port	Blank: Left side port R: Right side port B: Bottom port
		3M: End plate kit 		No this code	No this code
	60: 600 Series	4M: Side port block 		No this code	Blank: Left side port R: Right side port

- [Note] 1. For the same model, the port size of the end-plate is bigger than the sub-base (For example ESV202M, the port size of sub-base is 1/4", and the port size of end plate is 3/8").
2. Only individual pilot port is available for individual sub-base.
  3. The manifold sub-base must be used with end plate kit, individual pilot port and centralized pilot port can be mixed.
  4. 600 series individual sub-base only has side port, 600 series manifold sub-base only has individual pilot port and bottom port.
  5. Only 600 series have side port block.

# ISO Standard solenoid valve(5/2 way, 5/3 way)

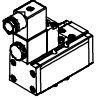
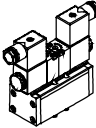
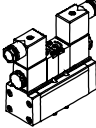
ESV200, 300, 400, 600 Series

## Ordering code

Ordering code of valve

ESV 2 10 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Code	③ Valve type	④ Voltage	⑤ Electrical entry	⑥ Pilot type [Note1]
ESV: ISO standard solenoid valve	2: 200 Series 3: 300 Series 4: 400 Series 6: 600 Series	10: Single solenoid 5/2 way 	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note2]	Blank: Internal pilot W: External pilot
		20: Double solenoid 5/2 way 			
		30C: Double solenoid 5/3 way closed center 30E: Double solenoid 5/3 way exhaust center 30P: Double solenoid 5/3 way pressure center 			

[Note1] Internal pilot can be changed to external pilot mode(except 600 series), please adjust the installation of the gasket referring to article 1.2 in the "installation and operation".

[Note2] The wire length is 0.5m.

Ordering code of accessories

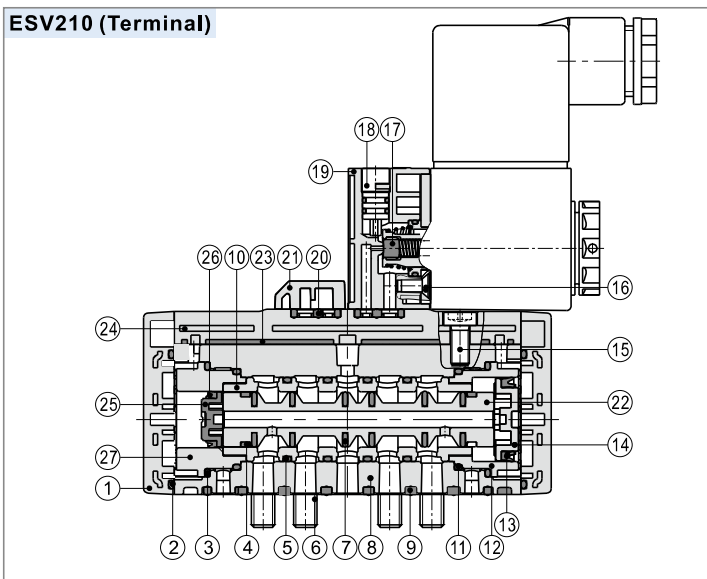
P-ESV200M R2

① ② ③

① Accessories code	② Code	③ Accessories type
P: Unit accessories	ESV200M: 200 Series manifold ESV300M: 300 Series manifold ESV400M: 400 Series manifold ESV600M: 600 Series manifold	R2: Blank plate for manifold

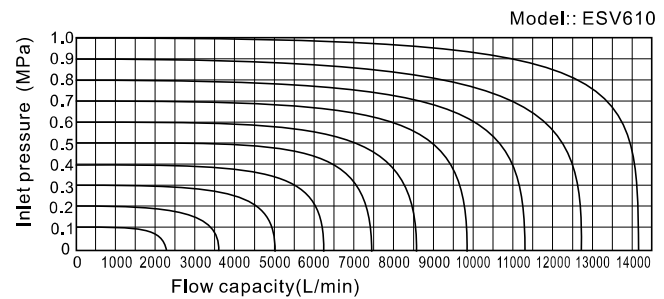
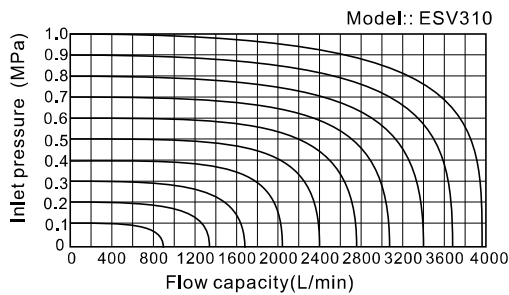
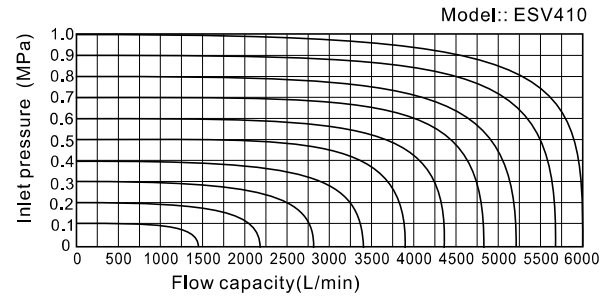
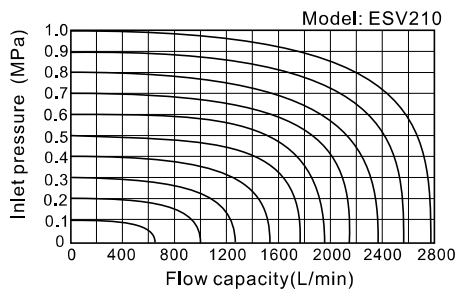
## Inner structure

ESV210 (Terminal)



NO.	Item	NO.	Item	NO.	Item
1	Bottom cover	10	Spacer	19	Pilot kit
2	O-ring	11	O-ring	20	Gasket
3	O-ring	12	Big piston sheath	21	Cover plate
4	Wear ring	13	Big piston O-ring	22	Spool
5	O-ring	14	Big piston	23	Upper cover gasket
6	Screw	15	Screw	24	Upper cover
7	O-ring	16	Screw	25	Small piston
8	Body	17	Gasket	26	Small piston O-ring
9	Gasket	18	Manual override	27	Small piston sheath

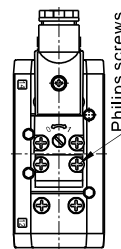
### Flow chart



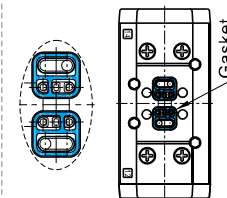
### Installation and operation(For 200, 300, 400 series)

1. The classification and selection for the pilot type of valve
  - 1.1. According to the source of pilot air, we can divide the valve into two types: the internal pilot and external pilot. The standard type is internal pilot.
  - 1.2. You can convert from internal pilot to external pilot by the following methods.

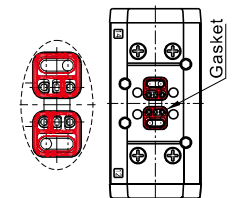
**1** Remove the 4 philips head screws, and then remove the coil, pilot body and cover.



**2** Assemble the gasket according to the picture, and then assemble the cover, pilot body and coil- Internal pilot



**3** Assemble the pilot O-ring according to the picture, and then, assemble the cover, pilot body and coil-External pilot.



2. The classification and selection for the parallel manifold sub-base
  - 2.1. According to the direction of pilot air supply, we can divide the manifold sub-base into two types: the individual pilot and centralized pilot.
  - 2.2. If you select the individual pilot, the fitting must be connected to the individual pilot ports. If you select the centralized pilot type, the fitting must be connected to the centralized pilot ports.

- 2.3. If you use parallel manifold, all of the manifold must be used the same pilot type: such as, all of them are the individual pilot type, or all of them are the centralized pilot type.
  - \* Note: Only when you use the external pilot type, you can select the individual pilot or centralized pilot.
  - When you use the internal pilot type, the pilot ports on the manifold are ineffective.

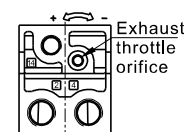
3. The position and specification of the manifold sub-base ports:

The diagram of manifold sub-base	Port status of manifold sub-base					
	Port name Ordering code	Left side port	Right side port	Bottom port	Centralized pilot port	Individual pilot port
	ESV202MG	Use	Unused	Unused	Unused	Use
	ESV202MGR	Unused	Use	Unused	Unused	Use
	ESV202MGB	Unused	Unused	Use	Unused	Use
	ESV202MGW	Use	Unused	Unused	Use	Unused
	ESV202MGWR	Unused	Use	Unused	Use	Unused
	ESV202MGWB	Unused	Unused	Use	Use	Unused

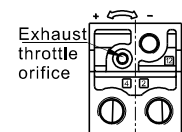
Note: Please seal the bottom port by plug, when it is unused.  
The above list is an example of 200M series' ordering code, the other series is follow the same pattern, only need to change the series code.

4. Exhaust throttle function
  - 4.1. The manifold has exhaust throttle function, the below picture shows the position of the exhaust throttle orifices on each side.
  - 4.2. Use allen key to adjust the screw.
  - 4.3. Rotate the screw clockwise to reduce the exhaust orifice, rotate the screw counter-clockwise to enlarge the exhaust orifice.

Manifold right side



Manifold left side

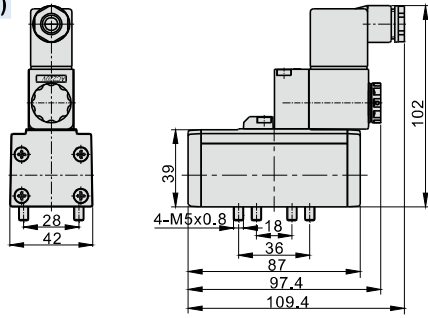


# ISO Standard solenoid valve(5/2 way, 5/3 way)

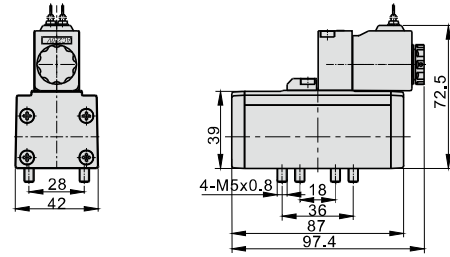
ESV200, 300, 400, 600 Series

## Dimensions(ESV200 Series)

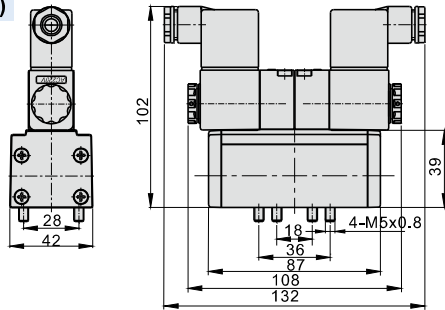
ESV210 (Terminal)



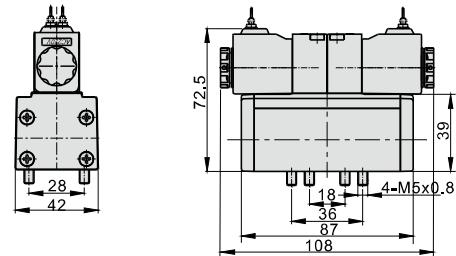
ESV210 (Grommet)



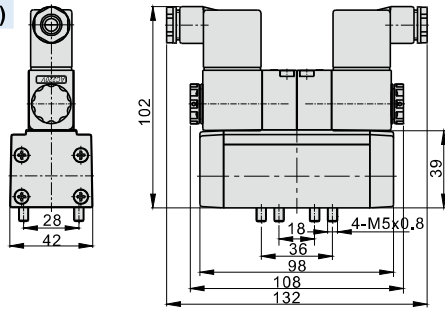
ESV220(Terminal)



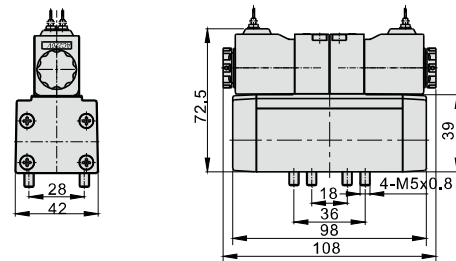
ESV220(Grommet)



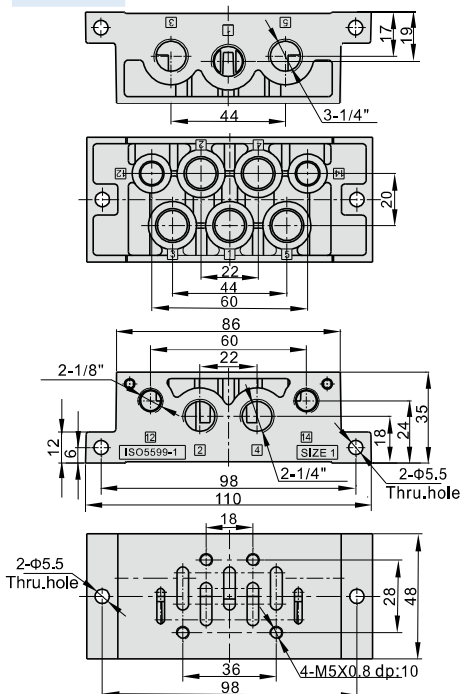
ESV230(Terminal)



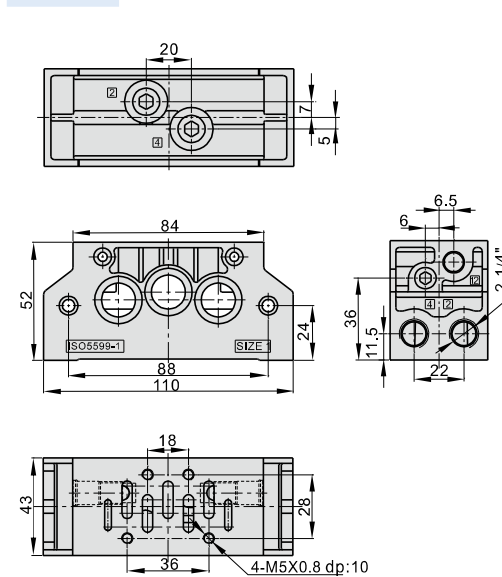
ESV230(Grommet)



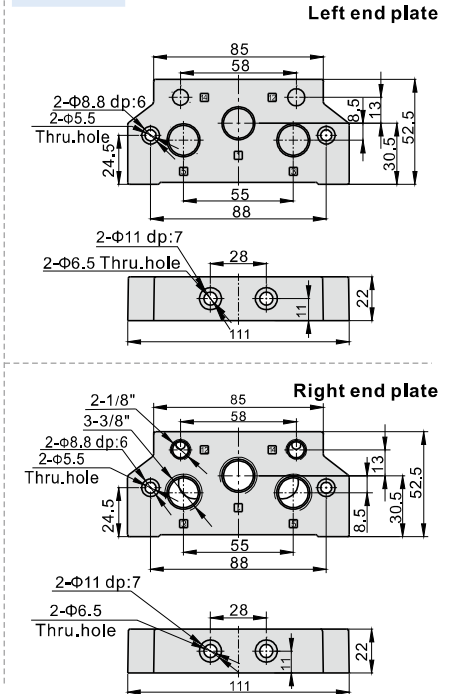
ESV201M



ESV202M



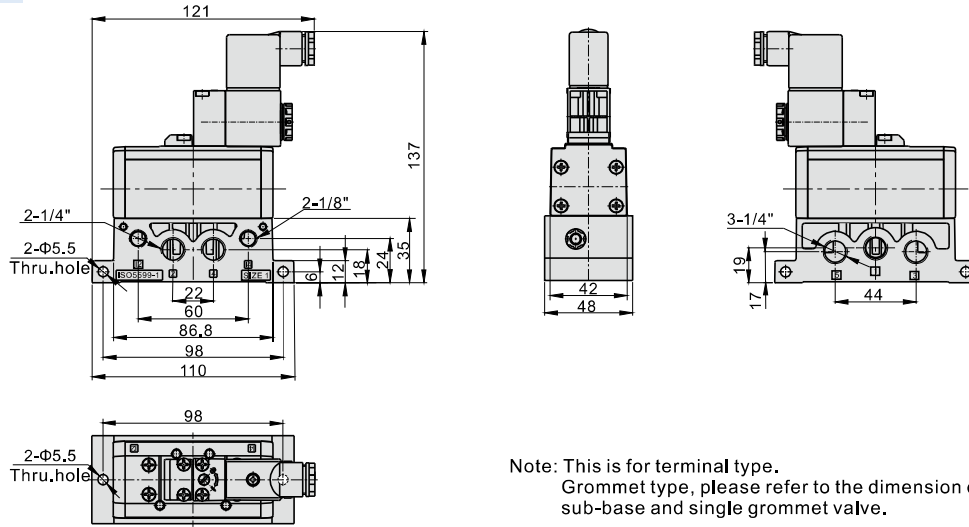
ESV203M



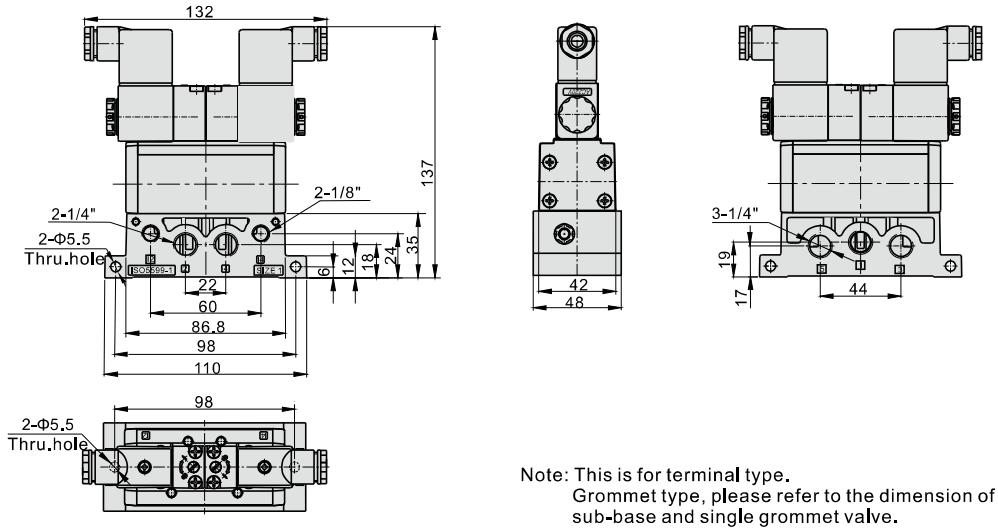
# ISO Standard solenoid valve(5/2 way, 5/3 way)

## ESV200, 300, 400, 600 Series

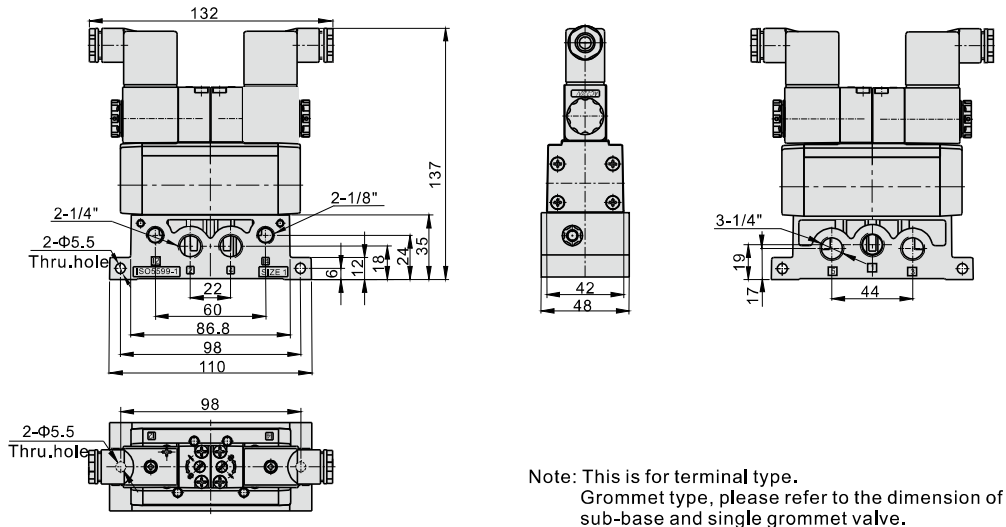
### ESV210+ESV201M



### ESV220+ESV201M



### ESV230+ESV201M

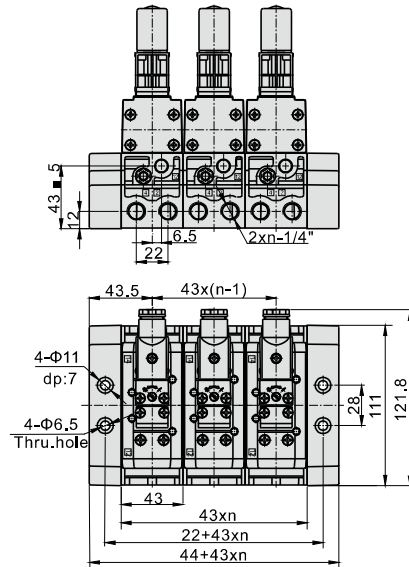
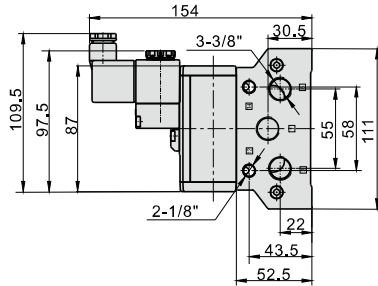


# ISO Standard solenoid valve(5/2 way, 5/3 way)

## ESV200, 300, 400, 600 Series

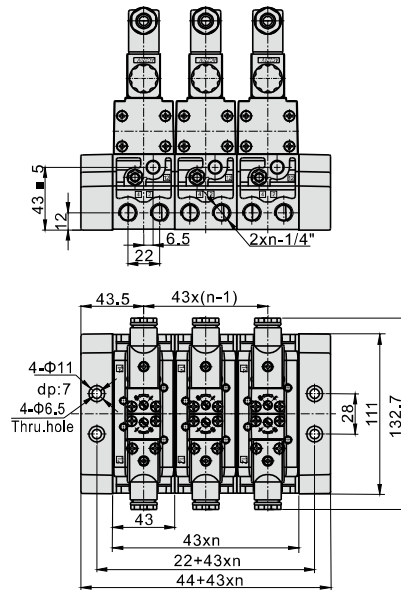
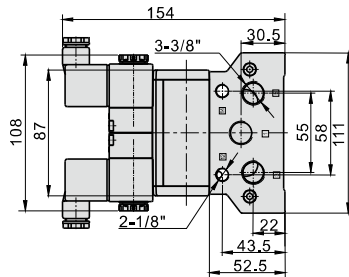
### ESV210+ESV202M+ESV203M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



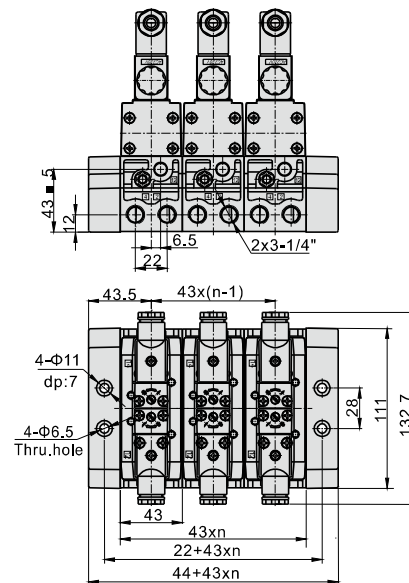
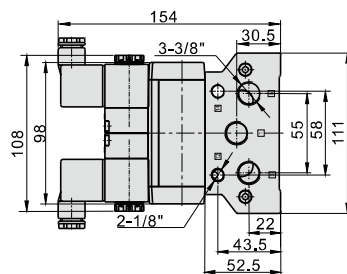
### ESV220+ESV202M+ESV203M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



### ESV230+ESV202M+ESV203M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



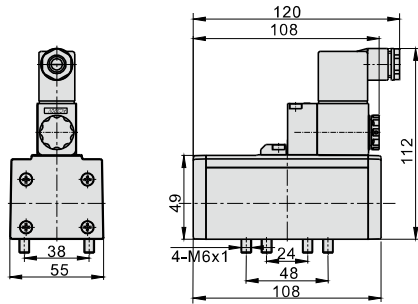


# ISO Standard solenoid valve(5/2 way, 5/3 way)

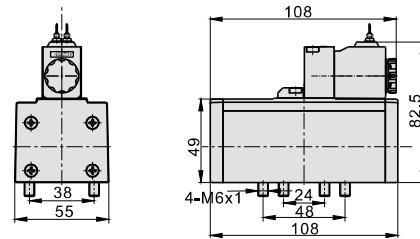
ESV200, 300, 400, 600 Series

Dimensions(ESV300 Series)

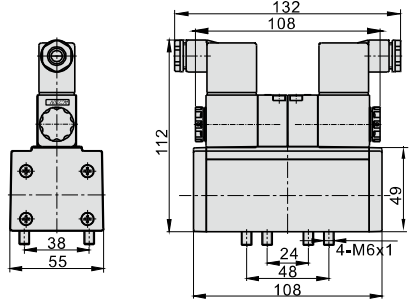
ESV310(Terminal)



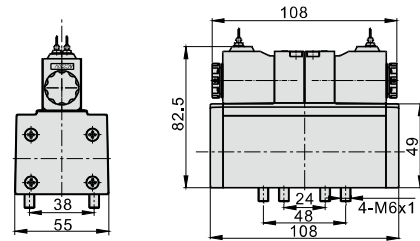
ESV310 (Grommet)



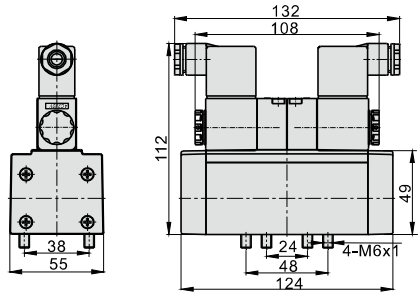
ESV320(Terminal)



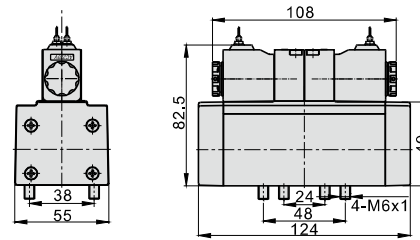
ESV320 (Grommet)



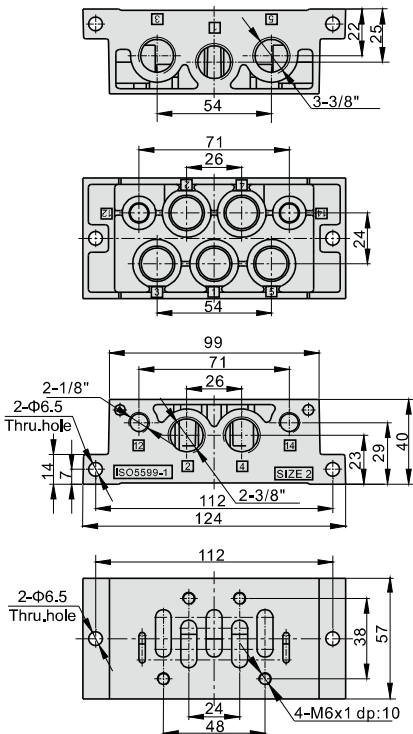
ESV330(Terminal)



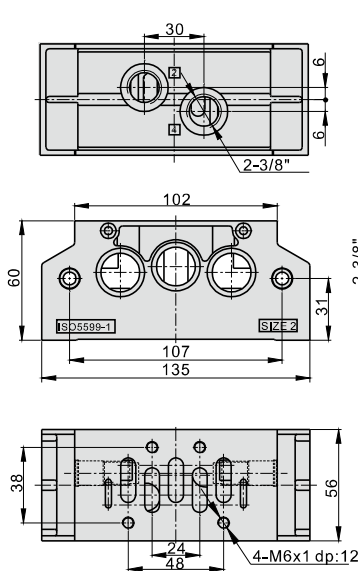
ESV330 (Grommet)



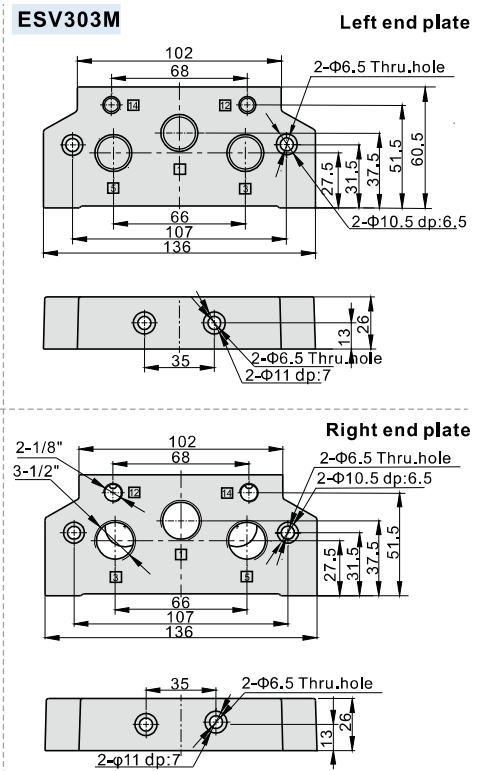
ESV301M



ESV302M



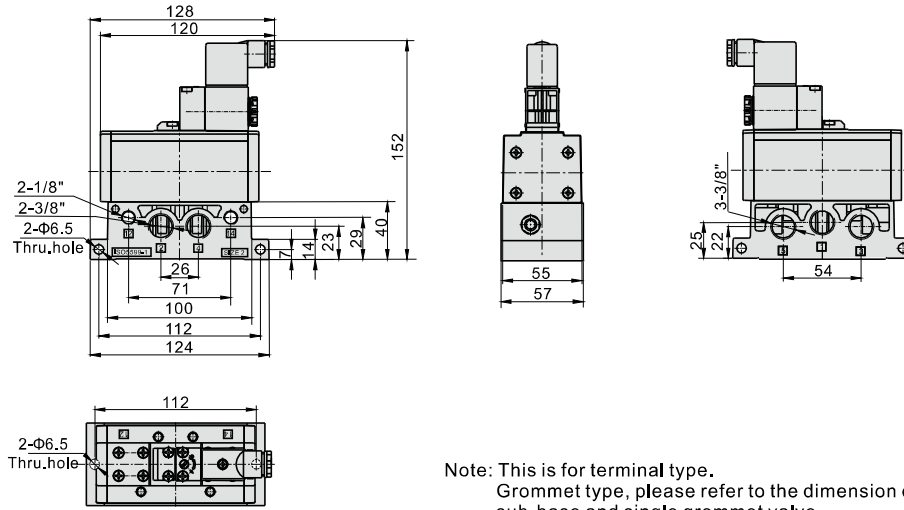
ESV303M



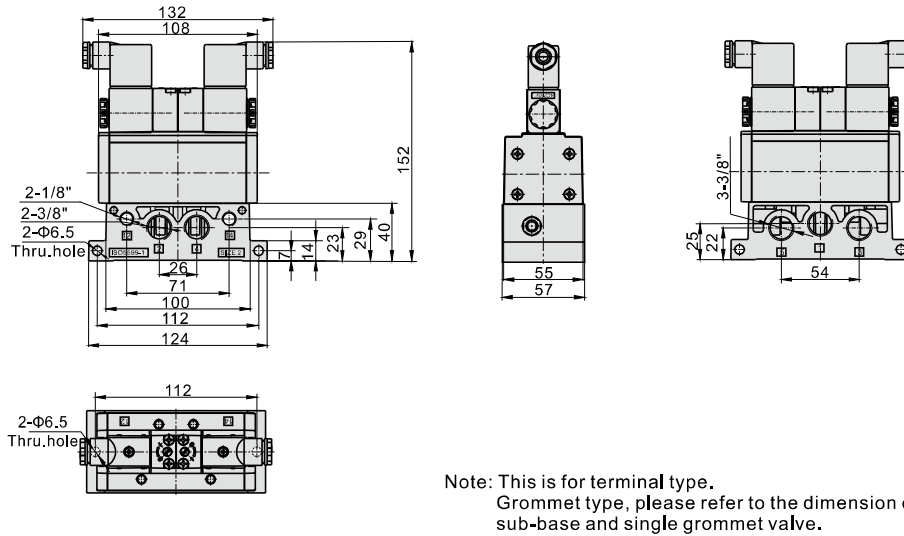
# ISO Standard solenoid valve(5/2 way, 5/3 way)

## ESV200, 300, 400, 600 Series

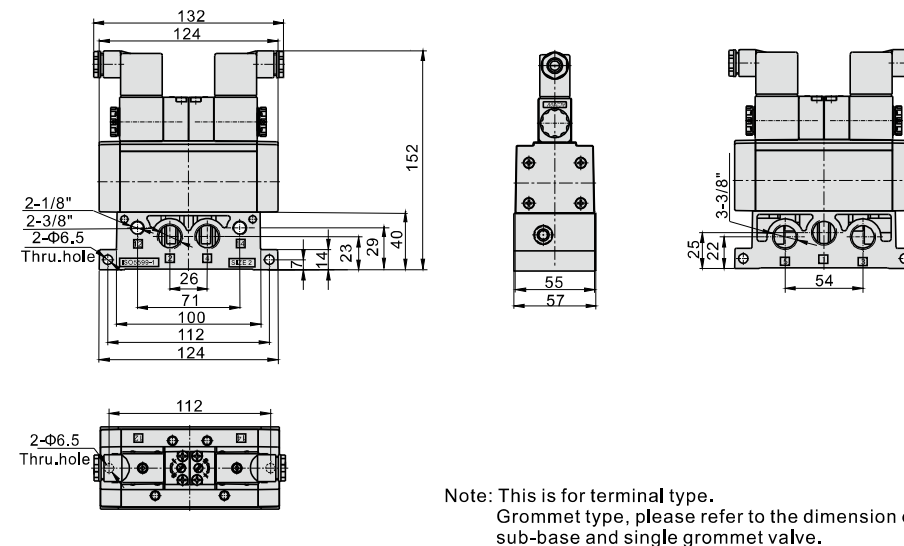
### ESV310+ESV301M



### ESV320+ESV301M



### ESV330+ESV301M

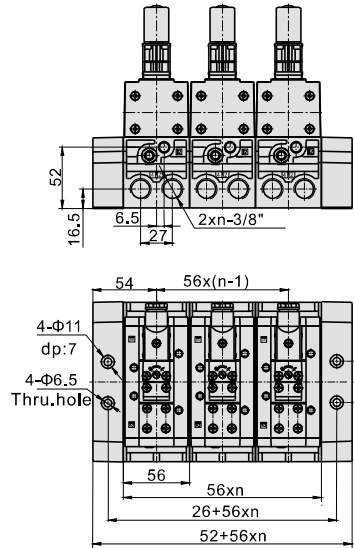
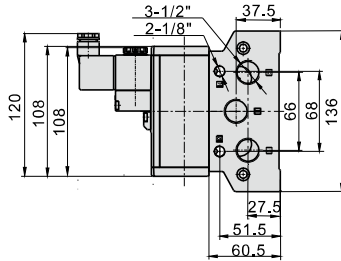


# ISO Standard solenoid valve(5/2 way, 5/3 way)

## ESV200, 300, 400, 600 Series

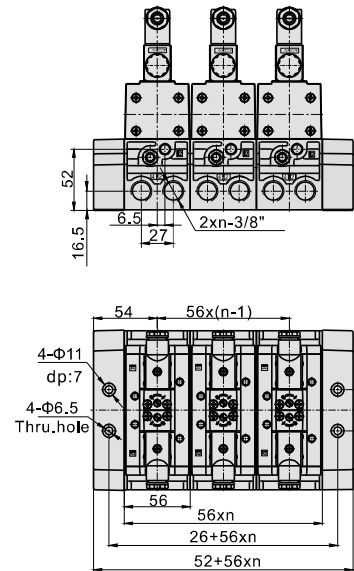
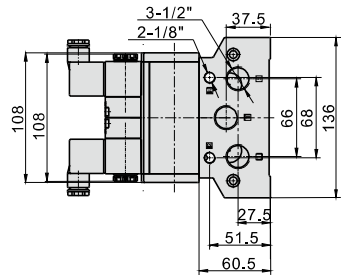
### ESV310+ESV302M+ESV303M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



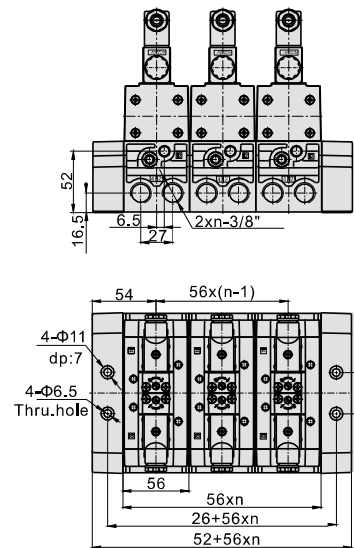
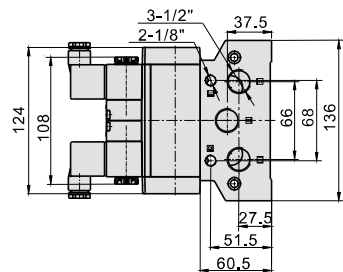
### ESV320+ESV302M+ESV303M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



### ESV330+ESV302M+ESV303M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.

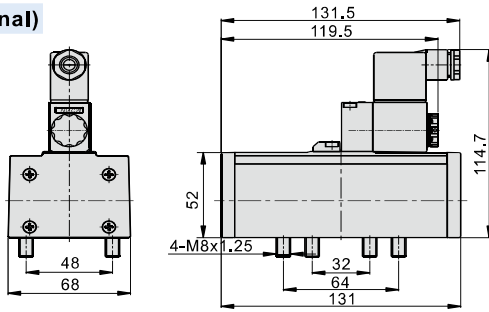


# ISO Standard solenoid valve(5/2 way, 5/3 way)

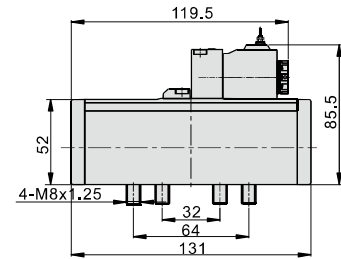
ESV200, 300, 400, 600 Series

## Dimensions(ESV400 Series)

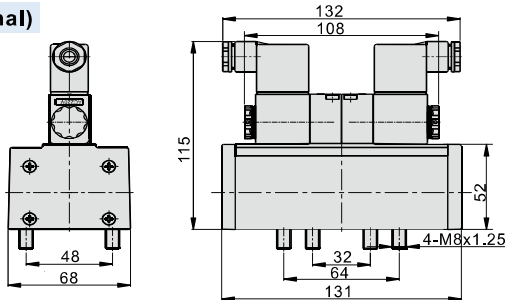
ESV410 (Terminal)



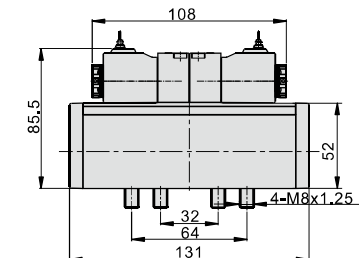
ESV410 (Grommet)



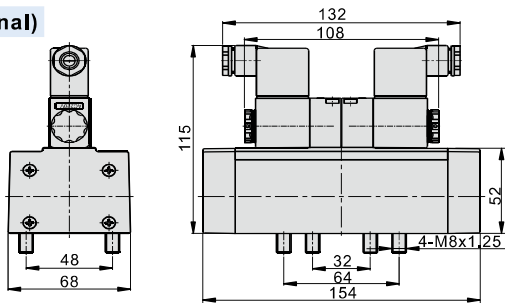
ESV420 (Terminal)



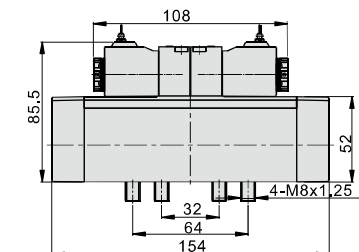
ESV420 (Grommet)



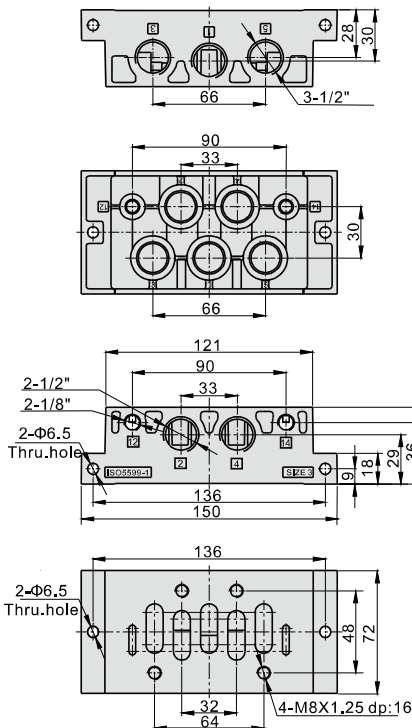
ESV430 (Terminal)



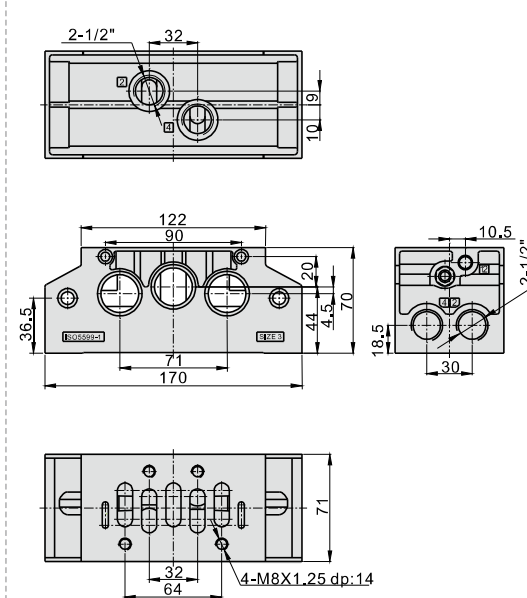
ESV430 (Grommet)



ESV401M

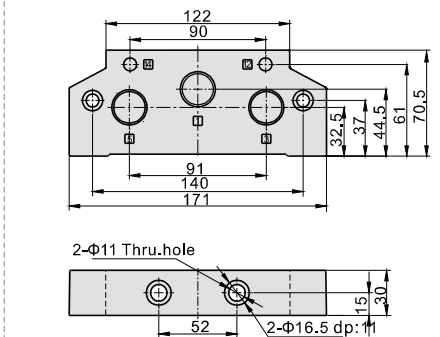


ESV402M

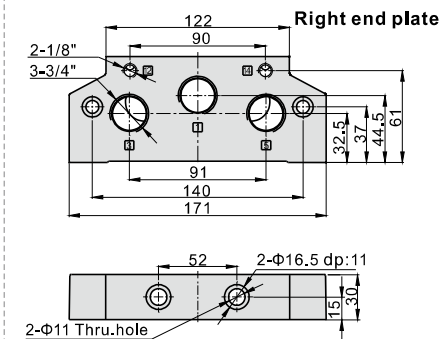


ESV403M

Left end plate



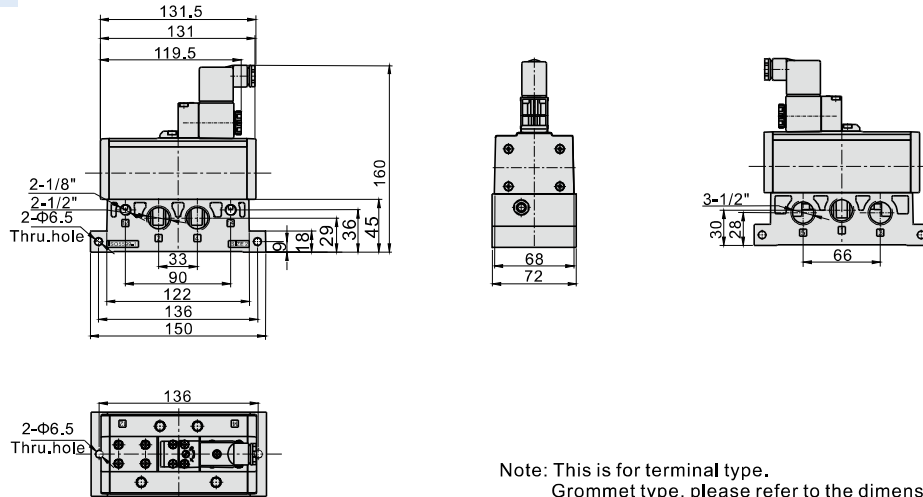
Right end plate



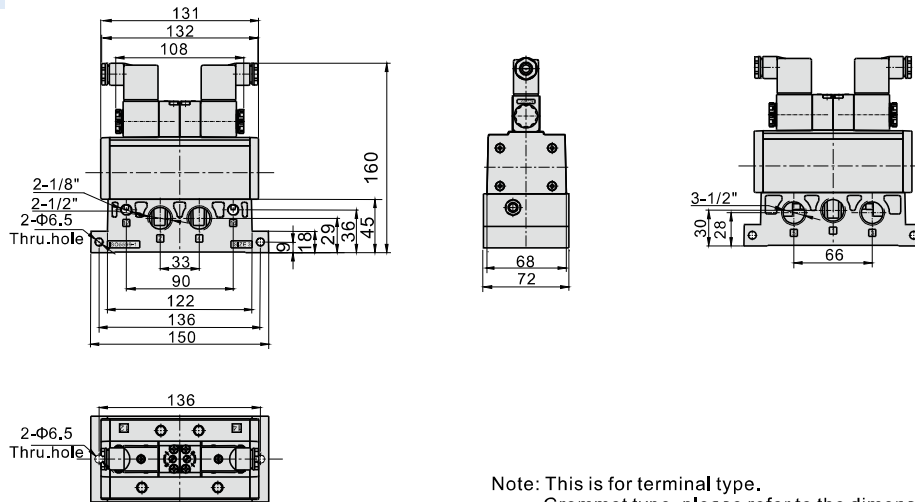
# ISO Standard solenoid valve(5/2 way, 5/3 way)

## ESV200, 300, 400, 600 Series

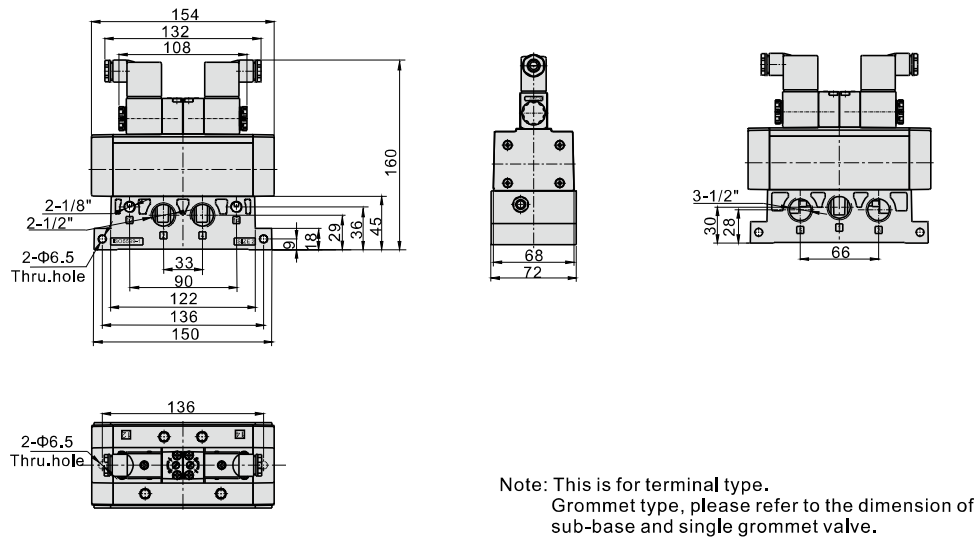
### ESV410+ESV401M



### ESV420+ESV401M



### ESV430+ESV401M

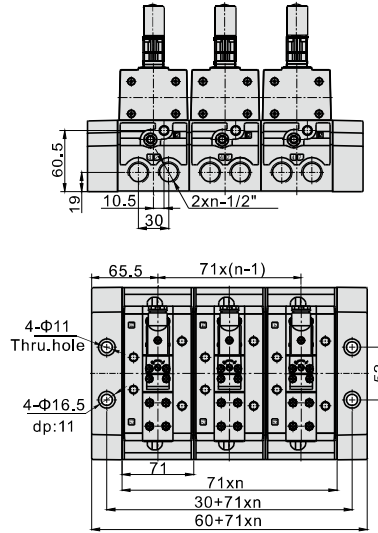
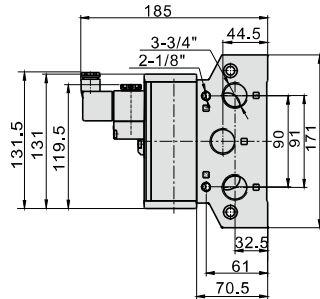


# ISO Standard solenoid valve(5/2 way, 5/3 way)

## ESV200, 300, 400, 600 Series

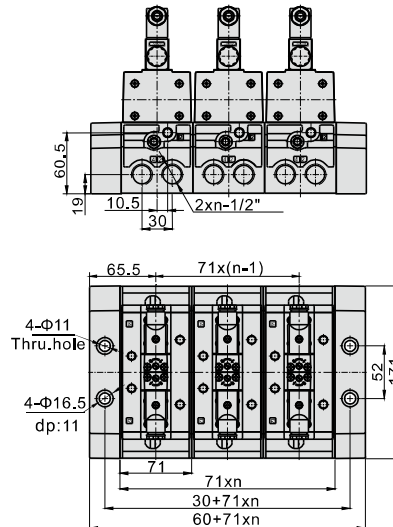
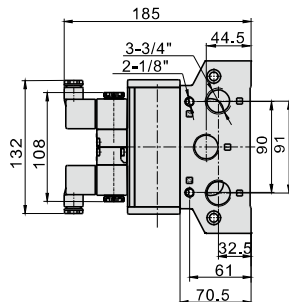
### ESV410+ESV402M+ESV403M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



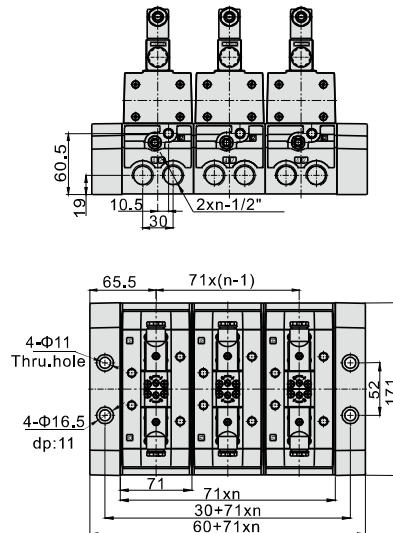
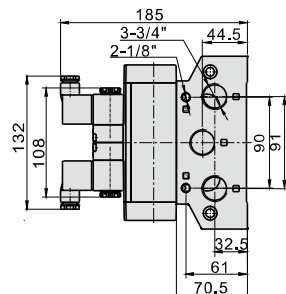
### ESV420+ESV402M+ESV403M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



### ESV430+ESV402M+ESV403M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



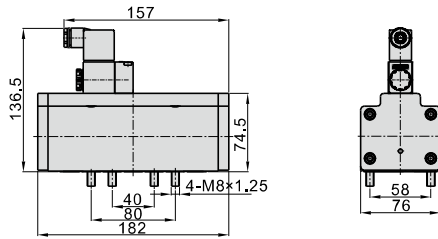


# ISO Standard solenoid valve(5/2 way, 5/3 way)

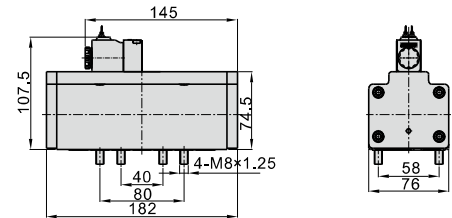
ESV200, 300, 400, 600 Series

Dimensions(ESV600 Series)

ESV610 (Terminal)

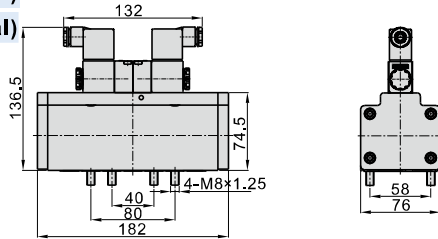


ESV610 (Grommet)



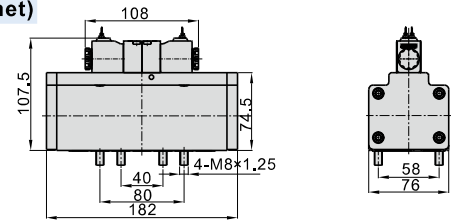
ESV620 (Terminal)

ESV630 (Terminal)

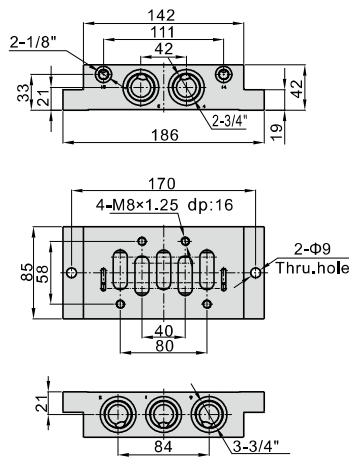


ESV620(Grommet)

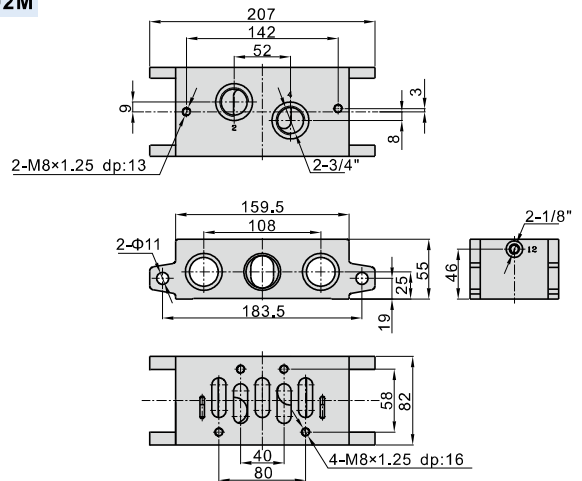
ESV630(Grommet)



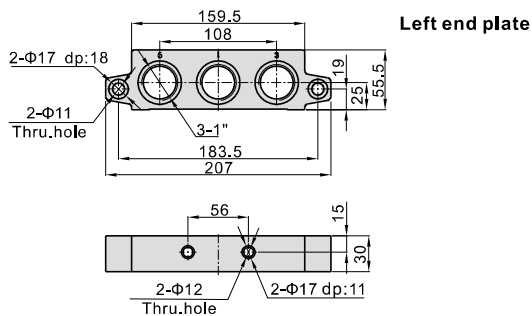
ESV601M



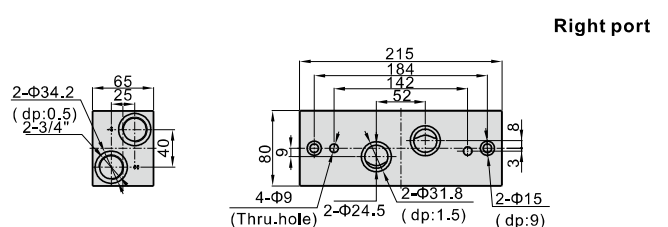
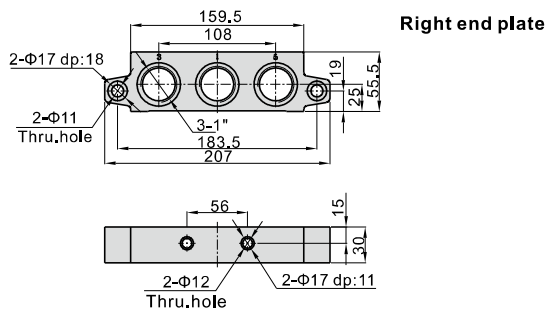
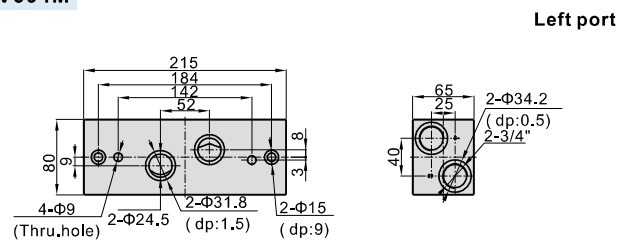
ESV602M



ESV603M



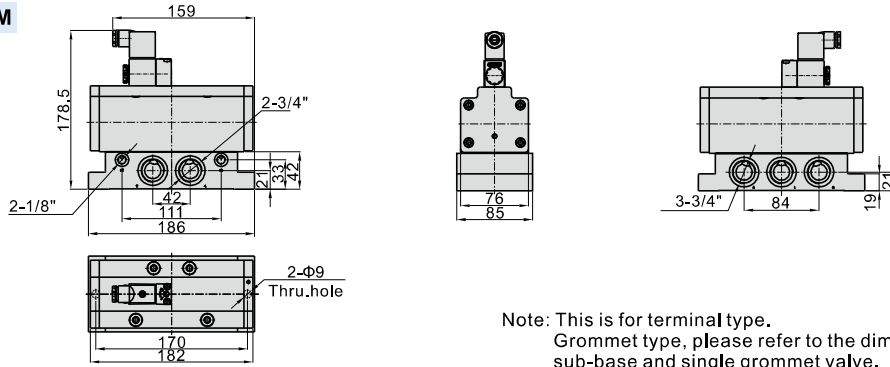
ESV604M



# ISO Standard solenoid valve(5/2 way, 5/3 way)

## ESV200, 300, 400, 600 Series

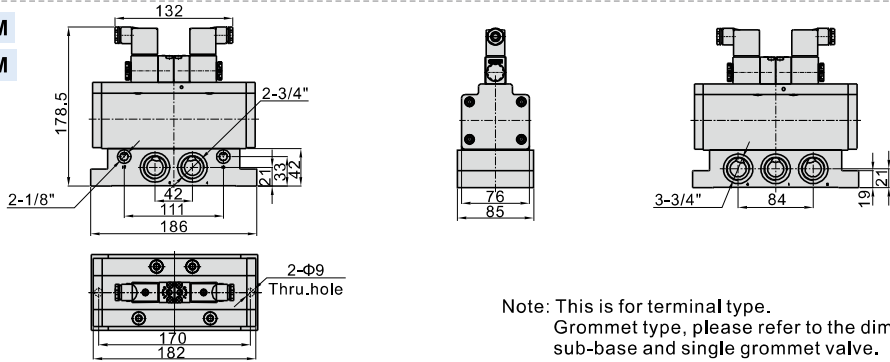
### ESV610+ESV601M



Note: This is for terminal type.  
Grommet type, please refer to the dimension of sub-base and single grommet valve.

### ESV620+ESV601M

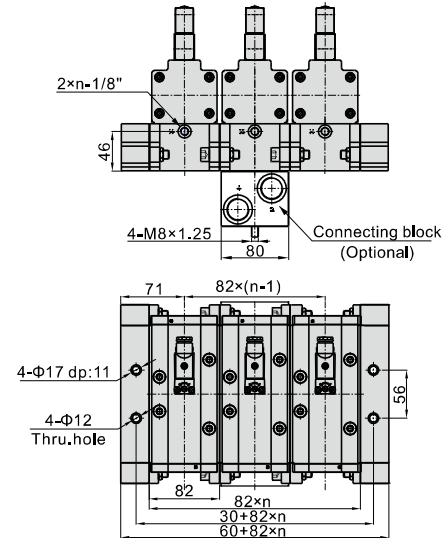
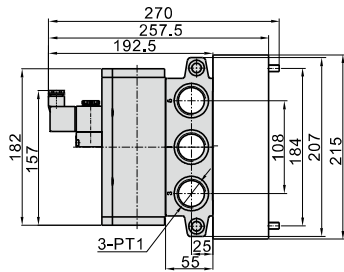
### ESV630+ESV601M



Note: This is for terminal type.  
Grommet type, please refer to the dimension of sub-base and single grommet valve.

### ESV610+ESV602M+ESV603M+ESV604M

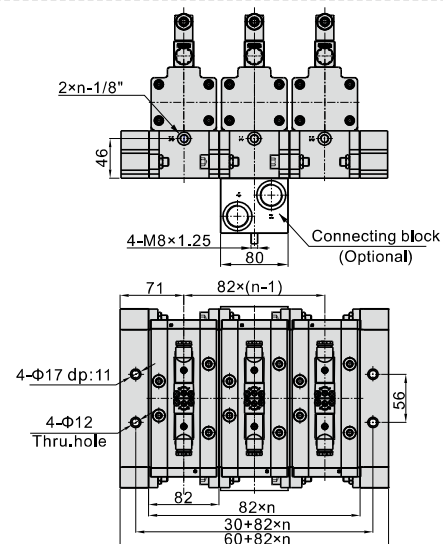
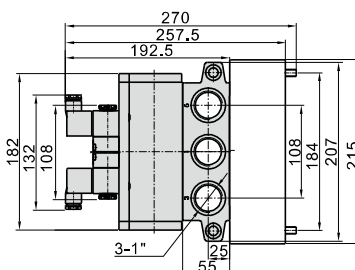
Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.



### ESV620+ESV602M+ESV603M+ESV604M

### ESV630+ESV602M+ESV603M+ESV604M

Note: "n" means the number of stations.  
The dimension of the grommet type (more than 3 stations), please refer to this drawing and the single grommet valve drawing.

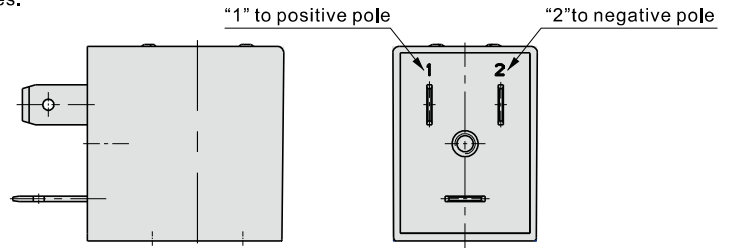


## 080, 092 Series

### Attentions for block wiring



Coil terminal with DC specification has polar indicator lights, thus when wiring, notice positive and negative poles, "1" shall be connected to positive pole, "2" to negative pole. If the poles are connected inversely, the indicator lights will not shine but valve still actuates.



### Ordering code

**CD A080 A**

① ② ③

① Coil type	② Coil's bore	③ Voltage
CD: Terminal CL: Grommet	A080: Coil specification (Bore size: $\Phi 8.0\text{mm}$ ) A092: Coil specification (Bore size: $\Phi 9.0\text{mm}$ )	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V

### 080 Series

Production series	Coil type	Voltage	Coil inside connection diagram	Connector type	Connector inside connection diagram	Memo
3V100 Series 4V100 Series 4M100 Series	CDA080 Terminal	AC		PL1515T-P1	-	Applied to CDA080 AC, DC type coil
	CDA080 Terminal	DC		PL1515T-P2		Applied to CDA080 AC type coil
	CDA080 Terminal	DC		PL1515T-P3		Applied to CDA080 DC type coil
	CLA080 Grommet	AC		-	-	-
	CLA080 Grommet	DC		-	-	-

### 092 Series

Production series	Coil type	Voltage	Coil inside connection diagram	Connector type	Connector inside connection diagram	Memo
3V1 Series 3V200 Series 3V300 Series 4V200 Series 4V300 Series 4V400 Series 4M200 Series 4M300 Series ESV200 Series ESV300 Series ESV400 Series ESV600 Series	CDA092 Terminal	AC		4V210-005-P1	-	Applied to CDA092 AC, DC type coil
	CDA092 Terminal	DC		4V210-005-P2		Applied to CDA092 AC type coil
	CDA092 Terminal	DC		4V210-005-P3		Applied to CDA092 DC type coil
	CLA092 Grommet	AC		-	-	-
	CLA092 Grommet	DC		-	-	-



# Air valve(3/2 way,5/2 way,5/3 way)

## Compendium of Air valve

3 port 2 position			
P110	Product feature	Photo	Manifold
6TA0500~6TA300 Series	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Single air control and double air control are optional</li> <li>•NO and NC are available for single air control</li> <li>•Manifold is available</li> </ul>		
P113	Product feature	Photo	Manifold
3A100~3A300 Series	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Single air control and double air control are optional</li> <li>•NO and NC are available for single air control</li> <li>•Manifold is available</li> </ul>		
5 port 2 position, 5 port 3 position			
P116	Product feature	Photo	Manifold
6A0500~6A300 Series	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Single air control and double air control are optional</li> <li>•5/2 Way and 5/3 Way are available</li> <li>•Closed center, exhaust center and pressure center are available for 5/3 Way</li> <li>•Manifold is available</li> </ul>		
P120	Product feature	Photo	Manifold
4A100~4A400 Series	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Single air control and double air control are optional</li> <li>•5/2 Way and 5/3 Way are available</li> <li>•Closed center, exhaust center and pressure center are available for 5/3 Way</li> <li>•Manifold is available</li> </ul>		
P130	Product feature	Photo	
EAV Series (ISO Standard)	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Single air control and double air control are optional</li> <li>•5/2 Way and 5/3 Way are available</li> <li>•Closed center, exhaust center and pressure center are available for 5/3 Way</li> <li>•The installation size conforms to ISO5599/1 standard</li> </ul>		

## Installation and Application



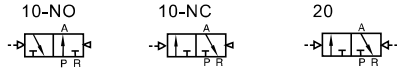
1. Before installing, be sure the valve hasn't been damaged during transportation.
2. It's suggested to use the medium lubricated by 40μm filter element. Be aware of the flow direction and port size.
3. Please notice whether the installation condition accords with technical requirements (such as "working pressure" and "scope of application temperature"), then the equipment can be installed and used.
4. Notice the flow direction of air during installation, P is the air intake, A (B) is the work port and R (S) is the exhaust outlet.
5. Take measure to avoid vibration and frozen.
6. Firstly press the base gasket into the base, and then connect the base with the valve body by the affiliated screws. The base gasket can be pressed into the installation places that are not used temporarily, and then seal them with affiliated blank cap. When the system expands, take the blank cap off and install relative air valves;
7. To keep the dust away, please use the silencer for the exhaust ports. Never forget to install dirt-proof boot in air intake and outlet during dismounting.



## 6TA Series



### Symbol



### Product feature

1. The body is extruded by aluminum alloy, and the inner hole is specially processed to increase the flow rate.
2. Can integrate manifold to form valve group to save space.

### Specification

Model	6TA0510	6TA0520	6TA110	6TA120
Port size [Note1]	In=Out=Exh=M5		In=Out=Exh=M5(or=1/8")	
Orifice size(Cv)[Note4]	M5:3.4mm <sup>2</sup> (0.2)		06 : 8.9mm <sup>2</sup> (0.52)	
Weight (g)	18.5	28.5	46.5	56.5
Model	6TA210	6TA220	6TA310	6TA320
Port size [Note1]	06:In=Out=Exh=1/8" 08:In=Out=1/4" Exh=1/8"		In=Out=3/8" Exh=1/4"	
Orifice size(Cv)[Note4]	08:15.4mm <sup>2</sup> (0.91)		10:38.4mm <sup>2</sup> (2.26)	
Weight (g)	96	121	200	240
Fluid	Air(to be filtered by 40μm filter element)			
Acting	External air control			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max.frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

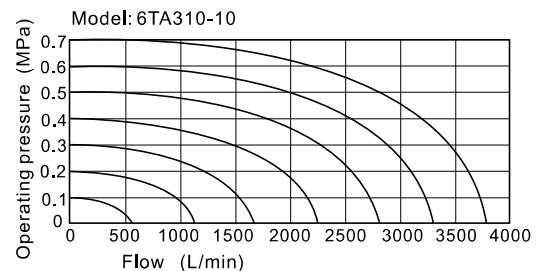
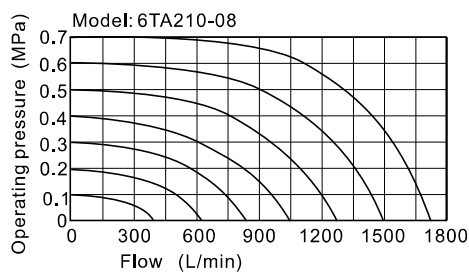
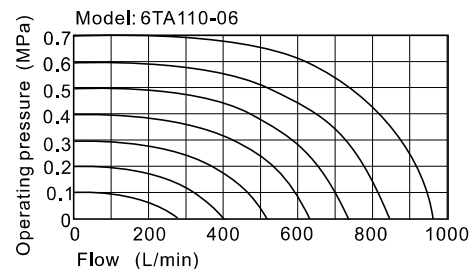
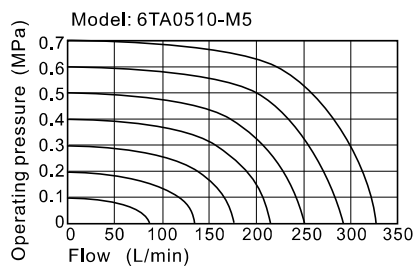
### Ordering code

6TA 2 10 08 NC □



① Model	6TV : Air valve (3/2 way)			
② Code	05: 0500 Series	1: 100 Series	2: 200 Series	3: 300 Series
③ Valve type	10: Single air control 20 : Double air control			
④ Port size	M5: M5	M5: M5	06: 1/8"	06: 1/8" 08: 1/4" 10: 3/8"
⑤ Acting type	NC: Normally closed NO: Normally opened [Note : Double air control no this code]			
⑥ Thread type	- Blank: PT Thread/ G: G Thread / T: NPT Thread			

### Flow chart

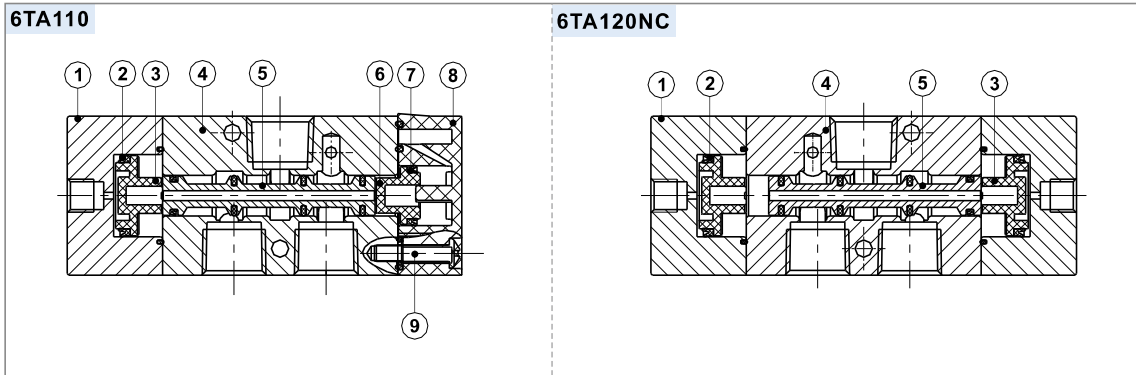


The data in flow rate chart are obtained from AirTAC lab.

# Air valve( 3/2 way)

## 6TA Series

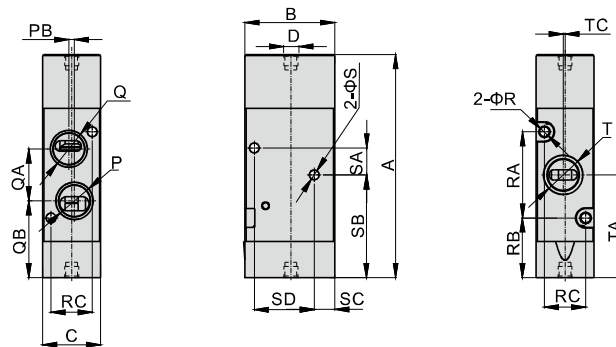
### Inner structure



No.	Item
1	Pilot valve
2	Gasket
3	Big piston
4	Body
5	Spool
6	Small piston
7	Gasket
8	Bottom cover
9	Bolt

### Dimensions

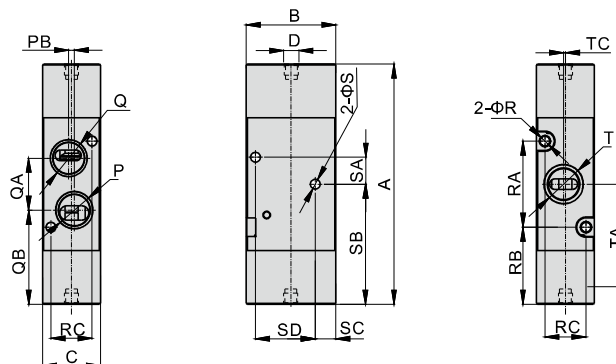
6TA0510  
6TA110  
6TA210  
6TA310



Model/Item	A	B	C	D	P	PB	Q	QA	QB	R	RA	RB	RC	S	SA	SB	SC	SD	T	TA	TC
6TA0510M5	41.5	21	10.6	M5X0.8	M5X0.8	1	M5X0.8	9.5	13.5	2.1	14	11.3	7.5	-	-	-	-	-	M5X0.8	18.3	0.5
6TA110M5	59.5	24	15.5	M5X0.8	M5X0.8	-	M5X0.8	14	20.5	2.6	23	16	11	Φ2.6	7.2	34.5	4	17.5	M5X0.8	27.5	0.5
6TA11006	59.5	24	15.5	M5X0.8	1/8"	1.5	1/8"	14	20.5	2.6	23	16	11	Φ2.6	7.2	34.5	4	17.5	1/8"	27.5	0.5
6TA21006	77.5	32.5	18.5	1/8"	1/8"	-	1/8"	18	25.5	3.2	33	18	13.5	Φ3.2	12	46.5	7	21	1/8"	34.5	-
6TA21008	77.5	32.5	18.5	1/8"	1/4"	-	1/8"	18	25.5	3.2	33	18	13.5	Φ3.2	12	46.5	7	21	1/4"	34.5	1
6TA31010	95	46	23.5	1/8"	3/8"	-	1/4"	28	29.5	3.2	43	22	18.4	Φ4.3	15	58.5	8	31	3/8"	43.5	-

[Note]: 6TA0510 type no through hole "S" on the side.

6TA0520  
6TA120  
6TA220  
6TA320



Model/Item	A	B	C	D	P	PB	Q	QA	QB	R	RA	RB	RC	S	SA	SB	SC	SD	T	TA	TC
6TA0520M5	47	21	10.6	M5X0.8	M5X0.8	1	M5X0.8	9.5	18.7	2.1	14	16.5	7.5	-	-	-	-	-	M5X0.8	23.5	0.5
6TA120M5	64.5	24	15.5	M5X0.8	M5X0.8	-	M5X0.8	14	25.2	2.6	23	20.7	11	Φ2.6	7.2	39.5	4	17.5	M5X0.8	32.2	-
6TA12006	64.5	24	15.5	M5X0.8	1/8"	1.5	1/8"	14	25.2	2.6	23	20.7	11	Φ2.6	7.2	39.5	4	17.5	1/8"	32.2	0.5
6TA22006	85.5	32.5	18.5	1/8"	1/8"	-	1/8"	18	33.9	3.2	33	26.3	13.5	Φ3.2	12	54.8	7	21	1/8"	42.8	-
6TA22008	85.5	32.5	18.5	1/8"	1/4"	-	1/8"	18	33.9	3.2	33	26.3	13.5	Φ3.2	12	54.8	7	21	1/4"	42.8	1
6TA32010	103	46	23.5	1/8"	3/8"	-	1/4"	28	37.5	3.2	43	30	18.4	Φ4.3	15	66.5	8	31	3/8"	51.5	-

[Note]: 6TA0520 type no through hole "S" on the side.



## Manifold for 6TA Series



### Specification

Item\Manifold Model	6TA0500M	6TA100M	6TA200M	6TA300M
Fluid	Air(to be filtered by 40µm filter element)			
Temperature °C	-20~70			
Adaptable valve's series	6TA0500 Series	6TA100 Series	6TA200 Series	6TA300 Series

### Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

### Ordering code

#### 6TV100M 5F □ Ordering code for manifold



① Model	6TV0500M: 6TV0500 Series manifold	6TV100M: 6TV100 Series manifold	6TV200M: 6TV200 Series manifold	6TV300M: 6TV300 Series manifold
② Number of stations	1F: 1 Station    2F: 2 Station    3F: 3 Station    .....    20F: 20 Station			
③ Thread type	Blank: PT / G: G Thread / T: NPT Thread			

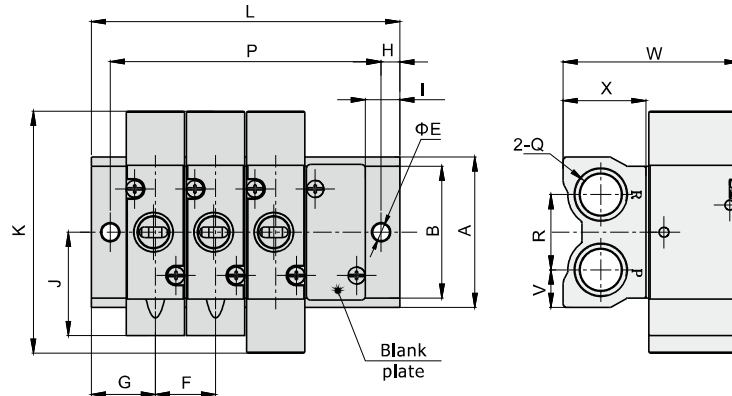
#### P-6TV100M - R2 Ordering code for blank plate



① Model	6TV0500M: 6TV0500 Series manifold	6TV100M: 6TV100 Series manifold	6TV200M: 6TV200 Series manifold	6TV300M: 6TV300 Series manifold
② Code	R2: Blank plate for manifold			

### Dimensions

[Note] 1. Manifold kits contains manifold, seal and screw; 2. Blank plate kits contains blank plate and screw.



Model\Item	A	B	E	F	G	H	I	J	K	Q	R	V	W	X
6TV0500M	33	26	4.5	11	15	5	9.5	18.5	47	1/8"	16.5	8.5	38.5	17
6TV100M	40	35	4.5	16	17	5	9	27.5	64.5	1/4"	20	10	47	22
6TV200M	48	44	4.5	19	18.5	5	9	34.5	85.5	1/4"	24	12	57	23.5
6TV300M	60	54	4.5	24	24	5	12.5	43.5	103	3/8"	32	14	74	27

Model\Item	L																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6TV0500M	30	41	52	63	74	85	96	107	118	129	140	151	162	173	184	195	206	217	228	239
6TV100M	34	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
6TV200M	37	56	75	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398
6TV300M	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504

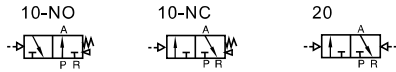
Model\Item	P																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6TV0500M	20	31	42	53	64	75	86	97	108	119	120	141	152	163	174	185	196	207	218	229
6TV100M	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
6TV200M	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388
6TV300M	38	62	86	110	134	158	182	206	230	254	278	302	326	350	374	398	422	446	470	494

# Air valve( 3/2 way)

## 3A100 Series



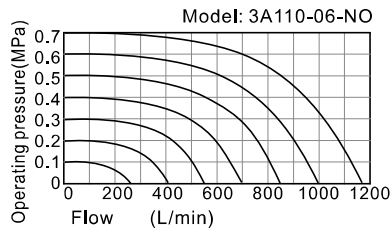
### Symbol



### Product feature

- Structure in sliding column mode: good tightness and sensitive reaction.
- Double air control valves have memory function.
- Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
- No need to add oil for lubrication.
- Multi-mounting helps to install and apply.
- Integrate with the manifold to save installation space.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Specification

Model	3A110-M5	3A120-M5	3A110-06	3A120-06
Fluid	Air(to be filtered by 40µm filter element)			
Acting	Exterior control			
Port size [Note1]	M5		1/8"	
Orifice size(Cv)[Note4]	3A110-06,3A120-06:10.2mm <sup>2</sup> (Cv=0.6)			
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Max. frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Ordering code

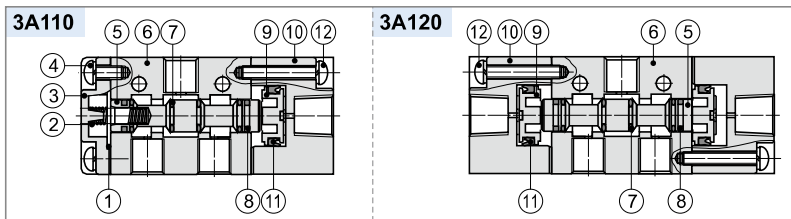
3A 1 10 06 NO □



① Model	② Code	③ Valve type	④ Port size	⑤ Acting type	⑥ Thread type
3A: Air Valve (3/2 way)	1: 100 Series	10: Single air control 20: Double air control	M5: M5 06: 1/8"	NC: Normally close NO: Normally open No this code	M5 1/8" No this code Blank: PT G: G T: NPT

Please refer to P128 for manifold specification and the order way.

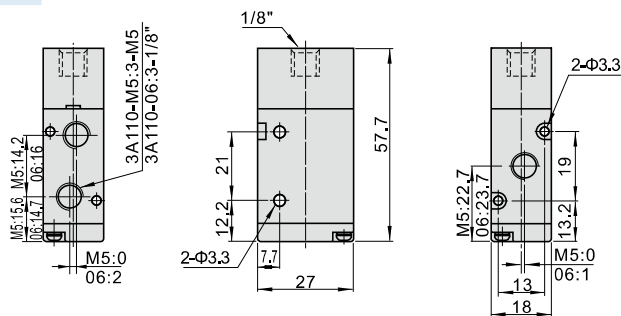
### Inner structure



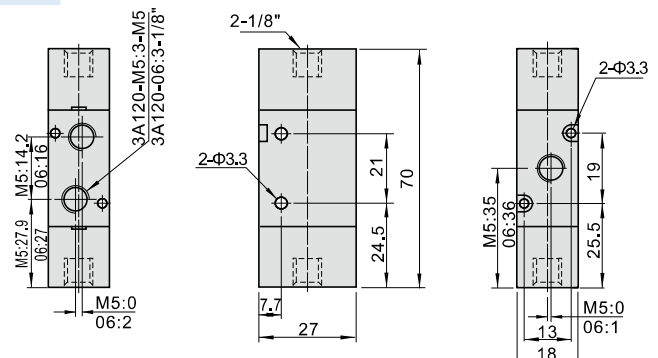
No.	Item	No.	Item	No.	Item
1	Bottom cover gasket	5	Spool	9	Piston
2	Spring	6	Body	10	Pilot body
3	Bottom cover	7	O-ring	11	Piston O-ring
4	Bottom cover screw	8	Wear ring	12	Screw

### Dimension

#### 3A110



#### 3A120

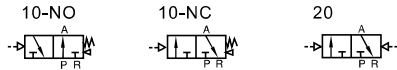


# Air valve( 3/2 way)

## 3A200 Series



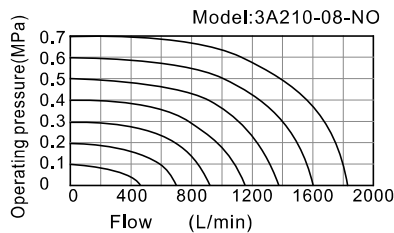
### Symbol



### Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Specification

Model	3A210-06	3A220-06	3A210-08	3A220-08
Fluid	Air (to be filtered by 40µm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=1/8"		In=Out=1/4"	
Orifice size (Cv) [Note4]	3A210-08, 3A220-08: 17.0mm <sup>2</sup> (Cv=1.0)			
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa (21~114psi)			
Proof pressure	1.2MPa (175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Max. frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

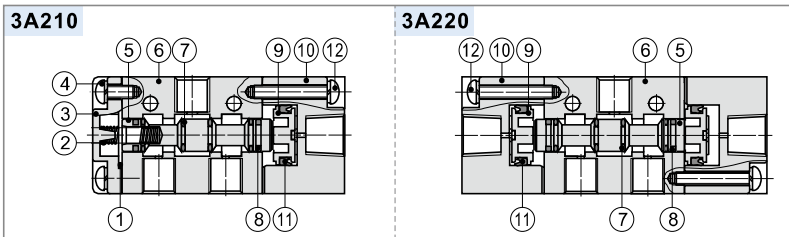
[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Ordering code

3A 2 10 08 NO □					
① Model	② Code	③ Valve type	④ Port size	⑤ Acting type	⑥ Thread type
3A: Air Valve (3/2 way)	2: 200 Series	10: Single air control 20: Double air control	06: 1/8" 08: 1/4"	NC: Normally close NO: Normally open No this code	Blank: PT G: G T: NPT

Please refer to P128 for manifold specification and the order way.

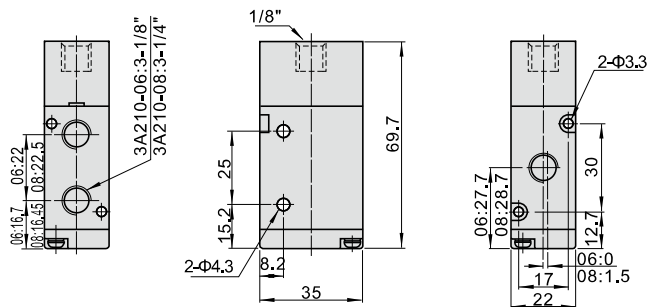
### Inner structure



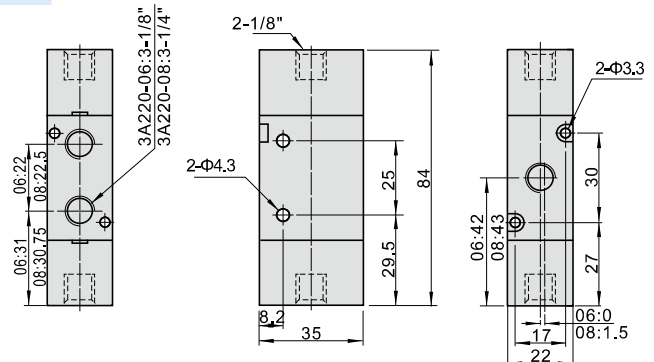
No.	Item	No.	Item	No.	Item
1	Bottom cover gasket	5	Spool	9	Piston
2	Spring	6	Body	10	Pilot body
3	Bottom cover	7	O-ring	11	Piston O-ring
4	Bottom cover screw	8	Wear ring	12	Screw

### Dimension

#### 3A210



#### 3A220

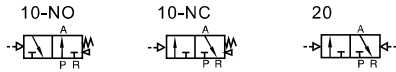


# Air valve( 3/2 way)

## 3A300 Series



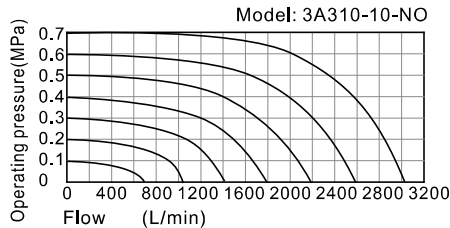
### Symbol



### Product feature

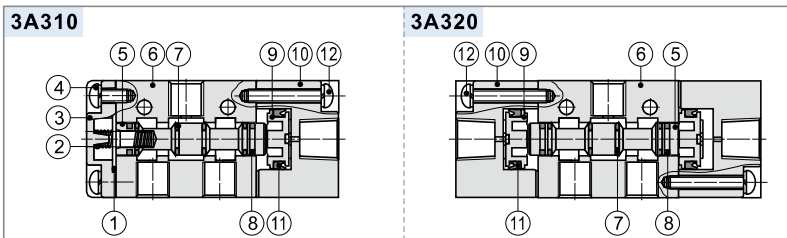
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Double air control valves have memory function.
3. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
4. No need to add oil for lubrication.
5. Multi-mounting helps to install and apply.
6. Integrate with the manifold to save installation space.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

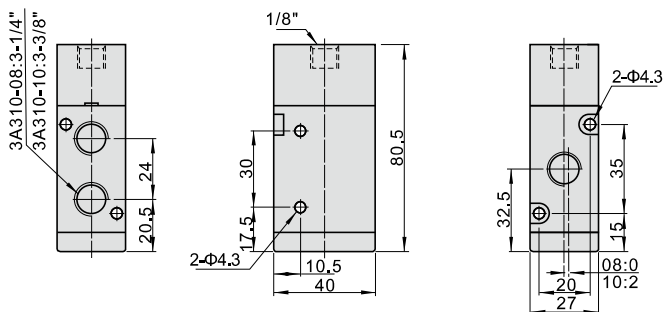
### Inner structure



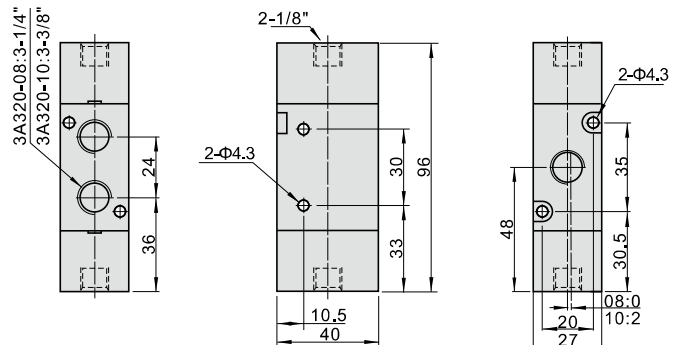
No.	Item	No.	Item	No.	Item
1	Bottom cover gasket	5	Spool	9	Piston
2	Spring	6	Body	10	Pilot body
3	Bottom cover	7	O-ring	11	Piston O-ring
4	Bottom cover screw	8	Wear ring	12	Screw

### Dimension

#### 3A310



#### 3A320



### Specification

Model	3A310-08	3A320-08	3A310-10	3A320-10
Fluid	Air(to be filtered by 40µm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=1/4"		In=Out=3/8"	
Orifice size(Cv)[Note4]	3A310-10,3A320-10:28.0mm <sup>2</sup> (Cv=1.65)			
Valve type	3 port 2 position			
Lubrication [Note2]	Not required			
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Max. frequency [Note3]	5 cycle/sec			

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Ordering code

3A 3 10 10 NO □

① ② ③ ④ ⑤ ⑥

① Model	② Code	③ Valve type	④ Port size	⑤ Acting type	⑥ Thread type
3A: Air Valve (3/2 way)	3: 300 Series	10: Single air control 20: Double air control	08: 1/4" 10: 3/8"	NC: Normally close NO: Normally open No this code	Blank: PT G: G T: NPT

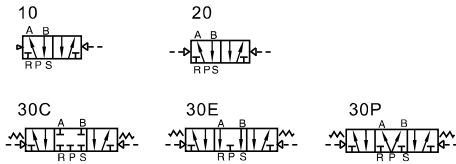
Please refer to P128 for manifold specification and the order way.

# Air valve (5/2 way, 5/3 way)

## 6A Series



### Symbol



### Product feature

1. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
2. Can integrate manifold to form valve group to save space.

### Specification

Model	6A0510	6A0520	6A0530	6A110	6A120	6A130
Port size [Note1]	In=Out=Exh=M5			In=Out=Exh=M5(or=1/8")		
Orifice size(Cv) [Note4]	M5:3.4mm <sup>2</sup> (0.2)		6A0530CM5: 2.2mm <sup>2</sup> (0.13)	06:8.9mm <sup>2</sup> (0.52)		6A130C06: 8.0mm <sup>2</sup> (0.47)
Weight	20g	25g	30g	50g	60g	65g
Model	6A210	6A220	6A230	6A310	6A320	6A330
Port size [Note1]	In=Out=1/8"(or=1/4") Exh=1/8"			In=Out=3/8" Exh=1/4"		
Orifice size(Cv) [Note4]	08:15.4mm <sup>2</sup> (0.91)		6A230C08: 14.2mm <sup>2</sup> (0.84)	10:38.4mm <sup>2</sup> (2.26)		6A330C10: 30.5mm <sup>2</sup> (1.8)
Weight	120g	125g	135g	250g	290g	320g
Fluid	Air(to be filtered by 40μm filter element)					
Acting	External air control					
Operating pressure	5/3 way		0.2~0.8MPa(29~114psi)			
	5/2 way		0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					
Lubrication [Note3]	Not required					
Max.frequency[Note2]	5 cycle/sec		3 cycle/sec	5 cycle/sec		3 cycle/sec

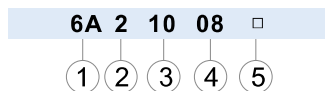
[Note1] PT, NPT, G thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

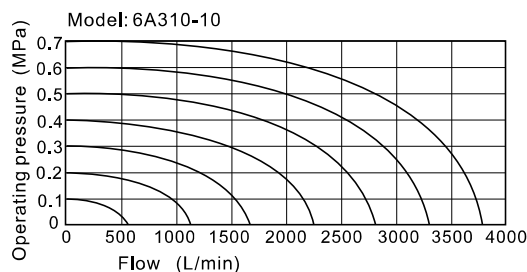
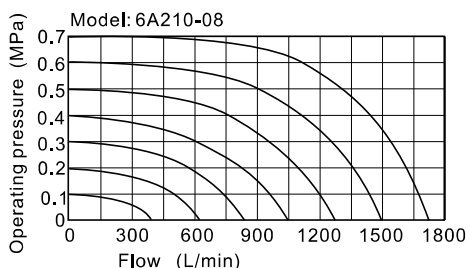
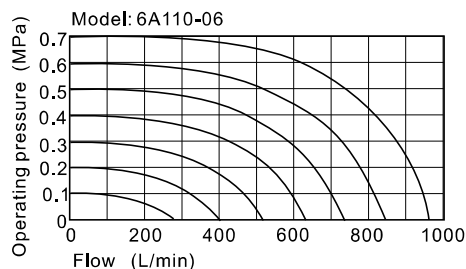
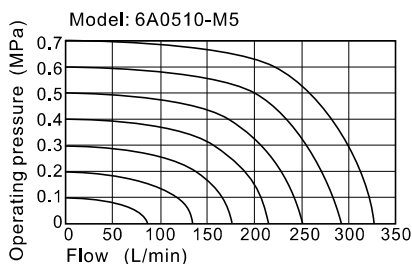
### Ordering code



① Model	6A: Air valve (5/2, 5/3 way)					
② Code	05: 0500 Series	1: 100 Series		2: 200 Series		3: 300 Series
③ Alve type	10: Single air control 5/2 way			20: Double air control 5/2 way		
	30C : Double air control 5/3 way closed center			30E : Double air control 5/3 way exhaust center		
	30P : Double air control 5/3 way pressure center					
④ Port size	M5: M5	M5: M5	06: 1/8"	06: 1/8"	08: 1/4"	10: 3/8"
⑤ Thread type	-			Blank: PT / G: G Thread / T: NPT Thread		

## 6A Series

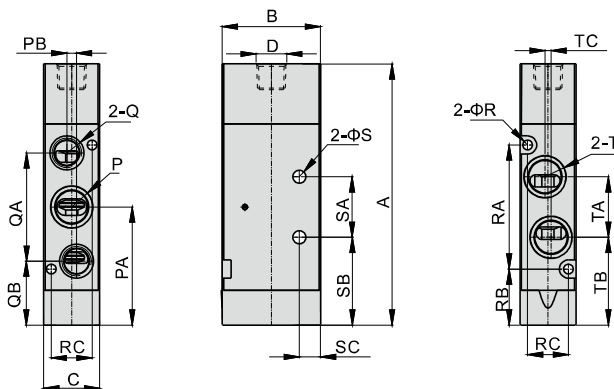
### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Dimensions

- 6A0510
- 6A110
- 6A210
- 6A310



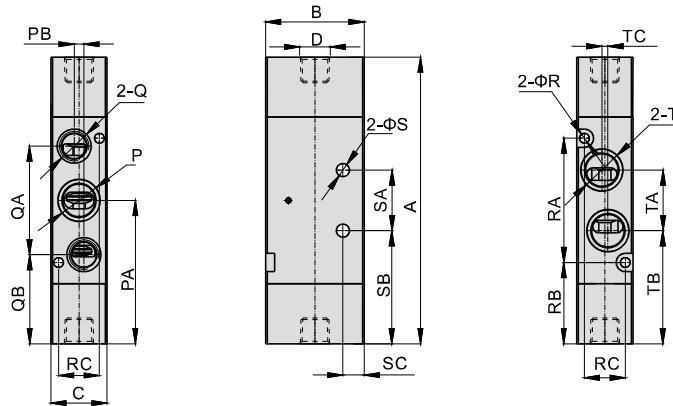
Model\Item	A	B	C	D	P	PA	PB	Q	QA	QB	R	RA	RB	RC	S	SA	SB	SC	T	TA	TB	TC
6A0510M5	50.5	21	10.6	M5x0.8	M5x0.8	22.5	1	M5x0.8	19	13	2.1	22.5	11.5	7.5	Φ2.6	10	17.5	4	M5x0.8	10.5	17.5	-
6A110M5	70.5	24	15.5	M5x0.8	M5x0.8	33	2.6	M5x0.8	28	19	2.6	34	16	11	Φ3.2	14	26	4	M5x0.8	16.5	24.5	-
6A11006	70.5	24	15.5	M5x0.8	1/8"	33	2.6	1/8"	28	19	2.6	34	16	11	Φ3.2	14	26	4	1/8"	16.5	24.5	-
6A21006	86.5	32.5	18.5	1/8"	1/8"	39	3.2	1/8"	36	21	3.2	41	18.5	13.5	Φ4.3	20	29	7	1/8"	20	29	2
6A21008	86.5	32.5	18.5	1/8"	1/4"	39	3.2	1/8"	36	21	3.2	41	18.5	13.5	Φ4.3	20	29	7	1/4"	20	29	2
6A31010	116	46	23.5	1/4"	3/8"	54	0	1/4"	50	29	3.2	64	22	18.5	Φ4.3	25	41.5	8	3/8"	33.5	37	0



# Air valve (5/2 way, 5/3 way)

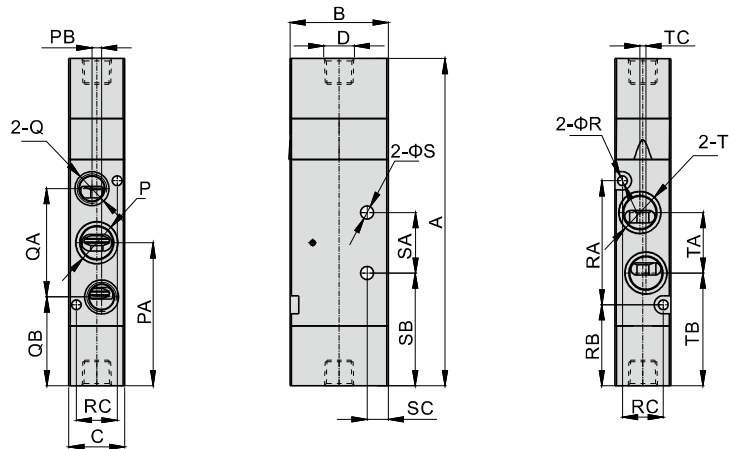
## 6A Series

- 6A0520
- 6A120
- 6A220
- 6A320



Model/Item	A	B	C	D	P	PA	PB	Q	QA	QB	R	RA	RB	RC	S	SA	SB	SC	T	TA	TB	TC
6A0520M5	55.5	21	10.6	M5x0.8	M5x0.8	28	1	M5x0.8	19	18	2.1	22.5	16.5	7.5	Φ2.6	10	22.5	4	M5x0.8	10.5	22.5	-
6A120M5	75	24	15.5	M5x0.8	M5x0.8	37.5	2.6	M5x0.8	28	24	2.6	34	20.5	11	Φ3.2	14	30.5	4	M5x0.8	16.5	29.5	-
6A12006	75	24	15.5	M5x0.8	1/8"	37.5	2.6	1/8"	28	24	2.6	34	20.5	11	Φ3.2	14	30.5	4	1/8"	16.5	29.5	-
6A22006	94.5	32.5	18.5	1/8"	1/8"	47.5	3.2	1/8"	36	29.5	3.2	41	27	13.5	Φ4.3	20	37.5	7	1/8"	20	37.5	2
6A22008	94.5	32.5	18.5	1/8"	1/4"	47.5	3.2	1/8"	36	29.5	3.2	41	27	13.5	Φ4.3	20	37.5	7	1/4"	20	37.5	2
6A32010	124	46	23.5	1/4"	3/8"	62	0	1/4"	50	37	3.2	64	30	18.5	Φ4.3	25	41.5	8	3/8"	33.5	45.5	0

- 6A0530
- 6A130
- 6A230
- 6A330



Model/Item	A	B	C	D	P	PA	PB	Q	QA	QB	R	RA	RB	RC	S	SA	SB	SC	T	TA	TB	TC
6A0530M5	64	21	10.6	M5x0.8	M5x0.8	28	1	M5x0.8	19	18	2.1	22.5	16.5	7.5	Φ2.6	10	22.5	4	M5x0.8	10.5	22.5	-
6A130M5	87	24	15.5	M5x0.8	M5x0.8	37.5	2.6	M5x0.8	28	24	2.6	34	20.5	11	Φ3.2	14	30.5	4	M5x0.8	16.5	29.5	-
6A13006	87	24	15.5	M5x0.8	1/8"	37.5	2.6	1/8"	28	24	2.6	34	20.5	11	Φ3.2	14	30.5	4	1/8"	16.5	29.5	-
6A23006	108	32.5	18.5	1/8"	1/8"	47.5	3.2	1/8"	36	29.5	3.2	41	27	13.5	Φ4.3	20	37.5	7	1/8"	20	37.5	2
6A23008	108	32.5	18.5	1/8"	1/4"	47.5	3.2	1/8"	36	29.5	3.2	41	27	13.5	Φ4.3	20	37.5	7	1/4"	20	37.5	2
6A33010	142	46	23.5	1/4"	3/8"	62	0	1/4"	50	37	3.2	64	30	18.5	Φ4.3	25	41.5	8	3/8"	33.5	45.5	0

## Manifold for 6A series



### Specification

Item\Manifold Model	6V0500M	6V100M	6V200M	6V300M
Fluid	Air(to be filtered by 40μm filter element)			
Temperature °C	-20~70			
Adaptable valve's series	6A0500 Series	6A100 Series	6A200 Series	6A300 Series

### Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

### Ordering code

#### 6V100M 5F □ Ordering code for manifold



① Model	6V0500M: 6V0500 Series manifold	6V100M: 6V100 Series manifold	6V200M: 6V200 Series manifold	6V300M: 6V300 Series manifold
② Number of stations	1F: 1 Station 2F: 2 Station 3F: 3 Station ..... 20F: 20 Station			
③ Thread type	Blank: PT / G: G Thread / T: NPT Thread			

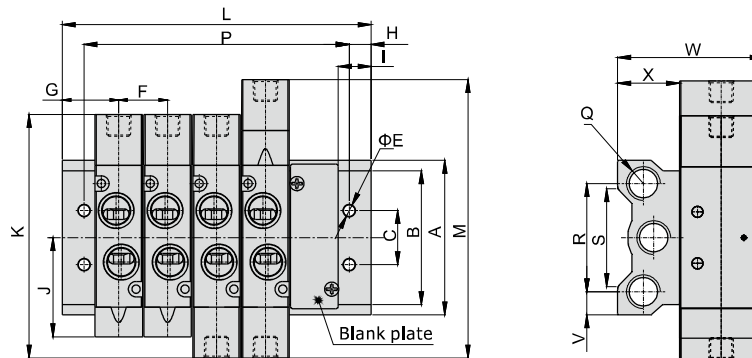
#### P-6V100M - R2 Ordering code for blank plate



① Model	6V0500M: 6V0500 Series manifold	6V100M: 6V100 Series manifold	6V200M: 6V200 Series manifold	6V300M: 6V300 Series manifold
② Code	R2: Blank plate for manifold			

[Note] 1. Manifold kits contains manifold, seal and screw; 2. Blank plate kits contains blank plate and screw.

### Dimensions



Model\Item	A	B	C	E	F	G	H	I	J	K	M	Q	R	S	V	W	X
6V0500M	46	32	16	4.5	11	15	5	9.5	22.5	55.5	64	1/8"	32	26	7	38	17
6V100M	57.5	43	20	4.5	16	17	5	9.5	33	75	87	1/4"	40	36	9	46	22
6V200M	60	52	21	4.5	19	18.5	5	9.5	38.5	94.5	108	1/4"	42	38	9	56.5	24
6V300M	85	75	26	4.5	23.5	24	5	12	54	124	142	3/8"	57	58	14	74	27

Model\Item	L																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6V0500M	30	41	52	63	74	85	96	107	118	129	140	151	162	173	184	195	206	217	228	239
6V100M	34	50	66	82	98	114	130	146	162	178	194	210	226	242	258	274	290	306	322	338
6V200M	37	56	75	94	113	132	151	170	189	208	227	246	265	284	303	322	341	360	379	398
6V300M	48	72	96	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480	504

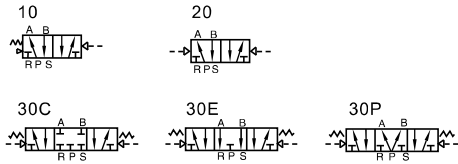
Model\Item	P																			
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F	20F
6V0500M	20	31	42	53	64	75	86	97	108	119	130	141	152	163	174	185	196	207	218	229
6V100M	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328
6V200M	27	46	65	84	103	122	141	160	179	198	217	236	255	274	293	312	331	350	369	388
6V300M	38	62	86	110	134	158	182	206	230	254	278	302	326	350	374	398	422	446	470	494

# Air valve(5/2 way, 5/3 way)

## 4A100 Series



### Symbol



### Specification

Model	4A110-M5 4A120-M5	4A130C-M5 4A130E-M5 4A130P-M5	4A110-06 4A120-06	4A130C-06 4A130E-06 4A130P-06
Fluid	Air(to be filtered by 40μm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=M5		In=Out=1/8"	
Orifice size(Cv) [Note4]	4A110-06,4A120-06:10,2mm <sup>2</sup> (Cv=0.6) 4A130C-06:8,6mm <sup>2</sup> (Cv=0,51)			
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4A110-M5:85 4A120-M5:140	165	4A110-06:85 4A120-06:140	165

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Product feature

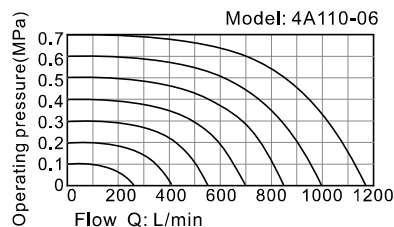
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

### Ordering code

① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4A: Air Valve(5/2, 5/3 way)	1: 100 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	M5: M5  06: 1/8"	No this code  Blank: PT G: G T: NPT

Please refer to P129 for manifold specification and the order way.

### Flow chart



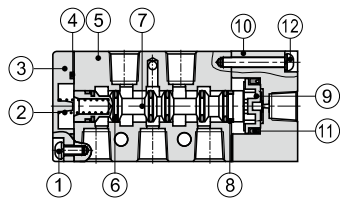
The data in flow rate chart are obtained from AirTAC lab.

# Air valve(5/2 way, 5/3 way)

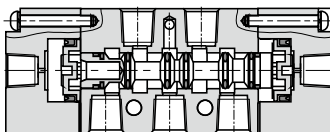
## 4A100 Series

### Inner structure

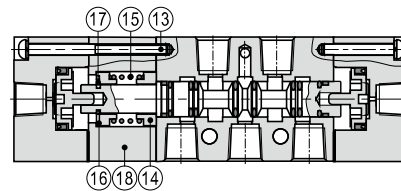
4A110



4A120



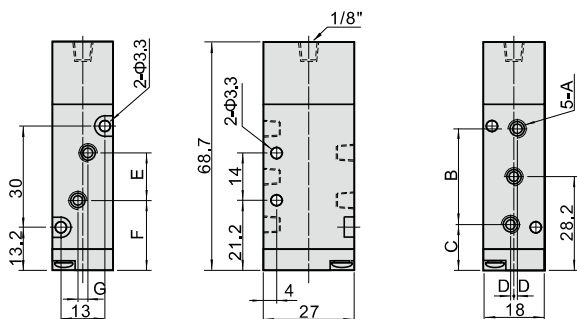
4A130C



No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Screw	3	Bottom cover	5	Body	7	Spool	9	Piston	11	O-ring	13	Screw	15	Return Spring
2	Spring	4	Bottom cover gasket	6	O-ring	8	Wear ring	10	Pilot body	12	Screw	14	Spring holder	16	Spring holder
														17	E Clip
														18	Side cover

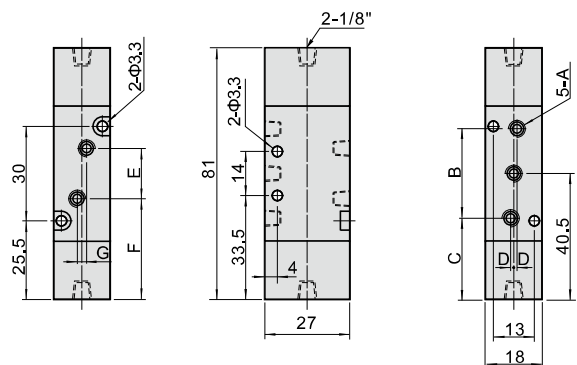
### Dimension

4A110



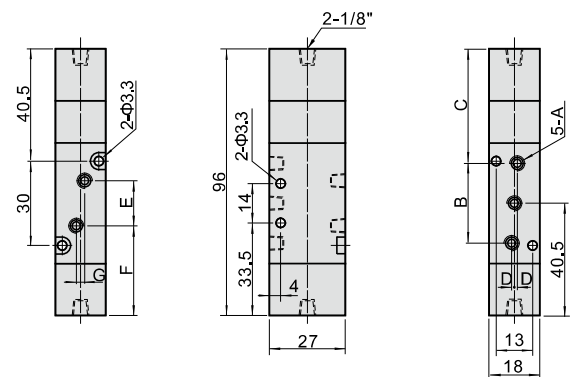
Model\Item	A	B	C	D	E	F	G
4A110-M5	M5x0.8	27	14.7	0	14	21.2	0
4A110-06	1/8"	28	14.2	1	16	20.2	3

4A120



Model\Item	A	B	C	D	E	F	G
4A120-M5	M5x0.8	27	27	0	14	33.5	0
4A120-06	1/8"	28	26.5	1	16	32.5	3

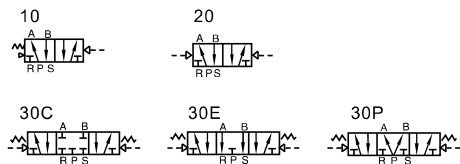
4A130



Model\Item	A	B	C	D	E	F	G
4A130-M5	M5x0.8	27	42	0	14	33.5	0
4A130-06	1/8"	28	41.5	1	16	32.5	3



### Symbol



### Specification

Model	4A210-06 4A220-06	4A230C-06 4A230E-06 4A230P-06	4A210-08 4A220-08	4A230C-08 4A230E-08 4A230P-08
Fluid	Air(to be filtered by 40µm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=Exhaust=1/8"		In=Out=1/4" Exhaust=1/8"	
Orifice size(Cv) [Note4]	4A210-08,4A220-08:17.0mm <sup>2</sup> (Cv=1.0) 4A230C-08:13.6mm <sup>2</sup> (Cv=0.8)			
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	5 cycle/sec	3 cycle/sec	5 cycle/sec	3 cycle/sec
Weight (g)	4A210-06:185 4A220-06:285	365	4A210-08:185 4A220-08:285	365

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Product feature

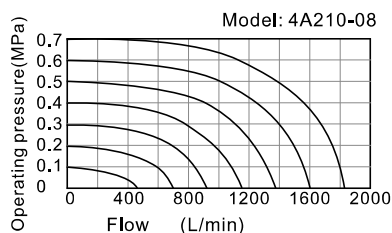
1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

### Ordering code

① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4A: Air Valve(5/2, 5/3 way)	2: 200 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	06: 1/8" 08: 1/4"	Blank: PT G: G T: NPT

Please refer to P129 for manifold specification and the order way.

### Flow chart



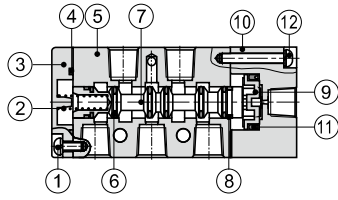
The data in flow rate chart are obtained from AirTAC lab.

# Air valve(5/2 way, 5/3 way)

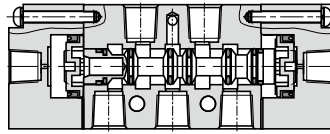
## 4A200 Series

### Inner structure

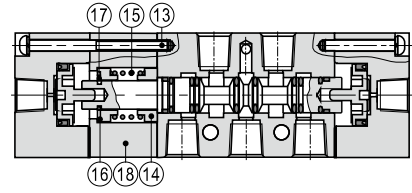
4A210



4A220



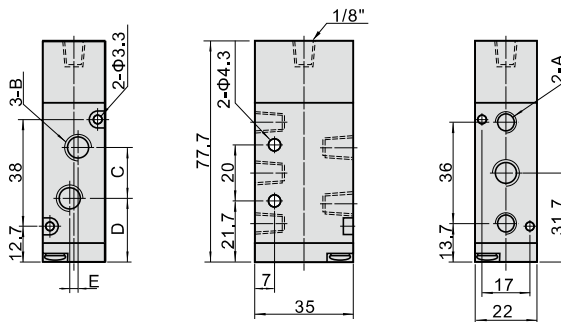
4A230C



No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Screw	3	Bottom cover	5	Body	7	Spool	9	Piston	11	O-ring	13	Screw	15	Return Spring
2	Spring	4	Bottom cover gasket	6	O-ring	8	Wear ring	10	Pilot body	12	Screw	14	Spring holder	16	Spring holder
														17	E Clip
														18	Side cover

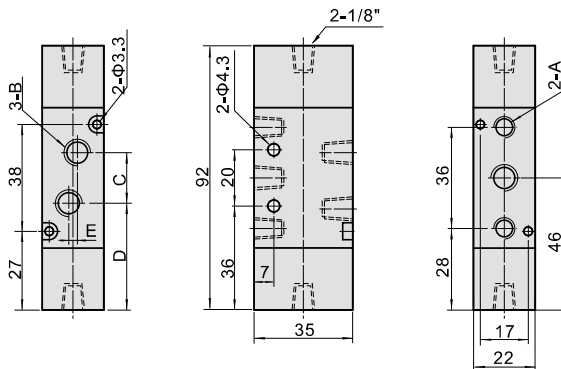
### Dimension

4A210



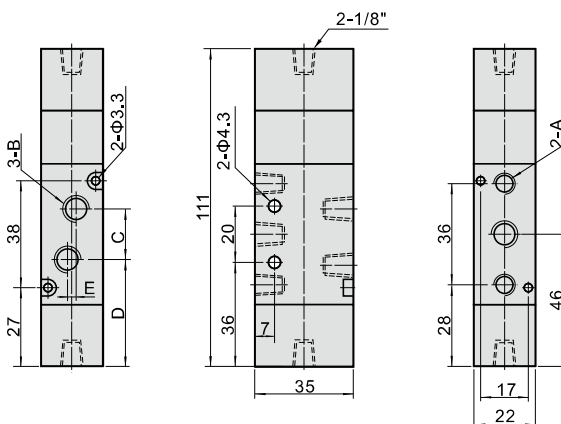
Model\Item	A	B	C	D	E
4A210-06	1/8"	1/8"	18	22.7	0
4A210-08	1/8"	1/4"	21	21.2	3

4A220



Model\Item	A	B	C	D	E
4A220-06	1/8"	1/8"	18	37	0
4A220-08	1/8"	1/4"	21	35.5	3

4A230



Model\Item	A	B	C	D	E
4A230-06	1/8"	1/8"	18	37	0
4A230-08	1/8"	1/4"	21	35.5	3

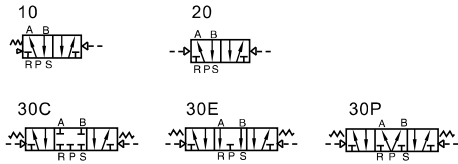


# Air valve(5/2 way, 5/3 way)

## 4A300 Series



### Symbol



### Specification

Model	4A310-08 4A320-08	4A330C-08 4A330E-08 4A330P-08	4A310-10 4A320-10	4A330C-10 4A330E-10 4A330P-10
Fluid	Air(to be filtered by 40μm filter element)			
Acting	Exterior control			
Port size [Note1]	In=Out=Exhaust=1/4"		In=Out=3/8" Exhaust=1/4"	
Orifice size(Cv) [Note4]	4A310-10,4A320-10:28.0mm <sup>2</sup> (Cv=1.65) 4A330C-10:21.3mm <sup>2</sup> (Cv=1.25)			
Valve type	5 port 2 position	5 port 3 position	5 port 2 position	5 port 3 position
Operating pressure	0.15~0.8MPa(21~114psi)			
Proof pressure	1.2MPa(175psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication [Note2]	Not required			
Max. frequency [Note3]	4 cycle/sec	3 cycle/sec	4 cycle/sec	3 cycle/sec
Weight (g)	4A310-08:275 4A320-08:365	505	4A310-10:275 4A320-10:365	505

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

### Ordering code

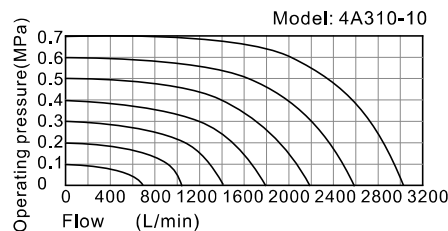
4A 3 10 10 □



① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4A: Air Valve(5/2, 5/3 way)	3: 300 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	08: 1/4" 10: 3/8"	Blank: PT G: G T: NPT

Please refer to P129 for manifold specification and the order way.

### Flow chart



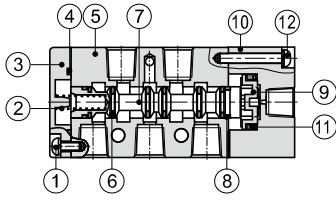
The data in flow rate chart are obtained from AirTAC lab.

# Air valve(5/2 way, 5/3 way)

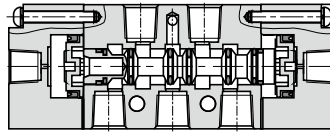
## 4A300 Series

### Inner structure

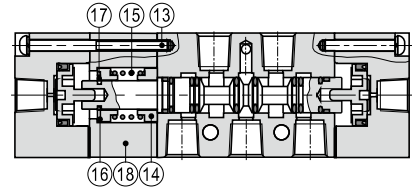
4A310



4A320



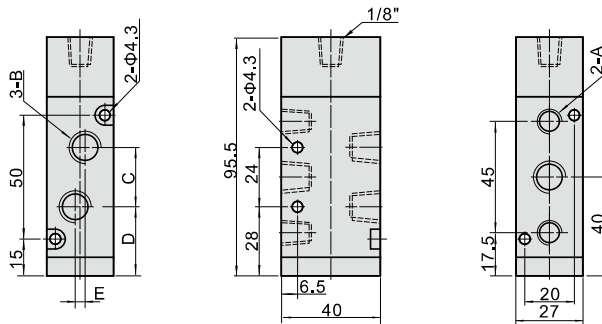
4A330C



No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Screw	3	Bottom cover	5	Body	7	Spool	9	Piston	11	O-ring	13	Screw	15	Return Spring
2	Spring	4	Bottom cover gasket	6	O-ring	8	Wear ring	10	Pilot body	12	Screw	14	Spring holder	16	Spring holder
														17	E Clip
														18	Side cover

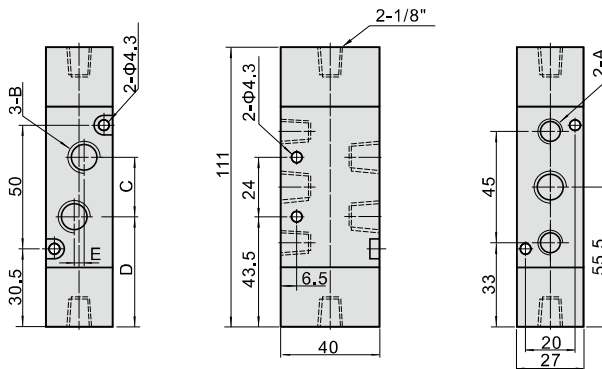
### Dimension

4A310



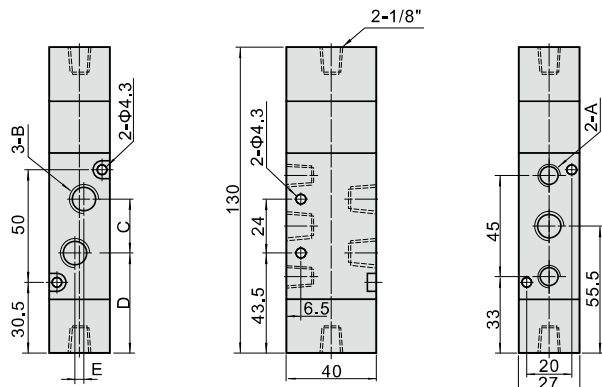
Model\Item	A	B	C	D	E
4A310-08	1/4"	1/4"	22	29	0
4A310-10	1/4"	3/8"	24	28	4

4A320



Model\Item	A	B	C	D	E
4A320-08	1/4"	1/4"	22	44.5	0
4A320-10	1/4"	3/8"	24	43.5	4

4A330



Model\Item	A	B	C	D	E
4A330-08	1/4"	1/4"	22	44.5	0
4A330-10	1/4"	3/8"	24	43.5	4

# Air valve(5/2 way, 5/3 way)

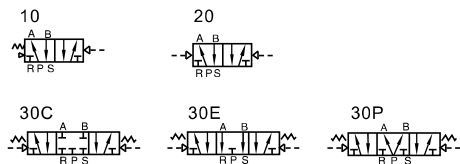
## 4A400 Series



### Specification

Model	4A410-15	4A420-15	4A430C-15	4A430E-15	4A430P-15
Fluid	Air(to be filtered by 40μm filter element)				
Acting	Exterior control				
Port size [Note1]	In=Out=Exhaust=1/2"				
Orifice size(Cv) [Note4]	4A410-15,4A420-15:48.0mm <sup>2</sup> (Cv=2.82) 4A430C-15:40.0mm <sup>2</sup> (Cv=2.35)				
Valve type	5 port 2 position		5 port 3 position		
Operating pressure	0.15~0.8MPa(21~114psi)				
Proof pressure	1.2MPa(175psi)				
Temperature	-20~70 °C				
Material of body	Aluminum alloy				
Lubrication [Note2]	Not required				
Max. frequency [Note3]	3 cycle/sec				
Weight (g)	555	685			735

### Symbol



[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency of no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Product feature

1. Structure in sliding column mode: good tightness and sensitive reaction.
2. Three position air valves have three kinds of central function for your choice.
3. Double air control valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Integrate with the manifold to save installation space.

### Ordering code

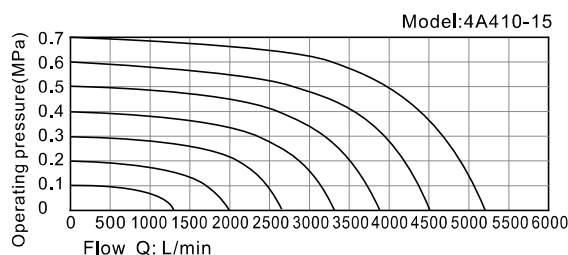
4A 4 10 15 □



① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4A: Air Valve(5/2, 5/3 way)	4: 400 Series	10: Single air control 5/2 way 20: Double air control 5/2 way 30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center	15: 1/2"	Blank: PT G: G T: NPT

Please refer to P129 for manifold specification and the order way.

### Flow chart



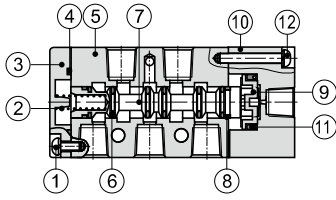
The data in flow rate chart are obtained from AirTAC lab.

# Air valve(5/2 way, 5/3 way)

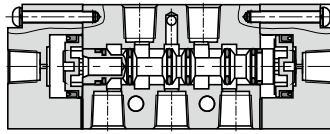
## 4A400 Series

### Inner structure

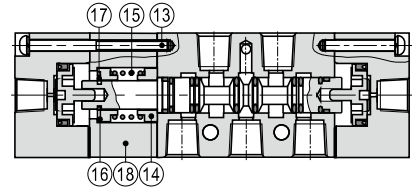
4A410



4A420



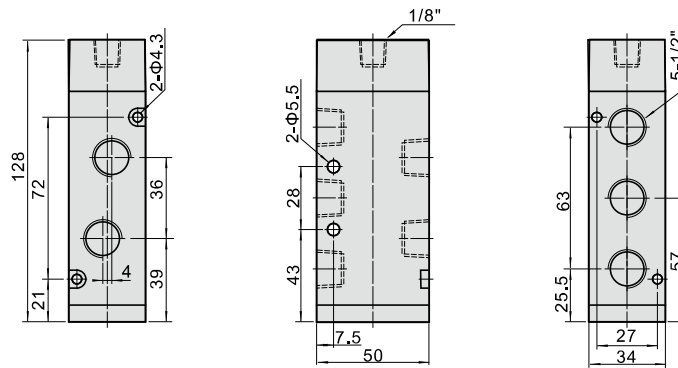
4A430C



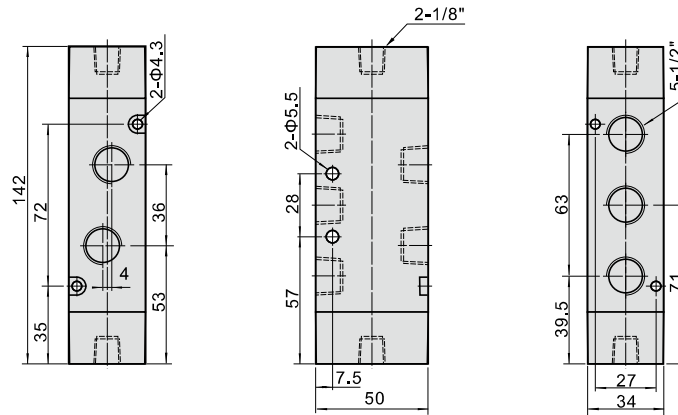
No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item	No.	Item
1	Screw	3	Bottom cover	5	Body	7	Spool	9	Piston	11	O-ring	13	Screw	15	Return Spring
2	Spring	4	Bottom cover gasket	6	O-ring	8	Wear ring	10	Pilot body	12	Screw	14	Spring holder	16	Spring holder
														17	E Clip
														18	Side cover

### Dimension

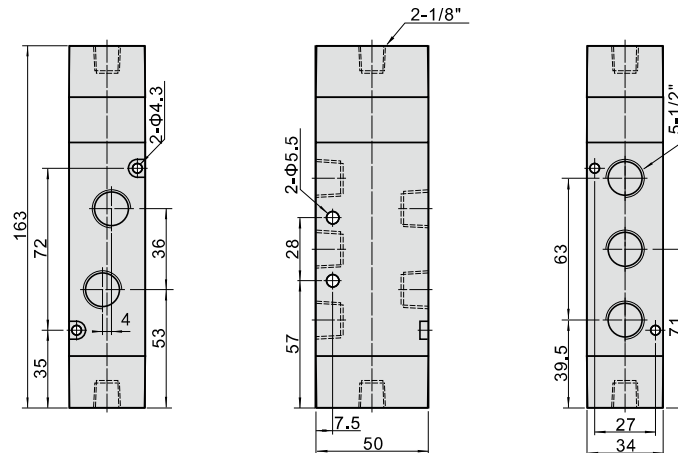
4A410



4A420



4A430



## Manifold



## Specification

Item/Manifold Model	100M	200M	300M
Fluid	Air(to be filtered by 40µm filter element)		
Temperature	-20~70°C		
Adoptable valve's series	3A100 Series	3A200 Series	3A300 Series

## Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost;
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring;
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

## Ordering code

### Ordering code for manifold

3V100M 5F □

① ② ③

① Model	② Number of stations	③ Thread type
3V100M: 100 Series Manifold	1F: 1 Station	Blank: PT G: G T: NPT
3V200M: 200 Series Manifold	2F: 2 Station	
3V300M: 300 Series Manifold	3F: 3 Station	
.....	.....	
	16F: 16 Station	

### Ordering code for blank plate

P-3V100M - R2

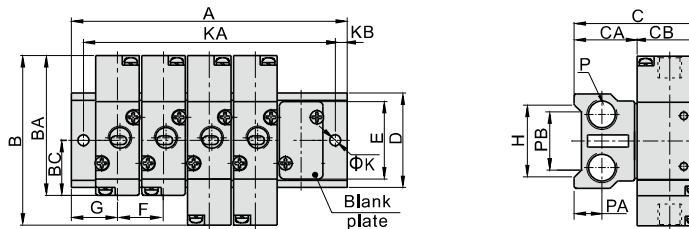
① ② ③

① Kits code	② Model	③ Code
P: Kits	3V100M: 100 Series Manifold 3V200M: 200 Series Manifold 3V300M: 300 Series Manifold	R2: Blank plate for manifold

- [Note] 1. Ordering code contains manifold and blank plate.  
2. Manifold kits contains manifold, seal and screw.  
3. Blank plate kits contains blank plate, and screw.

## Dimensions

### With 3A air valve



Model/Item	B	BA	BC	C	CA	CB	D	E	F	G	H	K	KB	P	PA	PB
3V100M	70	57.7	22.7	53	26	27	39	32	19	19	30	4.5	5	1/4"	11.5	22
3V200M	84	69.7	27.7	61	26	35	45	40	23	23	35	4.5	6	1/4"	11.5	25
3V300M	96	80.5	32.5	70	30	40	52	47	28	27	42	4.5	6	3/8"	13.5	28

Model/Item	A															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
3V200M	46	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391
3V300M	54	82	110	138	166	194	222	250	278	306	334	362	390	418	446	474

Model/Item	KA															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
3V100M	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
3V200M	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
3V300M	42	70	98	126	154	182	210	238	266	294	322	350	378	406	434	462

## Manifold



### Specification

Item/Manifold Model	100M	200M	300M	400M
Fluid	Air(to be filtered by 40μm filter element)			
Temperature	-20~70°C			
Adoptable valve's series	4A100 Series	4A200 Series	4A300 Series	4A400 Series

### Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost;
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring;
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

### Ordering code

#### Ordering code for manifold

**100M 5F □**

①    ②    ③

① Model	② Number of stations [Note1]	③ Thread type
100M: 100 Series Manifold 200M: 200 Series Manifold 300M: 300 Series Manifold 400M: 400 Series Manifold	1F: 1 Station 2F: 2 Station 3F: 3 Station ..... 16F: 16 Station	Blank: PT G: G T: NPT

[Note1] 100M, 200M series have a maximum of 16 stations ; 300M series have a maximum of 12 stations; 400M series have a maximum of 8 stations.

#### Ordering code for blank plate

**P-100M - R2**

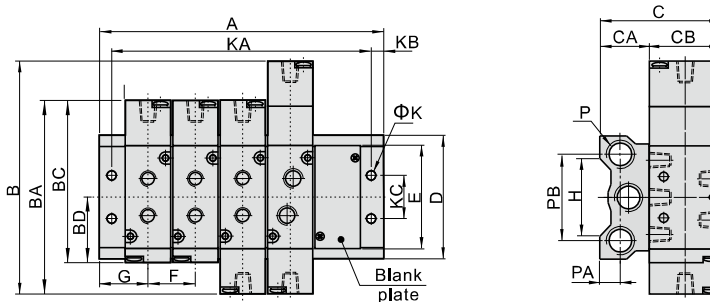
①    ②    ③

① Kits code	② Model	③ Code
P: Kits	100M: 100 Series Manifold 200M: 200 Series Manifold 300M: 300 Series Manifold 400M: 400 Series Manifold	R2: Blank plate for manifold

[Note] 1. Ordering code contains manifold and blank plate.  
2. Manifold kits contains manifold, seal and screw.  
3. Blank plate kits contains blank plate, and screw.

### Dimension

#### With 4A air valve



Model\Item	B	BA	BC	BD	C	CA	CB	D	E	F	G	H	K	KB	KC	P	PA	PB
100M=F	96	81	68.7	28	49	22	27	57.5	43	19	19	36	4.5	5	20	1/4"	10	40
200M=F	111	92	77.7	31.7	59	24	35	60	52	23	22	38	4.5	5	21	1/4"	10	42
300M=F	130	111	95.5	40	68	28	40	75	64	28	26	54	4.5	5	26	3/8"	13.5	53
400M=F	163	142	128	57	83	33	50	100	94	35	30.5	75	5.5	6	32	1/2"	15	68

Model\Item	A															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M=F	38	57	76	95	114	133	152	171	190	209	228	247	266	285	304	323
200M=F	44	67	90	113	136	159	182	205	228	251	274	297	320	343	366	389
300M=F	52	80	108	136	164	192	220	248	276	304	332	360	-	-	-	-
400M=F	61	96	131	166	201	236	271	306	-	-	-	-	-	-	-	-

Model\Item	KA															
	1F	2F	3F	4F	5F	6F	7F	8F	9F	10F	11F	12F	13F	14F	15F	16F
100M=F	28	47	66	85	104	123	142	161	180	199	218	237	256	275	294	313
200M=F	34	57	80	103	126	149	172	195	218	241	264	287	310	333	356	379
300M=F	42	70	98	126	154	182	210	238	266	294	322	350	-	-	-	-
400M=F	49	84	119	154	189	224	259	294	-	-	-	-	-	-	-	-



# ISO Standard air valve(5/2 way, 5/3 way)

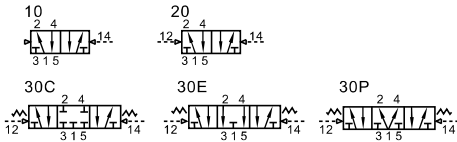
EAV200, 300, 400, 600 Series



## Specification

Model	200 Series	300 Series	400 Series	600 Series
Orifice size(Cv) mm <sup>2</sup>	32(Cv=1.8)	42(Cv=2.32)	69(Cv=3.85)	108(Cv=6.0)
Fluid	Air(to be filtered by 40μm filter element)			
Acting	Extend pilot			
Lubrication [Note1]	Not required			
Operating Pressure	Single air control	0.2~1.0MPa(2~10bar)(29~145psi)		
	Double air control	-0.09~1.0MPa(-0.9~10bar)(-13~145psi)		
Control pressure(external pilot)	0.2~1.0MPa(2~10bar)(29~145psi)			
Proof pressure	1.5MPa(15bar)(215psi)			
Temperature	-20~70°C			
Port size(manifold) [Note2]	1/4"	3/8"	1/2"	3/4"
Port size(end plate)	3/8"	1/2"	3/4"	1"
Installation size	ISO 5599-1 standard			

## Symbol



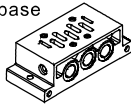
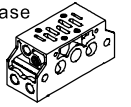
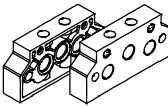
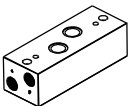
[Note1] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note2] PT thread and G thread are available.

## Product feature

1. Succinct appearance and compact conformation.
2. The installation size conforms to ISO 5599/1 standard.
3. Because of the special seals, the feature are large flow rate and long lifetime.
4. External pilot, can be used without electrical.
5. You need install the valve together with the sub-base. There are individual and manifold sub-base.
6. There are various connection and installation method for manifold. It is easy to use.
7. The manifold of 200\300\400 series have the function of exhaust throttling, so no need to connect another throttle valve.
8. Because of be used external pilot, the working pressure of double air control valve can be zero or vacuum.

## Ordering code

Ordering code of manifold		ESV 20 1M □ □ □					
		①	②	③	④	⑤	⑥
① Model	② Code	③ Manifold type		④ Thread type	⑤ External pilot port type		⑥ Port position type
ESV: ISO standard solenoid valve	20: 200 Series 30: 300 Series 40: 400 Series 60: 600 Series	1M: Individual sub-base 		Blank: PT G: G	Blank: Individual pilot port		Blank: Side port B: Bottom Port
		2M: Manifold sub-base 			Blank: Individual pilot port W: Centralized pilot port		Blank: Left side port R: Right side port B: Bottom Port
		3M: End plate kit 			No this code		No this code
	60: 600 Series	4M: Side port block 		No this code		Blank: Left side port R: Right side port	

Note:1. For the same model, the port size of the end-plate is bigger than the sub-base ( For example ESV202M, the port size of sub-base is 1/4", and the port size of end plate is 3/8").

2. Only individual pilot port is available for individual sub-base.
3. The manifold sub-base must be used with end plate kit, individual pilot port and centralized pilot port can be mixed.
4. 600 series individual sub-base only has side port, 600 series manifold sub-base only has individual pilot port and bottom port.
5. Only 600 series have side port block.

# ISO Standard air valve(5/2 way, 5/3 way)

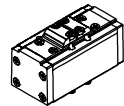
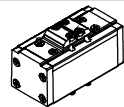
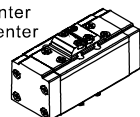
EAV200, 300, 400, 600 Series

## Ordering code

Ordering code of valve

**EAV 2 10**

① ② ③

① Model	② Code	③ Valve type
EAV: ISO standard air valve	2: 200 Series 3: 300 Series 4: 400 Series 6: 600 Series	10: Single air control 5/2 way 
		20: Double air control 5/2 way 
		30C: Double air control 5/3 way closed center 30E: Double air control 5/3 way exhaust center 30P: Double air control 5/3 way pressure center 

Ordering code of accessories

**P-ESV200M - R2**


① ② ③

① Accessories code	② Code	③ Accessories type
P: Unit accessories	ESV200M: 200 Series manifold ESV300M: 300 Series manifold ESV400M: 400 Series manifold ESV600M: 600 Series manifold	R2: Blank plate

Ordering code of cover plate

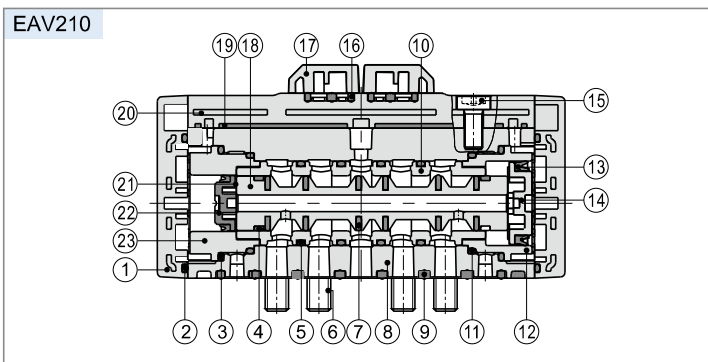
**P-EAV210 - R1**

① ② ③

① Accessories code	② Adapt production	③ Accessories type
P: Unit accessories		R1: Cover plate  With screw

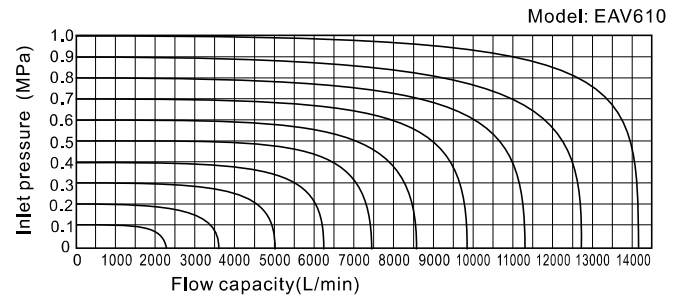
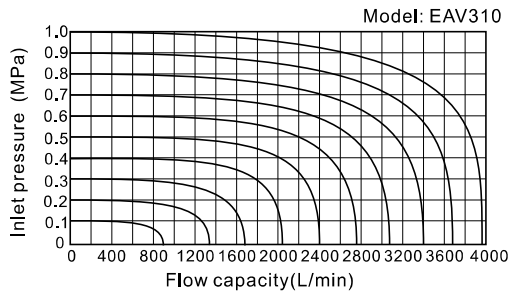
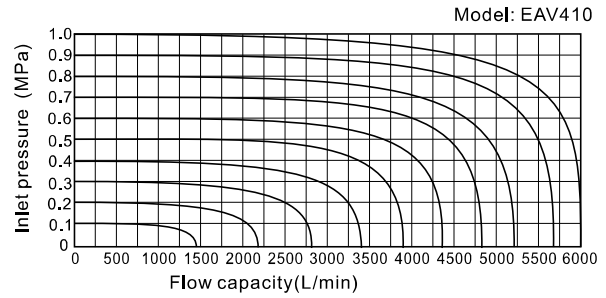
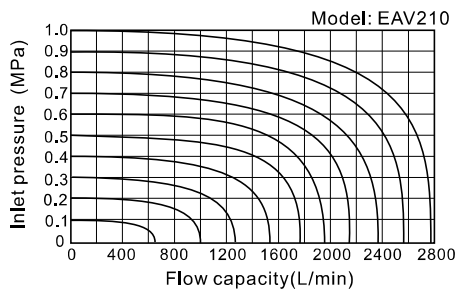
Note: 600 series don't have cover plate.

## Inner structure



NO.	Item	NO.	Item	NO.	Item
1	Bottom cover	9	Gasket	17	Cover plate
2	O-ring	10	Spacer	18	Spool
3	O-ring	11	O-ring	19	Upper cover gasket
4	Wear ring	12	Big piston sheath	20	Upper cover
5	O-ring	13	Big piston O-ring	21	Small piston
6	Screw	14	Big piston	22	Small piston O-ring
7	O-ring	15	Screw	23	Small piston sheath
8	Body	16	Gasket		

### Flow chart

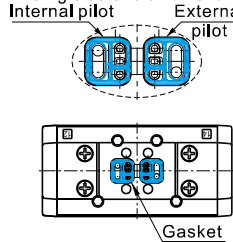


### Installation and operation(For 200, 300, 400 series)

#### 1. How to turn ESV series solenoid valve to EAV series air control valve

1.1. To turn ESV series solenoid valve (except 600 series) to EAV series air control valve, you must order cover plate first (the ordering code is P-EAV210-R1), then replace the coil unit and the pilot body with cover plate. The different gasket mounting can create different EAV air valve type as shown below.

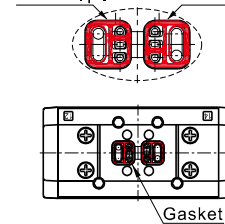
#### 1.2. Single solenoid valve turn to single air control valve:



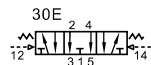
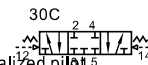
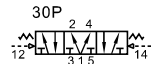
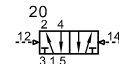
- Unload the cover plate of "12" end, mounted the gasket as internal pilot, then mounted the cover plate and screw.
- Unload the pilot valve of "14" end, mounted the gasket as external pilot, and replace the pilot valve with the cover plate, then mounted screw.
- After above two steps finished, single solenoid valve has been turned to single air control valve.



#### 1.3. Double solenoid valve turn to double air control valve:



- Unload the two pilot valves of "12", "14" ends, mounted the two gaskets as external pilot and replace the pilot valve with the cover plate, then mounted screw.
- After above step finished, double solenoid valve has been turned to single air control valve.



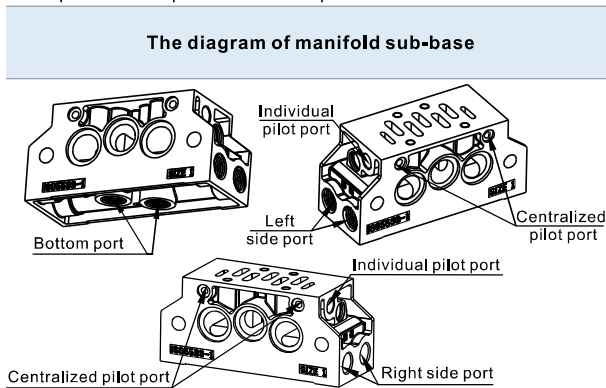
#### 2. The classification and selection of the parallel manifold sub-base

- According to the direction of pilot air supply, we can divide the sub-base manifold into two types: the individual pilot and centralized pilot.
- If you select the individual pilot, the fitting must be connected to the individual pilot ports. If you select the centralized pilot type, the fitting must be connected to the centralized pilot ports.
- If you use parallel manifold, all of the manifold must be used the same pilot type: such as, all of them are the individual pilot type, or all of them are the centralized pilot type.

\*Note: Only when you use the external pilot type, you can select the individual pilot or centralized pilot.

When you use the internal pilot type, the pilot ports on the manifold are ineffective.

#### 3. The position and specification of the parallel manifold sub-base:



Port status of different manifold sub-base

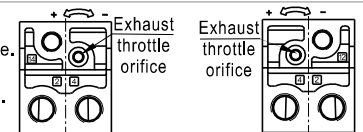
Port name	Left side port	Right side port	Bottom port	Centralized pilot port	Individual pilot port
Ordering code					
ESV202MG	Use	Unused	Unused	Unused	Use
ESV202MGR	Unused	Use	Unused	Unused	Use
ESV202MGB	Unused	Unused	Use	Unused	Use
ESV202MGW	Use	Unused	Unused	Use	Unused
ESV202MGWR	Unused	Use	Unused	Use	Unused
ESV202MGWB	Unused	Unused	Use	Use	Unused

Note: Please seal the bottom port by plug, when it is unused.

The above list is an example of 200M series' ordering code, the other series is follow the same pattern, only need to change the series code.

#### 4. Exhaust throttle function

- The manifold has exhaust throttle function, the below picture shows the position of the exhaust throttle orifices on each side.
- Use allen key to adjust the screw.
- Rotate the screw clockwise to reduce the exhaust orifice, rotate the screw counter-clockwise to enlarge the exhaust orifice.



Manifold right side

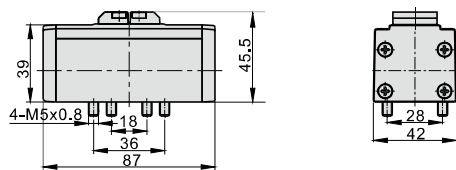
Manifold left side

# ISO Standard air valve(5/2 way, 5/3 way)

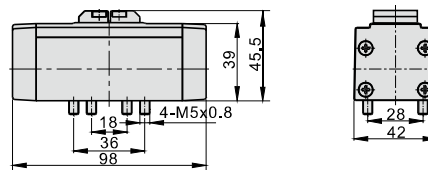
EAV200, 300, 400, 600 Series

## Dimensions of valves

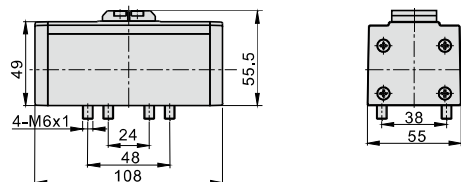
EAV210\EAV220



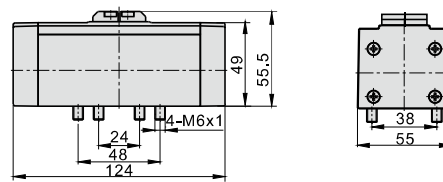
EAV230



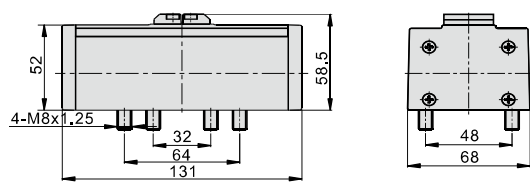
EAV310\EAV320



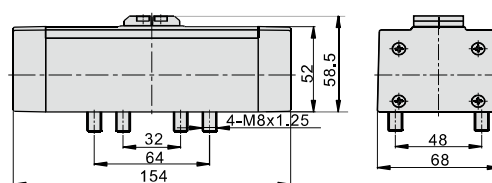
EAV330



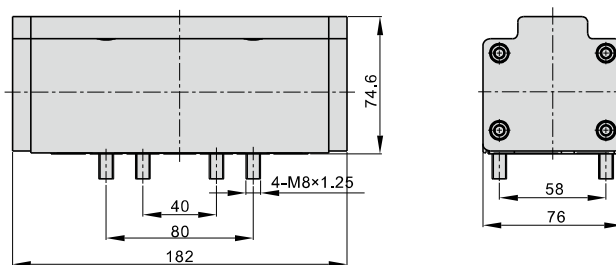
EAV410\EAV420



EAV430



EAV610\EAV620\EAV630



## Dimensions of manifold

The dimensions of manifold are the same as ESV series's, please refer to ESV series's dimensions for details.

# ISO Standard air valve(5/2 way, 5/3 way)

## EAV200, 300, 400, 600 Series

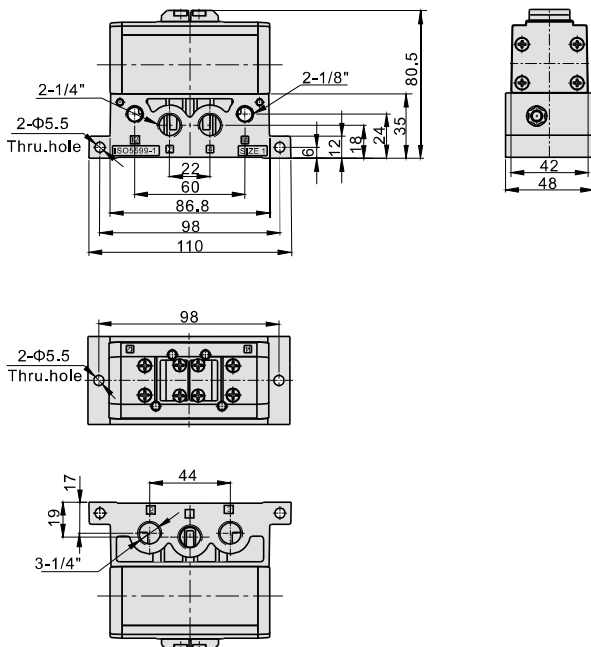
### Valves used with manifolds and their dimensions

1. EAV series valve must be used with the manifolds, the details are below:

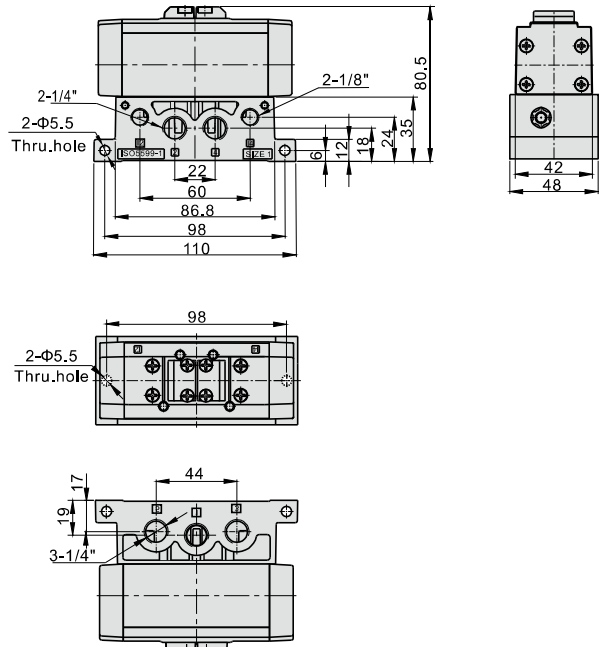
Manifolds	Valves	
	EAV210\EAV220 EAV310\EAV320 EAV410\EAV420 EAV610\EAV620	EAV230 EAV330 EAV430 EAV630
ESV201M ESV301M ESV401M ESV601M	EAV210\EAV220+ESV201M EAV310\EAV320+ESV301M EAV410\EAV420+ESV401M EAV610\EAV620+ESV601M	EAV230+ESV201M EAV330+ESV301M EAV430+ESV401M EAV630+ESV601M
ESV202M+ESV203M ESV302M+ESV303M ESV402M+ESV403M	EAV210\EAV220+ESV202M+ESV203M EAV310\EAV320+ESV302M+ESV303M EAV410\EAV420+ESV402M+ESV403M	EAV230+ESV202M+ESV203M EAV330+ESV302M+ESV303M EAV430+ESV402M+ESV403M
ESV602M+ESV603M+ESV604M	EAV610\EAV620+ESV602M+ESV603M+ESV604M	EAV630+ESV602M+ESV603M+ESV604M

2. The dimensions of valve with manifolds

#### EAV210/EAV220+ESV201M



#### EAV230+ESV201M





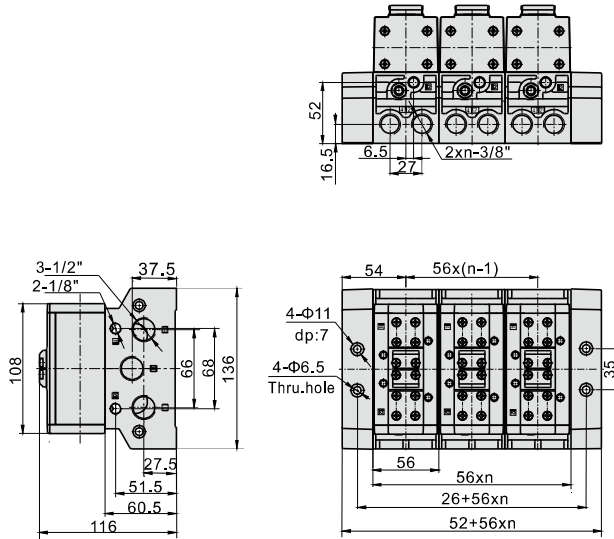


# ISO Standard air valve (5/2 way, 5/3 way)

## EAV200, 300, 400, 600 Series

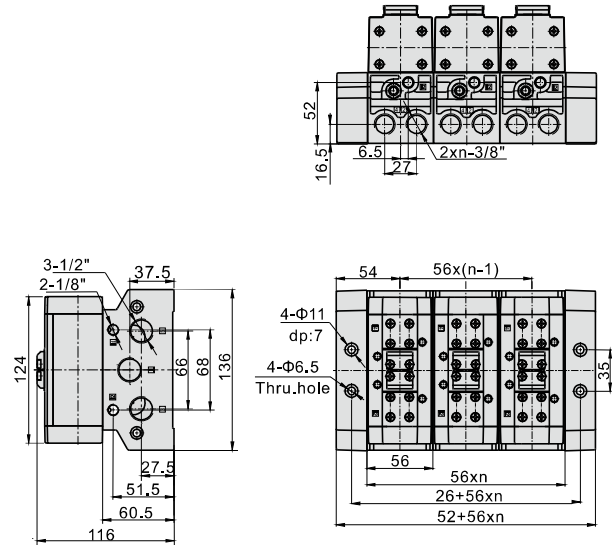
### EAV310/EAV320+ESV302M+ESV303M

Note: "n" means the number of stations.

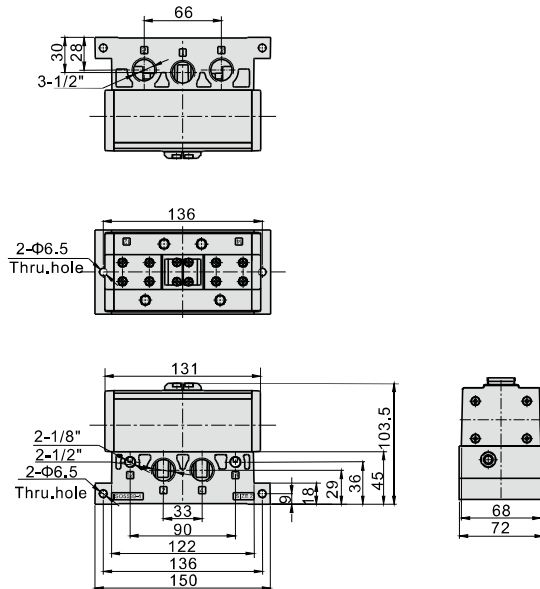


### EAV330+ESV302M+ESV303M

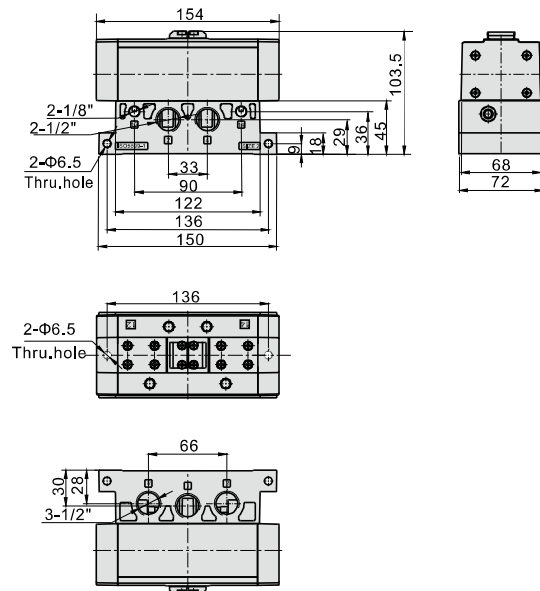
Note: "n" means the number of stations.



### EAV410/EAV420+ESV401M



### EAV430+ESV401M

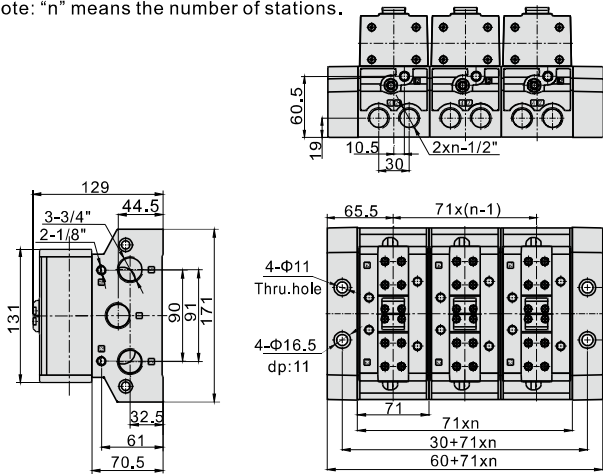


# ISO Standard air valve (5/2 way, 5/3 way)

## EAV200, 300, 400, 600 Series

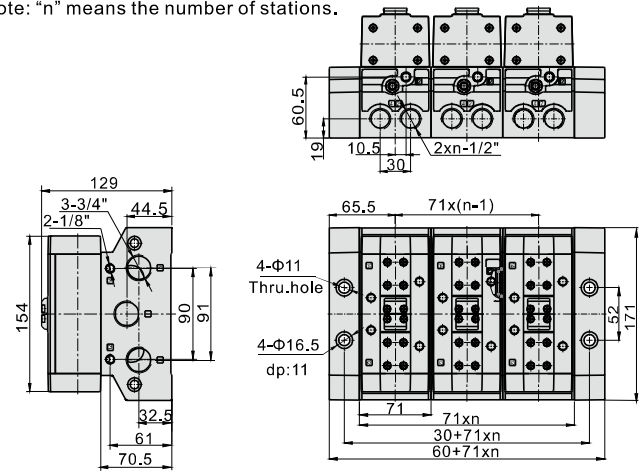
### EAV410/EAV420+ESV402M+ESV403M

Note: "n" means the number of stations.

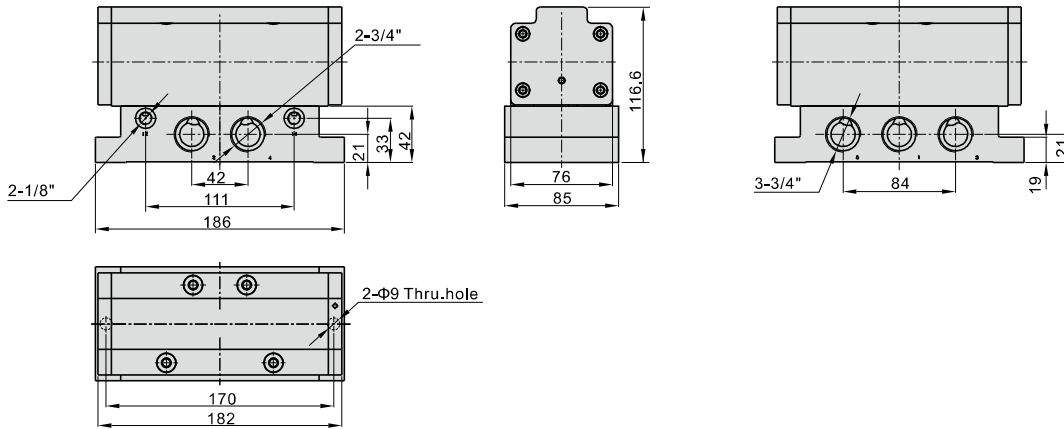


### EAV430+ESV402M+ESV403M

Note: "n" means the number of stations.

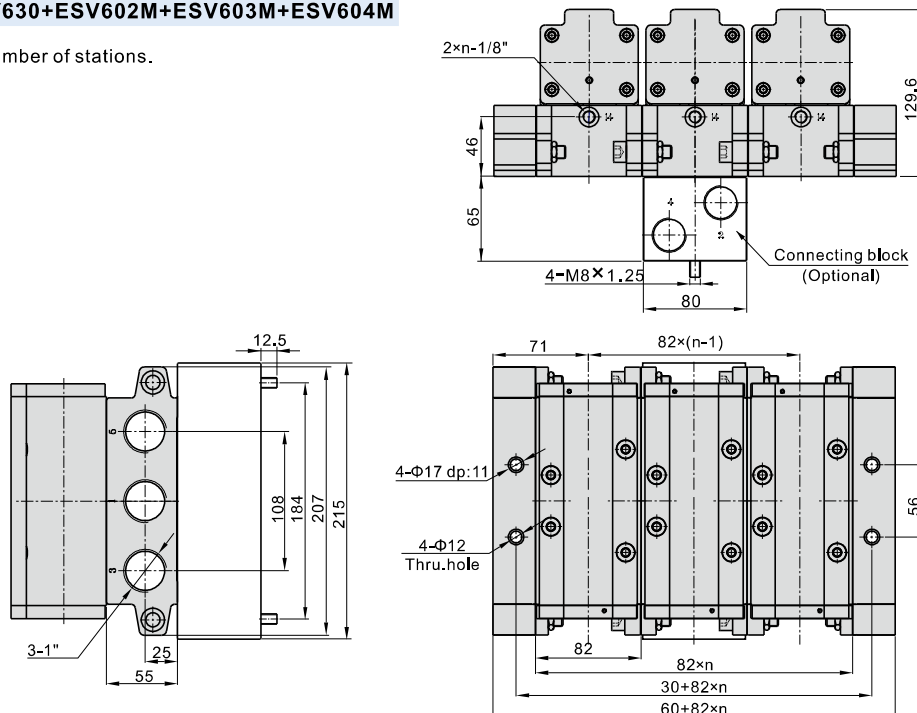


### EAV610/EAV620/EAV630+ESV601M



### EAV610/EAV620/EAV630+ESV602M+ESV603M+ESV604M

Note: "n" means the number of stations.





# Manual, mechanical and other valves

## Compendium of Manual, mechanical and other valve

P139	Product feature	Photo	141	Product feature	Photo
4H Series Hand lever valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Manual operation</li> <li>•Panel-mounting</li> <li>•5/2way、5/3 way</li> </ul>		3L Series Push-pull valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Manual operation</li> <li>•Panel-mounting</li> <li>•3/2 way</li> </ul>	
P142	Product feature	Photo	P143	Product feature	Photo
4L Series Push-pull valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Manual operation</li> <li>•Panel-mounting</li> <li>•5/2 way</li> </ul>		HSV Series Hand slide valve	<ul style="list-style-type: none"> <li>•There are several ways of internal and external thread connection</li> <li>•Hand slide operation</li> <li>•3/2 way</li> </ul>	
P144	Product feature	Photo	P146	Product feature	Photo
4HV Series Hand lever valve	<ul style="list-style-type: none"> <li>•Body installation and Panel installation</li> <li>•Manual operation</li> <li>•With lock and without lock are optional</li> <li>•4/2 way、4/3 way</li> </ul>		S3 Series Control valve	<ul style="list-style-type: none"> <li>•Shut-off structure</li> <li>•Manual control or mechanical control</li> <li>•Several control set are optional</li> <li>•Multi-mounting</li> <li>•3/2 way</li> </ul>	
P149	Product feature	Photo	P152	Product feature	Photo
M3 Series Control valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Manual control or mechanical control</li> <li>•Several control set are optional</li> <li>•Multi-mounting</li> <li>•3/2 way</li> </ul>		M5 Series Control valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Manual control or mechanical control</li> <li>•Several control set are optional</li> <li>•Multi-mounting</li> <li>•5/2 way</li> </ul>	
P155	Product feature	Photo	P160	Product feature	Photo
CM3 Series Control valve	<ul style="list-style-type: none"> <li>•Shut-off structure</li> <li>•Manual control or mechanical control</li> <li>•Several control set are optional</li> <li>•Multi-mounting</li> <li>•3/2 way、5/3 way</li> </ul>		ZM3 Series Control valve	<ul style="list-style-type: none"> <li>•Sliding column structure</li> <li>•Mechanical control</li> <li>•Several control set are optional</li> <li>•Multi-mounting</li> <li>•3/2 way</li> </ul>	
P162	Product feature	Photo	P164	Product feature	Photo
3F Series 3FM Series 4F Series Foot pedal valve	<ul style="list-style-type: none"> <li>•3F,3FM:Direct acting(NC)</li> <li>•4F: Direct acting</li> <li>•Foot pedal control</li> <li>•With lock and without lock are optional</li> <li>•3F、3FM: 3/2 way</li> <li>•4F: 5/2way</li> </ul>		ASC Series Flow control valve	<ul style="list-style-type: none"> <li>•Allows air to exhaust and cut off air flow</li> <li>•Multi-mounting</li> <li>•100、200、300 Series</li> </ul>	
P165	Product feature	Photo	P166	Product feature	Photo
NRV Series Non-return valve	<ul style="list-style-type: none"> <li>•Large valid area of section</li> <li>•Compact structure</li> <li>•Excellence hermetical capability</li> </ul>		PCV Series Pilot non-return valve	<ul style="list-style-type: none"> <li>•Fitting joint and thread are optional for pilot port</li> </ul>	

## Installation and Application



1. Before installing, be sure the valve hasn't been damaged via transportation.
2. It's suggested to use the medium lubricated by 40μm filter element. Be aware of the flow direction and port size.
3. Please notice whether the installation condition accords with technical requirements (such as "working pressure" and "scope of application temperature"), then the equipment can be installed and used.
4. Take measure to avoid vibration and frozen.
5. Before using the fittings and tubes make sure they are clean. When connecting to fittings, be sure the PTFE Thread seal tape is used correctly.
6. To keep the dust away, Never forget to install dirt-proof boot in air intake and outlet during dismounting.

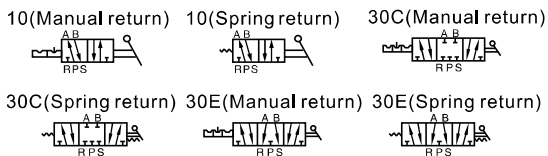


# Hand lever valve (5/2 way, 5/3 way)

## 4H Series



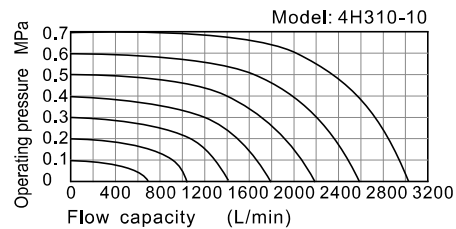
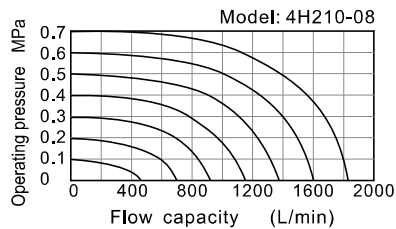
### Symbol



### Product feature

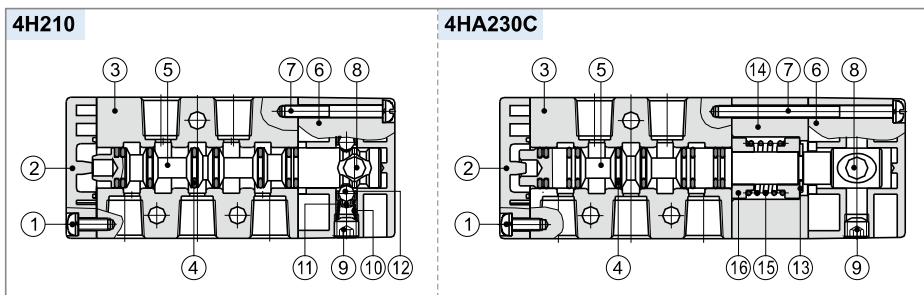
1. Manual operation, smooth actuation, and exact and reliable orientation.
2. Sliding column structure has good tightness and light weight and is easy to install and dismount.
3. Internal hole adopts special processing technology which has little attrition friction, long service life.
4. No need to add oil for lubrication.
5. Panel-mounting makes it convenient to install and apply.

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Inner structure



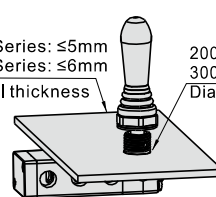
No.	Item	No.	Item
1	Round head screw	9	Stop screw
2	Bottom cover	10	Spring
3	Body	11	Steel ball jacket
4	O-ring	12	Steel ball
5	Spool	13	E clip
6	Top cover	14	Side cover
7	Round head cover	15	Spring
8	Axle	16	Spring holder

### Installation

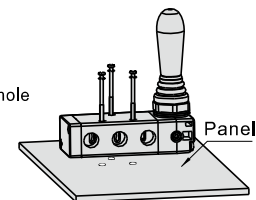
1. 5/3 way manual return hand lever valve is positioned by steel ball, which is convenient to switch. Please apply the proper force to avoid the position mismatch and misoperation.
2. When installed by panel, disassemble the gasket according to the practical requirement.
3. Below is the installation method for reference.  
Note: Please give your attention on the panel thickness and hole dimension when installed by panel.

200 Series: ≤5mm  
300 Series: ≤6mm  
Panel thickness

200 Series: Φ16  
300 Series: Φ20  
Dia. of Installation hole



Panel Installation



Body Installation

### Specification

Model	210-06	230-06	210-08	230-08	310-08	330-08	310-10	330-10
Fluid	Air (to be filtered by 40 μm filter element)							
Operating	Manual control direct acting type							
Port size[Note 1]	In=Out =Exhaust=1/8"		In=Out=1/4"; Exhaust=1/8"		In=Out =Exhaust=1/4"		In=Out=3/8"; Exhaust=1/4"	
Orifice size(Cv) [Note3]	4H210-08:17.0mm <sup>2</sup> (Cv=1.0) 4H230C-08:13.6mm <sup>2</sup> (Cv=0.8)				4H310-10:28.0mm <sup>2</sup> (Cv=1.65) 4H330C-10:21.3mm <sup>2</sup> (Cv=1.25)			
Valve type	5/2 way	5/3 way	5/2 way	5/3 way	5/2 way	5/3 way	5/2 way	5/3 way
Lubrication [Note2]	Not required							
Pressure range	0~1.0MPa(0~145psi)							
Proof pressure	1.5MPa(215psi)							
Temperature	-20~70°C							
Material of body	Aluminum alloy							
Operating angle	±15°	±8.5°	±15°	±8.5°	±18°	±10°	±18°	±10°

[Note1] PT thread, G thread and NPT thread are available;

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

[Note3] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Ordering code

4H 2 30C 08 □

① ② ③ ④ ⑤

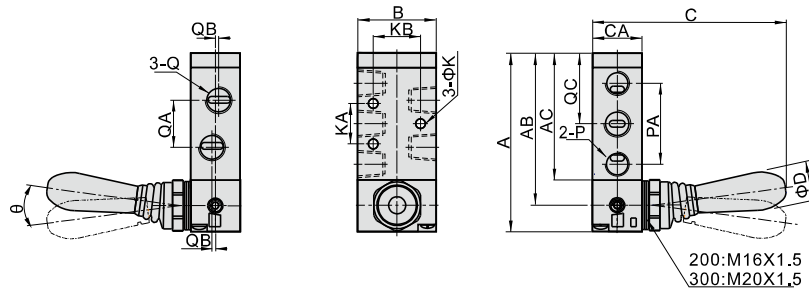
① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4H: Manual return 4HA: Spring return	2: 200 Series 3: 300 Series	10: 5/2 Way 30C: 5/3 Way closed center 30E: 5/3 Way exhaust center	06: 1/8" 08: 1/4" 08: 1/4" 10: 3/8"	Blank: PT G: G T: NPT

# Hand lever valve (5/2 way, 5/3 way)

## 4H Series

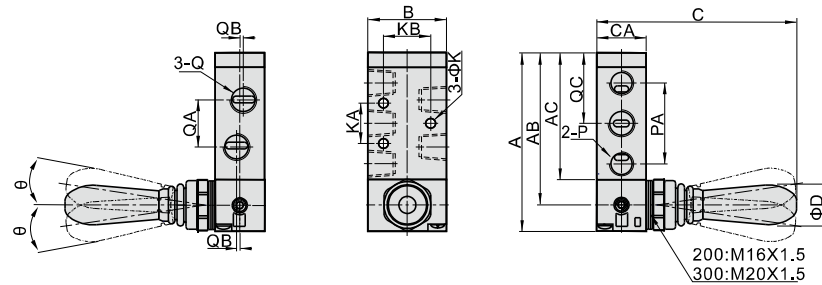
### Dimensions

#### 4H210\310、4HA210\310



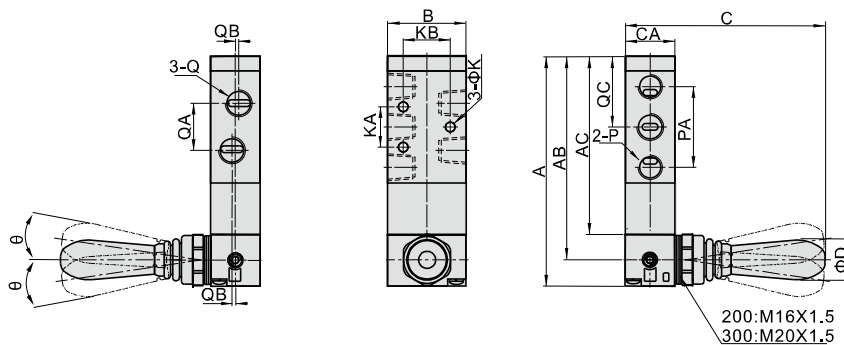
Model\Item	A	AB	AC	B	C	CA	D	K	KA	KB	P	PA	Q	QA	QB	QC	⊙
4H210-06 4HA210-06	81.5	69.5	57.5	35	90	22	18	4.3	20	23.5	1/8"	36	1/8"	18	-	32.5	15
4H210-08 4HA210-08	81.5	69.5	57.5	35	90	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	15
4H310-08 4HA310-08	101	87	73	40	93.5	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	18
4H310-10 4HA310-10	101	87	73	40	93.5	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	18

#### 4H230、4H330



Model\Item	A	AB	AC	B	C	CA	D	K	KA	KB	P	PA	Q	QA	QB	QC	⊙
4H230C-06 4H230E-06	81.5	69.5	57.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/8"	18	-	32.5	8.5
4H230C-08 4H230E-08	81.5	69.5	57.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4H330C-08 4H330E-08	101	87	73	40	94	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	10
4H330C-10 4H330E-10	101	87	73	40	94	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	10

#### 4HA230、4HA330



Model\Item	A	AB	AC	B	C	CA	D	K	KA	KB	P	PA	Q	QA	QB	QC	⊙
4HA230C-06 4HA230E-06	100.5	88.5	76.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/8"	18	-	32.5	8.5
4HA230C-08 4HA230E-08	100.5	88.5	76.5	35	90.5	22	18	4.3	20	23.5	1/8"	36	1/4"	21	1.5	32.5	8.5
4HA330C-08 4HA330E-08	120	106	92	40	94	27	18	4.3	24	27.5	1/4"	45	1/4"	22	-	40.5	10
4HA330C-10 4HA330E-10	120	106	92	40	94	27	18	4.3	24	27.5	1/4"	45	3/8"	24	2	40.5	10

# Push-pull valve(3/2way)

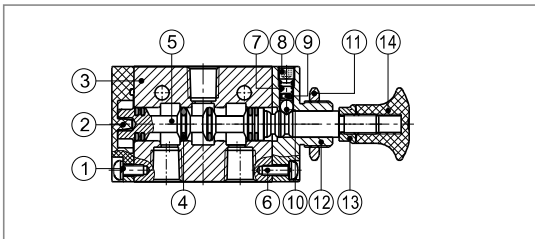
## 3L Series



### Symbol



### Inner structure



No.	Item	No.	Item	No.	Item
1	Round head screw	6	Round head screw	11	Hexagon nut
2	Bottom cover	7	Spring	12	Top cover
3	Body	8	Stop screw	13	Safety nut
4	O-ring	9	Spring holder	14	Hand grip
5	Spool	10	Steel ball		

### Specification

Model	3L110-06	3L210-06	3L210-08	3L310-08	3L310-10
Fluid	Air (to be filtered by 40 μm filter element)				
Operating	Manual control direct acting type				
Port size[Note1]	1/8"		1/4"		3/8"
Orifice size(Cv) [Note3]	10.2mm <sup>2</sup> (Cv=0.6)	3L210-08:17.0mm <sup>2</sup> (Cv=1.0)		3L310-10:28.0mm <sup>2</sup> (Cv=1.65)	
Valve type	3/2 Way				
Lubrication [Note2]	Not required				
Pressure range	0~1.0MPa(0~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70°C				
Material of body	Aluminum alloy				

[Note1] PT thread, G thread and NPT thread are available;

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span.

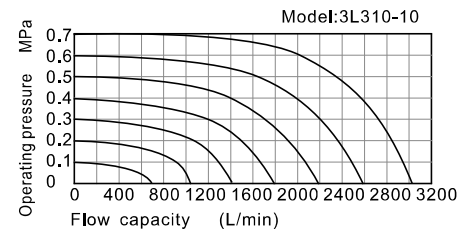
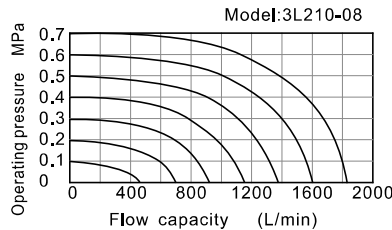
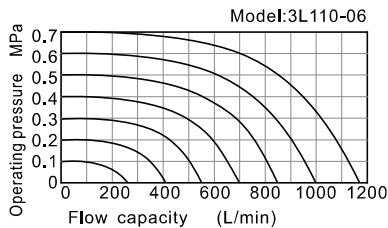
It is suggested to use ISO VG32 lubricant or the oil with the same grade.

[Note3] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Ordering code

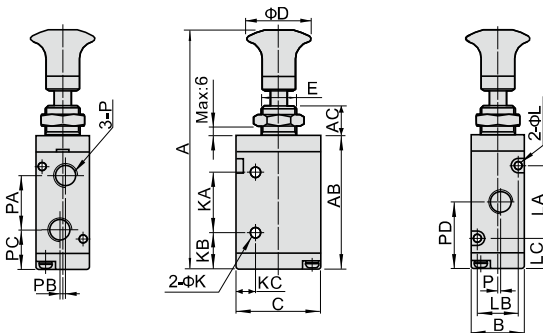
3L 2 10 08 □				
① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
3L: 3 port 2 position push-pull valve	1: 100 Series	10: 2 position	06: 1/8"	Blank: PT G: G T: NPT
	2: 200 Series		06: 1/8"	
	3: 300 Series		08: 1/4"	
			08: 1/4"	
			10: 3/8"	

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Dimensions



Item\Model	3L11006	3L21006	3L21008	3L31008	3L31010
A	87	98	98	106.5	106.5
AB	47.8	57.8	57.8	66.5	66.5
AC	10	10	10	10	10
B	18	22	22	27	27
C	27	35	35	40	40
D	25	25	25	25	25
E	M12×0.75	M14×1.0	M14×1.0	M16×1.0	M16×1.0
K	3.1	4.3	4.3	4.3	4.3
KA	21	25	25	30	30
KB	13	16	16	18	18
KC	7.7	8	8	10	10
L	3.3	3.3	3.3	4.3	4.3
LA	19	30	30	35	35
LB	13	17	17	20	20
LC	14	13.5	13.5	15.5	15.5
P	1/8"	1/8"	1/4"	1/4"	3/8"
PA	16	22.5	22.5	24	24
PB	2	0	0	0	0
PC	15.5	17.5	17.5	21	21
PD	24.5	28.5	28.5	33	33
PE	1	0	1.5	0	2



# Push-pull valve(5/2way)

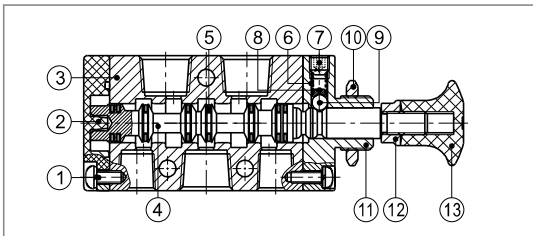
## 4L Series



### Symbol



### Inner structure



No.	Item	No.	Item	No.	Item
1	Round head screw	6	Spring	11	Top cover
2	Bottom cover	7	Stop screw	12	Safety nut
3	Body	8	Spring holder	13	Hand grip
4	Spool	9	Steel ball		
5	O-ring	10	Hexagon nut		

### Specification

Model	4L110-06	4L210-06	4L210-08	4L310-08	4L310-10
Fluid	Air (to be filtered by 40 μm filter element)				
Operating	Manual control direct acting type				
Port size[Note1]	1/8"		1/4"		3/8"
Orifice size(Cv) [Note3]	10.2mm <sup>2</sup> (Cv=0.6)	4L210-08:17.0mm <sup>2</sup> (Cv=1.0)		4L310-10:28.0mm <sup>2</sup> (Cv=1.65)	
Valve type	5/2 Way				
Lubrication [Note2]	Not required				
Pressure range	0~1.0MPa(0~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70°C				
Material of body	Aluminum alloy				

[Note1] PT thread, G thread and NPT thread are available;

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span.

It is suggested to use ISO VG32 lubricant or the oil with the same grade.

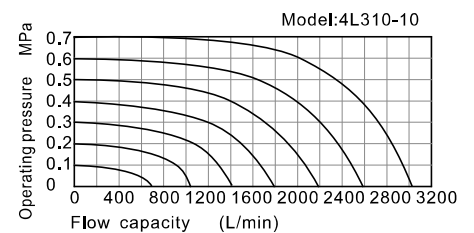
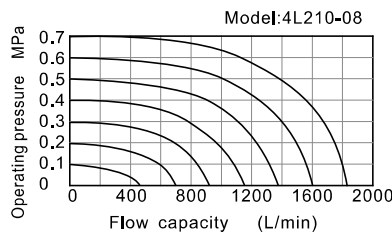
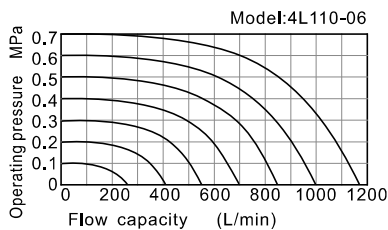
[Note3] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Ordering code

4L 2 10 08 □

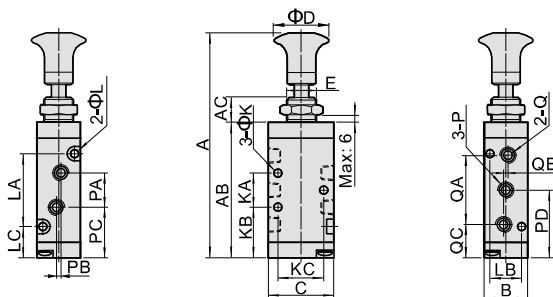
① Model	② Code	③ Valve type	④ Port size	⑤ Thread type
4L: 5 port 2 position push-pull valve	1: 100 Series	10: 2 position	06: 1/8"	Blank: PT G: G T: NPT
	2: 200 Series		06: 1/8"	
	3: 300 Series		08: 1/4"	
			08: 1/4"	
			10: 3/8"	

### Flow chart



The data in flow rate chart are obtained from AirTAC lab.

### Dimensions



Item\Model	4L11006	4L21006	4L21008	4L31008	4L31010
A	98	106	106	121.5	121.5
AB	58.8	65.8	65.8	81	81
AC	10	10	10	10	10
B	18	22	22	27	27
C	27	35	35	40	40
D	25	25	25	25	25
E	M12×0.75	M14×1.0	M14×1.0	M16×1.0	M16×1.0
K	3.3	4.3	4.3	4.3	4.3
KA	14	20	20	24	24
KB	22	22.5	22.5	28.5	28.5
KC	19	23.5	23.5	27.5	27.5
L	3.3	3.3	3.3	4.3	4.3
LA	30	38	38	50	50
LB	13	17	17	20	20
LC	14	13.5	13.5	15.5	15.5
P	1/8"	1/8"	1/4"	1/4"	3/8"
PA	16	18	21	22	24
PB	3	0	3	0	4
PC	21	23.5	22	29.5	28.5
PD	29	32.5	32.5	40.5	40.5
Q	1/8"	1/8"	1/8"	1/4"	1/4"
QA	28	36	36	45	45
QB	2	0	0	0	0
QC	15	14.5	14.5	18	18

# Hand slide valve(3/2 way)

## HSV Series



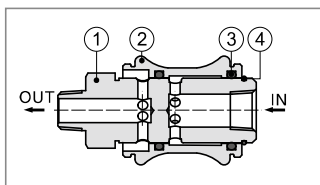
### Symbol



### Product feature

1. There are several ways of internal and external thread connection, suitable for the application in different pipeline systems.
2. The direction-change slides smoothly and has good hand feeling.
3. There is large effective circulating area.
4. The valve plug surface is treated with hard anodizing, and the surface of valve body is oxidized to keep the color for a long time.

### Inner structure



No.	Item
1	Valve plug
2	Body
3	O-ring
4	Clip

### Specification

Model	HSV06	HSV08	HSV10	HSV15	HSV20	HSV25
Fluid	Air (to be filtered by 40 μm filter element)					
Operating	Manual control direct acting type					
Port size [Note1]	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Orifice size	23.0mm <sup>2</sup> (Cv=1.28)	40.0mm <sup>2</sup> (Cv=2.20)	62.0mm <sup>2</sup> (Cv=3.50)	140.0mm <sup>2</sup> (Cv=7.80)	250.0mm <sup>2</sup> (Cv=13.80)	392.0mm <sup>2</sup> (Cv=21.78)
Valve type	3/2 Way					
Lubrication	Not required					
Pressure range	0~1.0MPa(0~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

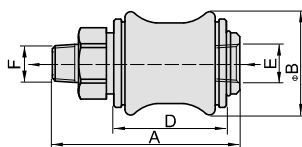
HSV 08 SS □



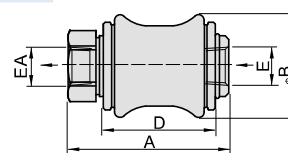
① Model	② Port size	③ Mounting type	④ Thread type
HSV: Hand slide valve	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2" 20: 3/4" 25: 1"	Blank: Standard SS: Double male thread FF: Double female thread SF: Male and female thread	Blank: PT G: G T: NPT

### Dimensions

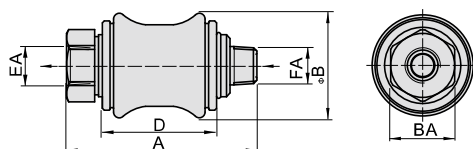
#### Standard



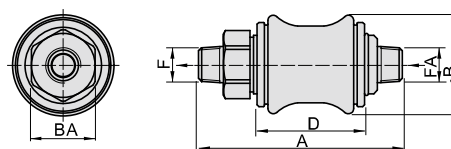
#### Double female thread (FF)



#### Male and female thread (SF)



#### Double male thread (SS)



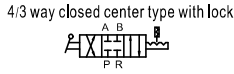
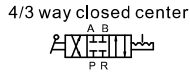
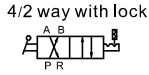
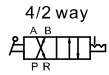
Model\Item	A				B	BA	D	E	EA	F	FA
	Standard	Double female thread	Male and female thread	Double male thread							
HSV06	50	43	50	57	27.5	17	30	1/8"	1/8"	1/8"	1/8"
HSV08	58	47	58	69	30	19	32.5	1/4"	1/4"	1/4"	1/4"
HSV10	68.5	55.5	68.5	81.5	35.5	22	39	3/8"	3/8"	3/8"	3/8"
HSV15	85.5	70.5	85.5	100.5	44	30	50	1/2"	1/2"	1/2"	1/2"
HSV20	96.5	79.5	96.5	113.5	53.5	36	58	3/4"	3/4"	3/4"	3/4"
HSV25	114.5	96.5	114.5	132.5	65.5	44	70	1"	1"	1"	1"

# Hand lever valve (4/2 way, 4/3 way)

4HV, 4HVL Series



## Symbol



## Specification

Model	4HV2□□ -06(L)	4HV2□□ -08(L)	4HV3□□ -08(L)	4HV3□□ -10(L)	4HV4□□ -15(L)	4HV4□□ -20(L)
Fluid	Air (to be filtered by 40 μm filter element)					
Operating	Manual control direct acting type					
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/4"
Orifice size	14.0mm <sup>2</sup> (Cv=0.78)	16.0mm <sup>2</sup> (Cv=0.89)	30.0mm <sup>2</sup> (Cv=1.67)	33.0mm <sup>2</sup> (Cv=1.83)	88.0mm <sup>2</sup> (Cv=4.89)	95.0mm <sup>2</sup> (Cv=5.27)
Valve type	4/2 Way, 4/3 Way					
Lubrication	Not required					
Pressure range	0~1.0MPa(0~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature	-20~70°C					
Operating angle	90°(4/3 Way: 45°)					

[Note1] PT thread, G thread and NPT thread are available.

## Product feature

1. The direction-change turns lightly with good hand feeling and exact orientation.
2. Large effective circulating area leads to little pressure loss.
3. Panel and body installation are optional. The panel installation can be attached with installing nut.

## Ordering code

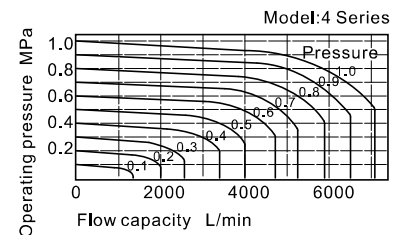
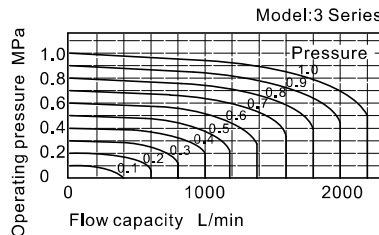
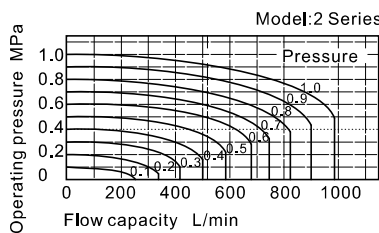
4HV 2 30 06 S L □



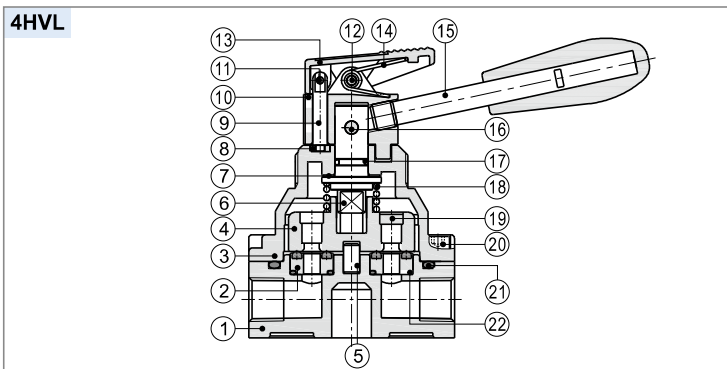
① Model	② Code	③ Valve type	④ Port size	⑤ Installation	⑥ Note	⑦ Thread type
4HV: Hand lever valve	2: 2 Series	10: 4 port 2 position 30: 4 port 3 position [Note1]	06: 1/8" 08: 1/4"	Blank: Body installation S: Panel installation [Note2]	Blank: Without lock L: With lock	Blank: PT G: G T: NPT
	3: 3 Series		08: 1/4" 10: 3/8"			
	4: 4 Series		15: 1/2" 20: 3/4"			

[Note1] 4 port 3 position only has closed center type. [Note2] The panel installation can be attached with installing nut.

## Flow chart



## Inner structure



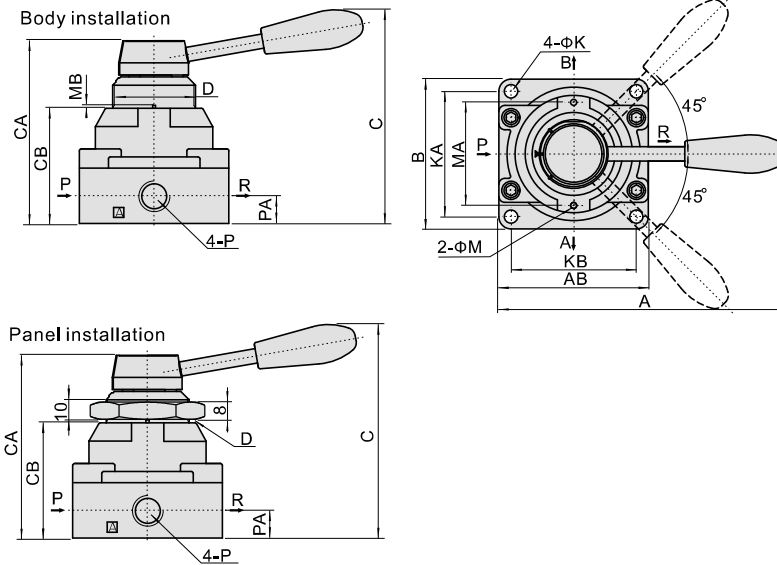
No.	Item	No.	Item
1	Body	12	Pin one
2	Seal base	13	Front cover
3	Valve cover	14	Spring
4	Valve plug	15	Handle
5	Column pin	16	Pin two
6	Shaft	17	Shaft O-ring
7	Washer	18	Spring
8	Fixing plate	19	Iron plate
9	Lock pin	20	Fixing screw
10	Valve cap	21	Body O-ring
11	Spring pin	22	Seal base O-ring

# Hand lever valve (4/2 way, 4/3 way)

## 4HV, 4HVL Series

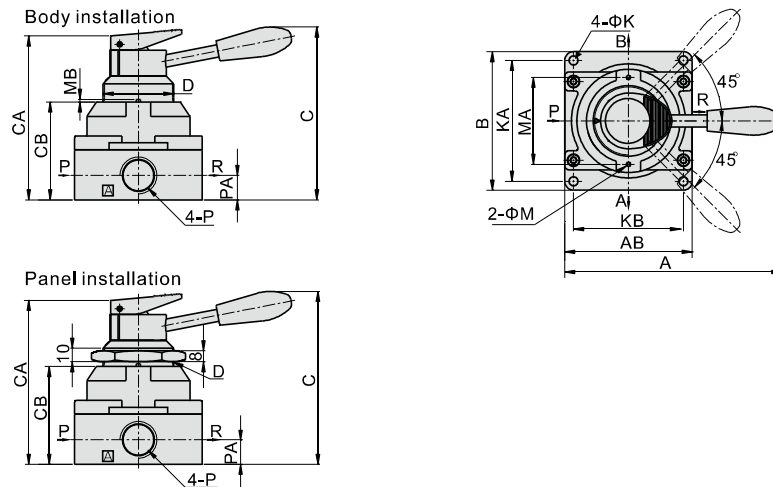
### Dimensions

#### 4HV



Model\Item	A	AB	B	C	CA	CB	D	K	KA	KB	M	MA	MB	P	PA
4HV2□□-06	120	62	62	92.5	73	45	M34×1.5	5.5	49	49	3	40	1.5	1/8"	11.5
4HV2□□-08	120	62	62	92.5	73	45	M34×1.5	5.5	49	49	3	40	1.5	1/4"	11.5
4HV3□□-08	140	74	74	104	88.5	56	M40×1.5	6.5	62	62	3	51	1.5	1/4"	13.5
4HV3□□-10	140	74	74	104	88.5	56	M40×1.5	6.5	62	62	3	51	1.5	3/8"	13.5
4HV4□□-15	160	94	102	128	110	72	M52×1.5	6.5	89	81	3	64	2	1/2"	18
4HV4□□-20	160	94	102	128	110	72	M52×1.5	6.5	89	81	3	64	2	3/4"	18

#### 4HVL

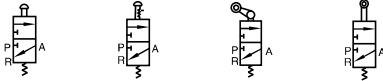


Model\Item	A	AB	B	C	CA	CB	D	K	KA	KB	M	MA	MB	P	PA
4HV2□□-06L	120	62	62	92.5	84	45	M34×1.5	5.5	49	49	3	40	1.5	1/8"	11.5
4HV2□□-08L	120	62	62	92.5	84	45	M34×1.5	5.5	49	49	3	40	1.5	1/4"	11.5
4HV3□□-08L	140	74	74	104	99	56	M40×1.5	6.5	62	62	3	51	1.5	1/4"	13.5
4HV3□□-10L	140	74	74	104	99	56	M40×1.5	6.5	62	62	3	51	1.5	3/8"	13.5
4HV4□□-15L	160	94	102	128	121	72	M52×1.5	6.5	89	81	3	64	2	1/2"	18
4HV4□□-20L	160	94	102	128	121	72	M52×1.5	6.5	89	81	3	64	2	3/4"	18

## S3 Series



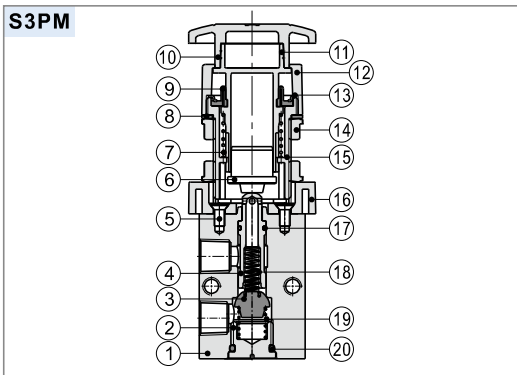
### Symbol



### Product feature

1. The external force required by changing the direction of the series of S3B, S3R, S3L and S3V is provided by external mechanism, which can be used for position test or stroke switch.
2. The series of S3PF, S3PM, S3PP, S3PL, S3Y, S3HS, S3C and S3D are operated manually, owning control joints with several structure forms and suitable for application under different conditions.
3. Shut-off structure has good tightness and is sensitive in direction changing and lubricant is not necessary.
4. Multi-mounting makes it convenient to install and apply.
5. The control joints of series of S3C, S3D, S3Y, S3R and S3L are made of metal which has long service life and more reliable and steady performance.

### Inner structure



No.	Item	No.	Item	No.	Item
1	Body	8	Clamping gasket	15	Button body
2	Bottom cover	9	Dust cover	16	Connector
3	Stopper plug	10	Button cap	17	O-ring
4	Valve core	11	Main body of button	18	Spring
5	Screw	12	Top cover	19	Spring
6	Button pressing buckle	13	Button ring	20	O-ring
7	Spring	14	Clamping nut		

### Specification

Model	S3B	S3C	S3D	S3V	S3R	S3L	S3Y	S3PM	S3PP	S3PF	S3PL	S3HS
Fluid	Air (to be filtered by 40 μm filter element)											
Operating	External control direct acting type											
Port size [Note1]	M5:M5 06:1/8" 08:1/4"											
Orifice size	M5:2.5 mm <sup>2</sup> (Cv=0.14)			06:8.0mm <sup>2</sup> (Cv=0.45)			08:12.0mm <sup>2</sup> (Cv=0.67)					
Valve type	3/2 Way											
Lubrication [Note2]	Not required											
Pressure range	0~1.0MPa(0~145psi)											
Proof pressure	1.5MPa(215psi)											
Temperature °C	-20~70											
Material of body	Aluminum alloy											

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

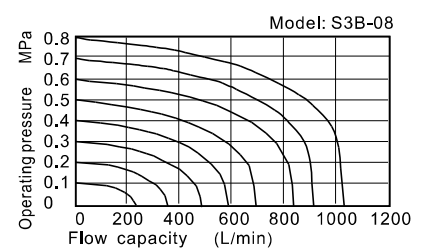
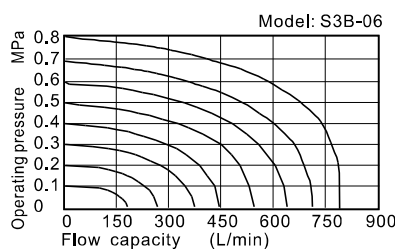
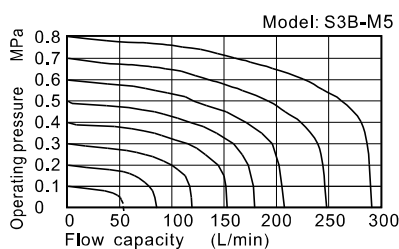
### Reversal stroke

Unit: mm					
Type	Spool stroke	Button stroke	Type	Spool stroke	Roller(handle) stroke
S3B	2.4~4.0	-	S3R	2.4~3.4	5.5~7.8
S3PF	2.4~4.0	3.8~5.4	S3L	2.4~3.4	6.0~8.6
S3PP	2.4~4.0	3.8~5.4	S3V	2.4~3.8	3.4~4.8
S3PM	2.4~4.0	3.8~5.4	S3C	2.4~3.8	14.4~18.4
S3PL	2.4~4.0	5.9~7.5	S3D	2.4~3.8	7.4~9.4
S3HS	2.4~4.0	5.1~6.7			

### Ordering code

S3 PM 06 R □				
① Valve's type	② Model	③ Port size	④ Button color	⑤ Thread type
S3: S type 3/2 Way	B: Basic type	M5:M5 06:1/8" 08:1/4"	No this code	M5 1/8" 1/4"
	C: Long handle type			
	D: Short handle type			
	Y: Lever type			
	R: Roller type			
	L: Roller with free return type			
	V: Vertical type			
	PL: Latching type			
	PP: Protruding type			
	PF: Flat type			
PM: Mushroom type	Blank: Red	No this code	Blank: PT G: G T: NPT	
HS: Selector type	R: Red G: Green B: Black			

### Flow chart

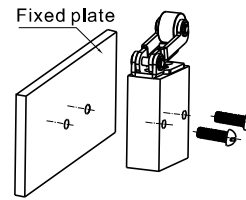


## S3 Series

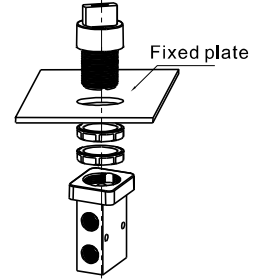
### Installation and Application

- 1) The control set is made of engineering plastic which only allows manual operation and switching valves through metal impact is forbidden.
- 2) The series of S3B, S3C, S3D, S3PM, S3PF and S3PP get the function of automatic restoration. The hand valves of S3Y, S3HS and S3PL are in the type of manual restoration. S3PL will be restored by turning the revolve button after being pressed into orientation.
- 3) Pay attention to the reversing stroke. The reversing stroke can not surpass its stroke stipulated in stroke control table when the direction-change of the valve is forced by any external forces, otherwise it will cause the damage of the valve.
- 4) The S3L can only switch the valve in single direction (impact from right to left). The impact from the other direction is invalid (from left to right).
- 5) Control joint combination can be ordered individually. Please refer to the following tables for order details.

Fixation way of body

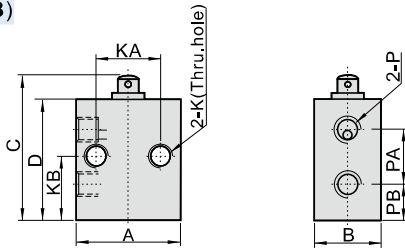


Fixation way of panel



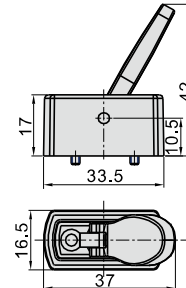
### Dimension

Body(S3B)



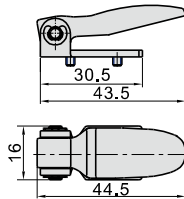
Model/Item	A	B	C	D	K	KA	KB	P	PA	PB
M5	26	16.5	36	30	M5x0.8	16	15	M5x0.8	13	9
06	30	16.5	47	41	M5x0.8	23	20.5	1/8"	17.5	11.5
08	34	17.5	52	46	M5x0.8	24	22.5	1/4"	21	12

Lever type(Y)



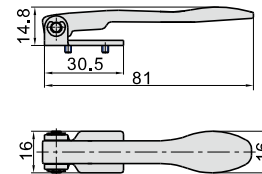
Model	Lever type(Y)
How to order	Ordering code
	Type
Applicable products	

Short handle type(D)



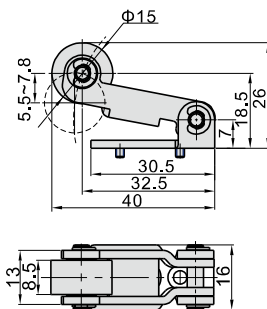
Model	Short handle type(D)
How to order	Ordering code
	Type
Applicable products	

Long handle type(C)



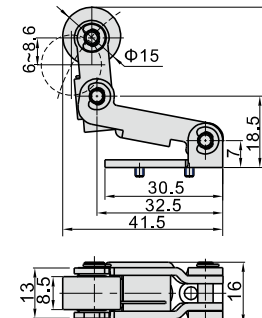
Model	Long handle type(C)
How to order	Ordering code
	Type
Applicable products	

Roller type(R)



Model	Roller type(R)
How to order	Ordering code
	Type
Applicable products	

Roller with free return type(L)

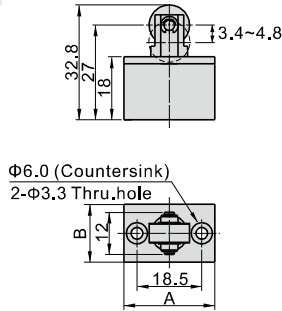


Model	Roller with free return type(L)
How to order	Ordering code
	Type
Applicable products	



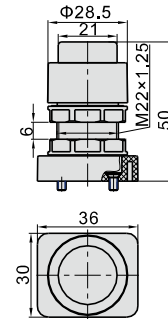
## S3 Series

### Vertical type(V)



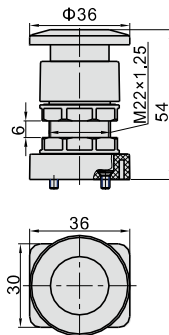
Model		Vertical type ( V )	
How to order	Ordering code	S3V05(06/08)-P14A	
	Type	S3V05(06, 08) Vertical type control set	
Applicable products		S3VM5,S3V06,S3V08	
Model\Item		A	B
M5		26	16.5
06		30	16.5
08		34	17.5

### Protruding type(PP)



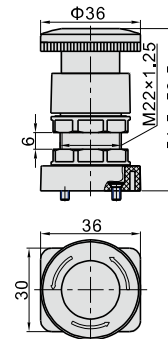
Model		Protruding type(PP)	
How to order	Ordering code	S3PP05-P11A	
	Type	S3PP protruding type control set (Green)	
How to order	Ordering code	S3PP05-P12A	
	Type	S3PP protruding type control set (Red)	
How to order	Ordering code	S3PP05-P13A	
	Type	S3PP protruding type control set (Black)	
Applicable products		S3PPM5,S3PP06,S3PP08	

### Mushroom type(PM)



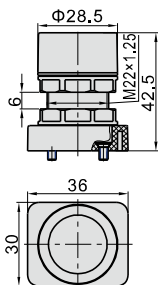
Model		Mushroom type(PM)	
How to order	Ordering code	S3PM05-P11A	
	Type	S3PM mushroom type control set (Green)	
How to order	Ordering code	S3PM05-P12A	
	Type	S3PM mushroom type control set (Red)	
How to order	Ordering code	S3PM05-P13A	
	Type	S3PM mushroom type control set (Black)	
Applicable products		S3PMM5,S3PM06,S3PM08	

### Latching type(PL)



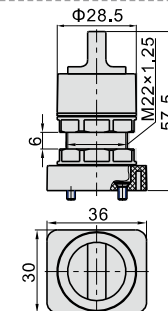
Model		Latching type (only red)(PL)	
How to order	Ordering code	S3PL05-P12A	
	Type	S3PL Latching type control set (Red)	
Applicable products		S3PLM5,S3PL06,S3PL08	

### Flat type(PF)



Model		Flat type(PF)	
How to order	Ordering code	S3PF05-P11A	
	Type	S3PF flat type control set (Green)	
How to order	Ordering code	S3PF05-P12A	
	Type	S3PF flat type control set (Red)	
How to order	Ordering code	S3PF05-P13A	
	Type	S3PF flat type control set (Black)	
Applicable products		S3PFM5,S3PF06,S3PF08	

### Selector type(HS)



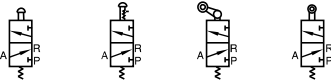
Model		Selector type(HS)	
How to order	Ordering code	S3HS05-P11A	
	Type	S3HS selector type control set (Green)	
How to order	Ordering code	S3HS05-P12A	
	Type	S3HS selector type control set (Red)	
How to order	Ordering code	S3HS05-P13A	
	Type	S3HS selector type control set (Black)	
Applicable products		S3HSM5,S3HS06,S3HS08	

# Control valve(3/2way)

## M3 Series



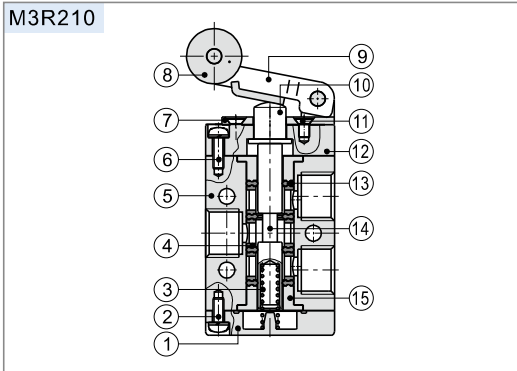
### Symbol



### Product feature

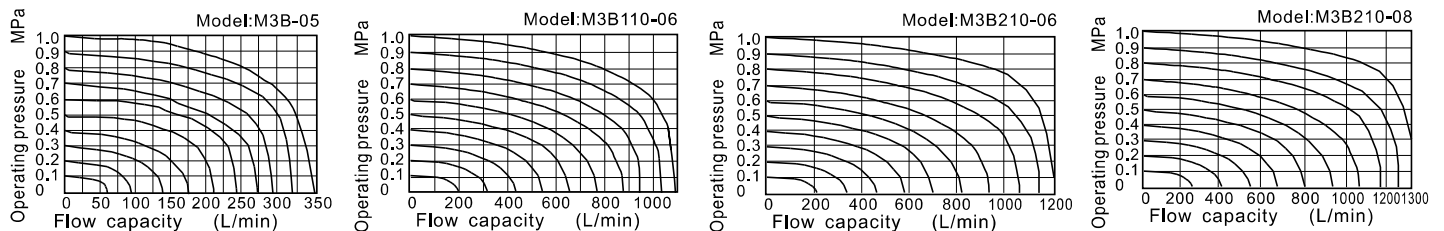
1. Exhaust outlet locates over the body, which is convenient to install muffler to decrease noise and pollution.
2. The external force required by direction-change of series of M3B, M3R and M3L is provided by external mechanism, which can be used for position test or stroke switch] limit switch.
3. M3C, M3D, M3Y, M3PF, M3PM, M3PP, M3PL and M3HS are operated manually, owning control joints with several structure forms and suitable for application under different conditions.
4. It is in sliding column structure that the control force is not influenced by working pressure (that is, there is no back pressure effect); internal circle is sealed with good tightness and the direction-change is sensitive.
5. No need to add oil for lubrication.
6. Multi-mounting makes it convenient to install and apply;
7. The control joints of series of M3C, M3D, M3Y, M3R, and M3L are made of metal which has long service life and more reliable and steady performance.

### Inner structure



No.	Item	No.	Item	No.	Item
1	Bottom cover	6	Screw	11	Screw
2	Screw	7	Roller holder	12	Front cover
3	Spring	8	Roller	13	Piston O-ring
4	Spacer	9	Rotating block	14	Spool
5	Body	10	Axle	15	Positioning block

### Flow chart



### Specification

Model	M3B	M3C	M3D	M3R	M3L	M3Y	M3PM	M3PP	M3PF	M3PL	M3HS
Fluid	Air (to be filtered by 40 μm filter element)										
Operating	External control direct acting type										
Port size [Note1]	05: M5 06: 1/8" 08: 1/4"										
Orifice size	Mini type					05: 2.5mm <sup>2</sup> (Cv=0.14)					
	110					06: 8.0mm <sup>2</sup> (Cv=0.45)					
	210					06: 9.0mm <sup>2</sup> (Cv=0.50) 08: 12.0mm <sup>2</sup> (Cv=0.67)					
Valve type	3/2 Way										
Lubrication [Note2]	Not required										
Pressure range	0~1.0MPa(0~145psi)										
Proof pressure	1.5MPa(215psi)										
Temperature °C	-20~70										
Material of body	Aluminum alloy										

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

### Reversal stroke

Common type						Mini type		
Type	Spool stroke	Button stroke	Type	Spool stroke	Roller(handle) stroke	Type	Spool stroke	Roller stroke
M3B	2.0~3.3	-	M3R	2.0~3.0	4.6~6.8	M3B05	2.0~3.3	-
M3PF	2.0~3.3	3.8~5.1	M3L	2.0~3.0	5.0~7.8	M3R05	2.0~3.0	6.0~8.5
M3PP	2.0~3.3	3.8~5.1	M3C	2.0~3.0	11.0~16.0	M3L05	2.0~3.0	7.0~10.0
M3PM	2.0~3.3	3.8~5.1	M3D	2.0~3.0	5.5~8.0			
M3PL	2.0~3.3	5.9~7.2						
M3HS	2.0~3.3	5.1~6.4						

### Ordering code

**Common type**      **M3 PM 210 06 R □**

① ② ③ ④ ⑤ ⑥

① Valve's type	② Model	③ Code	④ Port size	⑤ Button color	⑥ Thread type
M3: M type 3/2 Way	B: Basic type	110: 100 Series single control	06: 1/8"	No this code	Blank: PT G: G T: NPT
	C: Long handle type				
	D: Short handle type				
	Y: Lever type				
	R: Roller type	210: 200 Series single control	06: 1/8" 08: 1/4"	Blank: Red R: Red G: Green B: Black	
	L: Roller with free return type				
	PL: Latching type				
	PP: Protruding type				
	PF: Flat type				
	PM: Mushroom type				
HS: Selector type					

### Mini type

**M3 R 05**

① ② ③

① Valve's type	② Model	③ Port size
M3: M type 3/2 Way	B: Basic type R: Roller type L: Roller with free return type	05: M5

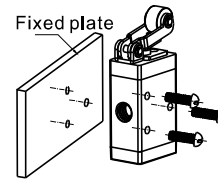


## M3 Series

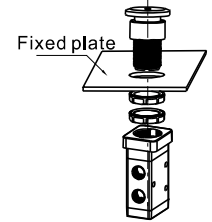
### Installation and Application

- 1) Body and panel installation ( picture at right ) :
- 2)The control set is made of engineering plastic which **only** allows manual operation and switching valves through metal impact is forbidden.
- 3)The series of M3B, M3C, M3D, M3PM, M3PF and M3PP get the function of automatic restoration. The hand valves of M3Y, M3HS and M3PL are in the type of manual restoration.M3PL will be restored by turning the revolve button after being pressed into orientation.
- 4) Pay attention to the reversing stroke. The reversing stroke can not surpass its stroke stipulated in stroke control table when the direction-change of the valve is forced by any external forces, otherwise it will cause the damage of the valve.
- 5) The M3L can only switch the valve in single direction (impact from right to left). The impact from the other direction is invalid (from left to right).
- 6) Control joint combination can be ordered individually. Please refer to the following tables for order details.

Fixation way of body

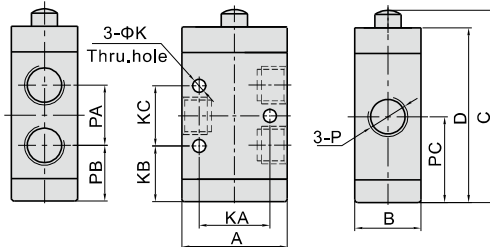


Fixation way of panel



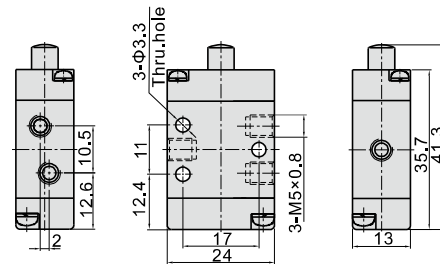
### Dimensions

#### Common type



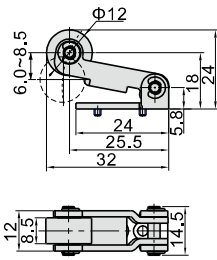
Model\Item	A	B	C	D	K	KA	KB	KC	P	PA	PB	PC
M3B11006	27	18	52	46.5	3.3	18	15.5	16	1/8"	16	15.5	23.5
M3B21006	35	22	64	58	4.3	23.5	18.5	20	1/8"	20	18.5	28.5
M3B21008									1/4"			

#### Mini type

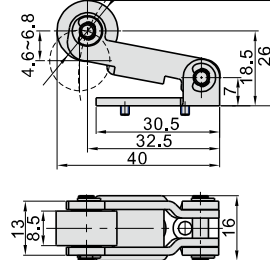


#### Roller type(R)

##### Mini type



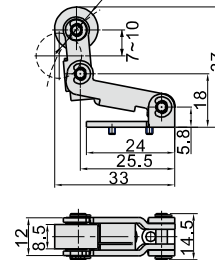
##### Common type



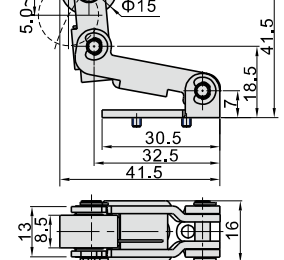
Model	Roller type(R)	
How to order	Ordering code M3R05-P14A	M3R210-P14A
Type	M3R05 Roller type control set	M3R210 Roller type control set
Applicable products	M3R05 M3R110, M3R210	

#### Roller with free return type(L)

##### Mini type

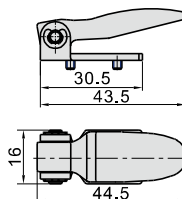


##### Common type



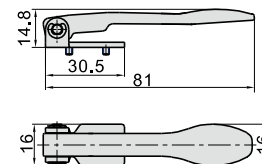
Model	Roller with free return type(L)	
How to order	Ordering code M3L05-P14A	M3L210-P14A
Type	M3L05 Roller with free return type control set	M3L210 Roller with free return type control set
Applicable products	M3L05 M3L110, M3L210	

#### Short handle type(D)



Model	Short handle type(D)	
How to order	Ordering code M3D210-P13A	
Type	M3D210 Short handle type control set	
Applicable products	M3D110, M3D210	

#### Long handle type(C)

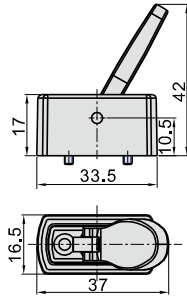


Model	Long handle type(C)	
How to order	Ordering code M3C210-P13A	
Type	M3C210 Long handle type control set	
Applicable products	M3C110, M3C210	

# Control valve(3/2way)

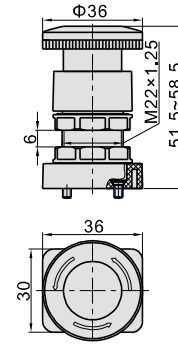
## M3 Series

### Lever type(Y)



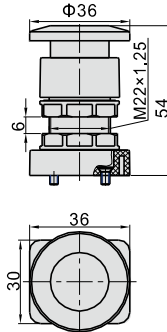
Model		Lever type(Y)
How to order	Ordering code	M3Y210-P13A
	Type	M3Y210 Lever type control set
Applicable products		M3Y110, M3Y210

### Latching type(PL)



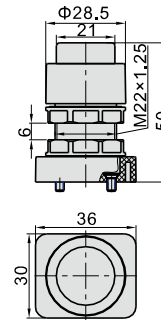
Model		Latching type (only red)(PL)
How to order	Ordering code	S3PL05-P12A
	Type	S3PL Latching type control set (Red)
Applicable products		M3PL110, M3PL210

### Mushroom type(PM)



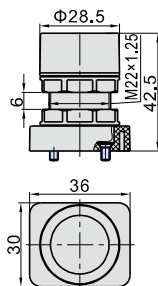
Model		Mushroom type(PM)
How to order	Ordering code	S3PM05-P11A
	Type	S3PM mushroom type control set (Green)
	Ordering code	S3PM05-P12A
	Type	S3PM mushroom type control set (Red)
	Ordering code	S3PM05-P13A
	Type	S3PM mushroom type control set (Black)
Applicable products		M3PM110, M3PM210

### Protruding type(PP)



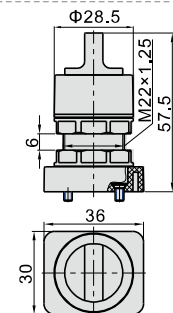
Model		Protruding type(PP)
How to order	Ordering code	S3PP05-P11A
	Type	S3PP protruding type control set (Green)
	Ordering code	S3PP05-P12A
	Type	S3PP protruding type control set (Red)
	Ordering code	S3PP05-P13A
	Type	S3PP protruding type control set (Black)
Applicable products		M3PP110, M3PP210

### Flat type(PF)



Model		Flat type(PF)
How to order	Ordering code	S3PF05-P11A
	Type	S3PF flat type control set (Green)
	Ordering code	S3PF05-P12A
	Type	S3PF flat type control set (Red)
	Ordering code	S3PF05-P13A
	Type	S3PF flat type control set (Black)
Applicable products		M3PF110, M3PF210

### Selector type(HS)



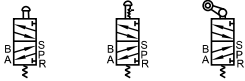
Model		Selector type(HS)
How to order	Ordering code	S3HS05-P11A
	Type	S3HS selector type control set (Green)
	Ordering code	S3HS05-P12A
	Type	S3HS selector type control set (Red)
	Ordering code	S3HS05-P13A
	Type	S3HS selector type control set (Black)
Applicable products		M3HS110, M3HS210

# Control valve(5/2way)

## M5 Series



### Symbol

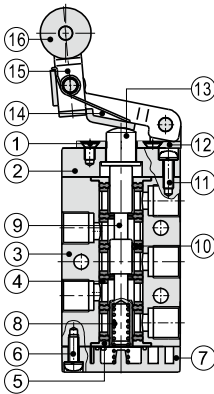


### Product feature

1. Exhaust outlet locates over the body, which is convenient to install muffler to decrease noise and pollution.
2. The external force required by direction-change of series of M5B, M5R and M5L is provided by external mechanism, which can be used for position test or [stroke switch] limit switch.
3. M5C, M5D, M5Y, M5PF, M5PM, M5PP, M5PL and M5HS are operated manually, owning control joints with several structure forms and suitable for application under different conditions.
4. It is in sliding column structure that the control force is not influenced by working pressure (that is, there is no back pressure effect); internal circle is sealed with good tightness and the direction-change is sensitive.
5. Lubricant is not necessary.
6. Multi-mounting makes it convenient to install and apply.
7. The control joints of series of M5C, M5D, M5Y, M5R and M5L are made of metal which has longer service life and more reliable and steady performance.

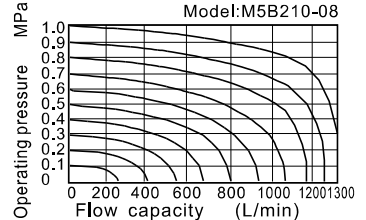
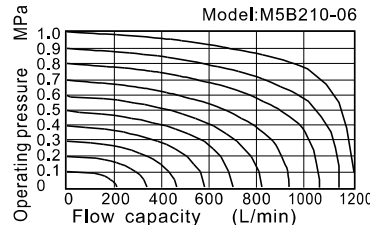
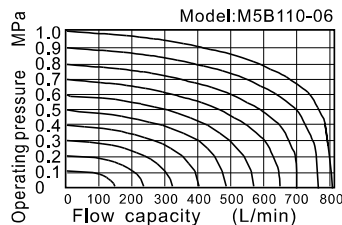
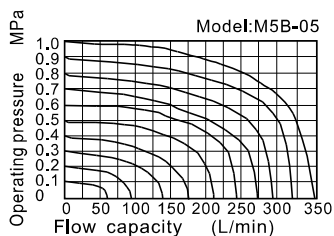
### Inner structure

M5L210



No.	Item	No.	Item	No.	Item
1	Screw	7	Bottom cover	13	Axle
2	Fore cover	8	Spring	14	Rotating block
3	Body	9	Spool	15	Rocker
4	Spacer	10	Piston O-ring	16	Roller
5	Positioning block	11	Screw		
6	Screw	12	Roller holder		

### Flow chart



### Specification

Model	M5B	M5C	M5D	M5R	M5L	M5Y	M5PM	M5PP	M5PF	M5PL	M5HS
Fluid	Air (to be filtered by 40 μm filter element)										
Operating	External control direct acting type										
Port size [Note1]	05: M5 06: 1/8" 08: 1/4"										
Orifice size	Mini type		05: 2.5mm <sup>2</sup> (Cv=0.14)								
	110		06: 8.0mm <sup>2</sup> (Cv=0.45)								
	210		06: 9.0mm <sup>2</sup> (Cv=0.50) 08: 12.0mm <sup>2</sup> (Cv=0.67)								
Valve type	5/2 Way										
Lubrication [Note2]	Not required										
Pressure range	0~1.0MPa(0~145psi)										
Proof pressure	1.5MPa(215psi)										
Temperature °C	-20~70										
Material of body	Aluminum alloy										

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

### Reversal stroke

Unit:mm

Common type						Mini type		
Type	Spool stroke	Button stroke	Type	Spool stroke	Roller(handle) stroke	Type	Spool stroke	Roller stroke
M5B	2.0~3.3	-	M5R	2.0~3.0	4.6~6.8	M5B05	2.0~3.3	-
M5PF	2.0~3.3	3.8~5.1	M5L	2.0~3.0	5.0~7.8	M5R05	2.0~3.0	6.0~8.5
M5PP	2.0~3.3	3.8~5.1	M5C	2.0~3.0	11.0~16.0	M5L05	2.0~3.0	7.0~10.0
M5PM	2.0~3.3	3.8~5.1	M5D	2.0~3.0	5.5~8.0			
M5PL	2.0~3.3	5.9~7.2						
M5HS	2.0~3.3	5.1~6.4						

### Ordering code

#### Common type

M5 PM 210 06 R □



① Valve's type	② Model	③ Code	④ Port size	⑤ Button color	⑥ Thread type
M5: M type 5/2 Way	B: Basic type	110: 100 Series single control	06: 1/8"	No this code	Blank: PT G: G T: NPT
	C: Long handle type				
	D: Short handle type				
	Y: Lever typer				
	R: Roller type	210: 200 Series single control	06: 1/8" 08: 1/4"	Blank: Red R: Red G: Green B: Black	
	L: Roller with free return type				
	PL: Latching type				
	PP: Protruding type				
	PF: Flat type				
	PM: Mushroom type				
HS: Selector type					

#### Mini type

M5 R 05



① Valve's type	② Model	③ Port size
M5: M type 5/2 Way	B: Basic type R: Roller type L: Roller with free return type	05: M5

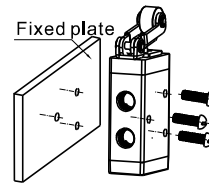
# Control valve(5/2way)

## M5 Series

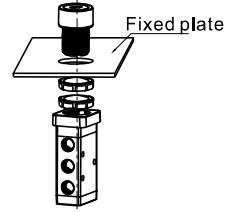
### Installation and Application

- 1) Body and panel installation ( picture at right ) :
- 2) The control set is made of engineering plastic which only allows manual operation and switching valves through metal impact is forbidden.
- 3) The series of M5B, M5C, M5D, M5PM, M5PF and M5PP get the function of automatic restoration. The hand valves of M5Y, M5HS and M5PL are in the type of manual restoration. M5PL will be restored by turning the revolve button after being pressed into orientation.
- 4) Pay attention to the reversing stroke. The reversing stroke can not surpass its stroke stipulated in stroke control table when the direction-change of the valve is forced by any external forces, otherwise it will cause the damage of the valve.
- 5) The M5L can only switch the valve in single direction (impact from right to left). The impact from the other direction is invalid (from left to right).
- 6) Control joint combination can be ordered individually. Please refer to the following tables for order details.

Fixation way of body

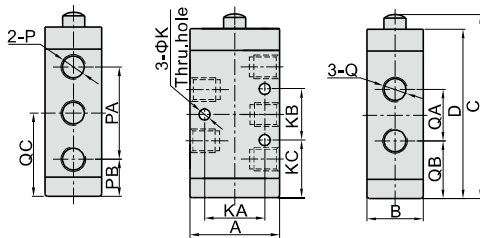


Fixation way of panel



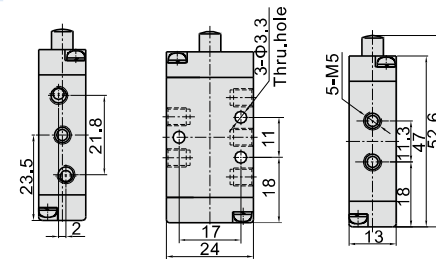
### Dimensions

#### Common type



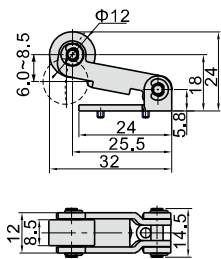
Model\Item	A	B	C	D	K	KA	KB	KC	P	PA	PB	Q	QA	QB	QC
M5B11006	27	18	63	57.5	3.3	18	14	22	1/8"	28	15	1/8"	16	21	29
M5B21006	35	22	72	66	4.3	23.5	20	22.5	1/8"	36	14.5	1/8"	20	22.5	32.5
M5B21008									1/8"			1/4"			

#### Mini type

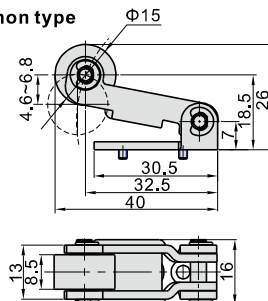


#### Roller type(R)

##### Mini type



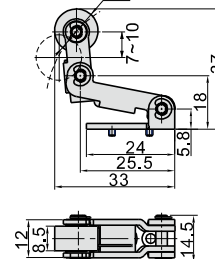
##### Common type



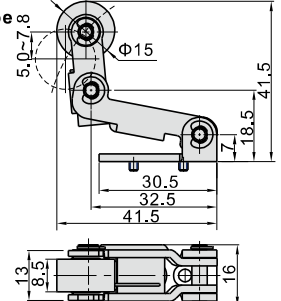
Model	Roller type(R)	
How to order	Ordering code	M3R05-P14A      M3R210-P14A
order	Type	M3R05 Roller type control set      M3R210 Roller type control set
Applicable products		M5R05      M5R110, M5R210

#### Roller with free return type(L)

##### Mini type

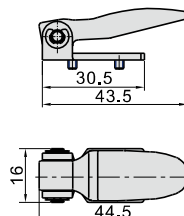


##### Common type



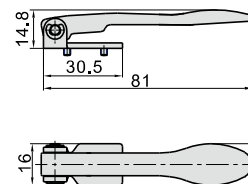
Model	Roller with free return type(L)	
How to order	Ordering code	M3L05-P14A      M3L210-P14A
order	Type	M3L05 Roller with free return type control set      M3L210 Roller with free return type control set
Applicable products		M5L05      M5L110, M5L210

#### Short handle type(D)



Model	Short handle type(D)	
How to order	Ordering code	M3D210-P13A
order	Type	M3D210 Short handle type control set
Applicable products		M5D110, M5D210

#### Long handle type(C)



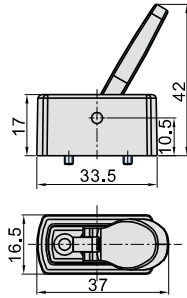
Model	Long handle type(C)	
How to order	Ordering code	M3C210-P13A
order	Type	M3C210 Long handle type control set
Applicable products		M5C110, M5C210



# Control valve(5/2way)

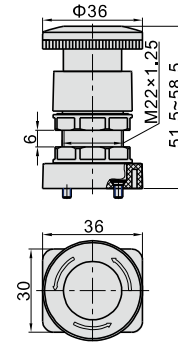
## M5 Series

### Lever type(Y)



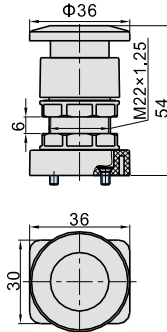
Model		Lever type(Y)
How to order	Ordering code	M3Y210-P13A
	Type	M3Y210 Lever type control set
Applicable products		M5Y110, M5Y210

### Latching type(PL)



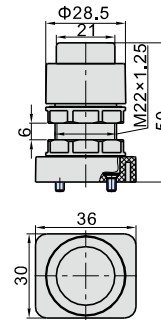
Model		Latching type (only red)(PL)
How to order	Ordering code	S3PL05-P12A
	Type	S3PL Latching type control set (Red)
Applicable products		M5PL110, M5PL210

### Mushroom type(PM)



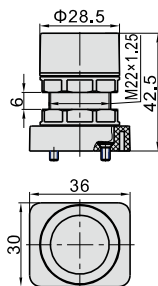
Model		Mushroom type(PM)
How to order	Ordering code	S3PM05-P11A
	Type	S3PM mushroom type control set (Green)
	Ordering code	S3PM05-P12A
	Type	S3PM mushroom type control set (Red)
	Ordering code	S3PM05-P13A
Applicable products		M5PM110, M5PM210

### Protruding type(PP)



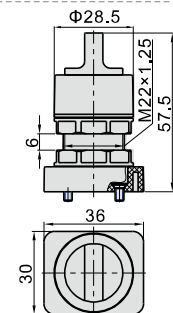
Model		Protruding type(PP)
How to order	Ordering code	S3PP05-P11A
	Type	S3PP protruding type control set (Green)
	Ordering code	S3PP05-P12A
	Type	S3PP protruding type control set (Red)
	Ordering code	S3PP05-P13A
Applicable products		M5PP110, M5PP210

### Flat type(PF)



Model		Flat type(PF)
How to order	Ordering code	S3PF05-P11A
	Type	S3PF flat type control set (Green)
	Ordering code	S3PF05-P12A
	Type	S3PF flat type control set (Red)
	Ordering code	S3PF05-P13A
Applicable products		M5PF110, M5PF210

### Selector type(HS)



Model		Selector type(HS)
How to order	Ordering code	S3HS05-P11A
	Type	S3HS selector type control set (Green)
	Ordering code	S3HS05-P12A
	Type	S3HS selector type control set (Red)
	Ordering code	S3HS05-P13A
Applicable products		M5HS110, M5HS210

# Control valve(3/2 way, 5/3 way)

## CM3 Series



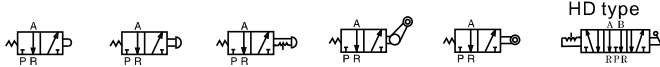
### Specification

Model	CM3□-05	CM3□-06	CM3□-08
Operating	External control		
Fluid	Air (to be filtered by 40 μm filter element)		
Pressure range	0~1.0MPa(0~10bar)(0~145psi)		
Proof pressure	1.5MPa(15bar)(215psi)		
Temperature	-20~70°C		
Valve type [Note1]	3 port 2 position		
Orifice size	2.0mm <sup>2</sup>	2.5mm <sup>2</sup>	15.0mm <sup>2</sup>
Cv	0.11	0.14	0.84
Port size [Note2]	M5×0.8	1/8"	1/4"
Material of body	Aluminum alloy		

[Note1] HD series are 5/3 way.

[Note2] PT thread, G thread and NPT thread are available.

### Symbol



### Product feature

- The external force required by changing the direction of the series of CM3B, CM3V, CM3L and CM3R is provided by external mechanism, which can be used for position test or limit switch.
- The series of CM3PF, CM3PM, CM3PMS, CM3PMX, CM3PL, CM3PP, CM3HS, CM3HD and CM3Y are operated manually, owning control joints with several structure forms and suitable for application under different conditions.
- Shut-off structure has good tightness and is sensitive in direction changing and lubricant is not necessary.
- Multi-mounting makes it convenient to install and apply.
- The control joints of series of CM3L, CM3V, CM3R and CM3Y are made of metal which has long service life and more reliable and steady performance.
- CM3PMS, CM3PMX Series have metallic guard, it can protect the push cup, to avoid misact due to outside force touching the push cup. So they can be used more reliably.

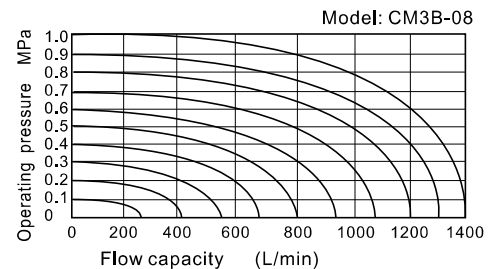
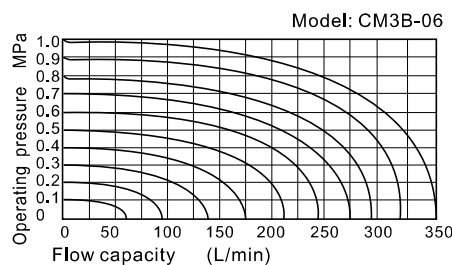
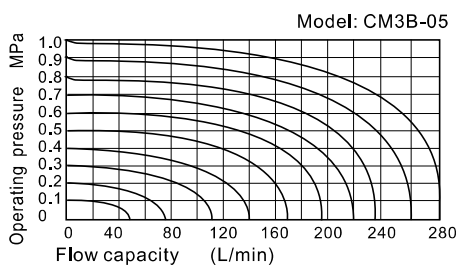
### Ordering code

CM3 PP 06 B □



① Valve's type	② Model	③ Port size	④ Button color	⑤ Thread type	
CM3: CM type 3/2 5/3 way	B: Basic type	05: M5 06: 1/8" 08: 1/4"	No this code	M5	1/8" 1/4"
	R: Roller type			No this code	Blank: PT G: G T: NPT
	L: Roller with free return type				
	V: Vertical type				
	Y: Lever typer				
	PL: Latching type		Blank:Red		
	PP: Protruding type		R: Red G: Green B: Black Y: Yellow		
	PF: Flat type				
	PM: Mushroom type				
	PMS: Mushroom type(with guard)				
PMX: Big mushroom type(with guard)					
HS: Selector type					
HD: Double-selector type					

### Flow chart

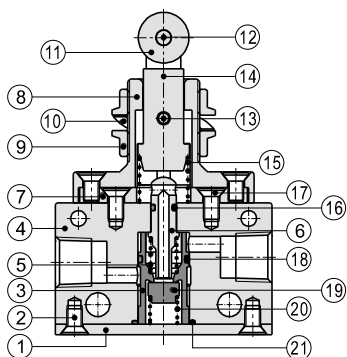


# Control valve(3/2 way, 5/3 way)

## CM3 Series

### Inner structure

CM3V



No.	Item	No.	Item	No.	Item
1	Fixing plate	8	Connecting holder	15	Spring
2	Screw	9	Clamping nut	16	O-ring
3	Spacer	10	Spring gasket	17	Screw
4	Body	11	Roller	18	O-ring
5	Spring	12	Shaft	19	Bottom cover gasket
6	Spool	13	Lock pin	20	Spring
7	Connecting gasket	14	Roller bracket	21	O-ring

### Installation and operation

1. Mounting way: by body, by panel I, by panel II, latching type, mushroom type. Please refer to the following picture:

Fixation way of body	Fixation way of panel I	Fixation way of panel II	Big mushroom type(With guard)	Mushroom type(With guard)
<p>Fixed plate</p>	<p>Fixed plate Thickness≤6 Fix holeΦ30.5</p>	<p>Fixed plate Thickness≤6 Fix holeΦ14.5</p>	<p>Push cap Guard Fixed plate Thickness≤6 Fix holeΦ30.5</p>	<p>Push cap Guard Fixed plate Thickness≤6 Fix holeΦ30.5</p>
<p><b>Latching type</b></p> <p>Fixed plate Thickness≤6 Fix holeΦ30.5</p> <p>Disassembly: Remove the screw, then to draw the button. Assembly: Install the button, then to tighten the screw.</p>		<p><b>Mushroom type</b></p> <p>Fixed plate Thickness≤6 Fix holeΦ30.5</p> <p>The button can be drew upward, or be pressed downward.</p>		<p>Disassembly: Remove the push cap, then remove the guard. Assembly: Install the guard, then to tighten the push cap.</p>
			<p>Disassembly: Untighten the guard first, then remove the push cap with the guard. Assembly: Install the guard, then to tighten the push cap.</p>	

2. The control set is made of engineering plastic which only allows manual operation and switching valves through metal impact is forbidden.

3. The series of CM3B, CM3L, CM3V, CM3R, CM3PM, CM3PMS, CM3PMX, CM3PF, CM3PP get the function of automatic restoration. The hand valves of CM3Y, CM3HS, CM3HD, CM3PL are in type of manual restoration. CM3PL will be restored by turning the revolve button after being pressed into orientation.

4. Pay attention to the reversing stroke. The reversing stroke can not surpass its stroke stipulated in stroke control table when the direction-change of the valve is forced by any external forces, otherwise it will cause the damage of the valve.

Model	Spool stroke	Button(Roller\Handle) stroke	Model	Spool stroke	Button(Roller\Handle) stroke
CM3B05(06)	1.5~3.0	-	CM3B08	2.4~4.0	-
CM3R05(06)	1.5~2.5	3.0~4.8	CM3R08	2.4~3.2	6.8~9.0
CM3L05(06)	1.5~2.3	3.0~4.8	CM3L08	2.4~3.2	7.2~9.7
CM3V05(06)	1.5~3.0	2.7~4.2	CM3V08	2.4~4.0	2.6~4.2
CM3Y05(06)	1.5~2.5	3.0~4.8	CM3Y08	2.4~3.2	6.8~9.0
CM3PL05(06)	1.5~2.5	4.0~5.0	CM3PL08	2.4~3.5	4.0~5.0
CM3PP05(06)	1.5~3.0	4.0~5.5	CM3PP08	2.4~4.0	4.0~5.5
CM3PF05(06)	1.5~3.0	4.0~5.5	CM3PF08	2.4~4.0	4.0~5.5
CM3HS05(06)	1.5~3.0	4.0~5.5	CM3HS08	2.4~4.0	4.0~5.5
CM3HD05(06)	1.5~3.0	4.0~5.5	CM3HD08	2.4~4.0	4.0~5.5
CM3PM05(06)	1.5~3.0	4.0~5.5	CM3PM08	2.4~4.0	4.0~5.5
CM3PMS05(06)	1.5~3.0	4.0~5.5	CM3PMX08	2.4~4.0	4.0~5.5
CM3PMX05(06)	1.5~3.0	4.0~5.5	CM3PMX08	2.4~4.0	4.0~5.5

5. The CM3L can only switch the valve in single direction(impact from left to right). The impact from the other direction (from right to left) is invalid.

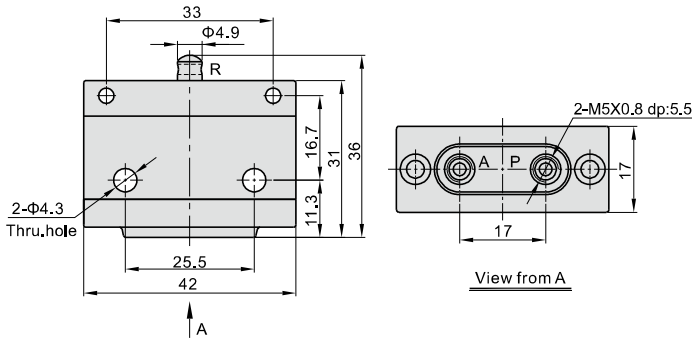
6. Control joint combination can be ordered individually. Please refer to external specification.

# Control valve(3/2 way, 5/3 way)

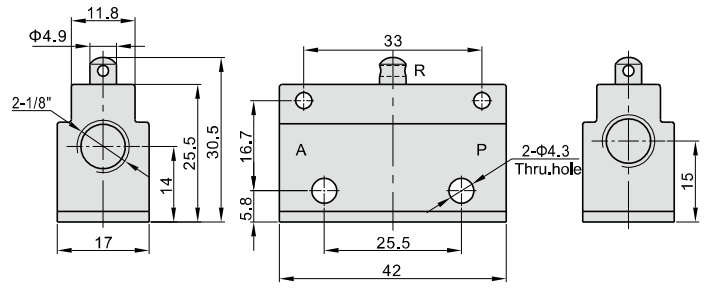
## CM3 Series

### Dimension (Basic type)

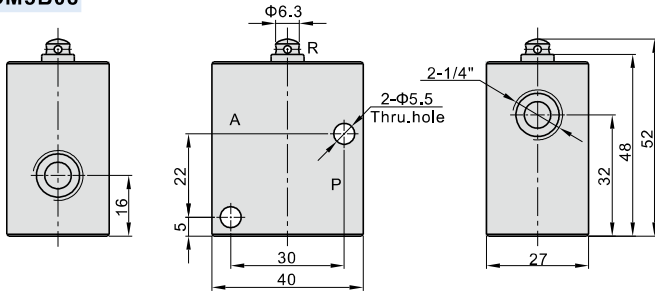
CM3B05



CM3B06



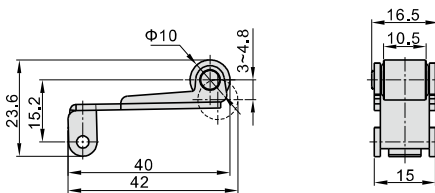
CM3B08



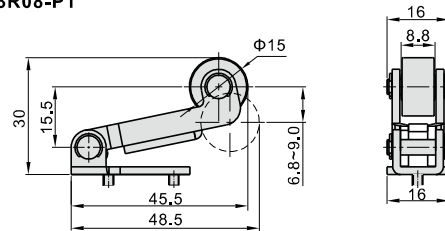
### Control set dimension

#### Roller type(R)

CM3R06-P1



CM3R08-P1

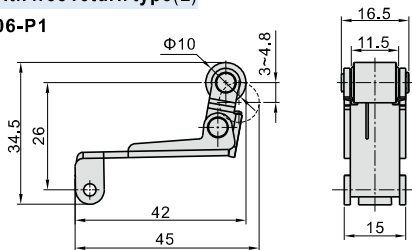


Note: CM3R06 control joint, which used in CM3R05 and CM3R06, can not be ordered individually. It should be matched with basic type.

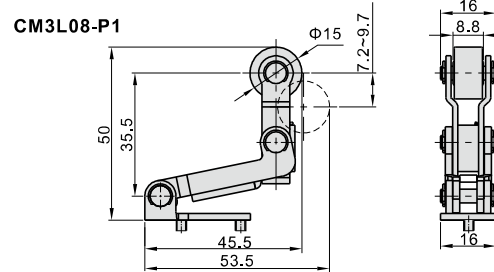
Model		Roller type(R)
How to order	Ordering code	CM3R08-P1
	Type	CM3R08 roller type control set
Applicable products		CM3R08

#### Roller with free return type(L)

CM3L06-P1



CM3L08-P1



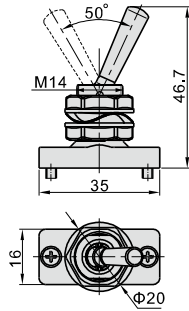
Note: CM3L06 control joint, which used in CM3L05 and CM3L06, can not be ordered individually. It should be matched with basic type.

Model		Roller with free return type(L)
How to order	Ordering code	CM3L08-P1
	Type	CM3L08Roller with free return type control set
Applicable products		CM3L08

# Control valve(3/2 way, 5/3 way)

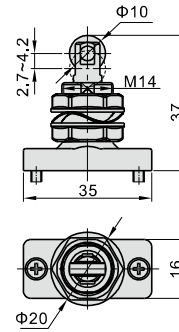
## CM3 Series

### Lever type(Y)



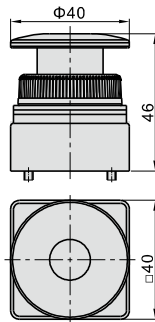
Model		Lever type(Y)
How to order	Ordering code	CM3Y06-P1
	Type	CM3Y lever type control set
Applicable products		CM3Y05 CM3Y06 CM3Y08

### Vertical type(V)



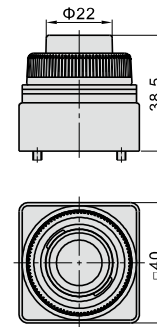
Model		Vertical type ( V )
How to order	Ordering code	CM3V06-P1
	Type	CM3V vertical type control set
Applicable products		CM3V05 CM3V06 CM3V08

### Mushroom type(PM)



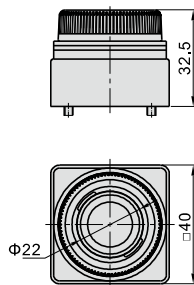
Model		Mushroom type ( PM )
How to order	Ordering code	CM3PM06-P1
	Type	CM3PM mushroom type control set(green)
	Ordering code	CM3PM06-P2
	Type	CM3PM mushroom type control set(red)
	Ordering code	CM3PM06-P3
	Type	CM3PM mushroom type control set(black)
	Ordering code	CM3PM06-P4
	Type	CM3PM mushroom type control set(yellow)
Applicable products		CM3PM05 CM3PM06 CM3PM08

### Protruding type(PP)



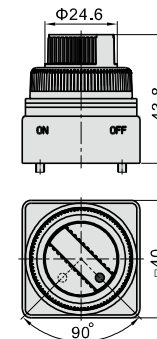
Model		Protruding type ( PP )
How to order	Ordering code	CM3PP06-P1
	Type	CM3PP protruding type control set(green)
	Ordering code	CM3PP06-P2
	Type	CM3PP protruding type control set(red)
	Ordering code	CM3PP06-P3
	Type	CM3PP protruding type control set(black)
	Ordering code	CM3PP06-P4
	Type	CM3PP protruding type control set(yellow)
Applicable products		CM3PP05 CM3PP06 CM3PP08

### Flat type(PF)



Model		Flat type ( PF )
How to order	Ordering code	CM3PF06-P1
	Type	CM3PF flat type control set(green)
	Ordering code	CM3PF06-P2
	Type	CM3PF flat type control set(red)
	Ordering code	CM3PF06-P3
	Type	CM3PF flat type control set(black)
	Ordering code	CM3PF06-P4
	Type	CM3PF flat type control set(yellow)
Applicable products		CM3PF05 CM3PF06 CM3PF08

### Selector type(HS)

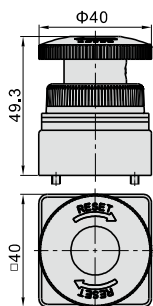


Model		Selector type ( HS )
How to order	Ordering code	CM3HS06-P1
	Type	CM3HS selector type control set(green)
	Ordering code	CM3HS06-P2
	Type	CM3HS selector type control set(red)
	Ordering code	CM3HS06-P3
	Type	CM3HS selector type control set(black)
	Ordering code	CM3HS06-P4
	Type	CM3HS selector type control set(yellow)
Applicable products		CM3HS05 CM3HS06 CM3HS08

# Control valve(3/2 way, 5/3 way)

## CM3 Series

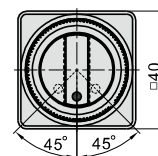
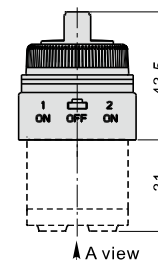
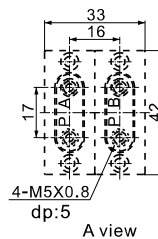
### Latching type(PL)



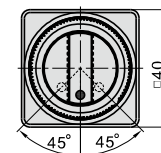
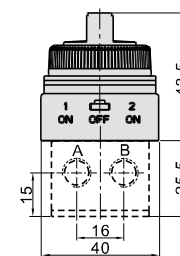
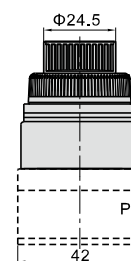
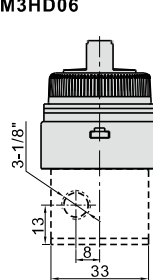
Model	Latching type(PL)
Ordering code	CM3PL06-P2
Type	CM3PL latching type control set(red)
Applicable products	CM3PL05 CM3PL06 CM3PL08

### Double-selector type(HD)

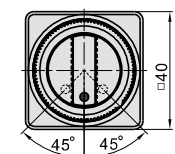
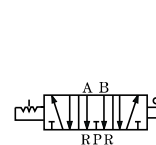
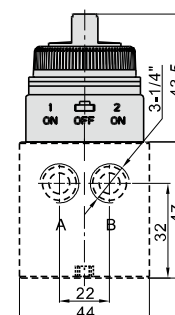
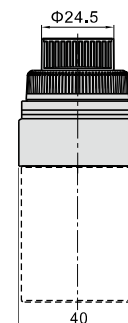
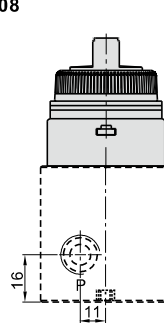
#### CM3HD05



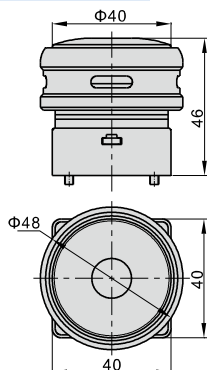
#### CM3HD06



#### CM3HD08

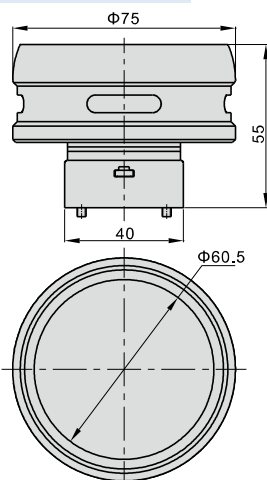


### Mushroom type(with guard)(PMS)



Model	Mushroom type(with guard) ( PMS )
Ordering code	CM3PMS06-P1
Type	CM3PMS mushroom type control set(green with guard)
Ordering code	CM3PMS06-P2
Type	CM3PMS mushroom type control set(red with guard)
Ordering code	CM3PMS06-P3
Type	CM3PMS mushroom type control set(black with guard)
Ordering code	CM3PMS06-P4
Type	CM3PMS mushroom type control set(yellow with guard)
Applicable products	CM3PMS05 CM3PMS06 CM3PMS08

### Big mushroom type(with guard)(PMX)



Model	Big mushroom type(with guard)(PMX)
Ordering code	CM3PMX06-P1
Type	CM3PMX big mushroom type control set(green with guard)
Ordering code	CM3PMX06-P2
Type	CM3PMX big mushroom type control set(red with guard)
Ordering code	CM3PMX06-P3
Type	CM3PMX big mushroom type control set(black with guard)
Ordering code	CM3PMX06-P4
Type	CM3PMX big mushroom type control set(yellow with guard)
Applicable products	CM3PMX05 CM3PMX06 CM3PMX08

Model	Double-selector type ( HD )
Ordering code	CM3HD06-P1
Type	CM3HD double-selector type control set(green)
Ordering code	CM3HD06-P2
Type	CM3HD double-selector type control set(red)
Ordering code	CM3HD06-P3
Type	CM3HD double-selector type control set(black)
Ordering code	CM3HD06-P4
Type	CM3HD double-selector type control set(yellow)
Applicable products	CM3HD05 CM3HD06 CM3HD08

Note: CM3HD control joint can be ordered individually, but should be matched with the body of CM3HD.

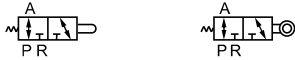


# Control valve(3/2 way)

## ZM3 Series

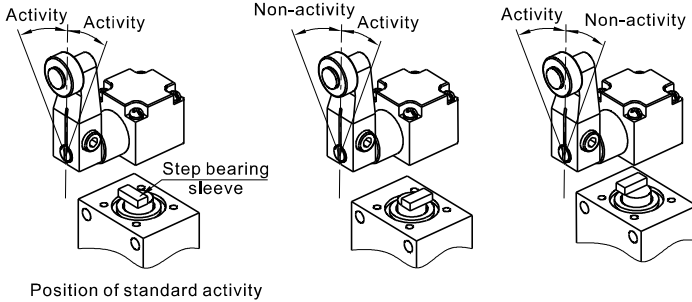


### Symbol

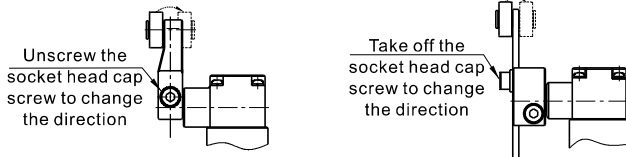


### Product feature

1. The activity direction could be changed(Only adapt to standard type, large angle type unavailable)



2. The rolling wheel could be installed at the inside of leverage



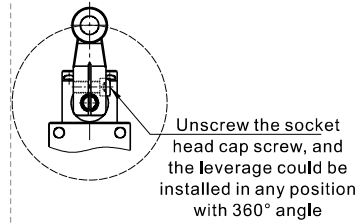
### Specification

Model	ZM3R	ZM3J	ZM3P
Operating	External control direct acting type		
Fluid	Air (to be filtered by 40 μm filter element)		
Pressure range	-0.1~1.0MPa(-1~10bar)(-15~145psi)		
Proof pressure	1.5MPa(15bar)(215psi)		
Temperature	-20~70°C		
Valve type	3/2 Way		
Orifice size	6.0mm <sup>2</sup> (Cv=0.34)		
Port size [Note1]	1/8"		
Lubrication [Note2]	Not required		
Material of body	Aluminum alloy		

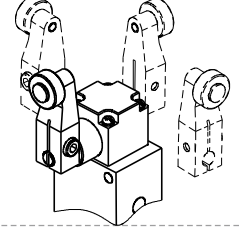
[Note1] PT thread, G thread and NPT thread are available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

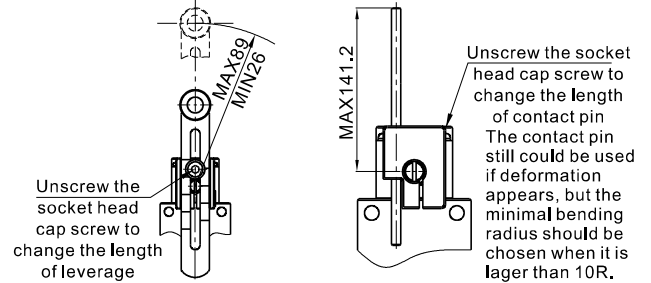
3. Installation position of leverage could be changed



4. Direction of head part could be changed



5. Length of contact pin could be changed

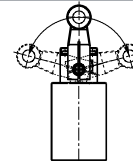


### Ordering code

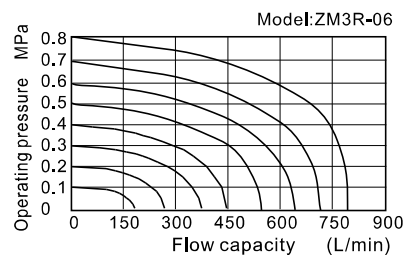
ZM3 R 06 W □

① ② ③ ④ ⑤

① Valve's type	② Model	③ Port size	④ Extreme angle of opening and closing of control head	⑤ Thread type
ZM3: ZM type 3/2 Way	R: Roller type J: Adjustable roller type P: Contact pin adjustable roller type	06: 1/8"	Blank: Standard type W: Large angle type	Blank: PT G: G T: NPT



### Flow chart

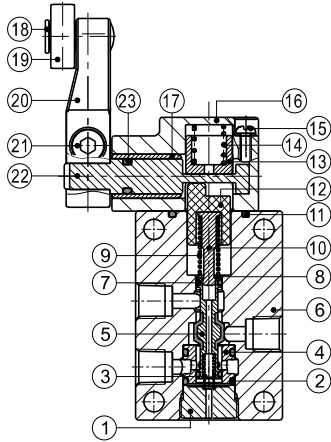


# Control valve(3/2 way)

## ZM3 Series

### Inner structure

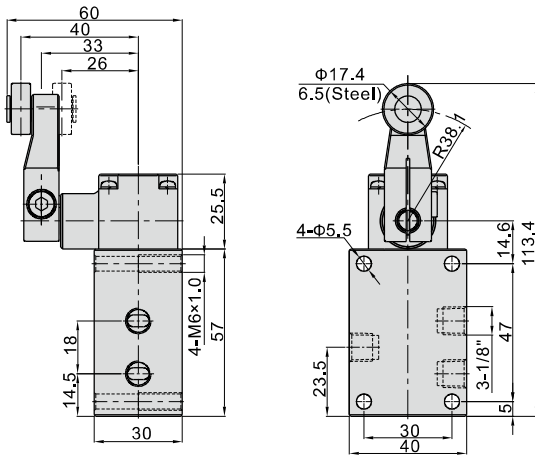
#### ZM3R



No.	Item	No.	Item
1	Bottom cover	13	Spring holder
2	O-ring	14	Spring
3	Spring	15	Screw
4	Spacer	16	Front cover
5	Spool	17	Bushing
6	Body	18	Shaft
7	O-ring	19	Roller
8	Spring washer	20	Rocker arm
9	Spring	21	Screw
10	Mandril	22	Rotation axis
11	O-ring	23	O-ring
12	Bushing		

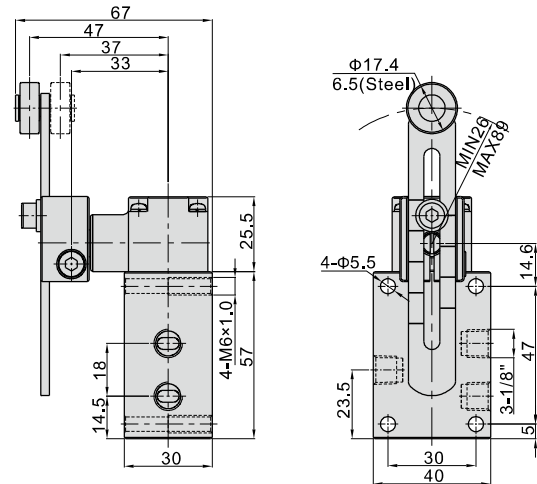
### Dimensions

#### ZM3R



Model\Item	F.O.F	P.T.	O.T.	T.T.
ZM3R06	20N	20°	30°	50°
ZM3R06-W	20N	25°	50°	75°

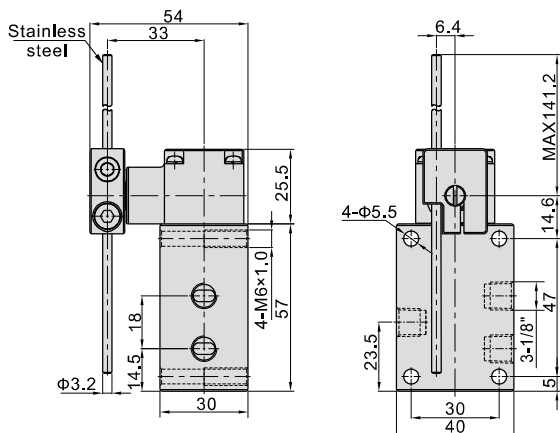
#### ZM3J



Model\Item	F.O.F [Note1]	P.T.	O.T.	T.T.
ZM3J06	20N	20°	30°	50°
ZM3J06-W	20N	25°	50°	75°

[Note1] When the length of leverage is 38.1mm

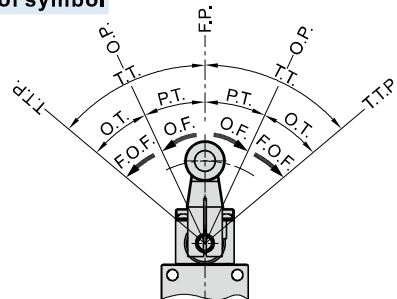
#### ZM3P



Model\Item	F.O.F [Note1]	P.T.	O.T.	T.T.
ZM3P06	2.3N	20°	30°	50°
ZM3P06-W	2.3N	25°	50°	75°

[Note1] When the length of leverage is 141.2mm

### Description of symbol



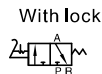
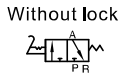
- F.P. Free position: the position of control head when no external force applied;
- O.P. Activity position: the position when the control head is applied with external force and the valve is switched;
- T.T.P. Extreme position of actuation: position of control head when it is pushed until end position;
- O.F. Actuation power: when driving from free position to actuation position, the operation power applied on control head;
- F.O.F. Extreme actuation power: when driving from free position to extreme actuation position, the operation power applied on control head;
- P.T. Free route: movement distance or rotation angle from free position of control head to actuation position;
- O.T. Actuation route: movement distance or rotation angle from actuation position of control head to extreme actuation position;
- T.T. Total route: movement distance or rotation angle from free position of control head to extreme actuation position;

# Foot pedal valve(3/2way)

## 3F, 3FM Series



### Symbol



### Product feature

1. Direct acting and normally closed type.
2. The 3F series has aluminum foot pedal and 3FM series has plastic foot pedal, in direct acting type, horizontal and compact structure.
3. If the duration of direction-change is long, the valves with lock may be selected.
4. The clamping framework is steady and reliable that it is easy and quick to unlock. However, with the limitation of the dimension of structure, it can not bear frequent strong impact.

### Specification

Model	3FM210-M5	3F210-06	3FM210-06	3F210-08	3FM210-08
Fluid	Air (to be filtered by 40 μm filter element)				
Operating	Acting type controlled by foot normally closed				
Port size[Note1]	M5	1/8"	1/8"	1/4"	1/4"
Valve type	3/2 Way				
Pressure range	0~1.0MPa(0~145psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70°C				
Material of body	3FM:Plastic; 3F:Aluminum alloy				
Lubrication	Not required				

[Note1] PT thread, G thread and NPT thread are available.

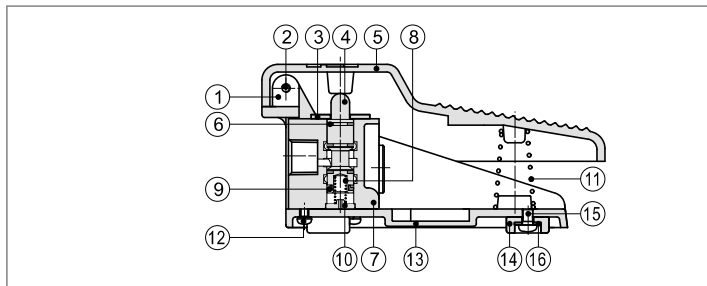
### Ordering code

3F210 08 L □

① ② ③ ④

① Model	② Port size	③ Note	④ Thread type	
3FM210: 3/2 way foot pedal valve (mini type)	M5: M5	No this code	M5	1/8" 1/4"
	06: 1/8"		No this code	Blank: PT
3F210: 3/2 way foot pedal valve	08: 1/4"	Blank: Without lock L: With lock		G: G
			T: NPT	

### Inner structure

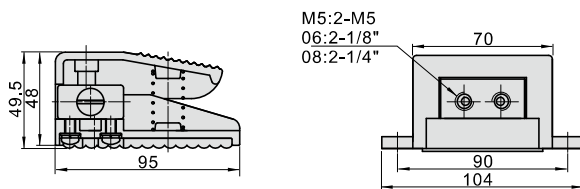


No.	Item	No.	Item	No.	Item
1	Pin	7	Body	13	Base
2	Fixed screw	8	Spring	14	Base pad
3	Fixed plate	9	E clip	15	Fixed screw
4	Spool	10	Spring holder	16	Clip
5	Pedal	11	Override spring		
6	O-ring	12	Fixed screw		

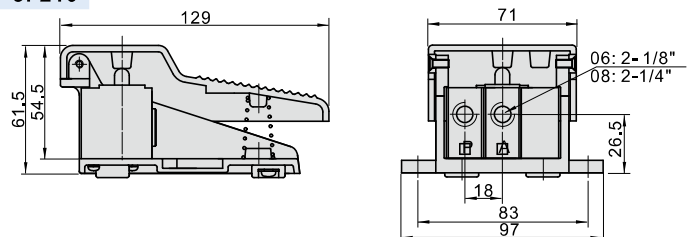
**Note** ⚠ Lockable type should be added grease periodically to ensure the lock mechanism can work regularly

### Dimensions

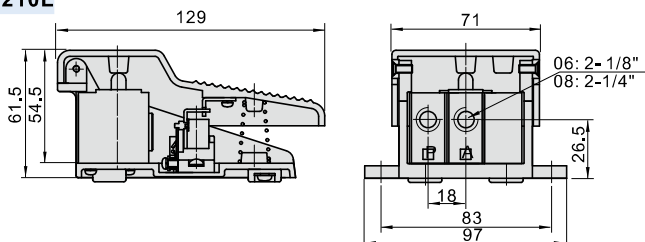
#### 3FM210



#### 3F210



#### 3FM210L

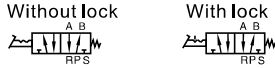


# Foot pedal valve(5/2way)

## 4F Series



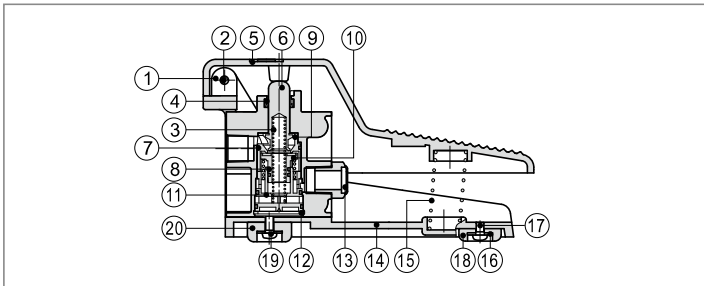
### Symbol



### Product feature

1. The aluminum foot pedal is designed with direct acting, which is steady and reliable.
2. If the duration of direction-change is long, the valves with lock may be selected.
3. The clamping framework is steady and reliable that it is easy and quick to unlock. However, with the limitation of the dimension of structure, it can not bear frequent strong impact.
4. Plastic guard with high strength may be selected.

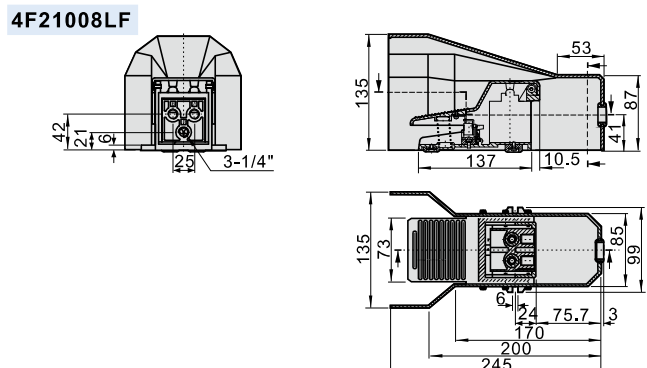
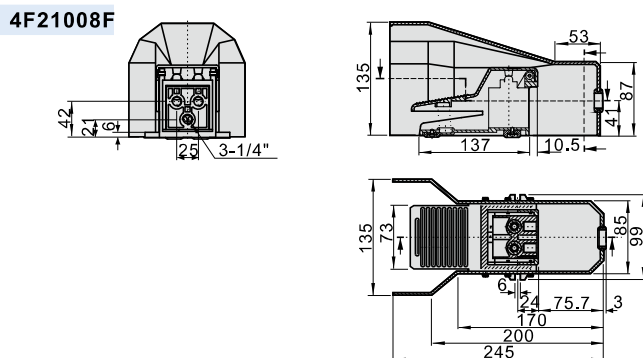
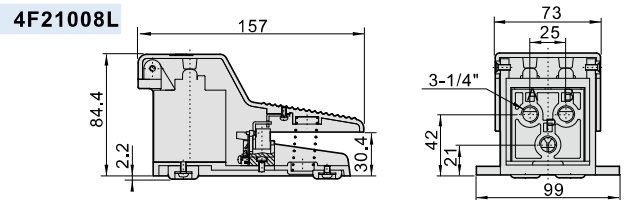
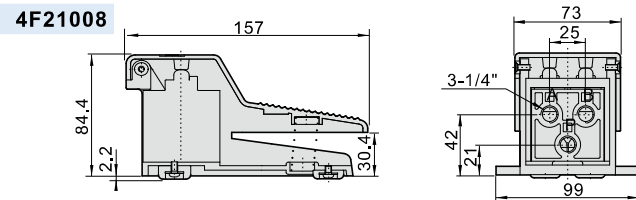
### Inner structure



No.	Item	No.	Item	No.	Item	No.	Item
1	Pin	6	Spool	11	Bottom cover	16	Washer
2	Screw	7	O-ring	12	C clip	17	Screw
3	Spring	8	O-ring	13	Silencer	18	Base pad
4	E clip	9	Front cover	14	Base	19	Screw
5	Pedal	10	Piston	15	Pedal spring	20	Base pad

**Note** ⚠ Lockable type should be added grease periodically to ensure the lock mechanism can work regularly.

### Dimensions



### Specification

Model	4F210-08	4F210-08L	4F210-08F	4F210-08LF
Fluid	Air (to be filtered by 40 μm filter element)			
Operating	Acting type controlled by foot			
Port size [Note1]	1/4"			
Valve type	5/2 Way			
Pressure range	0~1.0MPa(0~145psi)			
Proof pressure	1.5MPa(215psi)			
Temperature	-20~70°C			
Material of body	Aluminum alloy			
Lubrication	Not required			

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

**4F210 08 L □**

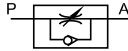
①    ②    ③    ④

① Model	② Port size	③ Note	④ Thread type
4F210: 5/2 way foot pedal valve	08: 1/4"	Blank: Without lock L: With lock F: With guard LF: With lock and guard	Blank: PT G: G T: NPT

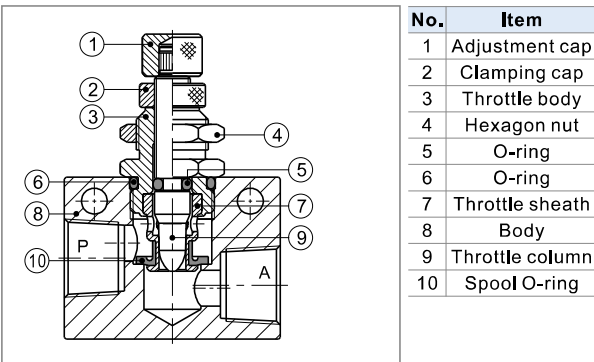
## ASC Series



### Symbol



### Inner structure



### Specification

Model	ASC100-06	ASC200-08	ASC300-10	ASC300-15	
Fluid	Air (to be filtered by 40 μm filter element)				
Port size [Note1]	1/8"	1/4"	3/8"	1/2"	
Pressure range	0.05~0.95MPa(7~135psi)				
Proof pressure	1.5MPa(215psi)				
Temperature	-20~70°C				
Material of body	Aluminum alloy				
Flow (L/min)	Control flow	200	450	1250	1650
	Free flow	400	800	1500	2500

[Note1] PT thread, G thread and NPT thread are available.

### Product feature

1. Small and compact structure.
2. Allows air to exhaust and cut off air flow. The adjustment is both sensitive and precise.
3. Can be mounted in various position to facilitate installation and application.

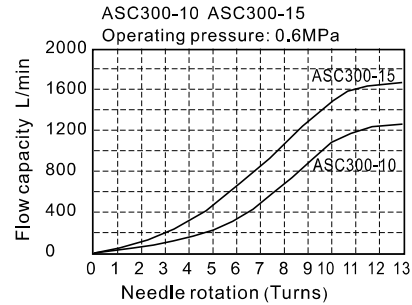
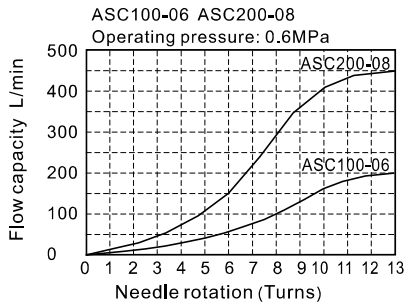
### Ordering code

**ASC 300 10 □**

① ② ③ ④

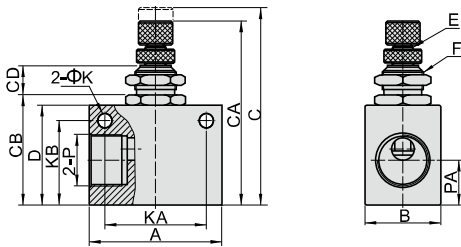
① Model	② Code	③ Port size	④ Thread type
ASC: Flow control valve	100: 100 series	06: 1/8"	Blank: PT G: G T: NPT
	200: 200 series	08: 1/4"	
	300: 300 series	15: 1/2"	

### Flow chart

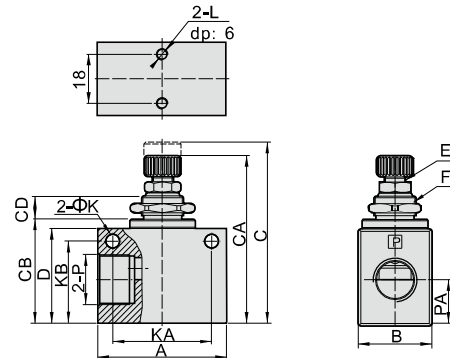


### Dimensions

#### ASC100\ASC200



#### ASC300



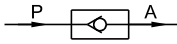
Model\Item	A	B	C	CA	CB	CD	D	E	F	K	KA	KB	L	P	PA
ASC10006	32	18	52.5	47	26	8.6	23	M6×0.5	M12×0.75	4.3	22	18	M4×0.7	1/8"	10
ASC20008	36	18	56.5	51	30	8.6	27	M6×0.5	M12×0.75	4.3	26	23	M4×0.7	1/4"	13.5
ASC30010	50	28	74	65	40.5	10	37	M8×0.75	M16×1.0	5.3	35	32	M4×0.7	3/8"	17.5
ASC30015	50	28	74	65	40.5	10	37	M8×0.75	M16×1.0	5.3	35	32	M4×0.7	1/2"	17.5

# Non-return valve

## NRV Series

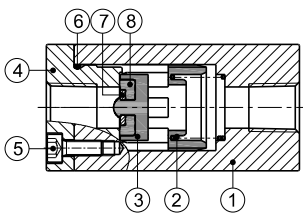


### Symbol



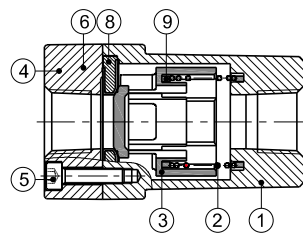
### Inner structure

NRV06\NRV08



No.	Item
1	Body
2	Spring
3	Spool
4	End cover
5	Screw
6	O-ring
7	Washer
8	Gasket washer
9	Bumper

NRV10~25



### Specification

Model	NRV06	NRV08	NRV10	NRV15	NRV20	NRV25
Fluid	Air (to be filtered by 40 μm filter element)					
Port size [Note1]	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Orifice size mm <sup>2</sup> (Cv valve)	18(1.0)	27(1.5)	60(3.33)	73(4.06)	230(12.78)	260(14.44)
Pressure range	0.02~1.0MPa(2.9~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature	-20~70°C					
Material of body	Aluminum alloy					

[Note1] PT thread, G thread and NPT thread are available.

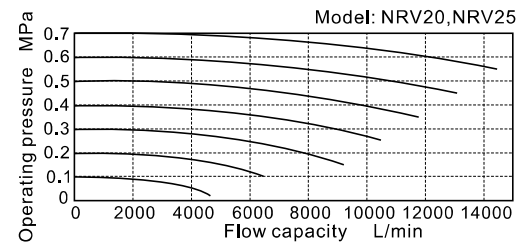
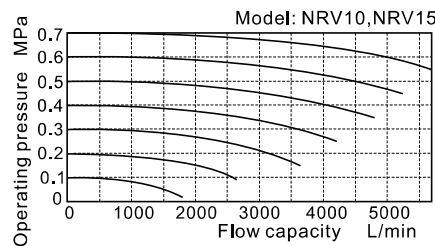
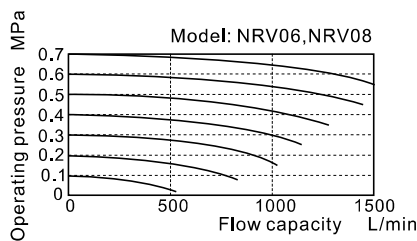
### Product feature

1. There are many port sizes: 1/8", 1/4", 3/8", 1/2", 3/4", 1".
2. It allows the fluid to flow in one direction **ONLY**.
3. It is prevent backflow due to sudden drop in pressure or decrease in air consumption .
4. There is large valid area of section.
5. The spool is made of POM, valve's core sealed with rubber, and it has a compact structure.

### Ordering code

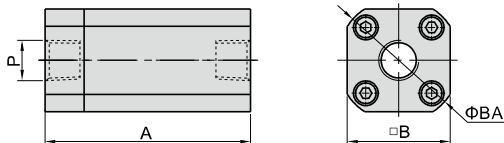
NRV 08 □		
①Model	②Port size	③Thread type
NRV: Non-return valve	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2" 20: 3/4" 25: 1"	Blank: PT G: G T: NPT

### Flow chart



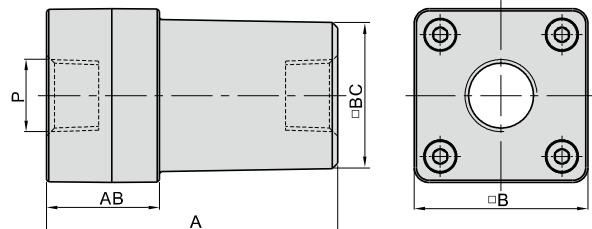
### Dimensions

NRV06\NRV08



Model\Item	A	AB	B	BA	BC	P
NRV06	50	-	25	30	-	1/8"
NRV08	50	-	25	30	-	1/4"
NRV10	67	26	40	-	33.6	3/8"
NRV15	67	26	40	-	33.6	1/2"
NRV20	95	31.5	52	-	46.7	3/4"
NRV25	95	31.5	52	-	46.7	1"

NRV10~25





# Pilot no-return valve

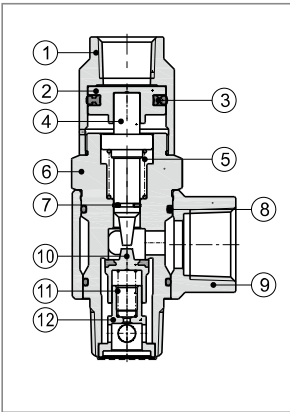
## PCV series



### Symbol



### Inner structure



No.	Item	Material
1	Pilot body	Aluminum alloy
2	Piston	Aluminum alloy
3	Gasket	NBR
4	Spool	Brass or carbon steel
5	Spring	SUS304
6	Body	Brass
7	Spool O-ring	NBR
8	O-ring	NBR
9	Conversion fitting	Aluminum alloy
10	Plunger	Aluminum alloy+NBR
11	Spring	SUS304
12	Base	Aluminum alloy

### Specification

Model	PCV06	PCV08	PCV10	PCV15	PCV06F	PCV08F	PCV10F	PCV15F	
Fluid	Air (to be filtered by 40μm filter element)								
Operating pressure range	0.15~1.0MPa								
Proof pressure	1.5MPa								
Temperature	-20~70(°C)								
Operating frequency	6(Cycle/minute)	40(Cycle/minute)	40(Cycle/minute)	60(Cycle/minute)	40(Cycle/minute)	40(Cycle/minute)	40(Cycle/minute)	40(Cycle/minute)	
Port size [Note1]	1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"	
Pilot port size	M5X0.8	1/8"	1/4"	1/4"	Φ6	Φ6	Φ8	Φ8	
Weight (g)	PT thread	53.2	94.8	142.8	189.6	53	90	142.2	188.1
	G thread	54.6	94.8	145	189	54.2	90.6	143.4	187.6

[Note1] PT thread, G thread are available.

### Product feature

1. Can be used for safety loop of pressure holding.
2. Can make cylinder momentary stop, accurate orientation.
3. Can be used special loop.
4. Fitting joint type is used for pilot port, which saved space and improve efficiency of installation.

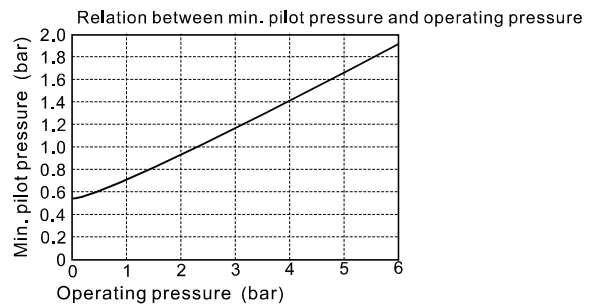
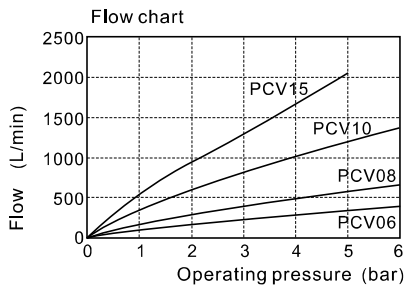
### Ordering code

**PCV 06** □ □

① ② ③ ④

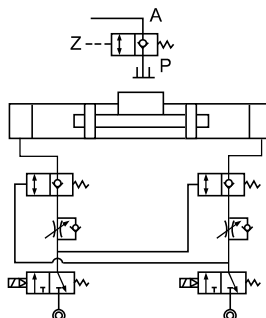
① Model	② Port size	③ Pilot port type			④ Thread type
		Pilot port type	Pilot port size	Inlet/outlet port size	
PCV: Pilot no-return valve	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	Blank: Female thread	M5X0.8	1/8"	Blank: PT G: G
			1/8"	1/4"	
			1/4"	3/8", 1/2"	
		F: Fitting	Φ6	1/8", 1/4"	
			Φ8	3/8", 1/2"	

### Flow chart, Relation between min. pilot pressure and operating pressure



### Typical application

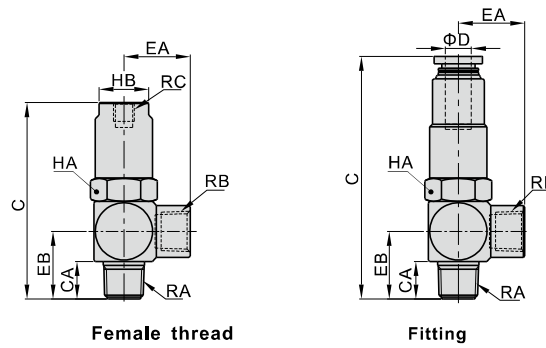
#### Accurate orientation



## PCV series

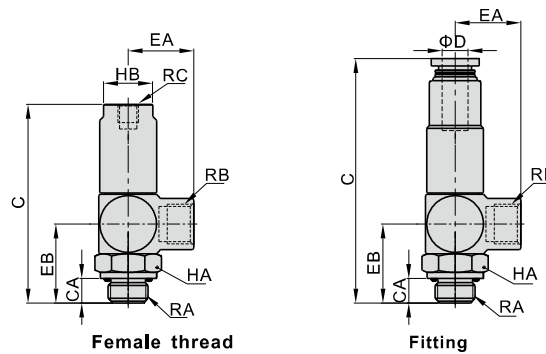
### Dimensions

#### PT Thread



Model/Item	C	CA	D	EA	EB	HA	HB	RA	RB	RC
PCV06	48,5	7,5	-	16	16,5	14	12	1/8"	1/8"	M5X0,8
PCV08	59	10	-	20,3	21	17	14	1/4"	1/4"	1/8"
PCV10	74,5	11	-	25	26	22	17	3/8"	3/8"	1/4"
PCV15	79,5	14	-	28	29,5	24	19	1/2"	1/2"	1/4"
PCV06F	58,5	7,5	6	16	16,5	14	-	1/8"	1/8"	-
PCV08F	67	10	6	20,3	21	17	-	1/4"	1/4"	-
PCV10F	82	11	8	25	26	22	-	3/8"	3/8"	-
PCV15F	87	14	8	28	29,5	24	-	1/2"	1/2"	-

#### G Thread



Model/Item	C	CA	D	EA	EB	HA	HB	RA	RB	RC
PCV06G	48,5	5,5	-	16	19	14	12	G1/8	G1/8	M5X0,8
PCV08G	59	6,5	-	20,3	24	17	14	G1/4	G1/4	G1/8
PCV10G	74,5	7,5	-	25	30,5	22	17	G3/8	G3/8	G1/4
PCV15G	79,5	9	-	28	34,5	24	19	G1/2	G1/2	G1/4
PCV06FG	58,5	5,5	6	16	19	14	-	G1/8	G1/8	-
PCV08FG	67	6,5	6	20,3	24	17	-	G1/4	G1/4	-
PCV10FG	82	7,5	8	25	30,5	22	-	G3/8	G3/8	-
PCV15FG	87	9	8	28	34,5	24	-	G1/2	G1/2	-



## Compendium of Fluid control valve

Product Code	Product feature	Photo	Product Code	Product feature	Photo
<b>P169</b>	<p>2WA Series direct-acting or internally piloted and normally closed</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: Brass</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>		<b>P173</b>	<p>2KWA Series direct-acting or internally piloted and normally opened</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: Brass</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>	
<b>P177</b>	<p>2SA Series direct-acting or internally piloted and normally closed</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>		<b>P181</b>	<p>2KSA Series direct-acting or internally piloted and normally opened</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>	
<b>P185</b>	<p>2LA Series direct-acting or internally piloted and normally closed</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>		<b>P189</b>	<p>2KLA Series direct-acting or internally piloted and normally opened</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>	
<b>P194</b>	<p>2S Series direct-acting or internally piloted and normally closed</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>		<b>P198</b>	<p>2KS Series direct-acting or internally piloted and normally opened</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>	
<b>P202</b>	<p>2W Series direct-acting or internally piloted and normally closed</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: Brass</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>		<b>P206</b>	<p>2KW Series direct-acting or internally piloted and normally opened</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: Brass</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>	
<b>P210</b>	<p>2L Series direct-acting or internally piloted and normally closed</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids and high temp.</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>		<b>P214</b>	<p>2KL Series direct-acting or internally piloted and normally opened</p> <ul style="list-style-type: none"> <li>●Shut-off structure or piston piloted structure</li> <li>●Wide operating pressure range</li> <li>●Body material: SUS304</li> <li>●Apply to various fluids and high temp.</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>	
<b>P219</b>	<p>2V Series</p> <ul style="list-style-type: none"> <li>●Direct-acting and diaphragm piloted optional</li> <li>●Body material: Stainless steel or brass</li> <li>●Apply to various fluids</li> <li>●Terminal and Grommet</li> <li>●2/2 way</li> </ul>		<b>P221</b>	<p>2J Series angle seat valve</p> <ul style="list-style-type: none"> <li>●Air piloted structure</li> <li>●Body and pitman material: Stainless steel</li> <li>●The structure of valve is angles at 45° degrees with streamline inner chamber design</li> <li>●Apply to various fluids and high temp.</li> </ul>	

## Installation and Application



1. Before installing, be sure the valve hasn't been damaged via transportation.
2. The coil must be pure vertical, the inlet and outlet on body must be horizontal. it's suggested to use the medium lubricated by 40µm filter element. Be aware of the flow direction and port size.
3. Please notice whether the installation condition accords with technical requirements (such as "voltage", "actuation frequency", "working pressure" and "scope of application temperature"), then the equipment can be installed and used.
4. Take measure to avoid vibration and frozen.
5. Before using the fittings and tubes make sure they are clean. When connecting to fittings, be sure the PTFE Thread Seal Tape is used correctly.
6. To keep the dust away, Default paragraph font; Never forget to install dirt-proof boot in air intake and outlet during dismounting.



# Fluid control valve(2/2way)

## 2WA Series (Direct-acting and normally closed )



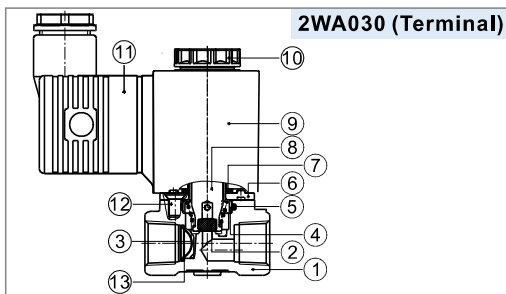
### Symbol



### Product feature

1. Direct acting and normally closed type 2/2 way fluid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard , large volume(L) and extra large volume (T);
3. It is compact, small size and light weight. Easy to install and dismantle.
4. The valve body is made of brass . Its coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry .

### Inner structure



No.	Item	No.	Item
1	Body	8	Movable core
2	Airtight ring	9	Coil assembly
3	Spring	10	Coil nut
4	Steel bushing	11	Connector
5	O-ring	12	Screw
6	Fixed plate	13	Filter [Note]
7	O-ring		

[Note] Extra large volume type has no filter element.

### Ordering code

#### Ordering code of valves

2WA L 030 08 A □ □



① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2WA: 2/2 way direct-acting and normally closed	X: Extra high pressure H: High pressure Blank: Standard L: Large volume T: Extra large volume	030: 030 Series	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
	050: 050 Series	10: 3/8" 15: 1/2"				

[Note] The wire length is 0.5m.

#### Ordering code of accessories

F-2WA030 LB



① Accessories code	② Valve type	③ Accessories type
F: Mounting accessories	2WA030: 030 Series valve 2WA050: 050 Series valve	LB: LB Type

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2WA030	-06 1/8"	1.5	0.10	1.8	245	3.0	450	5.0	750
	-08 1/4"				235				
2WAH030	-06 1/8"	2.0	0.18	3.0	245	2.0	300	5.0	750
	-08 1/4"				235				
2WA030	-06 1/8"	3.0	0.33	6.0	245	1.0	150	5.0	750
	-08 1/4"				235				
2WAL030	-06 1/8"	4.0	0.55	10.0	245	0.5	75	5.0	750
	-08 1/4"				235				
2WAT030	-06 1/8"	6.0	1.10	12.0	245	0.1	15	5.0	750
	-08 1/4"				235				
2WAX050	-10 3/8"	3.0	0.34	6.1	530	3.0	450	5.0	750
	-15 1/2"				510				
2WAH050	-10 3/8"	4.0	0.55	10.0	530	2.0	300	5.0	750
	-15 1/2"				510				
2WA050	-10 3/8"	5.0	0.83	15.0	530	1.0	150	5.0	750
	-15 1/2"				510				
2WAL050	-10 3/8"	7.0	1.40	25.0	530	0.5	75	5.0	750
	-15 1/2"				510				
2WAT050	-10 3/8"	10.0	2.20	40.0	530	0.1	15	5.0	750
	-15 1/2"				510				

[Note1] PT thread, G thread, and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2WA030 series grommet valve's weight is 10g less than terminal's. 2WA050series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2WA□030	CDA110 CLA110	AC	50	± 15%	Terminal (CDA)	10.0VA	Class F	50
			60			8.0VA		45
2WA□050	CDA160 CLA160	AC	50	± 15%	Grommet (CLA)	25.0VA	Class F	50
			60			22.0VA		60
		DC	-	± 10%		12.0W		65
			-	± 10%		12.0W		50

### Valve's specification

Acting		Direct acting				
Initial state		Normally closed				
Adaptable fluid		Air, Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient	
	Max.	80	90	80	70	
	Min.	1	-20 [Note1]	-10 [Note2]	-20	

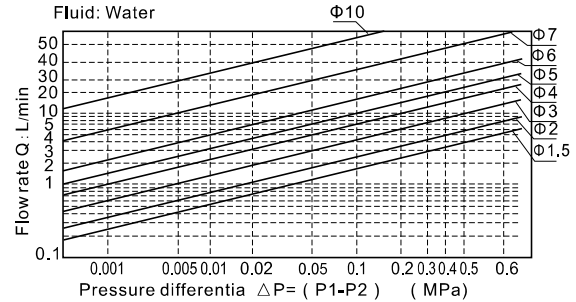
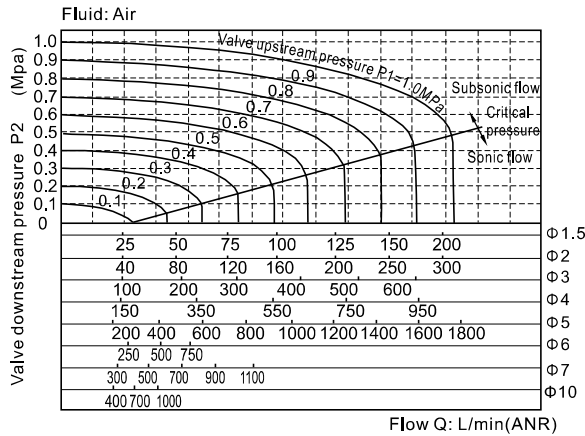
[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

# Fluid control valve(2/2way)

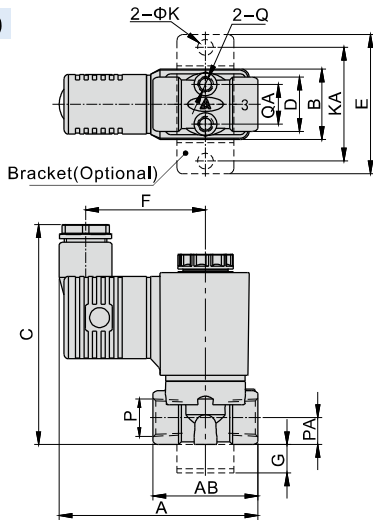
## 2WA Series (Direct-acting and normally closed)

### Flow chart

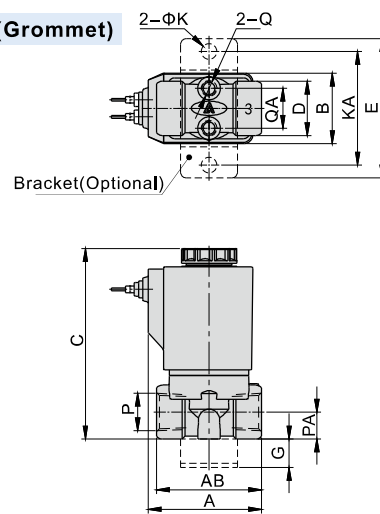


### Dimensions

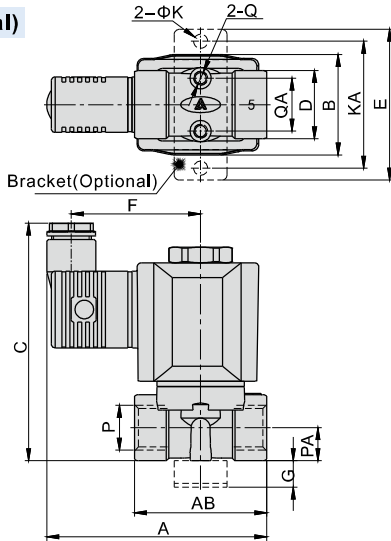
#### 2WA□030 (Terminal)



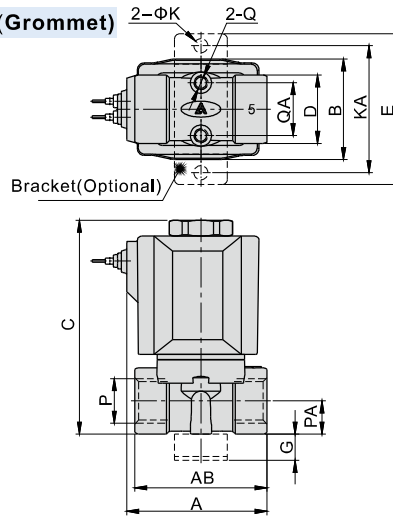
#### 2WA□030 (Grommet)



#### 2WA□050 (Terminal)



#### 2WA□050 (Grommet)



Model/Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2WA□030-06	70	37	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2WAT□030-06	71.5	39.5	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2WA□030-08	70	37	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2WAT□030-08	71.5	39.5	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2WA□050-10	83	50	38	90	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2WAT□050-10	84	51	38	93	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2WA□050-15	83	50	38	90	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5
2WAT□050-15	84	51	38	93	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5

Model/Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2WA□030-06	40	37	25	67	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2WAT□030-06	41.5	39.5	25	67	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2WA□030-08	40	37	25	67	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2WAT□030-08	41.5	39.5	25	67	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2WA□050-10	53	50	38	81	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2WAT□050-10	54	51	38	84	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2WA□050-15	53	50	38	81	26	57	10	5.5	48	1/2"	12.5	M5	19.5
2WAT□050-15	54	51	38	84	26	57	10	5.5	48	1/2"	12.5	M5	19.5

# Fluid control valve(2/2way)

## 2WA Series (Internally piloted and normally closed)



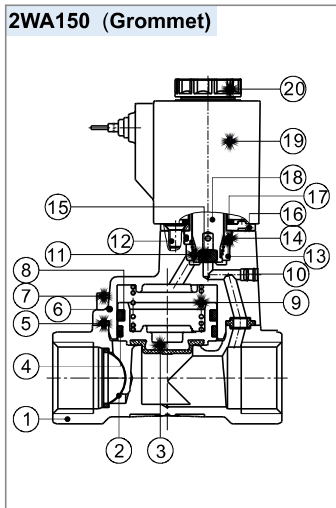
### Symbol



### Product feature

1. Indirect acting (Internal pilot) and normally closed type 2/2 way fluid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. Easy to install and dismantle;
3. The valve body is made of brass. The coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure



No.	Item
1	Body
2	Filter
3	Piston
4	Wear ring
5	O-ring
6	Cover
7	Screw
8	Spring
9	Spring
10	Spacer
11	Spring
12	Screw
13	Steel bushing
14	O-ring
15	Airtight ring
16	Fixed plate
17	O-ring
18	Movable core
19	Coil assembly
20	Coil nut

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2WA150-15	1/2"	15.0	5.50	100.0	575	Max: 1.0 Min: 0.05	Max: 150 Min: 10	1.5	220
2WA200-20	3/4"	20.0	9.50	170.0	735				
2WA250-25	1"	25.0	12.5	220.0	1035				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, grommet valve's weight is 10g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2WA150	CDA110	AC	50	±15%	Terminal (CDA)	10.0VA	Class F	50
2WA200	CLA110		60			8.0VA		45
2WA250		DC	-	±10%	Grommet (CLA)	6.5W		50

### Valve's specification

Acting	Internally piloted				
	Initial state	Normally closed			
Adaptable fluid	Air, Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ; [Note2] 50CST or less.

### Ordering code

Ordering code of valves	2WA	150	15	A	□	□
	①	②	③	④	⑤	⑥
① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type	
2WA: 2/2 way internally piloted and normally closed	150: Φ15mm 200: Φ20mm 250: Φ25mm	15: 1/2" 20: 3/4" 25: 1"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT	

[Note] The wire length is 0.5m.

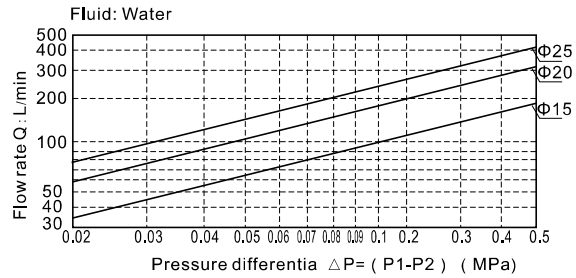
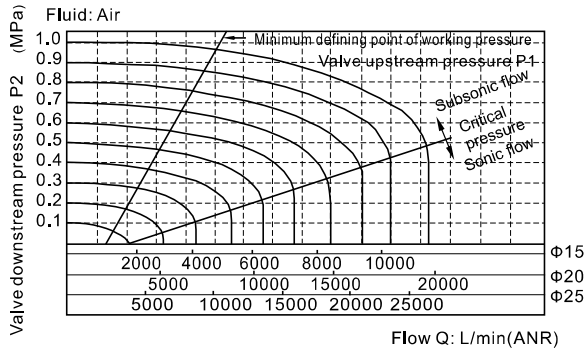
Ordering code of accessories	F-2WA150 LB	
	① ② ③	
① Accessories code	② Valve type	③ Accessories type
F: Mounting accessories	2WA150: 150 Series valve 2WA200: 200 Series valve 2WA250: 250 Series valve	LB: LB Type



# Fluid control valve(2/2way)

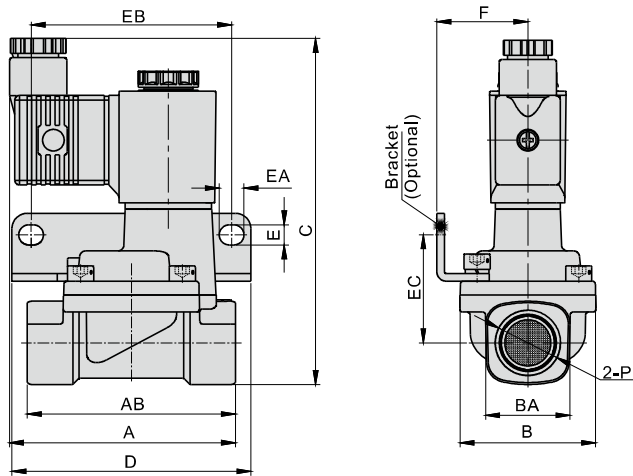
## 2WA Series (Internally piloted and normally closed)

### Flow chart



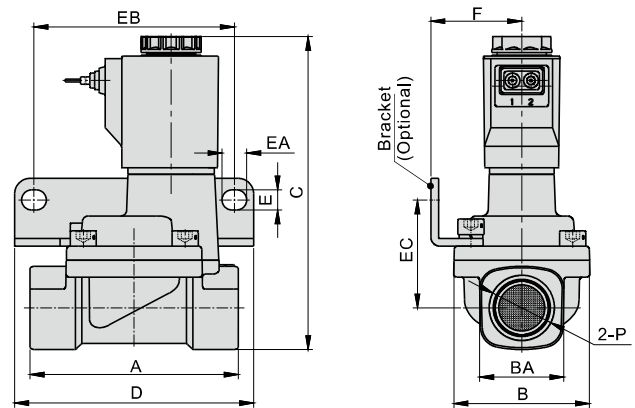
### Dimensions

#### Terminal



Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2WA150-15	73.5	67.5	44	27.5	112	77.5	6.5	8	65	35	29.5	1/2"
2WA200-20	75.5	79.5	51	33	119	87.5	6.5	8	75	38	33	3/4"
2WA250-25	77.5	90	57	40	126	93	6.5	8	80	42	35	1"

#### Grommet



Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2WA150-15	67.5	44	27.5	102	77.5	6.5	8	65	35	29.5	1/2"
2WA200-20	79.5	51	33.5	109	87.5	6.5	8	75	38	33	3/4"
2WA250-25	90	57	40.5	116	93	6.5	8	80	42	35	1"

# Fluid control valve(2/2 way)

## 2KWA Series (Direct-acting and normally opened)



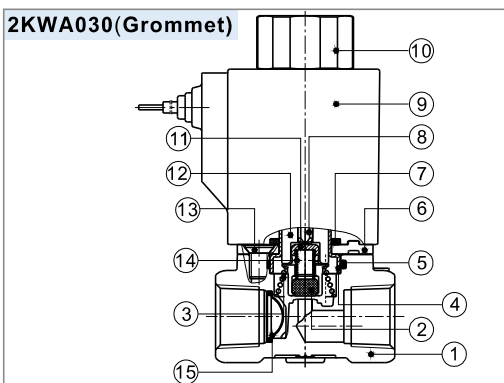
### Symbol



### Product feature

1. Direct acting and normally opened type 2/2 way fluid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard and large volume(L) to choose from;
3. It is compact, small size and light weight. Easy to install and dismantle.
4. The valve body is made of brass. Its coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure



No.	Item	No.	Item	No.	Item
1	Body	6	Fixed plate	11	Airtight bush
2	Airtight ring	7	O-ring	12	Electromagnet
3	Spring	8	Mandril	13	Screw
4	Coil axis	9	Coil assembly	14	Spring
5	O-ring	10	Coil nut	15	Filter

### Specification

Model\Item	Port size [Note1]	Cv	Orifice size (Φmm)	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	Mpa	psi
2KWAX030	-06 1/8"	0.10	1.5	1.8	245	2.0	300	3.0	450
	-08 1/4"								
2KWAH030	-06 1/8"	0.18	2.0	3.0	245	1.5	220		
	-08 1/4"								
2KWA030	-06 1/8"	0.33	3.0	6.0	245	0.7	100		
	-08 1/4"								
2KWAL030	-06 1/8"	0.55	4.0	10.0	245	0.4	60		
	-08 1/4"								
2KWAX050	-10 3/8"	0.34	3.0	6.1	530	2.0	300		
	-15 1/2"								
2KWAH050	-10 3/8"	0.55	4.0	10.0	530	1.5	220		
	-15 1/2"								
2KWA050	-10 3/8"	0.83	5.0	15.0	530	0.7	100		
	-15 1/2"								
2KWAL050	-10 3/8"	1.40	7.0	25.0	530	0.4	60		
	-15 1/2"								

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KWA030 series grommet valve's weight is 10g less than terminal's, 2KWA050series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KWA□030	CDA110 CLA110	AC	50	±15%	Terminal (CDA)	15.0VA	Class F	50
			60			11.0VA		45
		DC	-	±10%		6.5W		50
			-			35.0VA		65
2KWA□050	CDA160 CLA160	AC	50	±15%	Grommet (CLA)	30.0VA	Class F	60
			60			12.0W		50
		DC	-	±10%		-		-
			-			-		-

### Valve's specification

Acting		Direct acting				
Initial state		Normally opened				
Adaptable fluid		Air, Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature ( °C )			Water	Air	Oil	Ambient
		Max.	80	90	80	70
		Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Ordering code

#### Ordering code of valves

2KWA H 030 08 A □ □



① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2KWA: 2/2 way direct-acting and normally opened	X: Extra high pressure H: High pressure Blank: Standard L: Large volume	030: 030 Series  050: 050 Series	06: 1/8" 08: 1/4"  10: 3/8" 15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

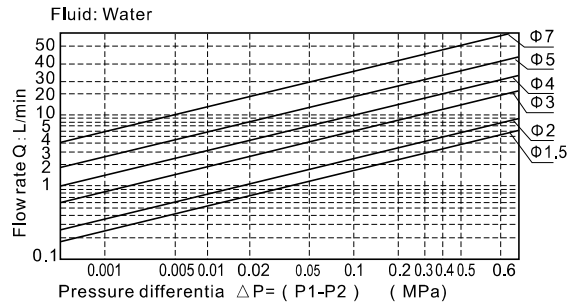
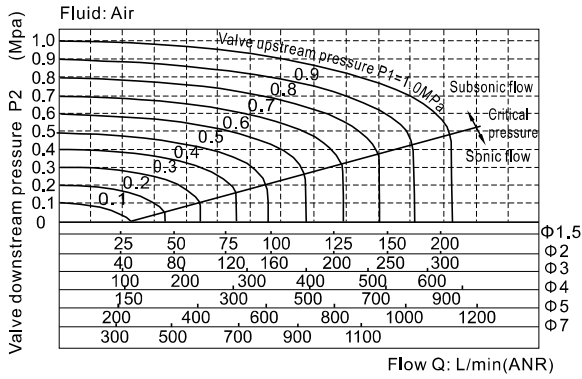
#### Ordering code of accessories

Ordering code of accessories is the same as 2WA series valve's, Please refer to P169 for details of ordering code.

# Fluid control valve(2/2 way)

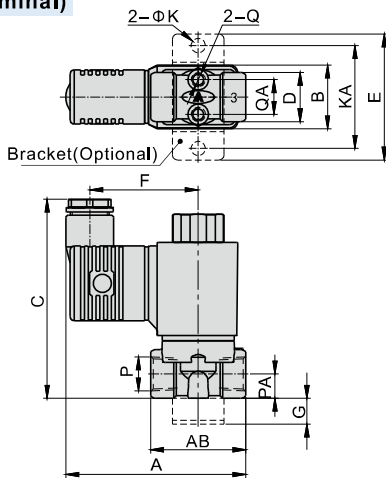
## 2KWA Series (Direct-acting and normally opened)

### Flow chart

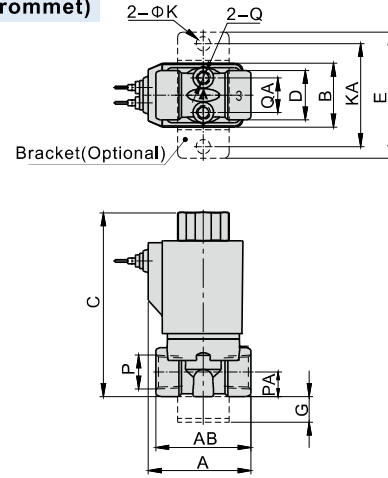


### Dimensions

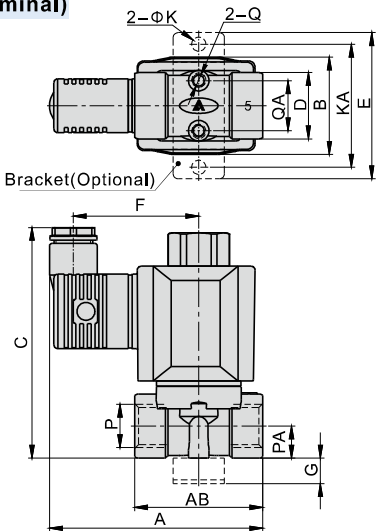
#### 2KWA□030 (Terminal)



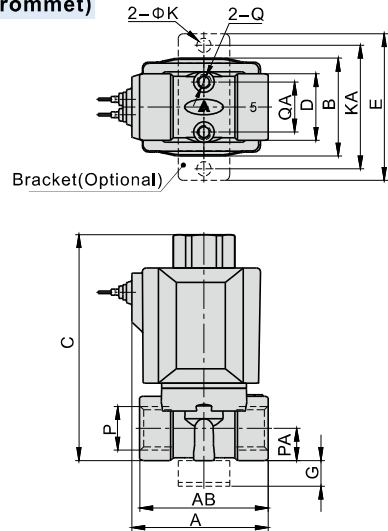
#### 2KWA□030 (Grommet)



#### 2KWA□050 (Terminal)



#### 2KWA□050 (Grommet)



Model\Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2KWA□030-06	70	37	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2KWA□030-08	70	37	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2KWA□050-10	83	50	38	90	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2KWA□050-15	83	50	38	90	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5

Model\Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2KWA□030-06	40	37	25	74	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2KWA□030-08	40	37	25	74	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2KWA□050-10	53	50	38	90	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2KWA□050-15	53	50	38	90	26	57	10	5.5	48	1/2"	12.5	M5	19.5

# Fluid control valve(2/2 way)

## 2KWA Series (Internally piloted and normally opened )



### Symbol



### Product feature

1. Indirect acting (Internal pilot) and normally opened type 2/2 way fluid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. Easy to install and dismantle;
3. The valve body is made of brass. The coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2KWA150-15	1/2"	15.0	5.50	100.0	575	Max: 0.7 Min: 0.05	Max: 100 Min: 10	1.5	220
2KWA200-20	3/4"	20.0	9.50	170.0	735				
2KWA250-25	1"	25.0	12.5	220.0	1035				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, grommet valve's weight is 10g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KWA150	CDA110	AC	50	±15%	Terminal (CDA)	15.0VA	Class F	50
2KWA200	CLA110		60			11.0VA		45
2KWA250		DC	-	±10%	Grommet (CLA)	6.5W		50

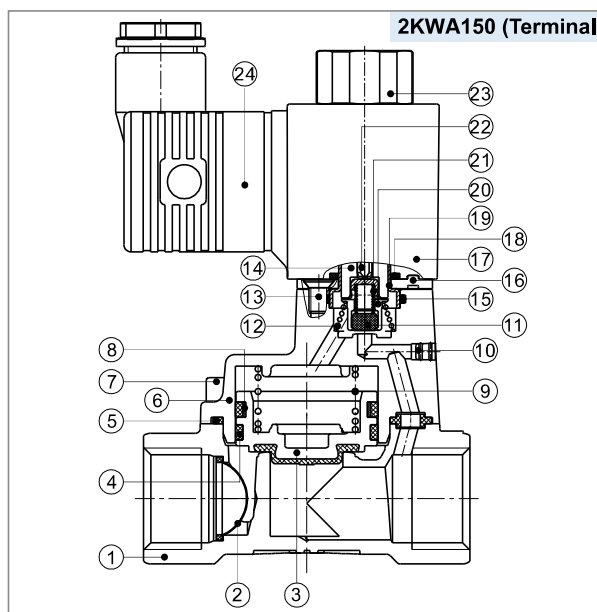
### Valve's specification

Acting	Internally piloted				
Initial state	Normally opened				
Adaptable fluid	Air, Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Inner structure



No.	Item
1	Body
2	Filter
3	Piston
4	Wear ring
5	O-ring
6	Cover
7	Screw
8	Bonnet spring
9	Spring
10	Bushing
11	Airtight ring
12	Spring
13	Screw
14	Electromagnet
15	O-ring
16	Fixed plate
17	Coil assembly
18	O-ring
19	Coil axis
20	Airtight ring
21	Spring
22	Mandrill
23	Coil nut
24	Connector

### Ordering code

Ordering code of valves

2KWA 150 15 A □ □  
 ① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2KWA: 2/2 way internally piloted and normally opened	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"	C: AC110V E: AC24V		
	250: Φ25mm	25: 1"	F: DC12V		

[Note] The wire length is 0.5m.

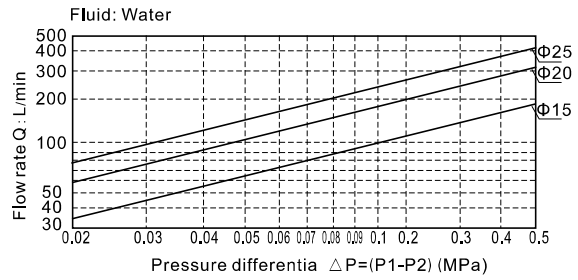
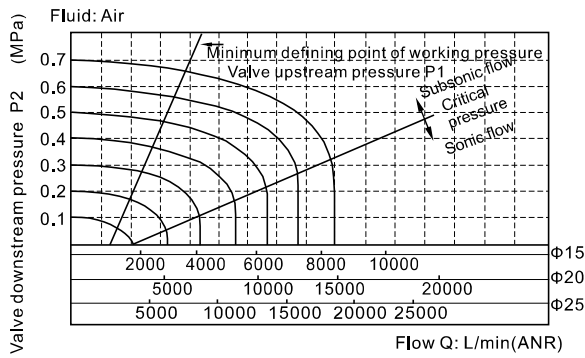
### Ordering code of accessories

Ordering code of accessories is the same as 2WA series valve's, Please refer to P171 for details of ordering code.

# Fluid control valve(2/2 way)

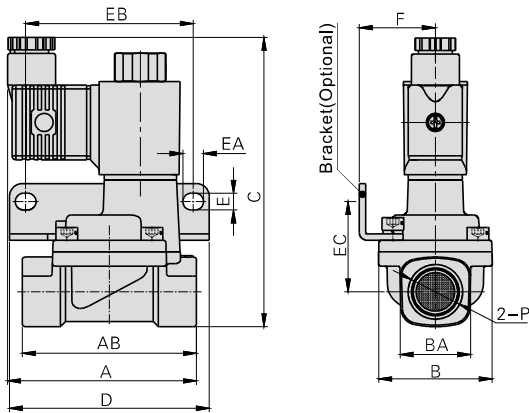
## 2KWA Series (Internally piloted and normally opened )

### Flow chart



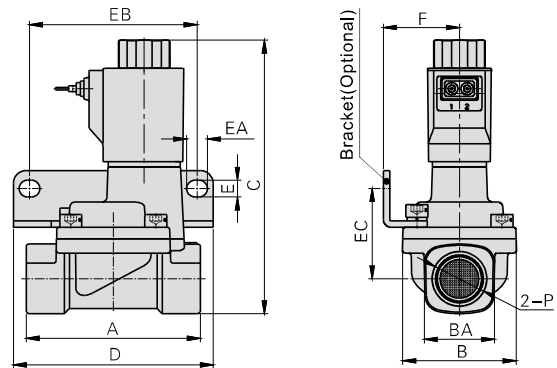
### Dimensions

#### Terminal



Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2KWA150-15	73.5	67.5	44	27.5	112	77.5	6.5	8	65	35	29.5	1/2"
2KWA200-20	75.5	79.5	51	33.5	119	87.5	6.5	8	75	38	33	3/4"
2KWA250-25	77.5	90	57	40.5	126	93	6.5	8	80	42	35	1"

#### Grommet



Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2KWA150-15	67.5	44	27.5	109	77.5	6.5	8	65	35	29.5	1/2"
2KWA200-20	79.5	51	33.5	116	87.5	6.5	8	75	38	33	3/4"
2KWA250-25	90	57	40.5	123	93	6.5	8	80	42	35	1"

# Fluid control valve(2/2way)

## 2SA Series (Direct-acting and normally closed)



### Symbol



### Product feature

1. Direct acting and normally closed type 2/2 way fluid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard , large volume(L) and extra large volume (T);
3. It is compact, small size and light weight. Easy to install and dismantle.
4. The valve body is made of SUS304 . Its coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry .

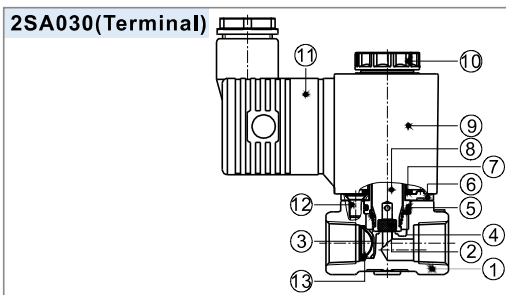
### Specification

Model\Item	Port size [Note1]		Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
							MPa	psi	MPa	psi
2SAX030	-06	1/8"	1.5	0.10	1.8	245	3.0	450	5.0	750
	-08	1/4"								
2SAH030	-06	1/8"	2.0	0.18	3.0	245	2.0	300	5.0	750
	-08	1/4"								
2SA030	-06	1/8"	3.0	0.33	6.0	245	1.0	150	5.0	750
	-08	1/4"								
2SAL030	-06	1/8"	4.0	0.55	10.0	245	0.5	75	5.0	750
	-08	1/4"								
2SAT030	-06	1/8"	6.0	1.10	12.0	245	0.1	15	5.0	750
	-08	1/4"								
2SAX050	-10	3/8"	3.0	0.34	6.1	530	3.0	450	5.0	750
	-15	1/2"								
2SAH050	-10	3/8"	4.0	0.55	10.0	530	2.0	300	5.0	750
	-15	1/2"								
2SA050	-10	3/8"	5.0	0.83	15.0	530	1.0	150	5.0	750
	-15	1/2"								
2SAL050	-10	3/8"	7.0	1.40	25.0	530	0.5	75	5.0	750
	-15	1/2"								
2SAT050	-10	3/8"	10.0	2.20	40.0	530	0.1	15	5.0	750
	-15	1/2"								

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2SA030 series grommet valve's weight is 10g less than terminal's. 2SA050series grommet valve's weight is 20g less than terminal's.

### Inner structure



No.	Item	No.	Item	No.	Item
1	Body	6	Fixed plate	11	Connector
2	Airtight ring	7	O-ring	12	Screw
3	Spring	8	Movable core	13	Filter [Note]
4	Steel bushing	9	Coil assembly		
5	O-ring	10	Coil nut		

[Note] Extra large volume type has no filter element.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2SA□030	CDA110 CLA110	AC	50	±15%	Terminal (CDA)	10.0VA	Class F	50
			60			8.0VA		45
		DC	-	±10%		6.5W		50
2SA□050	CDA160 CLA160	AC	50	±15%	Grommet (CLA)	25.0VA	Class F	65
			60			22.0VA		60
		DC	-	±10%		12.0W		50

### Valve's specification

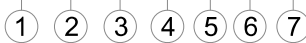
Acting		Direct acting			
Initial state		Normally closed			
Adaptable fluid		Air, Water, Oil			
Viscosity limit		Under 20CST			
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ; [Note2] 50CST or less.

### Ordering code

#### Ordering code of valves

2SA L 030 08 A □ □



① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2SA: 2/2 way direct-acting and normally closed	X: Extra high pressure H: High pressure Blank: Standard L: Large volume T: Extra large volume	030: 030 Series  050: 050 Series	06: 1/8" 08: 1/4"  10: 3/8" 15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

#### Ordering code of accessories

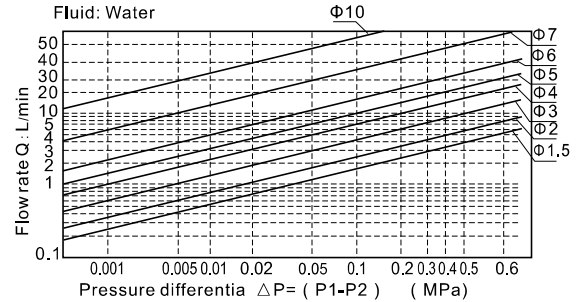
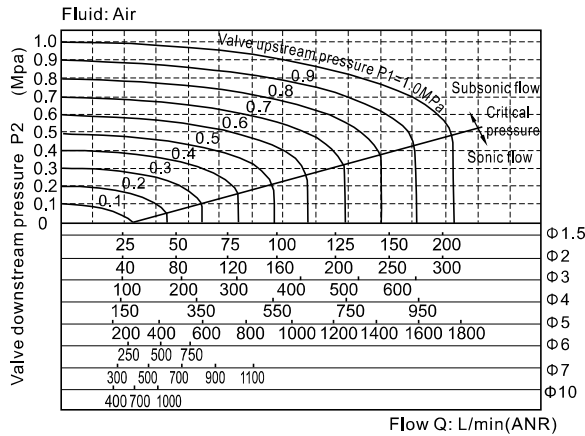
Ordering code of accessories is the same as 2WA series valve's, Please refer to P169 for details of ordering code.



# Fluid control valve(2/2way)

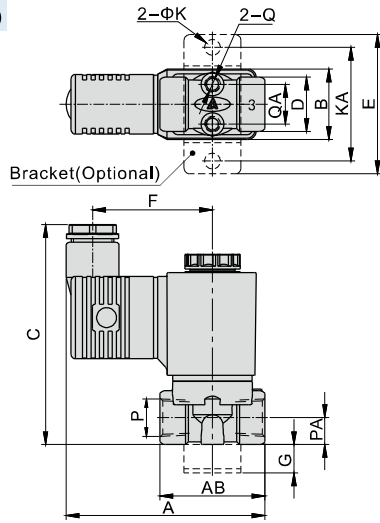
## 2SA Series (Direct-acting and normally closed)

### Flow chart

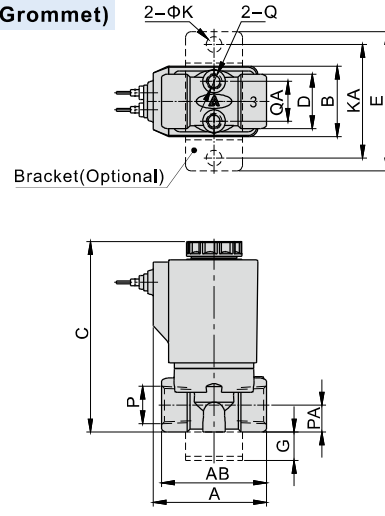


### Dimensions

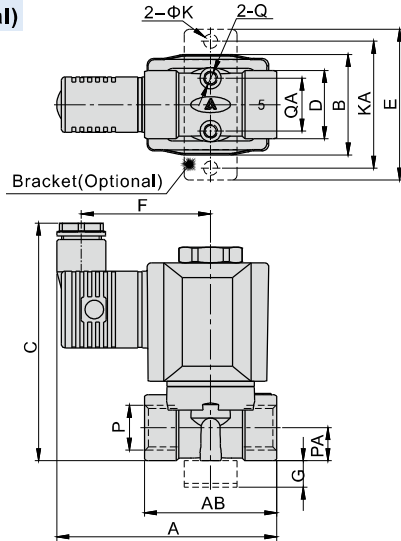
#### 2SA□030 (Terminal)



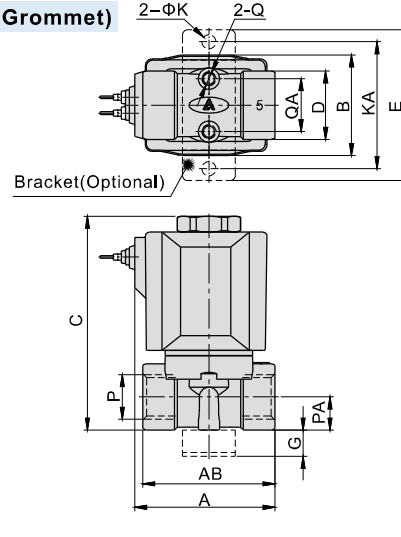
#### 2SA□030(Grommet)



#### 2SA□050 (Terminal)



#### 2SA□050(Grommet)



Model/Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2SA□030-06	70	37	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2SAT□030-06	71.5	39.5	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2SA□030-08	70	37	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2SAT□030-08	71.5	39.5	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2SA□050-10	83	50	38	90	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2SAT□050-10	84	51	38	90	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2SA□050-15	83	50	38	90	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5
2SAT□050-15	84	51	38	90	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5

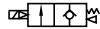
Model/Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2SA□030-06	40	37	25	67	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2SAT□030-06	41.5	39.5	25	67	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2SA□030-08	40	37	25	67	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2SAT□030-08	41.5	39.5	25	67	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2SA□050-10	53	50	38	81	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2SAT□050-10	54	51	38	81	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2SA□050-15	53	50	38	81	26	57	10	5.5	48	1/2"	12.5	M5	19.5
2SAT□050-15	54	51	38	81	26	57	10	5.5	48	1/2"	12.5	M5	19.5

# Fluid control valve(2/2way)

## 2SA Series (Internally piloted and normally closed)



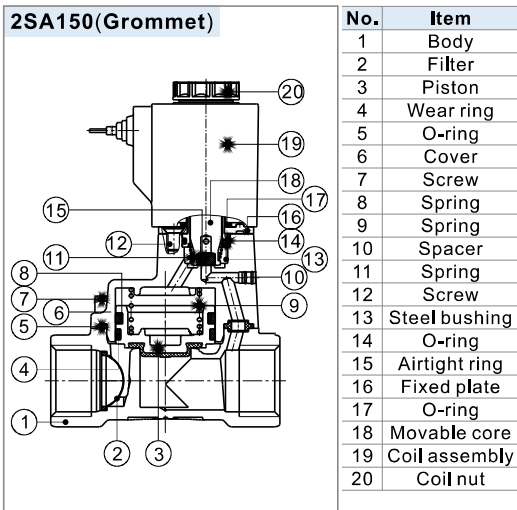
### Symbol



### Product feature

1. Indirect acting (Internal pilot) and normally closed type 2/2 way fluid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. Easy to install and dismantle;
3. The valve body is made of SUS304. The coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure



### Ordering code

#### Ordering code of valves

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2SA: 2/2 way internally piloted and normally closed	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ32mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
500: Φ50mm	50: 2"				

[Note] The wire length is 0.5m.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2SA150-15	1/2"	15.0	5.50	100.0	575	Max:1.0 Min:0.05	Max:100 Min:10	1.5	220
2SA200-20	3/4"	20.0	9.50	170.0	735				
2SA250-25	1"	25.0	12.50	220.0	1035				
2SA320-32	1 1/4"	35.0	23.00	420.0	2288				
2SA400-40	1 1/2"	40.0	31.00	560.0	2678				
2SA500-50	2"	50.0	49.00	880.0	3558				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, Grommet valve's weight is 10g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2SA150 2SA200 2SA250	CDA110 CLA110	AC	50	±15%	Terminal (CDA)	10.0VA	Class F	50
			60			8.0VA		45
		DC	-	±10%		6.5W		50
2SA320 2SA400 2SA500	CDA160 CLA160	AC	50	±15%	Grommet (CLA)	25.0VA		65
			60			22.0VA		60
		DC	-	±10%		12.0W		50

### Valve's specification

Acting	Internally piloted				
Initial state	Normally closed				
Adaptable fluid	Air, Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ; [Note2] 50CST or less.

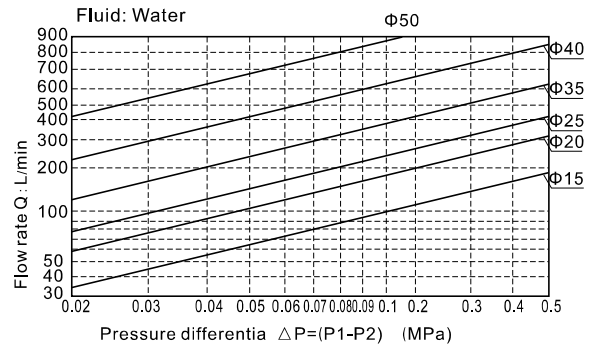
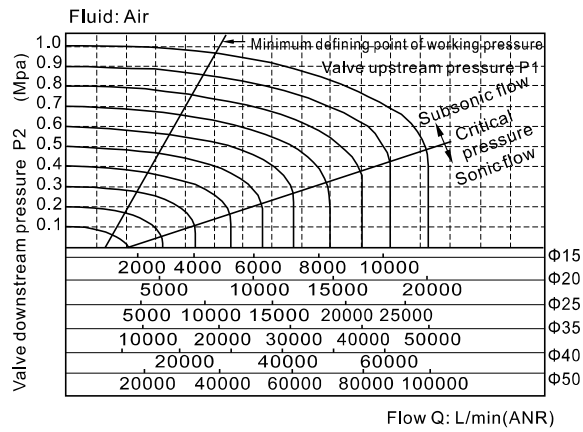
#### Ordering code of accessories

Ordering code of accessories is the same as 2WA series valve's, Please refer to P171 for details of ordering code.

# Fluid control valve(2/2way)

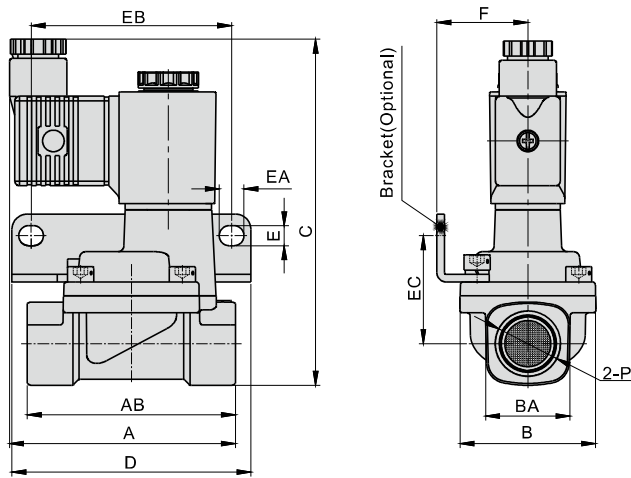
## 2SA Series (Internally piloted and normally closed)

### Flow chart

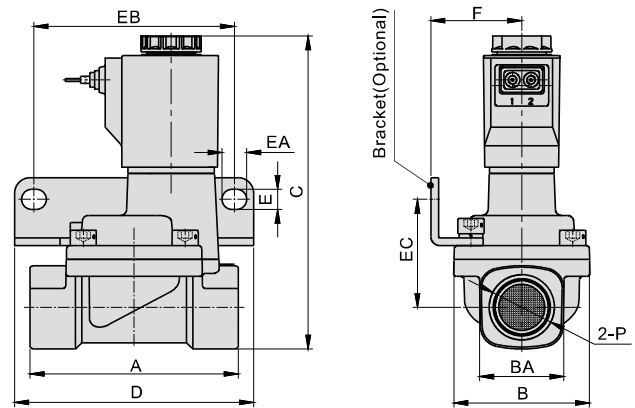


### Dimensions

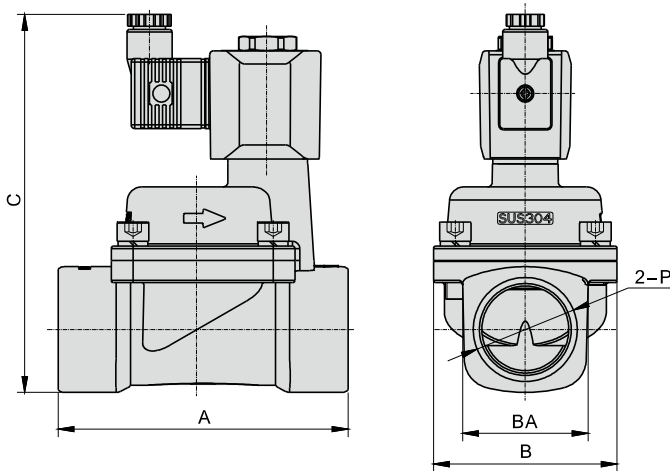
#### 2SA150~250 (Terminal)



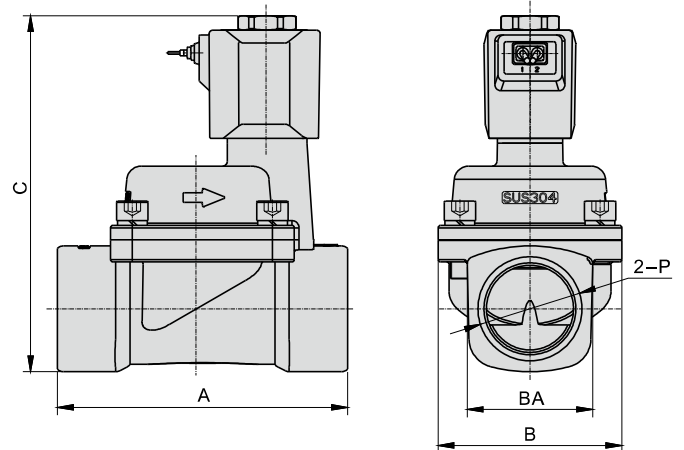
#### 2SA150~250(Grommet)



#### 2SA320~500 (Terminal)



#### 2SA320~500(Grommet)



Model/Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2SA150-15	73.5	67.5	44	27.5	112	77.5	6.5	8	65	35	29.5	1/2"
2SA200-20	75.5	79.5	51	33.5	119	87.5	6.5	8	75	38	33	3/4"
2SA250-25	77.5	90	57	40.5	126	93	6.5	8	80	42	35	1"
2SA320-32	120	-	76	52	156	-	-	-	-	-	-	1 1/4"
2SA400-40	126	-	86	58	166	-	-	-	-	-	-	1 1/2"
2SA500-50	144	-	96	70	177	-	-	-	-	-	-	2"

Model/Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2SA150-15	67.5	44	27.5	102	77.5	6.5	8	65	35	29.5	1/2"
2SA200-20	79.5	51	33.5	109	87.5	6.5	8	75	38	33	3/4"
2SA250-25	90	57	40.5	116	93	6.5	8	80	42	35	1"
2SA320-32	120	76	52	147	-	-	-	-	-	-	1 1/4"
2SA400-40	126	86	58	155	-	-	-	-	-	-	1 1/2"
2SA500-50	144	96	70	170	-	-	-	-	-	-	2"

# Fluid control valve(2/2 way)

## 2KSA Series (Direct-acting and normally opened)



### Symbol



### Product feature

1. Direct acting and normally opened type 2/2 way fluid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard and large volume(L);
3. It is compact, small size and light weight. Easy to install and dismantle.
4. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

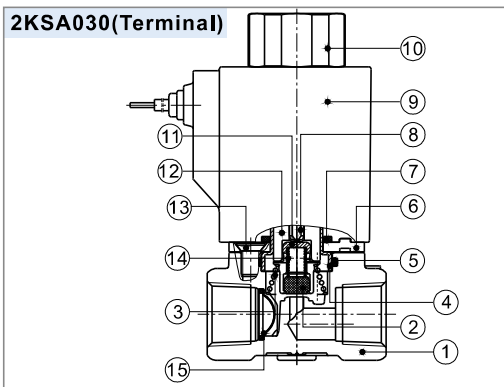
### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section(mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2KSAX030	-06 1/8"	1.5	0.10	1.8	245	2.0	300	3.0	450
	-08 1/4"				235				
2KSAH030	-06 1/8"	2.0	0.18	3.0	245	1.5	220		
	-08 1/4"				235				
2KSA030	-06 1/8"	3.0	0.33	6.0	245	0.7	100		
	-08 1/4"				235				
2KSAL030	-06 1/8"	4.0	0.55	10.0	245	0.4	60		
	-08 1/4"				235				
2KSAX050	-10 3/8"	3.0	0.34	6.1	530	2.0	300		
	-15 1/2"				510				
2KSAH050	-10 3/8"	4.0	0.55	10.0	530	1.5	220		
	-15 1/2"				510				
2KSA050	-10 3/8"	5.0	0.83	15.0	530	0.7	100		
	-15 1/2"				510				
2KSAL050	-10 3/8"	7.0	1.40	25.0	530	0.4	60		
	-15 1/2"				510				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KSA030 series grommet valve's weight is 10g less than terminal's. 2KSA050series grommet valve's weight is 20g less than terminal's.

### Inner structure



No.	Item	No.	Item	No.	Item
1	Body	6	Fixed plate	11	Airtight bush
2	Airtight ring	7	O-ring	12	Electromagnet
3	Spring	8	Mandril	13	Screw
4	Coil axis	9	Coil assembly	14	Spring
5	O-ring	10	Coil nut	15	Filter

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KSA□030	CDA110 CLA110	AC	50	±15%	Terminal (CDA)  Grommet (CLA)	15.0VA	Class F	50
			60			11.0VA		45
		DC	-	±10%		6.5W		50
2KSA□050	CDA160 CLA160	AC	50	±15%		35.0VA		65
			60			30.0VA		60
		DC	-	±10%		12.0W		50

### Valve's specification

Acting		Direct acting			
Initial state		Normally opened			
Adaptable fluid		Air, Water, Oil			
Viscosity limit		Under 20CST			
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Ordering code

#### Ordering code of valves

2KSA H 030 08 A □ □

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2KSA: 2/2 way direct-acting and normally opened	X: Extra high pressure	030: 030 Series	06: 1/8"	A: AC220V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
	H: High pressure	050: 050 Series	08: 1/4"	B: DC24V		
	Blank: Standard		10: 3/8"	C: AC110V		
	L: Large volume		15: 1/2"	E: AC24V		
				F: DC12V		

[Note] The wire length is 0.5m.

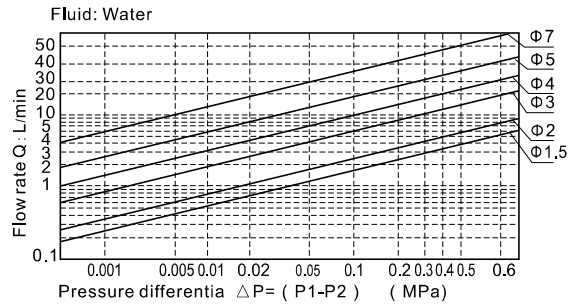
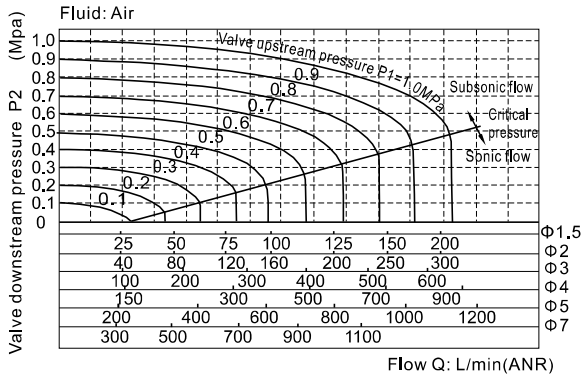
#### Ordering code of accessories

Ordering code of accessories is the same as 2WA series valve's, Please refer to P169 for details of ordering code.

# Fluid control valve(2/2 way)

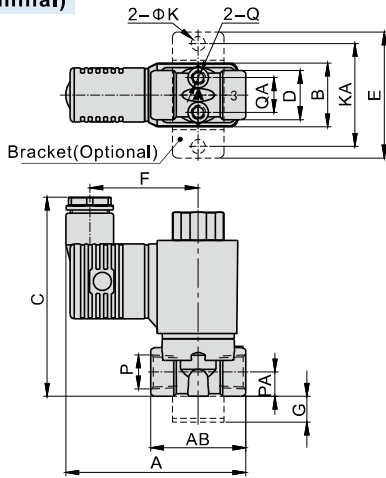
## 2KSA Series (Direct-acting and normally opened)

### Flow chart

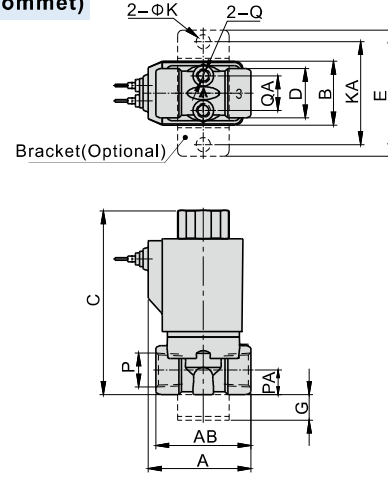


### Dimensions

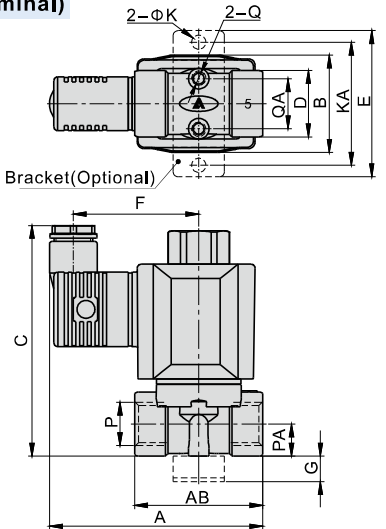
#### 2KSA□030 (Terminal)



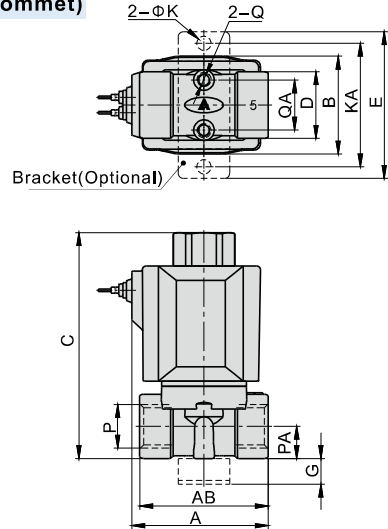
#### 2KSA□030 (Grommet)



#### 2KSA□050 (Terminal)



#### 2KSA□050 (Grommet)



Model/Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2KSA□030-06	70	37	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2KSA□030-08	70	37	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2KSA□050-10	83	50	38	90	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2KSA□050-15	83	50	38	90	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5

Model/Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2KSA□030-06	40	37	25	74	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2KSA□030-08	40	37	25	74	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2KSA□050-10	53	50	38	90	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2KSA□050-15	53	50	38	90	26	57	10	5.5	48	1/2"	12.5	M5	19.5

# Fluid control valve(2/2 way)

## 2KSA Series (Internally piloted and normally opened )



### Symbol



### Product feature

1. Indirect acting (Internal pilot) and normally opened type 2/2 way fluid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. Easy to install and dismantle;
3. The valve body is made of SUS304. The coil has a Heat resistance classification of Class F. The standard seal material is FPM-F. Please contact us if other seal material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2KSA150-15	1/2"	15.0	5.50	100.0	575	Max:0.7 Min:0.05	Max:100 Min:10	1.5	220
2KSA200-20	3/4"	20.0	9.50	170.0	735				
2KSA250-25	1"	25.0	12.50	220.0	1035				
2KSA320-32	1 1/4"	32.0	23.00	420.0	2287				
2KSA400-40	1 1/2"	40.0	31.00	560.0	2677				
2KSA500-50	2"	50.0	49.00	880.0	3557				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, Grommet valve's weight is 10g less than terminal's.

### Specification of coil

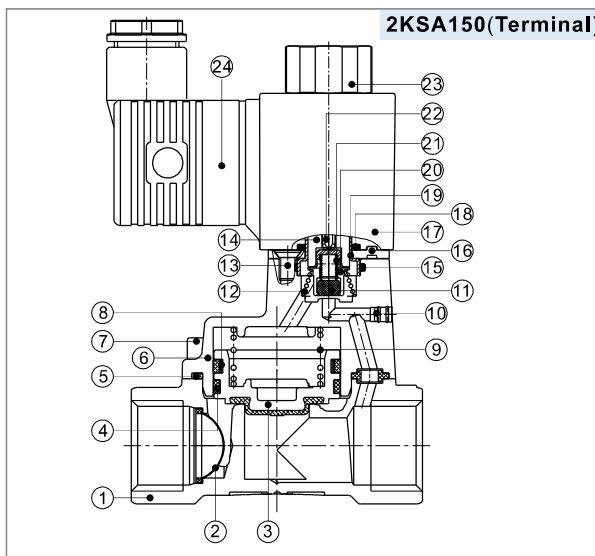
Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)		
2KSA150	CDA110	AC	50	±15%	Terminal (CDA)	15.0VA	Class F	50		
			60			11.0VA		45		
2KSA200	CLA110	DC	-	±10%		6.5W		50		
2KSA250			50	±15%		35.0VA		65		
2KSA320	CDA160	AC	50	±15%		Grommet (CLA)		30.0VA	Class F	60
2KSA400			60					12.0W		60
2KSA500	CLA160	DC	-	±10%	12.0W		50			
2KSA500			60	12.0W	50					

### Valve's specification

Acting		Internally piloted			
Initial state		Normally opened			
Adaptable fluid		Air, Water, Oil			
Viscosity limit		Under 20CST			
Ambient and fluid temperature ( °C )	Max.	Water 80	Air 90	Oil 80	Ambient 70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ; [Note2] 50CST or less.

### Inner structure



No.	Item
1	Body
2	Filter
3	Piston
4	Wear ring
5	O-ring
6	Cover
7	Screw
8	Spring
9	Spring
10	Spacer
11	Airtight ring
12	Spring
13	Screw
14	Movable core
15	O-ring
16	Fixed plate
17	Coil assembly
18	O-ring
19	Coil axis
20	Airtight ring
21	Spring
22	Man drill
23	Coil nut
24	Connector

### Ordering code

#### Ordering code of valves

2KSA 150 15 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2KSA: 2/2 way internally piloted and normally opened	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ32mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
	500: Φ50mm	50: 2"			

[Note] The wire length is 0.5m.

#### Ordering code of accessories

Ordering code of accessories is the same as 2WA series valve's. Please refer to P171 for details of ordering code.

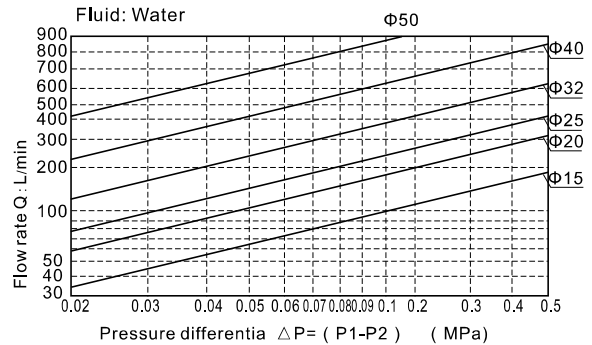
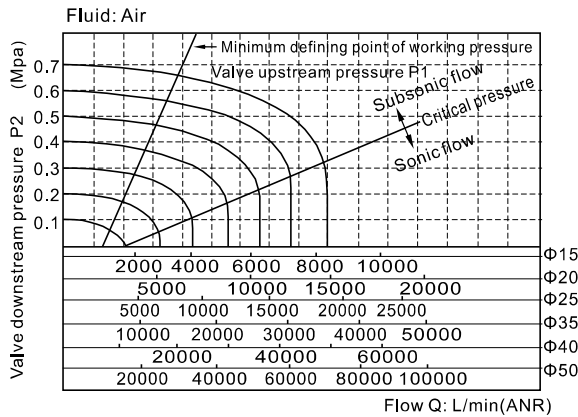




# Fluid control valve(2/2 way)

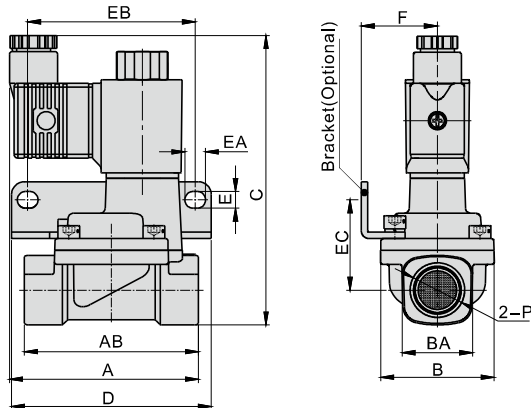
## 2KSA Series (Internally piloted and normally opened )

### Flow chart

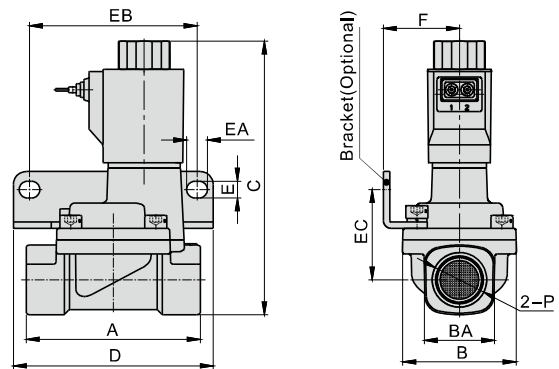


### Dimensions

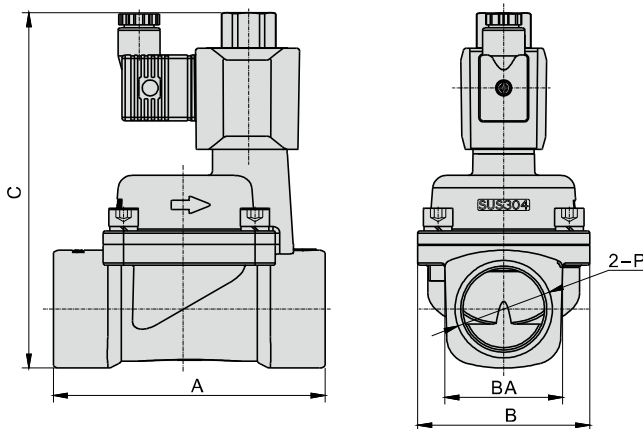
#### 2KSA150~250 (Terminal)



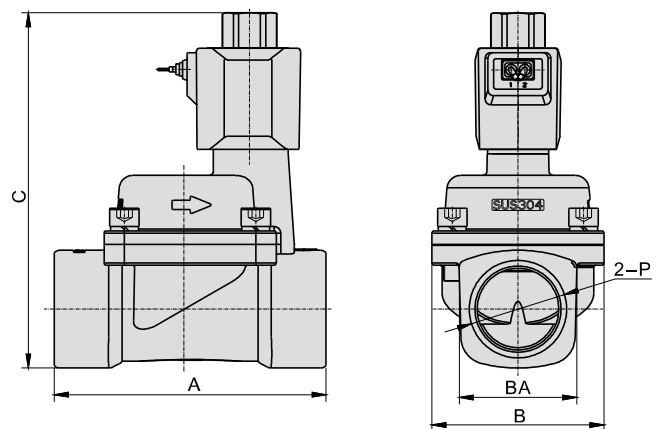
#### 2KSA150~250(Grommet)



#### 2KSA320~500 (Terminal)



#### 2KSA320~500(Grommet)



Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2KSA150-15	73.5	67.5	44	27.5	112	77.5	6.5	8	65	35	29.5	1/2"
2KSA200-20	75.5	79.5	51	33.5	119	87.5	6.5	8	75	38	33	3/4"
2KSA250-25	77.5	90	57	40.5	126	93	6.5	8	80	42	35	1"
2KSA320-32	120	-	76	52	165.5	-	-	-	-	-	-	1 1/4"
2KSA400-40	126	-	86	58	175.5	-	-	-	-	-	-	1 1/2"
2KSA500-50	144	-	96	70	186.5	-	-	-	-	-	-	2"

Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2KSA150-15	67.5	44	27.5	109	77.5	6.5	8	65	35	29.5	1/2"
2KSA200-20	79.5	51	33.5	116	87.5	6.5	8	75	38	33	3/4"
2KSA250-25	90	57	40.5	123	93	6.5	8	80	42	35	1"
2KSA320-32	120	76	52	156.5	-	-	-	-	-	-	1 1/4"
2KSA400-40	126	86	58	164.5	-	-	-	-	-	-	1 1/2"
2KSA500-50	144	96	70	179.5	-	-	-	-	-	-	2"

# Fluid control valve(2/2 way)

## 2LA Series (Direct-acting and normally closed )



### Symbol

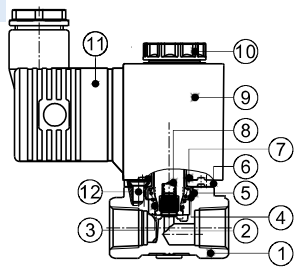


### Product feature

1. Direct acting and normally closed type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including standard high pressure (H) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of SUS304 . Its coil has a Heat resistance classification of Class H, The standard seal material is PTFE(Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry .

### Inner structure

2LA030 (Terminal)



No.	Item	No.	Item	No.	Item
1	Body	5	O-ring	9	Coil assembly
2	Airtight ring	6	Fixed plate	10	Coil nut
3	Spring	7	O-ring	11	Connector
4	Steel bushing	8	Movable core	12	Screw

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2LAH030	-06 1/8"	2.0	0.18	3.0	244.5	2.0	300	3.0	450
	-08 1/4"								
2LA030	-06 1/8"	3.0	0.33	6.0	244.5	1.0	150		
	-08 1/4"								
2LAH050	-10 3/8"	4.0	0.55	10.0	529	2.0	300		
	-15 1/2"								
2LA050	-10 3/8"	5.0	0.83	15.0	529	1.0	150		
	-15 1/2"							509	

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2LA030 series grommet valve's weight is 10g less than terminal's. 2LA050series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2LA□030	CDA110H CLA110H	AC	50	±15%	Terminal (CDA)	10.0VA	Class H	50
			60			8.0VA		45
		DC	-	±10%		6.5W		50
2LA□050	CDA160H CLA160H	AC	50	±15%	Grommet (CLA)	25.0VA		65
			60			22.0VA		60
		DC	-	±10%		12.0W		50

### Valve's specification

Acting	Direct acting				
	Initial state	Normally closed			
Adaptable fluid	Steam, High temperature Water,Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature ( °C )		Oil	Water	Steam	Ambient
	Max.	150	150	183	100
	Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

### Ordering code

#### Ordering code of valves

2LA H 030 08 A □ □



① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2LA: 2/2 way direct-acting and normally closed	H: High pressure Blank: Standard	030: 030 Series 050: 050 Series	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

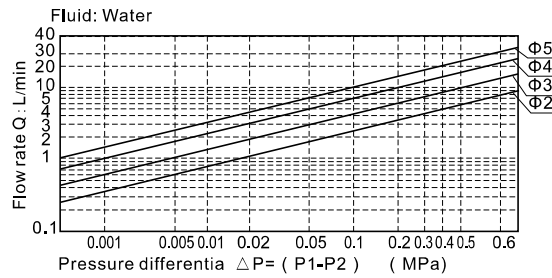
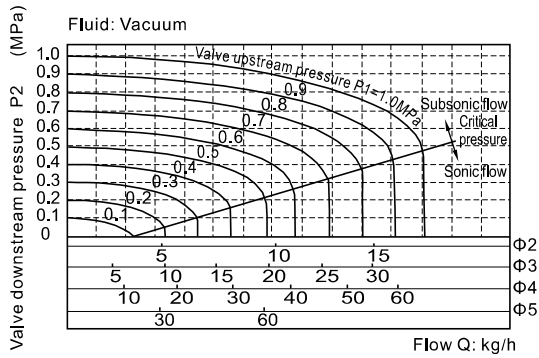
#### Ordering code of accessories

Ordering code of accessories is the same as 2WA series valve's, Please refer to P169 for details of ordering code.

# Fluid control valve(2/2 way)

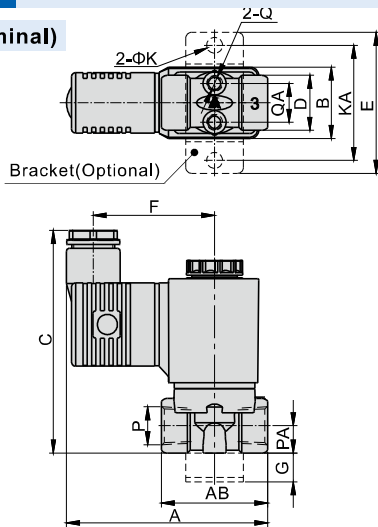
## 2LA Series (Direct-acting and normally closed)

### Flow chart

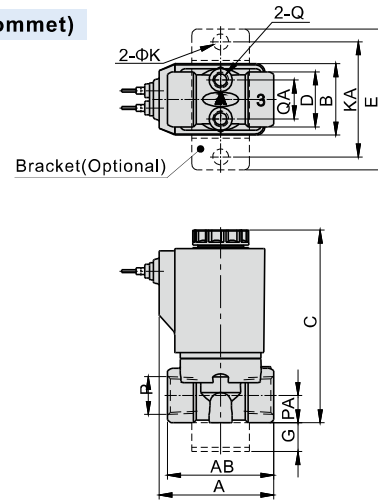


### Dimensions

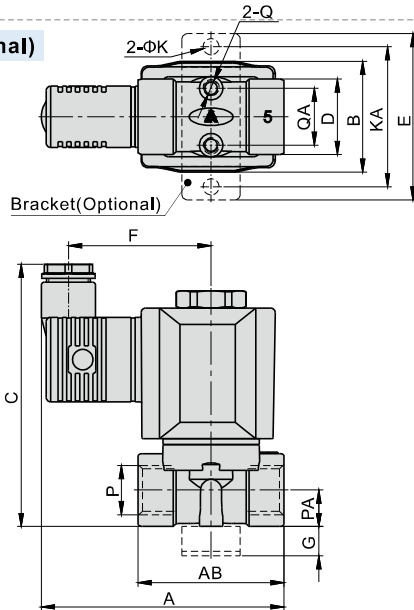
#### 2LA□030(Terminal)



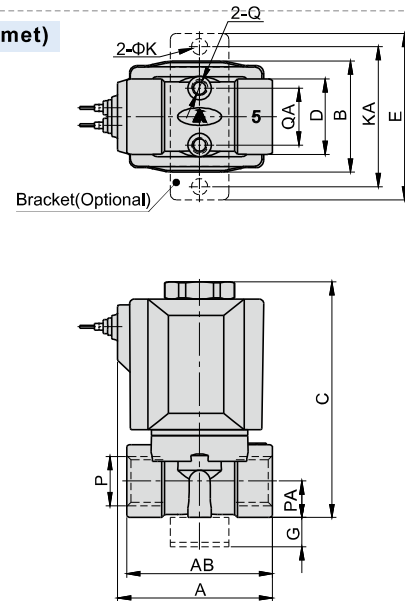
#### 2LA□030(Grommet)



#### 2LA□050(Terminal)



#### 2LA□050(Grommet)



Model\Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2LA□030-06	70	37	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2LA□030-08	70	37	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2LA□050-10	83	50	38	90	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2LA□050-15	83	50	38	90	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5

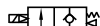
Model\Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2LA□030-06	40	37	25	67	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2LA□030-08	40	37	25	67	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2LA□050-10	53	50	38	81	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2LA□050-15	53	50	38	81	26	57	10	5.5	48	1/2"	12.5	M5	19.5

# Fluid control valve(2/2 way)

## 2LA Series (Internally piloted and normally closed)



### Symbol

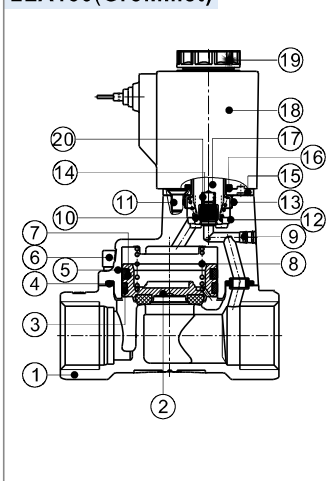


### Product feature

1. Indirect acting (Internal pilot) and normally closed type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly.
2. It is compact, small size and light weight. It is easy to install and dismantle.
3. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class H. The standard seal material is PTFE (Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure

2LA150 (Grommet)



No.	Item
1	Body
2	Piston
3	Wear ring
4	Gasket
5	Cover
6	Screw
7	Spring
8	Spring
9	Plug
10	Spring
11	Screw
12	Steel bushing
13	O-ring
14	Airtight ring
15	Fixed plate
16	O-ring
17	Movable core
18	Coil assembly
19	Coil nut
20	Spring

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2LA150-15	1/2"	15.0	5.50	100.0	570	Max:0.7 Min:0.05	Max:100 Min:10	1.5	220
2LA200-20	3/4"	20.0	9.50	170.0	723				
2LA250-25	1"	25.0	12.50	220.0	1027				
2LA320-32	1 1/4"	35.0	23.00	420.0	2262				
2LA400-40	1 1/2"	40.0	31.00	560.0	2642				
2LA500-50	2"	50.0	49.00	880.0	3509				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2LA150~250series grommet valve's weight is 10g less than terminal's. 2LA320~500series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2LA150	CDA110H CLA110H	AC	50	± 15%	Terminal (CDA)	10.0VA	Class H	50
2LA200			60			8.0VA		45
2LA250		DC	-	± 10%		6.5W		50
2LA320	CDA160H CLA160H	AC	50	± 15%	Grommet (CLA)	25.0VA		65
2LA400			60			22.0VA		60
2LA500		DC	-	± 10%		12.0W		50

### Valve's specification

Acting		Internally piloted				
Initial state		Normally closed				
Adaptable fluid		Steam, High temperature Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature ( °C )			Oil	Water	Steam	Ambient
		Max.	150	150	183	100
		Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

### Ordering code

#### Ordering code of valves

2LA 150 15 A □ □



① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2LA: 2/2 way internally piloted and normally closed	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ35mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
	500: Φ50mm	50: 2"			

[Note] The wire length is 0.5m.

#### Ordering code of accessories

Ordering code of accessories is the same as 2WA series valve's, please refer to P171 for details of ordering code.

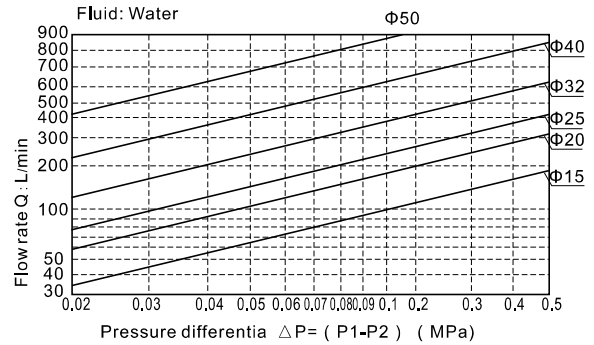
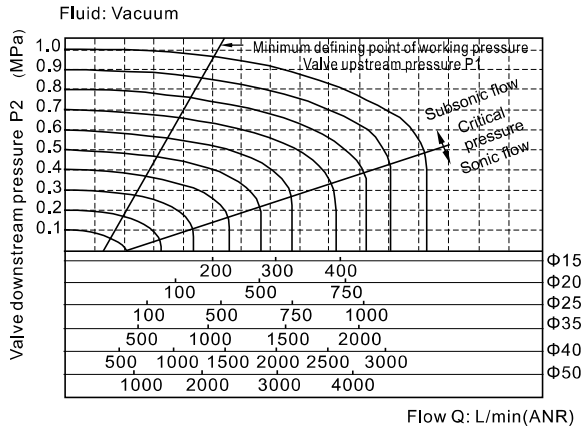
[Note] 320\400\500 series valves do not have mounting accessories.



# Fluid control valve(2/2 way)

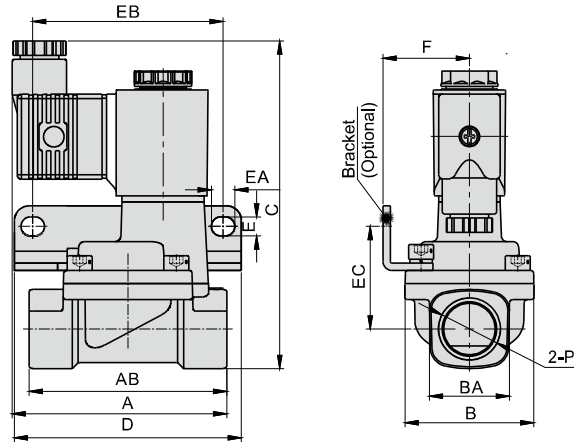
## 2LA Series (Internally piloted and normally closed)

### Flow chart

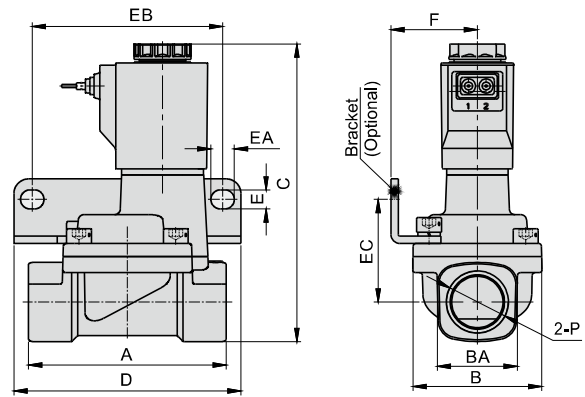


### Dimensions

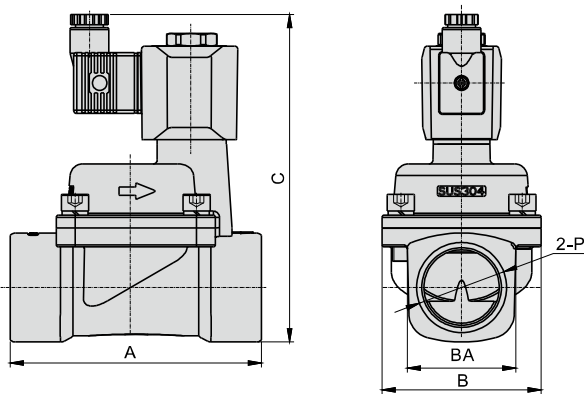
#### 2LA150~250(Terminal)



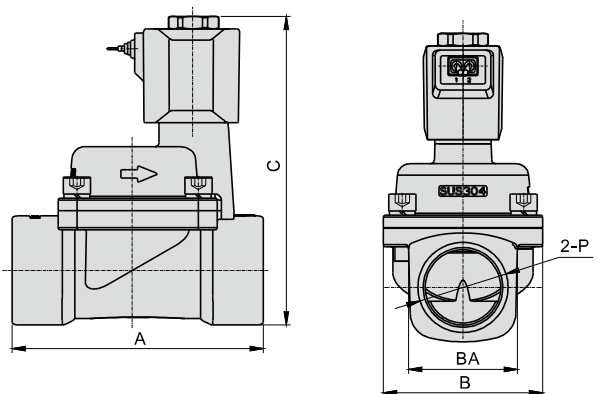
#### 2LA150~250(Grommet)



#### 2LA320~500(Terminal)



#### 2LA320~500(Grommet)



Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2LA150-15	73.5	67.5	44	27.5	112	77.5	6.5	8	65	35	29.5	1/2"
2LA200-20	75.5	79.5	51	33.5	119	87.5	6.5	8	75	38	33	3/4"
2LA250-25	77.5	90	57	40.5	126	93	6.5	8	80	42	35	1"
2LA320-32	120	-	76	52	156	-	-	-	-	-	-	1 1/4"
2LA400-40	126	-	86	58	166	-	-	-	-	-	-	1 1/2"
2LA500-50	144	-	96	70	177	-	-	-	-	-	-	2"

Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2LA150-15	67.5	44	27.5	102	77.5	6.5	8	65	35	29.5	1/2"
2LA200-20	79.5	51	33.5	109	87.5	6.5	8	75	38	33	3/4"
2LA250-25	90	57	40.5	116	93	6.5	8	80	42	35	1"
2LA320-32	120	76	52	147	-	-	-	-	-	-	1 1/4"
2LA400-40	126	86	58	155	-	-	-	-	-	-	1 1/2"
2LA500-50	144	96	70	170	-	-	-	-	-	-	2"

# Fluid control valve(2/2 way)

## 2KLA Series (Direct-acting and normally opened)



### Symbol



### Product feature

1. Direct acting and normally opened type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including standard high pressure (H) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class H. The standard seal material is PTFE(Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Specification

Model/Item	Port size [Note1]		Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
							MPa	psi	MPa	psi
2KLAH030	-06	1/8"	2.0	0.18	3.0	243.5	1.5	220	3.0	450
	-08	1/4"								
2KLA030	-06	1/8"	3.0	0.33	6.0	243.5	0.7	100	3.0	450
	-08	1/4"								
2KLAH050	-10	3/8"	4.0	0.55	10.0	528	1.5	220	3.0	450
	-15	1/2"								
2KLA050	-10	3/8"	5.0	0.83	15.0	528	0.7	100	3.0	450
	-15	1/2"								

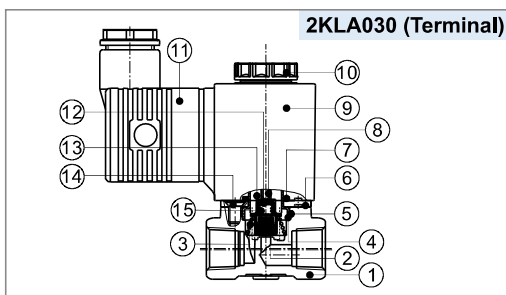
[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KLA030 series grommet valve's weight is 10g less than terminal's, 2KLA050 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KLA□030	CDA110H CLA110H	AC	50	±15%	Terminal (CDA)	10.0VA	Class H	50
			60			8.0VA		45
		DC	-	±10%		7.0W		50
			50			±15%		25.0VA
2KLA□050	CDA160H CLA160H	AC	60	±15%	Grommet (CLA)		22.0VA	Class H
			50			10.5W	50	
		DC	-	±10%				

### Inner structure



No.	Item	No.	Item	No.	Item
1	Body	6	Fixed plate	11	Connector
2	Airtight ring	7	O-ring	12	Airtight bush
3	Spring	8	Mandril	13	Electromagnet
4	Steel bushing	9	Coil assembly	14	Screw
5	O-ring	10	Coil nut	15	Spring

### Valve's specification

Acting	Direct acting				
Initial state	Normally opened				
Adaptable fluid	Steam, High temperature Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature (°C)		Oil	Water	Steam	Ambient
	Max.	150	150	183	100
	Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

### Ordering code

#### Ordering code of valves

2KLA H 030 08 A □ □

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2KLA: 2/2 way direct-acting and normally opened	H: High pressure Blank: Standard	030: 030 Series 050: 050 Series	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

#### Ordering code of accessories

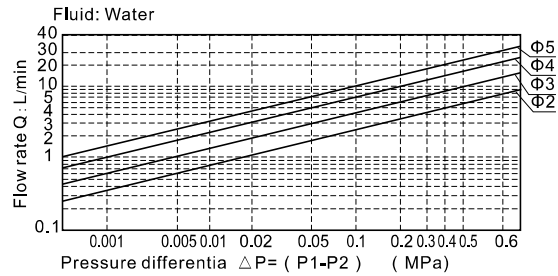
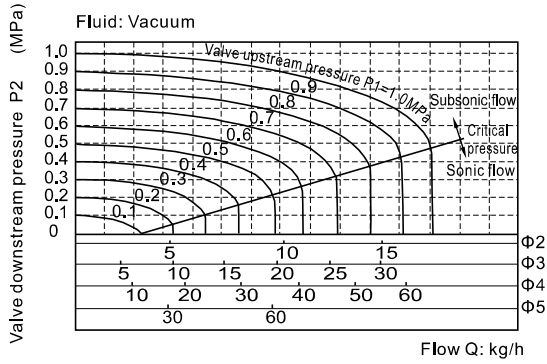
Ordering code of accessories is the same as 2WA series valve's, Please refer to P169 for details of ordering code.



# Fluid control valve(2/2 way)

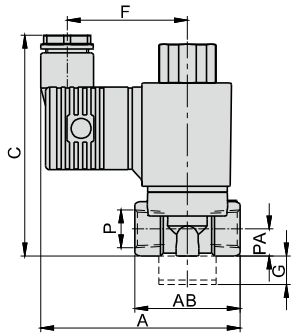
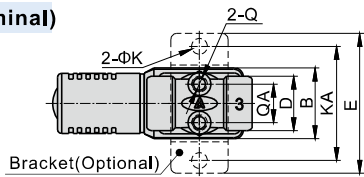
## 2KLA Series (Direct-acting and normally opened)

### Flow chart

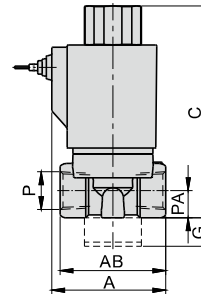
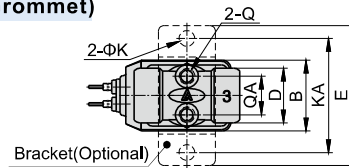


### Dimensions

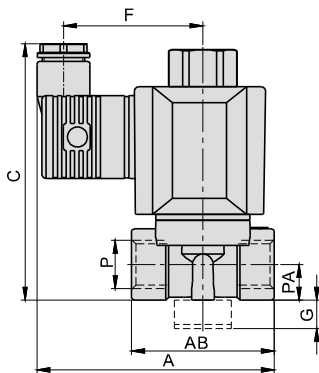
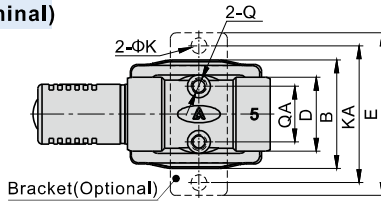
#### 2KLA□030(Terminal)



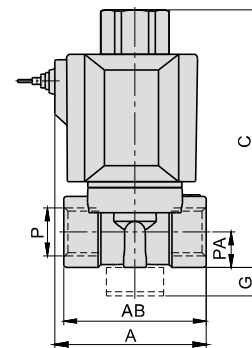
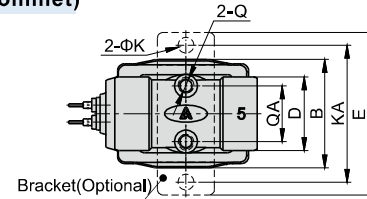
#### 2KLA□030(Grommet)



#### 2KLA□050(Terminal)



#### 2KLA□050(Grommet)



Model\Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2KLA□030-06	70	37	25	77.5	19	49	42	10	5.5	40	1/8"	9.5	M5	13.5
2KLA□030-08	70	37	25	77.5	19	49	42	10	5.5	40	1/4"	9.5	M5	13.5
2KLA□050-10	83	50	38	90	26	57	49	10	5.5	48	3/8"	12.5	M5	19.5
2KLA□050-15	83	50	38	90	26	57	49	10	5.5	48	1/2"	12.5	M5	19.5

Model\Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2KLA□030-06	40	37	25	74	19	49	10	5.5	40	1/8"	9.5	M5	13.5
2KLA□030-08	40	37	25	74	19	49	10	5.5	40	1/4"	9.5	M5	13.5
2KLA□050-10	53	50	38	90	26	57	10	5.5	48	3/8"	12.5	M5	19.5
2KLA□050-15	53	50	38	90	26	57	10	5.5	48	1/2"	12.5	M5	19.5

# Fluid control valve(2/2 way)

## 2KLA Series (Internally piloted and normally opened)



### Symbol

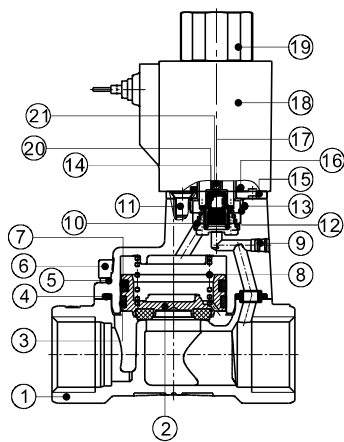


### Product feature

1. Indirect acting (Internal pilot) and normally opened type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly.
2. It is compact, small size and light weight. It is easy to install and dismantle.
3. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class H. The standard seal material is PTFE (Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure

#### 2KLA150 (Grommet)



No.	Item	No.	Item
1	Body	12	Steel bushing
2	Position	13	O-ring
3	Wear ring	14	Airtight ring
4	Gasket	15	Fixed plate
5	Cover	16	O-ring
6	Screw	17	Mandril
7	Spring	18	Coil assembly
8	Spring	19	Coil nut
9	Plug	20	Spring
10	Spring	21	Airtight bush
11	Screw		

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2KLA150-15	1/2"	15.0	5.50	100.0	569	Max: 0.7 Min: 0.05	Max: 100 Min: 10	1.5	220
2KLA200-20	3/4"	20.0	9.50	170.0	722				
2KLA250-25	1"	25.0	12.50	220.0	1026				
2KLA320-32	1 1/4"	35.0	23.00	420.0	2261				
2KLA400-40	1 1/2"	40.0	31.00	560.0	2641				
2KLA500-50	2"	50.0	49.00	880.0	3508				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KLA150~250 series grommet valve's weight is 10g less than terminal's. 2KLA320~500 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KLA150	CDA110H CLA110H	AC	50	±15%	Terminal (CDA)	10.0VA	Class H	50
2KLA200			60			8.0VA		45
2KLA250		DC	-	±10%		6.5W		50
2KLA320	CDA160H CLA160H	AC	50	±15%	Grommet (CLA)	25.0VA		65
2KLA400			60			22.0VA		60
2KLA500		DC	-	±10%		12.0W		50

### Valve's specification

Acting	Internally piloted				
	Normally opened				
Initial state	Normally opened				
Adaptable fluid	Steam, High temperature Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature (°C)		Oil	Water	Steam	Ambient
	Max.	150	150	183	100
	Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

### Ordering code

#### Ordering code of valves

**2KLA 150 15 A □ □**

①    ②    ③    ④    ⑤    ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2KLA: 2/2 way internally piloted and normally opened	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ35mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
	500: Φ50mm	50: 2"			

[Note] The wire length is 0.5m.

#### Ordering code of accessories

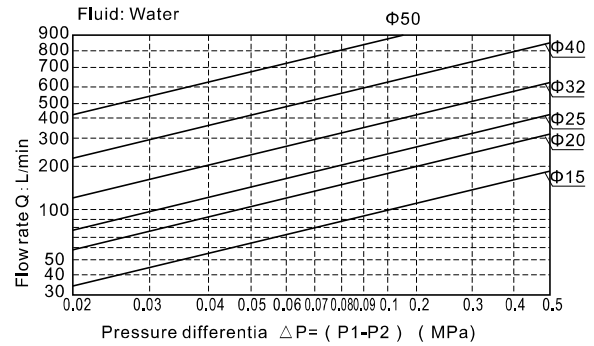
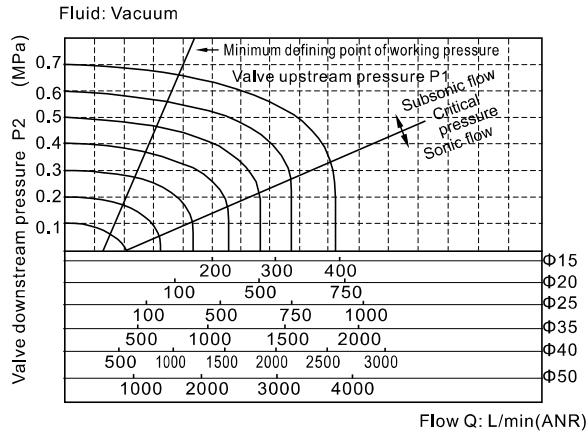
Ordering code of accessories is the same as 2WA series valve's. Please refer to P171 for details of ordering code.

[Note] 320\400\500 series valves do not have mounting accessories.

# Fluid control valve(2/2 way)

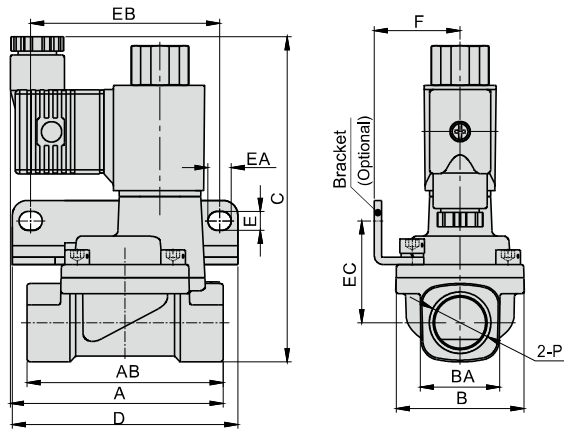
## 2KLA Series (Internally piloted and normally opened)

### Flow chart

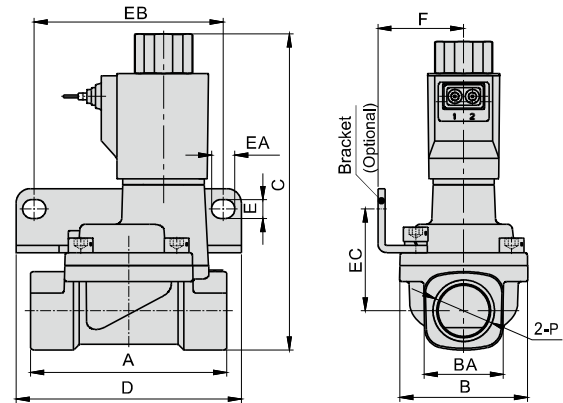


### Dimensions

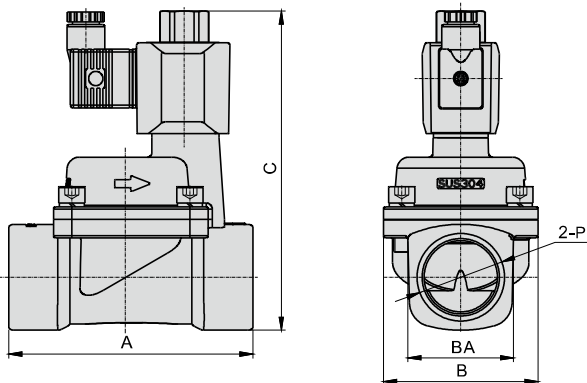
#### 2KLA150~250(Terminal)



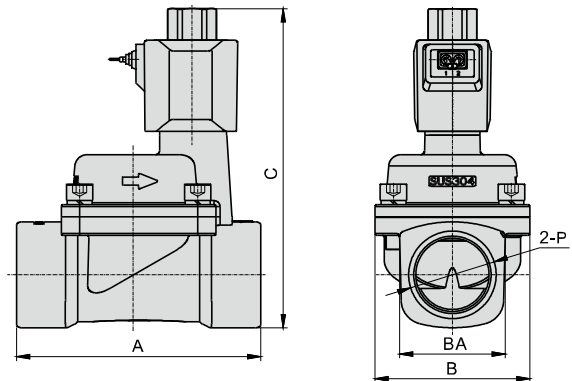
#### 2KLA150~250(Grommet)



#### 2KLA320~500(Terminal)



#### 2KLA320~500(Grommet)



Model/Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2KLA150-15	73.5	67.5	44	27.5	112	77.5	6.5	8	65	35	29.5	1/2"
2KLA200-20	75.5	79.5	51	33.5	119	87.5	6.5	8	75	38	33	3/4"
2KLA250-25	77.5	90	57	40.5	126	93	6.5	8	80	42	35	1"
2KLA320-32	120	-	76	52	165.5	-	-	-	-	-	-	1 1/4"
2KLA400-40	126	-	86	58	175.5	-	-	-	-	-	-	1 1/2"
2KLA500-50	144	-	96	70	186.5	-	-	-	-	-	-	2"

Model/Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2KLA150-15	67.5	44	27.5	102	77.5	6.5	8	65	35	29.5	1/2"
2KLA200-20	79.5	51	33.5	109	87.5	6.5	8	75	38	33	3/4"
2KLA250-25	90	57	40.5	116	93	6.5	8	80	42	35	1"
2KLA320-32	120	76	52	156.5	-	-	-	-	-	-	1 1/4"
2KLA400-40	126	86	58	164.5	-	-	-	-	-	-	1 1/2"
2KLA500-50	144	96	70	179.5	-	-	-	-	-	-	2"



### Specification

Model/Item	Power type	Voltage (V)	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)		Insulation	Temp.rise (°C)	
						For NC	For NO			
110 Series	AC	220	50	± 15%	DIN Terminal	10.0VA	15.0VA	Class F	50	
			60			8.0VA	11.0VA		45	
		110	50			Grommet	10.0VA		15.0VA	50
			60				8.0VA		11.0VA	45
		24	50			10.0VA	15.0VA		50	
			60			8.0VA	11.0VA		45	
	DC	24	-	± 10%	6.5W		50			
		12								
160 Series	AC	220	50	± 15%	DIN Terminal	25.0VA	35.0VA	65		
			60			22.0VA	30.0VA	60		
		110	50			Grommet	25.0VA	35.0VA	65	
			60				22.0VA	30.0VA	60	
		24	50			25.0VA	35.0VA	65		
			60			22.0VA	30.0VA	60		
	DC	24	-	± 10%	12.0W		50			
		12								

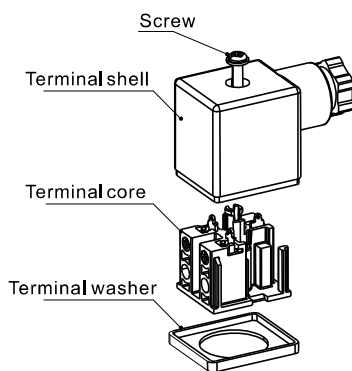
### Hookup

Coil's type		Hookup
110 Series	CDA110 (Terminal)	AC
		DC
	CLA110 (Grommet)	AC
		DC
160 Series	CDA160 (Terminal)	AC
		DC
	CLA160 (Grommet)	AC
		DC

### How to select coil

Valve type\Coil type	110Series		160 Series	
	Class F	Class H	Class F	Class H
2WA□030 2KWA□030	●	×	×	×
2SA□030 2KSA□030	●	×	×	×
2LA□030 2KLA□030	×	●	×	×
2WA□050 2KWA□050	×	×	●	×
2SA□050 2KSA□050	×	×	●	×
2LA□050 2KLA□050	×	×	×	●
2WA150~250 2KWA150~250	●	×	×	×
2SA150~250 2KSA150~250	●	×	×	×
2LA150~250 2KLA150~250	×	●	×	×
2SA320~500 2KSA320~500	×	×	●	×
2LA320~500 2KLA320~500	×	×	×	●

### How to use connector



### How to select accessories

Valve type\ Accessories type	F-2WA030LB	F-2WA050LB	F-2WA150LB	F-2WA200LB	F-2WA250LB
2WA□030 2KWA□030	●	×	×	×	×
2SA□030 2KSA□030	●	×	×	×	×
2LA□030 2KLA□030	●	×	×	×	×
2WA□050 2KWA□050	×	●	×	×	×
2SA□050 2KSA□050	×	●	×	×	×
2LA□050 2KLA□050	×	●	×	×	×
2WA150 2KWA150	×	×	●	×	×
2SA150 2KSA150	×	×	●	×	×
2LA150 2KLA150	×	×	●	×	×
2WA200 2KWA200	×	×	×	●	×
2SA200 2KSA200	×	×	×	●	×
2LA200 2KLA200	×	×	×	●	×
2WA250 2KWA250	×	×	×	×	●
2SA250 2KSA250	×	×	×	×	●
2LA250 2KLA250	×	×	×	×	●

### Ordering code of coil

**CD A110 A □**

① ② ③ ④

① Coil type	② Coil's bore	③ Voltage	④ Temperature resistance class
CD: Terminal CL: Grommet	A110: Coil Specification (Bore sizeΦ10.0mm) A160: Coil Specification (Bore sizeΦ16.0mm)	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: F Class H: H Class

# Fluid control valve(2/2way)

## 2S Series (Direct-acting and normally closed)



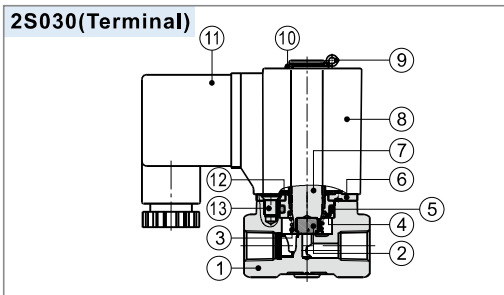
### Symbol



### Product feature

1. Direct acting and normally closed type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard, large volume(L) and extra large volume (T) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure



No.	Item	No.	Item
1	Body	8	Coil assembly
2	Airtight ring	9	E Clip
3	Spring	10	Gasket
4	Fixed cap	11	Connector
5	O-ring	12	Washer
6	Fixed plate	13	Screw
7	Movable core		

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2SX030	-06	1/8"	1.5	0.10	1.8	3.0	450	5.0	750
	-08	1/4"							
2SH030	-06	1/8"	2.0	0.18	3.0	2.0	300		
	-08	1/4"							
2S030	-06	1/8"	3.0	0.33	6.0	1.0	150		
	-08	1/4"							
2SL030	-06	1/8"	4.0	0.55	10.0	0.5	75		
	-08	1/4"							
2ST030	-06	1/8"	6.0	1.10	12.0	0.1	15		
	-08	1/4"							
2SX050	-10	3/8"	3.0	0.34	6.1	3.0	450		
	-15	1/2"							
2SH050	-10	3/8"	4.0	0.55	10.0	2.0	300		
	-15	1/2"							
2S050	-10	3/8"	5.0	0.83	15.0	1.0	150		
	-15	1/2"							
2SL050	-10	3/8"	7.0	1.40	25.0	0.5	75		
	-15	1/2"							
2ST050	-10	3/8"	10.0	2.20	40.0	0.1	15		
	-15	1/2"							

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2S030 series grommet valve's weight is 10g less than terminal's. 2S050series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)	
2S□030	CDA116 CLA116	AC	50	±15%	Terminal (CDA)	10.0VA	Class B	35	
			60			8.0VA		30	
2S□050	CDA170 CLA170	AC	50	±15%		Grommet (CLA)		6.5W	30
			60					25.0VA	60
2S□050	DC	-	±10%	12.0W	22.0VA			55	
					40				

### Valve's specification

Acting		Direct acting			
Initial state		Normally closed			
Adaptable fluid		Air, Water, Oil			
Viscosity limit		Under 20CST			
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Ordering code

#### Ordering code of valves

2S L 030 08 A □ □

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2S: 2/2 way direct-acting and normally closed	X: Extra high pressure H: High pressure Blank: Standard L: Large volume T: Extra large volume	030: 030 Series 050: 050 Series	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

#### Ordering code of accessories

F-2S030 LB

① ② ③

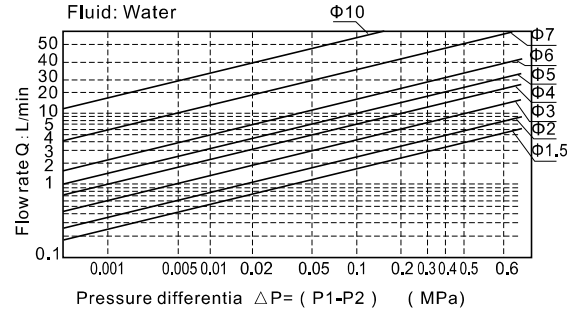
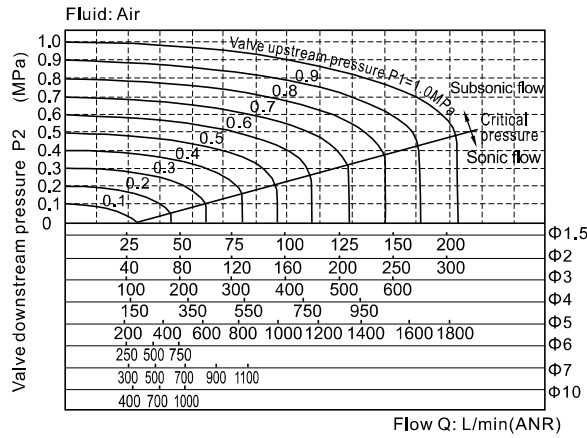
① Accessories code	② Valve type	③ Accessories type
F: Mounting accessories	2S030: 030 Series valve 2S050: 050 Series valve	LB: LB Type

[Note] The wire length is 0.5m.

# Fluid control valve(2/2way)

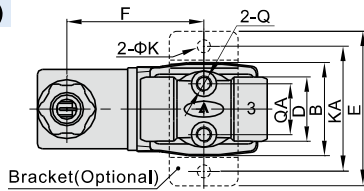
## 2S Series (Direct-acting and normally closed)

### Flow chart

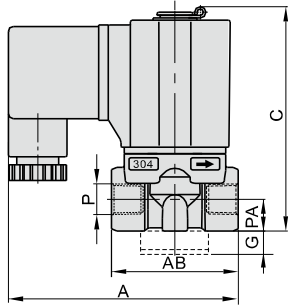


### Dimensions

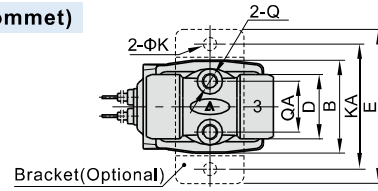
#### 2S□030 (Terminal)



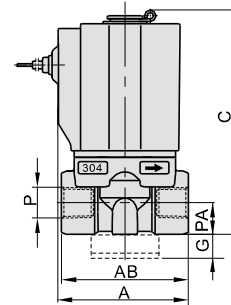
Bracket(Optional)



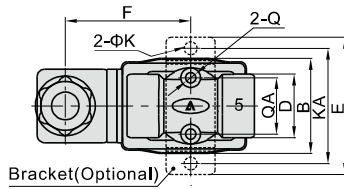
#### 2S□030 (Grommet)



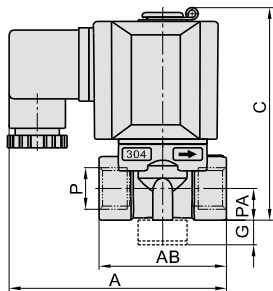
Bracket(Optional)



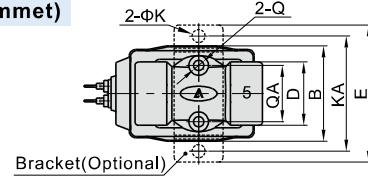
#### 2S□050 (Terminal)



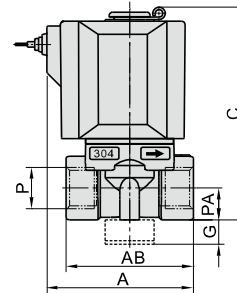
Bracket(Optional)



#### 2S□050 (Grommet)



Bracket(Optional)



Model/Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2S□030-06	72.5	40	29.5	71	20	49	43.5	10	5.3	40	1/8"	10	M5	16
2S□030-08	72.5	40	29.5	71	20	49	43.5	10	5.3	40	1/4"	10	M5	16
2S□050-10	89.5	52	39	87	26	56	51	10	5.3	48	3/8"	13	M5	23
2S□050-15	89.5	52	39	87	26	56	51	10	5.3	48	1/2"	13	M5	23

Model/Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2S□030-06	41	40	29.5	71	20	49	10	5.3	40	1/8"	10	M5	16
2S□030-08	41	40	29.5	71	20	49	10	5.3	40	1/4"	10	M5	16
2S□050-10	60	52	39	87	26	56	10	5.3	48	3/8"	13	M5	23
2S□050-15	60	52	39	87	26	56	10	5.3	48	1/2"	13	M5	23

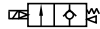


# Fluid control valve(2/2way)

## 2S Series (Internally piloted and normally closed)



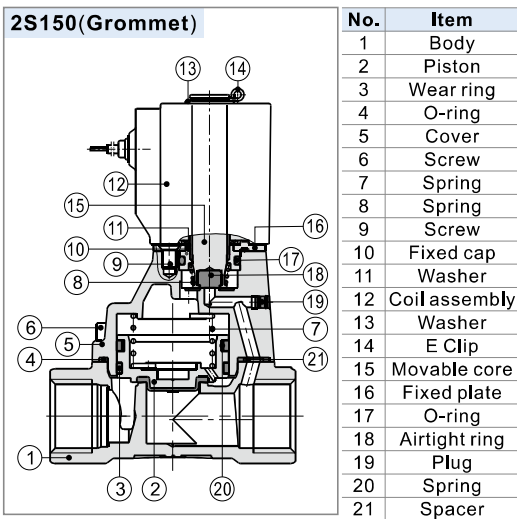
### Symbol



### Product feature

1. Indirect acting (Internal pilot) and normally closed type 2/2 way solenoid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. It is easy to install and dismantle;
3. The valve body is made of SUS304. The coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure



### Ordering code

#### Ordering code of valves

2S 150 15 A □ □					
① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2S: 2/2 way internally piloted and normally closed	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ35mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
500: Φ50mm	50: 2"				

[Note] The wire length is 0.5m.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2S150-15	1/2"	15.0	5.50	100.0	675	Max: 1.0 Min: 0.05	Max: 150 Min: 10	1.5	220
2S200-20	3/4"	20.0	9.50	170.0	875				
2S250-25	1"	25.0	12.50	220.0	1120				
2S320-32	1 1/4"	35.0	23.00	420.0	2700				
2S400-40	1 1/2"	40.0	31.00	560.0	3250				
2S500-50	2"	50.0	49.00	880.0	4300				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2S150~250 series grommet valve's weight is 10g less than terminal's. 2S320~500 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)		
2S150 2S200 2S250	CDA116 CLA116	AC	50	±15%	Terminal (CDA)	10.0VA	Class B	35		
			60			8.0VA		30		
		DC	-	±10%		6.5W		30		
2S320 2S400 2S500	CDA170 CLA170	AC	50	±15%		Grommet (CLA)		25.0VA	Class B	60
			60					22.0VA		55
		DC	-	±10%				12.0W		40

### Valve's specification

Acting	Internally piloted				
Initial state	Normally closed				
Adaptable fluid	Air, Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

#### Ordering code of accessories

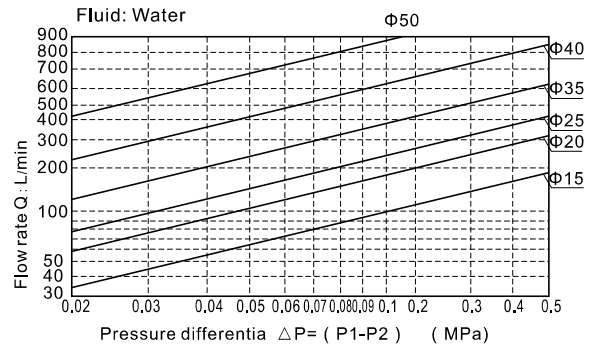
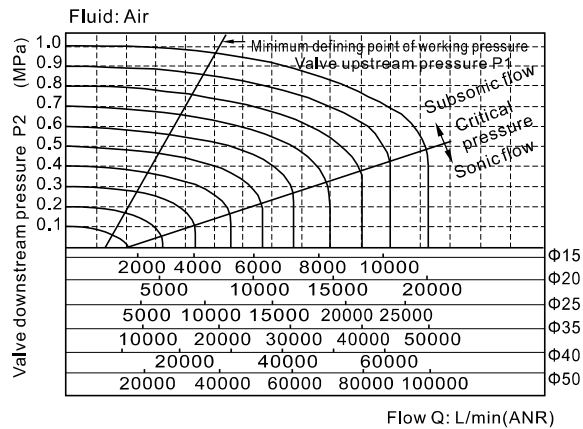
F-2S150 LB		
① Accessories code	② Valve type	③ Accessories type
F: Mounting accessories	2S150: 150 Series valve 2S200: 200 Series valve 2S250: 250 Series valve	LB: LB Type

[[Note] 320\400\500 series valves do not have mounting accessories.

# Fluid control valve(2/2way)

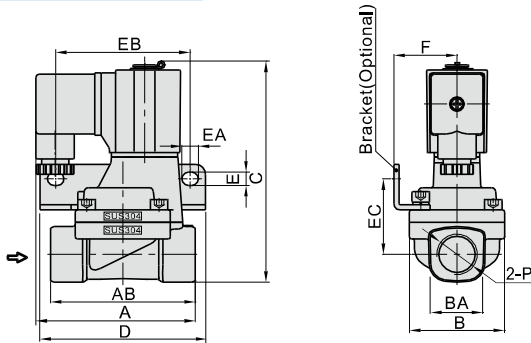
## 2S Series (Internally piloted and normally closed)

### Flow chart

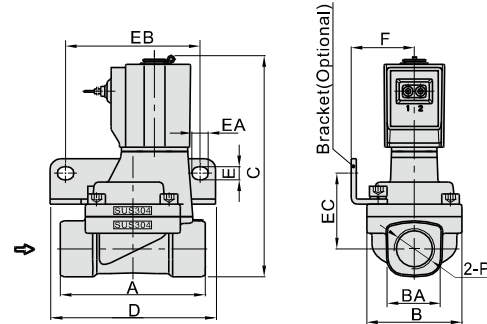


### Dimensions

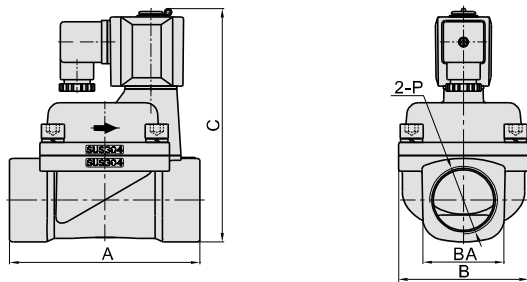
#### 2S150~250 (Terminal)



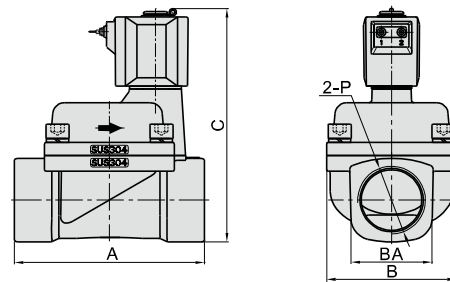
#### 2S150~250(Grommet)



#### 2S320~500 (Terminal)



#### 2S320~500(Grommet)

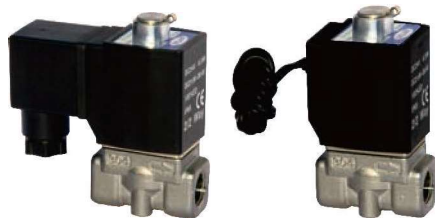


Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2S150-15	77	70	46	27.5	107	80	6.4	8	65	36.5	30.5	1/2"
2S200-20	78.5	82	53	33.5	115.5	90	6.4	8	75	40	34	3/4"
2S250-25	81	92	59	40.5	124	95	6.4	8	80	44.5	36	1
2S320-32	125	-	80	52	154.5	-	-	-	-	-	-	1 1/4"
2S400-40	132	-	90	58	162	-	-	-	-	-	-	1 1/2"
2S500-50	150	-	100	70	177	-	-	-	-	-	-	2"

Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2S150-15	70	46	27.5	107	80	6.4	8	65	36.5	30.5	1/2"
2S200-20	82	53	33.5	115.5	90	6.4	8	75	40	34	3/4"
2S250-25	92	59	40.5	124	95	6.4	8	80	44.5	36	1
2S320-32	125	80	52	154.5	-	-	-	-	-	-	1 1/4"
2S400-40	132	90	58	162	-	-	-	-	-	-	1 1/2"
2S500-50	150	100	70	177	-	-	-	-	-	-	2"

# Fluid control valve(2/2 way)

## 2KS Series (Direct-acting and normally opened)



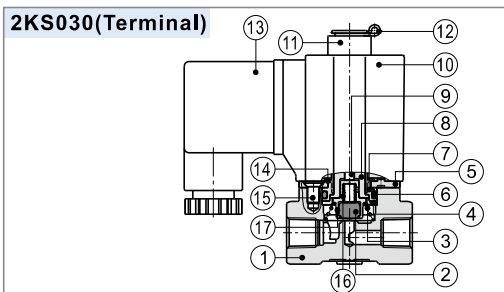
### Symbol



### Product feature

1. Direct acting and normally opened type 2/2 way solenoid valve. Its high sensitivity allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard and large volume(L) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure



No.	Item	No.	Item
1	Body	10	Coil assembly
2	Airtight ring	11	Position ring
3	Spring	12	E Clip
4	Bead flange	13	Connector
5	Fixed plate	14	Washer
6	O-ring	15	Screw
7	Fixed cap	16	Spring
8	Electromagnet	17	Airtight bush
9	Mandril		

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2KSX030	-06 1/8"	1.5	0.10	1.8	305	2.0	300	3.0	450
	-08 1/4"				295				
2KSH030	-06 1/8"	2.0	0.18	3.0	305	1.5	220		
	-08 1/4"				295				
2KS030	-06 1/8"	3.0	0.33	6.0	305	0.7	100		
	-08 1/4"				295				
2KSL030	-06 1/8"	4.0	0.55	10.0	305	0.4	60		
	-08 1/4"				295				
2KSX050	-10 3/8"	3.0	0.34	6.1	610	2.0	300		
	-15 1/2"				600				
2KSH050	-10 3/8"	4.0	0.55	10.0	610	1.5	220		
	-15 1/2"				600				
2KS050	-10 3/8"	5.0	0.83	15.0	610	0.7	100		
	-15 1/2"				600				
2KSL050	-10 3/8"	7.0	1.40	25.0	610	0.4	60		
	-15 1/2"				600				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KS030 series grommet valve's weight is 10g less than terminal's. 2KS050 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)		
2KS□030	CDA116 CLA116	AC	50	±15%	Terminal (CDA)	15.0VA	Class B	50		
			60			11.0VA		40		
		DC	-	±10%		6.5W		30		
2KS□050	CDA170 CLA170	AC	50	±15%		Grommet (CLA)		35.0VA	Class B	65
			60					30.0VA		60
		DC	-	±10%				12.0W		40

### Valve's specification

Acting		Direct acting				
Initial state		Normally opened				
Adaptable fluid		Air, Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient	
	Max.	80	90	80	70	
	Min.	1	-20 [Note1]	-10 [Note2]	-20	

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Ordering code

#### Ordering code of valves

2KS H 030 08 A □ □



① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2KS: 2/2 way direct-acting and normally opened	X: Extra high pressure H: High pressure Blank: Standard L: Large volume	030: 030 Series 050: 050 Series	06: 1/8" 08: 1/4" 10: 3/8" 15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT

[Note] The wire length is 0.5m.

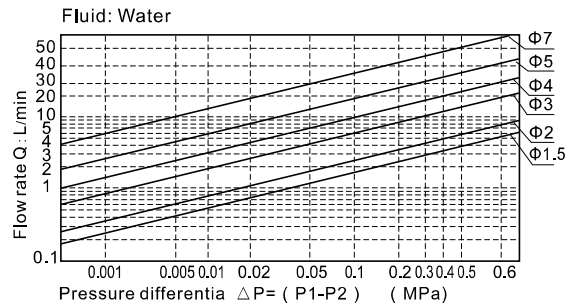
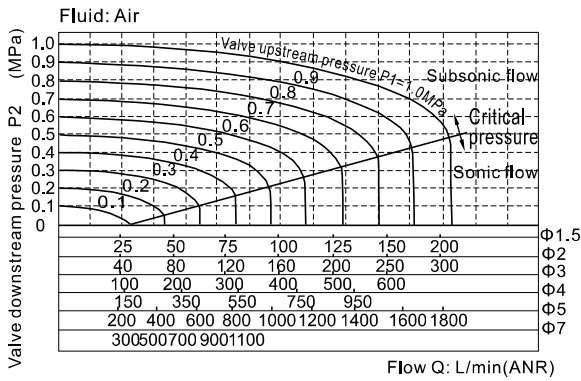
#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, Please refer to P194 for details of ordering code.

# Fluid control valve(2/2 way)

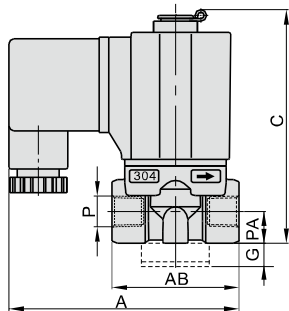
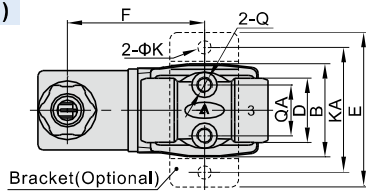
## 2KS Series (Direct-acting and normally opened)

### Flow chart

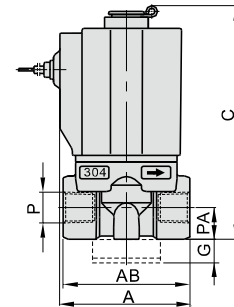
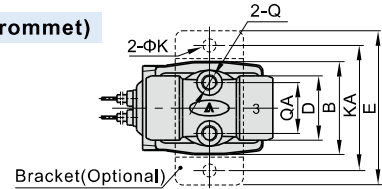


### Dimensions

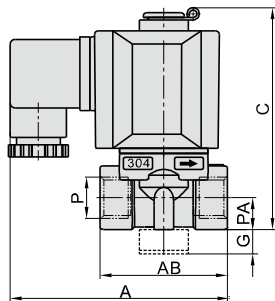
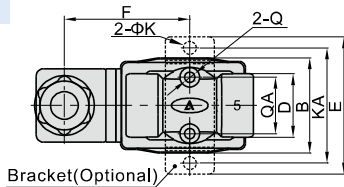
#### 2KS□030 (Terminal)



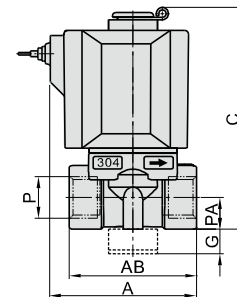
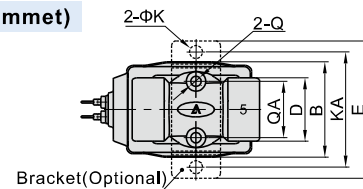
#### 2KS□030 (Grommet)



#### 2KS□050 (Terminal)



#### 2KS□050 (Grommet)

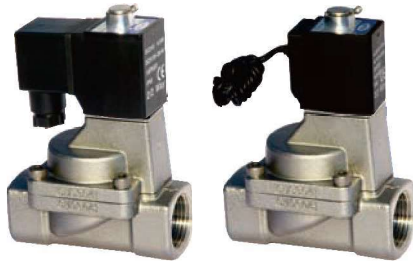


Model/Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2KS□030-06	72.5	40	29.5	76	20	49	43.5	10	5.3	40	1/8"	10	M5	16
2KS□030-08	72.5	40	29.5	76	20	49	43.5	10	5.3	40	1/4"	10	M5	16
2KS□050-10	89.5	52	39	92	26	56	51	10	5.3	48	3/8"	13	M5	23
2KS□050-15	89.5	52	39	92	26	56	51	10	5.3	48	1/2"	13	M5	23

Model/Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2KS□030-06	41	40	29.5	76	20	49	10	5.3	40	1/8"	10	M5	16
2KS□030-08	41	40	29.5	76	20	49	10	5.3	40	1/4"	10	M5	16
2KS□050-10	60	52	39	92	26	56	10	5.3	48	3/8"	13	M5	23
2KS□050-15	60	52	39	92	26	56	10	5.3	48	1/2"	13	M5	23

# Fluid control valve(2/2 way)

## 2KS Series (Internally piloted and normally opened )



### Symbol

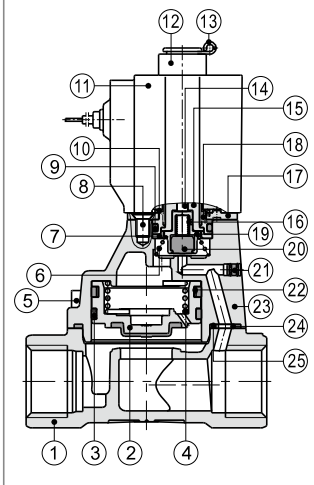


### Product feature

1. Indirect acting (Internal pilot) and normally opened type 2/2 way solenoid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. It is easy to install and dismantle;
3. The valve body is made of SUS304. The coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure

#### 2KS150(Grommet)



No.	Item
1	Body
2	Piston
3	Wear ring
4	Spring
5	Screw
6	Spring
7	Fixed ring
8	Screw
9	O-ring
10	Washer
11	Coil assembly
12	Position ring
13	E Clip
14	Mandril
15	Movable core
16	Spring
17	Fixed plate
18	Fixed cap
19	Airtight bushing
20	Airtight ring
21	Plug
22	Spring
23	Cover
24	Spacer
25	O-ring

### Ordering code

#### Ordering code of valves

2KS 150 15 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2KS: 2/2 way internally piloted and normally opened	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ35mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
500: Φ50mm	50: 2"				

[Note] The wire length is 0.5m.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2KS150-15	1/2"	15.0	5.50	100.0	680	Max: 0.7 Min: 0.05	Max: 100 Min: 10	1.5	220
2KS200-20	3/4"	20.0	9.50	170.0	880				
2KS250-25	1	25.0	12.50	220.0	1125				
2KS320-32	1 1/4"	35.0	23.00	420.0	2710				
2KS400-40	1 1/2"	40.0	31.00	560.0	3260				
2KS500-50	2"	50.0	49.00	880.0	4310				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KS150~250 series grommet valve's weight is 10g less than terminal's. 2KS320~500 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KS150 2KS200 2KS250	CDA116 CLA116	AC	50	±15%	Terminal (CDA)	15.0VA	Class B	50
			60			11.0VA		40
		DC	-	±10%		6.5W		30
2KS320 2KS400 2KS500	CDA170 CLA170	AC	50	±15%	Grommet (CLA)	35.0VA		65
			60			±10%		30.0VA
		DC	-	±10%		12.0W	40	

### Valve's specification

Acting	Internally piloted				
Initial state	Normally opened				
Adaptable fluid	Air, Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature ( °C )	Max.	Water 80	Air 90	Oil 80	Ambient 70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

#### Ordering code of accessories

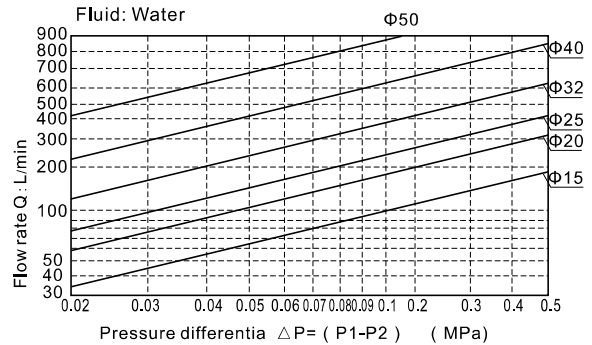
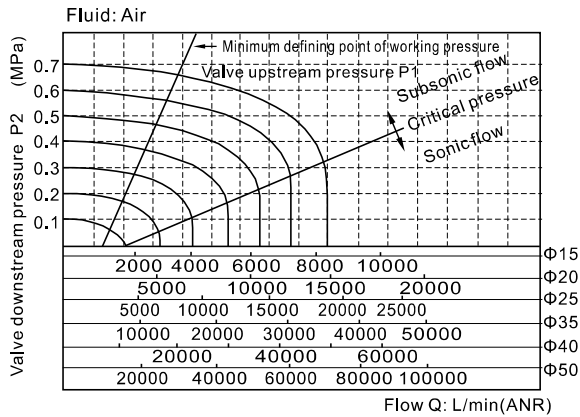
Ordering code of accessories is the same as 2S series valve's, please refer to P196 for details of ordering code.

[Note] 320\400\500 series valves do not have mounting accessories.

# Fluid control valve(2/2 way)

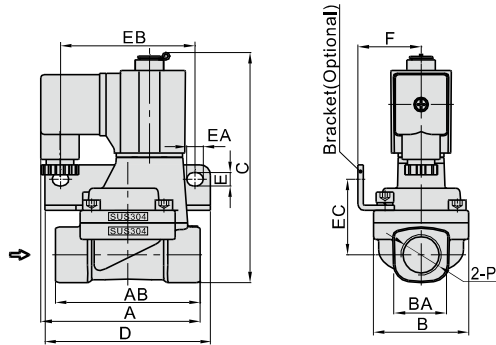
## 2KS Series (Internally piloted and normally opened )

### Flow chart

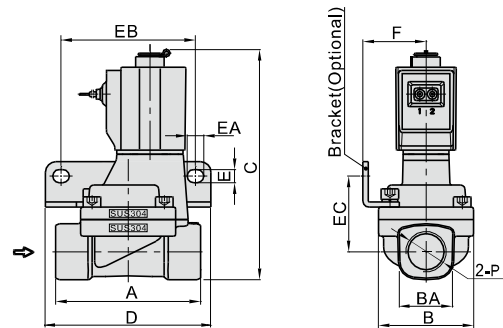


### Dimensions

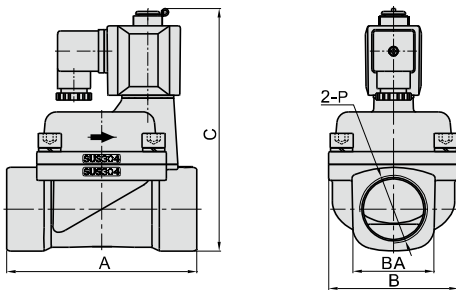
#### 2KS150~250 (Terminal)



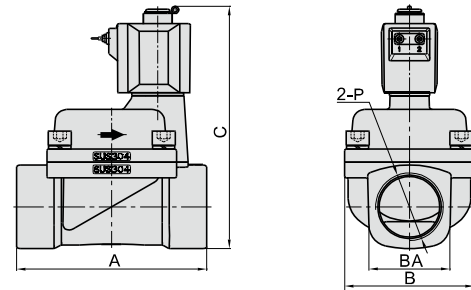
#### 2KS150~250(Grommet)



#### 2KS320~500 (Terminal)



#### 2KS320~500(Grommet)



Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2KS150-15	77	70	46	27.5	112.5	80	6.4	8	65	36.5	30.5	1/2"
2KS200-20	78.5	82	53	33.5	121	90	6.4	8	75	40	34	3/4"
2KS250-25	81	92	59	40.5	129.5	95	6.4	8	80	44.5	36	1
2KS320-32	125	-	80	52	160	-	-	-	-	-	-	1 1/4"
2KS400-40	132	-	90	58	167	-	-	-	-	-	-	1 1/2"
2KS500-50	150	-	100	70	182	-	-	-	-	-	-	2"

Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2KS150-15	70	46	27.5	112.5	80	6.4	8	65	36.5	30.5	1/2"
2KS200-20	82	53	33.5	121	90	6.4	8	75	40	34	3/4"
2KS250-25	92	59	40.5	129.5	95	6.4	8	80	44.5	36	1
2KS320-32	125	80	52	160	-	-	-	-	-	-	1 1/4"
2KS400-40	132	90	58	167	-	-	-	-	-	-	1 1/2"
2KS500-50	150	100	70	182	-	-	-	-	-	-	2"



# Fluid control valve(2/2way)

## 2W Series (Direct-acting and normally closed)



### Symbol

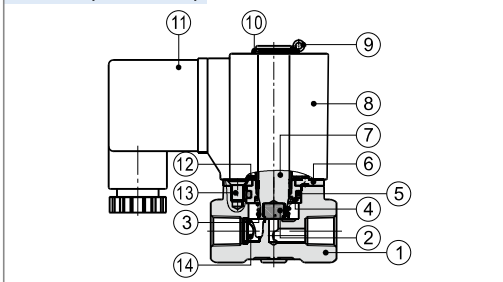


### Product feature

1. Direct acting and normally closed type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard, large volume(L) and extra large volume (T) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of brass. Its coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure

#### 2W030 (Terminal)



No.	Item	No.	Item
1	Body	8	Coil assembly
2	Airtight ring	9	E Clip
3	Spring	10	Gasket
4	Fixed cap	11	Connector
5	O-ring	12	Washer
6	Fixed plate	13	Screw
7	Movable core	14	Filter [Note]

[Note] Extra large volume type has no filter element.

### Ordering code

#### Ordering code of valves

2W L 030 08 A □ □



① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2W: 2/2 way direct-acting and normally closed	X: Extra high pressure H: High pressure Blank: Standard L: Large volume T: Extra large volume	030: 030 Series	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
	050: 050 Series	10: 3/8" 15: 1/2"				

[Note] The wire length is 0.5m.

#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, Please refer to P194 for details of ordering code.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max. operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2WX030	-06 1/8"	1.5	0.10	1.8	305	3.0	450	5.0	750
	-08 1/4"								
2WH030	-06 1/8"	2.0	0.18	3.0	305	2.0	300	5.0	750
	-08 1/4"								
2W030	-06 1/8"	3.0	0.33	6.0	305	1.0	150	5.0	750
	-08 1/4"								
2WL030	-06 1/8"	4.0	0.55	10.0	305	0.5	75	5.0	750
	-08 1/4"								
2WT030	-06 1/8"	6.0	1.10	12.0	305	0.1	15	5.0	750
	-08 1/4"								
2WX050	-10 3/8"	3.0	0.34	6.1	620	3.0	450	5.0	750
	-15 1/2"								
2WH050	-10 3/8"	4.0	0.55	10.0	620	2.0	300	5.0	750
	-15 1/2"								
2W050	-10 3/8"	5.0	0.83	15.0	620	1.0	150	5.0	750
	-15 1/2"								
2WL050	-10 3/8"	7.0	1.40	25.0	620	0.5	75	5.0	750
	-15 1/2"								
2WT050	-10 3/8"	10.0	2.20	40.0	620	0.1	15	5.0	750
	-15 1/2"								

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2W030 series grommet valve's weight is 10g less than terminal's. 2W050 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2W□030	CDA116 CLA116	AC	50	±15%	Terminal (CDA)	10.0VA	Class B	35
			60			8.0VA		30
2W□050	CDA170 CLA170	AC	50	±15%	Grommet (CLA)	25.0VA	Class B	60
			60			22.0VA		55
		DC	-	±10%	6.5W	30		
			-		12.0W	40		

### Valve's specification

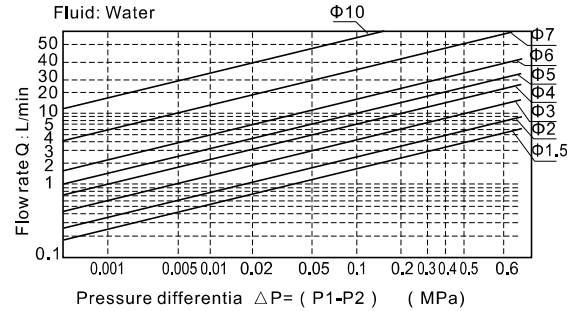
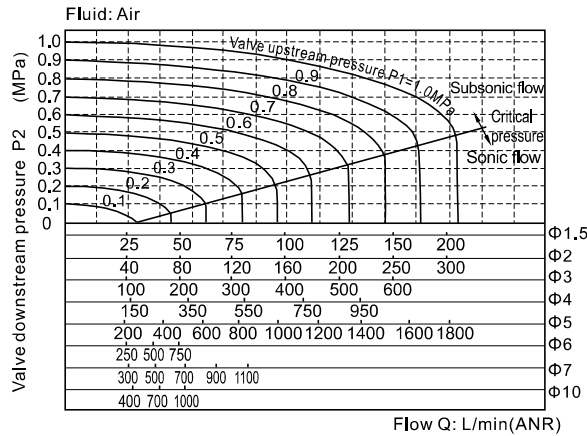
Acting		Direct acting			
Initial state		Normally closed			
Adaptable fluid		Air, Water, Oil			
Viscosity limit		Under 20CST			
Ambient and fluid temperature (°C)		Water	Air	Oil	Ambient
	Max.	80	90	80	70
	Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ; [Note2] 50CST or less.

# Fluid control valve(2/2way)

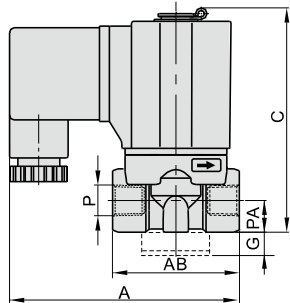
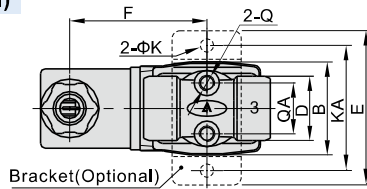
## 2W Series (Direct-acting and normally closed)

### Flow chart

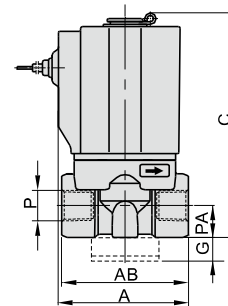
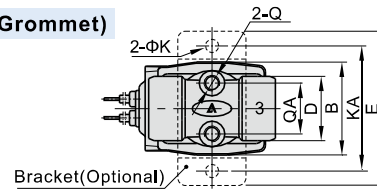


### Dimensions

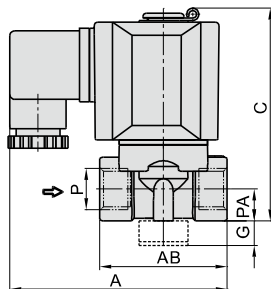
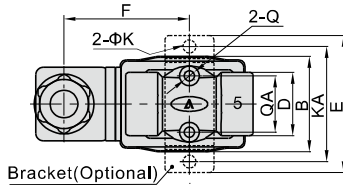
#### 2W□030 (Terminal)



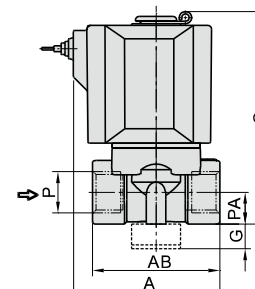
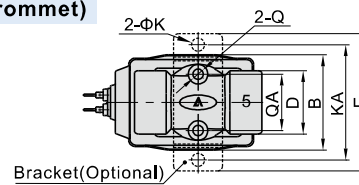
#### 2W□030 (Grommet)



#### 2W□050 (Terminal)



#### 2W□050 (Grommet)



Model\Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2W□030-06	72.5	40	29.5	71	20	49	43.5	10	5.3	40	1/8"	10	M5	16
2W□030-08	72.5	40	29.5	71	20	49	43.5	10	5.3	40	1/4"	10	M5	16
2W□050-10	89.5	52	39	87	26	56	51	10	5.3	48	3/8"	13	M5	23
2W□050-15	89.5	52	39	87	26	56	51	10	5.3	48	1/2"	13	M5	23

Model\Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2W□030-06	41	40	29.5	71	20	49	10	5.3	40	1/8"	10	M5	16
2W□030-08	41	40	29.5	71	20	49	10	5.3	40	1/4"	10	M5	16
2W□050-10	60	52	39	87	26	56	10	5.3	48	3/8"	13	M5	23
2W□050-15	60	52	39	87	26	56	10	5.3	48	1/2"	13	M5	23

# Fluid control valve(2/2way)

## 2W Series (Internally piloted and normally closed)



### Symbol



### Product feature

1. Indirect acting (Internal pilot) and normally closed type 2/2 way solenoid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. It is easy to install and dismantle;
3. The valve body is made of brass. The coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2W150-15	1/2"	15.0	5.50	100.0	720	Max: 1.0 Min: 0.05	Max: 150 Min: 10	1.5	220
2W200-20	3/4"	20.0	9.50	170.0	950				
2W250-25	1"	25.0	12.5	220.0	1200				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, grommet valve's weight is 10g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2W150	CDA116	AC	50	±15%	Terminal (CDA)	10.0VA	Class B	35
2W200			60			8.0VA		30
2W250	CLA116	DC	-	±10%	Grommet (CLA)	6.5W		30

### Valve's specification

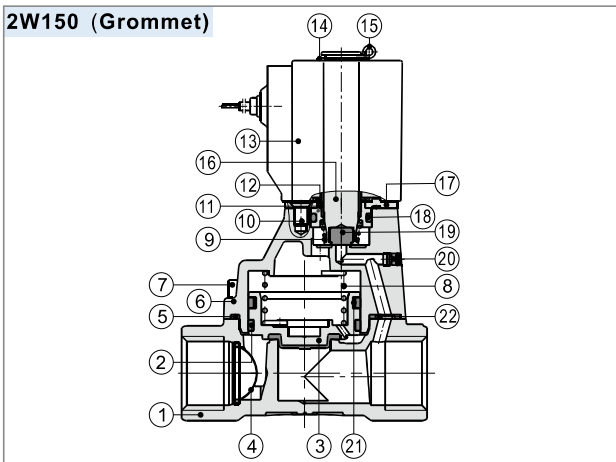
Acting		Internally piloted				
Initial state		Normally closed				
Adaptable fluid		Air, Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature ( °C )		Water		Air	Oil	Ambient
		Max.	80	90	80	70
		Min.	1	-20 [Note1]	-10 [Note2]	-20

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Inner structure

#### 2W150 (Grommet)



No.	Item	No.	Item	No.	Item
1	Body	9	Spring	16	Movable core
2	Filter	10	Screw	17	Fixed plate
3	Piston	11	Fixed cap	18	O-ring
4	Wear ring	12	Washer	19	Airtight ring
5	O-ring	13	Coil assembly	20	Plug
6	Cover	14	Washer	21	Spring
7	Screw	15	E Clip	22	Spacer
8	Spring				

### Ordering code

#### Ordering code of valves

2W 150 15 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2W: 2/2 way internally piloted and normally closed	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			

[Note] The wire length is 0.5m.

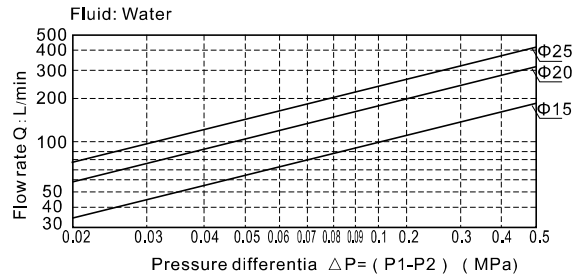
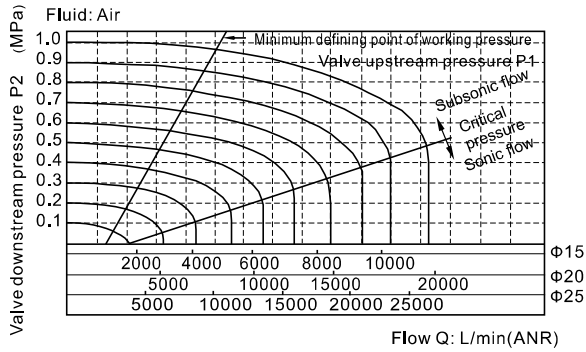
#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, Please refer to P196 for details of ordering code.

# Fluid control valve(2/2way)

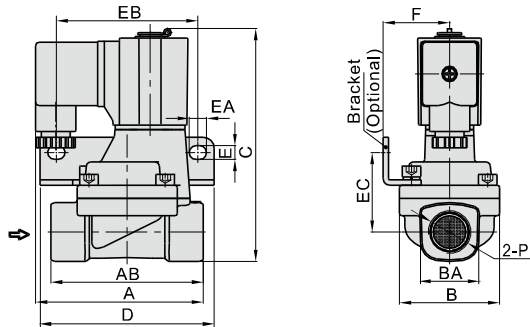
## 2W Series ( Internally piloted and normally closed)

### Flow chart



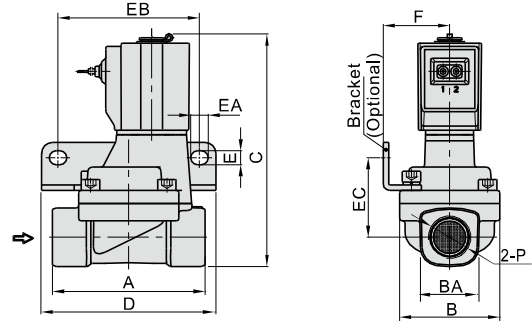
### Dimensions

#### Terminal



Model/Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2W150-15	77	70	46	27.5	107	80	6.4	8	65	36.5	30.5	1/2"
2W200-20	78.5	82	53	33.5	115.5	90	6.4	8	75	40	34	3/4"
2W250-25	81	92	59	40.5	124	95	6.4	8	80	44.5	36	1"

#### Grommet



Model/Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2W150-15	70	46	27.5	107	80	6.4	8	65	36.5	30.5	1/2"
2W200-20	82	53	33.5	115.5	90	6.4	8	75	40	34	3/4"
2W250-25	92	59	40.5	124	95	6.4	8	80	44.5	36	1"

# Fluid control valve(2/2 way)

## 2KW Series (Direct-acting and normally opened)



### Symbol

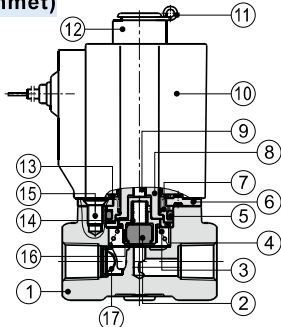


### Product feature

1. Direct acting and normally opened type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including extra high pressure (X), high pressure (H), standard and large volume(L) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of brass. Its coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure

2KW030(Grommet)



No.	Item	No.	Item
1	Body	10	Coil assembly
2	Airtight ring	11	E Clip
3	Spring	12	Position ring
4	Bead flange	13	Washer
5	O-ring	14	Spring
6	Fixed plate	15	Screw
7	Fixed cap	16	Airtight bush
8	Electromagnet	17	Filter
9	Mandril		

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2KWX030	-06 1/8"	1.5	0.10	1.8	315	2.0	300	3.0	450
	-08 1/4"								
2KWH030	-06 1/8"	2.0	0.18	3.0	315	1.5	220		
	-08 1/4"								
2KW030	-06 1/8"	3.0	0.33	6.0	315	0.7	100		
	-08 1/4"								
2KWL030	-06 1/8"	4.0	0.55	10.0	315	0.4	60		
	-08 1/4"								
2KWX050	-10 3/8"	3.0	0.34	6.1	635	2.0	300		
	-15 1/2"				615				
	-15 1/2"				615				
2KWH050	-10 3/8"	4.0	0.55	10.0	635	1.5	220		
	-15 1/2"				615				
2KW050	-10 3/8"	5.0	0.83	15.0	635	0.7	100		
	-15 1/2"				615				
2KWL050	-10 3/8"	7.0	1.40	25.0	635	0.4	60		
	-15 1/2"				615				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KW030 series grommet valve's weight is 10g less than terminal's, 2KW050series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KW□030	CDA116 CLA116	AC	50	±15%	Terminal (CDA) Grommet (CLA)	15.0VA	Class B	50
			60			11.0VA		40
	DC	-	±10%	6.5W		30		
		50		35.0VA		65		
2KW□050	CDA170 CLA170	AC	50	±15%	30.0VA	60		
			60		12.0W	40		
	DC	-	±10%					

### Valve's specification

Acting		Direct acting				
Initial state		Normally opened				
Adaptable fluid		Air, Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature ( °C )			Water	Air	Oil	Ambient
		Max.	80	90	80	70
		Min.	1	-20 [Note1]	-10 [Note2]	-20

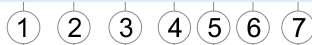
[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Ordering code

#### Ordering code of valves

2KW H 030 08 A □ □



① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2KW: 2/2 way direct-acting and normally opened	X: Extra high pressure H: High pressure Blank: Standard L: Large volume	030: 030 Series	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
		050: 050 Series	10: 3/8" 15: 1/2"			

[Note] The wire length is 0.5m.

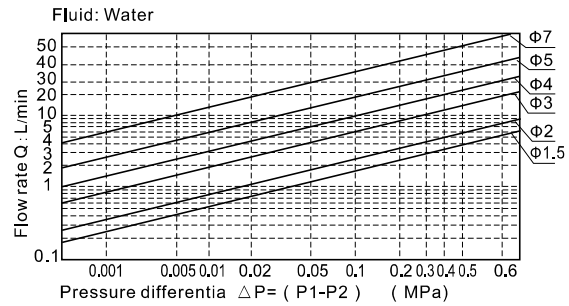
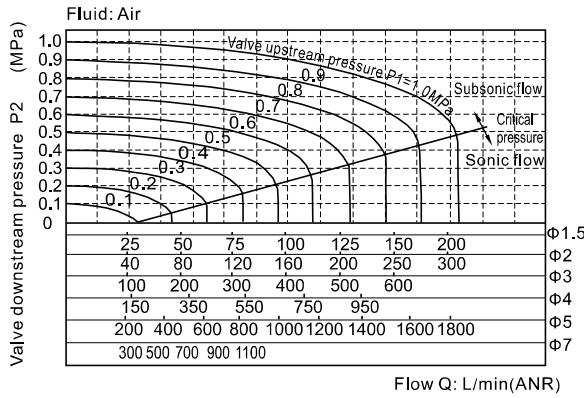
#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, Please refer to P194 for details of ordering code.

# Fluid control valve(2/2 way)

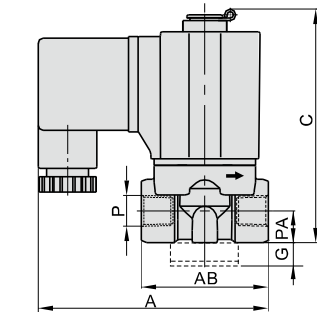
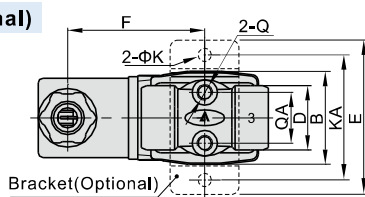
## 2KW Series (Direct-acting and normally opened)

### Flow chart

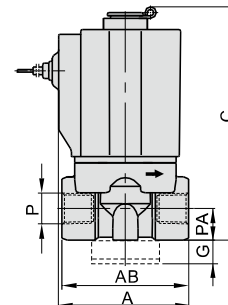
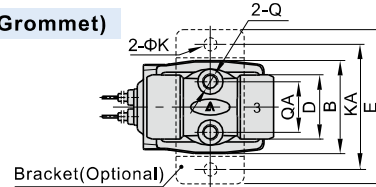


### Dimensions

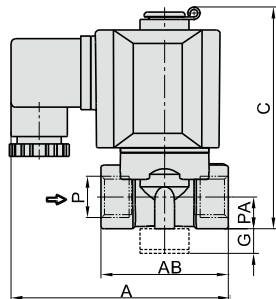
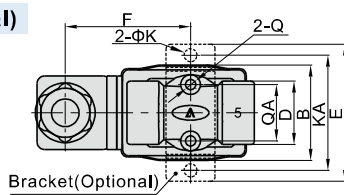
#### 2KW□030 (Terminal)



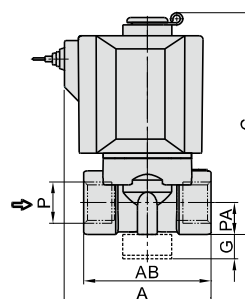
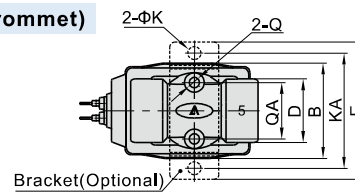
#### 2KW□030 (Grommet)



#### 2KW□050 (Terminal)



#### 2KW□050 (Grommet)



Model/Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2KW□030-06	72.5	40	29.5	76	20	49	43.5	10	5.3	40	1/8"	10	M5	16
2KW□030-08	72.5	40	29.5	76	20	49	43.5	10	5.3	40	1/4"	10	M5	16
2KW□050-10	89.5	52	39	92	26	56	51	10	5.3	48	3/8"	13	M5	23
2KW□050-15	89.5	52	39	92	26	56	51	10	5.3	48	1/2"	13	M5	23

Model/Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2KW□030-06	41	40	29.5	76	20	49	10	5.3	40	1/8"	10	M5	16
2KW□030-08	41	40	29.5	76	20	49	10	5.3	40	1/4"	10	M5	16
2KW□050-10	60	52	39	92	26	56	10	5.3	48	3/8"	13	M5	23
2KW□050-15	60	52	39	92	26	56	10	5.3	48	1/2"	13	M5	23



# Fluid control valve(2/2 way)

## 2KW Series (Internally piloted and normally opened)



### Symbol



### Product feature

1. Indirect acting (Internal pilot) and normally opened type 2/2 way solenoid valve. It can change direction quickly and has large flow.
2. It is compact, small and light weight. It is easy to install and dismantle;
3. The valve body is made of brass. The coil has a Heat resistance classification of Class B. The standard seal material is FPM-F. Please contact us if other material are required.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2KW150-15	1/2"	15.0	5.50	100.0	730	Max: 0.7 Min: 0.05	Max: 100 Min: 10	1.5	220
2KW200-20	3/4"	20.0	9.50	170.0	960				
2KW250-25	1"	25.0	12.5	220.0	1210				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, grommet valve's weight is 10g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2KW150	CDA116	AC	50	±15%	Terminal (CDA)	15.0VA	Class B	50
2KW200	CLA116		60		Grommet (CLA)	11.0VA		40
2KW250		DC	-	±10%		6.5W		30

### Valve's specification

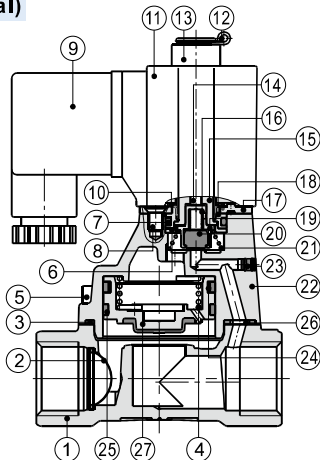
Acting		Internally piloted				
Initial state		Normally opened				
Adaptable fluid		Air, Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature ( °C )		Water	Air	Oil	Ambient	
	Max.	80	90	80	70	
	Min.	1	-20 [Note1]	-10 [Note2]	-20	

[Note1] Dew point: -20(°C) or less ;

[Note2] 50CST or less.

### Inner structure

#### 2KW150 (Terminal)



No.	Item	No.	Item	No.	Item
1	Body	10	Washer	19	Airtight bushing
2	Filter	11	Coil assembly	20	Airtight ring
3	O-ring	12	E Clip	21	Spring
4	Spring	13	Position ring	22	Cover
5	Screw	14	Mandril	23	Plug
6	Bead flange	15	Movable core	24	Bonnet spring
7	O-ring	16	Spring	25	Wear ring
8	Screw	17	Fixed plate	26	Spacer
9	Connector	18	Fixed cap	27	Piston

### Ordering code

#### Ordering code of valves

2KW 150 15 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2KW: 2/2 way internally piloted and normally opened	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank:PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			

[Note] The wire length is 0.5m.

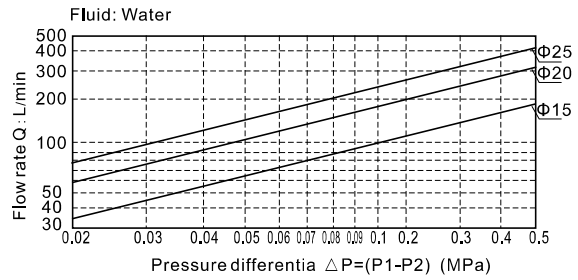
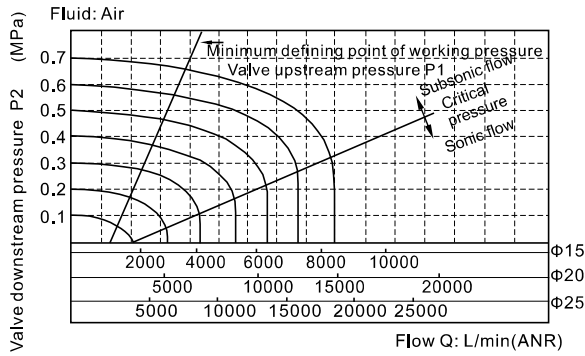
#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, Please refer to P196 for details of ordering code.

# Fluid control valve(2/2 way)

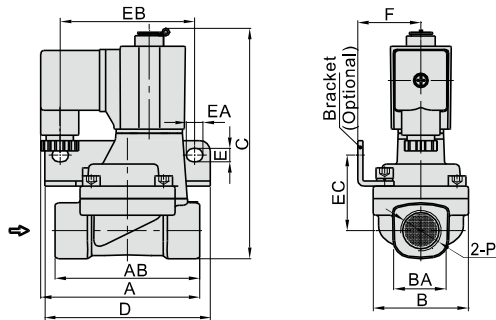
## 2KW Series (Internally piloted and normally opened )

### Flow chart



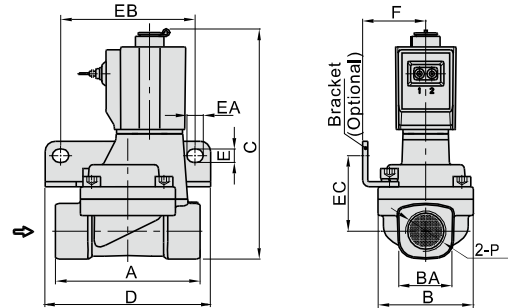
### Dimensions

#### Terminal



Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2KW150-15	77	70	46	27.5	112.5	80	6.4	8	65	36.5	30.5	1/2"
2KW200-20	78.5	82	53	33.5	121	90	6.4	8	75	40	34	3/4"
2KW250-25	81	92	59	40.5	129.5	95	6.4	8	80	44.5	36	1"

#### Grommet



Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2KW150-15	70	46	27.5	112.5	80	6.4	8	65	36.5	30.5	1/2"
2KW200-20	82	53	33.5	121	90	6.4	8	75	40	34	3/4"
2KW250-25	92	59	40.5	129.5	95	6.4	8	80	44.5	36	1"

# Fluid control valve(2/2 way)

## 2L Series (Direct-acting and normally closed )



### Symbol

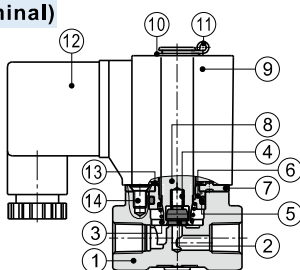


### Product feature

1. Direct acting and normally closed type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including standard and high pressure (H) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of SUS304 . Its coil has a Heat resistance classification of Class H, The standard seal material is PTFE(Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry .

### Inner structure

2L030 (Terminal)



No.	Item	No.	Item	No.	Item
1	Body	6	Fixed cap	11	E Clip
2	Airtight ring	7	Fixed plate	12	Connector
3	Spring	8	Movable core	13	Washer
4	Spring	9	Coil assembly	14	Screw
5	O-ring	10	Washer		

### Ordering code

#### Ordering code of valves

2L H 030 08 A □ □

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2L: 2/2 way direct-acting and normally closed	H: High pressure Blank: Standard	030: 030 Series	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
		050: 050 Series	10: 3/8" 15: 1/2"	E: AC24V F: DC12V		

[Note] The wire length is 0.5m.

#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, Please refer to P194 for details of ordering code.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max.operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2LH030	-06 1/8"	2.0	0,1 8	3.0	300	2.0	300	3.0	450
	-08 1/4"				290				
2L030	-06 1/8"	3.0	0,3 3	6.0	300	1.0	150		
	-08 1/4"				290				
2LH050	-10 3/8"	4.0	0,5 5	10.0	600	2.0	300		
	-15 1/2"				590				
2L050	-10 3/8"	5.0	0,8 3	15.0	600	1.0	150		
	-15 1/2"				590				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2L030 series grommet valve's weight is 10g less than terminal's. 2L050series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)
2L□030	CDA116 CLA116	AC	50	±15%	Terminal (CDA) Grommet (CLA)	10.0VA	Class H	35
			60			8.0VA		30
		DC	-	±10%		6.5W		30
2L□050	CDA170 CLA170	AC	50	±15%		25.0VA		60
			60			22.0VA		55
		DC	-	±10%		12.0W		40

### Valve's specification

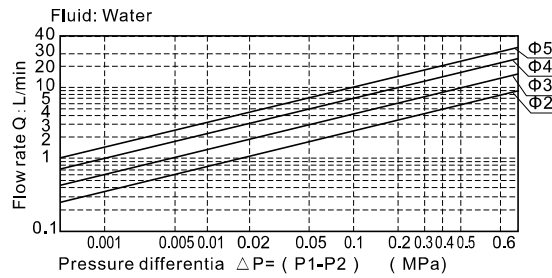
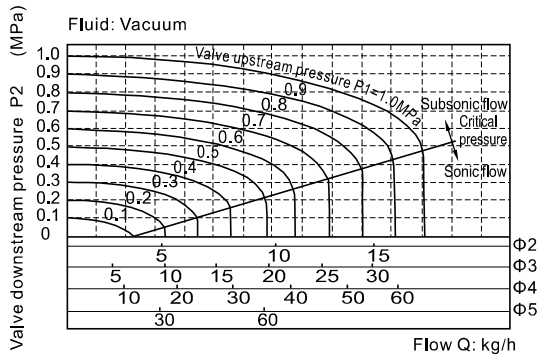
Acting	Direct acting				
	Initial state	Normally closed			
Adaptable fluid	Steam, High temperature Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature ( °C )		Oil	Water	Steam	Ambient
	Max.	150	150	183	100
	Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

# Fluid control valve(2/2 way)

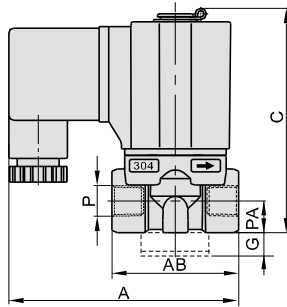
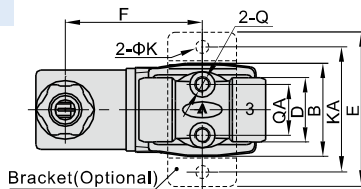
## 2L Series (Direct-acting and normally closed )

### Flow chart

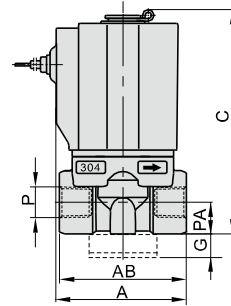
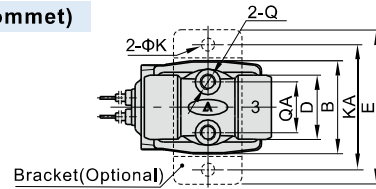


### Dimensions

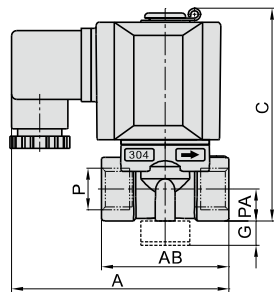
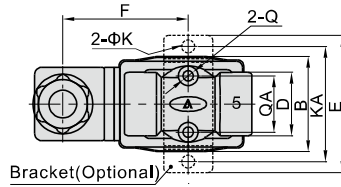
#### 2L□030(Terminal)



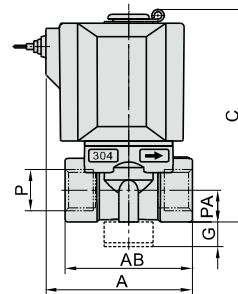
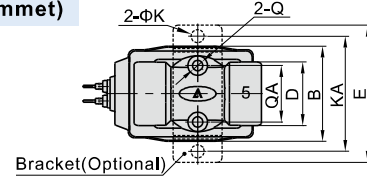
#### 2L□030(Grommet)



#### 2L□050(Terminal)



#### 2L□050(Grommet)



Model\Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2L□030-06	72.5	40	29.5	71	20	49	43.5	10	5.3	40	1/8"	10	M5	16
2L□030-08	72.5	40	29.5	71	20	49	43.5	10	5.3	40	1/4"	10	M5	16
2L□050-10	89.5	52	39	87	26	56	51	10	5.3	48	3/8"	13	M5	23
2L□050-15	89.5	52	39	87	26	56	51	10	5.3	48	1/2"	13	M5	23

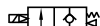
Model\Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2L□030-06	41	40	29.5	71	20	49	10	5.3	40	1/8"	10	M5	16
2L□030-08	41	40	29.5	71	20	49	10	5.3	40	1/4"	10	M5	16
2L□050-10	60	52	39	87	26	56	10	5.3	48	3/8"	13	M5	23
2L□050-15	60	52	39	87	26	56	10	5.3	48	1/2"	13	M5	23

# Fluid control valve(2/2 way)

## 2L Series (Internally piloted and normally closed)



### Symbol

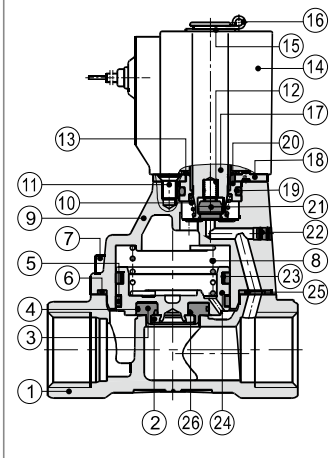


### Product feature

1. Indirect acting (Internal pilot) and normally closed type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly.
2. It is compact, small size and light weight. It is easy to install and dismantle.
3. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class H. The standard seal material is PTFE (Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure

#### 2L150 (Grommet)



No.	Item
1	Body
2	Fixed ring
3	Airtight gasket
4	O-ring
5	Wear ring
6	Gasket
7	Screw
8	Spring
9	Cover
10	Spring
11	Screw
12	Spring
13	Spring washer
14	Coil assembly
15	Washer
16	E Clip
17	Movable core
18	Fixed plate
19	O-ring
20	Fixed cap
21	Airtight ring
22	Plug
23	Spring
24	Piston
25	Spacer
26	O-ring

### Ordering code

#### Ordering code of valves

2L 150 15 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2L: 2/2 way internally piloted and normally closed	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ35mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
500: Φ50mm	50: 2"				

[Note] The wire length is 0.5m.

#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, please refer to P196 for details of ordering code.

[Note] 320\400\500 series valves do not have mounting accessories.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2L150-15	1/2"	15.0	5.50	100.0	675	Max: 1.0 Min: 0.05	Max: 150 Min: 10	1.5	220
2L200-20	3/4"	20.0	9.50	170.0	875				
2L250-25	1"	25.0	12.50	220.0	1120				
2L320-32	1 1/4"	35.0	23.00	420.0	2700				
2L400-40	1 1/2"	40.0	31.00	560.0	3250				
2L500-50	2"	50.0	49.00	880.0	4300				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2L150~250series grommet valve's weight is 10g less than terminal's. 2L320~500series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)	
2L150 2L200 2L250	CDA116 CLA116	AC	50	±15%	Terminal (CDA)	10.0VA	Class H	35	
			60			8.0VA		30	
	-	±10%	6.5W	30					
2L320 2L400 2L500	CDA170 CLA170	AC	50	±15%	Grommet (CLA)	25.0VA		Class H	60
			60			22.0VA			55
	-	±10%	12.0W	40					

### Valve's specification

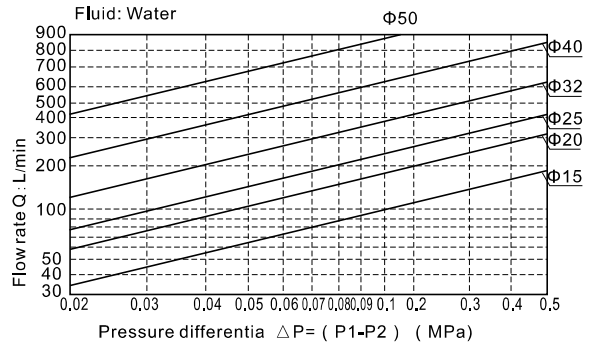
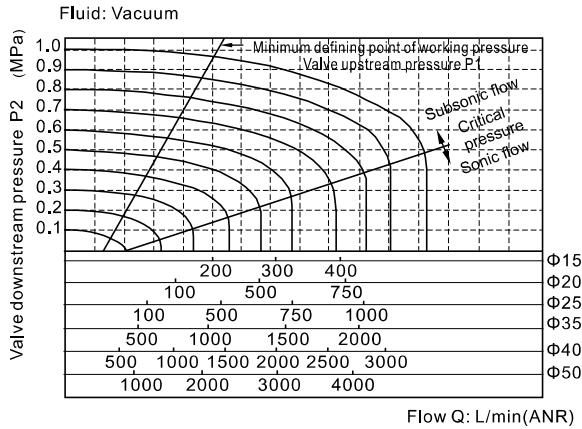
Acting		Internally piloted				
Initial state		Normally closed				
Adaptable fluid		Steam, High temperature Water, Oil				
Viscosity limit		Under 20CST				
Ambient and fluid temperature (°C)			Oil	Water	Steam	Ambient
		Max.	150	150	183	100
		Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

# Fluid control valve(2/2 way)

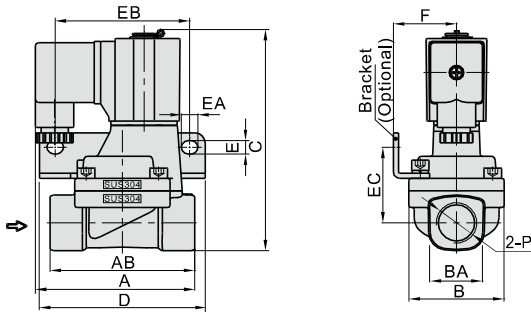
## 2L Series (Internally piloted and normally closed)

### Flow chart

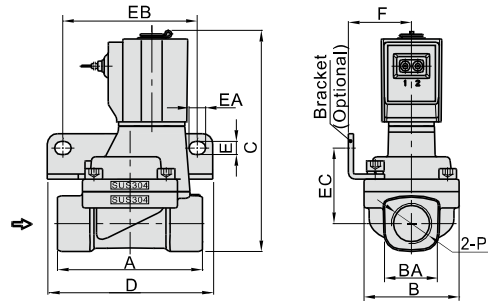


### Dimensions

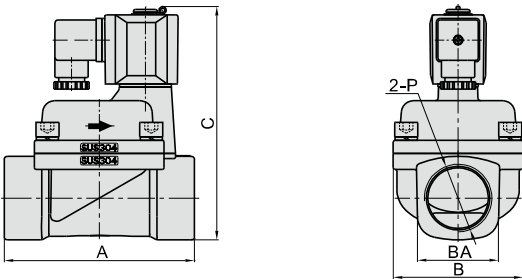
#### 2L150~250(Terminal)



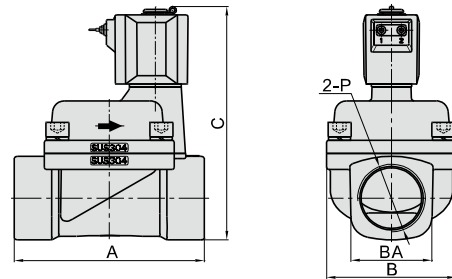
#### 2L150~250(Grommet)



#### 2L320~500(Terminal)



#### 2L320~500(Grommet)



Model/Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2L150-15	77	70	46	27.5	107	80	6.4	8	65	36.5	30.5	1/2"
2L200-20	78.5	82	53	33.5	115.5	90	6.4	8	75	40	34	3/4"
2L250-25	81	92	59	40.5	124	95	6.4	8	80	44.5	36	1"
2L320-32	125	-	80	52	154.5	-	-	-	-	-	-	1 1/4"
2L400-40	132	-	90	58	162	-	-	-	-	-	-	1 1/2"
2L500-50	150	-	100	70	177	-	-	-	-	-	-	2"

Model/Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2L150-15	70	46	27.5	107	80	6.4	8	65	36.5	30.5	1/2"
2L200-20	82	53	33.5	115.5	90	6.4	8	75	40	34	3/4"
2L250-25	92	59	40.5	124	95	6.4	8	80	44.5	36	1"
2L320-32	125	80	52	154.5	-	-	-	-	-	-	1 1/4"
2L400-40	132	90	58	162	-	-	-	-	-	-	1 1/2"
2L500-50	150	100	70	177	-	-	-	-	-	-	2"



# Fluid control valve(2/2 way)

## 2KL Series (Direct-acting and normally opened)



### Symbol



### Product feature

1. Direct acting and normally opened type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly;
2. It has wide pressure range, including standard and high pressure (H) to choose from;
3. It is compact, small size and light weight. It is easy to install and dismantle.
4. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class H. The standard seal material is PTFE(Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
5. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Max. operating pressure differentia		Proof pressure	
						MPa	psi	MPa	psi
2KLH030	-06 1/8"	2.0	0.18	3.0	305	1.5	220	3.0	450
	-08 1/4"								
2KL030	-06 1/8"	3.0	0.33	6.0	305	0.7	100		
	-08 1/4"								
2KLH050	-10 3/8"	4.0	0.55	10.0	610	1.5	220		
	-15 1/2"								
2KL050	-10 3/8"	5.0	0.83	15.0	610	0.7	100		
	-15 1/2"								

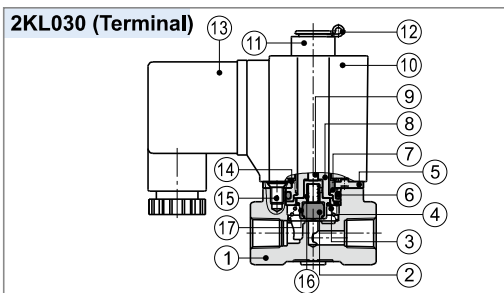
[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KL030 series grommet valve's weight is 10g less than terminal's, 2KL050 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)	
2KL□030	CDA116 CLA116	AC	50	±15%	Terminal (CDA)	15.0VA	Class H	50	
			60			11.0VA		40	
		DC	-	±10%		6.5W		30	
2KL□050	CDA170 CLA170	AC	50	±15%	Grommet (CLA)	35.0VA		Class H	65
			60			30.0VA			60
		DC	-	±10%		12.0W			40

### Inner structure



No.	Item	No.	Item	No.	Item
1	Body	7	Fixed cap	13	Connector
2	Airtight ring	8	Electromagnet	14	Spring washer
3	Spring	9	Mandril	15	Screw
4	Fixed ring	10	Coil assembly	16	Spring
5	Fixed plate	11	Position ring	17	Airtight bush
6	O-ring	12	E Clip		

### Valve's specification

Acting	Direct acting				
Initial state	Normally opened				
Adaptable fluid	Steam, High temperature Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature (°C)		Oil	Water	Steam	Ambient
	Max.	150	150	183	100
	Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

### Ordering code

#### Ordering code of valves

2KL H 030 08 A □ □

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Pressure condition	③ Size series	④ Port size	⑤ Voltage	⑥ Electrical entry	⑦ Thread type
2KL: 2/2 way direct-acting and normally opened	H: High pressure Blank: Standard	030: 030 Series	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
		050: 050 Series	10: 3/8" 15: 1/2"			

[Note] The wire length is 0.5m.

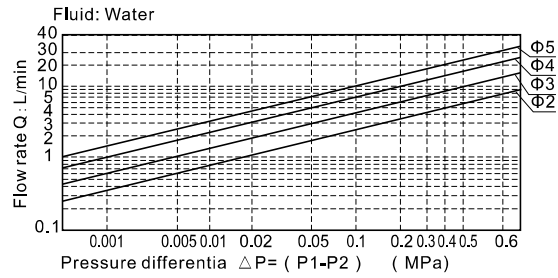
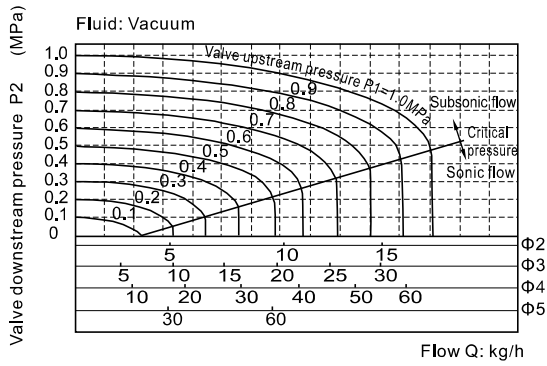
#### Ordering code of accessories

Ordering code of accessories is the same as 2S series valve's, Please refer to P194 for details of ordering code.

# Fluid control valve(2/2 way)

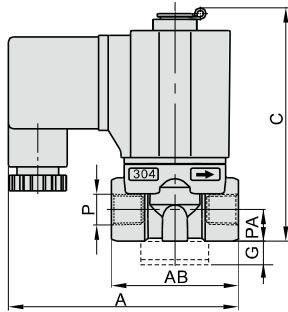
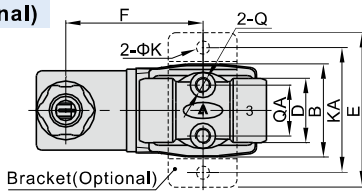
## 2KL Series (Direct-acting and normally opened)

### Flow chart

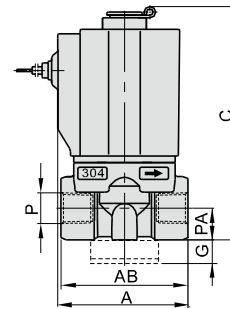
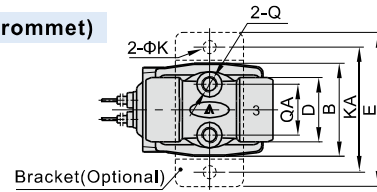


### Dimensions

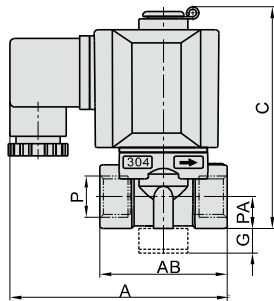
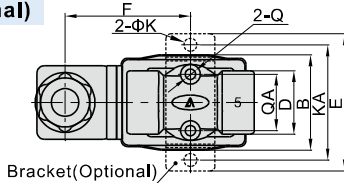
#### 2KL□030(Terminal)



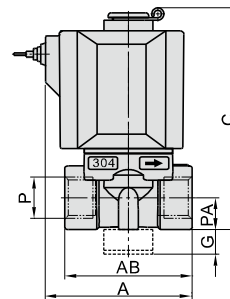
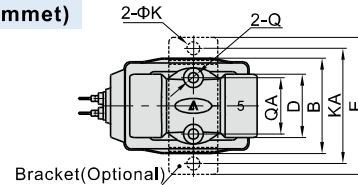
#### 2KL□030(Grommet)



#### 2KL□050(Terminal)



#### 2KL□050(Grommet)

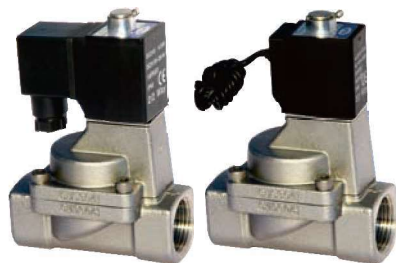


Model\Item	A	AB	B	C	D	E	F	G	K	KA	P	PA	Q	QA
2KL□030-06	72.5	40	29.5	76	20	49	43.5	10	5.3	40	1/8"	10	M5	16
2KL□030-08	72.5	40	29.5	76	20	49	43.5	10	5.3	40	1/4"	10	M5	16
2KL□050-10	89.5	52	39	92	26	56	51	10	5.3	48	3/8"	13	M5	23
2KL□050-15	89.5	52	39	92	26	56	51	10	5.3	48	1/2"	13	M5	23

Model\Item	A	AB	B	C	D	E	G	K	KA	P	PA	Q	QA
2KL□030-06	41	40	29.5	76	20	49	10	5.3	40	1/8"	10	M5	16
2KL□030-08	41	40	29.5	76	20	49	10	5.3	40	1/4"	10	M5	16
2KL□050-10	60	52	39	92	26	56	10	5.3	48	3/8"	13	M5	23
2KL□050-15	60	52	39	92	26	56	10	5.3	48	1/2"	13	M5	23

# Fluid control valve(2/2 way)

## 2KL Series (Internally piloted and normally opened)



### Symbol

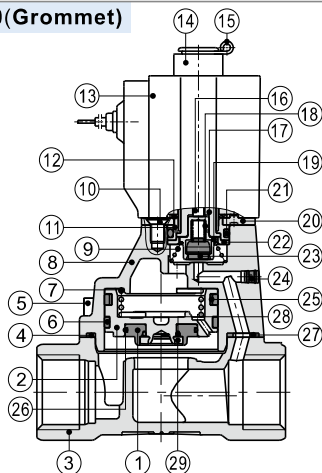


### Product feature

1. Indirect acting (Internal pilot) and normally opened type 2/2 way solenoid valve. Its high sensibility allows it to change direction quickly.
2. It is compact, small size and light weight. It is easy to install and dismantle.
3. The valve body is made of SUS304. Its coil has a Heat resistance classification of Class H. The standard seal material is PTFE (Teflon) which is suitable for a variety of working medium such as water with high temperature and vapour.
4. The protection class of the coil is IP65 and there is a choice for grommet or terminal electrical entry.

### Inner structure

#### 2KL150(Grommet)



No.	Item	No.	Item
1	Gasket	16	Mandril
2	Piston	17	Electromagnet
3	Body	18	Spring
4	Gasket	19	Airtight bush
5	Screw	20	Fixed plate
6	Wear ring	21	O-ring
7	Spring	22	Fixed ring
8	Cover	23	Airtight ring
9	Spring	24	Plug
10	Screw	25	Spring
11	Fixed cap	26	O-ring
12	Spring washer	27	Spacer
13	Coil assembly	28	O-ring
14	Position ring	29	Fixed ring
15	E Clip		

### Specification

Model\Item	Port size [Note1]	Orifice size (Φmm)	Cv	Valid area or section (mm <sup>2</sup> )	Weight [Note2](g)	Operating pressure differential		Proof pressure	
						MPa	psi	MPa	psi
2KL150-15	1/2"	15.0	5.50	100.0	675	Max: 0.7 Min: 0.05	Max: 100 Min: 10	1.5	220
2KL200-20	3/4"	20.0	9.50	170.0	880				
2KL250-25	1"	25.0	12.50	220.0	1125				
2KL320-32	1 1/4"	35.0	23.00	420.0	2710				
2KL400-40	1 1/2"	40.0	31.00	560.0	3260				
2KL500-50	2"	50.0	49.00	880.0	4310				

[Note1] PT thread, G thread and NPT thread are available.

[Note2] The weight in the table is the terminal valve's weight, 2KL150~250 series grommet valve's weight is 10g less than terminal's. 2KL320~500 series grommet valve's weight is 20g less than terminal's.

### Specification of coil

Valve type	Coil type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp. rise(°C)	
2KL150	CDA116	AC	50	±15%	Terminal (CDA)	15.0VA	Class H	50	
2KL200			60			11.0VA		40	
2KL250		DC	-	±10%		6.5W		30	
2KL320	CDA170	AC	50	±15%	Grommet (CLA)	35.0VA		Class H	65
2KL400			60			30.0VA			60
2KL500		DC	-	±10%		12.0W			40

### Valve's specification

Acting	Internally piloted				
Initial state	Normally opened				
Adaptable fluid	Steam, High temperature Water, Oil				
Viscosity limit	Under 20CST				
Ambient and fluid temperature (°C)		Oil	Water	Steam	Ambient
	Max.	150	150	183	100
	Min.	-10 [Note1]	1	-	-20

[Note1] 50CST or less.

### Ordering code

#### Ordering code of valves

2KL 150 15 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2KL: 2/2 way internally piloted and normally opened	150: Φ15mm	15: 1/2"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet [Note]	Blank: PT G: G T: NPT
	200: Φ20mm	20: 3/4"			
	250: Φ25mm	25: 1"			
	320: Φ35mm	32: 1 1/4"			
	400: Φ40mm	40: 1 1/2"			
500: Φ50mm	50: 2"				

[Note] The wire length is 0.5m.

#### Ordering code of accessories

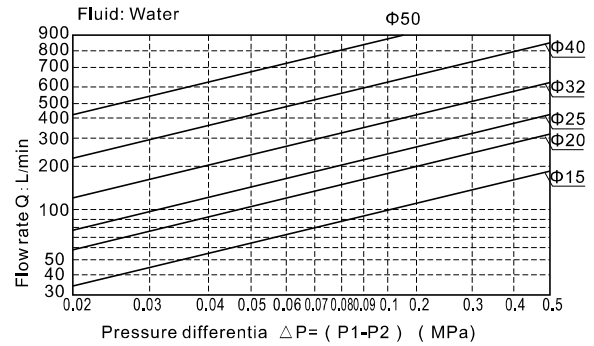
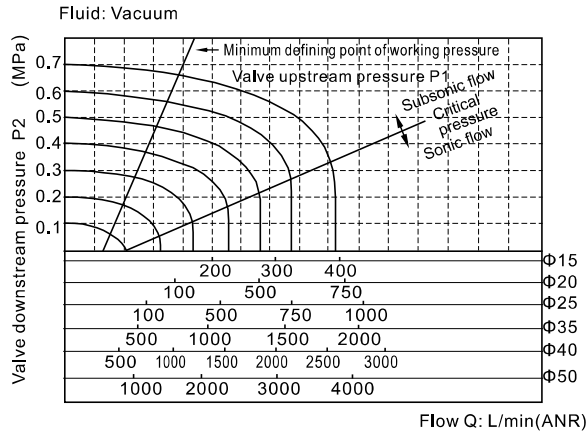
Ordering code of accessories is the same as 2S series valve's. Please refer to P196 for details of ordering code.

[Note] 320\400\500 series valves do not have mounting accessories.

# Fluid control valve(2/2 way)

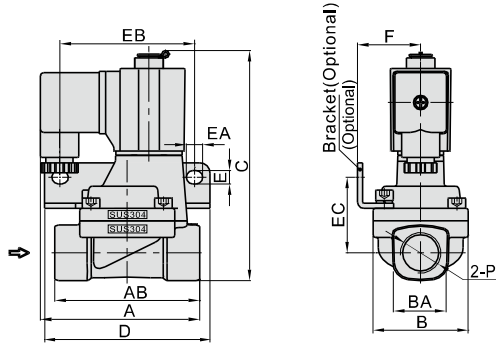
## 2KL Series (Internally piloted and normally opened)

### Flow chart

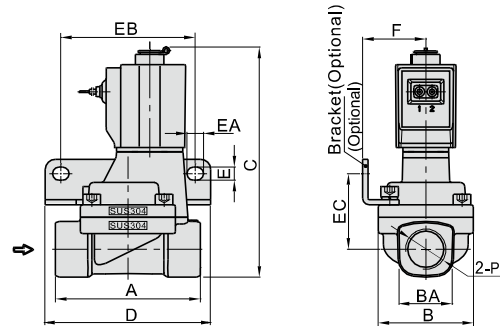


### Dimensions

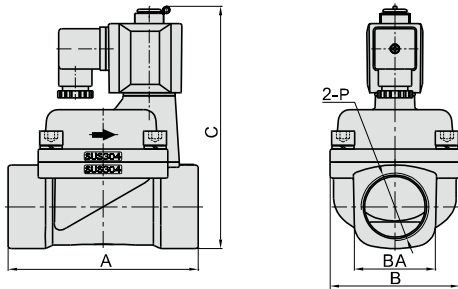
#### 2KL150~250(Terminal)



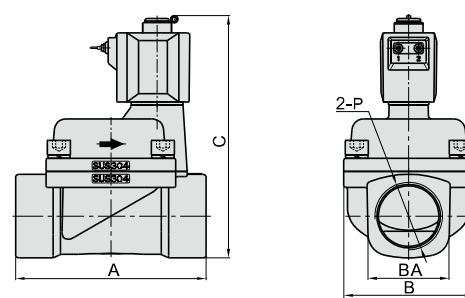
#### 2KL150~250(Grommet)



#### 2KL320~500(Terminal)



#### 2KL320~500(Grommet)

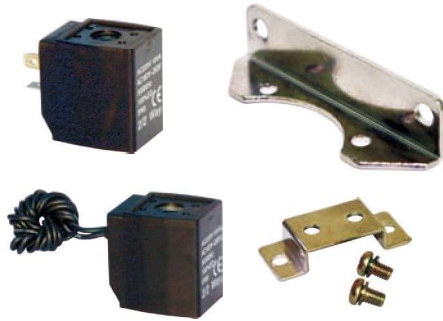


Model\Item	A	AB	B	BA	C	D	E	EA	EB	EC	F	P
2KL150-15	77	70	46	27.5	112.5	80	6.4	8	65	36.5	30.5	1/2"
2KL200-20	78.5	82	53	33.5	121	90	6.4	8	75	40	34	3/4"
2KL250-25	81	92	59	40.5	129.5	95	6.4	8	80	44.5	36	1"
2KL320-32	125	-	80	52	160	-	-	-	-	-	-	1 1/4"
2KL400-40	132	-	90	58	167	-	-	-	-	-	-	1 1/2"
2KL500-50	150	-	100	70	182	-	-	-	-	-	-	2"

Model\Item	A	B	BA	C	D	E	EA	EB	EC	F	P
2KL150-15	70	46	27.5	112.5	80	6.4	8	65	36.5	30.5	1/2"
2KL200-20	82	53	33.5	121	90	6.4	8	75	40	34	3/4"
2KL250-25	92	59	40.5	129.5	95	6.4	8	80	44.5	36	1"
2KL320-32	125	80	52	160	-	-	-	-	-	-	1 1/4"
2KL400-40	132	90	58	167	-	-	-	-	-	-	1 1/2"
2KL500-50	150	100	70	182	-	-	-	-	-	-	2"

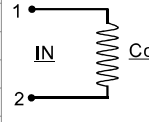
# Fluid control valve(2/2way)

## Coil and accessories

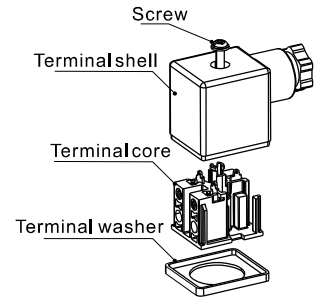


### Hookup

Coil's type		Hookup	Connector's type
116 Series	CDA116 (Terminal)	AC	PL2925
	CLA116 (Grommet)	DC	
170 Series	CDA170 (Terminal)	AC	PL3030
	CLA170 (Grommet)	DC	



### How to use connector



### Specification

Model\Item	Power type	Voltage (V)	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)		Insulation	Temp.rise(°C)	
						For NC	For NO		NC	NO
116 Series	AC	220	50	±15%	DIN Terminal	10.0VA	15.0VA	Class B	35	50
			60			8.0VA	11.0VA		30	40
		110	50			10.0VA	15.0VA		35	50
			60			8.0VA	11.0VA		30	40
	24	50	10.0VA	15.0VA	35	50				
		60	8.0VA	11.0VA	30	40				
DC	24	-	±10%	Grommet	6.5W		30	30		
	12	-			12.0W		40	40		
170 Series	AC	220	50	±15%	DIN Terminal	25.0VA	35.0VA	Class H	60	65
			60			22.0VA	30.0VA		55	60
		110	50			25.0VA	35.0VA		60	65
			60			22.0VA	30.0VA		55	60
	24	50	25.0VA	35.0VA	60	65				
		60	22.0VA	30.0VA	55	60				
DC	24	-	±10%	Grommet	12.0W		40	40		
	12	-			12.0W		40	40		

### How to select coil

Valve type\Coil type		116 Series		170 Series	
		Class B	Class H	Class B	Class H
2W□030\2KW□030	2S□030\2KS□030	●	×	×	×
2L□030	2KL□030	×	●	×	×
2W□050\2KW□050	2S□050\2KS□050	×	×	●	×
2L□050	2KL□050	×	×	×	●
2W150~250\2KW150~250	2S150~250\2KS150~250	●	×	×	×
2L150~250	2KL150~250	×	●	×	×
2S320~500	2KS320~500	×	×	●	×
2L320~500	2KL320~500	×	×	×	●

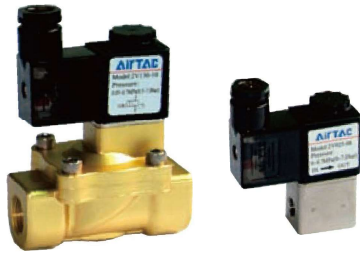
### How to select accessories

Valve type\ Accessories type			F-2S030LB	F-2S050LB	F-2S150LB	F-2S200LB	F-2S250LB
2W□030\2KW□030	2S□030\2KS□030	2L□030\2KL□030	●	×	×	×	×
2W□050\2KW□050	2S□050\2KS□050	2L□050\2KL□050	×	●	×	×	×
2W150\2KW150	2S150\2KS150	2L150\2KL150	×	×	●	×	×
2W200\2KW200	2S200\2KS200	2L200\2KL200	×	×	×	●	×
2W250\2KW250	2S250\2KS250	2L250\2KL250	×	×	×	×	●
2S320~500\2KS320~500	2L320~500\2KL320~500		×	×	×	×	×

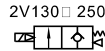
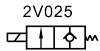
### Ordering code of coil

CD A116 A □			
① Coil type	② Coil's bore	③ Voltage	④ Temperature resistance class of coil
CD: Terminal CL: Grommet	A116: Coil Specification(Bore sizeΦ11.6mm) A170: Coil Specification(Bore sizeΦ17.0mm)	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: B Class H: H Class

## 2V Series



### Symbol



### Product feature

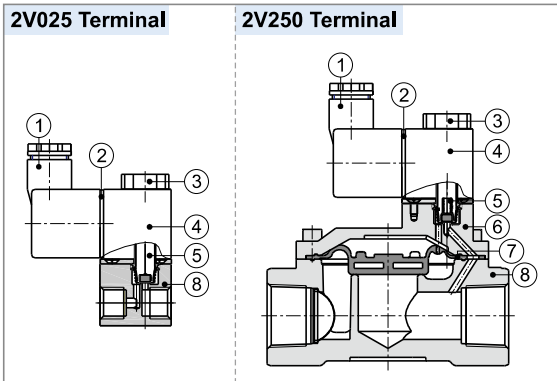
#### 2V025 series

1. Direct acting and normally closed type 2/2 way solenoid valve. Its high sensitivity allows it to change direction quickly.
2. The structure is small and compact.
3. The valve body is made of brass which is heat resistance and the coil conforms to Class B classification. The seals are made of fluorine rubber (VITON) which is suitable for several types of working medium.

#### 2V130 and 250 series

1. This 2/2 way diaphragm piloted solenoid valve has low energy consumption and large air flow.
2. The starting pressure is low and the Min. operational differential pressure is 0.05MPa.
3. The valve body is made of brass which is heat resistance and the coil conforms to Class B classification. The seals are made of NBR.

### Inner structure



No.	Item	No.	Item	No.	Item
1	Connector	4	Coil	7	Diaphragm
2	Connector gasket	5	Armature assembly	8	Body
3	Coil nut	6	Body cover		

### Ordering code

2V 025 08 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Orifice size	③ Port size	④ Voltage	⑤ Electrical entry	⑥ Thread type
2V: 2 port 2 position fluid control valve	025: Φ2.5mm	06: 1/8" 08: 1/4"	A: AC220V B: DC24V C: AC110V E: AC24V F: DC12V	Blank: Terminal I: Grommet[Note]	Blank: PT G: G T: NPT
	130: Φ13mm	10: 3/8" 15: 1/2"			
	250: Φ25mm	20: 3/4" 25: 1"			

[Note] The wire length is 0.5m.

### Specification

Model	2V025-06	2V025-08	2V130-10	2V130-15	2V250-20	2V250-25
Fluid	Air, Water, Oil					
Acting	Direct acting			Internally piloted acting		
Initial state	Normally closed					
Orifice size (mm)	2.5	2.5	13.0	13.0	25.0	25.0
Cv	0.23	0.25	6.20	6.20	13.00	13.00
Port size [Note]	1/8"	1/4"	3/8"	1/2"	3/4"	1"
Viscosity limit	Under 20CST					
Pressure range	0~1.0MPa(0~145psi)			0.05~1.0MPa(7~145psi)		
Proof pressure	1.5MPa(215psi)					
Material body	Brass with nickel plated			Brass		
Seal material	VITON			NBR		
Activating time	0.05 sec and below					

[Note] PT thread, G thread and NPT thread are available.

### Specification of coil

Valve type	Power type	Frequency (Hz)	Voltage range	Electrical entry	Power Consumption (VA/W)	Insulation	Temp.rise (°C)
2V025	AC	50	±15%	Terminal Grommet	7.0VA	Class B	35
2V130		60					
2V250	DC	-	±10%		7.0W		45

### Usable fluid

Seal material/Fluid	Water	Dry air	Acetone*	ISOVG32 oil	Glycol*	Nitrogen	Heavy oil
NBR	○	◎	△	◎	○	◎	○

Seal material/Fluid	JIS# oil	JIS#3 oil	Vegetable Oil	Inorganic Oil	Start Oil	Silicagel Oil	CO <sub>2</sub>	Argon
NBR	◎	○	◎	◎	○	◎	◎	◎

Note 1: ◎= Excellent(nearly without affect). ○= Good(workable though some affect).

△= Poor(large affect).

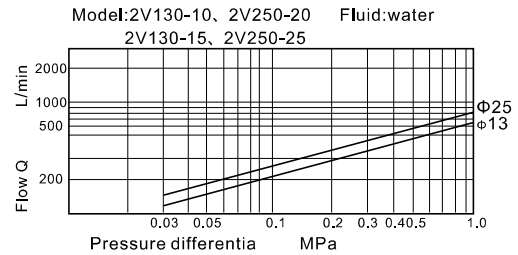
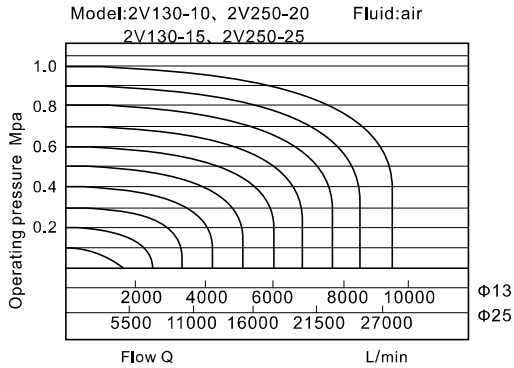
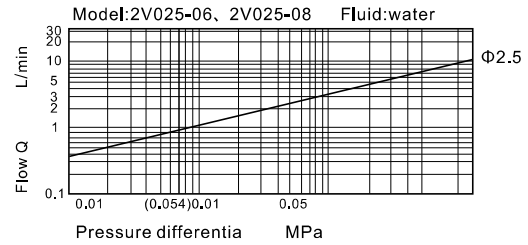
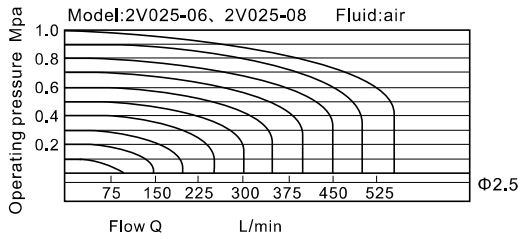
Note 2: "\*"means inflammable and explosive dangerous fluid. Please use the relative explosion proof coil.

Note 3: Please consult the technical department before using fluid that has not been shown in the above table.



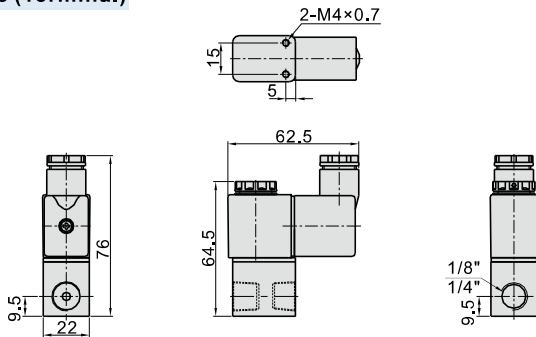
## 2V Series

### Flow chart

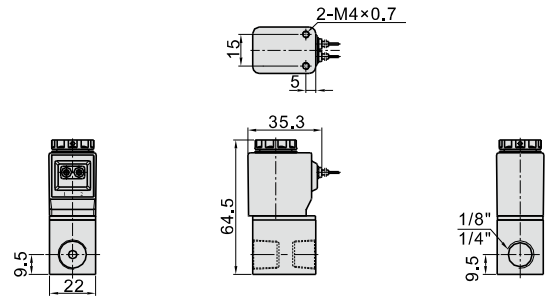


### Dimensions

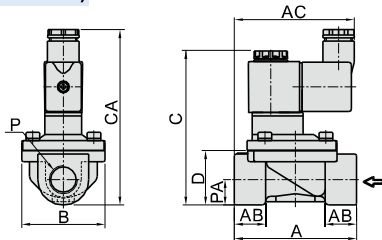
#### 2V025 (Terminal)



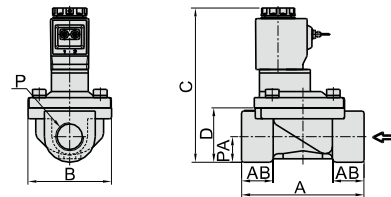
#### 2V025 (Grommet)



#### 2V130\250(Terminal)



#### 2V130\250 (Grommet)



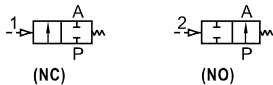
Model\Item	A	AB	AC	B	C	CA	D	P	PA
2V130-10	72	18.5	71	49	91	103	32	3/8"	15
2V130-15	72	18.5	71	49	91	103	32	1/2"	15
2V250-20	102	23	74	77.5	107.5	120	45	3/4"	21
2V250-25	102	23	74	77.5	107.5	120	45	1"	21

# Angle seat valve(2/2 way)

## 2J Series



### Symbol



### Product feature

- Air piloted and can be used non electric, inflammable and explosive environment. The start-up pressure is low; and the high pressure could be controlled by the low pressure.
- The accessories such as the noumenon and slide bar are made of stainless steel, which are of excellent rustproof quality. The seals are made of Teflon and can be applied extensively in areas with high temperature and strong corrosive liquids.
- The structure of valve is angles at 45° degrees with streamline inner chamber design . The reduced tunnel resistance allows liquid to run more smoothly thus achieving high flow. Filtration core are added at inlet port to prevent the entrance of impurities and extend life span of the seals.
- Actuator is fitted with visual position indicator. This allows for visual checking and adjustment of flowrate.
- Control point is made of metal insert. Mounting plate can be used to for NAMUR value.
- The actuator part can be rotated at 360° degrees and is easily installed.

### Specification

Model\Item	Port	Actuator size(mm)	Orifice size(mm)	Kv	Min.pilot pressure(bar)	Max.differentia pressure(bar)	Weight (kg)	
2JS150 2JW150	-10 G3/8	40	15	4.4	4.8	13	0.8	
	-15 G1/2						0.7	
	-10 G3/8	50		4.8	4.3	16	0.8	
	-15 G1/2						0.7	
2JS200 2JW200	-20 G3/4	40	20	7.9	4.8	6.5	0.9	
		50		8			11	0.95
		63		10			16	1.6
2JS250 2JW250	-25 G1	63	25	19	4.2	11	1.9	
		80		20			16	2.5
2JS320 2JW320	-32 G1 1/4	63	32	27	4.2	6	2.5	
		80		28			15	3.0
2JSK150 2JWK150	-10 G3/8	40	15	4.4	For details, please refer to normally-opened-type fluid pressure - control pressure curve	16	0.8	
	-15 G1/2						0.7	
	-10 G3/8	50		4.8			16	0.8
	-15 G1/2							0.7
2JSK200 2JWK200	-20 G3/4	40	20	7.9	16	16	0.9	
		50		8			16	0.9
2JSK250 2JWK250	-25 G1	50	25	14.5	16	16	1.2	
		63		19			16	1.6
2JSK320 2JWK320	-32 G1 1/4	63	32	27	16	16	2.2	
		80		28			16	2.4
2JSY150 2JWY150	-10 G3/8	40	15	4.4	For details, please refer to normally-closed-water-hammer-type fluid pressure - control pressure curve	16	0.8	
	-15 G1/2						0.7	
	-10 G3/8	50		4.8			16	0.8
	-15 G1/2							0.7
2JSY200 2JWY200	-20 G3/4	40	20	7.9	16	16	0.9	
		50		8			16	0.9
2JSY250 2JWY250	-25 G1	50	25	14.5	16	16	1.3	
		63		19			16	1.7
2JSY320 2JWY320	-32 G1 1/4	63	32	27	16	16	2.3	

### Ordering code

2J S K 150 15 Q50 G



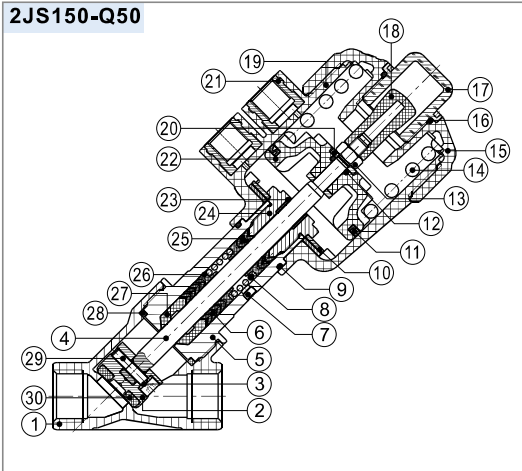
① Model	② Valve body material	③ Acting type	④ Orifice size	⑤ Port size	⑥ Size of actuator	⑦ Thread type
2J: Angle seat valve(2/2 way)	S: SUS316L W: SUS304	Blank: No water-hammer(NC) The working medium flows to the down side of valve inlet (Flow from the bottom part to upper part of piston)	150: Φ15mm	10: 3/8" 15: 1/2"	Q40: Φ40mm Q50: Φ50mm Q63: Φ63mm Q80: Φ80mm	G: G T: NPT
		Y: Water-hammer(NC) The working medium flows to the upper side of valve inlet (Flow from the upper part to bottom part of piston)	200: Φ20mm	20: 3/4"		
		K: Normal opened The working medium flows to the down side of valve inlet (Flow from the bottom part to upper part of piston)	250: Φ25mm	25: 1"		
			320: Φ32mm	32: 1 1/4"		

# Angle seat valve(2/2 way)

## 2J Series

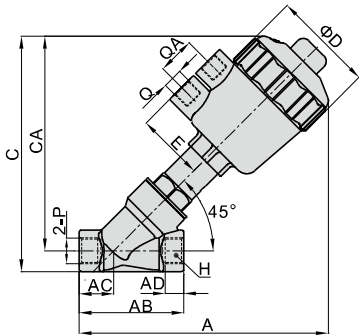
### Inner structure

2JS150-Q50



No.	Item	Material	No.	Item	Material
1	Body	Stainless steel	16	O-ring	NBR
2	Piston	Stainless steel	17	Transparent cap	Plastic
3	Spring washer	Spring steel	18	Indicate rod	Plastic
4	Piston rod	Stainless steel	19	Cylinder body	PA6
5	Pitman	Stainless steel	20	Washer	SPCC
6	V-seals	PTFE	21	Built-in nut	Brass nickel-plate
7	Filter core	Bronze	22	Piston	PA6
8	Spring	Spring steel	23	DU dry bearing	Wear resistant material
9	O-ring	NBR	24	Connect nut	Brass
10	Bellville spring	Spring steel	25	O-ring	Viton
11	O-ring	NBR	26	Spring holder	PTFE
12	O-ring	NBR	27	Guide sleeve	PTFE
13	Hexagon nut	Steel	28	Seal washer	PTFE
14	Spring	Spring steel	29	Screw	Stainless steel
15	Top cover	PA6	30	Seal washer	PTFE

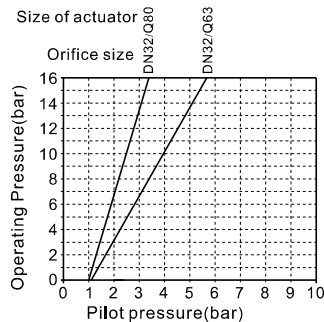
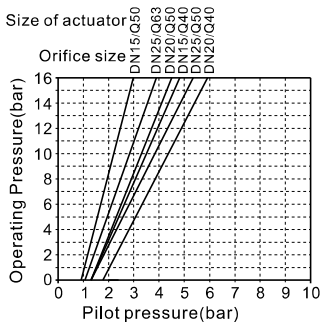
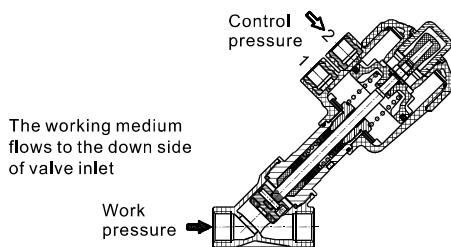
### Dimensions



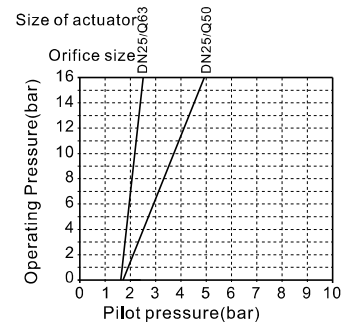
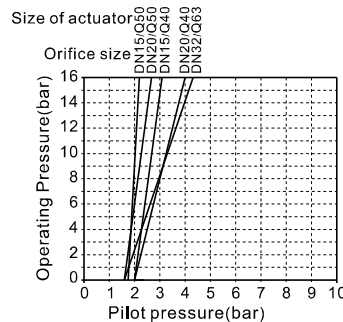
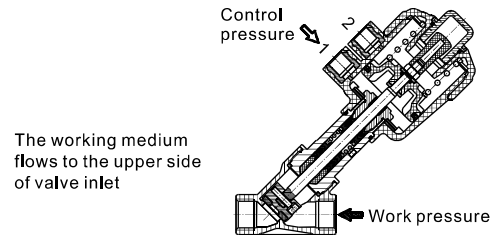
Orifice size(DN)	Size of actuator	A	AB	AC	AD	C	CA	ΦD	E	H	Port size(P)	Q	QA
15	Φ40	153	68	22.5	12	144	130	56	33	27	G3/8	G1/8	24
	Φ50	162				153	140	66	44		G1/2	G1/4	
20	Φ40	161	78	27	14	150	134	56	33	33	G3/4	G1/8	
	Φ50	170				160	143	66	44		G1/4	G1/4	
25	Φ63	200	90	28	14	189	172	82	51	40	G1	G1/4	
	Φ50	176				168	147	66	44		G1/4	G1/4	
32	Φ63	205	110	35	18	197	176	82	51	50	G1	G1/4	
	Φ80	221				213	193	102	60		G1 1/4	G1/4	
32	Φ63	220	110	35	18	210	185	82	51	50	G1 1/4	G1/4	
	Φ80	237				227	202	102	60		G1 1/4	G1/4	

### Fluid pressure — control pressure curve

#### Normal opened



#### Water-hammer(NC)



# Angle seat valve(2/2 way)

## 2J Series

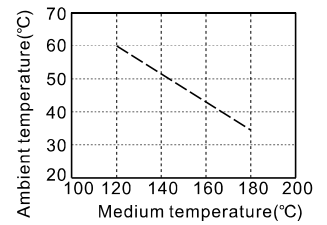
### Ambient and medium temperature

Control medium	Air, neutral air(to be filtered by 40µm filter element)
Max. control pressure	Size of actuatorΦ40/50/63 : 10bar Size of actuatorΦ80 : 7bar
Medium [Note1]	air, liquid, steam
Viscosity limit	600mm <sup>2</sup> /s below
Temperature [Note2]	-20~+180°C
Ambient temp [Note3]	-10~+60°C

[Note1]: The water-hammer-type can be used for air only, and can not be used for liquid.

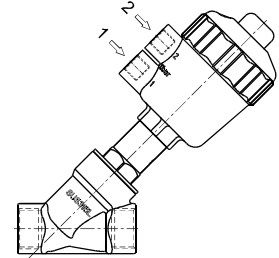
Note 2]: Dew point: -20°C or less.

[Note3]: Relationship of working medium temperature and ambient temperature is shown in following figure.



### Operation and maintenance

1. Before using, please verify that if the working status of product is identical with data in catalogue, and it should not exceed the limits.
2. Before the pressure releasing and cooling of system, no maintenance, examination and installation of product should be conducted.
3. For the normally-closed-type, when its valve is disassembled, due to the pre-pressure of the relatively large spring power in controller, the "1" hole should be opened for ventilation in advance so to make sure the piston could be completely moved to the position, then rotate the screw thread between the valve and the connection bar, direct rotation is forbidden, otherwise the disassembling would not be conducted in result of the scuffing of screw thread.
4. If maintenance of actuator part is needed, special tools should be used for disassembling and installation, while disassembling, the loading spring could cause damage. If the customer can not conduct the maintenance, please return the valve to manufacturer for maintenance.





To achieve the optimization of system performance, the first thing is to get the gas source which accords with the specifications. Preparation unit with good performance are the precondition to make sure the gas source. AirTAC has many kinds of preparation unit for your choice:

1. GA series ; 2. GP series ; 3. A, B series; 4. Other accessory series.

## GA Series

P227



GAC100~600 Series F.R.L combination.....	228
GAFC100~600 Series FR.L combination.....	231
GAFR100~600 Series Filter & regulator.....	234
GAF100~600 Series Filter.....	237
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GAL100~600 Series Lubricator.....	243
GT Series preparation unit.....	247
GA Series Gas distribution block.....	249

## GP Series

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GPF200~400 Series Oil mist fister.....	252
GPR200~400 Series precision regulator.....	254
GPFR Series precision Filter-Regulator.....	258

## A, B Series

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AC, BC Series F.R.L combination.....	262
AFC, BFC Series FR.L combination.....	264
AFR, BFR Series Filter & regulator.....	266
AF, BF Series Filter.....	268
AR, BR Series Regulator.....	269
AL, BL Series Lubricator.....	271

## Others

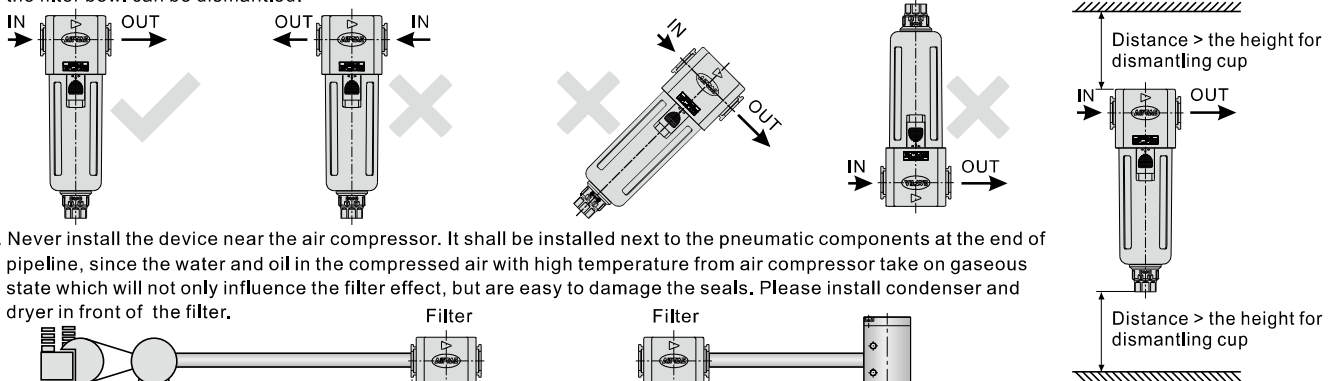
P272



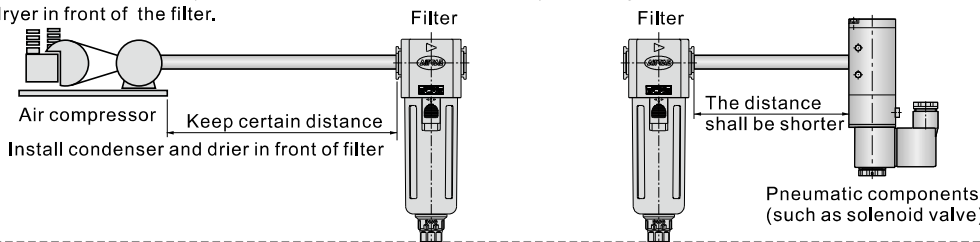
SR Series Regulator.....	273
SDR Series Regulator.....	274
DPS Series Digital Display Pressure Sensor.....	276
DPH Series Digital Display Pressure Sensor(Analog output)..	280
GS, GF, GU, GP, GV Series Pressure gauge.....	287
GVF Series Vacuum Filter.....	288
GVR Series Vacuum Regulator.....	290

## The installation and application of the filter

1. Before installation, the sundry granule such as dust, oil pollution and chipping in pipeline shall be cleaned up to prevent the mixture of fragments of seal materials.
2. Never install reversingly the direction of intake and outlet. It shall be installed vertically and the bowl is downward. For the convenient of maintenance, proper space around the device shall be left. The installation height of filter shall accord with the elevation that the filter bowl can be dismantled.



3. Never install the device near the air compressor. It shall be installed next to the pneumatic components at the end of pipeline, since the water and oil in the compressed air with high temperature from air compressor take on gaseous state which will not only influence the filter effect, but are easy to damage the seals. Please install condenser and dryer in front of the filter.



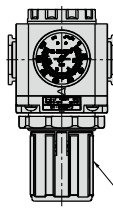
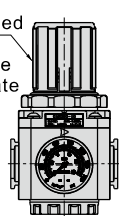
1. To prevent the external force to damage the filter bowl, never install it in the side of access of delivery vehicles or a protection barrier may be built.
2. The drain bowl is made of polycarbonate which can not be used in the environment with synthetic oil, organic solvent, chemicals, cooling fluid, alkali and acidic matter, gluwater; and the site additive with the above matters. Meanwhile, the direct sunshine shall be avoided.
3. Regular draining of bowl shall be conducted. Once water level surpasses the breakwater, the sewage filtered will be carried to the output compressed air again, causing secondary pollution.
4. To guarantee the filter effect, the filter core shall be cleaned or changed regularly.
5. Please regularly examine whether the plastic drain bowl has crack, damage or other aging.



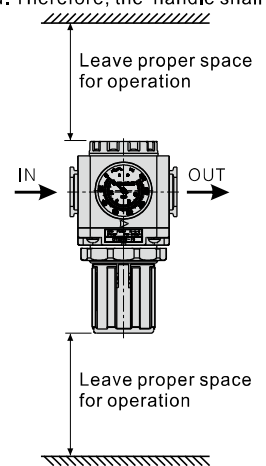
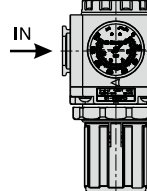
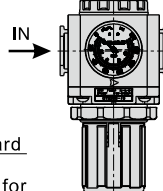
## Installation and application of regulator

1. Before installation, the sundry granule such as dust, oil pollution and chipping in pipeline shall be cleaned up to prevent the mixture of fragments of seal materials.
2. When there is more condensate, and if the condensate stays in the valve, poor action of Regulator will be easily caused. Therefore, the handle shall be installed downward.

The handle installed upward is unfavorable for the drain of condensate



The downward handle is unfavorable for the drain of condensate



3. The direction of intake and outlet shall not be installed reversingly, otherwise the Regulator will leak for a long time and lose pressure- adjustment function.
4. The set pressure at the outlet sides of Regulator shall be less than 85% of the pressure of intake side, which is to avoid overlarge pressure drop and failing in meeting the application requirement.
5. Two Regulator act as the loop for the intake by turns of high and low pressure. Please use free flow valve to prevent reflux.
6. If there are condensate, oil pollution and dust in pressure pipe at intake side, the jam in discharge orifice and restriction orifice and poor action of valve will be caused. Therefore, filter shall be installed additionally in front of Regulator.
7. It shall be applied in the stipulated temperature range and direct sunshine shall be avoided.
8. Proper space around the device shall be left for pressure-adjustment operation and maintenance.
9. After the pressure-adjustment operation is finished, the adjustment button of Regulator shall be locked.

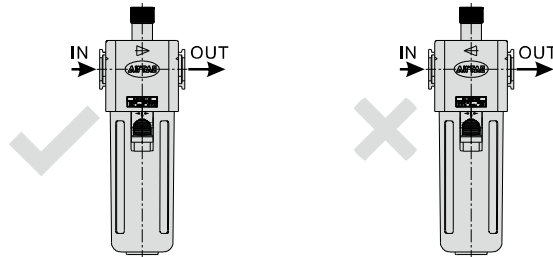




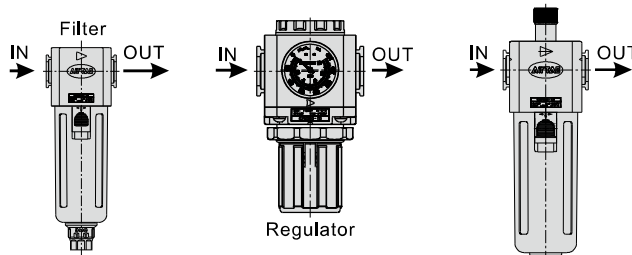


## The installation and application of oil feeder

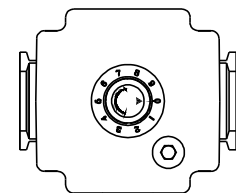
1. The direction of intake and outlet shall not be installed reversingly. Before installation, the sundry granule such as dust, oil pollution and chipping in pipeline shall be cleaned up to prevent the mixture of fragments of seal material.



2. It will be difficult to supply oil and conduct maintenance if the Lubricator is set too high.
3. Lubricator shall be installed after the air filter and Regulator to prevent moisture entering the oil bowl and avoid oil emulsification. The throttle orifice in Regulator shall not be polluted by oil and the rubber parts shall not be influenced by oil mist. It is good for the atomization of oil that the velocity of low after Regulator is higher than that in front of the valve.



The correct installation sequence of Filter Regulator and Lubricator



The bigger the number in dial is, the higher the quantity of oil dripping is

4. The number in dial in adjustment ring of Lubricator shows the position of oil quantity adjustment. The larger the number is, the more the oil dripping is. It is not for oil drops.
5. When Lubricator works, if there is a part in the pipeline loop that can not be supplied with oil, this part shall be set with one-way valve to prevent reflux.
6. The air flow that is used by Lubricator must meet the requirement of necessary quantity of oil dripping (minimal flow for mist). The insufficient air flow will cause the failure of oil dripping.
7. The Lubricator can be added oil under pressure. When oil is added, the oil-fill plug shall be slowly opened and dismantled after the pressure in oil bowl has been completely eliminated to prevent oil-fill plug flying off or oil spraying.
8. The oil level in oil bowl shall stay between the up limit and down limit, and please supplement oil on a timely basis.

◆Method for supplementing oil

When Lubricator is supplemented with oil, the oil-fill plug shall be turned off. Turbine oil poured into the oil bowl shall reach 80% of its volume.

Oil shall be regularly examined and supplemented to allow the device to work under the situation that oil is sufficient.

(As when the oil level is under the oil suction pipe, it can not supply oil for the system. Therefore, the oil shall be supplemented before the bottom of oil suction pipe is exposed).

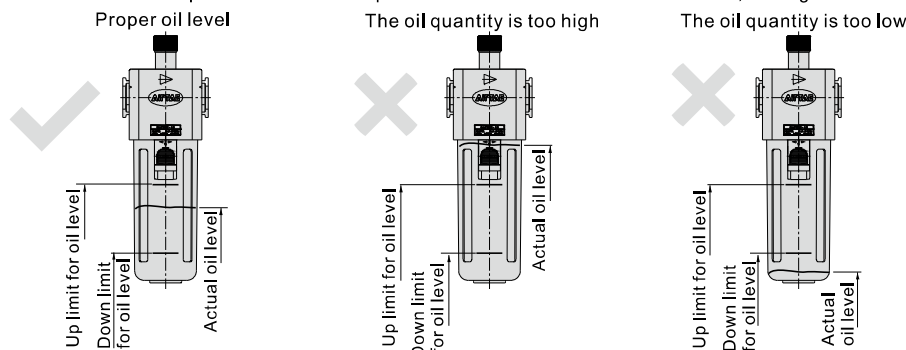
◆Oil quantity and its adjustment

Generally speaking, the free air of each 10m<sup>3</sup> uses 1cm<sup>3</sup> as the benchmark oil supply quantity.

◆Lubricant









The lubricant that is recommended for pneumatic components is one kind (ISO VG32) of turbine oil. Especially when pneumatic components are lubricated, its particularity shall be considered. Lubricant shall be anti-rust and avoid swelling, shrink and deterioration of seal materials (pneumatic components mostly adopt NBR as the seal's material). In addition, the performance of oil dripping of lubricant shall be considered. The viscosity that is too high or too low is not proper.

9. Please regularly examine whether the plastics bowl and inspection window of Lubricator have crack, damage or other aging situation.





## Compendium of GA Series preparation unit

P228	Product feature	Photo	P231	Product feature	Photo
GAC Series F.R.L Unit	<ul style="list-style-type: none"> <li>•The efficiency of eliminating moisture and solid grain is high.</li> <li>•Adjusting pressure steadily</li> <li>•The flow of miststart is low. Filling oil under pressure is possible.</li> <li>•100/200/300/400/500/600 Series</li> <li>•Port size: M5 1/8" 1/4" 3/8" 1/2" 3/4" 1"</li> </ul>		GAFC Series FR.L Unit	<ul style="list-style-type: none"> <li>•The efficiency of eliminating moisture and solid grain is high.</li> <li>•Adjusting pressure steadily</li> <li>•The flow of miststart is low. Filling oil under pressure is possible.</li> <li>•100/200/300/400/500/600 Series</li> <li>•Port size: M5 1/8" 1/4" 3/8" 1/2" 3/4" 1"</li> </ul>	
P234	Product feature	Photo	P237	Product feature	Photo
GAFR Series Filter-Regulator	<ul style="list-style-type: none"> <li>•The efficiency of eliminating moisture and solid grain is high.</li> <li>•Adjusting pressure steadily</li> <li>•With fixing bracket</li> <li>•100/200/300/400/500/600 Series</li> <li>•Port size: M5 1/8" 1/4" 3/8" 1/2" 3/4" 1"</li> </ul>		GAF Series Filter	<ul style="list-style-type: none"> <li>•Low pressure loss ,high efficiency in separating water</li> <li>•5μm and 40μm filtering grade(Optional)</li> <li>•Manual drain, semi-auto drain and automatic drain</li> <li>•With fixing bracket</li> <li>•100/200/300/400/500/600 Series</li> <li>•Port size: M5 1/8" 1/4" 3/8" 1/2" 3/4" 1"</li> </ul>	
P240	Product feature	Photo	P243	Product feature	Photo
GAR Series Regulator	<ul style="list-style-type: none"> <li>•Adjusting pressure steadily</li> <li>•Faceplate fixing and bracket fixing is optional</li> <li>•Standard type, lower pressure type is optional</li> <li>•100/200/300/400/500/600 Series</li> <li>•Port size: M5 1/8" 1/4" 3/8" 1/2" 3/4" 1"</li> </ul>		GAL Series Lubricator	<ul style="list-style-type: none"> <li>•The flow of miststart is low. Filling oil under pressure is possible.</li> <li>•With fixing bracket.</li> <li>•The adjustment of oil supply more reliable.</li> <li>•100/200/300/400/500/600 Series</li> <li>•Port size: M5 1/8" 1/4" 3/8" 1/2" 3/4" 1"</li> </ul>	
P247	Product feature	Photo	P249	Product feature	Photo
GT Series preparation unit	<ul style="list-style-type: none"> <li>•Short PC bowl type</li> <li>•GTC/GTFC/GTFR/GTF/GTL</li> <li>•Port size: 1/8" 1/4"</li> </ul>		GA Series Gas distribution block	<ul style="list-style-type: none"> <li>•Be used with GA series</li> <li>•The air flow can be divided by the device</li> <li>•200/300/400/500/600 Series</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2" 3/4" 1"</li> </ul>	

## Installation and application



1. Check whether the components have been damaged during transportation before installing and using.
2. Pay attention to whether the flow direction of air (notice "→" direction) and thread type are correct.
3. Please notice whether installation condition accords with technical requirements (such as "working pressure" and "applied temperature range").
4. The medium used or installation environment shall be noticed. The matters with chlorine, carbon compound, aromatic compound and oxidizing acid and alkali shall be avoided to prevent the damage of bowl and oil bowl.
5. Regularly clean or change filter core. Lubricators and regulators shall be in descending order.
6. Keep dust away. The dust cover shall be installed in intake and outlet when the device is dismantled and stored.

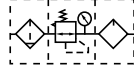
# Preparation unit—GA Series

## GAC100 Series F.R.L. combination



### Symbol

Reflux valve option is not available



### Specification

Model	GAC100M5	GAC10006
Fluid	Air	
Port size [Note1]	M5	1/8"
Filtering grade	40µm or 5µm	
Pressure range	0.15~0.9MPa(20~130psi)	
Max. pressure	1.0MPa(145psi)	
Proof pressure	1.5MPa(215psi)	
Temperature range	-5~70°C(Unfreeze)	
Capacity of drain bowl	6CC	
Capacity of oil bowl	9CC	
Recommended lubricant	ISO VG 32 or equivalent	
Weight	216g	
Constitute	Filter	GAF100M5 GAF10006
	Regulator	GAR100M5 GAR10006
	Lubricator	GAL100M5 GAL10006

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

GAC100  06  S  W G

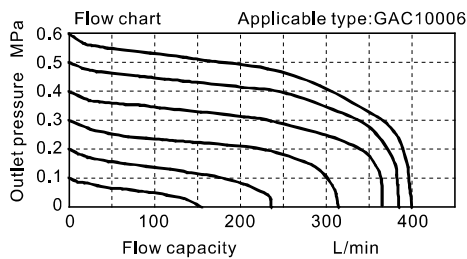
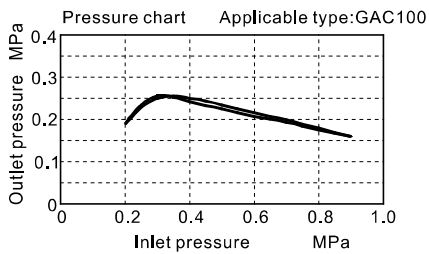
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model	② Bowl material	③ Port size	④ Drain type	⑤ Type code	⑥ Pressure gauge	⑦ Filtering grade	⑧ Thread type[Note2]	⑨ Code of reflux valve
GAC100:GA100 Series F.R.L unit	Blank : PC	M5: M5 06: 1/8"	Blank: Semi-auto drain+Manual drain	S: Standard L: Lower pressure [Note1]	Blank: Circular N: No gauge	Blank: 40µm W: 5µm	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: Reflux valve is not available

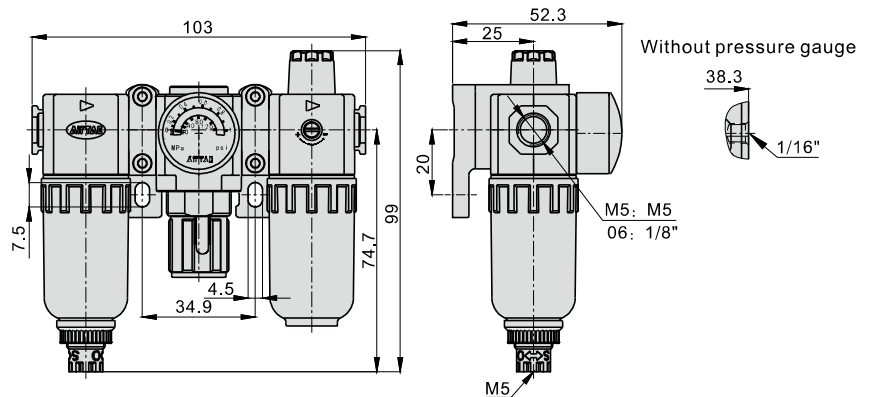
[Note1] The working pressure range of lower pressure type is 0.15~0.4MPa(20~58psi) ;

[Note 2] Thread type means connecting thread and scales of pressure gauge while port size is M5.

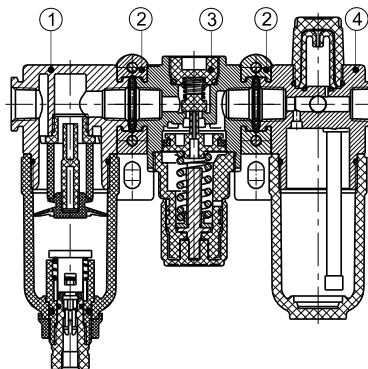
### Pressure and Flow chart



### Dimensions



### Inner structure



No.	Item
1	GAF100 series filter
2	Bracket
3	GAR100 series regulator
4	GAL100 series lubricator

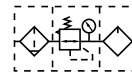
# Preparation unit——GA Series

## GAC Series F.R.L. combination

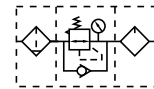


### Symbol

No reflux valve is attached



Reflux valve is attached



### Product feature

1. Quick and reliable mounting clamps makes it convenient to install and use.
2. The performance of pressure adjustment is reliable with high precision.
3. The efficiency of eliminating moisture and solid grain is high.
4. Two drain types are available: manual drain+semi-auto drain and automatic drain.
5. Three bowl materials are available: PC, Metal and Nylon.

### Specification

Model	GAC200-06	GAC200-08	GAC300-08	GAC300-10	GAC300-15	GAC400-10	GAC400-15	GAC500-20	GAC600-20	GAC600-25	
Fluid	Air										
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/8"	1/2"	3/4"	3/4"	1"	
Filtering grade	40μm or 5μm										
Pressure range	0.15~0.9MPa(20~130psi)										
Max. pressure	1.0MPa(145psi)										
Proof pressure	1.5MPa(215psi)										
Temperature range	-5~70°C(Unfreeze)										
Capacity of drain bowl	25CC		60CC			100CC		108CC	205CC		
Capacity of oil bowl	36CC		98CC			185CC		225CC	410CC		
Recommended lubricant	ISO VG 32 or equivalent										
Weight	750g		1300g			2390g		2460g	4600g		
Constitute	Filter	GAF200-06	GAF200-08	GAF300-08	GAF300-10	GAF300-15	GAF400-10	GAF400-15	GAF500-20	GAF600-20	GAF600-25
	Regulator	GAR200-06	GAR200-08	GAR300-08	GAR300-10	GAR300-15	GAR400-10	GAR400-15	GAR500-20	GAR600-20	GAR600-25
	Lubricator	GAL200-06	GAL200-08	GAL300-08	GAL300-10	GAL300-15	GAL400-10	GAL400-15	GAL500-20	GAL600-20	GAL600-25

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

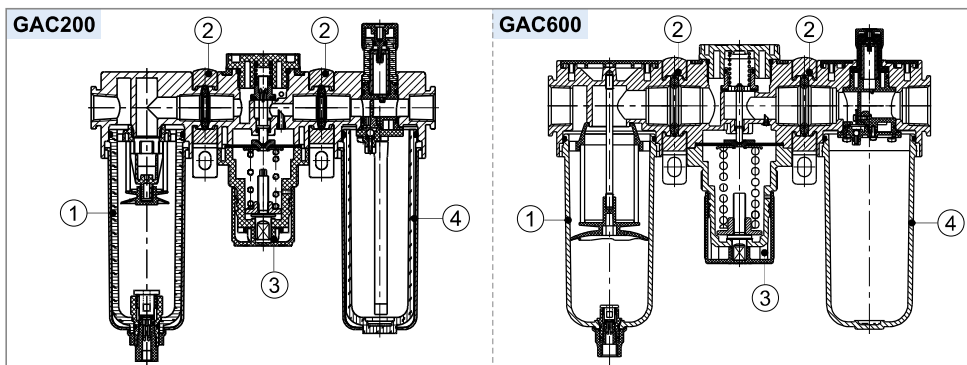
GAC300 □ 10 □ S □ W G K

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model	② Bowl material	③ Port size	④ Drain type	⑤ Type code	⑥ Pressure gauge	⑦ Filtering grade	⑧ Thread type	⑨ Code of reflux valve
GAC200:GA200 Series F.R.L unit	Blank : PC bowl	06: 1/8" 08: 1/4"	Blank: Semi-auto drain +Manual drain	S: Standard	Blank: Circular	Blank: 40μm	Blank: PT (MPa/psi)	Blank: No reverse flow valve is attached
GAC300:GA300 Series F.R.L unit		10: 3/8" 15: 1/2"		L: Lower pressure [Note1]				
GAC400:GA400 Series F.R.L unit	N: Nylon bowl	10: 3/8" 15: 1/2"	A: Automatic drain	S: Standard	T: NPT (psi/bar)	K: Reverse flow valve is attached [Note2]		
GAC500:GA500 Series F.R.L unit	C: Metal bowl	20: 3/4"						
GAC600:GA600 Series F.R.L unit			20: 3/4" 25: 1"					

[Note1] The work pressure of lower pressure type is 0.15~0.4MPa(20~58psi) ; [Note2] Please refer to page 246 for details of sealing plate Installation and reflux valve.

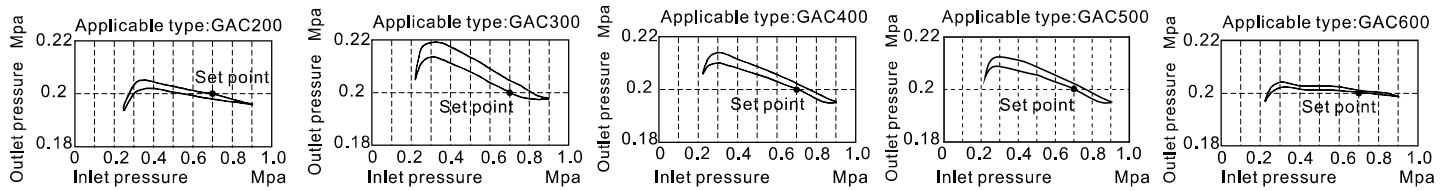
### Inner structure



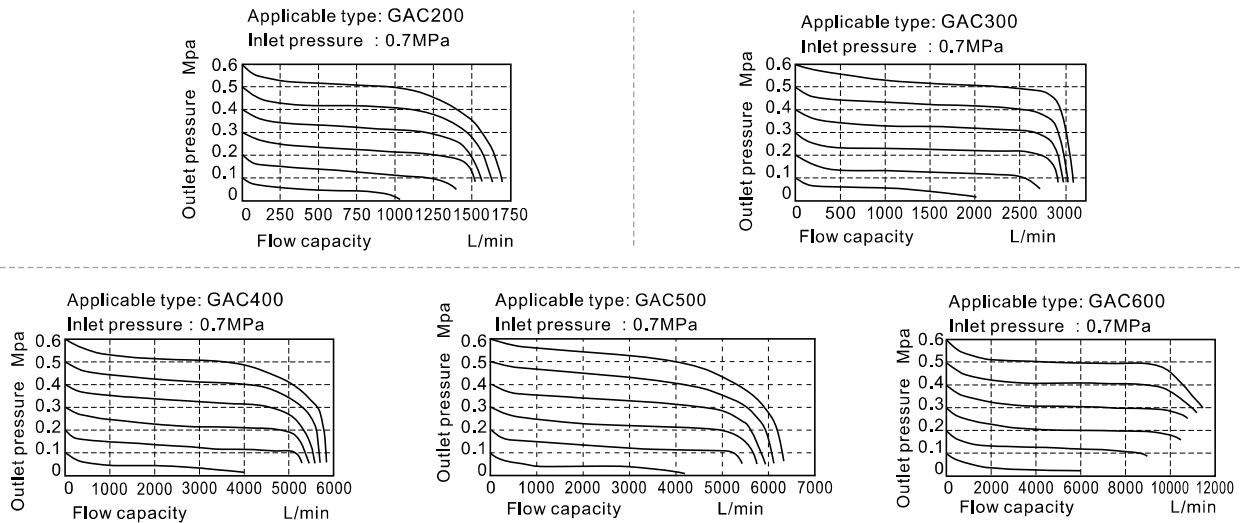
No.	Item	No.	Item
1	GA series filter	3	GA series regulator
2	Bracket	4	GA series lubricator

## GAC Series F.R.L. combination

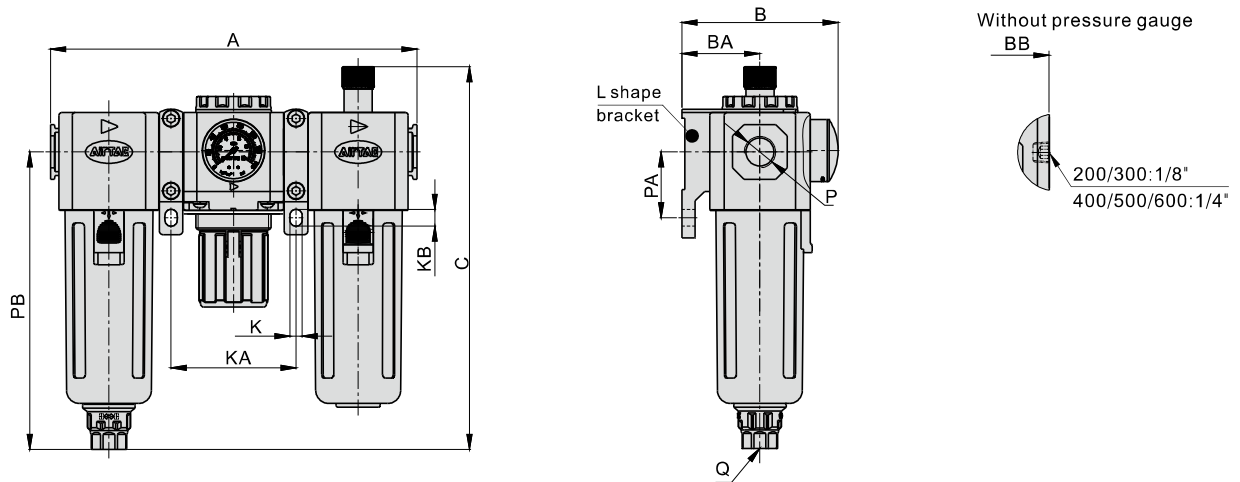
### Pressure chart



### Flow chart



### Dimensions



Model/Item	A	B	BA	BB	C	K	KA	KB	P	PA	PB	Q
GAC200-06	163.5	69	30	51.5	160	5.5	55.5	8.5	1/8"	25	120	M5X0.8
GAC200-08	163.5	69	30	51.5	160	5.5	55.5	8.5	1/4"	25	120	M5X0.8
GAC300-08	195	83	41.5	67.5	203.5	6.5	66.5	9	1/4"	35	158	G1/4
GAC300-10	195	83	41.5	67.5	203.5	6.5	66.5	9	3/8"	35	158	G1/4
GAC300-15	195	83	41.5	67.5	203.5	6.5	66.5	9	1/2"	35	158	G1/4
GAC400-10	248	99	50	84	227	8.6	84	12	3/8"	40	177.5	G1/4
GAC400-15	248	99	50	84	227	8.6	84	12	1/2"	40	177.5	G1/4
GAC500-20	254	100	50	85	241	8.6	86	12	3/4"	40	191.5	G1/4
GAC600-20	312	128	70	113	267.5	11	106	16	3/4"	50	205	G1/4
GAC600-25	312	128	70	113	267.5	11	106	16	1"	50	205	G1/4

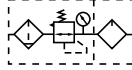
# Preparation unit—GA Series

## GAFC100 Series FR.L. combination



### Symbol

Reflux valve option is not available



### Specification

Model	GAFC100M5	GAFC10006
Fluid	Air	
Port size [Note1]	M5	1/8"
Filtering grade	40 $\mu$ m or 5 $\mu$ m	
Pressure range	0.15~0.9MPa(20~130psi)	
Max. pressure	1.0MPa(145psi)	
Proof pressure	1.5MPa(215psi)	
Temperature range	-5~70°C(Unfreeze)	
Capacity of drain bowl	6CC	
Capacity of oil bowl	9CC	
Recommended lubricant	ISO VG 32 or equivalent	
Weight	158g	
Constitute	Filter & Regulator	GAFR100M5 GAFR10006
	Lubricator	GAL100M5 GAL10006

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

GAFC100 □ 06 □ S □ W G □

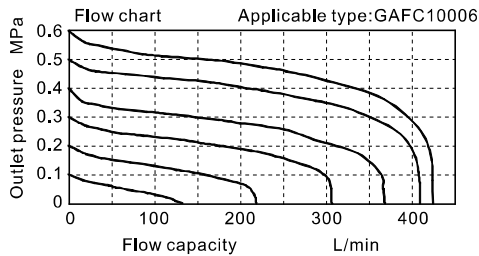
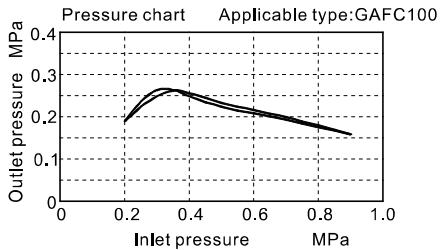
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model	② Bowl material	③ Port size	④ Drain type	⑤ Type code	⑥ Pressure gauge	⑦ Filtering grade	⑧ Thread type[Note2]	⑨ Code of reflux valve
GAFC100:GA100 Series FR.L unit	Blank : PC	M5: M5 06: 1/8"	Blank: Semi-auto drain+Manual drain	S: Standard L: Lower pressure [Note1]	Blank: Circular N: No gauge	Blank: 40 $\mu$ m W: 5 $\mu$ m	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: Reflux valve is not available

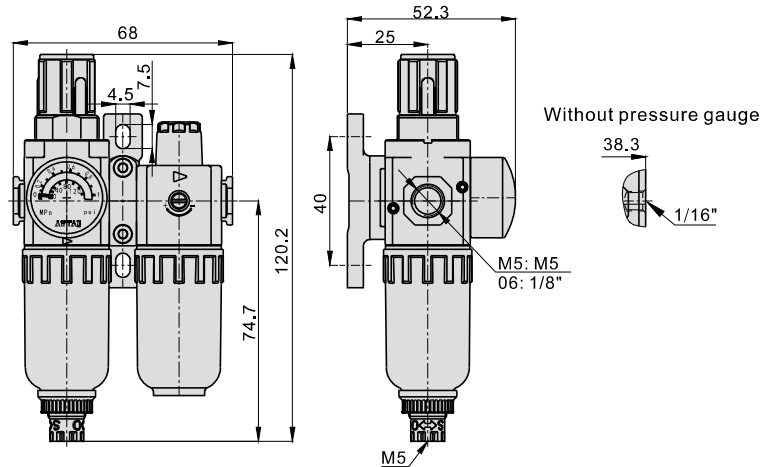
[Note1] The working pressure range of lower pressure type is 0.15~0.4MPa(20~58psi) ;

[Note 2] Thread type means connecting thread and scales of pressure gauge while port size is M5.

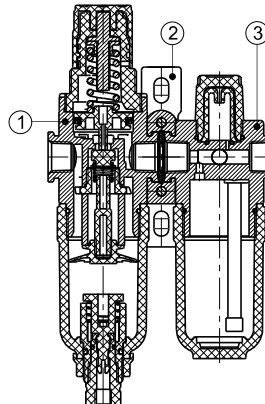
### Pressure and Flow chart



### Dimensions



### Inner structure



No.	Item
1	GAFC100 series filter & regulator
2	Bracket
3	GAL100 series lubricator



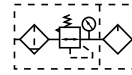
# Preparation unit—GA Series

## GAFC Series FR.L. combination

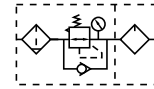


### Symbol

No reflux valve is attached



Reflux valve is attached



### Product feature

1. Quick and reliable mounting clamps makes it convenient to install and use.
2. The performance of pressure adjustment is reliable with high precision.
3. The efficiency of eliminating moisture and solid grain is high.
4. Two drain types are available: manual drain+semi-auto drain and automatic drain.
5. Three bowl materials are available: PC, Metal and Nylon.

### Specification

Model	GAFC200-06	GAFC200-08	GAFC300-08	GAFC300-10	GAFC300-15	GAFC400-10	GAFC400-15	GAFC500-20	GAFC600-20	GAFC600-25	
Fluid	Air										
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/8"	1/2"	3/4"	3/4"	1"	
Filtering grade	40μm or 5μm										
Pressure range	0.15~0.9MPa(20~130psi)										
Max. pressure	1.0MPa(145psi)										
Proof pressure	1.5MPa(215psi)										
Temperature range	-5~70°C(Unfreeze)										
Capacity of drain bowl	25CC		60CC			100CC		108CC	205CC		
Capacity of oil bowl	36CC		98CC			185CC		225CC	410CC		
Recommended lubricant	ISO VG 32 or equivalent										
Weight	590g		1020g			1810g		1910g	3430g		
Constitute	Filter & Regulator	GAFR200-06	GAFR200-08	GAFR300-08	GAFR300-10	GAFR300-15	GAFR400-10	GAFR400-15	GAFR500-20	GAFR600-20	GAFR600-25
	Lubricator	GAL200-06	GAL200-08	GAL300-08	GAL300-10	GAL300-15	GAL400-10	GAL400-15	GAL500-20	GAL600-20	GAL600-25

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

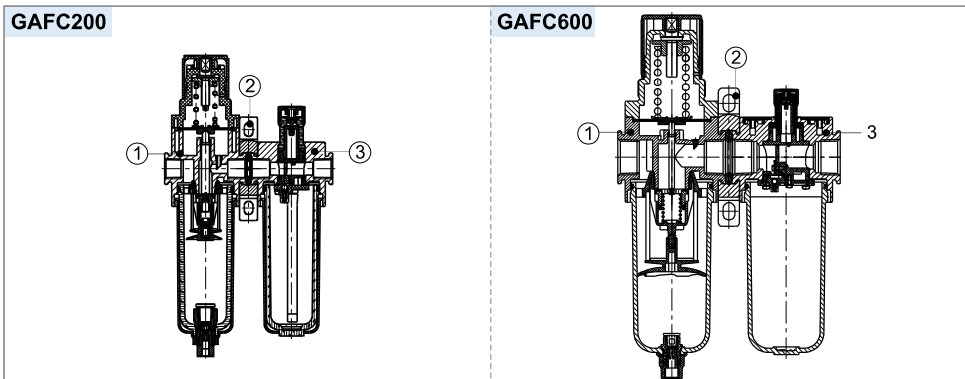
GAFC300 □ 10 □ S □ W G K



① Model	② Bowl material	③ Port size	④ Drain type	⑤ Type code	⑥ Pressure gauge	⑦ Filtering grade	⑧ Thread type	⑨ Code of reflux valve
GAFC200:GA200 Series FR.L unit		06: 1/8" 08: 1/4"	Blank: Semi-auto drain +Manual drain A: Automatic drain	S: Standard L: Lower pressure [Note1]	Blank: Circular N: No gauge [Note2]	Blank: 40μm W: 5μm	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: No reverse flow valve is attached K: Reverse flow valve is attached [Note2]
GAFC300:GA300 Series FR.L unit	Blank : PC bowl	08: 1/4" 10: 3/8" 15: 1/2"		S: Standard	Blank: Circular	Blank: 40μm	Blank: PT (MPa/psi)	Blank: No reverse flow valve is attached
GAFC400:GA400 Series FR.L unit	C: Metal bowl	10: 3/8" 15: 1/2"		L: Lower pressure [Note1]	Blank: Circular	Blank: 40μm	G: G (bar/MPa)	K: Reverse flow valve is attached [Note2]
GAFC500:GA500 Series FR.L unit	N: Nylon bowl	20: 3/4"		S: Standard	Blank: Circular	Blank: 40μm	T: NPT (psi/bar)	K: Reverse flow valve is attached [Note2]
GAFC600:GA600 Series FR.L unit	C: Metal bowl	20: 3/4" 25: 1"						

[Note1] The work pressure of lower pressure type is 0.15~0.4MPa(20~58psi) ; [Note2] Please refer to page 246 for details of sealing plate installation and reflux valve.

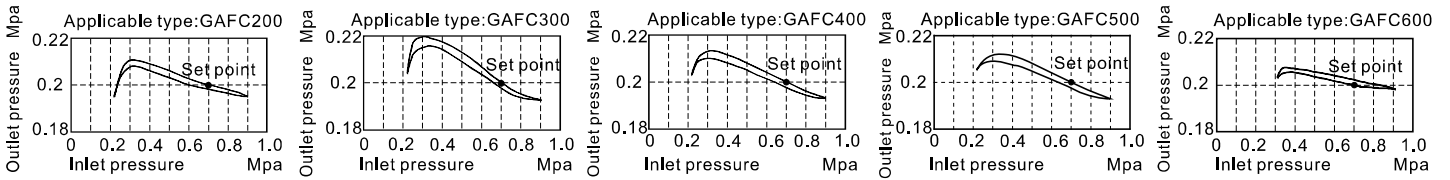
### Inner structure



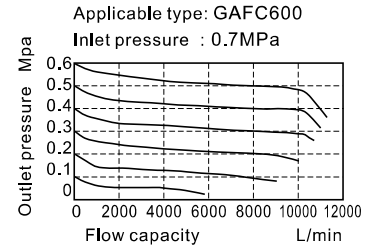
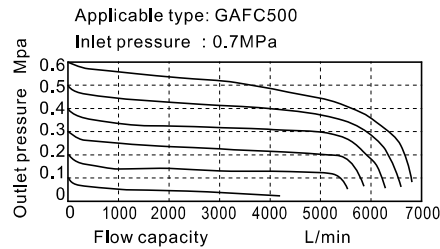
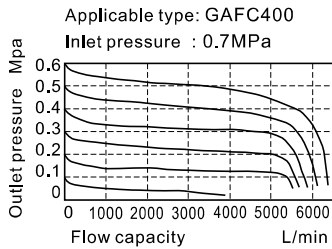
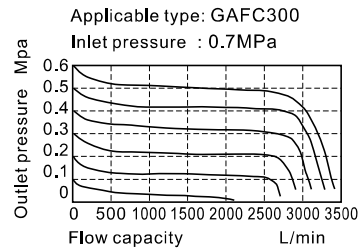
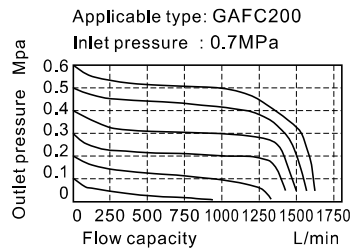
No.	Item
1	GA series filter & regulator
2	Bracket
3	GA series lubricator

## GAFC Series FR.L. combination

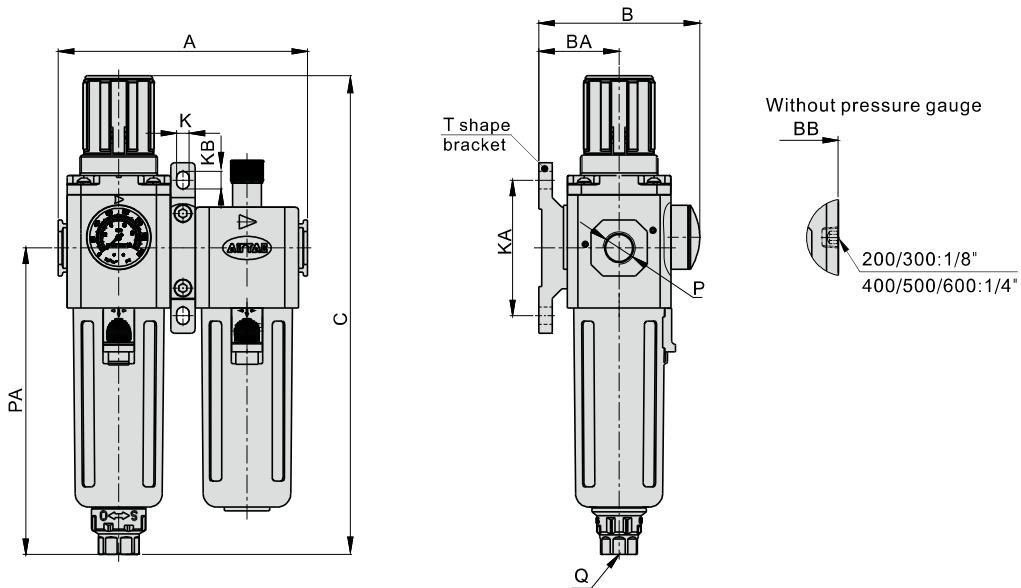
### Pressure chart



### Flow chart



### Dimensions



Model\Item	A	B	BA	BB	C	K	KA	KB	P	PA	Q
GAFC200-06	107.5	69	30	51.5	192.5	5.5	50	8.5	1/8"	120	M5X0.8
GAFC200-08	107.5	69	30	51.5	192.5	5.5	50	8.5	1/4"	120	M5X0.8
GAFC300-08	128.5	83	41.5	67.5	247	6.5	70	9	1/4"	158	G1/4
GAFC300-10	128.5	83	41.5	67.5	247	6.5	70	9	3/8"	158	G1/4
GAFC300-15	128.5	83	41.5	67.5	247	6.5	70	9	1/2"	158	G1/4
GAFC400-10	164	99	50	84	285.5	8.6	80	12	3/8"	177.5	G1/4
GAFC400-15	164	99	50	84	285.5	8.6	80	12	1/2"	177.5	G1/4
GAFC500-20	168	100	50	85	299.5	8.6	80	12	3/4"	191.5	G1/4
GAFC600-20	206	128	70	113	336.5	11	100	16	3/4"	205	G1/4
GAFC600-25	206	128	70	113	336.5	11	100	16	1"	205	G1/4

# Preparation unit—GA Series

## GAFR100 Series filter & regulator



### Symbol

Reflux valve option is not available



### Specification

Model	GAFR100M5	GAFR10006
Fluid	Air	
Port size [Note1]	M5	1/8"
Filtering grade	40µm or 5µm	
Pressure range	0.15~0.9MPa(20~130psi)	
Max. pressure	1.0MPa(145psi)	
Proof pressure	1.5MPa(215psi)	
Temperature range	-5~70°C(Unfreeze)	
Capacity of drain bowl	6CC	
Weight	80g	

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

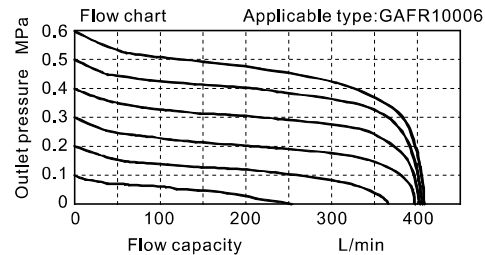
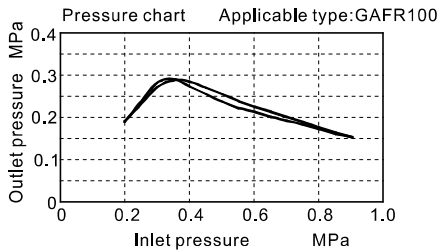
GAFR100 □ 06 □ S □ □ W G □  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Model	② Bowl material	③ Port size	④ Drain type	⑤ Type code	⑥ Accessories	⑦ Pressure gauge	⑧ Filtering grade	⑨ Thread type [Note2]	⑩ Code of reflux valve
GAFR100:GA100 Series Filter & regulator	Blank : PC	M5: M5 06: 1/8"	Blank: Semi-auto drain +Manual drain	S: Standard L: Lower pressure [Note1]	Blank: Bracket J: No bracket	Blank: Circular N: No gauge	Blank: 40µm W: 5µm	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: Reflux valve is not available

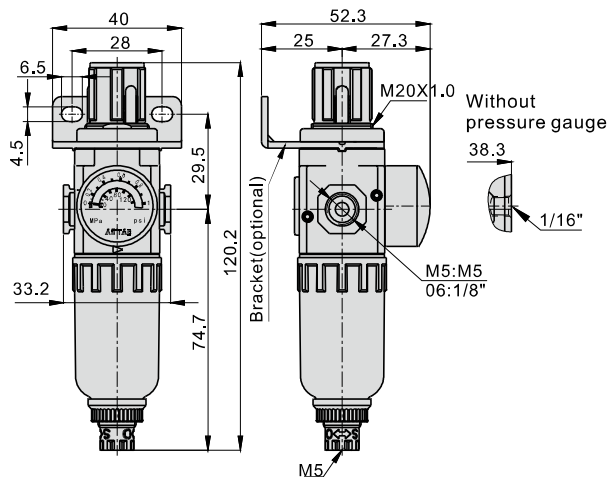
[Note1] The working pressure range of lower pressure type is 0.15~0.4MPa(20~58psi) ;

[Note 2] Thread type means connecting thread and scales of pressure gauge while port size is M5.

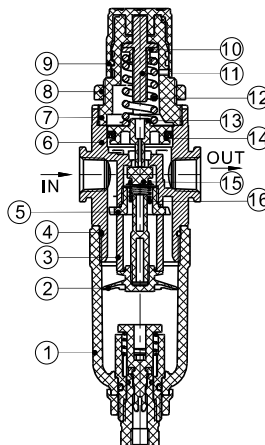
### Pressure and Flow chart



### Dimensions



### Inner structure



No.	Item	Material
1	Drain bowl	PC
2	Umbrella baffle	POM
3	Filter core	HDPE
4	O-ring	NBR
5	Air guider	POM
6	Body	Aluminum alloy
7	Adjusting seat	POM
8	Fixation ring cap	POM
9	Pressure knob	POM
10	Spindle nut	Steel
11	Adjusting spindle	08A
12	Spring	Spring Steel
13	Piston	POM
14	Piston O-ring	NBR
15	Adjusting plug	NBR
16	Spring	Stainless steel

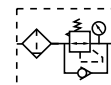
## GAFR Series filter & regulator



### Symbol

No reflux valve is attached

Reflux valve is attached



### Product feature

1. Circular square pressure gauge which with clip and magnifier is used to save installation space.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. Balanced design is adopted for the pressure adjustment mechanism.
4. Unique diversion structure spins the air flowing through to effectively separate the liquid from the air and reliably filter the solid grain.
5. The filtering grade includes 5 $\mu$ m and 40 $\mu$ m (optional).
6. Two drain types are available: semi-auto drain and automatic drain.
7. Three material of bowl are available: PC, Nylon and metal.
8. The bracket can be selected for installation.

### Specification

Model	GAFR200-06	GAFR200-08	GAFR300-08	GAFR300-10	GAFR300-15	GAFR400-10	GAFR400-15	GAFR500-20	GAFR600-20	GAFR600-25	
Fluid	Air										
Port size [Note 1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/8"	1/2"	3/4"	3/4"	1"	
Filtering grade	40 $\mu$ m or 5 $\mu$ m										
Pressure range	0.15~0.9MPa(20~130psi)										
Max. pressure	1.0MPa(145psi)										
Proof pressure	1.5MPa(215psi)										
Temperature range	-5~70°C(Unfreeze)										
Capacity of drain bowl	25CC			60CC			100CC		108CC	205CC	
Weight	290g			500g			880g		950g	1880g	

[Note 1] PT thread, G thread and NPT thread are available.

### Ordering code

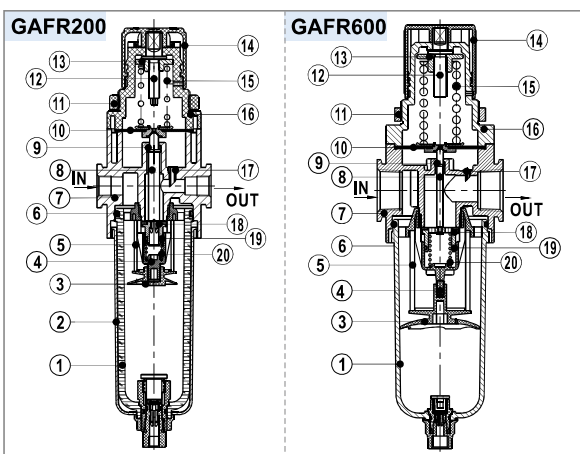
GAFR300 □ 10 □ S □ W G K

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Model	② Bowl material	③ Port size	④ Drain type	⑤ Type code	⑥ Accessories	⑦ Pressure gauge	⑧ Filtering grade	⑨ Thread type	⑩ Code of reflux valve
GAFR200:GA200 Series Filter & regulator	Blank : PC bowl C: Metal bowl N: Nylon bowl	06: 1/8" 08: 1/4"	Blank: Semi-auto drain +Manual drain A: Automatic drain	S: Standard L: Lower pressure [Note1] S: Standard	Blank: Bracket J: No bracket	Blank: Circular N: No gauge [Note2]	Blank: 40 $\mu$ m W: 5 $\mu$ m	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: No reverse flow valve is attached K: Reverse flow valve is attached [Note2]
GAFR300:GA300 Series Filter & regulator		10: 3/8" 15: 1/2"							
GAFR400:GA400 Series Filter & regulator		10: 3/8" 15: 1/2"							
GAFR500:GA500 Series Filter & regulator		20: 3/4"							
GAFR600:GA600 Series Filter & regulator		20: 3/4" 25: 1"							

[Note 1] The work pressure of lower pressure type is 0.15~0.4MPa(20~58psi) ; [Note 2] Please refer to page 246 for details of sealing plate Installation and reflux valve.

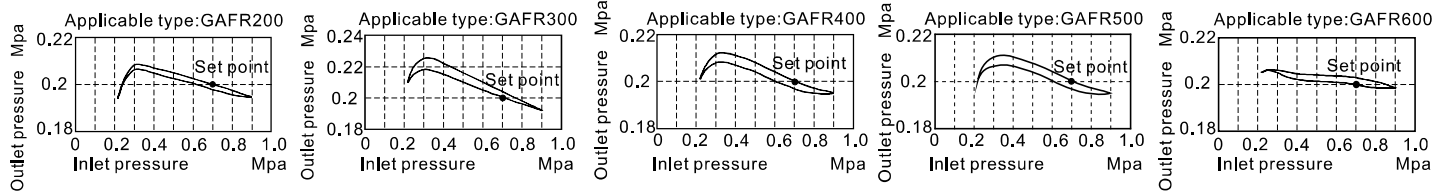
### Inner structure



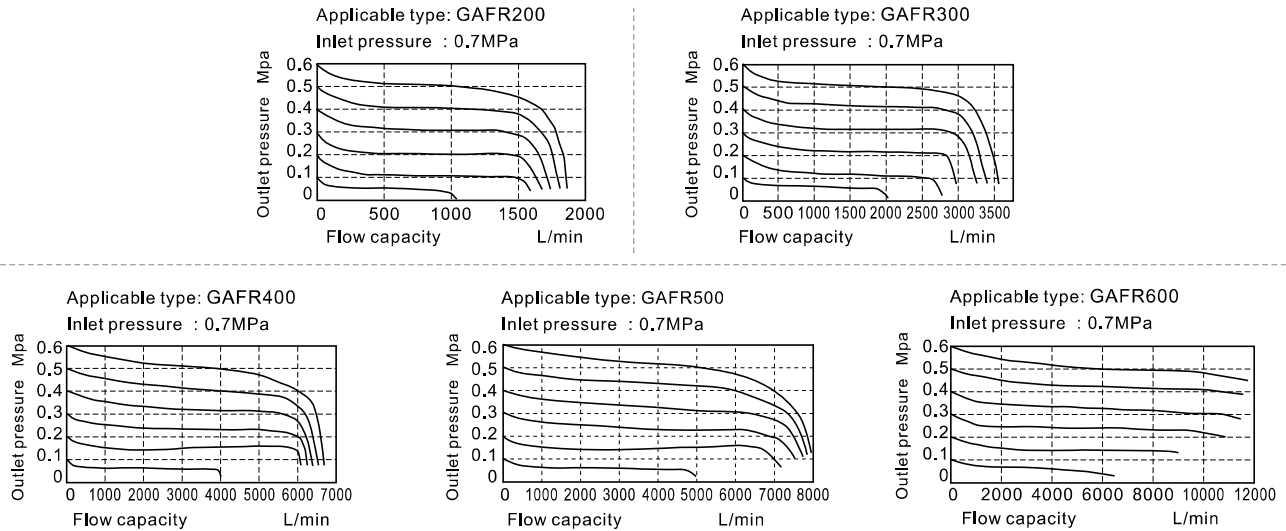
No.	Item	Material
1	Drain bowl	Aluminum alloy \ PC \ Nylon
2	Meter cover	SPCC
3	Umbrella baffle	High viscosity POM
4	Air guider	High viscosity POM
5	Filter core	HDPE
6	O-ring	NBR
7	Body of filter-regulator	Aluminum alloy
8	Adjusting spool	Brass(GAFR600)\POM(others)
9	O-ring	NBR
10	Diaphragm	NBR
11	Fixation ring cap	Aluminum alloy (GAFR600)\POM(others)
12	Adjusting spindle	08A
13	Regulator nut	Steel
14	Pressure knob	POM
15	Spring	SWPB
16	Adjusting seat	Aluminum alloy (GAFR600)\POM(others)
17	Feedback tube	POM
18	Adjusting plug	Brass & Rubber
19	O-ring	NBR
20	Spring	SWPB

## GAFR Series filter & regulator

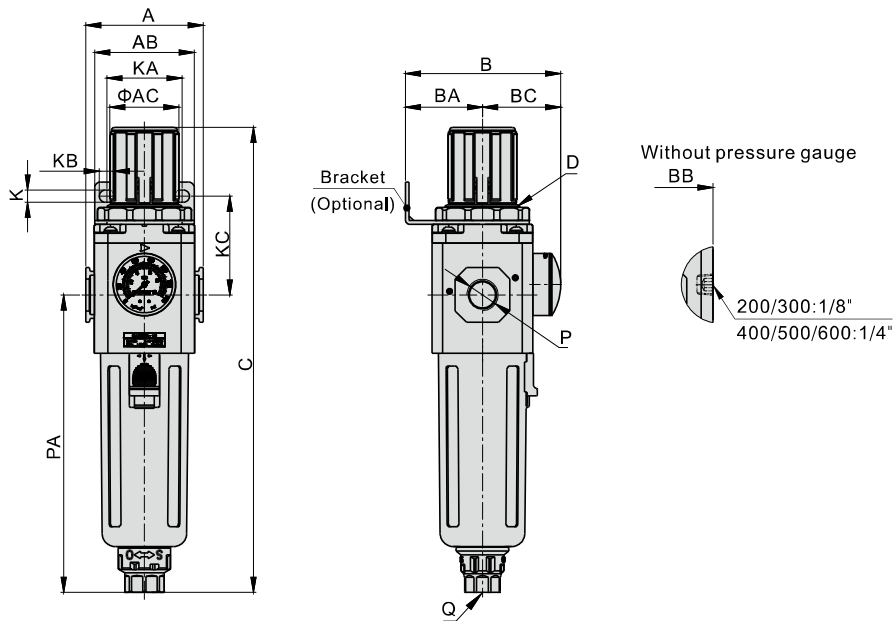
### Pressure chart



### Flow chart



### Dimensions



Model\Item	A	AB	AC	B	BA	BB	BC	C	D	K	KA	KB	KC	P	PA	Q
GAFR200-06	52.5	55	31	69	30	51.5	39	192.5	M33x1.5	5.4	34	15.4	52	1/8"	120	M5X0.8
GAFR200-08	52.5	55	31	69	30	51.5	39	192.5	M33x1.5	5.4	34	15.4	52	1/4"	120	M5X0.8
GAFR300-08	62.5	53	38	82.5	41	67.5	41.5	247	M40x1.5	6.5	40	8	52.5	1/4"	158	G1/4
GAFR300-10	62.5	53	38	82.5	41	67.5	41.5	247	M40x1.5	6.5	40	8	52.5	3/8"	158	G1/4
GAFR300-15	62.5	53	38	82.5	41	67.5	41.5	247	M40x1.5	6.5	40	8	52.5	1/2"	158	G1/4
GAFR400-10	80	72	52	99	50	84	49	285.5	M55x2.0	8.5	55	11	57	3/8"	177.5	G1/4
GAFR400-15	80	72	52	99	50	84	49	285.5	M55x2.0	8.5	55	11	57	1/2"	177.5	G1/4
GAFR500-20	82	72	52	100	50	85	50	299.5	M55x2.0	8.5	55	11	57	3/4"	191.5	G1/4
GAFR600-20	100	90	59	128	70	113	58	336.5	M62x1.5	11	66	13	76	3/4"	205	G1/4
GAFR600-25	100	90	59	128	70	113	58	336.5	M62x1.5	11	66	13	76	1"	205	G1/4

## GAF100 Series Filter



### Symbol



### Specification

Model	GAF100M5	GAF10006
Fluid	Air	
Port size [Note1]	M5	1/8"
Filtering grade	40μm or 5μm	
Pressure range	0.15~0.9MPa(20~130psi)	
Max. pressure	1.0MPa(145psi)	
Proof pressure	1.5MPa(215psi)	
Temperature range	-5~70°C(Unfreeze)	
Capacity of drain bowl	6CC	
Weight	55g	

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

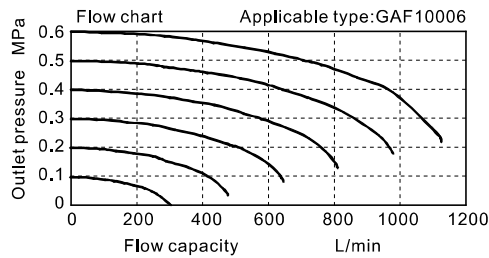
GAF100 □ 06 □ J W G

① ② ③ ④ ⑤ ⑥ ⑦

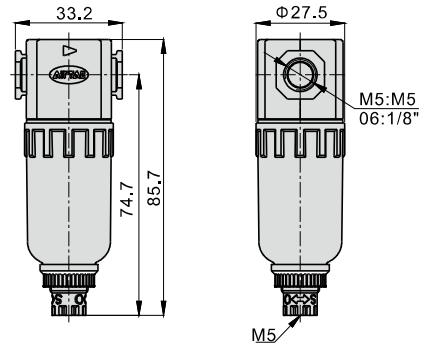
① Model	② Bowl material	③ Port size	④ Drain type	⑤ Accessories	⑥ Filtering grade	⑦ Thread type[Note1]
GAF100:GA100 Series Filter	Blank : PC	M5: M5 06: 1/8	Blank: Semi-auto drain +Manual drain	J: No bracket	Blank: 40μm W: 5μm	Blank: PT G: G T: NPT

[Note 1] Standard M5 thread is blank here.

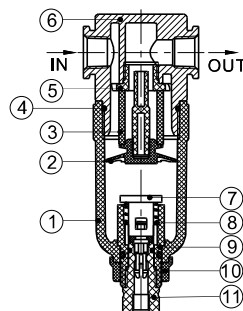
### Flow chart



### Dimensions



### Inner structure



No.	Item	Material
1	Drain bowl	PC
2	Umbrella baffle	POM
3	Filter core	HDPE
4	O-ring	NBR
5	Air guider	POM
6	Body	Aluminum alloy
7	Piston	POM
8	Spring	Stainless steel
9	Fixed baffle	POM
10	Fixing nut	POM
11	Drain cock	POM



## GAF Series Filter



### Symbol



### Product feature

1. Unique diversion structure spins the air flowing through to effectively separate the liquid from the air and reliably filter the solid grain.
2. It has low pressure loss, high efficiency in separating water and large drain bowl capacity.
3. Filtering grade includes 5 $\mu$ m and 40 $\mu$ m (Optional).
4. Three drain types are available: manual drain, semi-auto drain and automatic drain.
5. Two drain types are available: semi-auto drain and automatic drain.
6. Three material of bowl are available: PC, Nylon and metal.
7. The bracket can be selected for installation.

### Specification

Model	GAF200-06	GAF200-08	GAF300-08	GAF300-10	GAF300-15	GAF400-10	GAF400-15	GAF500-20	GAF600-20	GAF600-25
Fluid	Air									
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/8"	1/2"	3/4"	3/4"	1"
Filtering grade	40 $\mu$ m or 5 $\mu$ m									
Pressure range	0.15~0.9MPa(20~130psi)									
Proof pressure	1.5MPa(215psi)									
Temperature range	-5~70°C(Unfreeze)									
Capacity of drain bowl	25CC		60CC			100CC		108CC	205CC	
Weight	200g		360g			640g		680g	1040g	

[Note1] PT thread, G thread and NPT thread are available.

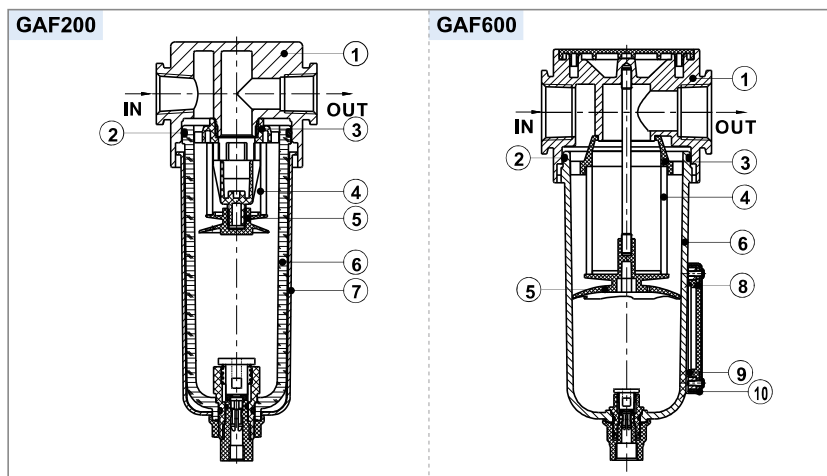
### Ordering code

GAF 300 □ 10 □ □ W G

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Bowl material	③ Port size	④ Drain type	⑤ Accessories	⑥ Filtering grade	⑦ Thread type
GAF200:GA200 Series Filter	Blank : PC bowl C: Metal bowl N: Nylon bowl	06: 1/8" 08: 1/4"	Blank: Semi-auto drain +Manual drain A: Automatic drain	Blank: Bracket J: No bracket	Blank: 40 $\mu$ m W: 5 $\mu$ m	Blank: PT G: G T: NPT
GAF300:GA300 Series Filter		08: 1/4" 10: 3/8" 15: 1/2"				
GAF400:GA400 Series Filter		10: 3/8" 15: 1/2"				
GAF500:GA500 Series Filter		20: 3/4"				
GAF600:GA600 Series Filter		20: 3/4" 25: 1"				

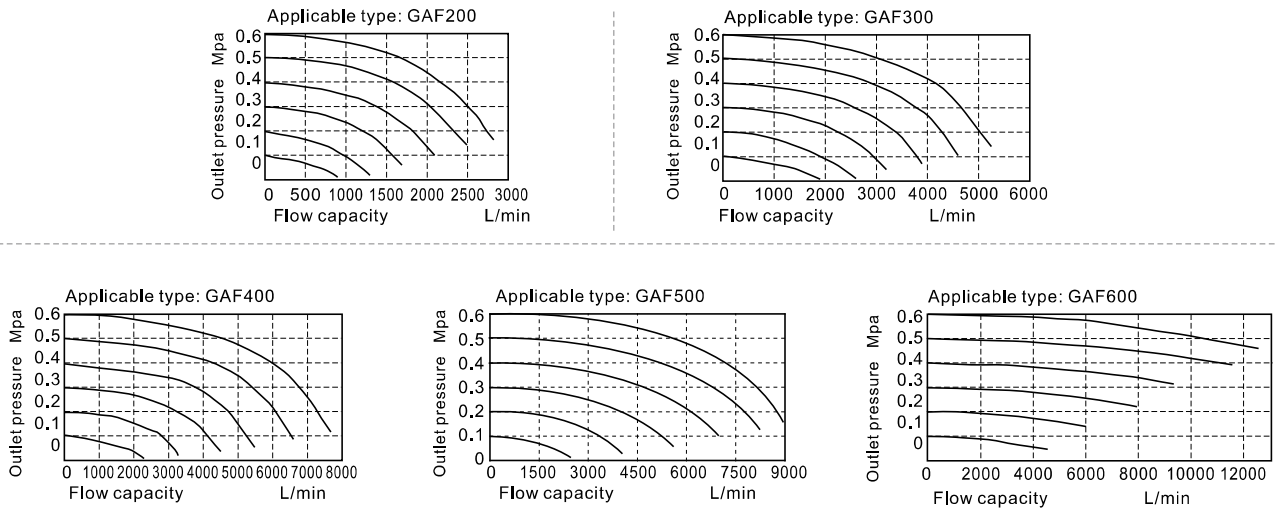
### Inner structure



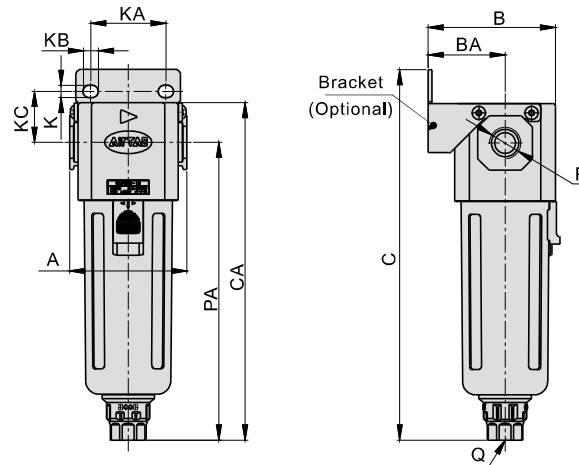
No.	Item	Material
1	Body	Aluminum alloy
2	O-ring	NBR
3	Air guide	High viscosity POM
4	Filter core	HDPE
5	Umbrella baffle	High viscosity POM
6	Drain bowl	Aluminum alloy\PC\Nylon
7	Meter cover	SPCC
8	Liquid meter inside cover	PC
9	Liquid meter seal	NBR
10	Liquid meter cover	SPCC

## GAF Series Filter

### Flow chart



### Dimensions



Model/Item	A	B	BA	C	CA	K	KA	KB	KC	P	PA	Q
GAF200-06	52.5	54.5	33	150	137	5.4	27	8.4	23	1/8"	120	M5X0.8
GAF200-08	52.5	54.5	33	150	137	5.4	27	8.4	23	1/4"	120	M5X0.8
GAF300-08	62.5	67.5	41	197	179	6.5	40	8	27	1/4"	158	G1/4
GAF300-10	62.5	67.5	41	197	179	6.5	40	8	27	3/8"	158	G1/4
GAF300-15	62.5	67.5	41	197	179	6.5	40	8	27	1/2"	158	G1/4
GAF400-10	80	84	50	220	202.5	8.5	55	11	33.5	3/8"	177.5	G1/4
GAF400-15	80	84	50	220	202.5	8.5	55	11	33.5	1/2"	177.5	G1/4
GAF500-20	82	85	50	234	216.5	8.5	55	11	33.5	3/4"	191.5	G1/4
GAF600-20	100	113	70	266	242	11	66	13	50	3/4"	205	G1/4
GAF600-25	100	113	70	266	242	11	66	13	50	1"	205	G1/4

# Preparation unit—GA Series

## GAR100 Series Regulator



### Symbol

Reflux valve option is not available



### Specification

Model	GAR100M5	GAR10006
Fluid	Air	
Port size [Note1]	M5	1/8"
Pressure range	0.05~0.9MPa(7~130psi)	
Max. pressure	1.0MPa(145psi)	
Proof pressure	1.5MPa(215psi)	
Temperature range	-5~70°C(Unfreeze)	
Weight	59g	

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

GAR100 06 S □ □ G □

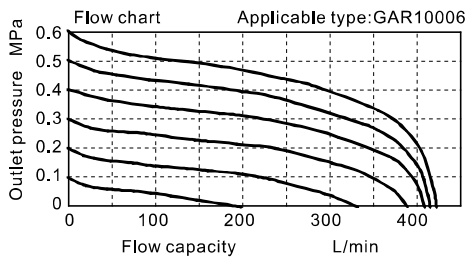
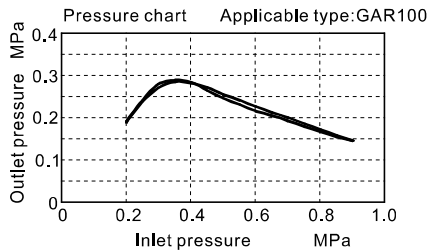
① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Port size	③ Type code	④ Accessories	⑤ Pressure gauge	⑥ Thread type[Note2]	⑦ Code of reflux valve
GAR100:GA100 Series regulator	M5: M5 06: 1/8	S: Standard L: Lower pressure [Note1]	Blank: Bracket J: No bracket	Blank: Circular N: No gauge	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: Reflux valve is not available

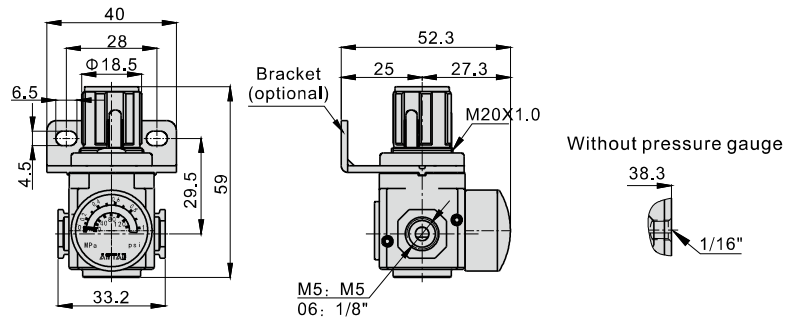
[Note1] The working pressure range of lower pressure type is 0.15~0.4MPa(20~58psi) ;

[Note 2] Thread type means connecting thread and scales of pressure gauge while port size is M5.

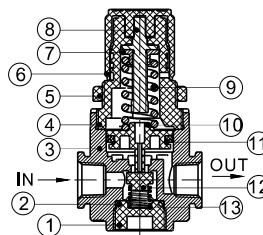
### Pressure and Flow chart



### Dimensions



### Inner structure



No.	Item	Material
1	Valve cap	POM
2	O-ring	NBR
3	Body	Aluminum alloy
4	Adjusting seat	POM
5	Fixed ring	POM
6	Pressure knob	POM
7	Spindle nut	Steel
8	Adjusting spindle	08A
9	Spring	Spring Steel
10	Piston	POM
11	Piston O-ring	NBR
12	Pressure plug	NBR
13	Spring	Stainless steel

## GAR Series Regulator



### Symbol

No reflux valve is attached



Reflux valve is attached



### Product feature

1. Circular square pressure gauge which with clip and magnifier is used to save installation space.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. Balanced design is adopted for the pressure adjustment mechanism.
4. In addition to panel installation, the bracket is optional for installation.

### Specification

Model	GAR200-06	GAR200-08	GAR300-08	GAR300-10	GAR300-15	GAR400-10	GAR400-15	GAR500-20	GAR600-20	GAR600-25
Fluid	Air									
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/8"	1/2"	3/4"	3/4"	1"
Pressure range	0.05~0.9MPa(7~130psi)									
Max. pressure	1.0MPa(145psi)									
Proof pressure	1.5MPa(215psi)									
Temperature range	-20~70°C									
Weight	170g		300g			570g		580g	1390g	

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

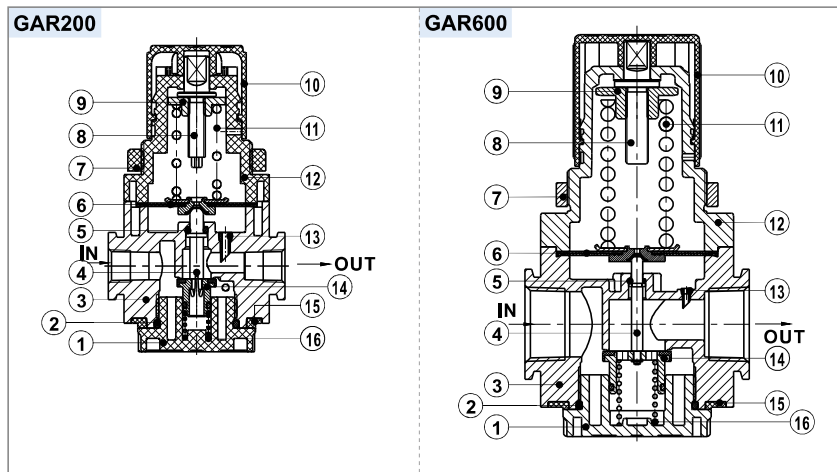
GAR300 10 S □ □ G K



① Model	② Port size	③ Type code	④ Accessories	⑤ Pressure gauge	⑥ Thread type	⑦ Code of reflux valve
GAR200:GA200 Series regulator	06: 1/8" 08: 1/4"	S: Standard L: Lower pressure [Note1]	Blank: Bracket J: No bracket	Blank: Circular N: No gauge [Note2]	Blank: PT (MPa/psi) G: G (bar/MPa) T: NPT (psi/bar)	Blank: No reverse flow valve is attached K: Reverse flow valve is attached [Note2]
GAR300:GA300 Series regulator	08: 1/4" 10: 3/8" 15: 1/2"					
GAR400:GA400 Series regulator	10: 3/8" 15: 1/2"					
GAR500:GA500 Series regulator	20: 3/4"					
GAR600:GA600 Series regulator	20: 3/4" 25: 1"	S: Standard				

[Note1] The work pressure of lower pressure type is 0.05~0.4MPa(7~58psi) ; [Note2] Please refer to page 246 for details of sealing plate Installation and reflux valve.

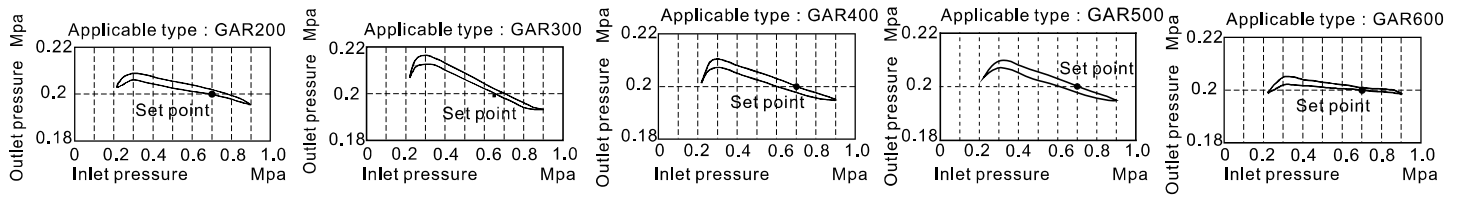
### Inner structure



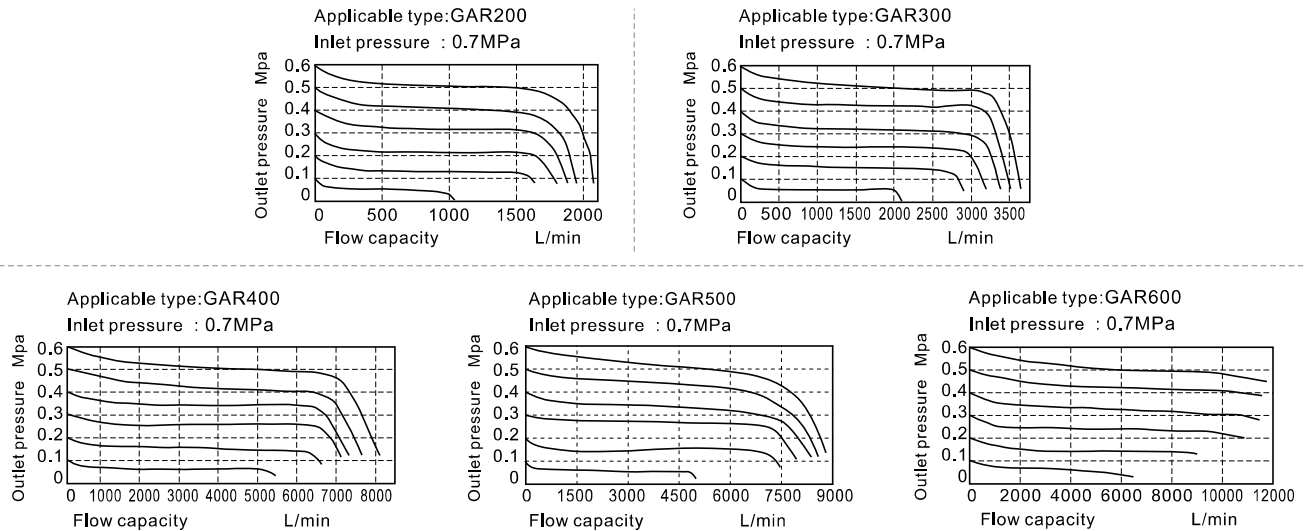
No.	Item	Material
1	Valve cap	Aluminum alloy(GR600)\POM(others)
2	O-ring	NBR
3	Body	Aluminum alloy
4	Spool	Brass(GR600)\POM(others)
5	O-ring	NBR
6	Diaphragm	NBR
7	Fixed ring	Aluminum alloy (GR600)\POM(others)
8	Adjusting spindle	08A
9	Regulator nut	Steel
10	Pressure knob	POM
11	Pressure spring	SWPB
12	Adjusting seat	Aluminum alloy (GR600)\POM(others)
13	Feed back tube	POM
14	Pressure plug	Aluminum alloy & steel
15	Bottom cover	POM
16	Spring	SWPB

## GAR Series Regulator

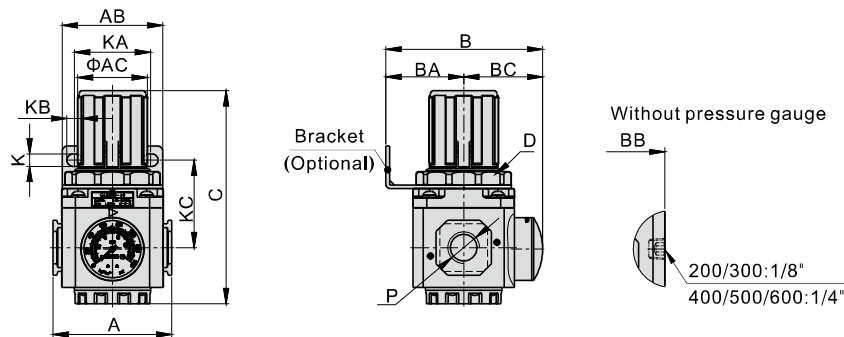
### Pressure chart



### Flow chart



### Dimensions



Model\Item	A	AB	AC	B	BA	BB	BC	C	D	K	KA	KB	KC	P
GAR200-06	52,5	55	31	69	30	51,5	39	91	M33x1,5	5,4	34	15,4	45	1/8"
GAR200-08	52,5	55	31	69	30	51,5	39	91	M33x1,5	5,4	34	15,4	45	1/4"
GAR300-08	62,5	53	38	82,5	41	67,5	41,5	112	M40x1,5	6,5	40	8	46	1/4"
GAR300-10	62,5	53	38	82,5	41	67,5	41,5	112	M40x1,5	6,5	40	8	46	3/8"
GAR300-15	62,5	53	38	82,5	41	67,5	41,5	112	M40x1,5	6,5	40	8	46	1/2"
GAR400-10	80	72	52	99	50	84	49	140,5	M55x2,0	8,5	55	11	53	3/8"
GAR400-15	80	72	52	99	50	84	49	140,5	M55x2,0	8,5	55	11	53	1/2"
GAR500-20	82	72	52	100	50	85	50	140,5	M55x2,0	8,5	55	11	53	3/4"
GAR600-20	100	90	59	128	70	113	58	179,5	M62x1,5	11	66	13	73,5	3/4"
GAR600-25	100	90	59	128	70	113	58	179,5	M62x1,5	11	66	13	73,5	1"

## GAL100 Series Lubricator



### Symbol



### Specification

Model	GAL100M5	GAL10006
Fluid	Air	
Port size [Note1]	M5	1/8"
Pressure range	0.05~0.9MPa(7~130psi)	
Proof pressure	1.5MPa(215psi)	
Temperature range	-5~70°C(Unfreeze)	
Recommended lubricant	ISO VG 32 or equivalent	
Capacity of oil bowl	9CC	
Weight	59g	

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

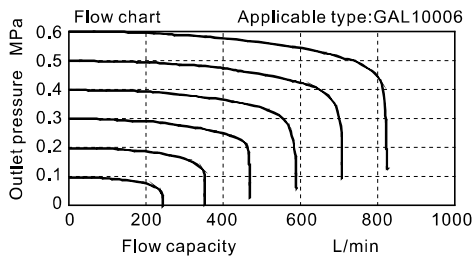
GAL100 □ 06 J G

① ② ③ ④ ⑤

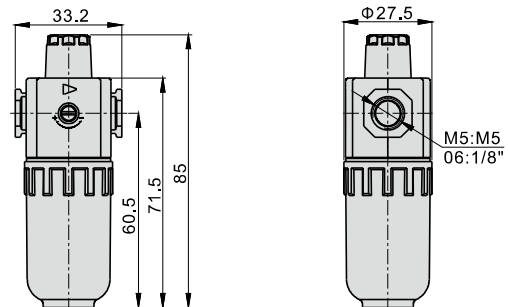
① Model	② Bowl material	③ Port size	④ Accessories	⑤ Thread type[Note1]
GAL100: GA100 Lubricator	Blank : PC	M5: M5 06: 1/8	J : No bracket	Blank: PT G: G T: NPT

[Note 1] Standard M5 thread is blank here.

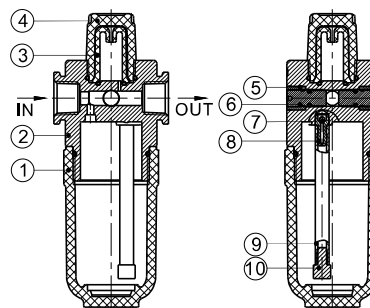
### Flow chart



### Dimensions



### Inner structure



No.	Item	Material
1	Oil bowl	PC
2	Body	Aluminum alloy
3	Drip pipe	PC
4	Sight window	PC
5	Adjusting screw	Brass
6	Fixing nut	Aluminum alloy
7	Steel ball	Stainless steel
8	Tube nozzle	Aluminum alloy
9	Tube	PU
10	Lubricant filter	Sintered bronze



## GAL Series Lubricator



### Symbol



### Product feature

1. The structure of oil dripping adopts gap seal type, which makes the adjustment of oil supply more reliable.
2. Oil feed ring can only make one full turn. The quantity of oil supply basically takes on linear distribution. The quantity of oil supply can be generally calculated according to the position of graduation ring.
3. Special drip nozzle structure will produce negative pressure in oil dripping outlet and the mist flow is minimal.
4. Three material of bowl are available: PC, Nylon and metal.
5. Filling of oil while the lubricator is under pressure is made possible, and the oil bowl is large.
6. The bracket can be selected for installation.

### Specification

Model	GAL200-06	GAL200-08	GAL300-08	GAL300-10	GAL300-15	GAL400-10	GAL400-15	GAL500-20	GAL600-20	GAL600-25
Fluid	Air									
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	3/8"	1/2"	3/4"	3/4"	1"
Pressure range	0.05~0.9MPa(7~130psi)									
Proof pressure	1.5MPa(215psi)									
Temperature range	-5~70°C(Unfreeze)									
Recommended lubricant	ISO VG 32 or equivalent									
Capacity of oil bowl	36CC		98CC			185CC		225CC		410CC
Weight	200g		370g			660g		700g		1040g

[Note1] PT thread, G thread and NPT thread are available.

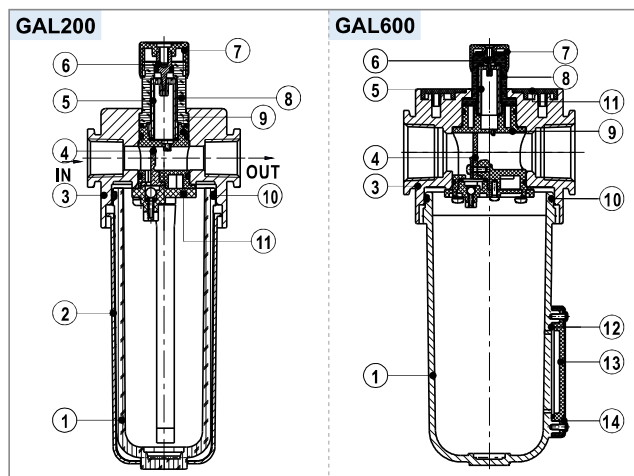
### Ordering code

GAL300 □ 10 □ G

① ② ③ ④ ⑤

① Model	② Bowl material	③ Port size	④ Accessories	⑤ Thread type
GAL200: GA200 Series Lubricator	Blank : PC bowl C: Metal bowl N: Nylon bowl	06: 1/8" 08: 1/4"	Blank : Bracket J : No bracket	Blank: PT G: G T: NPT
GAL300: GA300 Series Lubricator		08: 1/4" 10: 3/8" 15: 1/2"		
GAL400: GA400 Series Lubricator		10: 3/8" 15: 1/2"		
GAL500: GA500 Series Lubricator		20: 3/4"		
GAL600: GA600 Series Lubricator		20: 3/4" 25: 1"		

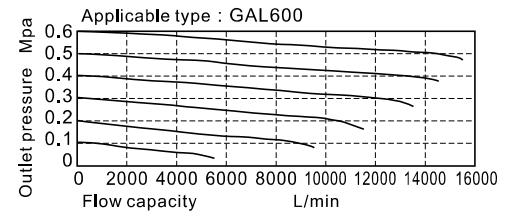
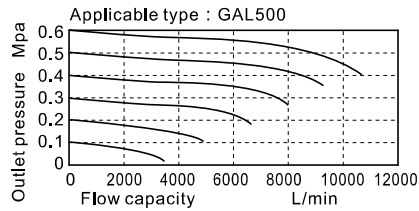
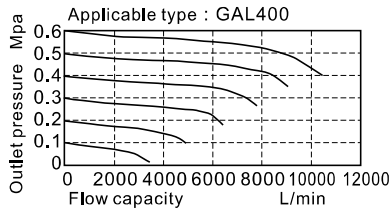
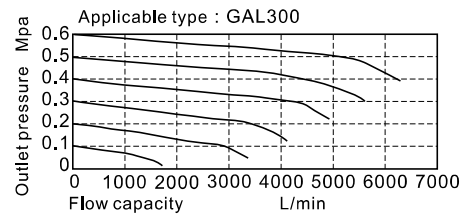
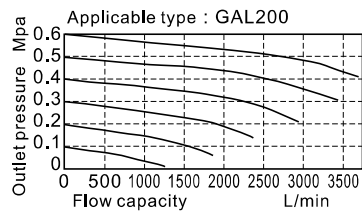
### Inner structure



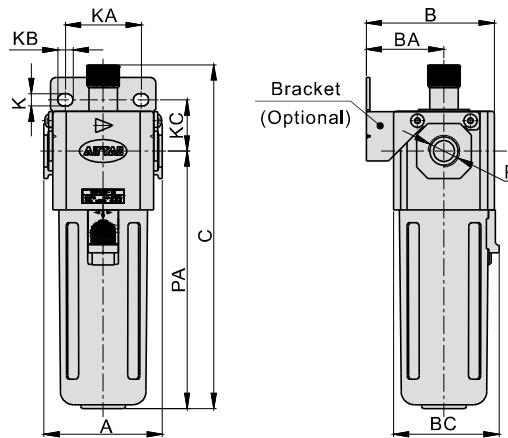
No.	Item	Material
1	Oil bowl	Aluminum alloy \ PC \ Nylon
2	Meter cover	SPCC
3	Body of lubricator	Aluminum alloy
4	Distance block	PU
5	Drip pipe	PC
6	Ejector pin	Brass
7	Adjusting ring	POM
8	Adjusting looker	PC
9	Sprayer body	POM
10	O-ring	NBR
11	Sprayer bottom cap	POM
12	Liquid meter seal	NBR
13	Liquid meter inside cover	PC
14	Liquid meter cover	SPCC

## GAL Series Lubricator

### Flow chart



### Dimensions



Model\Item	A	B	BA	C	K	KA	KB	KC	P	PA
GAL200-06	52.5	54.5	33	146.5	5.4	27	8.4	23	1/8"	107
GAL200-08	52.5	54.5	33	146.5	5.4	27	8.4	23	1/4"	107
GAL300-08	62.5	67.5	41	181	6.5	40	8	27	1/4"	136
GAL300-10	62.5	67.5	41	181	6.5	40	8	27	3/8"	136
GAL300-15	62.5	67.5	41	181	6.5	40	8	27	1/2"	136
GAL400-10	80	84	50	204.5	8.5	55	11	33.5	3/8"	155
GAL400-15	80	84	50	204.5	8.5	55	11	33.5	1/2"	155
GAL500-20	82	85	50	218.5	8.5	55	11	33.5	3/4"	169
GAL600-20	100	113	70	246	11	66	13	50	3/4"	182.5
GAL600-25	100	113	70	246	11	66	13	50	1"	182.5

## GA Series Reverse Flow valve



### Product feature

1. This reverse flow valve can be used with GA series regulator but can not be ordered individually.
2. When it is used with GA series regulator, one only needs to change the seal board in the back of regulator for the reverse flow valve. It is convenient to install and won't change the external dimension of regulator.

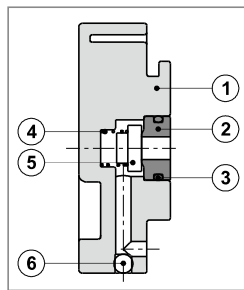
### Applicable products

Reflux valve type\Applicable products's type	GA F.R.L Comtination	GA FR.L Comtination	GA Filter & regulator	GA Regulator
GAR200-P1	GAC200	GAFC200	GAFR200	GAR200
GAR300-P1	GAC300, 400, 500, 600	GAFC300, 400, 500, 600	GAFR300, 400, 500, 600	GAR300, 400, 500, 600

### Ordering code

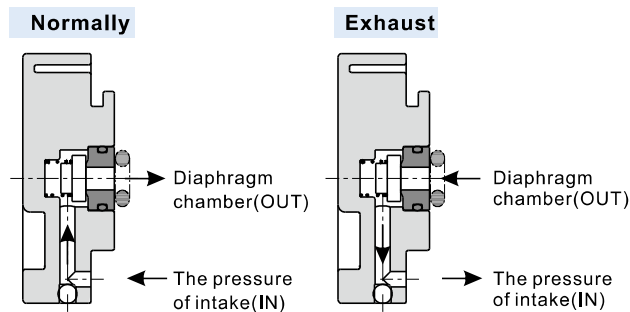
When GA series regulator is assembled with the reverse flow valve, the valve can be ordered together with the standard product. What needs to do is to add "-K" to the end of the ordering code of the standard product. Please refer to relevant content for more detailed order method.

### Inner structure



No.	Item	Material
1	Reverse flow valve's body	POM
2	Plug	6061C-T6
3	O-ring	NBR
4	Spring	SUS304
5	Gasket	NBR
6	Steel ball	SUS304

### Working principle

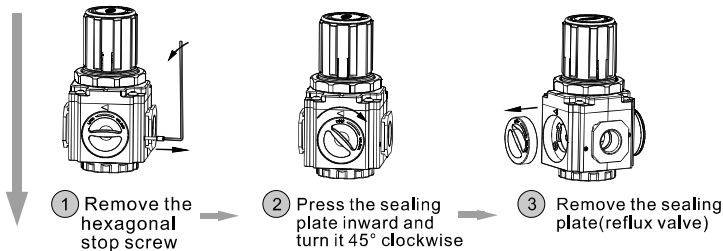


Normally, as the pressure of intake (IN) is higher than the set valve (pressure of outlet), the reverse flow valve closed; if the pressure of intake(IN) is cut off and starts exhaust, reverse flow valve opens. The pressure of diaphragm chamber is exhausted from IN orifice. At this moment, the pressure of diaphragm chamber decreases and the diaphragm is pressed down by the force from adjusting spring to open valve. The pressure from outlet is exhausted from IN port.

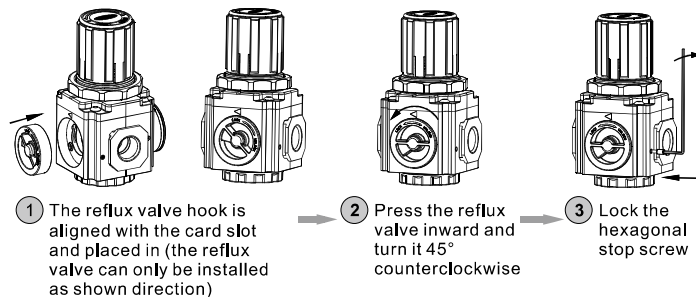
### Example for assemble the reflux valve

#### 1. Reflux valve installation steps:

##### a Disassembly sealing plate

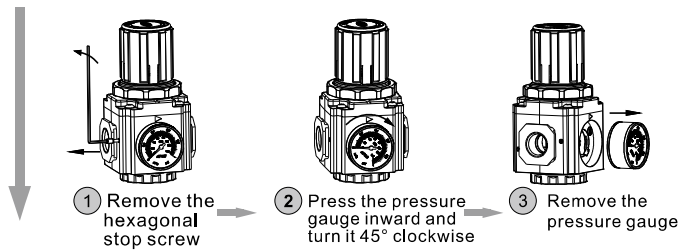


##### b Reflux valve installation

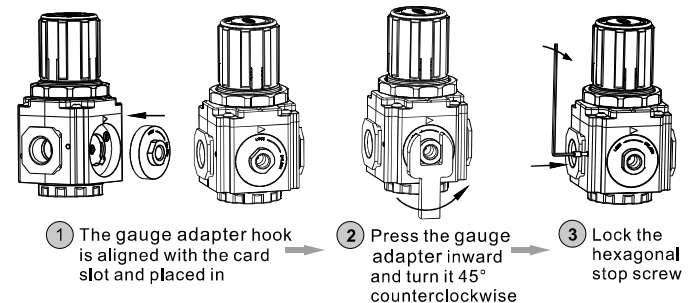


#### 2. Gauge adapter (used when no pressure gauge is attached) Installation steps:

##### a Disassembly pressure gauge



##### b Gauge adapter installation



# Preparation unit—GT Series(Short PC bowl type)

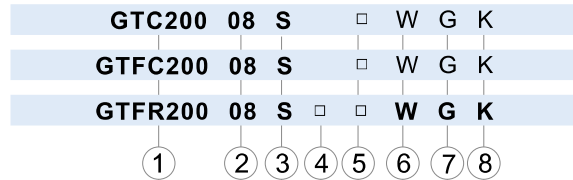
GTC, GTFC, GTFR, GTF, GTL Series

## Product feature

1. GT series is the shorter PC bowl version of GA200 series. Besides from the feature of GA200, GT series also has the below features.
2. drain bowl and oil bowl are shorter than GA200, which is suitable for restricted space installation.
3. No Auto drain available.  
Drain type is semi-auto drain+manual drain.

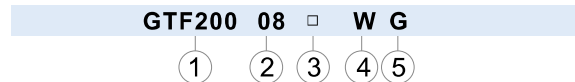


## Ordering code

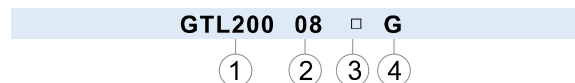


①Model	②Port size	③Type code	④Accessories	⑤Pressure gauge	⑥Filtering grade	⑦Thread type	⑧Code of reflux valve
GTC200: GT200 Series F.R.L unit (Short PC bowl)	06: 1/8" 08: 1/4"	S: Standard L: Lower pressure [Note1]	No this code	Blank: Circular N: No gauge [Note2]	Blank: 40µm W: 5µm	Blank: PT(MPa/psi) G: G(bar/MPa) T: NPT(psi/bar)	Blank: No reverse flow valve is attached K: Reverse flow valve is attached [Note2]
GTFC200: GT200 Series FR,L unit (Short PC bowl)							
GTFR200: GT200 Series Filter & regulator (Short PC bowl)			Blank : Bracket J : No bracket				

[Note1]The work pressure of lower pressure type is 0.15~0.4MPa(20~58psi) ; [Note2] Please refer to page 246 for details of sealing plate Installation and reflux valve.



①Model	②Port size	③Accessories	④Filtering grade	⑤Thread type
GTF200: GT200 Series Filter (Short PC bowl)	06: 1/8" 08: 1/4"	Blank : Bracket J : No bracket	Blank: 40µm W: 5µm	Blank: PT G: G T: NPT



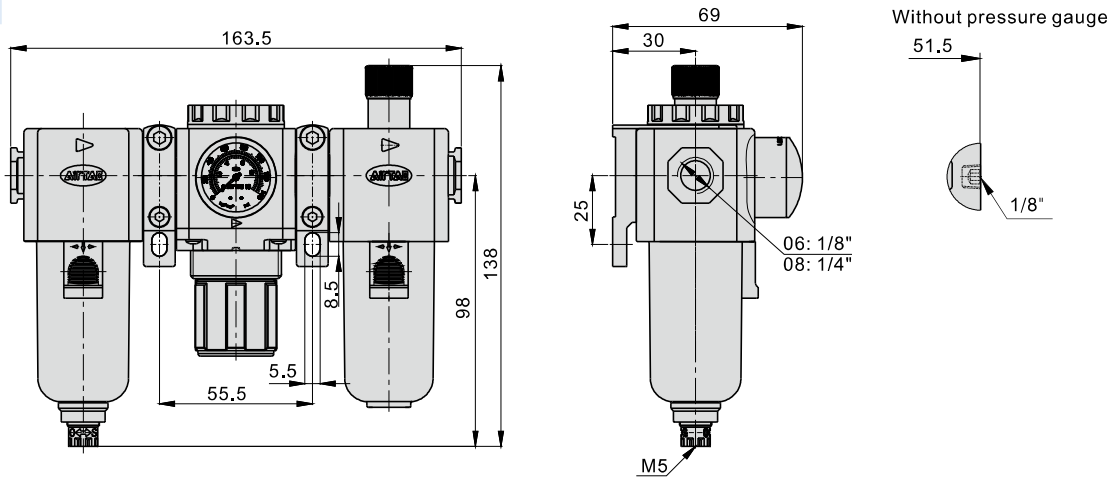
①Model	②Port size	③Accessories	④Thread type
GTL200: GT200 Series Lubricator (Short PC bowl)	06: 1/8" 08: 1/4"	Blank : Bracket J : No bracket	Blank: PT G: G T: NPT

# Preparation unit—GT Series (Short PC bowl type)

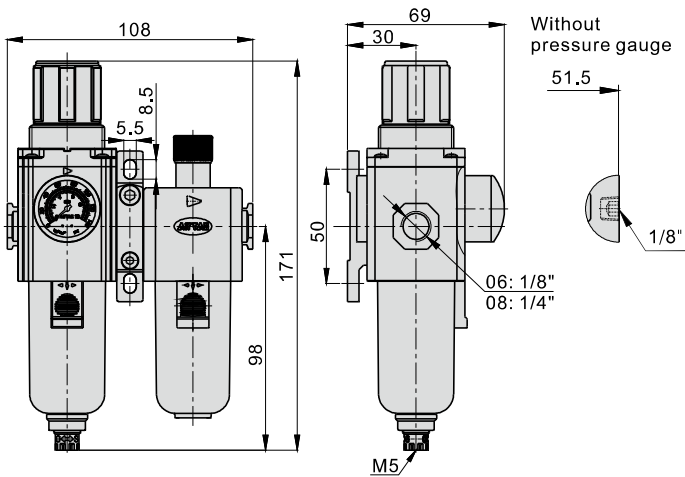
GTC, GTFC, GTFR, GTF, GTL Series

## Dimensions

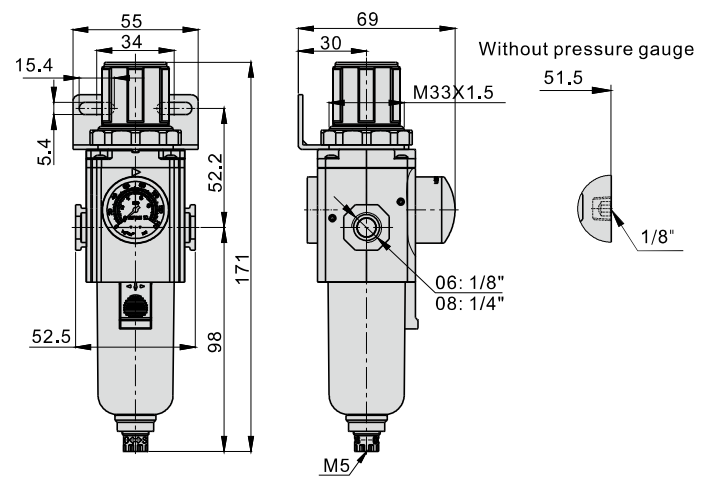
### GTC200



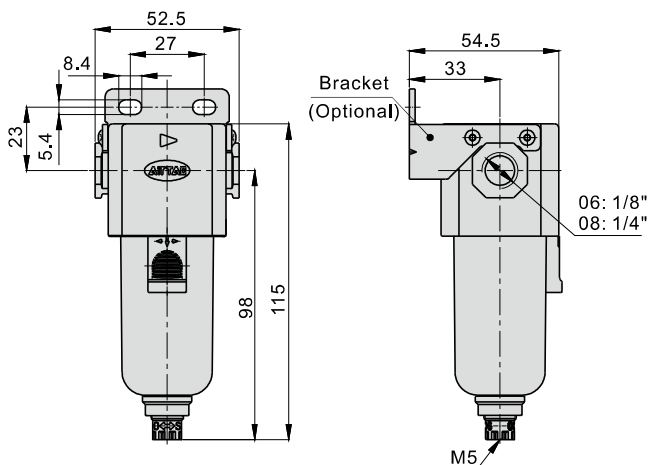
### GTFC200



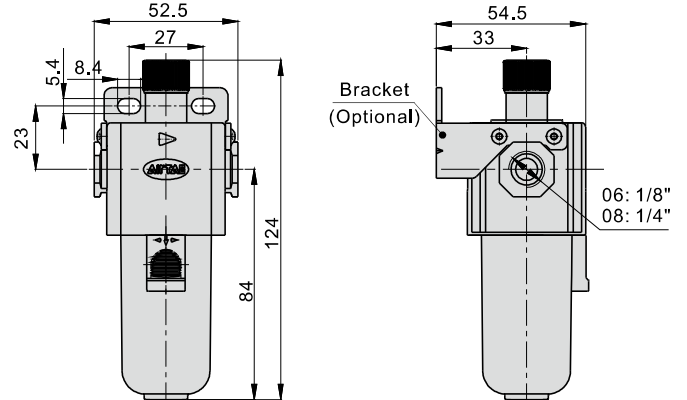
### GTFR200



### GTF200



### GTL200



## GA series of gas-distribution block



### Product feature

1. It is installed between GA series regulator (or filter & regulator) and G series Lubricator. The air flow is divided by the device that one enters Lubricator to supply oil for lubrication and the other (the second way) directly enters the equipment.
2. Several kinds of bracket can be selected to connect regulator and lubricator. Optional brackets are type T, type L and type U.

### Specification

Model	GA200-06	GA200-08	GA300-08	GA300-10	GA400-10	GA400-15	GA600-20	GA600-25
Fluid	Air							
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
Way number	Four							
Pressure range	0~1.0MPa(0~145psi)							
Proof pressure	1.5MPa(215psi)							
Temperature range	-20~70°C							

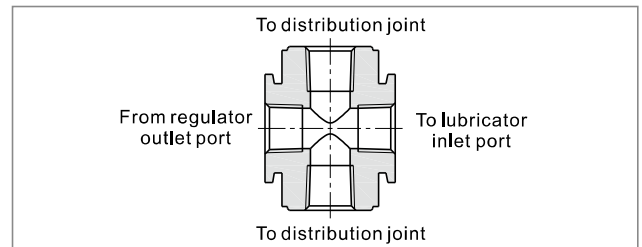
[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

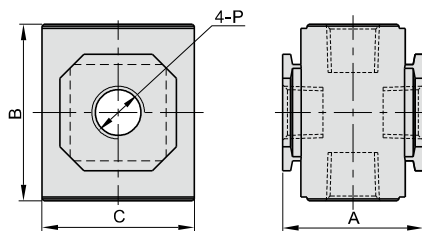
GA200 08 G		
① Model	② Port size	③ Thread type
GA200: 200 Series gas-distribution block	06: 1/8" 08: 1/4"	Blank: PT G: G T: NPT
GA300: 300 Series gas-distribution block	08: 1/4" 10: 3/8"	
GA400: 400/500 Series gas-distribution block	10: 3/8" 15: 1/2"	
GA600: 600 Series gas-distribution block	20: 3/4" 25: 1"	

Note : When it is used with F.R.L. combination, extra mounting bracket needed. Please refer to P250 for order detail.

### Inner structure



### Dimensions



Model\Item	A	B	C	P	
GA200	06	28.5	36	30	1/8"
	08	28.5	36	30	1/4"
GA300	08	35	44	38	1/4"
	10	35	44	38	3/8"
GA400	10	42	52	52	3/8"
	15	42	52	52	1/2"
GA600	20	62	76	68	3/4"
	25	62	76	68	1"



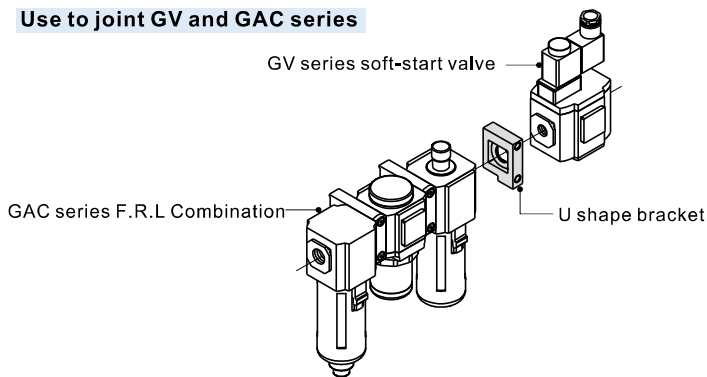
## Joint accessories—Bracket

### How to select the bracket

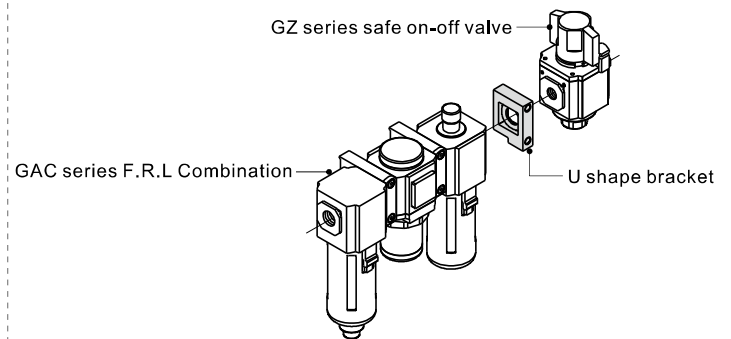
Bracket name	Code	Photo	Adapt accessories model		
			GV200	GZ200	GA200\GT200
T shape bracket	GA200T-P1		GV200	GZ200	GA200\GT200
	GA300T-P1		GV300	GZ300	GA300
	GA400T-P1		GV400	GZ400	GA400\GA500
	GA600T-P1		-	-	GA600
L shape bracket	GA200L-P1		GV200	GZ200	GA200\GT200
	GA300L-P1		GV300	GZ300	GA300
	GA400L-P1		GV400	GZ400	GA400\GA500
	GA600L-P1		-	-	GA600
U shape bracket	GA200U-P1		GV200	GZ200	GA200\GT200
	GA300U-P1		GV300	GZ300	GA300
	GA400U-P1		GV400	GZ400	GA400\GA500
	GA600U-P1		-	-	GA600

### How to use the bracket

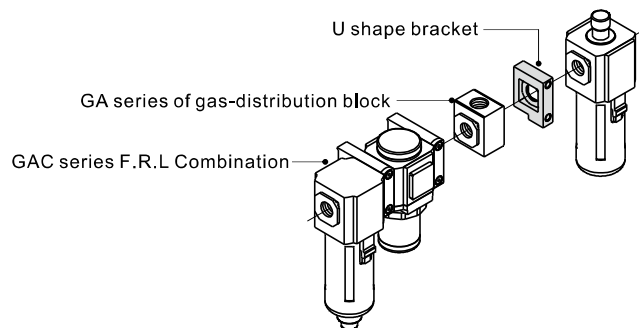
#### Use to joint GV and GAC series



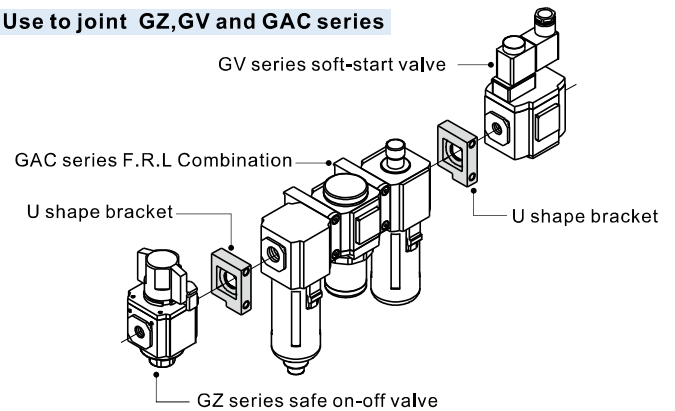
#### Use to joint GZ and GAC series



#### Use to joint GA and GAC series






#### Use to joint GZ, GV and GAC series





## Compendium of GP Series preparation unit

P252	Product feature	Photo	P254	Product feature	Photo
GPF Series Oil mist filter	<ul style="list-style-type: none"> <li>•The pressure loss is low</li> <li>•Filter efficiency more than 99%</li> <li>•0.3<math>\mu</math>m and 0.01<math>\mu</math>m filtering grade(Optional)</li> <li>•With fixing bracket</li> <li>•200/300/400 Series</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>		GPR Series Precision regulator	<ul style="list-style-type: none"> <li>•Higher precision adjustment pressure, sensitive to reaction</li> <li>•Excellence pressure characteristics and flow characteristics</li> <li>•Lower, Middle and high pressure are optional</li> <li>•With fixing bracket</li> <li>•200/300/400 Series</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>	
P258	<ul style="list-style-type: none"> <li>•The pressure loss is low</li> <li>•Filter efficiency more than 99%</li> <li>•0.3<math>\mu</math>m and 0.01<math>\mu</math>m filtering grade(Optional)</li> <li>•With fixing bracket</li> <li>•200/300/400 Series</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>				
GPR Series Precision Filter-Regulator					

## Installation and application



1. Check whether the components have been damaged during transportation before installing and using.
2. Pay attention to whether the flow direction of air (notice "→" direction) and thread type are correct.
3. Please notice whether installation condition accords with technical requirements (such as "working pressure" and "applied temperature range").
4. The medium used or installation environment shall be noticed. The matters with chlorine, carbon compound, aromatic compound and oxidizing acid and alkali shall be avoided to prevent the damage of bowl and oil bowl.
5. Regularly clean or change filter core. Lubricators and regulators shall be in descending order.
6. Keep dust away. The dust cover shall be installed in intake and outlet when the device is dismantled and stored.

## GPF Series Oil mist filter



### Specification

Model	GPF20006	GPF20008	GPF30008	GPF30010	GPF40010	GPF40015
Fluid	Air					
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	3/8"	1/2"
Filtering grade	M	0.3µm(Capture efficiency 99.9%)				
	D	0.01µm(Capture efficiency 99.9%)				
Pressure range	0.15~1.0MPa(20~145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature range	-5~70°C(Unfreeze)					
Rated flow capacity [2]	M	200L/min	450L/min		1100L/min	
	D	120L/min	240L/min		600L/min	
Bowl Material	Polycarbonate, Nylon, Metal					
Capacity of drain bowl	19CC		54.5CC		89CC	
Weight	PC bowl	207g	356g		620g	
	Metallic bowl	238g	397g		627g	

[Note1] PT thread, G thread and NPT thread are available.

[Note2] Conditions: inlet pressure 0.7MPa, outlet pressure 0.5MPa. The rated flow varies with the inlet pressure. If the flow exceeds the rated flow, oil will flow to the secondary side. Please note.

### Symbol



### Product feature

1. Low pressure drop, high oil mist remove efficiency up to 99% and large drain bowl.
2. 0.3µm and 0.01µm filtering grade are available.
3. Two drain types are available: manual and semi-auto drain, and automatic drain.
4. To meet the needs of different environment the bowl material has Poly Carbonate, nylon and metal can be selected.
5. Monomeric products can select the bracket for installation, others can be used with F,R,L Combination.

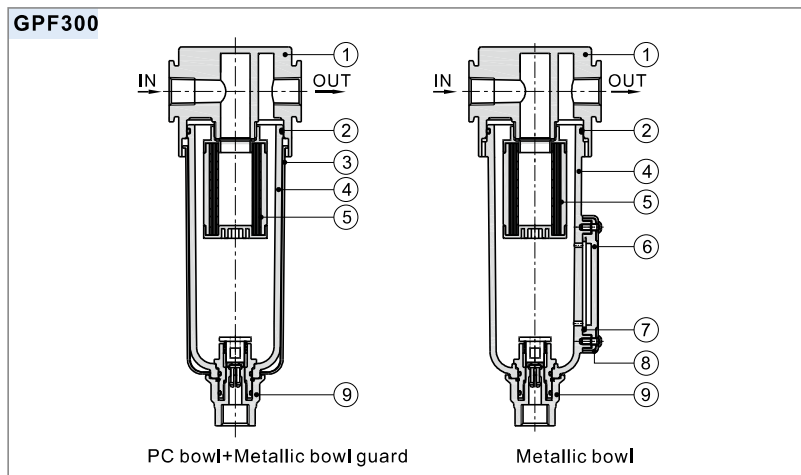
### Ordering code

GPF300 □ 08 □ □ M G



① Model	② Bowl Material	③ Port size	④ Drain type	⑤ Accessories	⑥ Filtering grade	⑦ Thread type
GPF200: 200 Series Oil mist filter	Blank: PC bowl+Metallic bowl guard C: Metallic bowl N: Nylon bowl+Metallic bowl guard	06: 1/8" 08: 1/4"	Blank: Manual and Semi-auto drain A: Automatic drain	Blank: Bracket J: No bracket	M: 0.3µm D: 0.01µm	Blank: PT G: G T: NPT
GPF300: 300 Series Oil mist filter		08: 1/4" 10: 3/8"				
GPF400: 400 Series Oil mist filter		10: 3/8" 15: 1/2"				

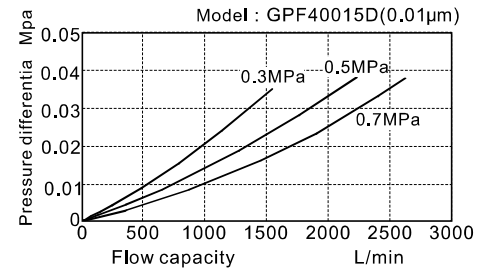
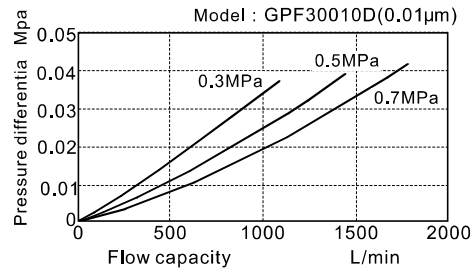
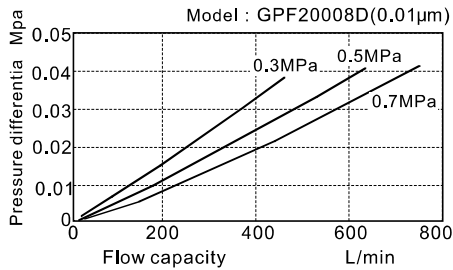
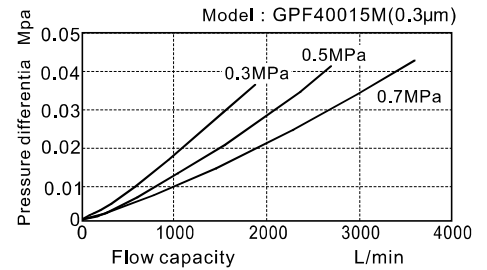
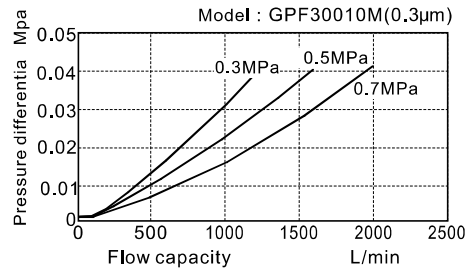
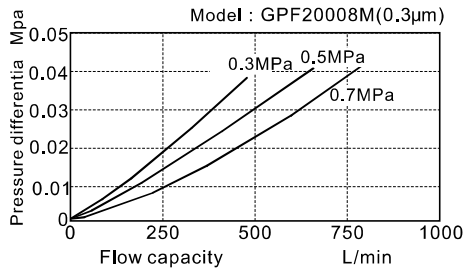
### Innerstructure



No.	Item	Material
1	Body	Aluminium alloy
2	O-ring	NBR
3	Meter cover	SPCC
4	Drain bowl	PC\nylon\aluminium alloy
5	Filter core	Polymer materials
6	Liquid meter inside cover	PC
7	Liquid meter seal	NBR
8	Liquid meter cover	SPCC
9	Drain connection	Plastic

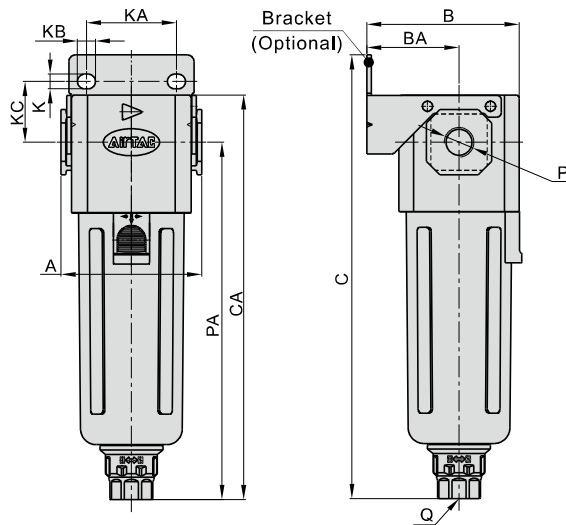
## GP Series Oil mist filter

### Flow chart

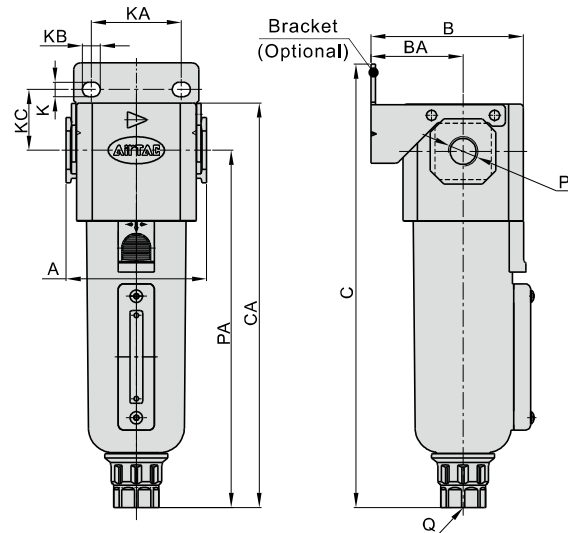


### Dimensions

#### PC bowl+Metallic bowl guard



#### Metallic bowl



Model/Item	A	B	BA	C	CA	K	KA	KB	KC	P	PA	Q
GPF200(C/N)06	52.5	54.5	33	150	137	5.4	27	8.4	23	1/8"	120	M5X0.8
GPF200(C/N)08	52.5	54.5	33	150	137	5.4	27	8.4	23	1/4"	120	M5X0.8
GPF300(C/N)08	62.5	67.5	41	197	179	6.5	40	8	27	1/4"	158	G1/4
GPF300(C/N)10	62.5	67.5	41	197	179	6.5	40	8	27	3/8"	158	G1/4
GPF400(C/N)10	80	84	50	220	202.5	8.5	55	11	33.5	3/8"	177.5	G1/4
GPF400(C/N)15	80	84	50	220	202.5	8.5	55	11	33.5	1/2"	177.5	G1/4

## GPR Series Precision Regulator



### Specification

Model	GPR20006	GPR30008	GPR40008	GPR40010	GPR40015
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Max. supply pressure	1.0MPa(145psi)				
Operating pressure	Lower pressure	0.005~0.2MPa(0.7~29psi)		0.01~0.2MPa(1.5~29psi)	
	Medium pressure	0.01~0.4MPa(1.5~58psi)			
	High pressure	0.01~0.8MPa(1.5~116psi)			
Sensitivity	Within 0.2%F.S.				
Repeatability	Within ±0.5%F.S.				
Air consumption (ANR)	≤4L/min	≤4L/min	≤9.5L/min	≤11.5L/min	
Temperature range	-20~70°C(Unfreeze)				
Weight	144g	336g	717g		

[Note1] PT thread, G thread and NPT thread are available.

### Symbol



### Product feature

1. High pressure regulating accuracy and rapid-response.
2. Good pressure and flow chart.
3. Easy installation, it can be installed independently by bracket or directly with existing filter combination components of module type.
4. In addition to high pressure type, the type of medium pressure and lower pressure can be selected.

### Ordering code

**GPR300 08 H □ □ G**

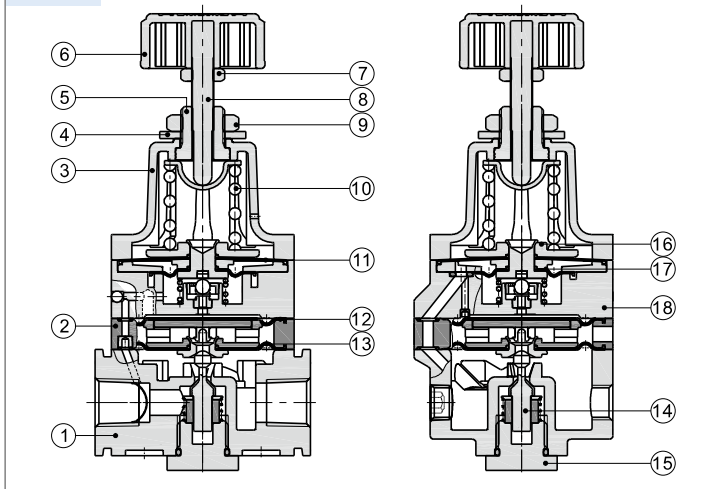
① ② ③ ④ ⑤ ⑥

① Model	② Port size	③ Regulating pressure range	④ Accessories	⑤ Pressure gauge	⑥ Thread type [Note1]
GPR200: 200 Series Precision Regulator	06: 1/8"	L: 0.005~0.2MPa(0.73~29psi) M: 0.01~0.4MPa(1.45~58psi)	Blank: Bracket J: No bracket	Blank: With pressure gauge N: Without pressure gauge	Blank: PT(Scale:MPa&psi) G: G(Scale:MPa&bar) T: NPT(Scale:bar&psi)
GPR300: 300 Series Precision Regulator	08: 1/4"	H: 0.01~0.8MPa(1.45~116psi)			
GPR400: 400 Series Precision Regulator	08: 1/4" 10: 3/8" 15: 1/2"	L: 0.01~0.2MPa(1.45~29psi) M: 0.01~0.4MPa(1.45~58psi) H: 0.01~0.8MPa(1.45~116psi)			

[Note1] Please consult us for special requirements.

### Inner structure

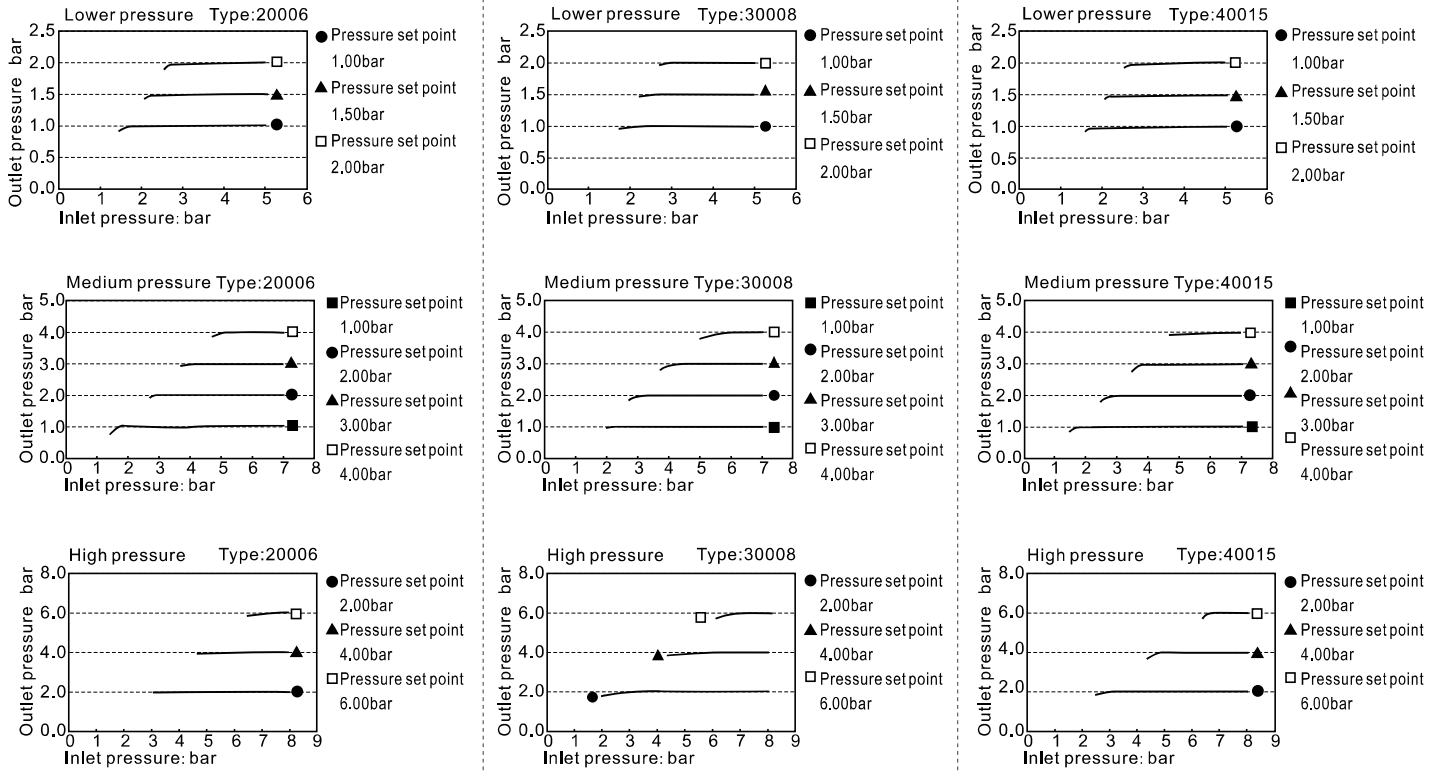
GPR300



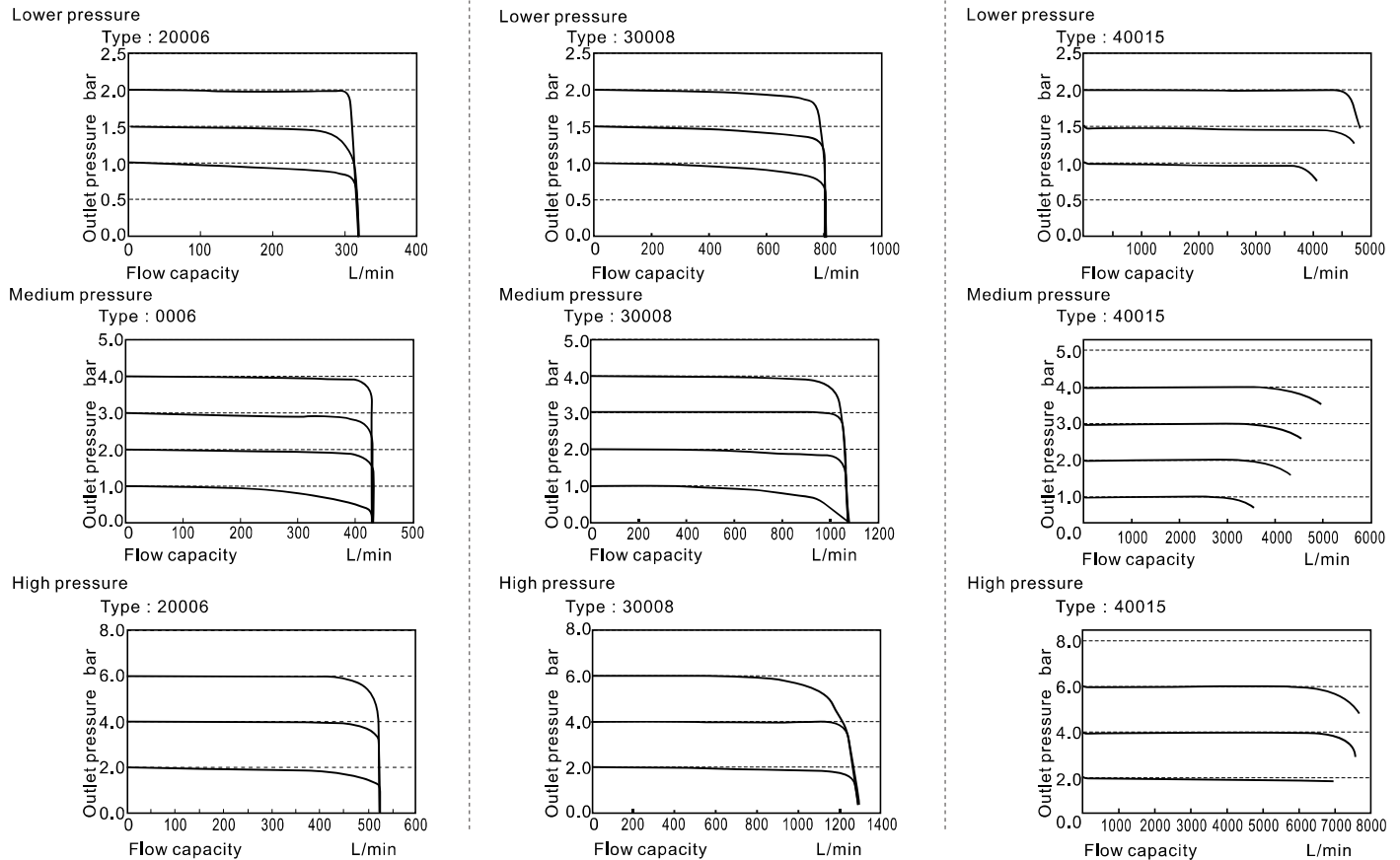
No.	Item	Material
1	Regulator body	Aluminum alloy
2	Pilot body	Plastic
3	Regulator seat	Aluminum alloy
4	Bracket gasket	SPCC
5	Adjusting nut	Carbon steel
6	Regulator knob	Plastic
7	Nut	Carbon steel
8	Regulator spindle	Carbon steel
9	Nut	Carbon steel
10	Spring	Spring steel
11	Pilot upper diaphragm	NBR
12	Regulator upper diaphragm	NBR
13	Regulator lower diaphragm	NBR
14	Spool	Stainless steel+NBR
15	Bonnet	Carbon steel
16	Pilot diaphragm upper hard core	Aluminum alloy
17	Pilot lower diaphragm	NBR
18	Nozzle body	Aluminum alloy

## GPR Series Precision Regulator

### Pressure chart



### Flow chart

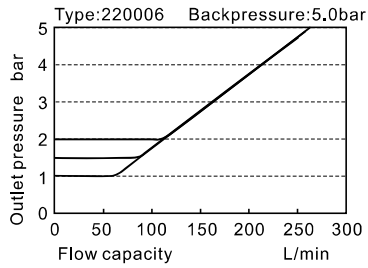




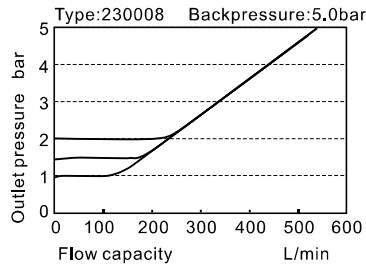
## GPR Series Precision Regulator

### Overflow chart

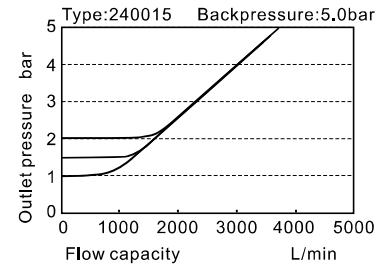
Lower pressure



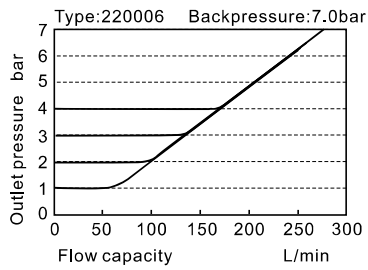
Lower pressure



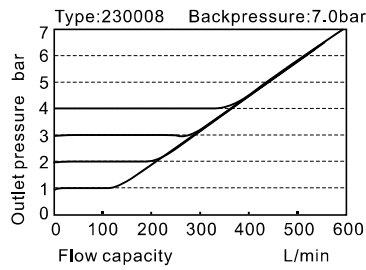
Lower pressure



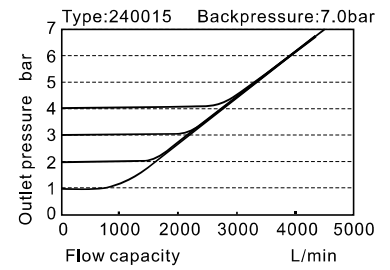
Medium pressure



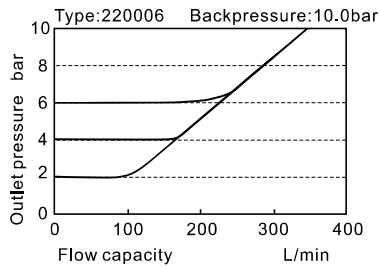
Medium pressure



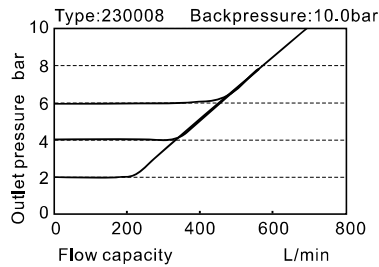
Medium pressure



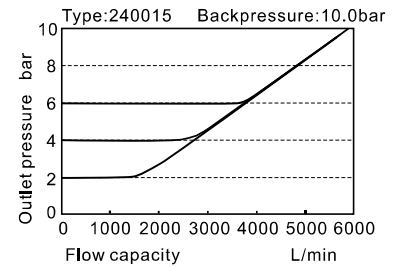
High pressure



High pressure



High pressure

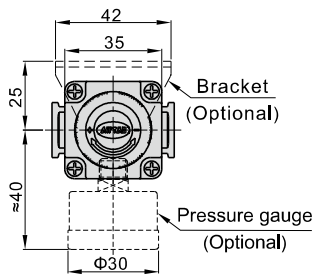
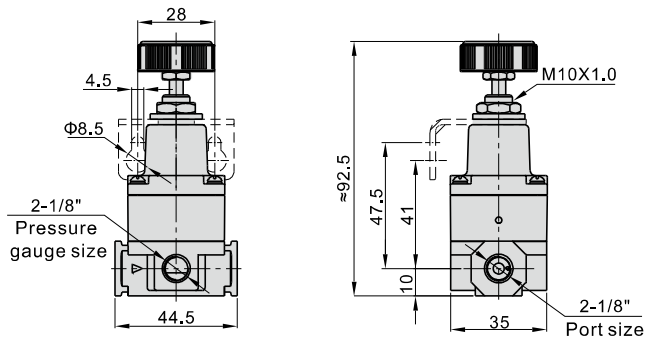


# Preparation unit—GP Series

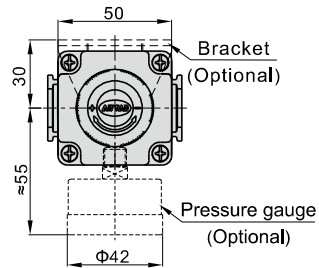
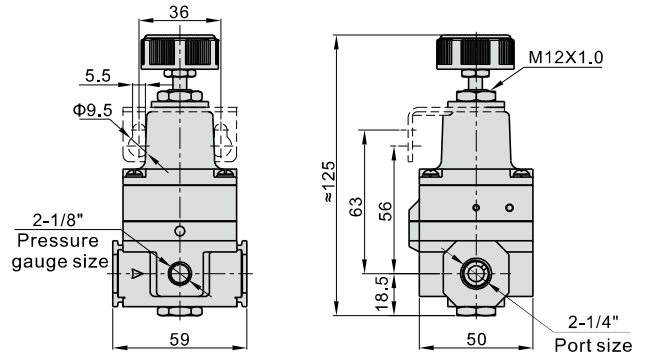
## GPR Series Precision Regulator

### Dimensions

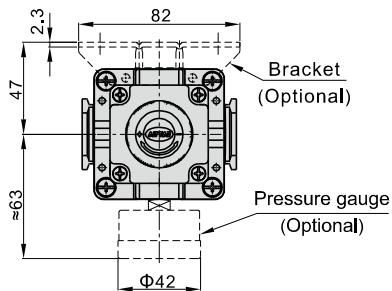
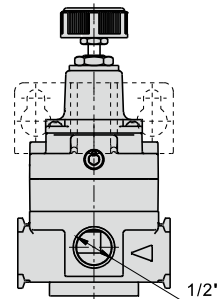
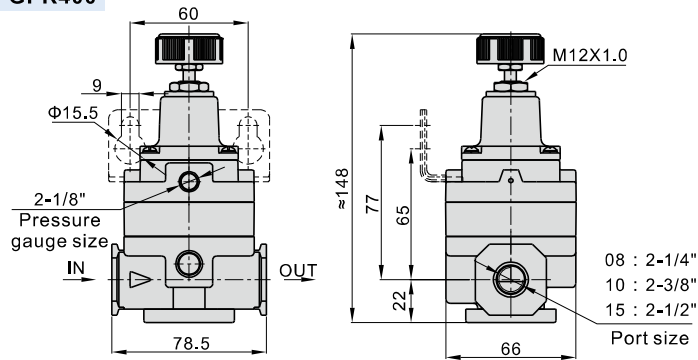
#### GPR200



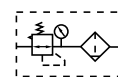
#### GPR300



#### GPR400



### Symbol



### Product feature

1. Circular square pressure gauge which with clip and magnifier is used to save installation space.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. Balanced design is adopted for the pressure adjustment mechanism.
4. Unique diversion structure spins the air flowing through to effectively separate the liquid from the air and reliably filter the solid grain.
5. The filtering grade includes 0.3 $\mu$ m and 0.01 $\mu$ m (optional).
6. Two drain types are available: semi-auto drain and automatic drain.
7. Three material of bowl are available: PC, Nylon and metal.
8. The bracket can be selected for installation.

### Specification

Model	GPFR200-06	GPFR200-08	GPFR300-08	GPFR300-10	GPFR400-10	GPFR400-15
Fluid	Air					
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	3/8"	1/2"
Filtering grade	0.3 $\mu$ m or 0.01 $\mu$ m					
Pressure range	0.15~0.9MPa(20~130psi)					
Max. pressure	1.0MPa(145psi)					
Proof pressure	1.5MPa(215psi)					
Temperature range	-5~70°C(Unfreeze)					
Rated flow capacity [Note2]	M	150L/min		330L/min		820L/min
	D	90L/min	D	180L/min		450L/min
Capacity of drain bowl	25CC		60CC		100CC	
Weight	310g		500g		910g	

[Note1] G thread, NPT thread and PT thread are available.

[Note2] Conditions: inlet pressure 0.7MPa, outlet pressure 0.5MPa. The rated flow varies with the inlet pressure. If the flow exceeds the rated flow, oil will flow to the secondary side. Please note.

### Ordering code

GPFR300 □ 10 □ S □ □ M G

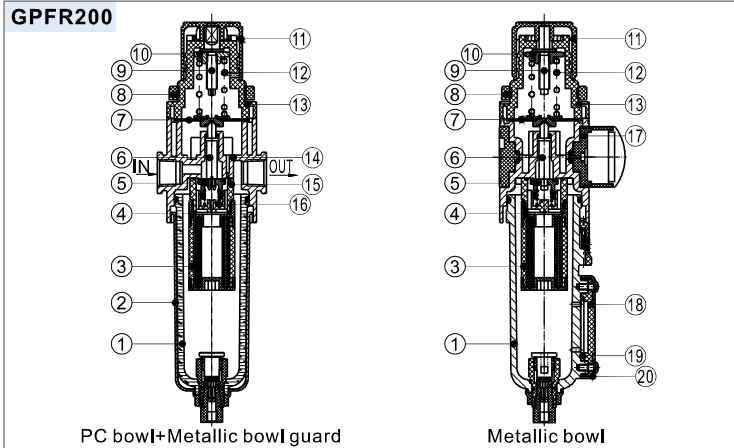
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model	② Material of bowl	③ Port size	④ Drain type	⑤ Type code	⑥ Accessories	⑦ Pressure gauge	⑧ Filtering grade	⑨ Thread type
GPFR200:GP200 Series Precision filter-regulator	Blank: PC N: Nylon C: Metal	06: 1/8" 08: 1/4"	Blank: Semi-auto drain +Manual drain	S: Standard L: Lower pressure [Note1]	Blank: Bracket J: No bracket	Blank: Circular with clip N: No pressure gauge [Note2]	M: 0.3 $\mu$ m D: 0.01 $\mu$ m	Blank: PT (MPa/psi) G: G(bar/MPa) T: NPT(psi/bar)
GPFR300:GP300 Series Precision filter-regulator		08: 1/4" 10: 3/8"						
GPFR400:GP400 Series Precision filter-regulator		10: 3/8" 15: 1/2"						

[Note1] The maximum work pressure of lower pressure type is 58psi(0.4MPa). [Note2] Please refer to page 246 for details of sealing plate installation.

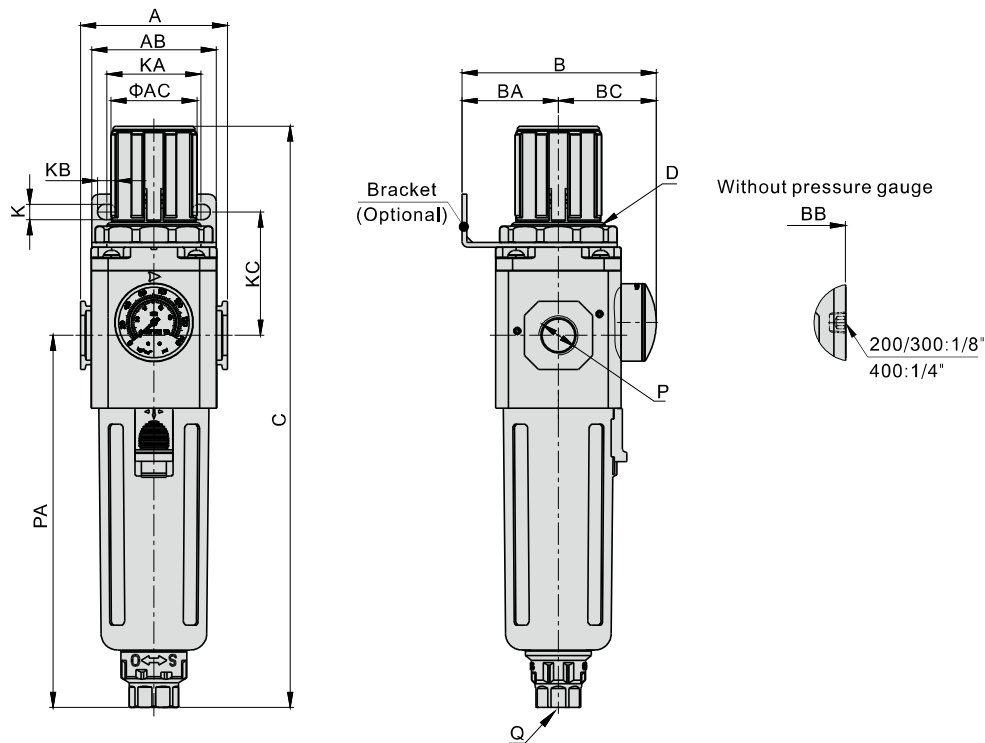
## GPFR Series Precision Filter & Regulator

### Inner structure



No.	Item	Material
1	Drain bowl	PC\nylon\aluminium alloy
2	Meter cover	SPCC
3	Filter core	Polymer materials
4	Gasket	NBR
5	Adjusting plug	Aluminum alloy & Rubber
6	Adjusting spool	POM
7	Diaphragm	NBR
8	Fixation ring cap	POM
9	Adjusting spindle	08A
10	Regulator nut	Steel
11	Pressure knob	POM
12	Spring	SWPB
13	Adjusting seat	POM
14	Body of filter-regulator	Aluminium alloy
15	Gas distribution	POM
16	Spring	SWPB
17	Gauge	-
18	Liquid meter inside cover	PC
19	Liquid meter seal	NBR
20	Liquid meter cover	SPCC

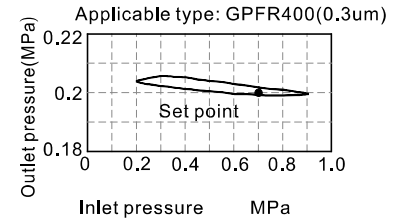
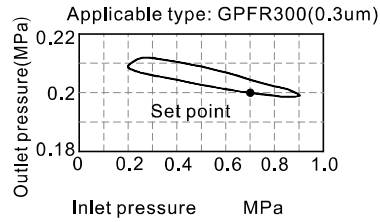
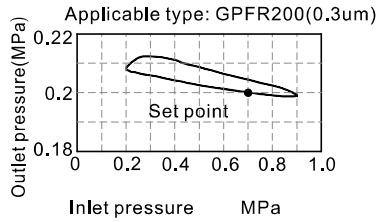
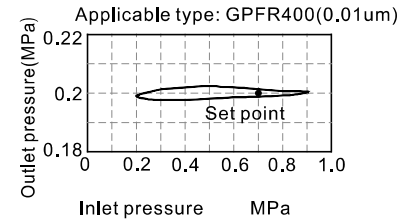
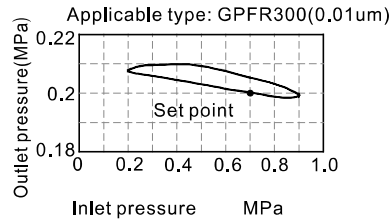
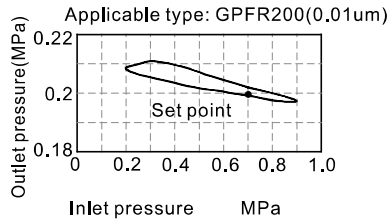
### Dimensions



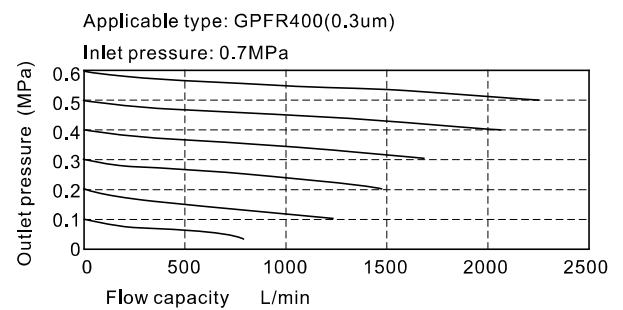
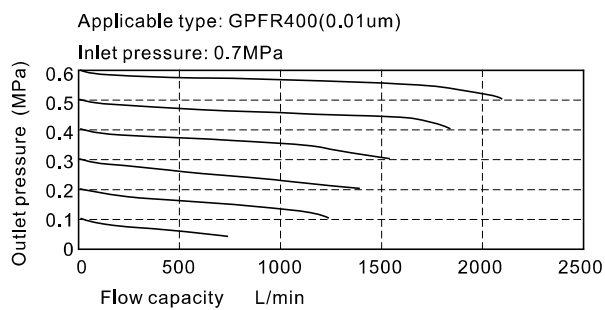
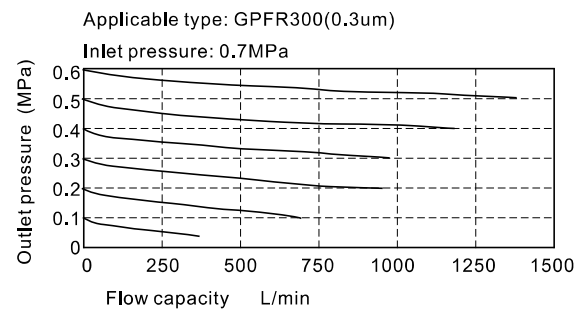
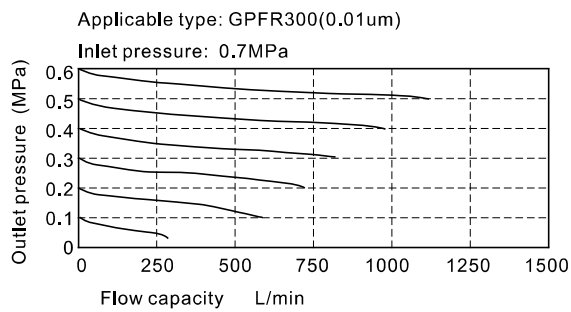
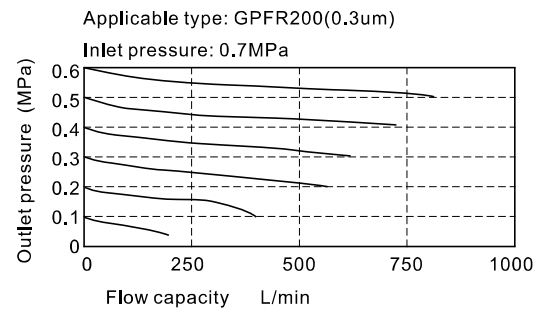
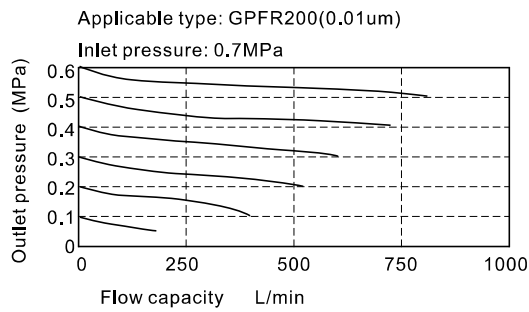
Model\Item	A	AB	AC	B	BA	BB	BC	C	D	K	KA	KB	KC	P	PA	Q
GPFR200-06	52.5	55	31	69	30	51.5	39	192.5	M33x1.5	5.4	34	15.4	52	1/8"	120	M5X0.8
GPFR200-08	52.5	55	31	69	30	51.5	39	192.5	M33x1.5	5.4	34	15.4	52	1/4"	120	M5X0.8
GPFR300-08	62.5	53	38	82.5	41	67.5	41.5	247	M40x1.5	6.5	40	8	52.5	1/4"	158	G1/4
GPFR300-10	62.5	53	38	82.5	41	67.5	41.5	247	M40x1.5	6.5	40	8	52.5	3/8"	158	G1/4
GPFR400-10	80	72	52	99	50	84	49	285.5	M55x2.0	8.5	55	11	57	3/8"	177.5	G1/4
GPFR400-15	80	72	52	99	50	84	49	285.5	M55x2.0	8.5	55	11	57	1/2"	177.5	G1/4

## GPFR Series Precision Filter & Regulator

### Pressure chart



### Flow chart





## Compendium of A, B Series preparation unit

P262	Product feature	Photo	P264	Product feature	Photo
AC, BC Series F.R.L Unit	<ul style="list-style-type: none"> <li>•The efficiency of water separating is high</li> <li>•The pressure loss is low</li> <li>•The flow of miststart is low</li> <li>•Convenient for installation and application</li> <li>•AC/BC series is optional</li> <li>•High-strength plastic shields is optional</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>		AFC, BFC Series FR.L Unit	<ul style="list-style-type: none"> <li>•The efficiency of water separating is high</li> <li>•The pressure loss is low</li> <li>•The flow of miststart is low</li> <li>•Convenient for installation and application</li> <li>•AFC/BFC series is optional</li> <li>•High-strength plastic shields is optional</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>	
P266	Product feature	Photo	P268	Product feature	Photo
AFR, BFR Series Filter-Regulator	<ul style="list-style-type: none"> <li>•The efficiency of water separating is high</li> <li>•The pressure loss is low</li> <li>•With fixing bracket convenient for use</li> <li>•AFR/BFR series is optional</li> <li>•High-strength plastic shields is optional</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>		AF, BF Series Filter	<ul style="list-style-type: none"> <li>•The pressure loss is low</li> <li>•High-strength plastic shields is optional</li> <li>•The filter precision includes 5μm and 40μm(optional)</li> <li>•AF/BF series is optional</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>	
P269	Product feature	Photo	P271	Product feature	Photo
AR, BR Series Regulator	<ul style="list-style-type: none"> <li>•Adjusting pressure steadily</li> <li>•Faceplate fixing and bracket fixing is optional</li> <li>•Standard type, lower pressure type is optional</li> <li>•AR/BR series is optional</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>		AL, BL Series Lubricator	<ul style="list-style-type: none"> <li>•The flow of miststart is low</li> <li>•The pressure loss is low</li> <li>•High-strength plastic shields is optional</li> <li>•AL/BL series is optional</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>	

## Installation and application

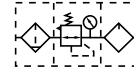


1. Check whether the components have been damaged during transportation before installing and using.
2. Pay attention to whether the flow direction of air (notice "→" direction) and thread type are correct.
3. Please notice whether installation condition accords with technical requirements (such as "working pressure" and "applied temperature range").
4. The medium used or installation environment shall be noticed. The matters with chlorine, carbon compound, aromatic compound and oxidizing acid and alkali shall be avoided to prevent the damage of bowl and oil bowl.
5. Regularly clean or change filter core. Lubricators and regulators shall be in descending order.
6. Keep dust away. The dust cover shall be installed in intake and outlet when the device is dismantled and stored.





### Symbol



### Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. The pressure loss is low and the efficiency of water separating is high.
4. The quantity of oil dripping can be directly observed through transparent check-dome.
5. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4MPa).

### Specification

Model	Ac1500	AC2000	BC2000	BC3000	BC4000	
Fluid	Air					
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	
Filtering grade	40μm or 5μm					
Pressure range	Semi-auto and automatic drain:0.15~0.9MPa(20~130Psi) Manual drain:0.05~0.9MPa(7~130Psi)					
Max. pressure	1.0MPa(145Psi)					
Proof pressure	1.5MPa(215Psi)					
Temperature range	-5~70°C(unfreeze)					
Capacity of drain bowl	15CC		60CC			
Capacity of oil bowl	25CC		90CC			
Recommended lubricant	ISO VG 32 or equivalent					
Weight	700g		900g			
Constitute	Filter	AF1500	AF2000	BF2000	BF3000	BF4000
	Regulator	AR1500	AR2000	BR2000	BR3000	BR4000
	Lubricator	AL1500	AL2000	BL2000	BL3000	BL4000

[Note1] PT thread, G thread and NPT thread are available.

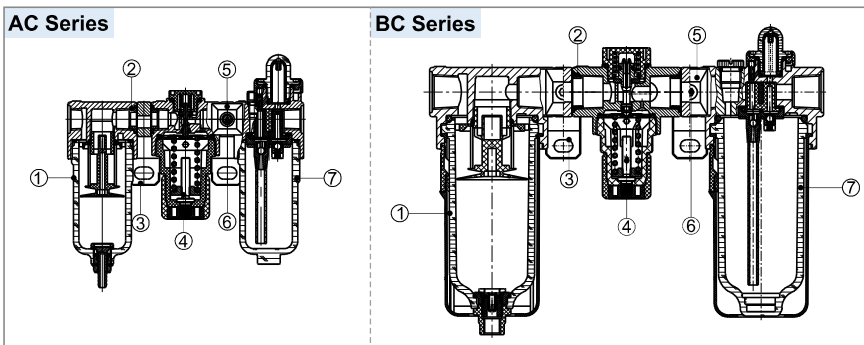
### Ordering code

AC 2000 M □ □ 1 W □



① Model	② Port size	③ Drain type	④ Type code	⑤ Pressure gauge	⑥ Scale	⑦ Filtering grade	⑧ Thread type
AC: A Series F.R.L unit	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: Standard (0.9MPa)	Blank: Pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm <sup>2</sup> & psi	Blank: 40μm W : 5μm	Blank: PT (Scale: MPa or kgf/cm <sup>2</sup> & psi) G: G(Scale:bar) T: NPT(Scale:psi)
BC: B Series F.R.L unit	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain	L: Lower pressure (0.4MPa)	N: No pressure gauge			

### Inner structure

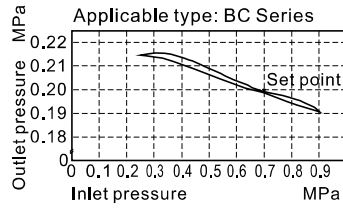
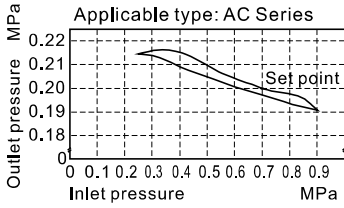


No.	Item	No.	Item
1	AF, BF Series filter	5	A, B Series fix kit
2	A, B Series gasket	6	Screw
3	A, B Series bracket	7	AL, BL Series lubricator
4	AR, BR Series regulator		

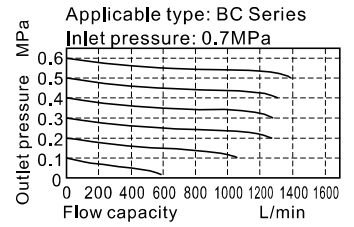
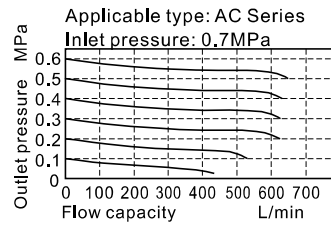
## AC、BC Series F.R.L. Combination

### Pressure and feature of flow

#### Pressure chart



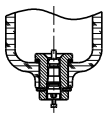
#### Flow chart



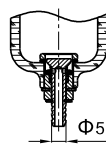
### Selection of drain mode

#### AC Series

Manual drain



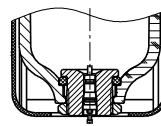
Semi-auto drain



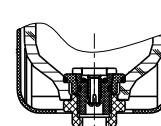
This semi-auto drain can also achieve the function of manual drain. PU tube with an inner diameter of Φ4mm is recommended

#### BC Series

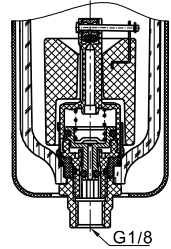
Manual drain



Semi-auto drain

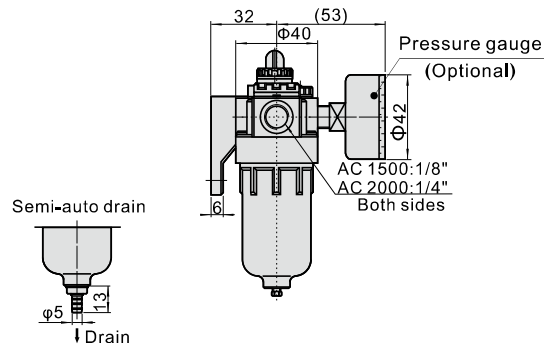
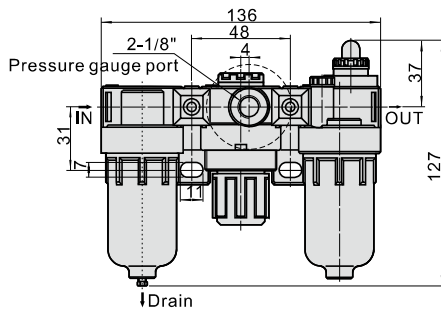


Automatic drain

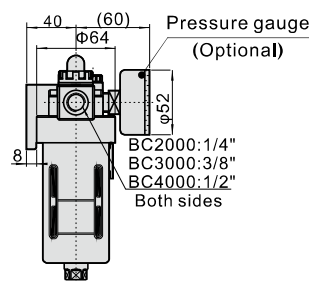
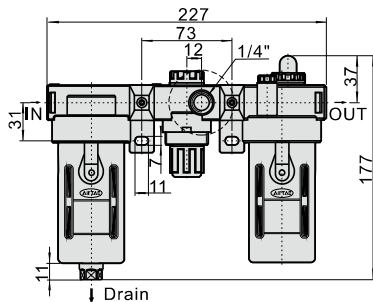


### Dimensions

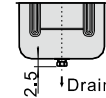
#### AC Series



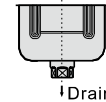
#### BC Series



Standard manual drain

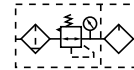


Automatic drain  
Semi-auto drain





### Symbol



### Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. The pressure loss is low and the efficiency of water separating is high.
4. The quantity of oil dripping can be directly observed through transparent check dome.
5. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4MPa).

### Specification

Model	AFC1500	AFC2000	BFC2000	BFC3000	BFC4000	
Fluid	Air					
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"	
Filtering grade	40μm or 5μm					
Pressure range	Semi-auto and automatic drain:0.15~0.9MPa(20~130Psi) Manual drain:0.05~0.9MPa(7~130Psi)					
Max. pressure	1.0MPa(145Psi)					
Proof pressure	1.5MPa(215Psi)					
Temperature range	-5~70°C(unfreeze)					
Capacity of drain bowl	15CC		60CC			
Capacity of oil bowl	25CC		90CC			
Recommended lubricant	ISO VG 32 or equivalent					
Weight	500g			700g		
Constitute	Filter-Regulator	AFR1500	AFR2000	BFR2000	BFR3000	BFR4000
	Lubricator	AL1500	AL2000	BL2000	BL3000	BL4000

[Note1] PT thread, G thread and NPT thread are available.

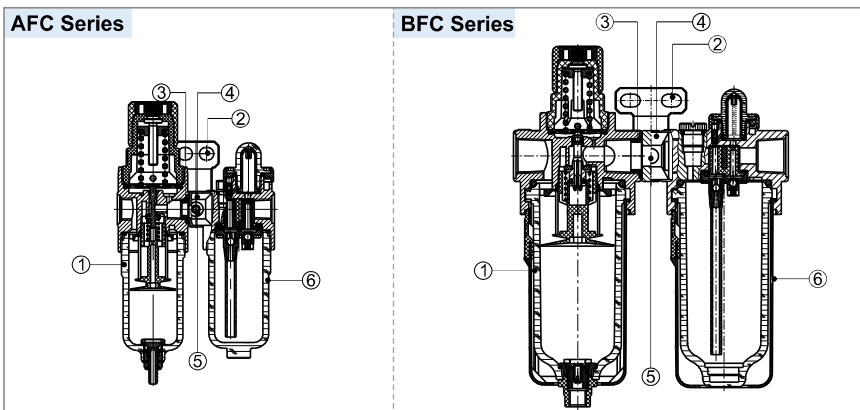
### Ordering code

AFC 2000 M □ □ 1 W □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Model	② Port size	③ Drain type	④ Type code	⑤ Pressure gauge	⑥ Scale	⑦ Filtering grade	⑧ Thread type
AFC: A Series FR.L unit	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: Standard (0.9MPa)	Blank: Pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm <sup>2</sup> & psi	Blank: 40μm W : 5μm	Blank: PT (Scale: MPa or kgf/cm <sup>2</sup> & psi) G: G(Scale:bar) T: NPT(Scale:psi)
BFC: B Series FR.L unit	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain	L: Lower pressure (0.4MPa)	N: No pressure gauge			

### Inner structure

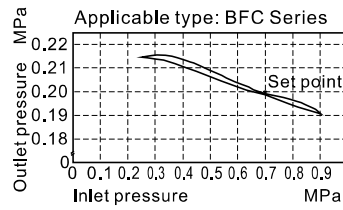
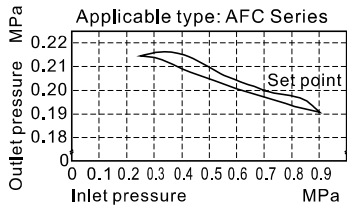


No.	Item
1	AFR, BFR Series filter & regulator
2	A, B Series bracket
3	A, B Series gasket
4	A, B Series fixed kit
5	Screw
6	AL, BL Series lubricator

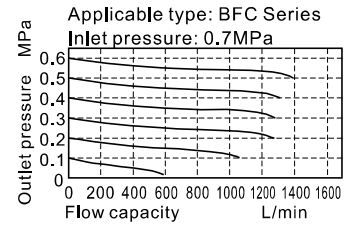
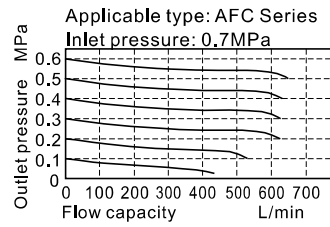
## AFC、BFC Series FR.L. Combination

### Pressure and feature of flow

#### Pressure chart



#### Flow chart

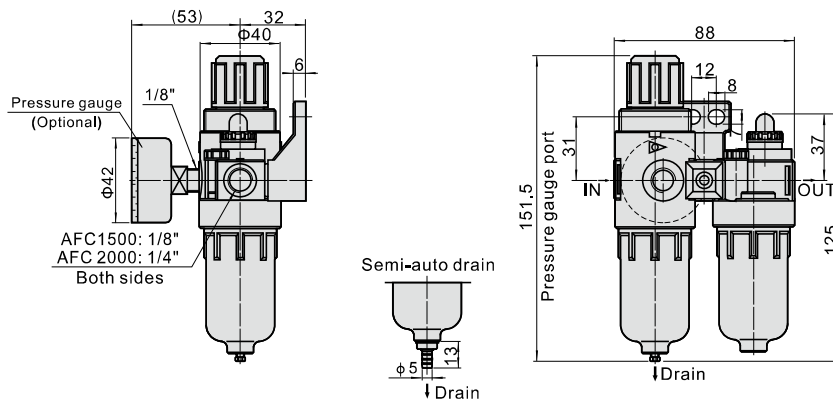


### Selection of drain mode

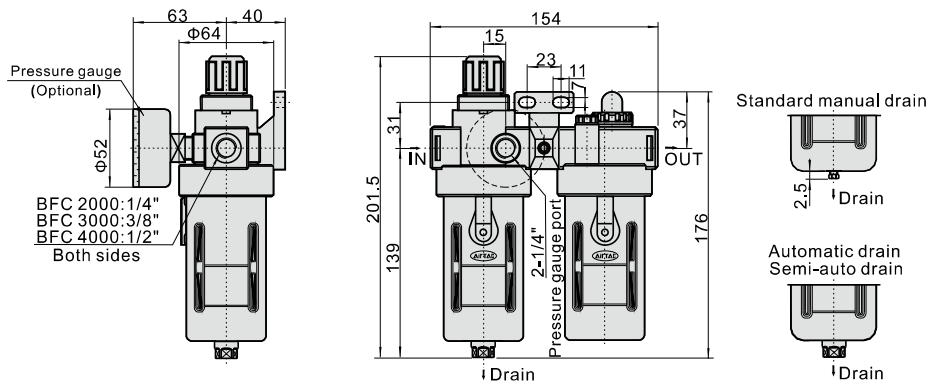
The drain modes of different series are different. Please refer to P263 for details.

### Dimensions

#### AFC Series



#### BFC Series



## AFR、BFR Series Filter & regulator



### Symbol



### Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. The pressure loss is low and the efficiency of water separating is high;
4. In addition to standard type, lower pressure type is optional(The highest adjustable pressure is 0.4MPa).

### Specification

Model	AFR1500	AFR2000	BFR2000	BFR3000	BFR4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade	40μm or 5μm				
Pressure range	Semi-auto and automatic drain:0.15~0.9MPa(20~130Psi) Manual drain:0.05~0.9MPa(7~130Psi)				
Max. pressure	1.0MPa(145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-5~70°C(unfreeze)				
Capacity of drain bowl	15CC		60CC		
Weight	260g		400g		

[Note1] PT thread, G thread and NPT thread are available.

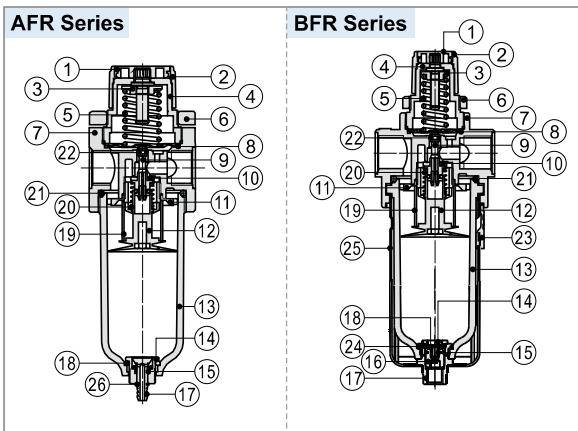
### Ordering code

AFR 2000 M □ □ □ 1 W □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model	② Port size	③ Drain type	④ Type code	⑤ Accessories	⑥ Pressure gauge	⑦ Scale	⑧ Filtering grade	⑨ Thread type
AFR: A Series Filter & regulator	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: Standard (0.9MPa)	Blank: Bracket J: No bracket	Blank: Pressure gauge N: No pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm <sup>2</sup> & psi	Blank: 40μm W : 5μm	Blank: PT (Scale: Mpa or kgf/cm <sup>2</sup> & psi) G: G(Scale:bar) T: NPT(Scale:psi)
BFR: B Series Filter & regulator	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain	L: Lower pressure (0.4MPa)					

### Inner structure

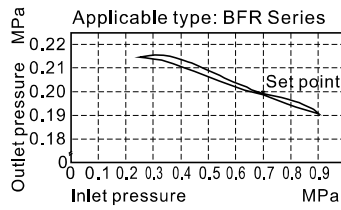
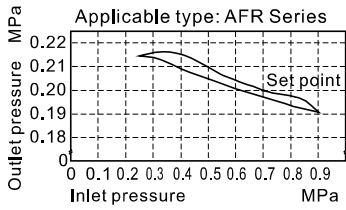


No.	Item	Material	No.	Item	Material
1	Push button	POM	14	Drain kit	A:Steel/B:POM
2	Adjusting button	POM	15	Return spring	Stainless steel
3	Adjusting nut	08A	16	Drain seat	A:Steel/B:POM
4	Adjusting seat	POM	17	Drain pillar	POM
5	Adjusting spring	SWC	18	Drain O-ring	NBR
6	Fixed ring	POM	19	Filter element	5μm HDPE
7	Body	Aluminum alloy			40μm HDPE
8	Diaphragm	Stainless steel & rubber	20	Return spring	Stainless steel
9	Balance needle	POM	21	Drain bowl O-ring	NBR
10	Needle gasket	Aluminum alloy & rubber	22	Needle O-ring	NBR
11	Air guider	POM	23	Bowl guard switch	POM
12	Umbrella baffle	POM	24	Gasket	POM
13	Drain bowl	PC	25	Bowl guard	PA66
			26	Clip	Spring steel

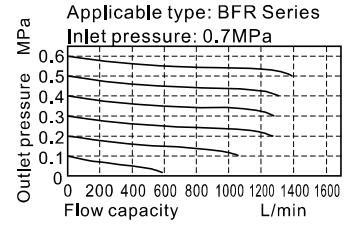
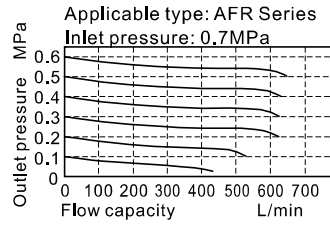
## AFR、BFR Series Filter & regulator

### Pressure and feature of flow

#### Pressure chart



#### Flow chart

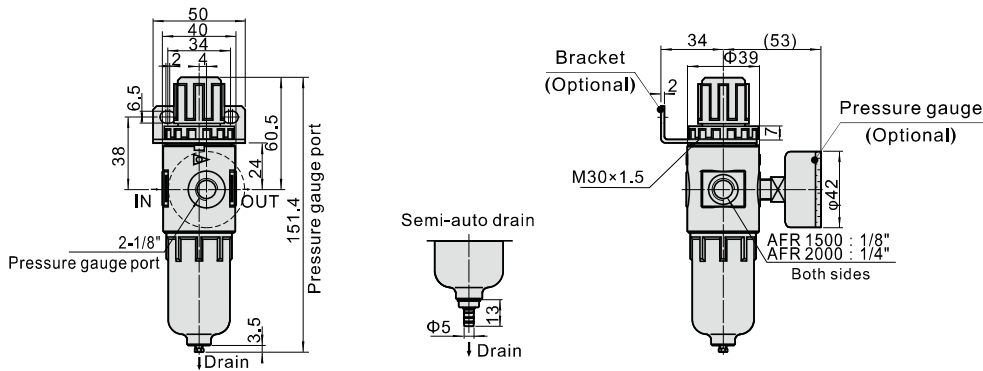


### Selection of drain mode

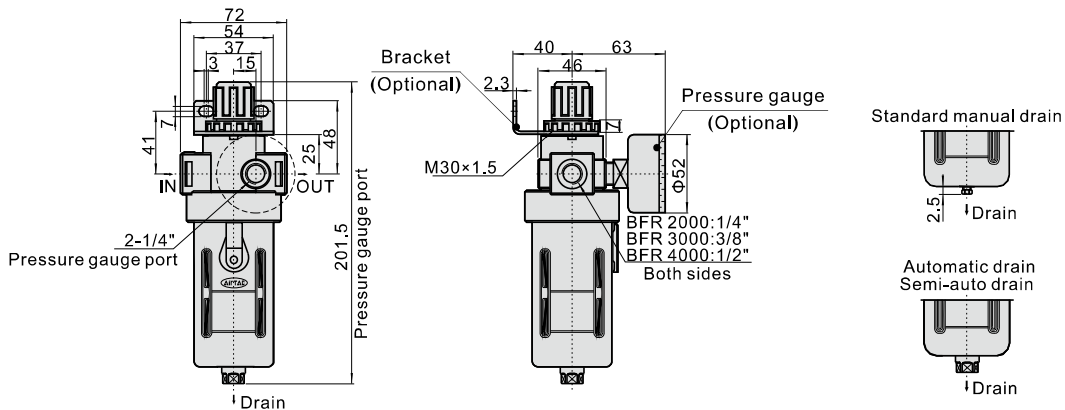
The drain modes of different series are different. Please refer to P263 for details.

### Dimensions

#### AFR Series



#### BFR Series





## AF、BF Series Filter



### Symbol



### Product feature

#### AF Series

1. The structure is delicate and compact.
2. The pressure loss is low and the efficiency of water separating is high;
3. The filter precision includes 5μm and 40μm(optional);

#### BF Series

1. The pressure loss is low and the efficiency of water separating is high.
2. The bowl has high-strength plastic shields outside, which is more safe and reliable to use.
3. The filter precision includes 5μm and 40μm (optional).

### Specification

Model	AF1500	AF2000	BF2000	BF3000	BF4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade	40μm or 5μm				
Pressure range	Semi-auto and automatic drain:0.15~1.0MPa(20~145Psi) Manual drain:0~1.0MPa(0~145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-5~70°C(unfreeze)				
Capacity of drain bowl	15CC			60CC	
Weight	140g			330g	

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

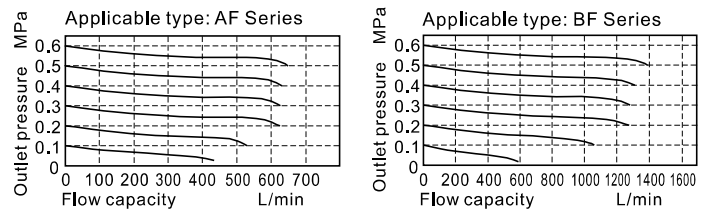
**AF 2000 M W □**

① ② ③ ④ ⑤

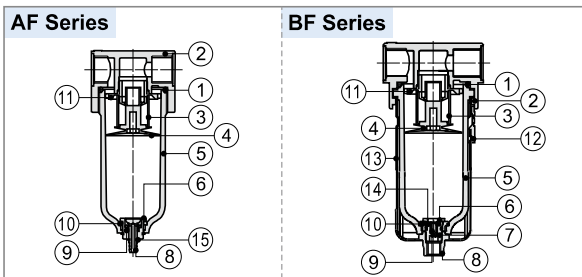
① Model	② Port size	③ Drain type [Note]	④ Filtering grade	⑤ Thread type
AF:A Series Filter	1500: 1/8" 2000: 1/4"	Blank: Semi-auto drain M: Manual drain	Blank: 40μm W: 5μm	Blank: PT G: G T: NPT
BF:B Series Filter	2000: 1/4" 3000: 3/8" 4000: 1/2"	Blank: Semi-auto drain M: Manual drain A: Automatic drain		

[Note1] The drain modes of different series are different. Please refer to P263 for details.

### Flow chart

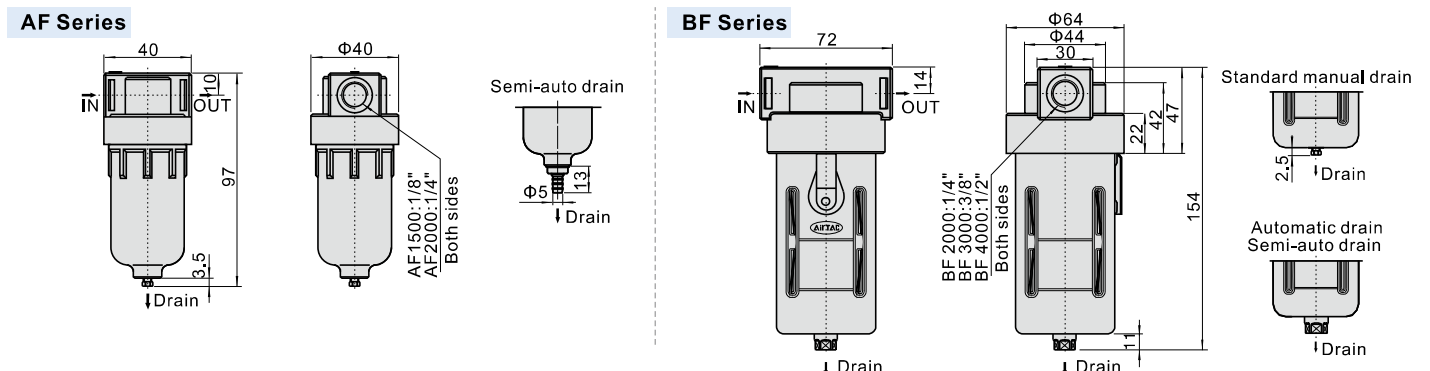


### Inner structure



No.	Item	Material	No.	Item	Material
1	Drain bowl O-ring	NBR	8	Drain pillar	POM
2	Body	Aluminum alloy	9	Return spring	Stainless steel
3	Filter element	5μm	10	Gasket	POM
		40μm	11	Air guider	POM
4	Umbrella baffle	POM	12	Bowl guard switch	POM
5	Drain bowl	PC	13	Bowl guard	Pa66
6	Drain kit	Steel/POM	14	Drain seat O-ring	NBR
7	Drain seat	Steel/POM	15	Clip	Spring steel

### Dimensions



## AR、BR Series Regulator



### Symbol



### Product feature

1. The structure is delicate and compact, which is convenient for installation and application.
2. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
3. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4MPa).

### Specification

Model	AR1500	AR2000	BR2000	BR3000	BR4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Pressure range	0.05~0.9MPa(7~130Psi)				
Max. pressure	1.0MPa(145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-20~70°C				
Weight	200g		230g		

[Note1] PT thread, G thread and NPT thread are available.

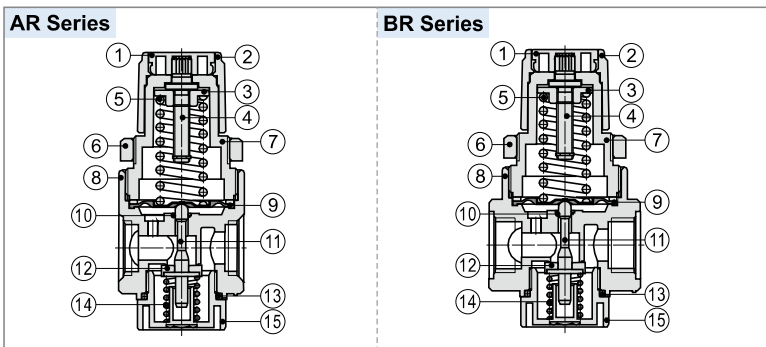
### Ordering code

AR 2000 L □ □ 1 □



① Model	② Port size	③ Type code	④ Accessories	⑤ Pressure gauge	⑥ Scale	⑦ Thread type
AR : A Series Regulator	1500: 1/8" 2000: 1/4"	Blank: Standard (0.9MPa) L: Lower pressure (0.4MPa)	Blank: Bracket J: No bracket	Blank: Pressure gauge N: No pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm <sup>2</sup> & psi	Blank: PT (Scale: Mpa or kgf/cm <sup>2</sup> & psi) G: G(Scale:bar) T: NPT(Scale:psi)
BR : B Series Regulator	2000: 1/4" 3000: 3/8" 4000: 1/2"					

### Inner structure

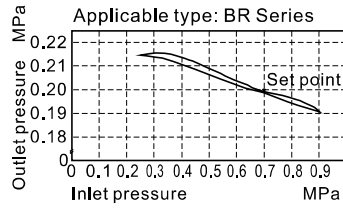
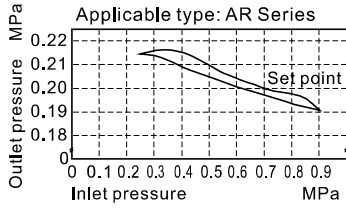


No.	Item	Material
1	Push button	POM
2	Adjusting button	POM
3	Adjusting nut	08A
4	Adjusting pillar	08A
5	Adjusting spring	SWC
6	Fixed ring	POM
7	Adjusting seat	POM
8	Body	Aluminum alloy
9	Diaphragm	Stainless steel & rubber
10	Needle O-ring	NBR
11	Balance needle	Aluminum alloy & rubber
12	Needle gasket	Aluminum alloy & rubber
13	Cap O-ring	NBR
14	Return spring	Stainless steel
15	Regulator cap	POM

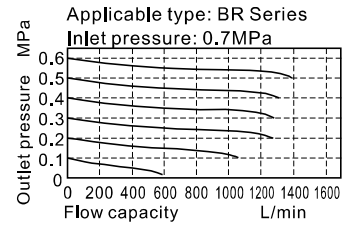
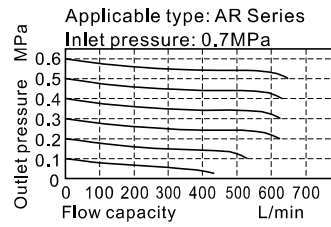
## AR、BR Series Regulator

### Pressure and feature of flow

#### Pressure chart

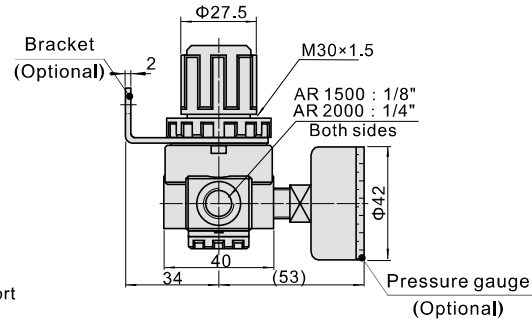
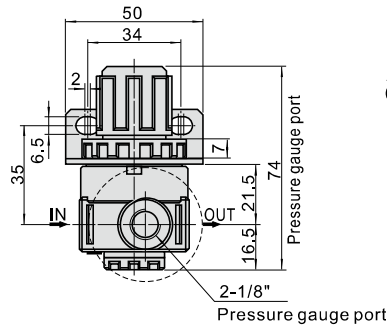


#### Flow chart

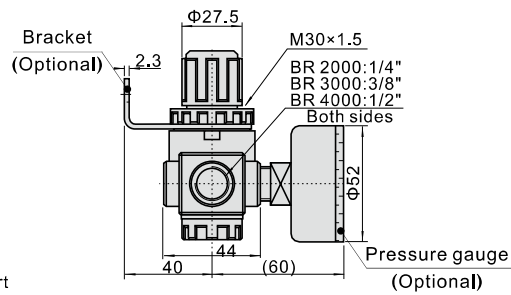
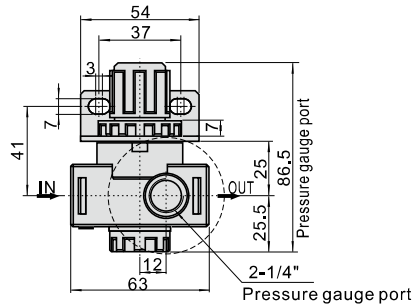


### Dimensions

#### AR Series



#### BR Series



# Preparation unit——A, B Series

## AL、BL Series Lubricator



### Specification

Model	AL1500	AL2000	BL2000	BL3000	BL4000
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Pressure range	0.05~1.0MPa(7~145Psi)				
Proof pressure	1.5MPa(215Psi)				
Temperature range	-5~70°C(unfreeze)				
Capacity of oil bowl	25CC		90CC		
Recommended lubricant	ISO VG 32 or equivalent				
Weight	170g			250g	

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

AL 2000 □

① ② ③

① Model	② Port size	③ Thread type
AL : A Series Lubricator	1500: 1/8" 2000: 1/4"	Blank: PT G: G T: NPT
BL : B Series Lubricator	2000: 1/4" 3000: 3/8" 4000: 1/2"	

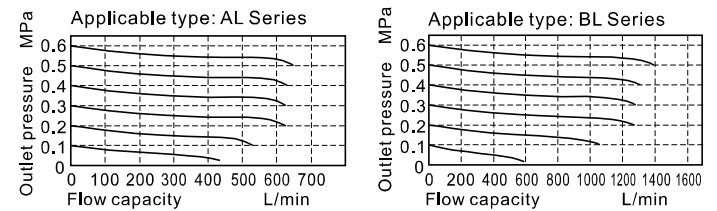
### Symbol



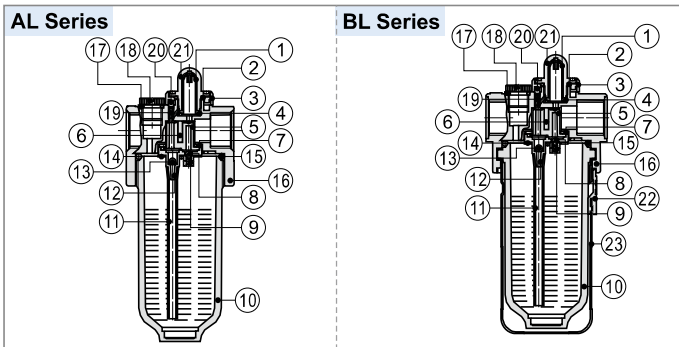
### Product feature

1. The structure is delicate and compact.
2. The quantity of oil dripping can be directly observed through transparent inspection sheet.
3. BL has high-strength plastic shields, which is more safe and reliable to use.
4. The pressure loss and the flow of miststart is low.

### Flow chart



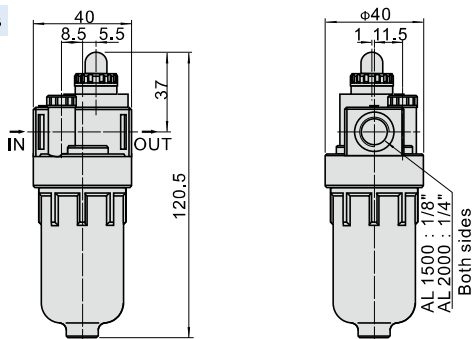
### Inner structure



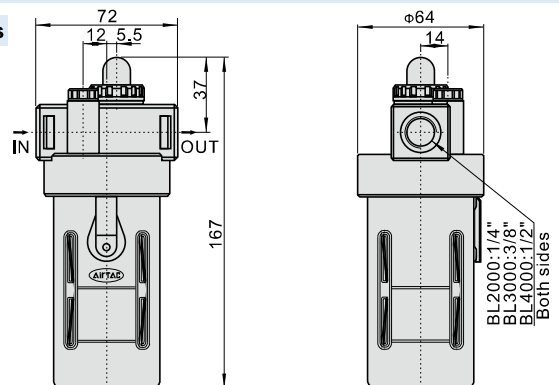
No.	Item	Material	No.	Item	Material
1	Drip pipe	PC	13	Ball	Stainless steel
2	Dripper O-ring	NBR	14	Lubricator fixed plate	SPCC
3	Oil adjusting dial	POM	15	Oil bowl O-ring	NBR
4	Adjusting ring	NBR	16	Body	Aluminum alloy
5	Lubricator seat	POM	17	Oil filling nut O-ring	NBR
6	Partition	PU	18	Oil filling plug	Steel
7	Lubricator kit gasket	NBR	19	Needle spring	Stainless steel
8	Adjustor	HDPE	20	Injector pin	Bronze
9	Return spring	Stainless steel	21	Check-dome	PC
10	Oil bowl	PC	22	Bowl guard switch	POM
11	Sunk tube	PU	23	Bowl guard	PA66
12	Lubricator kit	POM			

### Dimensions

#### AL Series



#### BL Series





## Compendium of Other Series preparation unit

P273	Product feature	Photo	P274	Product feature	Photo
SR200 Series Regulator	<ul style="list-style-type: none"> <li>•Delicate and compact design</li> <li>•Panel support or be used in pipeline</li> <li>•Adjustment is reliable and steady.</li> <li>•Standard and lower pressure type are available</li> <li>•Port size: 1/8" 1/4"</li> </ul>		SDR Series Regulator	<ul style="list-style-type: none"> <li>•Back pressure structure</li> <li>•Compact type, cost-effective</li> <li>•Broad regulating range</li> <li>•Standard and lower pressure type are available</li> <li>•Single unit installation</li> <li>•Port size: M5 1/8" 1/4"</li> </ul>	
P276	Product feature	Photo	P280	Product feature	Photo
DPS Series Digital Display Pressure Sensor	<ul style="list-style-type: none"> <li>•PNP、NPN Output type</li> <li>•Terminal and grommet to be choused</li> <li>•Wide measurement range</li> <li>•Higher precision</li> <li>•Digital Display type Precision and intuitionistic</li> </ul>		DPH Series digital display pressure sensor (Analog output)	<ul style="list-style-type: none"> <li>•PNP、NPN Output type</li> <li>•Terminal and grommet to be choused</li> <li>•Wide measurement range</li> <li>•Higher precision</li> <li>•Digital Display type Precision and intuitionistic</li> </ul>	
P287	Product feature	Photo	P288	Product feature	Photo
GS, GF, GU GP, GV Series Pressure gauge	<ul style="list-style-type: none"> <li>•Sensitive reaction Can work under low pressure</li> <li>•Several pressure units to be selected</li> <li>•Several installation ways</li> <li>•Several installation accessories to be selected</li> <li>•Various dimensions of screw thread are available</li> </ul>		GVF Series Vacuum filter	<ul style="list-style-type: none"> <li>•Low pressure loss ,high efficiency in separating water</li> <li>•5μm and 40μm filtering grade(Optional)</li> <li>•With fixing bracket</li> <li>•200/300 Series</li> <li>•Port size: 1/8" 1/4" 3/8" 1/2"</li> </ul>	
P290	Product feature	Photo			
GVR Series Vacuum regulator	<ul style="list-style-type: none"> <li>•In addition to panel installation, the bracket is optional for installation.</li> <li>•Suitable to adjust the vacuum pressure.</li> <li>•The pressure regulation is stable, the drift is small and the pressure characteristic is good.</li> <li>•Port size: 1/8" 1/4" 3/8"</li> </ul>				

## Installation and application



1. Check whether the components have been damaged during transportation before installing and using.
2. Pay attention to whether the flow direction of air (notice "→" direction) and thread type are correct.
3. Please notice whether installation condition accords with technical requirements (such as "working pressure" and "applied temperature range").
4. The medium used or installation environment shall be noticed. The matters with chlorine, carbon compound, aromatic compound and oxidizing acid and alkali shall be avoided to prevent the damage of bowl and oil bowl.
5. Regularly clean or change filter core. Lubricators and regulators shall be in descending order.
6. Keep dust away. The dust cover shall be installed in intake and outlet when the device is dismantled and stored.

## SR Series regulator



### Symbol



### Product feature

1. Panel support can be chosen for the installation of regulator with independent use in pipeline.
2. The structure is delicate and compact, which is convenient for installation and application.
3. The performance of pressure adjustment is reliable and steady.
4. In addition to standard type, lower pressure type is optional (The highest adjustable pressure is 0.4 MPa).

### Specification

Model	SR200-06	SR200-06L	SR200-08	SR200-08L
Fluid	Air			
Port size [Note1]	1/8"		1/4"	
Pressure range	Standard type:0.05~0.9MPa(7~130psi) ; Lower pressure type:0.03~0.4MPa(4~57psi)			
Max. pressure	1.0MPa(145psi)			
Proof pressure	1.5MPa(215psi)			
Temperature range	-20~70°C			

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

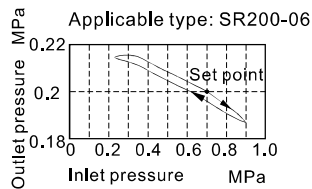
SR 200 08 L □ □ 1 □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

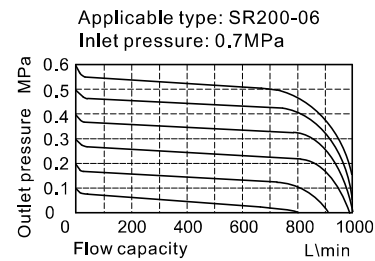
① Model	② Series code	③ Port size	④ Type code	⑤ Accessories	⑥ Pressure gauge	⑦ Scale	⑧ Thread type
SR: Regulator (Mini type)	200: 200 Series	06: 1/8" 08: 1/4"	Blank: Standard L: Lower pressure	Blank: Bracket J: No bracket	Blank: Pressure gauge N: No pressure gauge	1: MPa 2: psi 3: bar 4: kgf/cm <sup>2</sup> & psi	Blank: PT (Scale: Mpa or kgf/cm <sup>2</sup> & psi) G: G (Scale: bar) T: NPT (Scale: psi)

### Pressure and feature of flow

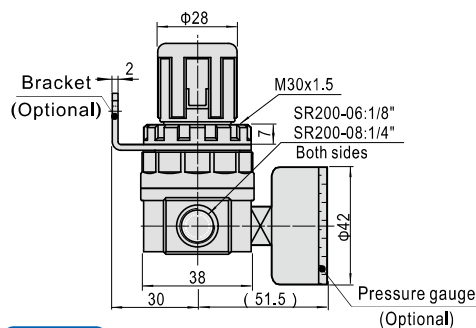
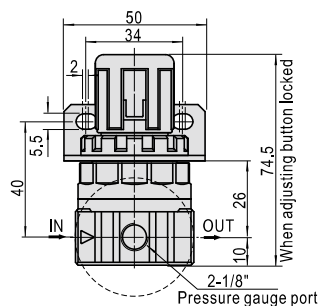
#### Pressure chart



#### Flow chart



### Dimensions





## SDR Series regulator



### Symbol



### Product feature

1. Back pressure structure, compact type, cost-effective, installation time saving.
2. Broad regulating range; low-pressure type is optional other than the standard type; stable output pressure; applicable to situation which has low expectation on output pressure but high expectation on performance and cost-effectiveness.
3. Single unit installation; easy to mount

### Specification

Model	SDR100M5	SDR10006	SDR20006	SDR20008	SDR100M5L	SDR10006L	SDR20006L	SDR20008L
Fluid	Air							
Pressure range	0.05~0.9MPa(7~130psi)				0.03~0.4MPa(4~57psi)			
Max. pressure					1.0MPa(145psi)			
Proof pressure					1.5MPa(215psi)			
Temperature range	-20~70°C							
Port size [Note1]	M5	1/8"		1/4"	M5	1/8"		1/4"

[Note1] PT thread, G thread and NPT thread are available.

### Ordering code

SDR 200 08 L □ □ 1 □

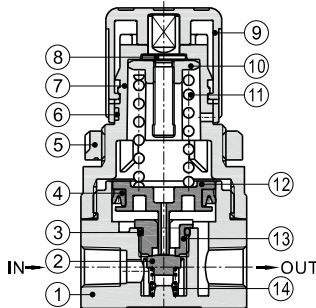
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Model	② Series code	③ Port size	④ Type code	⑤ Accessories	⑥ Pressure gauge	⑦ Scale[Note]	⑧ Thread type
SDR: SDR series regulator	100: 100 series	M5: M5 06: 1/8"	Blank: Standard L: Lower pressure	Blank: Bracket J: No bracket	Blank: Pressure gauge N: No pressure gauge	1: MPa 2: psi 3: bar	Blank:PT G:G T:NPT
	200: 200 series	06: 1/8" 08: 1/4"					

[Note] When select no pressure gauge, this code is blank.

### Inner structure and material of major parts

#### SDR Series

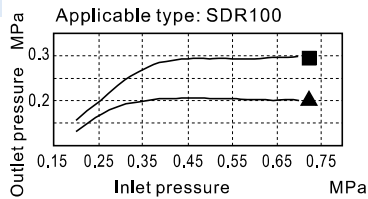


No.	Item	Material
1	Body	Aluminum alloy
2	Needle gasket	NBR
3	O-ring	NBR
4	O-ring	NBR
5	Fixed ring	POM
6	Identification ring	POM
7	Adjusting seat	POM
8	Adjusting pillar	08A
9	Adjusting button	POM
10	Adjusting nut	Steel
11	Adjusting spring	SWC
12	Piston rod	POM
13	Adjusting seat	POM
14	Return spring	SUS304

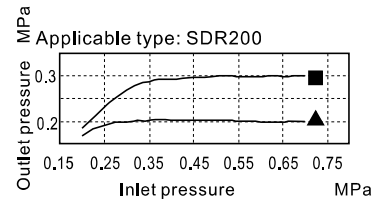
## SDR Series regulator

### Pressure and feature of flow

#### Pressure chart

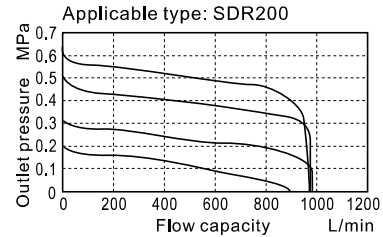
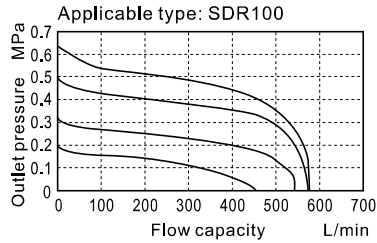


▲ Inlet pressure 0.2MPa ■ Inlet pressure 0.3MPa

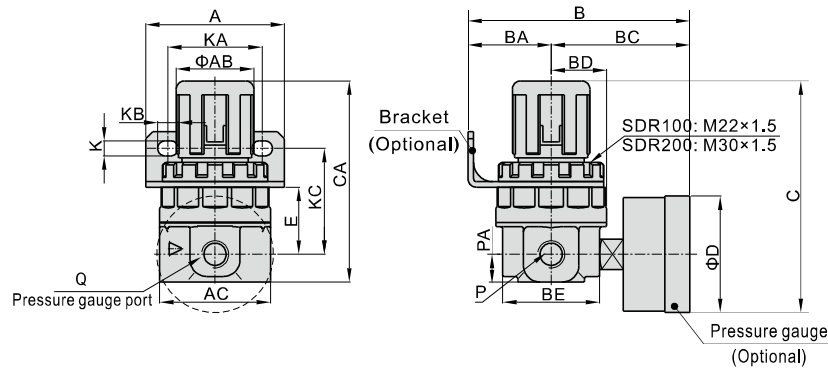


▲ Inlet pressure 0.2MPa ■ Inlet pressure 0.3MPa

#### Flow chart



### Dimensions



Model\Item	A	AB	AC	B	BA	BC	BD	BE	C	CA	D	E	K	KA	KB	KC	P	PA	Q
SDR100□M5	35	20	32	65.5	26	39.5	14.5	29	62.5	54.5	33	17	5.5	22	7	29	M5	7.5	1/16"
SDR100□06	35	20	32	65.5	26	39.5	14.5	29	62.5	54.5	33	17	5.5	22	7	29	1/8"	7.5	1/16"
SDR200□06	50	28	40	80	30	50	20	35	83.5	72.5	42	24	5.5	34	7.5	38	1/8"	10	1/8"
SDR200□08	50	28	40	80	30	50	20	35	83.5	72.5	42	24	5.5	34	7.5	38	1/4"	10	1/8"

Note: Bracket and pressure gauge are optional.

### Attentions of application

Unlock the regulating knob before pressure adjustment, then lock it after the adjustment. Otherwise, may cause the regulating knob damage or the outlet pressure change.

1. Pull the regulating knob to unlock, when the orange marking ring below the regulating knob appears, indicating that the regulating knob is unlocked.
2. Push the regulating knob to lock, when the orange marking ring below the regulating knob disappears completely, indicating that the regulating knob is locked.



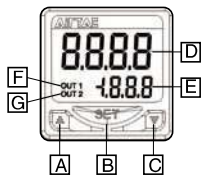
## DPS Series digital display pressure sensor



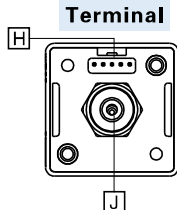
### Symbol



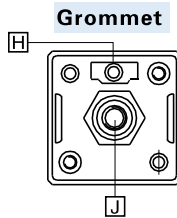
### User interface Instruction



No.	Item
A	Value up button
B	Setting button
C	Value Down button
D	Pressure display area
E	Set pressure display area
F	Output 1 indicator light
G	Output 2 indicator light
H	Power and signal connector
J	Pressure input

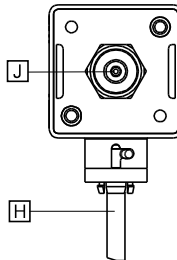


**Terminal**



**Grommet**

### Output on the bottom



### Specification

Input power	Voltage	12~24 VDC ± 10% Ripple(p-p) < 10%
	Fluid	Non-corrosive gas
Pressure range	Measurement range	DPSN1(P1)-01: -100kPa~100kPa
		DPSN1(P1)-10: -100kPa~1,000kPa
	Withstand pressure	DPSN1(P1)-01: 200kPa
		DPSN1(P1)-10: 1500kPa
	Measurement error	± 2% F.S., ± 1 digit(Temperature:25 ± 3°C)
Repetitive accuracy	± 0.2% F.S.	
Display	Temperature error	± 3% F.S.(Base 25°C, Range 0 to 50°C)
	Type	Double row LCD display,4-digit measurement, 3,5-digit setting
	Color	2-color LCD (Red/Green)
Output group	Display period	100ms、250ms、500ms、1,000ms
	Output group	DPSN1:Built-in two sets of NPN output DPSP1:Built-in two sets of PNP output
Output	Transistor output	NPN:Maximum applied voltage 30V/100mA,Retained voltage <1.5V PNP:Maximum applied voltage 30V/100mA,Retained voltage <1.5V
	Output delay time	2ms、20ms、50ms、100ms、250ms、500ms 1,000ms、2,500ms、5,000ms
	Hysteresis	DPSN1(P1)-01: 0.1、0.2、0.3..... 0.8(kPa) DPSN1(P1)-10: 1、2、3..... 8(kPa)
Pressure Unit	Output mode	Basic mode, Hysteresis mode, Window comparator mode
	DPSN1(P1)-01	kPa、kgf/cm <sup>2</sup> 、bar、psi、mmHg、inHg
	DPSN1(P1)-10	MPa、kPa、kgf/cm <sup>2</sup> 、bar、psi、cmHg、inHg
	Vibration resistance	10 to 500Hz with 10mm Amplitude in X, Y, Z directions for 2hrs
	Impact resistance	Maximum 100m/s <sup>2</sup> , X, Y, Z directions 3 times each
	Operating Temp. range	0~50°C
	Stored Temp. range	-20~65°C
	Humidity range	35%~80% RH(No condensation)

### Ordering code

DPS N1 □ -01 020 □

① ② ③ ④ ⑤ ⑥

① Model	② Output type	③ Electrical entry	④ Measurement range	⑤ Lead wire length	⑥ Piping specifications
DPS: Digital Display Pressure Sensor	N1: NPN P1: PNP	Space: Plug-in type B: Pre-wired type [Note1] D: Output on the bottom type	01: -100kPa~100kPa 10: -100kPa~1,000kPa	020: Length 2m 030: Length 3m 050: Length 5m M08:300mm with M8 plug connector[Note2]	Blank: Male thread PT1/8; female thread: M5 T: Male thread NPT1/8; female thread: 10-32UNF G: Male thread G1/8; female thread: M5

[Note1] The safety grade of pre-wired type is IP63.

[Note2] There is no plug-in type for M08.

The sockets of M08 need additional order. Please check on the right.

### Ordering code of Socket F – EC M08 D 020

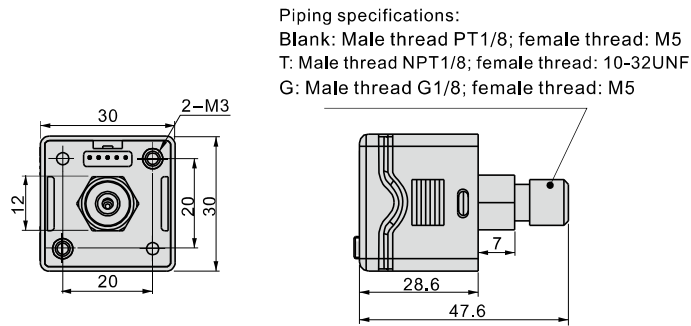


Category code	F: Accessory
Type code	EC: Connecting wire
Socket type	M08:M8 socket
Wire type	D: 4-wire type
Wire length	020: 2 meters 030:3meters 050:5meters 100:10meters

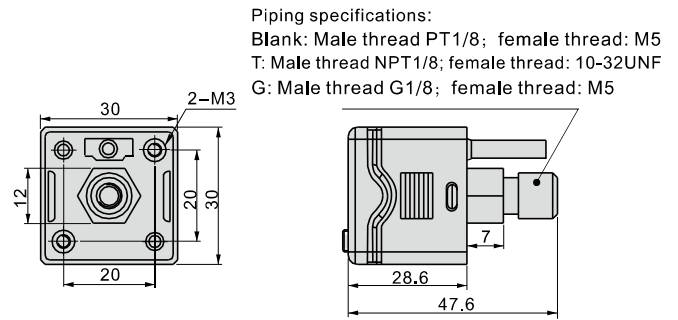
## DPS Series digital display pressure sensor

### Dimensions

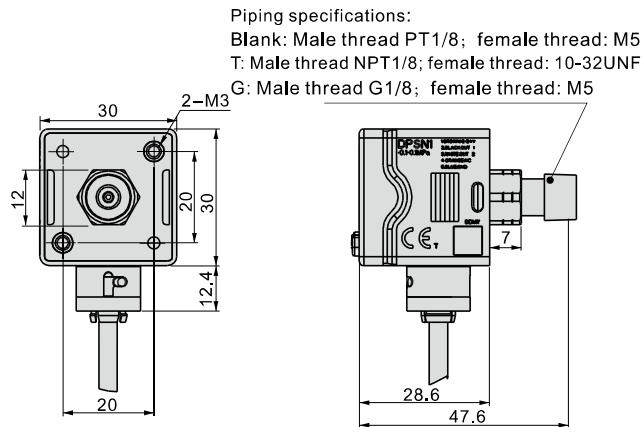
#### Plug-in connector



#### Pre-wired type



#### Output on the bottom type

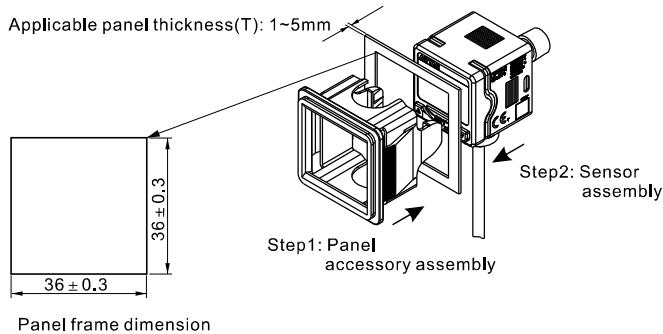


### Dimensions/Assembly Instruction

#### Panel mount adapter + Front protective cover

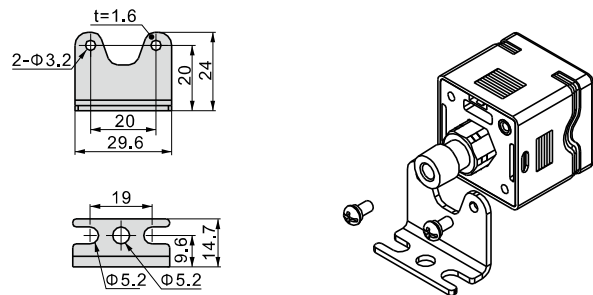
Order the installation accessories (Ordering code: F-DPSEB)

Applicable panel thickness(T): 1-5mm



#### Bracket

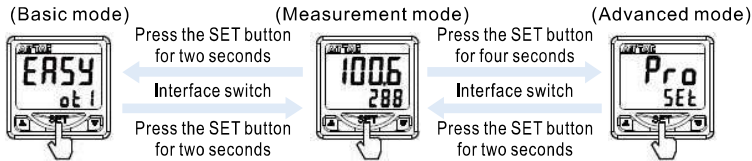
Order the installation accessories (Ordering code: F-DPSLB)



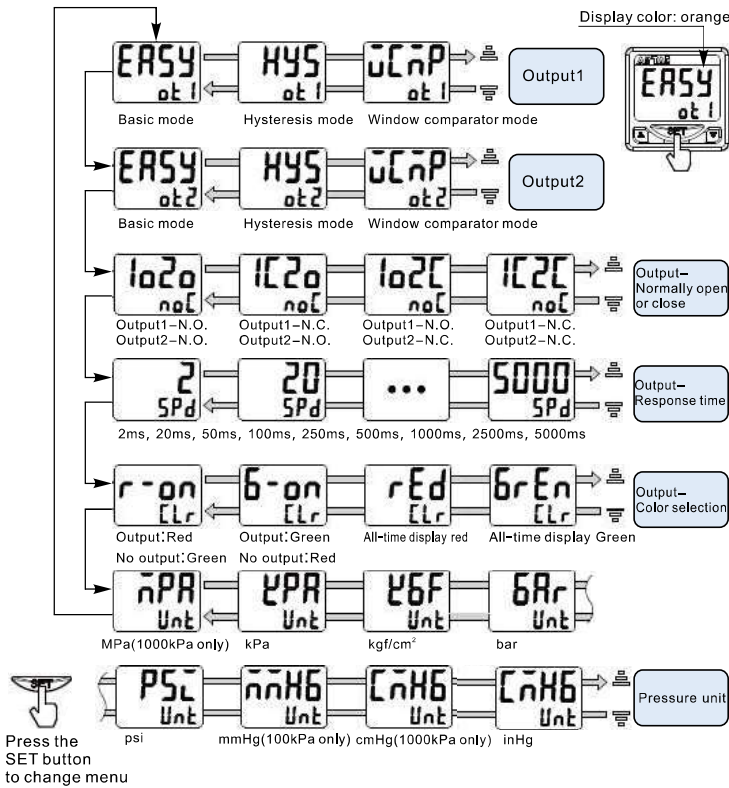
## DPS Series digital display pressure sensor

### User Interface Instructions

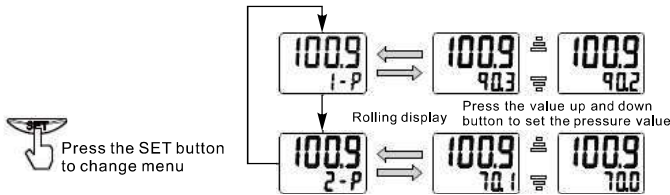
#### 1. Mode switch



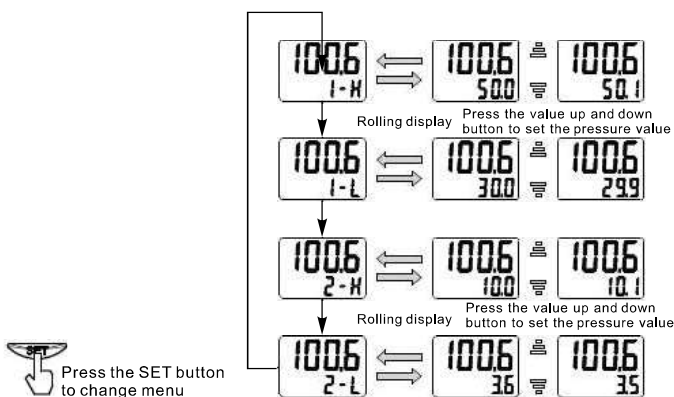
#### 2. Basic mode



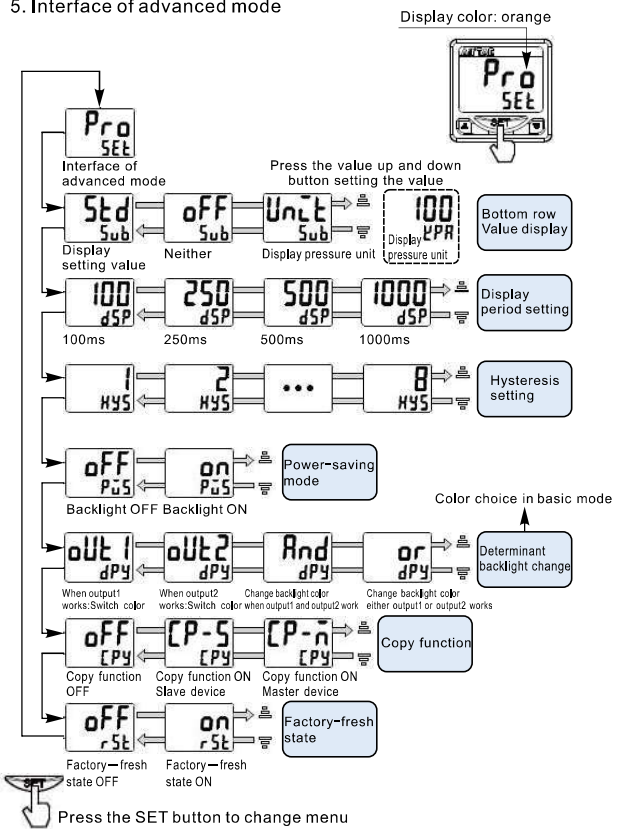
#### 3. Base mode pressure setting



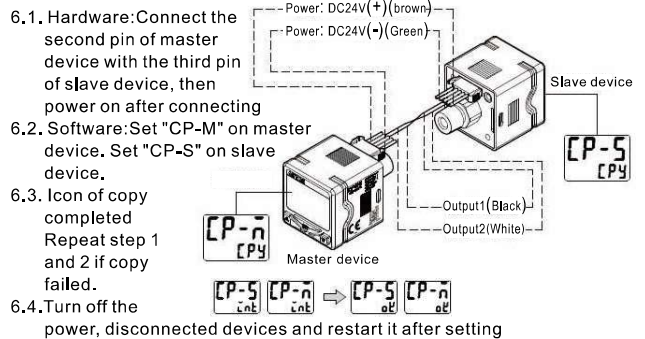
#### 4. Hysteresis /window comparator mode



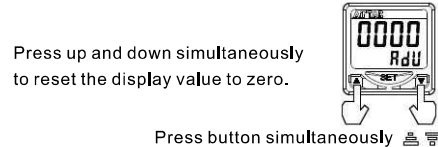
#### 5. Interface of advanced mode



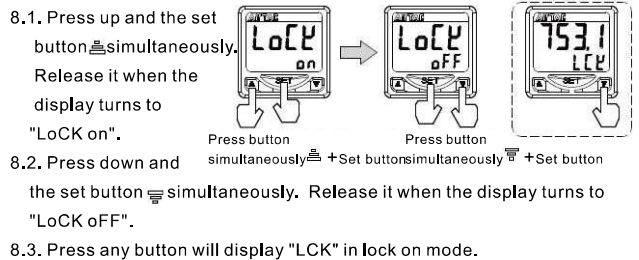
#### 6. Copy function



#### 7. Zero-Clear Function



#### 8. Key lock Function

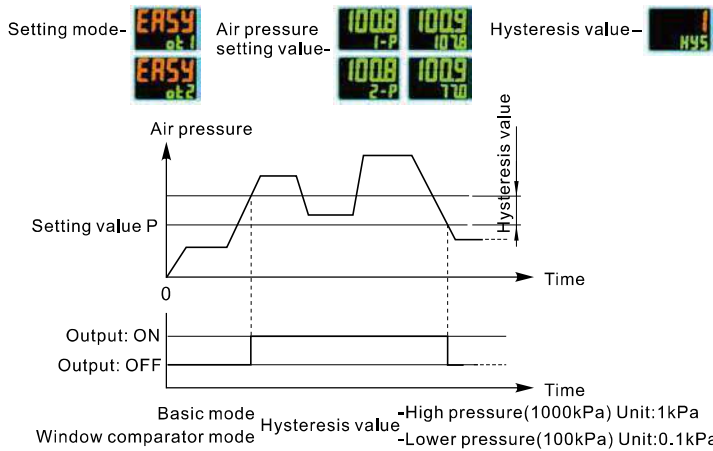




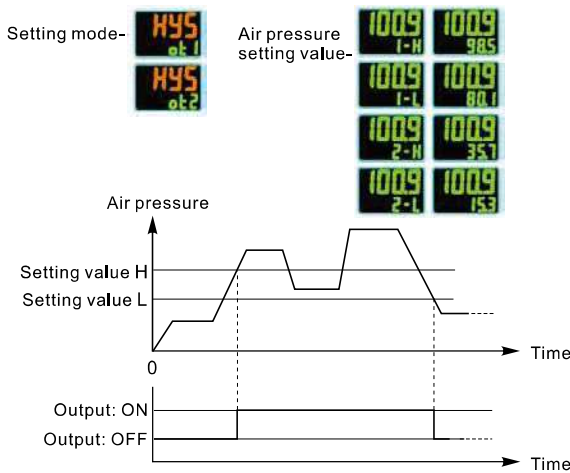
## DPS Series digital display pressure sensor

### Output mode

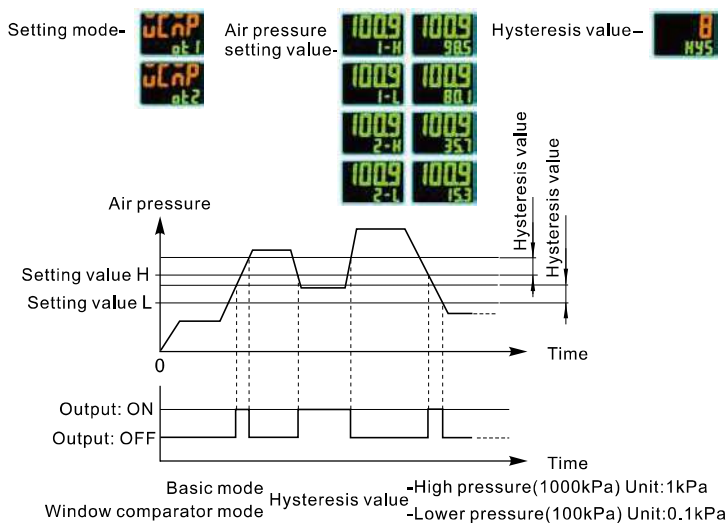
- 1. Basic mode:** Air pressure setting value 'P'. When air pressure large then (Setting value P+Hysteresis value), the output is 'NO'; When air pressure less than setting value 'P', the output is 'OFF'.



- 2. Hysteresis mode:** Air pressure setting value 'H/L'. When air pressure large then setting value 'H', the output is 'NO'; When air pressure less than setting value 'L', the output is 'OFF'.

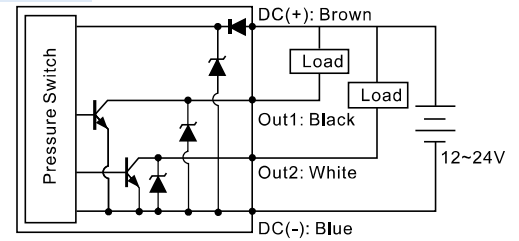


- 3. Window comparator mode:** Air pressure setting value 'H/L'. When air pressure large then value 'H' or less then value 'L', the output is 'OFF'; When air pressure large then value 'L' and less than value 'H', the output is 'ON'.

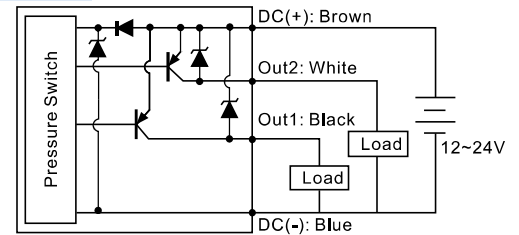


### Connection Example

#### NPN Output



#### PNP Output



### Notes

- Do not drop, knock or apply excessive impact while handling. Otherwise could cause damage and a malfunction.
- The tensile strength of the cord is 60N. Applying a greater pulling force on it can cause a malfunction.
- Do not exceed the screw-in torque of 7N.m when installing piping. Exceeding this value may cause malfunctioning of the sensor.
- Do not use it with corrosive and/or flammable gases or liquids.
- Please use it within rated pressure range.
- Turn off the power before connecting the wires.
- Don't use in an environment with spattering liquid of oil or solvent.
- Separate power lines from high voltage lines, avoiding wiring in the same conduit with these lines.
- When output current exceeds 100mA, circuit protection will be activated. System will resume once reboot.
- Adjust output-response response time can avoid errors caused by sudden change of working pressure.
- There is no copy function for PNP type.



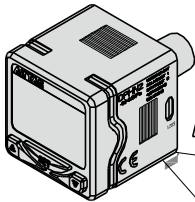
## DPH Series digital display pressure sensor(Analog output)



### Symbol



### On-line Manual



QR Code



Get full documentation

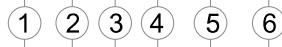
1. Install QR Code APP, and scan the QR Code on the shell.
2. Documentation website, <http://www.airtac.net/OM/main.htm>.

### Specification

Model	DPHN2(3)(B)-01 / DPHP2(3)(B)-01 / DPHN2(3)(B)-10 / DPHP2(3)(B)-10	
Input power	Voltage	12~24 VDC ± 10% Ripple(p-p) < 10%
	Current Consumption	40mA or less
Pressure range	Fluid	Non-corrosive gas
	Measurement range	DPHN2(3)(B)-01/DPHP2(3)(B)-01 : -15psi~15psi DPHN2(3)(B)-01/DPHP2(3)(B)-10 : -15psi~150psi
	Withstand pressure	DPHN2(3)(B)-01/DPHP2(3)(B)-01 : -15psi~22psi DPHN2(3)(B)-01/DPHP2(3)(B)-10 : -15psi~175psi
	Measurement error	±2%F.S. , ±1digit(Temperature:25±3°C)
	Repetitive accuracy	±0.2%F.S.
	Temperature error	±3%F.S.(Base 25°C , Range 0 to 50°C)
Display	Type	4-digit measurement, 3,5-digit setting
	Output	LCD Analog and Double row LCD display
	Color	2-color LCD (Red/Green)
Switch Output	Output model	Basic mode, Hysteresis mode, Window comparator mode Suction check mode, Leakage mode
	Transistor output	NPN:Maximum applied voltage 30V/100mA,Retained voltage <2V PNP:Maximum applied voltage 30V/100mA,Retained voltage <2V
	Analog Voltage Output	1 to 5V±3% F.S. (Minimum load impedance 1kΩ)
	Analog Current Output	4 to 20mA±3% F.S.(Range of Load impedance is 50 ~ 260Ω)
	Output-delay time	2ms, 20ms, 100ms, 500ms, 1000ms, 2000ms
Pressure Unit	DPHN2(3)(B)-01 DPHP2(3)(B)-01	kPa, kgf/cm <sup>2</sup> , bar, psi, mmHg, inHg
	DPHN2(3)(B)-10 DPHP2(3)(B)-10	MPa, kPa, kgf/cm <sup>2</sup> , bar, psi, cmHg, inHg
Vibration resistance	10 to 500Hz with 10mm Amplitude in X, Y, Z directions for 2hrs	
Impact resistance	Maximum 100m/s <sup>2</sup> , X, Y, Z directions 3 times each	
Operating Temp. range	0~50°C	
Stored Temp. range	-20~65°C	
Humidity range	35%~80% RH(No condensation)	

### Ordering code

DPH N2 □ -01 020 □

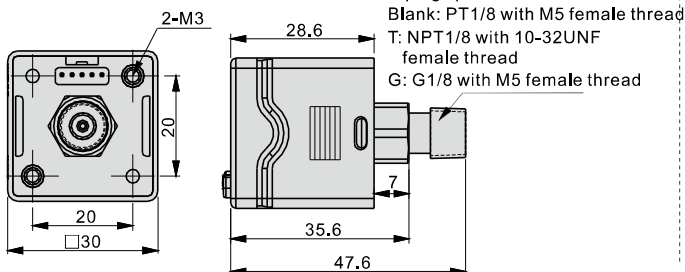


① Model	② Output type	③ Electrical entry	④ Measurement range	⑤ Lead wire length	⑥ Piping specifications
DPH: Digital Display Pressure Sensor (Analog output)	N2: NPN+Analog voltage output(1-5V) P2: PNP+Analog voltage output(1-5V) N3: NPN+Analog current output(4-20mA) P3: PNP+Analog current output(4-20mA)	Space: Terminal B: Grommet [Note]	01: -100kPa~100kPa 10: -100kPa~1,000kPa	020: Length 2m 030: Length 3m 050: Length 5m	Blank: PT1/8 with M5 female thread T: NPT1/8 with 10-32UNF female thread G: G1/8 with M5 female thread

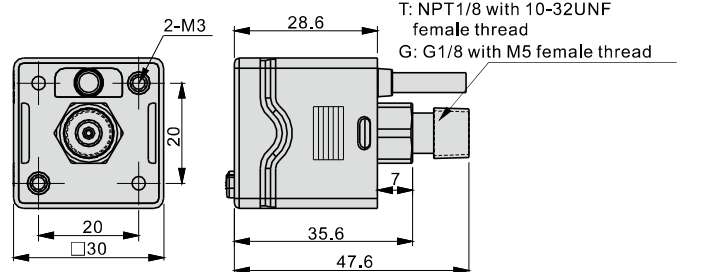
[Note] The safety grade of grommet type is IP63.

### Dimensions

#### Terminal



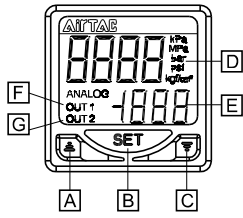
#### Grommet



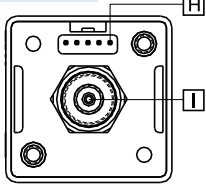
# Preparation unit—Accessories

## DPH Series digital display pressure sensor(Analog output)

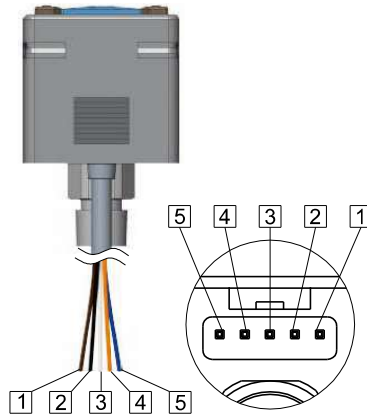
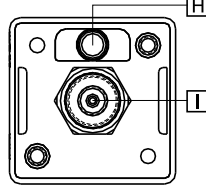
### User interface Instruction



Terminal



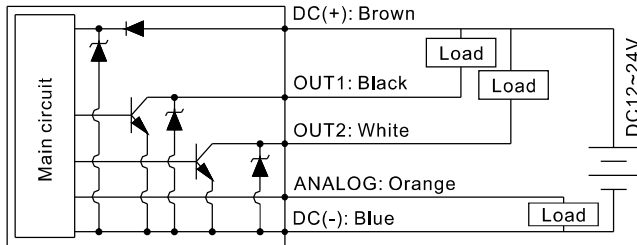
Grommet



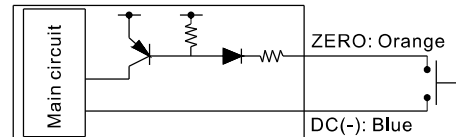
No.	Item
A	Value up button
B	Setting button
C	Value Down button
D	Pressure display area
E	Set pressure display area
F	Output 1 indicator light
G	Output 2 indicator light
H	Power and signal connector
I	Pressure input
1	DC(+) input (Brown)
2	OUT1 (Black)
3	OUT2 (White)
4	Analog/Zero (Orange)
5	DC(-) input (Blue)

### Connection Example

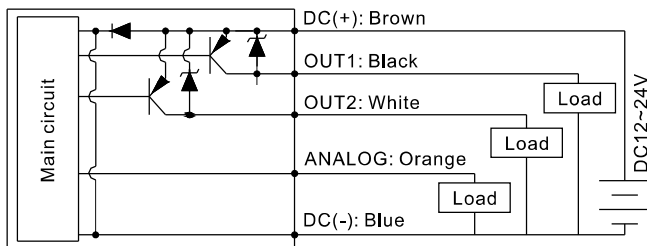
#### NPN Output



#### Zero-shift Input



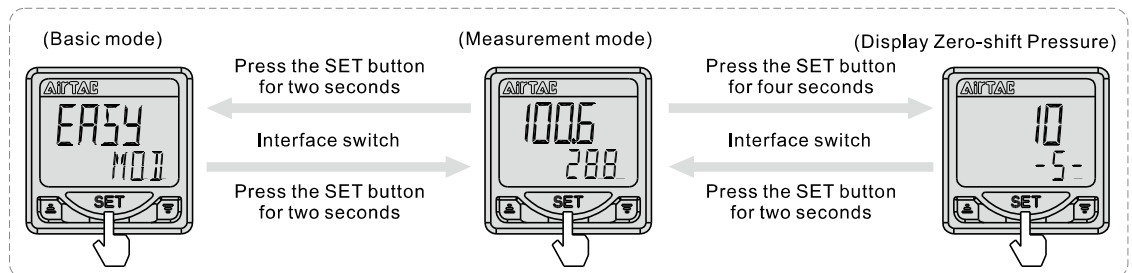
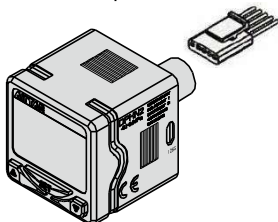
#### PNP Output



### User Interface Instructions

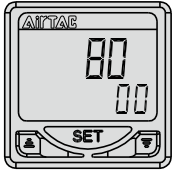
#### 1. Mode switch

Install the connector  
Turn on the power



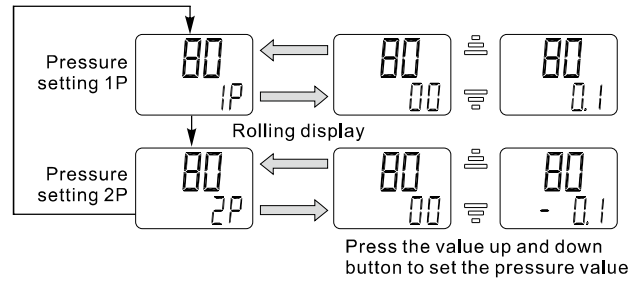
## DPH Series digital display pressure sensor(Analog output)

### 2. Measurement mode

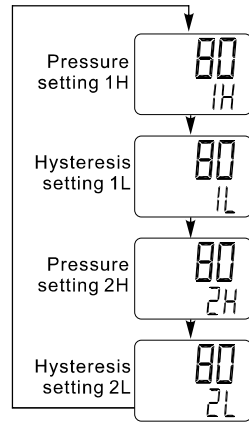


Press the SET button to change menu

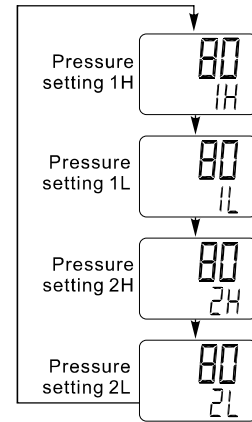
#### Interface of Basic mode



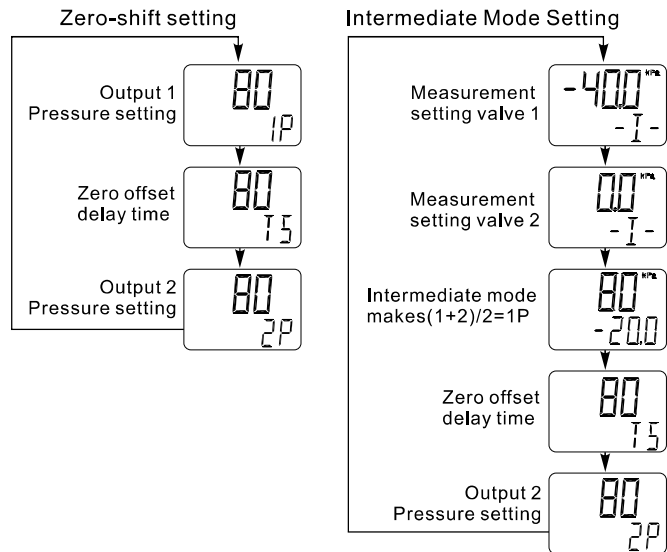
#### Interface of Hysteresis mode



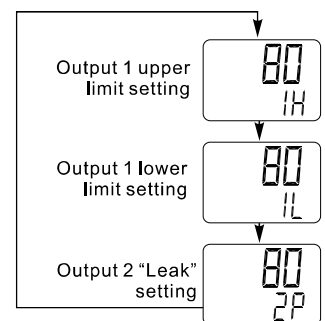
#### Interface of Window mode



#### Interface of Suction check mode



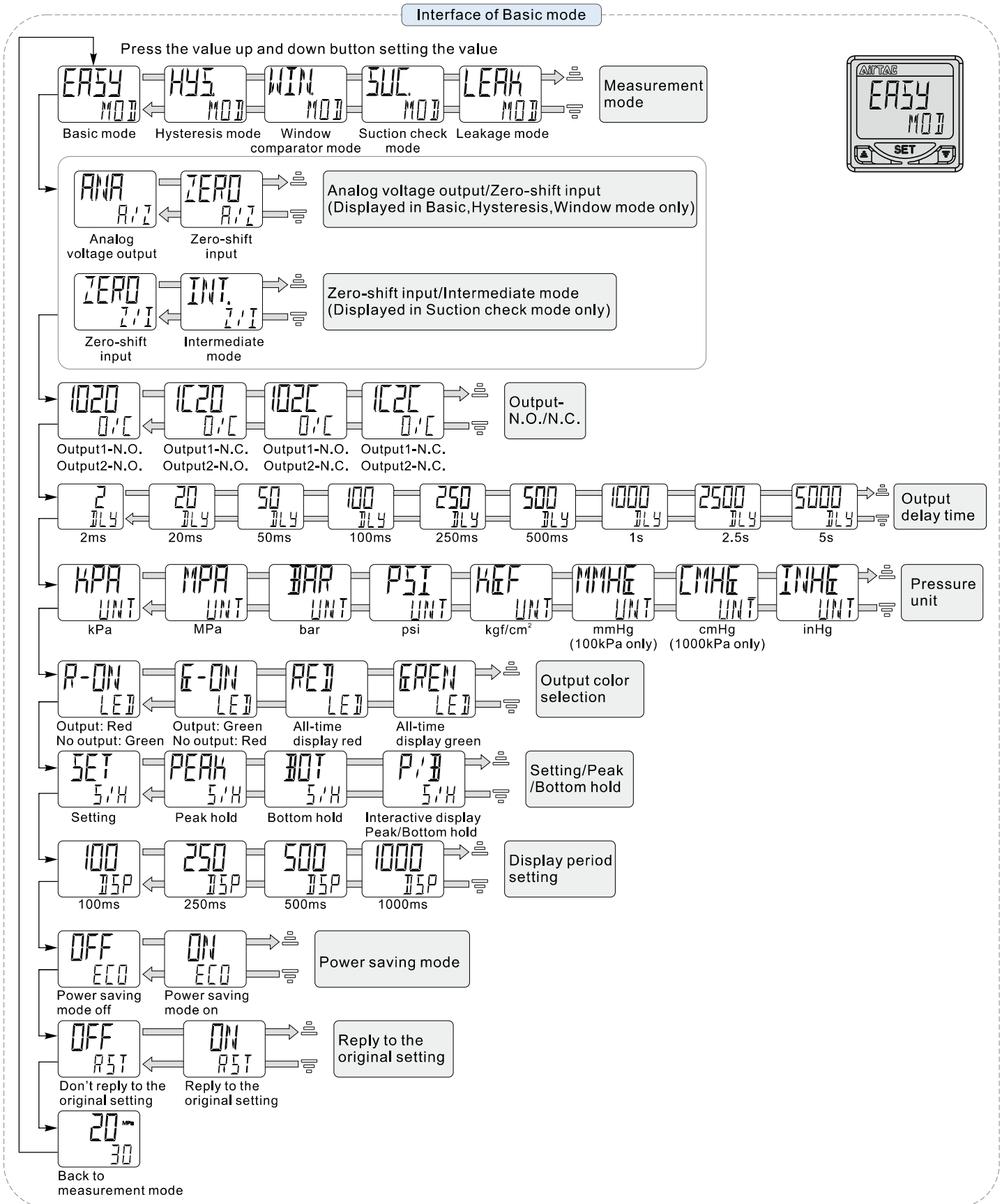
#### Interface of Leak mode



# Preparation unit—Accessories

## DPH Series digital display pressure sensor(Analog output)

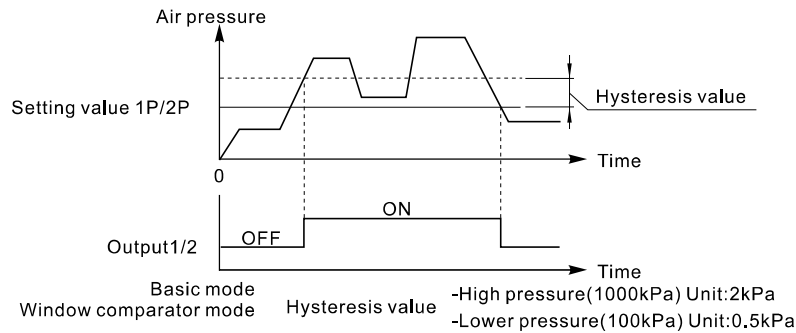
### 3. Basic mode



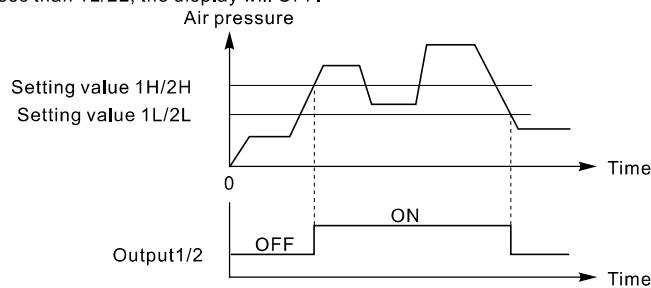
## DPH Series digital display pressure sensor(Analog output)

### Output mode description

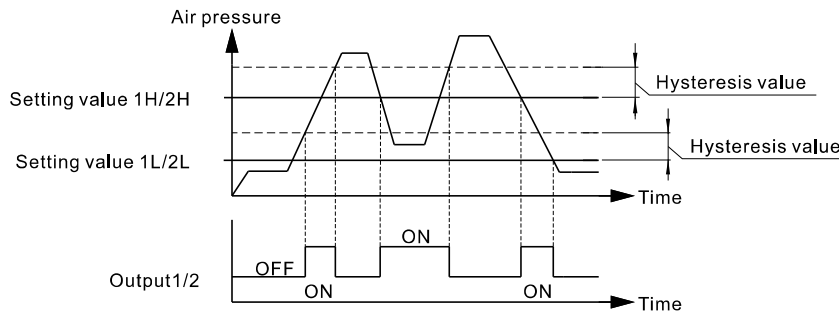
1. Basic mode: Set the pressure value 1P/2P. When the applied pressure value is greater than 1P/2P + hysteresis value, the display will ON. When the applied pressure value is less than P + hysteresis value, the display will OFF.



2. Hysteresis mode: Set the pressure value 1H/2H/1L/2L. When the applied pressure value is greater than 1H/2H, the display will ON. When the applied pressure is less than 1L/2L, the display will OFF.



3. Window comparator mode: Set the pressure value H/L. When the pressure is greater than the H value or less than the L value, the output is OFF; when the air pressure is greater than the L value and less than the H value, the output is ON.



4. Suction check mode: Generally used for suction check detection applications. After the zero-shift signal is triggered, the zero-shift is completed after the TS time.

- TS: Zero-shift delay time.
- 1P: "Pressure" setting value of output 1 before zero-shift (or without zero-shift).
- 1P': Output 1 after zero-shift. Relative to the reference value of the suction starting point pressure (zero offset point).
- 2P: Pressure setting of output 2.

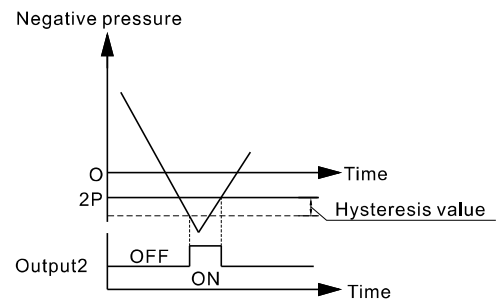
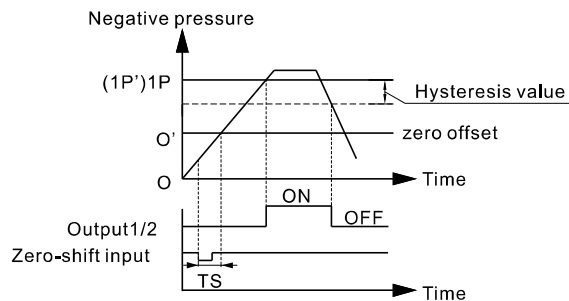
◇ Output 1: Suction pressure detection,

In (N.O.) mode, the output 1 is ON when the measured pressure value is less than the setting value 1P (1P');

Without zero-shift input, output 1 ON/OFF judgment based on 1P, which is the suction pressure setting value relative to atmospheric pressure.

With a zero-shift input, output 1 ON/OFF judgment based on 1P', which is the reference setting value with relative to the zero-shift point.

◇ Output 2: Vacuum plate break detection. In (N.O.) mode, output 2 turns ON when the air pressure is greater than the setting value 2P.

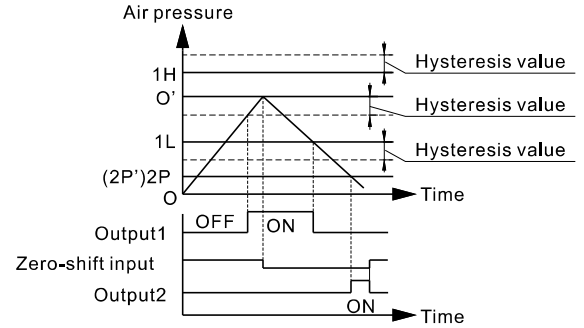


## DPH Series digital display pressure sensor(Analog output)

### 5. Leakage Mode: Generally used for leak detection applications.

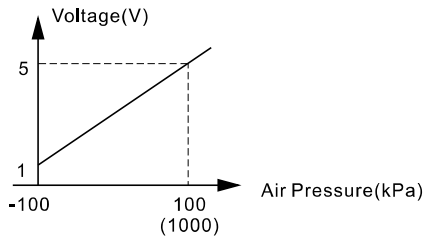
The zero-shift is completed after the zero-shift signal is triggered

- ◇ 1H: Output 1 upper limit setting value; 1L: Output 1 lower limit setting value.
- ◇ 2P(2P'): Output 2's "Leak" setting (Negative value).
- ◆ Output 1: Fill pressure detection. In the normally mode, output 1 is ON when the pressure is between 1H and 1L
- ◆ Output 2: Leakage detection. when only the zero-shift input, it will make output 2 ON/OFF judgment; In the normal mode, Output 2 is ON, when the leakage is greater than the setting value 2P (2P').



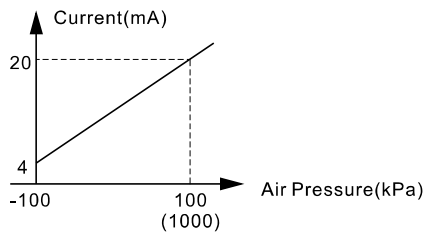
### 6. Analog output

#### 6.1) Analog Voltage Output (1-5V)



- ◆ In the analog voltage output mode, the orange line should pay attention to the following wiring:
  1. Don't directly connect 0V or any bias voltage under no load to avoid internal circuit damage.
  2. The minimum load impedance needs to be >1kΩ (Don't float) to avoid distortion of the output voltage.

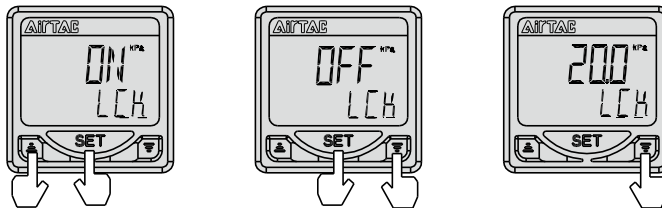
#### 6.2) Analog Current Output (4-20mA)



- ◆ In the analog current output mode, the orange line should pay attention to the following wiring:
  1. Don't directly connect 0V or any bias voltage under no load to avoid internal circuit damage.
  2. The range of load impedance is 50Ω to 260Ω. (Don't float) to avoid distortion of the output current.

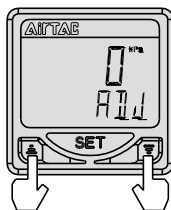
### 7. Key lock Function

Lock: Press and the SET button simultaneously. Release it when the display turns to "LCK on".  
 Unlock: Press and the SET button simultaneously. Release it when the display turns to "LCK OFF".  
 Press any button will display "LCK" in lock on mode.



### 8. Zero-Clear Function

Press and simultaneously to reset the display value to zero.



Press and simultaneously.



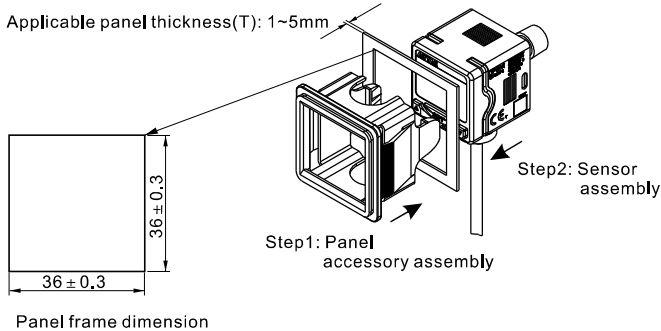
## DPH Series digital display pressure sensor(Analog output)

### Dimensions/Assembly Instruction

#### Panel mount adapter + Front protective cover

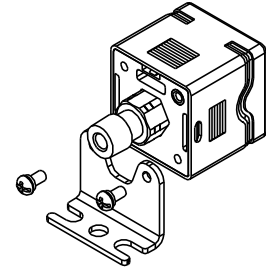
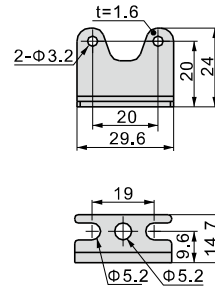
Order the Install accessories (Ordering code: F-DPSEB)

Applicable panel thickness(T): 1~5mm



#### Bracket

Order the Install accessories (Ordering code: F-DPSLB)



### Notes

1. Do not drop, knock or apply excessive impact while handling. Otherwise could cause damage and a malfunction.
2. The tensile strength of the cord is 60N. Applying a greater pulling force on it can cause a malfunction.
3. Do not exceed the screw-in torque of 7N.m when installing piping. Exceeding this value may cause malfunctioning of the sensor.
4. Do not use it with corrosive and/or flammable gases or liquids.
5. Please use it within rated pressure range.
6. Turn off the power before connecting the wires.
7. Don't use in an environment with spattering liquid of oil or solvent.
8. Separate power lines from high voltage lines, avoiding wiring in the same conduit with these lines.

# Preparation unit—Accessories

## GS, GF, GU, GP, GV Series pressure gauge



### Symbol



### Product feature

1. It has sensitive reaction and can work under low pressure.
2. The displayed words in the dial are clear and there are several pressure units to be selected.
3. There are several installation ways and installing accessories to be selected.
4. Various dimensions of screw thread are available.

### Specification

Model	GS-30	GS-40, GF-40, GU-40	GS-50, GF-50, GU-50	GF-60, GU-60
Fluid	Air			
Port size	1/16"	1/8"	1/4"	1/4"
Temperature range	-40~70°C			
Accuracy grade	2.5			
The pressure range of units and instructions	M	0~1.0MPa(Standard type); 0~0.4MPa(Lower pressure type)		
	B	0~10 bar (Standard type); 0~4 bar (Lower pressure type)		
	P	0~140psi(Standard type); 0~60psi(Lower pressure type)		
	Z	0~10kgf/cm <sup>2</sup> and 0~140psi(Dual-scale display, Standard type) 0~4kgf/cm <sup>2</sup> and 0~60psi(Dual-scale display, Lower pressure type)		
Material of major parts	Shell: SPCC ; Core: Brass			

Model	GP-30	GP-40	GV-40
Fluid	Air		
Port size	1/8"	1/8"	1/8"
Temperature range	-40~70°C		
Accuracy grade	2.5		
The pressure range of units and instructions	P	0~1.0MPa&0~140psi(Standard type) 0~0.4MPa&0~60psi(Middle pressure type) 0~0.2MPa&0~30psi(Lower pressure type)	-100~0kPa & -14~0psi
	G	0~1.0MPa&0~10bar(Standard type) 0~0.4MPa&0~4bar(Middle pressure type) 0~0.2MPa&0~2bar(Lower pressure type)	-100~0kPa & -14~0psi
	T	0~10bar&0~140psi(Standard type) 0~4bar&0~60psi(Middle pressure type) 0~2bar&0~30psi(Lower pressure type)	-100~0kPa & -14~0psi
	V	0~10bar&0~140psi(Standard type) 0~4bar&0~60psi(Middle pressure type) 0~2bar&0~30psi(Lower pressure type)	-100~0kPa & -14~0psi
Material of major parts	Shell: Stainless steel ; Core: Brass		

### Ordering code

F-G S 40 10 M

① ② ③ ④ ⑤ ⑥

① Accessories code	② Model	③ Mount Type Code	④ Dial diameter	⑤ Max. pressure scale	⑥ Scale and thread type
F: Accessories	G: Pressure gauge	S: Standard Mount F: Flange Mount U: Pannel Mount	30: OD 30 40: OD 40 50: OD 50 60: OD 60	04: 0.4MPa 10: 1.0MPa	M: MPa(PT) P: psi(NPT) B: bar(G) Z: kgf/cm <sup>2</sup> & psi(PT)

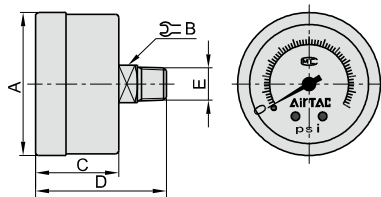
F-G P 40 10 P

① ② ③ ④ ⑤ ⑥

① Accessories code	② Model	③ Mount Type Code	④ Dial diameter	⑤ Max. pressure scale	⑥ Scale and thread type
F: Accessories	G: Pressure gauge	P: Stainless steel shell V: Vacuum type	30: OD 30 40: OD 40 40: OD 40	02: 0.2MPa 04: 0.4MPa 10: 1.0MPa 10: -100kPa	G: MPa&bar(G) P: MPa&psi(PT) T: bar&psi(NPT) G: kPa&psi(G) P: kPa&psi(PT) T: kPa&psi(NPT)

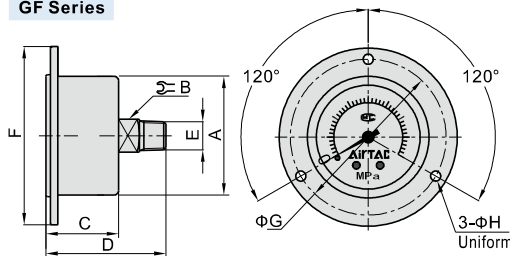
### Dimensions

#### GS Series



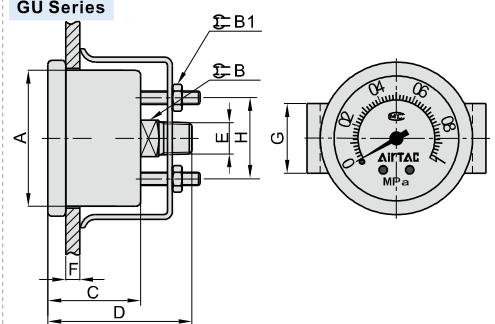
Model	A	B	C	D	E
GS-30	33	11	21	31	1/16"
GS-40	42	11	24.5	37.5	1/8"
GS-50	52	14	26.5	44.5	1/4"

#### GF Series



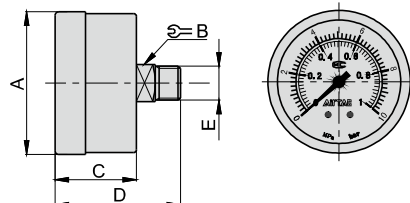
Model	A	B	C	D	E	F	G	H
GF-40	42	11	21	37	1/8"	60	52.5	3.4
GF-50	52	14	26	47	1/4"	71	62	4.4
GF-60	62	14	25	46	1/4"	82	71.5	4.4

#### GU Series



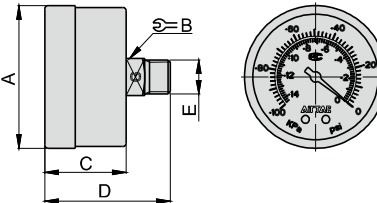
Model	A	B	B1	C	D	E	F(max)	G	H
GU-40	42	11	7	26	41	1/8"	5	21	24.5
GU-50	52	14	8	29.5	46	1/4"	7	24	35
GU-60	62	14	8	30	46.5	1/4"	7	25	35

#### GP Series



Model	GP-30	GP-40
A	30	42
B	11	11
C	17.5	24
D	30.5	37
E	1/8"	1/8"

#### GV Series



Model	GV-40
A	42
B	11
C	24
D	37
E	1/8"

## GVF Series



### Symbol



### Product feature

1. Unique diversion structure spins the air flowing through to effectively separate the liquid from the air and reliably filter the solid grain.
2. It has low pressure loss, high efficiency in separating water and large drain bowl capacity.
3. Filtering grade includes 5 $\mu$ m and 40 $\mu$ m (Optional).
4. Three material of bowl are available: PC, Nylon and metal.
5. The bracket can be selected for installation.

### Specification

Model	GVF200-06	GVF200-08	GVF300-08	GVF300-10	GVF300-15
Fluid	Air				
Port size [Note1]	1/8"	1/4"	1/4"	3/8"	1/2"
Filtering grade	40 $\mu$ m or 5 $\mu$ m				
Pressure range	-100~0KPa				
Proof pressure	0,5MPa				
Temperature range	-5~70°C(Unfreeze)				
Capacity of drain bowl	25CC		45CC		
Material of bowl	PC bowl, Nylon bowl, Metal bowl				
Weight(Plastic bowl/Metal bowl)	220g/225g	210g/215g	370g/380g	360g/375g	350g/360g
Flow capacity [Note2] (L/min ANR)	5 $\mu$ m	80	100	150	200
	40 $\mu$ m	100	160	200	280

[Note1] PT thread, G thread and NPT thread are available. [Note2] The flow capacity at the inlet pressure loss of 4 Kpa.

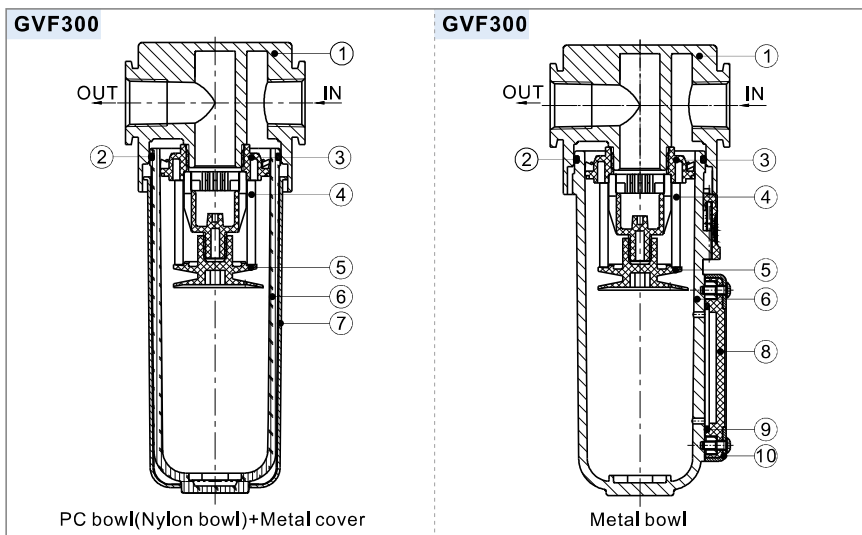
### Ordering code

GVF 300 □ 10 □ W G



① Model	② Bowl material	③ Port size	④ Accessories	⑤ Filtering grade	⑥ Thread type
GVF200 : GVF200 Series Vacuum Filter	Blank : PC bowl C : Metal bowl	06: 1/8" 08: 1/4"	Blank: Bracket J: No bracket	Blank: 40 $\mu$ m W: 5 $\mu$ m	Blank: PT G: G T: NPT
GVF300 : GVF300 Series Vacuum Filter	N : Nylon bowl	08: 1/4" 10: 3/8" 15: 1/2"			

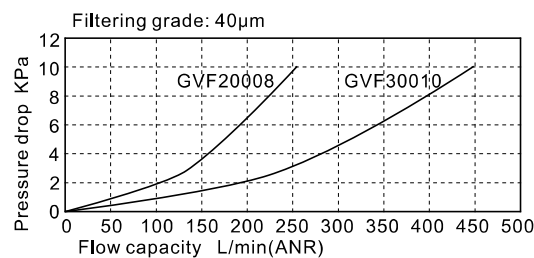
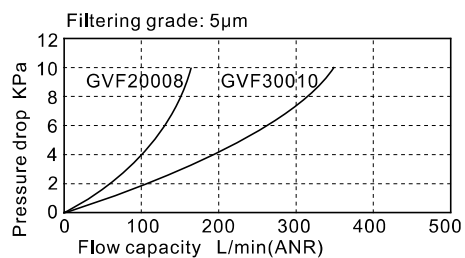
### Inner structure



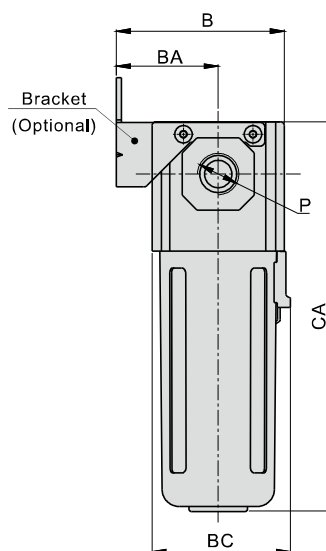
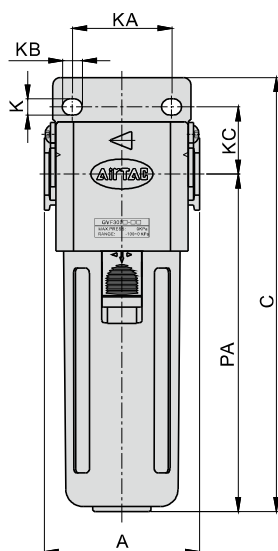
No.	Item	Material
1	Body	Aluminum alloy
2	O-ring	NBR
3	Air guide	High viscosity POM
4	Filter core	HDPE
5	Umbrella baffle	High viscosity POM
6	Drain bowl	Aluminum alloy\PC\Nylon
7	Meter cover	SPCC
8	Liquid meter inside cover	PC
9	Liquid meter seal	NBR
10	Liquid meter cover	SPCC

## GVF Series

### Flow chart



### Dimensions



Model\Item	A	B	BA	C	CA	K	KA	KB	KC	P	PA
GVF200-06	52.5	54.5	33	136.5	123.5	5.4	27	8.4	23	1/8"	106.5
GVF200-08	52.5	54.5	33	136.5	123.5	5.4	27	8.4	23	1/4"	106.5
GVF300-08	62.5	67.5	41	174.5	156.5	6.5	40	8	27	1/4"	135.5
GVF300-10	62.5	67.5	41	174.5	156.5	6.5	40	8	27	3/8"	135.5
GVF300-15	62.5	67.5	41	174.5	156.5	6.5	40	8	27	1/2"	135.5



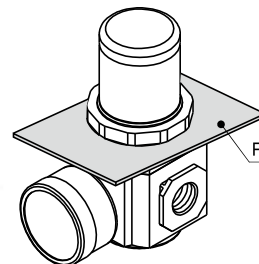
## Compendium of GVR Series

### Pressed-in self-locking mechanism

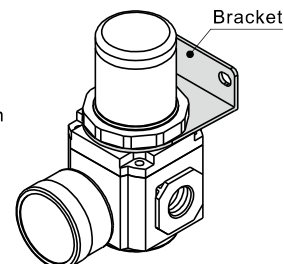
The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.

### Panel installation and bracket installation are optional

### Suitable to adjust the vacuum pressure



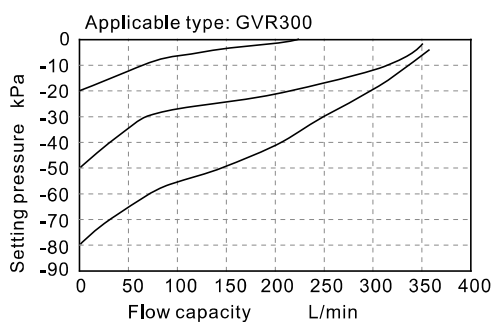
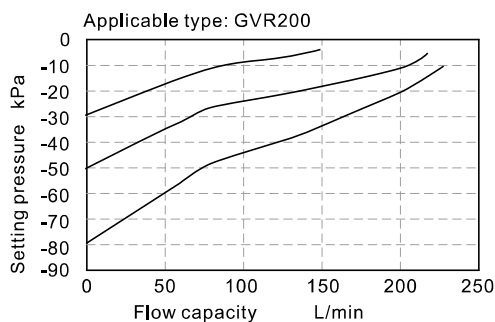
Panel installation



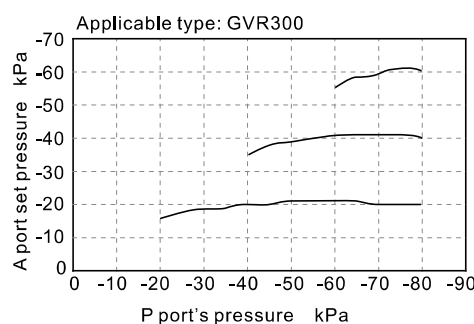
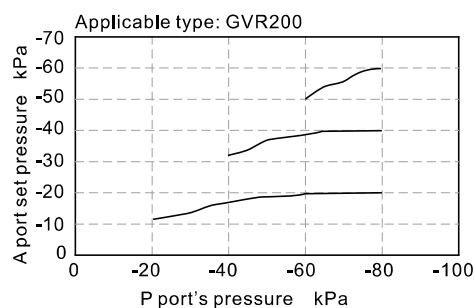
Bracket installation

## Flow chart and Pressure chart

### Flow chart



### Pressure chart



## Installation and Application

1. Please be used with safety circuit to avoid accidents when power failure, vacuum pump and vacuum regulator fail.
2. When checking, please set the pressure to 0 (atmospheric pressure) and completely cut off the pressure of the vacuum pump before pulling down the tube of the regulator.
3. The vacuum regulator can not be used to regulate the pressure of the vacuum pump, if the flow capacity of the vacuum generator is less than the flow capacity of the vacuum regulator, it is not suitable as a vacuum source.
4. The regulating knob rotates clockwise, the atmospheric pressure changes to the vacuum pressure, turns counterclockwise, the vacuum pressure changes to atmospheric pressure.
5. After setting the pressure, press the button on the pressure adjusting button until you hear the click.
6. The vacuum regulator is used for negative pressure, and no positive pressure should be applied.



## GVR Series



### Symbol



### Specification

Model	GVR200-06	GVR200-08	GVR300-08	GVR300-10
Fluid	Air			
Port size [Note1]	1/8"	1/4"	1/4"	3/8"
Pressure range	-100~-1.3kPa			
Max. pressure	-1.0kPa			
Air inhalation consumption	0.6 L/min(ANR) and below			
Temperature range	-20~70°C			
Weight g	204	198	342	336

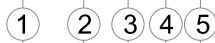
[Note1] NPT thread and G thread are available.

### Product feature

1. The pressed-in self-locking mechanism can prevent the abnormal movement of the set pressure caused by external interfere.
2. The pressure regulation is stable, the drift is small and the pressure characteristic is good.
3. In addition to panel installation, the bracket is optional for installation.

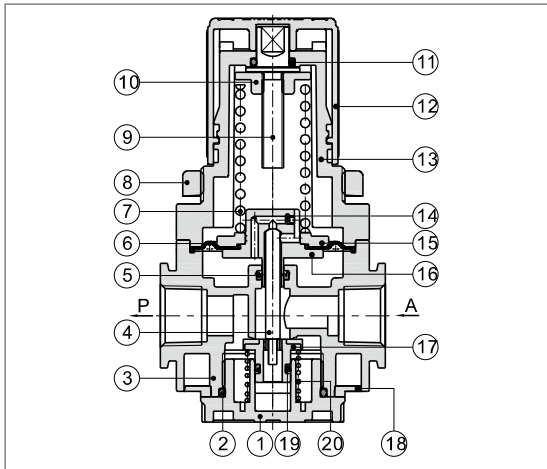
### Ordering code

GVR300 10 □ □ □



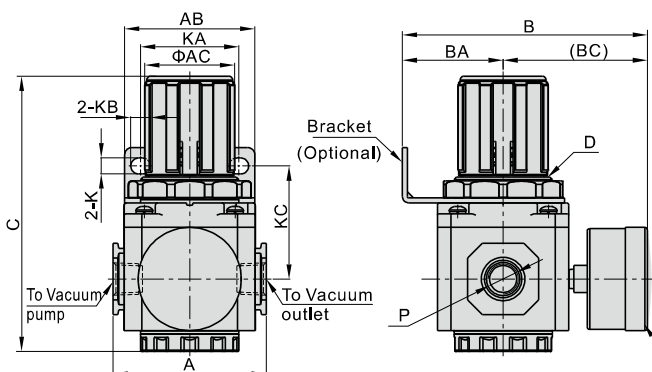
① Model	GVR200: 200 series vacuum regulator		GVR300: 300 series vacuum regulator	
② Port size	06: PT1/8	08: PT1/4	08: PT1/4	10: PT3/8
③ Accessories	Blank: Bracket		J: No bracket	
④ Pressure gauge	Blank: Pressure gauge		N: No pressure gauge	
⑤ Thread type	Blank: PT(kPa & psi)	G: G(kPa & psi)	T: NPT(kPa & psi)	

### Inner structure



No.	Item	Material	No.	Item	Material
1	Valve cap	POM	11	O-ring	NBR
2	O-ring	NBR	12	Pressure knob	POM
3	Body	Aluminum alloy	13	Adjusting seat	POM
4	Spool	Aluminum alloy	14	Gas resistance	Aluminum alloy
5	O-ring	NBR	15	Diaphragm up core	Aluminum alloy
6	Diaphragm	NBR	16	Diaphragm down core	Aluminum alloy
7	Spring	SWC	17	Pressure plug	Aluminum alloy
8	Fixed ring	PA66+Glass fibre	18	Bottom cover	POM
9	Adjusting spindle	08A	19	O-ring	NBR
10	Regulator nut	Steel	20	Spring	Stainless steel

### Dimensions



Model/Item	A	AB	AC	B	BA	BC	C	D	K	KA	KB	KC	P
GVR20006	52.5	55	31	83	30	53	89	M33X1.5	5.4	34	15.4	43	1/8"
GVR20008	52.5	55	31	83	30	53	89	M33X1.5	5.4	34	15.4	43	1/4"
GVR30008	62.5	53	38	99.5	41	58.5	112	M40X1.5	6.5	40	8	46	1/4"
GVR30010	62.5	53	38	99.5	41	58.5	112	M40X1.5	6.5	40	8	46	3/8"





The accessories is necessary for intact air system. AirTAC has many types of accessories for your choice:  
1. Polyurethane re-coil Hosepart; 2. Fitting; 3. Silencer; 4. Speed Controller.

## Polyurethane tubing

P295



US98A, UE95A Series PU tubing.....	295
UCS Series PU tubing.....	296
PA12, PA6 Series nylon tubing.....	297
UN54D Series flame resistant tubing.....	298

## Fitting, Silencer

P299



One—Touch fittings: tube_thread type.....	299
Metal one—Touch fittings.....	305
One—Touch fittings: tube_tube type.....	307
One—Touch fittings: threaded type.....	311
Silencers.....	313

## Speed Controller, Finger valve

P316



PSA, PSL, PSS Series Speed controllers.....	316
PTL Series Push-lock Speed controllers.....	320
PHV Series finger valve.....	323

## Stainless steel fitting, Stainless steel silencer

P324



Stainless steel one—Touch fittings: tube_thread type.....	324
Stainless steel one—Touch fittings: threaded type.....	329
Stainless steel Silencers.....	331

## Stainless steel speed Controller and pneumatic indicator

P333



PSA, PSL, PSS Series Stainless steel Speed controllers...	333
PTL Series Stainless steel Push-lock Speed controllers.....	337
PWC PWL Series pneumatic indicator.....	340



## Installation and Operation of tube and fitting

### 1. Installation and removal of tubing:

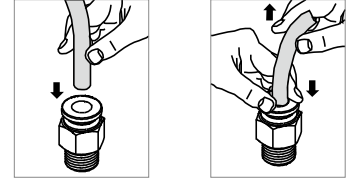
#### 1.1. Installation of tubing

Grasp the tubing and slowly push it into the fitting until it comes to a stop. The tubing will be locked by the spring gasket.

#### 1.2. Removal of tubing

Push the **release** button to open the spring gasket so that the tubing can be released.

Note: When remove the tubing, make sure the pressure in the tubing is Zero.



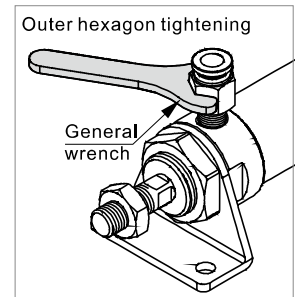
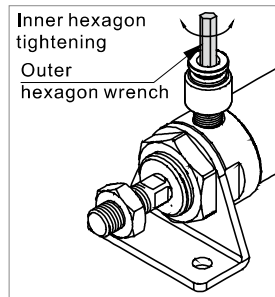
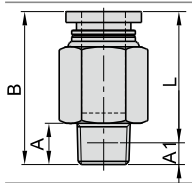
### 2. Connection thread tightening method

Use an inner or outer hexagon wrench to tighten the fitting as show in the picture below.

Note: Please refer to the tables below for the tightening torque and the depth of the thread screw-in.

Recommended tightening torque(N.m)					
Thread type	M5	1/8"	1/4"	3/8"	1/2"
Tightening torque	1~1.5	5~8	6~9	8~11	12~16

Depth of the thread screw-in (mm)			
Model\Item	Thread Length A	Depth of the thread A1	
M5	3	3	
1/8"	7.5	4	
1/4"	10	6	
3/8"	11	6.5	
1/2"	14	8	

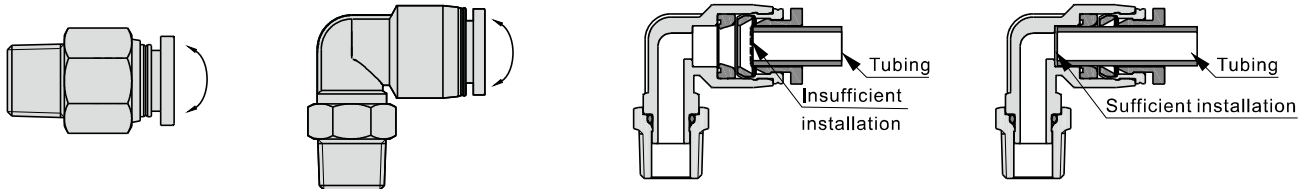


Note: If the fitting is connected with other parts, the external dimension L will be the value of the overall length of the fitting (B) minus the depth of the thread screw-in (A1).

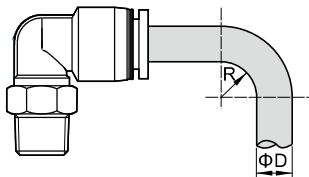
### 3. Caution

3.1. External force (bend, twist, and tension) may damage the fitting and cause air leakage.

3.2. Insufficient installation may cause air leakage or the tubing to release.



3.3. Pulling or twisting the tubing excessively may damage the fitting. For a mounting guide, see the table below.



Minimum bending radius of the tubing(mm)					
Tubing O.D.(ΦD)	4	6	8	10	12
Minimum bending radius(R)	20	30	50	80	150

### 4. Connection thread tightening method of the fitting with M5 type thread

First, tighten by hand, then use a wrench to tighten an additional 1/4 turn. Excessive tightening may damage the thread portion or deform the gasket and cause air leakage. Insufficient tightening may loosen the threads, or cause air leakage.

### 5. Tolerance of the Polyurethane tubing O.D.

Polyurethane tubing O.D.(mm)	4	6	8	10	12
Tolerance(mm)	±0.1	±0.1	±0.1	±0.15	±0.15





## Other precautions

1. Before piping is connected, it should be washed to remove chips and other debris from inside the pipe.
2. Ensure the tubing being cut perpendicularly and no damage or scratch on the surface of the tubing outside diameter.
3. Use pipe length with sufficient margin to avoid over-bending on the top of the fitting.
4. Pull the tubing back gently to make sure it has a positive seal before using.
5. Push the release button flange evenly and sufficiently to release the button. If the release button is not held down sufficiently, the tubing cannot be with drawn and the outer surface of the tubing may be scratched and cause air leakage.
6. When removing tubing, do not rotate around or 360 degree. This may result in scratch and removal of the tubing difficult.
7. When screwing together pipes and fittings, be certain that chips from the pipe threads and sealing material do not get inside the pipe. Also, when the pipe tape is used, leave approx. 1.5~2 thread ridges exposed at the end of the threads.



### Notes

## Safety instructions

- 1 When remove the tubing, make sure the pressure in the tubing is Zero.
- 2 Do not use the ordinary fittings and tubing in locations where spatter is generated. Spattering may result in a fire hazard.
- 3 Ensure that the pressure and ambient temperature are within the specified range.
- 4 Do not use in an atmosphere having corrosive gases, chemicals, sea water, water, water steam, or where there is direct contact with any of these.
- 5 Do not use in a place subject to heavy vibration and/or shock.



### Warning



### Product feature

1. Plastic polyurethane material conforms to the ROHS environment protection requirement.
2. High elasticity: small bend radius enables PU tubing to pass through the tight space.
3. Anti-knot: better anti-knot effect than other plastic tubing.
4. Excellent flexibility: it can bear repeated expansion.
5. Anti-abrasion: long working life and suitable for the environment in which it is easy to be worn.
6. Low permeability of gas: relieve the problems of leakage and pollution.
7. Good anti-solubility: no solvent leaks, therefore it will not pollute the environment.
8. Low compression: maintain excellent physical character.
9. Wide resistance: it has certain resistance to chemicals, water, fuel, oil and bacterium.

### Specification(Standard pressure type)

Type [Note1]	Tubing OD (mm)	Tubing ID (mm)	Wall Thickness (mm)	Package Length(m)	Working Pressure at 23°C(MPa)[Note2]	Burst pressure at 23°C(MPa)	Bend radius (mm)	Weight per 100M(kg)	Temperature (°C)
US98A032020□□	3.2	2.0	0.60	100/200	1.0	3.0	8	0.60	-20~70
US98A040025□□	4.0	2.5	0.75	100/200	1.0	3.0	10	0.94	
US98A060040□□	6.0	4.0	1.00	100/200	1.0	3.0	15	1.93	
US98A080050□□	8.0	5.0	1.50	100	1.0	3.0	20	3.66	
US98A100065□□	10.0	6.5	1.75	100	1.0	3.0	25	5.44	
US98A120080□□	12.0	8.0	2.00	100	1.0	3.0	35	7.56	
US98A160110□□	16.0	11.0	2.50	100	1.0	3.0	80	10.03	
UE95A032020□□	3.2	2.0	0.60	20/100/200	1.0	2.5	8	0.60	-40~70
UE95A040025□□	4.0	2.5	0.75	20/100/200	1.0	2.5	8	0.94	
UE95A060040□□	6.0	4.0	1.00	20/100/200	1.0	2.5	12	1.91	
UE95A080050□□	8.0	5.0	1.50	20/100	1.0	2.5	17	3.58	
UE95A100065□□	10.0	6.5	1.75	20/100	1.0	2.5	20	5.32	
UE95A120080□□	12.0	8.0	2.00	20/100	1.0	2.5	30	7.27	

[Note1] The first square of "□□" in the type column is for ordering code "unit" and the second is for "color".

[Note2] Working pressure:3 to 1 safety factor.

### Specification(Lower pressure type)

Type [Note1]	Tubing OD (mm)	Tubing ID (mm)	Wall Thickness (mm)	Package Length(m)	Working Pressure at 23°C(MPa)[Note2]	Burst pressure at 23°C(MPa)	Bend radius (mm)	Weight per 100M(kg)	Temperature (°C)
US98A080055□□	8.0	5.5	1.25	100	0.8	2.0	20	3.25	-20~70
US98A080060□□	8.0	6.0	1.00	100	0.4	1.5	25	2.70	
US98A100080□□	10.0	8.0	1.00	100	0.4	1.5	40	3.47	
US98A120100□□	12.0	10.0	1.00	100	0.4	1.5	60	4.24	
US98A160120□□	16.0	12.0	2.00	100	0.4	2.0	80	8.32	
UE95A080055□□	8.0	5.5	1.25	20/100	0.8	1.5	17	3.18	-40~70

[Note1] The first square of "□□" in the type column is for ordering code "unit" and the second is for "color".

[Note2] Working pressure:3 to 1 safety factor.

### Ordering code

US98A 060 040 100M BU



① Model	② Tubing OD	③ Tubing ID	④ Material length	⑤ Standard color [Note1]	
US98A: Ester Base, Shore A98±2	032 : Φ3.2mm 040 : Φ4.0mm 060 : Φ6.0mm	020 : Φ2.0mm 025 : Φ2.5mm 040 : Φ4.0mm 050 : Φ5.0mm 055 : Φ5.5mm 060 : Φ6.0mm	065 : Φ6.5mm 080 : Φ8.0mm 100 : Φ10.0mm 110 : Φ11.0mm 120 : Φ12.0mm	100M : 100 m/coil 200M : 200 m/coil  100M : 100 m/coil	BU: Blue BK: Black GE: Orange C: Clear WH: White CB: Clear Blue R: Red Y: Yellow GA: Gray  GN: Green BR: Brown CR: Clear Red CG: Clear Green CY: Clear Yellow CE: Clear Orange
	UE95A: Ether Base, Shore A95±2	032 : Φ3.2mm 040 : Φ4.0mm 060 : Φ6.0mm	020 : Φ2.0mm 025 : Φ2.5mm 040 : Φ4.0mm 050 : Φ5.0mm	055 : Φ5.5mm 065 : Φ6.5mm 080 : Φ8.0mm	

[Note1] Lower pressure type have nine standard colors: Blue\ Black\ Orange\ Clear\ White\ Clear Blue\ Red\ Yellow\ Gray.

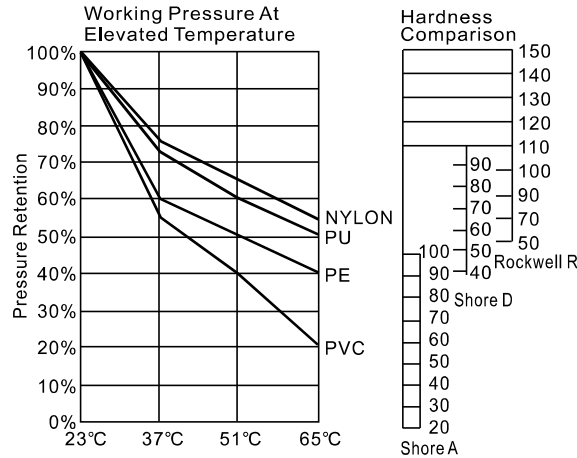
## UCS Series



### Product feature

1. Plastic polyurethane material conforms to the ROHS environment protection requirement.
2. High elasticity: small bend radius enables PU tubing to pass through the tight space.
3. Anti-knot: better anti-knot effect than other plastic tubing.
4. Excellent flexibility: it can bear repeated expansion.
5. Anti-abrasion: long working life and suitable for the environment in which it is easy to be worn.
6. Low permeability of gas: relieve the problems of leakage and pollution.
7. Good anti-solubility: no solvent leaks, therefore it will not pollute the environment.
8. Low compression: maintain excellent physical character.
9. Wide resistance: it has certain resistance to chemicals, water, fuel, oil and bacterium.

### Technical chart



### Specification(Standard pressure type)

Type [Note1]	Tubing OD(mm)	Tubing ID(mm)	Working Pressure at 23°C(MPa)[Note2]	Burst pressure at 23°C(MPa)	Bend radius(mm)	Length(m) [Note3]	Temp. (°C)
UCS060040□030□□	6.0	4.0	1.0	3.0	38	3	-20~70
UCS060040□060□□	6.0	4.0	1.0	3.0	38	6	
UCS060040□090□□	6.0	4.0	1.0	3.0	38	9	
UCS060040□120□□	6.0	4.0	1.0	3.0	38	12	
UCS060040□150□□	6.0	4.0	1.0	3.0	38	15	
UCS080050□060□□	8.0	5.0	1.0	3.0	38	6	
UCS080050□090□□	8.0	5.0	1.0	3.0	38	9	
UCS080050□120□□	8.0	5.0	1.0	3.0	38	12	
UCS080050□150□□	8.0	5.0	1.0	3.0	38	15	
UCS100065□060□□	10.0	6.5	1.0	3.0	50	6	
UCS100065□090□□	10.0	6.5	1.0	3.0	50	9	
UCS100065□120□□	10.0	6.5	1.0	3.0	50	12	
UCS100065□150□□	10.0	6.5	1.0	3.0	50	15	
UCS120080□060□□	12.0	8.0	1.0	3.0	60	6	
UCS120080□090□□	12.0	8.0	1.0	3.0	60	9	
UCS120080□120□□	12.0	8.0	1.0	3.0	60	12	
UCS120080□150□□	12.0	8.0	1.0	3.0	60	15	

### Specification(Lower pressure type)

Type [Note1]	Tubing OD(mm)	Tubing ID(mm)	Working Pressure at 23°C(MPa)[Note2]	Burst pressure at 23°C(MPa)	Bend radius(mm)	Length(m) [Note3]	Temp. (°C)
UCS080055□060□□	8.0	5.5	0.8	2.0	38	6	-20~70
UCS080055□090□□	8.0	5.5	0.8	2.0	38	9	
UCS080055□120□□	8.0	5.5	0.8	2.0	38	12	
UCS080055□150□□	8.0	5.5	0.8	2.0	38	15	

[Note1] "□" in the type column is for "color", and "□□" is for "coupling type" and "coupling mode".

[Note2] Working pressure: 3 to 1 safety factor.

[Note3] Material length: length of operating status=(0.8~0.9)xMaterial length.

### Ordering code

UCS 080 050 BU 090M A 1



① Model	② Tubing OD	③ Tubing ID	④ Standard color [Note 1]	⑤ Material length	⑥ Coupling type	⑦ Coupling form
UCS: Ester Base	060 : Φ6.0mm	040 : Φ4.0mm	BU: Blue BK: Black GE: Orange C: Clear WH: White CB: Clear Blue R: Red Y: Yellow GN: Green BR: Brown CR: Clear Red CG: Clear Green CY: Clear Yellow CE: Clear Orange	030M : 3m	A: one end is 30cm and the other end is 10cm	1: Without coupling
	080 : Φ8.0mm	050: Φ5.0mm		060M : 6m	B: Both of the tubings of the couplings are 10cm	2: With female-male coupling
	100 : Φ10.0mm	055 : Φ5.5mm		090M : 9m	C: Both of the tubings of the couplings are 0cm	3: With male-male coupling
	120 : Φ12.0mm	065 : Φ6.5mm		120M : 12m		
		080 : Φ8.0mm		150M : 15m		

[Note1] Lower pressure type has nine standard colors: Blue\ Black\ Orange\ Clear\ White\ Clear Blue\ Red\ Yellow\ Gray.

### Pipe end coupling

Name	Male quick coupling	Female quick coupling	Male quick coupling	Female quick coupling	Male quick coupling	Female quick coupling	Male quick coupling	Female quick coupling
Ordering code	GX-400-10PP	GX-230-10SP	GX-400-20PP	GX-230-20SP	GX-400-30PP	GX-230-30SP	GX-400-40PP	GX-230-40SP
Photo								
Type	Φ6×Φ4 quick coupling		Φ8×Φ5 quick coupling		Φ10×Φ6.5 quick coupling		Φ12×Φ8 quick coupling	





### Product feature

1. PA12、PA6 Nylon tubing has excellence capability to be used high temperature conditions widely.
2. Many kinds of colors to be chosen.
3. Steady size, Little osmotic rate.
4. Be used widely for it's aging resistant, good anti-oil, and high temperature resistant capability.

### Specification

Type [Note1]	Tubing OD (mm)	Tubing ID (mm)	Wall Thickness (mm)	Package Length(m)	Working Pressure at 23°C(MPa) [Note2]	Burst pressure at 23°C(MPa)	Bend radius (mm)	Weight per 100M(kg)	Temperature (°C)
PA6040025□□	4.0	2.5	0.75	200	3.5	11.0	30	0.90	-10~70
PA6060040□□	6.0	4.0	1.00	100	3.0	10.0	45	1.80	
PA6080060□□	8.0	6.0	1.00	100	2.0	7.0	65	2.50	
PA6100075□□	10.0	7.5	1.25	100	2.0	7.0	75	3.90	
PA6120090□□	12.0	9.0	1.50	100	2.0	7.0	100	5.70	
PA12040025□□	4.0	2.5	0.75	200	2.5	7.5	25	0.80	-40~70
PA12060040□□	6.0	4.0	1.00	100	2.0	7.0	35	1.60	
PA12080060□□	8.0	6.0	1.00	100	1.5	5.0	55	2.30	
PA12100075□□	10.0	7.5	1.25	100	1.5	5.0	75	3.50	
PA12120090□□	12.0	9.0	1.50	100	1.5	5.0	75	5.10	

[Note1] The first square of "□" in the type column is for ordering code "unit" and the second is for "color".

[Note2] Working pressure:3 to 1 safety factor.

### Relationship of operation pressure and temperature

Temperature	PA6 the percentage of work pressure reached at different temperatures					PA12 the percentage of work pressure reached at different temperatures				
	20°C	40°C	60°C	80°C	100°C	20°C	30°C	50°C	60°C	80°C
Percentage	100%	74%	57%	47%	40%	100%	83%	75%	64%	47%

### Ordering code

PA12 060 040 100M BU

① ② ③ ④ ⑤

① Model	② Tubing OD	③ Tubing ID	④ Material length	⑤ Standard color
PA6 : Nylon 6 PA12 : Nylon 12	040 : Φ4.0mm 060 : Φ6.0mm 080 : Φ8.0mm 100 : Φ10.0mm 120 : Φ12.0mm	025 : Φ2.5mm 040 : Φ4.0mm 060 : Φ6.0mm 075 : Φ7.5mm 090 : Φ9.0mm	200M : 200 m/coil(4X2.5) 100M : 100 m/coil(Others)	BU : Blue BK : Black GE : Orange N : True color WH : White GN : Green R : Red Y : Yellow



## UN54D Series

### Product feature



1. Monolayer tubing with flame resistant.
2. Excel in elasticity: can pass compactness space with lesser bend radius.
3. Excellent water-resistant and flexibility.
4. Super doughty wearable and higher intensity of stretch.

### Specification

Type [Note1]	Tubing OD (mm)	Tubing ID (mm)	Wall Thickness (mm)	Package Length(m)	Working Pressure at 23°C(MPa)	Burst pressure at 23°C	Bend radius (mm)	Weight per 100M(kg)	Temperature (°C)
UN54D□060040□□	6.0	4.0	1.00	100	1.0	4.0	12	1.93	-20~70
UN54D□080050□□	8.0	5.0	1.50	100	1.0	4.0	18	3.66	
UN54D□100065□□	10.0	6.5	1.75	100	1.0	4.0	20	5.44	
UN54D□120080□□	12.0	8.0	2.00	100	1.0	4.0	20	7.56	

[Note1] "□□" in the type column is for "color"

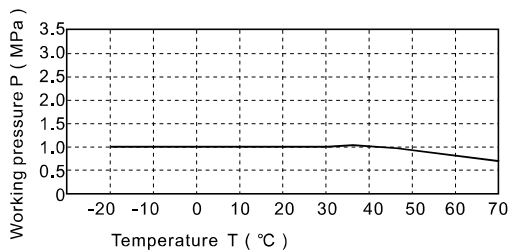
### Ordering code

UN54D 120 080 100M Y

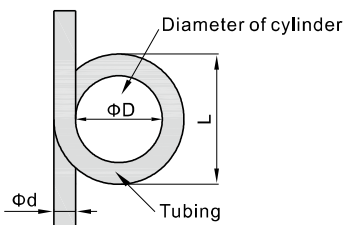
① ② ③ ④ ⑤

① Model	② Tubing OD	③ Tubing ID	④ Material length	⑤ Standard color
UN54D : Flame resistant tubing54D±3	060 : Φ6.0mm 080 : Φ8.0mm 100 : Φ10.0mm 120 : Φ12.0mm	040 : Φ4.0mm 050 : Φ5.0mm 065 : Φ6.5mm 080 : Φ8.0mm	100M : 100 m/coil	BU: Blue BK: Black GN: Green WH: White R: Red Y: Yellow

### Relationship of operation pressure and temperature



### Mini bend radius



The least bend radius ( JIS method )

JIS method ( Base on JIS B8381 standard )

When the tubing circle the cylinder tightly and the distortion rate is 25%, the cylinder radius is the least bend radius.

Testing condition : 20°C , 65%RH

$$N = \{1 - (L - D) / 2d\} \times 100$$

N = Distortion rate ( % ) , less than 25% of standard value.

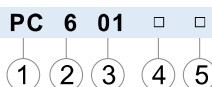
d = Tubing diameter ( mm )

L = Measure value ( mm )

D = Diameter of cylinder ( mm )

## PC, POC series

### Ordering code



① Model	② Port size	③ Thread connection		④ Standard color		⑤ Thread type
PC: Male connector 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ124mm	Thread connection M5 : M5X0.8	Adaptable port size Φ4, Φ6	Standard color Blank: Gray	Specification Release button: Gray	Blank: PT
POC: Male connector 		01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Φ4, Φ6 Φ8, Φ10 Φ12	D: Black	Release button: Black	

### Specification

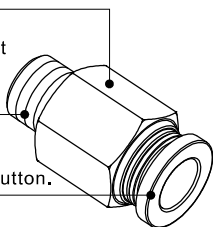
<b>Operating pressure range</b>	<b>0~10kgf/cm<sup>2</sup>(0~1.0MPa)</b>
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Table for interface port and tube O.D.

Product series	Thread type	Port size				
		Φ4	Φ6	Φ8	Φ10	Φ12
PC	M5	•	•			
	1/8"	•	•	•	•	•
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
	1/2"		•	•	•	•
POC	M5	•	•			
	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
	3/8"			•	•	•
	1/2"				•	•

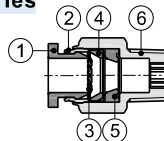
### Product feature

- The compact appearance space saving.
- The threaded portion is covered with sealant and the M5 thread is attached with a sealing gasket to prevent air leakage over the connection thread portion.
- Grey and black are optional for the release button.



### Inner structure

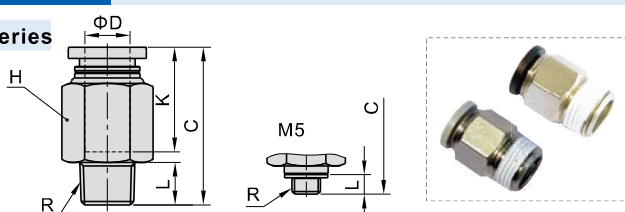
#### PC Series



No.	Item	Material
1	Release button	POM
2	Guide	Aluminum alloy
3	Spring gasket	Stainless steel
4	Chuck	POM
5	O-ring	NBR
6	Body	Brass

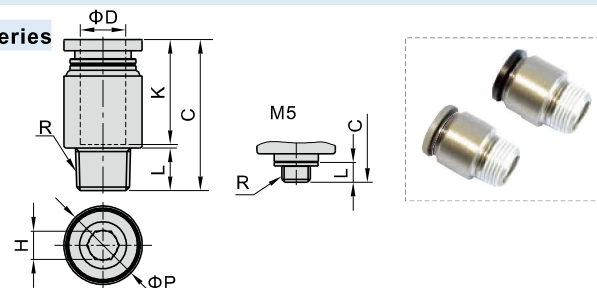
### Dimensions

#### PC Series



Model/Item	ΦD	R	L	C	K	H(Across flat)	Weight(g)
PC4M5	4	M5×0.8	3.5	19.5	14	9	6.5
PC401		1/8"	7.5	19.5	14	10	7
PC402		1/4"	10	19.5	14	14	13.5
PC6M5		M5×0.8	3.5	22.5	16.5	12	8.5
PC601	6	1/8"	7.5	22.0	18.5	12	7.5
PC602		1/4"	10	24.5	18.5	14	15.5
PC603		3/8"	11	22.5	18.5	17	24
PC604		1/2"	14	26.0	18.5	21	46
PC801	8	1/8"	7.5	28	18.5	14	13.5
PC802		1/4"	10	27	18.5	14	13
PC803		3/8"	11	23.5	18.5	17	21
PC804		1/2"	14	27	18.5	21	43.5
PC1001	10	1/8"	7.5	30	21	17	20.5
PC1002		1/4"	10	32.5	21	17	24
PC1003		3/8"	11	28	21	17	20.5
PC1004		1/2"	14	26.5	21	21	36
PC1201	12	1/8"	7.5	32.5	23	21	38.5
PC1202		1/4"	10	35	23	21	40.5
PC1203		3/8"	11	30.5	23	21	28.5
PC1204		1/2"	14	32.5	23	21	41.5

#### POC Series



Model/Item	ΦD	R	ΦP	L	C	K	H(Across flat)	Weight(g)
POC4M5	4	M5×0.8	9	3.5	18.5	14	2.5	3.6
POC401		1/8"	10	7.5	18	14	3	5.5
POC402		1/4"	14	10	19.5	14	3	12.6
POC6M5		M5×0.8	12	3.5	21.5	16.5	2	5.9
POC601	6	1/8"	12	7.5	22.0	18.5	4	6.3
POC602		1/4"	14	10	22.0	18.5	4	11.8
POC801		1/8"	14	7.5	26.5	18	5	9.9
POC802		1/4"	14	10	25	18	6	10.1
POC803	8	3/8"	17	11	23.5	18	6	19.3
POC1001		1/8"	17	7.5	30	21	5	16.5
POC1002		1/4"	17	10	29	21	6	15.4
POC1003		3/8"	17	11	28	21	8	18.7
POC1004	10	1/2"	21	14	26.5	21	8	35.3
POC1202		1/4"	21	10	34.5	23	6	32.3
POC1203		3/8"	21	11	30	23	8	25.1
POC1204		1/2"	21	14	32	23	8	37.5

### Ordering code

PC 6 01 □ □ - M

① ② ③ ④ ⑤ ⑥

① Model	② Port size	③ Thread connection	④ Standard color	⑤ Thread type	⑥ Style type	
PC: Male connector 	3.2 : Φ3.2mm 4 : Φ4mm 6 : Φ6mm	Thread connection: Adaptable port size	Standard color	Blank: PT	M : Mini type	
PL: Male elbow 		M3 : M3X0.5	Φ3.2, Φ4			Specification
		M5 : M5X0.8	Φ3.2, Φ4, Φ6			Release button: Gray
		01 : 1/8"	Φ4, Φ6	Release button: Black		

### Specification

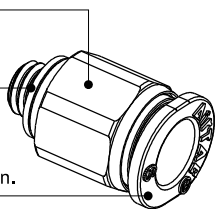
<b>Operating pressure range</b>	<b>0~10kgf/cm<sup>2</sup>(0~1.0MPa)</b>
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Table for interface port and tube O.D.

Product series	Thread type	Port size		
		Φ3.2	Φ4	Φ6
PC/PL	M3	•	•	
	M5	•	•	•
	1/8"		•	•

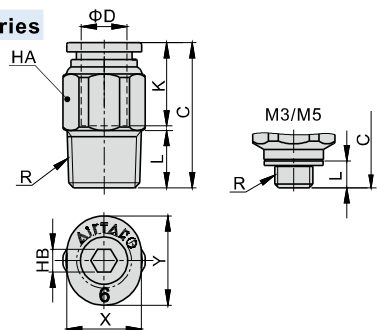
### Product feature

- The compact appearance space saving.
- The threaded portion is covered with sealant and the M3/M5 thread is attached with a sealing gasket to prevent air leakage over the connection thread portion.
- Grey and black are optional for the release button.

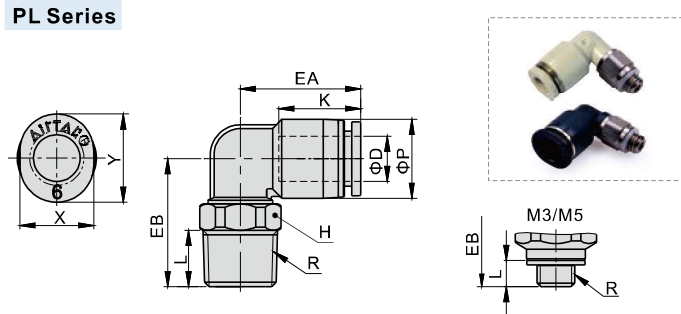


### Dimensions

#### PC Series



#### PL Series



Model/Item	ΦD	R	L	C	K	X	Y	HA	HB	Weight(g)
PC3.2M3-M	3.2	M3×0.5	3	16	11.5	6.8	8.7	7	1.5	1.7
PC3.2M5-M		M5×0.8	3.5	16	11.5	6.8	8.7	7	2	2.0
PC4M3-M	4	M3×0.5	3	17.5	12.5	7.8	9.5	8	1.5	2.4
PC4M5-M		M5×0.8	3.5	17	12.5	7.8	9.5	8	2	2.7
PC401-M		1/8"	7.5	17.5	13.5	7.8	9.5	10	3	5.5
PC6M5-M	6	M5×0.8	3.5	18.5	13.5	9.8	11.7	10	2	3.6
PC601-M		1/8"	7.5	19.0	15.5	9.8	11.7	10	4	6.0

Model/Item	ΦD	R	ΦP	L	K	EA	EB	H	X	Y	Weight(g)
PL3.2M3-M	3.2	M3×0.5	7.5	3	12	14.5	14	7	6.8	8.7	2.4
PL3.2M5-M		M5×0.8	3.5	12	14.5		7	6.8	8.7	2.7	
PL4M3-M	4	M3×0.5	8.5	3	12.5	15	14	7	7.8	9.5	3.0
PL4M5-M		M5×0.8		3.5	12.5		14.5	7	7.8	9.5	3.3
PL401-M		1/8"		7.5	12.5		16	10	7.8	9.5	6.2
PL6M5-M	6	M5×0.8	10.5	3.5	13.5	16.0	15.5	7	9.8	11.7	4.0
PL601-M		1/8"		7.5	13.5		16.5	10	9.8	11.7	6.8

## One-touch fittings—threaded type

### Ordering code

Same diameter type fittings

PL 6 01 □ □  
① ② ③ ④ ⑤

① Model	② Port size	③ Thread connection	④ Standard color	⑤ Thread type
PHW: Double universal male elbow 	PL: Male elbow 	Thread connection	Standard color	Blank: PT
PHF: Universal female elbow 	PLL: Extended male elbow 	Adaptable port size	Specification	
PEB: Male branch tee 	PLF: Female elbow 	M5: M5X0.8	Blank: Gray	
PED: Male run tee 	PCF: Female connector 	Φ4, Φ6	Release button: Gray	
PYB: Branch "Y" 	PMF: Bulkhead connector 	4: Φ4mm 6: Φ6mm 8: Φ8mm 10: Φ10mm 12: Φ12mm	Body: Gray	
PZB: Threaded cross 	PH: Universal male elbow 	01: 1/8" 02: 1/4" 03: 3/8" 04: 1/2"	Others	
			Release button: Black	
			Body: Black	
			Others	

Different diameter type fittings

PKD 6 - 4 01 □ □  
① ② ③ ④ ⑤ ⑥

① Model	② Port size	③ Port size	④ Thread connection	⑤ Standard color	⑥ Thread type
PKD: Male reducer triple branch 	6: Φ6mm 8: Φ8mm 10: Φ10mm	4: Φ4mm 6: Φ6mm 8: Φ8mm	01: 1/8" 02: 1/4" 03: 3/8"	Standard color: Specification	Blank: PT
				Blank: Gray	
				Release button: Gray/Body: Gray	
				D: Black	
				Release button: Black/Body: Black	

### Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Product feature

1. Variable models can be widely used in every kind of pneumatic systems.
2. High circulation performance: bear the same flow with the volume of the tubing inside diameter.
3. Connect tubing easily and conveniently. The tubing connection portion is safe and durable.
4. The threaded portion is covered with sealant and the M5 thread is attached with a sealing gasket to prevent air leakage over the connection thread portion.
5. The nickel plated body is anti-corrosion and anti-pollution, which allows a broader application.

### Inner structure

No.	Item	Material
1	Release button	POM
2	Guide	Aluminum alloy
3	Spring gasket	Stainless steel
4	Chuck	POM
5	O-ring	NBR
6	Body	PBT
7	O-ring	NBR
8	Stud	Brass

### Table for interface port and tube O.D.

Product series	Thread type	Port size				
		Φ4	Φ6	Φ8	Φ10	Φ12
PL	M5	•	•			
	1/8"	•	•	•	•	•
	1/4"	•	•	•	•	•
	3/8"	•	•	•	•	•
PLL	1/2"		•	•	•	•
	M5	•	•			
	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
PEB	3/8"		•	•	•	•
	1/2"			•	•	•
	M5	•	•			
PED	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
PYB	1/2"			•	•	•
	M5	•	•			
	1/8"	•	•	•	•	
PHF	1/4"	•	•	•	•	
	3/8"		•	•	•	•
	1/2"			•	•	•
PHW	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
PZB	1/2"			•	•	•
	1/8"	•	•			
	1/4"	•	•	•	•	

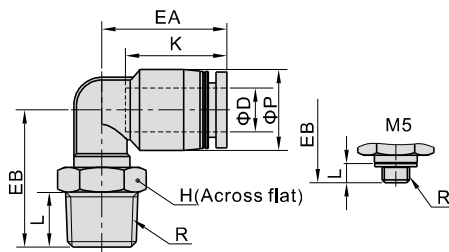
  

Product series	Thread type	Port size		
		Φ6-Φ4	Φ8-Φ6	Φ10-Φ8
PKD	1/8"	•		
	1/4"		•	
	3/8"			•

## One-touch fittings—threaded type

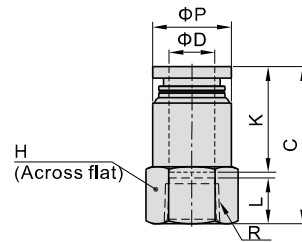
### Dimensions

#### PL Series



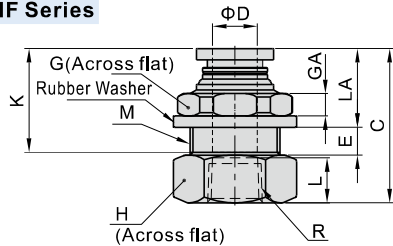
Model\Item	ΦD	R	ΦP	L	K	EA	EB	H	Weight(g)
PL4M5	4	M5×0.8	9	3.5	14	17	15	8	3
PL401		1/8"	9	7.5	14	17	18.5	10	4.5
PL402		1/4"	9	10	14	17	22.0	14	12
PL6M5	6	M5×0.8	12.5	3.5	17	20	17.0	8	4.5
PL601		1/8"	12.5	7.5	17	20	20.5	10	6
PL602		1/4"	12.5	10	17	20	24.0	14	13.5
PL603		3/8"	12.5	11	17	20	25.5	17	20.5
PL604	1/2"	12.5	14	17	20	30.0	21	36	
PL801	8	1/8"	15	7.5	18.5	23	20.5	10	7.5
PL802		1/4"	15	10	18.5	23	25.0	14	13
PL803		3/8"	15	11	18.5	23	26.5	17	21
PL804		1/2"	15	14	18.5	23	31.0	21	36
PL1001	10	1/8"	18	7.5	21	25.5	25.0	17	16.5
PL1002		1/4"	18	10	21	25.5	27.0	17	19
PL1003		3/8"	18	11	21	25.5	28.0	17	21
PL1004		1/2"	18	14	21	25.5	32.5	21	37
PL1201	12	1/8"	21	7.5	23	28.5	26.5	17	19
PL1202		1/4"	21	10	23	28.5	28.5	17	21.5
PL1203		3/8"	21	11	23	29.5	33	17	25.5
PL1204		1/2"	21	14	23	29.5	34	21	37

#### PCF Series



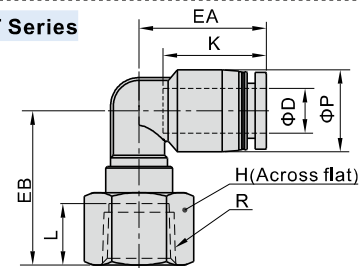
Model\Item	ΦD	R	ΦP	L	C	K	H	Weight(g)
PCF4M5	4	M5×0.8	9	5	21	14	10	2.7
PCF401		1/8"	9.5	8	23	14	14	4.5
PCF402		1/4"	9.5	11	26	14	17	6.5
PCF6M5	6	M5×0.8	12	5	21.5	16.5	12	3.9
PCF601		1/8"	12.5	8	25.5	16.5	14	5.6
PCF602		1/4"	12.5	11	28.5	16.5	17	7.5
PCF603		3/8"	13	12	29.5	16.5	21	10.7
PCF604	1/2"	13	13.5	31.0	16.5	25	13.8	
PCF801	8	1/8"	14	8	27.5	18.5	14	5.8
PCF802		1/4"	14.5	11	30.5	18.5	17	8.4
PCF803		3/8"	14.5	12	31.5	18.5	21	11.2
PCF804		1/2"	14.5	13.5	33	18.5	25	14.4
PCF1001	10	1/8"	17	8	29	21	17	9.5
PCF1002		1/4"	17	11	33	21	17	9.9
PCF1003		3/8"	18	12	34	21	21	14
PCF1004		1/2"	18	13.5	35.5	21	25	17.1
PCF1202	12	1/4"	21	11	33.5	23	21	17.5
PCF1203		3/8"	21	12	35.5	23	21	16.6
PCF1204		1/2"	21	13.5	37	23	25	19.7

#### PMF Series



Model\Item	ΦD	R	M	L	C	K	LA	E	GA	G	H	Weight(g)
PMF401	4	1/8"	M12X1	8	25	14	12	4	4	14	14	6.4
PMF402		1/4"	M12X1	11	29	14	12	4	4	14	17	9
PMF601	6	1/8"	M14X1	8	25.5	16.5	12.5	5	4	17	17	9.1
PMF602		1/4"	M14X1	11	30.5	16.5	12.5	5	4	17	17	10.9
PMF603		3/8"	M14X1	12	31.5	16.5	12.5	5	4	17	21	13.2
PMF801		1/8"	M16X1	8	27.5	18.5	13.5	5.5	4	19	19	12.8
PMF802	8	1/4"	M16X1	11	32	18.5	13.5	5.5	4	19	19	15.7
PMF803		3/8"	M16X1	12	33	18.5	13.5	5.5	4	19	21	15
PMF804		1/2"	M16X1	13.5	34.5	18.5	13.5	5.5	4	19	25	18.1
PMF1001		10	1/8"	M20X1	8	30	21	14.5	7.5	5	24	22
PMF1002	1/4"		M20X1	11	35	21	14.5	7.5	5	24	22	22.8
PMF1003	3/8"		M20X1	12	36	21	14.5	7.5	5	24	22	21.1
PMF1004	1/2"		M20X1	13.5	37.5	21	14.5	7.5	5	24	25	23.2
PMF1202	12	1/4"	M22X1	11	34.5	23	15.5	8	6	27	24	26.2
PMF1203		3/8"	M22X1	12	37.5	23	15.5	8	6	27	24	27
PMF1204		1/2"	M22X1	13.5	39	23	15.5	8	6	27	25	26.2

#### PLF Series

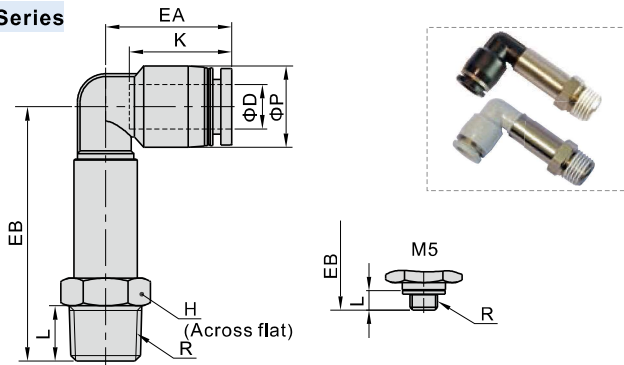


Model\Item	ΦD	R	ΦP	L	K	EA	EB	H	Weight(g)
PLF4M5	4	M5×0.8	9	5	14	17	16	10	2.9
PLF401		1/8"	9	8	14	17	21	14	4.6
PLF402		1/4"	9	11	14	17	24	17	6.8
PLF6M5	6	M5×0.8	12.5	5	17	20	18.5	10	7
PLF601		1/8"	12.5	8	17	20	23	14	5.8
PLF602		1/4"	12.5	11	17	20	26	17	8
PLF603		3/8"	12.5	12	17	20	27	21	10.7
PLF801	8	1/8"	15	8	18.5	23	20	14	6.6
PLF802		1/4"	15	11	18.5	23	27.5	17	9.2
PLF803		3/8"	15	12	18.5	23	28.5	21	11.9
PLF804		1/2"	15	13.5	18.5	23	30	25	15.2
PLF1001	10	1/8"	18	8	21	25.5	24	17	11.3
PLF1002		1/4"	18	11	21	25.5	26.5	17	11.2
PLF1003		3/8"	18	12	21	25.5	30	21	14.5
PLF1004		1/2"	18	13.5	21	25.5	31.5	25	17.4
PLF1202	12	1/4"	21	11	23	28.5	28.5	17	13.7
PLF1203		3/8"	21	12	23	29.5	32	21	17.4
PLF1204		1/2"	21	13.5	23	29.5	33	25	20.4

# Accessories—One-Touch Fittings

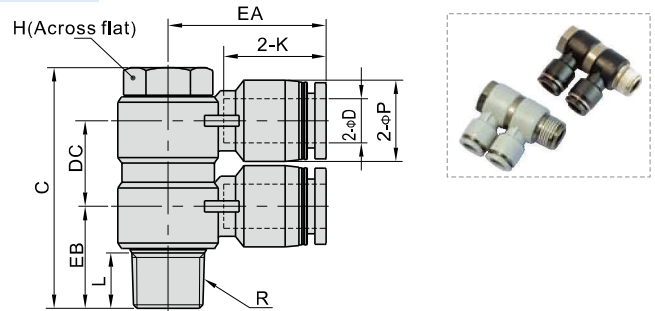
## One-touch fittings—threaded type

### PLL Series



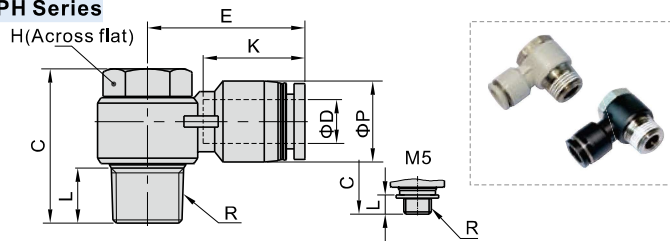
Model\Item	ΦD	R	ΦP	L	K	EA	EB	H	Weight(g)
PLL4M5	4	M5×0.8	9	3.5	14	17	32.5	8	8.9
PLL401		1/8"	9	7.5	14	17	35.5	10	12.3
PLL402		1/4"	9	10	14	17	38.5	14	16.9
PLL6M5	6	M5×0.8	12.5	3.5	17	20	34.5	8	9.9
PLL601		1/8"	12.5	7.5	17	20	37.5	10	13
PLL602		1/4"	12.5	10	17	20	40.5	14	18
PLL603	8	3/8"	12.5	11	17	20	43	17	23.4
PLL801		1/8"	15	7.5	18.5	23	43.5	12	16.6
PLL802		1/4"	15	10	18.5	23	45.5	14	22.7
PLL803	10	3/8"	15	11	18.5	23	48	17	27.7
PLL1001		1/8"	18	7.5	21	25.5	50.5	15	37.5
PLL1002		1/4"	18	10	21	25.5	53.5	15	40.6
PLL1003	12	3/8"	18	11	21	25.5	54.5	17	40.7
PLL1004		1/2"	18	14	21	25.5	59	21	47.4
PLL1202		1/4"	21	10	23	28.5	55.5	15	43
PLL1203	12	3/8"	21	11	23	29.5	60	17	55.4
PLL1204		1/2"	21	14	23	29.5	63	21	56.7

### PHW Series



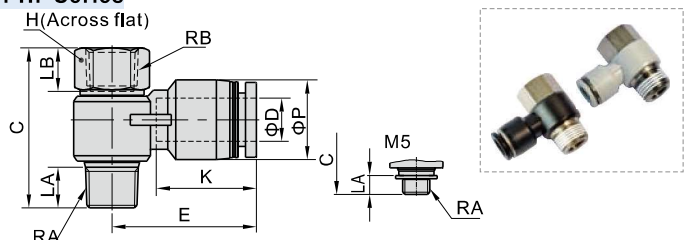
Model\Item	ΦD	R	ΦP	L	C	K	EA	EB	DC	H	Weight(g)
PHW401	4	1/8"	9	7.5	38	14	20.5	14.5	13	11	19
PHW601	6	1/8"	12.5	7.5	38	16.5	23.0	15	13	11	21
PHW602		1/4"	12.5	10	43.5	16.5	25.0	17.5	15.5	14	40.2
PHW603		3/8"	12.5	11	50	16.5	27.0	20	16.5	19	69.2
PHW801	8	1/8"	15	7.5	40.5	18.5	26.5	16.5	15.5	11	23.6
PHW802		1/4"	15	10	43.5	18.5	28.5	18.5	15.5	14	40.8
PHW803		3/8"	15	11	50	18.5	29.5	20	16.5	19	70.4
PHW804	10	1/2"	15	14	61	18.5	32	24.5	22	24	134.8
PHW1002		1/4"	18	10	46.5	21	31	20	18.5	14	47
PHW1003		3/8"	18	11	55	21	33	21	22	19	87.5
PHW1004	12	1/2"	18	14	61	21	35.5	25	22	24	137.7
PHW1203		3/8"	21	11	55	23	36	23	22	19	86.4
PHW1204	12	1/2"	21	14	61	23	38	26.5	22	24	147.5

### PH Series



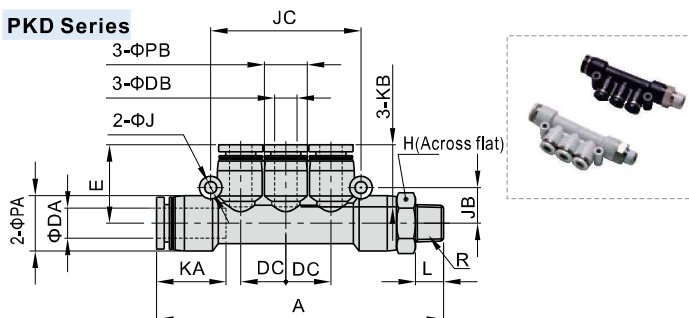
Model\Item	ΦD	R	ΦP	L	C	K	E	H	Weight(g)
PH4M5	4	M5×0.8	9	3.5	17	14	19	8	5.8
PH401		1/8"	9	7.5	25	14	20.5	11	12.8
PH6M5		6	M5×0.8	12.5	3.5	17	16.5	23.5	8
PH601	1/8"		12.5	7.5	25	16.5	23	11	14
PH602	1/4"		12.5	10	28	16.5	25	14	25.4
PH603	8	3/8"	12.5	11	33	16.5	27	19	50.2
PH801		1/8"	15	7.5	25	18.5	26.5	11	14.7
PH802		1/4"	15	10	28	18.5	28.5	14	26.4
PH803	10	3/8"	15	11	33	18.5	29.5	19	49.4
PH804		1/2"	15	14	39	18.5	32	24	89
PH1002		1/4"	18	10	28	21	31	14	27.7
PH1003	12	3/8"	18	11	33	21	33	19	51.1
PH1004		1/2"	18	14	39	21	35.5	24	88.5
PH1203		3/8"	21	11	33	23	36	19	53
PH1204	12	1/2"	21	14	39	23	38	24	92.8

### PHF Series



Model\Item	ΦD	RA	RB	ΦP	LA	LB	C	K	E	H	Weight(g)
PHF4M5	4	M5×0.8	M5×0.8	9	3.5	6	20	14	19	8	6.2
PHF401		1/8"	1/8"	9	7.5	8	29.5	14	20.5	12	12.9
PHF6M5		6	M5×0.8	M5×0.8	12.5	3.5	6	20	16.5	23.5	8
PHF601	1/8"		1/8"	12.5	7.5	8	29.5	16.5	23	12	13.9
PHF602	1/4"		1/4"	12.5	10	11	35	16.5	25	17	30.3
PHF603	8	3/8"	3/8"	12.5	11	12	40	16.5	27	19	44.2
PHF801		1/8"	1/8"	15	7.5	8	29.5	18.5	26.5	12	15
PHF802		1/4"	1/4"	15	10	11	35	18.5	28.5	17	30.7
PHF803	10	3/8"	3/8"	15	11	12	40	18.5	29.5	19	44.8
PHF804		1/2"	1/2"	15	14	13.5	47.5	18.5	32	24	84.7
PHF1002		1/4"	1/4"	18	10	11	35	21	31	17	32
PHF1003	12	3/8"	3/8"	18	11	12	40	21	33	19	46.2
PHF1004		1/2"	1/2"	18	14	13.5	47.5	21	35.5	24	86.1
PHF1203		3/8"	3/8"	21	11	12	40	23	36	19	48.4
PHF1204	12	1/2"	1/2"	21	14	13.5	47.5	23	38	24	89.7

### PKD Series



Model\Item	ΦDA	ΦDB	R	L	A	ΦPA	ΦPB	KA
PKD6-401	6	4	1/8"	7.5	66.5	12.5	9	16.5
PKD8-602	8	6	1/4"	10	79	15	12.5	18.5
PKD10-803	10	8	3/8"	11	91.5	18	15	21

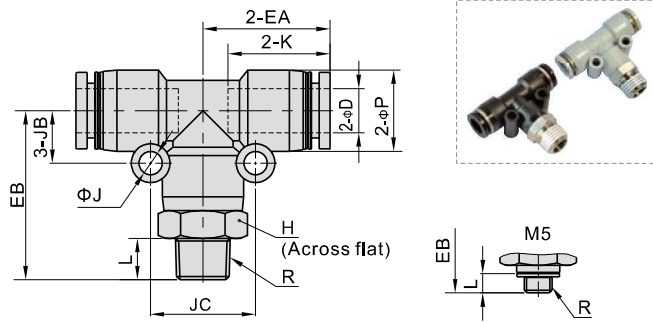
Model\Item	KB	ΦJ	JB	JC	DC	E	H	Weight(g)
PKD6-401	14	3.2	8	34	10	17.5	12	15.8
PKD8-602	16.5	3.2	9.5	40	12	21	14	26.5
PKD10-803	18.5	4.3	11	48	14.5	24	17	38.2



# Accessories—One-Touch Fittings

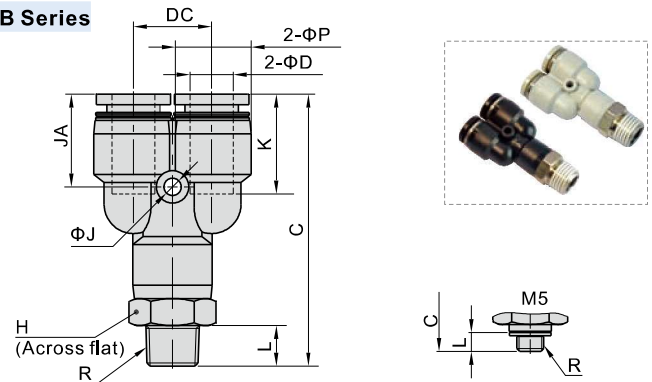
## One-touch fittings—threaded type

### PEB Series



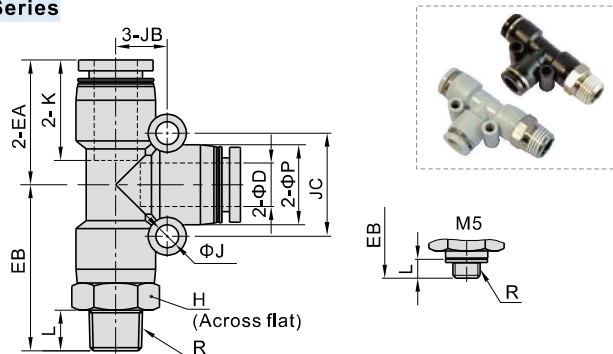
Model/Item	φD	R	φP	L	K	EA	EB	φJ	JB	JC	H	Weight(g)
PEB4M5	4	M5×0.8	9	3.5	14	17	21	3.2	6.5	13	9	6.8
PEB401		1/8"	9	7.5	14	17	25	3.2	6.5	13	10	8.8
PEB402		1/4"	9	10	14	17	28	3.2	6.5	13	14	15.5
PEB6M5	6	M5×0.8	12.5	3.5	16.5	20	23.5	3.2	8	16	12	11.2
PEB601		1/8"	12.5	7.5	16.5	20	27.5	3.2	8	16	12	13.5
PEB602		1/4"	12.5	10	16.5	20	30.5	3.2	8	16	14	18.6
PEB603	3/8"	12.5	11	16.5	20	32	3.2	8	16	17	25.3	
PEB801	8	1/8"	15	7.5	18.5	23	30.5	4.3	9.5	19	14	18.4
PEB802		1/4"	15	10	18.5	23	33	4.3	9.5	19	14	21.3
PEB803		3/8"	15	11	18.5	23	34.5	4.3	9.5	19	17	28.2
PEB804	1/2"	15	14	18.5	23	38.5	4.3	9.5	19	21	41	
PEB1001	10	1/8"	18	7.5	21	26.5	34	4.3	11	22	17	26.7
PEB1002		1/4"	18	10	21	26.5	36.5	4.3	11	22	17	29.2
PEB1003		3/8"	18	11	21	26.5	37.5	4.3	11	22	17	31.9
PEB1004	1/2"	18	14	21	26.5	41.5	4.3	11	22	21	45.4	
PEB1202	12	1/4"	21	10	23	30	41	4.3	13	26	21	49.6
PEB1203		3/8"	21	11	23	30	42	4.3	13	26	21	51.2
PEB1204		1/2"	21	14	23	30	45	4.3	13	26	21	57.3

### PYB Series



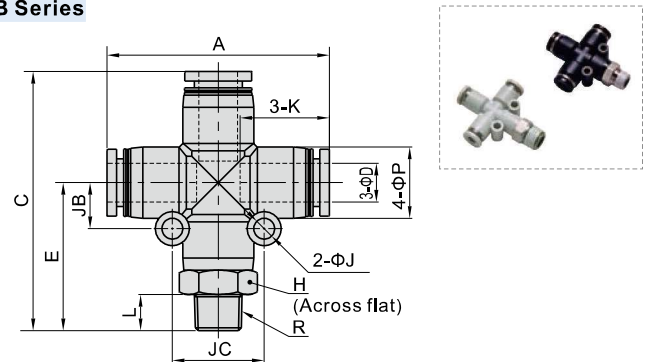
Model/Item	φD	R	φP	L	C	K	φJ	JA	DC	H	Weight(g)
PYB4M5	4	M5×0.8	9	3.5	35.5	14	3.2	13	10	9	6.7
PYB401		1/8"	9	7.5	39.5	14	3.2	13	10	10	9
PYB402		1/4"	9	10	42.5	14	3.2	13	10	14	10.8
PYB6M5	6	M5×0.8	12.5	3.5	40.5	16.5	3.2	15.5	12	12	11.1
PYB601		1/8"	12.5	7.5	44.5	16.5	3.2	15.5	12	12	13.7
PYB602		1/4"	12.5	10	47.5	16.5	3.2	15.5	12	14	18.2
PYB603	3/8"	12.5	11	49.0	16.5	3.2	15.5	12	17	25	
PYB801	8	1/8"	15	7.5	50	18.5	3.2	17	14.5	14	19.8
PYB802		1/4"	15	10	52.5	18.5	3.2	17	14.5	14	22
PYB803		3/8"	15	11	54	18.5	3.2	17	14.5	17	27.7
PYB804	1/2"	15	14	58	18.5	3.2	17	14.5	21	40.8	
PYB1001	10	1/8"	18	7.5	56.5	21	4.3	19.5	18	17	27.4
PYB1002		1/4"	18	10	59	21	4.3	19.5	18	17	29.5
PYB1003		3/8"	18	11	60	21	4.3	19.5	18	17	32.5
PYB1004	1/2"	18	14	64	21	4.3	19.5	18	21	45.4	
PYB1202	12	1/4"	21	10	66	23	4.3	21	20.5	21	27.3
PYB1203		3/8"	21	11	67	23	4.3	21	20.5	21	51.8
PYB1204		1/2"	21	14	70	23	4.3	21	20.5	21	56.8

### PED Series



Model/Item	φD	R	φP	L	K	EA	EB	φJ	JB	JC	H	Weight(g)
PED4M5	4	M5×0.8	9	3.5	14	17	21	3.2	6.5	13	9	6.8
PED401		1/8"	9	7.5	14	17	25	3.2	6.5	13	10	8.8
PED402		1/4"	9	10	14	17	28	3.2	6.5	13	14	15.5
PED6M5	6	M5×0.8	12.5	3.5	16.5	20	23.5	3.2	8	16	12	11.2
PED601		1/8"	12.5	7.5	16.5	20	27.5	3.2	8	16	12	13.5
PED602		1/4"	12.5	10	16.5	20	30.5	3.2	8	16	14	18.6
PED603	3/8"	12.5	11	16.5	20	32	3.2	8	16	17	25.3	
PED801	8	1/8"	15	7.5	18.5	23	30.5	4.3	9.5	19	14	18.4
PED802		1/4"	15	10	18.5	23	33	4.3	9.5	19	14	21.3
PED803		3/8"	15	11	18.5	23	34.5	4.3	9.5	19	17	28.2
PED804	1/2"	15	14	18.5	23	38.5	4.3	9.5	19	21	41	
PED1001	10	1/8"	18	7.5	21	26.5	34	4.3	11	22	17	26.7
PED1002		1/4"	18	10	21	26.5	36.5	4.3	11	22	17	29.2
PED1003		3/8"	18	11	21	26.5	37.5	4.3	11	22	17	31.9
PED1004	1/2"	18	14	21	26.5	41.5	4.3	11	22	21	45.4	
PED1202	12	1/4"	21	10	23	30	41	4.3	13	26	21	49.6
PED1203		3/8"	21	11	23	30	42	4.3	13	26	21	51.2
PED1204		1/2"	21	14	23	30	45	4.3	13	26	21	57.3

### PZB Series



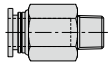
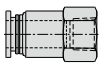

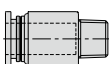
Model/Item	φD	R	L	A	E	C	φP	K	φJ	JB	JC	H	Weight(g)
PZB601	6	1/8"	7.5	39.5	27.5	47.5	12.5	16.5	3.2	8	16	12	15.2
PZB602		1/4"	10		30.5	50.5						14	20.4
PZB603		3/8"	11		32	52						17	27
PZB801	8	1/8"	7.5	46	30.5	53.5	15	18.5	4.3	9.5	19	14	20.9
PZB802		1/4"	10		33	56						14	23.8
PZB803		3/8"	11		34.5	57.5						17	29.9
PZB804	1/2"	14	38.5	61.5	21	43.5							
PZB1002	10	1/4"	10	52.5	36.5	63	18	21	4.3	11	22	17	33.5
PZB1003		3/8"	11		37.5	64						17	36.5
PZB1004		1/2"	14		41.5	68						21	49.2
PZB1203	12	3/8"	11	59.5	42	72	21	23	4.3	13	26	21	56.5
PZB1204		1/2"	14		45	75						21	65.4

## Metal one-touch fittings

### Ordering code

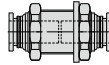
**BPC 6 01 □**

① ② ③ ④

① Model	② Port size	③ Thread connection	④ Thread type
<b>BPC: Metal male connector</b> 	<b>BPCF: Metal female connector</b>   <b>BPMF: Metal bulkhead female connector</b> 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ12mm	M5 : M5X0.8 01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"
<b>BPOC: Hexagon socket head metal male connector</b> 			

**BPM 6**

① ②

① Model	② Port size
<b>BPM: Metal bulkhead connector</b> 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ12mm

### Specification

<b>Operating pressure range</b>	<b>0~9kgf/cm<sup>2</sup>(0~0.9MPa)</b>
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	0~150
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

Note: The temperature resistance level of the tubing should be confirmed first when used in high temperature environments.

### Product feature

1. High flow capacity; The flow rate of these fittings is equivalent to that of the adaptable tubings.
2. Inserting or removal tubing is simple and convenient, and the connecting portion is reliable and durable.
3. Sealant is coated on threaded portion. The M5 metric thread is attached with a sealing gasket, to ensure no leakage of the threaded connection part.
4. The fitting metal body adopts a special nickel-plating process, which has good corrosion resistance.
5. Metal fittings can be used in high temperature environment.

### Table for interface port and tube O.D.

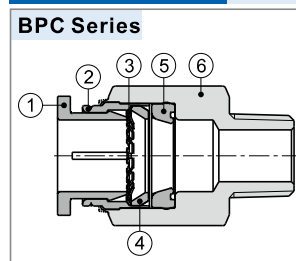
Product series	Thread type	Port size				
		Φ4	Φ6	Φ8	Φ10	Φ12
BPC	M5	•	•			
	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
	1/2"				•	•
BPOC BPCF	M5	•	•			
	1/8"	•	•	•		
	1/4"		•	•	•	
	3/8"				•	•
BPMF	M5					
	1/8"	•	•	•		
	1/4"		•	•	•	
	3/8"				•	•
BPM	1/2"					•

Product series	Port size				
	Φ4	Φ6	Φ8	Φ10	Φ12
BPM	•	•	•	•	•

### Inner structure

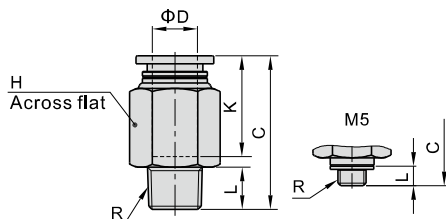
BPC Series		
NO.	Name	Material
1	Metal connector	Aluminum alloy
2	Locating ring	Aluminum alloy
3	Spring gasket	Stainless steel
4	Locating seat	Aluminum alloy
5	Special shape O-ring	Viton
6	Straight connector body	Brass



## Metal one-touch fittings

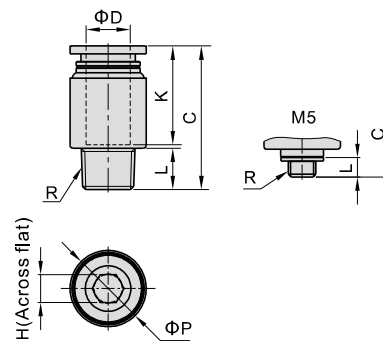
### Dimensions

#### BPC Series



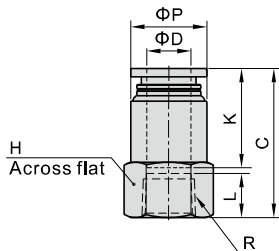
Model/Item	ΦD	R	L	C	K	H	Weight(g)
BPC4M5	4	M5X0.8	3.5	19.5	14	9	5.5
BPC401		1/8"	7.5	19.5	14	10	7.9
BPC402		1/4"	10	19	14	14	8.7
BPC6M5	6	M5X0.8	3.5	22	16	12	10.1
BPC601		1/8"	7.5	21.5	18	12	14.2
BPC602		1/4"	10	24	18	14	19.1
BPC603	8	3/8"	11	22.5	18	17	26.8
BPC801		1/8"	7.5	27.5	18	14	16.1
BPC802		1/4"	10	26.5	18	14	16
BPC803	10	3/8"	11	23	18	17	25.4
BPC1001		1/8"	7.5	29.5	20.5	17	24.5
BPC1002		1/4"	10	32	20.5	17	28
BPC1003	12	3/8"	11	27.5	20.5	17	34.6
BPC1004		1/2"	14	25.5	20.5	21	39.3
BPC1202		1/4"	10	34.5	22	21	44.5
BPC1203	12	3/8"	11	30	22	21	34.2
BPC1204		1/2"	14	32	22	21	47

#### BPOC Series



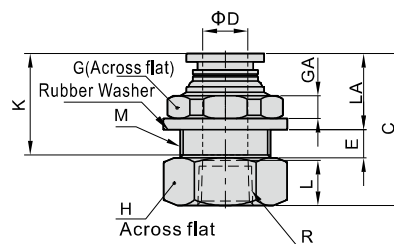
Model/Item	ΦD	R	ΦP	L	C	K	H	Weight(g)
BPOC4M5	4	M5X0.8	9	3.5	18.5	14	2	4.4
BPOC401		1/8"	10	7.5	17.5	14	2.5	6.6
BPOC6M5	6	M5X0.8	12	3.5	21	16	2	7.1
BPOC601		1/8"	12	7.5	21.5	18	4	8.4
BPOC602	8	1/4"	14	10	21.5	18	4	13.6
BPOC801		1/8"	14	7.5	26	17.5	5	12.3
BPOC802	10	1/4"	14	10	24.5	17.5	6	12.7
BPOC1002		1/4"	17	10	28.5	20.5	6	18.5
BPOC1003	12	3/8"	17	11	27.5	20.5	8	24.9
BPOC1203		3/8"	21	11	29.5	22	8	30.4
BPOC1204	12	1/2"	21	14	31.5	22	8	42.4

#### BPCF Series



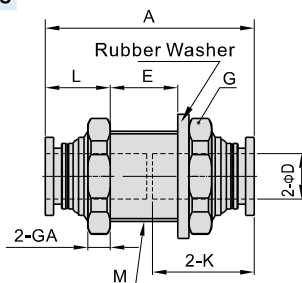
Model/Item	ΦD	R	ΦP	L	C	K	H	Weight(g)
BPCF4M5	4	M5X0.8	9	5	21	14	10	3.5
BPCF401		1/8"	9.5	8	23	14	14	5.3
BPCF6M5	6	M5X0.8	12	5	21	16	12	5.6
BPCF601		1/8"	12.5	8	25	16	14	7.2
BPCF602	8	1/4"	11	28	16	17	9.2	
BPCF801		1/8"	14	8	27	18	14	7.1
BPCF802	10	1/4"	14.5	11	30	18	10.6	
BPCF1002		1/4"	17	11	32.5	20.5	17	13.5
BPCF1003	12	3/8"	18	12	33.5	20.5	21	17.5
BPCF1203		3/8"	21	12	35	22	21	22
BPCF1204	12	1/2"	21	13.5	36.5	22	25	24.9

#### BPMF Series



Model/Item	ΦD	R	M	L	C	K	LA	E	GA	G	H	Weight(g)
BPMF401	4	1/8"	M12X1	8	25	14	12	4	4	14	14	7.6
BPMF601	6	1/8"	M14X1	8	25	16	12	5	4	17	17	10.4
BPMF602		1/4"	M14X1	11	30	16	12	5	4	17	17	12.2
BPMF801	8	1/8"	M16X1	8	27	18	13	5.5	4	19	19	13.9
BPMF802		1/4"	M16X1	11	31.5	18	13	5.5	4	19	19	15.3
BPMF1002	10	1/4"	M20X1	11	34.5	20.5	14	7.5	5	24	22	26.2
BPMF1003		3/8"	M20X1	12	35.5	20.5	14	7.5	5	24	22	24.4
BPMF1203	12	3/8"	M22X1	12	37	22	15	8	6	27	24	32.6
BPMF1204		1/2"	M22X1	13.5	38.5	22	15	8	6	27	25	31.8

#### BPM Series



Model/Item	ΦD	M	A	K	L	E	G (Across flat)	GA	Weight(g)
BPM4	4	M12X1	28.5	14	10	7	14	4	6.4
BPM6	6	M14X1	33	16	10	11	17	4	16.4
BPM8	8	M16X1	37	18	11	13	19	4	15.8
BPM10	10	M20X1	41.5	20.5	12	16	24	5	28.9
BPM12	12	M22X1	45	22	13	17.5	27	6	40.3

## One-touch fittings—tube-tube type

### Ordering code

#### Same diameter type fittings

PE 6 □

① ② ③

① Model				② Port size	③ Standard color		
PM: Bulkhead union 	PE: Union tee 	PP: Plug 	PV: Union elbow 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ12mm	Standard color	Specification	Adaptable model
PLM: Bulkhead male elbow 	PY: Union "Y" 	PZ: Cross 	PU: Straight union 		Blank: Gray	Release button: Gray Body: Gray	PM Others
					D: Black	Release button: Black Body: Black	PM Others

#### Different diameter type fittings

PEG 6 - 4 □

① ② ③ ④

① Model					② Port size I	③ Port size II	④ Standard color	
PG: Different diameter straight 	PZG: Different diameter cross 	PEW: Different diameter tee 	PYW: Different diameter union "Y" 	PGJ: Plug-in reducer 	4: Φ4mm 6: Φ6mm 8: Φ8mm 10: Φ10mm 12: Φ124mm	4: Φ4mm 6: Φ6mm 8: Φ8mm 10: Φ10mm	Standard color	Specification
PEG: Different diameter tee 	PKG: Reducer triple branch union 	PHK: Universal reducer triple branch union 	PHD: Universal reducer four branch union 				Blank: Gray	Release button: Gray Body: Gray
							D: Black	Release button: Black Body: Black

## Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

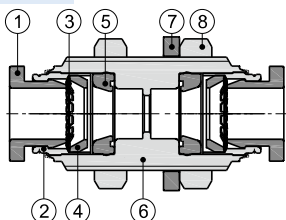
## Product feature

1. Variable models can be widely used in every kind of pneumatic systems.
2. High circulation performance: bear the same flow with the volume of the tubing inside diameter.
3. Connect tubing easily and conveniently. The tubing connection portion is safe and durable.
4. The threaded portion is covered with sealant and the M5 thread is attached with a sealing gasket to prevent air leakage over the connection thread portion.

## Inner structure

No.	Item	Material
1	Release button	POM
2	Guide	Aluminum alloy
3	Spring gasket	Stainless steel
4	Chuck	POM
5	O-ring	NBR
6	Body	Aluminum alloy
7	Rubber washer	NBR
8	Nut	Aluminum alloy

### PM Series



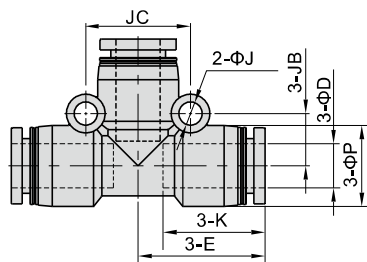
## Table for interface port and tube O.D.

Product series	Port size I	Port size II			
		Φ4	Φ6	Φ8	Φ10
PG PGJ	Φ4				
	Φ6	•			
	Φ8	•	•		
	Φ10		•	•	
	Φ12			•	•
PEG PEW PYW	Φ4				
	Φ6	•			
	Φ8		•		
	Φ10			•	
	Φ12			•	•
PZG	Φ4				
	Φ6	•			
	Φ8		•		
	Φ10			•	
	Φ12				•
PKG	Φ4				
	Φ6	•			
	Φ8		•		
	Φ10			•	
	Φ12				•
PHK PHD	Φ4				
	Φ6				
	Φ8		•		
	Φ10			•	
	Φ12				•
Product series	Port size				
PE, PY, PV, PU PM, PLM, PP, PZ	Φ4	Φ6	Φ8	Φ10	Φ12
	•	•	•	•	•

## One-touch fittings—tube-tube type

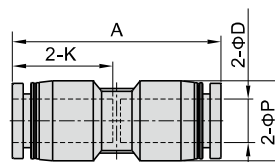
### Dimensions

#### PE Series



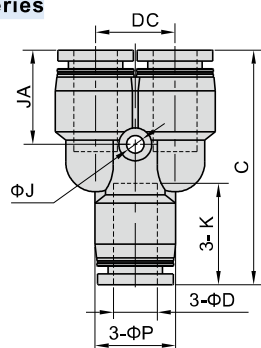
Model/Item	ΦD	ΦP	K	E	ΦJ	JB	JC	Weight(g)
PE4	4	9	14	17	3.2	6.5	13	3.1
PE6	6	12.5	16.5	20	3.2	8	16	6.1
PE8	8	15	18.5	23	4.3	9.5	19	8.8
PE10	10	18	21	26.5	4.3	11	22	13.8
PE12	12	21	23	30	4.3	13	26	21

#### PU Series



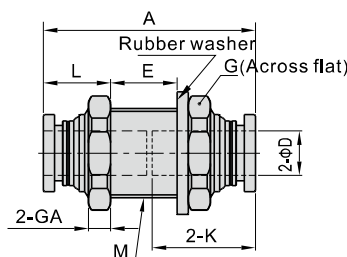
Model/Item	ΦD	ΦP	K	A	Weight(g)
PU4	4	9	14	29.5	1.7
PU6	6	12.5	16.5	34	3.6
PU8	8	15	18.5	38.5	5
PU10	10	18	21	43	8.1
PU12	12	21	23	47	12

#### PY Series



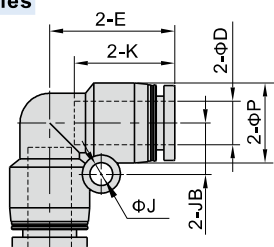
Model/Item	ΦD	ΦP	C	K	ΦJ	JA	DC	Weight(g)
PY4	4	9	31.5	14	3.2	13	10	3
PY6	6	12.5	37	16.5	3.2	15.5	12	6
PY8	8	15	42.5	18.5	3.2	17	14.5	8.6
PY10	10	18	48.5	21	4.3	19.5	18	14
PY12	12	21	54.5	23	4.3	21	20.5	21.2

#### PM Series



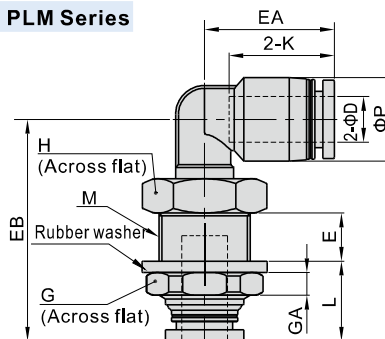
Model/Item	ΦD	M	A	K	L	E	GA	G	Weight(g)
PM4	4	M12X1	29	14	10	7	4	14	6.2
PM6	6	M14X1	34	16.5	10.5	11	4	17	9.5
PM8	8	M16X1	38	18.5	11.5	13	4	19	15.7
PM10	10	M20X1	43	21	12.5	16	5	24	22.5
PM12	12	M22X1	46.5	23	13.5	17.5	6	27	29.5

#### PV Series



Model/Item	ΦD	ΦP	K	E	ΦJ	JB	Weight(g)
PV4	4	9	14	17	3.2	6.5	1.9
PV6	6	12.5	16.5	20	3.2	8	4.2
PV8	8	15	18.5	23	4.3	9.5	6
PV10	10	18	21	26.5	4.3	11	9.3
PV12	12	21	23	30	4.3	13	14.6

#### PLM Series

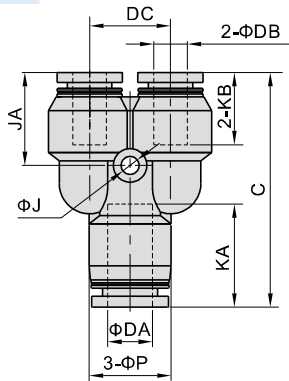


Model/Item	ΦD	ΦP	M	L	E	K	EA	EB	GA	G	H	Weight(g)
PLM4	4	9	M12X1	12	7.5	14	17	31	4	14	14	7.5
PLM6	6	12.5	M14X1	12.5	8.5	17	20	35.5	4	17	17	12.1
PLM8	8	15	M16X1	13.5	9	18.5	23	39	4	19	19	16.6
PLM10	10	18	M20X1	14.5	11	21	25.5	44.5	5	24	22	26.2
PLM12	12	21	M22X1	15.5	11	23	29.5	48	6	27	24	34

# Accessories—One-Touch Fittings

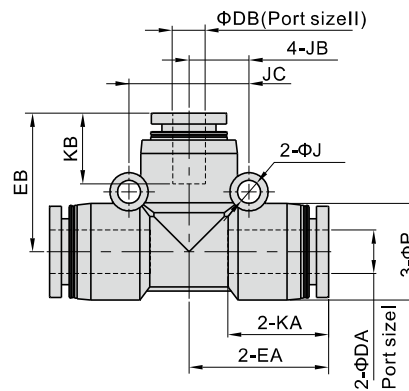
## One-touch fittings—tube-tube type

### PYW Series



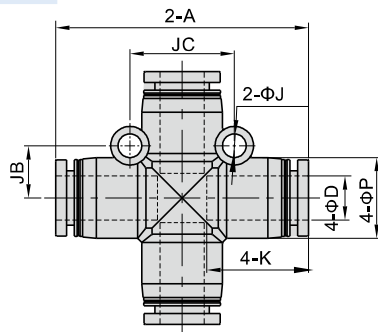
Model\Item	ΦDA	ΦDB	C	ΦP	KA	KB	ΦJ	JA	DC	Weight(g)
PYW6-4	6	4	36.5	12.5	16.5	14	3.2	15	12	5.8
PYW8-6	8	6	42	15	18.5	16.5	3.2	16.5	14.5	9.1
PYW10-8	10	8	48.5	18	21	18.5	4.3	19	18	14.1
PYW12-8	12	8	54	21	23	18.5	4.3	20.5	20.5	22.3
PYW12-10	12	10	54.5	21	23	21	4.3	21	20.5	21.7

### PEG Series



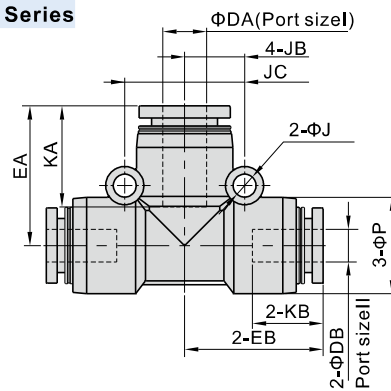
Model\Item	ΦDA	ΦDB	ΦP	KA	KB	EA	EB	ΦJ	JB	JC	Weight(g)
PEG6-4	6	4	12.5	16.5	14	20.0	19.5	3.2	8	16	7
PEG8-6	8	6	15	18.5	16.5	22.5	22	4.3	9.5	19	22.8
PEG10-8	10	8	18	21	18.5	25.5	25.5	4.3	11	22	15.1
PEG12-8	12	8	21	23	18.5	29	28.5	4.3	13	26	2.2
PEG12-10	12	10	21	23	21	29	29	4.3	13	26	21.5

### PZ Series



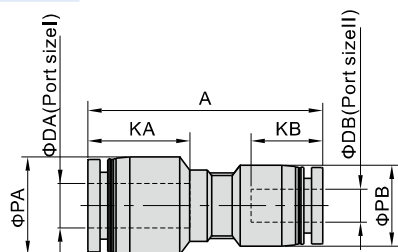
Model\Item	ΦD	A	ΦP	K	ΦJ	JB	JC	Weight(g)
PZ4	4	34	9	14	3.2	6.5	13	3.9
PZ6	6	39.5	12.5	16.5	3.2	8	16	7.9
PZ8	8	46	15	18.5	4.3	9.5	19	11.1
PZ10	10	52.5	18	21	4.3	11	22	17.5
PZ12	12	59.5	21	23	4.3	13	26	26.6

### PEW Series



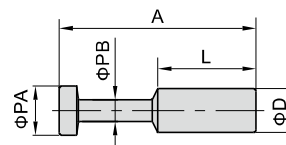
Model\Item	ΦDA	ΦDB	ΦP	KA	KB	EA	EB	ΦJ	JB	JC	Weight(g)
PEW6-4	6	4	12.5	16.5	14	20	19.5	3.2	8	16	7
PEW8-6	8	6	15	18.5	16.5	22.5	22	4.3	9.5	19	22.8
PEW10-8	10	8	18	21	18.5	25.5	25.5	4.3	11	22	15.1
PEW12-8	12	8	21	23	18.5	29	28.5	4.3	13	26	22
PEW12-10	12	10	21	23	21	29	29	4.3	13	26	21.5

### PG Series



Model\Item	ΦDA	ΦDB	ΦPA	ΦPB	KA	KB	A	Weight(g)
PG6-4	6	4	12.5	9	16.5	14	33.5	2.7
PG8-4	8	4	15	12.5	18.5	14	37.5	4.5
PG8-6	8	6	15	12.5	18.5	16.5	38	4.5
PG10-6	10	6	18	15	21	16.5	42	6.9
PG10-8	10	8	18	15	21	18.5	42.5	6.7
PG12-8	12	8	21	18	23	18.5	46.5	10.3
PG12-10	12	10	21	18	23	21	47	10.2

### PP Series

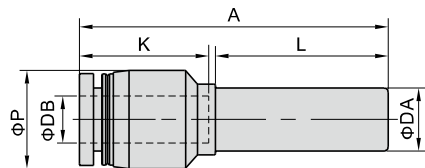


Model\Item	ΦD	ΦPA	ΦPB	L	A	Weight(g)
PP4	4	5	3	15	27.5	0.7
PP6	6	7	3	17	32	0.9
PP8	8	9	4	18	36	1.6
PP10	10	11	5	20	42	2.5
PP12	12	13	6	23	44	4.3



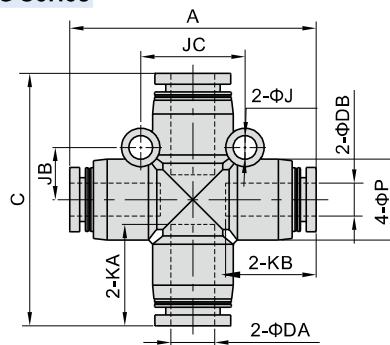
## One-touch fittings—tube-tube type

### PGJ Series



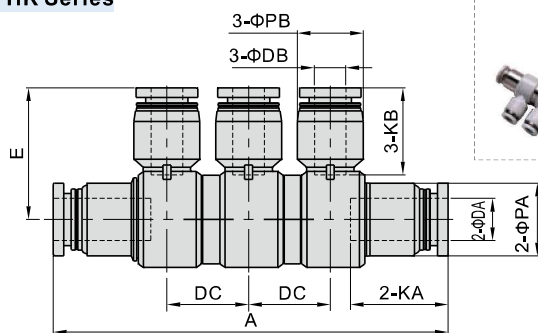
Model\Item	ΦDA	ΦDB	ΦP	K	L	A	Weight(g)
PGJ6-4	6	4	9	14	21	35	1.5
PGJ8-4	8	4	12.5	14	22	39	2.6
PGJ8-6	8	6	12.5	16.5	22	39.5	3.2
PGJ10-6	10	6	15	16.5	25	44	4.1
PGJ10-8	10	8	15	18.5	25	44.5	3.9
PGJ12-8	12	8	18	18.5	26	48.5	6.2
PGJ12-10	12	10	18	21	26	49	6

### PZG Series



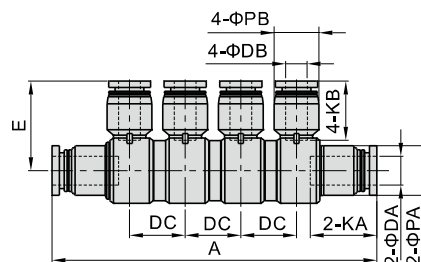
Model\Item	ΦDA	ΦDB	A	C	ΦP	KA	KB	ΦJ	JB	JC	Weight(g)
PZG6-4	6	4	39	39.5	12.5	16.5	14	3.2	8	16	8.2
PZG8-6	8	6	45	46	15	18.5	16.5	4.3	9.5	19	12
PZG10-8	10	8	52	52.5	18	21	18.5	4.3	11	22	18.1
PZG12-10	12	10	59	59.5	21	23	21	4.3	13	26	29

### PHK Series



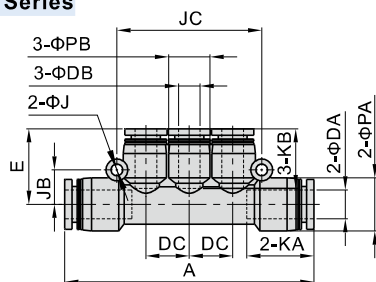
Model\Item	ΦDA	ΦDB	A	ΦPA	ΦPB	KA	KB	DC	E	Weight(g)
PHK8-6	8	6	75	14	12.5	18.5	16.5	15.5	25	28.4
PHK10-8	10	8	85.5	17	15	21	18.5	16.5	29.5	45

### PHD Series



Model\Item	ΦDA	ΦDB	A	ΦPA	ΦPB	KA	KB	DC	E	Weight(g)
PHD8-6	8	6	90.5	14	12.5	18.5	16.5	15.5	25	18.7
PHD10-8	10	8	102.5	17	15	21	18.5	16.5	29.5	52.7

### PKG Series



Model\Item	ΦDA	ΦDB	A	ΦPA	ΦPB	KA	KB	ΦJ	JB	JC	DC	E	Weight(g)
PKG6-4	6	4	58	12.5	9	16.5	14	3.2	8	34	10	17.5	8.6
PKG8-6	8	6	69	15	12.5	18.5	16.5	3.2	9.5	40	12	21	13.5
PKG10-8	10	8	80	18	15	21	18.5	4.3	11	48	14.5	24	20.7

## One-touch fittings—threaded type

### Ordering code

BB 01 01 □

① ② ③ ④

① Model	② Thread connection I	③ Thread connection II	④ Thread type
<b>BB: Male connector</b> 	<b>BD: Male &amp; female connector[Note1]</b> 	<b>BU: Double female connector</b> 	<b>BZ: Hexagon head cap plug[Note2]</b> 
	01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Blank; PT

[Note1] For BD series, Thread I is Female thread, Thread II is male thread; [Note2] For BZ series, no thread II and thread I is male thread.

### Specification

<b>Operating pressure range</b>	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	3.0MPa
Ambient and fluid temperature (°C)	0~150

### Configuration table of tubing thread

Product series	Thread connection I	Thread connection II			
		01	02	03	04
BB	01	•	•	•	
	02		•	•	•
	03			•	•
	04				•
BD	01		•	•	•
	02			•	•
	03				•
	04				
BU	01	•			
	02		•		
	03			•	
	04				•

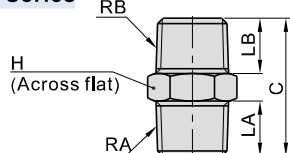
Product series	Thread connection			
	01	02	03	04
BZ	•	•	•	•

### Product feature

1. Variable models can be widely used in every kind of pneumatic systems.
2. High circulation performance bear the same flow with the volume of the tube innerdiameter.
3. The nickel plated body is anti-corrosion and anti-pollution, which allows a broader application.
4. Metal fittings can be used in high temperature environment.

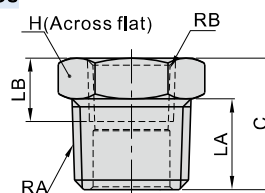
### Dimensions

#### BB Series



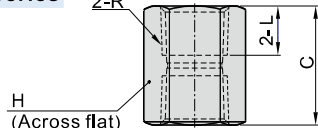
Model\Item	RA	RB	LA	LB	C	H	Weight(g)
BB0101	1/8"	1/8"	7.5	7.5	19.5	10	6.6
BB0102	1/4"	1/8"	10	7.5	22.5	14	12.1
BB0103	3/8"	1/8"	11	7.5	24	17	18.3
BB0202	1/4"	1/4"	10	10	25	14	14.6
BB0203	3/8"	1/4"	11	10	26.5	17	20.3
BB0204	1/2"	1/4"	14	10	30	21	34.3
BB0303	3/8"	3/8"	11	11	27.5	17	23.2
BB0304	1/2"	3/8"	14	11	31	21	36.2
BB0404	1/2"	1/2"	14	14	34	21	42.8

#### BD Series



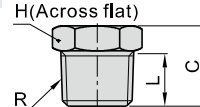
Model\Item	RA	RB	LA	LB	C	H	Weight(g)
BD0102	1/4"	1/8"	10	8	14.5	14	8.8
BD0103	3/8"	1/8"	11	8	16	17	17.1
BD0104	1/2"	1/8"	14	8	19.5	21	33.1
BD0203	3/8"	1/4"	11	11	16	17	12.7
BD0204	1/2"	1/4"	14	11	19.5	21	29.9
BD0304	1/2"	3/8"	14	12	19.5	21	22.5

#### BU Series



Model\Item	R	L	C	H	Weight(g)
BU0101	1/8"	8	17	14	4.7
BU0202	1/4"	11	23	17	8.1
BU0303	3/8"	12	25	21	12.7
BU0404	1/2"	13.5	28	25	18.0

#### BZ Series




Model\Item	R	L	C	H	Weight(g)
BZ01	1/8"	7.5	11	10	4.6
BZ02	1/4"	10	14.5	14	10.8
BZ03	3/8"	11	16	17	17.4
BZ04	1/2"	14	19.5	21	33

## One-touch fittings—threaded type

### Ordering code

BKC 06 04 -01 □

① ② ③ ④ ⑤

① Model	② Tubing outer diameter	③ Tubing inner diameter	④ Thread connection	⑤ Thread type
BKC: Straight locknut connector 	04 : Φ4mm 06 : Φ6mm 08 : Φ8mm 10 : Φ10mm 12 : Φ12mm	25 : Φ2.5mm 04 : Φ4mm 05 : Φ5mm 06 : Φ6mm 65 : Φ6.5mm 75 : Φ7.5mm 08 : Φ8mm 09 : Φ9mm	M3 : M3X0.5 M5 : M5X0.8 01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Blank: PT

Note: When using the tubing Φ8×Φ5.5, the straight lock nut connector of BKC0806 can be used.

### Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	3.0MPa
Ambient and fluid temperature (°C)	0~150

Note: The temperature resistance level of the tubing should be confirmed first when used in high temperature environments.

### Product feature

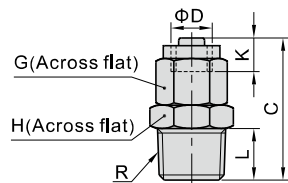
1. Variable models can be widely used in every kind of pneumatic systems.
2. High circulation performance bear the same flow with the volume of the tube inner diameter.
3. The nickel plated body is anti-corrosion and anti-pollution, which allows a broader application.
4. Metal fittings can be used in high temperature environments.

### Configuration table of tubing and tubing thread

Product series	Tubing outer diameter	Tubing inner diameter	Thread connection							
			M3	M5	01	02	03	04		
BKC	04	25	•	•	•					
	06	04			•	•	•			
	08	05			•	•	•			
		06			•	•	•			
	10	65				•	•	•		
		75				•	•	•		
	12	08				•	•	•		
		09				•	•	•		

### Dimensions

#### BKC Series



Model\Item	Tubing diameterΦD		R	L	C	K	G	H	Weight(g)	Model\Item	Tubing diameterΦD		R	L	C	K	G	H	Weight(g)								
	O.D	I.D									O.D	I.D															
BKC0425-M3	4	2.5	M3×0.5	3	17	5	8	8	4.4	BKC1065-02	10	6.5	1/4"	10	30	7.5	15	15	25.3								
BKC0425-M5				3.5	17.5			8	4.8	BKC1065-03				11	31.5			17	29.1								
BKC0425-01				7.5	20.5			10	7.1	BKC1065-04				12	35.5			21	44								
BKC0604-01	6	4	1/8"	7.5	22	5.5	10	10	9.9	BKC1075-02				7.5	or			1/4"	10	30	15	15	24.1				
BKC0604-02				10	25.5			14	15.8	BKC1075-03									11	31.5		17	28.9				
BKC0604-03				11	27			17	22.5	BKC1075-04									12	35.5		21	43.6				
BKC0805-01	8	5	1/8"	7.5	24	6.5	12	12	12.8	BKC1208-02		12	8			1/4"	10		30	7.5		17	17	30.5			
BKC0805-02				10	27.5			14	17.2	BKC1208-03							11		31.5				17	32.1			
BKC0805-03				11	29			17	23.7	BKC1208-04							12		35.5				21	46.7			
BKC0806-01				5.5 or 6	1/8"			7.5	24	12				13.1	BKC1209-02		g	or	1/4"		10		30	7.5	17	17	30.6
BKC0806-02								10	27.5	14				17.2	BKC1209-03						11		31.5			17	31.9
BKC0806-03								11	29	17				23.6	BKC1209-04						12		35.5			21	46.4

### Installation and application

#### 1. Method of inserting or removal a tubing

##### 1.1 Inserting a tubing

Place the locking cap over the tubing, and insert the tubing into the body, then tighten the locking cap. (As figure 1)

##### 1.2 Removing a tubing

Loosen the locking cap first, then remove the tubing. (As figure 2)

#### 2. Method of tightening the connector thread

Tighten the connector with a hex wrench, as shown right.

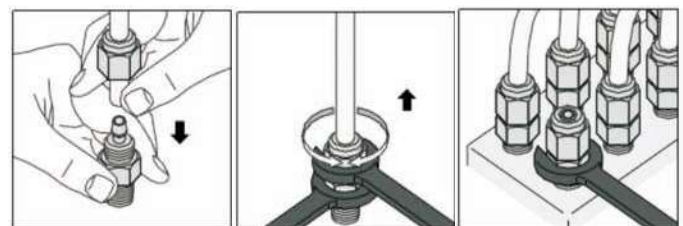


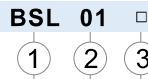
Figure 1

Figure 2

Figure 3

## BSL, BSLM, BESL, PAL, PALM series

### Ordering code



① Silencer Type	② Thread connection	③ Standard color		
BSL: Universal silencer BSLM: Mini Silencer BESL: Throttling silencer PAL: Plastic silencer PALM: Mini plastic Silencer	M5 : M5X0.8 01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Type	Color code	Color definition
		PAL、PALM	Blank: grey D: Black	Top cover: grey/Body: gray Top cover: black/Body: black
		Others	No such code	

### Product feature

#### BSL、BSLM、BESL Series :

1. This silencers have excellent noise silencing performance.
2. The installation of the silencer is simple and convenient, and the connecting portion is reliable and durable.
3. It is easy to adjust the exhaust flow of the throttling type silencer.

#### PAL Series、PALM Series :

1. The silencer body is made of plastic.
2. The mini type silencer has the characteristics of small volume and compact structure.

### Configuration table of tubing thread

Product series	Thread connection				
	M5	01	02	03	04
BSL	•	•	•	•	•
BSLM	•	•	•	•	•
BESL		•	•	•	•
PAL		•	•	•	•
PALM		•	•		

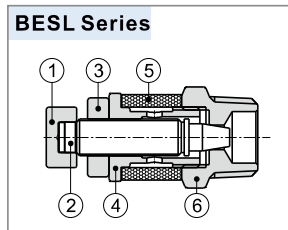
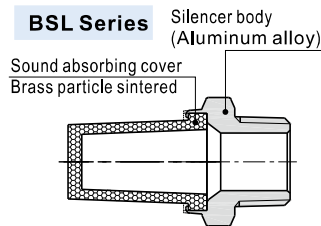
### Specification

Model	BSLM5	BSL01	BSL02	BSL03	BSL04	BSLM5	BSLM01	BSLM02	BSLM03	BSLM04
Thread connection	M5×0.8	1/8"	1/4"	3/8"	1/2"	M5×0.8	1/8"	1/4"	3/8"	1/2"
Silencing effect(dB)(0.5MPa)	13	13	13	13	13	13	13	13	13	13

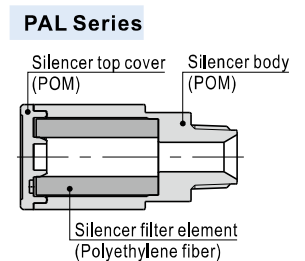
  

Model	BESL01	BESL02	BESL03	BESL04	PAL01	PAL02	PAL03	PAL04	PALM01	PALM02
Thread connection	1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"	1/8"	1/4"
Silencing effect(dB)(0.5MPa)	13	13	13	13	25	25	25	25	25	25
Operating pressure	0~10kgf/cm <sup>2</sup> (0~1.0MPa)									
Negative pressure	-750mmHg(10Torr)									
Proof pressure	1.5MPa									
Temperature range	-20~70°C									

### Inner structure

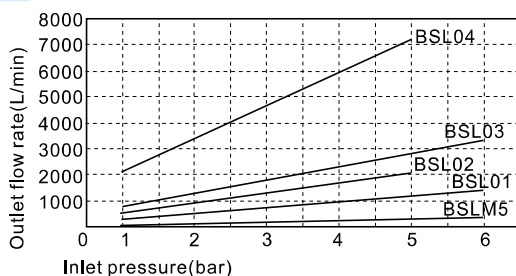


NO.	Name	Material
1	Adjusting cap	Aluminum alloy
2	Throttling column	Aluminum alloy
3	Locking cap	Aluminum alloy
4	Locking ring	Aluminum alloy
5	Silencer ring	Brass particle sintered
6	Silencer body	Aluminum alloy

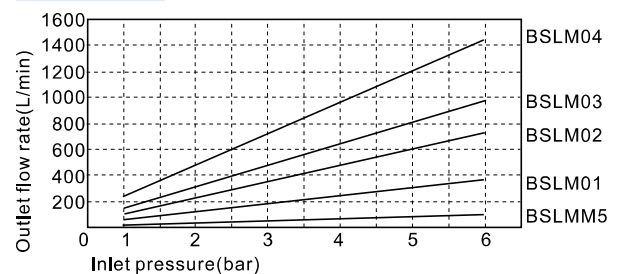


### Flowrate characteristic

#### BSL Series

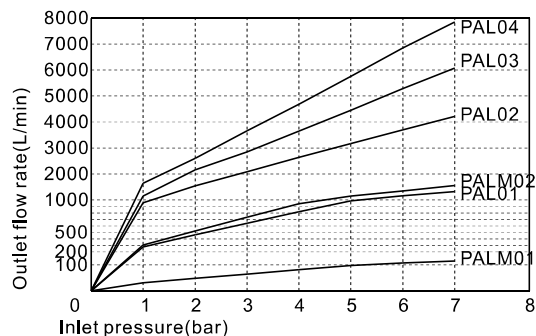


#### BSLM Series

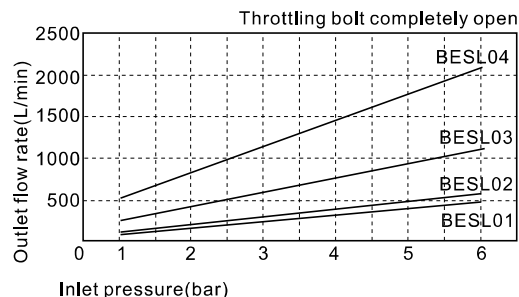


### Flowrate characteristic

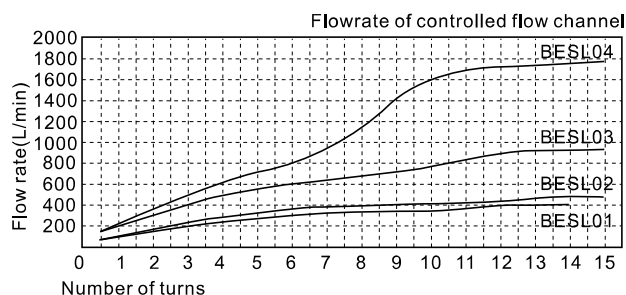
#### PAL, PALM Series



#### BESL Series (Inlet pressure and outlet flow rate)

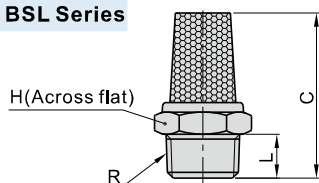


#### BESL Series



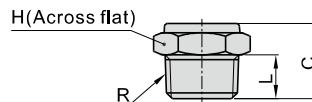
### Dimensions

#### BSL Series



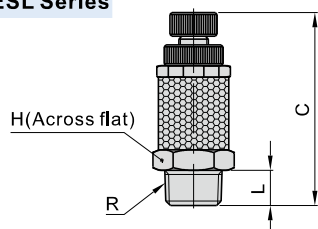
Model\Item	R	L	C	H	Weight(g)
BSLM5	M5×0.8	3.5	19.5	8	2.9
BSL01	1/8"	6	24	12	6.7
BSL02	1/4"	8	30	15	11.6
BSL03	3/8"	9	38.5	19	22
BSL04	1/2"	10.5	46	22	35

#### BSLM Series



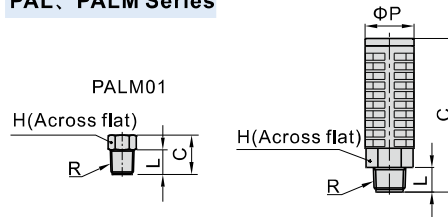
Model\Item	R	L	C	H	Weight(g)
BSLMM5	M5×0.8	3.5	9.5	8	2.3
BSLM01	1/8"	6	11	11	4.3
BSLM02	1/4"	8	13.5	15	8.4
BSLM03	3/8"	9	15.5	19	15.8
BSLM04	1/2"	10.5	19	22	25.9

#### BESL Series



Model\Item	R	L	C		H	Weight(g)
			max	min		
BESL01	1/8"	6	40.5	33	12	10
BESL02	1/4"	8	42.5	35	14	18.1
BESL03	3/8"	9	49	41.5	17	31.1
BESL04	1/2"	10.5	59.5	52	24	69.8

#### PAL, PALM Series



Model\Item	R	ΦP	L	C	H	Weight(g)
PAL01	1/8"	16	7	33	14	4.2
PALM01	1/8"	/	10	16	10	0.9
PAL02	1/4"	20	10	62.5	17	10.7
PALM02	1/4"	16	10	36	14	5.1
PAL03	3/8"	26	12	68	24	20
PAL04	1/2"	28	12	73	24	23.1

# Plug-in Silencer

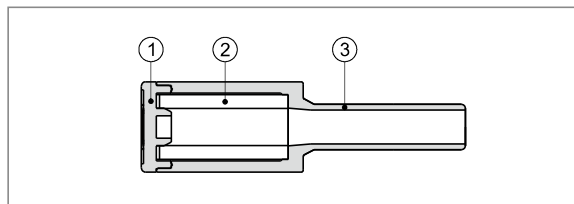
## PPA Series



### Product feature

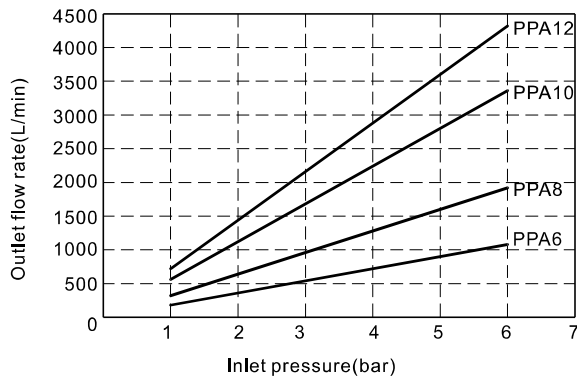
1. Full resin, excellent noise reduction and suitable for copper free environment.
2. Plug-in design, mount quickly and easily.

### Inner structure and material of major parts



NO.	Name	Material
1	Cap	POM
2	Silencer filter	PE
3	Body	POM

### Flowrate characteristic



### Specification

Model	PPA6	PPA8	PPA10	PPA12
Silencing effect(dB)(0.5MPa)	25	25	25	25
Operating pressure	0 ~ 10kgf/cm <sup>2</sup> (0 ~ 1.0MPa)			
Negative pressure	-750mmHg(10Torr)			
Proof pressure	1.5MPa			
Temperature range	-20 ~ 70°C			

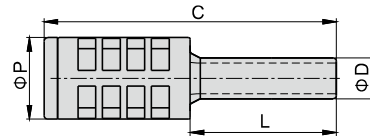
### Ordering code

**PPA 6**

①    ②

① Silencer Type	② Thread connection
PPA: Plug-in Silencer	6: Φ6 8: Φ8 10: Φ10 12: Φ12

### Dimensions



Model\Item	C(Lenght)	D	L	P	Weight(g)
PPA6	43	6	21.5	12	2.0
PPA8	45	8	23	14	2.9
PPA10	61.5	10	26	16	5.3
PPA12	71.5	12	28	20	9.8



## PSA, PSL, PSS series

### Ordering code

PSL 6 01 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Port size	③ Thread connection		④ Control method	⑤ Standard color		⑥ Thread type
PSL: Speed controller 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ12mm	Thread	Adaptable port size	A: Meter-out  Handle marking "A" Controlled flow Free flow	Standard color:	Specification	Blank: PT
PSS: Universal speed controller 		M5 : M5X0.8 01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Φ4 , Φ6 Φ4 , Φ6 Φ8 , Φ10 Φ12	B: Meter-in  Handle marking "B" Free flow Controlled flow	Blank: Gray D: Black	Release button: Gray Body: Gray Release button: Black Body: Black	

### PSA 6 □

① ② ③

① Model	② Port size	③ Standard color	
PSA: Straight speed controller 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ12mm	Standard color:	Specification
		Blank: Gray	Release button: Gray Body: Gray
		D: Black	Release button: Black Body: Black

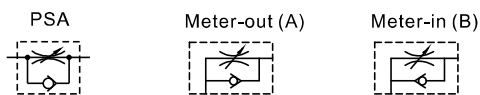
### Product feature

1. The speed control is small size, and light weight with small installation space.
2. Effectively control the action speed and pressure signal transmission from pneumatic device.
3. Meter-in and meter-out types are optional, which is suitable for different size of actuators
4. Excellent flow characteristics, high sensitivity and easy to adjust.
5. The brass body adopts a special nickel-plating process, which has good corrosion resistance and anti-pollution property.
6. Anti-drop structure is designed on the regulating rod.
7. The sealant being coated on threaded portion can ensure no leakage of the threaded connection part.
8. The inserting direction of universal speed controller can be adjusted in 360°.

### Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

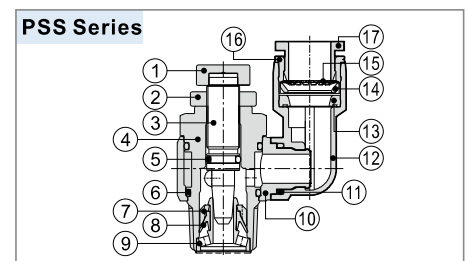
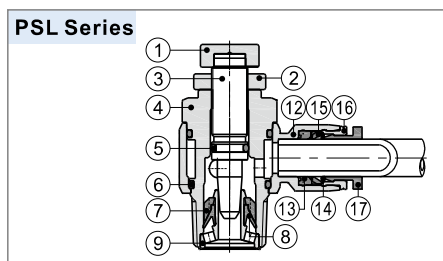
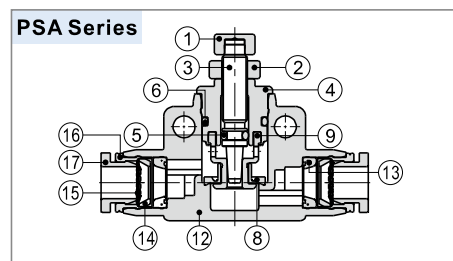
### Symbol



### Table for interface port and tube O.D.

Product series	Thread type	Port size				
		Φ4	Φ6	Φ8	Φ10	Φ12
PSA	-	•	•	•	•	•
	M5	•	•			
	1/8"	•	•	•		
PSL	1/4"		•	•	•	
	3/8"		•	•	•	•
	1/2"			•	•	•
PSS	M5	•				
	1/8"		•	•		
	1/4"		•	•	•	
	3/8"				•	•
	1/2"					•

### Inner structure

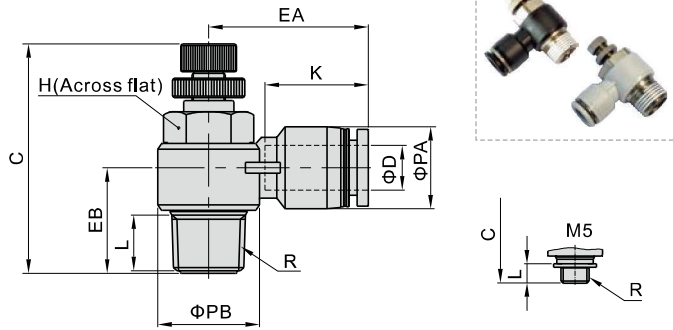


NO.	Name	Material	NO.	Name	Material	NO.	Name	Material
1	Adjusting cap	Aluminum alloy	7	Holder	PBT	13	O-ring	NBR
2	Locking cap	Aluminum alloy	8	O-ring	NBR	14	Locating seat	POM
3	Throttling column	Brass	9	Throttling sleeve	Aluminum alloy/Brass	15	Spring gasket	Stainless steel
4	Throttling body	Brass	10	Plastic body	PBT	16	Locating ring	Aluminum alloy
5	O-ring	NBR	11	O-ring	NBR	17	Plastic interface	POM
6	O-ring	NBR	12	Plastic body	PBT			

## PSA, PSL, PSS series

### Dimensions

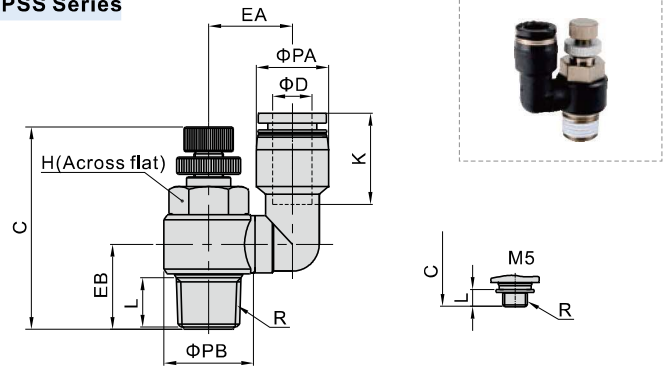
#### PSL Series



Model/Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						max	min					
PSL4M5□	4	M5×0.8	9	10	3.5	30	27.5	14	19	9.5	8	6.5
PSL401□		1/8"	9	14	7.5	41.5	35	14	20.5	15	11	16.5
PSL6M5□	6	M5×0.8	12.5	10	3.5	30	27.5	16.5	23.5	11.5	8	8
PSL601□		1/8"	12.5	14	7.5	41.5	35	16.5	23	15.5	11	17.5
PSL602□	6	1/4"	12.5	18	10	47.5	41	16.5	25	18	14	32
PSL603□		3/8"	12.5	22.5	11	52.5	45.5	16.5	27	20	19	59.5
PSL801□	8	1/8"	15	14	7.5	41.5	35	18.5	26.5	16.5	11	18
PSL802□		1/4"	15	18	10	47.5	41	18.5	28.5	19	14	33
PSL803□	8	3/8"	15	22.5	11	52.5	45.5	18.5	29.5	20	19	60
PSL804□		1/2"	15	28	14	58.5	51.5	18.5	32	25	24	96.5
PSL1002□	10	1/4"	18	18	10	47.5	41	21	31	20.5	14	34.5
PSL1003□		3/8"	18	22.5	11	52.5	45.5	21	33	21.5	19	62
PSL1004□	10	1/2"	18	28	14	58.5	51.5	21	35.5	25.5	24	98
PSL1203□		3/8"	21	22.5	11	52.5	45.5	23	36	23.5	19	64
PSL1204□	12	1/2"	21	28	14	58.5	51.5	23	38	27	24	100

[Note 1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

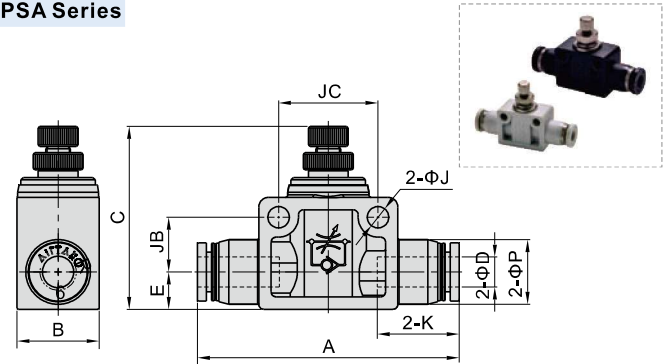
#### PSS Series



Model/Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						max	min					
PSS4M5□	4	M5×0.8	9	10	3.5	30	27.5	14	12.5	9.5	8	8.1
PSS601□	6	1/8"	12.5	14	7.5	41.5	35	17	17	15	11	19
PSS602□		1/4"	12.5	18	10	47.5	41	17	19	17.5	14	34.7
PSS801□	8	1/8"	15	14	7.5	41.5	35	18.5	17	15	11	20.2
PSS802□		1/4"	15	18	10	47.5	41	18.5	19	17.5	14	39.8
PSS1002□	10	1/4"	18	18	10	47.5	41	21	20.5	17.5	14	37.2
PSS1003□		3/8"	18	22.5	11	52.5	45.5	21	24	20	19	66
PSS1203□	12	3/8"	21	22.5	11	52.5	45.5	23	25.5	20	19	69.2
PSS1204□		1/2"	21	28	14	58.5	51.5	23	28	25	24	105.8

[Note 1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

#### PSA Series

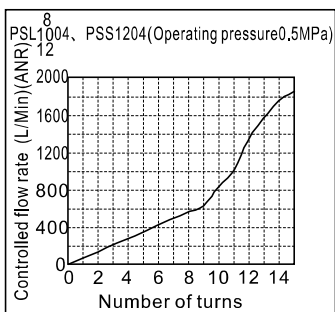
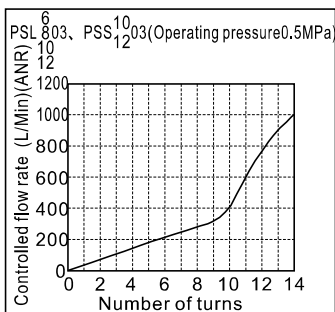
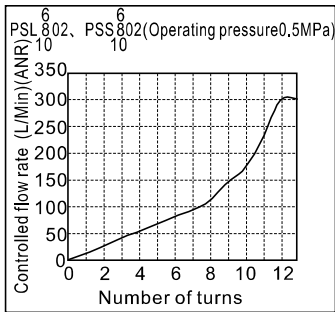
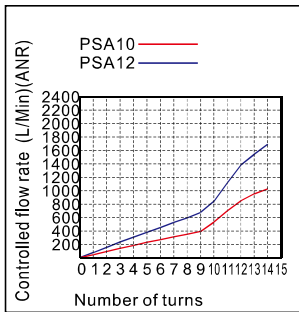
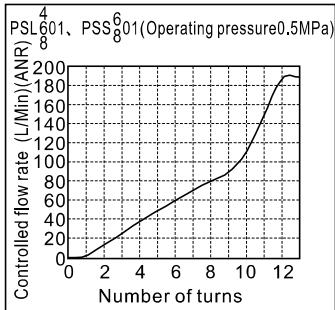
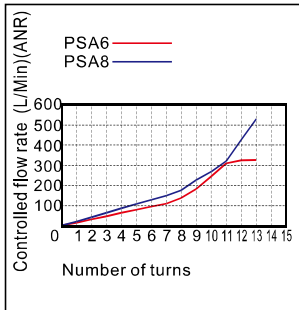
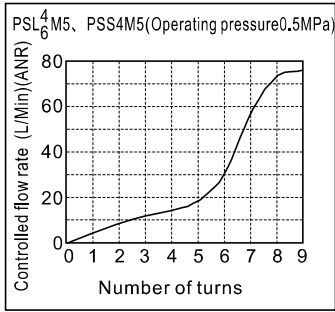
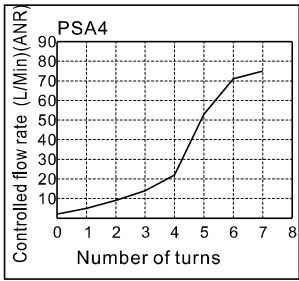


Model/Item	ΦD	A	B	C		ΦP	E	K	ΦJ	JB	JC	Weight (g)
				max	min							
PSA4	4	41	11	29	26.5	9.5	7	14	3.2	6	14	7.85
PSA6	6	52.5	16.5	43.5	36.5	13	7.5	16.5	4.3	11	20	18.3
PSA8	8	59.5	16.5	47	40	15	8.5	18.5	4.3	11	22	23.5
PSA10	10	69	21	53.5	46.5	18	10.5	21	4.3	14.5	26	42.4
PSA12	12	78.5	26	58.5	51	21.5	12	23	4.3	17.5	32	67.5

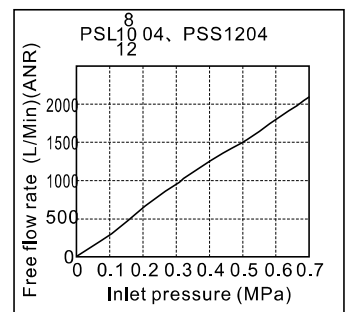
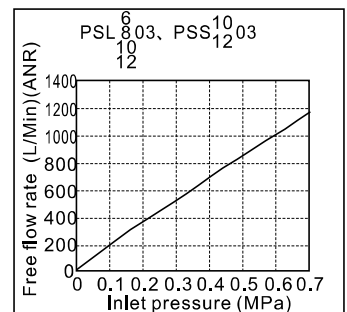
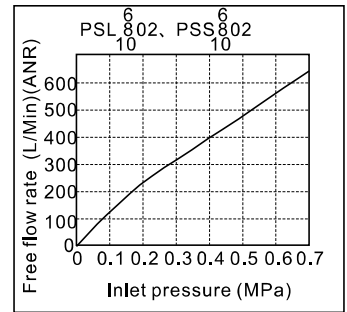
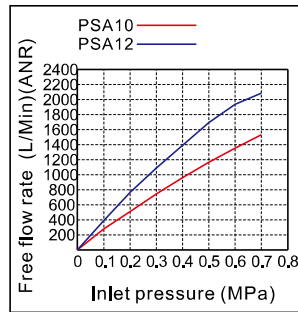
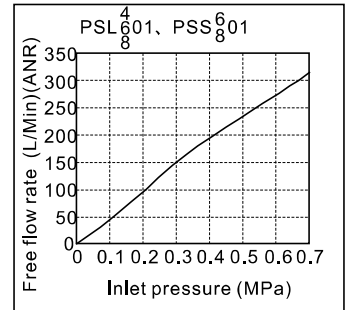
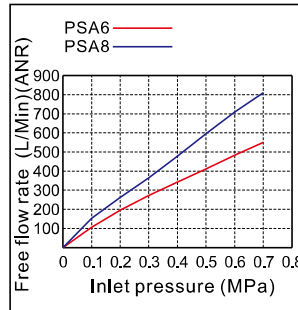
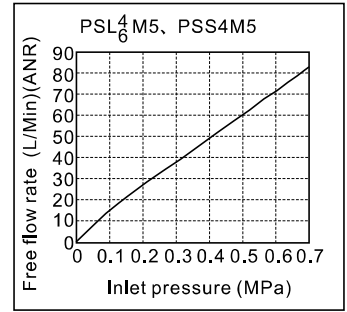
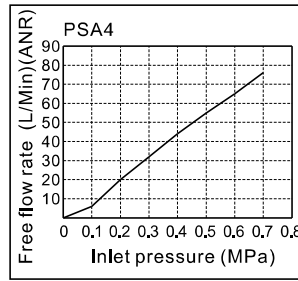
## PSA, PSL, PSS series

### Flowrate characteristic

#### Controlled flow rate



#### Free flow rate



### Selection, Installation and Operation

#### Selection

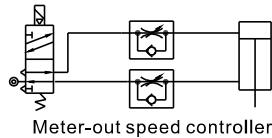
1. The speed controller has meter-out type and meter-in type:

	Working principle	Product identification
<p>Controlled flow Free flow</p>	<b>A: Meter-out</b> 1. The air flow is controlled from the threaded end to tubing connection end. 2. The air flow is free from the tubing connection end to the threaded end.	Handle marking "A" 
<p>Free flow Controlled flow</p>	<b>B: Meter-in</b> 1. The air flow is free from the threaded end to tubing connection end. 2. The air flow is controlled from the tubing connection end to the threaded end.	Handle marking "B" 

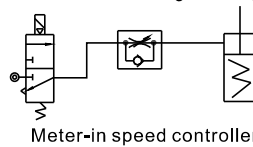
2. Select the different control method according to the actual requirement. The meter-out type is the first priority.

2.1. The application example of the meter-out speed controller    2.2. The application example of the meter-in speed controller

Solenoid valve    Double acting cylinder



Solenoid valve    Single acting cylinder



#### Installation

1. Installation and removal of tubing:

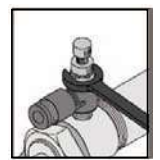
1.1. Installation of tubing

Grasp the tubing and slowly push it into the fitting until it comes to a stop. The tubing will be locked by the spring gasket.

1.2. Removal of tubing

Push the release button to open the spring gasket so that the tubing can be released.

Note: When remove the tubing, make sure the pressure in the tubing is Zero.



2. Mounting of the speed controller

Mount the speed controller into the inlet and outlet port of the cylinder with a wrench.

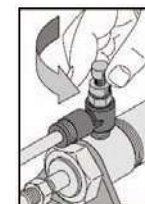
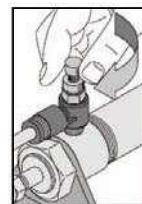
Note: Please refer to the fittings for the tightening torque and thread screw-in depth.

#### Operation

1. Adjustment of the cylinder speed

1.1. Make sure the speed controller is turned off before applying air pressure. The cylinder may fly out due to the high speed if the air is inlet when the speed controller is turned on.

1.2. Adjust the speed by opening the needle slowly from the fully closed state. When a needle valve is turned clockwise, the air flow through is reduced and the actuator speed decreases. When a needle valve is turned counter-clockwise, the air flow through is increased and the actuator speed increases.



2. Operation of the speed controller

2.1. Do not use tools such as pliers to rotate the handle. Do not apply excessive force or shock when the needle is at the place of top or bottom. It can cause damage or air leakage.

2.2. A certain amount of leakage is allowed in the closed state of the speed controller. It is not designed for the use as stop valve with zero air leakage.

## PTL Mini series

### Ordering code

PTL 6 M5 A □ □ - M

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Port size	③ Thread connection	④ Control method	⑤ Standard color	⑥ Thread type	⑦ Style
PTL: Speed controller (Push lock)  	4 : Φ4mm 6 : Φ6mm	M5 : M5X0.8 01 : 1/8"	A: Meter-out 	Standard color : Specification Blank: Gray Release button: Gray Body: Gray	Blank: PT	M: Mini type
			B: Meter-in 	D: Black Release button: Black Body: Black		

### Specification

<b>Operating pressure range</b>	<b>0~10kgf/cm<sup>2</sup>(0~1.0MPa)</b>
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Symbol

Meter-out (A)



Meter-in (B)



### Selection, Installation and Operation

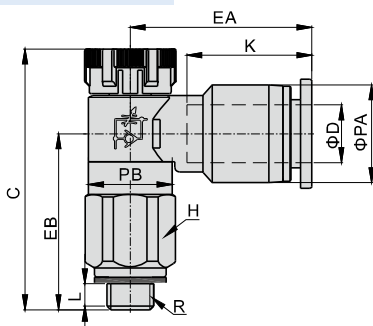
- The rotation torque of the push-lock speed controller cap should not be too large to avoid damage. It is recommended to use the torque below.

Thread size	Recommended torque(N.m)
M5	0.05
1/8"	0.08

- Push-lock speed controller installation instructions is the same as general one. Please refer to general type for specific content.

### Dimensions

#### PTL Mini series



Model\Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						Pull	Push					
PTL4M5□-M	4	M5×0.8	8.5	9	3.5	29.5	28	12.5	16.5	19	9	5
PTL401□-M		1/8"	8.5	9	3.5	29.5	28	12.5	16.5	19	10	11
PTL6M5□-M	6	M5×0.8	10.5	9	3.5	29.5	28	13.5	19.5	19	9	6.2
PTL601□-M		1/8"	10.5	9	3.5	29.5	28	13.5	19.5	19	10	12

[Note1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

## PTL series

### Ordering code

PTL 6 01 A □ □

① ② ③ ④ ⑤ ⑥

① Model	② Port size	③ Thread connection	④ Control method	⑤ Standard color	⑥ Thread type
PTL: Speed controller (Push lock) 	6 : Φ6mm	01 : 1/8" 02 : 1/4" 03 : 3/8"	A: Meter-out  Handle marking "A" Controlled flow Free flow	Standard color: Specification	Blank: PT
	8 : Φ8mm	01 : 1/8"    02 : 1/4" 03 : 3/8"    04 : 1/2"		Blank: Gray    Release button: Gray Body: Gray	
	10 : Φ10mm	02 : 1/4" 03 : 3/8" 04 : 1/2"	B: Meter-in  Handle marking "B" Free flow Controlled flow	D: Black    Release button: Black Body: Black	
	12 : Φ12mm	03 : 3/8" 04 : 1/2"			

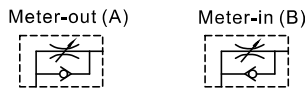
### Specification

<b>Operating pressure range</b>	<b>0~10kgf/cm<sup>2</sup>(0~1.0MPa)</b>
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Product feature

1. Compare with standard speed controller, smaller size, lighter weight, suitable for more occasions.
2. Effectively control the action speed and the pressure signal transmission from pneumatic device.
3. Simple push-lock, operation.
4. Adjust quickly, easily and accurately.
5. Excellent flow rate characteristic, high sensitivity and easy to adjust.
6. Options of Meter-out and meter-in, applicable for every type actuator.
7. Effectively prevent from corrosion and pollution by nickle plated brass.
8. The sealant being coated on threaded portion can ensure no leakage of the threaded connection part.

### Symbol



### Table for interface port and tube O.D.

Product series	Thread type	Port size			
		Φ6	Φ8	Φ10	Φ12
PTL	1/8"	•	•		
	1/4"	•	•	•	
	3/8"	•	•	•	•
	1/2"		•	•	•

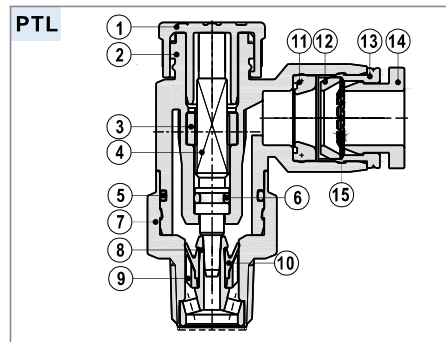
### Selection, Installation and Operation

1. The rotation torque of the push-lock speed controller cap should not be too large to avoid damage.  
It is recommended to use the torque below.

Thread size	Recommended torque(N.m)
1/8"	0.08
1/4"	0.16
3/8"	0.24
1/2"	0.32

2. Push-lock speed controller installation instructions is the same as general one. Please refer to general type for specific content.

### Inner structure



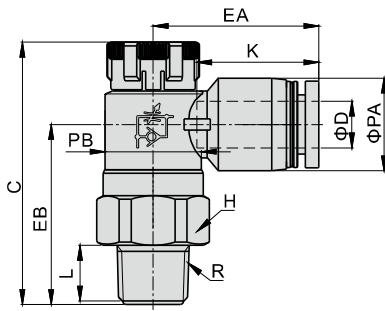
NO.	Name	Material	NO.	Name	Material
1	Adjusting cap	POM	9	Holder	PBT
2	Plastic body	PBT	10	O-ring	NBR
3	Locating ring	Aluminum alloy	11	O-ring	NBR
4	Throttling column	Aluminum alloy	12	Locating seat	POM
5	O-ring	NBR	13	Locating ring	Aluminum alloy
6	O-ring	NBR	14	Plastic interface	POM
7	Throttling body	Brass	15	Spring gasket	Stainless steel
8	Throttling sleeve	Aluminum alloy			



## PTL series

### Dimensions

#### PTL Series

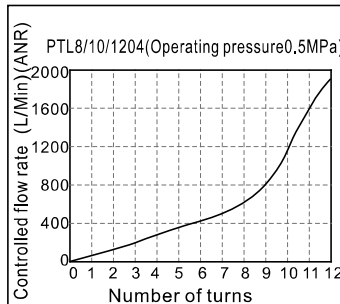
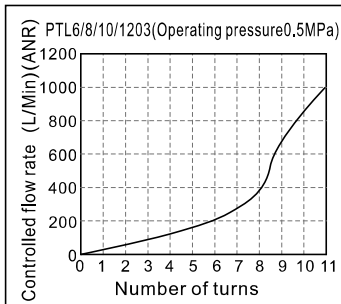
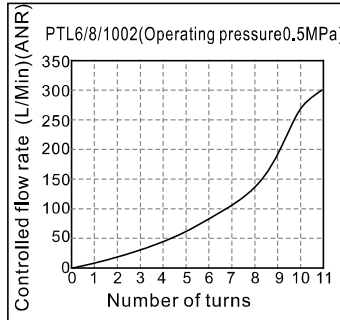
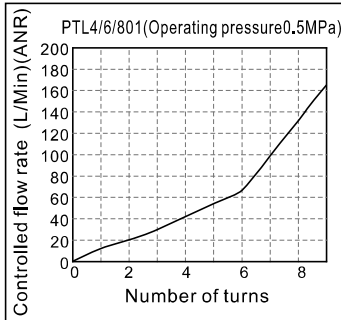
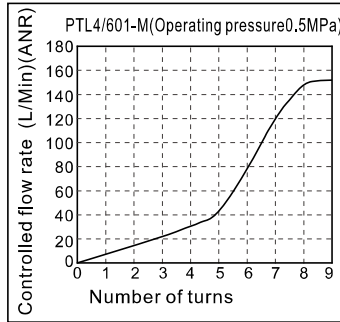
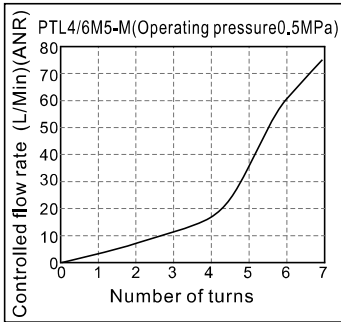


Model/Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						Pull	Push					
PTL601□	6	1/8"	12.5	13	8.5	36	34.5	16.5	22.5	23.5	14	12.5
PTL602□		1/4"	12.5	16.5	11	40.5	39	16.5	24	28	17	19.5
PTL603□		3/8"	12.5	19	12	44	42.5	16.5	25.5	31	19	28.5
PTL801□	8	1/8"	15	13	8.5	36	34.5	18.5	24.5	22.5	14	13
PTL802□		1/4"	15	16.5	11	40.5	39	18.5	26	27	17	20.5
PTL803□		3/8"	15	19	12	44	42.5	18.5	27	30	19	29
PTL804□	1/2"	15	24	15	52.5	51	18.5	29.5	37.5	24	49	
PTL1002□	10	1/4"	18	16.5	11	40.5	39	21	31	26	17	22
PTL1003□		3/8"	18	19	12	44	42.5	21	29	29	19	30.5
PTL1004□		1/2"	18	24	15	52.5	51	21	31.5	36.5	24	50.5
PTL1203□	12	3/8"	21	19	12	44	42.5	23	34.5	28	19	32.5
PTL1204□		1/2"	21	24	15	52.5	51	23	34	36	24	53

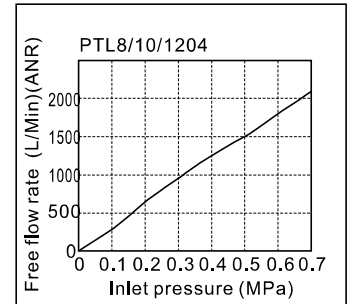
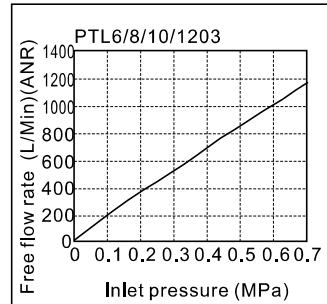
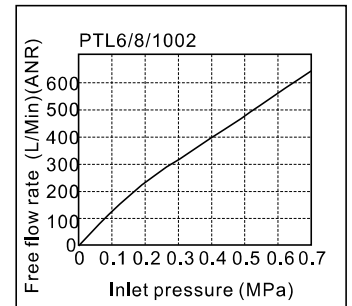
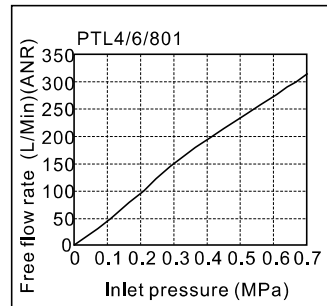
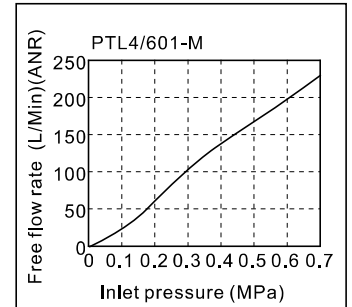
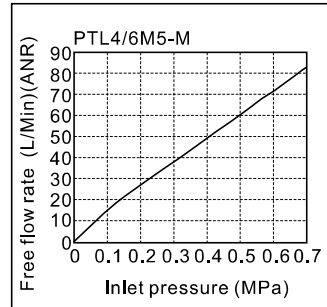
[Note1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

### Flowrate characteristic

#### Controlled flow rate



#### Free flow rate



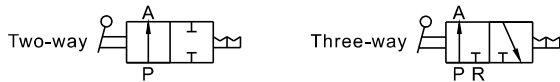
## PHV series



### Specification

Model	PHV6	PHV8	PHV10	PHV12
Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)			
Negative pressure	-750mmHg(10Torr)			
Proof pressure	1.5MPa			
Ambient and fluid temperature (°C)	-20~70			
Applicable tubing	Soft nylon or polyurethane			
Color	Grey/black			

### Symbol



### Product feature

1. PHV series product doesn't contain brass, so can be used for forbidding brass condition.
2. When the three-way valve is closed, the outlet pressure is released, which facilitates in commissioning and maintenance.
3. The finger valve has excellent flow characteristic and high sensitive anti-direction characteristic.

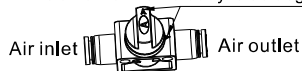
### Ordering code

PHV 6 A □			
① Fitting type	② Port size	③ Valve specification	④ Standard color
PHV: Finger valve	6: Φ6mm	A: Three-way B: Two-way Knob identifier "A"	Blank: Gray (Release button: Gray Body: Gray) D: Black (Release button: Black Body: Black)
	8: Φ8mm		
	10: Φ10mm		
	12: Φ12mm		

### Diagram of finger valve in the open and closed states

#### Closed state

Valve is closed, when the angle between the arrow on knob and the arrow on valve body is 90 degree

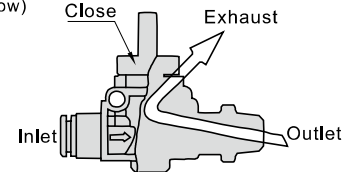


#### Opened state

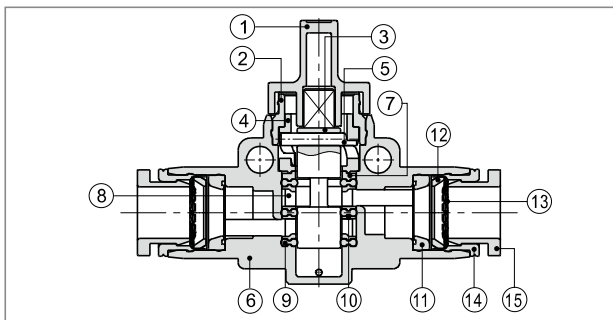
Valve is open, when the direction of the arrow on commutation knob is consistent with that on valve body.



When the three-way valve is closed, the outlet pressure is released, which facilitates in commissioning and maintenance. (as figure below)

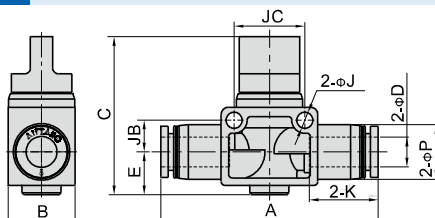


### Inner structure



NO.	Name	Material	NO.	Name	Material
1	Knob	POM	9	Special shape O-ring	NBR
2	Fixing ring	Aluminum alloy	10	Spacer ring	Aluminum alloy
3	Spool	Aluminum alloy	11	Special shape O-ring	NBR
4	Cam groove block	POM	12	Locating seat	POM
5	Pin	Stainless steel	13	Spring gasket	Stainless steel
6	Plastic body	PBT	14	Locating ring	Aluminum alloy
7	Locating block	Aluminum alloy	15	Plastic interface	POM
8	Spacer	POM			

### Dimensions



Model/Item	ΦD	A	B	C	ΦP	K	E	ΦJ	JB	JC	Weight(g)
PHV6□	6	51.5	17	40.5	12.5	16.5	10	4.3	8	18	14.3
PHV8□	8	58.5	18	42.5	15	18.5	11.5	4.3	8.5	19	17.5
PHV10□	10	66	21	42	18	21	11	4.3	11	24	25.1
PHV12□	12	71	22	46	21	23	13	4.3	11	24	31.4

Note: "□" indicates "A" or "B", "A" indicates three-way, and "B" indicates two-way.

The two kinds of valve have same dimensions.

## PC, POC series

### Ordering code

PC 6 01 □ □ - S

① ② ③ ④ ⑤ ⑥

① Model	② Port size	③ Thread connection	④ Standard color	⑤ Thread type	⑥ Material
PC: Male connector 	4 : Φ4mm 6 : Φ6mm	Thread connection: M5 : M5X0.8 Adaptable port size: Φ4, Φ6	Standard color: Blank: Gray Specification: Release button: Gray	Blank: PT	S: Stainless steel 304
POC: Male connector 	8 : Φ8mm 10 : Φ10mm 12 : Φ124mm	01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2" Φ4, Φ6 Φ8, Φ10 Φ12	D: Black Release button: Black		

### Specification

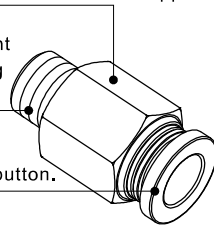
<b>Operating pressure range</b>	<b>0~10kgf/cm<sup>2</sup>(0~1.0MPa)</b>
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Table for interface port and tube O.D.

Product series	Thread type	Port size				
		Φ4	Φ6	Φ8	Φ10	Φ12
PC	M5	•	•			
	1/8"	•	•	•	•	•
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
	1/2"		•	•	•	•
POC	M5	•	•			
	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
	1/2"		•	•	•	•

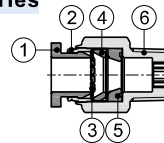
### Product feature

1. Body material is stainless steel, and all parts don't contain copper.
2. The threaded portion is covered with sealant and the M5 thread is attached with a sealing gasket to prevent air leakage over the connection thread portion.
3. Grey and black are optional for the release button.



### Inner structure

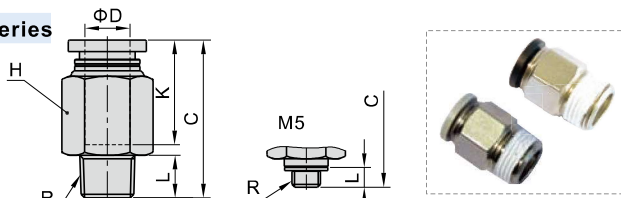
#### PC Series



No.	Item	Material
1	Release button	POM
2	Guide	Aluminum alloy
3	Spring gasket	Stainless steel
4	Chuck	POM
5	O-ring	NBR
6	Body	Stainless steel 304

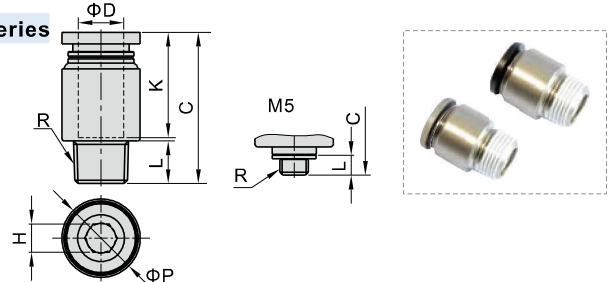
### Dimensions

#### PC Series



Model/Item	ΦD	R	L	C	K	H(Across flat)	Weight(g)
PC4M5	4	M5×0.8	3.5	19.5	14	9	6
PC401		1/8"	7.5	19.5	14	10	6.5
PC402		1/4"	10	19.5	14	14	12.5
PC6M5	6	M5×0.8	3.5	22.5	16.5	12	8
PC601		1/8"	7.5	22.0	18.5	12	7
PC602		1/4"	10	24.5	18.5	14	14.5
PC603		3/8"	11	22.5	18.5	17	22
PC604	1/2"	14	26.0	18.5	21	42	
PC801	8	1/8"	7.5	28	18.5	14	12.5
PC802		1/4"	10	27	18.5	14	12
PC803		3/8"	11	23.5	18.5	17	19.5
PC804	1/2"	14	27	18.5	21	40	
PC1001	10	1/8"	7.5	30	21	17	19
PC1002		1/4"	10	32.5	21	17	22
PC1003		3/8"	11	28	21	17	19
PC1004	1/2"	14	26.5	21	21	33	
PC1201	12	1/8"	7.5	32.5	23	21	35.5
PC1202		1/4"	10	35	23	21	37.5
PC1203		3/8"	11	30.5	23	21	26.5
PC1204		1/2"	14	32.5	23	21	38.5

#### POC Series



Model/Item	ΦD	R	ΦP	L	C	K	H(Across flat)	Weight(g)
POC4M5	4	M5×0.8	9	3.5	18.5	14	2.5	3.5
POC401		1/8"	10	7.5	18	14	3	5
POC402		1/4"	14	10	19.5	14	3	11.5
POC6M5	6	M5×0.8	12	3.5	21.5	16.5	2.5	5.5
POC601		1/8"	12	7.5	22.0	18.5	4	6
POC602		1/4"	14	10	22.0	18.5	4	11
POC603		1/8"	14	7.5	26.5	18	5	9
POC604	1/4"	14	10	25	18	6	9.5	
POC801	8	1/8"	17	11	23.5	18	6	18
POC802		1/8"	17	7.5	30	21	5	15.5
POC803		1/4"	17	10	29	21	6	14.5
POC1001	10	1/8"	17	11	28	21	8	17.5
POC1002		1/4"	21	14	26.5	21	8	32.5
POC1003		1/4"	21	10	34.5	23	6	30
POC1004		3/8"	21	11	30	23	8	23
POC1201	12	1/8"	21	14	32	23	8	34.5
POC1202		1/4"	21	10	34.5	23	6	30
POC1203		3/8"	21	11	30	23	8	23
POC1204	1/2"	21	14	32	23	8	34.5	

## One-touch fittings—threaded type

### Ordering code

Same diameter type fittings

PL 6 01 □ □ - S

① ② ③ ④ ⑤ ⑥

① Model	② Port size	③ Thread connection	④ Standard color	⑤ Thread type	⑥ Material									
PHW: Double universal male elbow 	4: Φ4mm 6: Φ6mm 8: Φ8mm 10: Φ10mm 12: Φ12mm	M5: M5X0.8	Blank: Gray	Blank: PT	S: Stainless steel 304									
PL: Male elbow 						Φ4, Φ6	Release button: Gray Body: Gray	PCF PMF Others						
PHF: Universal female elbow 									Φ4, Φ6 Φ8, Φ10 Φ12	Release button: Gray Body: Gray	PCF PMF Others			
PLL: Extended male elbow 												D: Black	Release button: Black Body: Black	PCF PMF Others
PEB: Male branch tee 														
PED: Male run tee 	PH: Universal male elbow 	Release button: Black Body: Black	PCF PMF Others											
PYB: Branch "Y" 														

Different diameter type fittings

PKD 6 - 4 01 □ □ - S

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Port size	③ Port size	④ Thread connection	⑤ Standard color	⑥ Thread type	⑦ Material
PKD: Male reducer triple branch 	6: Φ6mm	4: Φ4mm	01: 1/8"	Standard color	Blank: PT	S: Stainless steel 304
	8: Φ8mm	6: Φ6mm	02: 1/4"	Blank: Gray		
	10: Φ10mm	8: Φ8mm	03: 3/8"	D: Black		
				Specification		
				Release button: Gray/Body: Gray		
				Release button: Black/Body: Black		

### Specification

Operating pressure range	0~10kg/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Product feature

1. Stainless steel 304 material can be used for forbidding copper condition.
2. Variable models can be widely used in every kind of pneumatic systems.
3. High circulation performance: bear the same flow with the volume of the tubing inside diameter.
4. Connect tubing easily and conveniently. The tubing connection portion is safe and durable.
5. The threaded portion is covered with sealant and the M5 thread is attached with a sealing gasket to prevent air leakage over the connection thread portion.

### Inner structure

No.	Item	Material
1	Release button	POM
2	Guide	Aluminum alloy
3	Spring gasket	Stainless steel
4	Chuck	POM
5	O-ring	NBR
6	Body	PBT
7	O-ring	NBR
8	Stud	SUS304

### Table for interface port and tube O.D.

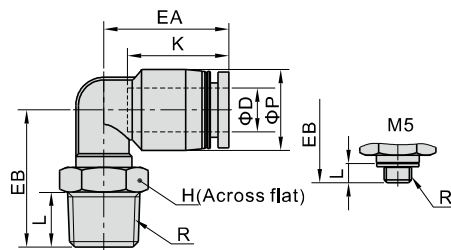
Product series	Thread type	Port size				
		Φ4	Φ6	Φ8	Φ10	Φ12
PL	M5	•	•			
	1/8"	•	•	•	•	•
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
	1/2"		•	•	•	•
PLL	M5	•	•			
	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
	1/2"			•	•	•
PEB PED PYB	M5	•	•			
	1/8"	•	•	•	•	
	1/4"	•	•	•	•	•
	3/8"		•	•	•	•
	1/2"			•	•	•
PH PHF	M5	•	•			
	1/8"	•	•	•		
	1/4"		•	•	•	
	3/8"		•	•	•	•
	1/2"			•	•	•
PHW	1/8"	•	•	•		
	1/4"		•	•	•	
	3/8"		•	•	•	•
	1/2"			•	•	•
PZB	1/8"		•	•		
	1/4"		•	•	•	
	3/8"		•	•	•	•
	1/2"			•	•	•

# Accessories—One-Touch Fittings(Stainless steel)

## One-touch fittings—threaded type

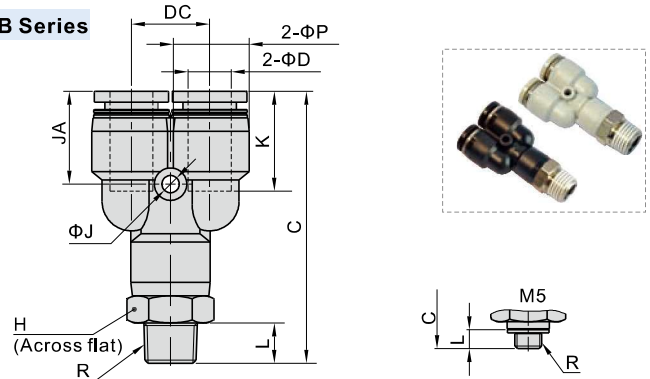
### Dimensions

#### PL Series



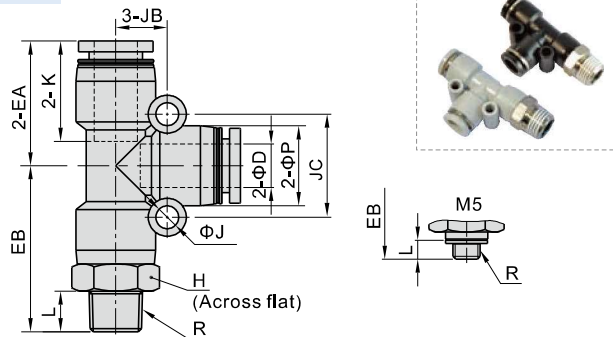
Model\Item	ΦD	R	ΦP	L	K	EA	EB	H	Weight(g)
PL4M5	4	M5×0.8	9	3.5	14	17	15	8	3
PL401		1/8"	9	7.5	14	17	18.5	10	4.5
PL402		1/4"	9	10	14	17	22.0	14	11
PL6M5	6	M5×0.8	12.5	3.5	17	20	17.0	8	4.5
PL601		1/8"	12.5	7.5	17	20	20.5	10	6
PL602		1/4"	12.5	10	17	20	24.0	14	12.5
PL603	8	3/8"	12.5	11	17	20	25.5	17	19
PL604		1/2"	12.5	14	17	20	30.0	21	33
PL801		1/8"	15	7.5	18.5	23	20.5	10	7
PL802	8	1/4"	15	10	18.5	23	25.0	14	12
PL803		3/8"	15	11	18.5	23	26.5	17	19.5
PL804		1/2"	15	14	18.5	23	31.0	21	33
PL1001	10	1/8"	18	7.5	21	25.5	25.0	17	15.5
PL1002		1/4"	18	10	21	25.5	27.0	17	18
PL1003		3/8"	18	11	21	25.5	28.0	17	20
PL1004	12	1/2"	18	14	21	25.5	32.5	21	34.5
PL1201		1/8"	21	7.5	23	28.5	26.5	17	18
PL1202		1/4"	21	10	23	28.5	28.5	17	20.5
PL1203	12	3/8"	21	11	23	29.5	33	17	24
PL1204		1/2"	21	14	23	29.5	34	21	34.5

#### PYB Series



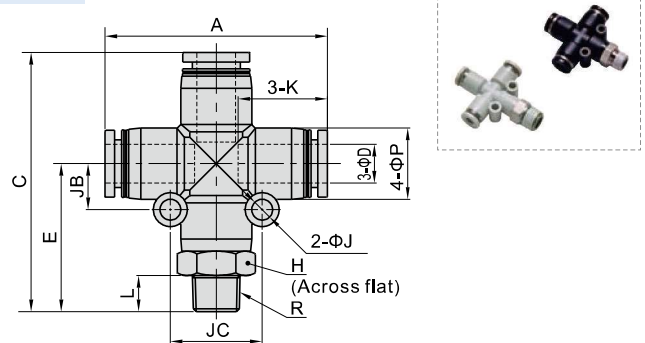
Model\Item	ΦD	R	ΦP	L	C	K	ΦJ	JA	DC	H	Weight(g)
PYB4M5	4	M5×0.8	9	3.5	35.5	14	3.2	13	10	9	6.5
PYB401		1/8"	9	7.5	39.5	14	3.2	13	10	10	8.5
PYB402		1/4"	9	10	42.5	14	3.2	13	10	14	10
PYB6M5	6	M5×0.8	12.5	3.5	40.5	16.5	3.2	15.5	12	12	10.5
PYB601		1/8"	12.5	7.5	44.5	16.5	3.2	15.5	12	12	13
PYB602		1/4"	12.5	10	47.5	16.5	3.2	15.5	12	14	17
PYB603	8	3/8"	12.5	11	49.0	16.5	3.2	15.5	12	17	23.5
PYB801		1/8"	15	7.5	50	18.5	3.2	17	14.5	14	19
PYB802		1/4"	15	10	52.5	18.5	3.2	17	14.5	14	21
PYB803	10	3/8"	15	11	54	18.5	3.2	17	14.5	17	26
PYB804		1/2"	15	14	58	18.5	3.2	17	14.5	21	38
PYB1001		1/8"	18	7.5	56.5	21	4.3	19.5	18	17	26
PYB1002	10	1/4"	18	10	59	21	4.3	19.5	18	17	28
PYB1003		3/8"	18	11	60	21	4.3	19.5	18	17	31
PYB1004		1/2"	18	14	64	21	4.3	19.5	18	21	42.5
PYB1202	12	1/4"	21	10	66	23	4.3	21	20.5	21	26.5
PYB1203		3/8"	21	11	67	23	4.3	21	20.5	21	49
PYB1204		1/2"	21	14	70	23	4.3	21	20.5	21	53.5

#### PED Series



Model\Item	ΦD	R	ΦP	L	K	EA	EB	ΦJ	JB	JC	H	Weight(g)
PED4M5	4	M5×0.8	9	3.5	14	17	21	3.2	6.5	13	9	6.5
PED401		1/8"	9	7.5	14	17	25	3.2	6.5	13	10	8.5
PED402		1/4"	9	10	14	17	28	3.2	6.5	13	14	14.5
PED6M5	6	M5×0.8	12.5	3.5	16.5	20	23.5	3.2	8	16	12	10.5
PED601		1/8"	12.5	7.5	16.5	20	27.5	3.2	8	16	12	13
PED602		1/4"	12.5	10	16.5	20	30.5	3.2	8	16	14	17.5
PED603	8	3/8"	12.5	11	16.5	20	32	3.2	8	16	17	23.5
PED801		1/8"	15	7.5	18.5	23	30.5	4.3	9.5	19	14	17.5
PED802		1/4"	15	10	18.5	23	33	4.3	9.5	19	14	20
PED803	10	3/8"	15	11	18.5	23	34.5	4.3	9.5	19	17	26.5
PED804		1/2"	15	14	18.5	23	38.5	4.3	9.5	19	21	38
PED1001		1/8"	18	7.5	21	26.5	34	4.3	11	22	17	25.5
PED1002	10	1/4"	18	10	21	26.5	36.5	4.3	11	22	17	27.5
PED1003		3/8"	18	11	21	26.5	37.5	4.3	11	22	17	30
PED1004		1/2"	18	14	21	26.5	41.5	4.3	11	22	21	42.5
PED1202	12	1/4"	21	10	23	30	41	4.3	13	26	21	47
PED1203		3/8"	21	11	23	30	42	4.3	13	26	21	48.5
PED1204		1/2"	21	14	23	30	45	4.3	13	26	21	54

#### PZB Series



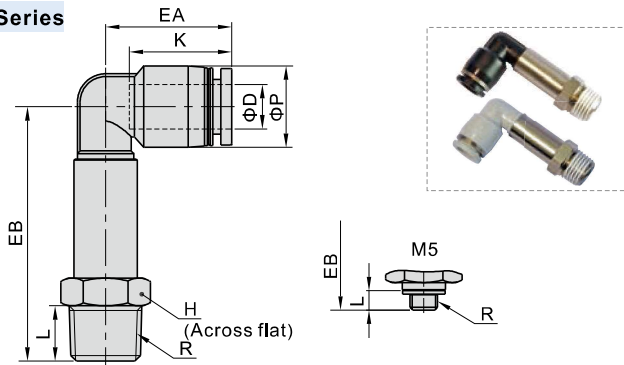
Model\Item	ΦD	R	L	A	E	C	ΦP	K	ΦJ	JB	JC	H	Weight(g)
PZB601	6	1/8"	7.5		27.5	47.5						12	14.5
PZB602		1/4"	10	39.5	30.5	50.5	12.5	16.5	3.2	8	16	14	19.5
PZB603		3/8"	11		32	52						17	25.5
PZB801	8	1/8"	7.5		30.5	53.5						14	20
PZB802		1/4"	10	46	33	56	15	18.5	4.3	9.5	19	14	22.5
PZB803		3/8"	11		34.5	57.5						17	28
PZB804	10	1/2"	14		38.5	61.5						21	40.5
PZB1002		1/4"	10		36.5	63						17	32
PZB1003		3/8"	11	52.5	37.5	64	18	21	4.3	11	22	17	35
PZB1004	12	1/2"	14		41.5	68						21	46.5
PZB1203		3/8"	11	59.5	42	72	21	23	4.3	13	26	21	53.5
PZB1204		1/2"	14		45	75						21	62



# Accessories—One-Touch Fittings(Stainless steel)

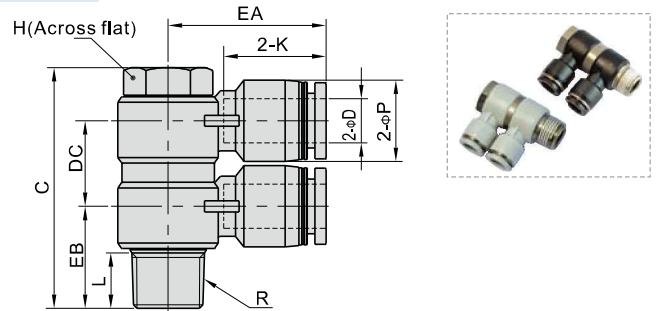
## One-touch fittings—threaded type

### PLL Series



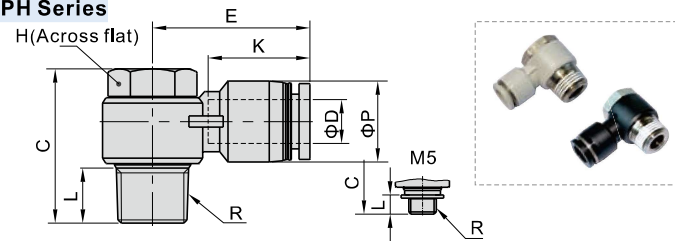
Model\Item	ΦD	R	ΦP	L	K	EA	EB	H	Weight(g)
PLL4M5	4	M5×0.8	9	3.5	14	17	32.5	8	8
PLL401		1/8"	9	7.5	14	17	35.5	10	11.5
PLL402		1/4"	9	10	14	17	38.5	14	15.5
PLL6M5	6	M5×0.8	12.5	3.5	17	20	34.5	8	9.5
PLL601		1/8"	12.5	7.5	17	20	37.5	10	12
PLL602		1/4"	12.5	10	17	20	40.5	14	16.5
PLL603	8	3/8"	12.5	11	17	20	43	17	21.5
PLL801		1/8"	15	7.5	18.5	23	43.5	12	15.5
PLL802		1/4"	15	10	18.5	23	45.5	14	21
PLL803	10	3/8"	15	11	18.5	23	48	17	25.5
PLL1001		1/8"	18	7.5	21	25.5	50.5	15	35
PLL1002		1/4"	18	10	21	25.5	53.5	15	37.5
PLL1003	12	3/8"	18	11	21	25.5	54.5	17	38
PLL1004		1/2"	18	14	21	25.5	59	21	44
PLL1202		1/4"	21	10	23	28.5	55.5	15	40
PLL1203	12	3/8"	21	11	23	29.5	60	17	51.5
PLL1204		1/2"	21	14	23	29.5	63	21	52.5

### PHW Series



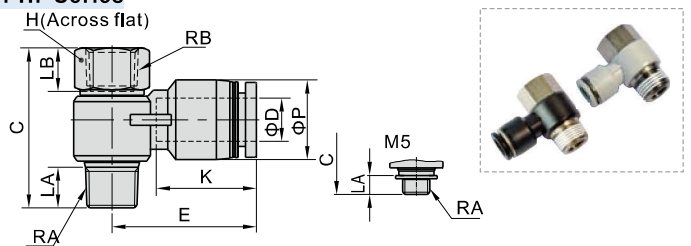
Model\Item	ΦD	R	ΦP	L	C	K	EA	EB	DC	H	Weight(g)
PHW401	4	1/8"	9	7.5	38	14	20.5	14.5	13	11	17.5
PHW601		1/8"	12.5	7.5	38	16.5	23.0	15	13	11	19.5
PHW602		1/4"	12.5	10	43.5	16.5	25.0	17.5	15.5	14	37.5
PHW603	6	3/8"	12.5	11	50	16.5	27.0	20	16.5	19	64
PHW801		1/8"	15	7.5	40.5	18.5	26.5	16.5	15.5	11	22.5
PHW802		1/4"	15	10	43.5	18.5	28.5	18.5	15.5	14	38
PHW803	8	3/8"	15	11	50	18.5	29.5	20	16.5	19	65
PHW804		1/2"	15	14	61	18.5	32	24.5	22	24	133.5
PHW1002		1/4"	18	10	46.5	21	31	20	18.5	14	44
PHW1003	10	3/8"	18	11	55	21	33	21	22	19	81.5
PHW1004		1/2"	18	14	61	21	35.5	25	22	24	127.5
PHW1203		3/8"	21	11	55	23	36	23	22	19	80.5
PHW1204	12	1/2"	21	14	61	23	38	26.5	22	24	137.5

### PH Series



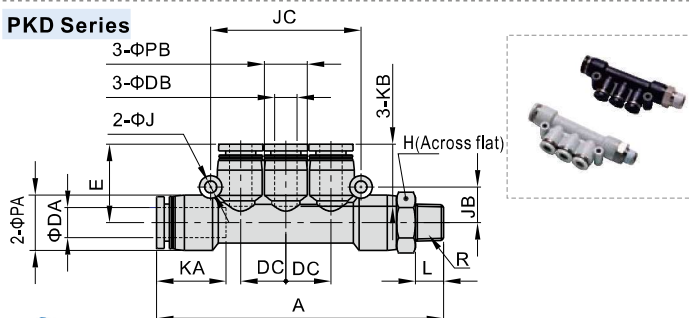
Model\Item	ΦD	R	ΦP	L	C	K	E	H	Weight(g)
PH4M5	4	M5×0.8	9	3.5	17	14	19	8	5.5
PH401		1/8"	9	7.5	25	14	20.5	11	12
PH6M5		M5×0.8	12.5	3.5	17	16.5	23.5	8	6.5
PH601	6	1/8"	12.5	7.5	25	16.5	23	11	13
PH602		1/4"	12.5	10	28	16.5	25	14	23.5
PH603		3/8"	12.5	11	33	16.5	27	19	46.5
PH801	8	1/8"	15	7.5	25	18.5	26.5	11	14
PH802		1/4"	15	10	28	18.5	28.5	14	24.5
PH803		3/8"	15	11	33	18.5	29.5	19	45.5
PH804	10	1/2"	15	14	39	18.5	32	24	82
PH1002		1/4"	18	10	28	21	31	14	26
PH1003		3/8"	18	11	33	21	33	19	47.5
PH1004	12	1/2"	18	14	39	21	35.5	24	81.5
PH1203		3/8"	21	11	33	23	36	19	49.5
PH1204		1/2"	21	14	39	23	38	24	86

### PHF Series



Model\Item	ΦD	RA	RB	ΦP	LA	LB	C	K	E	H	Weight(g)
PHF4M5	4	M5×0.8	M5×0.8	9	3.5	6	20	14	19	8	6
PHF401		1/8"	1/8"	9	7.5	8	29.5	14	20.5	12	12
PHF6M5		M5×0.8	M5×0.8	12.5	3.5	6	20	16.5	23.5	8	7
PHF601	6	1/8"	1/8"	12.5	7.5	8	29.5	16.5	23	12	13
PHF602		1/4"	1/4"	12.5	10	11	35	16.5	25	17	28
PHF603		3/8"	3/8"	12.5	11	12	40	16.5	27	19	41
PHF801	8	1/8"	1/8"	15	7.5	8	29.5	18.5	26.5	12	14
PHF802		1/4"	1/4"	15	10	11	35	18.5	28.5	17	28.5
PHF803		3/8"	3/8"	15	11	12	40	18.5	29.5	19	41.5
PHF804	10	1/2"	1/2"	15	14	13.5	47.5	18.5	32	24	78
PHF1002		1/4"	1/4"	18	10	11	35	21	31	17	30
PHF1003		3/8"	3/8"	18	11	12	40	21	33	19	43
PHF1004	12	1/2"	1/2"	18	14	13.5	47.5	21	35.5	24	79.5
PHF1203		3/8"	3/8"	21	11	12	40	23	36	19	45
PHF1204		1/2"	1/2"	21	14	13.5	47.5	23	38	24	83

### PKD Series



Model\Item	ΦDA	ΦDB	R	L	A	ΦPA	ΦPB	KA
PKD6-401	6	4	1/8"	7.5	66.5	12.5	9	16.5
PKD8-602	8	6	1/4"	10	79	15	12.5	18.5
PKD10-803	10	8	3/8"	11	91.5	18	15	21

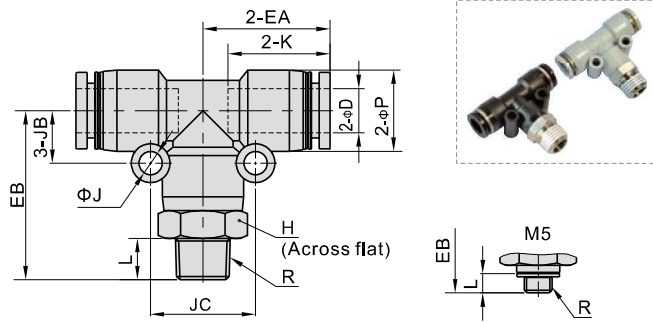
Model\Item	KB	ΦJ	JB	JC	DC	E	H	Weight(g)
PKD6-401	14	3.2	8	34	10	17.5	12	15
PKD8-602	16.5	3.2	9.5	40	12	21	14	25.5
PKD10-803	18.5	4.3	11	48	14.5	24	17	36.5





## One-touch fittings—threaded type

### PEB Series



Model\Item	ΦD	R	ΦP	L	K	EA	EB	ΦJ	JB	JC	H	Weight(g)
PEB4M5	4	M5×0.8	9	3.5	14	17	21	3.2	6.5	13	9	6.5
PEB401		1/8"	9	7.5	14	17	25	3.2	6.5	13	10	8.5
PEB402		1/4"	9	10	14	17	28	3.2	6.5	13	14	14.5
PEB6M5	6	M5×0.8	12.5	3.5	16.5	20	23.5	3.2	8	16	12	10.5
PEB601		1/8"	12.5	7.5	16.5	20	27.5	3.2	8	16	12	13
PEB602		1/4"	12.5	10	16.5	20	30.5	3.2	8	16	14	17.5
PEB603		3/8"	12.5	11	16.5	20	32	3.2	8	16	17	23.5
PEB801	8	1/8"	15	7.5	18.5	23	30.5	4.3	9.5	19	14	17.5
PEB802		1/4"	15	10	18.5	23	33	4.3	9.5	19	14	20
PEB803		3/8"	15	11	18.5	23	34.5	4.3	9.5	19	17	26.5
PEB804		1/2"	15	14	18.5	23	38.5	4.3	9.5	19	21	38
PEB1001	10	1/8"	18	7.5	21	26.5	34	4.3	11	22	17	25.5
PEB1002		1/4"	18	10	21	26.5	36.5	4.3	11	22	17	27.5
PEB1003		3/8"	18	11	21	26.5	37.5	4.3	11	22	17	30
PEB1004		1/2"	18	14	21	26.5	41.5	4.3	11	22	21	42.5
PEB1202	12	1/4"	21	10	23	30	41	4.3	13	26	21	47
PEB1203		3/8"	21	11	23	30	42	4.3	13	26	21	48.5
PEB1204		1/2"	21	14	23	30	45	4.3	13	26	21	54

## One-touch fittings—threaded type

### Ordering code

BB 01 01 □ - S

① ② ③ ④ ⑤

① Model	② Thread connection I	③ Thread connection II	④ Thread type	⑤ Material			
BB: Male connector 	BD: Male & female connector[Note1] 	BU: Double female connector 	BZ: Hexagon head cap plug[Note2] 	01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Blank: PT	S: SUS304

[Note1] For BD series, Thread I is Female thread, Thread II is male thread; [Note2] For BZ series, no thread II and thread I is male thread.

### Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	3.0MPa
Ambient and fluid temperature (°C)	0~150

### Configuration table of tubing thread

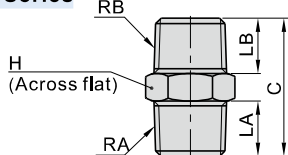
Product series	Thread connection I	Thread connection II			
		01	02	03	04
BB	01	•	•	•	
	02		•	•	•
	03			•	•
	04				•
BD	01		•	•	•
	02			•	•
	03				•
	04				
BU	01	•			
	02		•		
	03			•	
	04				•
Product series	Thread connection				
	01	02	03	04	
BZ	•	•	•	•	

### Product feature

1. Variable models can be widely used in every kind of pneumatic systems.
2. High circulation performance bear the same flow with the volume of the tube inner diameter.
3. Metal fittings can be used in high temperature environment.

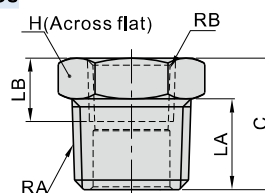
### Dimensions

#### BB Series



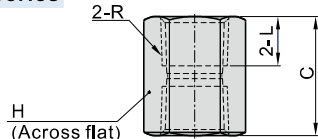
Model\Item	RA	RB	LA	LB	C	H	Weight(g)
BB0101	1/8"	1/8"	7.5	7.5	19.5	10	6
BB0102	1/4"	1/8"	10	7.5	22.5	14	11
BB0103	3/8"	1/8"	11	7.5	24	17	17
BB0202	1/4"	1/4"	10	10	25	14	13.5
BB0203	3/8"	1/4"	11	10	26.5	17	19
BB0204	1/2"	1/4"	14	10	30	21	31.5
BB0303	3/8"	3/8"	11	11	27.5	17	21.5
BB0304	1/2"	3/8"	14	11	31	21	33
BB0404	1/2"	1/2"	14	14	34	21	39.5

#### BD Series



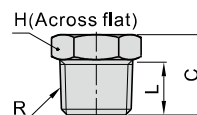
Model\Item	RA	RB	LA	LB	C	H	Weight(g)
BD0102	1/4"	1/8"	10	8	14.5	14	8
BD0103	3/8"	1/8"	11	8	16	17	15.5
BD0104	1/2"	1/8"	14	8	19.5	21	31
BD0203	3/8"	1/4"	11	11	16	17	11.5
BD0204	1/2"	1/4"	14	11	19.5	21	28
BD0304	1/2"	3/8"	14	12	19.5	21	20.5

#### BU Series



Model\Item	R	L	C	H	Weight(g)
BU0101	1/8"	8	17	12	8
BU0202	1/4"	11	23	17	23.5
BU0303	3/8"	12	25	21	36.5
BU0404	1/2"	13.5	28	24	42.5

#### BZ Series




Model\Item	R	L	C	H	Weight(g)
BZ01	1/8"	7.5	11	10	4
BZ02	1/4"	10	14.5	14	10
BZ03	3/8"	11	16	17	16.5
BZ04	1/2"	14	19.5	21	30

## One-touch fittings—threaded type

### Ordering code

BKC 06 04 -01 □ - S

① ② ③ ④ ⑤ ⑥

① Model	② Tubing outer diameter	③ Tubing inner diameter	④ Thread connection	⑤ Thread type	⑥ Material
BKC: Straight locknut connector 	04 : Φ4mm 06 : Φ6mm 08 : Φ8mm 10 : Φ10mm 12 : Φ12mm	25 : Φ2.5mm 04 : Φ4mm 05 : Φ5mm 06 : Φ6mm 65 : Φ6.5mm 75 : Φ7.5mm 08 : Φ8mm 09 : Φ9mm	M3 : M3X0.5 M5 : M5X0.8 01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Blank: PT	S: SUS304

Note: When using the tubing Φ8×Φ5.5, the straight lock nut connector of BKC0806can be used.

### Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	3.0MPa
Ambient and fluid temperature (°C)	0~150

Note: The temperature resistance level of the tubing should be confirmed first when used in high temperature environments.

### Product feature

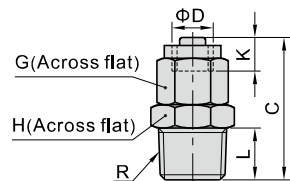
1. Variable models can be widely used in every kind of pneumatic systems.
2. High circulation performance bear the same flow with the volume of the tube innerdiameter.
3. Metal fittings can be used in high temperature environments.

### Configuration table of tubing and tubing thread

Product series	Tubing outer diameter	Tubing inner diameter	Thread connection					
			M3	M5	01	02	03	04
BKC	04	25	•	•	•			
	06	04			•	•	•	
	08	05			•	•	•	
		06			•	•	•	
	10	65				•	•	•
		75					•	•
	12	08				•	•	•
		09				•	•	•

### Dimensions

#### BKC Series



Model\Item	Tubing diameterΦD		R	L	C	K	G	H	Weight(g)	Model\Item	Tubing diameterΦD		R	L	C	K	G	H	Weight(g)							
	O.D	I.D									O.D	I.D														
BKC0425-M3	4	2.5	M3×0.5	3	17	5	8	8	4	BKC1065-02	10	6.5	7.5	15	15	22	1/4"	10	30	15	22					
BKC0425-M5			M5×0.8	3.5	17.5					3/8"							11	31.5	17	26.5						
BKC0425-01			1/8"	7.5	20.5					1/2"							14	35.5	21	40.5						
BKC0604-01	1/8"	7.5	22	1/4"	10	30	15	22																		
BKC0604-02	6	4	1/4"	10	25.5	5.5	10	14	14.5	BKC1065-03							10	7.5	15	17	26.5	3/8"	11	31.5	17	26.5
BKC0604-03	3/8"	11	27	1/2"	14	35.5	21	40																		
BKC0805-01	8	5	1/8"	7.5	24	6.5	12	12	11.5	BKC1075-02	10	8	7.5	17	28	1/4"						10	30	17	28	
BKC0805-02			1/4"	10	27.5					3/8"						11						31.5	17	29.5		
BKC0805-03			3/8"	11	29					1/2"						14						35.5	21	42.5		
BKC0806-01			1/8"	7.5	24					1/4"						10						30	17	28		
BKC0806-02			5.5or6	1/4"	10					27.5						3/8"	11	31.5	17	29						
BKC0806-03			3/8"	11	29					1/2"						14	35.5	21	42.5							

### Installation and application

#### 1. Method of inserting or removal a tubing

##### 1.1 Inserting a tubing

Place the locking cap over the tubing, and insert the tubing into the body, then tighten the locking cap. (As figure 1)

##### 1.2 Removing a tubing

Loosen the locking cap first, then remove the tubing. (As figure 2)

#### 2. Method of tightening the connector thread

Tighten the connector with a hex wrench, as shown right.

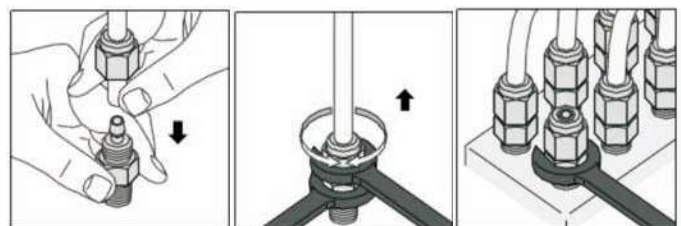


Figure 1

Figure 2

Figure 3

## BSL, BSLM, BESL series

### Ordering code

BSL 01 - S

① ② ③

① Silencer Type	② Thread connection	③ Material
BSL: Universal silencer BSLM: Mini Silencer BESL: Throttling silencer	M5 : M5X0.8 01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	S: SUS304

### Product feature

1. Stainless steel 304 material can be used in prohibiting copper condition.
2. This silencers have excellent noise silencing performance.
3. The installation of the silencer is simple and convenient, and the connecting portion is reliable and durable.
4. It is easy to adjust the exhaust flow of the throttling type silencer.

### Configuration table of tubing thread

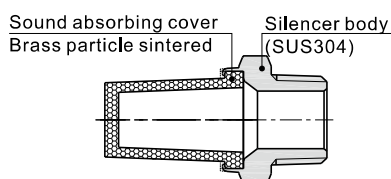
Product series	Thread connection				
	M5	01	02	03	04
BSL	•	•	•	•	•
BSLM	•	•	•	•	•
BESL		•	•	•	•

### Specification

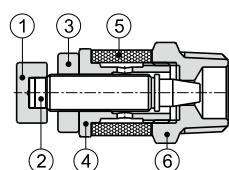
Model	BSLM5	BSL01	BSL02	BSL03	BSL04	BSLMM5	BSLM01	BSLM02	BSLM03	BSLM04	BESL01	BESL02	BESL03	BESL04
Thread connection	M5×0.8	1/8"	1/4"	3/8"	1/2"	M5×0.8	1/8"	1/4"	3/8"	1/2"	1/8"	1/4"	3/8"	1/2"
Silencing effect(dB)(0.5MPa)	15	20	20	20	20	15	20	20	20	20	20	20	20	20
Operating pressure	0~10kgf/cm <sup>2</sup> (0~1.0MPa)													
Negative pressure	-750mmHg(10Torr)													
Proof pressure	1.5MPa													
Temperature range	-20~70°C													

### Inner structure

#### BSL Series



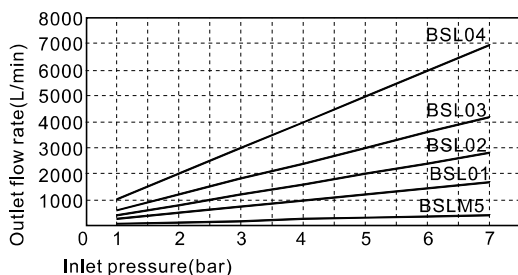
#### BESL Series



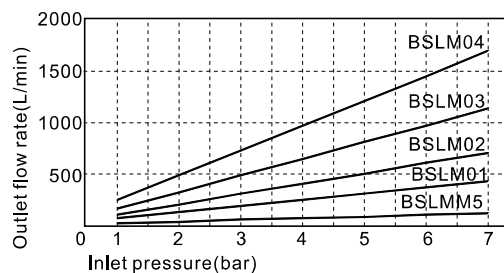
NO.	Name	Material
1	Adjusting cap	Aluminum alloy
2	Throttling column	Aluminum alloy
3	Locking cap	Aluminum alloy
4	Locking ring	Aluminum alloy
5	Silencer ring	Brass particle sintered
6	Silencer body	SUS304

### Flowrate characteristic

#### BSL Series



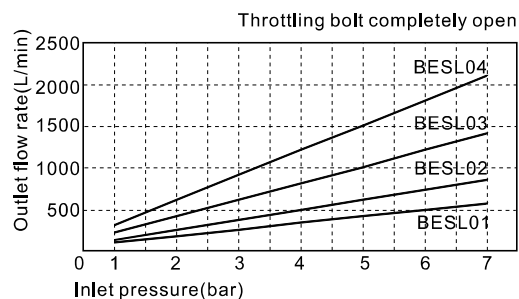
#### BSLM Series



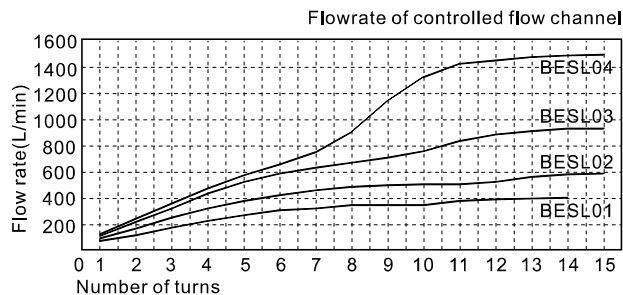
## BSL, BSLM, BESL series

### Flowrate characteristic

**BESL Series** (Inlet pressure and outlet flow rate)

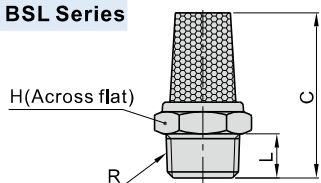


**BESL Series**



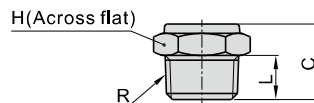
### Dimensions

**BSL Series**



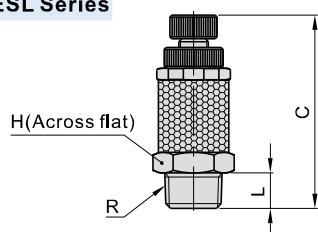
Model\Item	R	L	C	H	Weight(g)
BSLM5	M5×0.8	3.5	19.5	8	2.5
BSL01	1/8"	6	24	12	7
BSL02	1/4"	8	30	15	14
BSL03	3/8"	9	38.5	19	24.5
BSL04	1/2"	10.5	46	22	37.5

**BSLM Series**



Model\Item	R	L	C	H	Weight(g)
BSLMM5	M5×0.8	3.5	9.5	8	2.5
BSLM01	1/8"	6	11	12	5
BSLM02	1/4"	8	13.5	15	9
BSLM03	3/8"	9	15.5	19	15
BSLM04	1/2"	10.5	19	22	25.5

**BESL Series**



Model\Item	R	L	C		H	Weight(g)
			max	min		
BESL01	1/8"	6	40.5	33	12	11.5
BESL02	1/4"	8	42.5	35	14	17
BESL03	3/8"	9	49	41.5	17	30
BESL04	1/2"	10.5	59.5	52	24	66

## PSA, PSL, PSS series

### Ordering code

PSL 6 01 A □ □ - S

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Port size	③ Thread connection	④ Control method	⑤ Standard color	⑥ Thread type	⑦ Material
PSL: Speed controller 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ12mm	Thread M5 : M5X0.8 Adaptable port size Φ4 , Φ6	A: Meter-out  Handle marking "A" Controlled flow Free flow	Standard color Blank: Gray Specification Release button: Gray Body: Gray	Blank: PT	S: SUS304
PSS: Universal speed controller 	01 : 1/8" 02 : 1/4" 03 : 3/8" 04 : 1/2"	Φ4 , Φ6 Φ8 , Φ10 Φ12	B: Meter-in  Handle marking "B" Free flow Controlled flow	D: Black Release button: Black Body: Black		

PSA 6 □ - S

① ② ③ ④

① Model	② Port size	③ Standard color	④ Material
PSA: Straight speed controller 	4 : Φ4mm 6 : Φ6mm 8 : Φ8mm 10 : Φ10mm 12 : Φ12mm	Standard color: Blank: Gray Specification: Release button: Gray Body: Gray D: Black Release button: Black Body: Black	S: SUS304

### Product feature

1. Stainless steel 304 material can be used in prohibiting copper condition.
2. The speed control is small size, and light weight with small installation space.
3. Effectively control the action speed and pressure signal transmission from pneumatic device.
4. Meter-in and meter-out types are optional, which is suitable for different size of actuators
5. Excellent flow characteristics, high sensitivity and easy to adjust.
6. The brass body adopts a special nickel-plating process, which has good corrosion resistance and anti-pollution property.
7. Anti-drop structure is designed on the regulating rod.
8. The sealant being coated on threaded portion can ensure no leakage of the threaded connection part.
9. The inserting direction of universal speed controller can be adjusted in 360°.

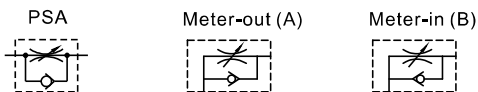
### Specification

Operating pressure range	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

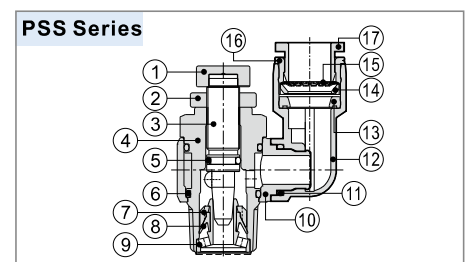
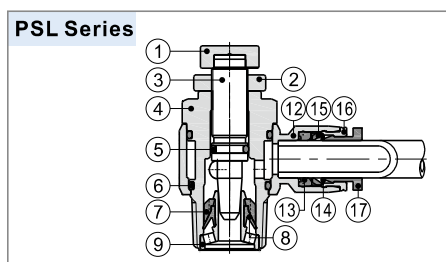
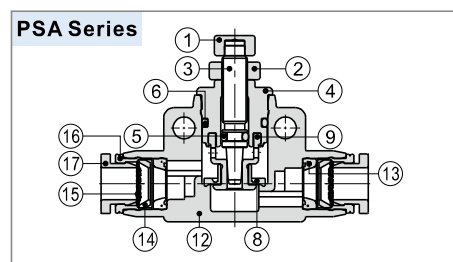
### Table for interface port and tube O.D.

Product series	Thread type	Port size				
		Φ4	Φ6	Φ8	Φ10	Φ12
PSA	-	•	•	•	•	•
	M5	•	•			
	1/8"	•	•			
PSL	1/4"		•	•	•	
	3/8"		•	•	•	•
	1/2"			•	•	•
PSS	M5	•				
	1/8"		•	•		
	1/4"		•	•	•	
	3/8"				•	•
	1/2"					•

### Symbol



### Inner structure



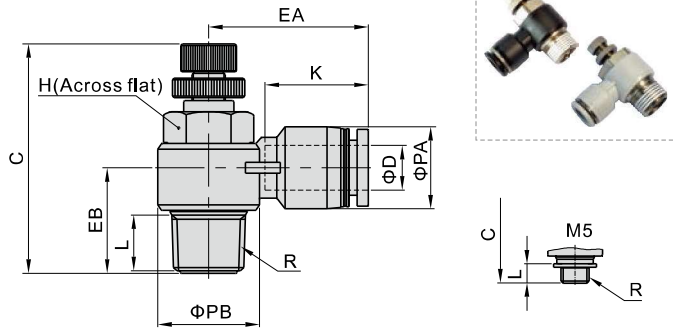
NO.	Name	Material	NO.	Name	Material	NO.	Name	Material
1	Adjusting cap	Aluminum alloy	7	Holder	PBT	13	O-ring	NBR
2	Locking cap	Aluminum alloy	8	O-ring	NBR	14	Locating seat	POM
3	Throttling column	SUS304	9	Throttling sleeve	Aluminum alloy	15	Spring gasket	Stainless steel
4	Throttling body	Aluminum alloy/SUS304	10	Plastic body	PBT	16	Locating ring	Aluminum alloy
5	O-ring	NBR	11	O-ring	NBR	17	Plastic interface	POM
6	O-ring	NBR	12	Plastic body	PBT			



## PSA, PSL, PSS series

### Dimensions

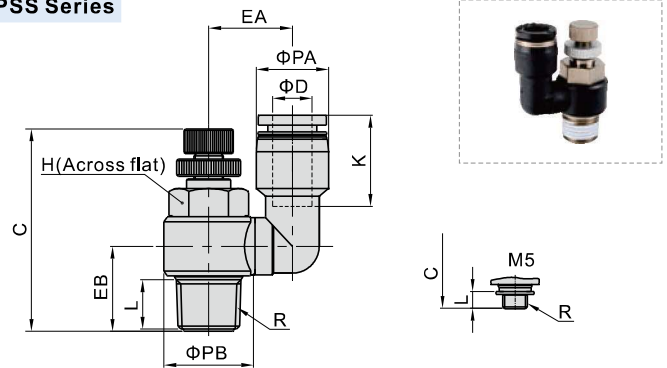
#### PSL Series



Model\Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						max	min					
PSL4M5□	4	M5×0.8	9	10	3.5	30	27.5	14	19	9.5	8	6
PSL401□		1/8"	9	14	7.5	41.5	35	14	20.5	15	11	15.5
PSL6M5□	6	M5×0.8	12.5	10	3.5	30	27.5	16.5	23.5	11.5	8	7.5
PSL601□		1/8"	12.5	14	7.5	41.5	35	16.5	23	15.5	11	16.5
PSL602□	6	1/4"	12.5	18	10	47.5	41	16.5	25	18	14	30
PSL603□		3/8"	12.5	22.5	11	52.5	45.5	16.5	27	20	19	55
PSL801□	8	1/8"	15	14	7.5	41.5	35	18.5	26.5	16.5	11	17
PSL802□		1/4"	15	18	10	47.5	41	18.5	28.5	19	14	31
PSL803□	8	3/8"	15	22.5	11	52.5	45.5	18.5	29.5	20	19	55.5
PSL804□		1/2"	15	28	14	58.5	51.5	18.5	32	25	24	89
PSL1002□	10	1/4"	18	18	10	47.5	41	21	31	20.5	14	32.5
PSL1003□		3/8"	18	22.5	11	52.5	45.5	21	33	21.5	19	57.5
PSL1004□	10	1/2"	18	28	14	58.5	51.5	21	35.5	25.5	24	90.5
PSL1203□		3/8"	21	22.5	11	52.5	45.5	23	36	23.5	19	59.5
PSL1204□	12	1/2"	21	28	14	58.5	51.5	23	38	27	24	92.5

[Note 1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

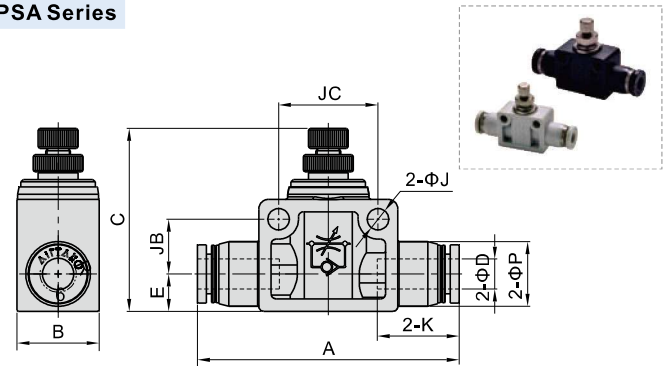
#### PSS Series



Model\Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						max	min					
PSS4M5□	4	M5×0.8	9	10	3.5	30	27.5	14	12.5	9.5	8	7.5
PSS601□		1/8"	12.5	14	7.5	41.5	35	17	17	15	11	18
PSS602□	6	1/4"	12.5	18	10	47.5	41	17	19	17.5	14	32.5
PSS801□		1/8"	15	14	7.5	41.5	35	18.5	17	15	11	19
PSS802□	8	1/4"	15	18	10	47.5	41	18.5	19	17.5	14	37.5
PSS1002□		1/4"	18	18	10	47.5	41	21	20.5	17.5	14	35
PSS1003□	10	3/8"	18	22.5	11	52.5	45.5	21	24	20	19	61.5
PSS1203□		3/8"	21	22.5	11	52.5	45.5	23	25.5	20	19	65
PSS1204□	12	1/2"	21	28	14	58.5	51.5	23	28	25	24	98.5

[Note 1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

#### PSA Series

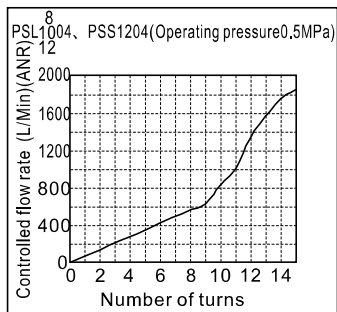
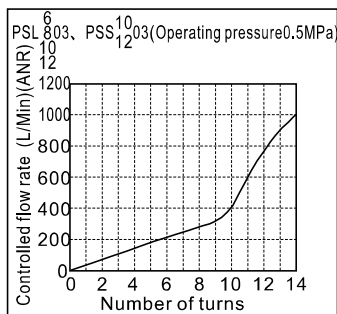
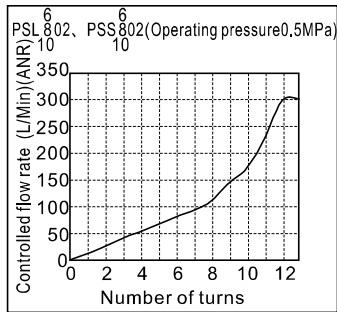
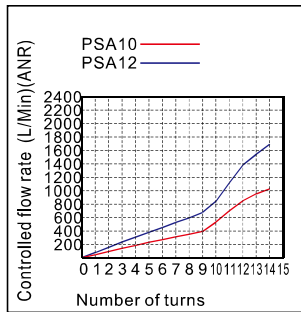
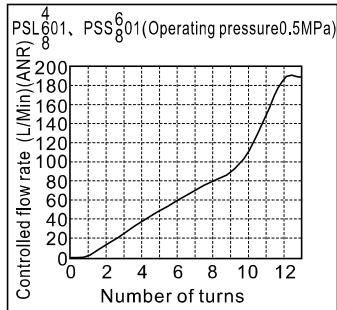
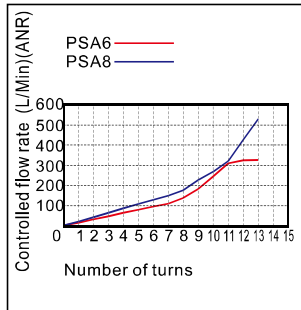
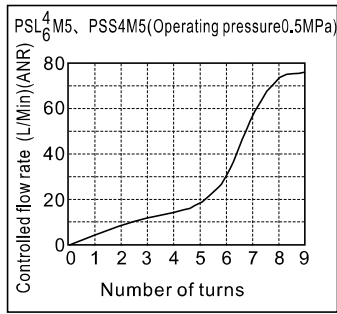
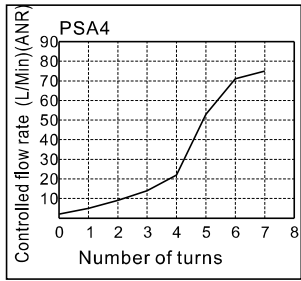


Model\Item	ΦD	A	B	C		ΦP	E	K	ΦJ	JB	JC	Weight (g)
				max	min							
PSA4	4	41	11	29	26.5	9.5	7	14	3.2	6	14	7.5
PSA6	6	52.5	16.5	43.5	36.5	13	7.5	16.5	4.3	11	20	18
PSA8	8	59.5	16.5	47	40	15	8.5	18.5	4.3	11	22	23
PSA10	10	69	21	53.5	46.5	18	10.5	21	4.3	14.5	26	41.5
PSA12	12	78.5	26	58.5	51	21.5	12	23	4.3	17.5	32	66

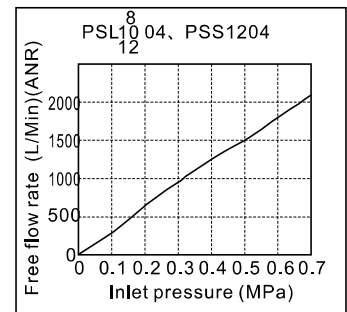
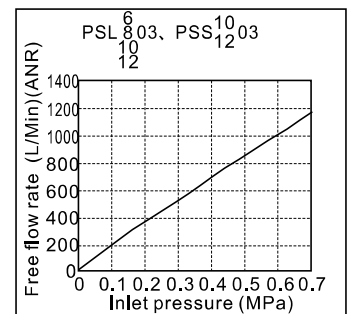
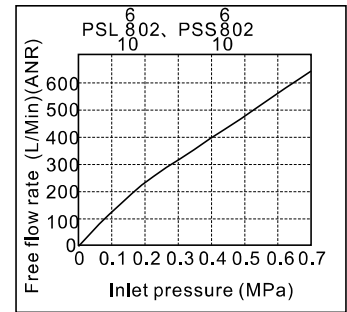
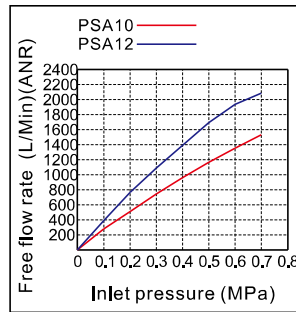
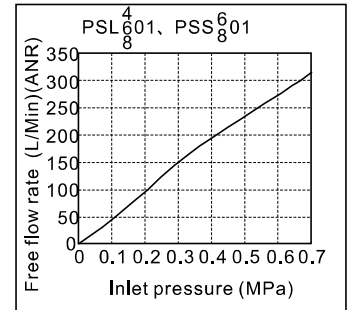
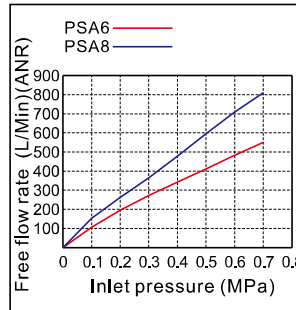
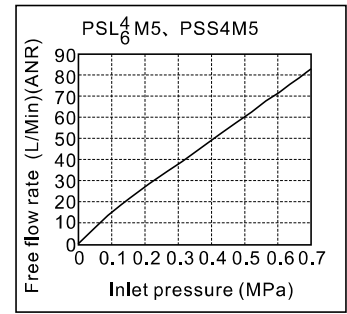
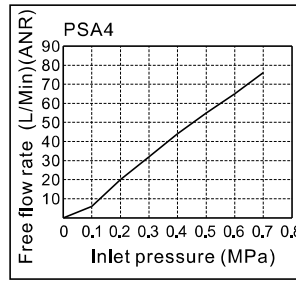
## PSA, PSL, PSS series

### Flowrate characteristic

#### Controlled flow rate



#### Free flow rate



## PSA, PSL, PSS series

### Selection, Installation and Operation

#### Selection

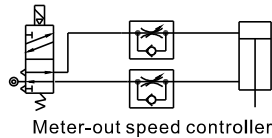
1. The speed controller has meter-out type and meter-in type:

	Working principle	Product identification
	<b>A: Meter-out</b> 1. The air flow is controlled from the threaded end to tubing connection end. 2. The air flow is free from the tubing connection end to the threaded end.	Handle marking "A" 
	<b>B: Meter-in</b> 1. The air flow is free from the threaded end to tubing connection end. 2. The air flow is controlled from the tubing connection end to the threaded end.	Handle marking "B" 

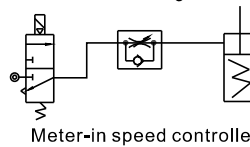
2. Select the different control method according to the actual requirement. The meter-out type is the first priority.

2.1. The application example of the meter-out speed controller    2.2. The application example of the meter-in speed controller

Solenoid valve    Double acting cylinder



Solenoid valve    Single acting cylinder



#### Installation

1. Installation and removal of tubing:

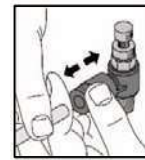
1.1. Installation of tubing

Grasp the tubing and slowly push it into the fitting until it comes to a stop. The tubing will be locked by the spring gasket.

1.2. Removal of tubing

Push the release button to open the spring gasket so that the tubing can be released.

Note: When remove the tubing, make sure the pressure in the tubing is Zero.



2. Mounting of the speed controller

Mount the speed controller into the inlet and outlet port of the cylinder with a wrench.

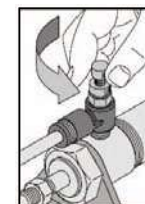
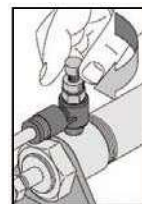
Note: Please refer to the fittings for the tightening torque and thread screw-in depth.

#### Operation

1. Adjustment of the cylinder speed

1.1. Make sure the speed controller is turned off before applying air pressure. The cylinder may fly out due to the high speed if the air is inlet when the speed controller is turned on.

1.2. Adjust the speed by opening the needle slowly from the fully closed state. When a needle valve is turned clockwise, the air flow through is reduced and the actuator speed decreases. When a needle valve is turned counter-clockwise, the air flow through is increased and the actuator speed increases.



2. Operation of the speed controller

2.1. Do not use tools such as pliers to rotate the handle. Do not apply excessive force or shock when the needle is at the place of top or bottom. It can cause damage or air leakage.

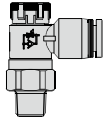
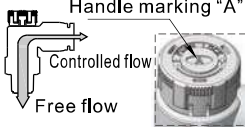

2.2. A certain amount of leakage is allowed in the closed state of the speed controller. It is not designed for the use as stop valve with zero air leakage.

## PTL Mini series

### Ordering code

PTL 6 M5 A □ □ - M S

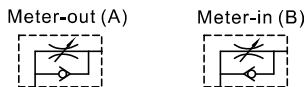
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Model	② Port size	③ Thread connection	④ Control method	⑤ Standard color	⑥ Thread type	⑦ Style	⑧ Material
PTL: Speed controller (Push lock) 	4 : Φ4mm 6 : Φ6mm	M5 : M5X0.8 01 : 1/8"	<b>A: Meter-out</b>  Handle marking "A" Controlled flow Free flow	Standard color: Specification Blank: Gray Release button: Gray Body: Gray	Blank: PT	M: Mini type	S: SUS304
			<b>B: Meter-in</b>  Handle marking "B" Free flow Controlled flow	D: Black Release button: Black Body: Black			

### Specification

<b>Operating pressure range</b>	0~10kgf/cm <sup>2</sup> (0~1.0MPa)
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Symbol



### Selection, Installation and Operation

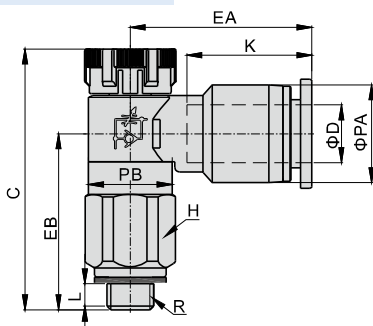
- The rotation torque of the push-lock speed controller cap should not be too large to avoid damage. It is recommended to use the torque below.

Thread size	Recommended torque(N.m)
M5	0.05
1/8"	0.08

- Push-lock speed controller installation instructions is the same as general one. Please refer to general type for specific content.

### Dimensions

#### PTL Mini series



Model\Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						Pull	Push					
PTL4M5□-MS	4	M5×0.8	8.5	9	3.5	29.5	28	12.5	16.5	19	9	5
PTL401□-MS		1/8"	8.5	9	3.5	29.5	28	12.5	16.5	19	10	11
PTL6M5□-MS	6	M5×0.8	10.5	9	3.5	29.5	28	13.5	19.5	19	9	6.2
PTL601□-MS		1/8"	10.5	9	3.5	29.5	28	13.5	19.5	19	10	12

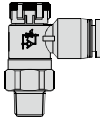
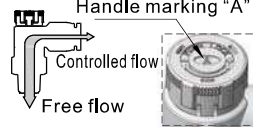
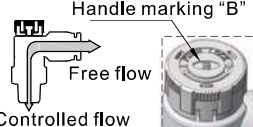
[Note1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

## PTL series

### Ordering code

PTL 6 01 A □ □ - S

① ② ③ ④ ⑤ ⑥ ⑦

① Model	② Port size	③ Thread connection	④ Control method	⑤ Standard color	⑥ Thread type	⑦ Material	
PTL: Speed controller (Push lock) 	6 : Φ6mm	01 : 1/8"	A: Meter-out  Handle marking "A" Controlled flow Free flow	Standard color Blank: Gray	Specification Release button: Gray Body: Gray	Blank: PT S: SUS304	
		02 : 1/4" 03 : 3/8"					
	8 : Φ8mm	01 : 1/8"	02 : 1/4"	B: Meter-in  Handle marking "B" Free flow Controlled flow	D: Black		Release button: Black Body: Black
		03 : 3/8"	04 : 1/2"				
10 : Φ10mm	02 : 1/4" 03 : 3/8" 04 : 1/2"						
12 : Φ12mm	03 : 3/8" 04 : 1/2"						

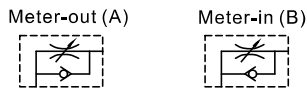
### Specification

<b>Operating pressure range</b>	<b>0~10kgf/cm<sup>2</sup>(0~1.0MPa)</b>
Negative pressure	-750mmHg(10Torr)
Proof pressure	1.5MPa
Ambient and fluid temperature (°C)	-20~70
Applicable tubing	Soft nylon or polyurethane
Color	Grey/black

### Product feature

1. Compare with standard speed controller, smaller size, lighter weight, suitable for more occasions.
2. Effectively control the action speed and the pressure signal transmission from pneumatic device.
3. Simple push-lock, operation.
4. Adjust quickly, easily and accurately.
5. Excellent flow rate characteristic, high sensitivity and easy to adjust.
6. Options of Meter-out and meter-in, applicable for every type actuator.
7. Effectively prevent from corrosion and pollution by nickel plated brass.
8. The sealant being coated on threaded portion can ensure no leakage of the threaded connection part.

### Symbol



### Table for interface port and tube O.D.

Product series	Thread type	Port size			
		Φ6	Φ8	Φ10	Φ12
PTL	1/8"	•	•		
	1/4"	•	•	•	
	3/8"	•	•	•	•
	1/2"		•	•	•

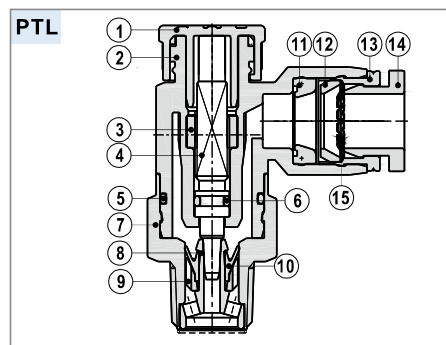
### Selection, Installation and Operation

1. The rotation torque of the push-lock speed controller cap should not be too large to avoid damage.  
It is recommended to use the torque below.

Thread size	Recommended torque(N.m)
1/8"	0.08
1/4"	0.16
3/8"	0.24
1/2"	0.32

2. Push-lock speed controller installation instructions is the same as general one. Please refer to general type for specific content.

### Inner structure

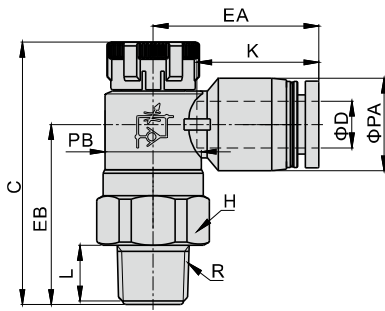


NO.	Name	Material	NO.	Name	Material
1	Adjusting cap	POM	9	Holder	PBT
2	Plastic body	PBT	10	O-ring	NBR
3	Locating ring	Aluminum alloy	11	O-ring	NBR
4	Throttling column	Aluminum alloy	12	Locating seat	POM
5	O-ring	NBR	13	Locating ring	Aluminum alloy
6	O-ring	NBR	14	Plastic interface	POM
7	Throttling body	SUS304	15	Spring gasket	Stainless steel
8	Throttling sleeve	Aluminum alloy			

## PTL series

### Dimensions

#### PTL Series

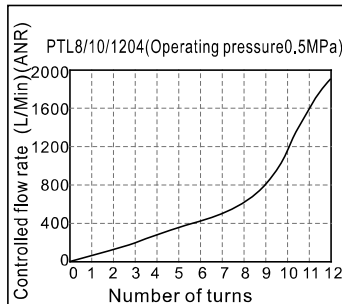
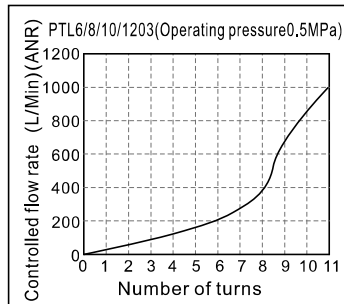
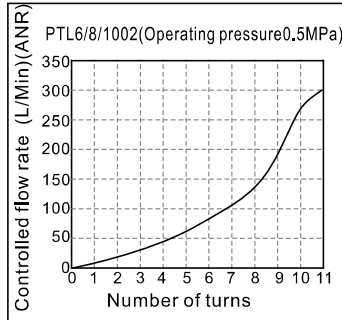
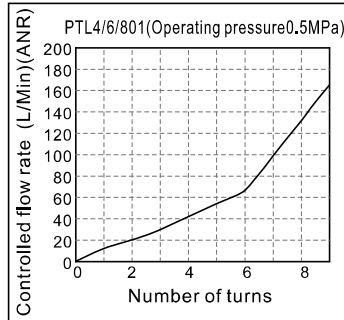
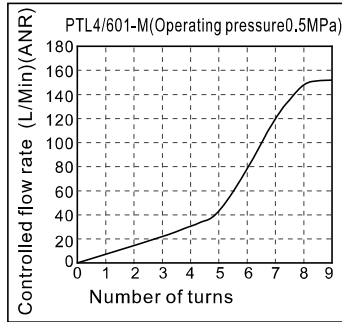
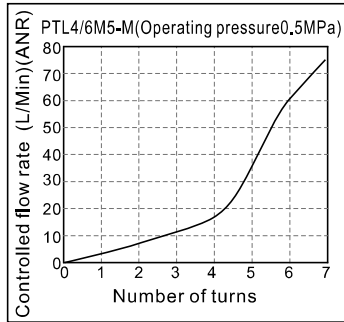


Model/Item [Note1]	ΦD	R	ΦPA	ΦPB	L	C		K	EA	EB	H	Weight (g)
						Pull	Push					
PTL601□-S	6	1/8"	12.5	13	8.5	36	34.5	16.5	22.5	23.5	14	12.5
PTL602□-S		1/4"	12.5	16.5	11	40.5	39	16.5	24	28	17	19.5
PTL603□-S		3/8"	12.5	19	12	44	42.5	16.5	25.5	31	19	28.5
PTL801□-S	8	1/8"	15	13	8.5	36	34.5	18.5	24.5	22.5	14	13
PTL802□-S		1/4"	15	16.5	11	40.5	39	18.5	26	27	17	20.5
PTL803□-S		3/8"	15	19	12	44	42.5	18.5	27	30	19	29
PTL804□-S	1/2"	15	24	15	52.5	51	18.5	29.5	37.5	24	49	
PTL1002□-S	10	1/4"	18	16.5	11	40.5	39	21	31	26	17	22
PTL1003□-S		3/8"	18	19	12	44	42.5	21	29	29	19	30.5
PTL1004□-S		1/2"	18	24	15	52.5	51	21	31.5	36.5	24	50.5
PTL1203□-S	12	3/8"	21	19	12	44	42.5	23	34.5	28	19	32.5
PTL1204□-S		1/2"	21	24	15	52.5	51	23	34	36	24	53

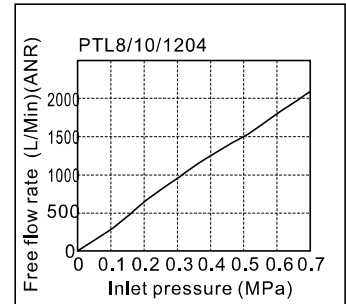
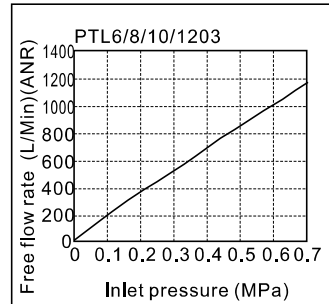
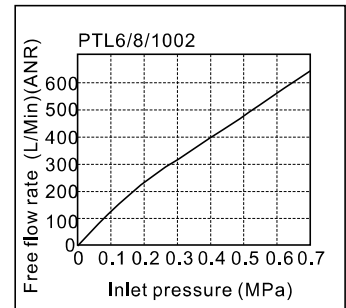
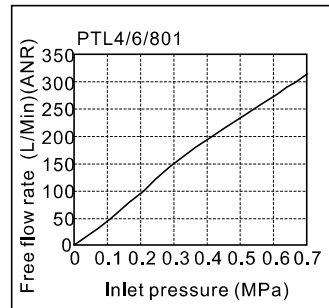
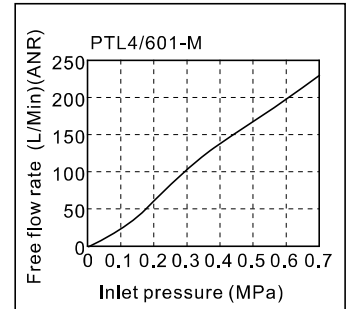
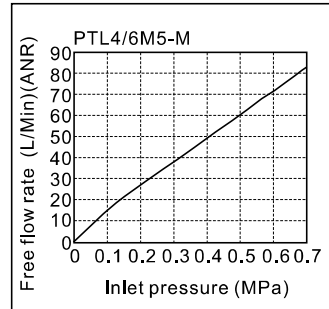
[Note1] "□" stands for A or B. A indicates meter-out type while B indicates meter-in type. The two types are with the same overall dimension.

### Flowrate characteristic

#### Controlled flow rate



#### Free flow rate





# Pneumatic Indicator

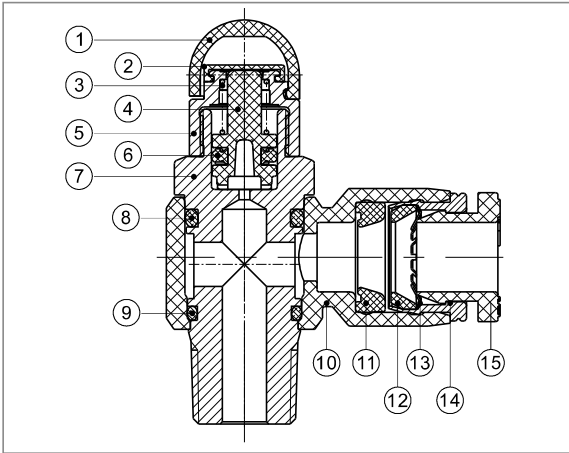
## PWC, PWL Series



### Product feature

1. Use to detect if compressed air passing by.
2. Rubber can maintain signal accuracy.
3. Transparent indicator window: Made of Nylon, strong and clear.
4. Nickel plated Brass body to prevent corrosion and contamination.
5. Standard sealant can prevent leakage.
6. Plug-in type for efficient and easy mounting.

### Inner structure and material of major parts



NO.	Item	Material
1	Indicator window	Nylon
2	Rubber shield	NBR
3	Spring	Stainless steel
4	Piston	POM
5	Front cover	Aluminum alloy
6	O-ring	NBR
7	Body	Brass
8	O-ring	NBR
9	O-ring	NBR
10	Plastic Body	PBT
11	Seal	NBR
12	Locker seat	POM
13	Spring washer	Stainless steel
14	Guide	Aluminum alloy
15	Release button	POM

### Table for interface port and tube O.D.

P Port/Male thread(A port)	M5	1/8"	1/4"
	●	●	●
	●	●	●
	●	●	●

### Specification

Model	PWC	PWL
Fluid	Air(to be filtered by 40µm filter element)	
Indication color	Red/Green	
Structure	Piston type	
Operating pressure	0.2~1.0MPa(29~145psi)(2.0~10bar)	
Proof pressure	1.5MPa(215psi)(15.0bar)	
Temperature °C	-20~70	
Tube	/	Nylon tube or PU tube
Color of body	/	Grey

### Ordering code

PWL 6 01 R □

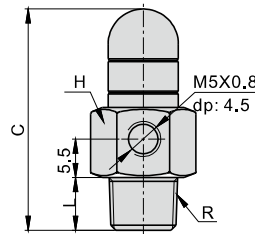
① ② ③ ④ ⑤

① Model	② Port size	③ Port size	④ Indication color	⑤ Thread
PWC:Standard	M5:M5X0.8	M5:M5X0.8 01:1/8 02:1/4	R:Red GN:Green	Blank:PT G:G T:NPT [Note]
PWL:Plug-in type	4:Φ4 6:Φ6 8:Φ8	M5:M5X0.8 (Φ4/Φ6) 01:1/8 (Φ4/Φ6/Φ8) 02:1/4 (Φ6/Φ8)		

[Note] M5 thread is blank here.

### Dimensions

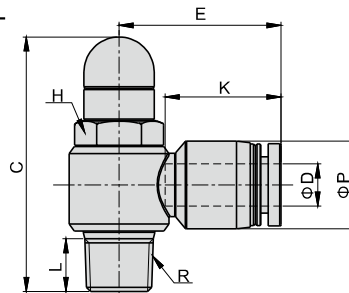
#### PWC



Model/Item	R	L	C	H	Weight(g)
PWCM5M5	M5×0.8	3.5	29.5	13	14.2
PWCM501	1/8	7.5(5.5)	32	13	16.2
PWCM502	1/4	10(6.5)	34.5	14	23.5

Note: Dimensions in ( ) are for G thread model.

#### PWL



Model/Item	D	R	P	L	C	K	E	H	Weight(g)
PWL4M5	4	M5×0.8	9	3.5	30	14	19	10	7.8
PWL401		1/8		7.5(5.5)	36.5		20.5	11	14
PWL6M5	6	M5×0.8	12.5	3.5	30	16.5	23.5	10	8.8
PWL601		1/8"		7.5(5.5)	36.5		23	11	15
PWL602	1/4"	10(6.5)	39.5	25	14	23			
PWL801	8	1/8"	15	7.5(5.5)	36.5	18.5	26.5	11	15.5
PWL802		1/4"		10(6.5)	39.5		28.5	14	23.5

Note: Dimensions in ( ) are for G thread model.

## Cylinder bore size, theory basic speed and corresponding valves list

Bore size (mm)	Theory basic speed (mm/s)	Necessary orifice size (mm <sup>2</sup> )	Corresponding valves				Corresponding accessories		Corresponding tube
			Single solenoid valve	Double solenoid valve	Single air control valve	Double air control valve	Speed control valve	Silencer	
Φ6	500	0.1	6V0510M5/6V110M5 4V110M5 4M110M5	6V0520M5/6V120M5 4V120M5 4M120M5	4A110M5	4A120M5	PTLM5 PSLM5 PSSM5	BSLM5 BSLMM5	Φ4XΦ2.5 tube
Φ10	500	0.2							
Φ12	500	0.3							
Φ16	500	0.5							
Φ20	300	0.5	6V0510M5/6V110M5 4V110M5/4V11006 4M110M5/4M11006	6V0520M5/6V120M5 4V120M5/4V12006 4M120M5/4M12006	4A110M5 4A11006	4A120M5 4A12006	PTLM5 PSLM5 PSSM5 PTL01 PSL01 PSS01 ASC10006	BSLM5 BSLMM5 BSL01 BSLM01 BESL01 PAL01 PALM01	Φ6XΦ4 tube
	400	0.7							
	500	0.8							
	600	1.0							
	700	1.2							
Φ25	300	0.8	6V0510M5/6V110M5 6V11006 4V110M5/4V11006 4M110M5/4M11006	6V0520M5/6V120M5 6V12006 4V120M5/4V12006 4M120M5/4M12006	4A110M5 4A11006	4A120M5 4A12006	PTLM5 PSLM5 PSSM5 PTL01 PSL01 PSS01 ASC10006	BSLM5 BSLMM5 BSL01 BSLM01 BESL01 PAL01 PALM01	Φ6XΦ4 tube
	400	1.0							
	500	1.3							
	600	1.5							
	700	1.8							
Φ32	300	1.3	6V11006/6V21006 4V11006/4V21006 4M11006/4M21006	6V12006/6V22006 4V12006/4V22006 4M12006/4M22006	4A11006 4A21006	4A12006 4A22006	PTL01 PSL01 PSS01 ASC10006	BSL(M)01 BESL01 PAL(M)01	Φ8XΦ5 tube
	400	1.7							
	500	2.1							
	600	2.5							
	700	2.9							
Φ40	300	2.0	6V11006/6V21006 6V21008 4V11006/4V21006 4V21008/4M11006 4M21006/4M21008	6V12006/6V22006 6V22008 4V12006/4V22006 4V22008/4M12006 4M22006/4M22008	4A11006 4A21006 4A21008	4A12006 4A22006 4A22008	PTL01 PSL01 PSS01 ASC10006 PTL02/PSL02 PSS02 ASC20008	BSL01/02 BSLM01/02 BESL01/02 PAL01/02 PALM01/02	Φ6XΦ4 tube Φ8XΦ5 tube Φ10XΦ6.5 tube
	400	2.6							
	500	3.3							
	600	3.9							
	700	4.6							
Φ50	300	3.1	6V21008 4V21008 4M21008	6V22008 4V22008 4M22008	4A21008	4A22008	PTL02 PSL02 PSS02 ASC20008	BSL02 BSLM02 BESL02 PAL02 PALM02	Φ8XΦ5 tube Φ10XΦ6.5 tube
	400	4.1							
	500	5.1							
	600	6.1							
	700	7.2							
Φ63	300	4.9	6V21008/6V31010 4V21008/4V31008 4V31010/4M21008 4M31008/4M31010	6V22008/6V32010 4V22008/4V32008 4V32010/4M22008 4M32008/4M32010	4A21008 4A31008 4A31010	4A22008 4A32008 4A32010	PTL02 PSL02 PSS02 ASC20008 PTL03 PSL03 PSS03 ASC30010	BSL02/03 BSLM02/03 BESL02/03 PAL02/03 PALM02/03	Φ8XΦ5 Φ10XΦ6.5 tube Φ16XΦ11 tube
	400	6.5							
	500	8.1							
	600	9.7							
	700	11.4							
Φ80	300	7.9	6V31010 4V31010 4M31010	6V32010 4V32010 4M32010	4A31010	4A32010	PTL03 PSL03 PSS03 ASC30010	BSL03 BSLM03 BESL03 PAL03 PALM03	Φ10XΦ6.5 tube Φ16XΦ11 tube
	400	10.5							
	500	13.1							
	600	15.7							
	700	18.3							
Φ100	300	12.3	6V31010 4V31010 4V41015 4M31010	6V32010 4V32010 4V42015 4M32010	4A31010 4A41015	4A32010 4A42015	PTL03 PSL03 PSS03 ASC30010 PTL04/PSL04 PSS04 ASC30015	BSL03/04 BSLM03/04 BESL03/04 PAL03/04 PALM03/04	Φ16XΦ11 tube
	400	16.4							
	500	20.4							
	600	24.5							
	700	28.6							
800	32.7								

## Production weight

Unit: g

Control components						Control components						Preparation unit			Preparation unit						
Series	Model	Weight	Series	Model	Weight	Series	Model	Weight	Series	Model	Weight	Series	Model	Weight	Series	Model	Weight				
3V1	3V1	141	3A	3A110	70	3L	3L110	67	4L	M5B110	35	GAC	200-08	717	GA bracket	GA200T-P1	51				
3V	3V110	110		3A120	75		3L210	126		M5B210	117		3L310	214		M5C110	99	300-10	1245	GA300T-P1	87
	3V120	158		3A210	134		4L110	152		M5C210	139		4L210	139		M5D110	92	400-15	2230	GA400T-P1	159
	3V210	213		3A220	146		4L310	247		M5D210	134		4L210	139		M5D210	134	500-20	2282	GA600T-P1	352
	3V220	314		3A310	213		S3B	50		M5Y110	106		4L310	247		S3C	85	200C-08	731	GA200U-P1	54
	3V310	276		3A320	232		S3C	85		M5Y210	156		S3D	80		M5R110	94	300C-10	1264	GA300U-P1	82
3V320	376	4A110	80	S3D	80	M5R210	149	S3Y	115	M5L110	102	400C-15	2265	GA400U-P1	173						
ESV	ESV210	435	4A	4A120	90	S3	S3C	85	M5	M5Y210	156	GAFC	500C-20	2305	GPF	GA600U-P1	355				
	ESV220	550		4A130C(/E/P)	104		S3D	80		M5R110	94		M5PL210	158		600C-25	4240	GA200L-P1	48	GA300L-P1	80
	ESV230(C/E/P)	625		4A210	145		S3Y	115		M5R210	149		M5L110	102		200-08	577	GA400L-P1	152	GA600L-P1	337
	ESV310	673		4A220	158		S3R	80		M5L210	144		M5PL210	158		300-10	1018	GPF200-08J	216	300-10J	382
	ESV320	724		4A230C(/E/P)	191		S3L	89		M5PL210	158		M5PP110	90		400-15	1745	300-15J	664	200C-08J	226
	ESV330(C/E/P)	923		4A310	245		S3PL	112		M5PP110	90		M5PP210	140		500-20	1840	200C-10J	409	400C-15J	679
	ESV410	888		4A320	265		S3PP	76		M5PP210	140		M5PF110	93		200C-08	573	300C-10	1012	200-06J	174
	ESV420	995		4A330C(/E/P)	310		S3PF	74		M5PF110	93		M5PF210	138		300C-10	1012	300C-15	1700	300-08J	384
	ESV430(C/E/P)	1214		EAV210	317		S3PM	78		M5PF210	138		M5PM110	93		500C-20	1834	400C-15	1700	400-15J	750
	ESV610	2285		EAV220	312		S3HS	79		M5PM110	93		M5PM210	142		600C-25	3268	200-08J	311	200-08J	321
	ESV620	2420		EAV230(C/E/P)	339		M3B110	47		M5PM210	142		M5HS110	92		200-08J	311	300-10J	539	400-15J	750
4H	4H210	149	EAV	EAV310	557	M3B210	95	M5HS210	142	400-15J	920	GAFR	200C-08J	314	GPF	200-08J	321				
	4H230(C/E)	151		EAV320	553	M3C110	82	M5B05	31	500-20J	977		300C-10J	533		300-10J	523	400-15J	937		
	4H310	242		EAV330(C/E/P)	578	M3C210	131	M5R05	50	400C-15J	909		400C-15J	909		400C-15J	942	AC/BC	AC2000	425	
	4H330(C/E)	245		EAV410	770	M3D110	77	M5L05	55	500C-20J	973		600C-25J	1851		400C-15J	942	AFC/BFC	AFC2000	362	
HD4V	HD4V110	125	EAV	EAV420	766	M3D210	124	CM3B	45	200-08J	222	GAF	200-08J	222	AFR/BFR	BFR2000J	429				
	HD4V120	172		EAV430(C/E/P)	798	M3Y110	97	CM3R	61	300-10J	385		300-10J	385		400-15J	646	AF/BF	BF4000	273	
2P	2P025	115	EAV610	2188	M3R110	79	CM3PL	106	500-20J	707	200C-08J	215	GAL	200-08J	219	AR/BR	BR4000J	248			
3V2	3V2	157	EAV620	2210	M3R210	127	CM3PL	106	600C-25J	1851	300C-10J	403		GAL	300-10J		389	AL/BL	AL2000	97	
3V2M	3V2M	150	EAV630(C/E/P)	2262	M3L110	86	CM3R	61	200-08J	222	400C-15J	658	GAL		400C-15J	658	SR		200-08J	169	
3V3	3V3	227	6HV0510	31	M3L210	134	CM3V	90	300-10J	385	500C-20J	667		GAL	500C-20J	667		SDR	100-06	77	
2V	2V025	228	6HV0520	44	M3PL110	94	CM3Y	171	400-15J	646	600C-25J	1851	GAL		600C-25J	1851	GS		F-GS30	33	
	2V130	618	6HV110	59	M3PL210	148	CM3PL	106	500-20J	707	200-08J	219		GAL	200-08J	219		GF	F-GF40	56	
	2V250	1415	6HV120	73	M3PP110	81	CM3PP	96	200C-08J	215	300-10J	389	GAL		300-10J	389	GU		F-GU40	90	
	PCV	PCV06	32.8	6HV130(C/E/P)	79	M3PP210	131	CM3PF	107	300C-10J	403	400-15J		658	GAL	400C-15J		658	GV	F-GV40	47.7
PCV06F		32	6HV130(C/E/P)	79	M3PF110	85	CM3PM	107	400C-15J	658	500C-20J	667	GAL	500C-20J		667	GVR	200-08J		209	
PCV08		58.8	3FM210-M5	261	M3PF210	133	CM3PMS	126	500C-20J	667	600C-25J	1045		GAL	600C-25J	1045		GVR	300-10J	336	
PCV08F		60	3FM210-08	250	M3PM110	83	CM3PMX	262	600C-25J	1045	200-08J	219	GAL		200-08J	219	GVF		200-08J	218	
HSV		-6	36	3FM210-08	250	M3PM210	134	CM3HS	176	200-08J	219	300-10J		389	GAL	300-10J		389	GVR	300-10J	336
	-8	45	3FM210-08	250	M3HS110	83	CM3HD	139	400-15J	700	400-15J	700	GAL	400-15J		700	GVR	200-08J		218	
	-10	71	210-08	395	M3HS210	130	ZM3R06	281	500-20J	702	500-20J	702		GAL	500-20J	702		GVR	300-10J	355	
	-15	145	210-08	648	M3B05	24	ZM3J06	321	200C-08J	216	200C-08J	216	GAL		200C-08J	216	GVR		200C-08J	222	
	-20	227	210-08L	669	M3R05	42	ZM3P06	278	ASC100	40	GAL300C-10J	396		GAL	GAL300C-10J	396		GVR	300C-10J	374	
	-25	398	210-08F	920	M3L05	47	ASC	119	ASC200	47	GAL400C-15J	700	GAL		GAL400C-15J	700	GVR		300C-10J	374	
4HV	210-08	358	210-08LF	930	NRV	-6	69	ASC300	119	GAL500C-20J	711	GAR		GAR200-08J	183	GU		F-GU40	90		
	310-10	585	-8	66		-10	161	GAR300-10J	312	GAR300-10J	312		GAR400-15J	607	GU		F-GU50	129			
	410-15	1253	-10	161		-15	152	GAR400-15J	607	GAR500-20J	593		GAR500-20J	593			GU	F-GU60	160		
	210-08L	374	-15	152		-20	344	GAR500-20J	593	GAR600-25J	1425		GAR600-25J	1425	GU			F-GP30	29		
	310-10L	610	-20	344		-25	315	GAR600-25J	1425	GAR200-P1	6		GAR200-P1	6			GU	F-GP40	48		
	410-15L	1284	-25	315		GAR300-P1	7.3	GAR300-P1	7.3	GTC200-08J	657		GTC200-08J	657	GT			F-GV40	47.7		
GT	GTC200-08J	657	GTC200-08J	657	GTFC200-08J	447	GTFC200-08J	447	GTFR200-08J	243	GTFR200-08J	243	GT	200-08J		209					
	GTFC200-08J	447	GTFC200-08J	447	GTL200-08J	155	GTL200-08J	155	GTF200-08J	158	GTF200-08J	158		GT	300-10J	336					
	GA200-08	45	GA200-08	45	GA200-08	45	GA200-08	45	GA200-08	45	GA200-08	45	GA		200-08J	218					
	GA300-10	98	GA300-10	98	GA300-10	98	GA300-10	98	GA300-10	98	GA300-10	98		GA	300-10J	355					
	GA400-15	185	GA400-15	185	GA400-15	185	GA400-15	185	GA400-15	185	GA400-15	185	GA		200C-08J	222					
	GA600-25	497	GA600-25	497	GA600-25	497	GA600-25	497	GA600-25	497	GA600-25	497		GA	300C-10J	374					

Note : The data in the weight table is for reference only, and the actual weight shall be subject to the actual product.

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