



Components for Pure water/Chemical liquids Wet Fine Components General Catalog



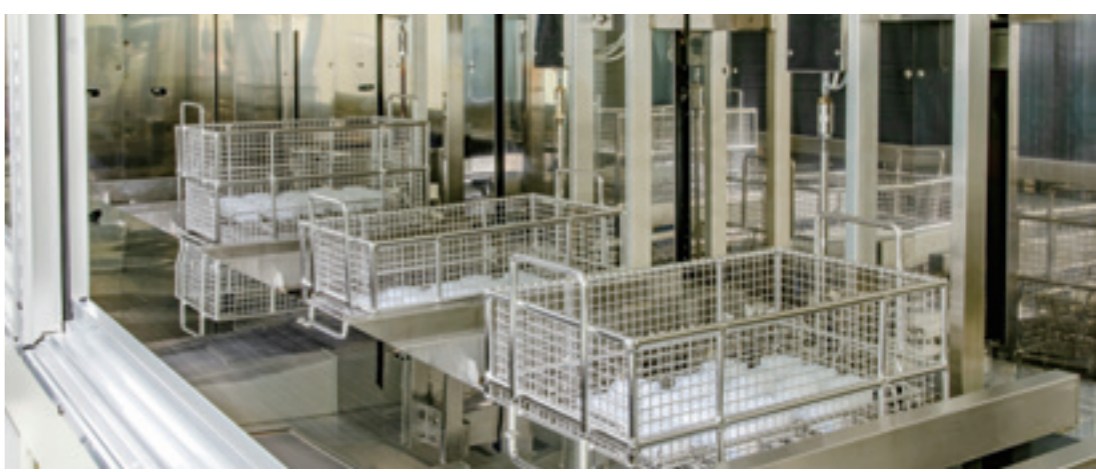
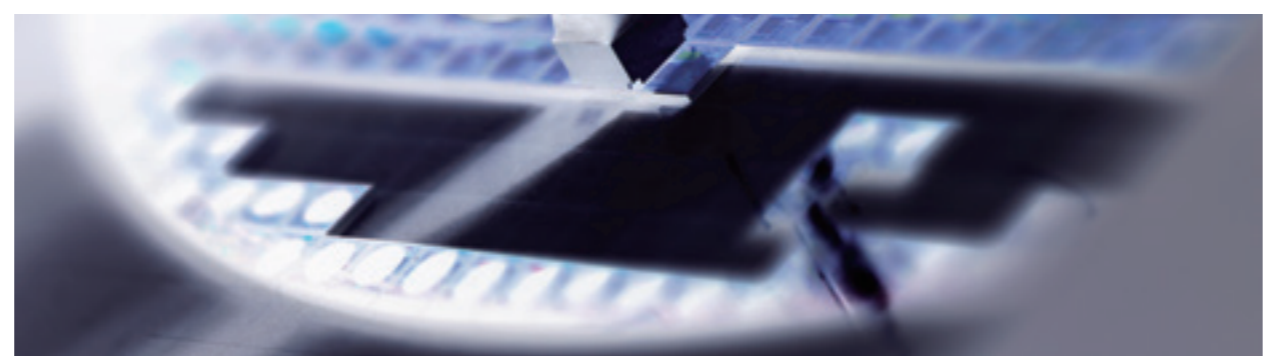
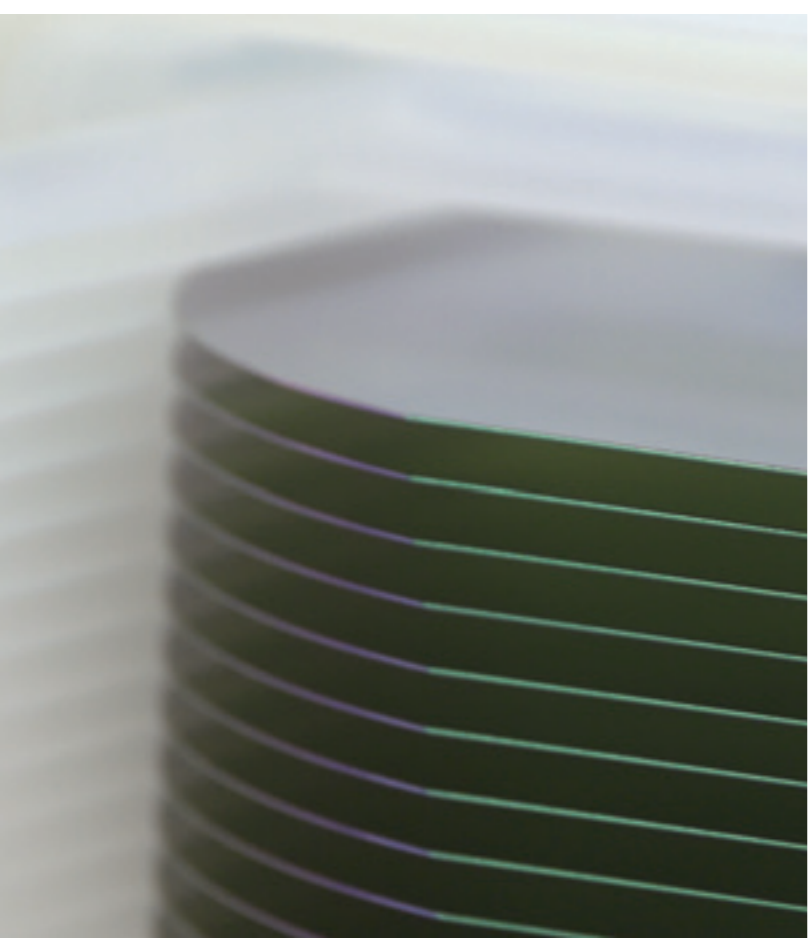
Chemical Processes Components



Wet Fine Control System

Pioneering the future of process control

Wet Fine system ideal for semiconductor/liquid crystal manufacturing processes using pure water, chemical liquids, etc.



Ultra Fine concept

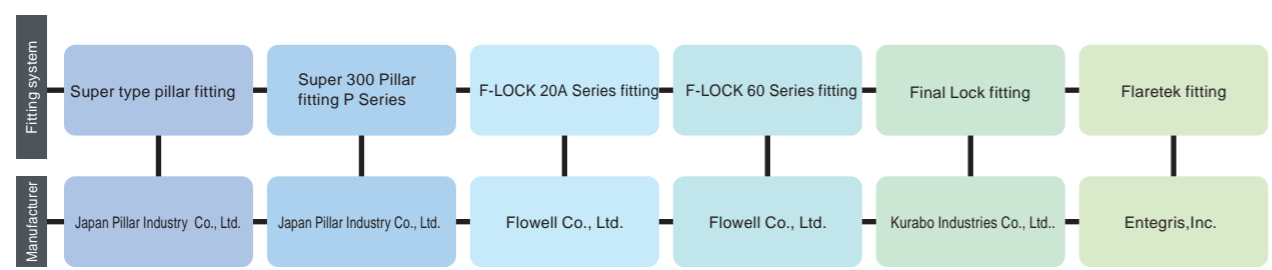
Introducing an all-clean process for essential factors of product development from design to evaluation, manufacturing and production.

Product cleanliness control is done thoroughly based on CKD's unique concept.



Variety of fitting variations

Fittings of six models by four manufacturers can be integrated for various equipment and applications.

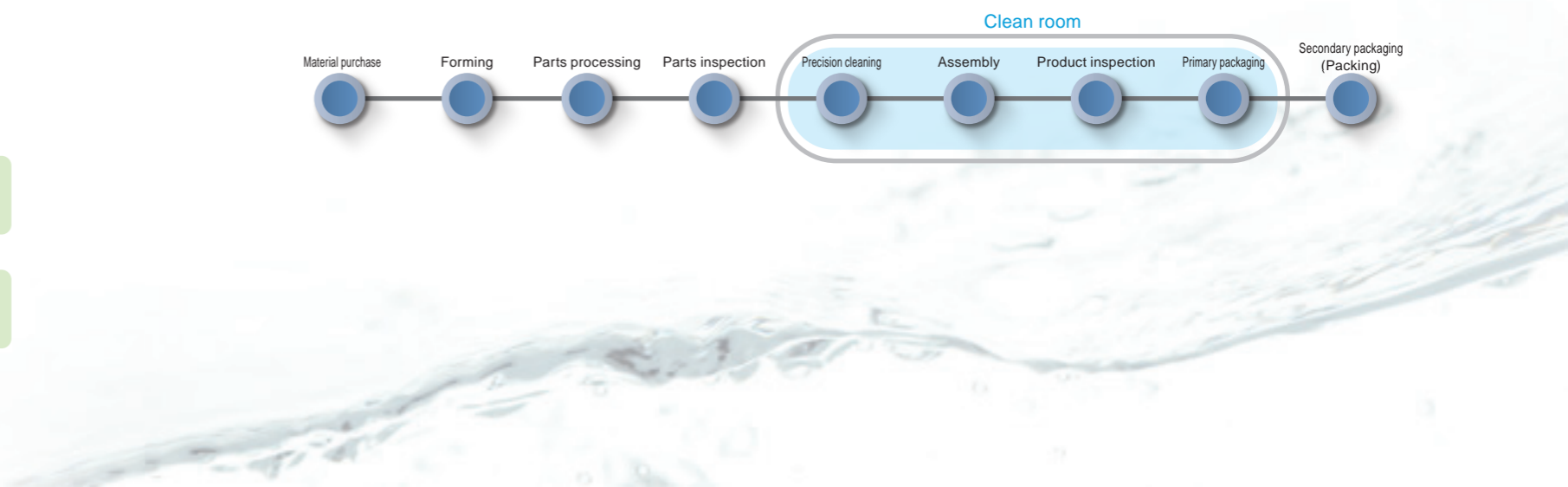
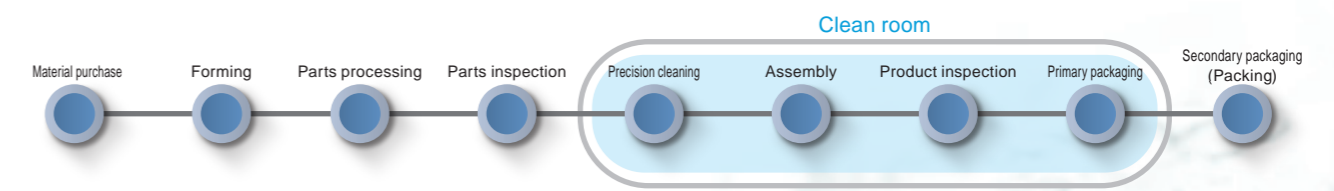


A consistent quality control system that ensures high cleanliness, including parts and products.

In-house production system

In every production process from processing to assembly, inspection and packaging, we have established a completely consistent quality control system not only at the product level but down to the parts level. For cleanliness, which is an important point of quality, we have incorporated in-house standards such as quantities of chemical liquid residue, organic carbon content, specific oil content and other impurity standards, and established solid quality.

Prod process example



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Series variation

Main series Features

- Fluid control components that emphasize high cleanliness and high durability -

* Check usability by carefully considering the compatibility of working fluids with product materials, working conditions, etc.
Refer to the information on each page for details on the materials used and specifications of each product.

Category	Photo	Model	Features	Main application examples (Semiconductors/FPD)			Component materials		Connection size (tube outer diameter)													Connection							Listed page								
				Coater / Developer	Cleaning	Chemical liquid feed equipment	Wetted parts	Non-wetted	Nominal diameter (union/flange connection)													Super Type	Super 300	F-LOCK20	F-LOCK60	Final Lock	Flaretek	Rc thread		Stainless steel tube	Double barbed	PVC union	PFA pipe for welding	PVDF union fitting			
							Body (*PTFE is used for the diaphragm)	Actuator	1/8", 3mm	1/4", 6mm	8 mm	3/8", 10mm	1/2", 12mm	3/4", 16mm	1", 25mm	1, 1/4"	1 / 1/2"	16 mm	20 mm	25 mm	30 mm														40 mm	50 mm	
Open/ Close valve	Part3R(N) Series	AMD**3R (air operated)	New standard model supporting a wide range of fluid, pressure and temperature conditions. The manual type has improved reliability with new mechanisms such as over-tightening prevention mechanism and lock ring to prevent accidental operation (MMD*03RN).	●	●	●	PTFE / PFA	PVDF	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	2
		MMD*03RN (manual)		●	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	104
	Part2 Series	AMD**2 (air operated)	Compatible with high temperature fluids (AMD**2). Wide range of connection options	●	●	●	PTFE / PFA / Stainless steel	PPS / PP / Aluminum alloy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	20	
		MMD*02 (manual)		●	●	●		PP /Aluminum alloy	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	116	
	Part1 Series	AMD** (air operated)	Compact, space saving and ideal for small flow rate control lines	●	●	●	PTFE / PFA / Stainless steel	PPS	●	●																									66		
	High pressure	AMD*1H (air operated)	Supports high pressure, high back pressure and large flow rate for chemical liquid supply facilities in semiconductor manufacturing factories, enabling safe chemical liquid feed operation.	●	●	●	PFA	PP																												76	
		MMD*0H (manual)		●	●	●																															
	Metal-free	AMD*1M (air operated)	Supports strong acid (hydrochloric acid, hydrofluoric acid, nitric acid) lines with high concentration and high corrosiveness in chemical liquid supply facilities and the like in semiconductor manufacturing plants.	●	●	●	PFA	PVDF																												82	
		MMD*0M (manual)		●	●	●																															
	Large bore size	LYX-1380 (air operated)	Port size 1.5" for large flow rate liquid feed.	●	●	●	PTFE	PP																													86
		LYX-1381 (manual)		●	●	●																															
	PVC	AMD*1L (air operated)	PVC union fitting is provided as standard for piping connection using water hammer reduced structure.	●	●	●	PVC	PPS																												88	
	Drip prevention valve	AMS, AMDS	High precision liquid drainage and drip prevention control prevent discharge failures. It also supports optimized custom-made designs for fluid viscosity. Discrete (AMS)/air operated valve integrated (AMDS).	●	●	●	PTFE / PFA / Stainless steel	PPS	●	●																											150
	Regulator	PMP (pilot operated)	Pressure and flow rate can be controlled by pilot air remote control. Balance between space saving and pressure stability on a high level.	●	●	●	PTFE, PFA	PVDF																													160
PYM (manual)		Stainless steel body (for Air/N ₂ gas/pure water)	●	●	●	Stainless steel	Stainless steel	●	●																											166	
PMM (manual)		Uses a fluoro resin body (for pure water)	●	●	●	PTFE / PFA	PP																													168	
Needle valve	MNV (motorized)	Highly precise variable flow rate setting by remote control	●	●	●	PTFE	PPS																													174	
	FMD (Manual)	Flow rate adjustment of highly corrosive fluid is possible	●	●	●	PTFE / PFA	PVDF																													176	
	LYX-0961, LYX-0965 (manual)	Fine flow rate can be adjusted. Discrete (LYX-0965), integrated with air operated valve (LYX-0961)	●	●	●	PTFE	PPS	●																												180	



Safety Precautions

Be sure to read this section before use.

When designing and manufacturing equipment using CKD wet fine system products, the manufacturer is obligated to ensure that the safety of the mechanism, pneumatic control circuit and/or water control circuit and the system that runs the electrical controls are secured.

It is important to select, use, handle and maintain CKD products appropriately to ensure their safe usage.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

WARNING

1 This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience.

2 Use this product in accordance with specifications.

This product must be used within its stated specifications. In addition, never modify or additionally machine this product.

This product is intended for use in general industrial machinery equipment or parts. It is not intended for use outdoors (except for products with outdoor specifications) or for use under the following conditions or environments. (Note that this product can be used when CKD is consulted prior to its usage and the customer consents to CKD product specifications. The customer should provide safety measures to avoid danger in the event of problems.)

- ① Use for applications requiring safety, including nuclear energy, railways, aircraft, marine vessels, vehicles, medical devices, devices or applications in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
- ② Use for applications where life or assets could be significantly affected, and special safety measures are required.

3 Observe organization standards and regulations, etc., related to the safety of the device design and control, etc.

ISO4414, JIS B 8370(Pneumatic fluid power - General rules and safety requirements for systems and their components)

JFPS2008 (Principles for pneumatic cylinder selection and use)


Including the High Pressure Gas Safety Act, Industrial Safety and Health Act, other safety rules, organization standards and regulations, etc.


4 Do not handle, pipe, or remove devices before confirming safety.


- ① Inspect and service the machine and devices after confirming safety of all systems related to this product.
- ② Note that there may be hot or charged sections even after operation is stopped.
- ③ When inspecting or servicing the device, turn OFF the energy source (air supply or water supply), and turn OFF power to the facility. Discharge any compressed air from the system, and pay attention to possible water leakage and leakage of electricity.
- ④ When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.

5 Observe the warnings and cautions on the following pages to prevent accidents.

■ Precautions are ranked as “DANGER”, “WARNING”, and “CAUTION” in this section.

 **DANGER:** In the case where the product operation is mishandled and/or when the urgency of a dangerous situation is high, it may lead to fatalities or serious injuries.

 **WARNING:** A dangerous situation may occur if handling is mistaken, leading to fatal or serious injuries.

 **CAUTION:** A dangerous situation may occur if handling is mistaken, leading to minor injuries or property damage.

Note that some items indicated with “CAUTION” may lead to serious results depending on the conditions. All items contain important information and must be observed.

Warranty

1 Warranty period

The product specified herein is warranted for one and a half (1.5) years from the date of delivery to the location specified by the customer.

2 Warranty coverage

If the product specified herein fails for reasons attributable to CKD within the warranty period specified above, CKD will promptly provide a replacement for the faulty product or a part thereof or repair the faulty product at one of CKD's facilities free of charge. However, following failures are excluded from this warranty:

- 1) Failure caused by handling or use of the product under conditions and in environments not conforming to those stated in the catalog, the Specifications, or the Instruction Manual.
- 2) Failure caused by use of the product exceeding its durability (cycles, distance, time, etc.) or caused by consumable parts.
- 3) Failure not caused by the product.
- 4) Failure caused by use not intended for the product.
- 5) Failure caused by modifications/alterations or repairs not carried out by CKD.
- 6) Failure caused by reasons unforeseen at the level of technology available at the time of delivery.
- 7) Failure caused by acts of nature and disasters beyond control of CKD.

The warranty stated herein covers only the delivered product itself. Any loss or damage induced by failure of the delivered product is excluded from this warranty.

Note: For details on the durability and consumable parts, contact your nearest CKD sales office.

3 Compatibility check

The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

Precautions for export

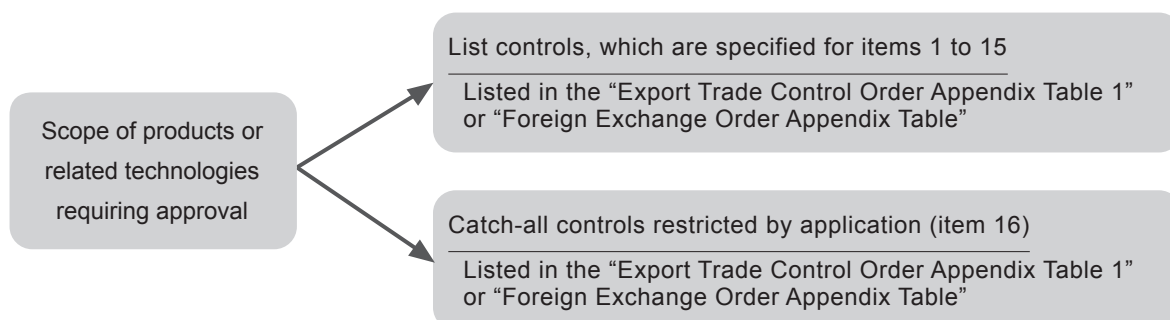
1 Security Trade Control

The products in this catalog and their related technologies may require approval before export or provision. For the sake of maintaining world peace and safety, there may be cases in which approval under the Foreign Exchange and Foreign Trade Control Law is required in advance, depending on the country to where the product or related technology is being exported or provided.

The scope of products and related technologies requiring approval is listed in the Export Trade Control Order Appendix Table 1 or Foreign Exchange Order Appendix Table.

The Export Trade Control Order Appendix Table 1 and Foreign Exchange Order Appendix Table contain the following two types of information:

- List controls, which are specified for items 1 to 15
- "Catch-all controls" that do not indicate specifications by item, but restrict by application (Section 16)



An application for approval is received by the Security Export Licensing Division of the Ministry of Economy, Trade and Industry or local bureaus of the Ministry of Economy, Trade and Industry.

2 Products and related technologies in this catalog

The products and related technologies in this catalog are subject to the list controls of the Foreign Exchange and Foreign Trade Control Law.

For information on the products or related technologies subject to the list controls of the Foreign Exchange and Foreign Trade Control Law, refer to the applicable product page.

If exporting or providing products or related technologies that fall under the list controls, be sure to obtain export permission under the Foreign Exchange and Foreign Trade Control Law.

In addition, when exporting or providing the products or related technologies in this catalog, ensure that they are not used for arms or weapons.

3 Contact

Contact your local CKD Sales Office for information on the Security Trade Control of products and related technologies in this catalog.



Fine System Components Safety Precautions

Be sure to read this section before use.

Design / Selection

1. Checking the specifications

WARNING

- This product cannot be used as an emergency shut-off valve. The valves listed in this catalog are not designed as valves to ensure safety such as emergency cutoff valves. When using in such a system, always take separate measures that will ensure safety.
- Incorrect component selection and handling can cause problems not only in this product, but also to your system. For equipment selection and handling, it is the customer's responsibility to check the specifications of this product and the compatibility with your system before use.
- Working fluids
Check with a scientific expert regarding the compatibility of the working fluid with the product material in order to determine usability. Stainless steel body cannot be used with acidic fluids.
- Fluid temperature
Use within the specified working fluid temperature range.
- Fluid pressure range
Use the products within the fluid pressure given in the specifications listed in this catalog.
- Ambient environment
 - ① Check the compatibility of product component materials and ambient atmosphere. (Do not use this product in a corrosive or explosive atmosphere.)
 - ② Do not allow fluid to come into contact with the product body.
 - ③ Use this product within the ambient temperature range.
 - ④ Do not use this product outdoors or in a place where it can be subjected to vibration or impact, or near a heat source.

2. Design

WARNING

- When using a working fluid that may be hazardous to the body, isolate the valve so that no one can approach it.
- Liquid ring
When the valve opens and closes, the diaphragm moves up and down, which accordingly causes the flow path capacity to change inside the valve. For this reason, as the fluid is an incompressible fluid (liquid), extreme pressures will be created in the valve when operating under conditions that seal the fluid in the valve (liquid ring). In this case, install a release valve on the primary or secondary side of the valve, preventing a liquid ring circuit from forming.
- Securing maintenance space
Secure sufficient space for maintenance and inspection.

- The Rc thread is piped according to "For Rc threads" on the following page (1), but the screw-in part may leak due to thermal cycling. When using the product under these conditions, select the integrated fitting-type.

3. With sensor option

WARNING

- Application, load current, voltage, temperature, impact, environment, etc., outside the specifications will result in damage or operation faults. Use the device as instructed in the specifications.
 - Never use this product in an explosive gas atmosphere. Option with sensor does not have an explosive-proof structure. Never use in an explosive gas atmosphere as explosions or fires could result.
 - It cannot be used in high steam and dusty environments or in direct contact with water, chemicals, etc., or in atmospheres of corrosive gases.
 - Take care when using this product for an interlock circuit. When using the option with sensor for an interlock signal requiring high reliability, provide a double interlock by installing a mechanical protective function or other sensor as a guard if problems occur. Regularly inspect and confirm that the interlock activates correctly.
 - Pay attention to the contact capacity.
Do not use a load that exceeds the sensor's max. contact capacity. This may lead to failure.
 - Pay attention to the protection circuit.
 - When an inductive load (relay or solenoid valve) is connected, a surge voltage is generated when the sensor is turned OFF. Provide a protection circuit.
 - When a capacious load (capacitor) is connected, starting current is generated when the sensor is turned ON. Provide a protection circuit.
 - If the wiring length increases, the wiring capacity will be reached and a rush current will occur, damaging the sensor or shortening the service life. Provide a protection circuit.
 - Do not use this product in surge generating areas. If there are devices and components (solenoid lifters, high frequency induction furnace, motors, etc.) around the sensor that generate a large surge, consider surge protection of the source as it may lead to deterioration or damage of the sensor internal circuit element.
- #### CAUTION
- Be careful of the internal voltage drop caused by serial connection.
 - When serially connecting several sensors, the sensor voltage drop is the total voltage drop of all connected sensors. Check load specifications and determine the number of connections so as not to exceed the maximum load current of the sensor.

Mounting, Installation and Adjustment

1. Mounting

⚠ WARNING

■ Incorrect mounting or piping will result in product trouble, may cause trouble in the user's system, and may result in death or serious injury. The user is responsible for making sure that the operator has read the instruction manual and fully comprehends the system, fluid characteristics, compatibility between the fluid and related products, and other safety-related information.

⚠ CAUTION

■ After installation, check for leaks from pipes and that the product is installed correctly.

2. Piping

⚠ WARNING

- Always flush the piping before installing the valve. Debris or foreign matter in the fluid may prevent the valve from functioning correctly. When there is contamination, install a filter on the primary side of the valve according to the circuit used.
- For products that have an arrow displayed, ensure that the piping is performed so that the flow of the fluid is consistent with the direction of the arrow.
- When piping, do not apply tension, compression, bending or other forces to the valve body from the piping.
- For NC and NO, ports that are not pressurized with operating pressure should be open to the atmosphere. If direct intake and exhaust from the valve should be avoided due to reasons such as ambient atmospheric conditions or airborne dirt, remove the set screw and install piping in order to allow intake and exhaust elsewhere as preferable.
- Use the driving solenoid valve connected to the drive unit according to the specifications or applications.

⚠ CAUTION

■ For information on PFA fitting tubes, refer to the latest instruction manuals issued by fitting manufacturers and install accordingly. Since fitting installation requires dedicated installation jigs, contact fitting manufacturers separately. Distance to adjacent fitting is short for AMG, GAMD, and GMMD. Note that installation may

be difficult with ordinary tools. Contact CKD as fitting manufacturers' dedicated installation jigs may not be usable.

- When installing the union fitting, make sure that the O-ring is inserted in the groove of the body and firmly tighten until the O ring collapses. If it is not securely tightened, fluid may leak outside, which could be dangerous.
- The PFA pipe for welding must be welded by a specialist in PFA pipe welding.
- When installing piping, avoid any application of stress on the valve body, such as bending, tension, or compression. Also, make sure that the pipes' support position and method do not produce piping load on the valve.
- Fix the equipment to the mounting plate in addition to using fittings as support when installing a valve.
- To install the Rc thread section, follow the procedure below.

(1) For Rc threads

① Wind PTFE seal tape three or four times around a fitting conforming to a JIS B 0203 pipe taper thread.

② Tighten at the following tightening torque.

Port size	PFA fitting	PVC fitting
Rc1/8	0.5 to 0.8	—
Rc3/8	1.0 to 1.5	—
Rc1/2	1.5 to 2.0	2.0 to 2.5
Rc3/4	2.0 to 2.5	2.5 to 3.0
Rc1	2.5 to 3.5	3.0 to 4.0

(N·m)

(2) Operating port

As port cracking and screw damage may result, tighten with 0.4 to 0.6 N·m. For AMD3/4/5*2, AMG3/4/502 or GAMD3/4/5*2, when using metal and PPS fittings, select a model with reinforcing ring (refer to applicable model pages). Do not use metal fittings for AMD4/5/61H and AMD3/51M.



Fine System Components

Safety Precautions

Be sure to read this section before use.

Mounting, Installation and Adjustment

3. With sensor option

CAUTION

- Do not drop or apply impact.
Do not drop, bump or apply excessive impact when handling. Even if the body is not damaged, sensor components could break or malfunction.
- Do not carry the valve body by the sensor's lead wire.
Never do this: it not only causes disconnection of lead wires, but since stress is applied to the internal sensor, it may also damage the sensor internal element.
- Do not wire together with power lines or high voltage lines.
Avoid the use of parallel wiring or wiring in the same conduit as that of power lines or high voltage lines. The control circuit containing the sensor could malfunction due to noise.
- Do not short-circuit the load.
If turned ON in a state of load short-circuit, excess current will flow and the sensor will be damaged.
- Pay attention to the lead wire connection.
Turn OFF power to the device in the electric circuit to be connected before starting wiring. If operated while the power is turned ON, it may cause accidents due to electric shock or unpredicted operation.
- Check the power supply fluctuations so that the power supply input does not exceed the rating.
- When using a commercially available switching regulator on the power supply, be sure to ground the power supply frame ground (F.G.) terminal.
- When using a component (switching regulator, inverter motor, etc.) that could generate noise around the component, be sure to ground the sensor frame ground (F.G.) terminal.

4. Electric needle valve MNV series

WARNING

- Note that the product surface will be hot when used under high temperature conditions. Touching it directly may result in burns.
- When the valve operates, a tiny amount of permeated gas from the chemical liquid will be released though the vent hole on the side of the cover. Do not put your face or hands near the vent hole. When touching the valve, use corrosion-resistant gloves and do not touch with bare hands.

- Be sure to observe the setting range (0 to 600 step).

- Do not use the product so as to continue step-out of the motor. Doing so may result in malfunctions or breakdowns. When using as feedback control, durability may be affected depending on the conditions. Check the operation with the actual device before use.

Use / Maintenance

1. Before use

⚠ WARNING

- Use this product below the max. working pressure and max. working pressure range.

⚠ CAUTION

- Do not disassemble.
- Do not apply strong impact to the product by dropping it, etc. This may cause malfunction or damage to the product.
- Check with a chemical expert regarding the compatibility of the working fluid with the product material in order to determine usability.
 - Fluids that contain particles, such as slurry and UV curing agent, or could solidify or jell may affect performance.
 - If the fluid is highly absorbable, such as liquid containing a surfactant or stripping solution, the fluid may permeate through the parts.

Conduct periodic inspections, and if there is any abnormality, take necessary measures such as replacing the parts.

- When using gases such as N₂ gas and air, valve seat leakage up to 1 cm³/min (at pneumatic pressure) may occur.
- Rapid changes in fluid temperature may cause the valve seat to warp unevenly, leading to valve seat leakage.
- As for operating air, use air or inert gas passed through a filter with a filtration rating of 5 μm or more.
- Since it is precision cleaned, clean packed and delivered assuming installation in a clean room, handle with care.
- Do not over-tighten the flow rate/bypass adjustment knob.
- Do not use valves as a footing or place any heavy objects on top of the valves.
- If the product has been out of use for a long period, perform a test run before starting the actual operation.
- The valve operating time may change due to the piping conditions, pressure conditions, operation intervals and the like of the operating air. Be sure to confirm that there are no problems before using the valve after it is installed on the actual machine.
- Turbulent flow occurs on the secondary side of the valve. When installing a device that requires laminar flow, e.g. a flow rate meter, on the secondary side of the valve, make sure to keep enough distance between the valve and the device so that the device is not affected by turbulent flow.
- Never attempt to disassemble the product. It is very dangerous, as some products include high-load springs.

- Do not allow fluid to come into contact with the product body.

■ Static electricity

Fluororesin is easily charged and becomes further charged by flowing gas or liquids. As static electricity may cause external leakage or ignition, be sure to take measures to remove static electricity to the extent possible.

2. With sensor option

⚠ WARNING

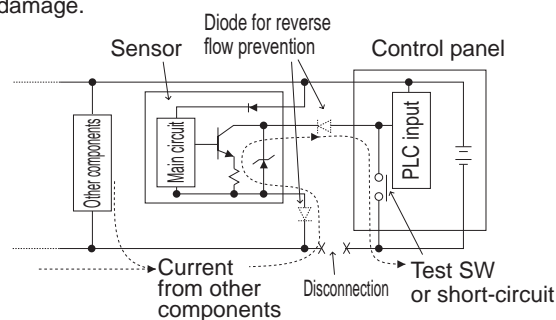
- Do not apply overcurrent.

If overcurrent flows to the sensor due to a load short-circuit, etc., the sensor will be damaged with a risk of ignition. Provide an overcurrent protection circuit, such as a fuse, for the output wire and power cable as needed.

⚠ CAUTION

- Pay attention to reverse currents caused by disconnected wires and wiring resistance.

- If other components, including a sensor, are connected to the same power supply as the sensor, and the output wire and power cable negative (-) side are short-circuited to check the operation of the control panel input unit, or if the power cable negative (-) side is disconnected, reverse current could flow to the sensor's output circuit and cause damage.



- Take the following measures to prevent damage caused by reverse current:
 - ① Avoid centralizing current at the power cable, especially the minus side power cable, and use as thick a cable as possible.
 - ② Limit the number of components connected to the same power source as the sensor.
 - ③ Insert a diode parallel to the sensor's output line to prevent reverse current.
 - ④ Insert a diode parallel to the sensor power wire's negative (-) side to prevent reverse current.



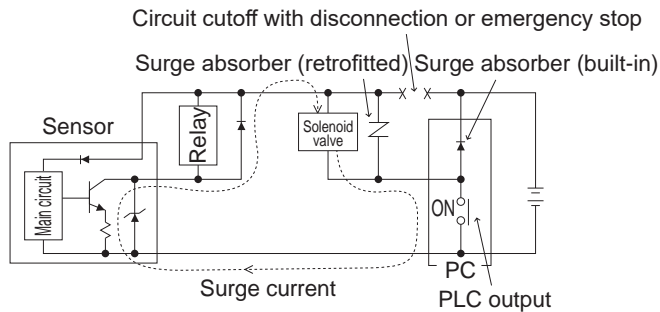
Fine System Components Safety Precautions

Be sure to read this section before use.

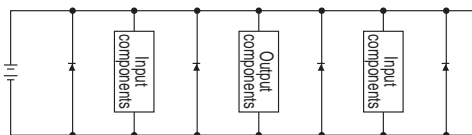
Use / Maintenance

■ Pay attention to surge current flow-around.

- When sensor power is shared with an inductive load that generates surges such as a solenoid valve or relay, if the circuit is cut off while the inductive load is functioning, surge current could enter the output circuit and cause damage depending on where the surge absorber is installed.



- Take the measures below to prevent damage from sneak surge current.
 - ① Separate power supplies for output systems that are inductive loads, such as solenoid valves and relays, from input systems, such as sensors.
 - ② If a separate power supply cannot be used, directly install a surge absorption element for all inductive loads. Consider that the surge absorber connected to the PLC, etc., protects only the individual device.
 - ③ Insert a diode parallel to the sensor's output line to prevent reverse current.
 - ④ Connect a surge absorber to places on the power wiring shown in the figure below, as a measure against disconnections in unspecified areas.



When devices are joined to a connector, the output circuit could be damaged by the above if the connector is disconnected while power is ON. Turn power OFF before connecting or disconnecting the connector.

3. Air operated manual valve for chemical liquids AMD/MMD Series

⚠ CAUTION

- When adjusting the flow rate of the AMD Series or MMD Series, vibration or flow rate fluctuation may occur depending on the working conditions such as fluid temperature, differential pressure, opening degree, etc. Confirm that the product is acceptable under actual working conditions before use.

Use the MMD**2 Series in the fully closed or fully open position. It cannot be used in the intermediate position. Tighten the MMD**2 Series knob within the torque range shown in the table below. If it is not tightened properly, the knob may rotate due to vibration of the pump.

Model No.	MMD302	MMD402	MMD502
Knob tightening torque	0.8 to 1.5	1.0 to 1.8	1.5 to 2.5

(N·m)

4. Air operated valve for chemical liquids AMD/GAMD Series

⚠ CAUTION

- In the AMD/GAMD Series, water hammer and vibration may occur in certain fluid pressure conditions. In most cases, this can be resolved by adjusting the open-close speed using a speed controller, etc. If a problem persists, review and revise the fluid pressure and piping conditions.

5. Air operated manual valve for high pressure chemical liquids AMD*1H/MMD*0H Series Air operated manual valve for chemical liquids AMD*1M/MMD*0M Series

⚠ CAUTION

- When collecting permeated gas from the diaphragm or detecting leakage, remove the set screw from the detection port and use it as the piping port. If the piping is made of fluororesin, tighten it by 0.4 N·m or less. Use the MMD*0H or MMD50M Series either fully closed or fully opened. The intermediate position cannot be used.

6. Manual valve for chemical liquids MMD Part 3RN/GMMD Part 3RN Series

⚠ CAUTION

- When operating the valve, turn the knob until it spins loosely (there should hear a click). If you hold the lock ring while turning the knob, it will not spin; valve seat deterioration or product damage may be caused by over tightening.
- If the knob spins loosely but the valve fails to close or open, insert a screwdriver or similar tool into the hole on the knob side and turn the knob. If the green indicator inside the hole is visible, forced operation is possible. If the green indicator is not visible from the hole, turn the knob to adjust the position.

Use / Maintenance

- The structure uses knob rotation for sealing, so that if the valve is left closed for long periods, valve seat leakage may occur. When temperature changes take place, retighten the knob.
- Vibration or flow rate fluctuation may occur depending on the working conditions such as fluid temperature, differential pressure, or opening. Confirm that the product is acceptable under actual working conditions before use. For precise flow rate adjustment, select the FMD Series or Fine flow rate adjusting valve (LYX).
- When transporting valves with misoperation prevention covers attached, hold the entire valve rather than the misoperation cover alone.
- Attach the misoperation prevention cover with the lock ring lowered. This can prevent misoperation and erroneous knob operation.
- When mounting the misoperation prevention cover to prevent knob operation, use a padlock or similar to keep it locked.
- Note that the misoperation prevention cover cannot be used with the GMMD Series.

7. Fine regulator PMM/PYM/PMP Series

CAUTION

- In the PMM, PYM or PMP Series, vibration may occur due to fluctuations in fluid pressure, flow rate, or supply pressure or to piping conditions, which may affect the product life. If this occurs, review and revise the fluid pressure and flow rate conditions.
- Since the regulator operates with a small opening, allowing a fluid mixed with foreign matter to flow may damage the valve seat and cause the performance to deteriorate. We recommend installing a filter on the primary side of the regulator when there is a possibility of foreign matter contamination.
- When the set output pressure of regulator is exceeded, if damage and malfunction of devices at the secondary side could be caused, always provide a safety device.
- In the PMP Series, bubbles may be generated in the liquid by the pilot air passing through the diaphragm membrane. We recommend not to keep pressurizing the pilot air when not in use.
- When adjusting the flow rate, install a needle valve or a needle valve, etc., on the secondary side of the regulator.

8. Maintenance and Inspection

DANGER

- When replacing the valve, thoroughly flush the remaining chemical liquid with pure water or air so that it does not affect the surrounding components and humans. While the upper side of the diaphragm (cylinder side) does not come into contact with the fluid, it may be exposed to chemical atmosphere due to gas permeation from the thin film part. For your safety, follow the precautions below:
 - ① Since a small amount of transmitted gas is released from the breathing hole on the cylinder side by the operation of the valve, do not let anyone near the breathing hole during valve operation.
 - ② In addition, crystals may adhere to the breathing hole and its vicinity.
 - ③ When touching the valve, use corrosion-resistant gloves and do not touch with bare hands.
- Valves used with chemical liquids may have chemical atmosphere remaining between the actuator and the diaphragm. Never attempt to disassemble the product. If disassembly is necessary, contact CKD or a distributor.
- Perform the following periodic inspection once or twice a year to ensure that the valve is achieving optimal functionality.
 - ① Inspection for leakage to the valve exterior
 - ② Inspection for leakage from fitting
 - ③ Check for abnormalities such as discoloration, deformation, corrosion of the components

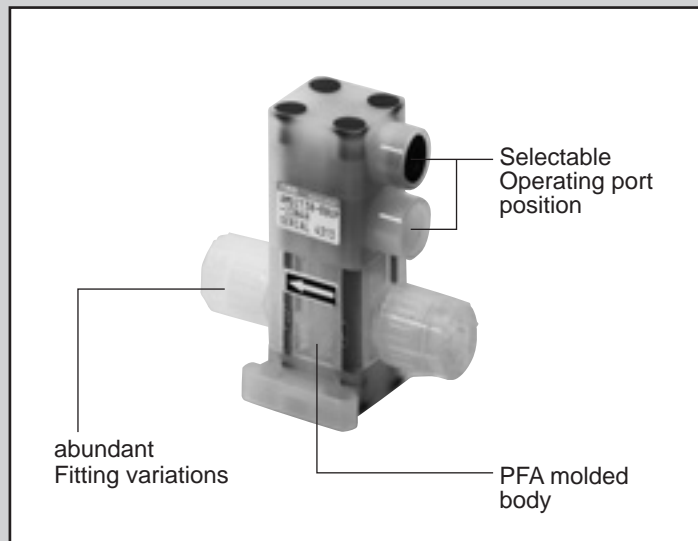
WARNING

- Read the instruction manual thoroughly and make sure you understand the content before performing maintenance.
- Always drain the operating air and fluid before performing maintenance.
- Before starting maintenance or inspection, read the material safety data sheet (SDS) for the chemical liquid and wear the necessary protective gear.
- When using chemical liquids such as high permeability hydrochloric acid, hydrofluoric acid, or nitric acid for long periods, it can lead to deterioration of parts other than the wetted parts and accidents such as external leakage due to transmission gas. Check for abnormalities such as discoloration, deformation, or corrosion of the components once or twice a year as periodic inspection for safety.

CAUTION

- When replacing a product, always replace it with a product with the same model No. Specifications may differ even when the appearance is the same.
- Store unused products in a location where they are not exposed to direct sunlight or high temperatures. When handling the product, do not apply impact or damage it by throwing, dropping, or allowing it to catch on something.

Air operated valve



⚠ Safety precautions	Intro Page 9
Part3R Series	
AMD**3R	2
AMG*03R	10
GAMD**3R	14
Part2 Series	
AMD0*2	20
AMD3/4/5*2	24
AMD3/4/5 *2 (stainless steel body)	36
AMG3/4/502	48
GAMD3/4/5*2	56
AMD**2/AMG*02/GAMD**2 (high pressure specification)	64
Part1 Series (compact)	
AMDZ*, AMD0*	66
AMGZ0, AMG00	72
High pressure	
AMD*1H	76
Metal-free	
AMD*1M	82
Large bore size	
LYX-1380	86
PVC	
AMD*1L	88
For liquid discharge	
LYX-08*	
LYX-14*	96
LYX-088*	

Air operated valve	Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RN	Part2	High pressure	Metal-free	Large bore size	Drip prevention valve	Single unit	Air operated Integrated
	Manual valve	High pressure	Metal-free	Large bore size	Single unit		Air operated Integrated	
					Pilot	Manual		
Regulator	Electric	Manual	Manual Fine flow rate	Flow rate adjusting valve	Fine level Switch	Related products		
	Manual	Manual						

The new standard!

Air operated valve for chemical liquids

- AMDZ*3R
- AMD0*3R
- AMD3*3R
- AMD4*3R
- AMD5*3R

RoHS



● Actuator option

● Various fittings supported

With indicator

Indicator showing solenoid open/close state at a glance equipped as standard.



With flow rate adjustment

Flow rate can be freely adjusted.



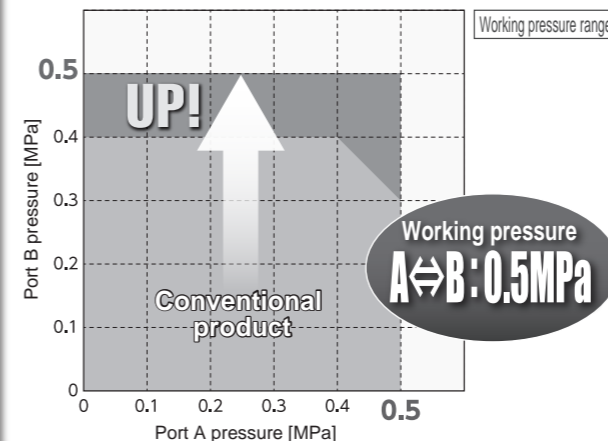
With sensor

Optional sensor available to confirm valve open/close state with signals



Working pressure range extended

Common operating pressure for equal working pressure at ports A and B.



Supports a variety of chemical liquids as standard

The use of highly chemically resistant polyvinylidene fluororesin (PVDF) for the actuator enables support for a wide range of applications as standard, regardless of acidity or alkalinity.

Standardized

Liquids	General/others	Hydrofluoric acid, nitric acid	Aqueous ammonia
Conventional product (Part 2)	Standard specifications	P specs.	M specs.

AMD※※3R (Part 3R) Standard specifications

Expanded working fluid temperature range for standard products

- Common operating pressure
- Common fluid temperature

NC/NO* common
0.35 to 0.5MPa

All models
120°C

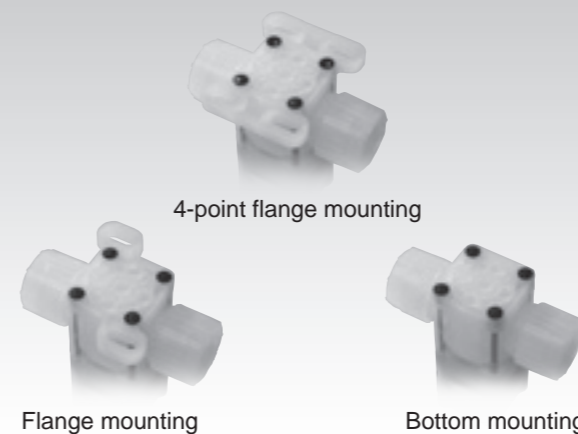
* AMD0/3/4/5* 3R Series

Size variation

Tube connection	1/8"	1/4"	3/8"	1/2"	3/4"	1"
	6mm	8mm	10mm	12mm		25mm
AMDZ*3R	●	●	●	●		
AMD0*3R		●	●	●		
AMD3*3R			●	●	●	
AMD4*3R					●	
AMD5*3R						●
AMG*03R		●	●	●	●	●
GAMD**3R		●	●	●	●	●

● Mounting method

3 types of mounting methods



3-port valve

AMG Series
3-port valve compatible.

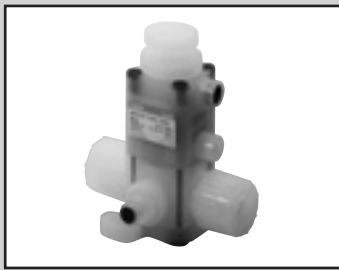


Manifold

GAMD Series
Manifold keeps it compact. Mix manifold* is also supported.



*Contact CKD for details.



Air operated valve for chemical liquids

AMD**3R Series

Export controlled items

*Eligibility: AMD4*3R, AMD5*3R



Specifications

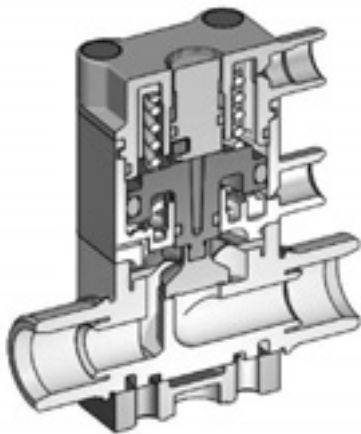
Item	Size	AMDZ*3R	AMD0*3R	AMD3*3R	AMD4*3R	AMD5*3R
		□ 22	□ 25	□ 36	□ 46	□ 60
Working fluid		Chemical liquids, pure water, N ₂ gas, air				
Fluid temperature	°C	5 to 120 (5 to 90 for body with bypass) *1, *2				
Proof pressure	MPa	1.0				
Working pressure range	(A→B) MPa	0 to 0.5 (Refer to table below for body with bypass)				
	(B→A) MPa	0 to 0.5 (Refer to table below for body with bypass)				
Valve seat leakage	cm ³ /min	0 (water pressure)				
Back pressure	MPa	0 to 0.5 (Refer to table below for body with bypass)				
Ambient temperature	°C	0 to 60 (0 to 50 for type with sensor)				
Frequency		30 cycles/min. or less			20 cycle/min. or less	
Mounting orientation		Unrestricted				
Connection		Super 300 Pillar fitting P Series F-LOCK 60 Series				
Operating section	Operating pressure MPa	NC/NO:0.4 to 0.5 Double acting: 0.3 to 0.4		NC/NO:0.35 to 0.5 Double acting: 0.3 to 0.4		
	Port connection	Rc 1/8				
Weight	Normal body kg	0.07	0.1	0.21	0.48	0.91
	Body with bypass kg	-	-	0.23	0.49	1

*1: For hydrofluoric acid or chemical liquids containing hydrofluoric acid, use within the range of 5 to 80°C.

*2: 5 to 100°C if the connection is F-LOCK 60 Series.

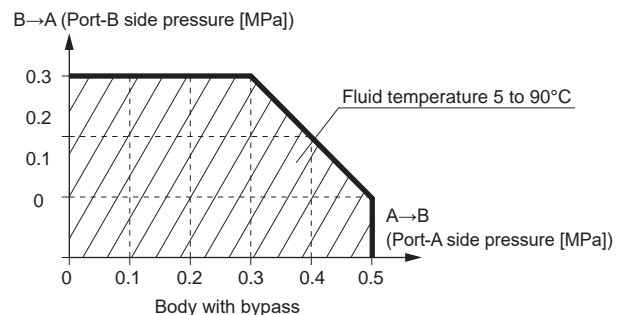
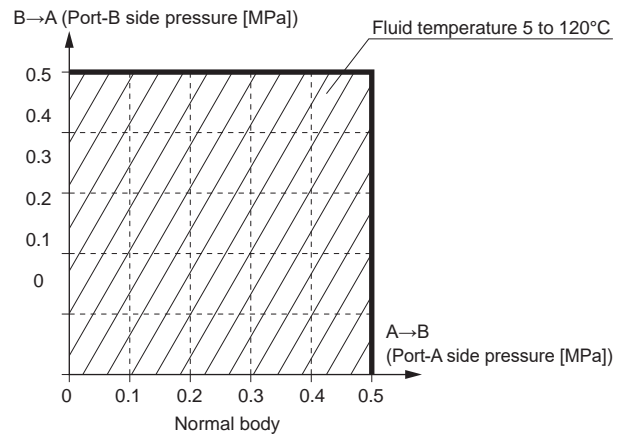
*3: Refer to pages 8 to 9 for Cv and flow characteristics.

Internal structure and parts list



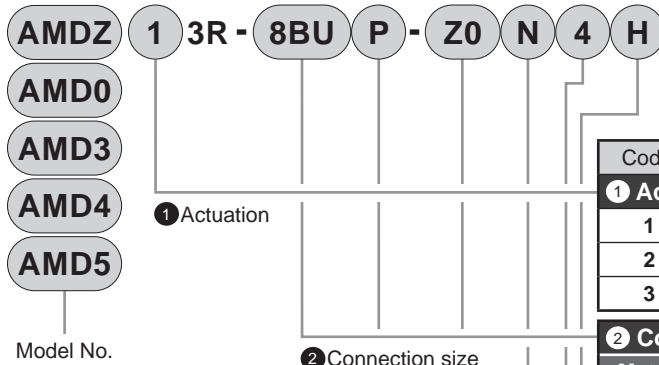
Part name	Material
Body (wetted parts)	PFA or PTFE
Diaphragm (wetted parts)	PTFE
Actuator	PVDF
O-ring	FEPM, FKM
Metal parts	Stainless steel (fluoro resin coating)
Mounting plate	PVDF

Working pressure



⚠ Always read the precautions on Intro Pages 7 to 14 before use.

How to order



Code	Description					
1 Actuation						
1	NC					
2	NO					
3	Double acting					
2 Connection size		Selectable models				
Metric	Tube size	AMDZ	AMD0	AMD3	AMD4	AMD5
3U	ø3xø2	●				
6U	ø6 x ø4	●	●			
8U	ø8 x ø6		●			
10U	ø10 x ø8		●	●		
12U	ø12 to ø10			●		
25U	ø25xø22					●
Inching	Tube size	AMDZ	AMD0	AMD3	AMD4	AMD5
6BU	1/8"x0.086"	●				
8BU	1/4"x5/32"	●	●			
10BU	3/8"x1/4"		●	●		
15BU	1/2"x3/8"			●		
20BU	3/4"x5/8"				●	
25BU	1"x7/8"					●
3 Connection						
P	Super 300 Pillar fitting P Series					
R	F-LOCK 60 Series					
4 Actuator option						
Z0	ON/OFF only (Note: Only AMDZ can be selected)					
00	ON/OFF only (with indicator)					
10	With flow rate adjustment					
With sensor	Transistor	Cable direction			Cable length	
A1	NPN	Operating port side			1 m	
A3					3 m	
B1		Opposite side to operating port			1 m	
B3	3 m					
C1	PNP	Operating port side			1 m	
D1					Opposite side to operating port	
5 Body option						
N	Normal body					
B	Body with bypass (Note: AMDZ/AMD0 cannot be selected.)					
6 Operating port direction						
1						With valve viewed from above, ← indicates fluid flow direction and operating port direction.
2						
3						
4						
7 Mounting method						
F	Flange mounting (Note: AMDZ cannot be selected.)					
H	4-point flange mounting					
X	Bottom mounting					

Model No.

1 Actuation

2 Connection size

3 Connection

4 Actuator option

5 Body option

6 Operating port direction

7 Mounting method

! Precautions for model No. selection

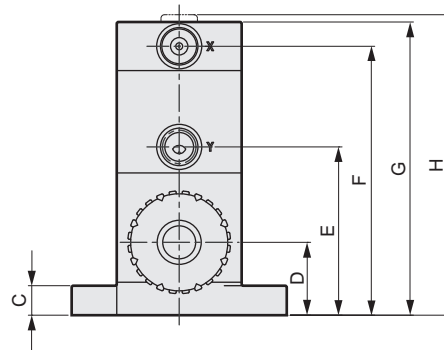
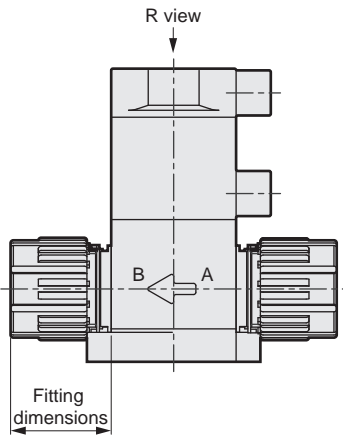
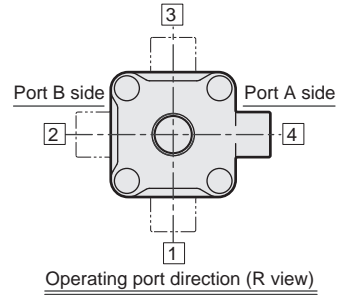
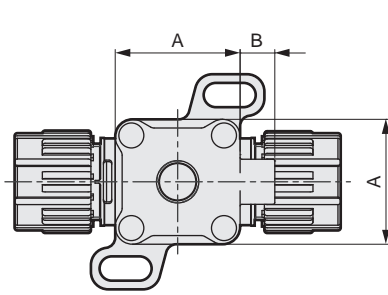
* Actuator option
For AMDZ, 00 (with indicator ON/OFF) is not selectable, and 10 (with flow rate adjustment) is only NC. Models with sensors can be selected with AMD3/AMD4/AMD5.

* Body material
Connection F-LOCK 60 Series is PTFE body.

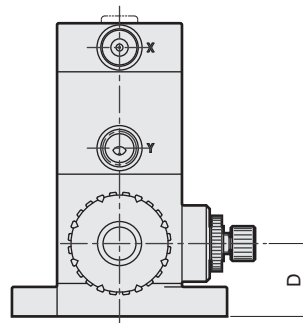
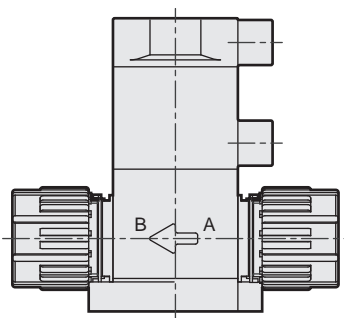
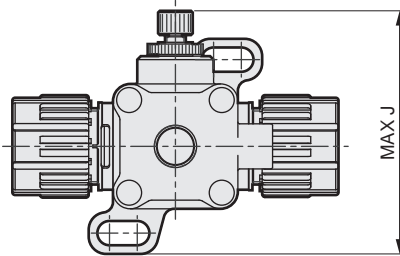
Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual flow rate	Flow rate adjusting valve	Final level Switch	Related products
--------	-------	-------	---------------	------------	-----------------	--------------------	----------	---------	-------	---------------	------------	-----------------	-------------	-------------------------	-------	--------	----------	--------	------------------	---------------------------	--------------------	------------------

Dimensions

● ON/OFF only type (indicator)



● With bypass



Connection	Fitting dimensions
S300 fitting	
3UP/6BUP	14
6UP/8BUP	19
8UP	22
10UP/10BUP	25
12UP/15BUP	29
20BUP	36
25UP/25BUP	43

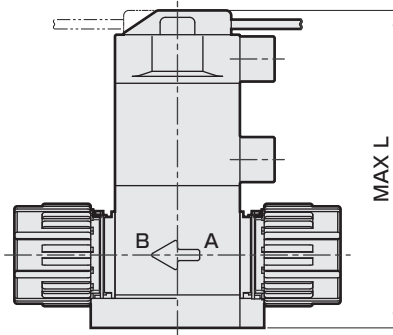
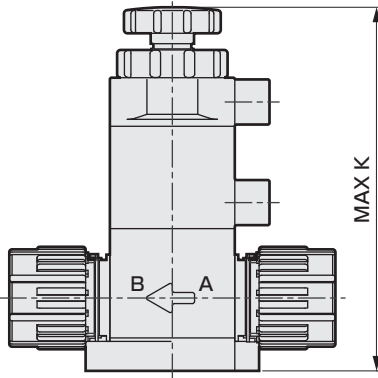
Connection	Fitting dimensions
F60 fitting	
6UR	30
8BUR	31
8UR	31
10UR	37
10BUR	39
12UR	37
15BUR	39
20BUR	44
25UR	49.5
25BUR	51

Model	A	B	C	D	E	F	G	H	J
AMDZ*3R	22	8	6	17	39	54	61	-	-
AMD0*3R	25	8	6	19	46	61	68	70	-
AMD3*3R	36	10	8.5	21	49	78	85	87	71
AMD4*3R	46	8	9	27	62	101	108	112	91
AMD5*3R	60	8	10	35	84	127	134	139	103

Dimensions

● With flow rate adjustment

● With sensor

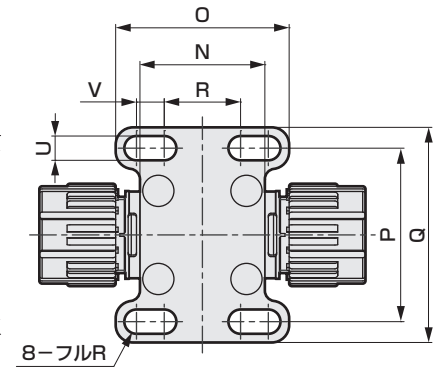
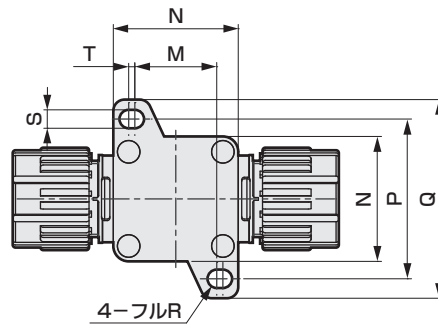
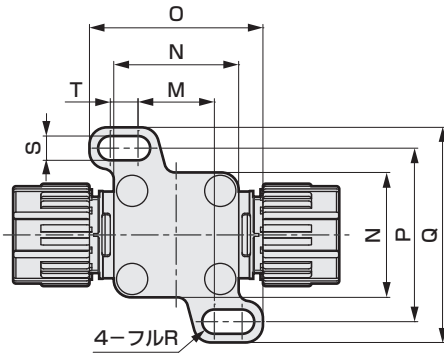


Model	K	L
AMDZ13R	77	-
AMD0*3R	86	-
AMD3*3R	108	92
AMD4*3R	131	115
AMD5*3R	166	141

● **F** Flange mounting (AMD 0/3/4)

● **F** Flange mounting (AMD5)

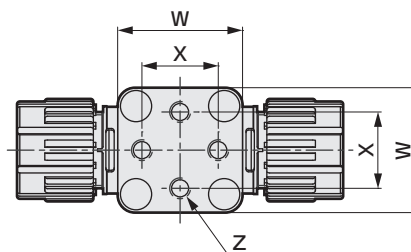
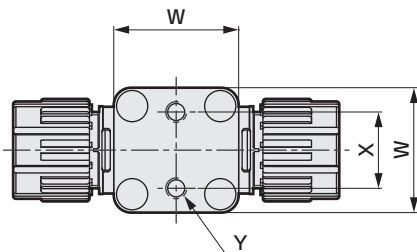
● **H** 4-point flange mounting



Model	M	N	O	P	Q	R	S	T	U	V
AMDZ*3R	-	22	27	30	36	12	-	-	4-3.5	4-4.5
AMD0*3R	15	25	30	33	39	15	2-3.5	2-4.5	4-3.5	4-4.5
AMD3*3R	22	36	50	50	62	22	2-7	2-8	4-7	4-8
AMD4*3R	28	46	66	64	82	28	2-9	2-11	4-9	4-11
AMD5*3R	40	61	78	78	97	40	2-9	2-3	4-9	4-11

● **X** Bottom mounting (AMDZ/O)

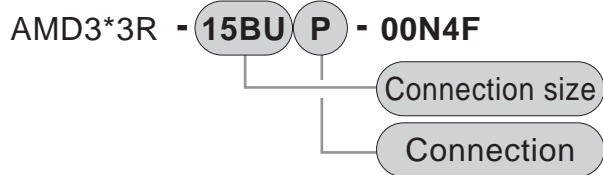
● **X** Bottom mounting (AMD 3/4/5)



Model	W	X	Y	Z
AMDZ*3R	22	14±0.3	2-M6 depth 6	-
AMD0*3R	25	14±0.3	2-M6 depth 8	-
AMD3*3R	36	22±0.3	-	4-M6 depth 9
AMD4*3R	46	28±0.3	-	4-M8 depth 10
AMD5*3R	61	40±0.3	-	4-M8 depth 13

Part3R	Part2	Part1	Air operated valve	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	Manual valve	High pressure	Metal-free	Large bore size	Drip prevention valve	Air operated integrated	Regulator	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
--------	-------	-------	--------------------	---------------	------------	-----------------	--------------------	----------	---------	-------	--------------	---------------	------------	-----------------	-----------------------	-------------------------	-----------	--------	----------	--------	-----------------------	-------------------	------------------

Connection and Cv of AMD**3R Series



Super 300 pillar fitting (connection code: P)

	Connection size	Connection	Applicable tube size	Selectable model sizes and Cv				
				AMDZ	AMD0	AMD3	AMD4	AMD5
Metric	3U	P	ø3 x ø2	0.07				
	6U	P	ø6 x ø4	0.25	0.34			
	8U	P	ø8 x ø6		0.64			
	10U	P	ø10 x ø8		0.8	1.25		
	12U	P	ø12 x ø10			1.8		
	25U	P	ø25 x ø22					8
Inch	6BU	P	1/8" x 0.086"	0.07				
	8BU	P	1/4" x 5/32"	0.25	0.34			
	10BU	P	3/8" x 1/4"		0.8	1.25		
	15BU	P	1/2" x 3/8"			1.8		
	20BU	P	3/4" x 5/8"				5	
	25BU	P	1" x 7/8"					8

F-LOCK 60 Series (connection code: R)

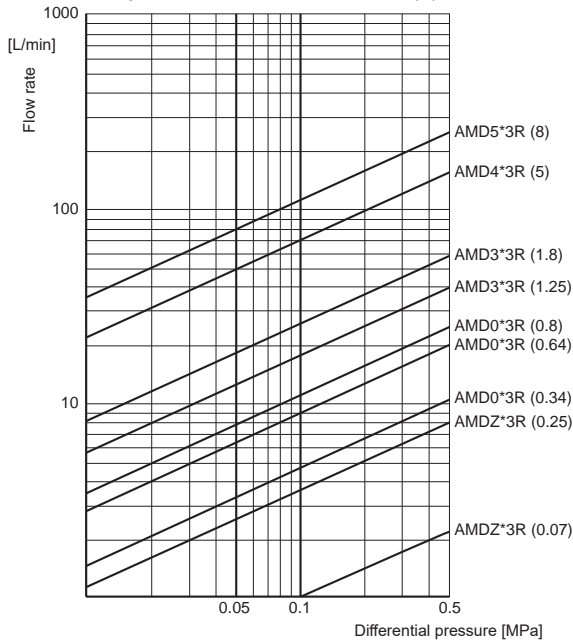
	Connection size	Connection	Applicable tube size	Selectable model sizes and Cv				
				AMDZ	AMD0	AMD3	AMD4	AMD5
Metric	6U	R	ø6 x ø4	0.22	0.28			
	8U	R	ø8 x ø6		0.64			
	10U	R	ø10 x ø8		0.7	1		
	12U	R	ø12 x ø10			1.6		
	25U	R	ø25 x ø22					8
Inch	8BU	R	1/4" x 5/32"	0.22	0.28			
	10BU	R	3/8" x 1/4"		0.64	0.7		
	15BU	R	1/2" x 3/8"			1.6		
	20BU	R	3/4" x 5/8"				4.5	
	25BU	R	1" x 7/8"					8

Flow characteristics

AMDZ*3R to AMD5*3R

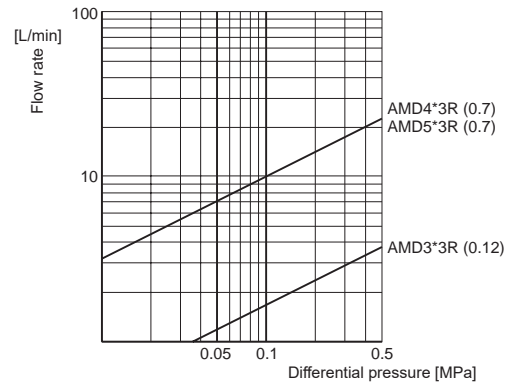
● Flow characteristics (water)

Differential pressure - internal flow rate () : Cv



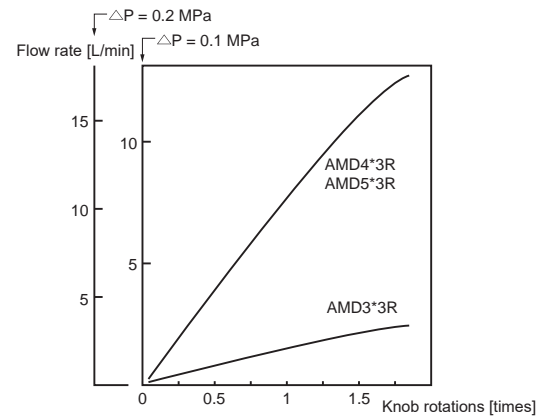
● Bypass Flow characteristics (water)

Differential pressure - internal flow rate () : Cv



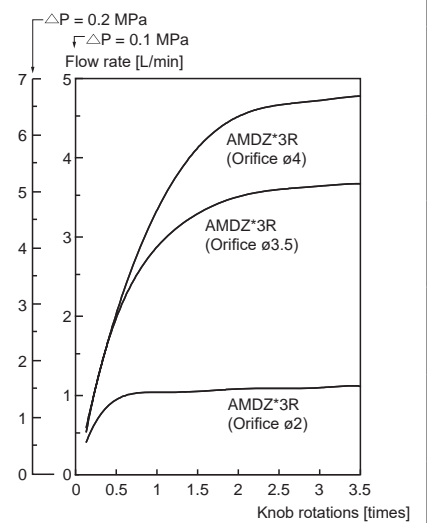
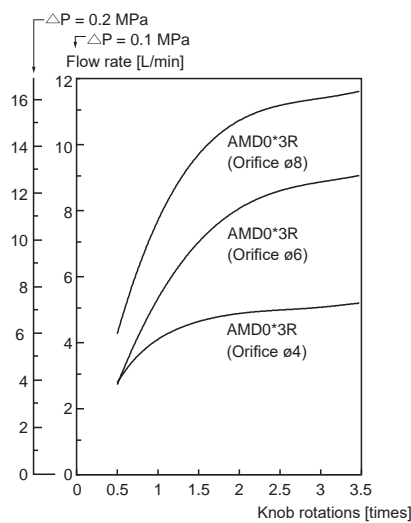
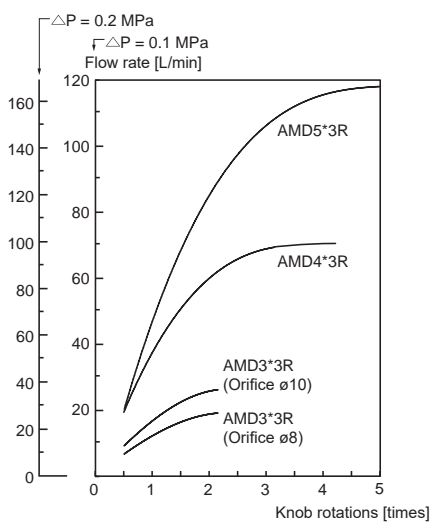
● With bypass (water)

Rotations - flow rate



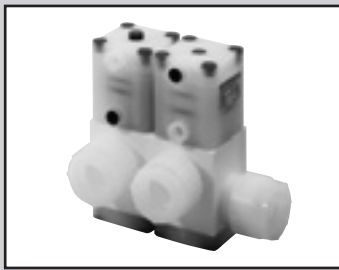
● With flow rate adjustment (water)

Rotations - flow rate



*1: Vibration and flow rate fluctuation may occur depending on the working conditions such as fluid temperature, differential pressure, and opening. Confirm that the product is acceptable under actual working conditions before use. For precise flow rate adjustment, select the FMD Series or Fine flow rate adjusting valve (LYX).

Part3R	Part2	Part1	High pressure	Metall-free	Large bore size	Polyvinyl chloride	Drainage
Part3RN	Part2	High pressure	Metall-free	Large bore size	Single unit	Air operated integrated valve	Regulator
	Manual valve	High pressure	Metall-free	Large bore size	Flow rate adjusting valve		Manual/Fine flow rate
							Fine level Switch
							Related products



Air operated valve for chemical liquids (3-port valve)

AMG*03R Series

Made-to-order product

Export controlled items

*Eligibility: AMG403R, 503R



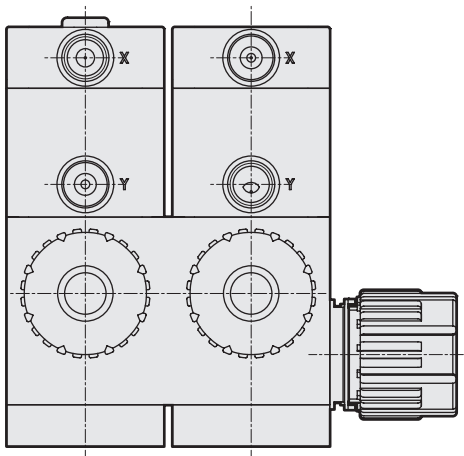
Specifications

Item	Size	AMGZ03R	AMG003R	AMG303R	AMG403R	AMG503R
		□ 22	□ 25	□ 36	□ 46	□ 60
Working fluid		Chemical liquids, pure water, N ₂ gas, air				
Fluid temperature °C		5 to 120 (*1, *2)				
Proof pressure MPa		1				
Working pressure range	(A→B) MPa	0 to 0.5				
	(B→A) MPa	0 to 0.5				
Valve seat leakage cm ³ /min		0 (water pressure)				
Back pressure MPa		0 to 0.5				
Ambient temperature °C		0 to 60 (0 to 50 for type with sensor)				
Frequency		30 cycles/min. or less			20 cycle/min. or less	
Mounting orientation		Unrestricted				
Connection		Super 300 Pillar fitting P Series F-LOCK 60 Series				
Operating section	Operating pressure MPa	0.4 to 0.5	0.35 to 0.5			
	Port connection	Rc1/8				
Weight kg		0.13	0.22	0.5	1	2.1

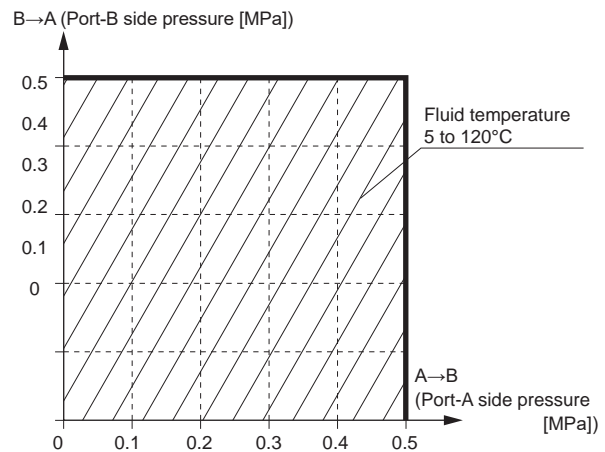
*1: For hydrofluoric acid or chemical liquids containing hydrofluoric acid, use within the range of 5 to 80°C.

*2: 5 to 100°C if the connection is F-LOCK 60 Series.

Structure diagram and parts list



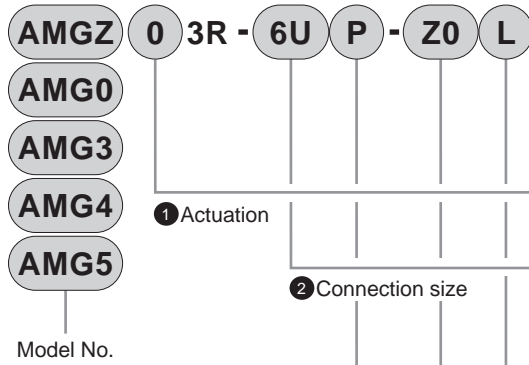
Working pressure



Part name	Material
Body (wetted parts)	PTFE
Diaphragm (wetted parts)	PTFE
Actuator	PVDF
O-ring	FEPM, FKM
Metal parts	Stainless steel (fluoro resin coating)
Mounting plate	PVDF

Always read the precautions on Intro Pages 7 to 14 before use.

How to order



Code	Description					
1 Actuation						
0	NC + NO					
2 Connection size		Selectable models				
Metric	Tube size	AMGZ	AMG0	AMG3	AMG4	AMG5
6U	ø6 x ø4	●	●			
8U	ø8 x ø6		●			
10U	ø10 x ø8		●	●		
12U	ø12 to ø10			●		
25U	ø25xø22					●
Inching	Tube size	AMGZ	AMG0	AMG3	AMG4	AMG5
8BU	1/4"x5/32"	●	●			
10BU	3/8"x1/4"		●	●		
15BU	1/2"x3/8"			●		
20BU	3/4"x5/8"				●	
25BU	1"x7/8"					●
3 Connection						
P	Super 300 Pillar fitting P Series					
R	F-LOCK 60 Series					
4 Actuator option						
Z0	ON/OFF only (Note: Only AMGZ can make selection)					
00	ON/OFF only (with indicator)					
10	With flow rate adjustment					
With sensor	Transistor	Cable direction			Cable length	
A1	NPN	Operating port side			1 m	
A3		Operating port side			3 m	
B1		Opposite side to operating port			1 m	
B3	PNP	Opposite side to operating port			3 m	
C1		Operating port side			1 m	
D1		Opposite side to operating port			1 m	
5 Port A position						
L	Left					
R	Right					

⚠ Precautions for model No. selection

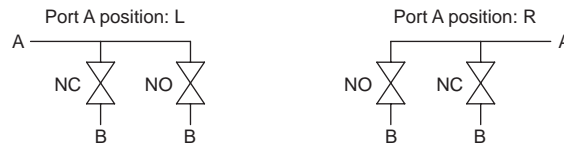
Note: Actuator option
 00 (with ON/OFF indicator) / 10 (with flow rate adjustment) cannot be selected for AMGZ.
 Model with sensor can be selected at AMG3/AMG4/AMG5.

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve						Manual valve			Drip prevention valve			Regulator		Flow rate adjusting valve				

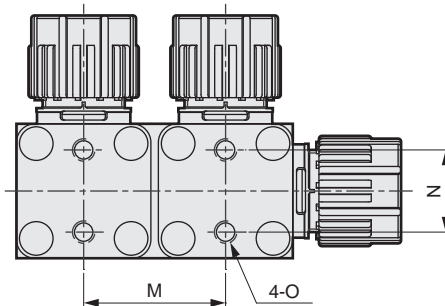
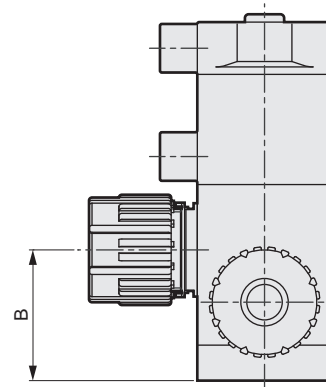
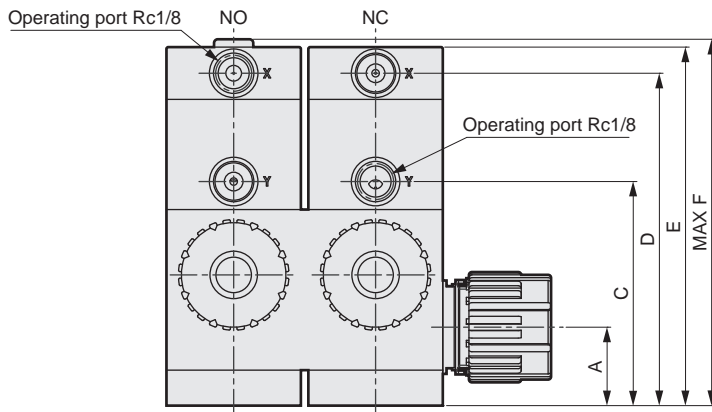
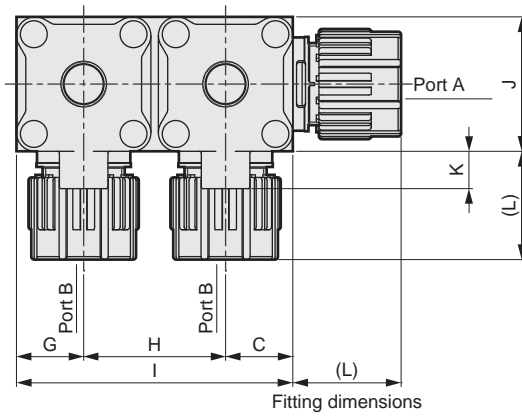
Dimensions

*: NC and NO arrangements differ by port A position.

The valve close to the port A side is NC, while the other is NO.



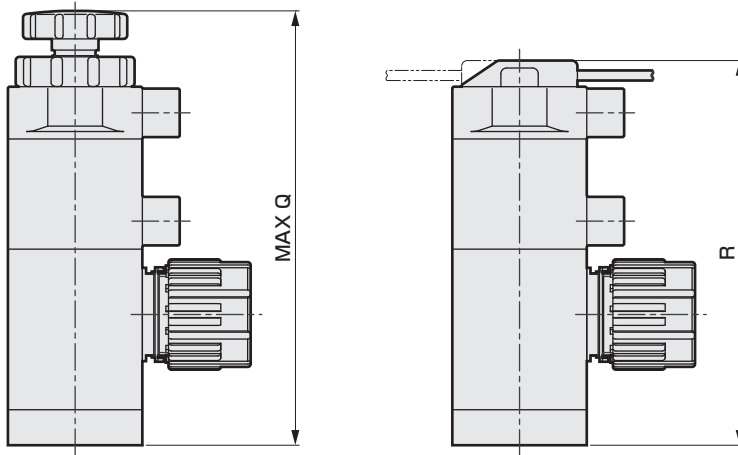
● ON/OFF only (with indicator)



Dimensions

● With flow rate adjustment

● With sensor



Model	A	B	C	D	E	F	G	H	I	J	K	Q	R
AMGZ03R	17	17	39	54	61	-	11	22.5	44.5	22	8	-	-
AMG003R	19	28.5	49	65	72	74	12.5	Table 1		25	8	90	-
AMG303R	21	35	60	89	96	98	18	38	74	36	10	119	103
AMG403R	27	46	78	118	125	128	23	48	94	46	8	148	132
AMG503R	35	60	99	142	149	154	30	62	122	60	8	181	156

Model	M	N	O
AMGZ03R	22.5±0.5	14±0.3	M6 depth 6
AMG003R	Table 1	14±0.3	M6 depth 8
AMG303R	38±0.3	22±0.3	M6 depth 9
AMG403R	48±0.4	28±0.3	M8 depth 10
AMG503R	62±0.4	40±0.3	M8 depth 13

Super 300P Series

Connection (connection size + type)	L
6UP, 8BUP	19
8UP	22
10UP, 10BUP	25
12UP, 15BUP	29
20BUP	36
25UP, 25BUP	43

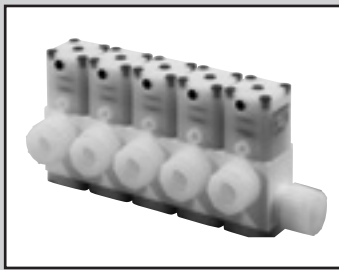
F-LOCK 60 Series

Connection (connection size + type)	L
6UR	30
8BUR	31
8UR	31
10UR	37
10BUR	39
12UR	37
15BUR	39
20BUR	44
25UR	49.5
25BUR	51

Table 1

Connection (connection size + type)	H	I	M
6UP, 8BUP	26	51	26±0.3
8UP			
6UR, 8BUR			
8UR			
10UP, 10BUP	31	56	31±0.3
10UR, 10BUR			

Air operated valve	Part3R
	Part2
	Part1
	High pressure
	Metar-free
Manual valve	Part3RN
	Part2
	High pressure
Drainage	Metar-free
	Large bore size
Drip prevention valve	Polyvinyl chloride
	Single unit
	Air operated integrated
Regulator	Pilot
	Manual
Flow rate adjusting valve	Electric
	Manual
Manual Fine flow rate	Manual Fine flow rate
	Fine level Switch
Related products	



Air operated valve for chemical liquids (manifold/branch valve)

GAMD**3R Series

Made-to-order product

Export controlled items

*Eligibility: GAMD4*3R, 5*3R



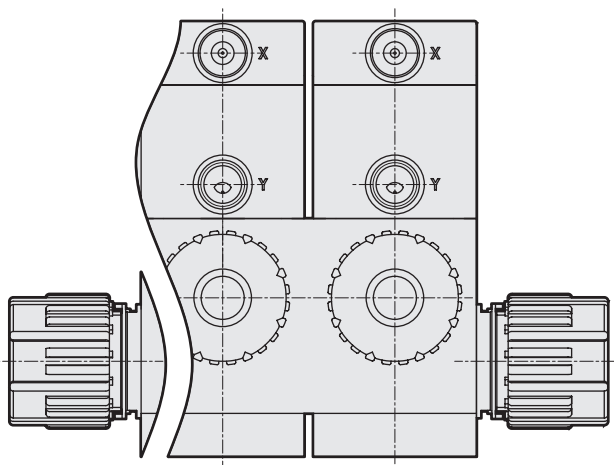
Specifications

Item	Size	GAMDZ*3R	GAMD0*3R	GAMD3*3R	GAMD4*3R	GAMD5*3R	
		□ 22	□ 25	□ 36	□ 46	□ 60	
Working fluid		Chemical liquids, pure water, N ₂ gas, air					
Fluid temperature	°C	5 to 120 (*1, *2)					
Proof pressure	MPa	1					
Working pressure range	(A→B) MPa	0 to 0.5					
	(B→A) MPa	0 to 0.5					
Valve seat leakage	cm ³ /min	0 (water pressure)					
Back pressure	MPa	0 to 0.5					
Ambient temperature	°C	0 to 60 (0 to 50 for type with sensor)					
Frequency		30 cycles/min. or less			20 cycle/min. or less		
Mounting orientation		Unrestricted					
Connection		Super 300 Pillar fitting P Series F-LOCK 60 Series					
Operating section	Operating pressure MPa	NC/NO: 0.4 to 0.5 Double acting: 0.3 to 0.4		NC/NO: 0.35 to 0.5 Double acting: 0.3 to 0.4			
	Port connection	Rc1/8					
Weight	kg	One station	0.08	0.12	0.26	0.54	1.2
		2 stations	0.14	0.23	0.52	1.1	2.5
		3 stations	0.21	0.34	0.78	1.6	3.9
		4 stations	0.27	0.45	1	2.1	5.2
		5 stations	0.35	0.56	1.3	2.6	-

*1: For hydrofluoric acid or chemical liquids containing hydrofluoric acid, use within the range of 5 to 80°C.

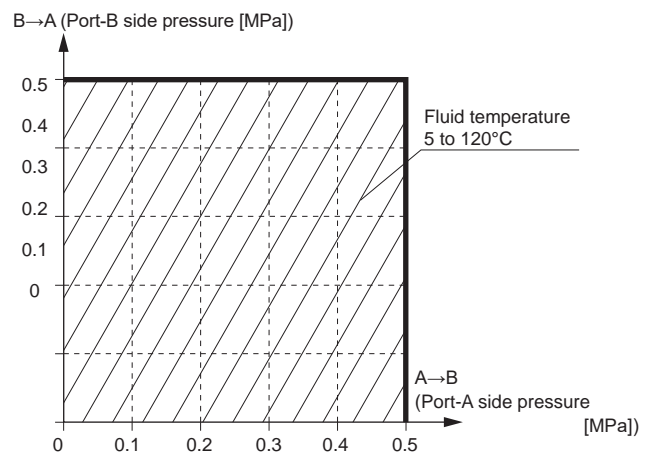
*2: 5 to 100°C if the connection is F-LOCK 60 Series.

Structure diagram and parts list



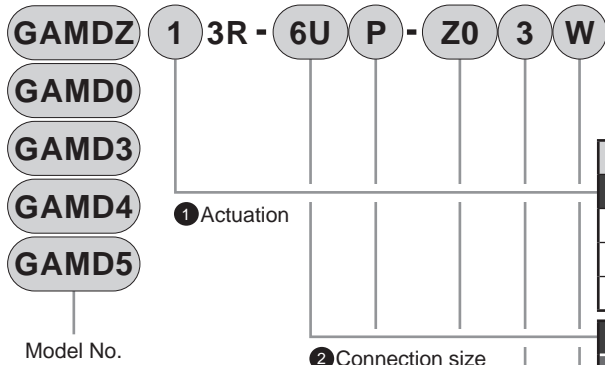
Part name	Material
Body (wetted parts)	PTFE
Diaphragm (wetted parts)	PTFE
Actuator	PVDF
O-ring	FEPM, FKM
Metal parts	Stainless steel (fluoro resin coating)
Mounting plate	PVDF

Working pressure



⚠ Always read the precautions on Intro Pages 7 to 14 before use.

How to order



Code	Description					
1 Actuation						
1	NC					
2	NO					
3	Double acting					
2 Connection size		Selectable models				
Metric	Tube size	GAMDZ	GAMD0	GAMD3	GAMD4	GAMD5
6U	ø6 x ø4	●	●			
8U	ø8 x ø6		●			
10U	ø10 x ø8		●	●		
12U	ø12 to ø10			●		
25U	ø25xø22					●
Inching	Tube size	GAMDZ	GAMD0	GAMD3	GAMD4	GAMD5
8BU	1/4"x5/32"	●	●			
10BU	3/8"x1/4"		●	●		
15BU	1/2"x3/8"			●		
20BU	3/4"x5/8"				●	
25BU	1"x7/8"					●
3 Connection						
P	Super 300 Pillar fitting P Series					
R	F-LOCK 60 Series					
4 Actuator option						
Z0	ON/OFF only (note: GAMDZ only can be selected)					
00	ON/OFF only (with indicator)					
10	With flow rate adjustment					
With sensor	Transistor	Cable direction			Cable length	
A1	NPN	Operating port side			1 m	
A3		Opposite side to operating port			3 m	
B1		Opposite side to operating port			1 m	
B3	PNP	Operating port side			3 m	
C1		Opposite side to operating port			1 m	
D1		Opposite side to operating port			1 m	
5 Station No.		Selectable models				
		GAMDZ	GAMD0	GAMD3	GAMD4	GAMD5
1	One station	●	●	●	●	●
2	2 stations	●	●	●	●	●
3	3 stations	●	●	●	●	●
4	4 stations	●	●	●	●	●
5	5 stations	●	●	●	●	
6 Port A position						
L	Left					
R	Right					
W	Both sides					

⚠ Precautions for model No. selection

* 00 (with ON/OFF indicator) and 10 (with flow rate adjustment) cannot be selected for the actuator option GAMDZ. Model with sensor can be selected with GAMD3/GAMD4/GAMD5.

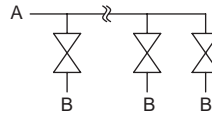
Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Integrated		Regulator		Flow rate adjusting valve				

Dimensions

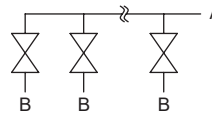
Part 3R
Part 2
Part 1
High pressure
Metal-free
Large bore size
PVC
Drainage
Part 3RN
Part 2
High pressure
Metal-free
Large bore size
Single unit
Air operated Integrated
Pilot
Manual
Electric
Manual
Manual Fine flow rate
Fine level Switch
Related products

● ON/OFF only (with indicator)

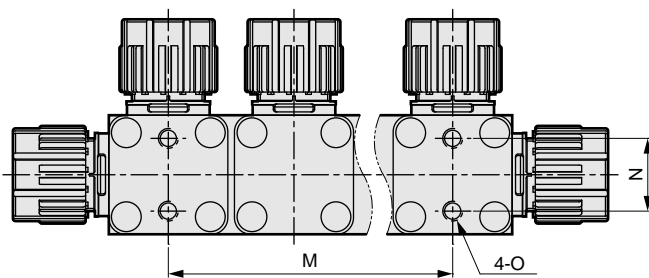
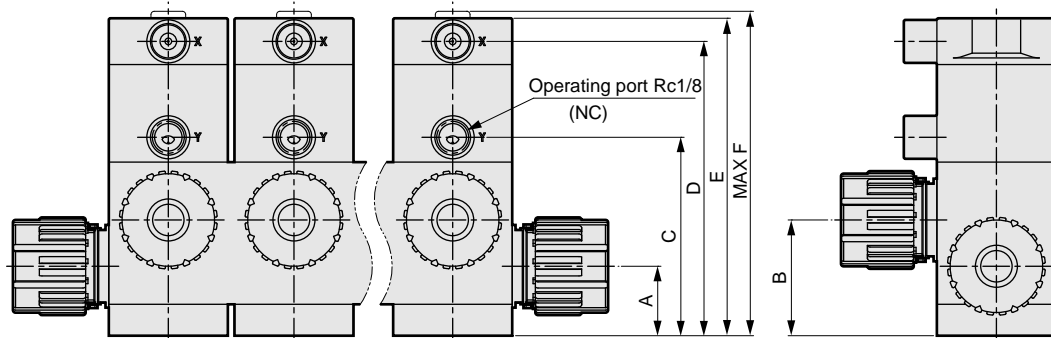
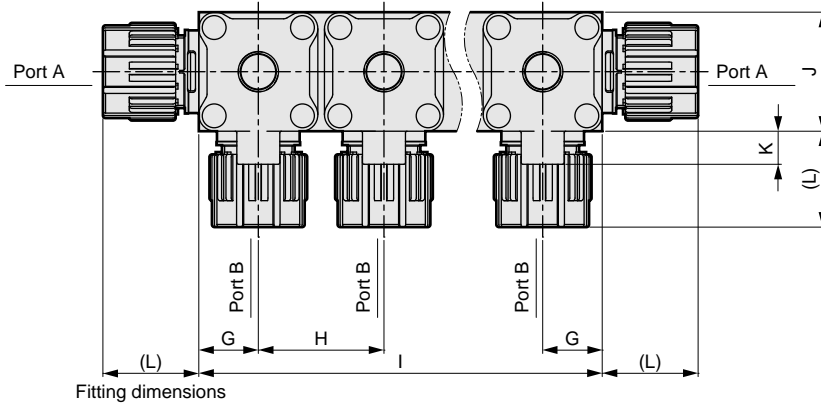
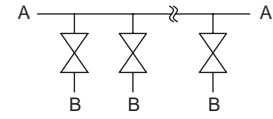
Port A position: L



Port A position: R



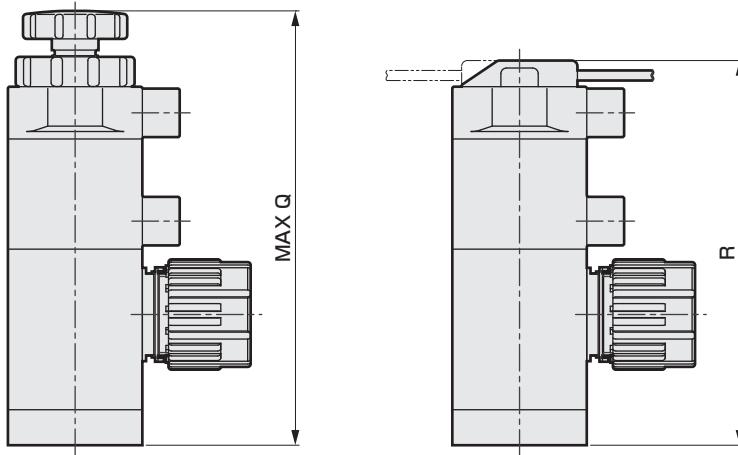
Port A position: W



Dimensions

● With flow rate adjustment

● With sensor



Super 300P Series

Connection (connection size + type)	L
6UP, 8BUP	19
8UP	22
10UP, 10BUP	25
12UP, 15BUP	29
20BUP	36
25UP, 25BUP	43

F-LOCK 60 Series

Connection (connection size + type)	L
6UR	30
8BUR	31
8UR	31
10UR	37
10BUR	39
12UR	37
15BUR	39
20BUR	44
25UR	49.5
25BUR	51

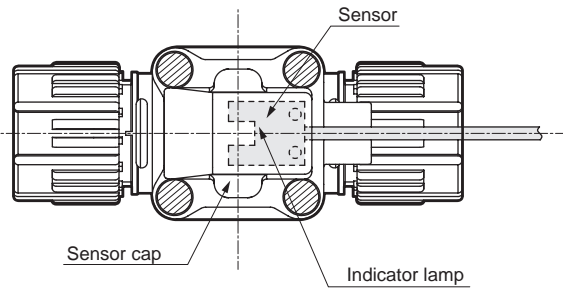
Model	A	B	C	D	E	F	G	H	J	K	Q	R
GAMDZ*3R	17	17	39	54	61	-	11	22.5	22	8	-	-
GAMD0*3R	19	28.5	49	65	72	74	12.5	Table 1	25	8	90	-
GAMD3*3R	21	35	60	89	96	98	18	38	36	10	119	103
GAMD4*3R	27	46	78	118	125	128	23	48	46	8	148	132
GAMD5*3R	35	60	99	142	149	154	30	62	60	8	181	156

Model	Station No.	I	M	N	O
GAMDZ*3R	1	22	-	14±0.3	M6 depth 6
	2	44.5	22.5±0.5		
	3	67	45±0.7		
	4	89.5	67.5±1.0		
	5	112	90±1.0		
GAMD0*3R	Table 1			14±0.3	M6 depth 8
GAMD3*3R	1	36	-	22±0.3	M6 depth 9
	2	74	38±0.3		
	3	112	76±0.4		
	4	150	114±0.5		
	5	188	152±0.7		
GAMD4*3R	1	46	-	28±0.3	M8 depth 10
	2	94	48±0.4		
	3	142	96±0.5		
	4	190	144±0.5		
	5	238	192±0.7		
GAMD5*3R	1	60	-	40±0.3	M8 depth 13
	2	122	62±0.4		
	3	184	124±0.5		
	4	246	186±0.7		

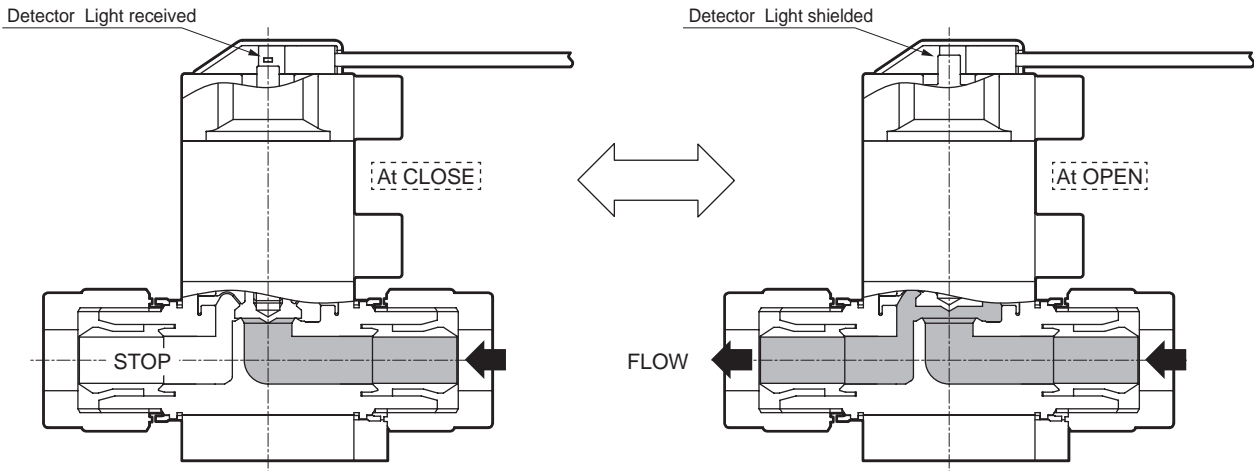
Table 1

Connection (connection size + type)	Station No.	H	I	M
6UP, 8BUP 8UP 6UR, 8BUR 8UR"	1	-	25	-
	2	26	51	26±0.3
	3		77	52±0.4
	4		103	78±0.4
	5		129	104±0.5
10 UP, 10BUP, 10UR, 10BUR	1	-	25	-
	2	31	56	31±0.3
	3		87	62±0.4
	4		118	93±0.5
	5		149	124±0.5

Valve operation and sensor operation



Valve operation		At CLOSE	At OPEN
Sensor	Detector	Light received	Light shielded
	Indicator lamp	ON	OFF
	Output 1 Lead wire color: Black	Output ON	Output OFF
	Output 2 Lead wire color: White	Output OFF	Output ON



Part 3R	Part 2	Part 1	High pressure	Metal-free	Large bore size	PVC	Drainage	Part 3RN	Part 2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products

Part3R	Part2	Part1	High pressure	Metar-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metar-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
			Air operated valve						Manual valve				Drip prevention valve		Regulator		Flow rate adjusting valve				



Air operated valve for chemical liquids

AMD0₃¹2 Series

- Connection tube size: ø6, ø6.35, 1/4", (Rc1/8)



Specifications

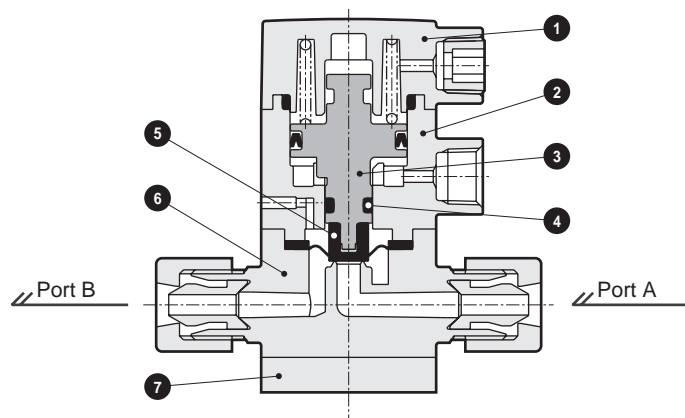
Item		AMD0 ₃ ¹ 2-* -4	
Working fluid		Pure water, chemical liquids, air, N ₂ gas (*1)	
Fluid temperature	°C	5 to 100 (*2)	
Proof pressure	MPa	1.0	
Working pressure (A→B)	MPa	0 to 0.5	
Working pressure (B→A)	MPa	0 to 0.3	
Valve seat leakage	cm ³ /min	0 (water pressure)	
Back pressure	MPa	0 to 0.3	
Ambient temperature	°C	0 to 60	
Frequency		30 cycles/min. or less	
Mounting orientation		Unrestricted	
Connection		Rc1/8, O.D. ø6 tube connection (integrated fitting), OD1/4" tube connection (integrated fitting)	
Orifice size		ø3.5	ø4
Cv value		0.28	0.32
Operating section	Operating pressure	MPa NC/NO 0.35 to 0.5, double acting 0.3 to 0.4 (0.2 to 0.3 for fluid code "P")	
	Operating port	Rc1/8	
Weight	kg	0.09	

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

*3: Refer to pages 46 to 47 for flow characteristics.

Internal structure and parts list

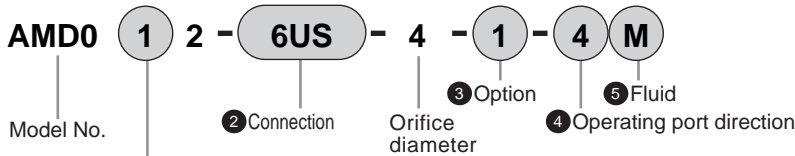


Part No.	Part name	Material (by fluid code)		
		Standard	M	P
1	Cover	PPS		PP
2	Cylinder	PPS		PP
3	Piston rod	PPS		PVDF
4	O-ring	FKM	EPDM	FKM
5	Diaphragm	PTFE		
6	Body	PFA, PTFE		
7	Mounting plate	PPS		PP

The material and structure may vary depending on the model number. Contact CKD for details.

Always read the precautions on Intro Pages 7 to 14 before use.

How to order



1 Actuation	
1	NC (normally closed)
2	NO (normally open)
3	Double acting

2 Connection		6	6US	8BUS	6UP	8BUP	6UF	8BUF	6UR	8BUR	6UK	8BUK	8BUW
Rc 1/8	Super Type Pillar fitting Integrated	Super 300 Pillar fitting P series integrated	F-LOCK 20 Series Integrated fitting	F-LOCK 60 Series Integrated fitting	Final Lock Fitting Integrated	Flaretek Fitting Integrated							
	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection	ø6xø4 tube connection
	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection
							ø.35x4.3 tube connection						

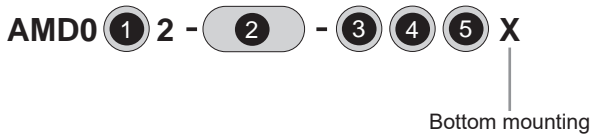
Code	Description	Orifice size	Body material										
			PFA: PFA molded body, PTFE: PTFE machined body										
3 Option													
0	ON/OFF only												
1	With flow rate adjustment		PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PTFE
6	ON/OFF / with indicator												

4 Operating port direction													
4	<p>With valve viewed from above, ← indicates fluid flow direction, ⇌ indicates the operating port direction</p>	●	●	●	●	●	●	●	●	●	●	●	●
1		●	●	●	●	●	●	●	●	●	●	●	●
2		●	●	●	●	●	●	●	●	●	●	●	●
3		●	●	●	●	●	●	●	●	●	●	●	●

5 Fluid code													
Blank	Standard	●	●	●	●	●	●	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●	●	●	●	●	●	●
P	For nitric acid	●	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

● Bottom mounting model No.
(hyphens between and indication of orifice size are not required **3 4**)



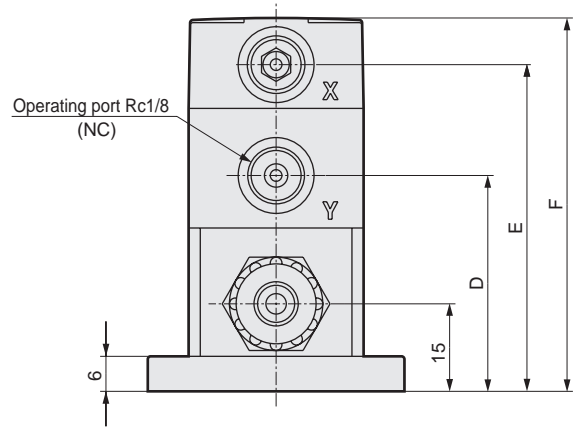
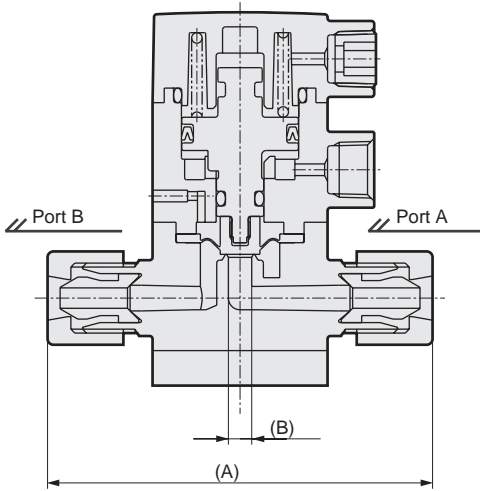
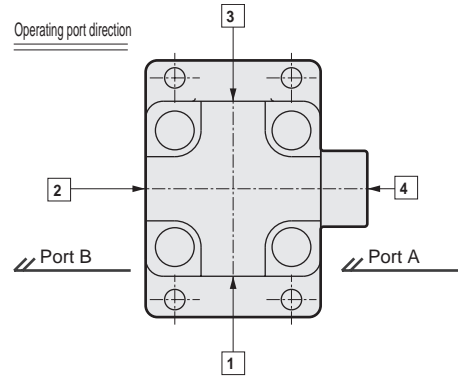
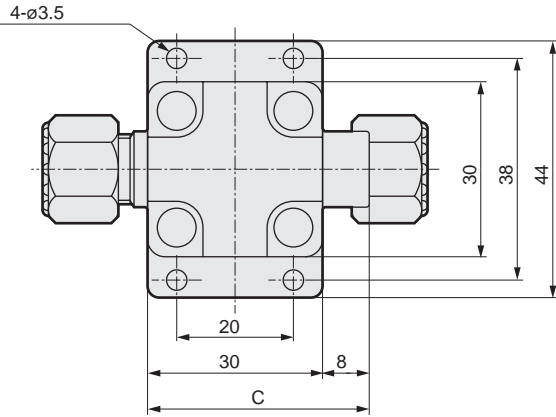
Air operated valve	Part3R	High pressure
	Part2	Metah-free
	Part1	Large bore size
		Polyvinyl chloride
Manual valve	Part3RN	Drainage
	Part2	High pressure
		Metah-free
		Large bore size
Regulator		Single unit
		Air operated integrated
		Pilot
		Manual
Flow rate adjusting valve		Electric
		Manual
		Manual Fine flow rate
	Fine level Switch	
	Related products	

AMDO¹₂²₃ Series

Dimensions

● ON/OFF only

· AMD0¹₂-[*1]-4-0-*



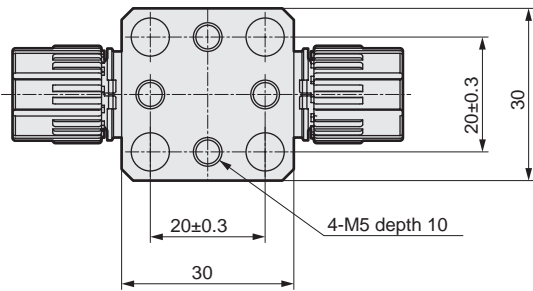
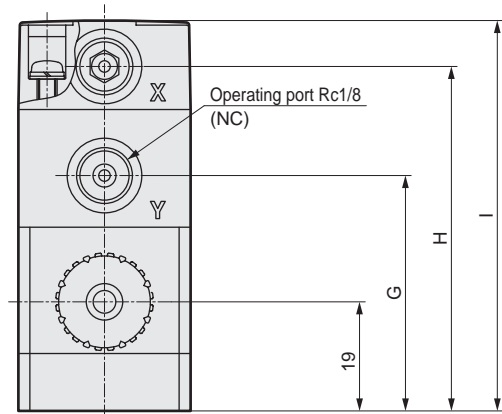
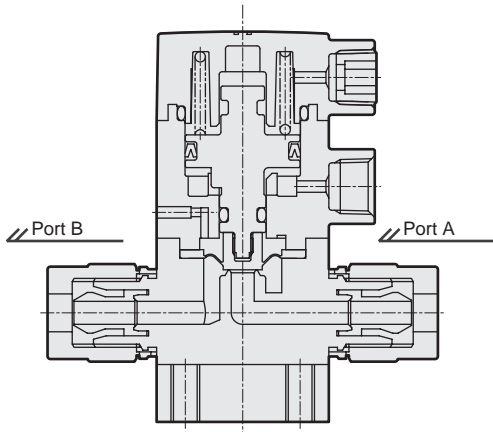
*1 Connector No.	A	B
6	36	4
6US	66	4
8BUS	66	4
6UP	68	4
8BUP	68	4

*1 Connector No.	A	B
6UF	64	4
8BUF	64	4
6UR	90	3.5
8BUR	92	3.5
6UK	71	4
8BUK	71	4
8BUW	86	3

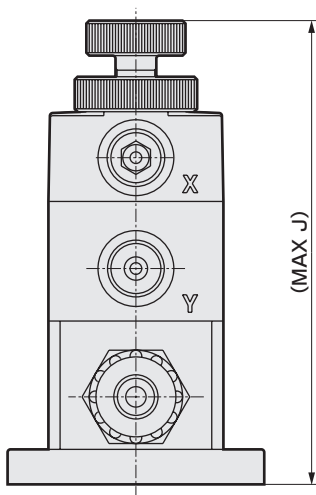
Fluid code	C	D	E	F
Blank/M	38	37	56	64
P	35	36	57	65

Dimensions

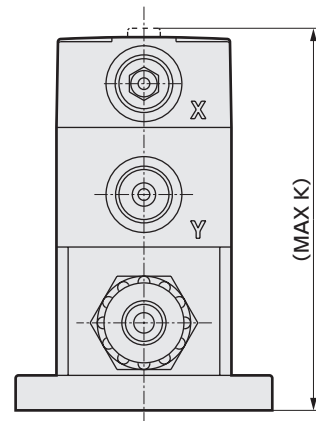
● Bottom mounting



● With flow rate adjustment



● With indicator



Fluid code	G	H	I	J	K
Blank/M	41	60	68	81	66
P	40	61	69	87	67

When bottom mounting is selected, dimensions J and K will be 4 mm higher.

Air operated valve	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RN	Part2	High pressure	Metals-free	Large bore size	Single unit	Air operated integrated	Regulator
	Manual valve	High pressure	Metals-free	Large bore size	Single unit	Air operated integrated	Regulator	Flow rate adjusting valve
Related products	Manual valve	High pressure	Metals-free	Large bore size	Single unit	Air operated integrated	Regulator	Flow rate adjusting valve
	Manual valve	High pressure	Metals-free	Large bore size	Single unit	Air operated integrated	Regulator	Flow rate adjusting valve



Air operated valve for chemical liquids

AMD3¹₂²/AMD4¹₂²/AMD5¹₂² Series

● Connection tube size: $\varnothing 10$, $\varnothing 12$, $\varnothing 25$,
3/8", 1/2", 3/4", 1"



Export controlled items

*Eligibility: AMD4*2, 5*2

Specifications

Item	AMD3 ¹ ₂ ² -* ¹ -8				AMD3 ¹ ₂ ² -* ¹ -10		
Working fluid	Chemical liquids, pure water, air, N2 gas (*1)						
Fluid temperature °C	5 to 90 (For high temperature: 5 to 160) (*5)						
Proof pressure MPa	1.0						
Working pressure (A→B)MPa	0 to 0.3 (*3...High pressure specification)						
Working pressure (B→A)MPa	0 to 0.1 (*3...High pressure specification)						
Valve seat leakage cm ³ /min	0 (water pressure)						
Back pressure MPa	0 to 0.1 (*3...High pressure specification)						
Ambient temperature°C	0 to 60						
Frequency	30 cycles/min. or less						
Mounting orientation	Unrestricted						
Connection	O.D. $\varnothing 10$ tube connection (integrated fitting) O.D. 3/8" tube connection (integrated fitting)				O.D. $\varnothing 12$ tube connection (integrated fitting) O.D. 1/2" tube connection (integrated fitting)		
Orifice size	$\varnothing 6.3$	$\varnothing 6.4$	$\varnothing 7.5$	$\varnothing 8$	$\varnothing 9.4$	$\varnothing 9.5$	$\varnothing 10$
Cv value	0.8		1.25		1.8		
Bypass orifice size (with bypass)	$\varnothing 2.3$						
Operating section	Operating pressure MPa	NC 0.3 to 0.5, NO 0.3 to 0.5 (0.3 to 0.35 for high temperature), double acting 0.3 to 0.4 (0.2 to 0.25 for high temperature)					
	Operating port	Rc1/8 (*2)					
Weight kg	0.21						

Item	AMD4 ¹ ₂ ² -* ¹ -16				AMD5 ¹ ₂ ² -* ¹ -20		
Working fluid	Chemical liquids, pure water, air, N2 gas (*1)				Chemical liquids, pure water, air, N2 gas (*1)		
Fluid temperature °C	5 to 90 (For high temperature: 5 to 160) (*5)				5 to 90 (*6)		
Proof pressure MPa	1				1		
Working pressure (A→B) MPa	0 to 0.3 (*3...High pressure specification)				0 to 0.3 (*3...High pressure specification)		
Working pressure (B→A)MPa	0 to 0.1 (*3...High pressure specification)				0 to 0.1 (*3...High pressure specification)		
Valve seat leakage cm ³ /min	0 (water pressure)				0 (water pressure)		
Back pressure MPa	0 to 0.1 (*3...High pressure specification)				0 to 0.1 (*3...High pressure specification)		
Ambient temperature°C	0 to 60				0 to 60		
Frequency	20 cycle/min. or less				20 cycle/min. or less		
Mounting orientation	Unrestricted				Unrestricted		
Connection	O.D. 3/4" tube connection (integrated fitting)				O.D. $\varnothing 25$ tube connection (integrated fitting)/ O.D. 1" tube connection (integrated fitting) Nominal 16/20 (PVC union integrated fitting)		
Orifice size	$\varnothing 16$				$\varnothing 20$		
Cv value	5				8		
Bypass orifice size (with bypass)	$\varnothing 6$				$\varnothing 6$		
Operating section	Operating pressure MPa	NC: 0.3 to 0.5, NO: 0.3 to 0.5 (0.3 to 0.35 for high temperature), Double acting: 0.3 to 0.4 (0.2 to 0.25 for high temperature)					
	Operating port	Rc1/8 (*2)					
Weight kg	0.42				0.84		

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: Use a resin fitting for connection to the operating port. (When using a metal fitting, select one with a reinforcing ring. However, a reinforcing ring cannot be selected for those with fluid code P for nitric acid and hydrofluoric acid.)

*3: Refer to page 64 for high-pressure specifications.

*4: Refer to pages 46 to 47 for flow characteristics.

*5: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

*6: 5 to 50°C when the integrated PVC union fitting is used for connection. For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

*7: Use a resin fitting for connection to the operating port. (When using a metal fitting, select one with reinforcing ring. However, a reinforcing ring cannot be selected for those with fluid code P for nitric acid and hydrofluoric acid.) However, since the integrated PVC union fitting comes with reinforcing ring, a metal fitting can also be used.

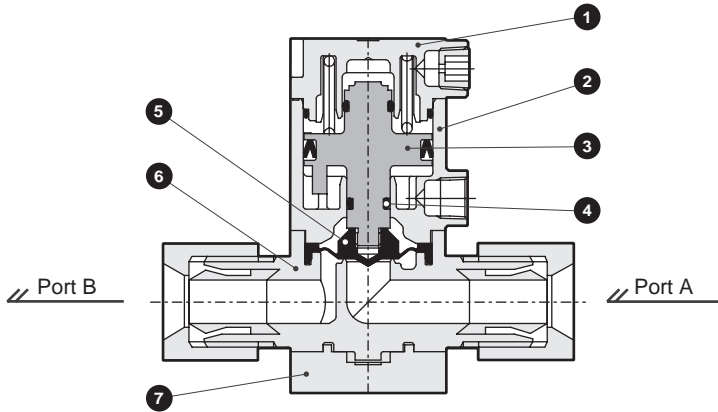
Always read the precautions on Intro Pages 7 to 14 before use.

AMD3¹₂²/AMD4¹₃²/AMD5¹₃² Series

Internal structure and parts list

Internal structure and parts list

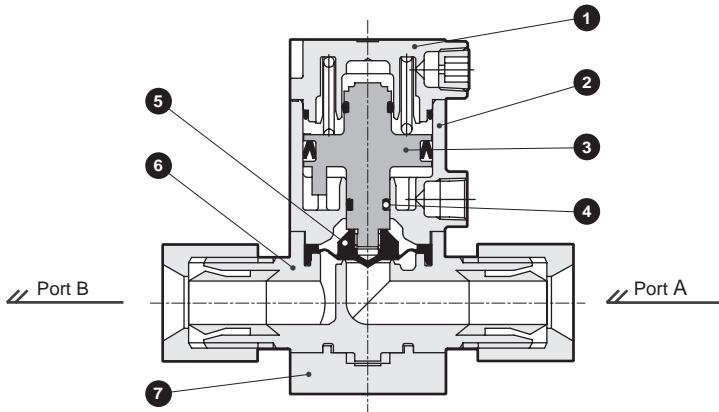
●AMD3*2 Series



Part No.	Part name	Material (by fluid code)		
		Standard	M	P
1	Cover	PPS		PP
2	Cylinder	PPS		PP
3	Piston rod	PPS		PVDF
4	O-ring	FKM	EPDM	FKM
5	Diaphragm	PTFE		
6	Body	PFA, PTFE		
7	Mounting plate	PPS		PP

The material and structure may vary depending on the model number. Contact CKD for details.

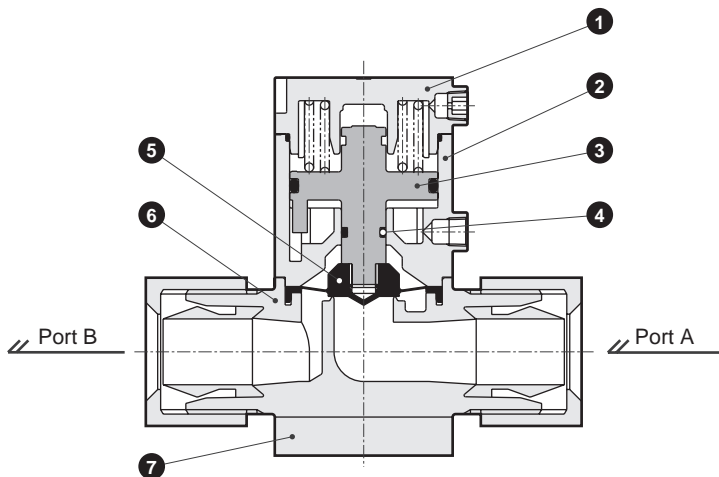
●AMD4*2 Series



Part No.	Part name	Material (by fluid code)		
		Standard/Y/E	M	P
1	Cover	PPS		PP
2	Cylinder	PPS		PP
3	Piston rod	PPS		PVDF
4	O-ring	FKM	EPDM	FKM
5	Diaphragm	PTFE		
6	Body	PFA, PTFE		
7	Mounting plate	PPS		PP

The material and structure may vary depending on the model number. Contact CKD for details.

●AMD5*2 Series



Part No.	Part name	Material (by fluid code)		
		Standard	M	P
1	Cover	PPS		PP
2	Cylinder	PPS		PP
3	Piston rod	PPS		PVDF
4	O-ring	FKM	EPDM	FKM
5	Diaphragm	PTFE		
6	Body	PFA, PTFE		
7	Mounting plate	PPS		PP

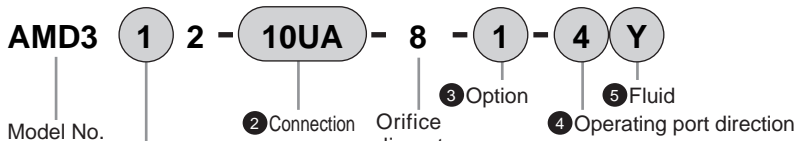
The material and structure may vary depending on the model number. Contact CKD for details.

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
Manual valve	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part1					
Regulator	Part3R	Flow rate adjusting valve	Electric	Manual	Manual/Flow rate	Fine level Switch
	Part2					
	Part1					
Related products	Part3R	Flow rate adjusting valve	Electric	Manual	Manual/Flow rate	Fine level Switch
	Part2					
	Part1					

AMD3²₃/AMD4²₃/AMD5²₃ Series

How to order

●AMD3*2 Series (connection: ø10, 3/8" tube connection)



1 Actuation	
1	NC (normally closed)
2	NO (normally open)
3	Double acting

2 Connection		10US	10BUS	10UP	10BUP	10UA	10BUA	10UR	10BUR	10UK	10BUK	10BUW
		Super Type Pillar fitting Integrated	Super 300 Pillar fitting P series integrated	F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting	Final Lock Fitting Integrated	Flaretek Fitting Integrated					
		ø10xø8 tube connection	3/8"x1/4" tube connection	ø10xø8 tube connection	3/8"x1/4" tube connection	ø10xø8 tube connection	3/8"x1/4" tube connection	ø10xø8 tube connection	3/8"x1/4" tube connection	ø10xø8 tube connection	3/8"x1/4" tube connection	3/8"x tube connection

Code	Description	Orifice size	Body material									
		ø8	PFA: PFA molded body, PTFE: PTFE machined body									
3 Option												
0	ON/OFF only		PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA
1	With flow rate adjustment											
2	With bypass		PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
3	With flow rate adjustment/bypass											
6	ON/OFF with indicator		PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA
7	With bypass with indicator		PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE

4 Operating port direction													
4		●	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
1		●	●	●	●	●	●	●	●	●	●	●	●
2		●	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
3		●	●	●	●	●	●	●	●	●	●	●	●

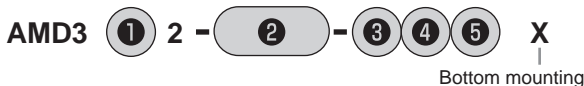
5 Fluid code													
Blank	Standard	●	●	●	●	●	●	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*3)	●	●	●	●	●	●	●	●	●	●	●	●
Y	For high temperature (5 to 160°C) (*2)	●	●	●	●	●	●	●	●	●	●	●	●
E	For high temperature (5 to 160°C), PTFE cut body (*2)	●	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

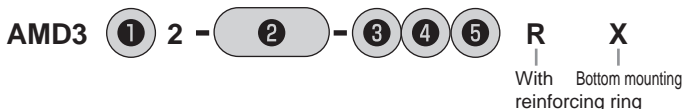
●Model No. of operating port with reinforcing ring (hyphen between **3** **4** is not required)



●Bottom mounting model No. (hyphen between **3** **4** and indication of orifice size are not required)



●Operating port with reinforcing ring + bottom mounting model No. (hyphen between **3** **4** and indication of orifice size are not required)



⚠️ Precautions for model No. selection

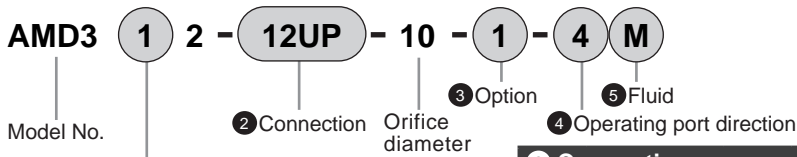
*1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.

*2: Item **3** is not available if the option is 2 (with bypass), 3 (with flow rate adjustment/bypass) or 7 (with bypass/with indicator). It cannot be used for nitric acid or hydrofluoric acid.

*3: If P is selected in **5**, R with reinforcing ring cannot be selected. If in item **3** the option is 2 (with bypass), 3 (with flow rate adjustment/bypass) or 7 (with bypass/with indicator), it is not available.

How to order

●AMD3*2 Series (connection: ø12, 1/2" tube connection)



1 Actuation	
1	NC (normally closed)
2	NO (normally open)
3	Double acting

2 Connection		Body material													
Code	Description	PFA: PFA molded body, PTFE: PTFE machined body													
12US	Super Type Pillar fitting Integrated	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA
15BUS	Super 300 Pillar fitting P series integrated	PTFE	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
12UP	F-LOCK 20A Series Integrated fitting	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA
15BUP	F-LOCK 60 Series Integrated fitting	PTFE	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
12UR	Final Lock Fitting Integrated	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA
15BUR	Flaretek Fitting Integrated	PTFE	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
12UK															
15BUK															
15BUW															

Code	Description	Orifice size
3 Option (*1)		
0	ON/OFF only	ø10
1	With flow rate adjustment	ø9.5
2	With bypass	ø10
3	With flow rate adjustment/bypass	ø9.4
6	ON/OFF / with indicator	
7	With bypass with indicator	

4 Operating port direction		Body material													
4	3 ↓	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1	4 ←	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2	2 →	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3	1 ↑	●	●	●	●	●	●	●	●	●	●	●	●	●	●

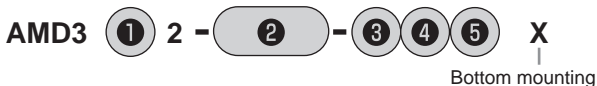
5 Fluid		Body material													
Blank	Standard	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●	●	●	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*3)	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Y	For high temperature (5 to 160°C) (*2)	●	●	●	●	●	●	●	●	●	●	●	●	●	●
E	For high temperature (5 to 160°C), PTFE cut body (*2)	●	●	●	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

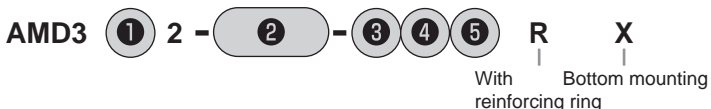
● Model No. of operating port with reinforcing ring (hyphen between ③ ④ is not required)



● Bottom mounting model No. (hyphen between ③ ④ and indication of orifice size are not required)



● Operating port with reinforcing ring + bottom mounting model No. (hyphen between ③ ④ and indication of orifice size are not required)



⚠ Precautions for model No. selection

*1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.

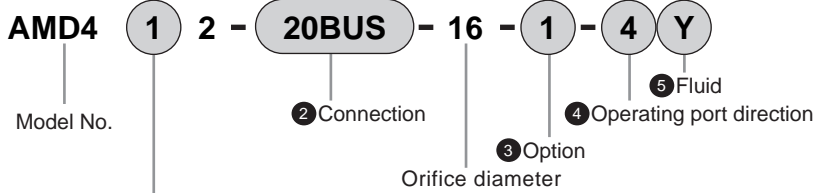
*2: Item ③ is not available if the option is 2 (with bypass), 3 (with flow rate adjustment/bypass) or 7 (with bypass/with indicator). It cannot be used for nitric acid or hydrofluoric acid.

*3: If P is selected in ⑤, R with reinforcing ring cannot be selected. Item ③ is not available if the option is 2 (with bypass), 3 (with flow rate adjustment/bypass) or 7 (with bypass/with indicator).

Part3R	Part2	Part1	High pressure	Metah-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metah-free	Large bore size	Single unit	Air operated integrated	Regulator	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
--------	-------	-------	---------------	------------	-----------------	--------------------	----------	---------	-------	---------------	------------	-----------------	-------------	-------------------------	-----------	-------	--------	----------	--------	-----------------------	-------------------	------------------

AMD3²₃/AMD4²₃/AMD5²₃ Series

How to order



1 Actuation	
1	NC (normally closed)
2	NO (normally open)
3	Double acting

2 Connection					
20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
Super-type pillar integrated fitting	Super 300 type Pillar fitting P Series integrated	F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting	Final Lock Integrated fitting	Flaretek Integrated fitting
3/4" x5/8" tube connectin					

Code	Description	Orifice size					
		ø16		ø15.9	ø16	ø14.7	
3 Option		Body material					
		PFA: PFA molded body, PTFE: PTFE machined body					
0	ON/OFF only	PFA	PFA	PTFE	PFA	PTFE	PFA
1	With flow rate adjustment						
2	With bypass	PFA	PFA	PTFE	PTFE	PTFE	PTFE
3	With flow rate adjustment/bypass						
6	ON/OFF with indicator	PFA	PFA	PTFE	PFA	PTFE	PFA
7	With bypass with indicator	PFA	PFA	PTFE	PTFE	PTFE	PTFE

4 Operating port direction							
4	<p>With valve viewed from above, ← indicates fluid flow direction and → indicates operating port direction.</p>	●	●	●	●	●	●
1		●	●	●	●	●	●
2		●	●	●	●	●	●
3		●	●	●	●	●	●

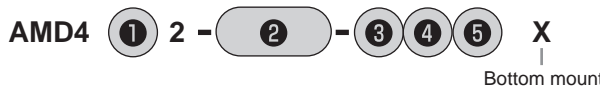
5 Fluid							
Blank	Standard	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*2)	●	●	●	●	●	●
Y	For high temperature (5 to 160°C) (*1)	●	●				
E	For high temperature (5 to 160°C), PTFE cut body (*1)	●	●	●		●	

* Machined PTFE products will be manufactured on a per-order basis.

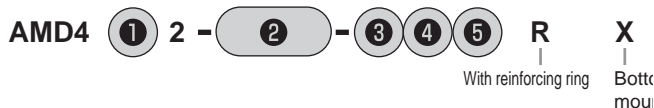
● Model No. of operating port with reinforcing ring (hyphen between **3** **4** is not required)



● Bottom mounting model No. (hyphens between and indication of orifice size are not required **3** **4**)



● Operating port with reinforcing ring + bottom mounting model No. (hyphens between and indication of orifice size are not required **3** **4**)

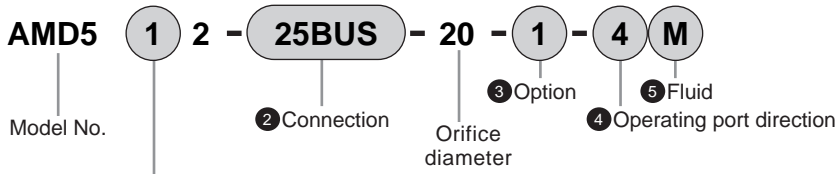


⚠ Precautions for model No. selection

*1: Item **3** is not available if the option is 2 (with bypass), 3 (with flow rate adjustment/bypass) or 7 (with bypass/with indicator). It cannot be used for nitric acid or hydrofluoric acid.

*2: If P is selected in **5**, R with reinforcing ring cannot be selected. If in item **3** the option is 2 (with bypass), 3 (with flow rate adjustment/bypass) or 7 (with bypass/with indicator), it is not available.

How to order



1 Actuation	
1	NC (normally closed)
2	NO (normally open)
3	Double acting

2 Connection		25US	25BUS	25UP	25BUP	25BUA	25UR	25BUR	25UK	25BUK	25BUW	15AU	20AU
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Fitting Integrated	F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated	Flaretek Fitting Integrated	PVC union Fitting Integrated		
		ø25x22 tube connection	1" x 7/8" tube connection	ø25x22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection (*1)	ø25x tube connection	1" x 7/8" tube connection	ø25x tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection	Nominal 16	Nominal 20

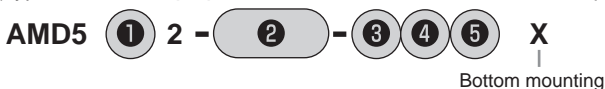
Code	Description	Orifice size												
		ø20												
3 Option		Body material												
		PFA: PFA molded body, PTFE: PTFE machined body												
0	ON/OFF only	PFA	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PFA		
1	With flow rate adjustment													
2	With bypass	PTFE	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE		(*3)	
3	With flow rate adjustment/bypass													
6	ON/OFF / with indicator	PFA	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PFA		
7	With bypass with indicator	PTFE	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE		(*3)	
4 Operating port direction														
4	<p>With valve viewed from above, ← indicates fluid flow direction and operating port direction.</p>	●	●	●	●	●	●	●	●	●	●	●	●	
1		●	●	●	●	●	●	●	●	●	●	●	●	
2		●	●	●	●	●	●	●	●	●	●	●	●	●
3		●	●	●	●	●	●	●	●	●	●	●	●	●
5 Fluid														
Blank	Standard	●	●	●	●	●	●	●	●	●	●	●	●	
M	For ammonia	●	●	●	●	●	●	●	●	●	●	●	●	
P	For nitric acid, for hydrofluoric acid (*2)	●	●	●	●	●	●	●	●	●	●	●	●	

* Machined PTFE products will be manufactured on a per-order basis.

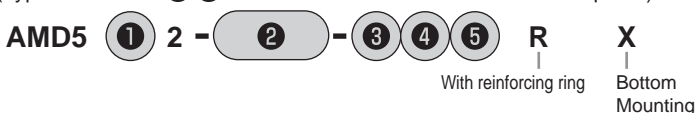
● Model No. of operating port with reinforcing ring (hyphen between 3 4 is not required)



● Bottom mounting model No. (hyphen between 3 4 and indication of orifice size are not required)



● Operating port with reinforcing ring + bottom mounting model No. (hyphen between 3 4 and indication of orifice size are not required)



⚠ Precautions for model No. selection

*1: It can also be used for ø25 x ø22 tube connection.

*2: If 15AU or 20AU is selected in 2 or P is selected in 5, R with reinforcing ring cannot be selected. It is not available if the option in 3 is 2 (with bypass), 3 (with flow rate adjustment/bypass) or 7 (with bypass/with indicator).

*3: Select from the AMD41L Series (page 88).

Part3R	High pressure	Air operated valve
Part2	Metar-free	
Part1	Large bore size	
	Polyvinyl chloride	
	Drainage	
Part3RN	High pressure	Manual valve
Part2	Metar-free	
	Large bore size	
	Single unit	
	Drip prevention valve	
	Air operated	
	Integrated	
	Pilot	
	Regulator	
	Manual	
	Electric	
	Flow rate adjusting valve	
	Manual	
	Flow rate	
	Manual Fine	
	Switch	
	Fine level	
	products	

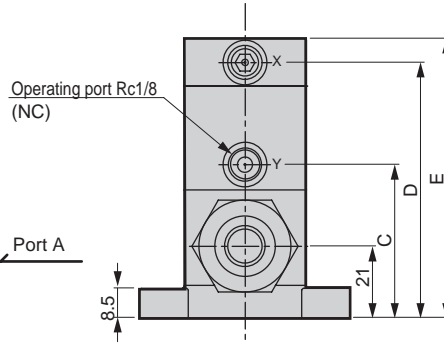
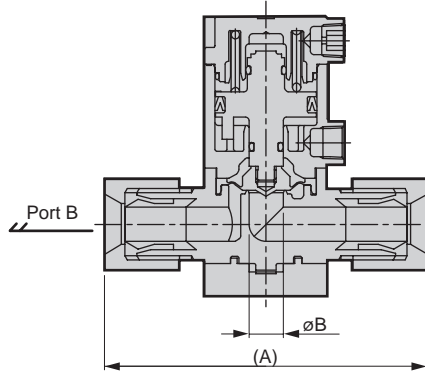
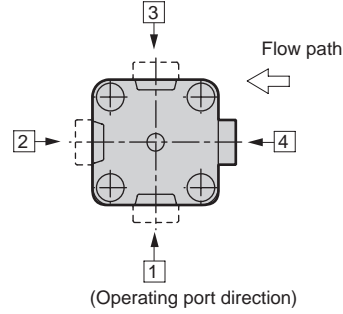
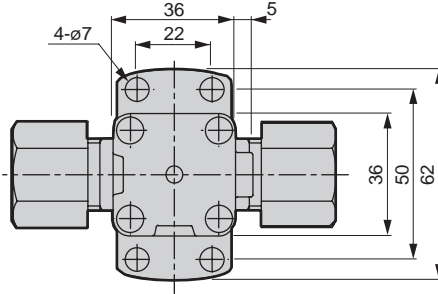
AMD3¹₃²2/AMD4¹₃²2/AMD5¹₃²2 Series

Dimensions

● ON/OFF only

· AMD3¹₃²2-[*1]-8

· AMD3¹₃²2-[*1]-10

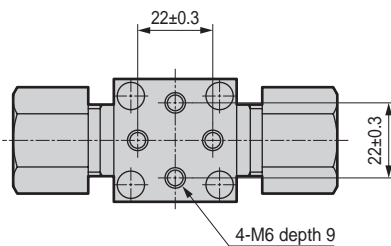


*1 (Connector No.)	A	B
10US	86	8
10BUS	86	8
10UP	86	8
10BUP	86	8
10UA	78	8
10BUA	78	8
10UR	110	7.5
10BUR	114	6.4
10UK	96	7.5
10BUK	96	7.5
10BUW	97	6.3

*1 (Connector No.)	A	B
12US	95	10
15BUS	95	10
12UP	94	10
15BUP	94	10
12UA	86	10
15BUA	86	10
12UR	110	9.5
15BUR	114	9.5
12UK	102	10
15BUK	102	10
15BUW	103	9.4

Fluid code	C	D	E
Blank/M/P/Y	45	75	82
E	49	79	86

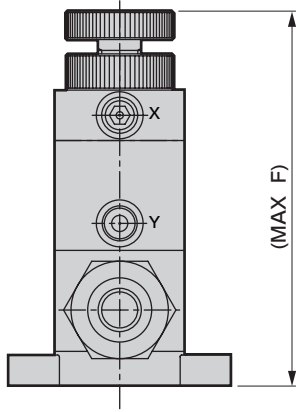
● Bottom mounting



Dimensions

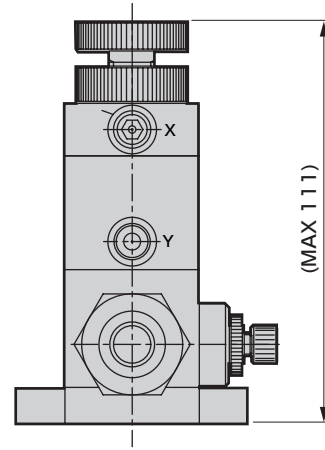
● With flow rate adjustment

· AMD3¹₂²/₃ 2-*-*-1



● With flow rate adjustment bypass

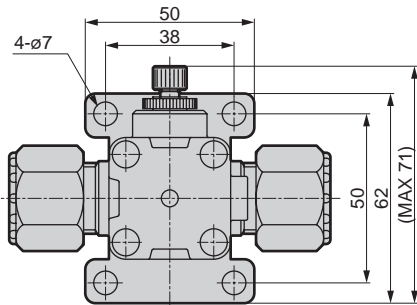
· AMD3¹₂²/₃ 2-*-*-3



(For other dimensions, refer to the dimensions with bypass.)

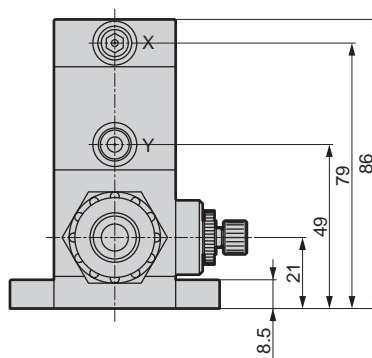
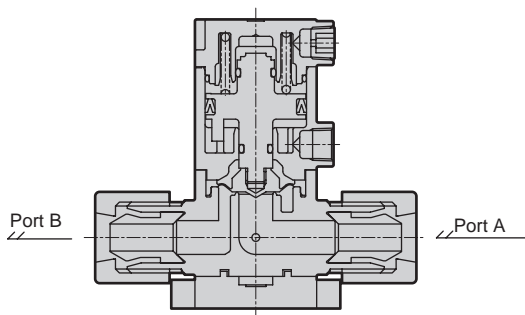
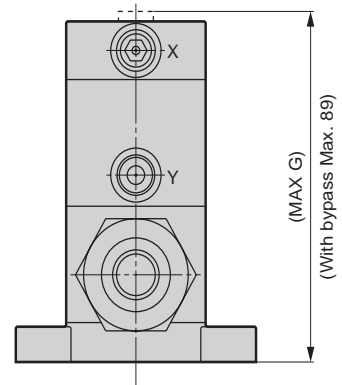
● With bypass

· AMD3¹₂²/₃ 2-*-*-2/7



● With indicator

· AMD3¹₂²/₃ 2-*-*-6/7



Fluid code	F	G
Blank/M/P/Y	107	85
E	111	89

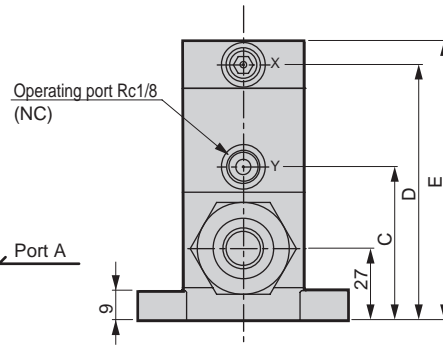
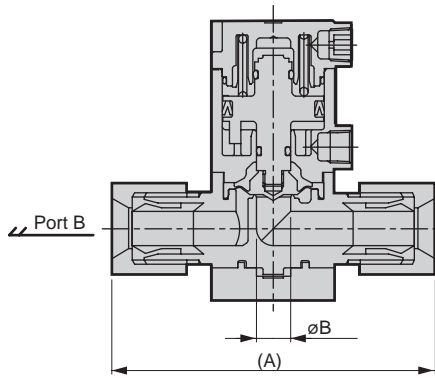
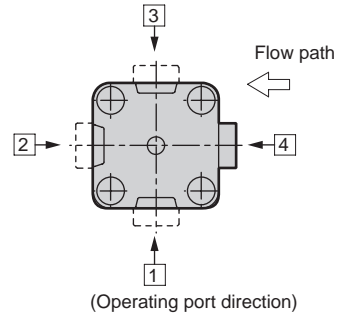
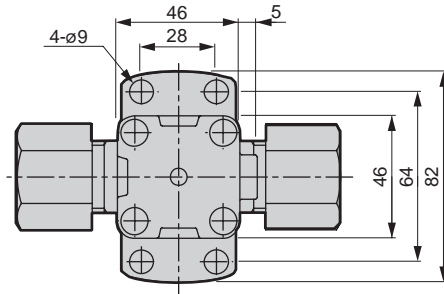
Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve		Regulator		Flow rate adjusting valve				

AMD3¹₂²/₃ / AMD4¹₂²/₃ / AMD5¹₂²/₃ Series

Dimensions

● ON/OFF only

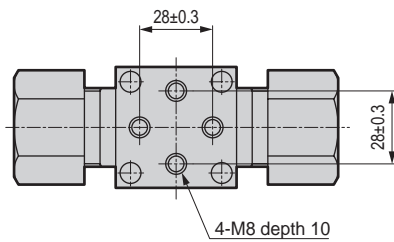
· AMD4¹₂²/₃ - *1 -16



*1 (Connector No.)	A	B
20BUS	124	16
20BUP	118	16
20BUA	108	16
20BUR	134	15.9
20BUK	119	16
20BUW	122	14.7

Fluid code	C	D	E
Blank/M/Y	60	97	106
P	60	97	107
E	64	101	110

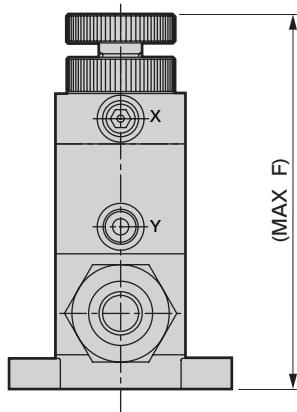
● Bottom mounting



Dimensions

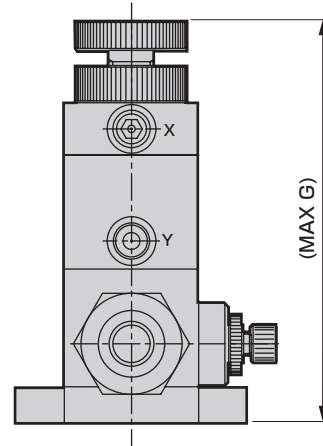
●With flow rate adjustment

· AMD4¹₂²/₃2*-16-1



●With flow rate adjustment bypass

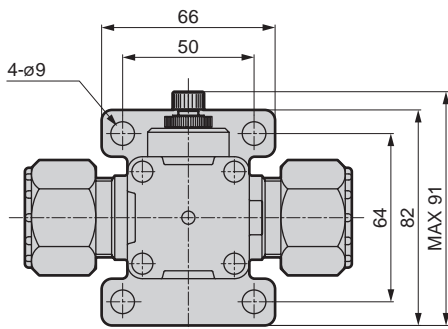
· AMD4¹₂²/₃2*-16-3



(For other dimensions, refer to the dimensions with bypass.)

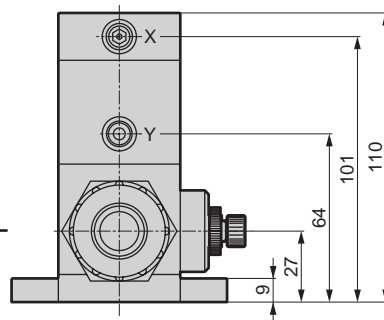
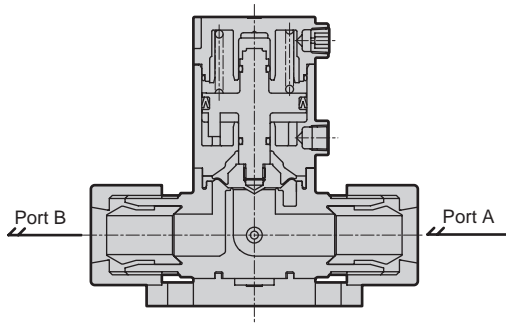
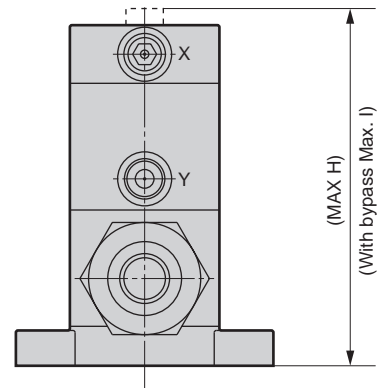
●With bypass

· AMD4¹₂²/₃2*-16-2/7



●With indicator

· AMD4¹₂²/₃2*-16-6/7



Fluid code	F	G	H	I
Blank/M	130	134	110	114
P	133	137	111	115
Y	130		110	
E	134		114	

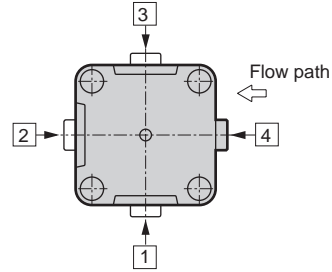
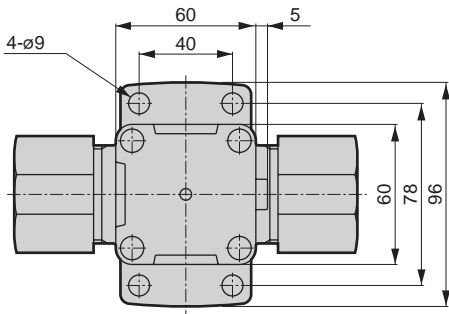
Part3R	Part2	Part1	High pressure	Meta-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Meta-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve		Regulator		Flow rate adjusting valve				

AMD3¹₃²2/AMD4¹₃²2/AMD5¹₃²2 Series

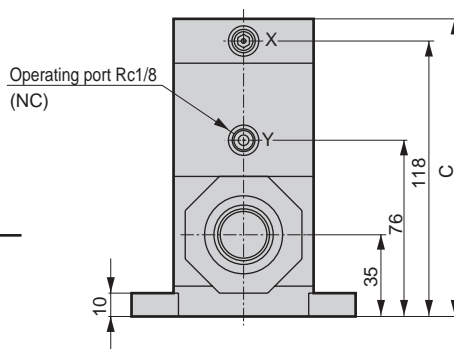
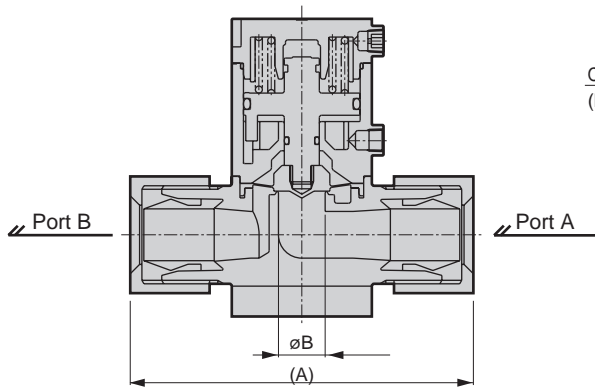
Dimensions

●ON/OFF only

· AMD5¹₃²2-*1-20



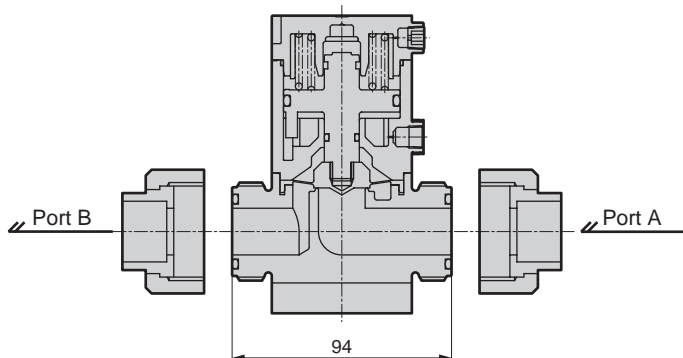
(Operating port direction)



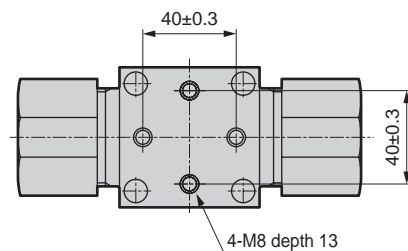
*1 (Connector No.)	A	B
25US	147	20
25BUS	147	20
25UP	146	20
25BUP	146	20
25BUA	140	20
25UR	159	20
25BUR	162	20
25UK	141	20
25BUK	141	20
25BUW	156	20

Fluid code	C
Blank/M	128
P	132

●PVC union fitting integrated



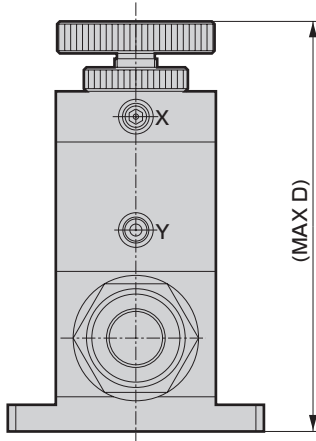
●Bottom mounting



Dimensions

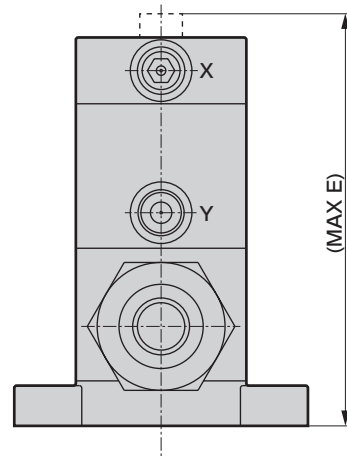
●With flow rate adjustment

· AMD5¹₃² 2-* -20-1



●With indicator

· AMD5¹₃² 2-* -20-6/7

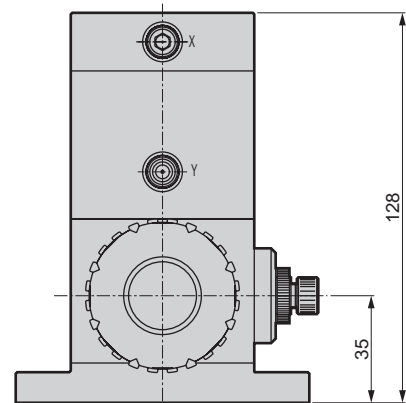
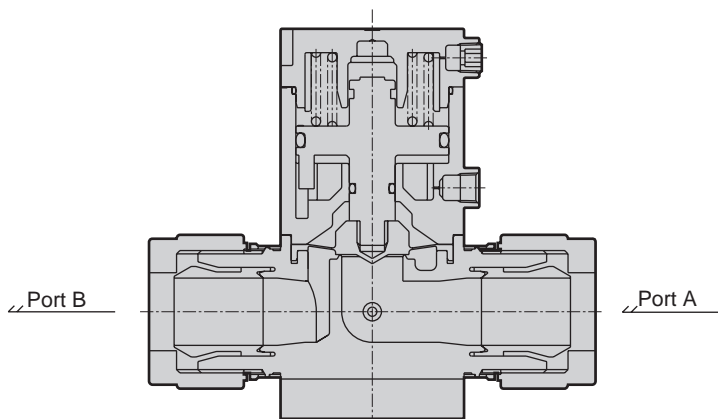
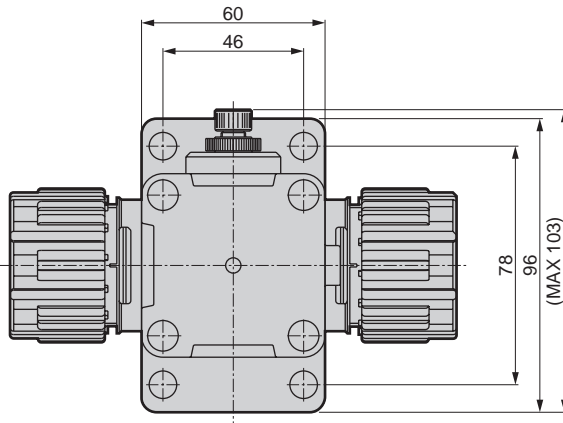


Fluid code	D	E
Blank/M	159	133
P	166	137

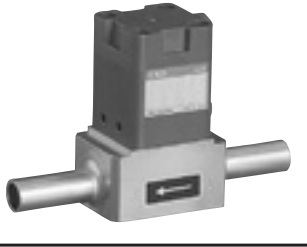
The dimensions are the same with bypass.

●With bypass

· AMD5¹₃² 2-* -20-2/7



Air operated valve	Part3R	High pressure	Part3RR	High pressure
	Part2	Metals-free	Part2	Metals-free
	Part1	Large bore size	Part1	Large bore size
Manual valve	Polyvinyl chloride	Drainage	Manual valve	Single unit
	Drainage	Part3RR	Manual valve	Air operated integrated
	Part2	Part2	Manual valve	Pilot
Regulator	Manual valve	Manual valve	Regulator	Manual
	Manual valve	Manual valve	Regulator	Electric
	Manual valve	Manual valve	Regulator	Manual flow rate
Flow rate adjusting valve	Manual flow rate	Manual flow rate	Flow rate adjusting valve	Manual flow rate
	Manual flow rate	Manual flow rate	Flow rate adjusting valve	Manual flow rate
Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch
	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch
Related products	Related products	Related products	Related products	Related products
	Related products	Related products	Related products	Related products



Stainless steel body air operated valve for chemical liquids

AMD3¹/₂²/AMD4¹/₂²/AMD5¹/₂² Series



Specifications

Item	AMD3 ¹ / ₂ ² -8/3BT/6S	AMD3 ¹ / ₂ ² -10/4BT/8S
Working fluid	Chemical liquids, pure water, air, N2 gas (*1)	
Fluid temperature °C	5 to 120	
Proof pressure MPa	1.0	
Working pressure (A→B) MPa	0 to 0.3 (*2...High pressure specification)	
Working pressure (B→A) MPa	0 to 0.1 (*2:High pressure specification)	
Valve seat leakage cm ³ /min	0 (water pressure)	
Back pressure MPa	0 to 0.1 (*2:High pressure specification)	
Ambient temperature °C	0 to 60	
Frequency	30 cycles/min. or less	
Mounting orientation	Unrestricted	
Connection	Rc1/4 3/8" SUS tube Double barbed fitting for 3/8" (*3)	Rc3/8 1/2" SUS tube Double barbed fitting for 1/2" (*3)
Orifice size	ø8	ø10
Operating section	Operating pressure MPa	NC/NO 0.3 to 0.5, double acting 0.3 to 0.4
	Operating port	Rc1/8
Weight kg	0.45	

Item	AMD4 ¹ / ₂ ² -15/6BT/12S	AMD5 ¹ / ₂ ² -8BT/16S
Working fluid	Chemical liquids, pure water, air, N2 gas (*1)	
Fluid temperature °C	5 to 120	
Proof pressure MPa	1.0	
Working pressure (A→B) MPa	0 to 0.3 (*2...High pressure specification)	
Working pressure (B→A) MPa	0 to 0.1 (*2:High pressure specification)	
Valve seat leakage cm ³ /min	0 (water pressure)	
Back pressure MPa	0 to 0.1 (*2:High pressure specification)	
Ambient temperature °C	0 to 60	
Frequency	20 cycle/min. or less	
Mounting orientation	Unrestricted	
Connection	Rc 1/2, 3/4" SUS tube / Double barbed fitting for 3/4" (*3)	1" SUS tubing Double barbed fitting for 1" (*3)
Orifice size	ø16	ø20
Operating section	Operating pressure MPa	NC/NO 0.3 to 0.5, double acting 0.3 to 0.4
	Operating port	Rc1/8
Weight kg	0.89	1.3

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: Refer to page 64 for high-pressure specifications.

*3: For double barbed fitting, fluorine lubricant is applied to the sliding surface between the front ferrule and fitting body.

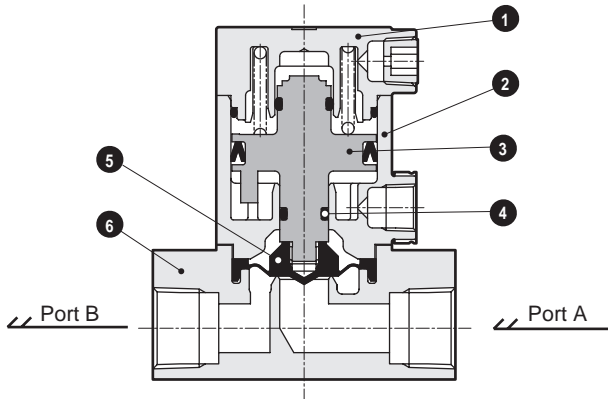
Always read the precautions on Intro Pages 7 to 14 before use.

AMD3¹₃²2/AMD4¹₃²2/AMD5¹₃²2 Series

Internal structure and parts list

Internal structure and parts list

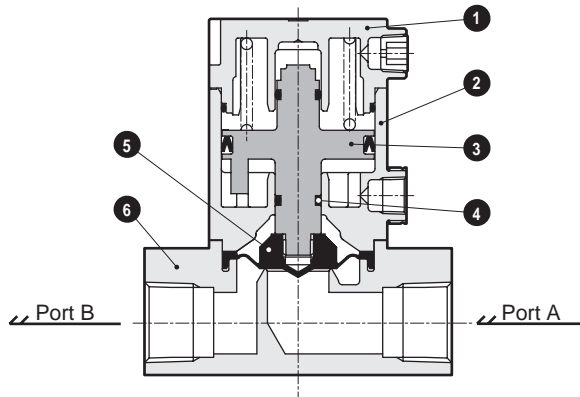
●AMD3*2 Series



Part No.	Part name	Material (by actuator material)	
		Standard	A
1	Cover	PPS	A5056
2	Cylinder	PPS	A5056
3	Piston rod	PPS	A5056
4	O-ring	EPDM	
5	Diaphragm	PTFE	
6	Body	SUS316L	

The material and structure may vary depending on the model number. Contact CKD for details.

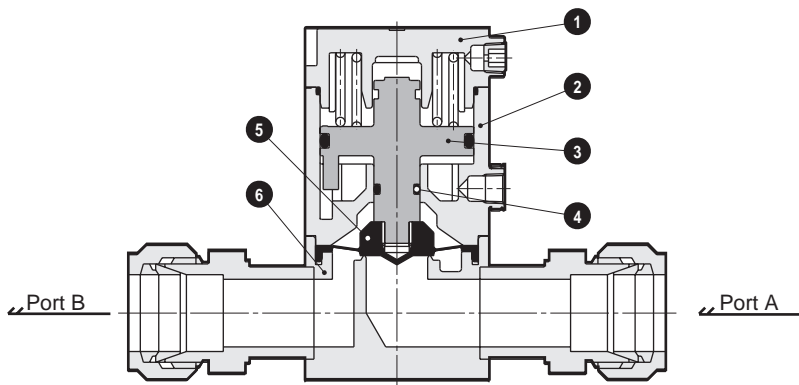
●AMD4*2 Series



Part No.	Part name	Material (by actuator material)	
		Standard	A
1	Cover	PPS	A5056
2	Cylinder	PPS	A5056
3	Piston rod	PPS	A5056
4	O-ring	EPDM	
5	Diaphragm	PTFE	
6	Body	SUS316L	

The material and structure may vary depending on the model number. Contact CKD for details.

●AMD5*2 Series



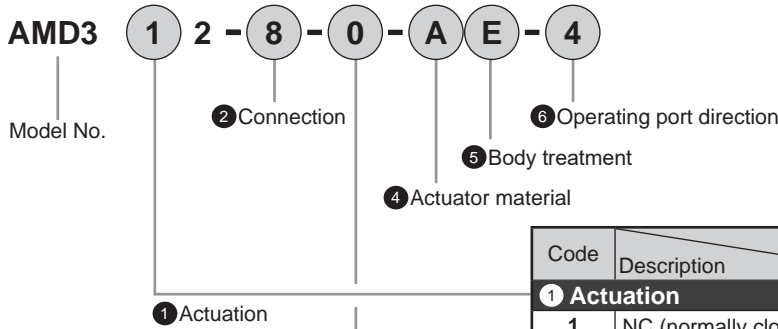
Part No.	Part name	Material (by actuator material)	
		Standard	A
1	Cover	PPS	A5056
2	Cylinder	PPS	A5056
3	Piston rod	PPS	A5056
4	O-ring	EPDM	
5	Diaphragm	PTFE	
6	Body	SUS316L	

The material and structure may vary depending on the model number. Contact CKD for details.

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
	Part3RN					
	Part2					
	Part1					
Manual valve	Part3R	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part1					
	Part3RN					
	Part2					
	Part1					
Regulator	Part3R	Pilot	Manual	Flow rate adjusting valve	Electric	Manual
	Part2					
	Part1					
	Part3RN					
	Part2					
	Part1					
Flow rate adjusting valve	Part3R	Manual	Manual	Manual	Manual	Manual
	Part2					
	Part1					
	Part3RN					
	Part2					
	Part1					
Flow rate adjusting valve	Part3R	Fine level	Switch	Related products	Related products	Related products
	Part2					
	Part1					
	Part3RN					
	Part2					
	Part1					

AMD3²₃/AMD4²₃/AMD5²₃ Series

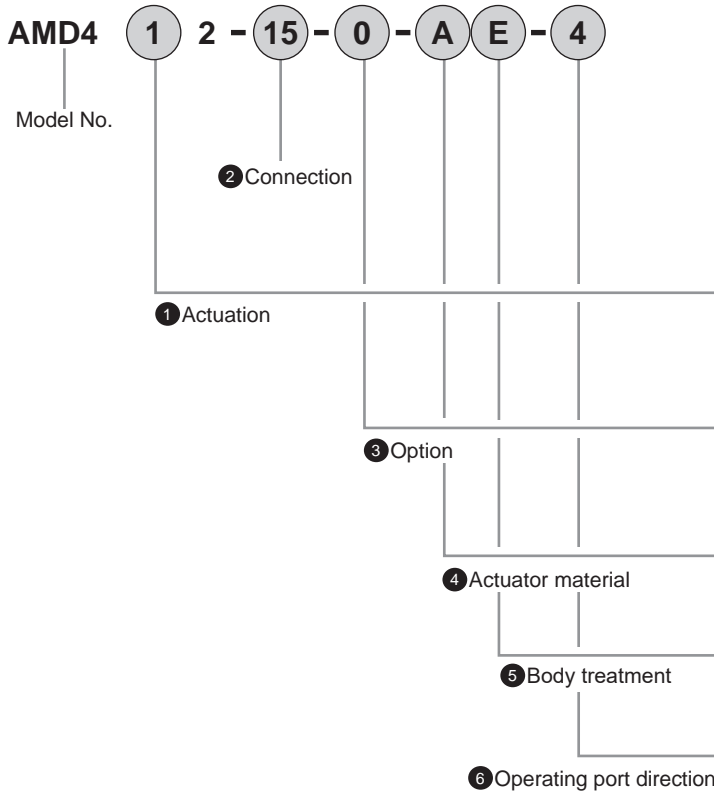
How to order



② Connection					
8	3BT	6S	10	4BT	8S
Rc 1/4	3/8" x1.0 SUS tube	3/8" tube connection Double barbed fitting	Rc3/8	1/2" x1.24 SUS tube	1/2" tube connection Double barbed fitting

Code	Description	Orifice size					
① Actuation							
1	NC (normally closed)	●	●	●	●	●	●
2	NO (normally open)	●	●	●	●	●	●
3	Double acting	●	●	●	●	●	●
③ Option							
0	ON/OFF only	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●
④ Actuator material							
Blank	PPS	●	●	●	●	●	●
A	A5056	●	●	●	●	●	●
⑤ Body treatment							
Blank	None	●	●	●	●	●	●
E	With electrolytic polishing	●	●	●	●	●	●
⑥ Operating port direction							
4	<p>With valve viewed from above, ← indicates fluid flow direction ← and operating port direction.</p>	●	●	●	●	●	●
1		●	●	●	●	●	●
2		●	●	●	●	●	●
3		●	●	●	●	●	●

* Body electropolished products must be manufactured on a case-by-case basis.



② Connection		
15	6BT	12S
Rc1/2	3/4" x1.24 SUS tube	3/4" tube connection Double barbed fitting

Code	Description	Orifice size		
① Actuation				
1	NC (normally closed)	●	●	●
2	NO (normally open)	●	●	●
3	Double acting	●	●	●
③ Option				
0	ON/OFF only	●	●	●
1	With flow rate adjustment	●	●	●
6	With indicator	●	●	●
④ Actuator material				
Blank	PPS	●	●	●
A	A5056	●	●	●
⑤ Body treatment				
Blank	None	●	●	●
E	With electrolytic polishing	●	●	●
⑥ Operating port direction				
4	<p>With valve viewed from above, ← indicates fluid flow direction ← and operating port direction.</p>	●	●	●
1		●	●	●
2		●	●	●
3		●	●	●

* Body electropolished products must be manufactured on a case-by-case basis.

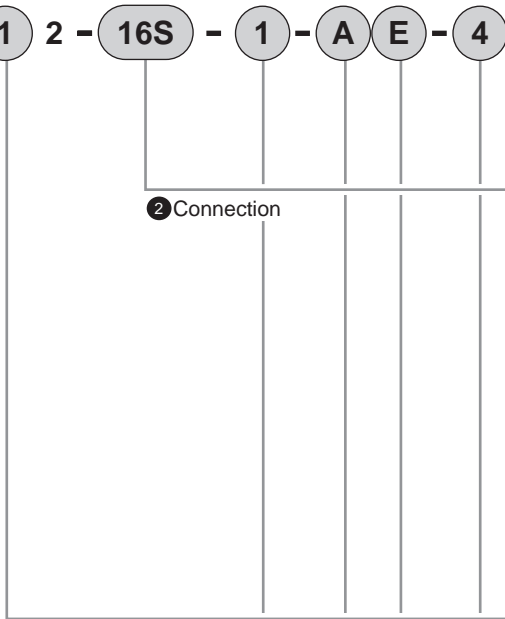
⚠ Precautions for model No. selection

- * Consult with CKD for connections other than the ones listed.
- * Connection Rc is not compatible with electrolytic polishing specifications.

How to order

AMD5 **1** **2** - **16S** - **1** - **A** **E** - **4**

Model No.



1 Actuation

2 Connection

3 Option

4 Actuator material

5 Body treatment

6 Operating port direction

2 Connection	
8BT	16S
1"xt1.65SUS tube	1"tube connection Double barbed fitting

Code	Description	Orifice size	
		ø20	
1 Actuation			
1	NC (normally closed)	●	●
2	NO (normally open)	●	●
3	Double acting	●	●
3 Option			
0	ON/OFF only	●	●
1	With flow rate adjustment	●	●
6	With indicator	●	●
4 Actuator material			
Blank	PPS	●	●
A	A5056	●	●
5 Body treatment			
Blank	None	●	●
E	With electrolytic polishing	●	●
6 Operating port direction			
4	<p>With valve viewed from above, ← indicates fluid flow direction and operating port direction.</p>	●	●
1		●	●
2		●	●
3		●	●

Body electropolished products must be manufactured on a case-by-case basis.

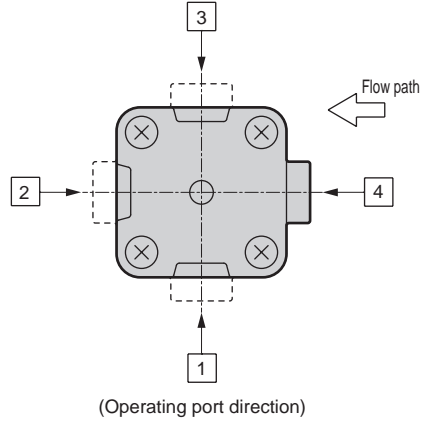
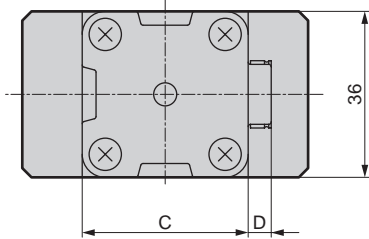
Part3R	Part2	Part1	Air operated valve	High pressure	Metall-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	Manual valve	High pressure	Metall-free	Large bore size	Drip prevention valve	Single unit	Air operated integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
--------	-------	-------	--------------------	---------------	-------------	-----------------	--------------------	----------	---------	-------	--------------	---------------	-------------	-----------------	-----------------------	-------------	-------------------------	-----------	-------	--------	---------------------------	----------	--------	-----------------------	-------------------	------------------

AMD3¹₃²2/AMD4¹₃²2/AMD5¹₃²2 Series

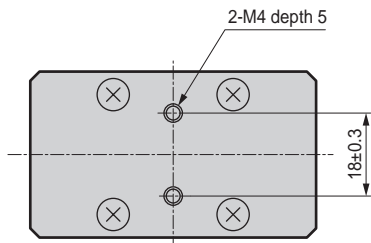
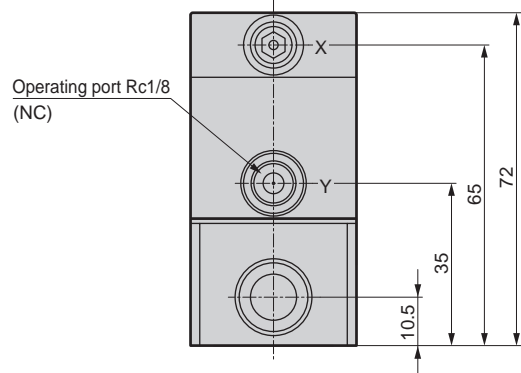
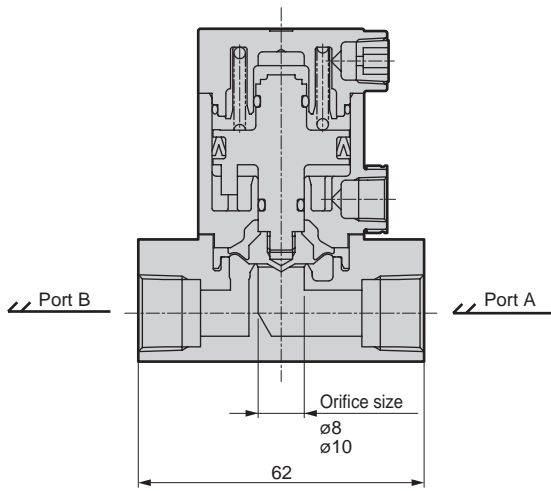
Dimensions

● Rc thread

· AMD3¹₃²2-8/10



Actuator material	C	D
Blank	36	5
A	44	0

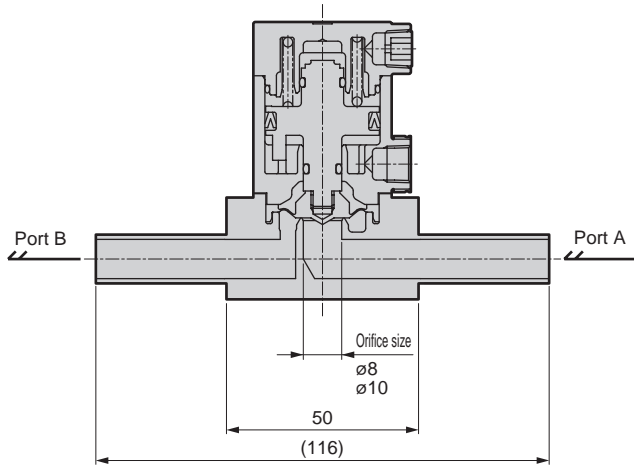


Part 3R	Part 2	Part 1	High pressure	Metal-free	Large bore size	PVC	Drainage	Part 3RN	Part 2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve				Drip prevention valve	Regulator		Flow rate adjusting valve				

Dimensions

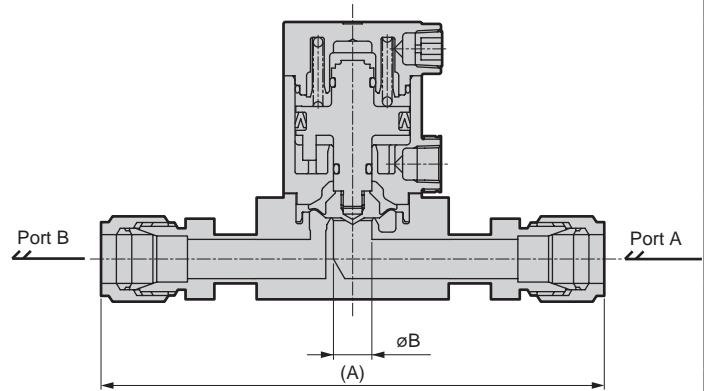
●SUS tube

- AMD3¹₃²/₂-3BT/4BT



●Double barbed fitting

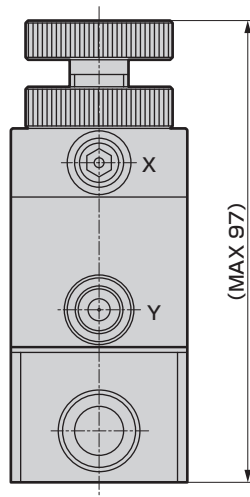
- AMD3¹₃²/₂-6S/8S



Dimensions	A	B
Model No.		
AMD3*2-6S	116	8
AMD3*2-8S	130	10

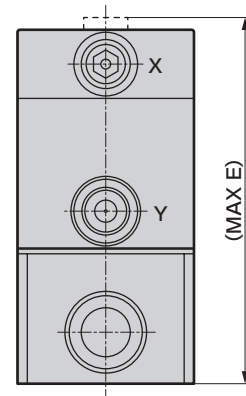
●With flow rate adjustment

- AMD3¹₃²/₂*-1



●With indicator

- AMD3¹₃²/₂*-6



Actuator material	E
Blank	75
A	74

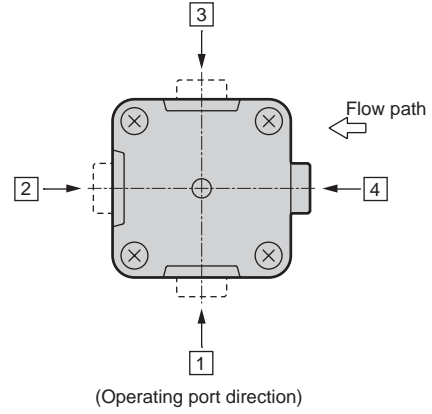
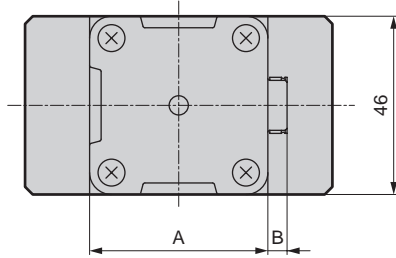
Part3R																			
Part2																			
Part1																			
		High pressure																	
		Metal-free																	
		Large bore size																	
		Polyvinyl chloride																	
		Drainage																	
Part3RN																			
Part2																			
		High pressure																	
		Manual valve																	
		Metal-free																	
		Large bore size																	
		Single unit																	
		Air operated integrated																	
		Regulator																	
		Pilot																	
		Manual																	
		Electric																	
		Manual																	
		Flow rate adjusting valve																	
		Manual																	
		Fine level Switch																	
		Related products																	

AMD3¹₂²/₃ / AMD4¹₂²/₃ / AMD5¹₂²/₃ Series

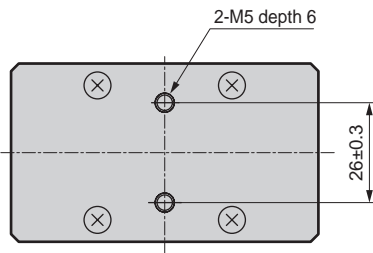
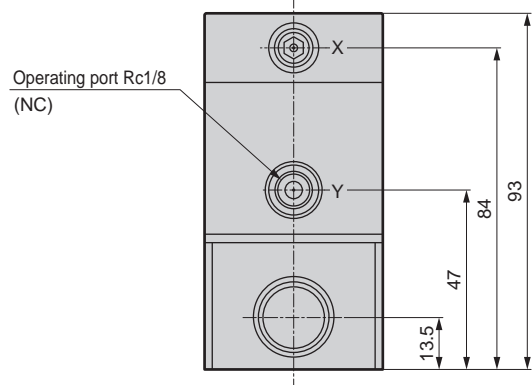
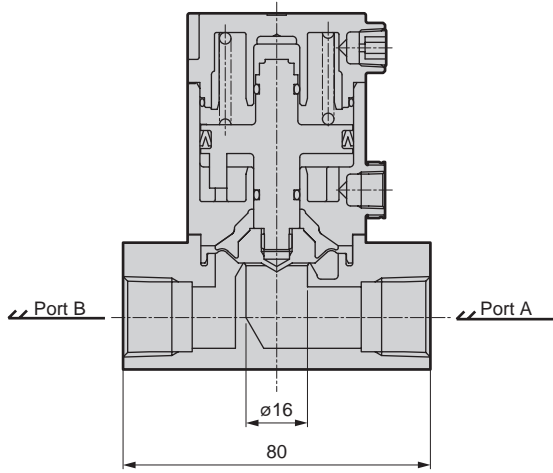
Dimensions

● Rc thread

· AMD4¹₂²/₃ 2-15



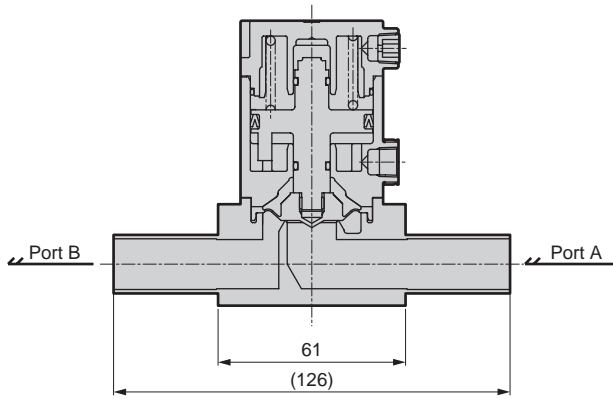
Actuator material	A	B
Blank	46	5
A	56	0



Dimensions

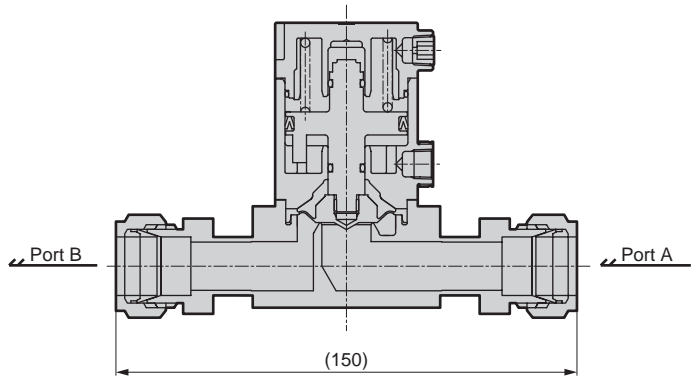
●SUS tube

· AMD4¹₂ 2-6BT



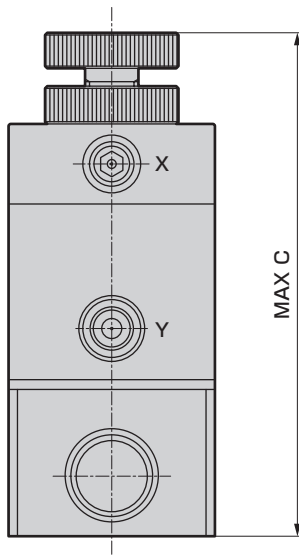
●Double barbed fitting

· AMD4¹₂ 2-12S



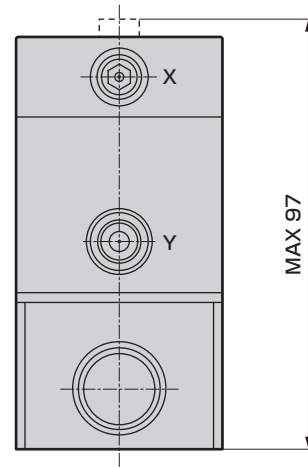
●With flow rate adjustment

· AMD4¹₂ 2-*-1



●With indicator

· AMD4¹₂ 2-*-6



Actuator material	C
Blank	117
A	119

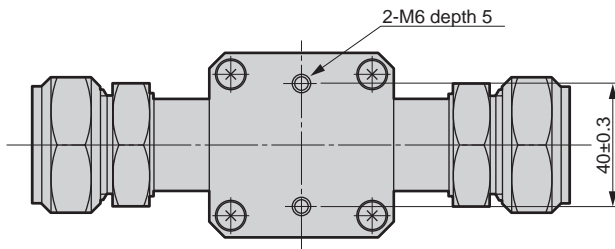
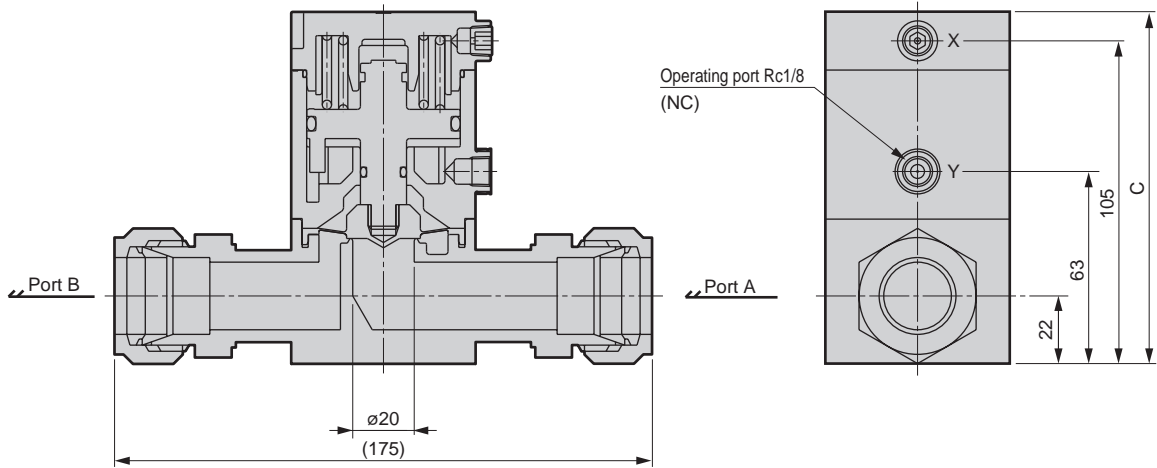
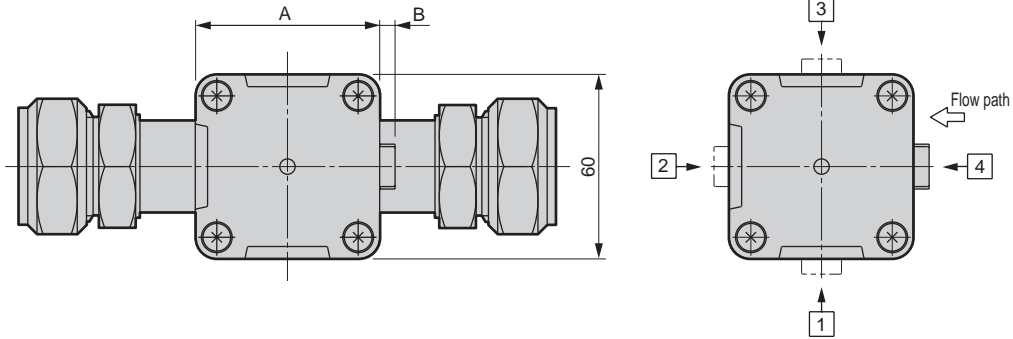
Air operated valve	Part3R	High pressure	Part2	High pressure	Part1	High pressure
		Metals-free		Metals-free		Metals-free
		Large bore size		Large bore size		Large bore size
Manual valve	Part3RN	Single unit	Part2	High pressure	Part1	High pressure
		Air operated integrated		Metals-free		Metals-free
		Drip prevention valve		Large bore size		Large bore size
Regulator		Pilot				
		Manual				
		Electric				
Flow rate adjusting valve		Manual				
		Manual Fine flow rate				
		Manual Fine flow rate Switch				
	Related products					

AMD3¹₂²/AMD4¹₃²/AMD5¹₃² Series

Dimensions

● Double barbed fitting

· AMD5¹₃²-16S

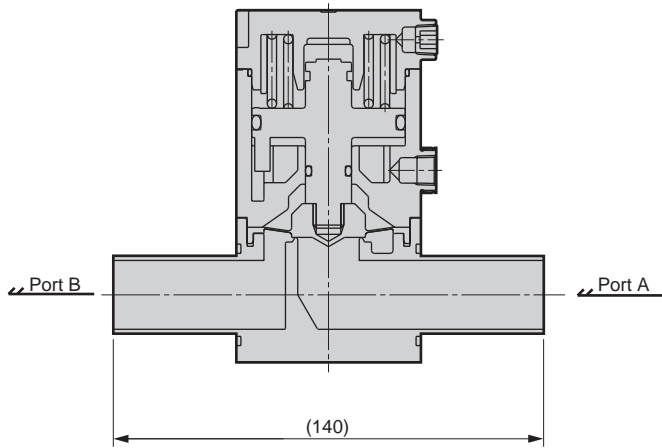


Actuator material	A	B	C
Blank	60	5	115
A	70	0	114

Dimensions

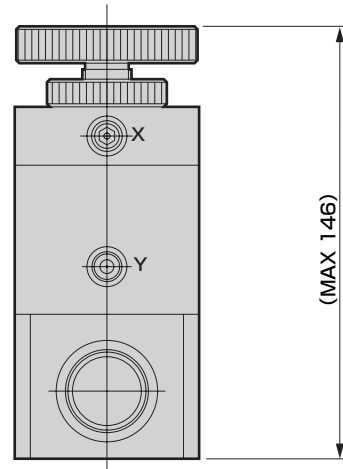
●SUS tube

· AMD5¹₃² 2-8BT



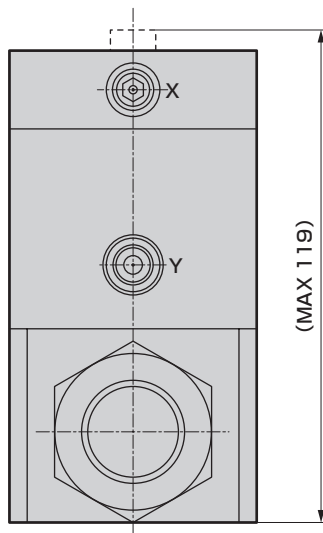
●With flow rate adjustment

· AMD5¹₃² 2-*-1



●With indicator

· AMD5¹₃² 2-*-6

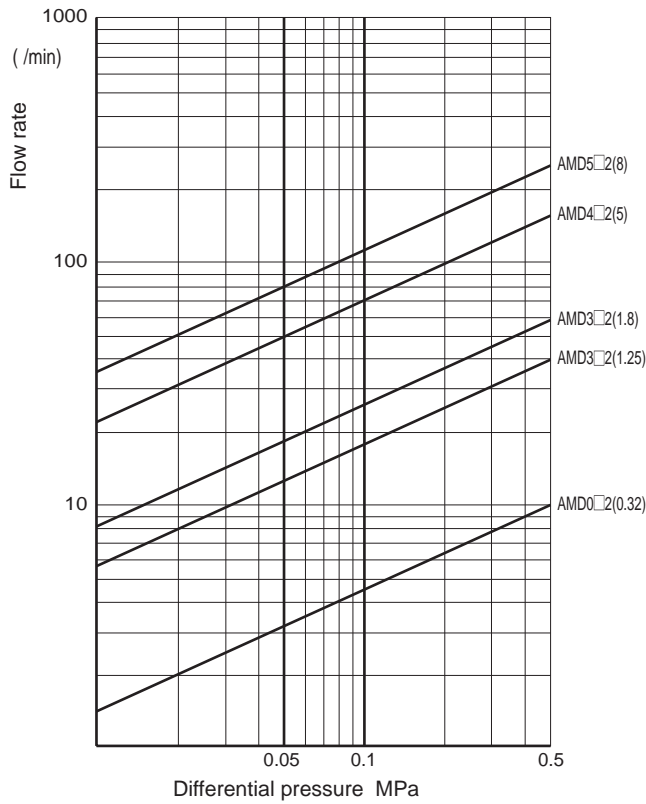


Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metals-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve		Regulator		Flow rate adjusting valve				

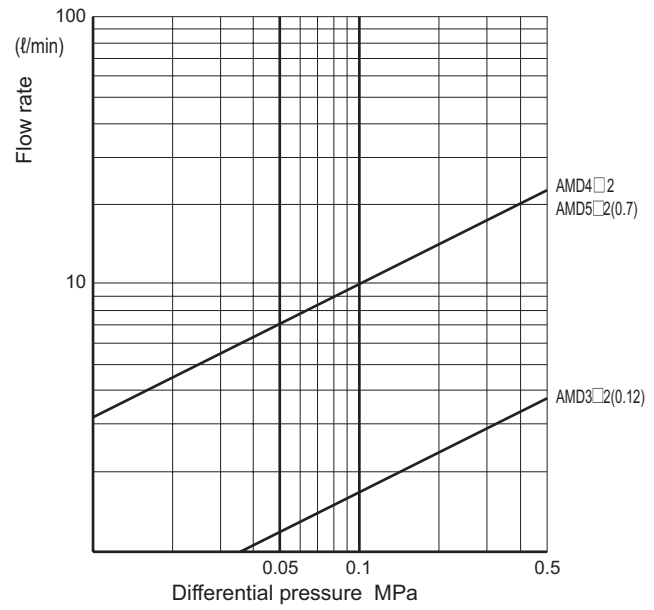
Flow characteristics

AMD0□2 to AMD5□2

● Flow characteristics (water)
Differential pressure - internal flow rate (): Cv



● Bypass Flow characteristics (water)
Differential pressure - internal flow rate (): Cv

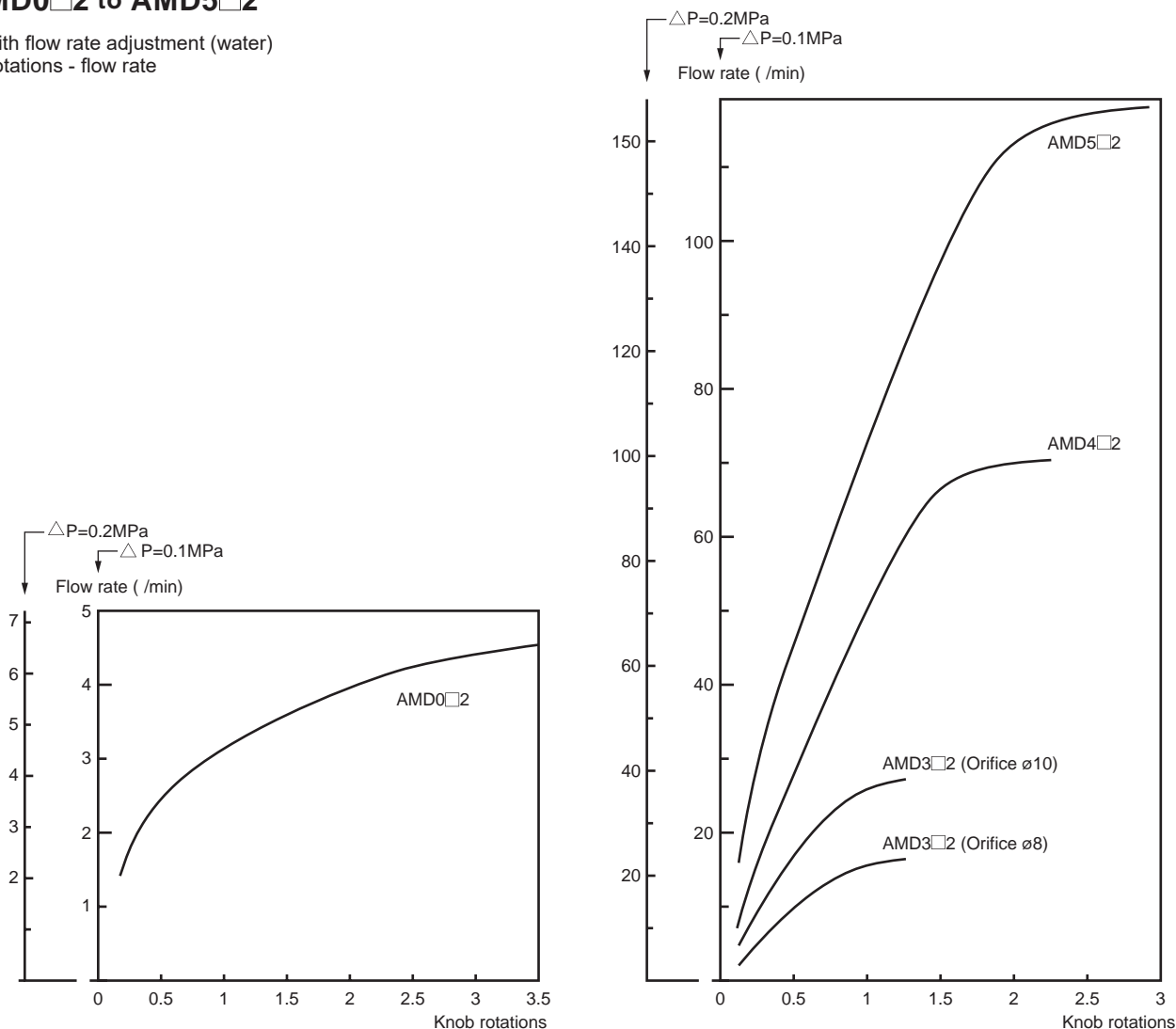


Part 3R	Part 2	Part 1	High pressure	Metal-free	Large bore size	PVC	Drainage	Part 3RN	Part 2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			High pressure							High pressure											
			Air operated valve							Manual valve											

Flow characteristics

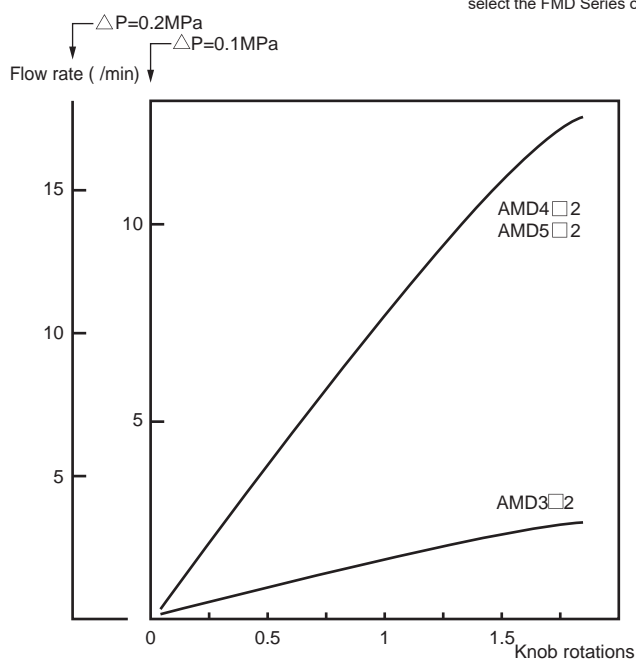
AMD0□2 to AMD5□2

- With flow rate adjustment (water)
Rotations - flow rate



*1: Vibration and flow rate fluctuation may occur depending on the working conditions such as fluid temperature, differential pressure, and opening. Confirm that the product is acceptable under actual working conditions before use. For precise flow rate adjustment, select the FMD Series or Fine flow rate adjusting valve (LYX).

- With bypass (water)
Rotations - flow rate



Part3R	Part2	Part1	Part3RR	Part2	Part1	Part3RR	Part2	Part1
High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure
Metar-free	Metar-free	Metar-free	Metar-free	Metar-free	Metar-free	Metar-free	Metar-free	Metar-free
Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size
Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride	Polyvinyl chloride
Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage
Air operated valve	Manual valve	Manual valve	Manual valve	Manual valve	Manual valve	Manual valve	Manual valve	Manual valve
Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit
Integrated	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated	Integrated
Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot
Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual
Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric
Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual
Manual/Fine flow rate	Manual/Fine flow rate	Manual/Fine flow rate	Manual/Fine flow rate	Manual/Fine flow rate	Manual/Fine flow rate	Manual/Fine flow rate	Manual/Fine flow rate	Manual/Fine flow rate
Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch
Related products	Related products	Related products	Related products	Related products	Related products	Related products	Related products	Related products



Air operated valve for chemical liquids (3-port valve)

AMG^{3/4/5}02 Series

● Connection tube size: $\varnothing 10$, $\varnothing 12$, $\varnothing 25$, 3/8", 1/2", 3/4", 1"



Export controlled items

*Eligibility: AMG402 and 502 only

Specifications

Item	AMG302	AMG402	AMG502
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C	5 to 90 (For high temperature: 5 to 160) (*5)		5 to 90 (*5)
Proof pressure MPa	1.0		
Working pressure (A→B) MPa	0 to 0.3 (*4...High pressure specification)		
Working pressure (B→A) MPa	0 to 0.1 (*4...High pressure specification)		
Valve seat leakage cm ³ /min	0 (water pressure)		
Back pressure MPa	0 to 0.1 (*4...High pressure specification)		
Ambient temperature °C	0 to 60		
Frequency	30 cycles/min. or less	20 cycles/min. or less	
Mounting orientation	Unrestricted		
Connection	O.D. $\varnothing 10/\varnothing 12$ tube connection (integrated fitting) O.D. 3/8", 1/2" tube connection (integrated fitting)	O.D. 3/4" tube connection (integrated fitting)	O.D. $\varnothing 25$ tube connection (integrated fitting) O.D. 1" tube connection (integrated fitting)
Orifice size	$\varnothing 6$ to $\varnothing 10$ (*3)	$\varnothing 14.7$ to $\varnothing 16$ (*3)	$\varnothing 20$
Operating section	Operating pressure MPa	0.3 to 0.5 (0.3 to 0.35 for high temperature)	
	Operating port	Rc1/8 (*2)	
Weight kg	0.44	1.0	2.1

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: Use a resin fitting for connection to the operating port. (When using a metal fitting, select one with reinforcing ring. However, a reinforcing ring cannot be selected for those with fluid code P for nitric acid and hydrofluoric acid.)

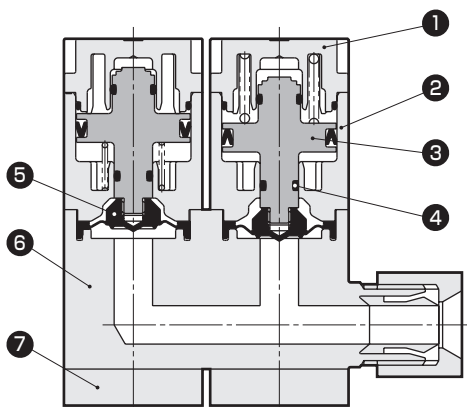
*3: Check the orifice of each connection in How to order.

*4: Refer to page 64 for high-pressure specifications.

*5: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Internal structure and parts list



Part No.	Part name	Material (by fluid code)		
		Standard/Y	M	P
1	Cover	PPS		PP
2	Cylinder	PPS		PP
3	Piston rod	PPS		PVDF
4	O-ring	FKM	EPDM	FKM
5	Diaphragm	PTFE		
6	Body	PTFE		
7	Mounting plate	PPS		PP

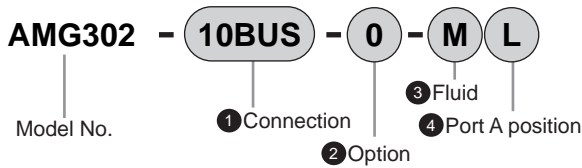
The material and structure may vary depending on the model number. Contact CKD for details.

Air operated valve	Part3R	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
Manual valve	Part3RR	High pressure	Metals-free	Large bore size		
	Part2					
Drip prevention valve		Single unit				Air operated integrated
Regulator		Pilot				
		Manual				
Flow rate adjusting valve		Electric				
		Manual				
		Manual/Fine flow rate				
		Fine level Switch				
		Related products				

AMG302 Series

How to order

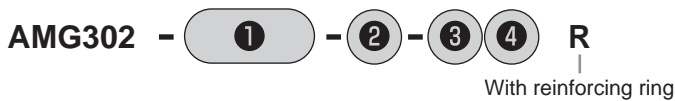
●AMG302 Series (connection: $\phi 10$, 3/8" tube connection)



		① Connection										
		10US	10BUS	10UP	10BUP	10UA	10BUA	10UR	10BUR	10UK	10BUK	10BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		$\phi 10 \times \phi 8$ tube connection	3/8" x 1/4" tube connection	$\phi 10 \times \phi 8$ tube connection	3/8" x 1/4" tube connection	$\phi 10 \times \phi 8$ tube connection	3/8" x 1/4" tube connection	$\phi 10 \times \phi 8$ tube connection	3/8" x 1/4" tube connection	$\phi 10 \times \phi 8$ tube connection	3/8" x 1/4" tube connection	3/8" x 1/4" tube connection
Code	Description	Orifice size $\phi 8$						$\phi 7$	$\phi 6$	$\phi 8$		$\phi 6.3$
	Body material	PTFE machined body										
② Option												
0	ON/OFF only	●	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●	●	●	●	●	●
③ Fluid												
Blank	Standard	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
M	For ammonia	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
P	For nitric acid, for hydrofluoric acid (*3)	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
Y	For high temperature (5 to 160°C) (*2)	●	●	●	●	●	●			●(*1)	●(*1)	
④ Port A position												
Blank	Right	●	●	●	●	●	●	●	●	●	●	●
L	Left	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring

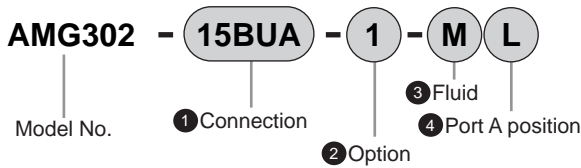


⚠ Precautions for model No. selection

- *1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.
- *2: It cannot be used for nitric acid or hydrofluoric acid.
- *3: If P is selected in ③, R with reinforcing ring cannot be selected.

How to order

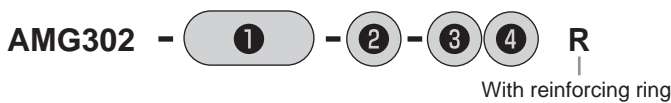
●AMG302 Series (connection: $\phi 12, 1/2"$ tube connection)



		① Connection										
		12US	15BUS	12UP	15BUP	12UA	15BUA	12UR	15BUR	12UK	15BUK	15BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		$\phi 12 \times \phi 10$ tube connection	$1/2" \times 3/8"$ tube connection	$\phi 12 \times \phi 10$ tube connection	$1/2" \times 3/8"$ tube connection	$\phi 12 \times \phi 10$ tube connection	$1/2" \times 3/8"$ tube connection	$\phi 12 \times \phi 10$ tube connection	$1/2" \times 3/8"$ tube connection	$\phi 12 \times \phi 10$ tube connection	$1/2" \times 3/8"$ tube connection	$1/2" \times 3/8"$ tube connection
Code	Description	$\phi 10$						$\phi 9$		$\phi 10$		$\phi 9.4$
Orifice size		$\phi 10$						$\phi 9$		$\phi 10$		$\phi 9.4$
Body material		PTFE machined body										
② Option												
0	ON/OFF only	●	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●	●	●	●	●	●
③ Fluid												
Blank	Standard	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
M	For ammonia	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
P	For nitric acid, for hydrofluoric acid (*3)	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
Y	For high temperature (5 to 160°C) (*2)	●	●	●	●	●	●			●(*1)	●(*1)	
④ Port A position												
Blank	Right	●	●	●	●	●	●	●	●	●	●	●
L	Left	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring



⚠ Precautions for model No. selection

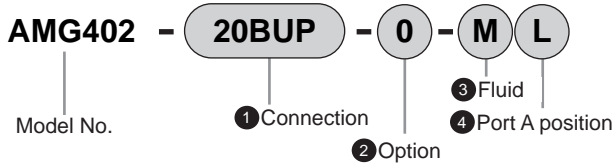
- *1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.
- *2: It cannot be used for nitric acid or hydrofluoric acid.
- *3: If P is selected in ③, R with reinforcing ring cannot be selected.

Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metals-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve		Regulator		Flow rate adjusting valve				

AMG402 Series

How to order

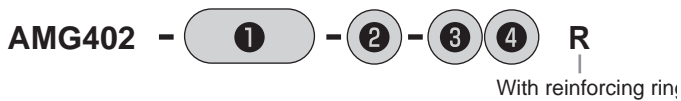
●AMG402 Series



① Connection		20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
		Super-type pillar integrated fitting	Super 300 type Pillar fitting P Series integrated	F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series integrated fitting	Final Lock Integrated fitting	Flaretek Fitting Integrated
3/4" / 8" tube connection							
Code	Description	Orifice size		ø16	ø15	ø16	ø14.7
Body material		PTFE machined body					
② Option							
0	ON/OFF only	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●
③ Fluid							
Blank	Standard	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*2)	●	●	●	●	●	●
Y	For high temperature (5 to 160°C) (*1)	●	●	●		●	
④ Port A position							
Blank	Right	●	●	●	●	●	●
L	Left	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring

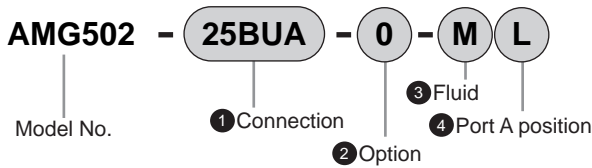


⚠ Precautions for model No. selection

- *1: It cannot be used for nitric acid or hydrofluoric acid.
- *2: If P is selected in ③, R with reinforcing ring cannot be selected.

How to order

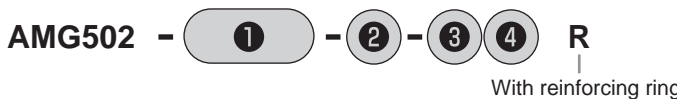
●AMG502 Series



		① Connection									
		25US	25BUS	25UP	25BUP	25BUA	25UR	25BUR	25UK	25BUK	25BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		ø25 x ø22 tube connection	1" x7/8" tube connection	ø25 x ø22 tube connection	1" x7/8" tube connection	1" x7/8" tube connection (*1)	ø25 x ø22 tube connection	1" x7/8" tube connection	ø25 x ø22 tube connection	1" x7/8" tube connection	1" x7/8" tube connection
Code	Description	Orifice size									
		ø20									
		Body material									
		PTFE machined body									
		② Option									
0	ON/OFF only	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●	●	●	●	●
		③ Fluid									
Blank	Standard	●	●	●	●	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*2)	●	●	●	●	●	●	●	●	●	●
		④ Port A position									
Blank	Right	●	●	●	●	●	●	●	●	●	●
L	Left	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring



⚠ Precautions for model No. selection

- *1: Can also be used for ø25 x ø22 tube connection.
- *2: If P is selected in ③, R with reinforcing ring cannot be selected.

Air operated valve	Part3R	High pressure
	Part2	Metal-free
	Part1	Large bore size
Manual valve	Part3RN	Polyvinyl chloride
	Part2	Drainage
	Part1	High pressure
Drip prevention valve	Part3R	Single unit
	Part2	Air operated Integrated
	Part1	Regulator
Flow rate adjusting valve	Part3R	Pilot
	Part2	Manual
	Part1	Electric
Related products	Part3R	Manual Fine flow rate
	Part2	Manual
	Part1	Fine level Switch

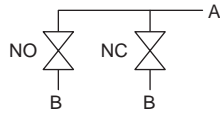
Dimensions

● ON/OFF only

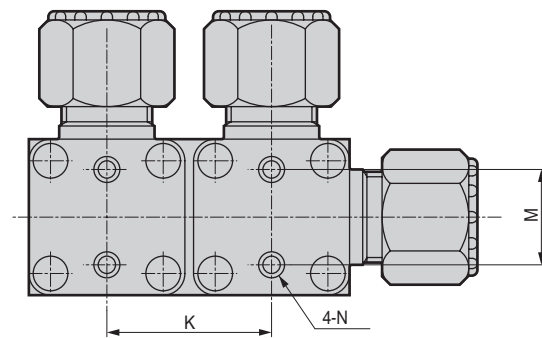
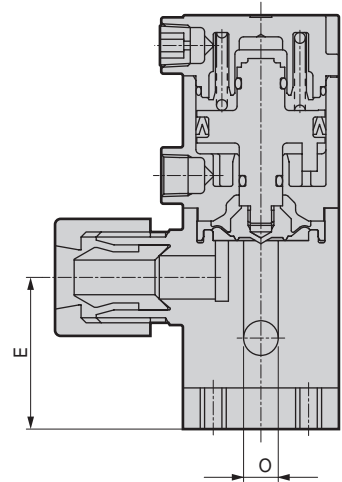
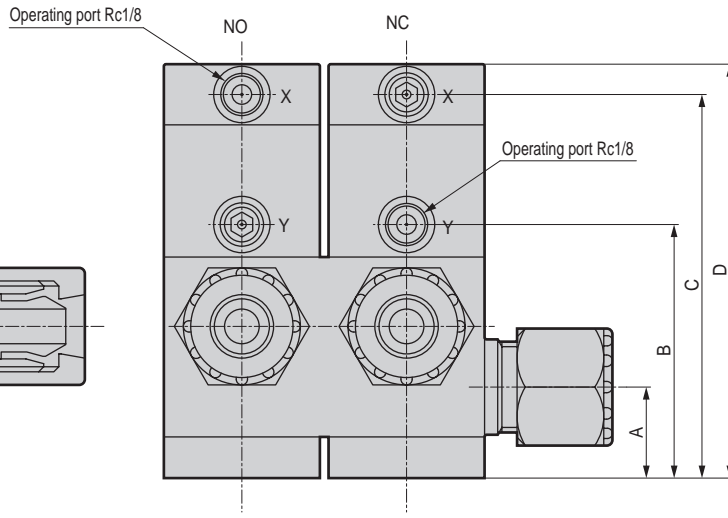
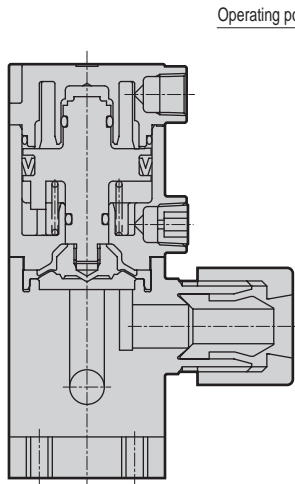
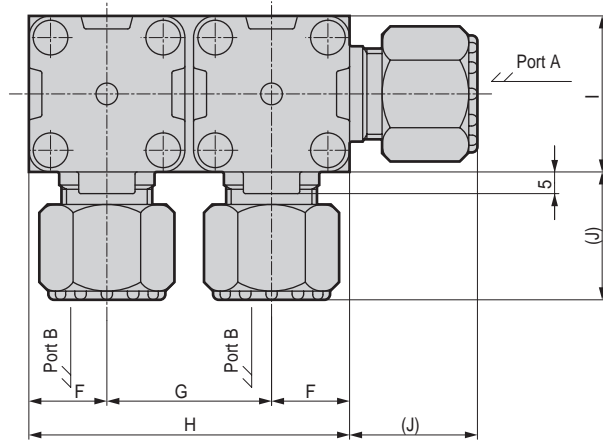
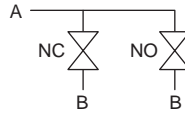
- AMG302- *1
- AMG402- *1
- AMG502- *1

Note: NC and NO arrangements differ by port A position.
The valve close to the port A side is NC, while the other is NO.

Port A position: Blank



Port A position: L



Dimensions

Model No.	A	B	C	D (by fluid code)		E	F	G	H	I	K	M	N
				Blank/M/Y	P								
AMG302	21	59	89	96	96	35	18	38	74	36	38±0.3	22±0.3	M6 depth 9
AMG402	27	79	116	125	126	46	23	48	94	46	48±0.4	28±0.3	M8 depth 10
AMG502	35	101	143	153	157	60	30	62	122	60	62±0.4	40±0.3	M8 depth 13

AMG3 (10 mm / 3/8")

*1 (Connector No.)	J	O
10US	25	8
10BUS	25	8
10UP	25	8
10BUP	25	8
10UA	21	8
10BUA	21	8
10UR	37	7
10BUR	39	6
10UK	30	8
10BUK	30	8
10BUW	31	6.3

AMG3(12mm / 1/2")

*1 (Connector No.)	J	O
12US	29.5	10
15BUS	29.5	10
12UP	29	10
15BUP	29	10
12UA	25	10
15BUA	25	10
12UR	37	9
15BUR	39	9
12UK	33	10
15BUK	33	10
15BUW	33.5	9.4

AMG4

*1 (Connector No.)	J	O
20BUS	39	16
20BUP	36	16
20BUA	31	16
20BUR	44	15
20BUK	36.5	16
20BUW	38	14.7

AMG5

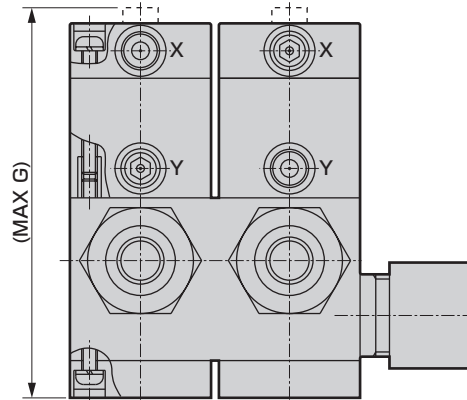
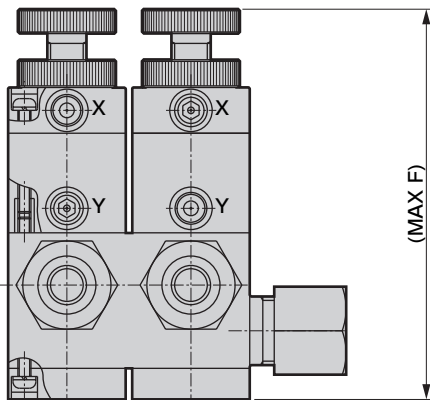
*1 (Connector No.)	J	O
25US	43.5	20
25BUS	43.5	20
25UP	43	20
25BUP	43	20
25BUA	40	20
25UR	49.5	20
25BUR	51	20
25UK	40.5	20
25BUK	40.5	20
25BUW	48	20

● With flow rate adjustment

· AMG*02-*-1

● With indicator

· AMG*02-*-6



Model No.	F (by fluid code)		G (by fluid code)	
	Blank/M/Y	P	Blank/M/Y	P
AMG302	120	120	98	98
AMG402	149	152	129	130
AMG502	185	192	158	162

Part3R
Part2
Part1
High pressure
Air operated valve
Metah-free
Large bore size
Polyvinyl chloride
Drainage
Part3RR
Part2
High pressure
Manual valve
Metah-free
Large bore size
Single unit
Drip prevention valve
Air operated integrated
Regulator
Pilot
Manual
Electric
Flow rate adjusting valve
Manual
Manual Fine flow rate
Flow rate
Fine level Switch
Related products



Air operated valve for chemical liquids (manifold/branch valve)

GAMD³₄₅*2 Series

- Station No. 1 to 5 stations
- Connection tube size: $\varnothing 10$, $\varnothing 12$, $\varnothing 25$, 3/8", 1/2", 3/4", 1"



Export controlled items

*Eligibility: GAMD4*2, 5*2 (*6)

Specifications

Item	GAMD3*2	GAMD4*2	GAMD5*2	
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)			
Fluid temperature °C	5 to 90 (For high temperature: 5 to 160) (*5)		5 to 90 (*5)	
Proof pressure MPa	1.0			
Working pressure (A→B) MPa	0 to 0.3 (*4...High pressure specification)			
Working pressure (B→A) MPa	0 to 0.1 (*4...High pressure specification)			
Valve seat leakage cm ³ /min	0 (water pressure)			
Back pressure MPa	0 to 0.1 (*4...High pressure specification)			
Ambient temperature °C	0 to 60			
Frequency	30 cycles/min. or less	20 cycle/min. or less		
Mounting orientation	Unrestricted			
Connection	O.D. $\varnothing 10/\varnothing 12$ tube connection (integrated fitting) O.D. 3/8" / 1/2" tube connection (integrated fitting)	O.D. 3/4" tube connection (integrated fitting)	O.D. $\varnothing 25$ tube connection (integrated fitting) O.D. 1" tube connection (integrated fitting)	
Orifice size	$\varnothing 6$ to $\varnothing 10$ (*3)	$\varnothing 14.7$ to $\varnothing 16$ (*3)	$\varnothing 20$	
Operating section	Operating pressure MPa	NC: 0.3 to 0.5, NO: 0.3 to 0.5 (0.3 to 0.35 for high temperature), double acting 0.3 to 0.4 (0.2 to 0.25 for high temperature)		
	Operating port	Rc1/8 (*2)		
Weight kg	1 station	0.25	0.51	1.0
	2 stations	0.50	1.0	2.0
	3 stations	0.75	1.5	3.0
	4 stations	1.0	2.0	4.0
	5 stations	1.3	2.5	—

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: Use a resin fitting for connection to the operating port. (When using a metal fitting, select one with a reinforcing ring. However, a reinforcing ring cannot be selected for those with fluid code P for nitric acid and hydrofluoric acid.)

*3: Check the orifice of each connection in How to order.

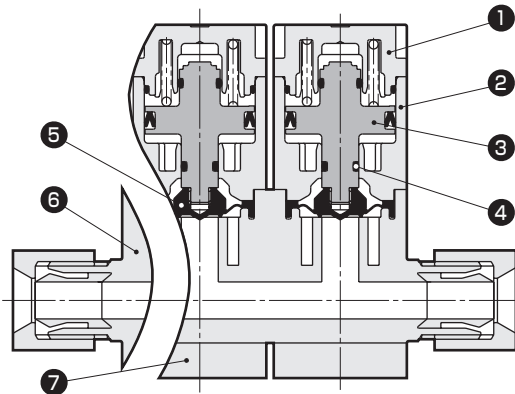
*4: Refer to page 64 for high-pressure specifications.

*5: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

*6: GAMD3*2 is not applicable. (for individual piping of secondary side port)

Always read the precautions on Intro Pages 7 to 14 before use.

Internal structure and parts list



Part No.	Part name	Material (by fluid code)		
		Standard/Y	M	P
1	Cover	PPS		
2	Cylinder	PPS		
3	Piston rod	PPS		
4	O-ring	FKM	EPDM	FKM
5	Diaphragm	PTFE		
6	Body	PTFE		
7	Mounting plate	PPS		PP

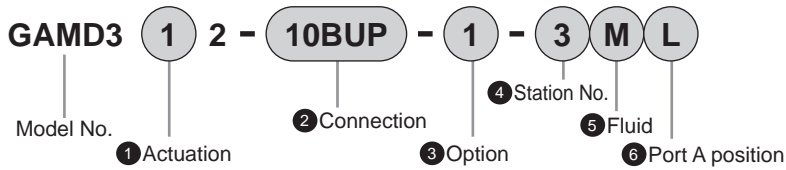
The material and structure may vary depending on the model number. Contact CKD for details.

Air operated valve	Part3R	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Manual valve	Part2	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Drip prevention valve	Single unit	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Air operated integrated	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Regulator	Pilot	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Manual	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Electric	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Manual	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Manual/Fine flow rate	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Fine level Switch	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	
Related products	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Drainage

GAMD3*2 Series

How to order

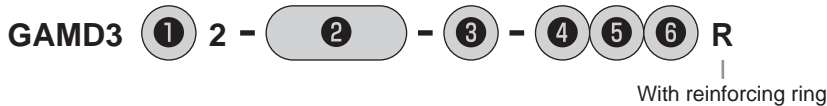
●GAMD3*2 Series (connection: $\phi 10$, 3/8" tube connection)



		② Connection										
		10US	10BUS	10UP	10BP	10UA	10BUA	10UR	10BUR	10UK	10BUK	10BUW
		Super Type Pillar fitting Integrated	Super Type Pillar fitting P series integrated	F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated	Flaretek Fitting Integrated			
		$\phi 10 \times \phi 8$ tube connection	$3/8" \times 1/4"$ tube connection	$\phi 10 \times \phi 8$ tube connection	$3/8" \times 1/4"$ tube connection	$\phi 10 \times \phi 8$ tube connection	$3/8" \times 1/4"$ tube connection	$\phi 10 \times \phi 8$ tube connection	$3/8" \times 1/4"$ tube connection	$\phi 10 \times \phi 8$ tube connection	$3/8" \times 1/4"$ tube connection	$3/8" \times 1/4"$ tube connection
Code	Description	$\phi 8$						$\phi 7$	$\phi 6$	$\phi 8$		$\phi 6.3$
Orifice size												
Body material		PTFE machined body										
① Actuation												
1	NC (normally closed)	●	●	●	●	●	●	●	●	●	●	●
2	NO (normally open)	●	●	●	●	●	●	●	●	●	●	●
3	Double acting	●	●	●	●	●	●	●	●	●	●	●
③ Option												
0	ON/OFF only	●	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●	●	●	●	●	●
④ Station No.												
1	One station											
to	to	●	●	●	●	●	●	●	●	●	●	●
5	5 stations											
⑤ Fluid												
Blank	Standard	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
M	For ammonia	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
P	For nitric acid, for hydrofluoric acid (*3)	●	●	●	●	●	●	●	●	●(*1)	●(*1)	●
Y	For high temperature (5 to 160°C) (*2)	●	●	●	●	●	●			●(*1)	●(*1)	
⑥ Port A position												
Blank	Right	●	●	●	●	●	●	●	●	●	●	●
L	Left	●	●	●	●	●	●	●	●	●	●	●
W	Both sides	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring (indicate R at the end of the model No.)

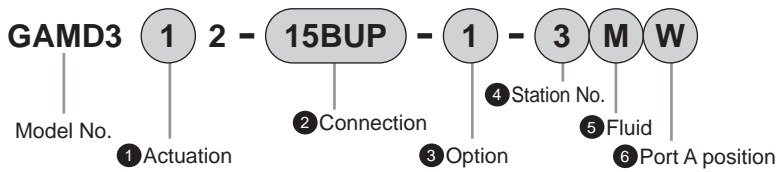


⚠ Precautions for model No. selection

- *1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.
- *2: It cannot be used for nitric acid or hydrofluoric acid.
- *3: If P is selected in ⑤, R with reinforcing ring cannot be selected.

How to order

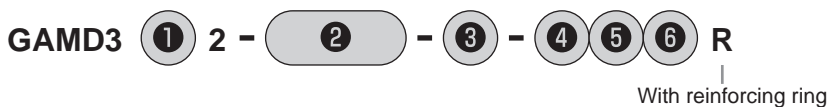
●GAMD3*2 Series (connection: ø12, 1/2" tube connection)



		② Connection											
		12US	15BUS	12UP	15BUP	12UA	15BUA	12UR	15BUR	12UK	15BUK	15BUW	
		Super Type Pillar fitting Integrated	Super 300 Pillar fitting P series integrated	F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting	Final Lock Fitting Integrated	Flaretek Fitting Integrated						
		ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	
Code	Description	ø10						ø9		ø10		ø9.4	
Orifice size													
Body material		PTFE machined body											
① Actuation													
1	NC (normally closed)	●	●	●	●	●	●	●	●	●	●	●	
2	NO (normally open)	●	●	●	●	●	●	●	●	●	●	●	
3	Double acting	●	●	●	●	●	●	●	●	●	●	●	
③ Option													
0	ON/OFF only	●	●	●	●	●	●	●	●	●	●	●	
1	With flow rate adjustment	●	●	●	●	●	●	●	●	●	●	●	
6	With indicator	●	●	●	●	●	●	●	●	●	●	●	
④ Station No.													
1	One station												
to	to	●	●	●	●	●	●	●	●	●	●	●	
5	5 stations												
⑤ Fluid													
Blank	Standard	●	●	●	●	●	●	●	●	● (*1)	● (*1)	●	
M	For ammonia	●	●	●	●	●	●	●	●	● (*1)	● (*1)	●	
P	For nitric acid, for hydrofluoric acid (*3)	●	●	●	●	●	●	●	●	● (*1)	● (*1)	●	
Y	For high temperature (5 to 160°C) (*2)	●	●	●	●	●	●			● (*1)	● (*1)		
⑥ Port A position													
Blank	Right	●	●	●	●	●	●	●	●	●	●	●	
L	Left	●	●	●	●	●	●	●	●	●	●	●	
W	Both sides	●	●	●	●	●	●	●	●	●	●	●	

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring (indicate R at the end of the model No.)



⚠ Precautions for model No. selection

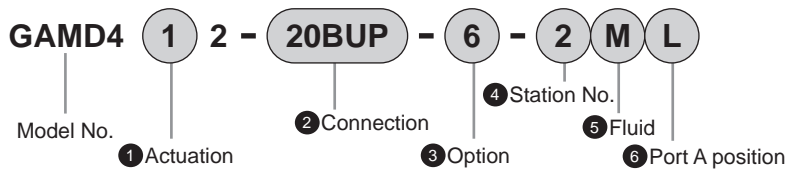
- *1: Since the Final Lock Fitting Nut and operating air piping may interfere, be sure to check the dimensions before making the selection.
- *2: It cannot be used for nitric acid or hydrofluoric acid.
- *3: If P is selected in ⑤, R with reinforcing ring cannot be selected.

Part3R	Part2	Part1	High pressure	Metar-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metar-free	Large bore size	Single unit	Air operated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve						Manual valve				Drip prevention valve		Regulator		Flow rate adjusting valve				

GAMD4*2 Series

How to order

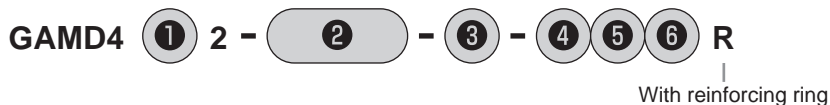
●GAMD4*2 Series



		② Connection					
		20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
		Super-type pillar integrated fitting	Super 300 type Pillar fitting P Series integrated	F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting	Final Lock Integrated fitting	Flaretek Integrated fitting
		3/4" x5/8" tube connection					
Code	Description	Orifice size		ø16	ø15	ø16	ø14.7
Body material		PTFE machined body					
① Actuation							
1	NC (normally closed)	●	●	●	●	●	●
2	NO (normally open)	●	●	●	●	●	●
3	Double acting	●	●	●	●	●	●
③ Option							
0	ON/OFF only	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●
④ Station No.							
1	One station						
to	to	●	●	●	●	●	●
5	5 stations						
⑤ Fluid							
Blank	Standard	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*2)	●	●	●	●	●	●
Y	For high temperature (5 to 160°C) (*1)	●	●	●		●	
⑥ Port A position							
Blank	Right	●	●	●	●	●	●
L	Left	●	●	●	●	●	●
W	Both sides	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring (indicate R at the end of the model No.)



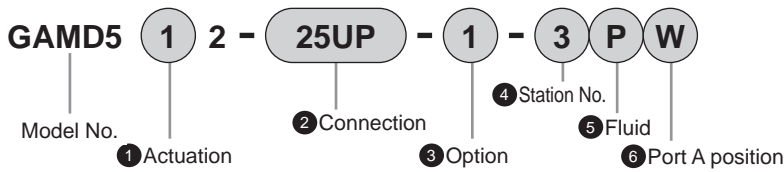
⚠ Precautions for model No. selection

*1: It cannot be used for nitric acid or hydrofluoric acid.

*2: If P is selected in ⑤, R with reinforcing ring cannot be selected.

How to order

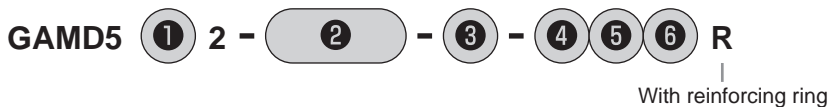
●GAMD5*2 Series



		② Connection									
		25US	25BUS	25UP	25BUP	25BUA	25UR	25BUR	25UK	25BUK	25BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection (*1)	ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection
Code	Description	Orifice size ø20									
Body material		PTFE machined body									
① Actuation											
1	NC (normally closed)	●	●	●	●	●	●	●	●	●	●
2	NO (normally open)	●	●	●	●	●	●	●	●	●	●
3	Double acting	●	●	●	●	●	●	●	●	●	●
③ Option											
0	ON/OFF only	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●	●	●	●	●
6	With indicator	●	●	●	●	●	●	●	●	●	●
④ Station No.											
1	One station										
to	to	●	●	●	●	●	●	●	●	●	●
4	4 stations										
⑤ Fluid											
Blank	Standard	●	●	●	●	●	●	●	●	●	●
M	For ammonia	●	●	●	●	●	●	●	●	●	●
P	For nitric acid, for hydrofluoric acid (*2)	●	●	●	●	●	●	●	●	●	●
⑥ Port A position											
Blank	Right	●	●	●	●	●	●	●	●	●	●
L	Left	●	●	●	●	●	●	●	●	●	●
W	Both sides	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. of operating port with reinforcing ring (indicate R at the end of the model No.)



⚠ Precautions for model No. selection

- *1: Can also be used for ø25 x ø22 tube connection.
- *2: If P is selected in ⑤, R with reinforcing ring cannot be selected.

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
Manual valve	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated
	Part2					
	Part1					
Regulator	Electric	Flow rate adjusting valve	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Manual					
	Manual Fine flow rate					

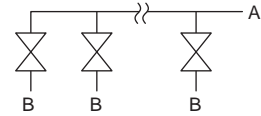
GAMD³₅*² Series

Dimensions

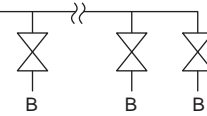
● ON/OFF only

- GAMD3*2- *1
- GAMD4*2- *1
- GAMD5*2- *1

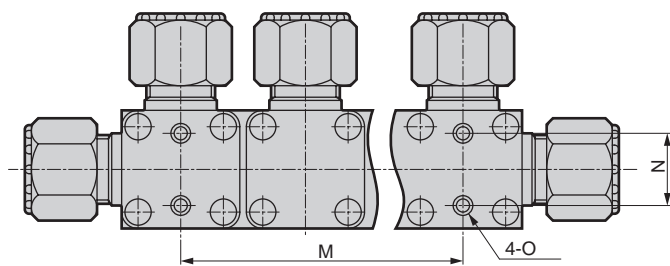
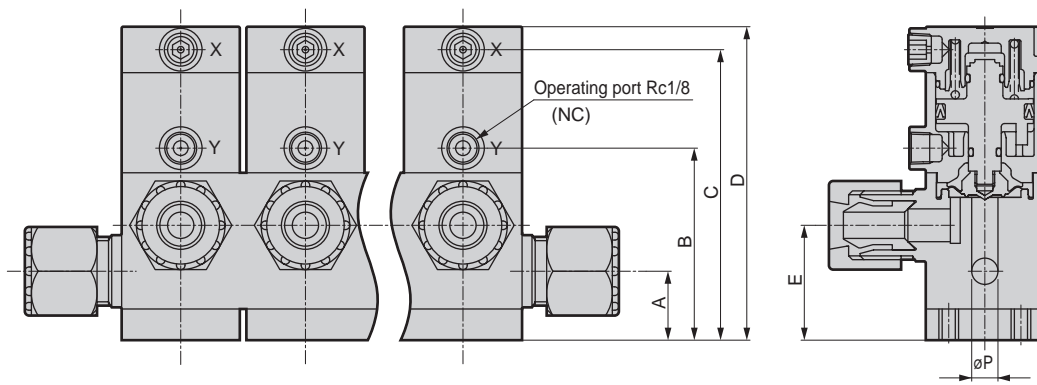
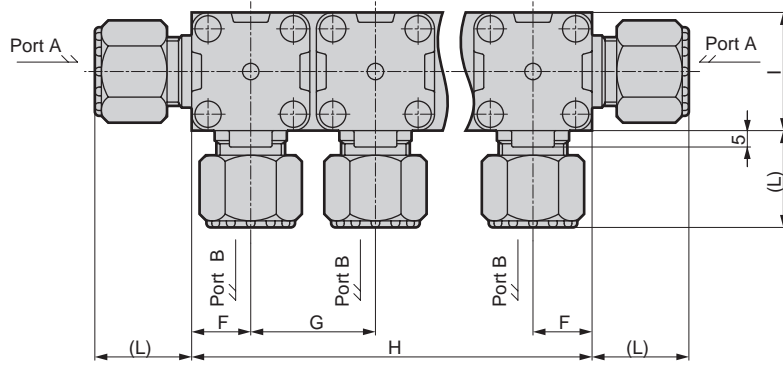
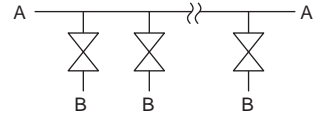
Port A position: Blank



Port A position: L



Port A position: W



Part 3R	Part 2	Part 1	High pressure	Metal-free	Large bore size	PVC	Drainage	Part 3RN	Part 2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
Air operated valve								Manual valve					Single unit	Drip prevention valve	Regulator			Flow rate adjusting valve			

Dimensions

Station No.	Model No.	A	B	C	D (by fluid code)		E	F	G	H	I	M	N	O
					Blank/M/Y	P								
1	GAMD3*2	21	59	89	96	96	35	18	38	36	36	-	22±0.3	M6 depth 9
	GAMD4*2	27	79	116	125	126	46	23	48	46	46	-	28±0.3	M8 depth 10
	GAMD5*2	35	101	143	153	157	60	30	62	60	60	-	40±0.3	M8 depth 13
2	GAMD3*2	21	59	89	96	96	35	18	38	74	36	38±0.3	22±0.3	M6 depth 9
	GAMD4*2	27	79	116	125	126	46	23	48	94	46	48±0.4	28±0.3	M8 depth 10
	GAMD5*2	35	101	143	153	157	60	30	62	122	60	62±0.4	40±0.3	M8 depth 13
3	GAMD3*2	21	59	89	96	96	35	18	38	112	36	76±0.4	22±0.3	M6 depth 9
	GAMD4*2	27	79	116	125	126	46	23	48	142	46	96±0.5	28±0.3	M8 depth 10
	GAMD5*2	35	101	143	153	157	60	30	62	184	60	124±0.5	40±0.3	M8 depth 13
4	GAMD3*2	21	59	89	96	96	35	18	38	150	36	114±0.5	22±0.3	M6 depth 9
	GAMD4*2	27	79	116	125	126	46	23	48	190	46	144±0.5	28±0.3	M8 depth 10
	GAMD5*2	35	101	143	153	157	60	30	62	246	60	186±0.7	40±0.3	M8 depth 13
5	GAMD3*2	21	59	89	96	96	35	18	38	188	36	152±0.7	22±0.3	M6 depth 9
	GAMD4*2	27	79	116	125	126	46	23	48	238	46	192±0.7	28±0.3	M8 depth 10

GAMD3*2 (10 mm / 3/8")

*1 (Connector No.)	L	P
10US	25	8
10BUS	25	8
10UP	25	8
10BUP	25	8
10UA	21	8
10BUA	21	8
10UR	37	7
10BUR	39	6
10UK	30	8
10BUK	30	8
10BUW	31	6.3

GAMD3*2 (12 mm, 1/2")

*1 (Connector No.)	L	P
12US	29.5	10
15BUS	29.5	10
12UP	29	10
15BUP	29	10
12UA	25	10
15BUA	25	10
12UR	37	9
15BUR	39	9
12UK	33	10
15BUK	33	10
15BUW	33.5	9.4

GAMD4*2

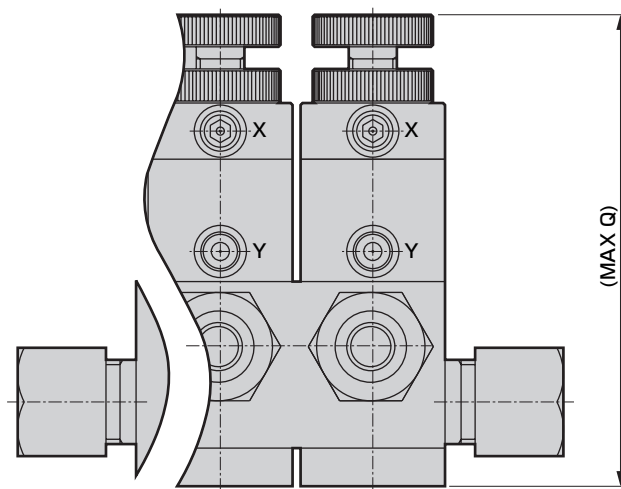
*1 (Connector No.)	L	P
20BUS	39	16
20BUP	36	16
20BUA	31	16
20BUR	44	15
20BUK	36.5	16
20BUW	38	14.7

GAMD5*2

*1 (Connector No.)	L	P
25US	43.5	20
25BUS	43.5	20
25UP	43	20
25BUP	43	20
25BUA	40	20
25UR	49.5	20
25BUR	51	20
25UK	40.5	20
25BUK	40.5	20
25BUW	48	20

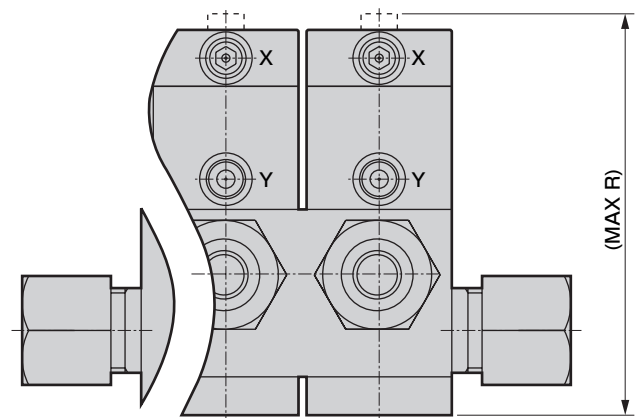
● With flow rate adjustment

· GAMD**2*-1



● With indicator

· GAMD**2*-6



Model No.	Q (by fluid code)		R (by fluid code)	
	Blank/M/Y	P	Blank/M/Y	P
GAMD3*2	120	120	98	98
GAMD4*2	149	152	129	130
GAMD5*2	185	192	158	162

Part3R
 Part2
 Part1
 Air operated valve
 High pressure
 Metal-free
 Large bore size
 Polyvinyl chloride
 Drainage
 Part3RN
 Part2
 Manual valve
 High pressure
 Metal-free
 Large bore size
 Single unit
 Air operated integrated
 Drip prevention valve
 Regulator
 Pilot
 Manual
 Electric
 Flow rate adjusting valve
 Manual
 Manual Fine flow rate
 Fine level Switch
 Related products

Air operated valve for chemical liquids
High pressure specification

AMD³₄⁵*2, AMG³₄⁵ 02, GAMD³₄⁵*2 Series



Item	B	Q
pressure specification		
Fluid temperature °C	5 to 90	
Working pressure MPa	Refer to Fig. 1 below	Refer to Fig. 2 below
Back pressure MPa	Refer to Fig. 1 below	Refer to Fig. 2 below
Operating pressure MPa	NC/NO: 0.4 to 0.5 Double acting: 0.35 to 0.4	NC/NO: 0.5 to 0.6 Double acting: 0.4 to 0.45 (*2)

*1: Other specifications and dimensions are the same as standard. However, the fluid temperature is 5 to 90°C. For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.
*2: NC for AMD5*2, AMG5*2, and GAMD5*2 0.5 to 0.6, NO: 0.45 to 0.5, Double acting: 0.35 to 0.4.

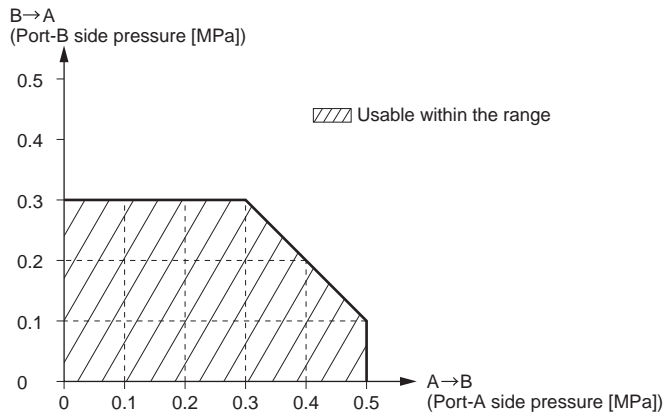


Fig 1: Usable fluid pressure range (B specification)

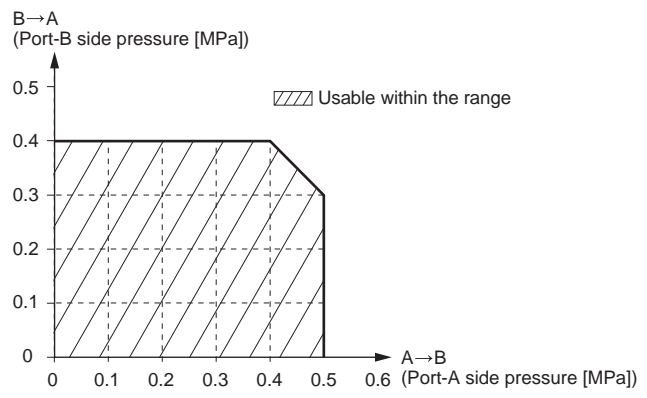


Fig 2: Usable fluid pressure range (Q specification)

How to order

AMD³₄⁵*2 Series

AMD³₄⁵ ① 2 - 15BUS - ③ ④ P B

① Actuation

② Connection ③ Option ④ Operating port direction

⑥ High pressure specification

B	0.3 MPa specification for both ports
Q	0.4 MPa specification for both ports

⚠️ Precautions for model No. selection

*1: ① to ⑤ are the same as standard. Select from the page for each model. (AMD3*2, 4*2, 5*2: Page 24)

*2: When combining with operating port with reinforcing ring (R) and bottom mounting (X), fill in the model No. in the order of ③ ④ ⑤ R ⑥ X.

*3: If Item ⑥ is Q, bypass cannot be specified.

AMD³₄⁵*2 Series (stainless steel body)

AMD³₄⁵ ① 2 - ⑧ - ③ ④ - A - ⑤ B

① Actuation

② Connection ③ Option ④ Actuator material

⑥ High pressure specification

B	0.3 MPa specification for both ports
Q	0.4 MPa specification for both ports

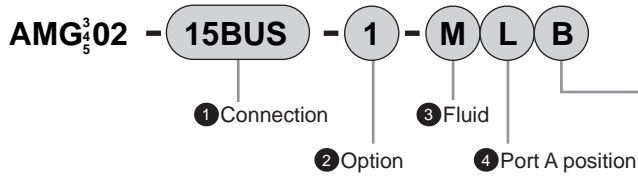
⚠️ Precautions for model No. selection

*1: ① to ⑤ are the same as standard stainless steel body. Select from the page for each model. However, if ④ is blank, omit the previous hyphen when filling out the model No. (AMD3*2, 4*2, 5*2: Page 36)

⚠️ Always read the precautions on Intro Pages 7 to 14 before use.

How to order

AMG³₅⁴ 02 Series

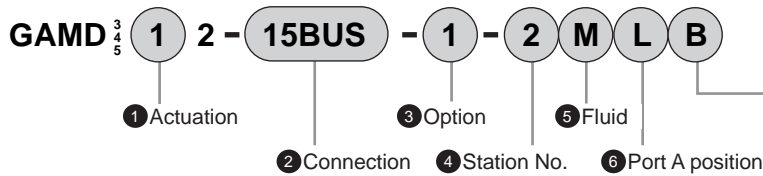


5 High pressure specification	
B	0.3 MPa specification for both ports
Q	0.4 MPa specification for both ports

⚠ Precautions for model No. selection

- *1: ① to ④ are the same as standard. Select from pages 48 to 55.
- *2: When combining with operating port with reinforcing ring (R), fill in the model No. in the order of ③ ④ R ⑤.

GAMD³₅⁴*2 Series

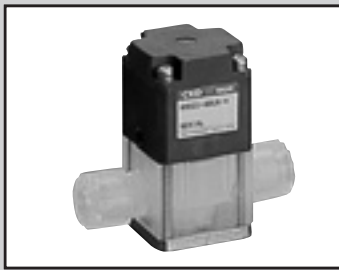


7 High pressure specification	
B	0.3 MPa specification for both ports
Q	0.4 MPa specification for both ports

⚠ Precautions for model No. selection

- *1: ① to ⑥ are the same as standard. Select from pages 56 to 63.
- *2: When combining with operating port with reinforcing ring (R), fill in the model No. in the order of ④ ⑤ ⑥ R ⑦.

Air operated valve	Part3R	Manual valve	Part2
	High pressure		Part1
	Metah-free		
	Large bore size		
Drip prevention valve	Polyvinyl chloride	Regulator	Drainage
	Part3RR		High pressure
	Part2		Metah-free
	Single unit		Large bore size
Flow rate adjusting valve	Air operated integrated	Manual flow rate	Single unit
	Pilot		Manual
	Electric		Manual
	Manual Fine flow rate		Manual Fine flow rate
Related products	Fine level Switch		



Air operated valve for chemical liquids

AMDZ¹/₂/₃/AMDO¹/₂/₃ Series

● Connection tube size: ø3, ø6, ø6.35, 1/8", 1/4", (Rc1/8)



Specifications

Item	AMDZ *- * 2	AMDZ**4	AMDO**4
Working fluid	Chemical liquid, pure water, N ₂ gas, air (*3)		
Fluid temperature °C	5 to 80		
Proof pressure MPa	1.0		
Working pressure (A→B) MPa	0 to 0.5	0 to 0.3	0 to 0.5
Working pressure (B→A) MPa	0 to 0.3		
Valve seat leakage cm ³ /min	0 (water pressure)		
Back pressure MPa	0 to 0.3	0 to 0.1	0 to 0.3
Ambient temperature °C	0 to 60		
Frequency	30 cycles/min. or less		
Mounting orientation	Unrestricted		
Connection	Rc1/8 O.D. ø3 tube connection O.D. 1/8" tube connection	O.D. ø6 tube connection O.D. 1/4" tube connection	Rc1/8 O.D. ø6 tube connection O.D. 1/4" tube connection
Orifice size	ø2	ø3.5	ø4
Cv value	0.08 (*1, 2)	0.25	0.32 (*2)
Operating section	Operating pressure MPa	NC/NO: 0.3 to 0.5, double acting: 0.2 to 0.3	NC/NO: 0.35 to 0.5, double acting: 0.2 to 0.3
	Operating port	M5	
Weight kg	0.06	0.06	0.11

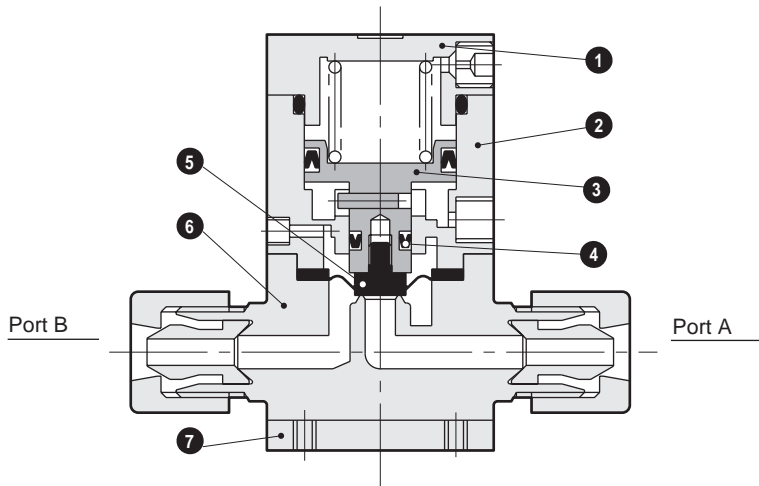
*1: The PFA body with Rc1/8 connection will have Cv = 0.12.

*2: The SUS body Cv will be about 80% of that of the PFA body with Rc1/8 connection.

*3: Cannot be used with acidic fluids. For use with acidic fluids, refer to pages 2 and 20. Check the compatibility of product structural materials, working fluids and atmosphere.

*4: Refer to page 70 for flow characteristics.

Internal structure and parts list



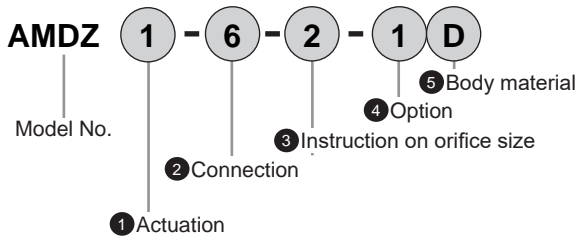
Part No.	Part name	Material (by body material)	
		Standard	D
1	Cover	PPS	
2	Cylinder	PPS	
3	Piston rod	SUS303	
4	Y packing	NBR	
5	Diaphragm	PTFE	
6	Body	PFA, PTFE	SUS316
7	Mounting plate	SUS304	—

The material and structure may vary depending on the model number. Contact CKD for details.

Always read the precautions on Intro Pages 7 to 14 before use.

How to order

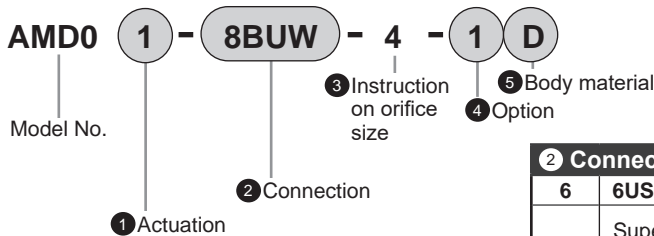
●AMDZ Series



		② Connection									
		6	3US	6BUS	3UP	6BUP	3UF	3UR	6BUR	6UR	8BUR
Rc 1/8		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20 Series Integrated fitting		F-LOCK 60 Series Integrated fitting			
		ø3 x ø2 tube connection	1.8" x 0.086" tube connection	ø3 x ø2 tube connection	1.8" x 0.086" tube connection	ø3 x ø2 tube connection	ø3 x ø2 tube connection	ø3 x ø2 tube connection	1/8" x 1/16" tube connection	ø6 x ø4 tube connection	1/4" x 5/32" tube connection
Code	Description										
① Actuation											
1	NC (normally closed)	●	●	●	●	●	●	●	●	●	●
2	NO (normally open)	●	●	●	●	●	●	●	●	●	●
3	Double acting	●	●	●	●	●	●	●	●	●	●
③ Orifice size											
2	Refer to text at right	ø2						ø1.6			
4	Refer to text at right								ø3.5		
④ Option											
Blank	ON/OFF only	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment (NC only)	●	●	●	●	●	●	●	●	●	●
⑤ Body material											
Blank	PFA molded body or PTFE machined body	PFA	PFA		PFA	PTFE	PTFE	PTFE		PFA	
D	Stainless steel body	●									

* Machined PTFE products will be manufactured on a per-order basis.

●AMD0 Series



		② Connection											
		6	6US	8BUS	6UP	8BUP	6UF	8BUF	6UR	8BUR	6UK	8BUK	8BUW
Rc 1/8		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 200 Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated	
		ø6 x ø4 tube connection	1/4" x 5/32" tube connection	ø6 x ø4 tube connection	1/4" x 5/32" tube connection	ø6 x ø4 tube connection	ø6.35 x ø4.3 tube connection	ø6 x ø4 tube connection	1/4" x 5/32" tube connection	ø6 x ø4 tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection
Code	Description												
① Actuation													
1	NC (normally closed)	●	●	●	●	●	●	●	●	●	●	●	●
2	NO (normally open)	●	●	●	●	●	●	●	●	●	●	●	●
3	Double acting	●	●	●	●	●	●	●	●	●	●	●	●
③ Orifice size													
4	Refer to text at right	ø4						ø3.5		ø4		ø3	
④ Option													
Blank	ON/OFF only	●	●	●	●	●	●	●	●	●	●	●	●
1	With flow rate adjustment	●	●	●	●	●	●	●	●	●	●	●	●
⑤ Body material													
Blank	PFA molded body or PTFE machined body	PFA	PFA		PFA	PFA	PFA	PFA	PFA	PFA	PFA		PTFE
D	Stainless steel body	●											

* Machined PTFE products will be manufactured on a per-order basis.

⚠ Precautions for model No. selection

*1: Refer to pages 2 and 20 if selecting all-resin for an actuator that can be used for acidic fluids.

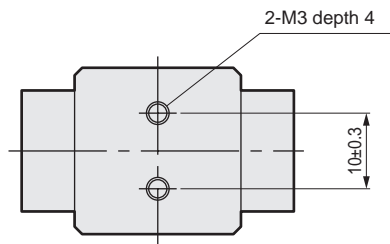
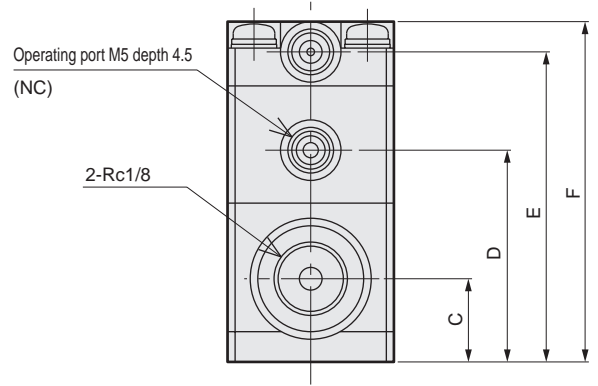
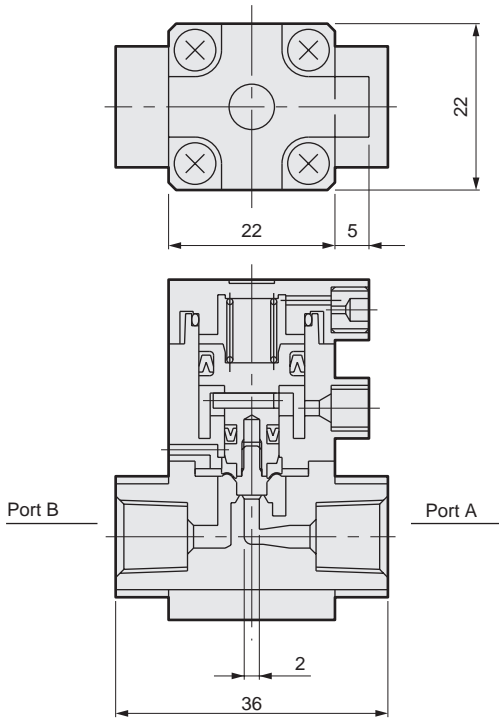
*2: The low-sliding (diaphragm) actuator is also supported to reduce foaming and improve liquid drainage performance. Contact CKD for details.

Part3R	High pressure
Part2	Manual valve
Part1	Air operated valve
High pressure	High pressure
Metall-free	Metall-free
Large bore size	Large bore size
Polyvinyl chloride	Polyvinyl chloride
Drainage	Drainage
Part3RN	High pressure
Part2	Manual valve
High pressure	High pressure
Metall-free	Metall-free
Large bore size	Large bore size
Drift prevention valve	Drift prevention valve
Single unit	Single unit
Air operated	Air operated
Regulator	Regulator
Manual	Manual
Electric	Electric
Manual flow rate	Manual flow rate
Manual Fine Switch	Manual Fine Switch
Related products	Related products

Dimensions

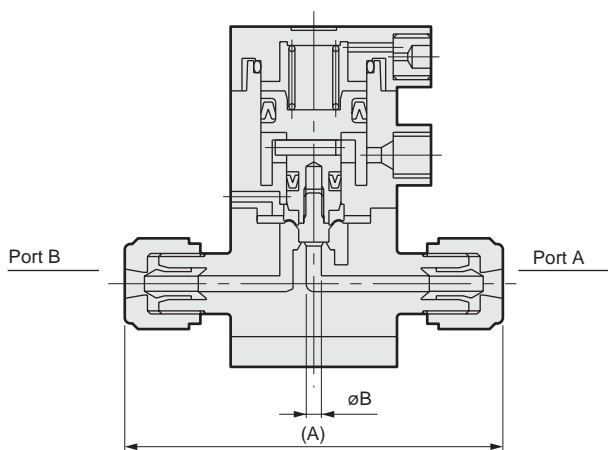
● Rc thread

• AMDZ*6-2

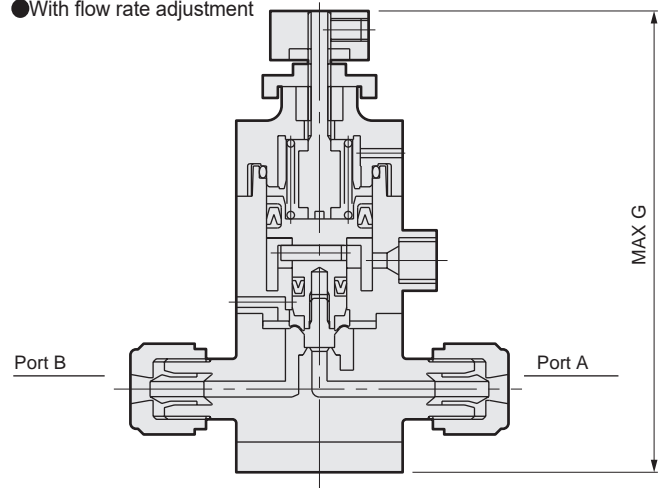


● Integrated fitting

• AMDZ*- -2



● With flow rate adjustment

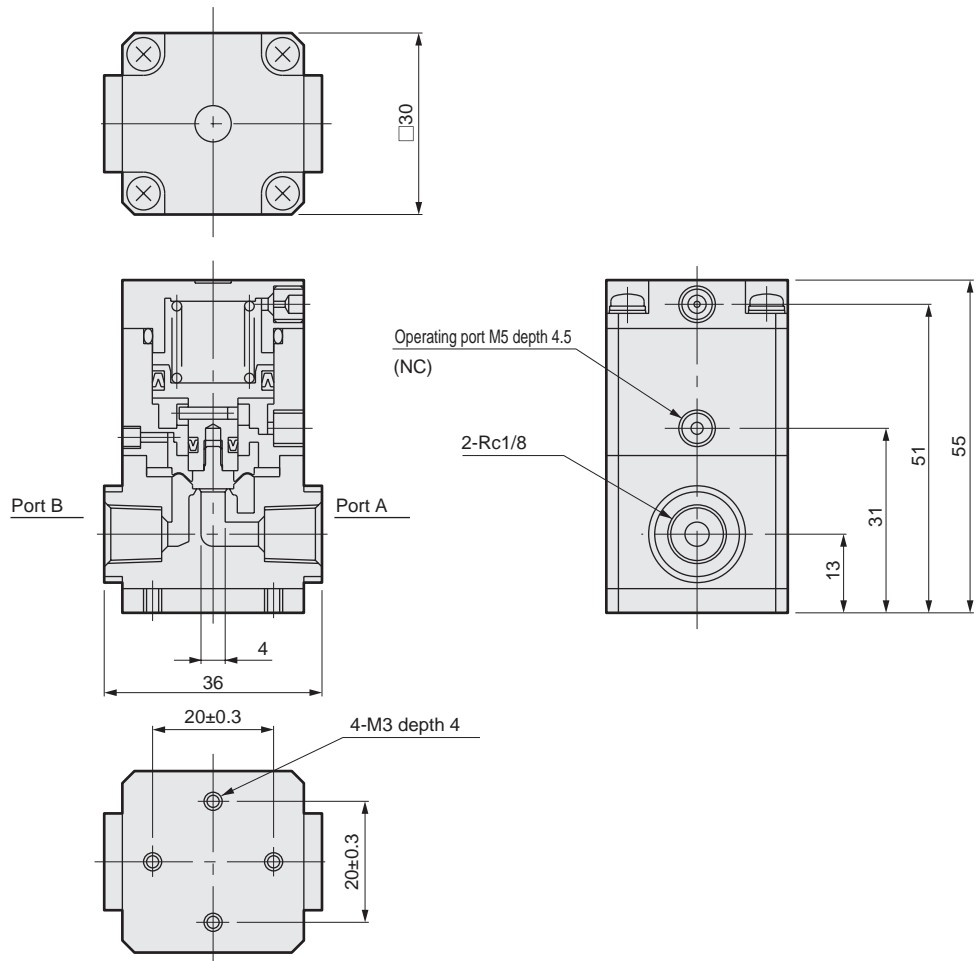


Dimensions	A	B	C	D	E	F	MAX G
<input type="text" value="*1"/> (Connector No.)							
6	-	2	11	28	41	45	63
3US, 3UP	50	2	11	28	41	45	63
6BUS, 6BUP	50	2	11	28	41	45	63
3UF	40	2	11	28	41	45	63
3UR	57	1.6	11	28	41	45	63
6BUR	57	1.6	11	28	41	45	63
6UR	82	3.5	12	31	44	48	66
8BUR	84	3.5	12	31	44	48	66

Dimensions

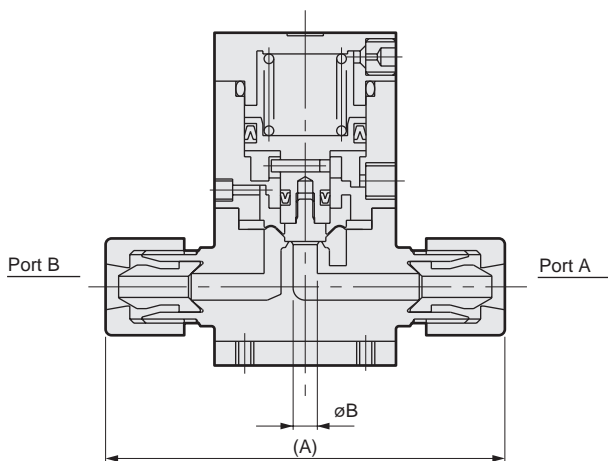
● Rc thread

• AMD0*6-4

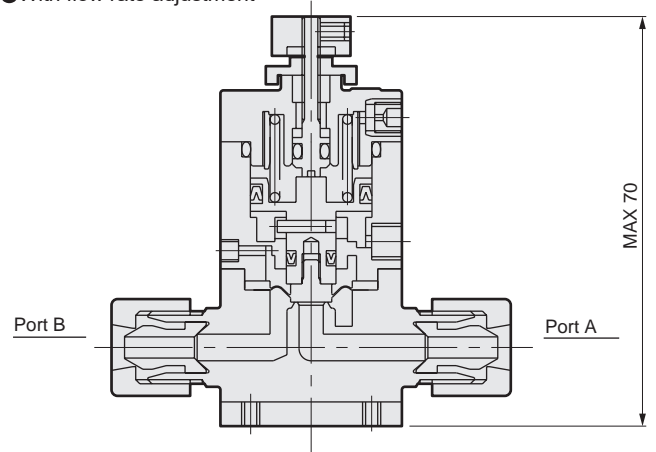


● Integrated fitting

• AMD0*-*1-4



● With flow rate adjustment



Dimensions	A	B
*1 (Connector No.)		
6US	66	4
8BUS	66	4
6UP	68	4
8BUP	68	4

Dimensions	A	B
*1 (Connector No.)		
6UF	64	4
8BUF	64	4
6UR	90	3.5
8BUR	92	3.5
6UK	71	4
8BUK	71	4
8BUW	86	3

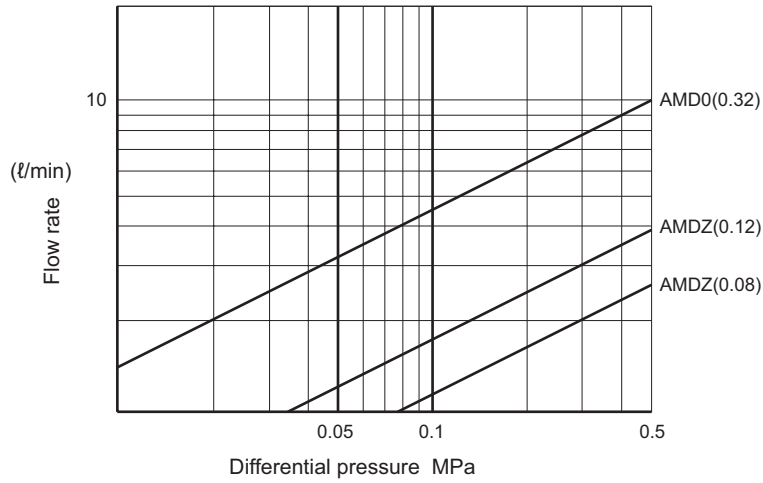
Air operated valve	Part3R	High pressure
	Part2	Metals-free
	Part1	Large bore size
Manual valve	Part3RN	Polyvinyl chloride
	Part2	Drainage
	Part1	High pressure
Drip prevention valve	Part3R	Metals-free
	Part2	Large bore size
	Part1	Single unit
Regulator	Part3R	Air operated integrated
	Part2	Pilot
	Part1	Manual
Flow rate adjusting valve	Part3R	Electric
	Part2	Manual
	Part1	Manual Fine flow rate
Related products	Part3R	Fine level Switch
	Part1	Related products

Flow characteristics

AMDZ / AMD0

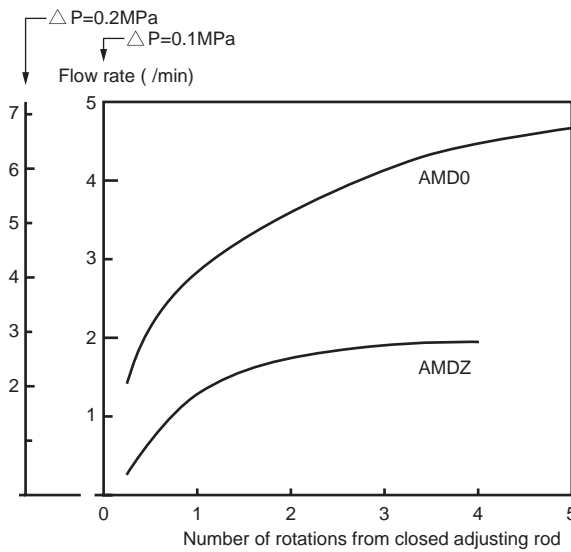
● Flow characteristics (water)

Differential pressure - internal flow rate () : Cv



● With flow rate adjustment (water)

Rotations - flow rate



*1: Vibration and flow rate fluctuation may occur depending on the working conditions such as fluid temperature, differential pressure, and opening. Confirm that the product is acceptable under actual working conditions before use. For precise flow rate adjustment, select the FMD Series or Fine flow rate adjusting valve (LYX).

Part3R	Part2	Part1	High pressure	Metar-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metar-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve		Regulator		Flow rate adjusting valve				



Air operated valve for chemical liquids (3-port valve)

AMGZ0 / AMG00 Series

● Connection tube size: $\varnothing 3$, $\varnothing 6$, $\varnothing 6.35$, 1/8", 1/4"

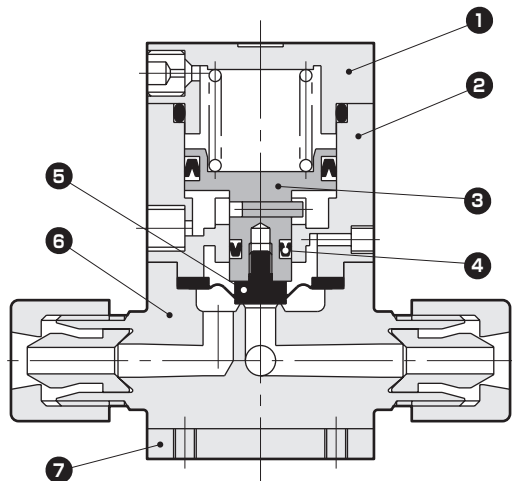


Specifications

Item	AMGZ0*-2	AMG00*-4
Working fluid	Chemical liquid, pure water, N ₂ gas, air (*1)	
Fluid temperature °C	5 to 80	
Proof pressure MPa	1.0	
Working pressure (A→B)MPa	0 to 0.5	
Working pressure (B→A)MPa	0 to 0.3	
Valve seat leakagecm ³ /min	0 (water pressure)	
Back pressure MPa	0 to 0.3	
Ambient temperature°C	0 to 60	
Frequency	30 cycles/min. or less	
Mounting orientation	Unrestricted	
Connection	O.D. $\varnothing 3$ tube connection O.D. 1/8" tube connection	O.D. $\varnothing 6$ tube connection O.D. $\varnothing 6.35$ tube connection O.D. 1/4" tube connection
Orifice size	$\varnothing 2$	$\varnothing 4$
Cv value	0.08	0.32
Operating section	Operating pressure MPa	0.3 to 0.5
	Operating port	M5
Weight kg	0.12	0.21

*1: Cannot be used with acidic fluids. Check the compatibility of product structural materials, working fluids and atmosphere.

Internal structure and parts list



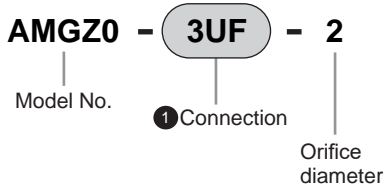
Part No.	Part name	Material
1	Cover	PPS
2	Cylinder	PPS
3	Piston rod	SUS303
4	Y packing	NBR
5	Diaphragm	PTFE
6	Body	PFA, PTFE
7	Mounting plate	SUS304

The material and structure may vary depending on the model number. Contact CKD for details.

Always read the precautions on Intro Pages 7 to 14 before use.

How to order

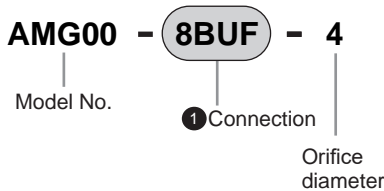
● AMGZO Series



Description	① Connection									
	3US	6BUS	3UP	6BUP	3UF	3UR	6BUR			
	Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 200 Series Integrated fitting	F-LOCK 60 Series Integrated fitting				
	ø3 x ø2 tube connection	1.8" x 0.086" tube connection	ø3 x ø2 tube connection	1.8" x 0.086" tube connection	ø3 x ø2 tube connection	ø3 x ø2 tube connection	1/8" x 1/16" tube connection			
Orifice size	Refer to text at right						ø2	ø1.6		
Body material	PFA molded body or PTFE machined body						PFA	PFA	PTFE	PTFE

* Machined PTFE products will be manufactured on a per-order basis.

● AMG00 Series



Description	① Connection											
	6US	8BUS	6UP	8BUP	6UF	8BUF	6UR	8BUR	6UK	8BUK	8BUW	
	Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 200 Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated	
	ø6 x ø4 tube connection	1/4" x 5/32" tube connection	ø6 x ø4 tube connection	1/4" x 5/32" tube connection	ø6 x ø4 tube connection	ø6.35 x ø4.3 tube connection	ø6 x ø4 tube connection	1/4" x 5/32" tube connection	ø6 x ø4 tube connection	1/4" x 5/32" tube connection	1/4" x 5/32" tube connection	
Orifice size	Refer to text at right						ø4	ø3.5	ø4	ø4	ø3	
Body material	PFA molded body or PTFE machined body						PFA	PTFE	PTFE	PTFE	PTFE	PTFE

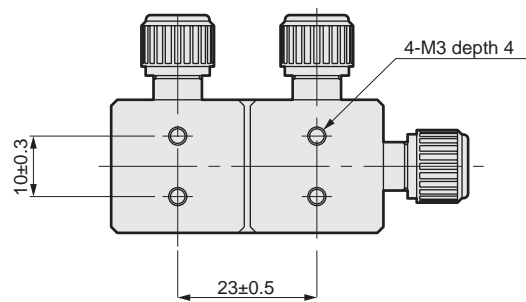
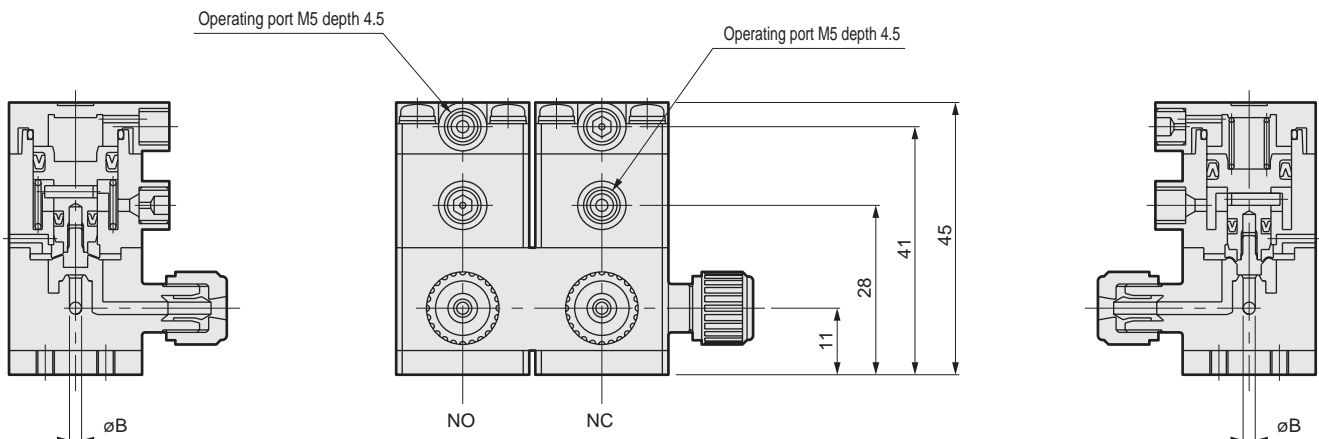
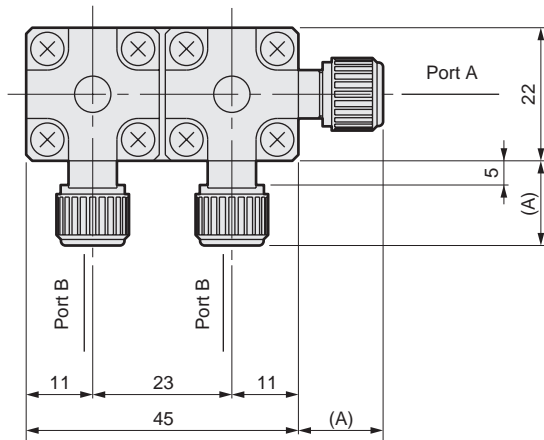
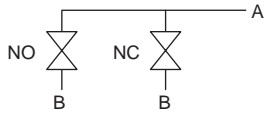
* Machined PTFE products will be manufactured on a per-order basis.

Part3R	Part2	Part1	High pressure	Metall-free	Large bore size	Polyvinyl chloride	Drainage
Part3RN	Part2	High pressure	Metall-free	Large bore size	Single unit	Air operated Integrated	Regulator
		Manual valve					Manual
							Electric
							Manual
							Manual Fine flow rate
							Fine level Switch
							Related products

Dimensions

● Integrated fitting

• AMGZO- *1 -2

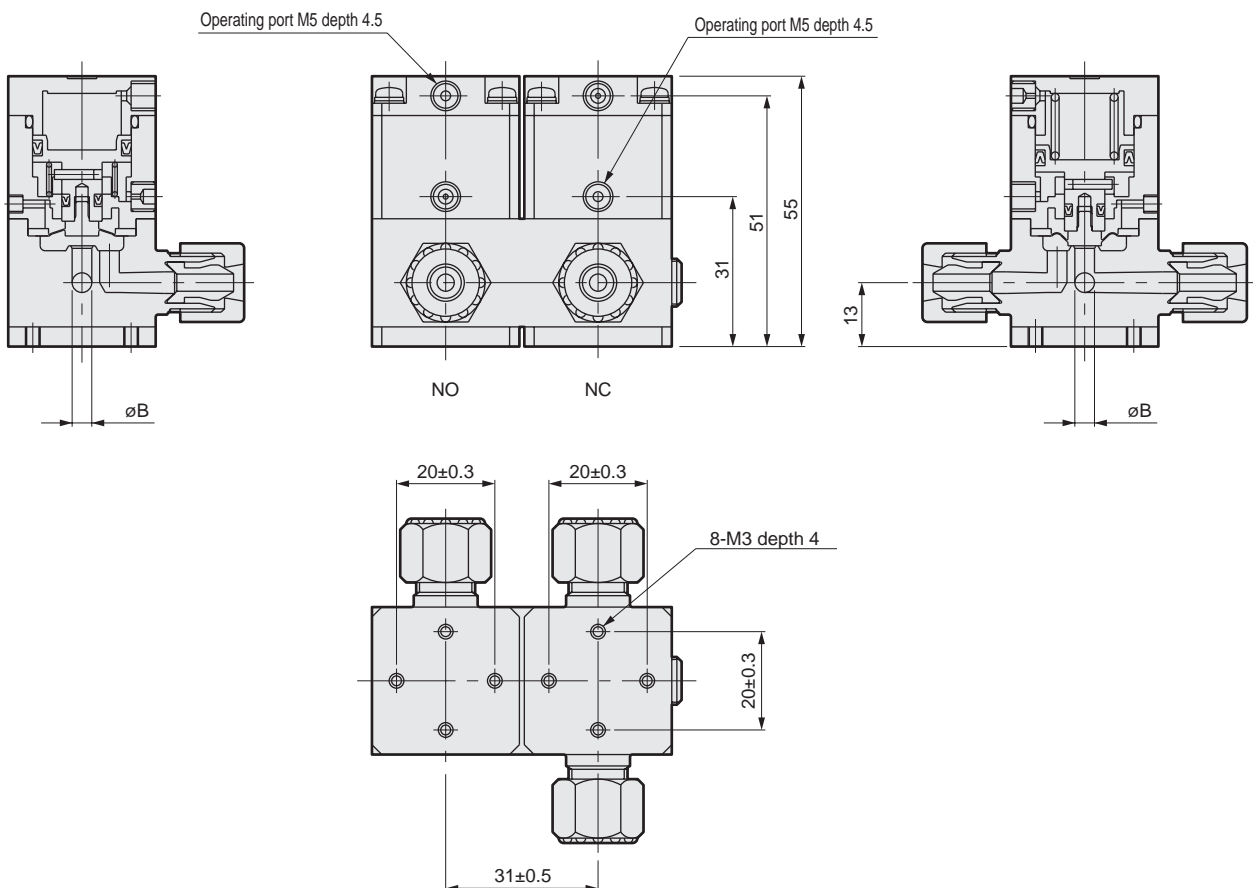
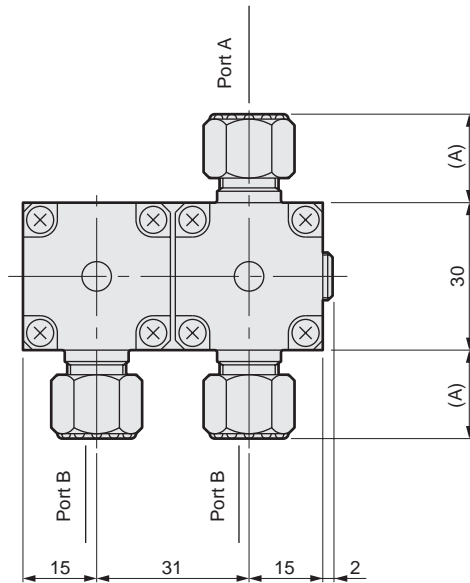
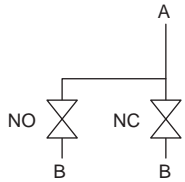


Dimensions		
*1 (Connector No.)	A	B
3US, 3UP	14	2
6BUS, 6BUP	14	2
3UF	9	2
3UR	17.5	1.6
6BUR	17.5	1.6

Dimensions

● Integrated fitting

• AMG00- *1 -4



Dimensions	A	B
*1 (Connector No.)		
6US	18	4
8BUS	18	4
6UP	19	4
8BUP	19	4

Dimensions	A	B
*1 (Connector No.)		
6UF	17	4
8BUF	17	4
6UR	30	3.5
8BUR	31	3.5
6UK	20.5	4
8BUK	20.5	4
8BUW	28	3

Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Part3RR	Part2	Manual valve	High pressure	Metals-free	Large bore size	Single unit	Air operated integrated
		Regulator	Pilot	Manual	Flow rate adjusting valve	Manual Fine flow rate	Manual Fine flow rate
			Electric	Manual	Flow rate adjusting valve	Manual Fine flow rate	Manual Fine flow rate
						Flow level	Flow level
						Switch	Switch
						Related products	Related products



Air operated valve for high pressure chemical liquid

AMD*1H Series

A valve designed to support high pressure and high back pressure in chemical liquid lines in semiconductor manufacturing lines.

- Connection tube size: 1/2", 3/4", 1", 1.25"
PFA pipe for welding:

Nominal 1/4", 1/2", 3/4", 1"



Export controlled items

*Eligibility: AMD41H, 51H, 61H (*5)

Variation contents

- Water hammer reduction (L)
- Operating pressure reduction (V)
- Operating pressure reduction + water hammer reduction (VL)

Model No.	Working press (MPa)	Operating press (MPa)	Water hammer Reduction
AMD*1H - * - <input type="button" value="Blank"/>	<input type="button" value="0 to 0.7"/>	<input type="button" value="0.5 to 0.7"/>	
AMD*1H - * - <input type="button" value="L"/>	<input type="button" value="0 to 0.7"/>	<input type="button" value="0.5 to 0.7"/>	<input type="button" value="WH Reduction"/>
AMD*1H - * - <input type="button" value="V"/>	<input type="button" value="0 to 0.5"/>	<input type="button" value="0.4 to 0.6"/>	
AMD*1H - * - <input type="button" value="VL"/>	<input type="button" value="0 to 0.5"/>	<input type="button" value="0.4 to 0.6"/>	<input type="button" value="WH Reduction"/>

Specifications

Item	AMD41H	AMD51H	AMD61H	
Actuation	NC (normally closed)			
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)			
Fluid temperature °C	5 to 40			
Proof pressure MPa	1.4			
Working pressure (A→B)MPa	0 to 0.7			
Valve seat leakage cm ³ /min	0 (water pressure)			
Back pressure MPa	0 to 0.7			
Ambient temperature°C	0 to 40			
Frequency	15 cycle/min. or less			
Mounting orientation	Unrestricted			
Connection	O.D. 1/2" tube connection Nominal 1/4" PFA pipe for welding	OD3/4" tube connection Nominal 1/2" PFA pipe for welding	O.D. 1" tube connection Nominal 3/4" PFA pipe for welding	OD1.25" tube connection Nominal 1" PFA pipe for welding
Orifice size	ø10	ø16	ø22	ø25
Cv value	2	5 (*2)	9.5	14
Operating section	Operating pressure MPa	0.5 to 0.7		
	Operating port	Rc1/8		
Weight kg	0.56	1.1	1.3	

Optional specifications (: Additional specifications)

Item	AMD*1H-* -L	AMD*1H-* -V	AMD*1H-* -VL
Actuation	NC (normally closed)		
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C	5 to 40		
Proof pressure MPa	1.4		
Working pressure (A→B) MPa	0 to 0.7	0 to 0.5	0 to 0.5
Back pressure MPa	0 to 0.7	0 to 0.5	0 to 0.5
Ambient temperature °C	0 to 40		
Frequency	5 cycle/min. or less	15 cycle/min. or less	5 cycle/min. or less
Mounting orientation	Unrestricted		
Operating section	Operating pressure MPa	0.5 to 0.7	0.4 to 0.6
	Operating port	Rc1/8	
Water hammer reduction	●(*4)	—	●(*4)

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: The Flaretek fitting has a Cv of 4.5.

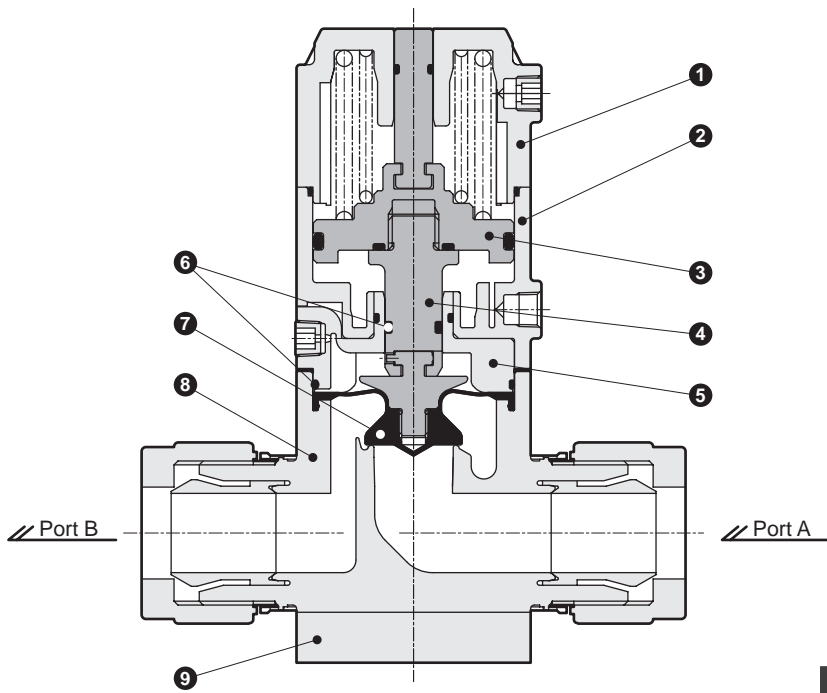
*3: Refer to page 80 for flow characteristics.

*4: The water hammer reduction type has a longer response time than standard. Contact CKD for details.

*5: Excludes O.D. 1/2" tube connection and nominal 1/4" PFA pipe.

! Always read the precautions on Intro Pages 7 to 14 before use.

Internal structure and parts list



Part No.	Part name	Material (by fluid code)	
		Standard	M
1	Cover	PP	
2	Cylinder	PP	
3	Piston	PP	
4	Rod	PP	
5	Diaphragm holder	PP	
6	O-ring	FKM	EPDM
7	Diaphragm	PTFE	
8	Body	PFA	
9	Mounting plate	PP	

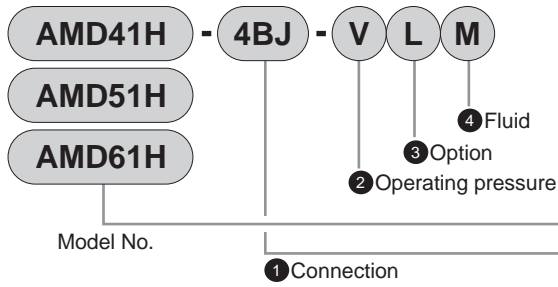
The material and structure may vary depending on the model number. Contact CKD for details.

Air operated valve	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Manual valve	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Drip prevention valve	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Regulator	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Fine level Switch	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
Related products	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage

AMD*1H Series

How to order

●AMD*1H Series



		AMD41H				AMD51H			AMD61H			
		1 Connection										
		4BJ	6BJ	4BW	6BW	2W	4W	8BJ	8BW	6W	10BJ	8W
		Super 300 Pillar fitting P series integrated		Flaretek Fitting Integrated		For welding PFA pipe		Super 300 Pillar fitting P series integrated	Flaretek Fitting Integrated	For welding PFA pipe	Super 300 Pillar fitting P series integrated	For welding PFA pipe
		1/2" x 3/8" tube connection	3/4" x 5/8" tube connection	1/2" x 3/8" tube connection	3/4" x 5/8" tube connection	Nominal 1/4" PFA pipe for welding	Nominal 1/2" PFA pipe for welding	1" x 7/8" tube connection	1" x 7/8" tube connection	Nominal 3/4" PFA pipe for welding	1 1/10" x 1 1/4" tube connection	Nominal 1" PFA pipe for welding
Code	Description	Orifice size	Ø10	Ø16	Ø10	Ø16	Ø10	Ø16	Ø22			Ø25
Cv			2	5	2	4.5	2	5	9.5			14
Body material	PFA molded body											

Code	Description	Orifice size
Ø10		
Ø16		

		2 Operating pressure										
Blank	Standard (0.5 to 0.7 MPa)	●	●	●	●	●	●	●	●	●	●	●
V	0.4 to 0.6 MPa	●	●	●	●	●	●	●	●	●	●	●
		3 Option										
Blank	Standard	●	●	●	●	●	●	●	●	●	●	●
L	Water hammer reduction	●	●	●	●	●	●	●	●	●	●	●
		4 Fluid										
Blank	Standard	●	●	●	●	●	●	●	●	●	●	●
M	For ammonia (*1)	●	●	●	●	●	●	●	●	●	●	●

*1: Available as made to order.



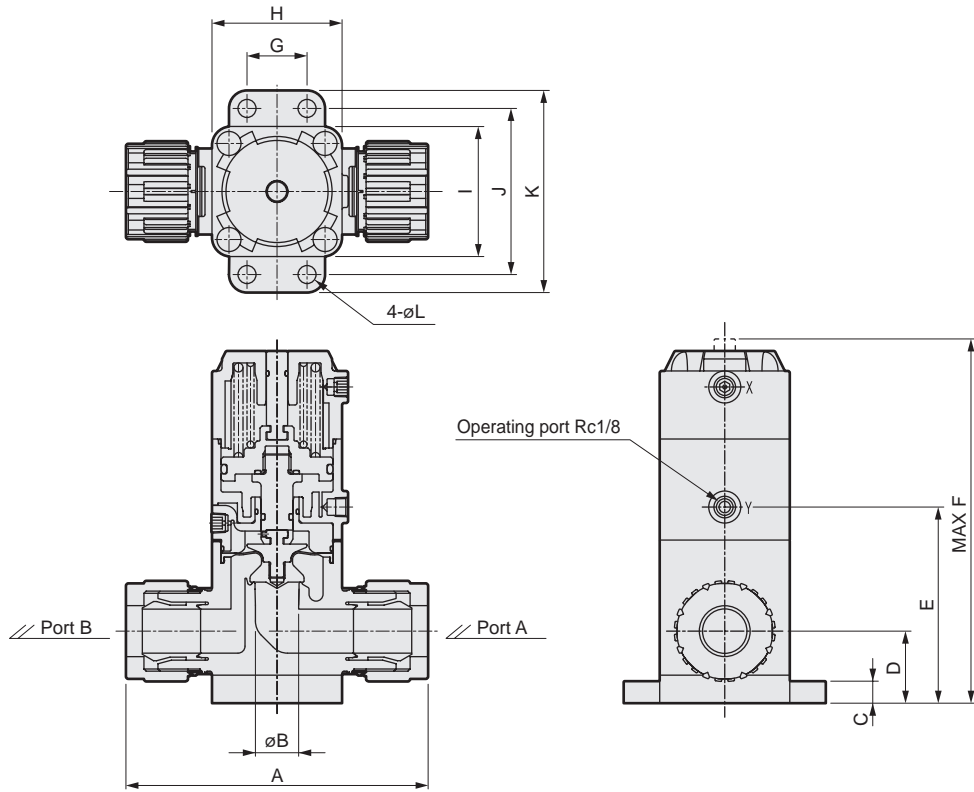
Water Hammer

The option "L" water hammer reduction structure reduces water hammer, but sufficient reduction may not be obtained depending on the piping conditions. Be sure to check with a trial run whether water hammer reduction is obtained after construction. If the reduction is not obtained, review the piping conditions. In general, the shorter and straighter the valve secondary side piping, the greater the reduction performance.

Dimensions

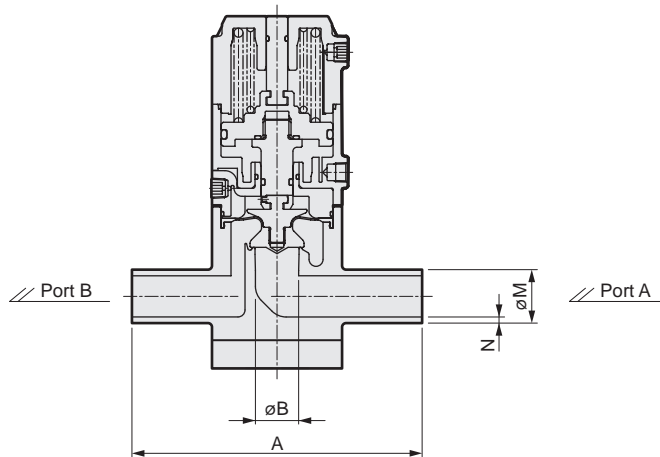
● Integrated fitting

- AMD⁴₆ 1H-* BJ
- AMD⁵₆ 1H-* BW



● Pipe for welding

- AMD⁴₆ 1H-* W



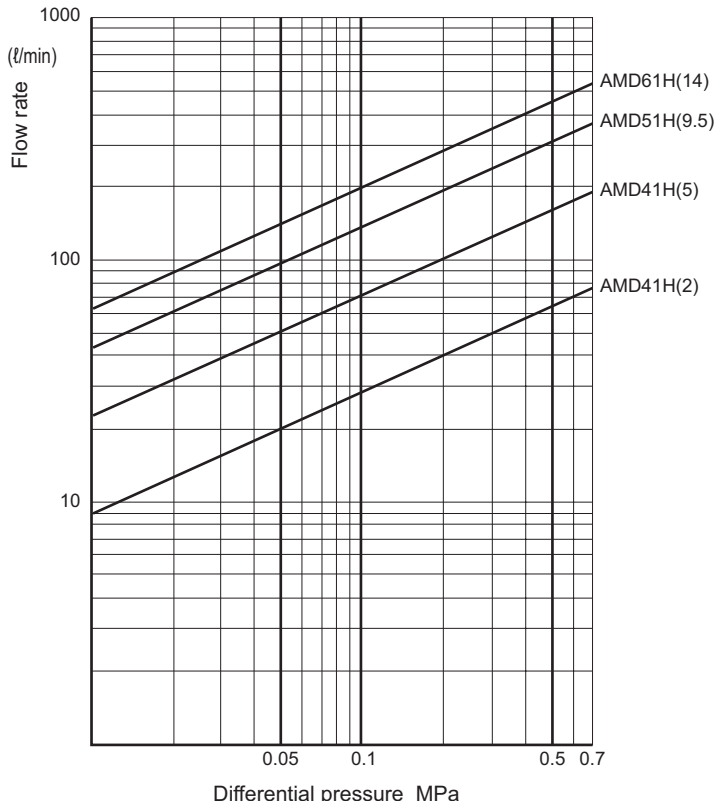
Model No.	Connector No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N
AMD41H	4BJ	108	10	10	31	80	147	20	50	50	68	86	9	-	-
	4BW	117	10	10	31	80	147	20	50	50	68	86	9	-	-
	2W	110	10	10	31	80	147	20	50	50	68	86	9	13.7	2.3
	6BJ	122	16	10	31	80	147	20	50	50	68	86	9	-	-
	6BW	126	16	10	31	80	147	20	50	50	68	86	9	-	-
	4W	130	16	10	31	80	147	20	50	50	68	86	9	21.3	2.8
AMD51H	8BJ	151	22	11	36	98	182	30	65	65	83	101	9	-	-
	8BW	161	22	11	36	98	182	30	65	65	83	101	9	-	-
	6W	145	22	11	36	98	182	30	65	65	83	101	9	26.7	2.9
AMD61H	10BJ	198	25	12	42	111	202	38	75	75	93	111	9	-	-
	8W	155	25	12	42	111	202	38	75	75	93	111	9	33.4	3.4

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Manual valve	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Part2						Part2															
	Part1						Part1															
	Part3R						Part3R															

Flow characteristics

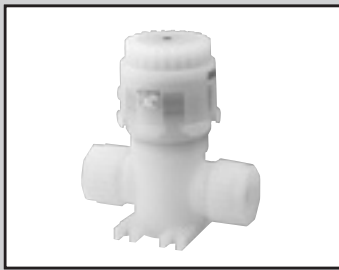
● Flow characteristics (water)

Differential pressure - internal flow rate (): Cv



Part 3R	Part 2	Part 1	High pressure	Metal-free	Large bore size	PVC	Drainage	Part 3RN	Part 2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve				Drip prevention valve	Regulator		Flow rate adjusting valve				

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve		Regulator		Flow rate adjusting valve				



Air operated valve for chemical liquids, metal-free

AMD*1M Series

A valve designed to support strong acid (hydrochloric acid, hydrofluoric acid) lines in semiconductor manufacturing.

- Connection tube size: $\varnothing 10$, $\varnothing 12$, $\varnothing 25$, 3/8", 1/2", 3/4", 1"



Export controlled items

*Eligibility: AMD51M

Specifications

Item	AMD31M		AMD51M	
Actuation	NC (normally closed)			
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)			
Fluid temperature °C	5 to 40			
Proof pressure MPa	1.0			
Working pressure (A→B)MPa	0 to 0.5			
Valve seat leakagecm ³ /min	0 (water pressure)			
Back pressure MPa	0 to 0.5			
Ambient temperature°C	0 to 40			
Frequency	20 cycle/min. or less		15 cycle/min. or less	
Mounting orientation	Unrestricted			
Connection	O.D. $\varnothing 3/8$ " tube connection O.D. $\varnothing 10$ tube connection	O.D. $\varnothing 1/2$ " tube connection O.D. $\varnothing 12$ tube connection	O.D. $\varnothing 3/4$ " tube connection	O.D. 1" tube connection O.D. $\varnothing 25$ tube connection
Orifice size	$\varnothing 8$	$\varnothing 10$	$\varnothing 16$	$\varnothing 22$
Cv value	1.25	1.8	5.5	9.5
Operating section	Operating pressure MPa	0.4 to 0.6		
	Operating port	Rc1/8		
Weight kg	0.33		1.0	

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

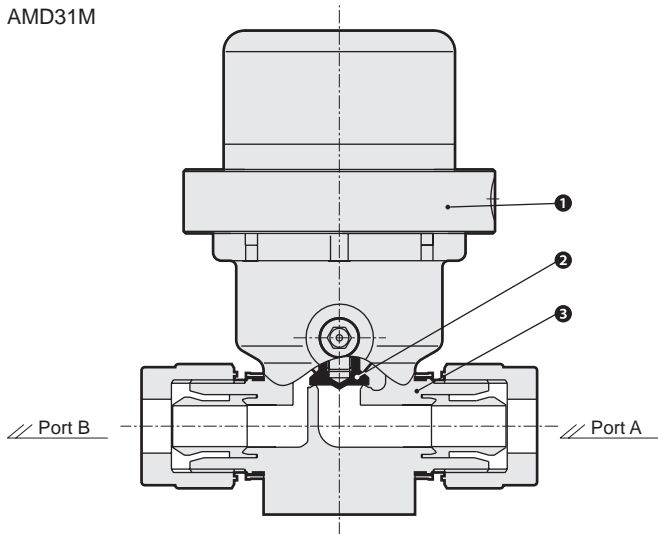
Part 3R
Part 2
Part 1
High pressure
Metal-free
Large bore size
PVC
Drainage
Part 3RN
Part 2
High pressure
Metal-free
Large bore size
Single unit
Air operated Integrated
Pilot
Manual
Electric
Manual
Manual Fine flow rate
Fine level Switch
Related products

Air operated valve
Manual valve
Drip prevention valve
Regulator
Flow rate adjusting valve

Always read the precautions on Intro Pages 7 to 14 before use.

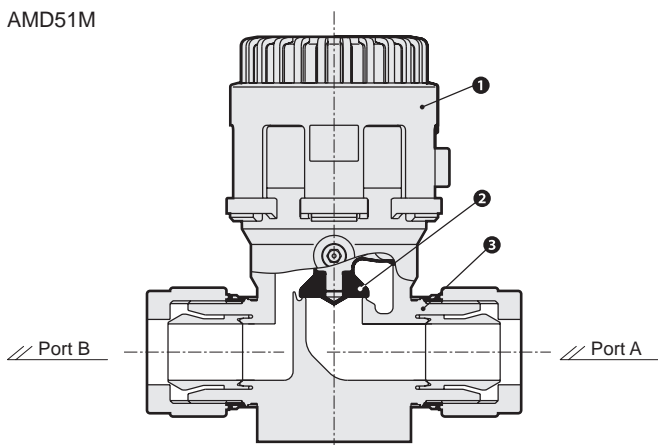
Internal structure and parts list

AMD31M



Part No.	Part name	Material
1	Actuator	PP, etc.
2	Diaphragm	PTFE
3	Body	PFA

AMD51M



Part No.	Part name	Material
1	Actuator	PVDF and others
2	Diaphragm	PTFE
3	Body	PFA

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metal-free	Large bore size		
	Part1	High pressure	Metal-free	Large bore size		
Manual valve	Part3RN	High pressure	Metal-free	Large bore size		
	Part2	High pressure	Metal-free	Large bore size		
	Part1	High pressure	Metal-free	Large bore size		
Drip prevention valve		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
Regulator		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
Flow rate adjusting valve		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
Fine level Switch		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
		High pressure	Metal-free	Large bore size		
Related products						

AMD*1M Series

How to order

●AMD*1M Series



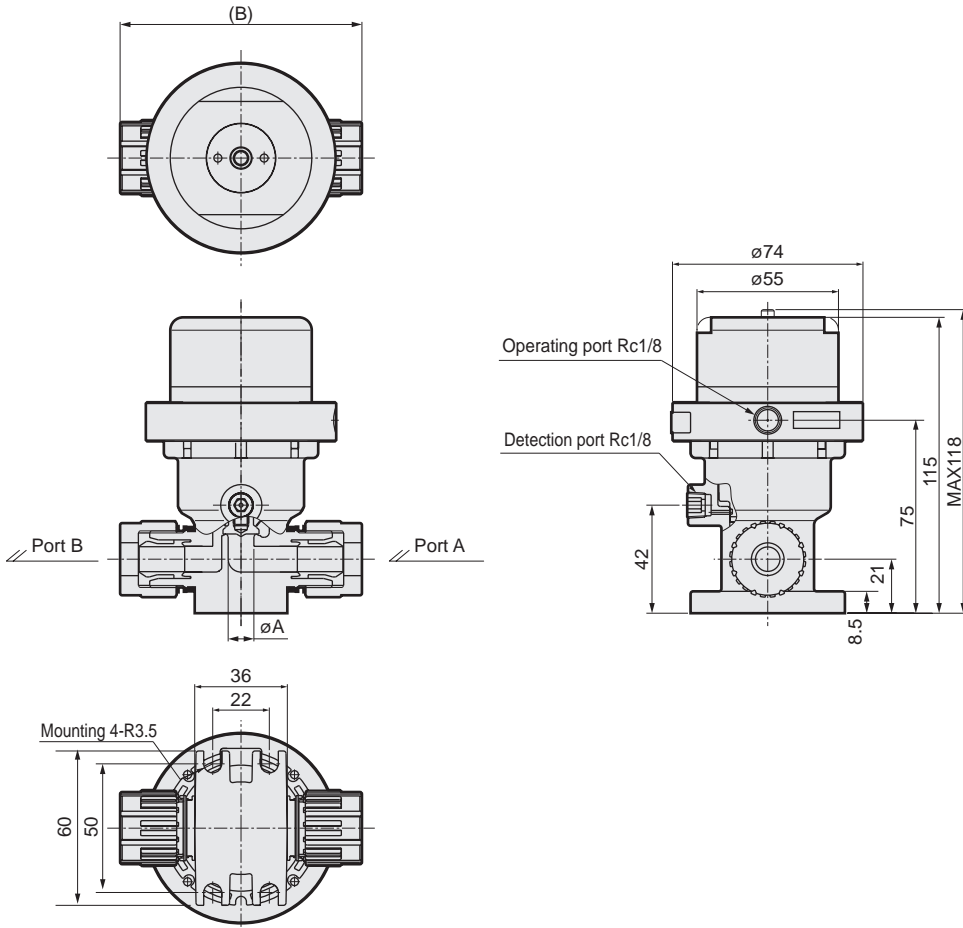
Model No.

① Connection

	AMD31M				AMD51M		
	① Connection						
	3BJ	10J	4BJ	12J	6BJ	8BJ	25J
	Super 300 Pillar fitting P series integrated						
	3/8" x 1/4" tube connection	ø10 x ø8 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	3/4" x 5/8" tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection
Orifice size	ø8		ø10		ø16		ø22
Cv	1.25		1.8		5.5		9.5

Dimensions

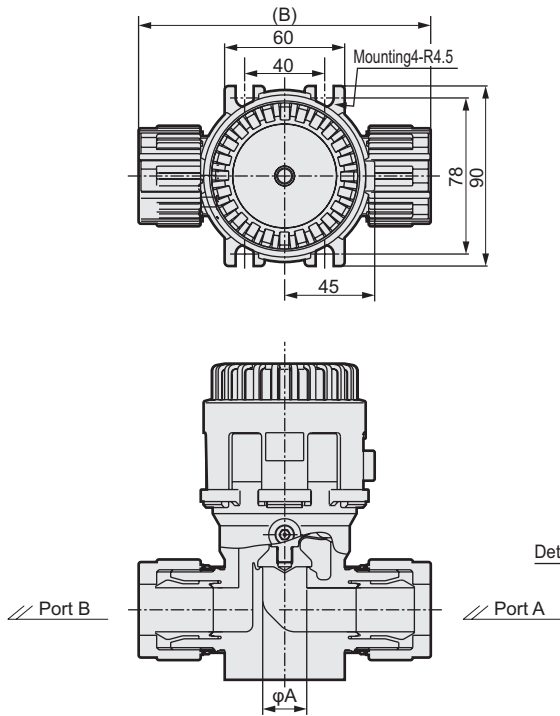
●AMD31M-*1



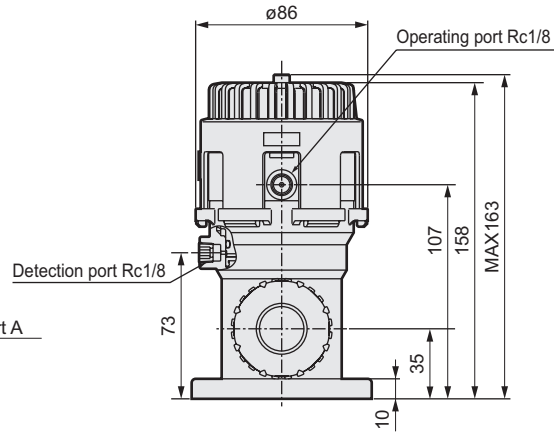
*1 (connector No.)	øA	B
3BJ	8	86
4BJ	10	94

Dimensions

●AMD51M- * 1



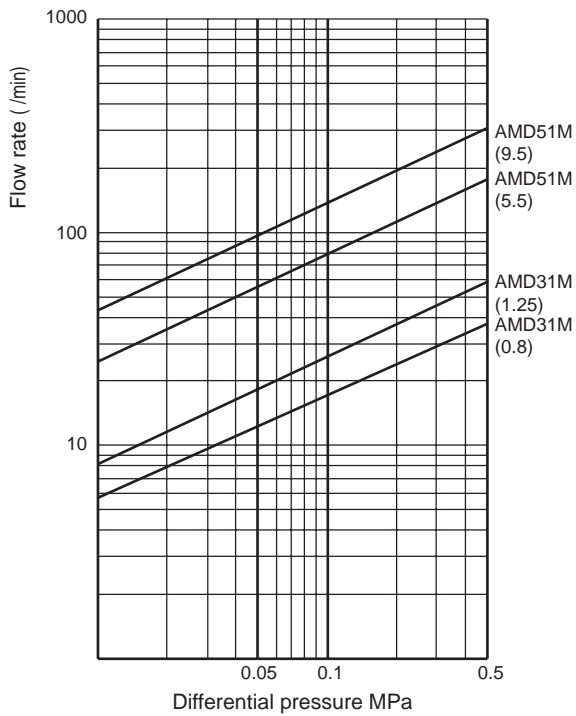
*1 (connector No.)	ϕA	B
6BJ	16	132
8BJ	22	146



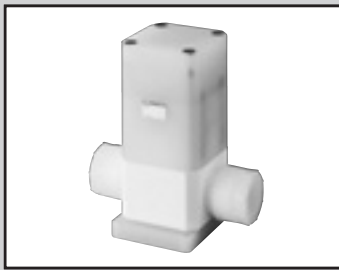
Flow characteristics

● Flow characteristics (water)

Differential pressure - internal flow rate () : Cv



Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve						Manual valve					Integrated	Regulator	Flow rate adjusting valve					



Air operated valve for large bore size chemical liquids

LYX Series

Large bore size PFA tube 1.5" compatible

RoHS

Export controlled items

Specifications

Item	LYX-1380	
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)	
Fluid temperature °C	10 to 35	
Proof pressure MPa	0.8	
Working pressure (A→B) MPa	0 to 0.4	
Working pressure (B→A) MPa	0 to 0.4	
Valve seat leakage cm ³ /min	0 (water pressure)	
Back pressure MPa	0 to 0.4	
Ambient temperature °C	5 to 35	
Frequency	4 cycle/min. or less	
Mounting orientation	Unrestricted	
Connection	OD1 1/2" Super 300 Pillar fitting P Series 1 1/2" x 1 21/64" tube connection	
Orifice size	ø40	
Cv value	24	
Operating section	Operating pressure MPa	0.5 to 0.6
	Operating port	Rc1/8
Weight kg	6.1	

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

How to order

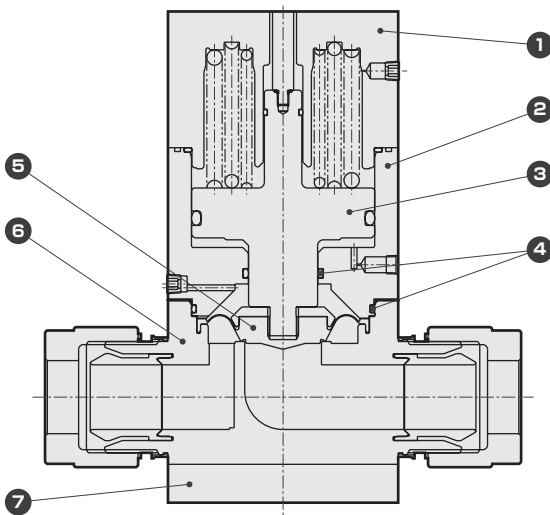
LYX - **1380** - 12BJ - **M**

Model No. ① Working Fluid

Code	Description
① Fluid	
Blank	Standard
M	For ammonia

Internal structure and parts list

● LYX-1380



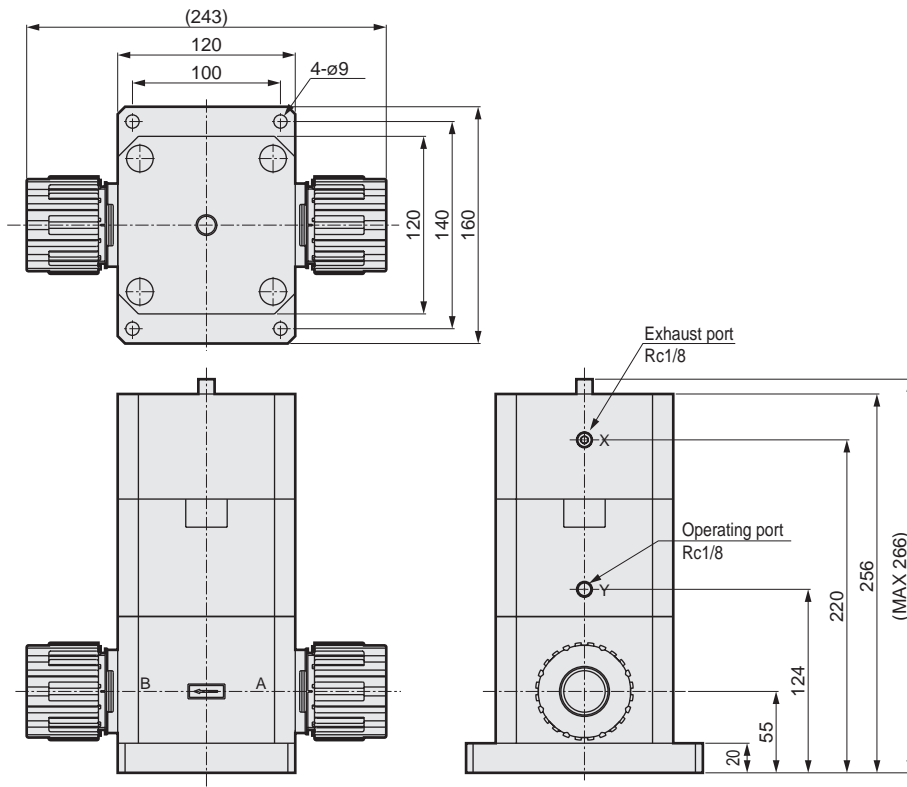
Part No.	Part name	Material (by fluid code)	
		Standard	M
1	Cover	PP	
2	Cylinder	PP	
3	Piston rod	PP	
4	O-ring	FKM	EPDM
5	Diaphragm	PTFE	
6	Body	PTFE	
7	Mounting plate	PP	

The material and structure may vary depending on the model number. Contact CKD for details.

! Always read the precautions on Intro Pages 7 to 14 before use.

Dimensions

● Air operated valve



Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metals-free	Large bore size	Single unit	Air operated integrated	Regulator	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
Air operated valve								Manual valve														



Air operated valve for pure water (PVC)

AMD*1L Series

- NC (normally closed)
- Connection PVC union fitting, Nominal 16 to 50



Specifications

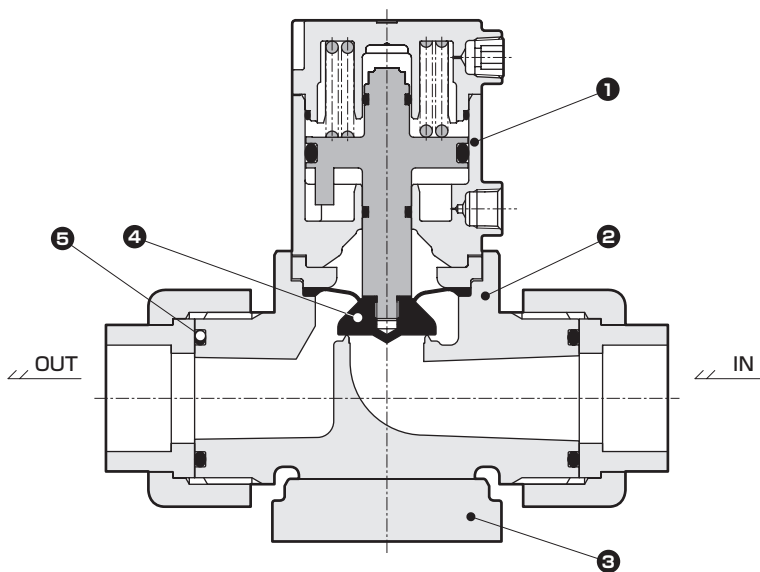
Item	AMD41L-15AU	AMD41L-20AU	AMD51L-25AU	AMD61L-32AU	AMD71L-40AU	AMD81L-50AU
Actuation category	NC (normally closed) (*1)					
Working fluid	Pure water/Air/N ₂ gas (*2)					
Fluid temperature °C	5 to 40					5 to 45
Proof pressure MPa	0.8					
Working pressure range (IN→OUT) MPa	0 to 0.4					
Valve seat leakage cm ³ /min	0 (water pressure)					
Back pressure MPa	0 to 0.2					
Ambient temperature °C	0 to 40					
Frequency	10 cycles/min. or less			6 cycles/min. or less		
Mounting orientation	Unrestricted					
Connection	PVC union fitting integrated					
Orifice	ø18	ø18	ø23	ø30	ø36	ø50
Bypass orifice (with bypass)	ø6					
Cv (*3)	7 (6.4)	7 (6.4)	10 (10)	17 (17)	24 (24)	50
Operating section	Operating pressure range MPa					
	NC 0.4 to 0.5 (*1)					
Weight	Operating pressure connection port					
	Rc1/8					
Weight kg	0.56	0.56	0.89	1.7	2.8	5.4

*1 : Also compatible with NO. Contact CKD for details. (excluding AMD81L)

*2 : Refer to the precautions at the end for details.

*3 : Values in () are with flow rate adjustment.

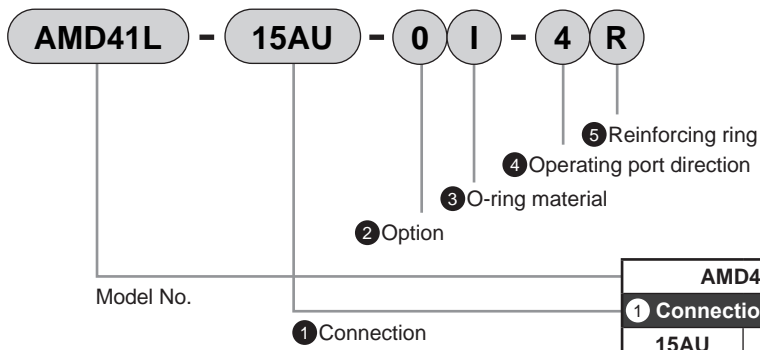
Internal structure and parts list



Part No.	Part name	Material	Quantity
1	Actuator assembly	PPS, etc.	1
2	Body	PVC	1
3	Mounting plate	PPS	1
4	Diaphragm	PTFE	1
5	O-ring	FKM (EPDM)	2

! Always read the precautions on Intro Pages 7 to 14 before use.

How to order



		AMD41L	AMD51L	AMD61L	AMD71L	AMD81L	
1 Connection							
		15AU	20AU	25AU	40AU	50AU	
		PVC union fitting integrated					
		Nominal 16	Nominal 20	Nominal 25	Nominal 30	Nominal 40	
		Nominal 50					
Code	Description	Orifice size					
			ø18	ø23	ø30	ø36	ø50
2 Option							
0	ON/OFF only		●	●	●	●	●
1	With flow rate adjustment		●	●	●	●	●
2	With bypass		●	●	●	●	●
3	With flow rate adjustment/bypass		●	●	●	●	●
3 O-ring material							
I	FKM		●	●	●	●	●
A	EPDM		●	●	●	●	●
4 Operating port direction							
4		With valve viewed from above, 4 indicates fluid flow direction ← and operating port direction are listed below.	●	●	●	●	●
1			●	●	●	●	●
2			●	●	●	●	●
3			●	●	●	●	●
5 Reinforcing ring							
Blank	None		●	●	●	●	
R	Yes		●	●	●	●	

⚠ Precautions for model No. selection

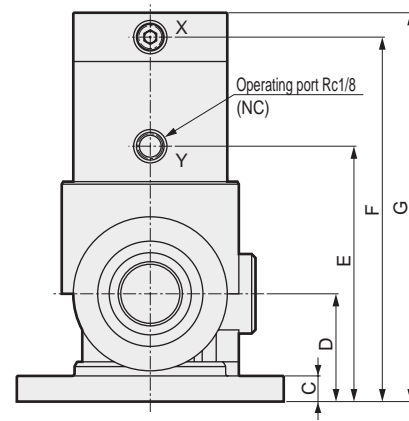
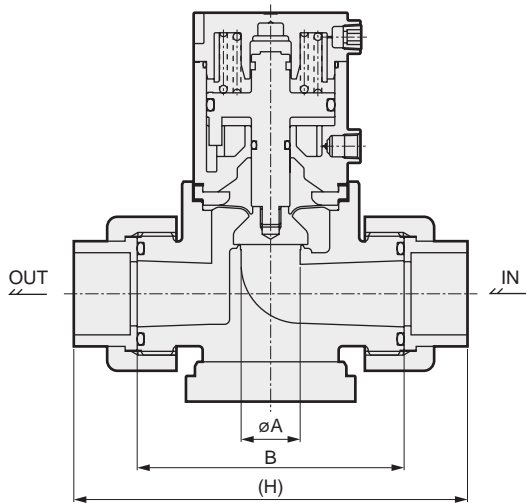
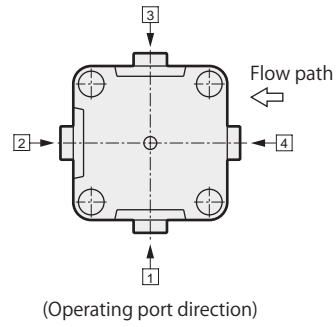
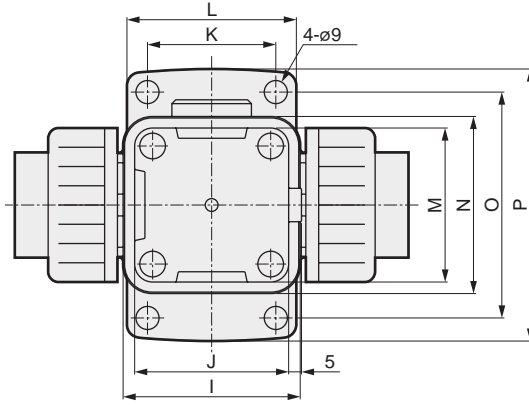
- *1 : With indicator is available. Contact CKD for details. (excluding AMD81L)
- *2 : R with reinforcing ring cannot be selected for AMD81L Series.

Part3R	High pressure	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Manual valve	Part2	High pressure	Metal-free	Large bore size	Single unit	Drift prevention valve	Air operated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
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AMD*1L Series

Dimensions (AMD41L to AMD71L)

●PVC union fitting integrated

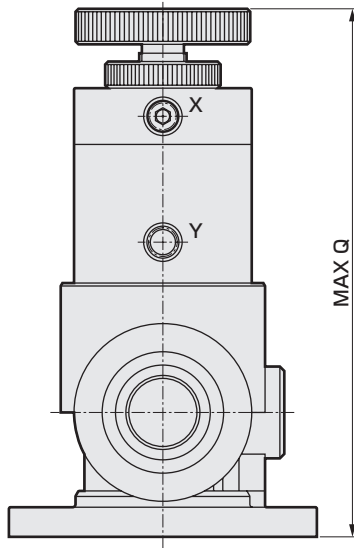


Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
AMD41L-15AU AMD41L-20AU	18	94	10	35	81	118	127	138	55	46	40	56	46	55	78	96
AMD51L-25AU	23	104	10	42	99.5	142	152	154	69	60	50	66	60	69	88	106
AMD61L-32AU	30	148	20	55	129	186	199	206	79	70	80	100	70	79	120	140
AMD71L-40AU	36	148	20	55	126	208	248	216	92	88	80	100	88	92	120	140

Dimensions (AMD41L to AMD71L)

● With flow rate adjustment

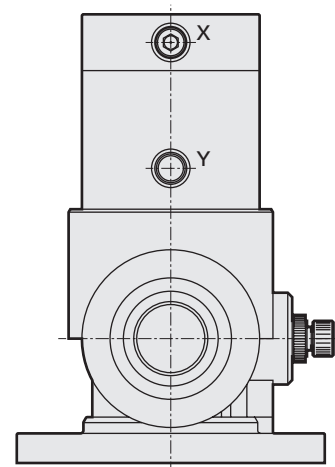
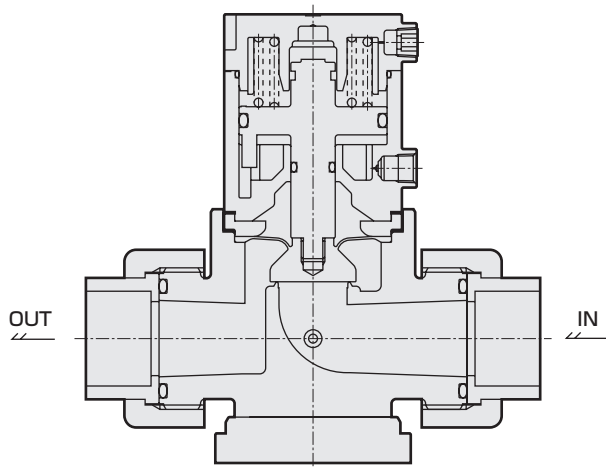
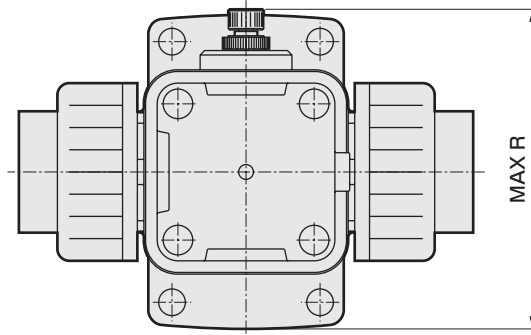
- AMD*1L-* - 1 / 3



Model No.	Q
AMD41L-15AU AMD41L-20AU	151
AMD51L-25AU	183
AMD61L-32AU	231
AMD71L-40AU	294

● With bypass

- AMD*1L-* - 2 / 3



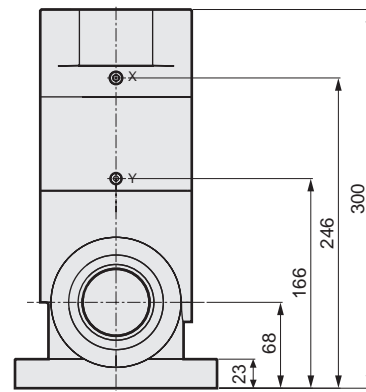
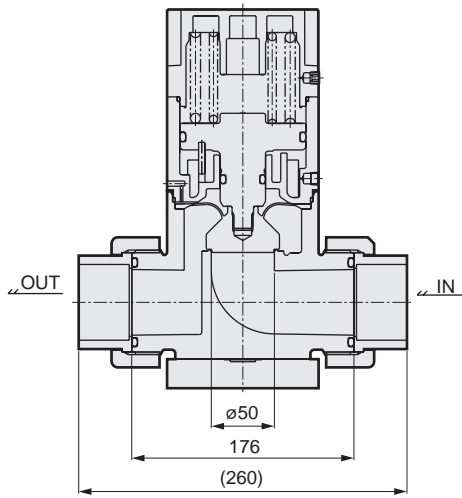
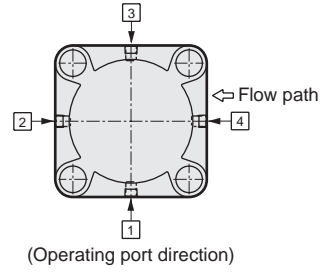
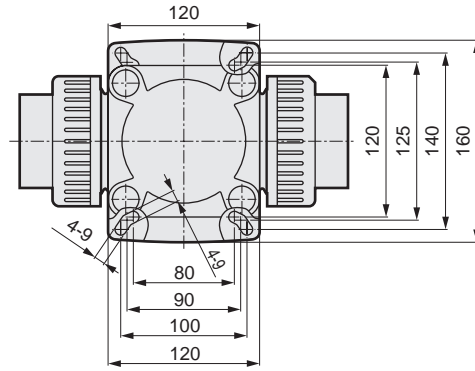
Model No.	R
AMD41L-15AU AMD41L-20AU	101
AMD51L-25AU	110
AMD61L-32AU	133.5
AMD71L-40AU	136

Air operated valve	Part3R	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
		Metar-free		Metar-free		Metar-free		Metar-free		Metar-free		Metar-free
		Large bore size		Large bore size		Large bore size		Large bore size		Large bore size		Large bore size
Manual valve		Polyvinyl chloride		Polyvinyl chloride		Polyvinyl chloride		Polyvinyl chloride		Polyvinyl chloride		Polyvinyl chloride
		Drainage		Drainage		Drainage		Drainage		Drainage		Drainage
		Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1
Drip prevention valve		Single unit		Single unit		Single unit		Single unit		Single unit		Single unit
		Air operated integrated		Air operated integrated		Air operated integrated		Air operated integrated		Air operated integrated		Air operated integrated
		Regulator		Regulator		Regulator		Regulator		Regulator		Regulator
Flow rate adjusting valve		Electric		Electric		Electric		Electric		Electric		Electric
		Manual		Manual		Manual		Manual		Manual		Manual
		Manual/Fine flow rate		Manual/Fine flow rate		Manual/Fine flow rate		Manual/Fine flow rate		Manual/Fine flow rate		Manual/Fine flow rate
	Fine level Switch		Fine level Switch		Fine level Switch		Fine level Switch		Fine level Switch		Fine level Switch	
	Related products		Related products		Related products		Related products		Related products		Related products	

AMD*1L Series

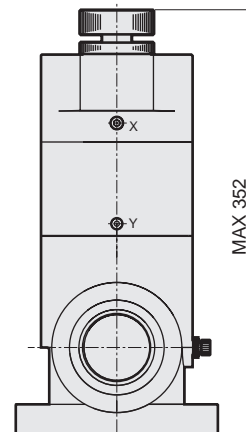
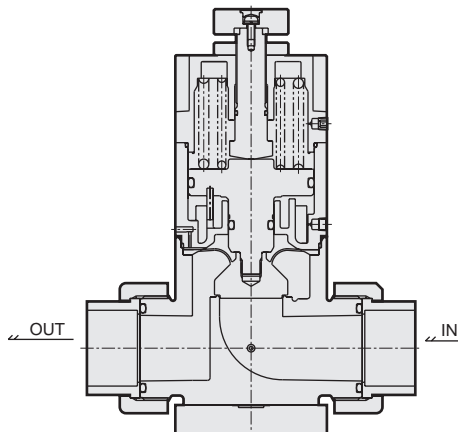
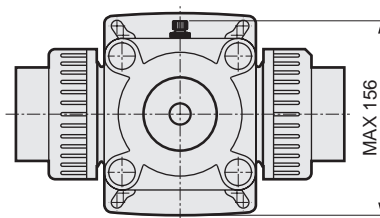
Dimensions (AMD81L)

●PVC union fitting integrated



●With flow rate adjustment, bypass

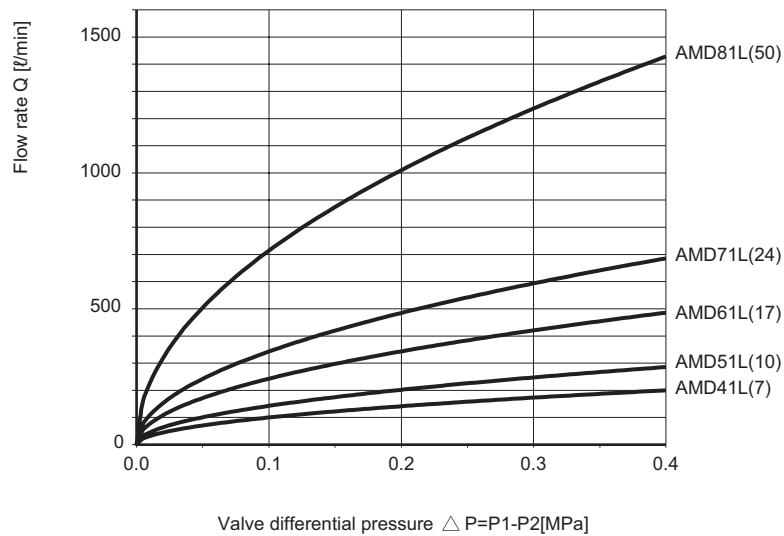
● AMD81L-50AU- 1 / 2 / 3



Flow characteristics

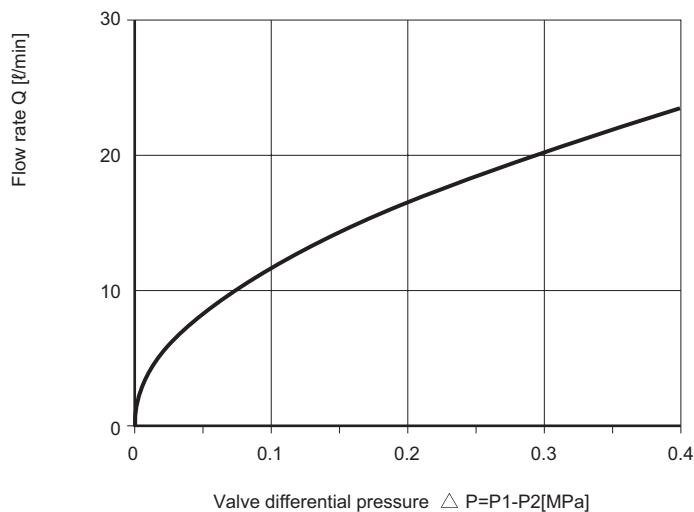
● Flow characteristics (water)

Valve differential pressure - internal flow rate (): Cv
[Without flow rate adjustment]



● Bypass Flow characteristics (water)

Valve differential pressure - Flow rate (common for AMD41L to 81L) [when knob is fully open]



● Flow rate calculation method (water)

$$Q = 45.6 \times C_v \times \frac{\sqrt{(P_1 - P_2)}}{\sqrt{G}}$$

- Q : Flow rate l/min
- P₁ : Primary pressure MPa
- P₂ : Secondary pressure MPa
- G : Specific gravity (water = 1)
- Δ P=P₁-P₂ : Valve differential pressure (pressure loss) MPa

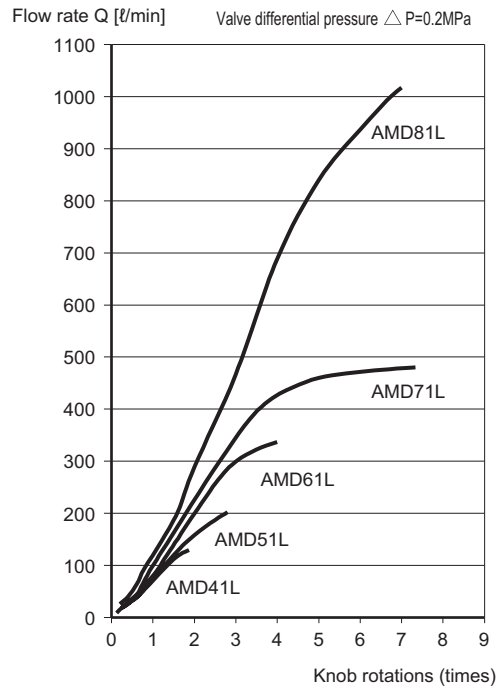
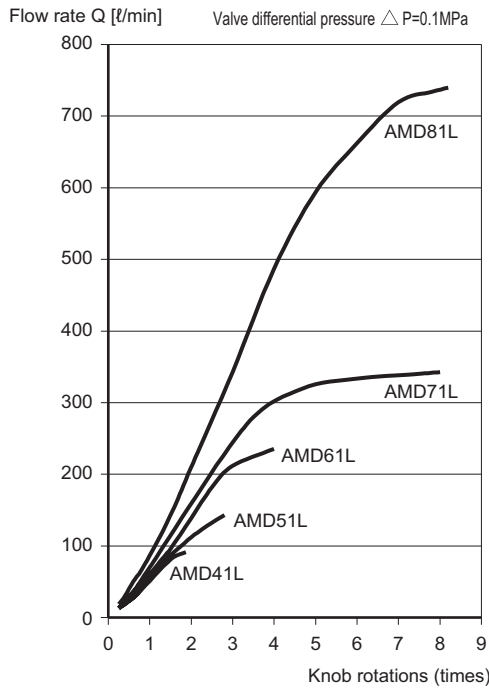
*1: The flow rate is a calculated value and may differ in actual use.
Also, the value depends on the operating conditions (fluid, piping, etc.), so use it as a reference only.

Air operated valve	Part3R	Manual valve	Part2	Drip prevention valve	Part3RN
	Part1		Part2		
	High pressure		High pressure		
	Metah-free		Metah-free		
	Large bore size		Large bore size		
Regulator	Flow rate adjusting valve	Regulator	Single unit	Regulator	Pilot
			Air operated integrated		Manual
			Manual Fine flow rate		
Related products	Fine level Switch	Related products	Fine level Switch	Related products	Related products

Flow characteristics

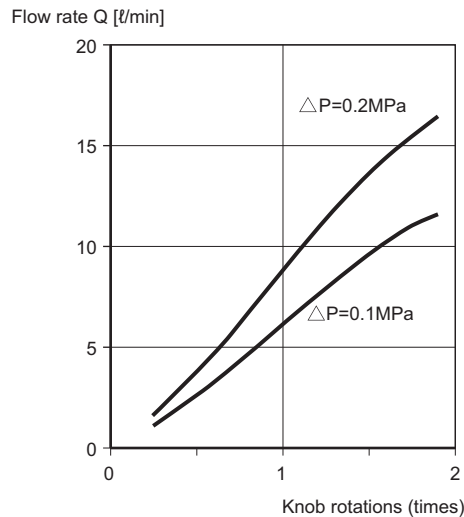
● Flow characteristics (water)

Knob rotations - Flow rate calculation method (water)



● Bypass Flow characteristics (water)

Knob rotation speed - flow rate (common to AMD41L to 81L)



*1 : Vibration and flow rate fluctuation may occur depending on the working conditions such as fluid temperature, differential pressure, and opening. Confirm that the product is acceptable under actual working conditions before use.

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
			Air operated valve								Manual valve				Regulator		Flow rate adjusting valve				
													Drip prevention valve								



Air operated valve for chemical liquids

Liquid discharge valve (2-port valve) LYX Series

- Connection PVC union fitting, nominal 25 to 75, JIS 5K flange, nominal 80, 100

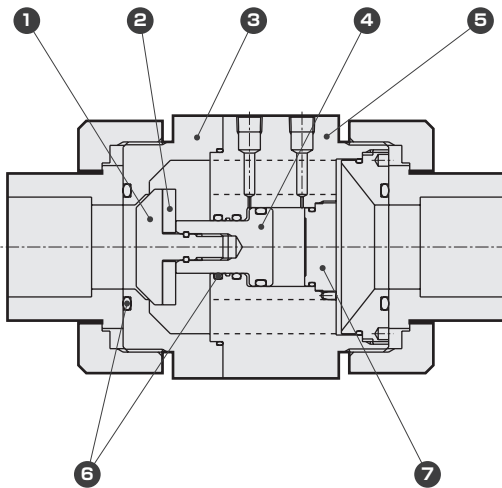
Specifications

Item	LYX-0877	LYX-0878	LYX-0879	LYX-0880	LYX-1451	LYX-1452	LYX-1453	LYX-1454
Working fluid	Chemical liquid, pure water (*1)							
Fluid temperature °C	5 to 90 °C				5 to 50 °C		5 to 80°C	
Proof pressure MPa	0.1							
Working pressure MPa	0.02							
Valve seat leakage cm ³ /min	0 (water pressure)							
Ambient temperature °C	0 to 40							
Frequency	6 cycles/min. or less							
Mounting orientation	Unrestricted							
Connection	PVC union fitting integrated						JIS 5K flange	
Port size	25	30	40	50	65	75	80	100
Orifice size	ø25	ø32	ø40	ø50	ø65	ø78	ø78	ø100
Operating section	Operating pressure MPa							
	Operating port							
Weight kg	0.4	0.85	0.85	1.4	3.3	3.7	5.6	4.8

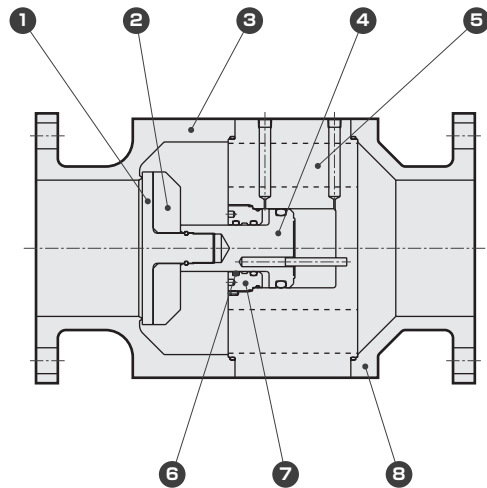
*1: Check the compatibility of product structural materials, working fluids and atmosphere.

Internal structure and parts list

●LYX-0878



●LYX-1454



Part No.	Part name	Material (O-ring material)	
		A	I
1	Main valve	PTFE	
2	Spacer	PP	
3	Body	PP	
4	Piston rod	PP	
5	Cylinder	PP	
6	O-ring	EPDM	FKM
7	Cylinder cap	PP	
8	OUT port	PP	

The material and structure may vary depending on the model number. Contact CKD for details.

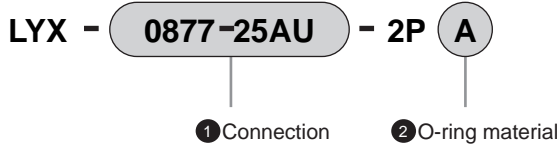
⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Liquid discharge valve (2-port valve)

How to order

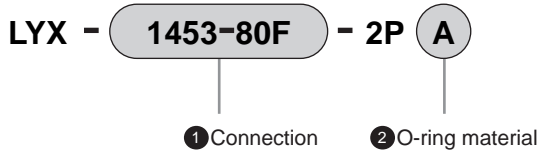
How to order

● PVC union fitting integrated



		① Connection					
		0877-25AU	0878-32AU	0879-40AU	0880-50AU	1451-65AU	1452-75AU
		PVC union fitting					
		Nominal 25	Nominal 30	Nominal 40	Nominal 50	Nominal 65	Nominal 75
Code	Description	Orifice size	Orifice size	Orifice size	Orifice size	Orifice size	Orifice size
		ø25	ø32	ø40	ø50	ø65	ø75
② O-ring material							
A	EPDM	●	●	●	●	●	●
I	FKM	●	●	●	●	●	●

● Flange connection



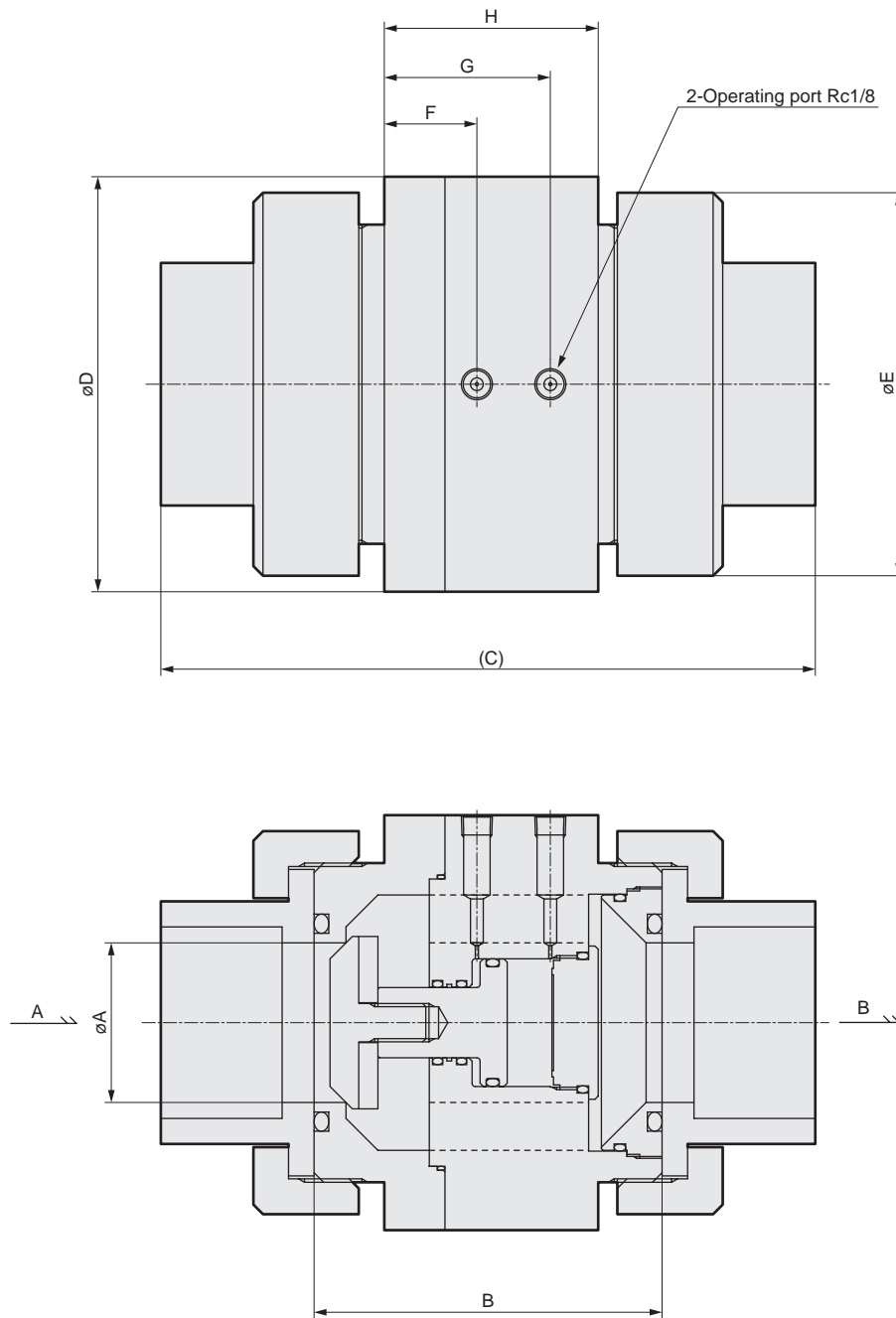
		① Connection	
		1453-80F	1454-100F
		JIS 5K flange	
		Nominal 80	Nominal 100
Code	Description	Orifice size	Orifice size
		ø75	ø100
② O-ring material			
A	EPDM	●	●
I	FKM	●	●

Part3R	Part2	Part1	High pressure Air operated valve
Part3RR	Part2	High pressure Manual valve	Metals-free Large bore size Polyvinyl chloride
Regulator	Pilot	Manual	Drainage
Flow rate adjusting valve	Electric	Manual	Part3RRN
Manual/Fine flow rate	Manual	Manual/Fine flow rate	Part2
Fine level Switch	Manual/Fine flow rate	Manual/Fine flow rate	High pressure Manual valve
Related products	Manual/Fine flow rate	Manual/Fine flow rate	High pressure Manual valve

Liquid discharge valve (2-port valve)

Dimensions

● PVC union fitting integrated



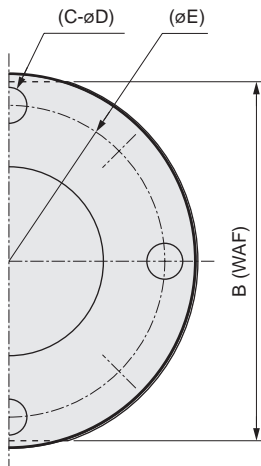
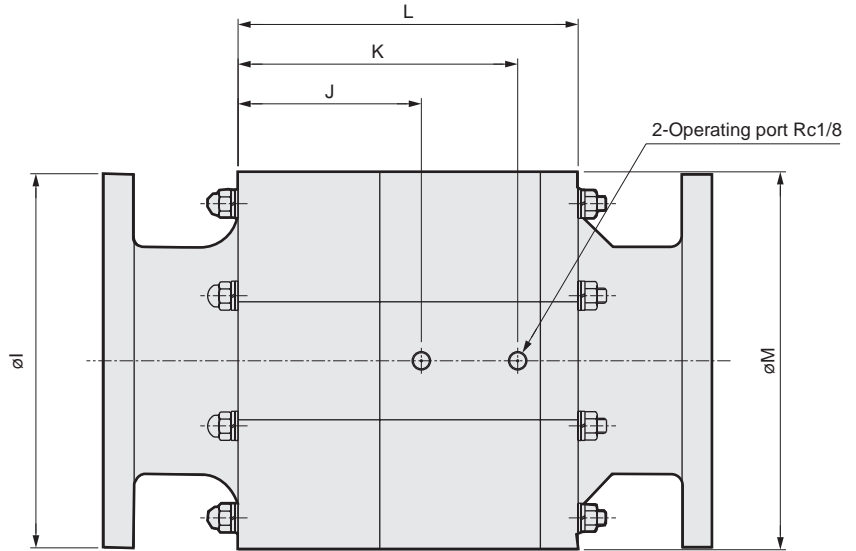
Dimensions	A	B	C	D	E	F	G	H
Model No.								
LYX-0877-25AU	25	75	147	76	70	18	32	45
LYX-0878-32AU	32	101	189	100	96	29	49	63
LYX-0879-40AU	40	101	183	100	96	29	49	63
LYX-0880-50AU	50	109	205	130	120	29	52	67
LYX-1451-65AU	65	170	310	160	154	61.5	95	110
LYX-1452-75AU	78	175	320	170	164	61	99	115

Liquid discharge valve (2-port valve)

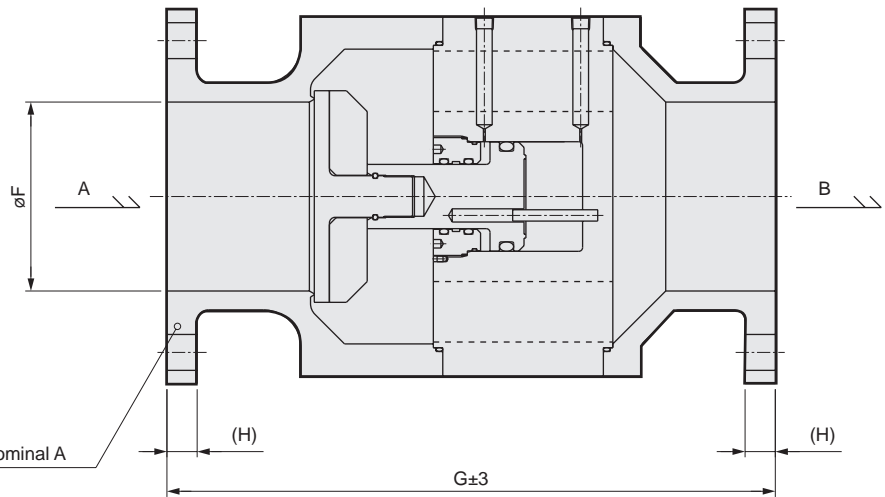
Dimensions

Dimensions

● Flange connection



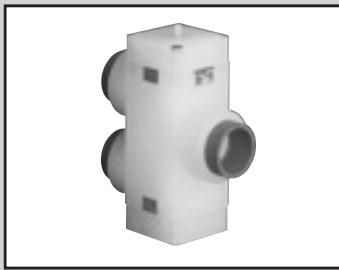
2-JIS 5K flange nominal A



Note: Dimensions in () follow JIS 5K flange shape.

Dimensions	A	B	C	D	E	F	G	H	I	J	K	L	M
Model No.													
LYX-1453-80F	80	166	4	19	145	78	310	14	180	91	129	170	170
LYX-1454-100F	100	190	8	19	165	100	322	16	198	97	148	180	195

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve						Manual valve				Drift prevention valve		Regulator	Flow rate adjusting valve					



Air operated valve for chemical liquids

Liquid discharge valve (3-port valve) Series

- Connection PVC union fitting, Nominal 30, 40, 50

Specifications

Item	LYX-0882	LYX-0883	LYX-0884
Working fluid	Chemical liquid, pure water (*1)		
Fluid temperature °C	5 to 90		
Proof pressure MPa	0.1		
Working pressure MPa	0.02		
Valve seat leakage cm ³ /min	0 (water pressure)		
Ambient temperature °C	0 to 40		
Frequency	6 cycles/min. or less		
Mounting orientation	Unrestricted		
Port size (PVC union integrated fitting)	Nominal 30	Nominal 40	Nominal 50
Orifice size	ø32	ø40	ø50
Operating section	Operating pressure MPa	0.4 to 0.5	
	Operating port	Rc1/8	
Weight kg	1.9	1.9	2.6

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

How to order

LYX - **0882-32AU** - 3P **A**

① Connection

② O-ring material

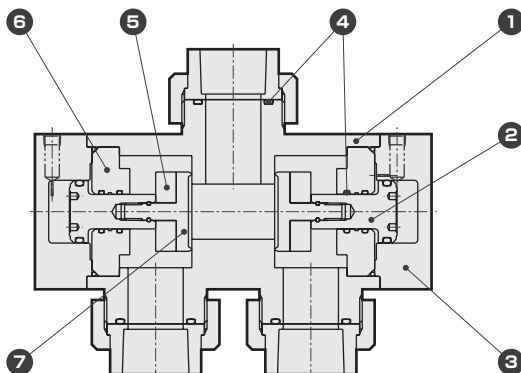
① Connection

0882-32AU	0883-40AU	0884-50AU
PVC union fitting		
Nominal 30	Nominal 40	Nominal 50

Code	Description	Orifice size		
		ø32	ø40	ø50
② O-ring material				
A	EPDM	●	●	●
I	FKM	●	●	●

Internal structure and parts list

● LYX-0882



Part No.	Part name	Material (O-ring material)	
		A	I
1	Body	PP	
2	Piston rod	PP	
3	Cylinder	PP	
4	O-ring	EPDM	FKM
5	Spacer	PP	
6	Cylinder adaptor	PP	
7	Main valve	PTFE	

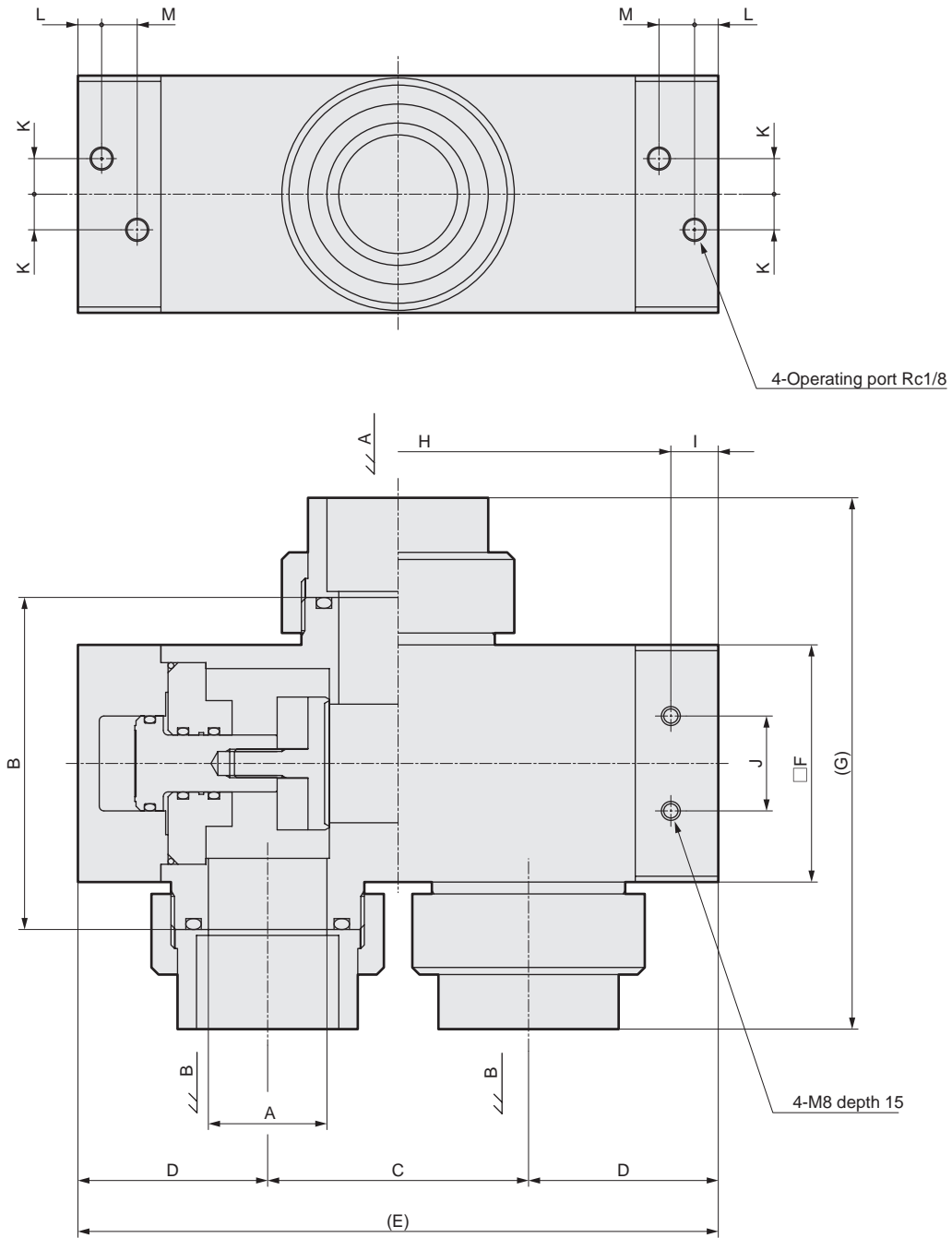
The material and structure may vary depending on the model number. Contact CKD for details.

! Always read the precautions on Intro Pages 7 to 14 before use.

Liquid discharge valve (3-port valve)

Dimensions

Dimensions



Dimensions	A	B	C	D	E	F	G	H	I	J	K	L	M
Model No.													
LYX-0882-32AU	32	130	90	70	230	90	190	200	15	40	15	10	10
LYX-0883-40AU	40	130	90	70	230	90	198	200	15	40	15	10	10
LYX-0884-50AU	50	140	110	80	270	100	224	230	20	40	15	10	15

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve												Regulator		Flow rate adjusting valve				

MEMO

Related products	Fine level Switch	Manual flow rate	Manual	Electric	Manual	Pilot	Air operated Integrated	Single unit	Large bore size	Metal-Free	High pressure	Part 2	Part 3RN	Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R
		Flow rate adjusting valve			Regulator		Drip prevention valve					Manual valve						Air operated valve			

Manual valve



⚠ Safety precautions	Intro Page 9
Part3RN Series	
MMD*03RN	104
GMMD*03RN	112
Part2 Series	
MMD*02 (fluoro body)	116
MMD*02 (stainless steel body)	124
GMMD*02	130
High pressure	
MMD*0H	138
Metal-free	
MMD*0M	142
Large bore size	
LYX-1381	146

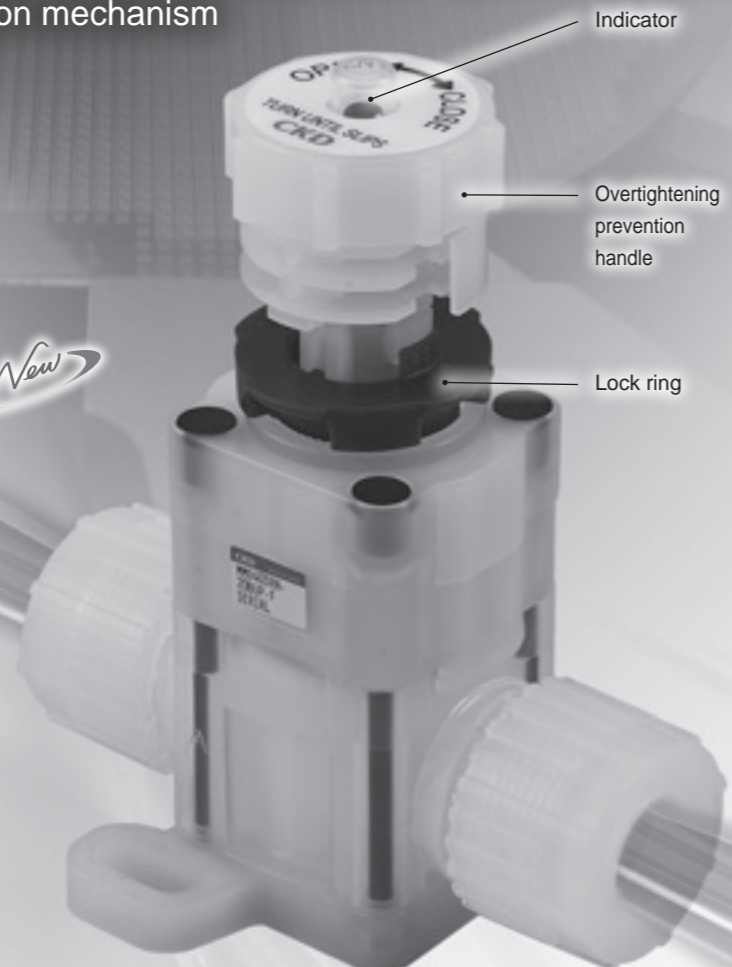
Air operated valve	Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Manual valve	Part3RN	Part2	High pressure	Metal-free	Large bore size		
Drip prevention valve				Single unit	Air operated integrated			
	Regulator	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products

Easier than ever to choose and use

Cover of the "working pressure range", "working fluid" and "fluid temperature" has been expanded as standard from the conventional model (MMD**2). Added safety with a proprietary overtightening prevention mechanism

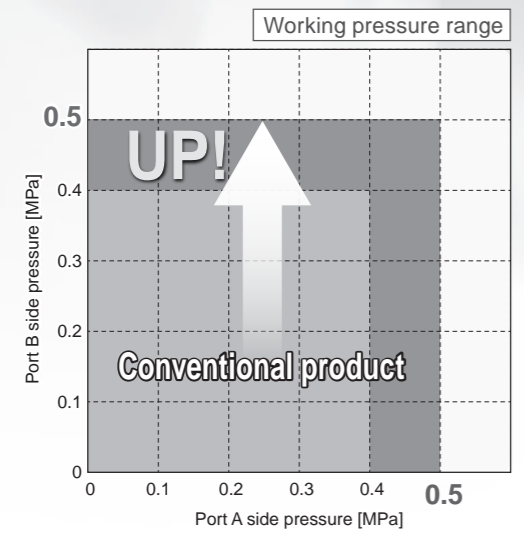
Manual valve for chemical liquids

- MMD003RN**
- MMD303RN**
- MMD403RN**
- MMD503RN**



Working pressure range extended

Working pressure range expanded compared to the conventional Part 2 Series. Equal working pressure at ports A and B.

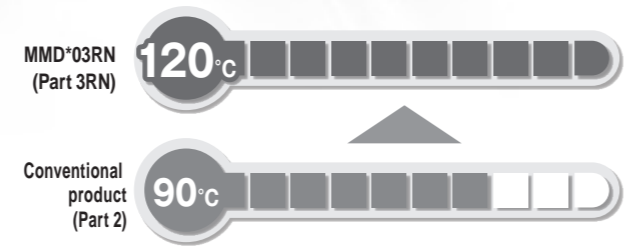


Supports a variety of liquids as standard

The use of highly chemically resistant polyvinylidene fluororesin (PVDF) for the actuator enables support for a wide range of applications as standard, regardless of acidity or alkalinity.

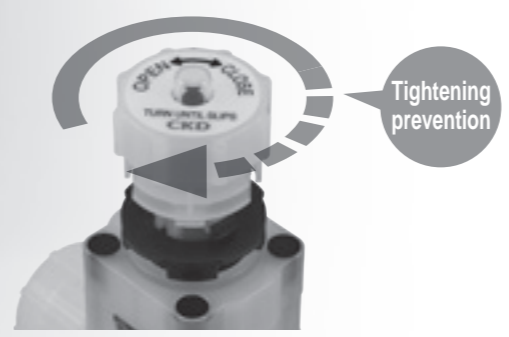
Liquids	General/Other	Hydrofluoric acid
Conventional product (Part 2)	U specs.	P specs.
MMD*03RN (Part 3RN)	Standard specifications	

Extended fluid temperatures for standard products



Seal damage prevention

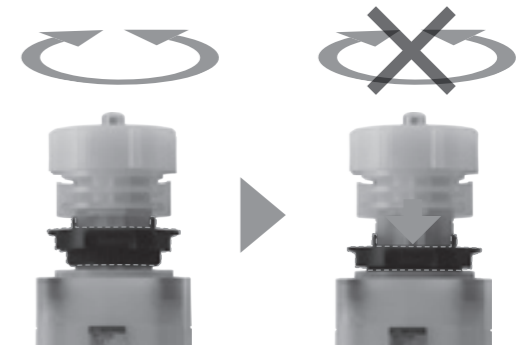
Handle with overtightening prevention mechanism
With CKD's proprietary structure, the risk of seal damage due to handle operation is minimized.



* MMD303/403/503RN Series and MMD003RN Series have different structures for tightening prevention. Refer to the precautions for details.

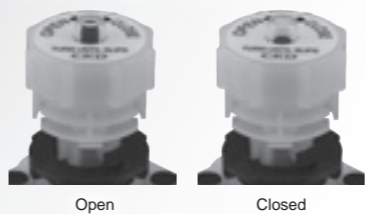
Malfunction prevention

Lock ring
Prevents unintended handle opening/closing due to vibration, etc.



Valve open/closed visual indicator

Indicator
The valve status (open or closed) can be confirmed.



3 types of mounting methods

New 4-point flange mounting added to the conventional flange and bottom mounting.



Prevents misoperation

Misoperation prevention cover

By covering the operation section (handle/lock ring), misoperation, human error issues such as carelessness, communication failures, disasters, and accidents are prevented.

*The misoperation prevention cover cannot be used with the GMMD303/403/503RN Series.



Size variation

	1/4"	3/8"	1/2"	3/4"	1"
Tube connection	6 mm	10 mm	12 mm		25 mm
MMD003RN	●	●			
<i>Industry's smallest class Face-to-Face dimensions</i>					
MMD303RN		●	●		
MMD403RN				●	
MMD503RN					●
GMMD*03RN	●	●	●	●	●

GMMD Series
Manifold keeps it compact.
*Contact CKD for details.



Manual valve for chemical liquids

MMD*03RN Series



Export controlled items

*Eligibility: MMD403RN, MMD503RN

Specifications

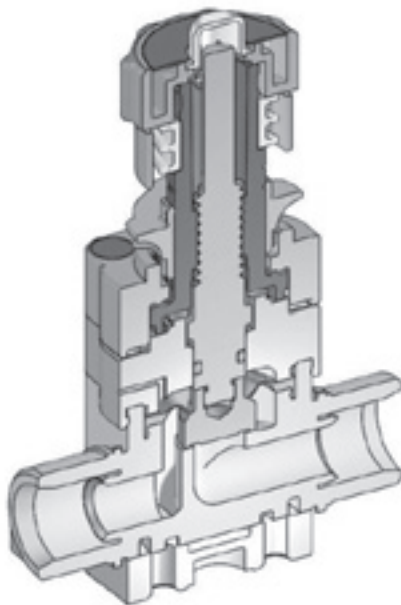
Item	Size	MMD003RN	MMD303RN	MMD403RN	MMD503RN
		□ 25	□ 36	□ 46	□ 60
Working fluid		Chemical liquids, pure water, N ₂ gas, air			
Fluid temperature °C		5 to 120 (*1, *2)			
Proof pressure MPa		1.0			
Working pressure range	(A→B) MPa	0 to 0.5			
	(B→A) MPa	0 to 0.5			
Valve seat leakage cm ³ /min		0 (water pressure)			
Back pressure MPa		0 to 0.5			
Ambient temperature °C		0 to 60			
Mounting orientation		Unrestricted			
Connection		Super 300 Pillar fitting P Series F-LOCK 60 Series			
Weight kg		0.09	0.22	0.44	0.87

*1: For hydrofluoric acid or chemical liquids containing hydrofluoric acid, use within the range of 5 to 80°C.

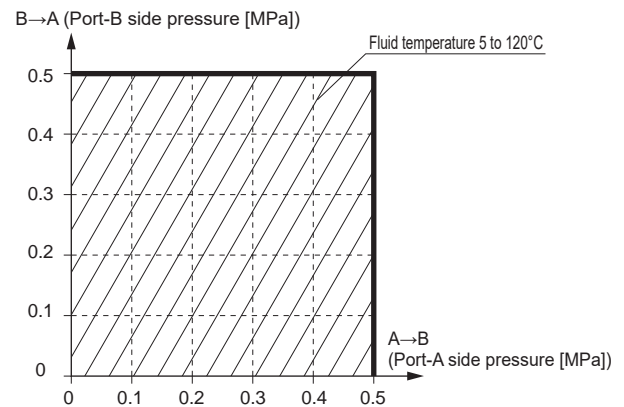
*2: 5 to 100°C if the connection is F-LOCK 60 Series.

*3: Refer to pages 110 to 111 for Cv and flow characteristics.

Structure diagram and parts list



Working pressure

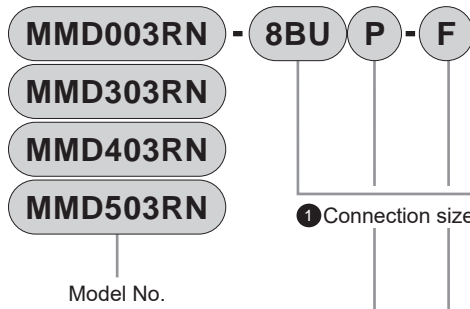


Part name	Material
Body (wetted parts)	PFA or PTFE
Diaphragm (wetted parts)	PTFE
Actuator	PVDF
O-ring	FEPM
Metal parts	Stainless steel (fluoro resin coating)
Mounting plate	PVDF
Misoperation prevention cover	PP

! Always read the precautions on Intro Pages 7 to 14 before use.

How to order

● Body



Code	Description				
1 Connection size		Selectable models			
Metric	Tube size	MMD0	MMD3	MMD4	MMD5
6U	ø6 x ø4	●			
8U	ø8 x ø6	●			
10U	ø10 x ø8	●	●		
12U	ø12 to ø10		●		
25U	ø25 x ø22				●
Inching	Tube size	MMD0	MMD3	MMD4	MMD5
8BU	1/4"×5/32"	●			
10BU	3/8"×1/4"	●	●		
15BU	1/2"×3/8"		●		
20BU	3/4"×5/8"			●	
25BU	1"×7/8"				●
2 Connection					
P	Super 300 Pillar fitting P Series				
R	F-LOCK 60 Series				
3 Mounting method					
F	Flange mounting				
H	4-point flange mounting				
X	Bottom mounting				

⚠ Precautions for model No. selection

* Body material
Connection F-LOCK 60 Series is PTFE body.

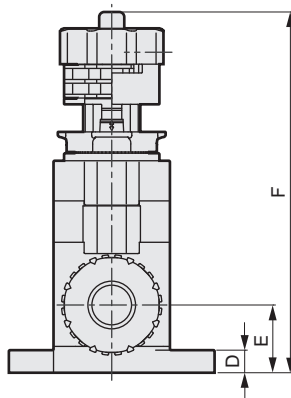
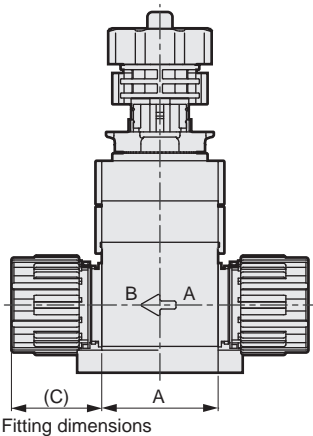
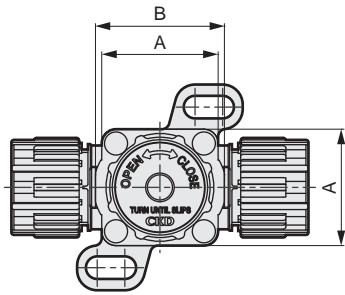
● Misoperation prevention cover

- MMD003RN-C
- MMD303RN-C
- MMD403RN-C
- MMD503RN-C

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN
	Part2						Part2
	Part1						High pressure
Manual valve	Part3R	High pressure	Metal-free	Large bore size	Drip prevention valve	Air operated integrated	Regulator
	Part2						Pilot
Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products		
	Manual						

MMD*03RN Series

Dimensions



Super 300P Series

Connection (connection size + type)	C
6UP, 8BUP	19
8UP	22
10UP, 10BUP	25
12UP, 15BUP	29
20BUP	36
25UP, 25BUP	43

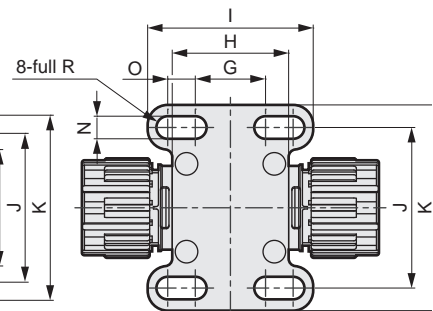
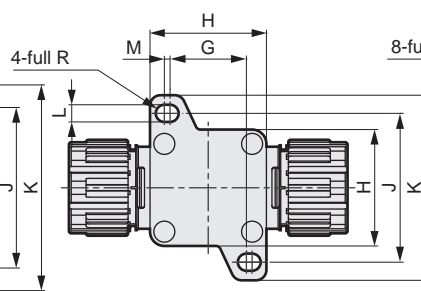
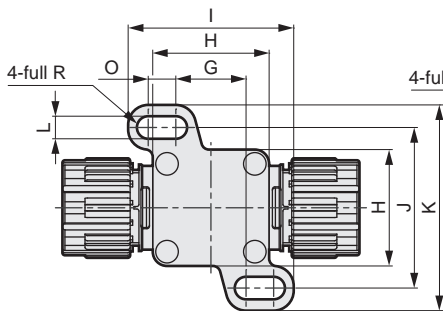
F-LOCK 60 Series

Connection (connection size + type)	C
6UR	30
8BUR	31
8UR	31
10UR	37
10BUR	39
12UR	37
15BUR	39
20BUR	44
25UR	49.5
25BUR	51

● **F** Flange mounting (MMD 0/3/4)

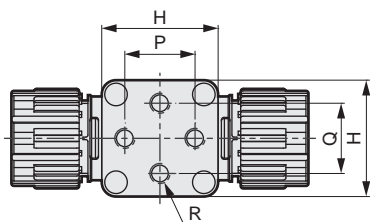
● **F** Flange mounting (MMD5)

● **H** 4-point flange mounting



Model	A	B	D	E	F	G	H	I	J	K	L	M	N	O
MMD003RN	25	-	6	19	83	15	25	30	33	39	2-3.5	2-4.5	4-3.5	4-4.5
MMD303RN	36	39	8.5	21	116	22	36	50	50	62	2-7	2-8	4-7	4-8
MMD403RN	46	51	9	27	144	28	46	66	64	82	2-9	2-11	4-9	4-11
MMD503RN	60	65	10	35	184	40	61	78	78	97	2-9	2-3	4-9	4-11

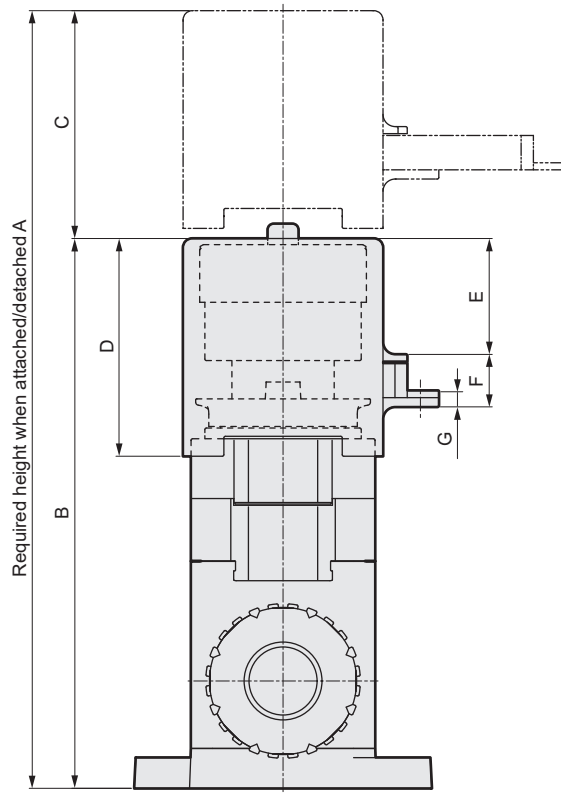
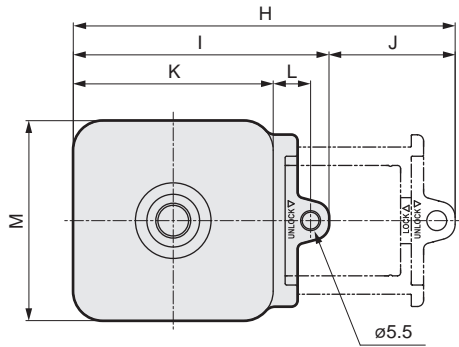
● **X** Bottom mounting



Model	P	Q	R
MMD003RN	-	14±0.3	2-M6 depth 8
MMD303RN	22±0.3	22±0.3	4-M6 depth 9
MMD403RN	28±0.3	28±0.3	4-M8 depth 10
MMD503RN	40±0.3	40±0.3	4-M8 depth 13

Dimensions

- Misoperation prevention cover
 - MMD*03RN-C



Required height when attached/detached A

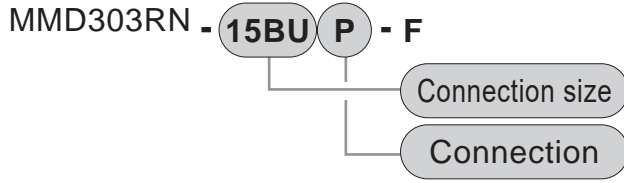
* Mounting the misoperation prevention cover
Mountable in any direction (4 directions).

Model No.	A	B	C	D	E	F	G	H	I	J	K	L	M
MMD003RN-C	105	79	26	22	6.5	8	5	60	44	16	29	10	25
MMD303RN-C	166	112	54	51	25	13	5	78	55	23	40	10	40
MMD403RN-C	203	139	64	60	31	15	5	99	68	31	51	11	51
MMD503RN-C	254	179	75	71	38	17	5.5	125	83	71	65	12	65

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metal-free	Large bore size		
	Part1					
Manual valve	Part3RN	High pressure	Metal-free	Large bore size		
	Part2	High pressure	Metal-free	Large bore size		
	Part1					
Drip prevention valve	Single unit					
	Air operated					
	Integrated					
Regulator	Pilot					
	Manual					
Flow rate adjusting valve	Electric					
	Manual					
	Manual/Fine flow rate					
Fine level Switch						
Related products						

MMD*03RN Series

MMD*03RN Series Connection and Cv



Super 300 pillar fitting (connection code: P)

	Connection size	Connection	Applicable tube size	Selectable model sizes and Cv			
				MMD0	MMD3	MMD4	MMD5
Metric	6U	P	ø6 x ø4	0.34			
	8U	P	ø8 x ø6	0.64			
	10U	P	ø10 x ø8	0.8	1.25		
	12U	P	ø12 x ø10		1.8		
	25U	P	ø25 x ø22				8
Inch	8BU	P	1/4" x 5/32"	0.34			
	10BU	P	3/8" x 1/4"	0.8	1.25		
	15BU	P	1/2" x 3/8"		1.8		
	20BU	P	3/4" x 5/8"			5	
	25BU	P	1" x 7/8"				8

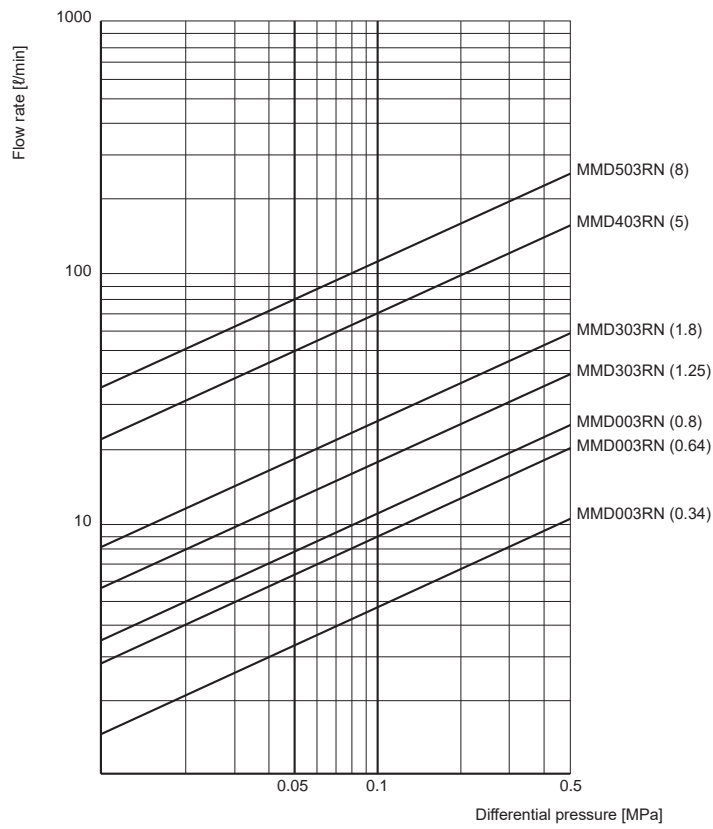
F-LOCK 60 Series (connection code: R)

	Connection size	Connection	Applicable tube size	Selectable model sizes and Cv			
				MMD0	MMD3	MMD4	MMD5
Metric	6U	R	ø6 x ø4	0.28			
	8U	R	ø8 x ø6	0.64			
	10U	R	ø10 x ø8	0.7	1		
	12U	R	ø12 x ø10		1.6		
	25U	R	ø25 x ø22				8
Inch	8BU	R	1/4" x 5/32"	0.28			
	10BU	R	3/8" x 1/4"	0.64	0.7		
	15BU	R	1/2" x 3/8"		1.6		
	20BU	R	3/4" x 5/8"			4.5	
	25BU	R	1" x 7/8"				8

MMD003RN to MMD503RN Flow characteristics

● Flow characteristics (water)

Differential pressure - internal flow rate (): Cv



Air operated valve	Part3R	High pressure	Part2	High pressure	Part1	High pressure	High pressure
		Metal-free		Metal-free		Metal-free	Metal-free
		Large bore size		Large bore size		Large bore size	Large bore size
		Polyvinyl chloride		Polyvinyl chloride		Polyvinyl chloride	Polyvinyl chloride
Manual valve	Part3RN	High pressure	Part2	High pressure	Part1	High pressure	High pressure
		Metal-free		Metal-free		Metal-free	Metal-free
		Large bore size		Large bore size		Large bore size	Large bore size
		Drainage		Drainage		Drainage	Drainage
Drip prevention valve		Single unit		Single unit		Single unit	Single unit
		Air operated integrated		Air operated integrated		Air operated integrated	Air operated integrated
Regulator		Pilot		Pilot		Pilot	Pilot
		Manual		Manual		Manual	Manual
Flow rate adjusting valve		Electric		Electric		Electric	Electric
		Manual		Manual		Manual	Manual
		Manual Fine flow rate		Manual Fine flow rate		Manual Fine flow rate	Manual Fine flow rate
	Fine level Switch		Fine level Switch		Fine level Switch	Fine level Switch	
	Related products		Related products		Related products	Related products	

GMMD*03RN Series

**Export controlled items**

*Eligibility: GMMD403RN, GMMD503RN



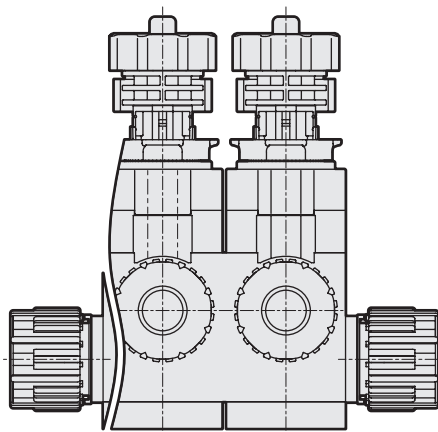
Specifications

Item	Size	GMMD003RN	GMMD303RN	GMMD403RN	GMMD503RN
		□ 25	□ 36	□ 46	□ 60
Working fluid		Chemical liquids, pure water, N ₂ gas, air			
Fluid temperature °C		5 to 120 (*1, *2)			
Proof pressure MPa		1.0			
Working pressure range	(A→B) MPa	0 to 0.5			
	(B→A) MPa	0 to 0.5			
Valve seat leakage cm ³ /min		0 (water pressure)			
Back pressure MPa		0 to 0.5			
Ambient temperature °C		0 to 60			
Mounting orientation		Unrestricted			
Connection		Super 300 Pillar fitting P Series F-LOCK 60 Series			
Weight	kg				
	One station	0.12	0.27	0.5	1.2
	2 stations	0.22	0.54	1.0	2.4
	3 stations	0.33	0.81	1.5	3.8
	4 stations	0.43	1.0	1.9	5.0
	5 stations	0.54	1.4	2.4	-

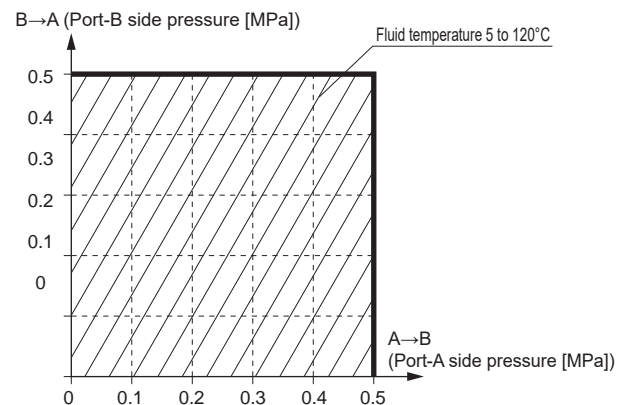
*1: For hydrofluoric acid or chemical liquids containing hydrofluoric acid, use within the range of 5 to 80°C.

*2: 5 to 100°C if the connection is F-LOCK 60 Series.

Structure and parts list



Working pressure

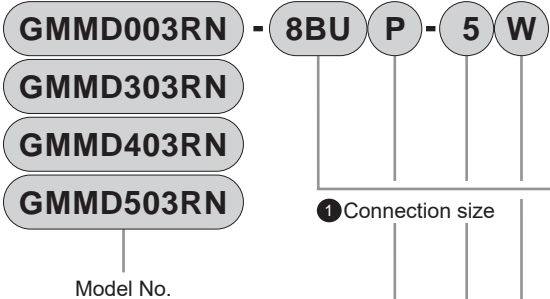


Part name	Material
Body (wetted parts)	PFA or PTFE
Diaphragm (wetted parts)	PTFE
Actuator	PVDF
O-ring	FEPM
Metal parts	Stainless steel (fluoro resin coating)
Mounting plate	PVDF
Misoperation prevention cover	PP

! Always read the precautions on Intro Pages 7 to 14 before use.

How to order

● Body



Code		Description			
① Connection size		Selectable models			
Metric	Tube size	GMMD0	GMMD3	GMMD4	GMMD5
6U	ø6 x ø4	●			
8U	ø8 x ø6	●			
10U	ø10 x ø8	●	●		
12U	ø12 to ø10		●		
25U	ø25 x ø22				●
Inching	Tube size	GMMD0	GMMD3	GMMD4	GMMD5
8BU	1/4" x 5/32"	●			
10BU	3/8" x 1/4"	●	●		
15BU	1/2" x 3/8"		●		
20BU	3/4" x 5/8"			●	
25BU	1" x 7/8"				●
② Connection					
P	Super 300 Pillar fitting P Series				
R	F-LOCK 60 Series				
③ Station No.		Selectable models			
		GMMD0	GMMD3	GMMD4	GMMD5
1	1 station	●	●	●	●
2	2 stations	●	●	●	●
3	3 stations	●	●	●	●
4	4 stations	●	●	●	●
5	5 stations	●	●	●	
④ Port A position					
L	Left				
R	Right				
W	Both sides				

● Misoperation prevention cover
 • MMD003RN-C

* The misoperation prevention cover cannot be used with the GMMD3/4/5 Series.

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Drift prevention valve	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Air operated integrated		Regulator		Flow rate adjusting valve				

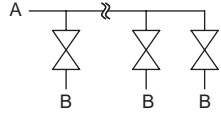
GMMD*03RN Series

Dimensions

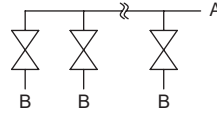
Part 3R Part 2 Part 1 High pressure Metal-free Large bore size PVC Drainage Part 3RN Part 2 High pressure Metal-free Large bore size Single unit Air operated Integrated Pilot Manual Electric Manual Manual Fine level Switch Related products

Air operated valve Manual valve Drip prevention valve Regulator Flow rate adjusting valve

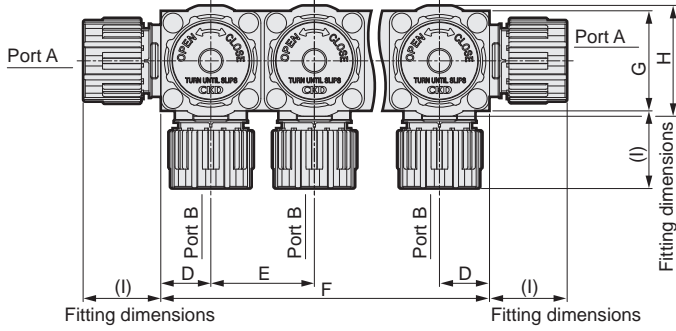
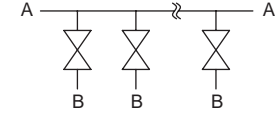
Port A position: L



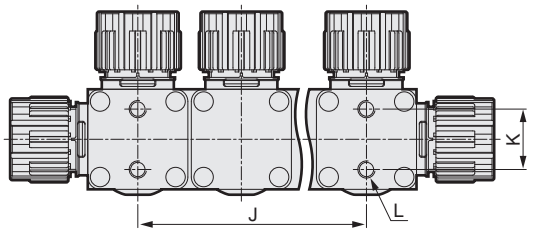
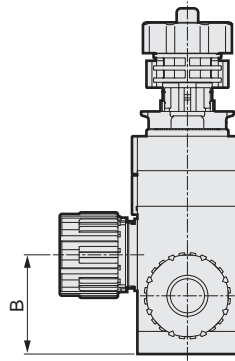
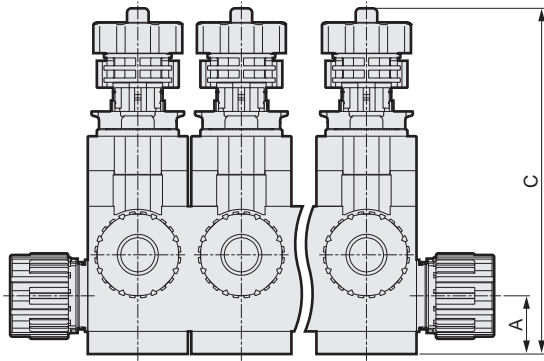
Port A position: R



Port A position: W



Model	A	B	C	D	E	G	H
GMMD003RN	19	28.5	87	12.5	Table 1	25	-
GMMD303RN	21	35	128	18	38	36	39
GMMD403RN	27	46	160	23	48	46	51
GMMD503RN	35	60	199	30	62	60	65



Super 300P Series

Connection (connection size + type)	l
6UP, 8BUP	19
8UP	22
10UP, 10BUP	25
12UP, 15BUP	29
20BUP	36
25UP, 25BUP	43

F-LOCK 60 Series

Connection (connection size + type)	l
6UR	30
8BUR	31
8UR	31
10UR	37
10BUR	39
12UR	37
15BUR	39
20BUR	44
25UR	49.5
25BUR	51

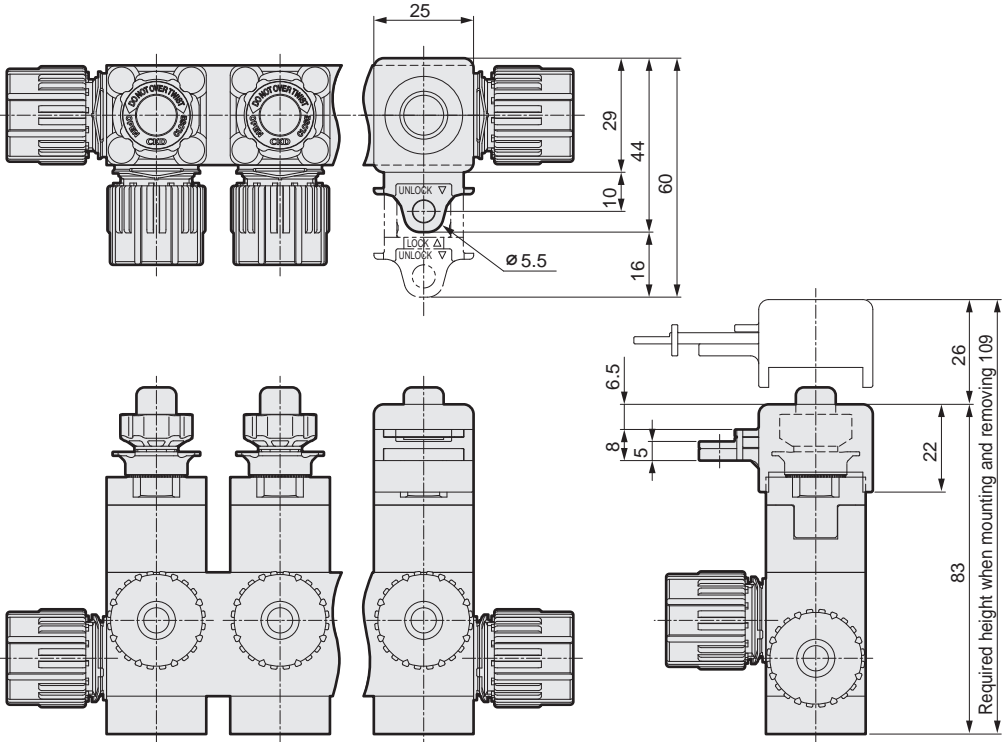
Table 1

Connection (connection size + type)	Station No.	E	F	J	L
6UP, 8BUP 8UP	1	-	25	-	2-M6 depth 8
	2	26	51	26±0.3	
	3		77	52±0.4	4-M6 depth 8
	4		103	78±0.4	
	5		129	104±0.5	
10UP, 10BUP 10UR, 10BUR	1		-	25	-
	2	31	56	31±0.3	
	3		87	62±0.4	4-M6 depth 8
	4		118	93±0.5	
	5		149	124±0.5	

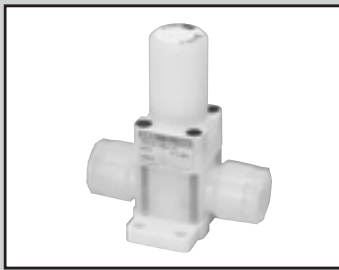
Model	Station No.	F	J	K	L
GMMD003RN	Table 1		-	14±0.3	Table 1
GMMD303RN	1	36	-	22±0.3	4-M6 depth 9
	2	74	38±0.3		
	3	112	76±0.4		
	4	150	114±0.5		
	5	188	152±0.7		
GMMD403RN	1	46	-	28±0.3	4-M8 depth 10
	2	94	48±0.4		
	3	142	96±0.5		
	4	190	144±0.5		
	5	238	192±0.7		
GMMD503RN	1	60	-	40±0.3	4-M8 depth 13
	2	122	62±0.4		
	3	184	124±0.5		
	4	246	186±0.7		

Dimensions

- Misoperation prevention cover (GMMD003RN)



Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Regulator	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
Air operated valve							Manual valve					Drip prevention valve		Regulator		Flow rate adjusting valve						



Manual valve for chemical liquids

MMD³₄⁵02 Series

● Connection tube size: ø10, ø12, ø25, 3/8", 1/2", 3/4", 1"



Export controlled items

*Eligibility: MMD402, 502

Specifications

Item	MMD302	MMD402	MMD502
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C	5 to 90 (*2)		
Proof pressure MPa	1.2		
Working pressure (A→B)MPa	0 to 0.4		
Working pressure (B→A)MPa	0 to 0.4		
Valve seat leakagecm ³ /min	0 (water pressure)		
Back pressure MPa	0 to 0.4		
Ambient temperature°C	0 to 60		
Mounting orientation	Unrestricted		
Connection	O.D. ø10 tube connection (integrated fitting) O.D. ø12 tube connection (integrated fitting) O.D. 3/8" tube connection (integrated fitting) O.D. 1/2" tube connection (integrated fitting)	O.D. 3/4" tube connection (Integrated fitting)	O.D. ø25 tube connection (integrated fitting) O.D. 1" tube connection (integrated fitting)
Orifice size	ø6.3 ø6.4 ø7.5 Ø 8 ø9.4 ø9.5 ø10	ø14.7 ø15.9 ø16	ø20
Cv value	0.8 1.25 1.8	5	8
Weight kg	0.20	0.40	0.76

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

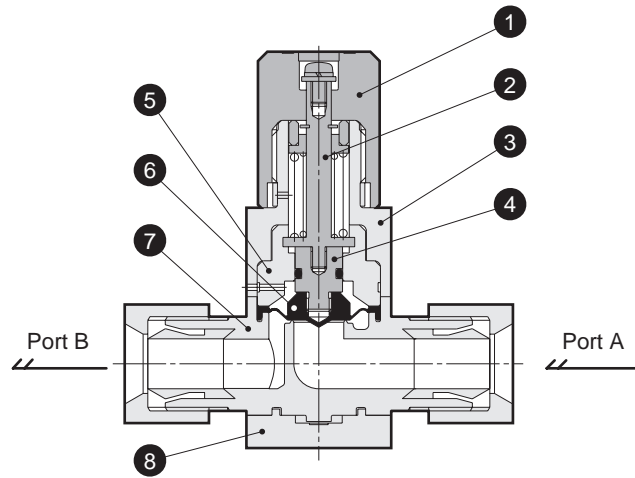
*3: MMD*02 Series cannot be used for flow rate adjustment. Use it either fully closed or fully opened.

Part 3R
Part 2
Part 1
High pressure
Metal-free
Large bore size
PVC
Drainage
Part 3RN
Part 2
High pressure
Metal-free
Large bore size
Single unit
Air operated Integrated
Pilot
Manual
Electric
Manual
Manual Fine flow rate
Fine level Switch
Related products

Air operated valve
Manual valve
Drip prevention valve
Regulator
Flow rate adjusting valve

Always read the precautions on Intro Pages 7 to 14 before use.

Internal structure and parts list



Part No.	Part name	Material (by fluid code)	
		U	P
1	Knob	PE	
2	Shaft	SUS304 (with fluoro resin coating)	
3	Cover	PP (*1)	PP (*1)
4	Rod	PP	
5	Diaphragm holder	PP (*1)	PP (*1)
6	Diaphragm	PTFE	
7	Body	PFA, PTFE	
8	Mounting plate	PP (*1)	PP (*1)

*1: The color tone differs between fluid code U and fluid code P. The material and structure may vary depending on the model number. Contact CKD for details.

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Manual valve	Part3RN	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Regulator	Pilot	Single unit	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Manual	Single unit	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Electric	Single unit	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Manual	Single unit	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Manual/Fine flow rate	Single unit	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Related products	Fine level Switch	Single unit	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Related products	Single unit	Metal-free	Large bore size	Polyvinyl chloride	Drainage

MMD302 Series

How to order

●MMD302 Series (connection: $\phi 10$, 3/8" tube connection)

MMD302 - 10UP - 8 - U

Model No. Orifice diameter Fluid

① Connection

		① Connection										
		10US	10BUS	10UP	10BUP	10UA	10BUA	10UR	10BUR	10UK	10BUK	10BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection		$\phi 10 \times \phi 8$ tube connection 3/8" x 1/4" tube connection
Code	Description	Orifice size						$\phi 7.5$	$\phi 6.4$	$\phi 7.5$		$\phi 6.3$
Body material												
PFA: PFA molded body, PTFE: PTFE machined body		PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PFA	PTFE
		② Fluid										
U	General chemical liquids	●	●	●	●	●	●	●	●	●	●	●
P	For hydrofluoric acid	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

●Model No. for bottom mounting

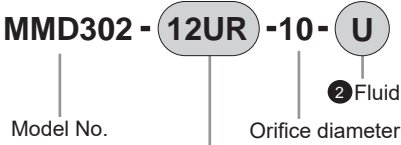
MMD302 - ① - 8 - ② X

Bottom mounting

Part 3R	High pressure	Air operated valve
Part 2	Metal-free	
Part 1	Large bore size	
	PVC	
	Drainage	
Part 3RN	Manual valve	
Part 2	High pressure	Manual valve
	Metal-free	
	Large bore size	
	Single unit	Drip prevention valve
	Air operated Integrated	
	Pilot	Regulator
	Manual	
	Electric	
	Manual	Flow rate adjusting valve
	Manual Fine flow rate	
	Fine level Switch	
Related products		

How to order

●MMD302 Series (connection: ø12, 1/2" tube connection)

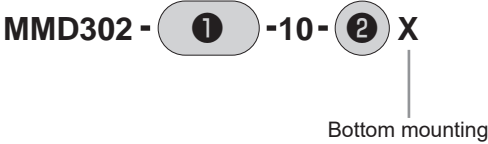


① Connection											
12US	15BUS	12UP	15BUP	12UA	15BUA	12UR	15BUR	12UK	15BUK	15BUW	
Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated	
ø12 x ø10 tube connection 1/2" x 3/8" tube connection		ø12 x ø10 tube connection 1/2" x 3/8" tube connection		ø12 x ø10 tube connection 1/2" x 3/8" tube connection		ø12 x ø10 tube connection 1/2" x 3/8" tube connection		ø12 x ø10 tube connection 1/2" x 3/8" tube connection		1/2" x 3/8" tube connection	
ø10						ø9.5		ø10		ø9.4	
PFA molded body											

Code	Description	Orifice size
	Body material	

② Fluid		12US	15BUS	12UP	15BUP	12UA	15BUA	12UR	15BUR	12UK	15BUK	15BUW
U	General chemical liquids	●	●	●	●	●	●	●	●	●	●	●
P	For hydrofluoric acid	●	●	●	●	●	●	●	●	●	●	●

●Model No. for bottom mounting



Part3R	Part2	Part1	High pressure	Metar-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metar-free	Large bore size	Single unit	Air operated Integrated	Regulator	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve		Regulator			Flow rate adjusting valve				

MMD402 Series

How to order

● MMD402 Series

MMD402 - 20BUA -16- U

Model No. Instruction on orifice size

② Fluid

① Connection

① Connection					
20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
Super-type pillar integrated fitting	Super 300 type Pillar fitting P Series integrated	F-LOCK 20A Series Integrated fitting	F-LOCK 60 Series Integrated fitting	Final Lock Integrated fitting	Flaretek Integrated fitting
3/4" x 5/8" tube connection					
Code	Description	Orifice size			
		ø16		ø15.9	ø16
	Body material	PFA	PTFE	PFA	PTFE

Code	Description	Orifice size			
		ø16	ø15.9	ø16	ø14.7
	Body material	PFA	PTFE	PFA	PTFE

② Fluid					
Code	Description	20BUS	20BUP	20BUA	20BUR
U	General chemical liquids	●	●	●	●
P	For hydrofluoric acid	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

● Model No. for bottom mounting

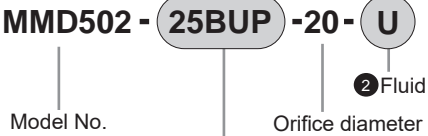
MMD402 - ① -16- ② X

Bottom mounting

- Part 3R
- Part 2
- Part 1
- High pressure
- Metal-free
- Large bore size
- PVC
- Drainage
- Part 3RN
- Part 2
- High pressure
- Metal-free
- Large bore size
- Single unit
- Air operated Integrated
- Pilot
- Manual
- Electric
- Manual
- Manual Fine flow rate
- Fine level Switch
- Related products

How to order

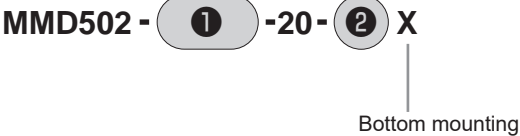
● MMD502 Series



		1 Connection									
		25US	25BUS	25UP	25BUP	25BUA	25UR	25BUR	25UK	25BUK	25BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Fitting Integrated	F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection (*1)	ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection
Code	Description	ø20									
Body material											
PFA: PFA molded body, PTFE: PTFE machined body		PFA	PFA	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
2 Fluid											
U	General chemical liquids	●	●	●	●	●	●	●	●	●	●
P	For hydrofluoric acid	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

● Model No. for bottom mounting



Precautions for model No. selection

*1: Can also be used for ø25 x ø22 tube connection.

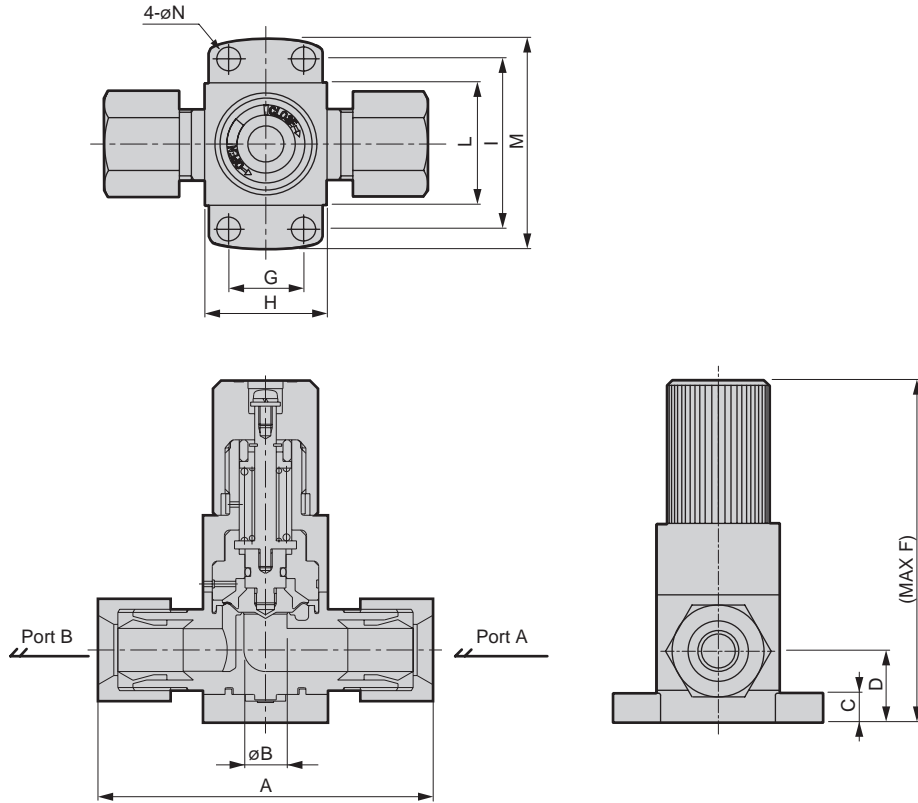
Air operated valve	Part3R	Part2	Part1
	High pressure	Metal-free	Large bore size
	Polyvinyl chloride	Drainage	Part3RN
Manual valve	Part2	High pressure	Manual valve
	Metal-free	Large bore size	Single unit
	Drain prevention valve	Air operated integrated	Regulator
Flow rate adjusting valve	Pilot	Manual	Electric
	Manual	Manual	Manual
	Manual Fine flow rate	Manual Fine flow rate	Fine level Switch
Related products			

MMD³₅402 Series

Dimensions

● Integrated fitting

- MMD302- *1
- MMD402- *1
- MMD502- *1



Model No.	C	D	F	G	H	I	L	M	N
MMD302	8.5	21	106	22	38	50	36	62	7
MMD402	9	27	134	28	47	64	46	82	9
MMD502	10	35	167	40	60	78	60	96	9

MMD3 (10mm)

*1 (Connector No.)	A	B
10US	86	8
10BUS	86	8
10UP	86	8
10BUP	86	8
10UA	78	8
10BUA	78	8
10UR	110	7.5
10BUR	114	6.4
10UK	96	7.5
10BUK	96	7.5
10BUW	97	6.3

MMD3 (12mm)

*1 (Connector No.)	A	B
12US	95	10
15BUS	95	10
12UP	94	10
15BUP	94	10
12UA	86	10
15BUA	86	10
12UR	110	9.5
15BUR	114	9.5
12UK	102	10
15BUK	102	10
15BUW	103	9.4

MMD4

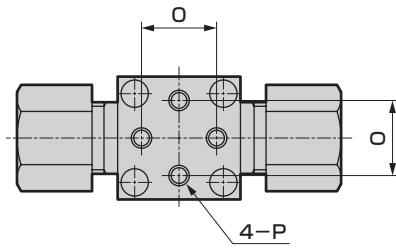
*1 (Connector No.)	A	B
20BUS	124	16
20BUP	118	16
20BUA	108	16
20BUR	134	15.9
20BUK	119	16
20BUW	122	14.7

MMD5

*1 (Connector No.)	A	B
25BUS	147	20
25BUP	147	20
25UP	146	20
25BUP	146	20
25BUA	140	20
25UR	159	20
25BUR	162	20
25UK	141	20
25BUK	141	20
25BUW	156	20

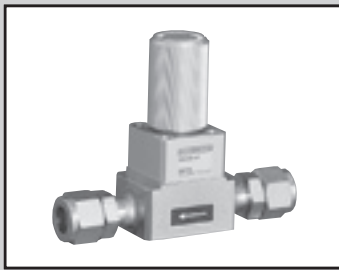
Dimensions

● Bottom mounting



Model No.	O	P
MMD302	22±0.3	M6 depth 9
MMD402	28±0.3	M8 depth 10
MMD502	40±0.3	M8 depth 13

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RRN	Manual valve	High pressure	Metal-free	Large bore size	Drip prevention valve	Single unit	Air operated integrated	Regulator	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Manual Fine flow rate	Fine level Switch	Related products
	Part2																						
	Part1																						
	High pressure																						



Stainless steel body manual valve for chemical liquids

MMD³₄⁵02 Series

Stainless steel body with stable seal structure

Ideal for explosion-proof environments such as solvents



Specifications

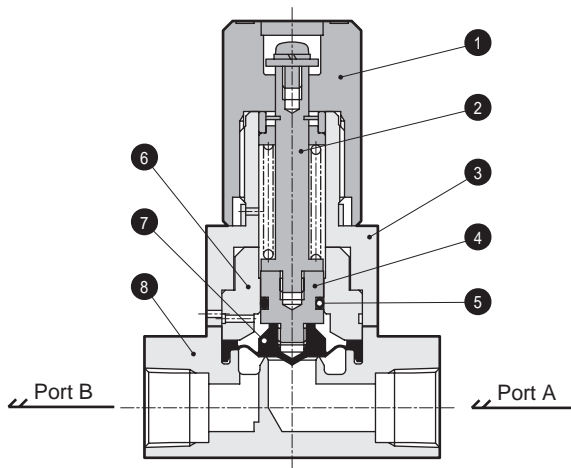
Item	MMD302	MMD402	MMD502
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C	5 to 90		
Proof pressure MPa	1.2		
Working pressure (A→B)MPa	0 to 0.4		
Working pressure (B→A)MPa	0 to 0.4		
Valve seat leakagecm ³ /min	0 (water pressure)		
Back pressure MPa	0 to 0.4		
Ambient temperature°C	0 to 60		
Mounting orientation	Unrestricted		
Connection	Rc1/4, Rc3/8 ø3/8" SUS tube Double barbed fitting for ø3/8" (*2) ø1/2" SUS tube Double barbed fitting for ø1/2" (*2)	Rc1/2 ø3/4" SUS tube Double barbed fitting for ø3/4" (*2)	ø1" SUS tube Double barbed fitting for ø1" (*2)
Orifice size	ø8, ø10	ø16	ø20
Weight kg	0.45	0.88	1.3

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: For double barbed fitting, fluorine lubricant is applied to the sliding surface between the front ferrule and fitting body.

*3: MMD*02 Series cannot be used for flow rate adjustment. Use it either fully closed or fully opened.

Internal structure and parts list



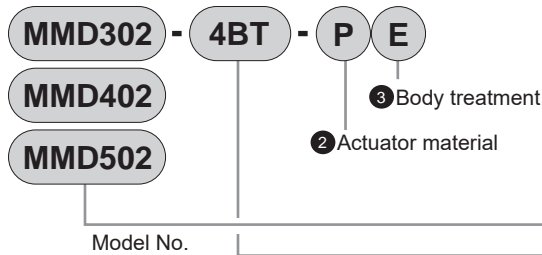
Part No.	Part name	Material (by actuator material)	
		P	A
1	Knob	PE	A5056
2	Shaft	SUS304	SUS304
3	Cover	PP	A5056
4	Rod	PP	
5	O-ring	EPDM	
6	Diaphragm holder	PP	A5056
7	Diaphragm	PTFE	
8	Body	SUS316L	

The material and structure may vary depending on the model number. Contact CKD for details.

Always read the precautions on Intro Pages 7 to 14 before use.

How to order

●MMD*02 Series



		MMD302					MMD402			MMD502		
		1 Connection										
		8	3BT	6S	10	4BT	8S	15	6BT	12S	8BT	16S
	Orifice size	ø8		ø10			ø16			ø20		
	Description	Rc 1/4	3/8" x1.0 SUS tube	3/8"tube connection Double barbed fitting	Rc 3/8	1/2" x1.24 SUS tube	1/2"tube connection Double barbed fitting	Rc 1/2	3/4" x1.24 SUS tube	3/4"tube connection Double barbed fitting	1" x 1.65SUS tube	1"tube connection Double barbed fitting
2 Actuator material												
P	PP	●	●	●	●	●	●	●	●	●	●	●
A	A5056	●	●	●	●	●	●	●	●	●	●	●
3 Body treatment												
Blank	None	●	●	●	●	●	●	●	●	●	●	●
E	With electrolytic polishing		●	●		●	●		●	●	●	●

Products that have electropolished bodies must be manufactured on a case-by-case basis.

⚠ Precautions for model No. selection

*Consult with CKD for connections other than the ones listed.

*Connection Rc is not compatible with electrolytic polishing specifications.

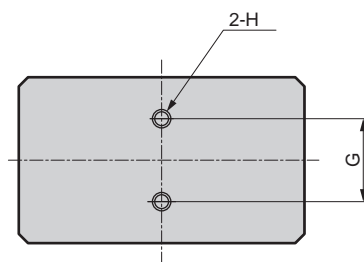
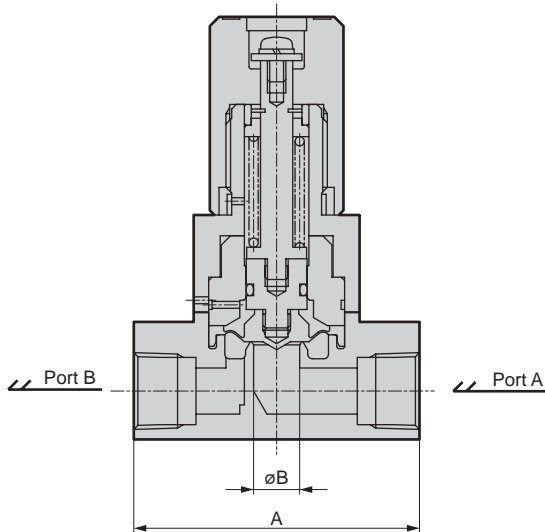
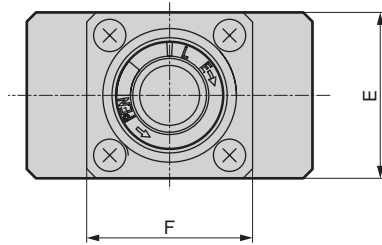
Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Regulator	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve									

MMD³402 Series

Dimensions

● Rc thread

- MMD302-8/10
- MMD402-15

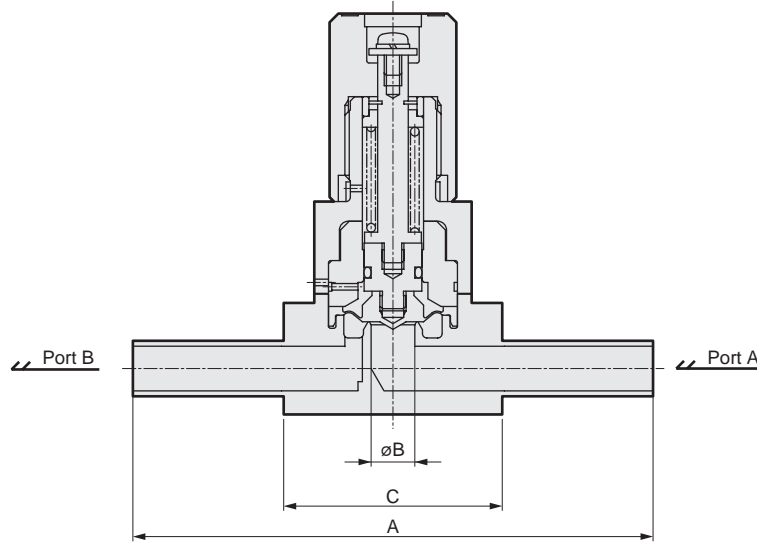


Model No.	A	B	C	D	E	F	G	H
MMD302-8	62	8	10.5	96	36	36	18±0.3	M4 depth 5
MMD302-10	62	10	10.5	96	36	36	18±0.3	M4 depth 5
MMD402-15	80	16	13.5	121	46	46	26±0.3	M5 depth 6

Dimensions

●SUS tube

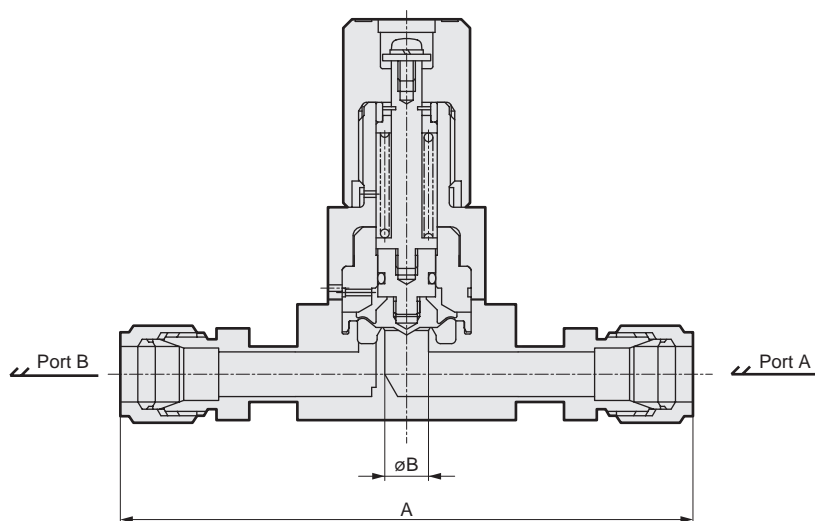
- MMD302-3BT/4BT
- MMD402-6BT



Model No.	A	B	C
MMD302-3BT	116	8	50
MMD302-4BT	116	10	50
MMD402-6BT	126	16	61

●Double barbed fitting

- MMD302-6S/8S
- MMD402-12S



Model No.	A	B
MMD302-6S	116	8
MMD302-8S	130	10
MMD402-12S	150	16

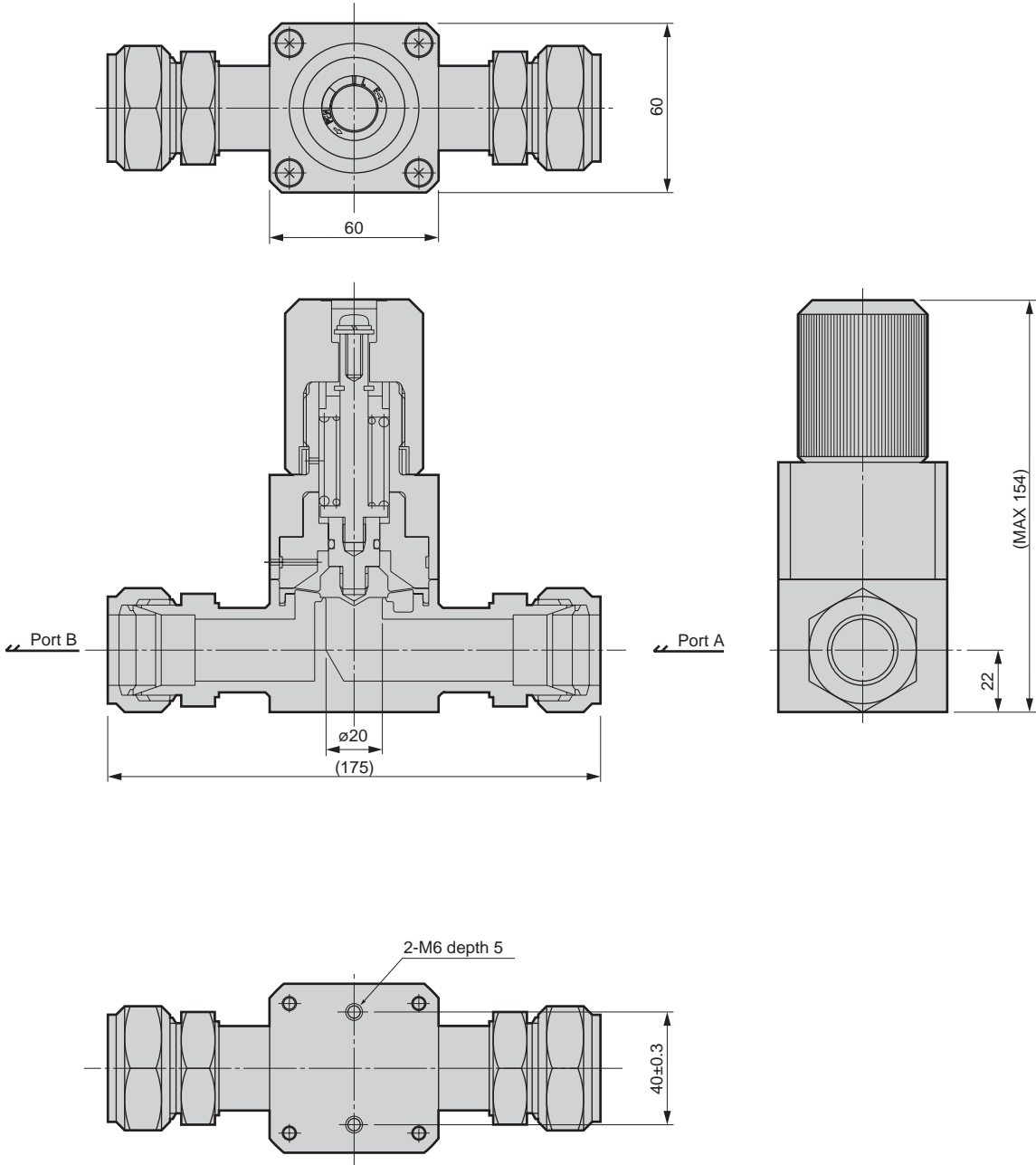
Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	
	Part2						Part2	
	Part1						High pressure	
	Manual valve						High pressure	
Drip prevention valve	Single unit	Air operated	Metal-free	Large bore size	Integrator	Regulator	Manual valve	
							Manual	Manual
							Pilot	Manual
							Flow rate adjusting valve	Manual
Flow rate adjusting valve	Manual/Fine flow rate	Manual	Manual	Manual	Manual	Flow rate adjusting valve	Electric	
							Manual	Manual
							Manual/Fine flow rate	Manual
Related products	Fine level Switch	Manual	Manual	Manual	Manual	Flow rate adjusting valve	Flow rate adjusting valve	
							Flow rate adjusting valve	Flow rate adjusting valve

MMD502 Series

Dimensions

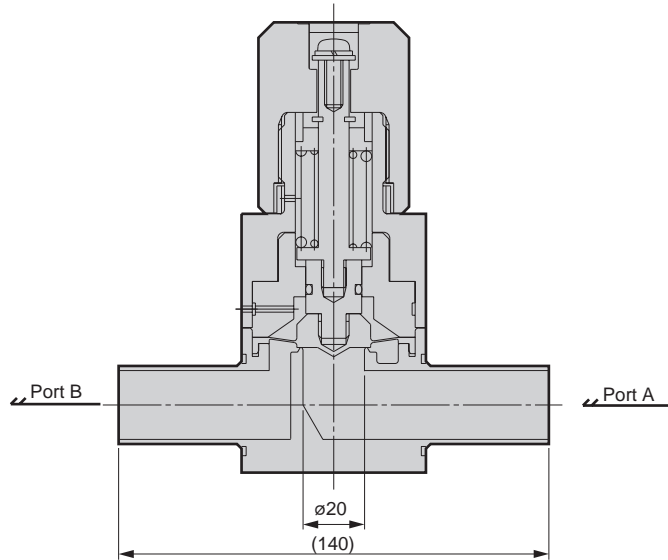
- Double barbed fitting
- MMD502-16S

Related products	Fine level Switch	Manual flow rate	Manual	Electric	Manual	Regulator	Pilot	Air operated Integrated	Single unit	Large bore size	Metal-free	High pressure	Manual valve	Part 2	Part 3RN	Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R
		Flow rate adjusting valve				Drip prevention valve							Air operated valve										



Dimensions

- SUS tube
- MMD502-8BT



Part3R	Part2	Part1	Air operated valve	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Manual valve	Part2	High pressure	Metal-free	Large bore size	Drip prevention valve	Single unit	Air operated Integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products

Manual valve for chemical liquids (manifold/branch valve)



GMMD³₄₅02 Series

Manifold that uses a stable seal structure Ideal for saving space in the branch part of chemical liquids

RoHS

Export controlled items

*Eligibility: GMMD402, 502 (*5)

● Orifice size: $\phi 6$ to $\phi 20$

● Station No.: 1 to 5 stations

● Connection tube size: $\phi 10$, $\phi 12$, $\phi 25$, 3/8", 1/2", 1"

Specifications

Item	GMMD302	GMMD402	GMMD502
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)		
Fluid temperature °C	5 to 90 (*3)		
Proof pressure MPa	1.2		
Working pressure MPa	0 to 0.4		
Valve seat leakage cm ³ /min	0 (water pressure)		
Back pressure MPa	0 to 0.4		
Ambient temperature °C	0 to 60		
Mounting orientation	Unrestricted		
Connection	O.D. $\phi 10$ tube connection (integrated fitting) O.D. $\phi 12$ tube connection (integrated fitting) O.D. 3/8" tube connection (integrated fitting) O.D. 1/2" tube connection (integrated fitting)	O.D. 3/4" tube connection (Integrated fitting)	O.D. $\phi 25$ tube connection (integrated fitting) O.D. 1" tube connection (integrated fitting)
Orifice size	$\phi 6$ to $\phi 10$ (*2)	$\phi 14.7$ to $\phi 16$ (*2)	$\phi 20$
Weight kg	1 station	0.25	1.1
	2 stations	0.51	2.2
	3 stations	0.76	3.3
	4 stations	1.0	4.4
	5 stations	1.3	—

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: Check the orifice size of each connection in How to order.

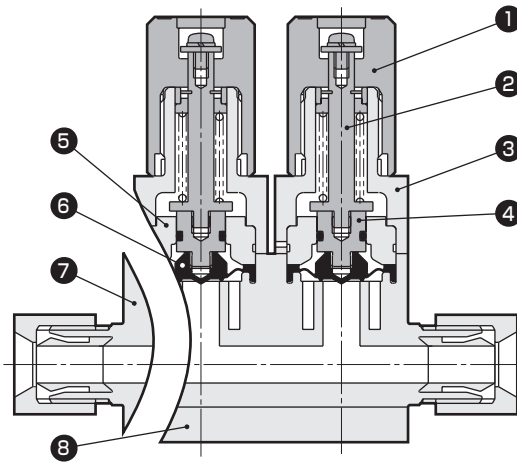
*3: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

*4: MMD*02 Series cannot be used for flow rate adjustment. Use it either fully closed or fully opened.

*5: GMMD302 is not applicable. (when piping individual secondary side ports)

! Always read the precautions on Intro Pages 7 to 14 before use.

Internal structure and parts list



Part No.	Part name	Material (by fluid code)
		U
1	Knob	PE
2	Shaft	SUS304 (with fluoro resin coating)
3	Cover	PP
4	Rod	PP
5	Diaphragm holder	PP
6	Diaphragm	PTFE
7	Body	PTFE
8	Mounting plate	PP

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
	Part3RN					
	Part2					
Manual valve	Part3R	High pressure	Metal-free	Large bore size	Drip prevention valve	Air operated integrated
	Part2					
	Part1					
	Part3RN					
	Part2					
Regulator	Pilot	Manual	Manual	Manual	Regulator	Flow rate adjusting valve
	Manual					
	Electric					
Flow rate adjusting valve	Manual	Manual	Manual	Manual	Flow rate adjusting valve	Manual/Fine flow rate
	Manual					
Fine level Switch	Manual	Manual	Manual	Manual	Fine level Switch	Related products
	Manual					

GMMD302 Series

How to order

●GMMD3 Series (connection: \varnothing 10, 3/8" tube connection)

GMMD302 - 10UK - 4 U L

Model No. ① Connection ② Station No. ③ Fluid ④ Port A position

Part 3R	High pressure	Air operated valve
Part 2	Metal-free	
Part 1	Large bore size	
	PVC	
	Drainage	
Part 3RN	High pressure	Manual valve
Part 2	Metal-free	
	Large bore size	
	Single unit	Drip prevention valve
	Air operated Integrated	
	Pilot	Regulator
	Manual	
	Electric	Flow rate adjusting valve
	Manual	
	Manual Fine flow rate	
	Fine level Switch	
Related products		

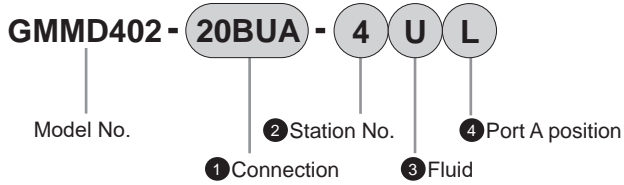
		① Connection										
		10US	10BUS	10UP	10BUP	10UA	10BUA	10UR	10BUR	10UK	10BUK	10BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		\varnothing 10 x \varnothing 8 tube connection 3/8" x 1/4" tube connection		\varnothing 10 x \varnothing 8 tube connection 3/8" x 1/4" tube connection		\varnothing 10 x \varnothing 8 tube connection 3/8" x 1/4" tube connection		\varnothing 10 x \varnothing 8 tube connection 3/8" x 1/4" tube connection		\varnothing 10 x \varnothing 8 tube connection 3/8" x 1/4" tube connection		3/8" x 1/4" tube connection
Code	Description	Orifice size \varnothing 8						\varnothing 7	\varnothing 6	\varnothing 8		\varnothing 6.3
Body material		PTFE machined body										
② Station No.												
1 to 5	1 station to 5 stations	●	●	●	●	●	●	●	●	●	●	●
③ Fluid												
U	Standard	●	●	●	●	●	●	●	●	●	●	●
④ Port A position												
Blank	Right	●	●	●	●	●	●	●	●	●	●	●
L	Left	●	●	●	●	●	●	●	●	●	●	●
W	Both sides	●	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

GMMD402 Series

How to order

● GMMD4 Series



① Connection					
20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
Super-type pillar integrated fitting	Super 300 type Pillar fitting P Series integrated	F-LOCK20 A Series Integrated fitting	F-LOCK60 Series Integrated fitting	Final Lock Integrated fitting	Flaretek Integrated fitting
3/4" x 5/8" tube connection					
Code	Description	Orifice size			
			ø16	ø15.9	ø16
		Body material	PTFE machined body		

② Station No.							
Code	Description	20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
1 to 5	1 station to 5 stations	●	●	●	●	●	●

③ Fluid							
Code	Description	20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
U	Standard	●	●	●	●	●	●

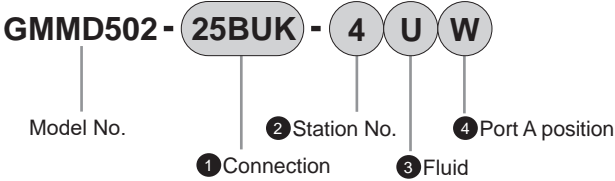
④ Port A position							
Code	Description	20BUS	20BUP	20BUA	20BUR	20BUK	20BUW
Blank	Right	●	●	●	●	●	●
L	Left	●	●	●	●	●	●
W	Both sides	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

- Part 3R Part 3R
- Part 2 Part 2
- Part 1 Part 1
- High pressure High pressure
- Metal-free Metal-free
- Air operated valve Air operated valve
- Large bore size Large bore size
- PVC PVC
- Drainage Drainage
- Part 3RN Part 3RN
- Part 2 Part 2
- High pressure High pressure
- Manual valve Manual valve
- Metal-free Metal-free
- Large bore size Large bore size
- Single unit Single unit
- Air operated integrated Air operated integrated
- Drip prevention valve Drip prevention valve
- Pilot Pilot
- Regulator Regulator
- Manual Manual
- Electric Electric
- Manual Manual
- Flow rate adjusting valve Flow rate adjusting valve
- Manual Fine flow rate Manual Fine flow rate
- Fine level Switch Fine level Switch
- Related products Related products

How to order

● GMMD5 Series



		① Connection									
		25US	25BUS	25UP	25BUP	25BUA	25UR	25BUR	25UK	25BUK	25BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Fitting Integrated	F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection (*1)	ø25 x ø22 tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection	1" x 7/8" tube connection	1" x 7/8" tube connection
Code	Description	ø20									
Orifice size		ø20									
Body material		PTFE machined body									
② Station No.											
1 to 4	1 station to 4 stations	●	●	●	●	●	●	●	●	●	●
③ Fluid											
U	Standard	●	●	●	●	●	●	●	●	●	●
④ Port A position											
Blank	Right	●	●	●	●	●	●	●	●	●	●
L	Left	●	●	●	●	●	●	●	●	●	●
W	Both sides	●	●	●	●	●	●	●	●	●	●

* Machined PTFE products will be manufactured on a per-order basis.

Precautions for model No. selection

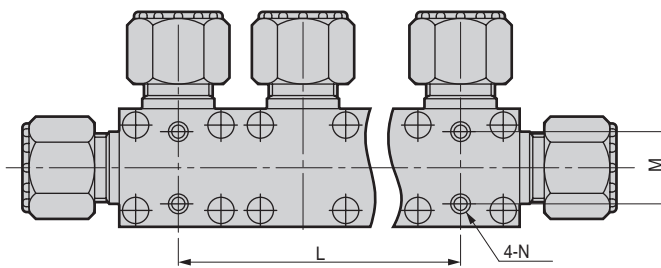
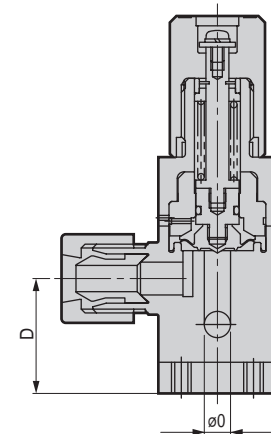
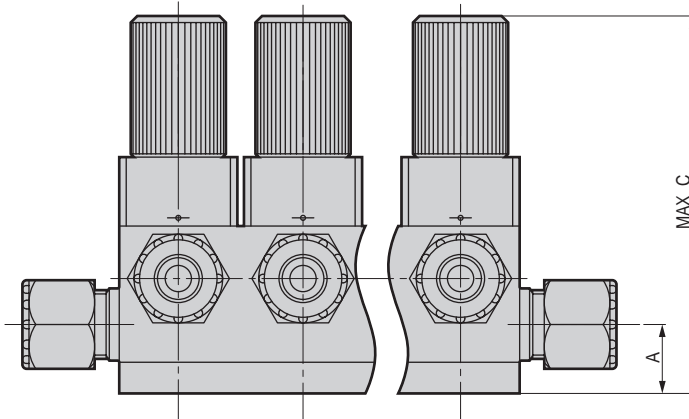
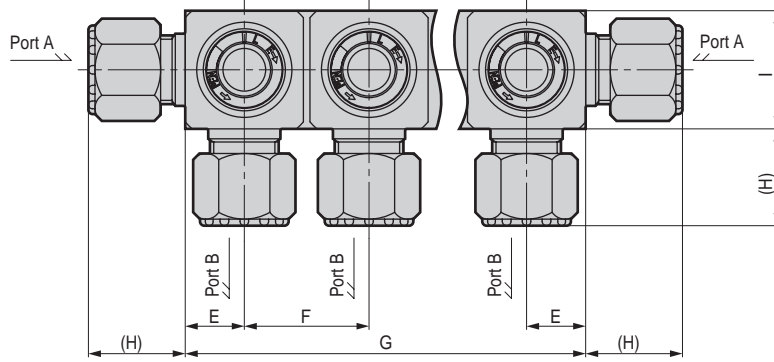
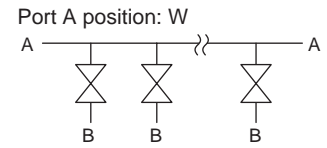
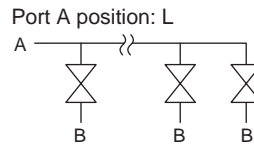
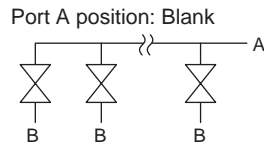
*1: Can also be used for ø25 x ø22 tube connection.

Part3R	High pressure
Part2	Metal-free
Part1	Large bore size
	Polyvinyl chloride
	Drainage
Part3RN	High pressure
Part2	Metal-free
	Large bore size
	Single unit
	Air operated integrated
	Regulator
	Pilot
	Manual
	Flow rate adjusting valve
	Electric
	Manual
	Manual Fine flow rate
	Fine level Switch
	Related products

Dimensions

● Integrated fitting

- GMMD302- *1
- GMMD402- *1
- GMMD502- *1



Part 3R	High pressure	Part 2	Part 1	High pressure	Part 3RN	Part 2	High pressure	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Metal-free			Metal-free			Metal-free	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Large bore size			Large bore size			Large bore size	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	PVC			PVC			PVC	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Drainage			Drainage			Drainage	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Air operated valve			Air operated valve			Air operated valve	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Manual valve			Manual valve			Manual valve	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Drip prevention valve			Drip prevention valve			Drip prevention valve	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Regulator			Regulator			Regulator	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Flow rate adjusting valve			Flow rate adjusting valve			Flow rate adjusting valve	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products

Dimensions

Station No.	Model No.	A	C	D	E	F	G	I	L	M	N
1	GMMD302	21	120	35	18	38	36	36	-	22±0.3	M6 depth 9
	GMMD402	27	153	46	23	48	46	46	-	28±0.3	M8 depth 10
	GMMD502	35	192	60	30	62	60	60	-	40±0.3	M8 depth 13
2	GMMD302	21	120	35	18	38	74	36	38±0.3	22±0.3	M6 depth 9
	GMMD402	27	153	46	23	48	94	46	48±0.4	28±0.3	M8 depth 10
	GMMD502	35	192	60	30	62	122	60	62±0.4	40±0.3	M8 depth 13
3	GMMD302	21	120	35	18	38	112	36	76±0.4	22±0.3	M6 depth 9
	GMMD402	27	153	46	23	48	142	46	96±0.5	28±0.3	M8 depth 10
	GMMD502	35	192	60	30	62	184	60	124±0.5	40±0.3	M8 depth 13
4	GMMD302	21	120	35	18	38	150	36	114±0.5	22±0.3	M6 depth 9
	GMMD402	27	153	46	23	48	190	46	144±0.5	28±0.3	M8 depth 10
	GMMD502	35	192	60	30	62	246	60	186±0.7	40±0.3	M8 depth 13
5	GMMD302	21	120	35	18	38	188	36	152±0.7	22±0.3	M6 depth 9
	GMMD402	27	153	46	23	48	238	46	192±0.7	28±0.3	M8 depth 10

GMMD302 (10mm)

*1 (Connector No.)	H	O
10US	25	8
10BUS	25	8
10UP	25	8
10BUP	25	8
10UA	21	8
10BUA	21	8
10UR	37	7
10BUR	39	6
10UK	30	8
10BUK	30	8
10BUW	31	6.3

GMMD302 (12mm)

*1 (Connector No.)	H	O
12US	29.5	10
15BUS	29.5	10
12UP	29	10
15BUP	29	10
12UA	25	10
15BUA	25	10
12UR	37	9.5
15BUR	39	9.5
12UK	33	10
15BUK	33	10
15BUW	33.5	9.4

GMMD402

*1 (Connector No.)	H	O
20BUS	39	16
20BUP	36	16
20BUA	31	16
20BUR	44	15.9
20BUK	36.5	16
20BUW	38	14.7

GMMD502

*1 (Connector No.)	H	O
25US	43.5	20
25BUS	43.5	20
25UP	43	20
25BUP	43	20
25BUA	40	20
25UR	49.5	20
25BUR	51	20
25UK	40.5	20
25BUK	40.5	20
25BUW	48	20

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
Manual valve	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part1					
Regulator	Pilot	Flow rate adjusting valve	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Manual					
	Electric					



Manual valve for high pressure chemical liquid

MMD*0H Series

For chemical liquid lines in semiconductor manufacturing lines
A valve designed to support high pressure and high back pressure.



Export controlled items

● Tube connection: 1/2", 1", 1.25"

PFA pipe: Nominal 1/4", 1/2", 3/4", 1"

*Eligibility: MMD40H (*4), MMD50H, 60H

Specifications

Item	MMD40H	MMD50H	MMD60H	
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)			
Fluid temperature °C	5 to 40			
Proof pressure MPa	1.4			
Working pressure (A→B)MPa	0 to 0.7			
Valve seat leakage cm ³ /min	0 (water pressure)			
Back pressure MPa	0 to 0.7			
Ambient temperature °C	0 to 40			
Mounting orientation	Unrestricted			
Connection	O.D. 1/2" tube connection Nominal 1/4" PFA pipe for welding	O.D. 3/4" tube connection Nominal 1/2" PFA pipe for welding	O.D. 1" tube connection Nominal 3/4" PFA pipe for welding	O.D. 1.25" tube connection Nominal 1" PFA pipe for welding
Orifice size	ø10	ø16	ø22	ø25
Cv value	2	5 (*2)	9.5	14
Weight kg	0.59	1.1	2.0	

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

*2: The Flaretek fitting has Cv of 4.5.

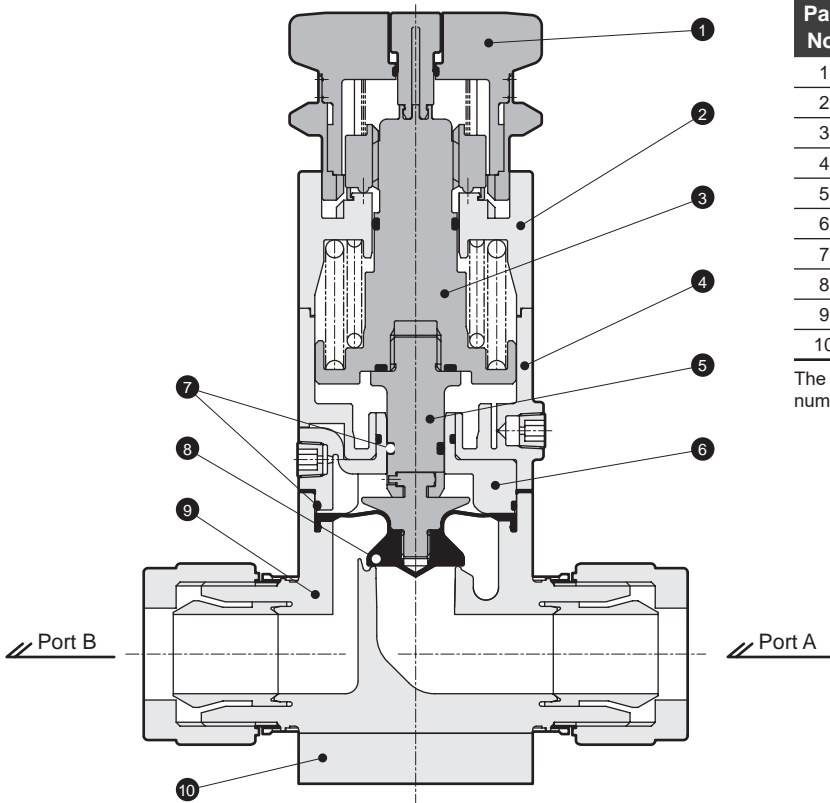
*3: MMD*0H Series cannot be used for flow rate adjustment. Use it either fully closed or fully opened.

*4: OD1/2" tube connection, excluding nominal 1/4" PFA pipe for welding.

Part 3R
Part 2
Part 1
High pressure
Metal-free
Air operated valve
Large bore size
PVC
Drainage
Part 3RN
Part 2
High pressure
Metal-free
Large bore size
Single unit
Air operated Integrated
Drip prevention valve
Pilot
Manual
Regulator
Electric
Manual
Flow rate adjusting valve
Manual Fine flow rate
Manual level Switch
Related products

Always read the precautions on Intro Pages 7 to 14 before use.

Internal structure and parts list



Part No.	Part name	Material (by fluid code)	
		Standard	M
1	Knob	PP	
2	Cover	PP	
3	Shaft	PP	
4	Cylinder	PP	
5	Rod	PP	
6	Diaphragm holder	PP	
7	O-ring	FKM	EPDM
8	Diaphragm	PTFE	
9	Body	PFA	
10	Mounting plate	PP	

The material and structure may vary depending on the model number. Contact CKD for details.

Manual valve operation method

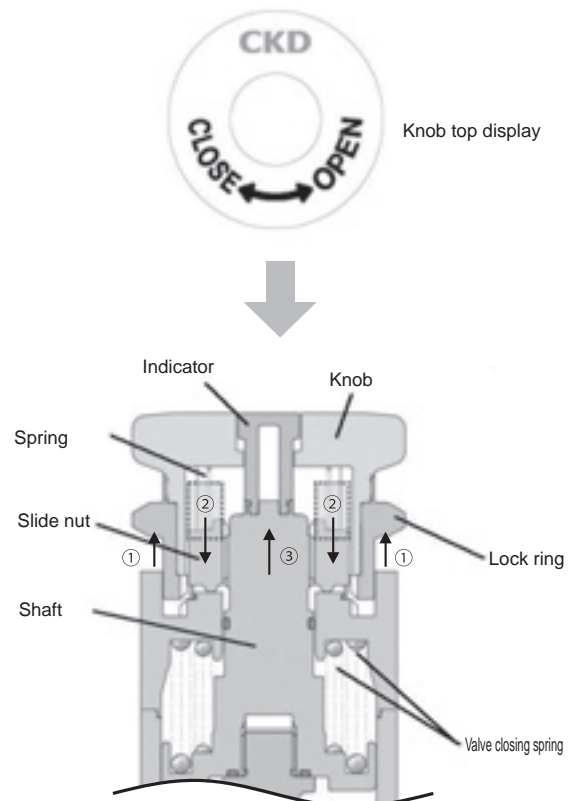
- **OPEN**

Confirm that the lock ring has slid to the upper limit. (↑ (1))
 When turning the knob in the OPEN direction, the first few turns will be idle.
 When idling, the slide nut moves downward while rotating, comes to the position shown in the figure and stops moving downward. (↓ (2))
 If turned further, the knob will rotate and raise the shaft with the thrust of the rotation, and the valve will open. (↑ (3) Indicator rises.)
- **CLOSE**

Confirm that the lock ring has slid to the upper limit. (↑ (1))
 Turning the knob clockwise will close the valve.
 (Indicator falls.)
 When turning the knob further in the CLOSE direction while the valve is closed (indicator lowered position), it will idle.
 → This prevents overtightening.
 Even when it is idling, the fluid can be stopped as the valve closing spring is activated.

In the idling state, the slide nut and shaft screw will rotate to the point where they are disengaged, but the slide nut is constantly pushed by the spring, so turning the screw in the OPEN direction once more will cause the screws to engage again.
- **Knob lock**

After operating the knob, you can slide the lock ring to the lower limit and lock the lock ring so that the knob does not turn.
 → This can prevent misoperation.
- **Do not operate while applying lateral force to the knob. Do not forcibly turn the knob after the valve OPEN and after the knob is locked. There is a risk of part damage.**

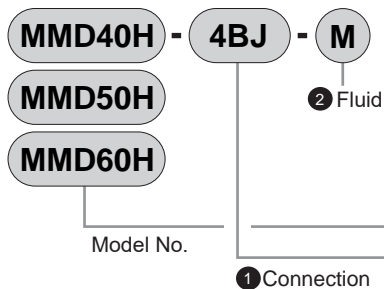


Air operated valve	Part3R	High pressure	Large bore size	Polyvinyl chloride	Drainage
	Part2	Metal-free			
	Part1				
Manual valve	Part3RN	High pressure	Large bore size		
	Part2	Metal-free			
	Part1				
Regulator	Flow rate adjusting valve	Electric	Manual	Manual/Fine flow rate	
	Manual				
	Pilot				
Related products	Fine level Switch				

MMD*0H Series

How to order

● MMD*0H Series



		MMD40H				MMD50H			MMD60H			
		1 Connection										
		4BJ	6BJ	4BW	6BW	2W	4W	8BJ	8BW	6W	10BJ	8W
		Super 300 Pillar fitting P series integrated		Flaretek Fitting Integrated		For welding PFA pipe		Super 300 Pillar fitting P series integrated	Flaretek Fitting Integrated	For welding PFA pipe	Super 300 Pillar fitting P series integrated	For welding PFA pipe
		1/2" x 3/8" tube connection	3/4" x 5/8" tube connection	1/2" x 3/8" tube connection	3/4" x 5/8" tube connection	Nominal 1/4" PFA pipe for welding	Nominal 1/2" PFA pipe for welding	1" x 7/8" tube connection	1" x 7/8" tube connection	Nominal 3/4" PFA pipe for welding	1" 1/4x 1" 1/10 Tube connection	Nominal 1" PFA pipe for welding
Code	Description	Orifice size		ø10	ø16	ø10	ø16	ø22			ø25	
		Body material										
		PFA molded body										
2 Fluid												
Blank	Standard	●	●	●	●	●	●	●	●	●	●	●
M	For ammonia (Note)	●	●	●	●	●	●	●	●	●	●	●

⚠️ Precautions for model No. selection

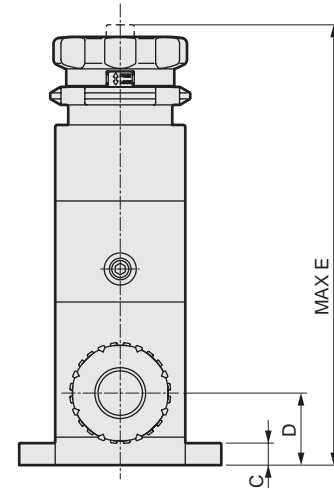
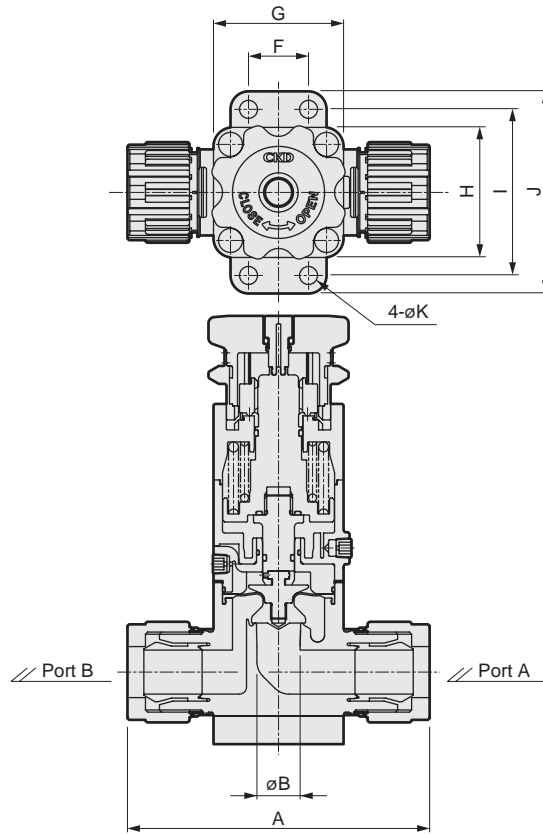
Note: Available as made to order

Part 3R	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure
Part 2	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free
Part 1	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size
	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC
	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage	Drainage
Part 3RN	Part 2	Part 2	Part 2	Part 2	Part 2	Part 2	Part 2	Part 2	Part 2	Part 2	Part 2	Part 2
	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure
	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free	Metal-free
	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size	Large bore size
	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit	Single unit
	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated	Air operated Integrated
	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot	Pilot
	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual
	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric	Electric
	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual
	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate
	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch	Fine level Switch
	Related products	Related products	Related products	Related products	Related products	Related products	Related products	Related products	Related products	Related products	Related products	Related products

Dimensions

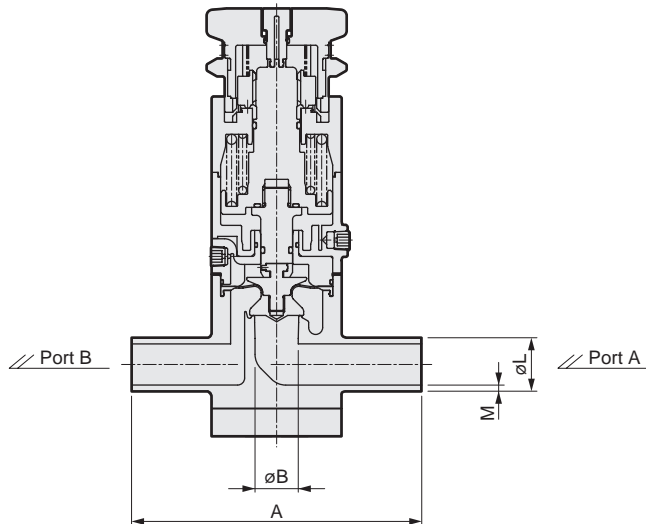
● Integrated fitting

- MMD $\frac{4}{5}$ 0H-*BJ
- MMD $\frac{4}{6}$ 0H-*BW



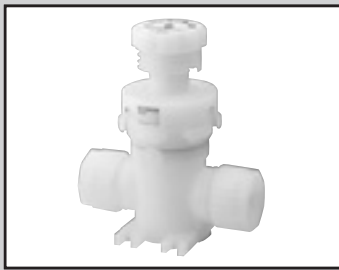
● Pipe for welding

- MMD $\frac{4}{6}$ 0H-*W



Model No.	Connector No.	A	B	C	D	E	F	G	H	I	J	K	L	M
MMD40H	4BJ	108	10	10	31	183	20	50	50	68	86	9	-	-
	4BW	117	10	10	31	183	20	50	50	68	86	9	-	-
	2W	110	10	10	31	183	20	50	50	68	86	9	13.7	2.3
	6BJ	122	16	10	31	183	20	50	50	68	86	9	-	-
	6BW	126	16	10	31	183	20	50	50	68	86	9	-	-
MMD50H	4W	130	16	10	31	183	20	50	50	68	86	9	21.3	2.8
	8BJ	151	22	11	36	220	30	65	65	83	101	9	-	-
	8BW	161	22	11	36	220	30	65	65	83	101	9	-	-
MMD60H	6W	145	22	11	36	220	30	65	65	83	101	9	26.7	2.9
	10BJ	198	25	12	42	241	38	75	75	93	111	9	-	-
	8W	155	25	12	42	241	38	75	75	93	111	9	33.4	3.4

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2					
	Part1					
	Part3RN					
	Part2					
Manual valve	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part3RN					
	Part2					
	Part3RN					
Drip prevention valve	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part3RN					
	Part2					
	Part3RN					
Regulator	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part3RN					
	Part2					
	Part3RN					
Flow rate adjusting valve	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part3RN					
	Part2					
	Part3RN					
Related products	Part3RN	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated
	Part2					
	Part3RN					
	Part2					
	Part3RN					



Manual valve for chemical liquids, metal-free

MMD*0M Series

A valve designed to support strong acid (hydrochloric acid, hydrofluoric acid) lines in semiconductor manufacturing.

● Connection tube size: $\varnothing 10$, $\varnothing 12$, $\varnothing 25$, 3/8", 1/2", 3/4", 1"



Export controlled items

*Eligibility: MMD50M

Specifications

Item	MMD30M		MMD50M	
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)			
Fluid temperature °C	5 to 40			
Proof pressure MPa	1.0			
Working pressure (A→B)MPa	0 to 0.5			
Valve seat leakagecm ³ /min	0 (water pressure)			
Back pressure MPa	0 to 0.5			
Ambient temperature°C	0 to 40			
Mounting orientation	Unrestricted			
Connection	O.D. $\varnothing 3/8$ " tube connection O.D. $\varnothing 10$ tube connection	O.D. $\varnothing 1/2$ " tube connection O.D. $\varnothing 12$ tube connection	O.D. $\varnothing 3/4$ " tube connection	O.D. $\varnothing 1$ " tube connection O.D. $\varnothing 25$ tube connection
Orifice size	$\varnothing 8$	$\varnothing 10$	$\varnothing 16$	$\varnothing 22$
Cv value	1.25	1.8	5.5	9.5
Weight kg	0.28		1.1	

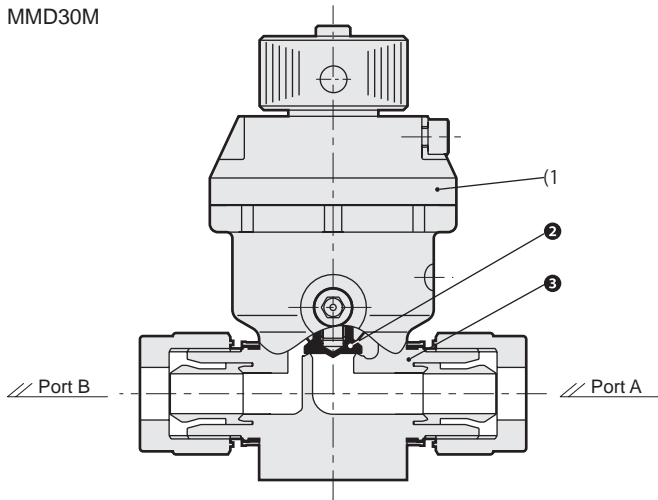
*1: Check the compatibility of product structural materials, working fluids and atmosphere.

Part 3R
Part 2
Part 1
High pressure
Metal-free
Air operated valve
Large bore size
PVC
Drainage
Part 3RN
Part 2
High pressure
Metal-free
Large bore size
Single unit
Air operated Integrated
Drip prevention valve
Pilot
Manual
Regulator
Electric
Manual
Flow rate adjusting valve
Manual Fine flow rate
Fine level Switch
Related products

Always read the precautions on Intro Pages 7 to 14 before use.

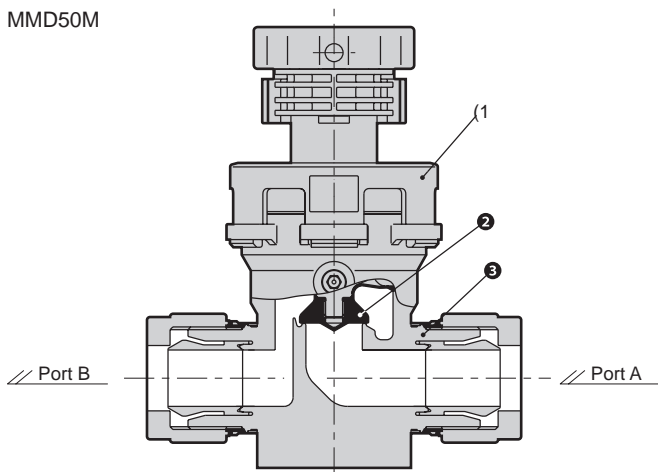
Internal structure and parts list

MMD30M



Part No.	Part name	Material
1	Actuator	PP, etc.
2	Diaphragm	PTFE
3	Body	PFA

MMD50M



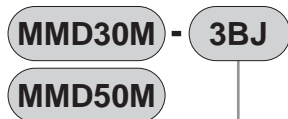
Part No.	Part name	Material
1	Actuator	PVDF and others
2	Diaphragm	PTFE
3	Body	PFA

Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Manual valve	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Drip prevention valve	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Regulator	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Fine level Switch	Part2	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RR	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage
Related products						

MMD*0M Series

How to order

● MMD*0M Series



Model No.

① Connection

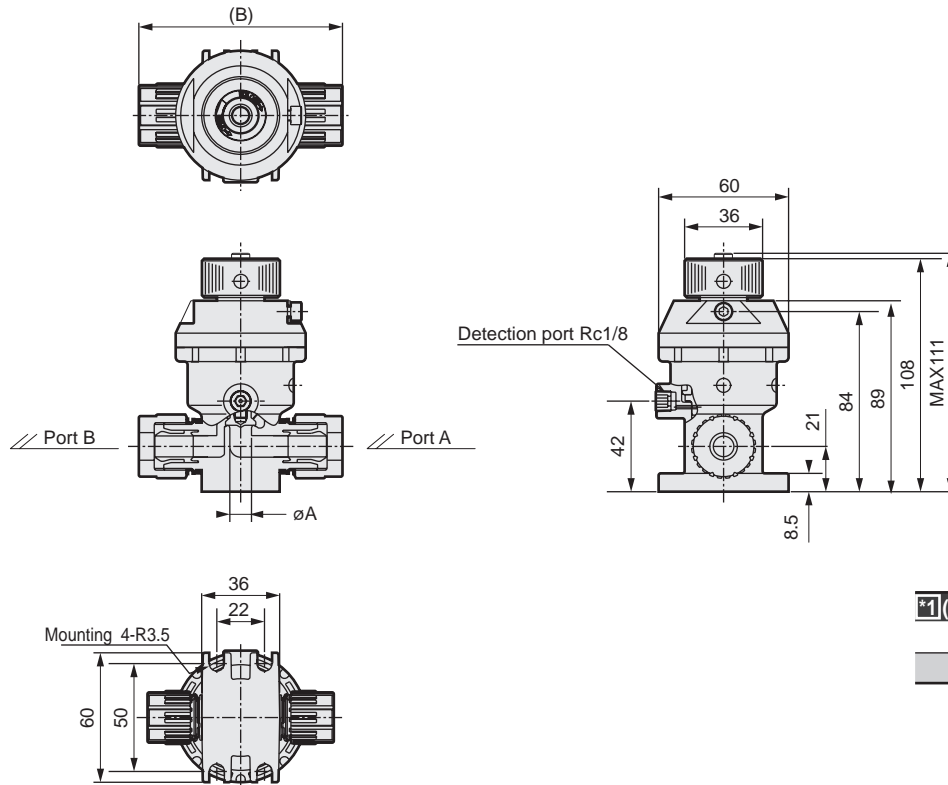
	MMD30M				MMD50M		
	① Connection						
	3BJ	10J	4BJ	12J	6BJ	8BJ	25J
	Super 300 Pillar fitting P series integrated						
	3/8" x 1/4" tube connection	ø10 x ø8 tube connection	1/2" x 3/8" tube connection	ø12 x ø10 tube connection	3/4" x 5/8" tube connection	1" x 7/8" tube connection	ø25 x ø22 tube connection
Orifice size	ø8		ø10		ø16		ø22
Cv	1.25		1.8		5.5		9.5

Description	Orifice size
Cv	1.25

Related products	Fine level switch
Manual Fine flow rate	Manual
Manual Electric	Electric
Manual	Manual
Pilot	Pilot
Air operated Integrated	Air operated Integrated
Single unit	Single unit
Large bore size	Large bore size
Metal-Free	Metal-Free
High pressure	High pressure
Part 2	Part 2
Part 3RN	Part 3RN
Drainage	Drainage
PVC	PVC
Large bore size	Large bore size
Metal-free	Metal-free
High pressure	High pressure
Part 1	Part 1
Part 2	Part 2
Part 3R	Part 3R

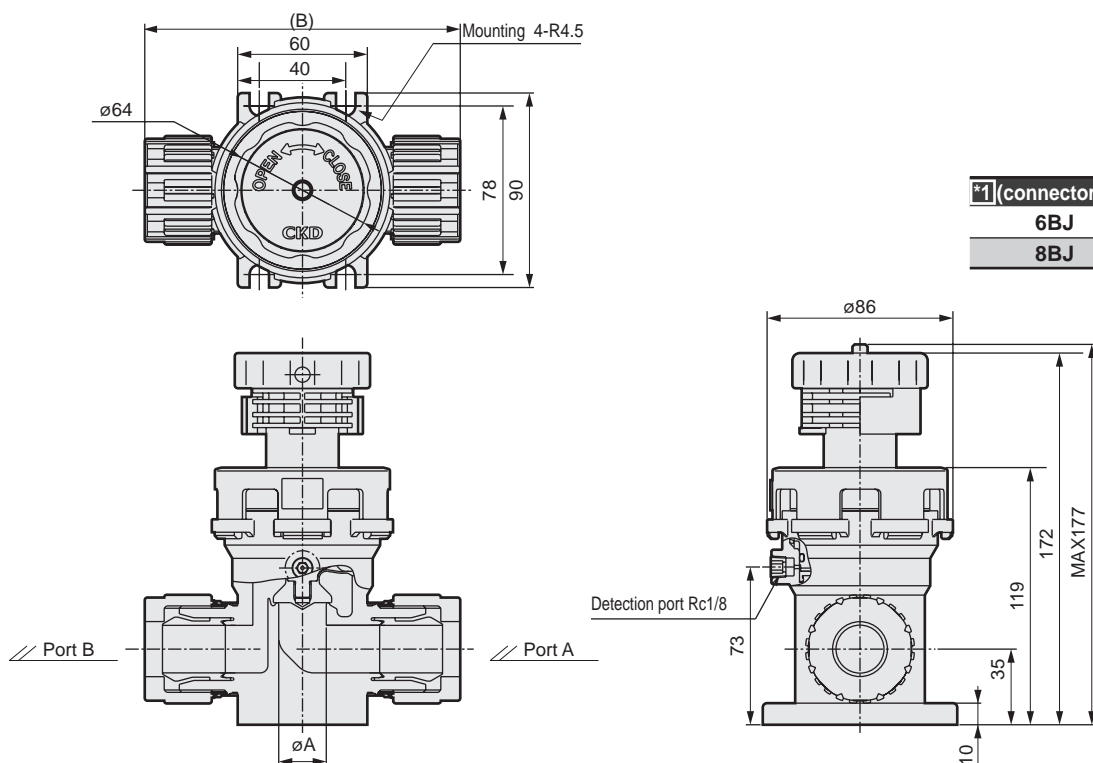
Dimensions

●MMD30M- *1



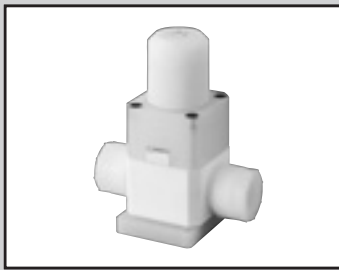
*1 (connector No.)	øA	B
3BJ	8	86
4BJ	10	94

●MMD50M- *1



*1 (connector No.)	øA	B
6BJ	16	132
8BJ	22	146

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve										Drip prevention valve		Regulator		Flow rate adjusting valve				



Large bore size Manual valve for chemical liquids

LYX Series

Large bore size PFA tube 1.5" compatible

RoHS

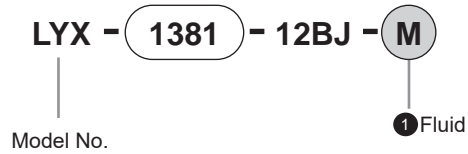
Export controlled items

Specifications

Item	LYX-1381	
Working fluid	Chemical liquids, pure water, air, N ₂ gas (*1)	
Fluid temperature °C	10 to 35	
Proof pressure MPa	0.8	
Working pressure (A→B) MPa	0 to 0.4	
Working pressure (B→A) MPa	0 to 0.4	
Valve seat leakage cm ³ /min	0 (water pressure)	
Back pressure MPa	0 to 0.4	
Ambient temperature °C	5 to 35	
Frequency	4 cycle/min. or less	
Mounting orientation	Unrestricted	
Connection	OD1, 1/2" Super 300 Pillar fitting P Series 1 1/2" x 1 21/64" tube connection	
Orifice size	ø40	
Cv value	24	
Operating section	Operating pressure MPa	0.5 to 0.6
	Operating port	Rc1/8
Weight kg	5.3	

*1: Check the compatibility of product structural materials, working fluids and atmosphere.

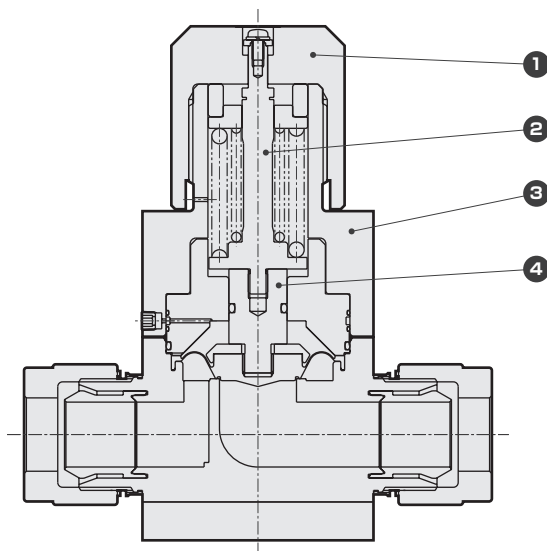
How to order



Code	Description
① Fluid	
Blank	Standard
M	For ammonia

Internal structure and parts list

●LYX-1381



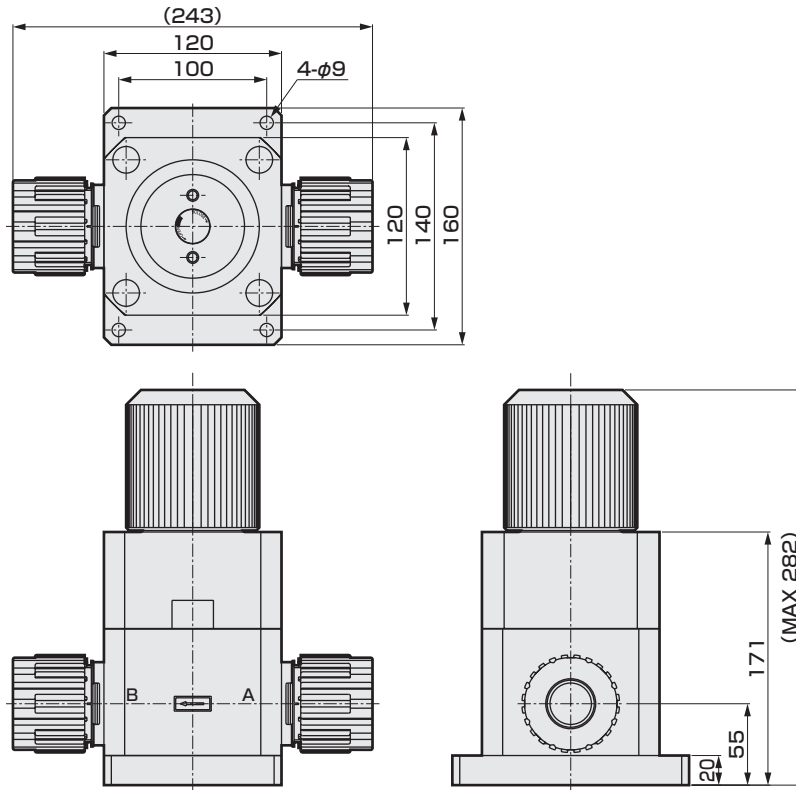
Part No.	Part name	Material (by fluid code)	
		Standard	M
1	Knob	PE	
2	Shaft	SUS304 (with fluoro resin coating)	
3	Cover	PP	
4	Rod	PP	

The material and structure may vary depending on the model number. Contact CKD for details.

Always read the precautions on Intro Pages 7 to 14 before use.

Dimensions

● Manual valve



Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
Air operated valve								Manual valve													
													Drip prevention valve		Regulator		Flow rate adjusting valve				

MEMO

Related products	Fine level Switch	Manual Fine flow rate	Manual	Electric	Manual	Pilot	Air operated Integrated	Single unit	Large bore size	Meta-Free	High pressure	Part 2	Part 3RN	Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R
		Flow rate adjusting valve			Regulator		Drip prevention valve					Manual valve							Air operated valve		

Drip prevention valve

Overview

A valve that draws the liquid level at the tip of the nozzle into the pipe after closing the flow path in order to prevent the fluid from dripping down from the tip of the nozzle when the flow path is closed. A Drip prevention valve single unit and an integrated air operated valve for chemical liquids are available.



⚠ Safety precautions	Intro Page 9
Single unit	
AMS	150
Air operated integrated	
AMDS	154

Air operated valve	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	Manual valve	High pressure	Metals-free	Large bore size	Drip prevention valve	Single unit	Air operated integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products	
	AMS	150	AMDS	154	AMS	150	AMDS	154	AMS	150		AMDS	154	AMS		150	AMDS		154	AMS		150	AMDS	154			
	AMS	150	AMDS	154	AMS	150	AMDS	154	AMS	150		AMDS	154	AMS	150	AMDS	154	AMS	150	AMDS	154	AMS	150	AMDS	154	AMS	150



Drip prevention valve for chemical liquids

AMSZ2/AMS022 Series

Drippings can be prevented

Drip prevention valve for nozzle tip control

●Maximum drip prevention amount: 0.04cm³/0.12cm³

●Connection tube size: ø3, ø6, ø6.35, 1/8", 1/4", Rc1/8

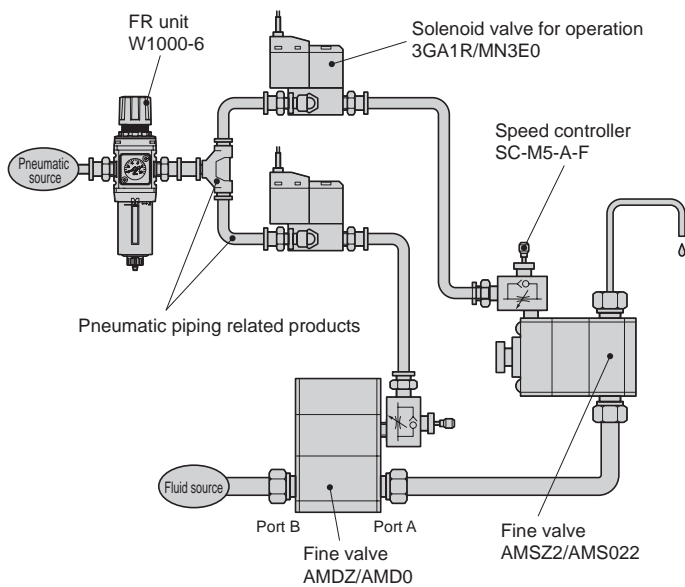


Specifications

Item		AMSZ2-*	AMS022-*
Working fluid		Chemical liquid, pure water (*1)	
Fluid temperature	°C	5 to 80	
Proof pressure	MPa	1.0	
Working pressure	MPa	0 to 0.2	
Ambient temperature	°C	0 to 60	
Mounting orientation		Horizontally mounted with port positioned vertically (port on OUT side up)	
Connection		Rc1/8 O.D. ø3 tube connection O.D. 1/8" tube connection	Rc1/8 O.D. ø6 tube connection O.D. 1/4" tube connection
Operating section	Operating pressure	MPa 0.3 to 0.5	
	Operating port	M5	
Maximum drip prevention amount		cm ³ 0.04	cm ³ 0.12
Weight	kg	0.08	0.13

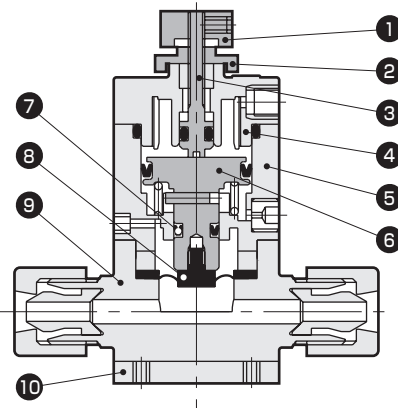
*1: Cannot be used with acidic fluids. Contact CKD regarding acidic fluids and aqueous ammonia.
Check the compatibility of product structural materials, working fluids and atmosphere.

Examples of use and related products



For related products,
Pneumatic Valves (Catalog No. CB-023SA),
Pneumatic, Vacuum and Auxiliary Components (Catalog No. CB-024SA),
Refer to General Purpose Components (catalog No. CB-033SA).

Internal structure and parts list



Part No.	Part name	Material (by body material)	
		Standard	D
1	Knob	SUS303	
2	Lock nut	SUS303	
3	Adjusting rod	SUS303	
4	Cover	PPS	
5	Cylinder	PPS	
6	Piston rod	SUS303	
7	Y packing	NBR	
8	Diaphragm	PTFE	
9	Body	PFA, PTFE	SUS316
10	Mounting plate	SUS304	—

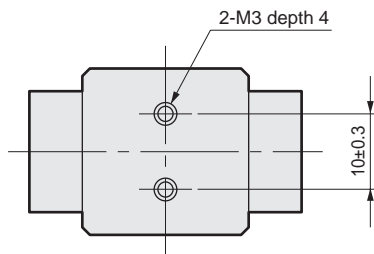
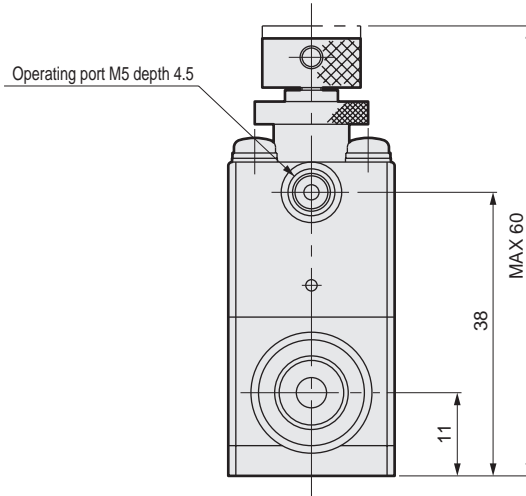
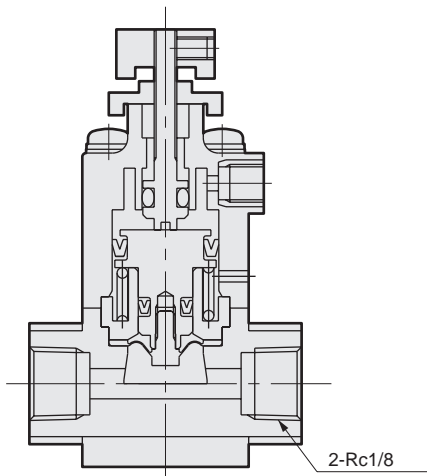
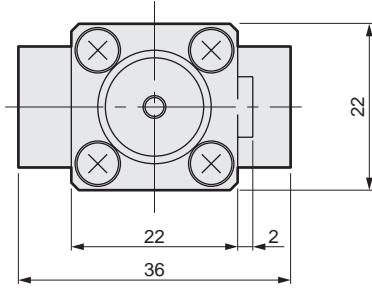
The material and structure may vary depending on the model number. Contact CKD for details.

⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Dimensions

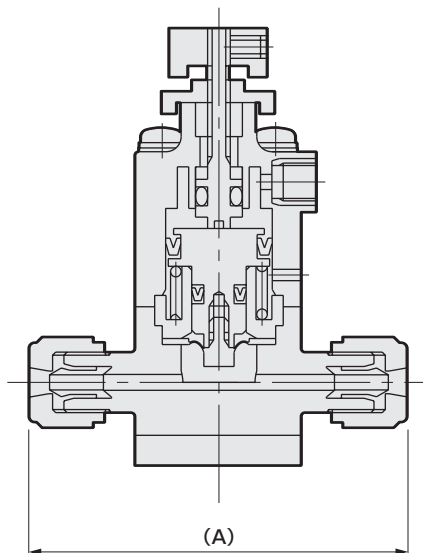
● Rc thread

- AMSZ2-6
- AMSZ2-6-D

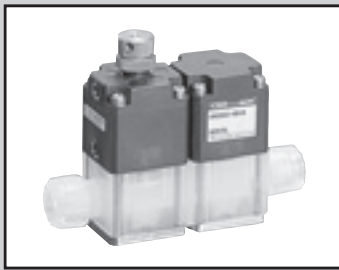


● Integrated fitting

- AMSZ2-



Dimensions	
*1 (Connector No.)	A
3US, 3UP	50
6BUS, 6BUP	50
3UF	40
3UR	57
6BUR	57



Air operated valve for chemical liquids/drip prevention valve integrated

AMDSZO / AMDS00 Series

Achieves reduced steps in piping and compactness

- Maximum drip prevention amount: 0.04 cm³/0.12 cm³
- Connection tube size: ø3, ø6, ø6.35, 1/8", 1/4"

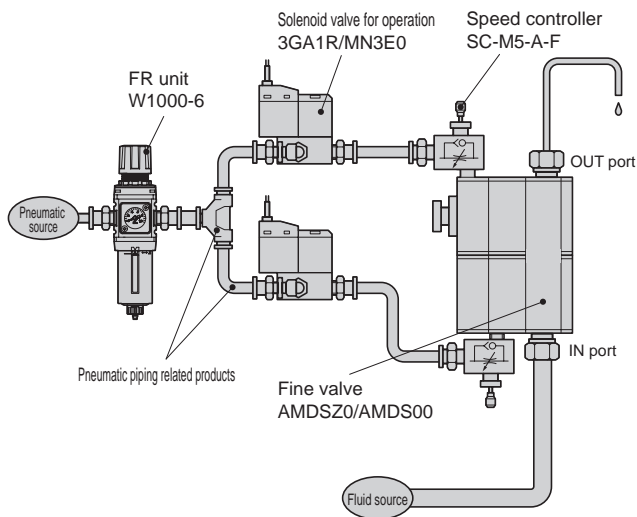


Specifications

Item	AMDSZO-*	AMDS00-*
Working fluid	Chemical liquid, pure water (*1)	
Fluid temperature °C	5 to 80	
Proof pressure MPa	1.0	
Working pressure MPa	0 to 0.2	
Ambient temperature °C	0 to 60	
Mounting orientation	Horizontally mounted with port positioned vertically (OUT port up)	
Connection	O.D. ø3 tube connection O.D. 1/8" tube connection	O.D. ø6 tube connection O.D. 1/4" tube connection
Operating section	Operating pressure MPa	0.3 to 0.5
	Operating port	M5
Maximum drip prevention amount cm ³	0.04	0.12
Orifice size	ø2	ø4
Cv	0.08	0.32
Weight kg	0.12	0.22

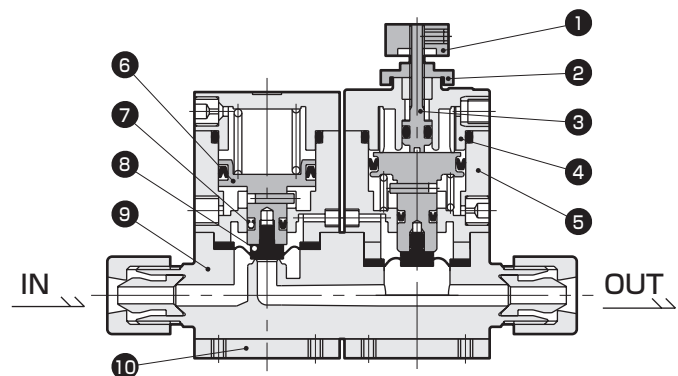
*1: Cannot be used with acidic fluids. Contact CKD regarding acidic fluids and aqueous ammonia.
Check the compatibility of product structural materials, working fluids and atmosphere.

Examples of use and related products



For related products,
Refer to Pneumatic Components (Catalog No. CB-023SA),
Pneumatic, Vacuum and Auxiliary Valves (Catalog No. CB-024SA),
and Clean Component Systems (Catalog No. CB-033SA).

Internal structure and parts list



Part No.	Part name	Material
1	Knob	SUS303
2	Lock nut	SUS303
3	Adjusting rod	SUS303
4	Cover	PPS
5	Cylinder	PPS
6	Piston rod	SUS303
7	Y packing	NBR
8	Diaphragm	PTFE
9	Body	PFA, PTFE
10	Mounting plate	SUS304

The material and structure may vary depending on the model number. Contact CKD for details.

⚠ Always read the precautions on Intro Pages 7 to 14 before use.

How to order

●AMDSZ Series

AMDSZO - 3US

Model No.

① Connection

		① Connection							
		3US	6BUS	3UP	6BUP	3UF	3UR	6BUR	
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20 Series Integrated fitting		F-LOCK 60 Series Integrated fitting	
		ø3 x ø2 tube connection 1.8" x 0.086" tube connection		ø3 x ø2 tube connection 1.8" x 0.086" tube connection		ø3 x ø2 tube connection		ø3 x ø2 tube connection 1/8" x 1/16" tube connection	
Code	Description	PFA		PFA		PTFE		PTFE	
Body material		PFA		PFA		PTFE		PTFE	

* Machined PTFE products will be manufactured on a per-order basis.

●AMDS0 Series

AMDS00 - 6UR

Model No.

① Connection

		① Connection										
		6US	8BUS	6UP	8BUP	6UF	8BUF	6UR	8BUR	6UK	8BUK	8BUW
		Super Type Pillar fitting Integrated		Super 300 Pillar fitting P series integrated		F-LOCK 20 Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
		ø6 x ø4 tube connection 1/4" x 5/32" tube connection		ø6 x ø4 tube connection 1/4" x 5/32" tube connection		ø6 x ø4 tube connection ø 6.35 x ø 4.3 tube connection		ø6 x ø4 tube connection 1/4" x 5/32" tube connection		ø6 x ø4 tube connection 1/4" x 5/32" tube connection		1/4" x 5/32" tube connection
Code	Description	PFA		PTFE		PTFE		PTFE		PTFE		PTFE
Body material		PFA		PTFE		PTFE		PTFE		PTFE		PTFE

* Machined PTFE products will be manufactured on a per-order basis.

⚠ Precautions for model No. selection

- *1: Contact CKD if selecting all-resin for an actuator that can be used for acidic fluids.
- *2: The low-sliding (diaphragm) actuator is also supported to reduce foaming and improve liquid drainage performance. Contact CKD for details.

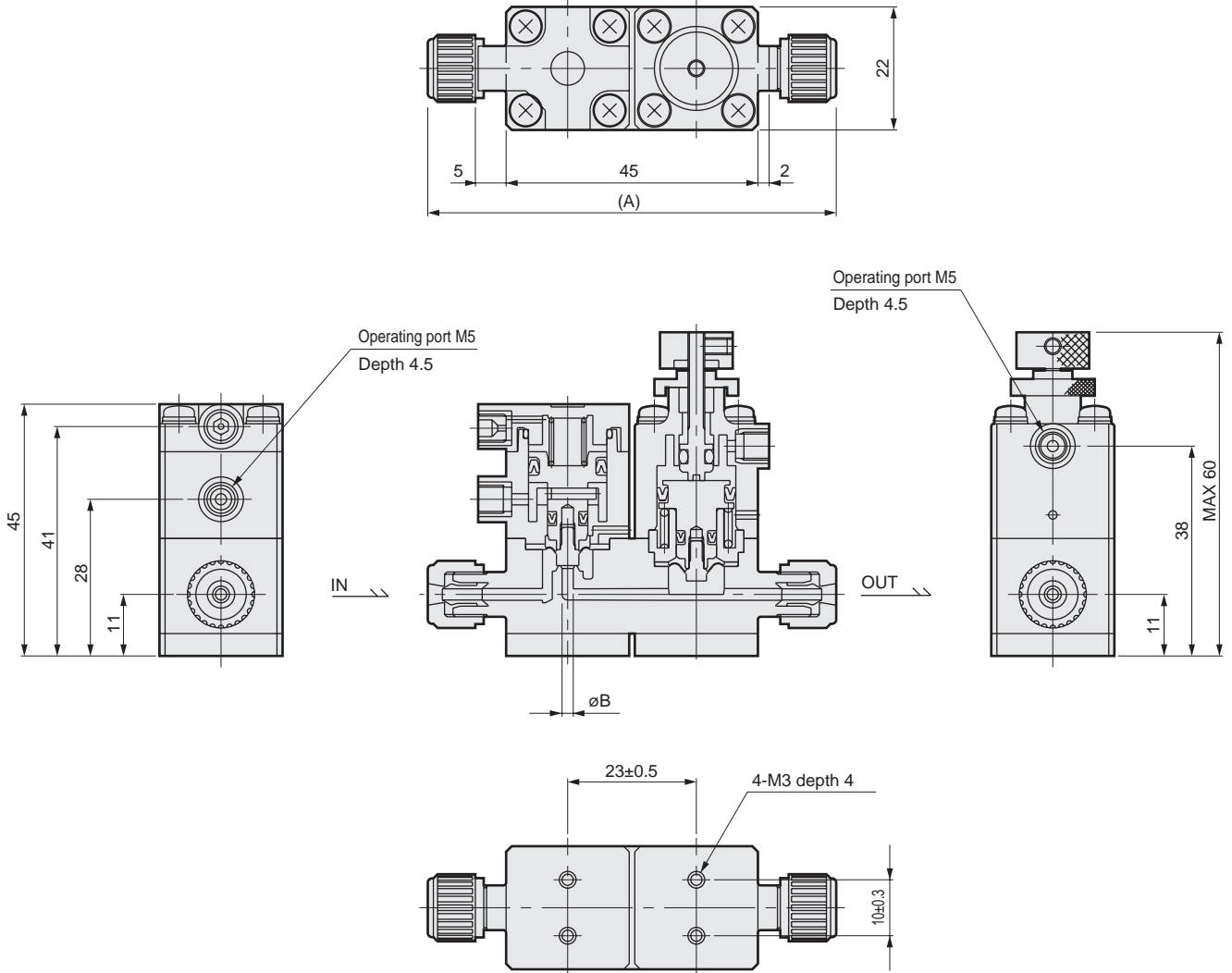
Air operated valve	Part3R	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part2	Manual valve	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products	
	Part1						Part3RN																Part2

Dimensions

● Integrated fitting

·AMDSZ0- *1

Part 3R	Part 2	Part 1	High pressure	Metal-free	Air operated valve
Large bore size	PVC	Drainage	Part 3RN	Part 2	High pressure
Manual valve	High pressure	Metal-free	Single unit	Air operated Integrated	Drip prevention valve
Regulator	Pilot	Manual	Electric	Manual	Flow rate adjusting valve
Manual Fine flow rate	Manual	Manual	Manual	Manual	Flow rate adjusting valve
Fine level Switch	Manual	Manual	Manual	Manual	Flow rate adjusting valve
Related products	Manual	Manual	Manual	Manual	Flow rate adjusting valve

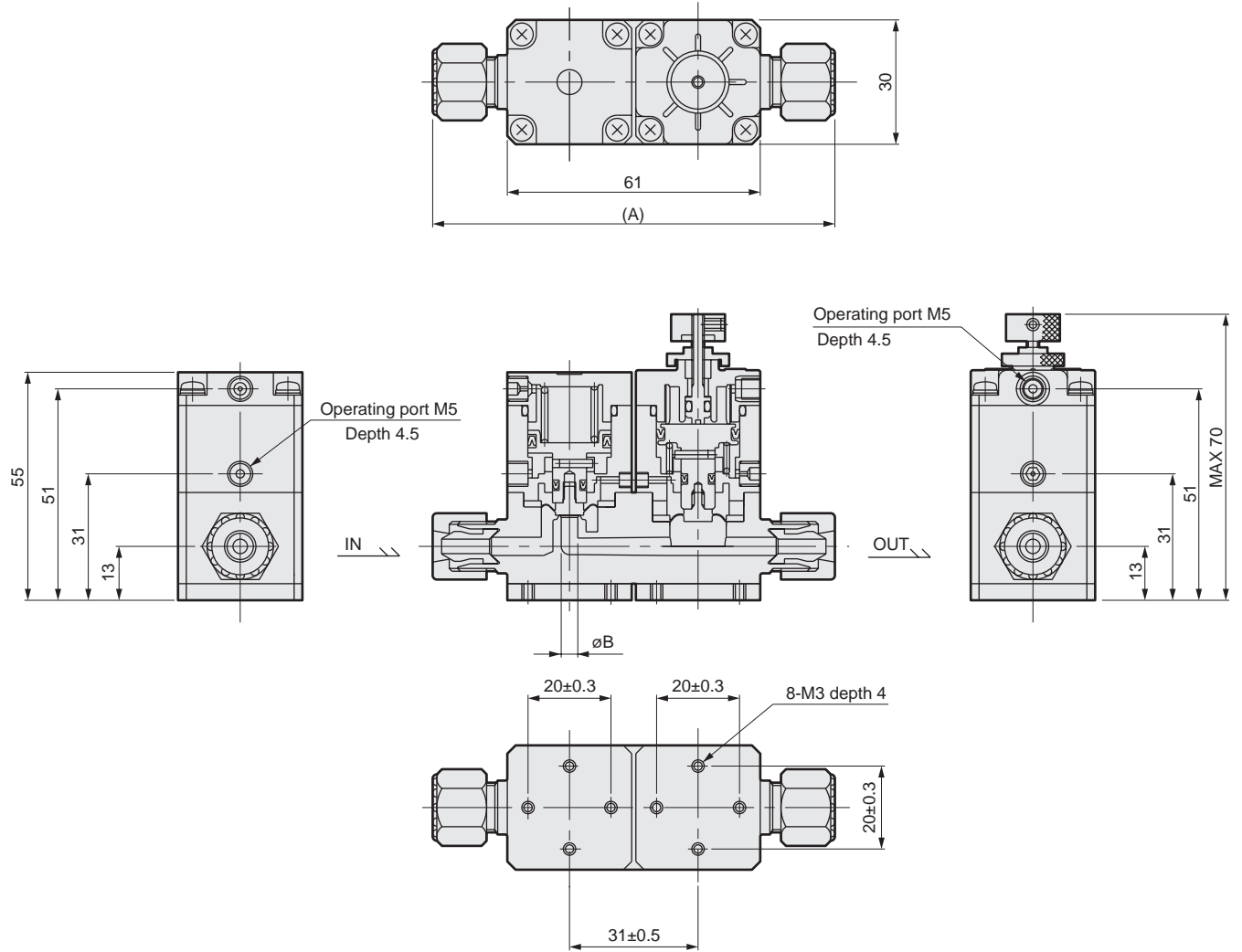


Dimensions	A	B
*1 (Connector No.)		
3US, 3UP	73	2
6BUS, 6BUP	73	2
3UF	63	2
3UR	80	1.6
6BUR	80	1.6

Dimensions

● Integrated fitting

·AMDS00- *1



Dimensions		
*1 (Connector No.)	A	B
6US	97	4
8BUS	97	4
6UP	99	4
8BUP	99	4
6UF	95	4
8BUF	95	4
6UR	121	3.5
8BUR	123	3.5
6UK	102	4
8BUK	102	4
8BUW	117	3

Air operated valve	Part3R	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure
	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure
	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
Manual valve	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure
	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure
	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
Drip prevention valve	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure
Regulator	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure
Flow rate adjusting valve	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure
Fine level Switch	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure
Related products	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure
	Part2	High pressure	Part1	High pressure	Part3RR	High pressure	Part2	High pressure	Part1	High pressure	Part3RR	High pressure

MEMO

Related products	Fine level Switch	Manual Fine flow rate	Manual	Electric	Manual	Pilot	Air operated Integrated	Single unit	Large bore size	Metal-Free	High pressure	Part 2	Part 3RN	Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R
		Flow rate adjusting valve			Regulator		Drip prevention valve					Manual valve							Air operated valve		

Regulator

Overview

A pressure reducing valve for pure water, chemical liquids, air and N₂ gas. Excellent corrosion resistance and easy to install. It can be selected from stainless steel and fluorine resin depending on the application.

Features

PMP

- Excellent pressure stability and high-speed response.
- Flow path structure with less retention area.
- All-fluororesin wetted parts (PTFE, PFA)

PYM (for Air/N₂ gas/pure water)

- Stainless steel body, wetted parts are made of fluororesin (PTFE) and SUS316.
- Filter built in
Provides safety with regard to foreign matter in fluids.

PMM20

- Uses a fluororesin body and all-fluororesin wetted parts (PFA, PTFE).
- Integrated fitting that provides great measures against contamination.

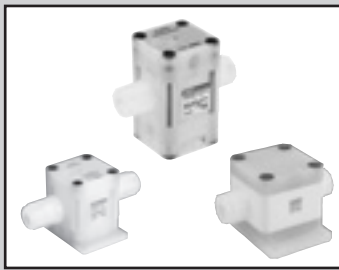
PMM50

- A pressure reducing valve designed to support a large flow rate supply of pure water and warm pure water.



⚠ Safety precautions		Intro Page 9
Pilot operated		
PMP002		160
PMP202		160
PMP402		160
Manual		
PYM		166
PMM20		168
PMM50		170

Air operated valve	Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Manual valve	High pressure	Metal-free	Large bore size	Drip prevention valve	Single unit	Air operated integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products	
	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure		High pressure	High pressure	High pressure		High pressure	High pressure		High pressure	High pressure		High pressure	High pressure	High pressure			High pressure
	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure		High pressure	High pressure	High pressure		High pressure	High pressure	High pressure	High pressure	High pressure		High pressure	High pressure	High pressure	High pressure	High pressure	High pressure
	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure		High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure
	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure		High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure	High pressure



Fine regulator (pilot operated)

PMP⁰₂⁰02 Series

Changes in pressure of chemical liquids and pure water supply parts can be achieved with pilot air control, A regulator designed to adjust pressure for stability.



- Connection tube size: $\varnothing 6$, $\varnothing 10$, $\varnothing 12$, $\varnothing 25$, 1/4", 3/8", 1/2", 3/4", 1"

Export controlled items

* Eligibility: PMP402 (*4)

Specifications

Item	PMP002	PMP202	PMP402
Working fluid	Pure water, chemical liquids (*2)		Pure water (*3)
Fluid temperature °C	10 to 90		10 to 90
Proof pressure MPa	1.0		1.0
Max. working pressure MPa	0.5		0.5
Set pressure MPa	0.02 to 0.3		0.07 to 0.4
Operating pressure MPa	0 to 0.4		0 to 0.45
Recommended flow rate L/min	0.2 to 3	0.2 to 5	2 to 20
Operating port	Rc1/8		Rc1/8
Ambient temperature °C	10 to 60		10 to 60
Mounting orientation	Unrestricted		Unrestricted
Connection	O.D. $\varnothing 6$ tube connection (integrated fitting), OD1/4" tube connection (integrated fitting), O.D. $\varnothing 10$ tube connection (integrated fitting), O.D. 3/8" tube connection (integrated fitting)		O.D. 3/4" tube connection (Integrated fitting) (O.D. 1" and OD1/2" options available)
Weight kg	0.13	0.28	1.7

*1: Non-relief

*2: Check the compatibility of product structural materials, working fluids and atmosphere.

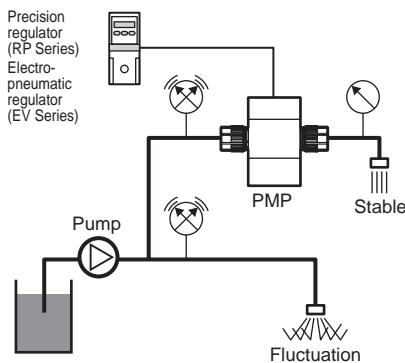
*3: Contact CKD when using chemical liquids.

*4: Excludes O.D. $\varnothing 12$ and 1/2" tube connection.

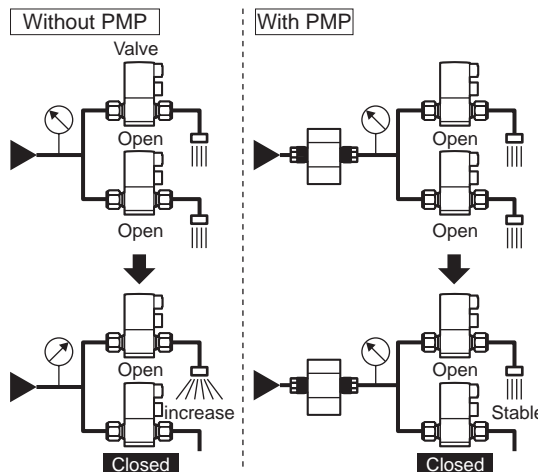
*5: When using chemical liquids with high permeability, permeated gas may contaminate the pilot mechanism, which may adversely affect the operating components. Consult with CKD if protection is needed for the operating components.

Application

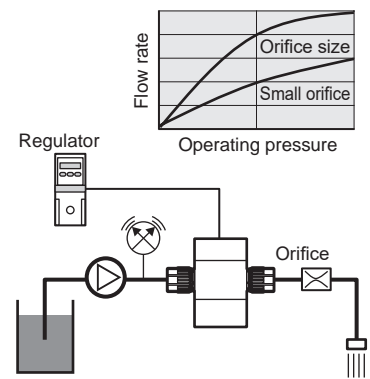
Stable discharge (pressure/flow rate)



Branched flow rate uniformizing



Remote flow rate setting

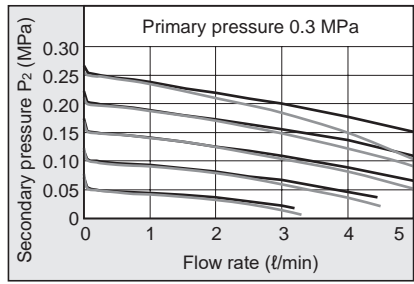


! Always read the precautions on Intro Pages 7 to 14 before use.

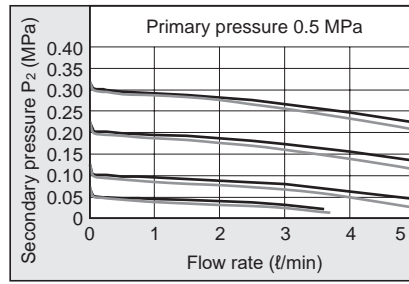
Flow characteristics / Pressure characteristics / Pressure adjustment characteristics

PMP002

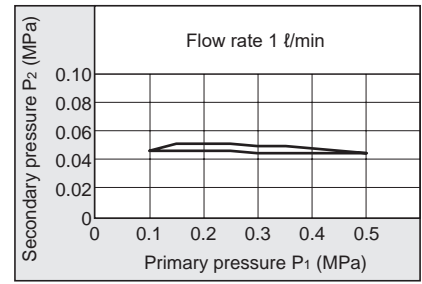
Flow characteristics 1 (water) — 3/8" — 1/4"



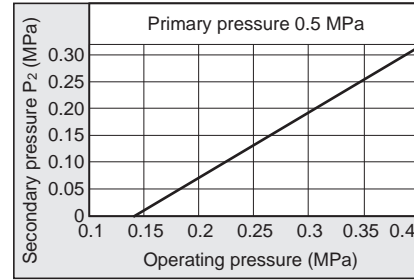
Flow characteristics 2 (water) — 3/8" — 1/4"



Pressure characteristics (water)

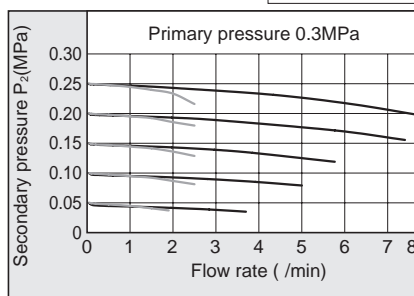


Pressure adjustment characteristics (water)

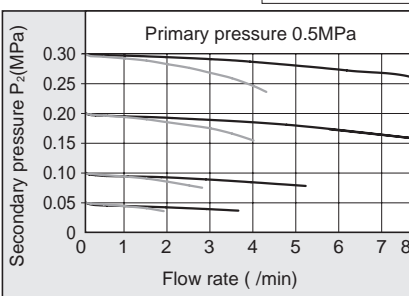


PMP202

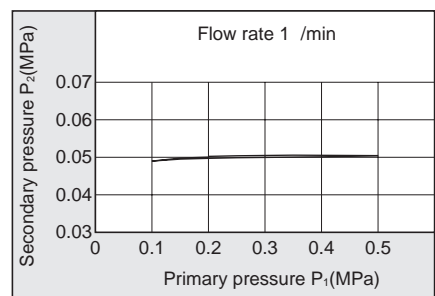
Flow characteristics 1 (water) — OD ø10,3/8" — OD ø6,1/4"



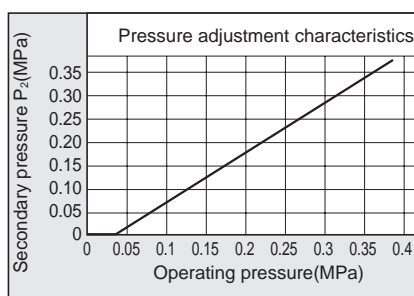
Flow characteristics 2 (water) — OD ø10,3/8" — OD ø6,1/4"



Pressure characteristics (water)

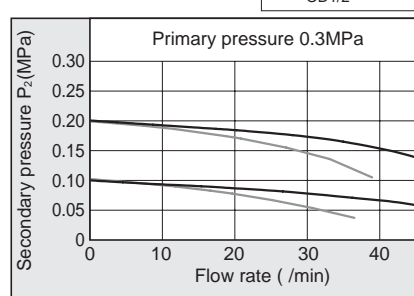


Pressure adjustment characteristics (water)

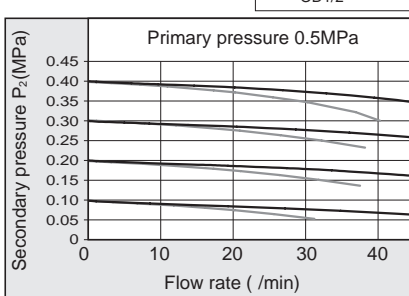


PMP402

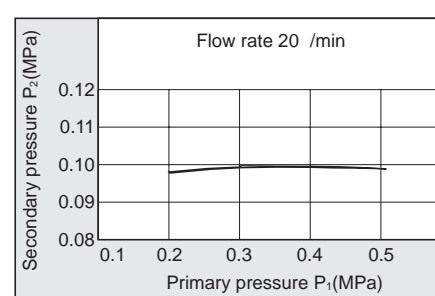
Flow characteristics 1 (water) — OD3/4",OD1" — OD1/2"



Flow characteristics 2 (water) — OD3/4",OD1" — OD1/2"

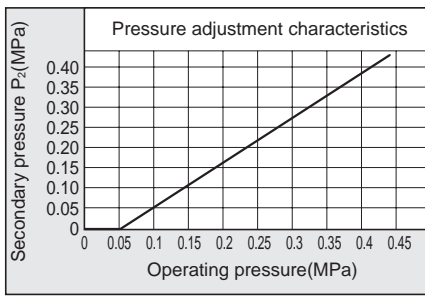


Pressure characteristics (water)



PMP402

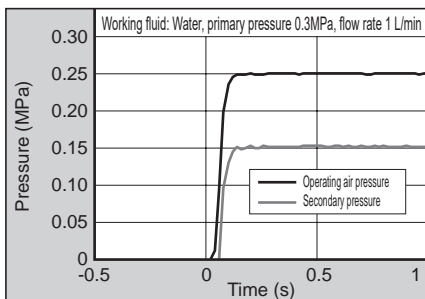
Pressure adjustment characteristics (water)



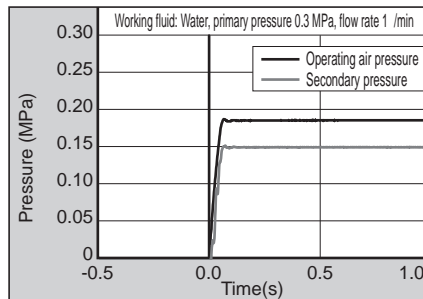
Reference data

Responsivity Tracking of secondary side pressure for operating air

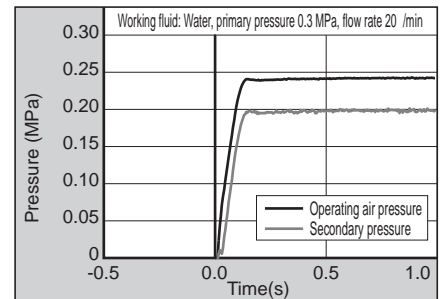
PMP002



PMP202

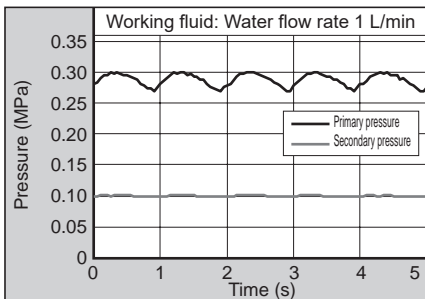


PMP402

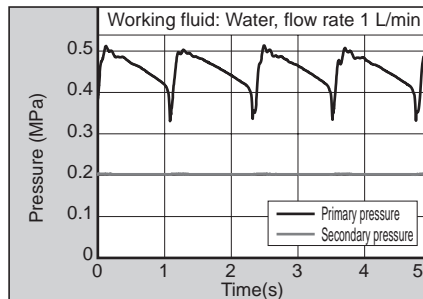


Pulsation absorption Stability of secondary pressure against pulsation of primary pressure

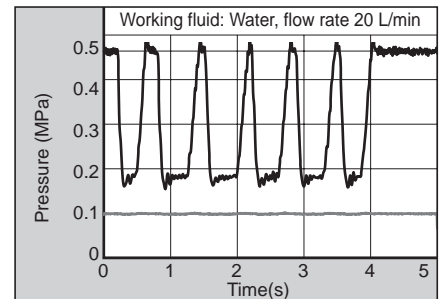
PMP002



PMP202

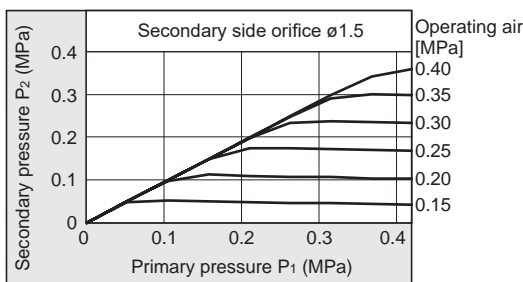


PMP402



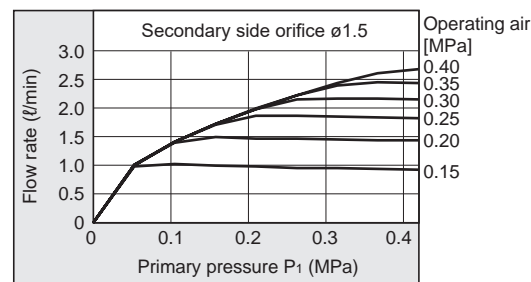
Operating air pressure - secondary pressure characteristics (water)

PMP002



Operating air pressure - flow characteristics (water)

PMP002



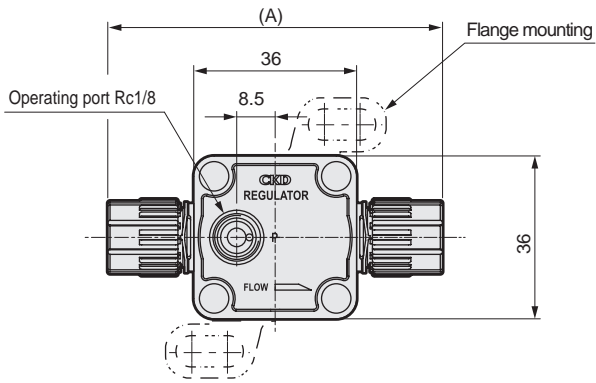
■ How to use

- Set the temperature, pressure, flow rate and other use conditions within the specification range of the product.
- If the product will be out of use for long periods, stop the supply pressure on the primary side.
- This product is a non-relief-type, and if used with the secondary side closed, it may retain the high pressure generated by water hammer, etc.
- Do not use as a residual pressure exhaust valve.

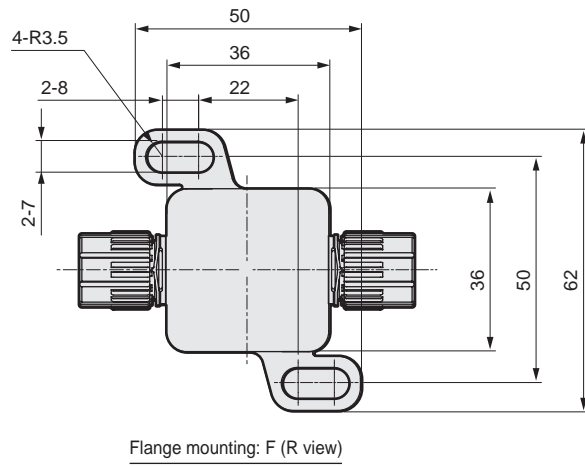
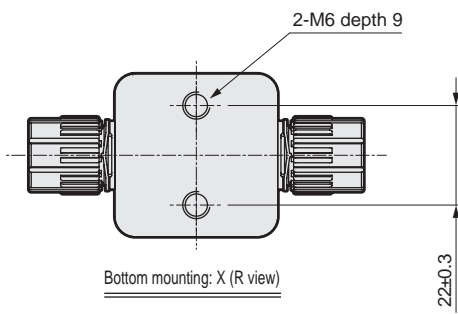
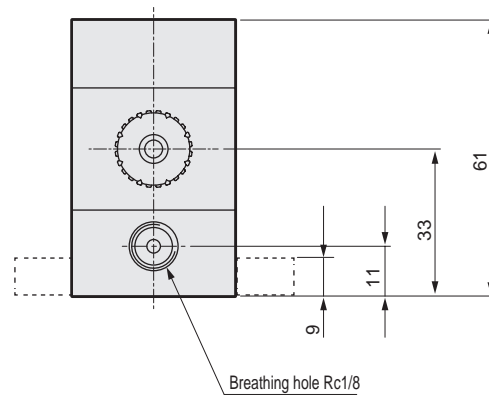
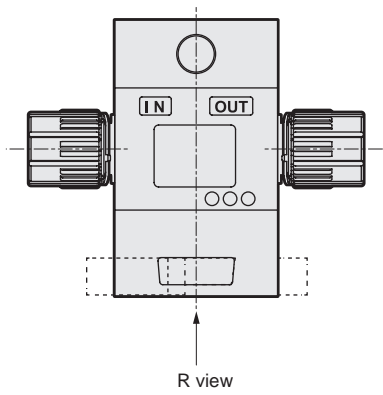
Part3R
Part2
Part1
High pressure
Metar-free
Large bore size
Polyvinyl chloride
Drainage
Part3RN
Part2
High pressure
Metar-free
Large bore size
Single unit
Drp prevention valve
Air operated Integrated
Regulator
Manual
Electric
Manual Flow rate adjusting valve
Manual/Fine flow rate
Fine level Switch
Related products

Dimensions

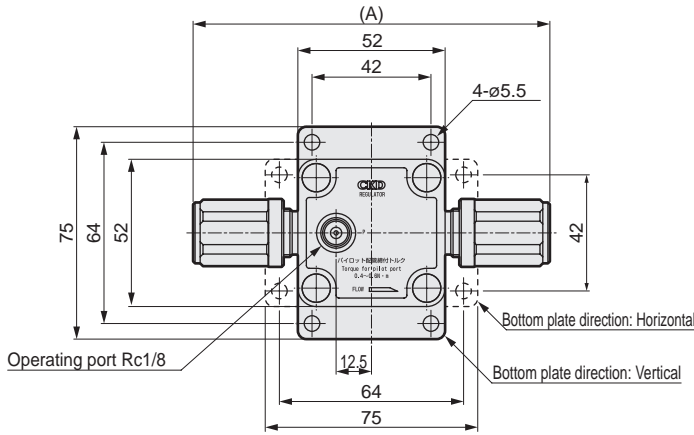
●PMP002- *1 -*



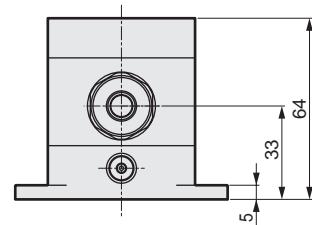
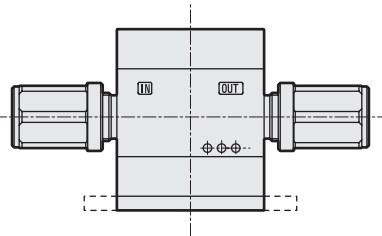
Dimensions		A
*1	Connector No.	
	6UP	74
	8BUP	74
	10UP	86
	10BUP	86



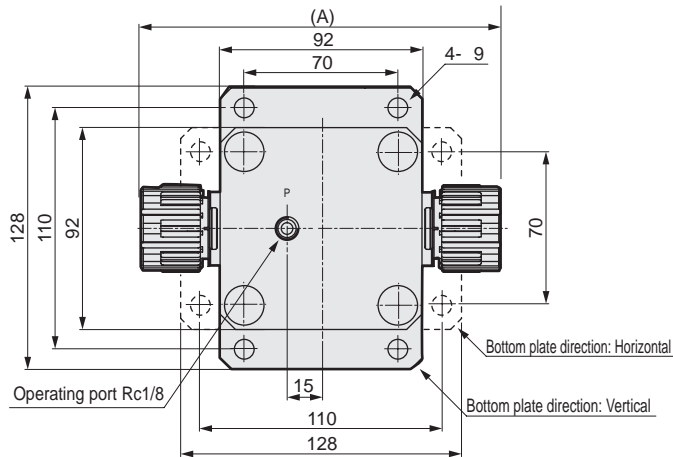
●PMP202- *1 -*



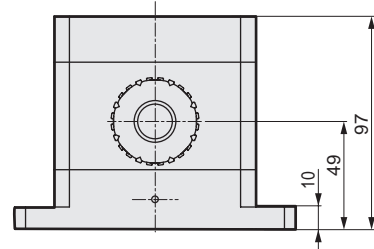
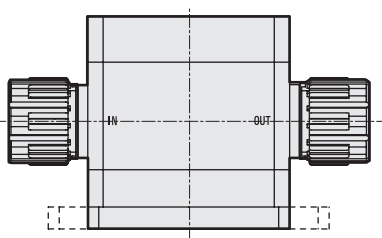
Dimensions	
*1 (Connector No.)	A
6UP	90
8BUP	90
6UR	112
8BUR	114
10UP	102
10BUP	102
10UR	126
10BUR	130



●PMP402- *1 -*N



Dimensions	
*1 (Connector No.)	A
12UP, 15BUP	150
20BUP	164
25UP, 25BUP	178



Part3R	Part2	Part1	Air operated valve	High pressure	6UP	90
				High pressure	8BUP	90
				High pressure	6UR	112
				High pressure	8BUR	114
			Manual valve	High pressure	10UP	102
				High pressure	10BUP	102
				High pressure	10UR	126
				High pressure	10BUR	130
			Regulator	High pressure	12UP, 15BUP	150
				High pressure	20BUP	164
				High pressure	25UP, 25BUP	178
				High pressure		
			Flow rate adjusting valve	Flow rate	Manual	76
				Flow rate	Manual/Fine	49
				Flow rate	Fine level Switch	10
			Related products			



Fine regulator (manual)

PYM Series

Stainless steel body
Regulator for air, N₂ gas and pure water

● Connection: Rc1/8", 1/4"



Specifications

Item	PYM10-6	PYM10-8
Working fluid	Pure water, N ₂ gas, air (*3)	
Fluid temperature °C	5 to 60	
Proof pressure MPa	1.5	
Max. working pressure MPa	0.99	
Set pressure MPa	0.02 to 0.2 (*2)	
Ambient temperature °C	0 to 60	
Mounting orientation	Unrestricted	
Port size and gauge port size	Rc1/8	Rc1/4
Weight kg	0.77	

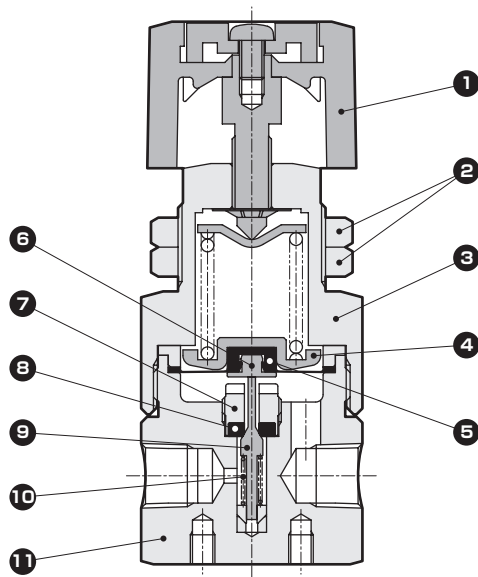
*1: Wetted parts material: PTFE, SUS316, Non-relief

*2: Set pressure range of 0.02 to 0.4 MPa is also available. Contact CKD for details.

*3: Cannot be used with acidic fluids.

*4: Check the compatibility of product structural materials, working fluids and atmosphere.

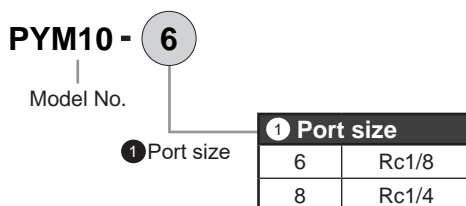
Internal structure and parts list



Part No.	Part name	Material
1	Pressure adjustment knob	ABS
2	Lock nut	SUS304
3	Cover	C3604 (nickel-phosphorus plating)
4	Spring rest	SUS304
5	Diaphragm	PTFE
6	Diaphragm retainer	SUS316
7	Valve disk holder	SUS316
8	Valve disc	PTFE
9	Valve	SUS316
10	Spring	SUS316
11	Body	SUS316

The material and structure may vary depending on the model number. Contact CKD for details.

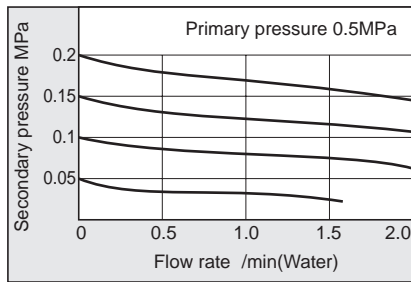
How to order



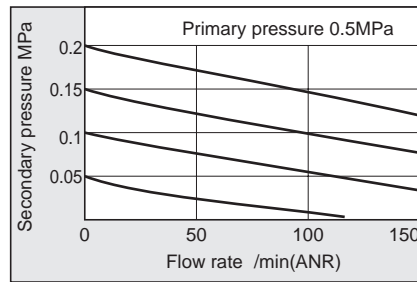
⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Flow characteristics / Pressure characteristics

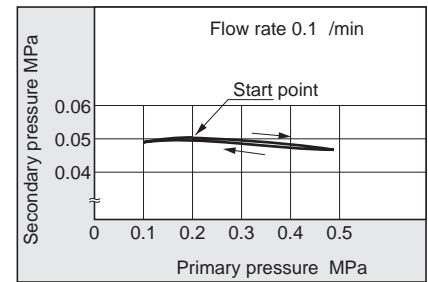
Flow characteristics (water)



Flow characteristics (air)

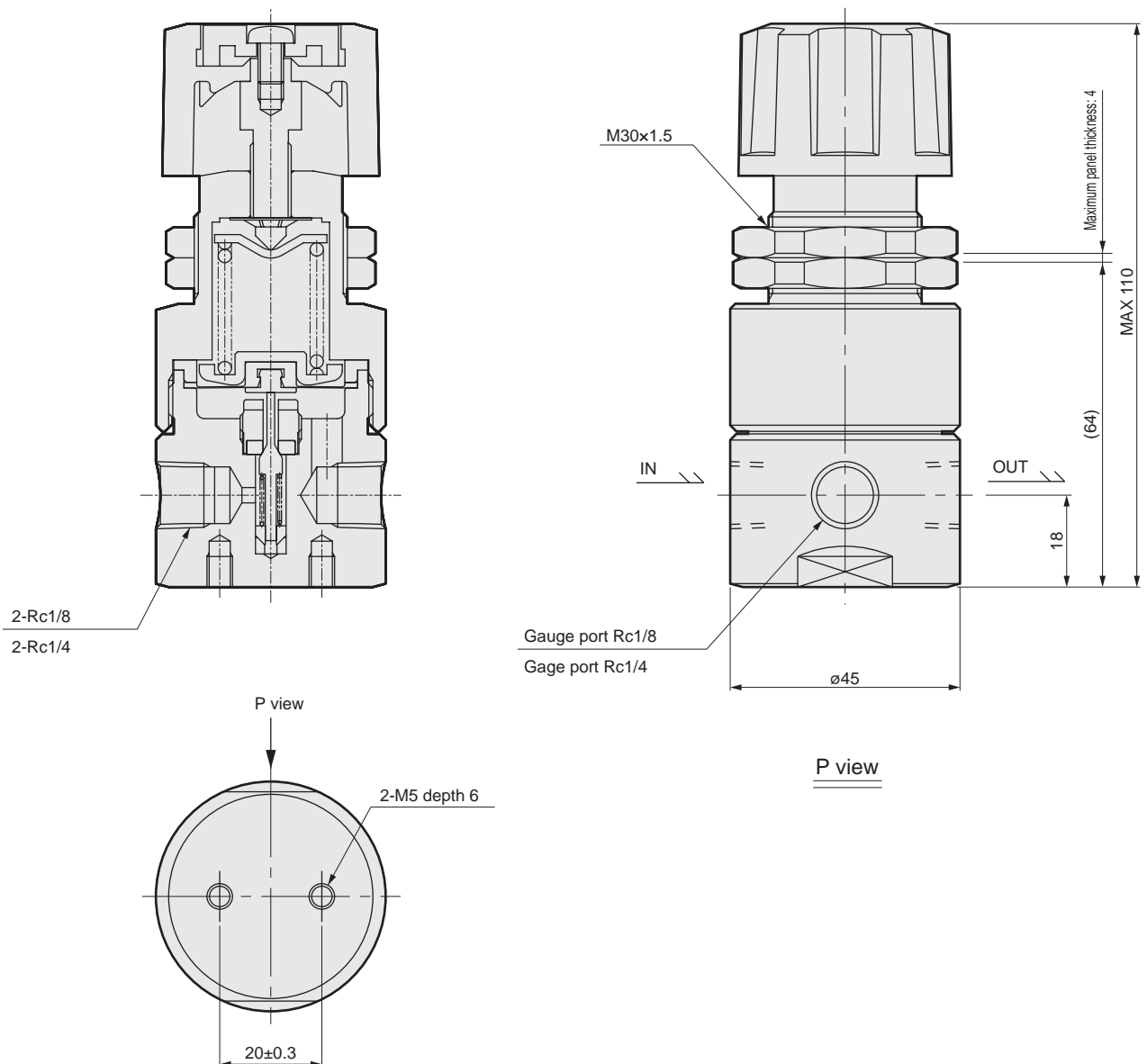


Pressure characteristics (water)



Dimensions

- PYM10-6 (Rc1/8)
- PYM10-8 (Rc1/4)



How to use

- Set the temperature, pressure, flow rate and other use conditions within the specification range of the product.
- If the product will be out of use for long periods, stop the supply pressure on the primary side.
- This product is a non-relief-type, and if used with the secondary side closed, it may retain the high pressure generated by water hammer, etc.
- Do not use as a residual pressure exhaust valve.

Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metals-free	Large bore size	Single unit	Air operated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve			Drip prevention valve	Integrated	Regulator		Flow rate adjusting valve				



Fine regulator (manual)

PMM20 Series

Pressure reducing valve for pure water with all fluoroplastic wetted parts

- Connection tube size: $\varnothing 8$, $\varnothing 10$, $3/8''$



Specifications

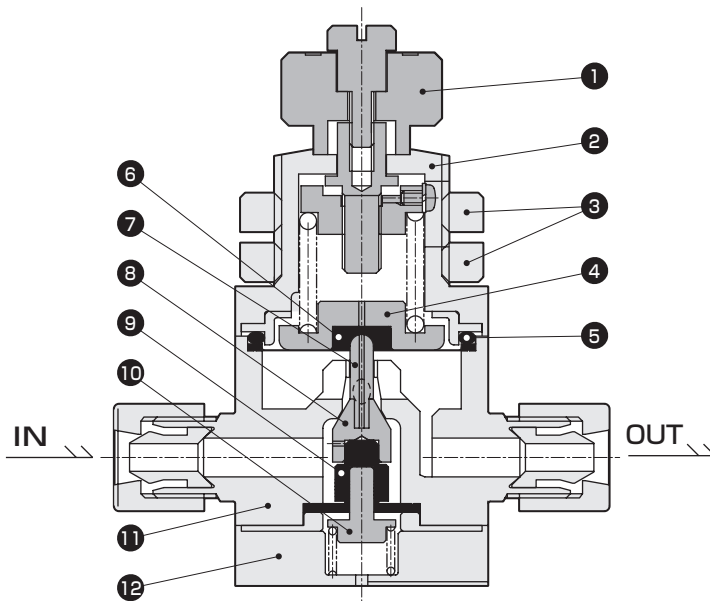
Item	PMM20	
Working fluid	Pure water	
Fluid temperature	°C	5 to 80
Proof pressure	MPa	0.75
Max. working pressure	MPa	0.5
Set pressure	MPa	0.02 to 0.2 (*3)
Ambient temperature	°C	0 to 60
Mounting orientation	Unrestricted	
Connection	O.D. $\varnothing 10$ tube connection (integrated fitting) O.D. $3/8''$ tube connection (integrated fitting)	
Weight	kg	0.42

*1: Non-relief

*2: Panel mounting is also available.

*3: The set pressure range 0.05 to 0.4 MPa can be handled by adding "-H" at the end of the model number. (The fluid temperature will be 5 to 40°C) Contact CKD for details.

Internal structure and parts list



Part No.	Part name	Material
1	Pressure adjustment knob	PP
2	Cover	PP
3	Lock nut	PP
4	Spring rest	SUS304
5	O-ring	FKM
6	Diaphragm	PTFE
7	Stem	PCTFE
8	Valve	PTFE
9	Bellows	PTFE
10	Rod	SUS304
11	Body	PFA
12	Bottom plate	PP

The material and structure may vary depending on the model number. Contact CKD for details.

How to order

PMM20-10BUS
 Model No. ① Connection

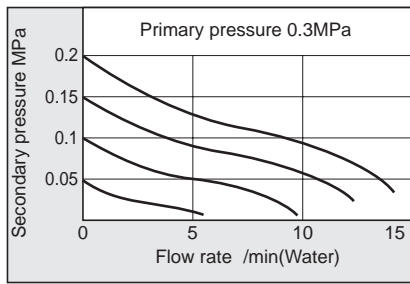
Description	① Connection											
	8US	10US	10BUS	10UP	10BUP	10UA	10BUA	10UR	10BUR	10UK	10BUK	10BUW
Super Type Pillar fitting Integrated				Super 300 Pillar fitting P series integrated		F-LOCK 20A Series Integrated fitting		F-LOCK 60 Series Integrated fitting		Final Lock Fitting Integrated		Flaretek Fitting Integrated
$\varnothing 8 \times \varnothing 6$ tube connection	$\varnothing 10 \times \varnothing 8$ tube connection	$3/8'' \times 1/4''$ tube connection	$\varnothing 10 \times \varnothing 8$ tube connection	$3/8'' \times 1/4''$ tube connection	$\varnothing 10 \times \varnothing 8$ tube connection	$3/8'' \times 1/4''$ tube connection	$\varnothing 10 \times \varnothing 8$ tube connection	$3/8'' \times 1/4''$ tube connection	$\varnothing 10 \times \varnothing 8$ tube connection	$3/8'' \times 1/4''$ tube connection	$3/8'' \times 1/4''$ tube connection	$3/8'' \times 1/4''$ tube connection
Body material	PFA			PTFE		PTFE		PTFE		PTFE		PTFE

* Machined PTFE products will be manufactured on a per-order basis.

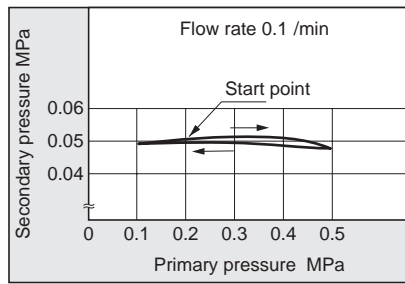
⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Flow characteristics / Pressure characteristics

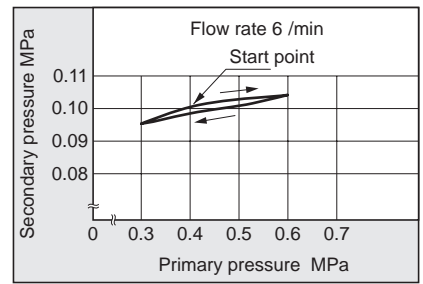
Flow characteristics (water)



Pressure characteristics 1 (water)

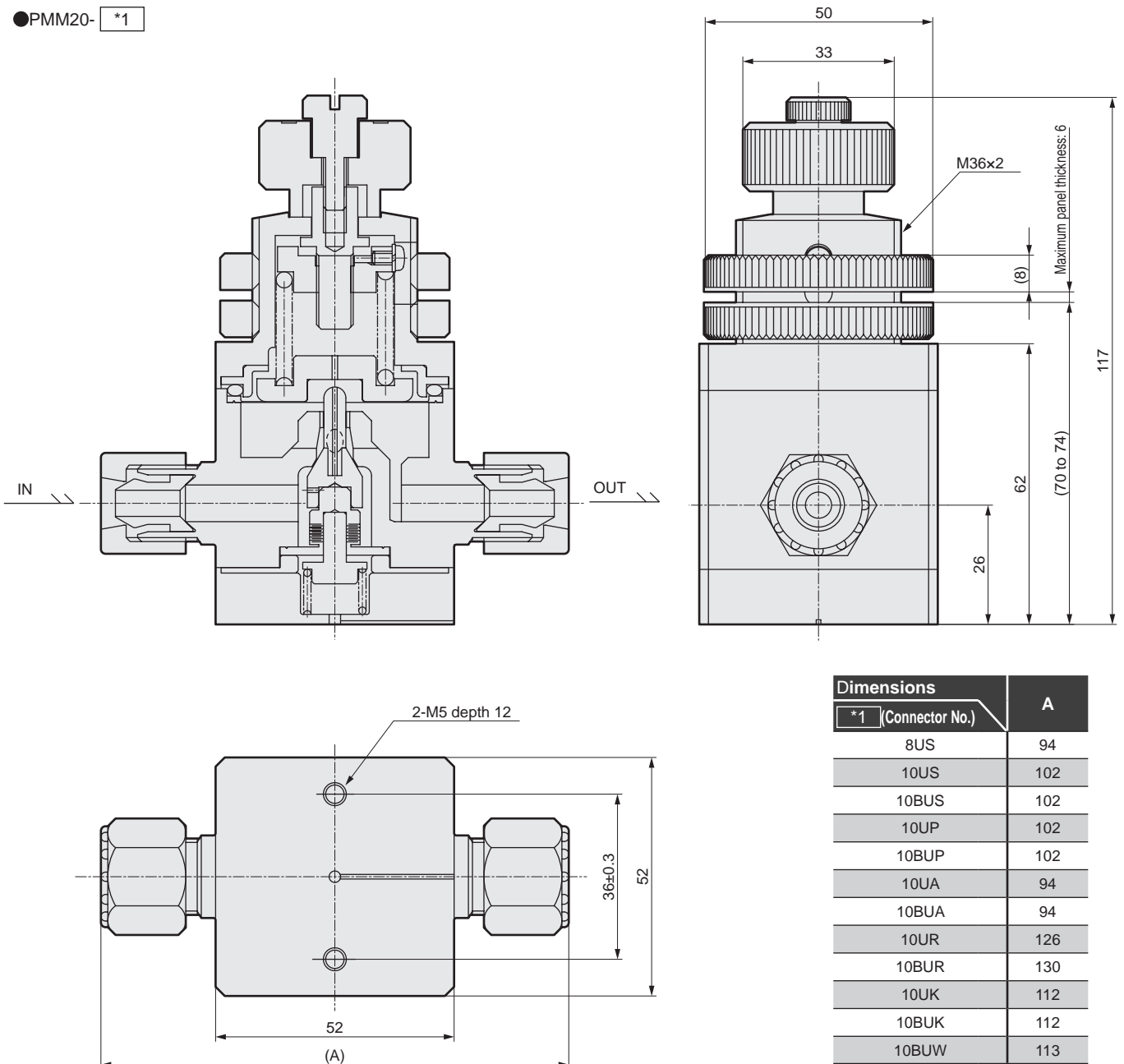


Pressure characteristics 2 (water)



Dimensions

●PMM20- *1



Dimensions	
*1 (Connector No.)	A
8US	94
10US	102
10BUS	102
10UP	102
10BUP	102
10UA	94
10BUA	94
10UR	126
10BUR	130
10UK	112
10BUK	112
10BUW	113

How to use

- Set the temperature, pressure, flow rate and other use conditions within the specification range of the product.
- If the product will be out of use for long periods, stop the supply pressure on the primary side.
- This product is a non-relief-type, and if used with the secondary side closed, it may retain the high pressure generated by water hammer, etc.
- Do not use as a residual pressure exhaust valve.

Air operated valve	Part3R	Part2	Part1
	High pressure	High pressure	High pressure
	Metal-free	Metal-free	Metal-free
	Large bore size	Large bore size	Large bore size
Manual valve	Polyvinyl chloride	Drainage	Part3RN
	High pressure	High pressure	Part2
	Metal-free	Metal-free	High pressure
	Large bore size	Large bore size	High pressure
Air operated integrated valve	Single unit	Drift prevention valve	Part3RN
	High pressure	High pressure	Part2
	High pressure	High pressure	High pressure
	High pressure	High pressure	High pressure
Regulator	Pilot	Regulator	Part3RN
	Manual	Manual	Part2
	Manual	Manual	High pressure
	Manual	Manual	High pressure
Flow rate adjusting valve	Electric	Flow rate adjusting valve	Part3RN
	Manual	Manual	Part2
	Manual	Manual	High pressure
	Manual	Manual	High pressure
Fine level Switch	Fine level Switch	Flow rate adjusting valve	Part3RN
	Flow rate adjusting valve	Flow rate adjusting valve	Part2
Related products	Related products	Flow rate adjusting valve	Part3RN
	Flow rate adjusting valve	Flow rate adjusting valve	Part2



Fine regulator (manual)

PMM50 Series

A pressure reducing valve designed to support a large flow supply of pure water and warm pure water.

- Connection Nominal 25, PVDF union integrated



Made-to-order product

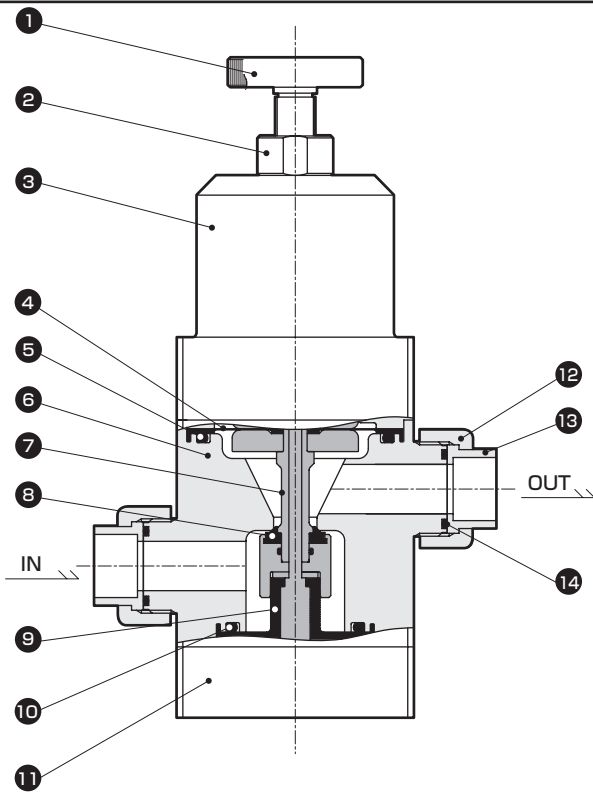
Export controlled items

Specifications

Item	PMM50-25AFU	
Working fluid	Pure water	
Fluid temperature	°C	5 to 80
Proof pressure	MPa	0.75
Max. working pressure	MPa	0.5
Set pressure	MPa	0.1 to 0.3
Ambient temperature	°C	5 to 40
Mounting orientation	Vertical mounting with the pressure adjustment knob on top	
Connection	Nominal 25, PVDF union integrated fitting	
Weight	Kg	5.5

*1: Non-relief

Internal structure and parts list



How to order

PMM50-25AFU

Model No.

① Connection

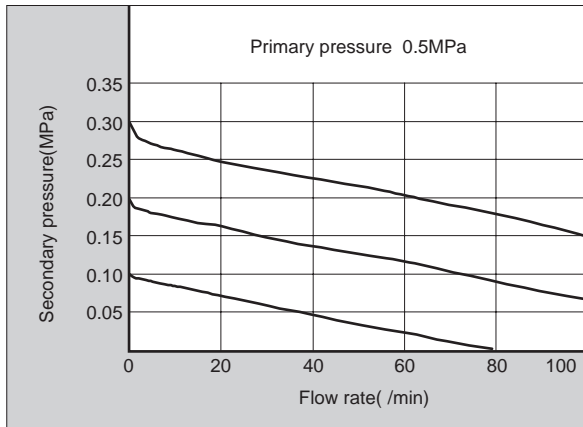
PMM50	
① Connection	
25AFU	
PVDF union fitting	
Integrated	
Nominal 25	

Part No.	Part name	Material	Part No.	Part name	Material
1	Pressure adjustment knob	PP	8	Valve seat	FKM
2	Lock nut	PP	9	Bellows	PTFE
3	Cover	PP	10	O-ring	FKM
4	Diaphragm	PTFE	11	Bottom plate	PVDF
5	O-ring	FKM	12	Union nut	PVDF
6	Body	PTFE	13	Union end	PVDF
7	Rod sleeve	PVDF	14	O-ring	FKM

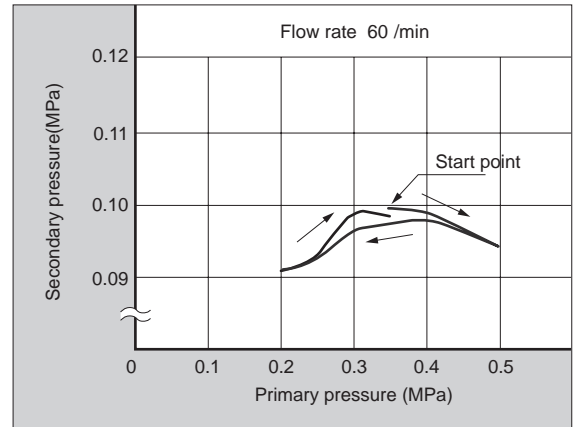
⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Flow characteristics / Pressure characteristics

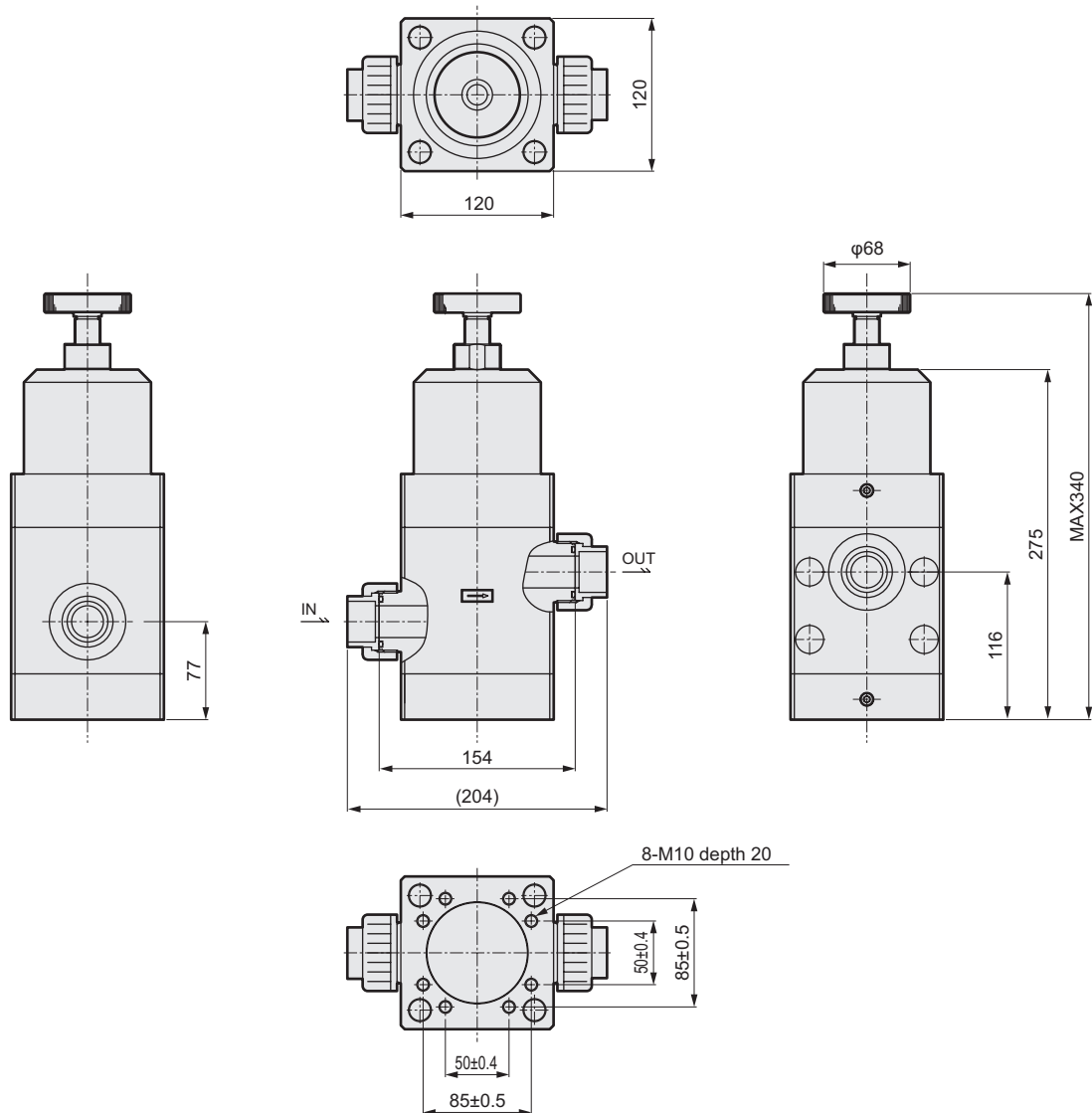
Flow characteristics (water)



Pressure characteristics (water)



Dimensions



How to use

- Set the temperature, pressure, flow rate and other use conditions within the specification range of the product.
- If the product will be out of use for long periods, stop the supply pressure on the primary side.
- This product is a non-relief-type, and if used with the secondary side closed, it may retain the high pressure generated by water hammer, etc.
- Do not use as a residual pressure exhaust valve.

Part3R	Part2	Part1	Air operated valve	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	Manual valve	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Drip prevention valve	Pilot Regulator	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products													

MEMO

Related products	Fine level Switch	Manual Fine flow rate	Manual	Electric	Manual	Pilot	Air operated Integrated	Single unit	Large bore size	Metal-Free	High pressure	Part 2	Part 3RN	Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R	
		Flow rate adjusting valve			Regulator		Drip prevention valve					Manual valve							Air operated valve			

Flow rate adjusting valve

Overview

A flow regulating valve using resin for the wetted parts that adjusts the flow rate of chemical liquids.

Features

MNV

- An electrical flow rate regulating valve with adjusting range of 600 steps.
- It supports fluids of 20°C to 195°C.

FMD00

- A fine flow rate control valve designed to support highly corrosive fluids.



⚠ Safety precautions	Intro Page 9
Motorized	
MNV	174
Manual	
FMD00	176
Manual fine flow rate	
LYX-0961	
LYX-0965	180

Air operated valve	Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	Manual valve	High pressure	Metal-free	Large bore size	Single unit	Drip prevention valve	Air operated integrated	Regulator	Pilot	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
	Part3RR	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Manual	Manual	Manual Fine flow rate															
	Part3RR	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Manual	Manual	Manual Fine flow rate															



Electric needle valve for chemical liquid

MNV Series

● Connection tube size: 3/8"



Specifications

1. Valve/body

Item	MNV00-10BUP-1-G
Working fluid	Chemical liquids, pure water (*1)
Fluid temperature °C	20 to 195
Proof pressure MPa	0.5
Working pressure (A→B) MPa	0 to 0.2
Fluid differential pressure kPa	5 to 200 (differential pressure between ports A and B)
Setting range	0 to 600step (motor drive step) • 0step valve open side, home sensor detection • 600step valve closed side, with stopper
Operating ambient temperature °C	20 to 100
Operating ambient humidity%RH	20 to 85 (no condensation)
Storage ambient temperature °C	0 to 60
Storage ambient humidity%RH	20 to 85 (no condensation)
Mounting orientation	Unrestricted
Connection	Super 300 pillar fitting P series integrated 3/8" x 1/4" fitting for PFA tube
Orifice size mm	ø3.4
Degree of protection	Waterproof (IP65 or equivalent)
Weight kg	0.51

*1: Check the compatibility of product structural materials, working fluids and atmosphere. It cannot be used for nitric acid, hydrochloric acid, hydrofluoric acid, ozone or organic fluids.

2. Motor

Type	2-phase stepper motor (bipolar)
Drive method	Full step (step angle: 1.8°)
Rated drive current mA/phase	350
Drive speed pps	650

3. Sensor

Power supply voltage	24 VDC ±10% Ripple (P-P) 10[%] or less
Current consumption	50 mA or less
Control output	NPN open collector output, 40 mA or less
Operation mode	Output ON when opening the valve open side from the origin position
Response frequency	1 kHz or more

4. Purge (*2)

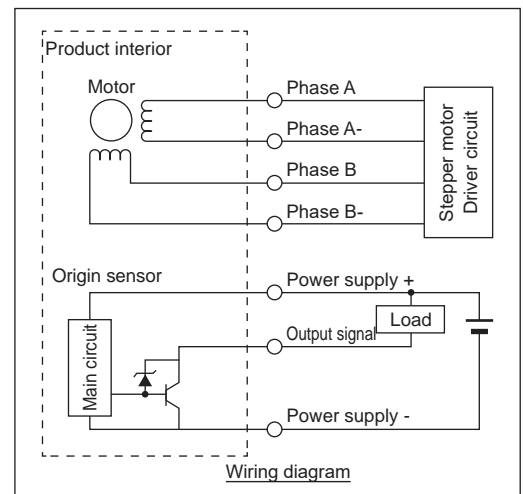
Purge flow rate L/min	15 to 30
Internal pressure kPa	0 to 100
Fluid temperature °C	10 to 30
Port size	IN port: Rc1/8, EXH port: Rc1/8
Purge supply fluid	Clean compressed air, equivalent to JIS grade 2.6.1 (JIS B 8392-1:2003)

*2: Purge must be performed. Also, be sure to adjust the flow rate to the specified flow rate by providing a speed control valve on the supply side.

5. Cable

Conductor sectional area	AWG#24, approx. 0.2 [mm ²]
Conductor material	Tin plated annealed copper wire
Lead wire coating O.D.	Approx. 1.14 [mm]
Lead wire insulation material	ETFE
Cable finish O.D.	Approx. 4.4 [mm]
Coating sheath material	FEP, black
Cable length	3 m

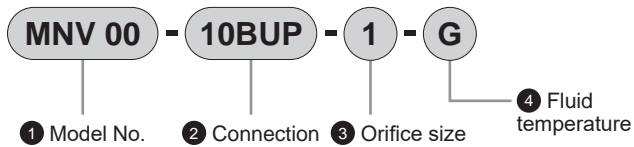
6. Wiring



Insulator color	Access point
Green	Motor Phase A
Yellow	Motor Phase A-
White	Motor Phase B
Red	Motor Phase B-
Orange	Origin sensor Power supply +
Blue	Origin sensor Power supply -
Gray	Origin sensor Output signal
Black	NC

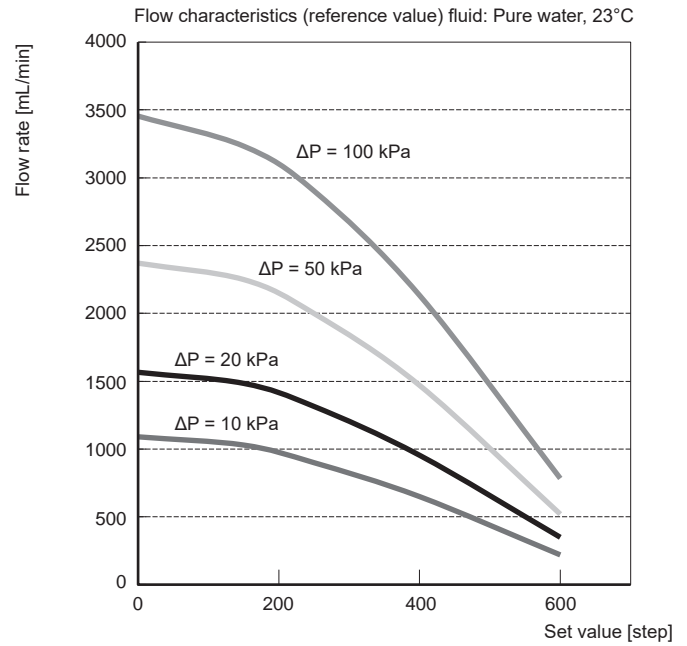
⚠ Always read the precautions and product specifications on Intro Pages 7 to 14 before use.

How to order



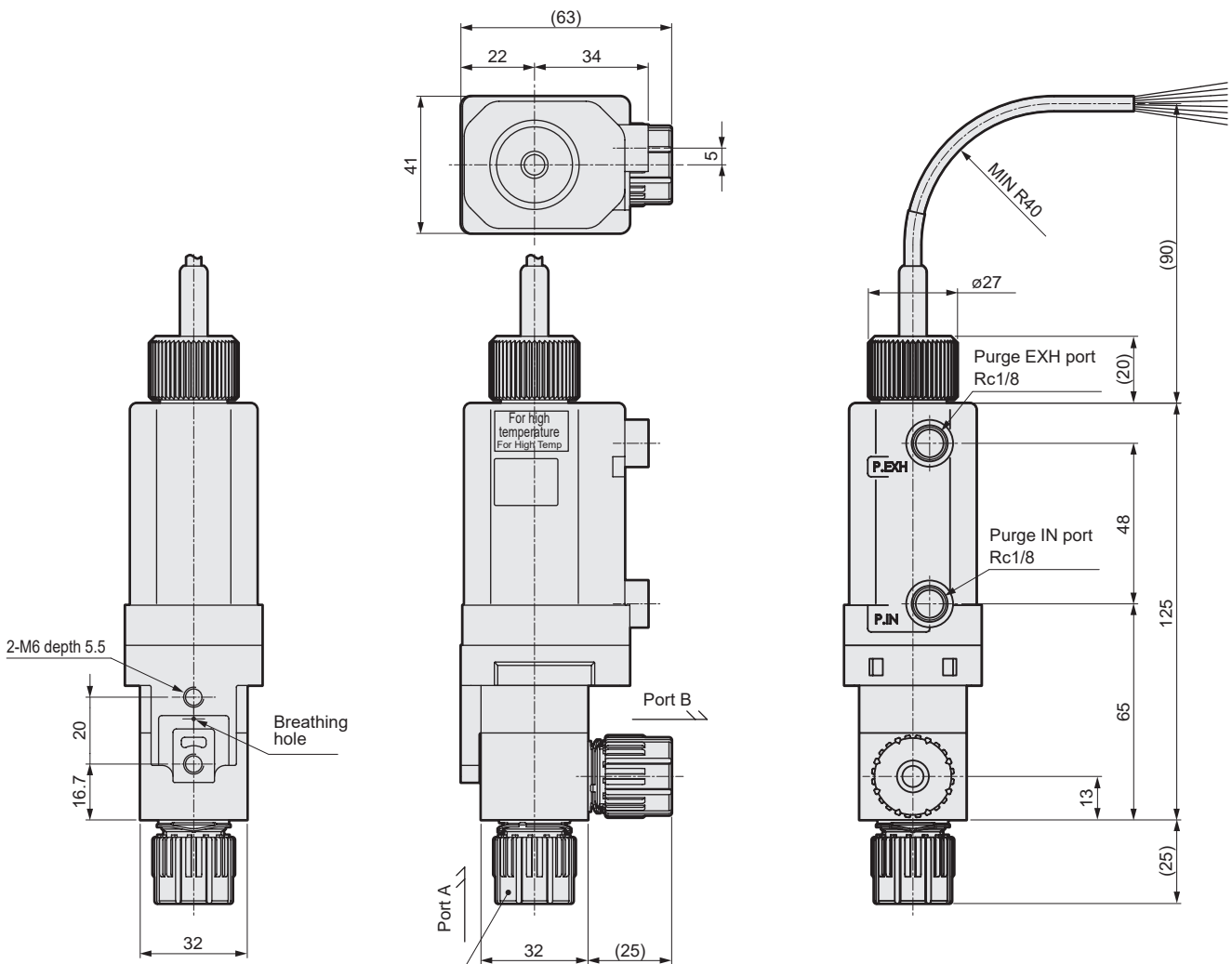
Code	Description
① Model No.	
MNV 00	
② Connection	
10BUP	Super 300 pillar fitting P series integrated 3/8"×1/4" Tube connection
③ Orifice size	
1	ø3.4
④ Fluid temperature	
G	20 to 195°C

Flow characteristics



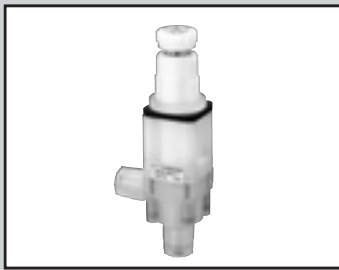
* The characteristics above are reference values. There are individual differences in the actual flow characteristics.

Dimensions



2-3/8" × 1/4" Fitting for PFA tube
Nippon Pillar Packing Co., Ltd. Super 300 pillar fitting P Series

Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve						Manual valve				Drip prevention valve	Integrated	Regulator	Flow rate adjusting valve					



Flow rate adjusting valve

FMD00 Series

To support highly corrosive fluids,
Designed fine flow rate adjusting valve.

- Connection tube size: $\phi 6$, $\phi 10$, 1/4", 3/8"



Specifications

Item	FMD00-*	FMD00-*-1
Working fluid	Pure water, chemical liquids, air, N ₂ gas (*1)	
Fluid temperature °C	5 to 80 (*2)	
Proof pressure MPa	1	
Working pressure MPa	0 to 0.3	
Ambient temperature °C	0 to 40	
Mounting orientation	Unrestricted	
Connection	O.D. $\phi 6$ tube connection (integrated fitting) O.D. 1/4" tube connection (integrated fitting) O.D. $\phi 10$ tube connection (integrated fitting) O.D. 3/8" tube connection (integrated fitting)	
Orifice size	$\phi 1.6$	$\phi 3.5$
Weight kg	0.11	

*1: Check the compatibility of product structural materials, working fluids and atmosphere.
*2: For use with hydrofluoric acid, or when the fluid temperature exceeds 40°C, consult with CKD.

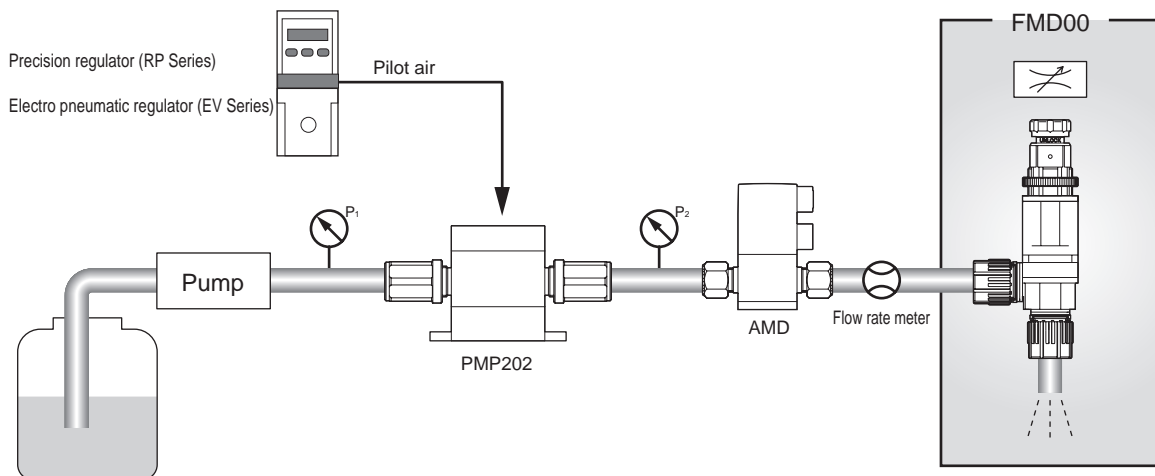
How to order

FMD00 - **6UP** - **1**

Model No. ① Connection ② Orifice size

		① Connection			
		6UP	8BUP	10UP	10BUP
		Super 300 Pillar fitting P series integrated			
		$\phi 6 \times \phi 4$ tube connection	1/4" x 5/32" tube connection	$\phi 10 \times$ $\phi 8$ tube connection	3/8" x 1/4" tube connection
Code	Description	② Orifice size			
Blank	$\phi 1.6$	●	●	●	●
1	$\phi 3.5$	●	●	●	●

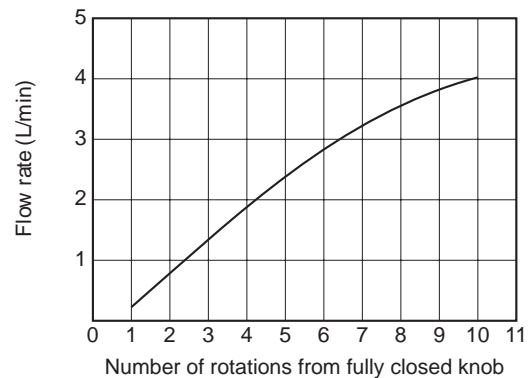
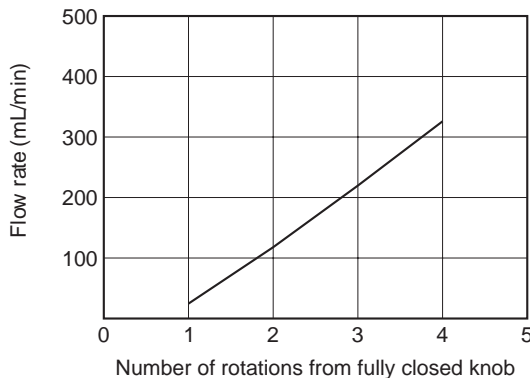
Applications



Flow characteristics $\Delta P 0.1 \text{ MPa}$ fluid: Water (reference data)

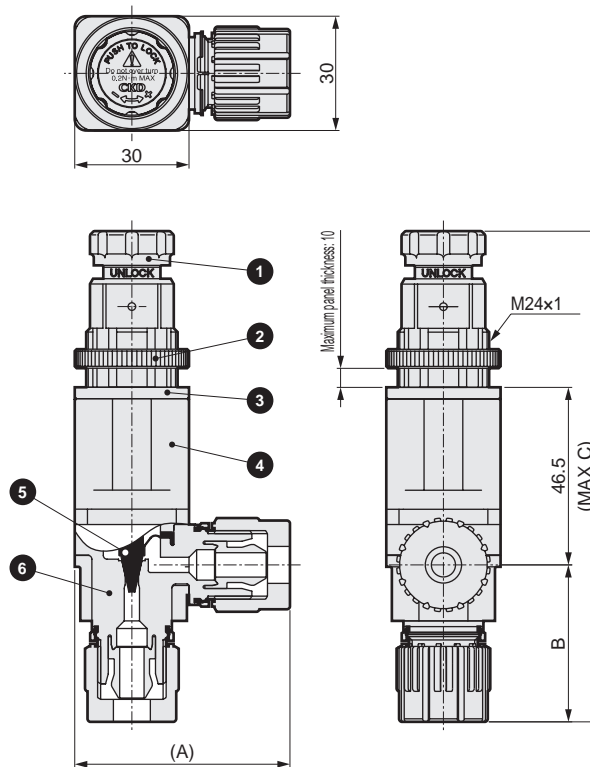
● FMD00-8BUP (orifice size: $\phi 1.6$)

● FMD00-8BUP-1 (orifice size: $\phi 3.5$)



⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Internal structure and Parts list / Dimensions



Part No.	Part name	Material
1	Knob	PP
2	Lock nut	PP
3	Gasket	FKM
4	Cover	PP
5	Diaphragm	PTFE
6	Body	PFA

The material and structure may vary depending on the model number. Contact CKD for details.

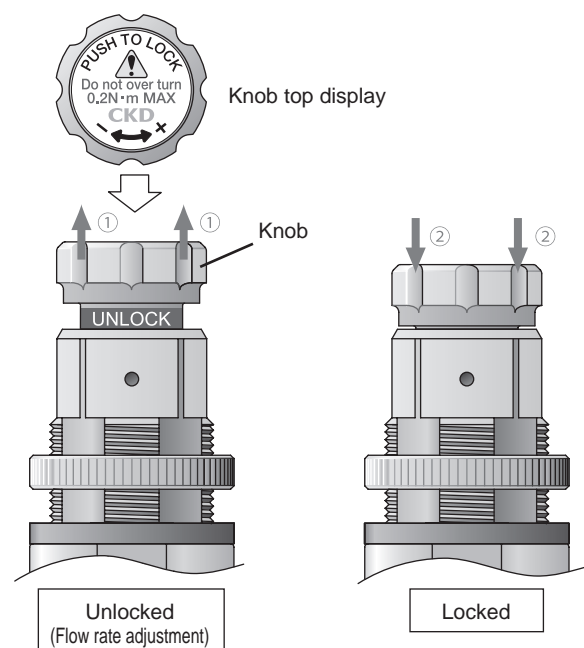
Connector No.	A	B	C
6UP	51	36	123
8BUP	51	36	123
10UP	57	42	129
10BUP	57	42	129

Operation mode of flow rate adjusting valve

When operating the flow regulating valve, be sure to adjust while checking the flow rate with the flow meter, and be careful not to turn the knob too much.

(The knob rotational torque should be 0.2 N·m or less)

- When increasing the flow rate
Slide the knob up until you can see the word UNLOCK. (↑ (1))
[Unlocked] Turn the knob in the + direction.
- When decreasing the flow rate
Slide the knob up until you can see the word UNLOCK. (↑ (1))
[Unlocked] Turn the knob in the - direction.
- Knob lock
After operating the knob, you can lock the knob by sliding the knob down until the word UNLOCK cannot be seen.
(↓ (2)) [Locked]
→ **This can prevent misoperation.**



Air operated valve	Part3R	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Part1	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Part1	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
Manual valve	Part3RN	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Part2	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
Drip prevention valve	Single unit	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Integrated	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
Regulator	Pilot	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Electric	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
Flow rate adjusting valve	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage
	Manual	High pressure	Part2	Large bore size	Polyvinyl chloride	Drainage

WARNING

Install the valve body to the equipment with the panel mount. If mounted only with fittings, the main body and piping/fitting may be damaged.

CAUTION

1 Flow rate configuration

- When operating the valve, operate the knob with rotational torque of 0.2 N·m or less. Operating with torque larger than 0.2 N·m may damage the product.
- When unlocking, do not pull the knob forcibly.
- When carrying this product, do not dangle it by the knob.
- For use, be sure to confirm that there is no vibration under actual use conditions. Vibration may reduce the product life.
- As this product does not have a sealing function, fluid cannot be sealed. To seal the fluid, use a valve with a sealing function. Sealing the fluid with this product may crush the valve seat and lower the flow controllability of the product.
- When set to a fine flow rate, the valve opening will also be very small. Therefore, if foreign matter is mixed into the fluid, the valve may clog and the flow rate may change.
- If there is a change in the fluid temperature, the valve opening may change due to volume expansion of the fluororesin and the flow rate may change.

Part 3R	High pressure	Air operated valve
Part 2	High pressure	Manual valve
Part 1	High pressure	
High pressure	Metal-free	Manual valve
Metal-free	Large bore size	
Large bore size	PVC	Manual valve
PVC	Drainage	
Drainage	Part 3RN	Manual valve
Part 3RN	Part 2	
Part 2	High pressure	Manual valve
High pressure	Metal-free	
Metal-free	Large bore size	Manual valve
Large bore size	Single unit	
Single unit	Air operated Integrated	Drip prevention valve
Air operated Integrated	Pilot	
Pilot	Manual	Regulator
Manual	Electric	
Electric	Manual	Flow rate adjusting valve
Manual	Manual Fine flow rate	
Manual Fine flow rate	Fine level Switch	Flow rate adjusting valve
Fine level Switch	Related products	

Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metals-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products
Air operated valve								Manual valve													
Regulator										Flow rate adjusting valve											



Fine flow rate adjusting valve Series

Separate the flow rate adjustment section and valve open/close function section

Realizing stable fine flow rate adjustment

● Connection tube size: $\varnothing 3$, 1/8", Rc1/8



Specifications

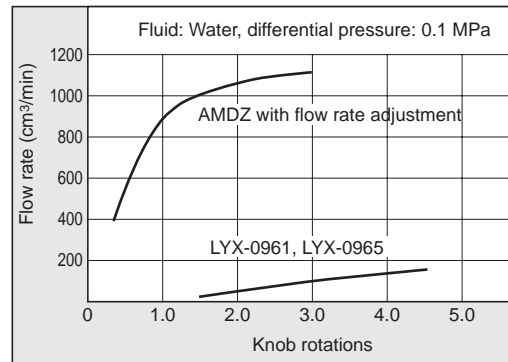
Item	LYX-0961-*	LYX-0965-*
Working fluid	Chemical liquid, pure water (*1)	
Fluid temperature °C	5 to 60	
Proof pressure MPa	0.6	
Working pressure MPa	0 to 0.3	
Ambient temperature °C	0 to 60	
Mounting orientation	Unrestricted	
Weight kg	0.12	0.07

*1: Cannot be used with acidic fluids. Check the compatibility of product structural materials, working fluids and atmosphere.

*2: Refer to AMDZ on page 66 for specifications of the air operated valve.

Flow / Pressure characteristics

Flow characteristics comparison



How to order

LYX - 0961 - 6BUS - 1

① Type

② Connection

③ Actuation
(Select only for LYX-0961)

① Type

0961	Air operated valve integrated
0965	Fine flow rate adjusting valve only (no valve closing function)

② Connection

6	Rc1/8	
3US	Super-type pillar integrated fitting	$\varnothing 3 \times \varnothing 2$ tube connection
6BUS	Super-type pillar integrated fitting	1.8" x 0.086" tube connection
3UP	Super 300	$\varnothing 3 \times \varnothing 2$ tube connection
6BUP	Pillar fitting P Series	1.8" x 0.086" tube connection
3UF	F-LOCK 20 Series integrated fitting	$\varnothing 3 \times \varnothing 2$ tube connection
3UR	F-LOCK 60 Series integrated fitting	$\varnothing 3 \times \varnothing 2$ tube connection
6BUR	F-LOCK 60 Series integrated fitting	1/8" x 1/16" tube connection

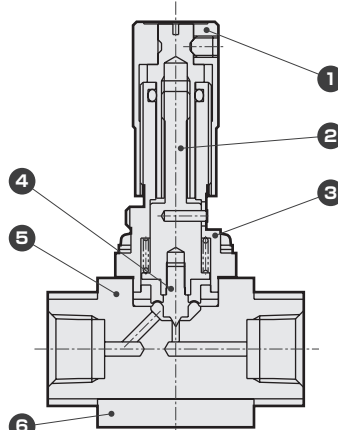
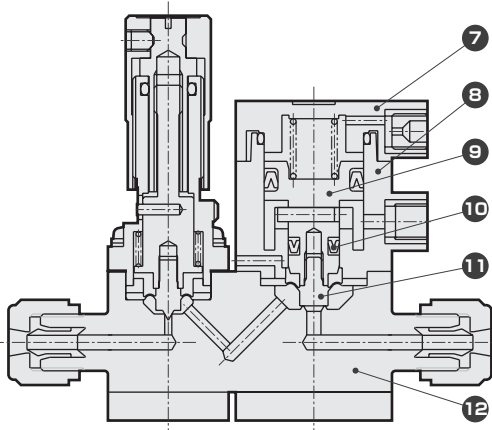
③ Actuation

1	NC (normally closed)
2	NO (normally open)
3	Double acting

Internal structure and parts list

● LYX-0961

● LYX-0965



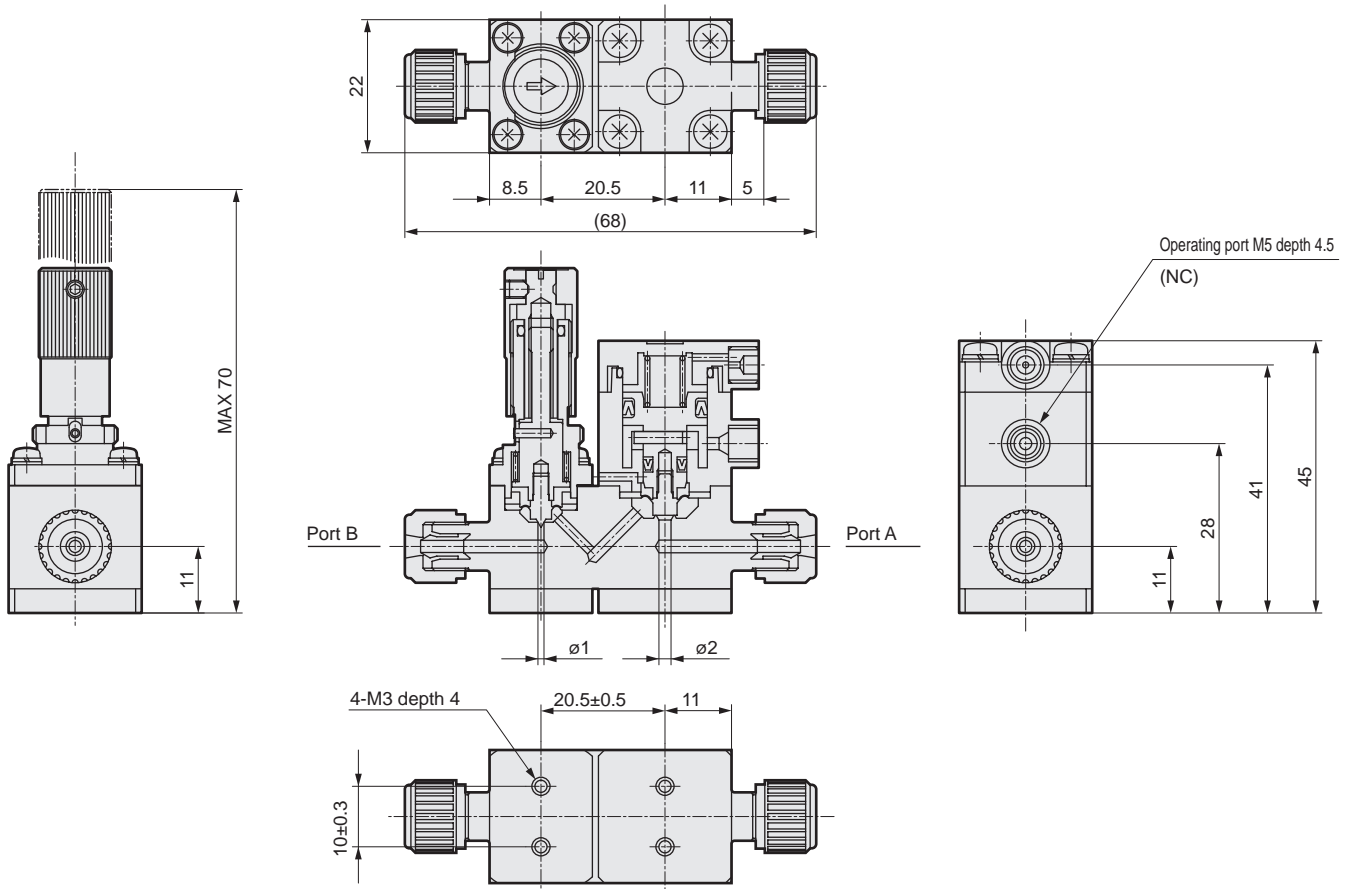
Part No.	Part name	Material
1	Adjusting knob	A5056
2	Lower rod	SUS304
3	Needle cover	SUS304
4	Diaphragm	PTFE
5	Body	PTFE
6	Mounting plate	SUS304
7	Cover	PPS
8	Cylinder	PPS
9	Piston rod	SUS303
10	Y packing	NBR
11	Diaphragm	PTFE
12	Body	PTFE

The material and structure may vary depending on the model number. Contact CKD for details.

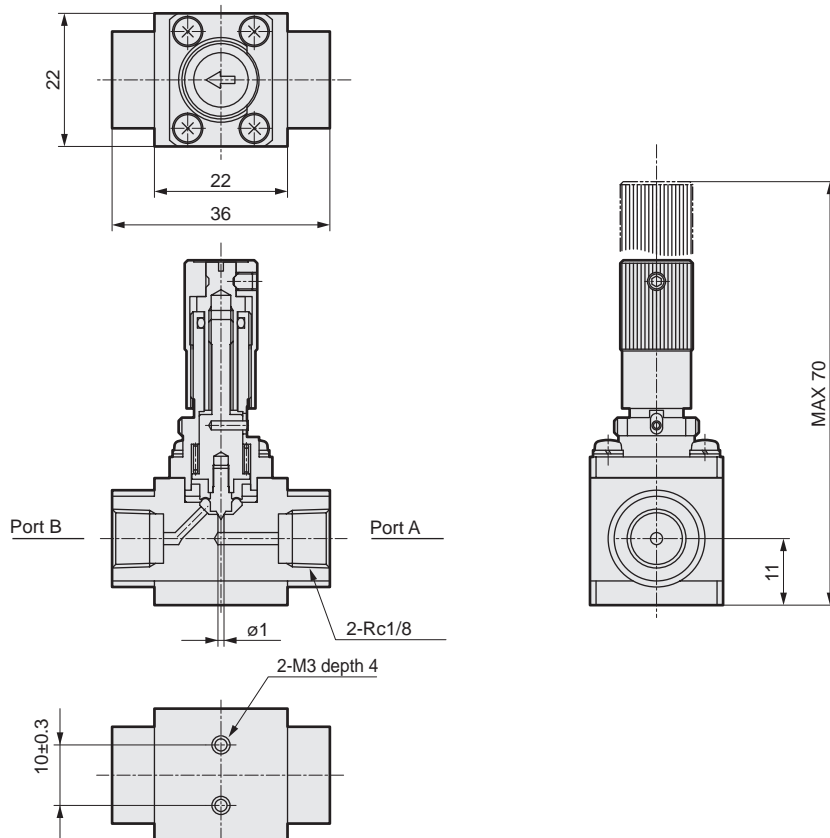
⚠ Always read the precautions on Intro Pages 7 to 14 before use.

Dimensions

● LYX-0961-6BUS-1



● LYX-0965-6



Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Fine level Switch	Related products
			Air operated valve							Manual valve					Regulator		Flow rate adjusting valve				

MEMO

Related products	Fine level Switch	Manual Fine flow rate	Manual	Electric	Manual	Pilot	Air operated Integrated	Single unit	Large bore size	Metal-Free	High pressure	Part 2	Part 3RN	Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R	
		Flow rate adjusting valve			Regulator		Drip prevention valve					Manual valve							Air operated valve			

Fine level switch

Overview

Detects with high accuracy the level of pure water and corrosive fluids including acids, alkalis and solvents, and outputs electrical signals.

Features

KML703

- **Detection point: 8 points**
- **Remote operation available**
Since the sensor and display are separated, it is possible to install the operation display away from the liquid bath. Furthermore, the built-in communication function (RS485) allows operation from the host computer.
- **Resistant to environmental pressure fluctuation**
As the differential pressure method detects the pressure difference between the environmental pressure and water level, it is resistant to fluctuation in environmental pressure since the detection tube and environment detection tube are set in an environment with the same pressure.

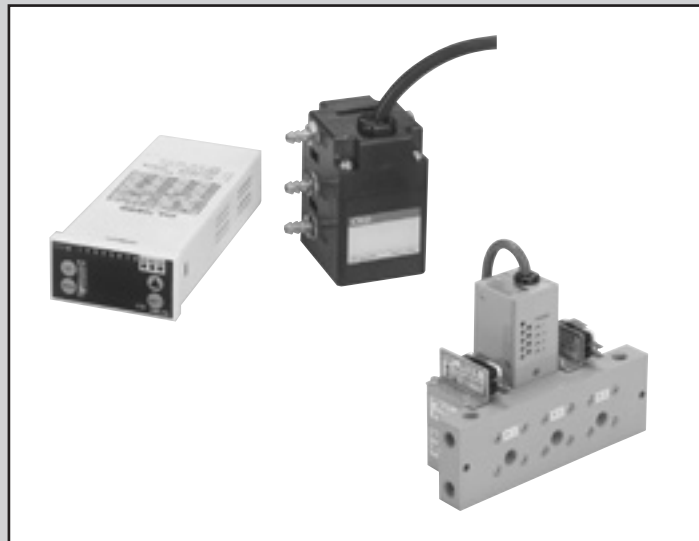
- **Detection flow rate setting not required**

KML60

- **Detection point: 4-point setting available**
- **It can be made into a mix manifold with KML50 (1-point detection)**
- **With the internal fixed flow orifice, detection flow rate settings are rendered unnecessary.**

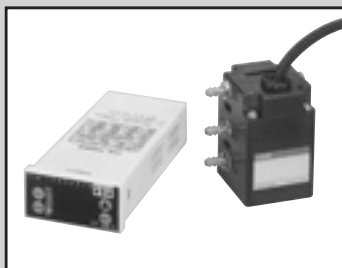
KML50

- **High precision level detection (± 1 mm)**
- **Excellent installability**
- **Select models made of material with high corrosion resistance according to the ambient atmosphere.**



Safety precautions	Intro Page 9
Pilot-type	
KML703	184
KML60 MXKML	188
KML50 MKML	192

Air operated valve	Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RN	Part2	High pressure	Metals-free	Large bore size	Single unit	Air operated Integrated	Pilot
	Manual valve	High pressure	Metals-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual
	Regulator	Electric	Manual	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate
	Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate
Drip prevention valve	Single unit	Air operated Integrated	Pilot	Manual	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate	Manual Fine flow rate
Related products	Fine level Switch							



Digital fine level switch

KML703 Series

No need to set the flow rate to be detected

Resistant to environmental pressure fluctuation (differential pressure method)

Remote operation enabled and communication function (RS485) built in



Specifications

Item	KML703-G-485		KML703-D-485	
Detection	Gauge pressure method		Differential pressure method	
Working fluid	Clean air, N ₂ (*1)			
Working pressure	kPa	10 to 30		
Fluid temperature	°C	5 to 50		
Ambient temperature	°C	5 to 50		
Proof pressure	kPa	Working pressure	100	
		Detection pressure	10	
Detection water level	mm	1 to 700 (*2)		
Environmental pressure fluctuation	kPa	-	Within ±3 (Confirm that detection tubes are in same pressure environment.)	
Consumption flow rate	Ncm ³ /min	70 or less	140 or less	
Monitor output		4 to 20 mADC (load resistance: 200 to 550 Ω)		
Power supply voltage		24 VDC ±10%, voltage ripple rate 1% or less		
Current consumption	mA	130 or less (when using 24 VDC)		
Switch output		NPN open collector 8-point (CH1 to CH6 contact a, CH7 to CH8 contact b) (30 VDC 50mA or less)		
Insulation resistance	MΩ	100 or more (500 VDC for 1 minute)		
Withstand voltage		Commercial frequency 500 VAC, 1 minute		
Repeatability	mm	±3 (10 minutes after power on) (*2)		
Hysteresis	mm	1 to 10 setting (*2)		
Response time	ms	600 or less (supply pressure: 20 kPa, detection tube I.D.: ø4 mm, length: 5 m)		
Temperature characteristics	mm/°C	Within ±1.2 (detection fluid: water)		
Detection tube I.D.	mm	4		
Detection tube length	m	Within 5		
Weight	kg	0.51		

*1: Use a filter with a degree of filtration of 0.3 μm or more.

*2: The specifications above include fluid pressure of 20kPa, power supply voltage 24 VDC, ambient temperature of 20°C, detection pipe inner diameter of ø4 × length of 5 m. Values when the specific gravity setting value is 1 and the nozzle mounting height is 0. The detection fluid is water.

⚠ Safety precautions

- 1 Install the switch at a position higher than the liquid level to be detected.
- 2 Use piping with a ø4 mm bore for detection. Do not install anything that will create resistance, such as a throttle, in the middle of the piping.
- 3 Detection in sealed liquid tanks and similar liquid tanks is not possible.
- 4 Do not block the detection pipe and detection port with a valve, etc. Supply pressure will be directly applied to the sensor chip, which may cause damage.
- 5 Use pneumatic pressure with dust and oil filtered out through a submicron filter and micro alescerc.
- 6 Do not stop the supply pressure. The chemical liquid atmosphere may flow back from the detection tube to the sensor and cause adverse effects.
- 7 With the gauge pressure method, leave the EXH port open and do not block it with a plug, etc.
- 8 This product cannot be used in an atmosphere where chemical liquid is present.

⚠ Always read the precautions on Intro Pages 7 to 14 before use.

How to order



Model No.

① Detection

② Communication

③ Sensor cable length

Code	Description
① Detection	
G	Gauge pressure method
D	Differential pressure method
② Communication	
485	RS485 communication
③ Sensor cable length	
Blank	Sensor cable 5 m
3	Sensor cable 3 m

[Example of model No.]

KML703-G-485

Model KML703

- ① Detection : Gauge pressure method
- ② Communication : RS485 communication
- ③ Sensor cable length : 5 m

● Option (bracket/cable)

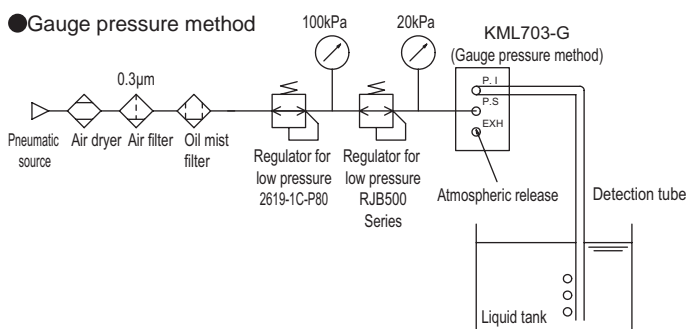


Model No.

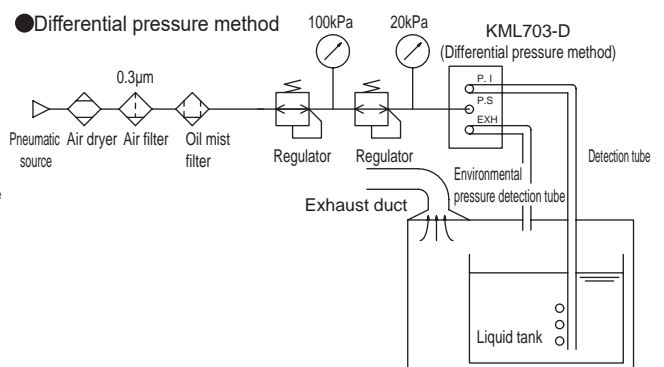
Code	Description
① Option	
B	Bracket for sensor body
P	Power supply cable (3 m)
O	Output cable (3 m)

Piping example

● Gauge pressure method



● Differential pressure method



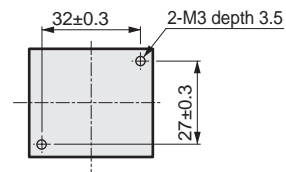
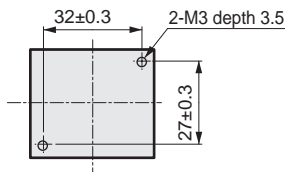
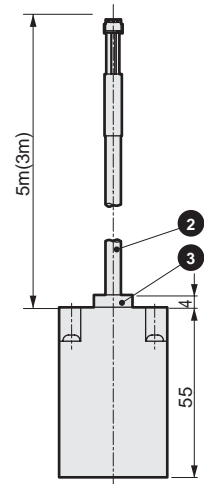
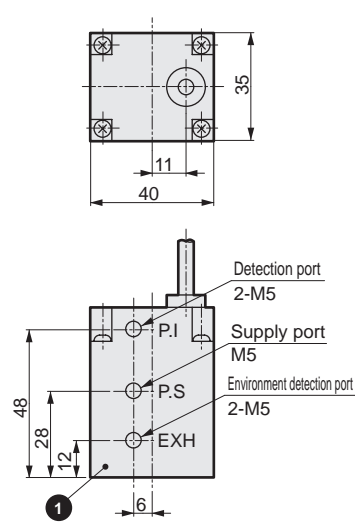
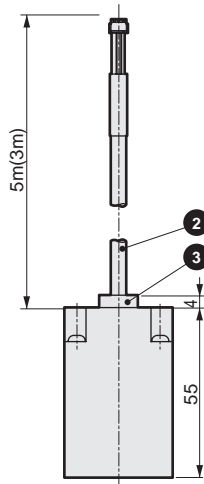
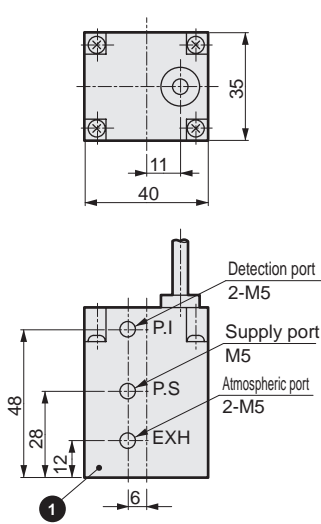
Part3R	Part2	Part1	Air operated valve	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	Manual valve	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Drip prevention valve	Regulator	Pilot	Manual	Electric	Manual	Flow rate adjusting valve	Manual/Fine flow rate	Fine level Switch	Related products

KML703 Series

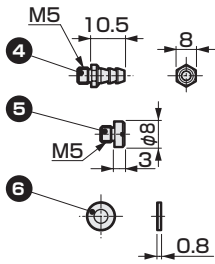
Internal structure and main part materials / Dimensions

- Sensor body
 - KML703-G-485

- KML703-D-485



- Nipple, plug, gasket (accessory)

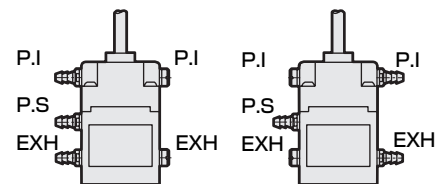
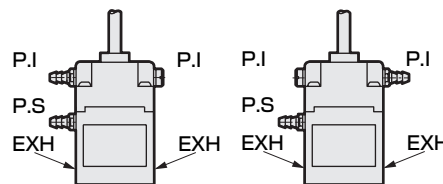


There are two PI and EXH ports on the front and back of this product. For unused ports, install the attached plugs to prevent leakage.

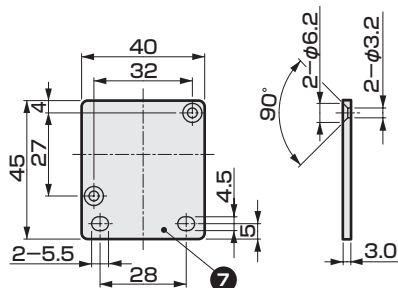
* With the gauge pressure method, leave the EXH port open and do not attach a plug.

Gauge pressure method

Differential pressure method



- Bracket for sensor body (option)
 - KML703-B

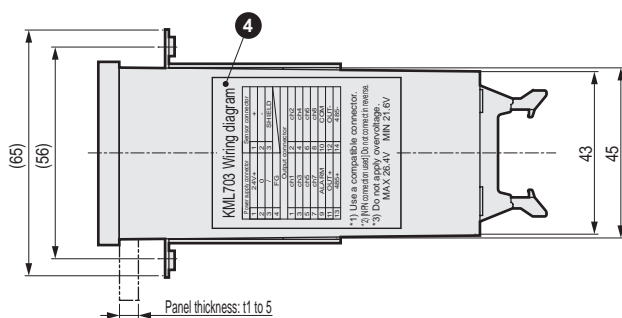


* For mounting brackets, 2 flat head machine screws are included

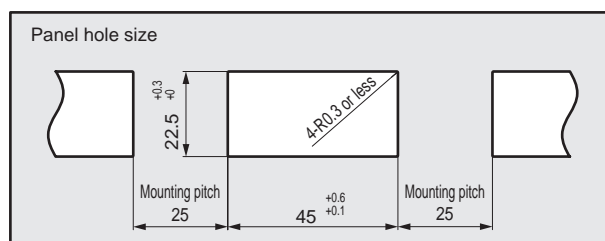
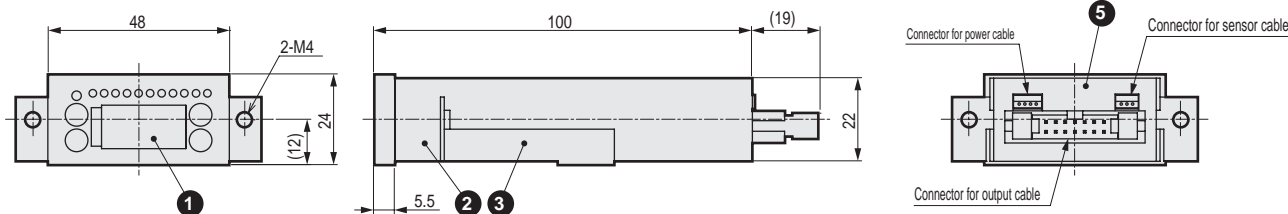
Part No.	Part name	Material
1	Body	PPS
2	Sensor cable	PVC
3	Bush	PA
4	Nipple	SUS304
5	Plug	SUS304
6	Gasket	PTFE
7	Bracket	SUS304

Internal structure and main part materials / Dimensions

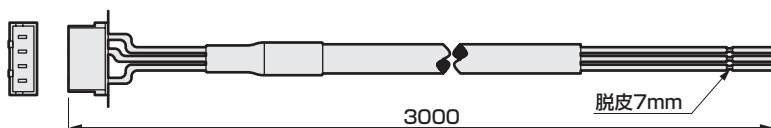
● Indicator



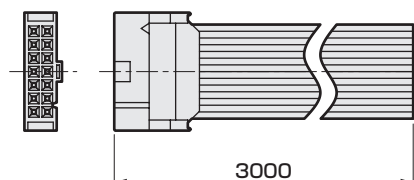
Part No.	Part name	Material figure No.
1	Front panel	
2	Case	PBT
3	Mounting bracket	SUS304
4	Wiring indication nameplate	
5	Serial nameplate	



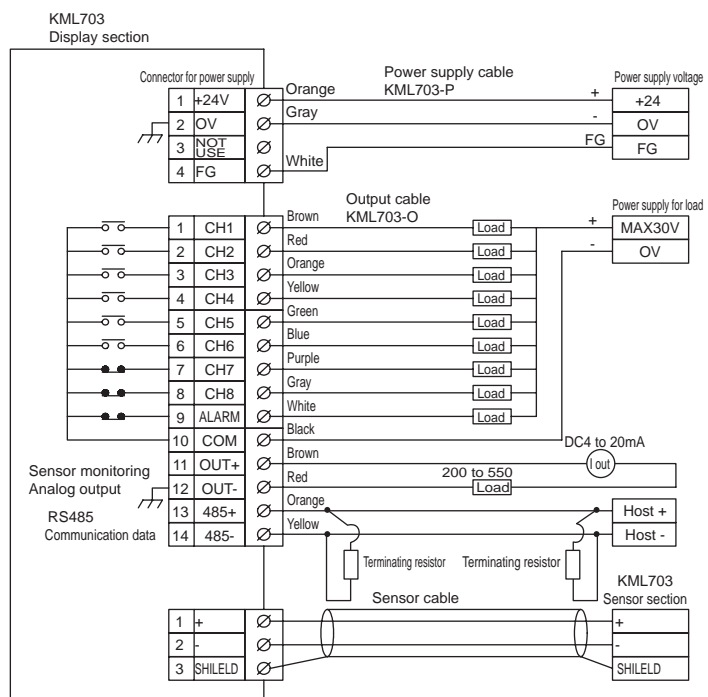
● Power cable (option)
• KML703-P



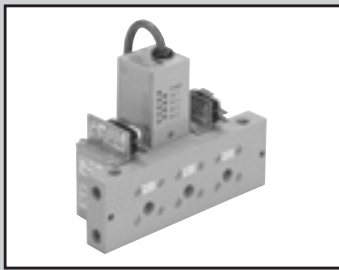
● Output cable (option)
• KML703-O



Wiring connection diagram



Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated integrated	Regulator	Manual	Electric	Manual	Manual Fine flow rate	Flow rate adjusting valve	Related products	
			Air operated valve							Manual valve			Drip prevention valve									



Fine level switch

KML60 Series

With one detection tube, detects liquid level at 4 points



Specifications

Item	KML60-4	
Working fluid	Air, N ₂ (*1)	
Working pressure kPa	10 to 30 (when the set water level is 10 to 500 mm and water is used as the detection fluid)	
	15 to 30 (when the set water level is 10 to 1,000 mm and water is used as the detection fluid)	
Fluid temperature °C	5 to 50	
Ambient temperature °C	5 to 50	
Proof pressure kPa	Working pressure	100
	Detection pressure	20 (where detection water level is 2,000 mm)
Detection water level mm	10 to 1000 (*2)	
Power supply voltage	12 to 24 VDC ±10% Voltage ripple rate 5% or less	
Current consumption mA	40 or less (when using 24 VDC)	
Switch output	NPN open collector 4-point (DC28V 80mA or less)	
Insulation resistance MΩ	100 or more (500 VDC for 1 minute)	
Withstand voltage	Commercial frequency 500 VAC, 1 minute	
Repeatability mm	±10 (10 minutes after power on) (*2)	
Hysteresis mm	4 or less (set water level 10 to 200 mmH ₂ O) (*2) 20 or less (set water level 200 to 1000 mmH ₂ O) (*2)	
Response time ms	600 or less (supply pressure: 20 kPa, detection tube I.D.: ø4 mm, length: 5 m)	
Temperature characteristics mm/°C	±1.2	
Detection tube I.D. Ø mm	4	
Detection tube length m	Within 5	
Weight kg	0.23	

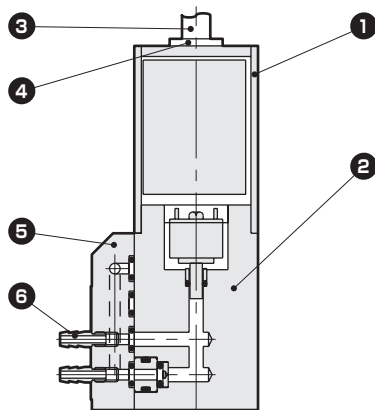
*1: Use fluid passed through a filter with a Degree of filtration of 0.3 µm or more.

*2: The above specifications are values obtained in the following usage conditions: fluid pressure: 20kPa, power supply 24 VDC: 20°C. The detection fluid is water.

⚠ Safety precautions

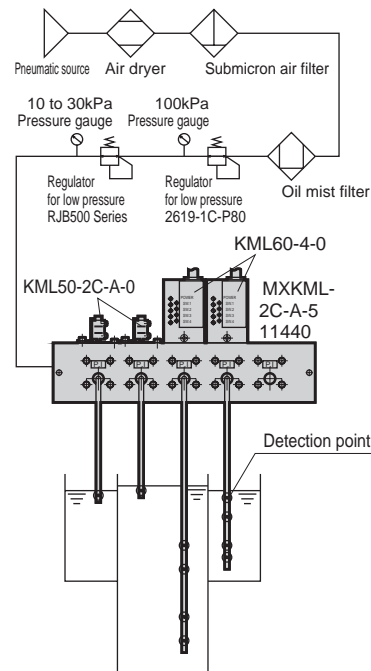
- 1 Install the switch at a position higher than the liquid level to be detected.
- 2 Use pneumatic pressure with dust and oil filtered out through a submicron filter and micro alescer.
- 3 Use a low-pressure regulator with oil-free processing.
- 4 Use piping with a ø4 mm bore for detection. Do not install anything that will create resistance, such as a throttle, in the middle of the piping.
- 5 Eight P/S ports are provided on the manifold. Perform masking for piping ports that are not used.
- 6 Detection in sealed liquid tanks and similar liquid tanks is not possible.
- 7 Do not block the detection pipe and detection port with a valve, etc. Supply pressure will be directly applied to the sensor chip, which may cause damage.
- 8 When using a mix manifold with the KML50 Series, refer to the Safety Precautions for the KML50 Series.
- 9 Do not stop the supply pressure. The chemical liquid atmosphere may flow back from the detection tube to the sensor and cause adverse effects.
- 10 This product cannot be used in an atmosphere where chemical liquid is present.

Internal structure and parts list



Part No.	Part name	Material
1	Cover	PVC
2	Base	PVC
3	Sensor cable	PVC
4	Bush	Nylon 66
5	Manifold	PVC
6	Nipple	SUS304

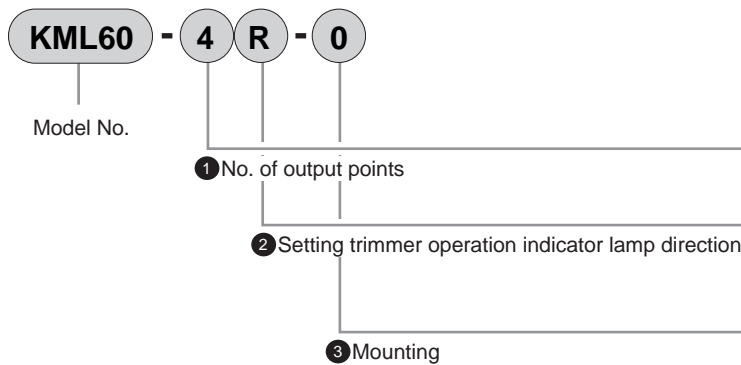
Applications



⚠ Always read the precautions on Intro Pages 7 to 14 before use.

How to order

● Single unit



[Example of model No.]

KML60-4R-0

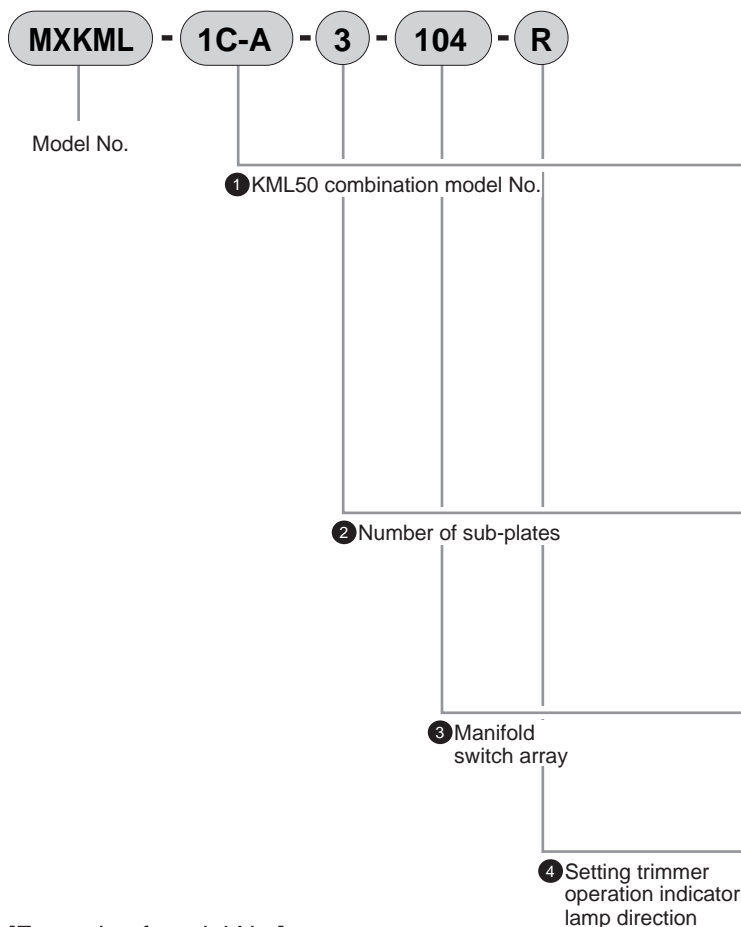
Model KML60

- ① No. of output points : 4 points
- ② Setting trimmer operation indicator lamp direction : P.I. port rear side
- ③ Mounting : For sub-plate mounting

Code	Description
① No. of output points	
4	4-point setting
② Setting trimmer operation indicator lamp direction	
Blank	P.I. port side
R	P.I. port rear side
③ Mounting (*1)	
Blank	Single unit
0	Single unit for manifold

*1: ③ When installing the Item 0 product to the manifold sub-base, the two supply ports on the top of the manifold sub-base cannot be used. When using the ports on the top surface with an existing manifold, change to other supply ports.

● Manifold



[Example of model No.]

MXKML-1C-A-3-104-R

Model MXKML

- ① KML50 combination model No. : KML50-1C-A-0
- ② Number of sub-plates : 3 stations
- ③ Manifold switch array : From the front left, arrange in the order of KML50-1C-A-0, masking and KML60-4-0
- ④ Setting trimmer operation indicator lamp direction : P.I. port rear side

Code	Description
① KML50 combination model No.	
00-0	No KML50 combination
1C-A	KML50-1C-A-0 combined
1C-B	KML50-1C-B-0 combined
2C-A	KML50-2C-A-0 combined
2C-B	KML50-2C-B-0 combined
0A-A	KML50-0A-A-0 combined
0A-B	KML50-0A-B-0 combined
1B-A	KML50-1B-A-0 combined
2B-A	KML50-2B-A-0 combined
2B-B	KML50-2B-B-0 combined

Code	Description
② Number of sub-plates	
1	1 station
2	2 stations
3	3 stations
4	4 stations
5	5 stations

Code	Description
③ Manifold switch array (*1, *2, *3, *4)	
0	Masking
1	KML50 specified in Item ①
4	KML60-4-0

Code	Description
④ Setting trimmer operation indicator lamp direction	
Blank	P.I. port side
R	P.I. port rear side

*1: Specify the switch array on the manifold with an array of numbers 0, 1 and 4.

*2: Specify the array from the left front side of the manifold (P.I. port side).

*3: Specify with the same number of digits as the number of sub-plate stations specified in "Item ②".

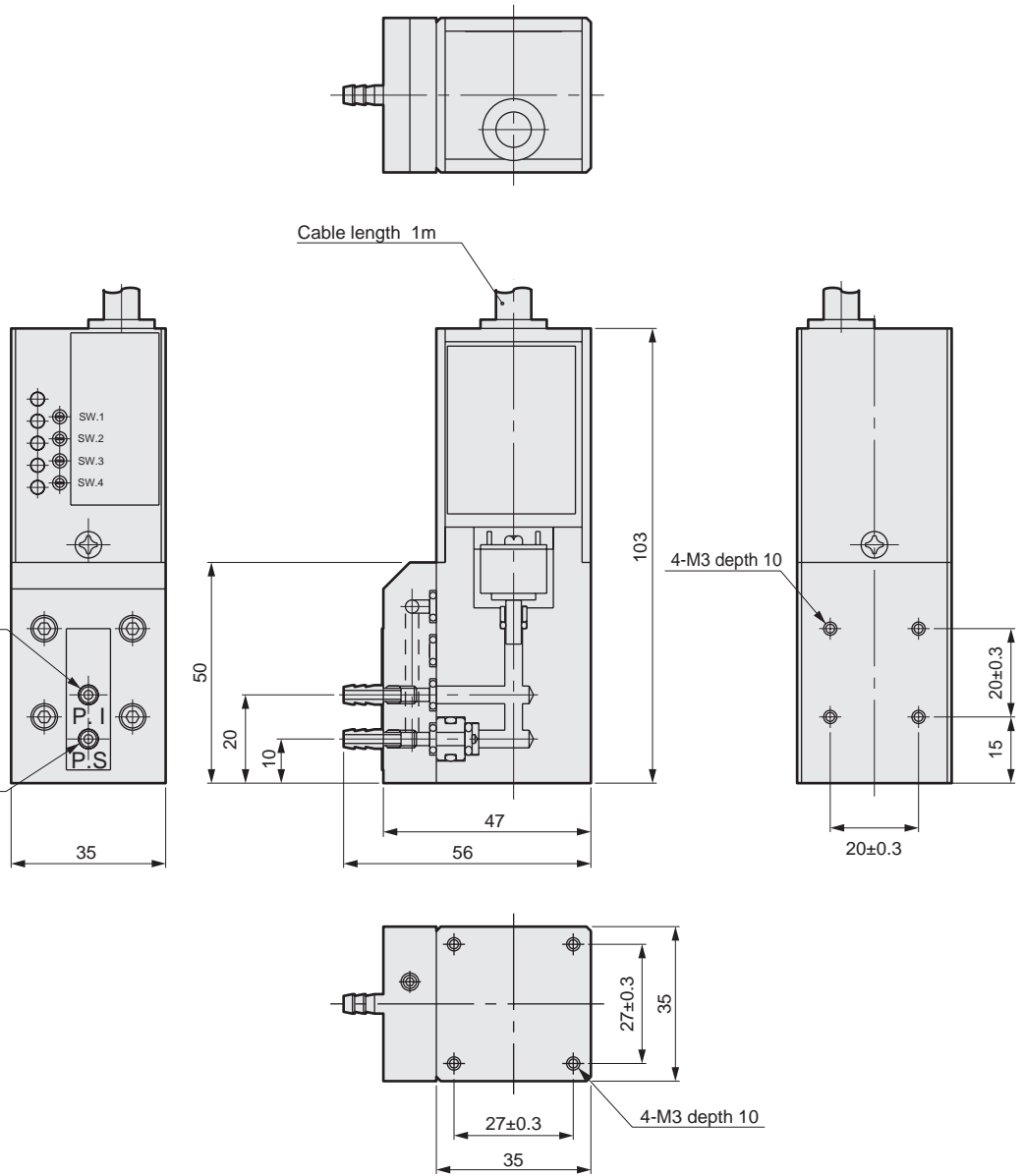
*4: When masking, be sure to specify 0 in the masking position.

Part3R	Part2	Part1	High pressure	Metals-free	Large bore size	Polyvinyl chloride	Drainage	Part3RN	Part2	High pressure	Metals-free	Large bore size	Single unit	Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Related products
			Air operated valve							Manual valve			Drip prevention valve	Air operated	Regulator		Flow rate adjusting valve		Fine level Switch	

Dimensions

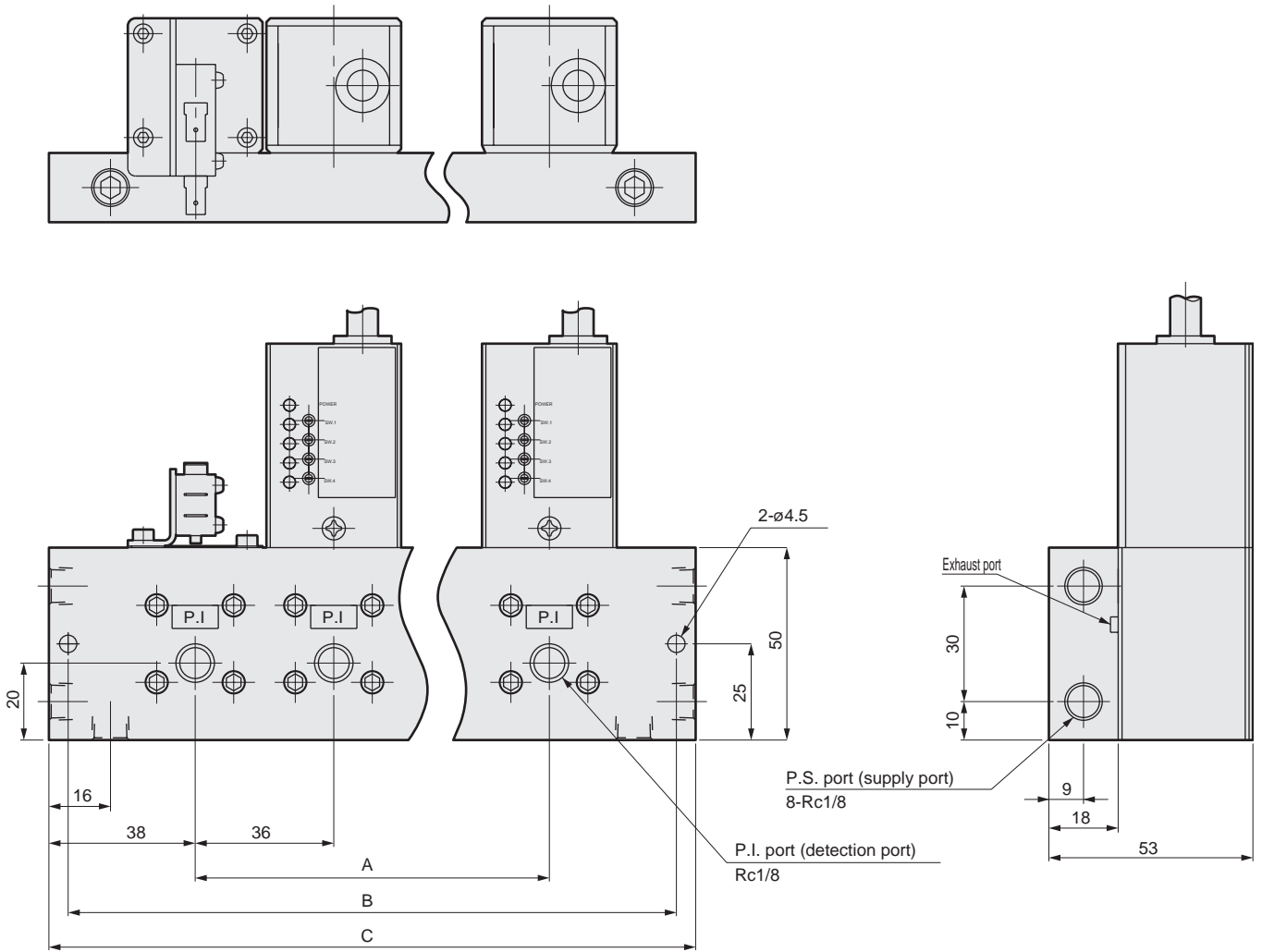
● KML60-4

Related products	Fine level Switch
Manual flow rate	Flow rate adjusting valve
Manual	Electric
Manual	Manual
Pilot	Regulator
Air operated Integrated	Drip prevention valve
Single unit	Single unit
Large bore size	Large bore size
Metal-free	Metal-free
High pressure	High pressure
Part 1	Part 2
Part 2	Part 3RN
Drainage	PVC
Large bore size	Metal-free
High pressure	Air operated valve
Part 1	Part 2
Part 2	Part 3R



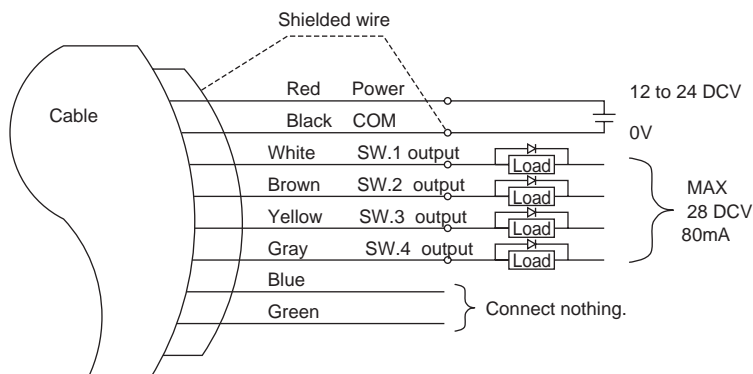
Dimensions

● MXKML-0A-A-*-* (manifold)

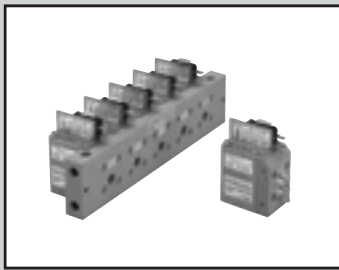


Number of sub-plates	A	B	C
1	-	66	76
2	36	102	112
3	72	138	148
4	108	174	184
5	144	210	220

Wiring connection diagram



Air operated valve	Part3R	Part2	Part1
	High pressure	Metah-free	Large bore size
	Polyvinyl chloride	Drainage	Part3RR
	Manual valve	Part2	High pressure
Drip prevention valve	Metah-free	Large bore size	Single unit
	8-Rc1/8	Rc1/8	Air operated
	Integrated	Regulator	Pilot
Flow rate adjusting valve	Manual	Manual	Manual
	Electric	Manual	Manual
Fine level products	Flow rate	Flow rate	Flow rate
	Switch	Switch	Switch



Fine level switch

KML50 Series

Boasting detection precision of ± 1 mm and excellent installability
Liquid level detector

Specifications

Item	KML50-0A- ^A / _B	KML50-1 ^{B A} / _{C B}	KML50-2 ^{B A} / _{C B}
Working fluid	Air, N ₂		
Working pressure kPa	15 to 35	10 to 30	
Fluid temperature °C	5 to 60		
Ambient temperature °C	15 to 40	5 to 60	
Proof pressure kPa	50		
Detection water level mm	8 to 100	1 to 600	
Contact capacity	A type	3 A 125 V / 250 VAC resistance load (micro switch)	
	B type	0.25 A 100 VDC resistance load (reed switch)	
Switching	Switching point	8 to 12 (*1)	1 to 3 (*1)
	Water level: mm	Hysteresis	5 or less (*1)
Repeatability mm	± 1		
Response time ms	200 or less (detection flow rate 75cm ³ /min (ANR), detection tube I.D. ϕ 4 mm, length 2 m)		
Detection tube I.D. ϕ mm	4		
Detection tube length m	Up to 2		
Air consumption cm ³ /min (ANR)	750 or less (at supply pressure of 20 kPa)		
Weight kg	0.19	KML50-1B-* 0.27	KML50-2B-* 0.27
		KML50-1C-* 0.19	KML50-2C-* 0.19

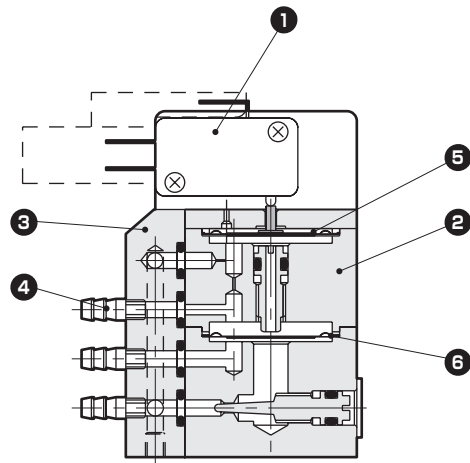
*1: The above specifications are values obtained at supply pressure 20 kPa (ambient temperature: 24 \pm 2°C).
Be sure to use supply pressure with a high degree of cleanliness. Value obtained with measured water.

*2: Micro switch is C contact and reed switch is A contact.

Safety precautions

- Install the switch at a position higher than the liquid level to be detected.
- Use pneumatic pressure with dust and oil filtered out through a submicron filter and micro aescer.
- Use a low-pressure regulator with oil-free processing.
- Water or a fluid of similar viscosity is used to adjust before shipping.
- Use piping with a 4 mm bore ϕ for detection. Do not install anything that will create resistance, such as a throttle, in the middle of the piping.
- Eight P/S ports are provided on the manifold. Perform masking for piping ports that are not used.
- Detection in sealed liquid tanks and similar liquid tanks is not possible.
- Applying a pressure of 50 kPa or more to the PS port may cause damage. Gradually raise the pressure from 0.
- With the switch section facing up, install at a position higher than the liquid level.
- The needle is adjusted before shipping and should not be readjusted.
- If the EXH port is blocked, excess pressure may be applied inside the product which may cause damage, so be sure to leave the EXH port open.
- Do not stop supplying the supply gas if corrosive gas may enter from the detection tube. The switch protects the detection part from corrosive gas by discharging the detection gas from the detection tube.
- This product cannot be used in an atmosphere where chemical liquid is present.

Internal structure and parts list



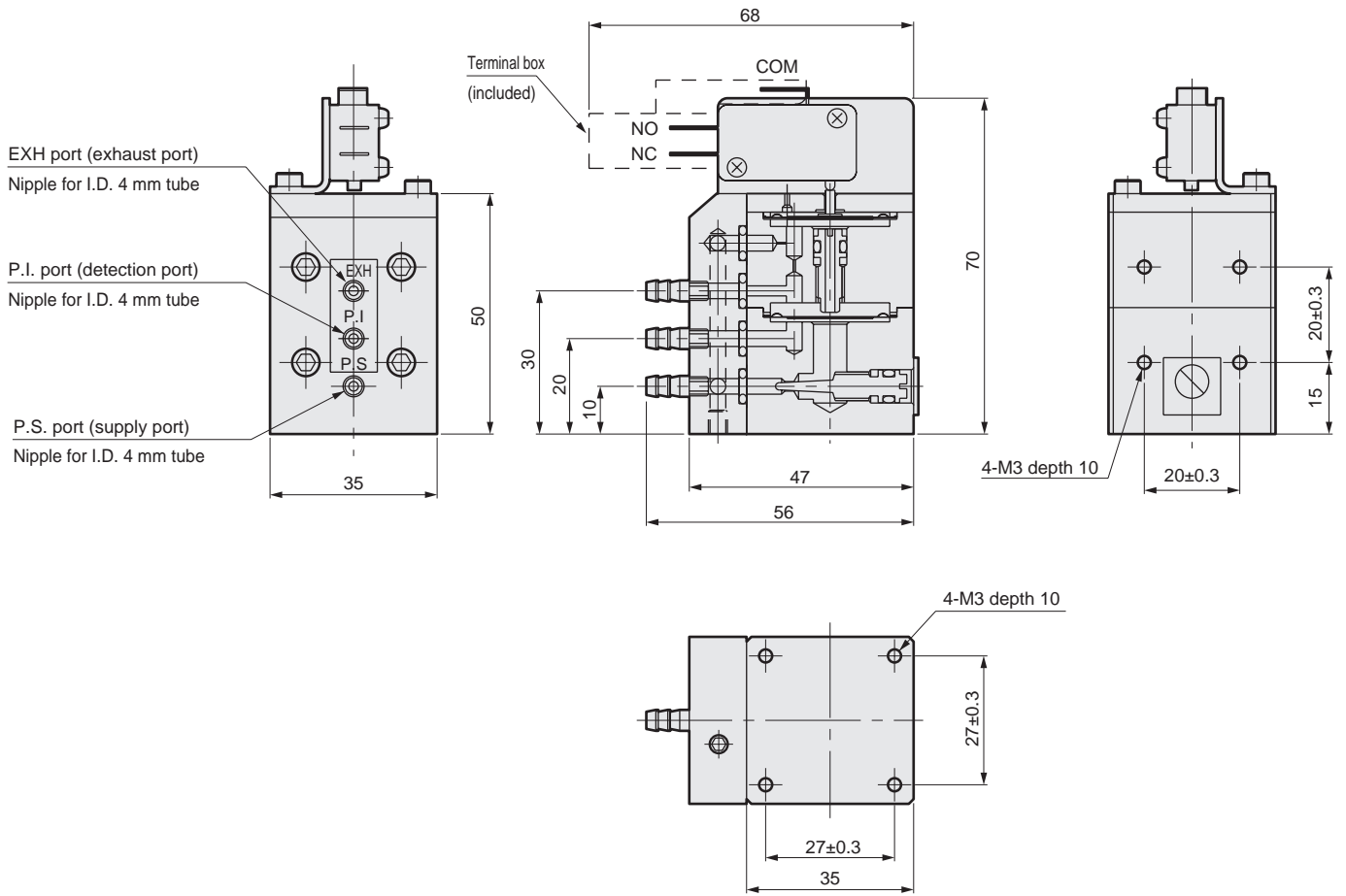
Part No.	Part name	Material (by material combination)		
		A	B	C
1	Micro switch		—	
2	Body	PVC	A6063	PVC
3	Manifold	PVC	A6063	PVC
4	Nipple	SUS304		
5	Diaphragm A	U		
6	Diaphragm B	PTFE	U	U

Always read the precautions on Intro Pages 7 to 14 before use.

Dimensions

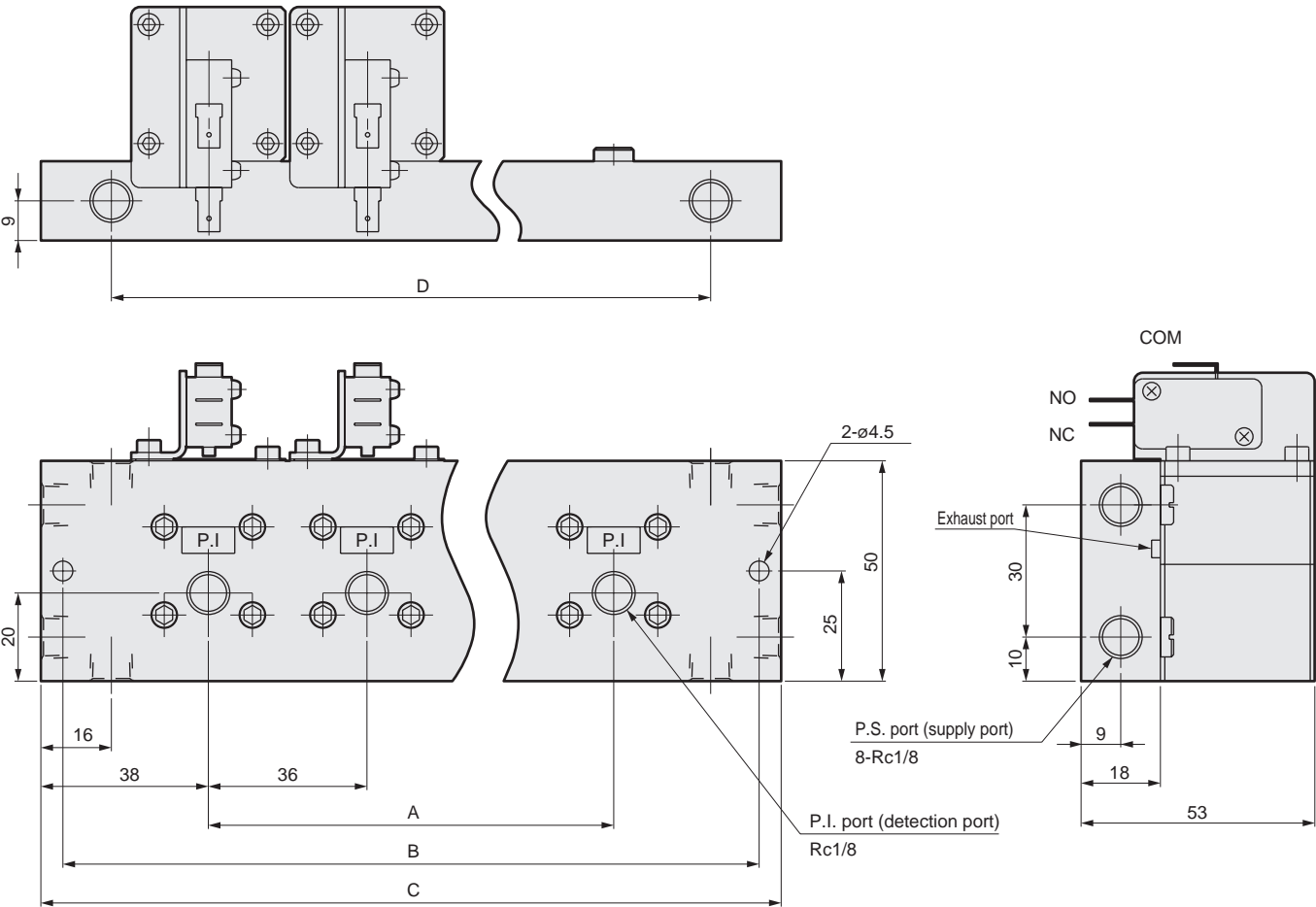
● KML50-0A-A

Part 3R	Part 2	Part 1	High pressure	Metal-free	Large bore size	PVC	Drainage	Part 3RN	Part 2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Electric	Manual	Manual Fine flow rate	Related products
			Air operated valve							Manual valve				Drip prevention valve	Regulator		Flow rate adjusting valve			



Dimensions

● MKML-0A-A-*-* (manifold)



Number of sub-plates	A	B	C	D
1	-	66	76	44
2	36	102	112	80
3	72	138	148	116
4	108	174	184	152
5	144	210	220	188

Air operated valve	Part3R	Part2	Part1
	High pressure	Metal-free	Large bore size
	Polyvinyl chloride	Drainage	Part3RR
	Part2	Part2	Part2
Manual valve	High pressure	Metal-free	Large bore size
	Single unit	Drain prevention valve	Regulator
	Part2	Part2	Part2
	Part2	Part2	Part2
Flow rate adjusting valve	Electric	Manual	Manual Fine flow rate
	Manual	Manual	Manual Fine flow rate
	Manual	Manual	Manual Fine flow rate
	Manual	Manual	Manual Fine flow rate
Fine level Switch	Related products	Related products	Related products

MEMO

Related products	Fine level Switch	Air operated valve																			
	Manual Fine flow rate	Manual	Electric	Manual	Pilot	Air operated Integrated	Single unit	Large bore size	Metal-Free	High pressure	Part 2	Part 3RN	Drainage	PVC	Large bore size	Metal-free	High pressure	Part 1	Part 2	Part 3R	
		Flow rate adjusting valve										Manual valve									
		Regulator		Drip prevention valve																	

Related products

Applications		Communication	
Solenoid valve for operation			
MN3E / MN4E	Air operated valve drive, etc.	CC-LINK DeviceNet EtherCAT EtherNet/IP	198
3QRA/B	Air operated valve drive, etc.		198
MN4GA/B R	Air operated valve drive, etc.	CC-LINK CC-Link IE Field Basic CC-Link IE Field DeviceNet PROFIBUS-DP PROFINET EtherCAT EtherNet/IP IO-Link	198
Electro-pneumatic regulator			
EVS2	Pilot regulator control		199
MEVT	Pilot regulator control	CC-LINK DeviceNet	199
EVR	Pilot regulator control		199
Clean regulator			
RC2000	Purge Air, N ₂ pressure adjustment		200
Flow rate sensor			
FSM3	Purge Air, N ₂ flow rate measurement	IO-Link	200
Auxiliary components			
Airfiber	Air operated valve drive		200
FCS	Purge Air, N ₂ extraction		201

Air operated valve	Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Part2	High pressure	Metal-free	Large bore size	Drip prevention valve	Single unit	Air operated integrated	Regulator	Pilot	Manual	Flow rate adjusting valve	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products

Part 3R
Part 2
Part 1
High pressure
Metal-free
Large bore size
PVC
Drainage
Part 3RN
Part 2
High pressure
Metal-free
Large bore size
Single unit
Air operated Integrated
Pilot
Manual
Electric
Manual
Manual Fine flow rate
Fine level Switch
Related products

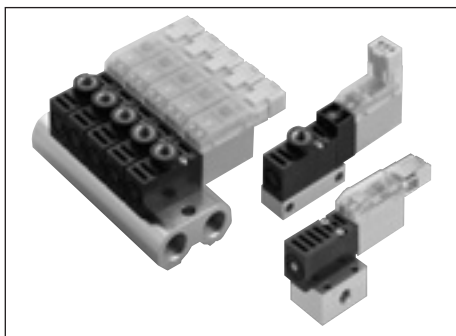
Solenoid valve for operation



(Catalog No. CB-023SA)

Applications: Air operated valve drive, etc.

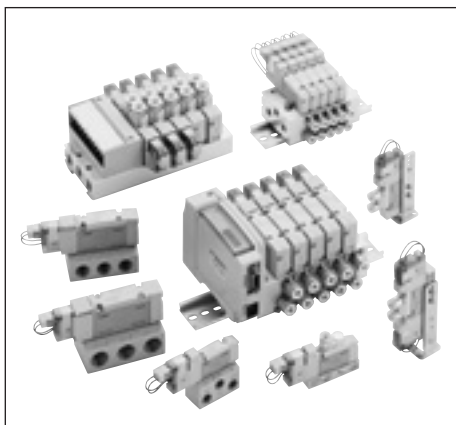
Solenoid valve for operation



(Catalog No. CC-1020A)

Applications: Air operated valve drive, etc.

Solenoid valve for operation



(Catalog No. CB-023SA)

Applications: Air operated valve drive, etc.

MN3E/MN4E Series

(3, 4-port valve, two 3-port valves integrated)

Compact (width of 7 or 10 mm) 3, 4-port valve block manifolds that are highly integrated and offer space-saving with high performance

- Compact and space saving
In addition to the MN3/4EO series with 10 mm valve block width type, MN3/4EOO with 7 mm valve lock width and 7 mm manifold pitch are now available. Helps to reduce device footprints. Can be installed anywhere. Individual wiring used for increased integration.
- Environmental preservation
Environment-friendly halogen-free lead wires have been adopted for internal wiring. (D-sub-connector T30-type)
- High performance
 - 12 ms responsivity for balancing ports A and B (Our data value with two 3-port valves integrated)
 - Cumbersome wiring work is not required
With connector, wiring is completed at the same time as assembling.
- Diversity
A wide range of electrical connections such as serial transmission corresponding to various connectors and networks are available.
- Energy saving
MN3/4EO Series: 0.6 W
MN3/4EOO Series: 0.4 W
With energy saving type (Option E), it further reduces power consumption.

3QRA/B Series

(3-port valve)

Realizes large flow rate/high-speed conversion

- Contributes to increased speed and optimization of equipment (downsizing and improved maintainability)
Durability 100 million cycles or more (as under CKD-regulated stringent test conditions)
Compact and lightweight 19 g (best weight) 10 mm (W) × 20mm (H) × 46mm (D)
- Enhanced flow rate and response time enable high-speed vacuum/atmospheric release
Large flow rate C: 0.4 (dm³/s·bar) Large flow rate C: 0.3 (dm³/s·bar) standard
High response 4±1ms/1.5±1ms (ON/OFF)
- Standard compliant for various applications. All ports from vacuum to positive pressure. Universally pressurizable
 - Ozone resistance (rubber FKM used)
 - RoHS command compliant
 - Restricted copper materials (air passage, sliding part)

MN4GA/B R Series

(3, 5-port valve)

General purpose valves support a wide range of needs

- Safety
Includes protective cover to prevent misoperation of the manual override due to external force, etc. Prevents malfunction of cylinders due to back pressure when using a single acting cylinder.
- Reliability
 - Service life of 100 million cycles or more (at 0.5 MPa with clean air)
 - Response 12 ms ± 2 ms (Our data for 4G1 Series)
Thanks to the new sliding mechanism, reliability performance such as service life and responsiveness has definitely been upgraded.
- Easy to use
 - Wiring connector upward/lateral common
Just insert top-facing or side-facing. PAT.
- Energy savings: 0.35 W, 0.1 W (low exoergic/energy circuit)
- Diverse options
Eight-types available
- Wide range of communication methods
Supports ten-types of communication methods

Air operated valve	Part3R	Part2	Part1	High pressure	Metah-free	Large bore size	Polyvinyl chloride	Drainage
	Part3RN	Part2	High pressure	Metah-free	Large bore size	Single unit	Air operated Integrated	Regulator
	Manual valve	High pressure	Metah-free	Large bore size	Single unit	Air operated Integrated	Regulator	
Drip prevention valve	Regulator	Manual	Electric	Manual	Manual/Fine flow rate	Fine level Switch	Related products	
	Flow rate adjusting valve	Manual	Manual	Manual	Manual/Fine flow rate	Fine level Switch	Related products	

Electro-pneumatic regulator



(Catalog No. CB-024SA)

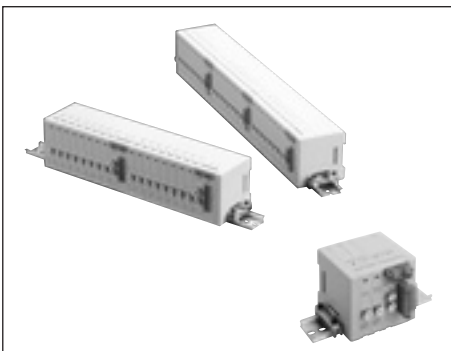
Applications: Pilot regulator control

EVS2 Series

Compact, lightweight and high performance electro pneumatic regulator

- Compact, light-weight
Compared with conventional models... Volume 20% reduced, weight 35% reduced
- Long service life
Three times longer service life than our conventional model
- High precision/high-speed response
0.3%F.S. repeatability, 0.1%F.S. resolution, 0.1sec response time (without load)
- 2-color LED of the operating status
At set pressure: Green
Outside setting, at error: Red
- Easy to pipe/wire
Push-in cartridge fitting and M12 connector are used.

Electro-pneumatic regulator



(Catalog No. CB-024SA)

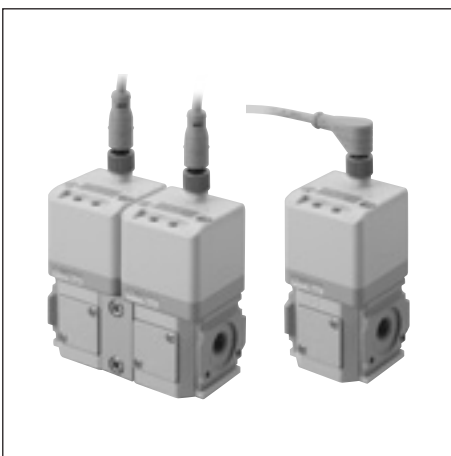
Applications: Pilot regulator control

MEVT Series

Thin electro-pneumatic regulator/manifold with PC control and reduced wiring

- 14 mm thin and 80 g lightweight.
- Network-compatible.
- 2-color LED of the operating status.
- Easy to pipe/wire.
- 2 installation directions.
- High precision and high response.
- Eco-friendly product.

Electro-pneumatic regulator



(Catalog No. CB-024SA)

Applications: Pilot regulator control

EVR Series

Electro pneumatic regulator that focuses on accuracy and stability

- The optimum pressure for your device can be selected.
Pressure variations: 9 variations are available from 100 kPa to 900 kPa.
- High-precision pressure control
The new control method, with built-in microcomputer, achieves more advanced pressure control.
- Temperature stability
Built-in temperature compensation reduces the influence of ambient temperatures. No need for pressure correction due to equipment temperature rise.
- Pressure stability
Residual pressure 0 when the input signal is 0%
The pressure control pattern can be selected (3 patterns)
- Easy operation
Two switches allow various settings
With operation indicator
- Installability
Connectors: Straight and L-types are available
Manifold is also usable

Part 3R	Air operated valve
Part 2	
Part 1	
High pressure	
Metal-free	
Large bore size	
PVC	
Drainage	
Part 3RN	Manual valve
Part 2	
High pressure	
Metal-free	
Large bore size	
Single unit	Drip prevention valve
Air operated Integrated	
Pilot	Regulator
Manual	
Electric	
Manual	Flow rate adjusting valve
Manual/Fine flow rate	
Fine level Switch	
Related products	

Clean regulator



(Catalog No. CB-024SA)

Applications: Purge Air, N₂ pressure adjustment

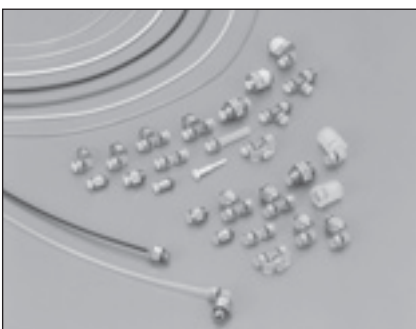
Flow rate sensor



(Catalog No. CC-1393A)

Applications: Purge Air, N₂ flow rate measurement

Auxiliary components



(Catalog No. CB-024SA)

Applications: Air operated valve drive

RC2000 Series

Ideal for pressure control of clean air and nitrogen

- Oil-prohibited specifications

Precision cleaning is performed on the gas contact parts, and the manufacturing processes from assembling to packaging are completed in clean rooms. No grease is used in gas-contacting parts.

- Compact/large flow rate

A large flow rate of 0.8 m³/min. is realized even with just 50 mm interface.
(Flow rate at 0.7 MPa primary pressure, 0.5 MPa set pressure, 0.1 MPa pressure drop)

- Reverse function (when back pressure is not applied)

This function reverses secondary pressure to the primary side when primary pressure is exhausted. This safety-oriented product has no residual pressure on the secondary side.

Compact flow rate sensor RAPIFLOW[®] FSM3 Series

Easy-to-use compact flow rate sensor with high performance and variety

- Stainless steel body

An oxygen-dedicated model is also available (oil-prohibited specifications)
Select from JXR fitting type, double barbed fitting type and screw-in type

- Resin body

Select from four fitting types: push-in elbow, push-in straight, screw-in elbow and screw-in straight
2-port valve can be directly connected, contributing to further space saving

- Common specifications

Flow rate range: Supports up to 1,000 L
Compatible with five types of gases in a single unit, including air, nitrogen, argon, carbon dioxide, and mixed gas
Integrating the needle valve helps save space

- High precision/high-speed response

Redesigned flow path reduces pressure loss by up to 50% compared to conventional products
The flow direction can be set to forward, bi-direction or reverse direction
Response time: 50 msec

- Automation of the entire factory using IO-Link

IO-Link compatibility allows parameter and event data transmission, enabling preventative maintenance.
Ideal for leakage inspection and air consumption control

Fiber tube[®] for push-in fitting

New ultrafine tubing with an enlarged inner diameter and one-touch fittings for greatly improved usability

- New O.D. gripping structure used

- Expanded bore size from $\phi 1.0$ to $\phi 1.2$ for approx. three times larger flow rate

- Tube piping capacity is small, thus energy saving/space saving

- Series of clean-room models using highly corrosion-resistant materials

- Attachable and detachable push-in fitting, standard PG Series, clean-room CG Series available

Air operated valve	Part3R	Part2	Part1	High pressure	Metal-free	Large bore size	Polyvinyl chloride	Drainage	Part3RR	Manual valve	Part2	High pressure	Metal-free	Large bore size	Drip prevention valve	Single unit	Air operated Integrated	Regulator	Pilot	Manual	Electric	Manual	Manual/Fine flow rate	Manual/Fine flow rate	Fine level Switch	Related products
	Part3RR	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual		Manual	Manual/Fine flow rate														
	Part2	High pressure	Metal-free	Large bore size	Single unit	Air operated Integrated	Pilot	Manual	Manual		Manual/Fine flow rate															

Auxiliary components



(Catalog No. CB-024SA)

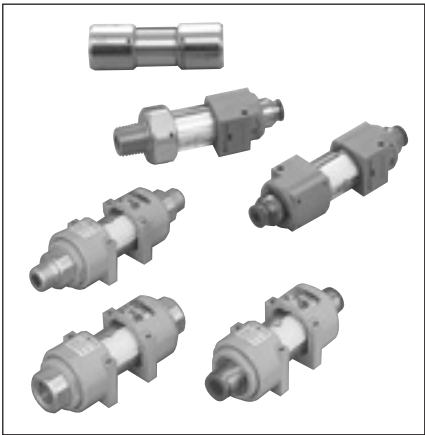
Applications: Air operated valve drive

Fiber tube®

Piping-free ultra-fine tube

- Extremely fine tube as fine and flexible as lead wires
- O.D. ø1.8 and min. bending radius 4 mm
- Electrical resistance is approx. 1×177 Ω·cm Antistatic
- Ideal for fine speed cylinder piping
- Equipped with a wide range of tube colors and fittings

Auxiliary components



(Catalog No. CB-024SA)

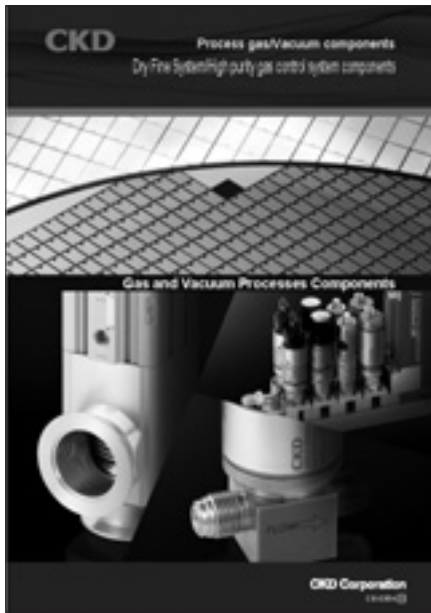
Applications: Purge Air, purification of N₂

FCS Series

Our proprietary hollow fiber membrane provides innovative filter performance

- High-precision filtration
Hollow fiber membrane element has enabled 0.01 μm high precision filtration and 99.99% removal efficiency
- Long service life
Considerably longer service life. Approximately five times longer than the flat membrane type
- Compact/lightweight/large flow rate
A three to ten times filtration area enables larger flow rate and less pressure loss than the flat membrane-type of the same capacity. Lighter and more compact at the same flow rate
- Oil-prohibited specifications
Parts are all degreased and cleaned. Production from assembly through packaging takes place in cleanrooms
- Easy maintenance
Transparent case is used for resin type. Element contamination can be visually checked.
- Ample variations
Two kinds of flow rate (500 and 1000 Series), resin and stainless steel materials, and mounting options of push-in fitting, male thread piping and female thread piping are available.

System lineup



Responding to high-level needs for semiconductor manufacturing process control

Dry Fine System High purity gas control system components

Catalog No.CB-035A

- Industry top performance and reliability
- Super clean room with advanced specifications and an integrated production system from design to assembly and packaging realize high quality.
- Variety of versatile fitting variations



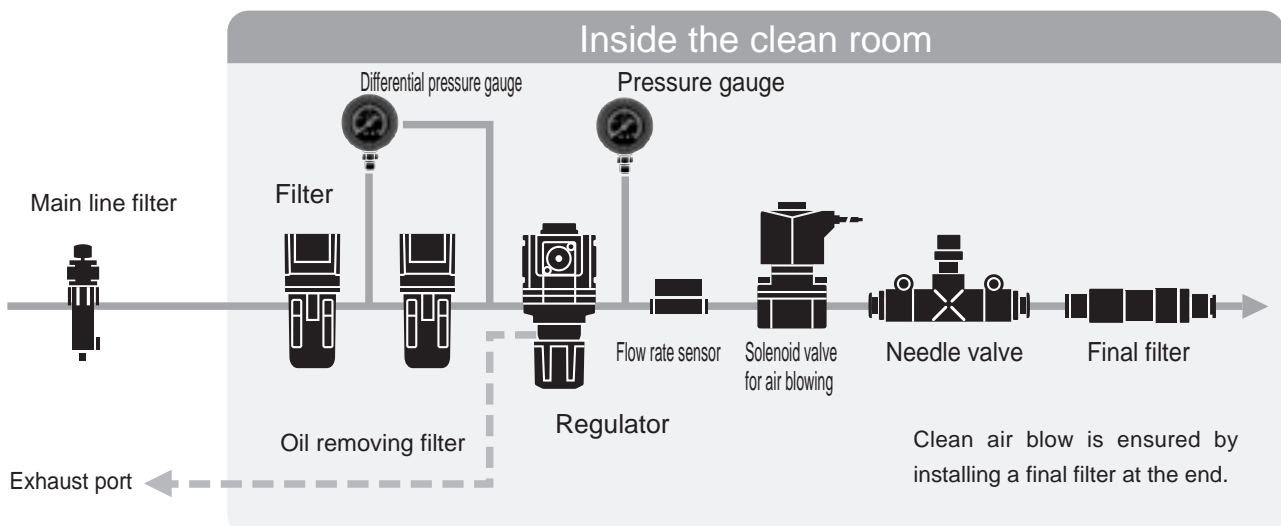
Components for clean room specifications

Catalog No.CB-33SA

Satisfies the various levels of clean room cleanliness in a wide range of industries

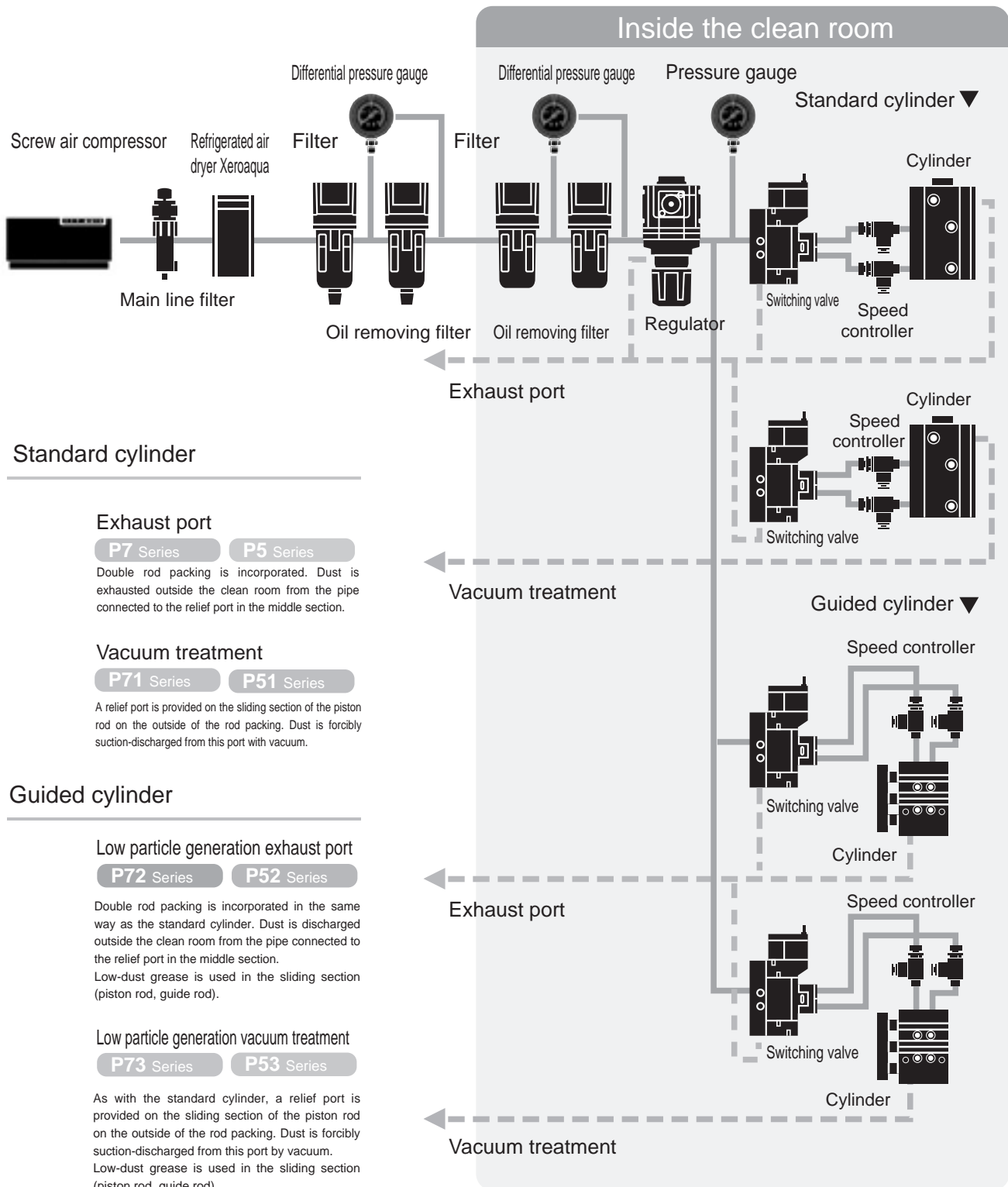
● Reliably producing high cleanliness air

Clean blow system model circuit



● Zero particle generation with vacuum treatment and exhaust port

Air-driven actuator system circuit structure



Homepage

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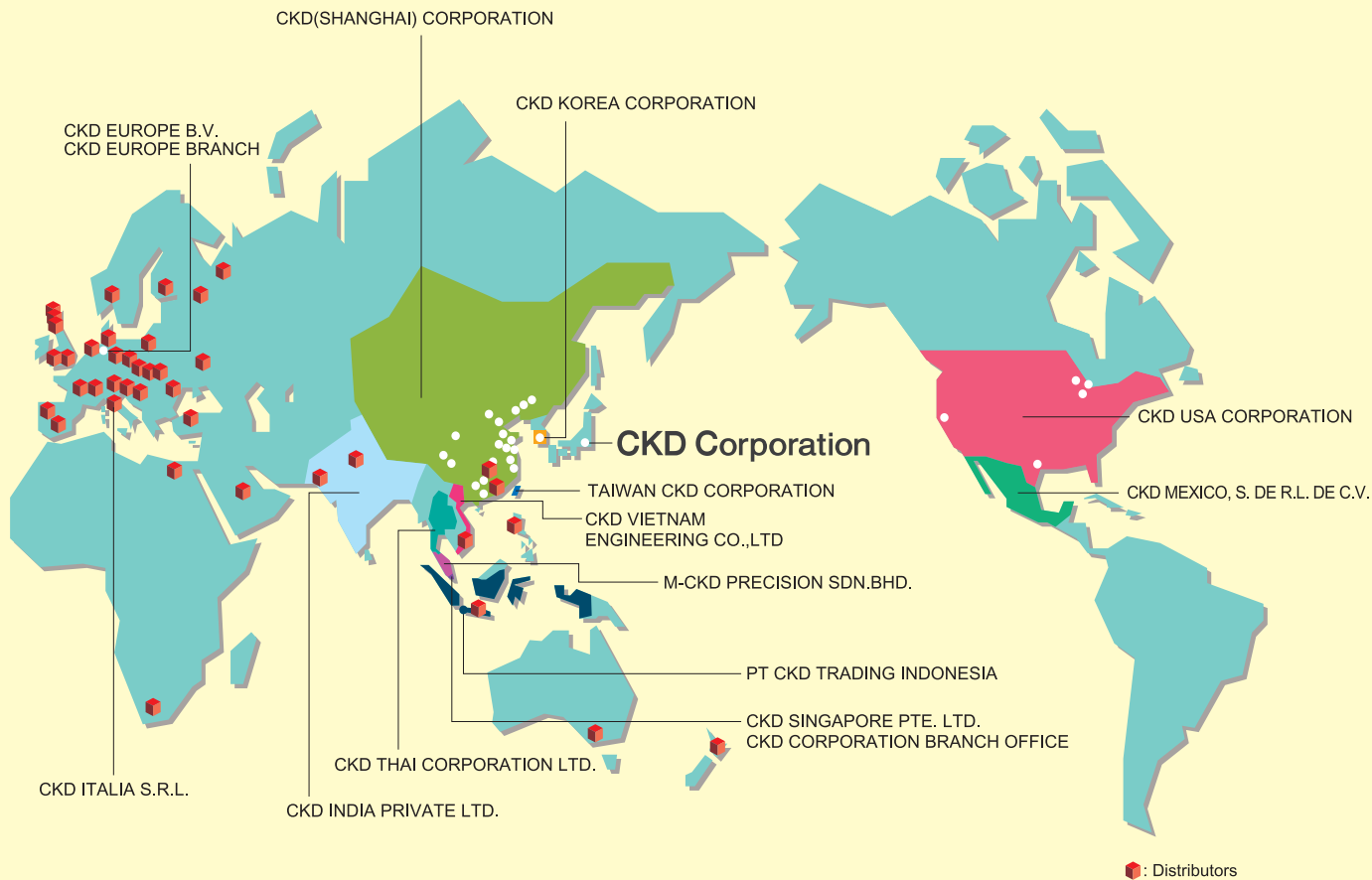


**Have any questions concerning
chemical liquid, gas or vacuum control?
Feel free to contact us for details!**

- I need to control fluctuations in flow rate
- I need to prevent dripping when the valve is closed
- I need to switch between multiple chemical liquids in a compact manner
- I need a proposal for a set of pneumatic valves.



Department in charge: F.S. Development Dept.
Phone: +81-52-223-1126



CKD Corporation

Website <https://www.ckd.co.jp/en/>

ASIA

喜開理(上海)機器有限公司

CKD(SHANGHAI)CORPORATION

●營業部/上海浦東事務所(SALES HEADQUARTERS / SHANGHAI PUDONG OFFICE)
Room 612, 6th Floor, Yuanzhongkeyan Building, No. 1905
Hongmei Road, Xuhui District, Shanghai 200233, China
PHONE +86-21-60906046 FAX +86-21-60906046

- 上海浦東事務所(SHANGHAI PUDONG OFFICE)
- 寧波事務所(NINGBO OFFICE)
- 杭州事務所(HANGZHOU OFFICE)
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- 濰坊事務所(WEIFANG OFFICE)
- 濟南事務所(JINAN OFFICE)
- 烟台事務所(YANTAI OFFICE)

CKD INDIA PRIVATE LTD.

- HEADQUARTERS
Unit No. 607, 6th Floor, Welldone Tech Park, Sector 48,
Sohna Road, Gurgaon-122018, Haryana, India
PHONE +91-124-418-8212
- BANGALORE OFFICE
- PUNE OFFICE
- CHENNAI OFFICE
- MUMBAI OFFICE
- HYDERABAD OFFICE

□ 2-250 Uji, Komaki City, Aichi 485-8551, Japan

□ PHONE +81-568-74-1338 FAX +81-568-74-1165
74-1165

PT CKD TRADING INDONESIA

- HEAD OFFICE
Menara Bidakara 2, 18th Floor, Jl. Jend. Gatot Subroto Kav.
71-73, Pancoran, Jakarta 12870, Indonesia
PHONE +62-21-2938-6601 FAX +62-21-2906-9470
- MEDAN OFFICE
- BEKASI OFFICE
- KARAWANG OFFICE
- SEMARANG OFFICE
- SURABAYA OFFICE

CKD KOREA CORPORATION

- HEADQUARTERS
19th Floor, 44, Sinsu-ro, Mapo-gu, Seoul 04088, Korea
PHONE +82-2-783-5201~5203 FAX +82-2-783-5204
- 水原營業所(SUWON OFFICE)
- 天安營業所(CHEONAN OFFICE)
- 蔚山營業所(ULSAN OFFICE)

M-CKD PRECISION SDN.BHD.

- HEAD OFFICE
Lot No.6,Jalan Modal 23/2, Seksyen 23, Kawasan MIEL,
Fasa 8, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia
PHONE +60-3-5541-1468 FAX +60-3-5541-1533
- JOHOR BAHRU BRANCH OFFICE
- PENANG BRANCH OFFICE

CKD SINGAPORE PTE. LTD.

No.33 Tannery Lane #04-01 Hoesteel Industrial
Building, Singapore 347789, Singapore
PHONE +65-67442623 FAX +65-67442486

CKD CORPORATION BRANCH OFFICE

No.33 Tannery Lane #04-01 Hoesteel Industrial
Building, Singapore 347789, Singapore
PHONE +65-67447260 FAX +65-68421022

CKD THAI CORPORATION LTD.

- HEADQUARTERS
19th Floor, Smooth Life Tower, 44 North Sathorn Road,
Silom, Bangrak, Bangkok 10500, Thailand
PHONE +66-2-267-6300 FAX +66-2-267-6304-5
- NAVANAKORN OFFICE
- EASTERN SEABOARD OFFICE
- LAMPHUN OFFICE
- KORAT OFFICE
- AMATANAKORN OFFICE
- PRACHINBURI OFFICE
- SARABURI OFFICE

台灣喜開理股份有限公司

TAIWAN CKD CORPORATION

- HEADQUARTERS
16F-3, No. 7, Sec. 3, New Taipei Blvd., Xinzhuang Dist.,
New Taipei City 242, Taiwan
PHONE +886-2-8522-8198 FAX +886-2-8522-8128
- 新竹營業所(HSINCHU OFFICE)
- 台中營業所(TAICHUNG OFFICE)
- 台南營業所(TAINAN OFFICE)
- 高雄營業所(KAOHSIUNG OFFICE)

CKD VIETNAM ENGINEERING CO.,LTD.

- HEADQUARTERS
18th Floor, CMC Tower, Duy Tan Street, Cau Giay
District, Hanoi, Vietnam
PHONE +84-24-3795-7631 FAX +84-24-3795-7637
- HO CHI MINH OFFICE

EUROPE

CKD EUROPE B.V.

- HEADQUARTERS
Beechavenue 125A, 1119 RB Schiphol-Rijk, the Netherlands
PHONE +31-23-554-1490
- CKD EUROPE GERMANY OFFICE
- CKD EUROPE UK
- CKD EUROPE CZECH O.Z.

CKD CORPORATION EUROPE BRANCH

Beechavenue 125A, 1119 RB Schiphol-Rijk, the Netherlands
PHONE +31-23-554-1490

CKD ITALIA S.R.L.

Via di Fibbiana 15 Calenzano (FI) CAP 50041, Italy
PHONE +39 0558825359 FAX +39 0558827376

NORTH AMERICA & LATIN AMERICA

CKD MEXICO, S. DE R.L. DE C.V.

Cerrada la Noria No. 200 Int. A-01, Querétaro Park II,
Parque Industrial Querétaro, Santa Rosa Jáuregui,
Querétaro, C.P. 76220, México
PHONE +52-442-161-0624

CKD USA CORPORATION

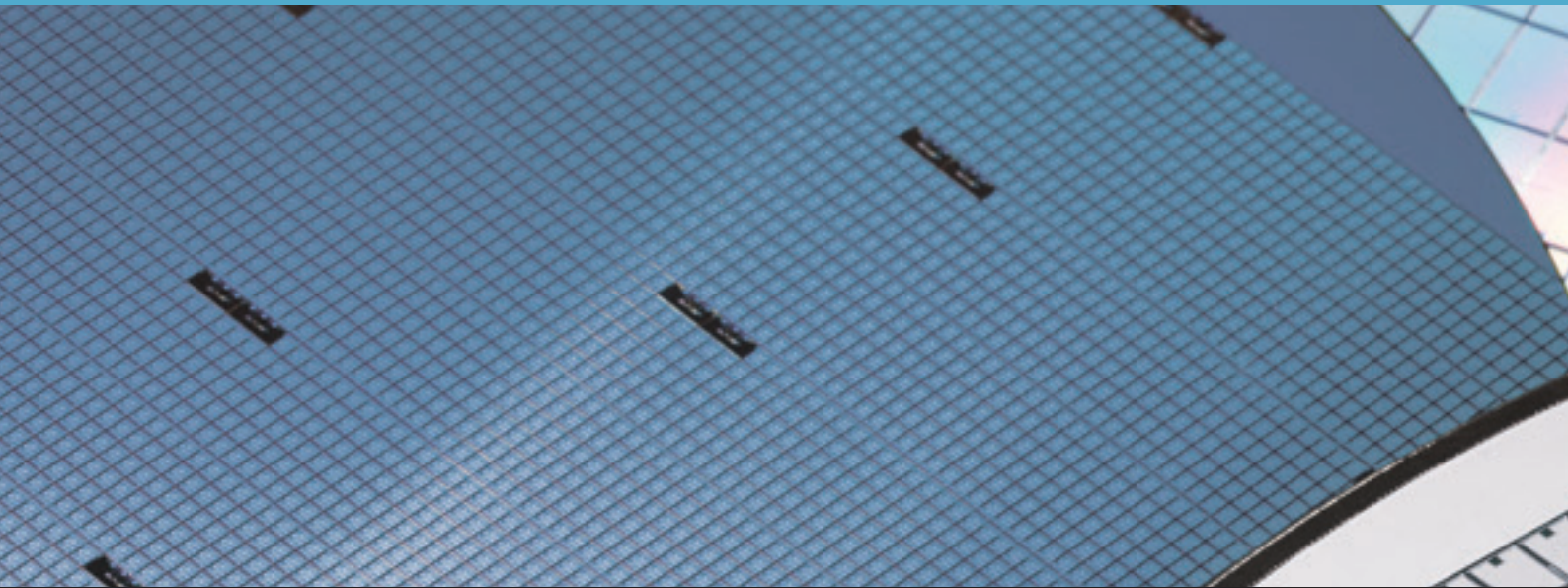
- HEADQUARTERS
1605 Penny Lane, Schaumburg, IL 60173, USA
PHONE +1-847-648-4400 FAX +1-847-565-4923
- LEXINGTON OFFICE
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Components for Pure water/Chemical liquids

Wet Fine Components General Catalog



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