

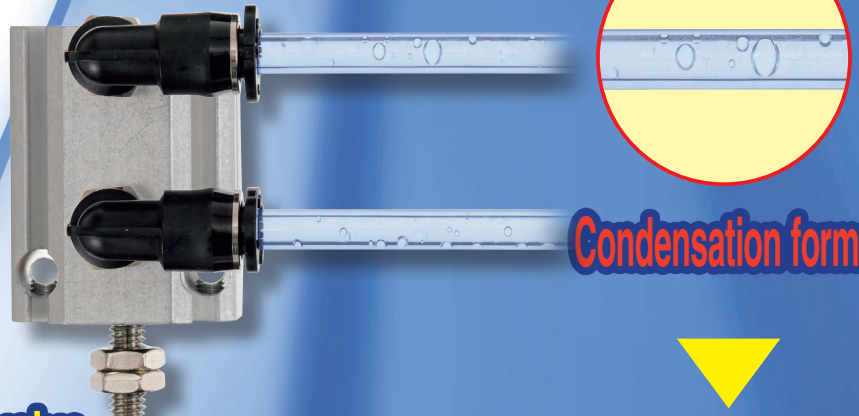


Water Removal Valves

MTV Series

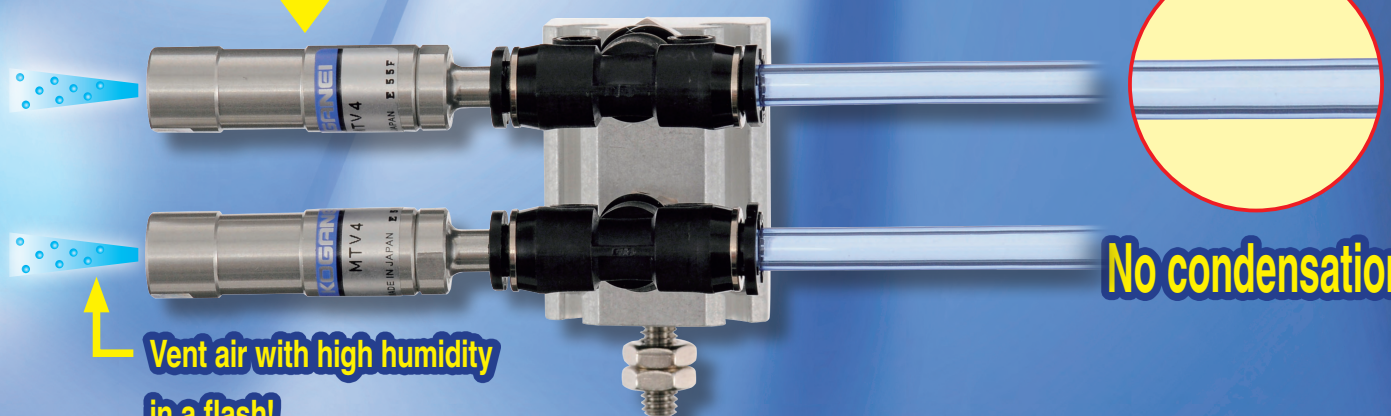
Our answer to counteracting condensation

Troubled by condensation from small cylinders?



Condensation forms

Mounting the water removal valve



No condensation

Vent air with high humidity in a flash!

Water Removal Valves

MTV Series



Our answer to counteracting condensation!

Prevent condensation from developing inside the piping to pneumatic grippers and small cylinders!

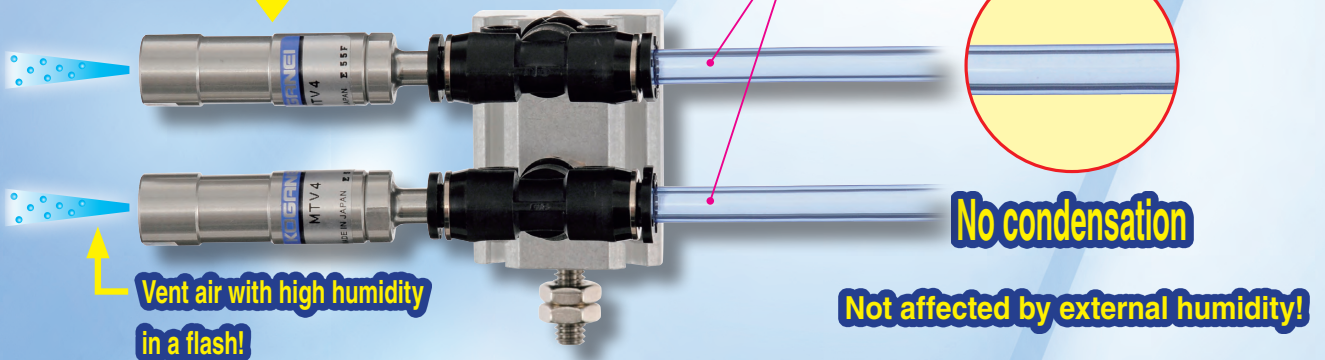
Condensation may develop when small-volume actuators are connected to long piping (large volume).



Simply connect it in the pipes! Easy mounting!

Mounting the water removal valve

Possible to use highly flexible tubes!



User reviews!

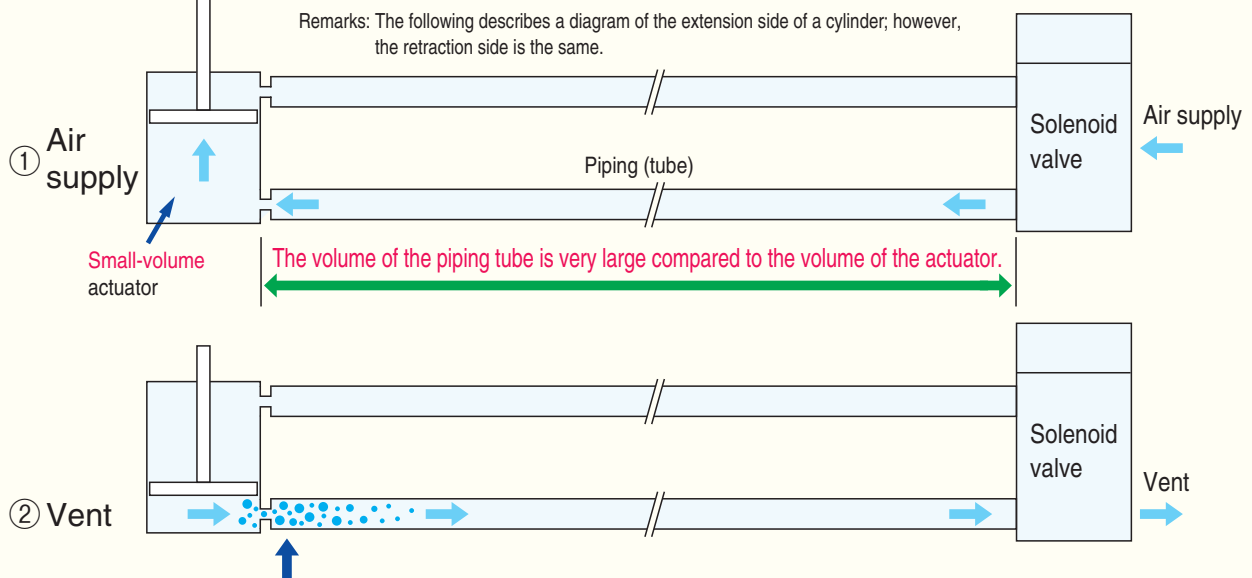
Company A: Every morning we drained all of the piping for our pneumatic grippers. Ever since we installed the water removal valves, our drainage work has vanished!

Company B: Installing the water removal valves got rid of the water that nothing we tried before could.

Example of piping



The mechanism that generates mist (moisture)



- During exhaust, the temperature in the piping tube decreases instantaneously due to adiabatic expansion.
 - Mist occurs when the temperature falls below that of the atmospheric dew point.
 - Because the volume inside the tube is large, mist cannot drain completely during exhaust (it remains inside the tube).
- Each time, moisture in new compressed air accumulates from the ① air supply > ② exhaust process, and then the moisture becomes liquid (condensation).

Principles of water removal valve operation

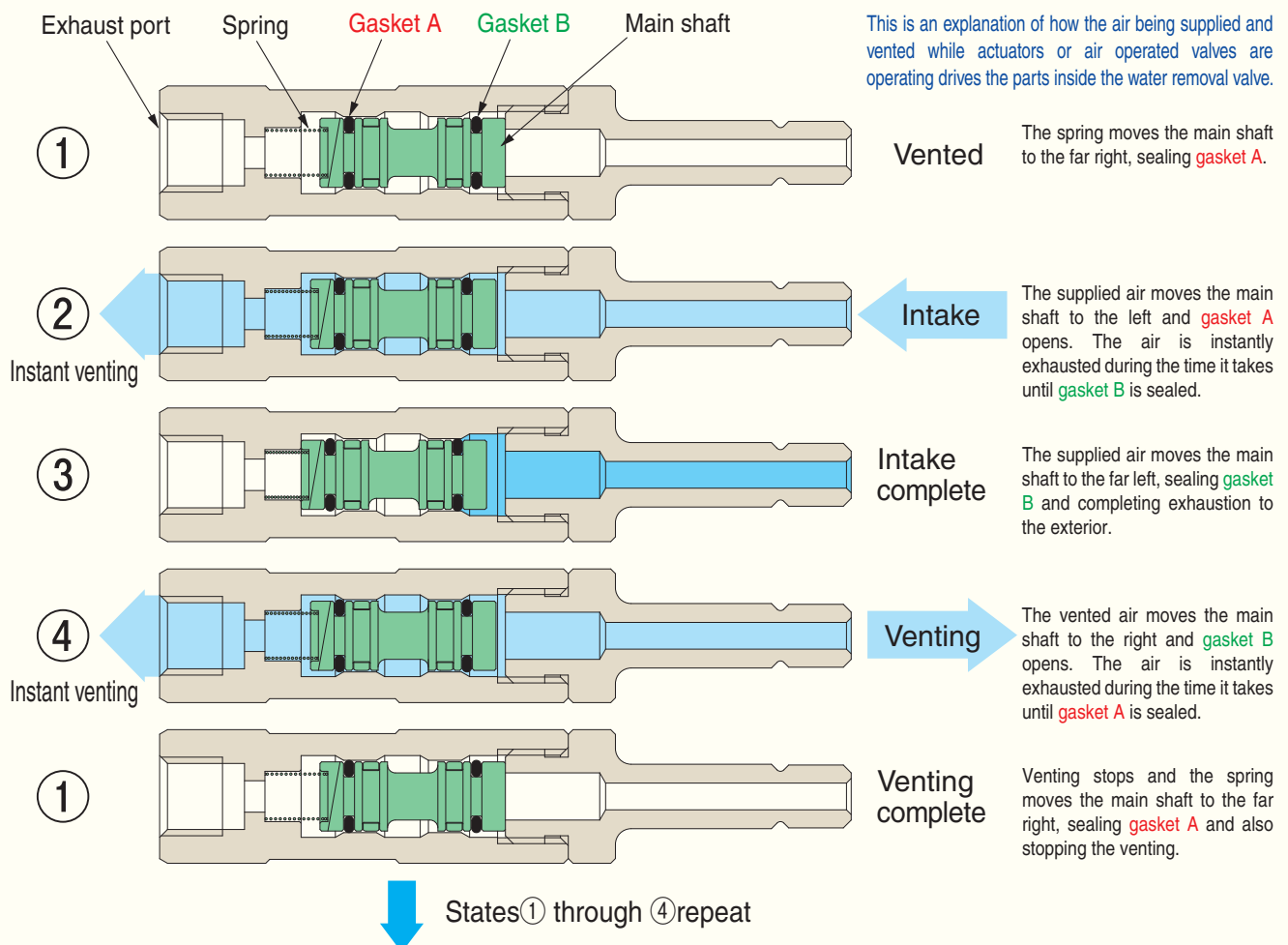
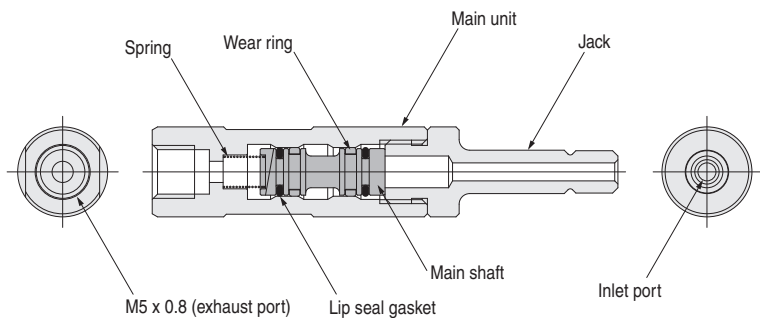


Diagram of construction



Materials used in major parts

Name	Materials
Main unit	Aluminum alloy (anodized)
Main shaft	Aluminum alloy (anodized)
Jack	Aluminum alloy (anodized)
Wear ring	Plastic (polyacetal)
Lip seal gasket	Synthetic rubber (HNBR)
Spring	Stainless steel

Specifications

Item	Model	MTV4
Mounting method		Mini type quick fitting, $\phi 4$ [0.157 in] direct insert
Medium		Air
Operating pressure range	MPa [psi]	0.2 to 0.7 [29 to 102]
Proof pressure	MPa [psi]	1.05 [152]
Operating temperature range	$^{\circ}\text{C}$ [$^{\circ}\text{F}$]	0 to 60 [32 to 140]
Lubrication		Not required
Connection port		$\phi 4$ [0.157 in] (for mini type quick fitting)
Weight	g [oz]	4.5 [0.16]

Note 1: Use the $\phi 4$ [0.157 in] mini type quick fitting to connect the inlet port (jack).
 Note 2: Use when the exhaust port is open to the atmosphere.

Order codes

MTV4 — [] — []

Water removal valves (Contains 1)

Cylinder-side connection
 Blank: No fitting
 T4 : UT4M with fitting^{Note}
 T6 : UTD6-4M with fitting^{Note}
 Y4 : UY4M with fitting^{Note}
 Note: The fitting is shipped attached.

-T4

With UT4M fitting

-T6

With UTD6-4M fitting

-Y4

With UY4M fitting

Exhaust-side connection
 Blank: No fitting
 TS : TS4-M5M with fitting^{Note}
 TL : TL4-M5M with fitting^{Note}
 Note: The fitting is shipped attached.

-TS

With TS4-M5M fitting

-TL

With TL4-M5M fitting

MTV4S

Contains 10 water removal valves (MTV4)

Note: Fitting options cannot be selected.



Safety precautions (water removal valve)

- WARNING**
- Use Koganei $\phi 4$ [0.157 in] mini type quick fitting to connect the inlet port (jack). Using ones other than these is very dangerous as there is a risk that it may come off.
 - After mounting, check to make sure that the water removal valve cannot be pulled off.

Handling instructions and precautions



General precautions

Piping

Before mounting the water removal valve, thoroughly flush the inside of the pipes with compressed air. Machining chips, sealing tape, rust and other debris remaining from the piping work may result in air leaks and malfunctions.

Air source

1. Use air for the medium.
2. Air used for the water removal valve should be clean air that contains no degraded compressor oil, etc. Install an air filter (filtration of 40 μm or less) in an appropriate position on the pneumatic bypass to remove dirt and fluid. Also drain the air filter periodically. If fluids or dirt get in the water removal valve, it may cause defective operation.

Lubrication

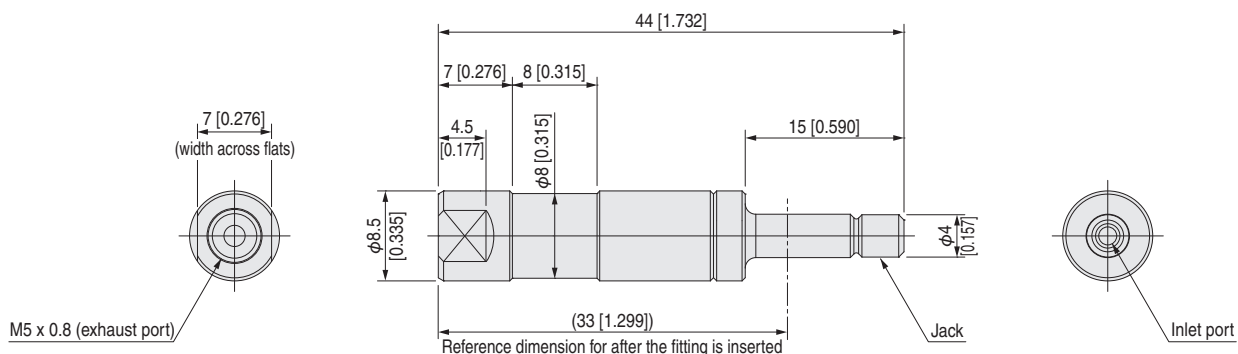
It can be used without lubrication. Avoid using lubrication if at all possible. However, if lubrication, such as a lubricator, is used, use turbine oil 1 (ISO VG32) or an equivalent. Avoid using spindle oil or machine oil.

Environment

1. Cover the unit when using it in locations where it might be subject to excessive dust, dripping water, dripping oil, etc.
2. Do not use the water removal valve in environments which may be corrosive. Using it in these types of environments may result in damage or erratic operation.
3. Do not use it in excessively dry conditions.
4. Do not use it if the ambient temperature is over 60°C [140°F]. Doing so may result in damage or erratic operation. Also, consider anti-freezing measures if the temperature is less than 5°C [41°F], because moisture may freeze and result in damage or erratic operation.
5. Fix the water removal valve in place when the piping is in an environment that is likely to have vibrations.

★ Before use, be sure to read the "Safety Precautions" and "General Precautions" in the general catalog and the "Precautions" in the reference material on Koganei's homepage.

Dimensions mm [in]



- Note 1: Use the mini type quick fitting $\phi 4$ [0.157 in] to pipe the inlet port (jack).
 2: Use when the exhaust port is open to the atmosphere.

Handling

Confirm that there is no pressurized air in the piping before starting maintenance work.

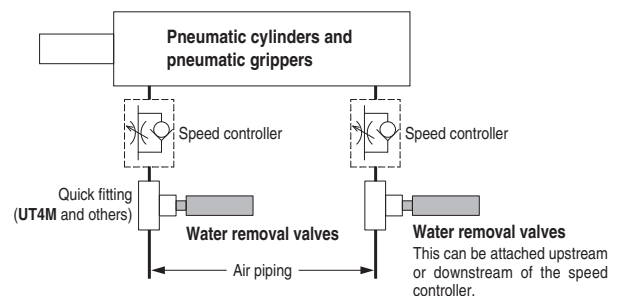
Mounting

1. Though there are no restrictions on the mounting direction, the water removal valve should be mounted where it will not be directly subjected to strong impact and/or vibration.
2. Be sure to always vent the water removal valve to the open atmosphere.
3. Precautions when mounting the fitting to the exhaust port
 - ① When mounting the fitting, use the appropriate tool for tightening and place it on the flat part of the valve.
 - ② Use the following table of recommended tightening torques as a reference while tightening the fitting when you mount it. The flat parts of the water removal valve may be damaged if you tighten them using more than the recommended tightening torque.

Recommended tightening torque for the exhaust port

● Fittings		N·m [ft·lbf]
Screw size	Tightening torque	
M5 × 0.8	1.0 to 1.5 [0.74 to 1.11]	

4. Caution when piping the inlet port
 - ① Use the mini type quick fitting $\phi 4$ [0.157 in] to pipe the inlet port.
 - ② After mounting, check to make sure that the water removal valve cannot be pulled off.
5. Mount the water removal valve as close as you can to places where condensation develops (we recommend within 100 mm [3.937 in.]). The ability to dehumidify decreases if the place where the water removal valve is mounted is far from the place where condensation develops.
6. If the water removal valve is mounted in the vicinity of a speed controller, the ability to dehumidify does not change, no matter whether you mount it on the upstream side or the downstream side (it is affected by the distance from the place where condensation develops).



7. Be sure to understand the precautions for any air cylinders and other devices as well before you use the product.

M E M O

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Limited Warranty

KOGANEI CORP. warrants its products to be free from defects in material and workmanship subject to the following provisions.

Warranty Period The warranty period is 180 days from the date of delivery.

Koganei Responsibility If a defect in material or workmanship is found during the warranty period, KOGANEI CORP. will replace any part proved defective under normal use free of charge and will provide the service necessary to replace such a part.

Limitations

- This warranty is in lieu of all other warranties, expressed or implied, and is limited to the original cost of the product and shall not include any transportation fee, the cost of installation or any liability for direct, indirect or consequential damage or delay resulting from the defects.

- KOGANEI CORP. shall in no way be liable or responsible for injuries or damage to persons or property arising out of the use or operation of the manufacturer's product.

- This warranty shall be void if the engineered safety devices are removed, made inoperative or not periodically checked for proper functioning.

- Any operation beyond the rated capacity, any improper use or application, or any improper installation of the product, or any substitution upon it with parts not furnished or approved by KOGANEI CORP., shall void this warranty.

- This warranty covers only such items supplied by KOGANEI CORP. The products of other manufacturers are covered only by such warranties made by those original manufacturers, even though such items may have been included as the components.

The specifications are subject to change without notice.

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