

Quick Exhaust Valve

Push-in fitting type quick exhaust valve

⚠ Safety instructions for this product

Safety instructions, Common safety instructions for each product category and Detailed safety instructions for each product are in the end of this catalog and our website.

Standard Type Model Designation (Example)

EQ (1) **01** (2) - **C04** (3) **P01** (4) **C08** (5)

(1) Quick exhaust valve

(2) Effective sectional area

Code	01	02	03
Effective sectional area (mm ²)	8	16	30

(3) Intake-side type · connection size

■ Tube size for Push-in fitting joint type (øD)

■ Thread size for Taper pipe thread type (R)

Code	mm size (mm)					inch size (inch)		Code	P01	P02	P03	P04
	C04	C06	C08	C10	C12	C1/4	C3/8					
Tube O.D.	ø4	ø6	ø8	ø10	ø12	ø1/4	ø3/8	Size	R1/8	R1/4	R3/8	R1/2

(4) Output-side type · connection size

■ Tube size for Push-in fitting joint type (øD)

■ Thread size for Taper pipe thread type (R)

Code	mm size (mm)				Code	Taper pipe thread				National pipe thread tapered		
	C06	C08	C10	C12		P01	P02	P03	P04	N1	N2	N3
Tube O.D.	ø6	ø8	ø10	ø12	Size	R1/8	R1/4	R3/8	R1/2	NPT1/8	NPT1/4	NPT3/8

(5) Exhaust-side type · connection size

■ Tube size for Push-in fitting joint type (øD)

■ Exhaust throttle type

*As for the available combination type of intake-side (3), output-side (4) and exhaust-side (5), please note that only the combination table below can be manufactured.

■ Producible combination table

Code	mm size (mm)					Code	E	Type	Exhaust throttle (Open to air)	Type	Intake-side			Output-side			Exhaust-side		
	C08	C10	C12	C3/8	C1/2														
Tube O.D.	ø8	ø10	ø12	ø3/8	ø1/2														

Mini Type Model Designation (Example)

EQ (1) **H** (2) - **4** (3) **M5** (4) **E** (5)

(1) Quick exhaust valve

(2) Type

Code	U	Y	E	H	J
Type	Union Straight, Open to Air Exhaust, Mini type	Union Straight, Tube Exhaust, Mini type	Union Straight, Exhaust Throttle to Air, Mini type	Cylinder Direct Attachment, Mini type	Plug-in, Open to Air Exhaust, Mini type

(3) Tube dia. (øD)

Code	3	4	6	5/32	1/4
Tube O.D.	ø3mm	ø4mm	ø6mm	ø5/32"	ø1/4"

(4) Thread size (R1) (Selectable only for EQH)

Code	M3	M5	U10
Size	M3×0.5	M5×0.8	10-32UNF

(5) Exhaust type (R2) (Selectable only for EQH)

Code	E	M6	U10
Type	Exhaust throttle (Open to air)	Exhaust female thread (M6×1)	Exhaust female thread (10-32UNF)

Characteristics

■ In response to high-speed drive cylinder.

■ Possible to control high-speed cylinder.

Exhaust throttle type, that having a throttling function on the exhaust port, is prepared.

■ Incorporated silencer reduces the exhaust noise.

The silencer element can be replaced without touching the needle valve, so that it is not necessary to readjust the exhaust flow. (Standard type: Exhaust throttle type)

■ Tube O.D. 3mm is available for mini type.

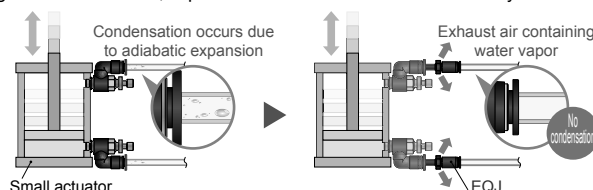
Annual 90,000ℓ of air consumption can be reduced by downsizing the tube size ø4mm to ø3mm.

(36% reduction (piping parts only), about 10% reduction (including cylinder))

*Cylinder condition/ Cylinder bore: dia. 20mm, Stroke: 100mm, One-side rod, Cylinder annual operation: 2,160,000 times, Pressure: 0.5MPa (Piping length: 2m).

■ Tube O.D. 3mm is available for plug-in type.

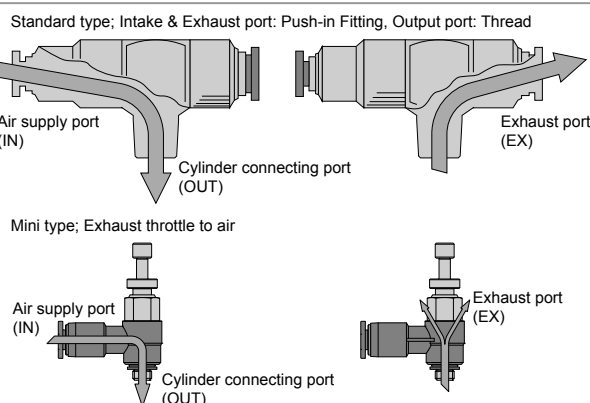
By installing near the actuator, it prevents dew condensation caused by adiabatic expansion.



Specifications

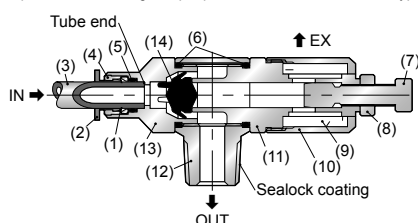
Fluid medium	Air
Max. operating pressure	0.1 to 0.7 MPa
Operating temp. range	5 to 60°C (No freezing)
Min. opening pressure	0.05 MPa

Control direction



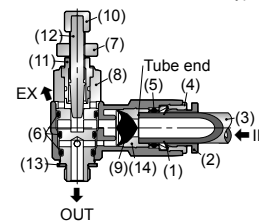
Sectional drawing

Standard type, Intake port: Push-in Fitting, Output port: Thread, Exhaust throttle type: EQ-CPE



No.	Parts	Material
(1)	Lock claws	Stainless steel
(2)	Release-ring	POM
(3)	Tube	Polyurethane, Nylon, etc
(4)	Guide ring	Nickel-plated brass
(5)	Elastic sleeve	NBR
(6)	O-ring	NBR
(7)	Slide valve	Nickel-plated brass
(8)	Lock nut	Aluminum
(9)	Element	PVF
(10)	Silencer cover	Aluminum
(11)	Metallic body	Aluminum
(12)	Thread body	Aluminum
(13)	Fitting body	Aluminum
(14)	Valve element	HNBR

Mini type, Cylinder direct attachment, Exhaust throttle to air type: EQH-E



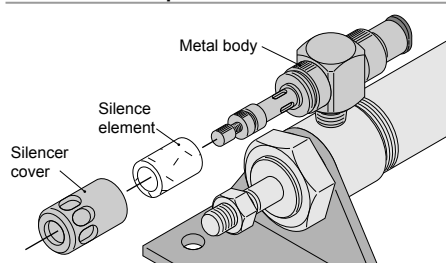
No.	Parts	Material
(1)	Lock claws	Stainless steel
(2)	Release-ring	POM
(3)	Tube	Polyurethane, Nylon, etc
(4)	Guide ring	Nickel-plated brass
(5)	Elastic sleeve	NBR
(6)	O-ring	NBR
(7)	Lock nut	Aluminum
(8)	Metallic body	M3 thread: Stainless steel M5 thread: Nickel-plated brass
(9)	Valve element	HNBR
(10)	Knob	Nickel-plated brass
(11)	Needle guide	Stainless steel
(12)	Needle	Nickel-plated brass
(13)	Gasket	SPCC + NBR
(14)	Valve retainer	Aluminum

RoHS2 (2011/65/EU+EU2015/863) compliant

Standard type				Mini type			
Type	Model code EQ□-CøD P(N) sR CøD	Type	Model code EQ□-PR CøD CøD	Type	Model code EQU-øD	Type	Model code EQJ-øD
IN & EX: Push-in fitting OUT: Thread EQ  øD (IN) R (OUT)	EQ01-C04P01C08 EQ01-C06P01C08 EQ02-C06P01C10 EQ02-C06P02C10 EQ02-C08P01C10 EQ02-C08P02C10 EQ03-C10P02C12 EQ03-C10P03C12 EQ03-C10P04C12 EQ03-C12P02C12 EQ03-C12P03C12 EQ03-C12P04C12 EQ02-C ¹ / ₄ N1C ³ / ₈ EQ02-C ¹ / ₄ N2C ³ / ₈ EQ03-C ³ / ₈ N2C ¹ / ₂ EQ03-C ³ / ₈ N3C ¹ / ₂	OUT & EX: Push-in fitting IN: Thread EQ  øD (OUT) øD (EX) R (IN)	EQ01-P01C06C08 EQ02-P01C06C10 EQ02-P01C08C10 EQ02-P02C06C10 EQ02-P02C08C10 EQ03-P03C10C12 EQ03-P03C12C12 EQ03-P04C10C12 EQ03-P04C12C12	Union Straight Exhaust to Air EQU  øD (OUT) (EX) øD (IN)	EQU-3 EQU-4 EQU-6 EQU- ⁵ / ₃₂ EQU- ¹ / ₄	Plug-in Open to Air Exhaust EQJ  øD (OUT) (EX) øD (IN)	EQJ-3 EQJ-4 EQJ-6 EQJ- ⁵ / ₃₂ EQJ- ¹ / ₄
				Union Straight Tube Exhaust EQY  øD (IN) øD (EX)	EQY-3 EQY-4 EQY-6 EQY- ⁵ / ₃₂ EQY- ¹ / ₄	Union Straight Exhaust Throttle to Air EQE  øD (IN) (EX)	EQE-3 EQE-4 EQE-6 EQE- ⁵ / ₃₂ EQE- ¹ / ₄
Type	Model code EQ□-CøD P(N) R E	Silencer element Model code	Valve element Model code	Type	Model code EQH-øD R1 R2		
IN: Push-in fitting OUT: Thread EX: Exhaust throttle EQ  øD (IN) R (OUT)	EQ01-C04P01E EQ01-C06P01E EQ02-C06P01E EQ02-C06P02E EQ02-C08P01E EQ02-C08P02E EQ03-C10P02E EQ03-C10P03E EQ03-C10P04E EQ03-C12P02E EQ03-C12P03E EQ03-C12P04E EQ02-C ¹ / ₄ N1E EQ02-C ¹ / ₄ N2E EQ03-C ³ / ₈ N2E EQ03-C ³ / ₈ N3E	EQSE-01E EQSE-02E EQSE-03E	EQM008R07 EQM015R07 EQM035R07	Cylinder Direct Attachment with Exhaust Female Thread EQH  øD (IN) R1 (OUT) R2 (EX)	EQH-3M3M6 EQH-3M5M6 EQH-4M3M6 EQH-4M5M6 EQH-6M3M6 EQH-6M5M6 EQH- ⁵ / ₃₂ U10U10 EQH- ¹ / ₄ U10U10		
				Cylinder Direct Attachment with Exhaust Throttle EQH  øD (IN) R1 (OUT) (EX)	EQH-3M3E EQH-3M5E EQH-4M3E EQH-4M5E EQH-6M3E EQH-6M5E EQH- ⁵ / ₃₂ U10E EQH- ¹ / ₄ U10E		

* Please refer to below "How to replace silencer element" for replacement of silencer element.

How to replace silencer element



1. Remove the silencer cover by loosening it in the counterclockwise direction.
2. Remove the silencer element.
3. Attach a new silencer element to the metallic body up to the end.
4. Place the silencer cover over the element and tighten the cover in the clockwise direction.

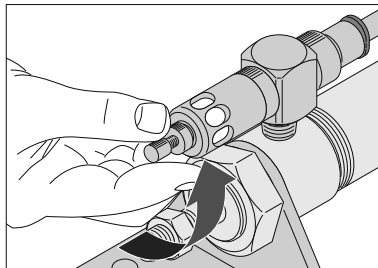
CAD data is available at PISCO website.

Packaging specifications
1 pc. /bag

■ How to adjust speed (Exhaust Throttle type only)

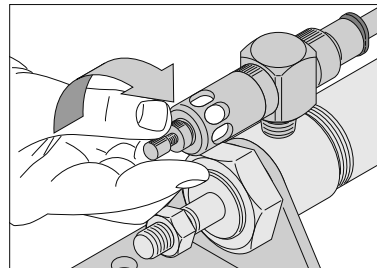
(1) Increasing speed

When the slide of Quick Exhaust Valve Exhaust Throttle type is turned counterclockwise from the fully closed position, the actuator return speed will increase. Make sure to tighten the lock nut at the desired speed so that the speed setting cannot be changed.



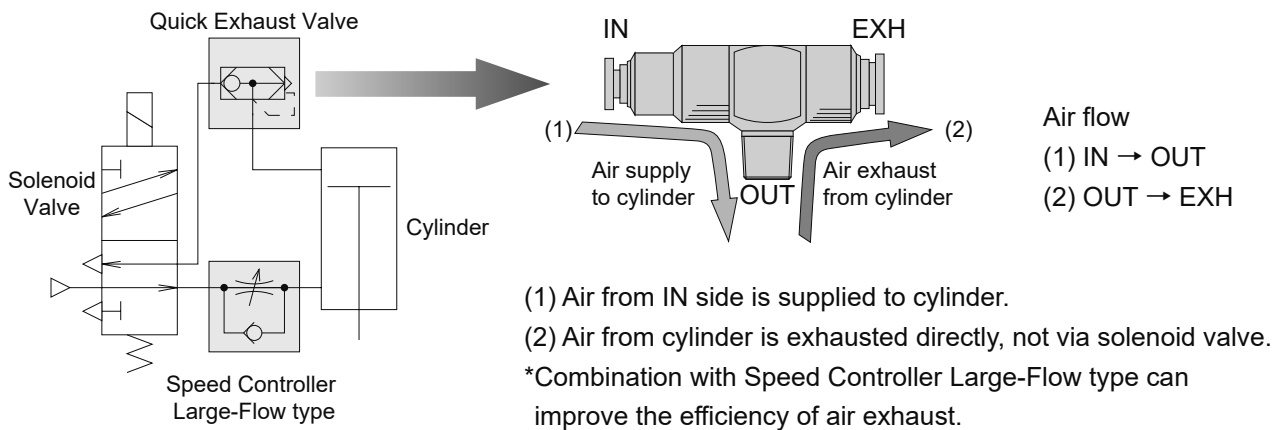
(2) Reducing speed

If the slide of Quick Exhaust Valve Exhaust Throttle type is turned too far (if the return speed is too fast), turn it clockwise to reduce the actuator return speed. Make sure to tighten the lock nut at the desired speed so that the speed setting cannot be changed.



■ Control method (usage example)

■ Standard



■ Mini

Three shapes are available for Quick Exhaust Valve Mini type connection: Cylinder Direct Attachment type with male threads (Fig. 1), Union Straight type with push-in fitting between the solenoid valve and the cylinder (Fig. 2), and Plug-in type with the socket side to be inserted into a fitting or speed controller mounted on the cylinder (Fig. 3). Cylinder Direct Attachment type enables efficient high-speed control with direct exhaust from the cylinder. Union Straight type has different efficiencies for high-speed control with varying piping lengths from the cylinder. (The shorter the piping length, the better the efficiency.) Plug-in type enables efficient control when used in combination with the installed speed controller.

Since the speed controller is designed to exhaust air from the solenoid valve exhaust port (Fig. 4), Quick Exhaust Valve is recommended when high-speed cylinder control is required.

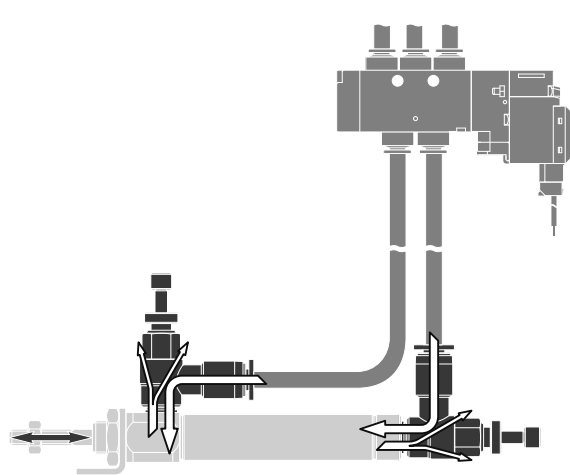


Fig. 1. Usage example of Cylinder Direct Attachment type

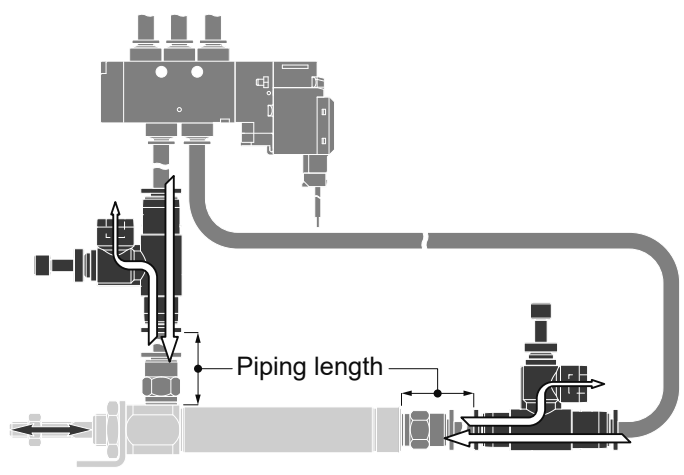


Fig. 2. Usage example of Union Straight type

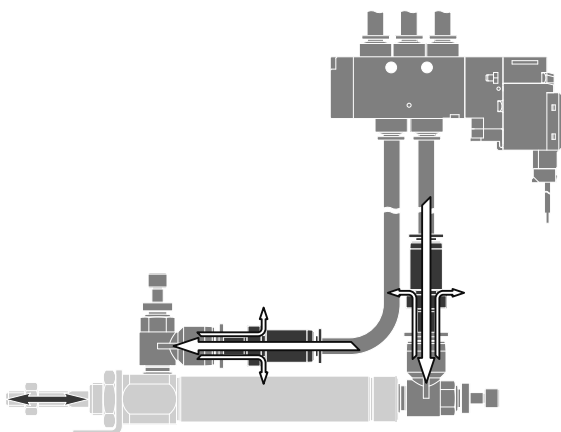
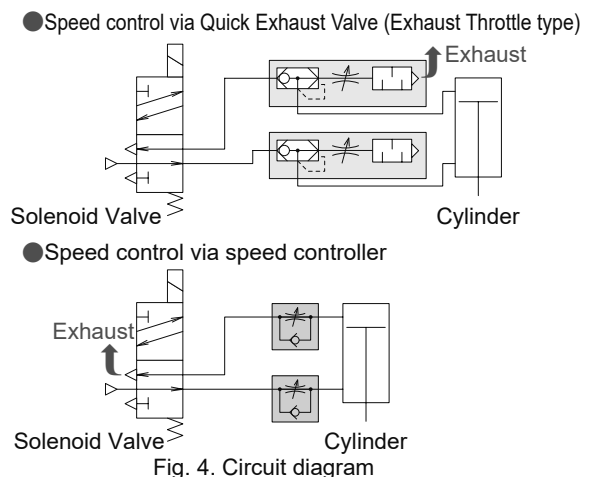


Fig. 3. Usage example of Plug-in type



■ Condensation countermeasures (usage example)

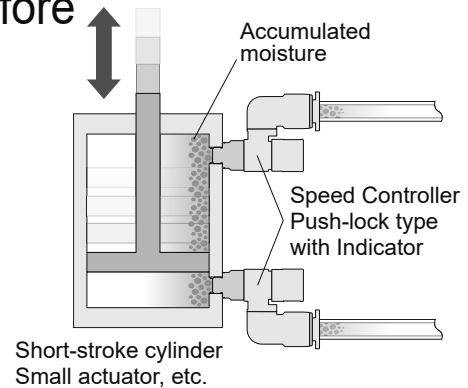
■ Open-air exhaust of moisture generated due to adiabatic expansion

How condensation occurs due to adiabatic expansion

- (1) Increase in the interior air volume due to exhaust (adiabatic expansion) causes the temperature to decrease.
- (2) As the temperature decreases, the moisture in the air condenses into water droplets.
- (3) For short-stroke cylinders, the piping length may make it impossible to fully exhaust the moist air.
- (4) The accumulated moisture enters the actuator and causes problems.

Countermeasures

Before

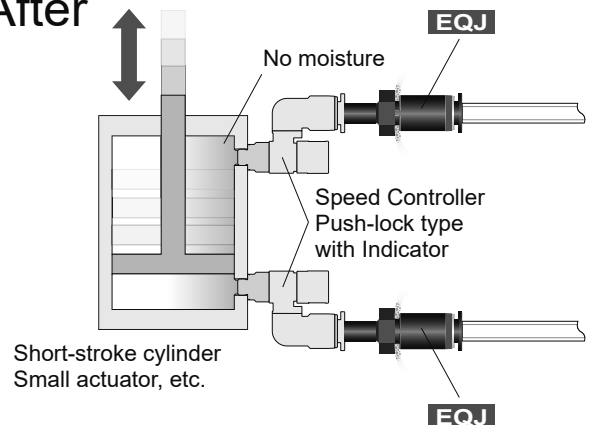


Mounting EQJ to prevent condensation

- (1) Plug-in type (EQJ) is easily mountable between the speed controller and the tube.
- (2) EQJ exhausts the moisture accumulated in the actuator along with the exhaust air into the atmosphere.
- (3) The actuator's internal structure is preserved, enabling a longer service life.

Countermeasures

After



■ Contributing to a long service life of the actuator

Water drainage prevents piston packing deterioration due to the scattered grease inside the actuator, contributing to a longer service life of the actuator.