

2QV/3QV

Quick exhaust valve

2, 3 port valve

Features

Straight flow path and large effective sectional area.
 Flame resistance resin is used as standard.
 (Equivalent to UL94 standards V-0)
 By bracket of option,
 Manifold enabled by optional bracket.
 2, 3 port valves are available.



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MN4E0
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M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

Quick exhaust valve



Safety precautions

Always read this section before starting use.

MN3E0
MN4E0

4GA/B

M4GA/B

MN4GA/B

4GA/B
(Master)

W4GA/B2

W4GB4

MN3S0
MN4S0

4TB

4L2-4/
LMF0

4SA/B0

4SA/B1

4KA/B

4F

PV5G/
CMFPV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F*0E

HMV
HSV2QV
3QV

SKH

PCD/
FS/FD

Ending

Quick exhaust valve 2QV/3QV Series

Design & Selection

⚠ WARNING

- Use the product within the specifications.
Using this product with fluid other than compressed air or at a pressure or temperature exceeding the specifications could result in rupture, tube coming off, or leakage.
- Avoid installing this product outdoors or where it is exposed to direct sunlight.

⚠ CAUTION

- Confirm that the product will withstand the working environment.
 - This product cannot be used in an environment where functional obstacles could occur.
Such environments include high temperatures, a chemical atmosphere, or where chemicals, vibration, moisture, water drip, or gas are present; where ozone is generated; outdoors or where the product could be subject to direct sunlight; or where cutting oil, coolant, or spatter could occur or where static electricity could pose a problem.
- Confirm that PTFE can be used.
 - The sealant contains PTFE (polytetrafluoroethylene resin) powder. Check that this poses no problem during use.
- Consult with CKD if ozone is generated in supply air. (An ozone-resistant series is available.)
- Avoid using this product in hot or, humid places, outdoors, or where it is exposed to direct sunlight.

Installation & Adjustment

⚠ WARNING

- Securely insert the tube until it contacts the joint's tube end, and check that it does not come off the joint.
- Stop air and confirm that there is no residual pressure before replacing the tube.

Piping

⚠ CAUTION

- Observe the following precautions when using nylon tubes or urethane tubes for piping material.
 - Use the designated tube and CKD plastic plug (GWP Series). Do not use metal plugs, which could cause problems.
Tube outer diameter accuracy
 - Polyamide tube: Within ± 0.1 mm
 - Polyurethane rubber tube
 - (up to $\varnothing 6$): Within ± 0.1 mm
 - (from $\varnothing 8$): Within $\begin{matrix} +0.1 \\ -0.15 \end{matrix}$ mm
- Use a tube with a hardness of 92° or more. If a tube that does not satisfy diameter accuracy or hardness is used, chucking force may drop or the tube may come off or be difficult to insert.
Consult with CKD when using a tube or a plug not specified.

- Cut the tube with a specified cutter, and cut at a right angle.
- Do not use worn or damaged tube that could be crushed or ruptured.
- Do not reuse the tube, which is worn and deformed.
- Do not let tube directly contact other structures because it could wear and break.

- Do not use this valve for applications that constantly rotate, vibrate or which have a tube that moves vigorously.
- Use tube that is within the minimum bending radius but is long enough to avoid sudden bending.
 - Consider changes in tube length caused by pressure when tubing is connected, and provide sufficient length within the tube's minimum bending radius.
- Always flush just before piping pneumatic component.
 - Foreign matter that enters during piping must not enter pneumatic components. Remove all powder and foreign matter before piping or inserting the tube.
- When supplying compressed air for the first time after connecting pipes, do not apply high pressure suddenly.
 - Tube may come off and fly out, causing an accident.

Installation & Adjustment

CAUTION

- When supplying compressed air for the first time after connecting pipes, confirm that no air is leaking from any pipe connections.

- Apply a leakage detection agent on pipe connections with a brush, and check for air leaks.

- Tighten pipes with the appropriate torque.

- Pipes must be connected with the appropriate torque to prevent air leakages and screw damage. First tighten the screw by hand to prevent damage to screw threads, then use a tool. Check that the tool's hexagon face and wrench are the correct size.

(Reference value)

Set screw	Tightening torque N·m
R1/8	3 to 5
R1/4	6 to 8
R3/8	13 to 15
R1/2	16 to 18

* The above values apply when the mating screw is JISB0203 tapered female thread for piping. (material: C3604BD)

- Pipe so that piping connection does not deviate by the device's movement, vibration, tension, etc.

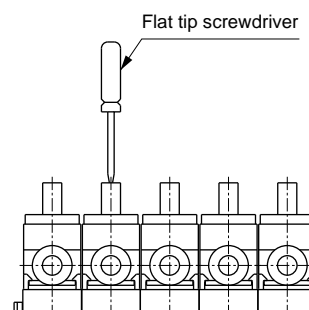
- Control of actuator speed will be disabled if piping on the exhaust side of the pneumatic circuit is disengaged.
- When using the chuck holding mechanism, the chuck will be released creating a hazardous state.
- Confirm that the tube has been inserted properly, and make sure that there is no tension during use. The tube could be dislocated or damaged if there is any tension.

- Make sure that the joint and tube are not twisted or pulled, and that moment load is not applied.

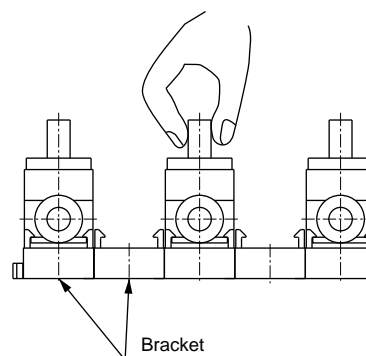
- Do not tighten while pressure is applied.

- When using a urethane rubber tube (U-95**, NU-**) for a vacuum, use an insert ring.

- If the manifolds are installed with a priority on space, it may be difficult to operate the valve manually. Operate by inserting a screwdriver, etc., into the slot on the top of the dial.



- If manifolds are installed with priority on manual operation, valves can be operated easily by installing valves in every other space.



MN3E0
MN4E0

4GA/B

M4GA/B

MN4GA/B

4GA/B
(Master)

W4GA/B2

W4GB4

MN3S0
MN4S0

4TB

4L2-4/
LMF0

4SA/B0

4SA/B1

4KA/B

4F

PV5G/
CMF

PV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F*0E

HMV
HSV

2QV
3QV

SKH

PCD/
FS/FD

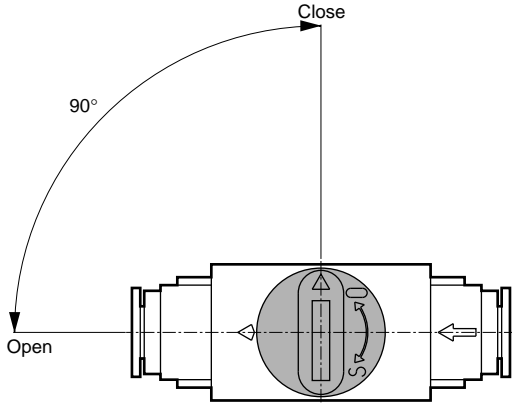
Ending

Quick exhaust valve

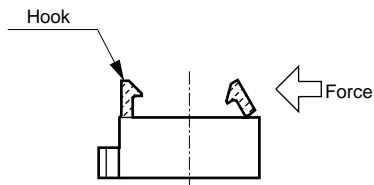
During Use & Maintenance

CAUTION

- This product's operation angle is 90°. Do not turn the product more than 90°.

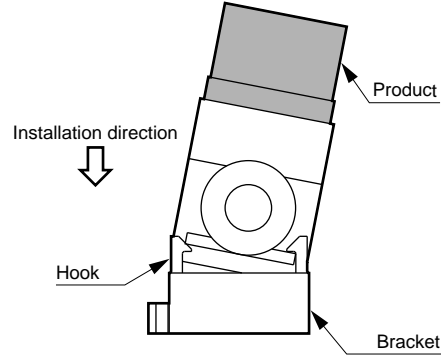


- The dedicated bracket's hooks can be damaged by external force. Use brackets correctly.

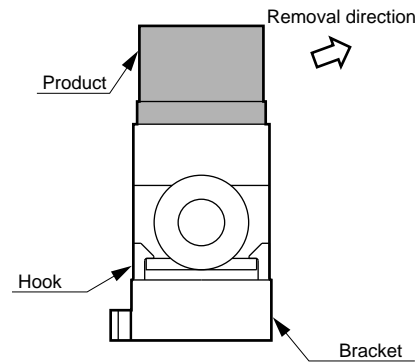


How to use bracket

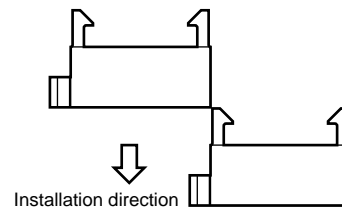
- (1) Fix the bracket before starting use. To mount, insert the product at a slant into the bracket, and then fit into hooks.



- (2) To remove the product, tilt it slightly to the side, and release one hook.



- (3) When mounting a manifold, interlock the project on the bracket into the other bracket's slot.



Quick exhaust valve

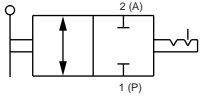
2QV/3QV Series

● Port size: Push-in joint $\varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 12, R1/8$ to $R1/2$

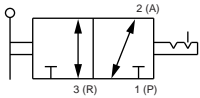


JIS symbol

● 2QV



● 3QV



Specifications

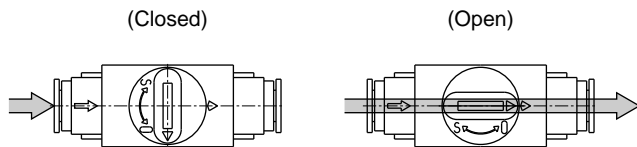
Descriptions	2QV/3QV
Working fluid	Air
Max. working pressure MPa	1.0
Min. working pressure kPa	-100 (Note 1)
Withstanding pressure MPa	1.5
Fluid temperature °C	0 to 60
Ambient temperature °C	0 to 60
Switching angle °	90
Applicable tube	Soft nylon tube (tube F-15**) Urethane tube (tube U-95**and NU-**))
Installation attitude	Free

Note 1: When using urethane tube (U-95**, NU-**) for vacuum, use an insert ring.

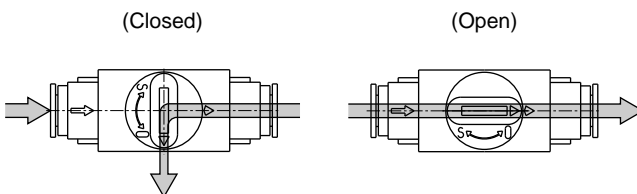
Note 2: Lubricant is used, so oil-prohibited specifications are not available.

Operational explanation

● 2-port valve (2QV Series)

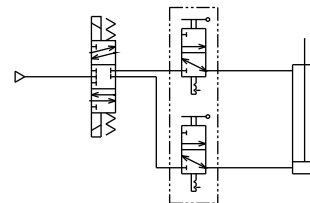


● 3-port valve (3QV Series)



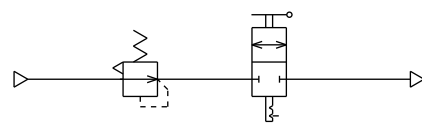
Applications

● Shut-off valve of air cylinder circuit



Quick exhaust valve (3QV)

● Stop valve of air blow circuit



Quick exhaust valve (2QV)

Clean room specifications (catalog No. CB-033SA)

● Dust generation preventing structure for use in cleanrooms

2QV- - P70

How to order

● Quick exhaust valve

2 QV - 04-04

A Valve type

B Port size (P port) - (A port)

Symbol		Descriptions		
A Valve type				
2		2 way valve		
3		3 way valve		
B Port size (P port) - (A port)				
		IN side	OUT side	Bracket *
Standard	04-04	Push-in joint ø4	Push-in joint ø4	2QV-P1
	06-06	Push-in joint ø6	Push-in joint ø6	
	08S-08S	Push-in joint ø8	Push-in joint ø8	
	08-08	Push-in joint ø8	Push-in joint ø8	2QV-P2
	10-10	Push-in joint ø10	Push-in joint ø10	
	12-12	Push-in joint ø12	Push-in joint ø12	
Option	6A-04	R1/8	Push-in joint ø4	2QV-P1
	6A-06	R1/8	Push-in joint ø6	
	8A-06	R1/4	Push-in joint ø6	
	8A-08S	R1/4	Push-in joint ø8	2QV-P2
	10A-08	R3/8	Push-in joint ø8	
	10A-10	R3/8	Push-in joint ø10	
	15A-10	R1/2	Push-in joint ø10	2QV-P2
	15A-12	R1/2	Push-in joint ø12	
	04-6A	Push-in joint ø4	R1/8	
	06-6A	Push-in joint ø6	R1/8	
	06-8A	Push-in joint ø6	R1/4	
	08S-8A	Push-in joint ø8	R1/4	2QV-P2
	08-10A	Push-in joint ø8	R3/8	
	10-10A	Push-in joint ø10	R3/8	
	10-15A	Push-in joint ø10	R1/2	2QV-P2
12-15A	Push-in joint ø12	R1/2		
6A-6A	R1/8	R1/8	2QV-P1	
8A-8A	R1/4	R1/4		
10A-10A	R3/8	R3/8		
15A-15A	R1/2	R1/2	2QV-P2	

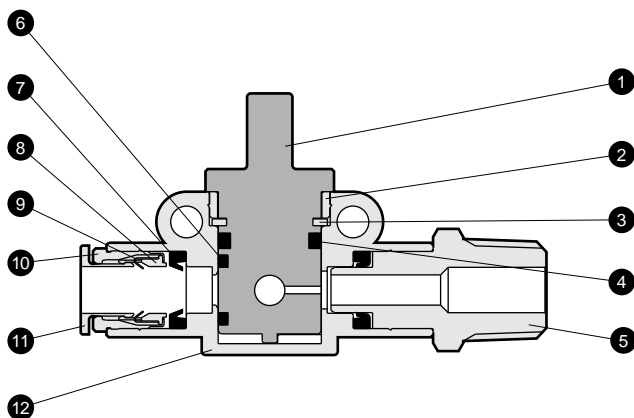
* Bracket is common for 2 and 3 port valves.

* Note that brackets differ depending on the body size.

Internal structure and parts list



Select the reverse regulator (R*100) or reverse filter regulator (W*100) when installing the 3QV on the primary side of the regulator or filter regulator.



Parts list

No.	Parts name	Material
1	Rotary shaft	PBT (UL94V-0 or equivalent)
2	Stopper	Brass (electroless nickeling treatment) *1
		Stainless steel *2
3	Ring	Steel *1
		Stainless steel *2
4	O ring	Nitrile rubber
5	Nipple	Brass (electroless nickeling treatment)
6	O ring	Nitrile rubber
7	Packing seal	Nitrile rubber
8	Chuck holder	Polyacetal
9	Chuck	Stainless steel
10	Outer ring	Brass (electroless nickeling treatment)
11	Push ring	PBT (UL94V-0 or equivalent)
12	Body	PBT (UL94V-0 or equivalent)

*1: Material for model having A dimensions "18" in the dimension drawing.

*2: Material for model having A dimensions "22" in the dimension drawing.

MN3E0
MN4E0

4GA/B

M4GA/B

MN4GA/B

4GA/B
(Master)

W4GA/B2

W4GB4

MN3S0
MN4S0

4TB

4L2-4/
LMF0

4SA/B0

4SA/B1

4KA/B

4F

PV5G/
CMF

PV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F*OE

HMV
HSV

2QV
3QV

SKH

PCD/
FS/FD

Ending

Quick exhaust valve

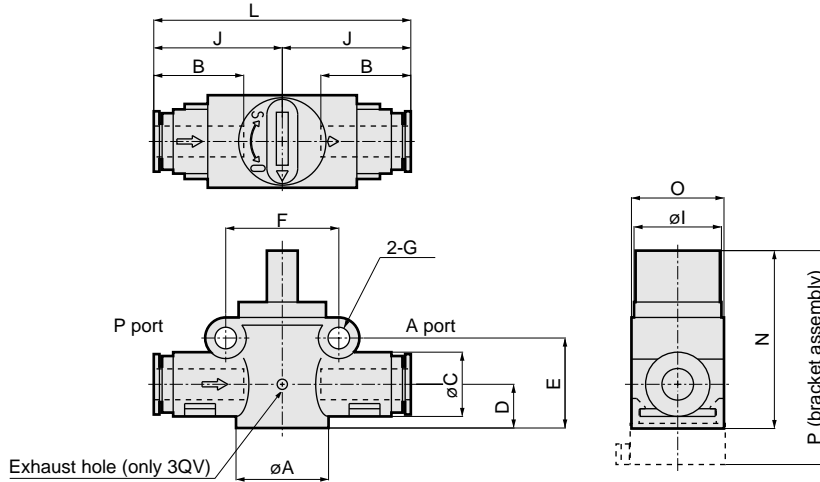
2QV/3QV Series

Dimensions



● Port size

· P port (push-in joint) · A port (push-in joint)

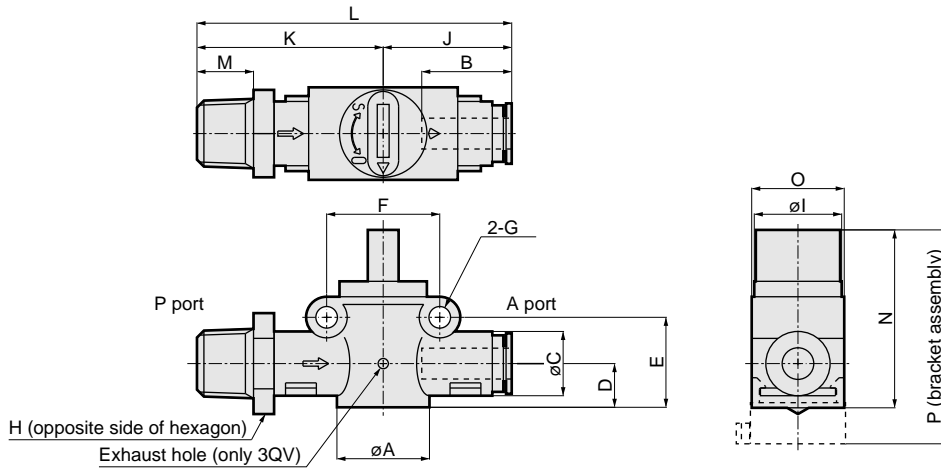


Applicable tube O.D. (mm)	Model no.	A	B	C	D	E	F	G	I	J	L	N	O	P	Weight (g)	Effective sectional area (mm ²)	
																P port	A port
4KA/B	$\frac{2}{3}$ QV-04-04	18	16	12.5	8.5	17.5	22	4.2	17	25	50	34.5	18	41.5	20	4.2	1.8
	$\frac{2}{3}$ QV-06-06		17.5													21	
4F	$\frac{2}{3}$ QV-08S-08S	18	19	14.5	10.7	22.8	26.5	4.2	17	26.5	53	39.8	22	46.8	23	10.2	4.0
	$\frac{2}{3}$ QV-08-08		19													34	
PV5G/CMF	$\frac{2}{3}$ QV-10-10	22	21.5	17.5	10.7	22.8	26.5	4.2	17	31.5	63	39.8	22	46.8	35	22.5	4.0
	$\frac{2}{3}$ QV-12-12		23													38	

* Tolerance of effective sectional area is ±10%.

● Port size

· P port (male thread) · A port (push-in joint)



Set screw R	Applicable tube O.D. (mm)	Model no.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight (g)	Effective sectional area (mm ²)	
																				P port	A port
1/8	ø4	$\frac{2}{3}$ QV-6A-04	18	16	12.5	8.5	17.5	22	4.2	14	17	25	33.5	58.5	8	34.5	18	41.5	26	4.2	1.8
				$\frac{2}{3}$ QV-6A-06																17.5	
1/4	ø6	$\frac{2}{3}$ QV-8A-06	18	19	14.5	10.7	22.8	26.5	4.2	17	17	26.5	38	64.5	11	39.8	22	46.8	35	9.3	4.0
1/4	ø8	$\frac{2}{3}$ QV-8A-08S																		19	
3/8	ø8	$\frac{2}{3}$ QV-10A-08	22	19	17.5	10.7	22.8	26.5	4.2	17	17	31.5	44.5	76	12	39.8	22	46.8	57	16.3	4.0
3/8	ø10	$\frac{2}{3}$ QV-10A-10																		19	
1/2	ø10	$\frac{2}{3}$ QV-15A-10	22	21.5	20.0	10.7	22.8	26.5	4.2	22	17	47.5	79	15	39.8	22	46.8	76	21.4	4.0	
1/2	ø12	$\frac{2}{3}$ QV-15A-12																	33		82

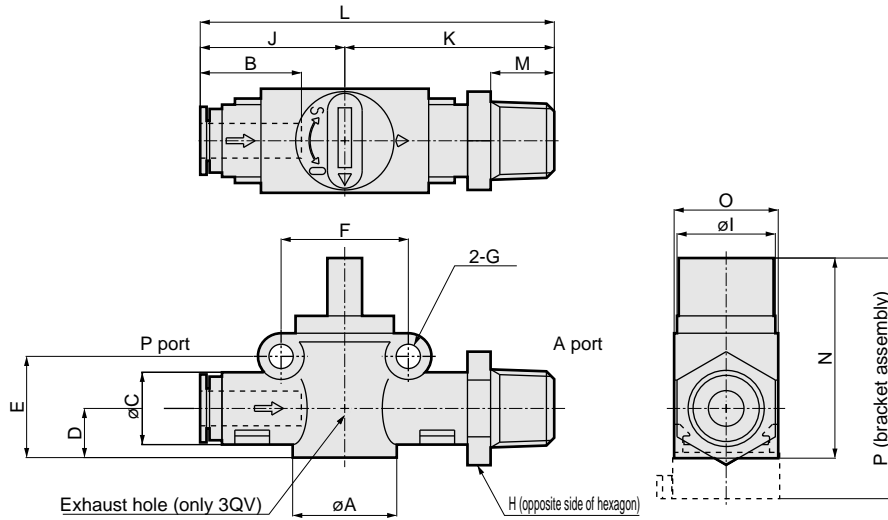
* Tolerance of effective sectional area is ±10%.

Dimensions



● Port size

· P port (push-in joint) · A port (male thread)

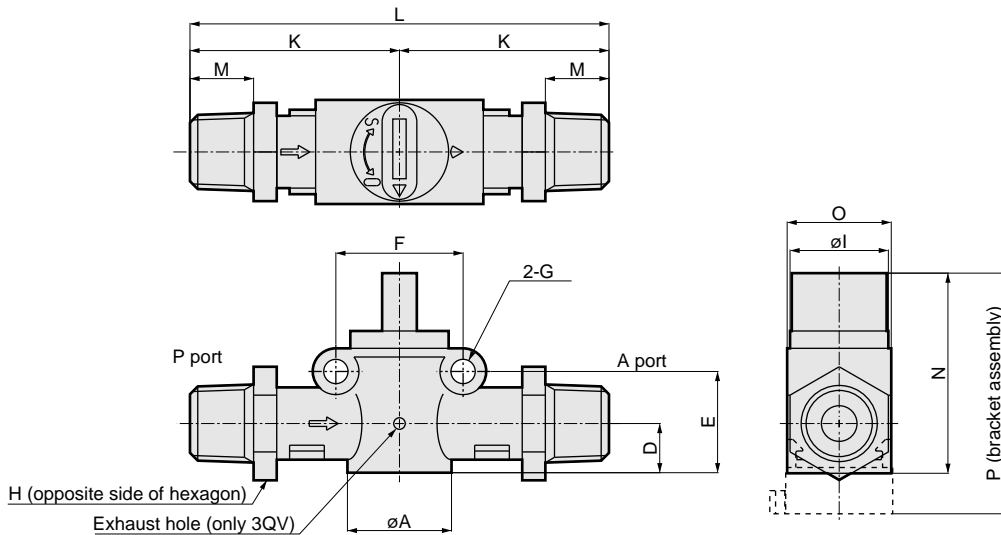


Applicable tube O.D. (mm)	Set screw R		Model no.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight (g)	Effective sectional area (mm ²)		
	P port	A port																			P → A	A → R	
ø4	1/8	2/3	QV-04-6A	18	16	12.5	8.5	17.5	22	4.2	14	17	25	33.5	58.5	8	34.5	18	41.5	26	3.5	1.8	
			QV-06-6A																		32		9.3
		QV-06-8A	35		9.3																		
		QV-08S-8A	40		10.2																		
	1/4	2/3	QV-08-10A	22	19	17.5	10.7	22.8	26.5	4.2	17	17	17	26.5	38	64.5	11	39.8	22	46.8	57		15.8
			QV-10-10A																				63
		QV-10-15A	76		21.4																		
		QV-12-15A	85		21.4																		

* Tolerance of effective sectional area is ±10%.

● Port size

· P port (male thread) · A port (male thread)



Set screw R		Model no.	A	D	E	F	G	H	I	K	L	M	N	O	P	Weight (g)	Effective sectional area (mm ²)			
P port	A port																P → A	A → R		
1/8	1/8	QV-6A-6A	18	8.5	17.5	22	4.2	14	17	33.5	67	8	34.5	18	41.5	42	9.5	1.8		
		QV-8A-8A															48		9.5	
	3/8	3/8		QV-10A-10A	22	10.7	22.8	26.5	4.2	19	17	44.5	89	12	39.8	22	46.8		90	21.4
				QV-15A-15A																116

* Tolerance of effective sectional area is ±10%.

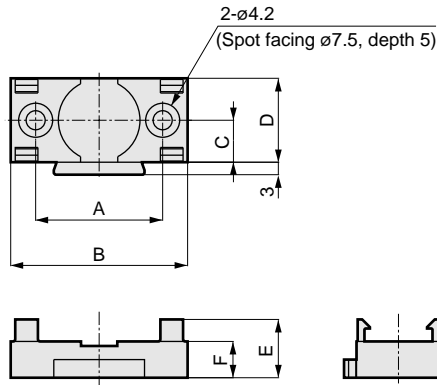
MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/
LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/
CMF
PV5/
CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/
NVP
4F*0E
HNV
HSV
2QV
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SKH
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Ending

Quick exhaust valve

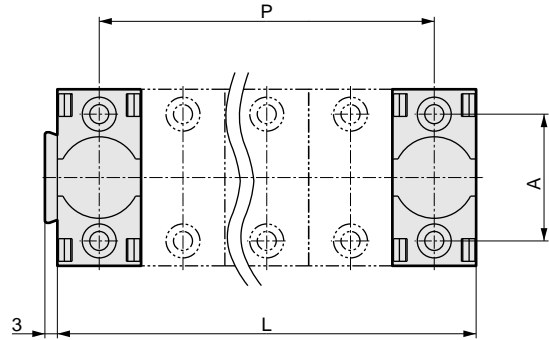
Dimensions



● Bracket



● Manifold mounting pitch dimension



Model no.	A	B	C	D	E	F	P	L	A dimension
2QV-P1	28	39	9.25	18.5	13	8	D × (n-1)	D × n	18
2QV-P2	32	44	11.25	22.5	12.5	8			22

n = station number

Guide for custom order

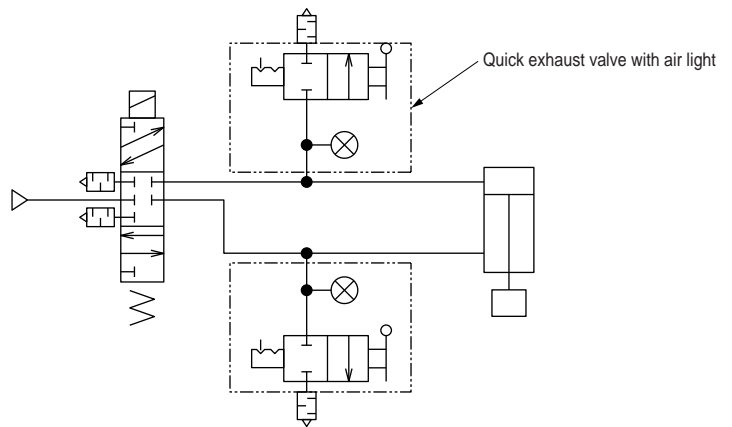
A quick valve with air lamp is available as a customized order part. Contact CKD for details.
 Note: This type is not available to ø12 size.

Specifications

Descriptions	Air light
Working fluid	Air
Working pressure range MPa	0.05 to 0.8
Fluid temperature °C	0 to 60
Ambient temperature °C	0 to 60
Display color	Red/green

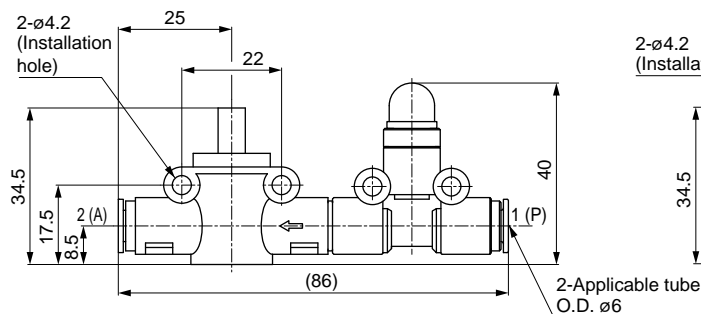
Applications

- Cylinder residual pressure exhaust

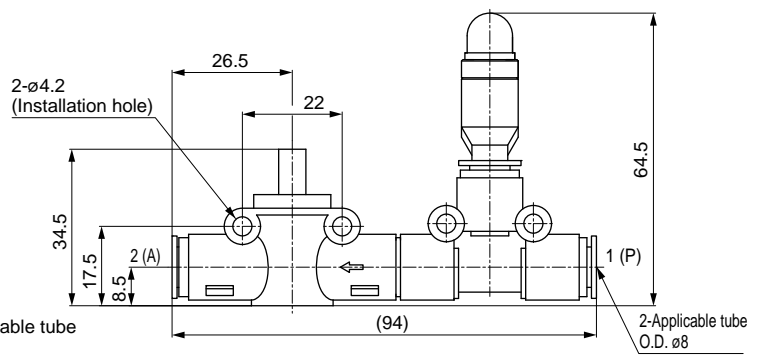


Example of assembly

● For 2QV-06-06 with air indicator light



● For 2QV-08-08 with air indicator light



● The 3QV-06 to 10 types with air lamp are available. Contact CKD for details.