

KOGANEI

Air Valve

CHECK VALVE with QJ

INSTRUCTION MANUAL Ver.1.0

Safety Precautions (Check Valves)

The following is a safety precaution to Check Valves. For other safety precautions, be sure to read the precautions on p.31.

Warning

- High switching frequency operations could cause the valve body to heat up, leading to the risk of a burn if the body is touched. For applications involving high frequency operations, consult us.

Handling Instructions and Precautions

● Mounting

Precautions for mounting the body

1. To mount the body, use a suitable tool to tighten it on the outer hexagonal sections of the body.
2. When tightening body thread, tighten to the recommended tightening torque shown in the table below. Tightening to more than the recommended torque could result in broken thread sections or air leaks due to deformed gaskets. Tightening to less than the recommended torque could lead to loose body thread or air leaks.

Recommended tightening torque

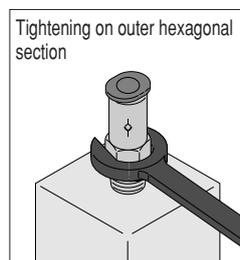
Thread type	Thread	Tightening torque
Metric thread	M5×0.8	1.5~1.9N·m(15.3~19.37kgf·cm) [1.11~1.40ft·lbf]
	M6×1	2~2.7N·m(20.4~27.53kgf·cm) [1.48~1.99ft·lbf]
Taper pipe thread	R1/8	7~9N·m(71.38~91.77kgf·cm) [5.16~6.64ft·lbf]
	R1/4	12~14N·m(122.37~142.76kgf·cm) [8.85~10.3ft·lbf]
	R3/8	22~24N·m(224.34~244.73kgf·cm) [16.2~17.7ft·lbf]
	R1/2	28~30N·m(285.52~305.92kgf·cm) [20.7~22.1ft·lbf]

Precautions for disconnecting the body

1. To disconnect the body, use a suitable tool to loosen it on the outer hexagonal section of the body.
2. Clean off the sealant coating on the thread of the removed mating part. The coated sealant could enter other relating parts, and cause breakdowns.

Method for tightening body thread

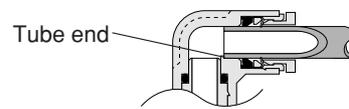
1. Tightening body thread
For tightening body thread, use a wrench on outer hexagonal section. (For details, see the text.)



● Tube connection and disconnection

Precautions for connecting the tube

1. Check that the cut section of the tube has been cut at straight angle, that the outer surface of the tube is not scratched, and that the tube has not become oval shaped.
2. When connecting a tube, failure to insert the tube all the way to the end could result in air leaks.



3. After connection, pull the tube to check that it will not disconnect.

Precautions for disconnecting the tube

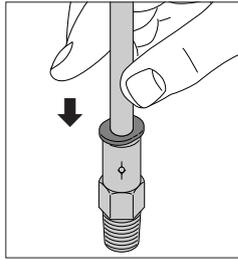
1. Before disconnecting a tube, check that the pressure inside the tube is down to zero.
2. Push the release ring evenly all the way to the end, and then pull the tube out. An insufficient push could make it impossible to pull out the tube, or could scratch the tube, leaving scratched tube material inside the fitting.

Handling Instructions and Precautions

Tube connection and disconnection method

1. Tube connection

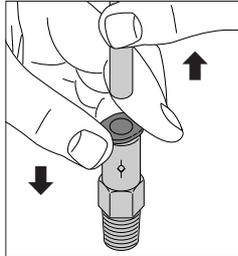
The Check Valve is equipped with a lock claw that holds the tube in place when it has been pushed all the way to the end, and with an elastic sleeve for sealing the tube periphery.



2. Tube disconnection

To disconnect the tube, first push on the release ring, releasing the lock claw, and then pull out the tube.

Always stop the air supply before removing the tube.



For cases where tight or cramped piping spaces hinder tube removal operations, a special tool is available. Consult us for details.

Special tool for tube removal

For $\phi 3$, $\phi 4$ and $\phi 6$ tubes

Order code : **UJ-1**



For $\phi 6$, $\phi 8$, $\phi 10$ and $\phi 12$ tubes

Order code : **UJ-2**



● Usable tubes

Either nylon or urethane tubes can be used. The tube outer diameter accuracy should be, for nylon tubes, within $\pm 0.1\text{mm}$ [$\pm 0.004\text{in.}$] of the nominal dimensions, and for urethane tubes, within $\pm 0.15\text{mm}$ [$\pm 0.006\text{in.}$] of the nominal dimensions, while the ovalness (difference between long diameter and short diameter) should be within 0.2 mm [0.008in.].

- Cautions:**
1. Use tubes with no visible scratches on the outer surface. If a scratch is made during repeated use, cut off the scratched section.
 2. Do not bend or twist the tube too much near the connection to the fitting. It could result in air leaks. The minimum bending radius for nylon tubes is as shown in the table below.

mm [in.]

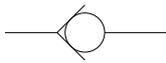
Tube size	Minimum bending radius
$\phi 4$ [0.16]	20 [0.8]
$\phi 6$ [0.24]	30 [1.2]
$\phi 8$ [0.31]	50 [2.0]
$\phi 10$ [0.39]	80 [3.2]
$\phi 12$ [0.47]	150 [5.9]

CHECK VALVES

- These are check valves that prevent the media's reverse flow against the flow direction.
- Built-in quick fitting simplifies plumbing. Optimum for compact piping.

- Superior rust-proof electroless nickel plating is standard specification.

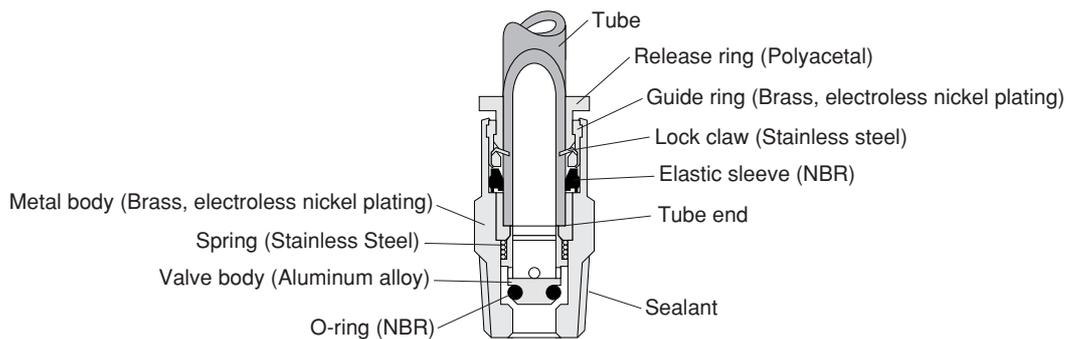
Symbol



Specifications

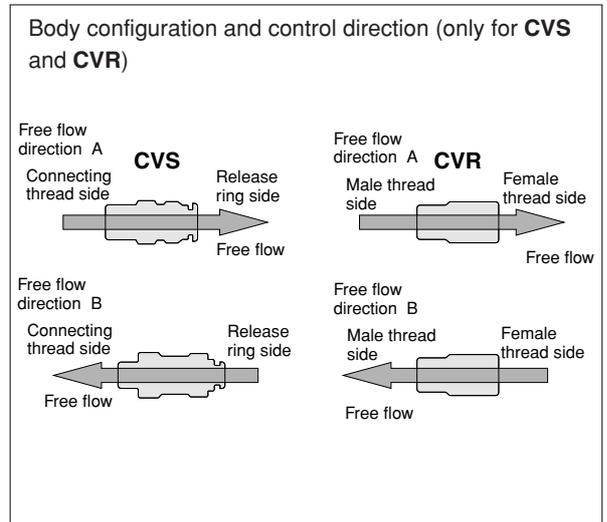
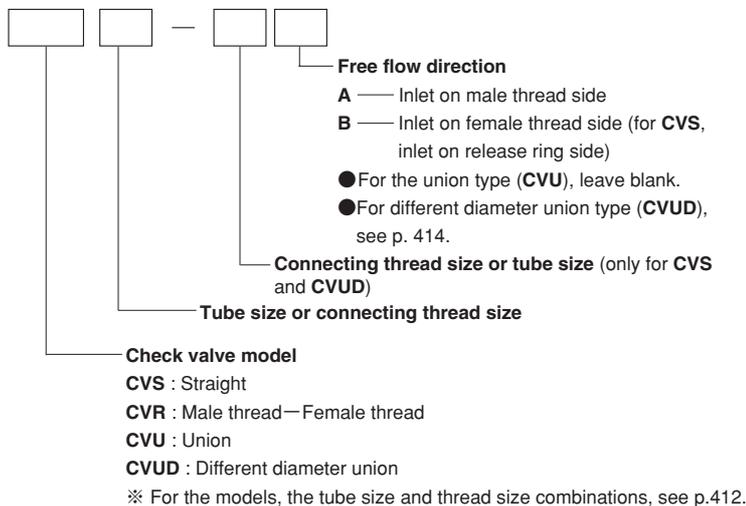
Media	Air
Operating pressure range	0~0.9MPa {0~9.2kgf/cm ² } [0~131psi.]
Cracking pressure	0.01MPa {0.1kgf/cm ² } [1.5psi.]
Operating vacuum pressure	-100kPa {-750mmHg} [-14.5psi.]
Operating temperature range	0~60°C [32~140°F]
Recommended tube	Nylon tube, urethane tube
Sales unit	1 pc.

Inner Construction, Major Parts and Materials



Note: Some models may be aluminum. See p.412.

Order Code



- For the NCU and non-lubricant specifications, see p.415.

● **CVS** Straight 413



Tube size	Thread size					
	M5X0.8	M6X1	R1/8	R1/4	R3/8	R1/2
4	M5	M6	01	—	—	—
6	—	—	01	02	—	—
8	—	—	01	02	—	—
10	—	—	—	—	03	04
12	—	—	—	—	03	04

Parts	Tube size	Materials
Metal body	4,6,8	Brass (nickel plated)
	10,12	Aluminum

Model sample : **CVS6-02A**

● **CVR** Male thread — Female thread 413



Thread size R, Rc	
1/8	01
1/4	02
3/8	03
1/2	04

Parts	Thread size	Materials
Metal body	1/8,1/4	Brass (nickel plated)
	3/8,1/2	Aluminum

Model sample : **CVR02-A**

● **CVU** Union 414



Tube size
4
6
8
10
12

Parts	Materials
Metal body	Aluminum

Model sample : **CVU8**

● **CVUD** Different diameter union 414



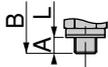
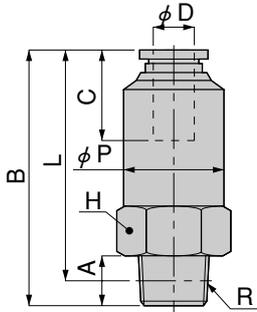
Tube size
12-10
10-12

Parts	Materials
Metal body	Aluminum

Model sample : **CVUD12-10A**

Dimensions (mm)

Straight CVS

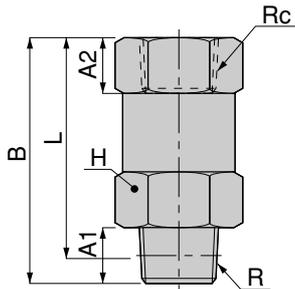


Metric thread type

Model	Tube outer diameter ϕD	R	A	B	L ^{Note1}	ϕP	C	Width across flats H	Effective area (mm ²)	Mass (g) [oz.]
CVS4-M5 <input type="checkbox"/>	4	M5X0.8	3	27.8	24.8	8	10.9	8	2.5	7.2 [0.25]
CVS4-M6 <input type="checkbox"/>		M6X1	3.9	28.8	24.9				2.7	7.4 [0.26]
CVS4-01 <input type="checkbox"/>		R1/8	8	23.9	19.9	9		10	11 [0.39]	
CVS6-01 <input type="checkbox"/>	6	R1/8	8	29	25	10	11.7	10	6.8	11 [0.39]
CVS6-02 <input type="checkbox"/>		R1/4	11		23					12
CVS8-01 <input type="checkbox"/>	8	R1/8	8	35.5	31.5	13.5	18.2	14	6.8	22 [0.78]
CVS8-02 <input type="checkbox"/>		R1/4	11	39.2	33.2				15.5	24 [0.85]
CVS10-03 <input type="checkbox"/>	10	R3/8	12	61.7	55.4	25	20.7	24	35	47 [1.66]
CVS10-04 <input type="checkbox"/>		R1/2	15	68.2	60				28	39
CVS12-03 <input type="checkbox"/>	12	R3/8	12	64.3	58	25	23.3	24	50	50 [1.76]
CVS12-04 <input type="checkbox"/>		R1/2	15	70.8	62.6				28	53

Notes: 1. The L dimensions for the taper thread type are the reference dimensions after the fittings are assembled.
 2. In the blank box shown at the end of the model order code, enter **A** for inlet on male thread side and **B** for outlet on male thread side.

Male thread — Female thread CVR



Model	R	Rc	A1	A2	B	L ^{Note1}	Width across flats H	Effective area (mm ²)	Mass (g) [oz.]
CVR01 <input type="checkbox"/>	R1/8	Rc1/8	8	8.5	26.3	22.3	14	6.8	22 [0.78]
CVR02 <input type="checkbox"/>	R1/4	Rc1/4	11	11	33	27	17	15.5	37 [1.31]
CVR03 <input type="checkbox"/>	R3/8	Rc3/8	12	12	52	45.7	24	52	38 [1.34]
CVR04 <input type="checkbox"/>	R1/2	Rc1/2	15	15	62	53.8	27	78	57 [2.01]

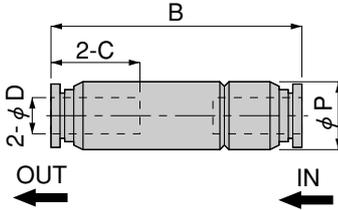
Notes: 1. The L dimensions for the taper thread type are the reference dimensions after the fittings are assembled.
 2. In the blank box shown at the end of the model order code, enter **A** for inlet on male thread side and **B** for outlet on male thread side.

Dimensions (mm)

Union CVU



Model	Tube outer diameter ϕ D	B	ϕ P	C	Effective area (mm ²)	Mass (g) [oz.]
CVU4	4	33.6	9	10.9	2.7	5.3 [0.19]
CVU6	6	38.2	12	11.7	6.8	10 [0.35]
CVU8	8	54.9	15	18.2	15.5	21 [0.74]
CVU10	10	73.4	25	20.7	32	63 [2.22]
CVU12	12	78.6	25	23.3	46	69 [2.43]



Different diameter union CVUD

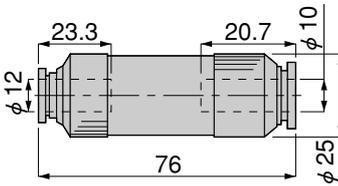


Model	Effective area (mm ²)	Mass (g) [oz.]
CVUD12-10□	36	65 [2.29]

Note: In the case of ϕ 12 inlet, enter **A** into the open box in the model code, and for ϕ 12 outlet, enter **B**.
Also, the air flow direction is as shown below.

For **A** : Tube size ϕ 12→10

For **B** : Tube size ϕ 10→12



CHECK VALVES

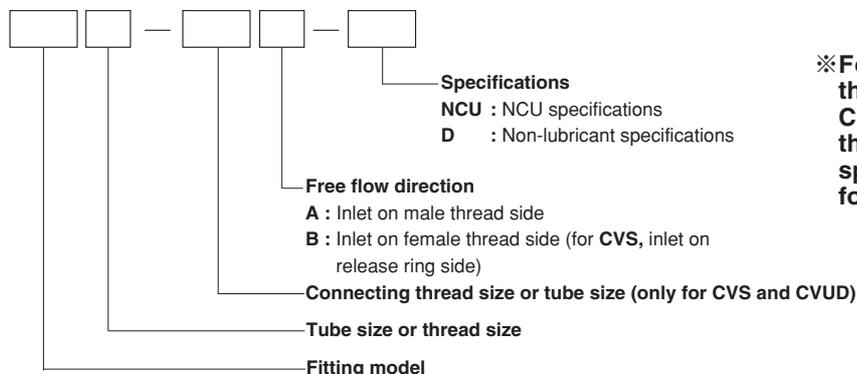
NCU Specifications and Non-lubricant Specifications

- For specifications, see p.411.
- The dimensions, inner construction, major parts and materials for the **NCU** specifications and non-lubricant specifications shown below are the same as the standard type. See inner construction, major parts and materials on p.411 and dimensions on p. 413~414.
The sealant is not applied to the R taper thread section of the **NCU** specifications.

Caution: For delivery times, consult us.

NCU Specifications and Non-lubricant Specifications

● Order Code



※For the fitting models, the tube size and thread combinations, see the table below. Columns showing the “←” symbol indicate that standard parts can be used for the NCU specifications. In these cases, place orders for the standard parts.

● Model Table (NCU Specifications)

Parts	Tube outer diameter	Thread	Standard type model (reference)	NCU specification model
Straight CVS	4	M5×0.8	CVS4-M5A	←
			CVS4-M5B	←
		M6×1	CVS4-M6A	←
			CVS4-M6B	←
		R1/8	CVS4-01A	CVS4-01A-NCU
			CVS4-01B	CVS4-01B-NCU
	6	R1/8	CVS6-01A	CVS6-01A-NCU
			CVS6-01B	CVS6-01B-NCU
		R1/4	CVS6-02A	CVS6-02A-NCU
			CVS6-02B	CVS6-02B-NCU
	8	R1/8	CVS8-01A	CVS8-01A-NCU
			CVS8-01B	CVS8-01B-NCU
		R1/4	CVS8-02A	CVS8-02A-NCU
			CVS8-02B	CVS8-02B-NCU
	10	R3/8	CVS10-03A	CVS10-03A-NCU
			CVS10-03B	CVS10-03B-NCU
		R1/2	CVS10-04A	CVS10-04A-NCU
			CVS10-04B	CVS10-04B-NCU
	12	R3/8	CVS12-03A	CVS12-03A-NCU
			CVS12-03B	CVS12-03B-NCU
R1/2		CVS12-04A	CVS12-04A-NCU	
		CVS12-04B	CVS12-04B-NCU	
Male thread — Female thread CVR	—	R1/8,Rc1/8	CVR01A	CVR01A-NCU
			CVR01B	CVR01B-NCU
	—	R1/4,Rc1/4	CVR02A	CVR02A-NCU
			CVR02B	CVR02B-NCU
	—	R3/8,Rc3/8	CVR03A	CVR03A-NCU
			CVR03B	CVR03B-NCU
	—	R1/2,Rc1/2	CVR04A	CVR04A-NCU
			CVR04B	CVR04B-NCU
Union CVU	4	—	CVU4	←
	6	—	CVU6	←
	8	—	CVU8	←
	10	—	CVU10	←
	12	—	CVU12	←
Different diameter union CVUD	12-10	—	CVUD12-10A	←
	10-12	—	CVUD12-10B	←

● Model Table (Non-lubricant Specifications)

Parts	Tube outer diameter	Thread	Standard type model (reference)	Non-lubricant specification model
Straight CVS	4	M5×0.8	CVS4-M5A	CVS4-M5A-D
			CVS4-M5B	CVS4-M5B-D
		M6×1	CVS4-M6A	CVS4-M6A-D
			CVS4-M6B	CVS4-M6B-D
		R1/8	CVS4-01A	CVS4-01A-D
			CVS4-01B	CVS4-01B-D
	6	R1/8	CVS6-01A	CVS6-01A-D
			CVS6-01B	CVS6-01B-D
		R1/4	CVS6-02A	CVS6-02A-D
			CVS6-02B	CVS6-02B-D
	8	R1/8	CVS8-01A	CVS8-01A-D
			CVS8-01B	CVS8-01B-D
		R1/4	CVS8-02A	CVS8-02A-D
			CVS8-02B	CVS8-02B-D
	10	R3/8	CVS10-03A	CVS10-03A-D
			CVS10-03B	CVS10-03B-D
		R1/2	CVS10-04A	CVS10-04A-D
			CVS10-04B	CVS10-04B-D
	12	R3/8	CVS12-03A	CVS12-03A-D
			CVS12-03B	CVS12-03B-D
R1/2		CVS12-04A	CVS12-04A-D	
		CVS12-04B	CVS12-04B-D	
Male thread — Female thread CVR	—	R1/8,Rc1/8	CVR01A	CVR01A-D
			CVR01B	CVR01B-D
	—	R1/4,Rc1/4	CVR02A	CVR02A-D
			CVR02B	CVR02B-D
	—	R3/8,Rc3/8	CVR03A	CVR03A-D
			CVR03B	CVR03B-D
	—	R1/2,Rc1/2	CVR04A	CVR04A-D
			CVR04B	CVR04B-D
Union CVU	4	—	CVU4	CVU4-D
	6	—	CVU6	CVU6-D
	8	—	CVU8	CVU8-D
	10	—	CVU10	CVU10-D
	12	—	CVU12	CVU12-D
Different diameter union CVUD	12-10	—	CVUD12-10A	CVUD12-10A-D
	10-12	—	CVUD12-10B	CVUD12-10B-D