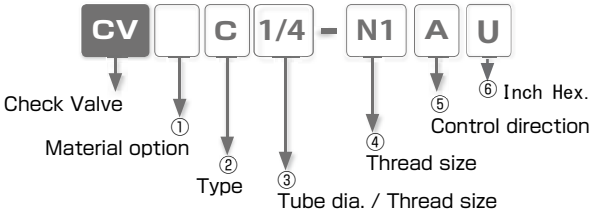
Back Flow Preventing Valve with Push-In Fitting

Check Valve Series

- *Back Flow Prevention. Keep Pressure in Outlet Side.*
- *Ideal for Vacuum Retention or Low-Pressure Application.*
- *Body of in-line type is made of aluminum.*
- *Low-cost and Lightweight Resin Type available.*

Visit the site for the dimensions and the details about
Low Cracking Pressure Check Valve
SUS304 PP Water Use Check Valve

■ Model Designation (Example)



① Material option

No code : Metal type

P : Resin type (Only available for CVC and CVU with tube dia. 4/6/8mm and CVF Rc1/8 and Rc1/4)

※. Material of Bush type (CVPF) body is metal and Poppet is resin.

② Type

Code	Type	Code	Type	Code	Type	Code	Type
C	Straight	U	In-Line Straight	G	In-Line Reducer	F	Bush

③ Tube dia. / Thread size

Connection	Tube dia.					Taper pipe thread (Male)			
Code	5/32	1/4	5/16	3/8	1/2	N1	N2	N3	N4
Size (inch)	5/32"	1/4"	5/16"	3/8"	1/2"	1/8NPT	1/4NPT	3/8NPT	1/2NPT

Code	4	6	8	10	12	01	02	03	04
Size (mm)	ø4	ø6	ø8	ø10	ø12	R1/8	R1/4	R3/8	R1/2

※ R thread is same as BSPT

④ Thread size (※. Female threads are for CVF, CVPF types only)

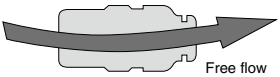
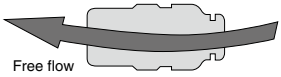
Connection	Tube dia.					UNF thread	Taper pipe thread (Male or Female)			
Code	5/32	1/4	5/16	3/8	1/2	U10	N1	N2	N3	N4
Size (inch)	5/32"	1/4"	5/16"	3/8"	1/2"	10-32UNF	1/8NPT	1/4NPT	3/8NPT	1/2NPT

Metric

Code	4	6	8	10	12	M5	M6	01	02	03	04
Size (mm)	ø4	ø6	ø8	ø10	ø12	M5X0.8	M6 X 1	R1/8	R1/4	R3/8	R1/2
								Rc1/8	Rc1/4	Rc3/8	Rc1/2

※ R thread is same as BSPT

⑤ Control direction (※. No entry for In-line straight type "U")

Code	A	B
Control direction	Inlet on male thread	Outlet on male thread
		

⑥ Wrench Size

U : inch wrench spec. (NPT and UNF thread), not applied to CVPC models

No Code : metric wrench spec.(all CVPC models and metric thread models)

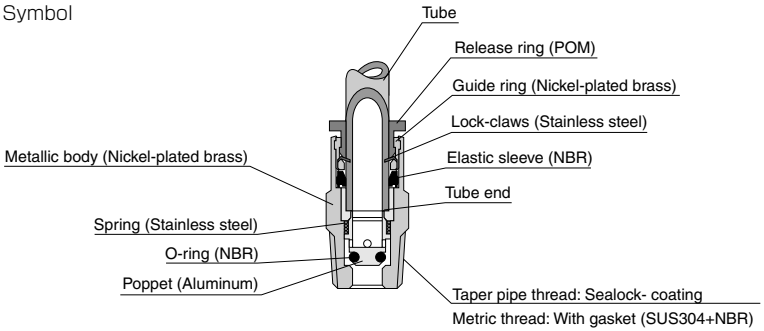
Specifications

Fluid medium	Air
Operating pressure range	-29.5 inHg ~130psi (-0.1 ~ 0.9 MPa)
Opening pressure	1.45psi (0.01MPa)
Max. vacuum	-29.5 in. Hg (-100kPa)
Operating temp. range	32 ~ 140°F (0 ~ 60°C) (no freezing)

※ Opening pressure is the initial pressure on the secondary side when the pressure is applied from free flow side.

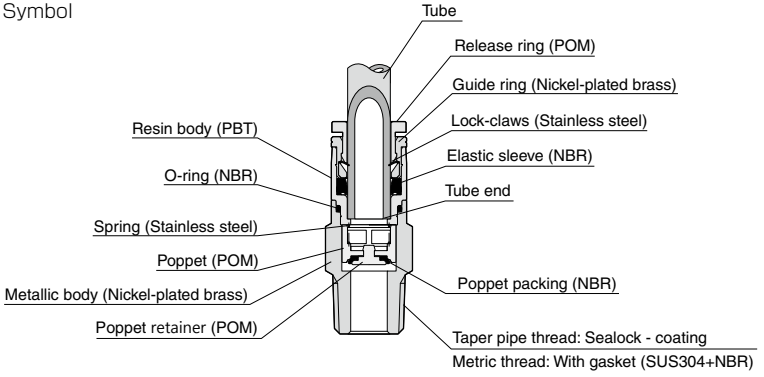
Construction (Metal type straight: CVC)

Symbol



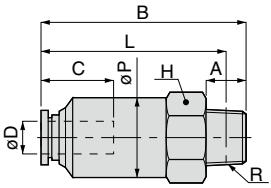
Construction (Resin type straight: CVPC)

Symbol



Check Valve Series

CVC Straight



Unified or Metric thread type

❖ NPT, UNF thread

Unit：inch

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	Hex. H	CAD file name
CVC5/32-U10□U	5/32	10-32 UNF	0.14	1.10	0.96	0.31	0.43	5/16	CVC5_32-U10_U
CVC5/32-N1□U		1/8 NPT	0.31	0.94	0.79	0.35	0.43	7/16	CVC5_32-N1_U
CVC1/4-N1□U	1/4	1/8 NPT	0.31	1.14	0.98	0.39	0.47	7/16	CVC1_4-N1_U
CVC1/4-N2□U		1/4 NPT	0.43	1.14	0.91	0.47	0.47	9/16	CVC1_4-N2_U
CVC5/16-N1□U	5/16	1/8 NPT	0.31	1.40	1.24	0.53	0.73	9/16	CVC5_16-N1_U
CVC5/16-N2□U		1/4 NPT	0.43	1.56	1.32	0.53	0.73	9/16	CVC5_16-N2_U
CVC3/8-N3 □U*	3/8	3/8 NPT	0.47	2.44	2.19	0.98	0.83	1	CVC3_8-N3_U
CVC3/8-N4 □U*		1/2 NPT	0.59	2.74	2.38	1.10	0.83	1 1/8	CVC3_8-N4_U

Unit：mm

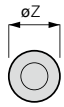
Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	Hex. H	Effective area (mm^2)	Weight (g)	CAD file name
CVC4-M5□	4	M5×0.8	3	27.8	24.8	8	10.9	8	2.5	7.2	CVC4-M5_
CVC4-M6□		M6×1	3.9	28.8	24.9				2.7	7.4	CVC4-M6_
CVC4-01□		R1/8	8	23.9	19.9	9		10		11	CVC4-01_
CVC6-01□	6	R1/8	8	29	25	10	11.7	10	6.8	11	CVC6-01_
CVC6-02□		R1/4	11		23	12		14		23	CVC6-02_
CVC8-01□	8	R1/8	8	35.5	31.5	13.5	18.2	14	6.8	22	CVC8-01_
CVC8-02□		R1/4	11	39.2	33.2				15.5	24	CVC8-02_
CVC10-03□*	10	R3/8	12	61.7	55.4	25	20.7	24	35	47	CVC10-03_
CVC10-04□*		R1/2	15	68.2	60	28		27	39	65	CVC10-04_
CVC12-03□*	12	R3/8	12	64.3	58	25	23.3	24	50	50	CVC12-03_
CVC12-04□*		R1/2	15	70.8	62.6	28		27	53	69	CVC12-04_

*Material for metallic body is aluminum.

※ 1. "L" is a reference value for height dimension after tightening taper thread.
※ 2. □ in Model code / Replaced with "A" for Inlet on male thread, "B" for Outlet on male thread

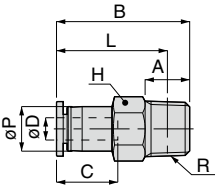
CVPC Straight (Resin type)

RoHS compliant



Release ring
Standard type
øD : 5/16"

Release ring
Mini type
øD : 5/32", 1/4"



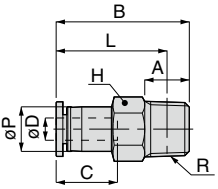
Unified thread type

Unit : mm

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	Hex. H	X	Y	øZ	Effective area (mm²)	Weight (g)
CVPC5/32-U10□	5/32"	10-32UNF	3	24.2	21.2	9	11	8	9.8	7.8	–	2.6	4.3
CVPC5/32-N1□		1/8NPT	8	23.9	19.8			12				2.7	9.8
CVPC1/4-N1□	1/4"	1/8NPT	8	30.7	26.6	11	11.4	12	11.8	9.8	–	7.2	12
CVPC1/4-N2□		1/4NPT	11	28	22.2			14				7.3	17
CVPC5/16-N1□	5/16"	1/8NPT	8	35.5	31.4	14	18.1	14	–	–	13.8	7.3	20

※ 1. "L" is a reference value for height dimension after tightening taper thread.
※ 2. □ in Model code / Replaced with "A" for Inlet on male thread, "B" for Outlet on male thread

Release ring
Mini type
øD : 4、6



Metric thread type

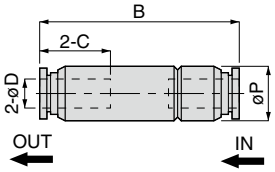
Unit : mm

Model code	Tube O.D. øD	R	A	B	L	øP	Tube end C	Hex. H	X	Y	Effective area (mm²)	Weight (g)	CAD file name
CVPC4-M5□	4	M5×0.8	3	24.2	21.2	9	11	8	9.8	7.8	2.6	4.3	CVPC4-M5_
CVPC4-M6□		M6×1	4	25.2							2.7	4.6	CVPC4-M6_
CVPC4-01□		R1/8	8	23.9	19.9			10				7.7	CVPC4-01_
CVPC6-01□	6	R1/8	8	30.5	26.5	11	11.4	10	11.8	9.8	7.2	9.0	CVPC6-01_
CVPC6-02□		R1/4	11	27.8	21.8			14			7.3	16.1	CVPC6-02_
CVPC8-01□	8	R1/8	8	35.5	31.5	14	18.1	14	–	–	7.3	19.3	CVPC8-01_
CVPC8-02□		R1/4	11	39.5	33.5						14.5	21.7	CVPC8-02_

※ 1. "L" is a reference value for height dimension after tightening taper thread.
※ 2. □ in Model code / Replaced with "A" for Inlet on male thread, "B" for Outlet on male thread

CVU In–Line Straight

RoHS compliant



Unit：inch

Model code	Tube O.D. øD	B	øP	Tube end C	CAD file name
CVU5/32-5/32	5/32	1.34	0.35	0.43	CVU5_32-5_32
CVU1/4-1/4	1/4	1.52	0.47	0.47	CVU1_4-1_4
CVU5/16-5/16	5/16	2.19	0.59	0.73	CVC5_16-5_16
CVU3/8-3/8*	3/8	3.25	0.98	0.83	CVC3_8-3_8
CVU1/2-1/2*	1/2	3.44	0.98	0.93	CVC1_2-1_2

※Material of the body of small models from 5/32" to 5/16" is anodized aluminum. For the larger sizes marked with * are made of aluminum.

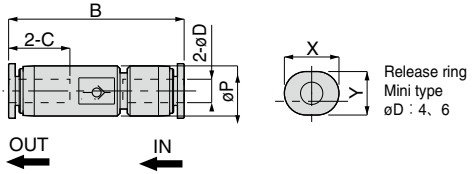
Unit：mm

Model code	Tube O.D. øD	B	øP	Tube end C	Effective area (mm^2)	Weight (g)	CAD file name
CVU4-4	4	33.6	9	10.9	2.7	5.3	CVU4-4
CVU6-6	6	38.2	12	11.7	6	10	CVU6-6
CVU8-8	8	54.9	15	18.2	13.5	21	CVU8-8
CVU10-10*	10	73.4	25	20.7	32	63	CVU10-10
CVU12-12*	12	78.6	25	23.3	46	69	CVU12-12

※Material of the body upto 8mm is anodized aluminum. For the larger sizes marked with * are made of aluminum.

CVPU In–Line Straight (Resin type)

RoHS compliant



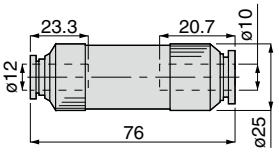
Unit：mm

Model code	Tube O.D. øD	B	øP	Tube end C	X	Y	Effective area (mm^2)	Weight (g)	CAD file name
CVPU4-4	4	31.5	9	11	9.8	7.8	2.9	3.7	CVPU4-4
CVPU6-6	6	34	11	11.6	11.8	9.8	7.5	5.4	CVPU6-6
CVPU8-8	8	47.3	15	18.1	–	–	15.5	13.0	CVPU8-8

❖ Inexpensive resin body 5/32, 5/16 1/4, 3/8, 1/2 inch O.D. in-line check valve is available.
See the site of Low cracking type of In-line check valve (CVLU)

CVG In-Line Reducer

RoHS compliant



Model code	Effective area (mm^2)	Weight (g)	CAD file name
CVG12-10□	36	65	CVG12-10

※. Material of metallic body is aluminum.

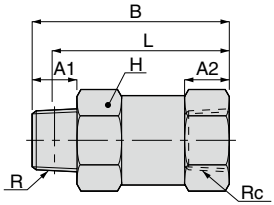
※. □ in Model code / Replaced with "A" for Inlet on ø 12mm, "B" for Outlet on ø 12mm. Air flow direction as below

A: ø 12 → ø 10mm

B: ø 10 → ø 12mm

CVF Bush

RoHS compliant



❖ NPT thread

Unit : inch

Model code	R	Rc	A1	B	L	Hex. H	CAD file name
CVFN1-N1□U	1/8NPT	1/8NPT	0.31	1.04	0.89	9/16	CVFN1-N1_U
CVFN2-N2□U	1/4NPT	1/4NPT	0.43	1.30	1.06	11/16	CVFN2-N2_U
CVFN3-N3 □U *	3/8NPT	3/8NPT	0.47	2.05	1.79	1	CVFN3-N3_U
CVFN4-N4 □U *	1/2NPT	1/2NPT	0.59	2.44	2.19	1 1/8	CVFN4-N4_U

Unit : mm

Model code	R	Rc	A1	A2	B	L	Hex. H	Effective area (mm^2)	Weight (g)	CAD file name
CVF01-01□	R1/8	Rc1/8	8	8.5	26.3	22.3	14	6	22	CVF01-01_
CVF02-02□	R1/4	Rc1/4	11	11	33	27	17	14.5	37	CVF02-02_
CVF03-03□*	R3/8	Rc3/8	12	12	52	45.7	24	52	38	CVF03-03_
CVF04-04□*	R1/2	Rc1/2	15	15	62	53.8	27	78	57	CVF04-04_

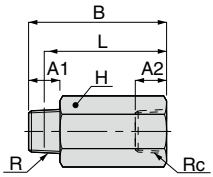
*Material for metallic body is aluminum.

※1. "L" is a reference value for height dimension after tightening taper thread.

※2. □ in Model code / Replaced with "A" for Inlet on male thread, "B" for Outlet on male thread

CVPF Bush (Resin type)

RoHS compliant

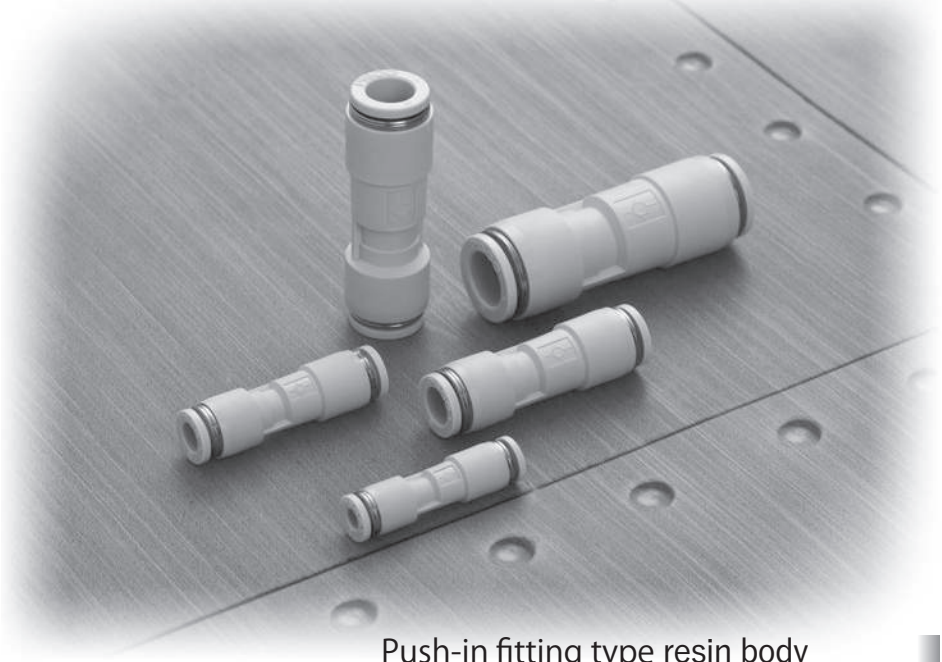


Unit : mm

Model code	R	Rc	A1	A2	B	L	Hex. H	Effective area (mm^2)	Weight (g)	CAD file name
CVPFN1-N1□	1/8NPT	1/8NPT	8	7	27.7	23.6	14	7	24	-
CVPF01-01□	R1/8	Rc1/8	8	6.5	27.7	23.7	14	7	23.9	CVPF01-01_
CVPF02-02□	R1/4	Rc1/4	11	9.5	34.6	28.6	17	14.3	39.2	CVPF02-02_

※1. "L" is a reference value for height dimension after tightening taper thread.

※2. □ in Model code / Replaced with "A" for Inlet on male thread, "B" for Outlet on male thread.



Push-in fitting type resin body

Check Valve - Inline low cracking pressure

In-Line Back Flow Preventing Valve

Low level ozone proof

● *Service pressure range from -29.5inHg to 145psi with min. opening differential pressure of 1.45psi (3inHg).*

● *Opening pressure : 0.73psi (5kPa)*

Securing air flow at low pressure that the conventional check valve does not open.

※Price competitive!

● *Low level ozone proof*

HNBR and FKM for rubber parts.

● *Less noise generation compared to the conventional type.*

No disc type - No spring incorporated.

● *Resin type valve for cost-saving and light-weight*

Specifications

Fluid medium	Air
Max. operating pressure	145psi (1.0MPa)
Max. vacuum	-29.5inHg (-100kPa)
Opening pressure (※1)	0.73psi at 77°F (5kPa at 25°C)
Operating temp. range	32 ~ 140° F (0 ~ 60° C) (no freezing)
Min. opening differential pressure	1.45psi (0.01MPa)

※1. Opening pressure is the initial pressure on the secondary side when the pressure is applied from free flow side.

※2. Check valve permits air leakage. Do not use for the application in which air tightness is required.

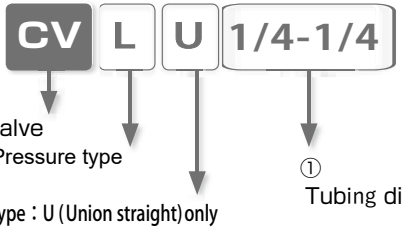
※3. Entering of foreign substances in the product may cause leakage at check valve. Make sure to place a filter at upstream side.

Model Designation (Example)

CVLU

RoHS compliant

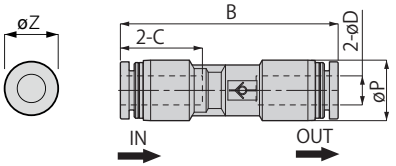
In-Line Straight Low Cracking Pressure



① . Tubing O.D.

Code	5/32-5/32	1/4-1/4	5/16-5/16	3/8-3/8	1/2-1/2	4-4	6-6	8-8	10-10	12-12
Size (O.D.)	5/32"	1/4"	5/16"	3/8"	1/2"	4mm	6mm	8mm	10mm	12mm

Dimensions



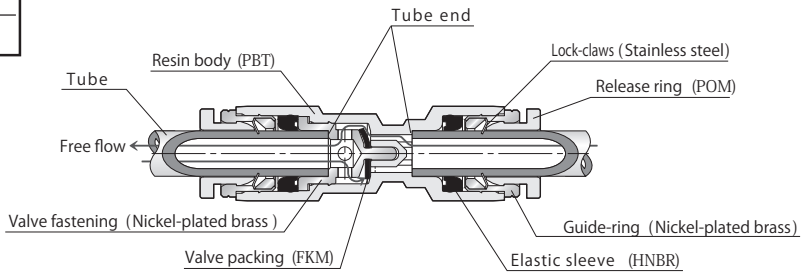
Unit : mm

Model code	Tube O.D. øD	øZ	B	øP	Tube end C	Effective area (mm^2)	Weight (g)
CVLU5/32-5/32	5/32	9.9	38.9	10	14.9	2	5.9
CVLU1/4-1/4	1/4	11.8	45	12.5	17	4.3	8.6
CVLU5/16-5/16	5/16	13.8	50.5	15	18.1	6.4	15
CVLU3/8-3/8	3/8	16.8	58.4	18.5	20.2	12.3	26
CVLU1/2-1/2	1/2	19.8	67.4	21.7	23.7	16.9	38

Model code	Tube O.D. øD	B	øP	Tube end C	Effective area (mm^2)	Weight (g)	CAD File name
CVLU4-4	4	38.9	10	14.9	2	5.9	CVLU4-4
CVLU6-6	6	45	12.5	17	4.3	8.8	CVLU6-6
CVLU8-8	8	50.5	15	18.1	6.4	15	CVLU8-8
CVLU10-10	10	58.4	18.5	20.2	12.3	25	CVLU10-10
CVLU12-12	12	66.8	21.7	23.4	16.9	39	CVLU12-12

Constructions

Symbol



Standard Size List

Connection: Thread ⇔ Tube

- Metallic body

Type	Thread size	Tube O.D. (inch)				
		5/32	1/4	5/16	3/8	1/2
CVC Straight	10-32UNF	●				
	1/8NPT	●	●	●		
NPT, UNF thread	1/4NPT		●	●		
	3/8NPT				●	●
	1/2NPT				●	●

Type	Thread size	Tube O.D. (mm)				
		4	6	8	10	12
CVC Straight	M5 × 0.8	●				
	M6 × 1	●				
	R1/8	●	●	●		
Metric, R or BSPT thread	R1/4		●	●		
	R3/8				●	●
	R1/2				●	●

- Plastic main body

Type	Thread size	Tube O.D. (inch)		
		5/32	1/4	5/16
CVPC Straight	10-32UNF	●		
	1/8NPT	●	●	
NPT, UNF thread	1/4NPT		●	●

Type	Thread size	Tube O.D. (mm)		
		4	6	8
CVPC Straight	M5 × 0.8	●		
	M6 × 1	●		
Metric, R or BSPT thread	R1/8	●	●	●
	R1/4		●	●

Connection: Tube ⇔ Tube (Equal dia.)

Type	Tube O.D. (Inch)				
	5/32	1/4	5/16	3/8	1/2
CVU In-Line Straight	●	●	●	●	●
CVLU In-line Straight Low Cracking	●	●	●	●	●
PCVLU In-line Straight PP + SUS304	●	●	●	●	●

Type	Tube O.D. (mm)				
	4	6	8	10	12
CVU Union Straight	●	●	●	●	●
CVPU Union Straight	●	●	●		
CVLU In-line Straight Low Cracking	●	●	●	●	●
PCVLU In-line Straight PP + SUS304	●	●	●	●	●

Connection: Tube ⇔ Tube (Unequal dia.)

Type	Tube O.D.1 (mm)	Tube O.D.2(mm)
		10
CVG Unequal Union Straight	12	●

Connection: Male thread ⇔ Female thread

Type	Thread size			
	1/8NPT	1/4NPT	3/8NPT	1/2NPT
CVF Bush (NPT)	●	●	●	●
CVPF Bush (NPT)	●			

Type	Thread size			
	R1/8	R1/4	R3/8	R1/2
CVF Bush (R or BSPT)	●	●	●	●
CVPF Bush (R or BSPT)	●	●		

⚠ Detailed Safety Instructions

Before using PISCO products, be sure to read "Safety Instructions" and "Safety Instruction Manual" .

Warning

1. Frequent switching may generate heat and cause a danger of getting burnt. Contact us in case of using Check Valve with frequent switching.

Caution

1. Make sure to follow "2. Instructions for installing controllers" in "Common Safety Instructions for Controllers", when tightening thread. Too much tightening may cause a malfunction of poppet.
2. In case the pressure difference between the primary pressure and the secondary pressure is extremely large, it may cause damage to the poppet during operation. The fragment of broken poppet may flow into the secondary side in the worst case.
3. Abnormal noise by chattering poppet may occur, depending on an operation pressure or flow rate.

⚠Warning

1. Frequent switching may generate heat and cause a danger of getting burnt. Contact us in case of using Check Valve with frequent switching.
2. When the fluid medium is liquid, make sure to use Insert Ring together with. There is a risk of tube coming-off or leakage without Insert Ring.
3. When the fluid medium is chemicals or mixed gases, please check chemical resistance before actual use. Some conditions can cause damage of Push-in fitting, tube coming off or leakage.
4. Do not use this series under the condition with vibration or physical impact. These may cause damage to the products, the escape of tubes and a fluid leakage.
5. Resin can be deteriorated by being exposed to direct sunlight or ultraviolet rays.
6. Max. operating pressure for this product differs according to operating temperature range. Please make sure to check the chart "Relation of Operating Temp. & Max. Operating Pressure" and use the product within the specification range.

⚠Caution

1. In case the pressure difference between the primary pressure and the secondary pressure is extremely large, it may cause damage to the poppet during operation. The fragment of broken poppet may flow into the secondary side in the worse case.
2. Abnormal noise by chattering poppet may occur, depending on an operation pressure or flow rate.
3. The seal rubber material EPDM is not suitable for general air piping, due to its inferior durability against mineral oil.
4. If there is a possibility of fire by a fluid leakage, implement specific counter measures such as using a protective cover in order to protect machines/facilities from damanges or fire.
5. For Low Operating Pressure Type, min. checking differential pressure should be above 10kPa. Use with chekcing differential pressure under 10kPa may cause leakage.
6. When pressure is applied consecutively in the checking direction on Low Operating Pressure Type, opening pressure may be highter than the catalog specification depending on ambient temperature, pressure appling time an other conditions.
7. Corrosiveness and dusting characteristics differs depending on environment. When negative effect is expected on machines or apparatus, please conduct evaluation considering the environment before actual use at user's side.

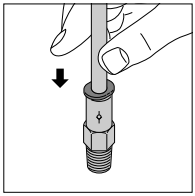
How to insert and disconnect

1. How to insert and disconnect tubes

① Tube insertion

Insert a tube into Push-In Fitting up to the tube end. Lock-claws bite the tube and fix it automatically, then the elastic sleeve seals around the tube.

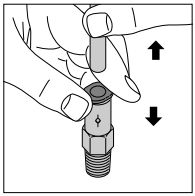
Refer to "2. Instructions for Tube Insertion" under "Common Safety Instructions for Fittings".



② Tube disconnection

The tube is disconnected by pushing release-ring to release Lock-claws.

Make sure to stop air supply before the tube disconnection.



2. How to tighten thread

① Tightening thread

Use a spanner to tighten a hexagonal-column.

Refer to "Table: Recommended tightening torque" under "2. Instructions for Installing Controllers" in "Common Safety Instructions for Controllers".