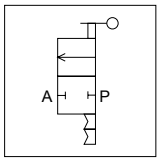
Hand Valve - Shut-Off Valve (On-Off 2 way, 3 way)

Characteristics

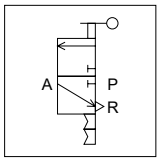
- The Hand valve (shut-off valve) turns on and off air pressure to a pneumatic device or a circuit.
- The three way, pressure relief type isolates the supplied air pressure and exhausts the downstream pressure for maintenance purpose while the two way type holds the downstream pressure.
- 4 types are available to fit the application requirement.

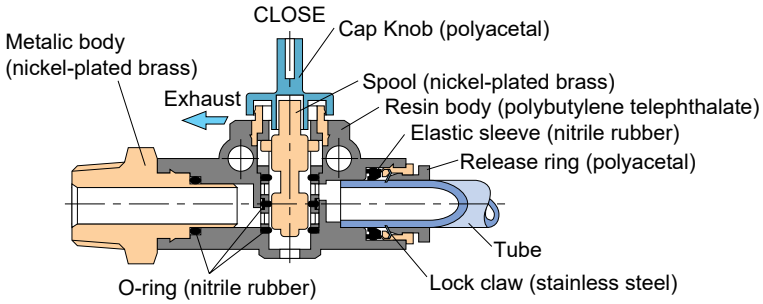
Construction

2-way valve
Graphical representation



3-way valve
Graphical representation





Specification

Fluid admitted	Air	
Service pressure range	0~131psi	0~0.9MPa
Working vacuum	-29.5in. Hg	-100KPa
Service temperature range	32~140°F	0~60°C

Model Designation (example)

HV (1) — 1/4 (2) — N1 (3) — -2 (4) — (5) — U (6)

(1)Model
(2)Input port size
(3)Output port size

Connection size	Tubing dia								
	Inch size					mm size			
Code	1/4	3/16	5/16	3/8	1/2	6	8	10	12
Size	1/4"	3/16"	5/16"	3/8"	1/2"	ϕ6	ϕ8	ϕ10	ϕ12

Connection size	American standard taper pipe thread				Taper pipe thread size			
Code	N1	N2	N3	N4	01	02	03	04
Size	NTP1/8	NTP1/4	NTP3/8	NTP1/2	R1/8	R1/4	R3/8	R1/2

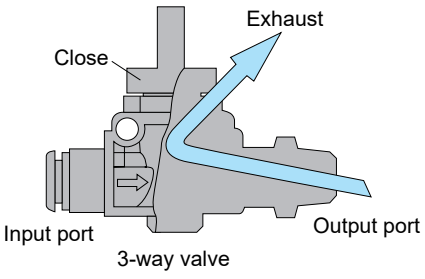
❖ R thread is same as BSPT

(4)Number of valve ports
No code : 3-way valve
-2 : 2-way valve

(5)Ivory Specification
No code : Standard color
W : Ivory color

(6)Hexagon flat-to-flat specification
U: Hexagon flat-to-flat inch spec. (NPT)
No code: Hexagon flat-to-flat mm spec.

About 3-way and 2-way Valves

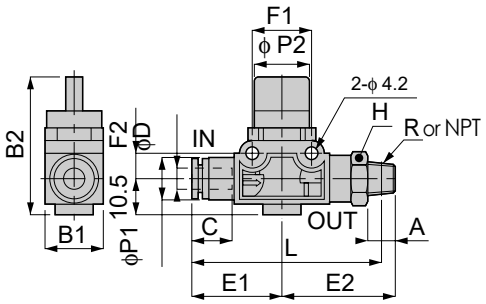


The three way valve releases the residual pressure from the downstream (connected devices) when turning off. It is necessary to protect the systems against malfunction or decrease the pressure so the systems may be maintained. The two way valve holds the pressure so it is ideal for the application where the residual pressure maintained such as an air tank or some vacuum system.

HV

Straight A

RoHS compliant



unit:inch

MODEL	Tube dia. ϕ	NPT	A	B2	C	E1	E2	F1	F2	B1	H	Weight (g)	Orifice ϕmm	Eff. A. mm²	Cv
HV3/16-N1U	3/16	1/8	0.31	1.59	0.67	1.02	1.16	0.71	0.31	0.67	9/16	33.7	4.0	5.1	0.27
HV3/16-N2U	3/16	1/4	0.43	1.59	0.67	1.02	1.20	0.71	0.31	0.67	9/16	39.6	4.0	5.1	0.27
HV3/16-N3U	3/16	3/8	0.47	1.59	0.67	1.02	1.26	0.71	0.31	0.67	11/16	53.3	4.0	5.2	0.28
HV1/4-N1U	1/4	1/8	0.31	1.59	0.67	1.02	1.16	0.71	0.31	0.67	9/16	33.8	5.0	7.5	0.40
HV1/4-N2U	1/4	1/4	0.43	1.59	0.67	1.02	1.20	0.71	0.31	0.67	9/16	39.8	5.0	7.7	0.41
HV1/4-N3U	1/4	3/8	0.47	1.59	0.67	1.02	1.26	0.71	0.31	0.67	11/16	53.3	5.0	7.5	0.40
HV5/16-N1U	5/16	1/8	0.31	1.59	0.71	1.10	1.16	0.71	0.31	0.83	9/16	34.8	5.0	8.7	0.47
HV5/16-N2U	5/16	1/4	0.43	1.59	0.71	1.10	1.20	0.71	0.31	0.83	9/16	40.7	5.0	8.9	0.48
HV5/16-N3U	5/16	3/8	0.47	1.59	0.71	1.10	1.26	0.71	0.31	0.83	11/16	54.4	5.0	8.6	0.46
HV3/8-N2U	3/8	1/4	0.43	1.61	0.79	1.28	1.44	0.94	0.43	0.83	11/16	63.0	5.0	16.2	0.87
HV3/8-N3U	3/8	3/8	0.47	1.61	0.79	1.28	1.46	0.94	0.43	0.83	11/16	71.3	7.0	16.0	0.86
HV3/8-N4U	3/8	1/2	0.59	1.61	0.79	1.28	1.48	0.94	0.43	0.83	7/8	94.3	7.0	15.7	0.85
HV1/2-N2U	1/2	1/4	0.43	1.61	0.93	1.38	1.44	0.94	0.43	0.83	11/16	65.5	7.0	16.3	0.88
HV1/2-N3U	1/2	3/8	0.47	1.61	0.93	1.38	1.46	0.94	0.43	0.83	11/16	73.9	7.0	16.3	0.88
HV1/2-N4U	1/2	1/2	0.59	1.61	0.93	1.38	1.52	0.94	0.43	0.83	7/8	96.8	7.0	16.1	0.87

unit:mm

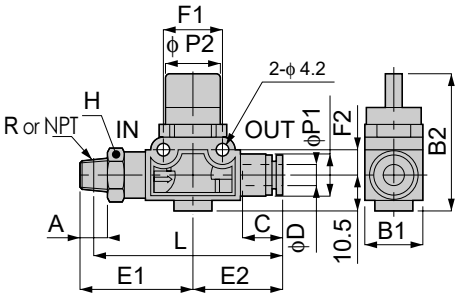
Model	Tube O.D. øD1	R	A	B1	B2	L	øP1	øP2	Tube end C	E1	E2	H	F1	F2	Eff. area (mm²)	Weight (g)	CAD file name
HV6-01-	6	R1/8	8	17	40.5	55.9	12.5	16.5	17	26.4	33.5	14	18	8	7.5	34	HV6-01_
HV6-02-		R1/4	11			56.8					36.5				7.7	40	HV6-02_
HV6-03-		R3/8	12			58.3					38.3	17			7.5	53	HV6-03_
HV8-01-	8	R1/8	8	17	40.5	57.2	15	16.5	18.1	27.7	33.5	14	18	8	8.7	35	HV8-01_
HV8-02-		R1/4	11			58.2					36.5				8.9	41	HV8-02_
HV8-03-		R3/8	12			59.7					38.3	17			8.6	54	HV8-03_
HV10-02-	10	R1/4	11	21.7	41	68.7	17.5	19.5	20.2	32.2	42.5	17	24	11	16.2	62	HV10-02_
HV10-03-		R3/8	12			69.4					43.5				16	71	HV10-03_
HV10-04-		R1/2	15			70.5					46.5	21			15.7	93	HV10-04_
HV12-02-	12	R1/4	11	21.7	41	71.4	21	19.5	23.4	34.9	42.5	17	24	11	16.3	66	HV12-02_
HV12-03-		R3/8	12			72.1					43.5					74	HV12-03_
HV12-04-		R1/2	15			73.2					46.5	21			16.1	96	HV12-04_
HV1/4-01-	1/4	R1/8	8	17	40.5	55.9	12.5	16.5	17	26.4	33.5	14	18	8	8.2	34	HV1_4-01_
HV1/4-02-		R1/4	11			56.8					36.5				8	40	HV1_4-02_
HV1/4-03-		R3/8	12			58.3					38.3	17			8.2	53	HV1_4-03_
HV5/16-01-	5/16	R1/8	8	17	40.5	57.2	15	16.5	18.1	27.7	33.5	14	18	8	8.7	35	HV5_16-01_
HV5/16-02-		R1/4	11			58.2					36.5				8.9	41	HV5_16-02_
HV5/16-03-		R3/8	12			59.7					38.3	17			8.6	54	HV5_16-03_
HV3/8-02-	3/8	R1/4	11	21.7	41	68.7	17.5	19.5	20.2	32.2	42.5	17	24	11	15.4	63	HV3_8-02_
HV3/8-03-		R3/8	12			69.4					43.5				15.7	71	HV3_8-03_
HV3/8-04-		R1/2	15			70.5					46.5	21			15.4	93	HV3_8-04_

❖ R thread is same as BSPT

HV

Straight B

RoHS compliant



unit:inch

MODEL	Tube dia. ϕ	NPT	A	B2	C	E1	E2	F1	F2	B1	H	Weight (g)	Orifice ϕmm	Eff. A. mm²	Cv
HVN1-3/16U	3/16	1/8	0.31	1.59	0.67	1.02	1.16	0.71	0.31	0.67	9/16	34.0	4.0	5.6	0.30
HVN2-3/16U	3/16	1/4	0.43	1.59	0.67	1.02	1.2	0.71	0.31	0.67	9/16	39.8	4.0	6.0	0.32
HVN3-3/16U	3/16	3/8	0.47	1.59	0.67	1.02	1.26	0.71	0.31	0.67	11/16	53.5	4.0	5.7	0.30
HVN1-1/4U	1/4	1/8	0.31	1.59	0.67	1.02	1.16	0.71	0.31	0.67	9/16	33.8	5.0	8.3	0.44
HVN2-1/4U	1/4	1/4	0.43	1.59	0.67	1.02	1.20	0.71	0.31	0.67	9/16	39.5	5.0	8.5	0.46
HVN3-1/4U	1/4	3/8	0.47	1.59	0.67	1.02	1.26	0.71	0.31	0.67	11/16	53.5	5.0	8.2	0.44
HVN1-5/16U	5/16	1/8	0.31	1.59	0.71	1.10	1.16	0.71	0.31	0.83	9/16	35.1	5.0	8.9	0.48
HVN2-5/16U	5/16	1/4	0.43	1.59	0.71	1.10	1.20	0.71	0.31	0.83	9/16	40.9	5.0	8.9	0.48
HVN3-5/16U	5/16	3/8	0.47	1.59	0.71	1.10	1.26	0.71	0.31	0.83	11/16	54.6	5.0	8.9	0.48
HVN2-3/8U	3/8	1/4	0.43	1.61	0.79	1.28	1.44	0.94	0.43	0.83	11/16	63.1	7.0	16.6	0.89
HVN3-3/8U	3/8	3/8	0.47	1.61	0.79	1.28	1.46	0.94	0.43	0.83	11/16	71.3	7.0	16.9	0.91
HVN4-3/8U	3/8	1/2	0.59	1.61	0.79	1.28	1.48	0.94	0.43	0.83	7/8	94.4	7.0	16.5	0.89
HVN2-1/2U	1/2	1/4	0.43	1.61	0.93	1.38	1.44	0.94	0.43	0.83	11/16	65.8	7.0	17.0	0.92
HVN3-1/2U	1/2	3/8	0.47	1.61	0.93	1.38	1.46	0.94	0.43	0.83	11/16	74.3	7.0	17.1	0.92
HVN4-1/2U	1/2	1/2	0.59	1.61	0.93	1.38	1.52	0.94	0.43	0.83	7/8	97.1	7.0	16.8	0.91

unit:mm

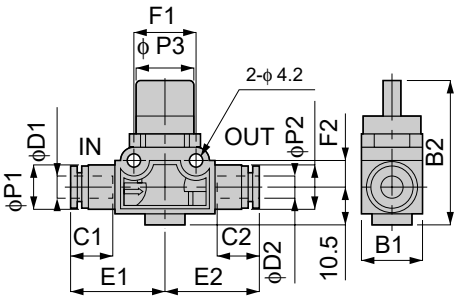
Model	Tube O.D. øD1	R	A	B1	B2	L	øP1	øP2	Tube end C	E1	E2	H	F1	F2	Eff. area (mm²)	Weight (g)	CAD file name
HV01-6-	6	R1/8	8	17	40.5	55.9	12.5	16.5	17	33.5	26.4	14	18	8	8.3	34	HV01-6_
HV02-6-		R1/4	11			56.8				36.5					8.5	40	HV02-6_
HV03-6-		R3/8	12			58.3				38.3		17			8.2	53	HV03-6_
HV01-8-	8	R1/8	8	17	40.5	57.2	15	16.5	18.1	33.5	27.7	14	18	8	8.9	35	HV01-8_
HV02-8-		R1/4	11			58.2				36.5						41	HV02-8_
HV03-8-		R3/8	12			59.7				38.3		17				54	HV03-8_
HV02-10-	10	R1/4	11	21.7	41	68.7	17.5	19.5	20.2	42.5	32.2	17	24	11	16.6	62	HV02-10_
HV03-10-		R3/8	12			69.4				43.5					16.9	71	HV03-10_
HV04-10-		R1/2	15			70.5				46.5		21			16.5	93	HV04-10_
HV02-12-	12	R1/4	11	21.7	41	71.4	21	19.5	23.4	42.5	34.9	17	24	11	17	66	HV02-12_
HV03-12-		R3/8	12			72.1				43.5					17.1	74	HV03-12_
HV04-12-		R1/2	15			73.2				46.5		21			16.8	96	HV04-12_
HV01-1/4-	1/4	R1/8	8	17	40.5	55.9	12.5	16.5	17	33.5	26.4	14	18	8	8.7	34	HV01-1_4_
HV02-1/4-		R1/4	11			56.8				36.5					8.4	40	HV02-1_4_
HV03-1/4-		R3/8	12			58.3				38.3		17			8.5	53	HV03-1_4_
HV01-5/16-	5/16	R1/8	8	17	40.5	57.2	15	16.5	18.1	33.5	27.7	14	18	8	8.9	35	HV01-5_16_
HV02-5/16-		R1/4	11			58.2				36.5						41	HV02-5_16_
HV03-5/16-		R3/8	12			59.7				38.3		17				54	HV03-5_16_
HV02-3/8-	3/8	R1/4	11	21.7	41	68.7	17.5	19.5	20.2	42.5	32.2	17	24	11	16.5	63	HV02-3_8_
HV03-3/8-		R3/8	12			69.4				43.5					16.8	71	HV03-3_8_
HV04-3/8-		R1/2	15			70.5				46.5		21			16.6	93	HV04-3_8_

❖ R thread is same as BSPT

HV

Union Straight

RoHS compliant



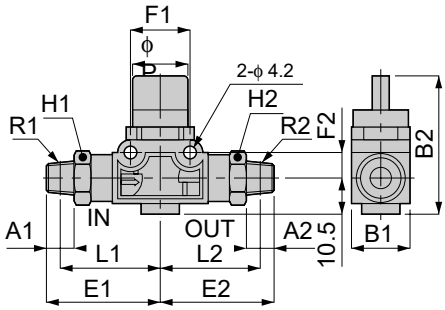
unit:mm

Model	Tube O.D. øD1	Tube O.D. øD2	B1	B2	øP1	øP2	øP3	Tube end C1	Tube end C2	E1	E2	F1	F2	Eff. area (mm^2)	Weight (g)	CAD file name
HV5/32-5/32-	5/32	5/32	17	40.5	10	10	16.5	14.9	14.9	25.8	25.8	18	8	3.4	24	HV4-4_
HV3/16-3/16-	3/16	3/16	17	40.5	12.5	12.5	16.5	17	17	26.4	26.4	18	8	5.1	25	
HV1/4-3/16-	1/4	3/16	17	40.5	12.5	12.5	16.5	17	17	26.4	26.4	18	8	5.1	25	
HV1/4-1/4-		1/4												7.2		HV1_4-1_4_
HV3/8-3/8-	3/8	3/8	21.7	41	17.5	17.5	19.5	20.2	20.2	32.2	32.2	24	11	17.4	45	HV3_8-3_8_
HV1/2-3/8-	1/2	3/8	21.7	41	21	17.5	19.5	23.4	20.2	34.9	32.2	24	11	17.5	48	HV1_2-3_8_
HV1/2-1/2-		1/2				21			23.4		34.9			18.1	51	HV1_2-1_2_
HV5/16-1/4-	5/16	1/4	17	40.5	15	12.5	16.5	18.1	17	27.7	26.4	18	8	8.8	26	HV5_16-1_4_
HV5/16-5/16-		5/16				15			18.1		27.7			8.7	28	HV5_16-5_16_
HV4-4-	4	4	17	40.5	10	10	16.5	14.9	14.9	25.8	25.8	18	8	3.4	24	HV4-4_
HV6-6-	6	6	17	40.5	12.5	12.5	16.5	17	17	26.4	26.4	18	8	7.2	25	HV6-6_
HV8-6-	8	6	17	40.5	15	12.5	16.5	18.1	17	27.7	26.4	18	8	8.1	26	HV8-6_
HV8-8-		8				15			18.1		27.7			8.7	28	HV8-8_
HV10-10-	10	10	21.7	41	17.5	17.5	19.5	20.2	20.2	32.2	32.2	24	11	17.4	45	HV10-10_
HV12-10-	12	10	21.7	41	21	17.5	19.5	23.4	20.2	34.9	32.2	24	11	17.5	48	HV12-10_
HV12-12-		12				21			23.4		34.9			18.1	51	HV12-12_

HV

Nipple Type

RoHS compliant



unit:inch

MODEL	R1	R2	A1	A2	B2	L1	L2	E1	E2	F1	F2	H1	H2	B1	(g)	Orifice ϕmm	Eff. A. mm 2	Cv
HVN1-N1U	1/8NPT	1/8NPT	0.31	0.31	1.59	1.16	1.16	1.32	1.32	0.71	0.30	9/16	9/16	0.67	43.0	5.0	8.8	0.47
HVN2-N1U	1/4NPT	1/8NPT	0.43	0.31	1.59	1.16	1.16	1.44	1.32	0.71	0.30	9/16	9/16	0.67	48.9	5.0	9.0	0.48
HVN2-N2U	1/4NPT	1/4NPT	0.43	0.43	1.61	1.42	1.42	1.67	1.67	0.94	0.43	11/16	11/16	0.83	81.1	5.0	15.8	0.85
HVN3-N2U	3/8NPT	1/4NPT	0.47	0.43	1.61	1.42	1.42	1.71	1.67	0.94	0.43	11/16	11/16	0.83	89.5	5.0	15.6	0.84
HVN3-N3U	3/8NPT	3/8NPT	0.47	0.47	1.61	1.46	1.46	1.71	1.71	0.94	0.43	11/16	11/16	0.83	97.7	7.0	15.7	0.85

unit:mm

MODEL	R1	R2	A1	A2	B1	B2	L1	L2	øP	E1	E2	H1	H2	F1	F2	Eff. A. (mm^2)	Weight (g)	CAD file name
HV01-01-	R1/8	R1/8	8	8	17	40.5	29.5	29.5	16.5	33.5	33.5	14	14	18	8	8.8	43	HV01-01_
HV02-01-	R1/4	R1/8	11	8	17	40.5	30.5	29.5	16.5	36.5	33.5	14	14	18	8	9	49	HV02-01_
HV02-02-		R1/4		11	21.7	41	36.5	36.5	19.5	42.5	42.5	17	17	24	11	15.8	80	HV02-02_
HV03-02-	R3/8	R1/4	12	11	21.7	41	37.2	36.5	19.5	43.5	42.5	17	17	24	11	15.6	88	HV03-02_
HV03-03-		R3/8		12				37.2			43.5					15.7	96	HV03-03_

❖ R thread is same as BSPT

Detailed Safety Instructions

Before using the PISCO device, be sure to read the "Safety Instructions", "Common Safety Instructions for Products Listed in This Manual" and "Common Safety Instructions for Change Series Valves".

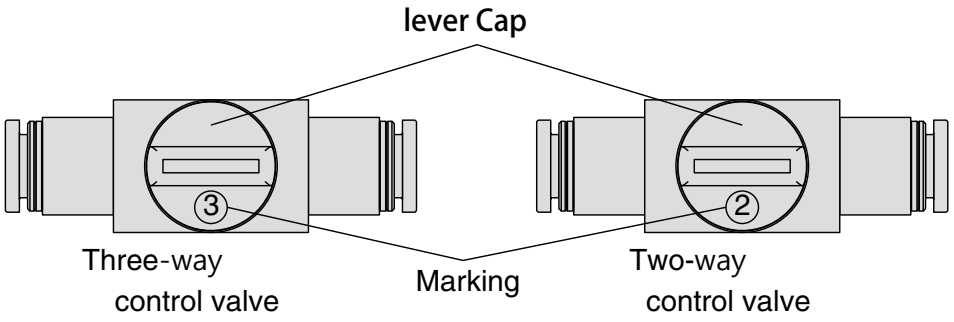
△Caution

1. When operating the cap lever, turn it 90 degrees completely until it stops. Inadequate turning may result in poor conduction or low flow rate due to faulty switching.
2. Distinguish between the two-directional and the three-directional control valve by checking the marking②or③ on the top surface of the cap lever.
3. For use with negative pressures, provide a vacuum filter on the suction side. Otherwise dust sucked in may cause malfunction.

■ To identify either Three-directional control valve or Two-directional control valve, check the marking number on the lever cap.

③: Three-directional control valve - 3-way

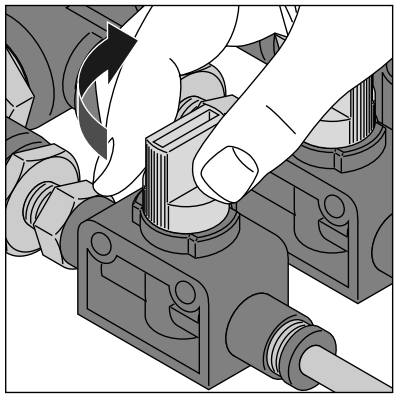
②: Two-directional control valve - 2-way



■ Cap lever operation

1. Open the valve

To open the valve, turn the cap lever 90 degrees until it stops.



2. Close the valve

To close the valve, turn the cap lever 90 degrees counterclockwise until it stops.

As for three-way valve, the residual pressure in outlet side **is released from the gap between the lever cap and the body when turning it off.**