CONSTANT FLOW VALVE

Features

- High accuracy (within +/-6% of full scale) and large range ability (ratio of MAX. and MIN. flow setting values)
- The set flow can be changed by handle operation. Can also be used as an inhibitor valve (complete closure).
- Equipped with opening degree indicator that allows for checking of set flow rate (m^3/hr).
- The wetted part uses corrosion-resistant and light weight plastic and elastomer.
- Uses spring (SUS304) fully coated with FLUORO resin having adequate durability and chemical resistance.

Basic specifications

- Valve Type		:	Constant Flow Valve
- Size		:	15mm (1/2") - 100mm (4")
- Body Material		:	U-PVC (Conforming to ASTM D1784 Cell Classification 12454A)
- Seal Material	/ O-ring	:	EPDM, FKM
- Connection	/ Flanged	:	JIS B2220 5K, JIS B2220 10K, DIN/EN1092-1, ANSI B16.5

Body Material	FLUID TEMPERATURE ˚C {˚F}	Maximum working pressure (Normal temperature) MPa {psi }	
		15mm - 80mm	100mm
U-PVC	0 ~ 50 { 30 ~120 }	1.0 { 150 }	0.5 { 70 }

Note:

The maximum working pressure is the value including the water hammer pressure. Be careful that the maximum working pressure is not exceeded during use.

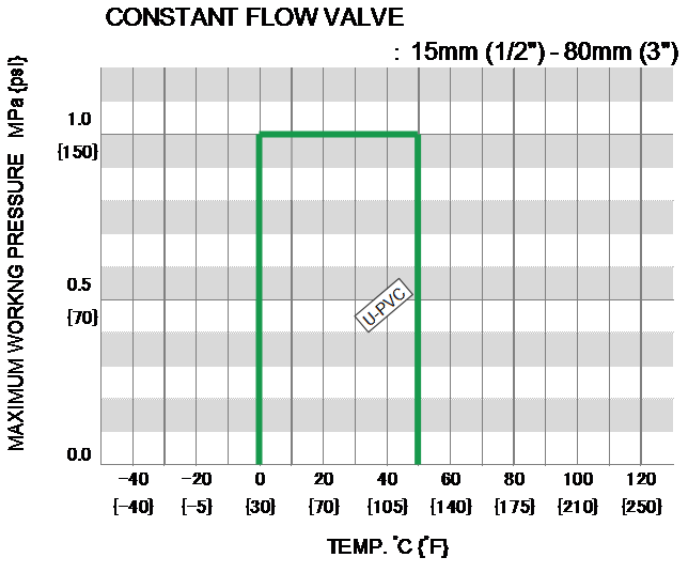
* Concerning the allowable pressure for each temperature and material, see the technical documents at the next page of this sheet.

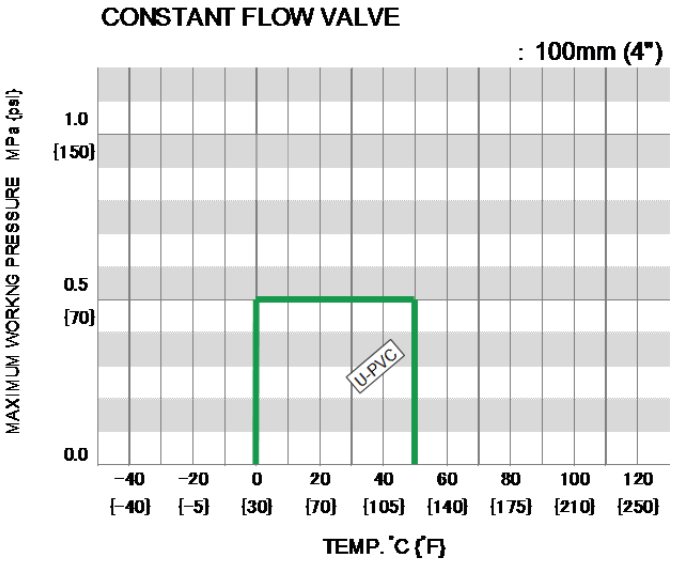
Certificate / Approval / Directive

PED, ABS, NSF/ANSI61

“For details of applicable products, please consult us.”

Working pressure vs. Temperature



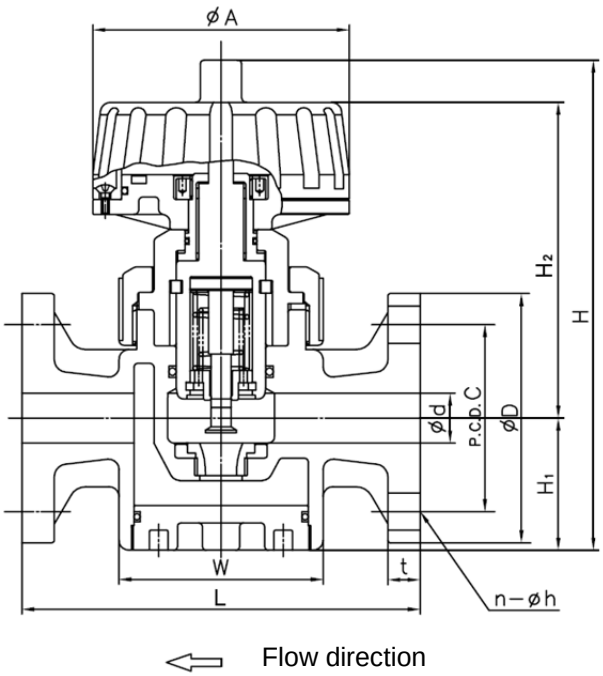


Note:

Make sure that the temperature and pressure are within the working range during operation.
(If the tolerance range is exceeded during use, the valve may be damaged.)

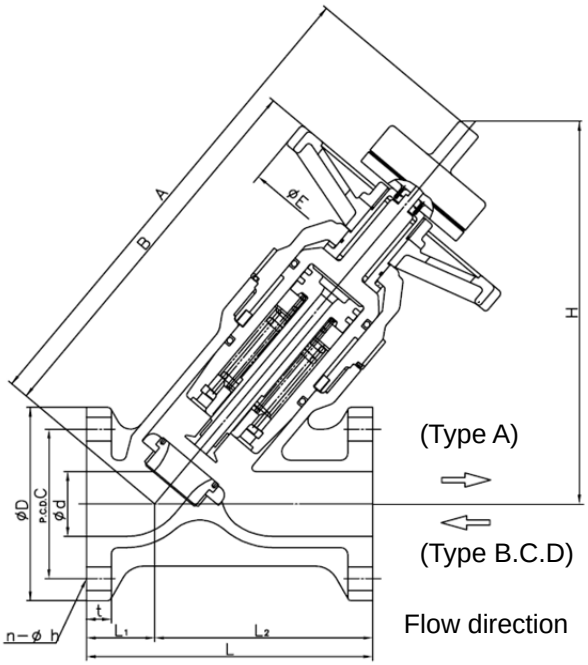
Product dimension

15mm (1/2") - 20mm (3/4")



Flow direction

25mm (1") – 100mm (4")



(Type A)

(Type B.C.D)

Flow direction

■JIS, DIN (Unit: mm)

mm	inch	d	W	A	H_1	H_2	H	L	t	JIS 10K								DIN			
										JIS 5K				JIS 10K				DIN PN10			
										D	C	n	h	D	C	n	h	D	C	n	h
15	1/2	16	82X82	103	51	129	197	160	12	80	60	4	12	95	70	4	15	95	65	4	14
20	3/4	20	82X82	103	53	127	197	160	13	85	65	4	12	100	75	4	15	100	75	4	14

■JIS, DIN (Unit: mm)

mm	inch	d	L_1	L_2	A	B	H	E	L	t	JIS 10K								DIN			
											JIS 5K				JIS 10K				DIN PN10			
											D	C	n	h	D	C	n	h	D	C	n	h
25	1	25	40	120	272	201	218	150	160	14	95	75	4	12	125	90	4	19	115	85	4	14
50	2	52	55	175	390	309	307	210	230	20	130	105	4	15	155	120	4	19	165	125	4	18
80	3	78	70	210	484	387	377	210	280	22	180	145	4	19	185	150	8	19	200	160	8	18
100	4	100	85	325	623	483	446	250	410	22	200	165	8	19	210	175	8	19	220	180	8	18

■ANSI (Unit: inch)

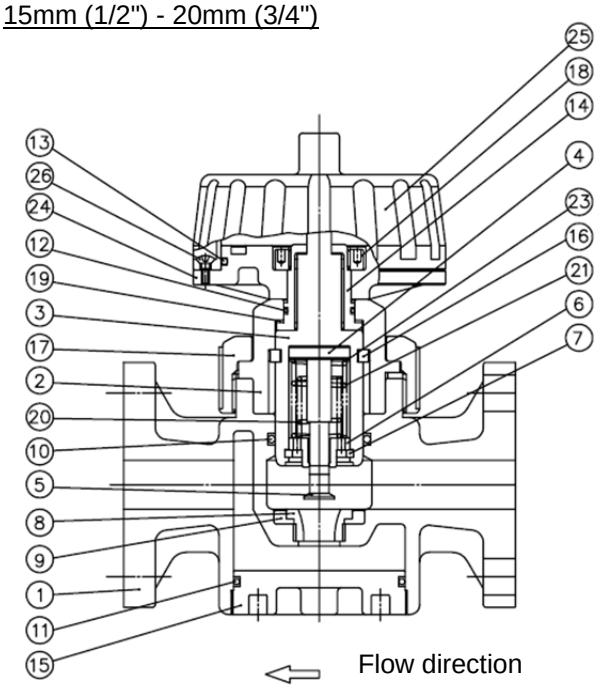
inch	mm	d	W	A	H_1	H_2	H	L	t	ANSI			
										ANSI Class150			
										D	C	n	h
1/2	15	0.63	3.23X3.23	4.06	2.01	5.08	7.76	6.30	0.47	3.50	2.38	4	0.63
3/4	20	0.79	3.23X3.23	4.06	2.09	5.00	7.76	6.30	0.51	3.86	2.76	4	0.63

■ANSI (Unit: inch)

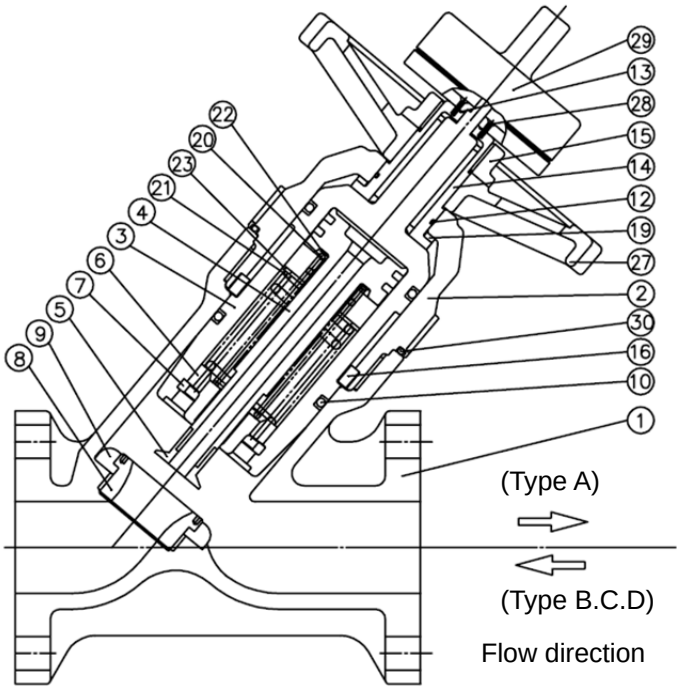
inch	mm	d	L_1	L_2	A	B	H	E	L	t	ANSI			
											ANSI Class150			
											D	C	n	h
1	25	0.98	1.57	4.72	10.71	7.91	8.58	5.91	6.30	0.55	4.25	3.13	4	0.63
2	50	2.05	2.17	6.89	15.35	12.17	12.09	8.27	9.06	0.79	5.98	4.74	4	0.75
3	80	3.07	2.76	8.27	19.06	15.24	14.84	8.27	11.02	0.87	7.24	6.00	8	0.75
4	100	3.94	3.35	12.80	24.53	19.02	17.56	9.84	16.14	0.87	8.66	7.50	8	0.75

Parts list

15mm (1/2") - 20mm (3/4")



25mm (1") – 100mm (4")



PART NO./NAME	QTY	MATERIAL
1 BODY	1	U-PVC
2 BONNET	1	U-PVC
3 CYLINDER	1	U-PVC
4 PISTON	1	U-PVC
5 PLUG	1	U-PVC
6 SPRING SEAT	1	U-PVC
7 STOP RING	1	PVDF
8 ORIFICE	1	U-PVC
9 SEAT	1	EPDM, etc.
10 O-RING (A)	1	EPDM, etc. (1) Used for 15-20mm only.
	2	EPDM, etc. (1) Used for 25-100mm only.

PART NO./NAME	QTY	MATERIAL
12 O-RNG (C)	1	EPDM
13 O-RNG (D)	1	EPDM
14 SLEEVE	1	COPPER ALLOY
15 CAP	1	U-PVC
16 KEY	2	PP Used for 15-20mm only.
		U-PVC Used for 25-100mm only.
19 THRUST RING	1	PP
20 SPRING (A)	1	STAINLESS STEEL *
21 SPRING (B)	1	STAINLESS STEEL *
23 WASHER (B)	1	U-PVC

Used for 15 - 20mm only.

PART NO./NAME	QTY	MATERIAL
11 O-RING (B)	1	EPDM, etc.
17 UNION NUT	1	U-PVC
18 NUT	1	ABS
24 HANDLE BASE	1	ABS
25 HANDLE COVER	1	PC
26 CROSS RECESSED RAISED COUNTERSUNK HEAD SCREW	4	STAINLESS STEEL

Used for 25mm only.

PART NO./NAME	QTY	MATERIAL
22 WASHER (A)	1	U-PVC
27 HANDLE	1	PP
28 FASTENING SCREW	4	COPPER ALLOY
29 OPENING DEGREE INDICATOR	1Set	ABS, etc.
30 O-RING (E)	1	EPDM, etc. Used for 50-100mm only.

(1) For FKM, complete closure is not available. * STAINLESS STEEL is coated with fluororesin.

Product weight

CONSTANT FLOW VALVE
FLANGED Unit: kg

mm	inch	U-PVC
15	1/2	1.4
20	3/4	1.5
25	1	1.5
50	2	5.0
80	3	8.5
100	4	16.5

Principle & Operation

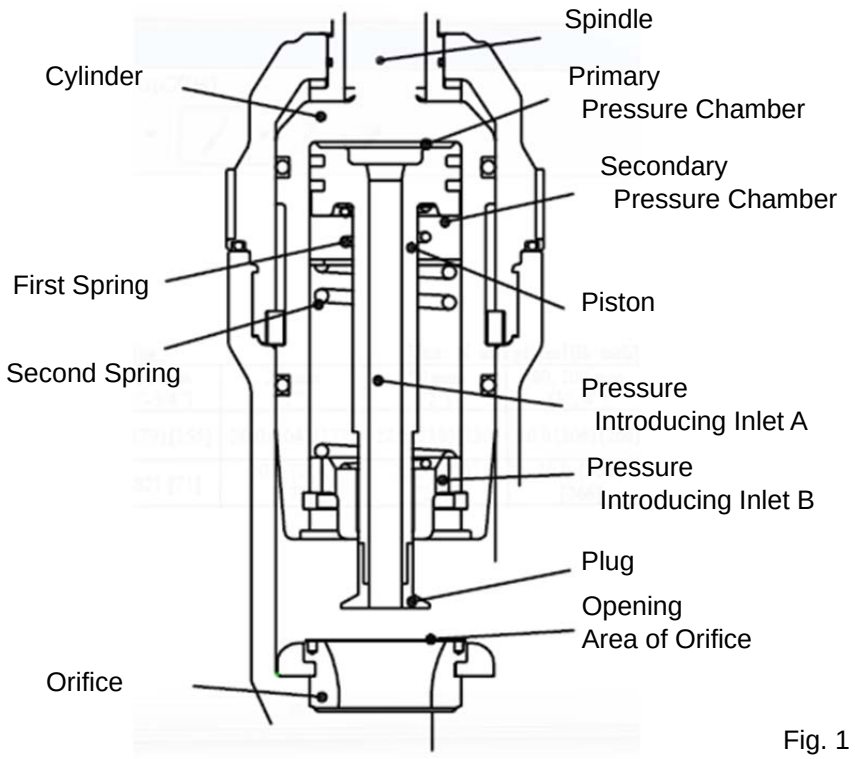


Fig. 1

Refer to Figure 1 for design and operation of ASAHI AV Flow Control Valve. When the upstream fluid pressure, P1 is introduced at the flow control orifice, it exerts a corresponding pressure on the upper surface of the flange on the piston type valve plug.
Likewise, the downstream pressure, P2 exerts a corresponding pressure to the lower surface of the valve plug flange. Thus, when a differential pressure exists between the fluid upstream and downstream of the orifice, the corresponding pressure differential acting on the surfaces of the flange moves the valve plug piston either downward against the force of the spring cartridge or upward by the force the spring, depending upon the direction of the force induced by the existing pressure differential.

This upward or downward movement of the valve plug piston causes the flow orifice to be widened of narrowed accordingly, thus the flow rate of the fluid passing across the orifice is automatically adjusted.

For example, if the pressure differential, P1 - P2 created between the upstream and downstream side of the orifice increased, the valve plug piston moves downward to narrow the area of the orifice opening and automatically adjusts the orifice to the preset flow rate value. (With the type of B, C and D, the plug has no inlet hole for fluid, as the pressure differential P1 - P2 exerts directly on the surface of the plug.)
The reverse is also true when the pressure differential decreases, the piston moves upward increasing the orifice opening area and allowing the fluid flow rate to increase to the Preset value.

Preset flow rate range for use Design flow rate ranges:

Nom. Size	TYPE	Flow rate (m3/hr)	Range ability	Working differential pressure Mpa{kgf/cm^2}
15mm (1/2")	TYPE B	0.04 - 0.8	20:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE C	0.08 - 0.8	10:1	0.03 ～ 0.2 {0.3 ～ 2.0}
20mm (3/4")	TYPE B	0.06 - 1.2	20:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE C	0.12 - 1.2	10:1	0.03 ～ 0.2 {0.3 ～ 2.0}
25mm (1")	TYPE A	0.5 - 2.0	4:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE B	0.1 - 2.0	20:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE C	0.2 - 2.0	10:1	0.03 ～ 0.2 {0.6 ～ 2.0}
50mm (2")	TYPE A	2.0 - 8.0	4:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE B	0.4 - 8.0	20:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE C	0.8 - 8.0	10:1	0.03 ～ 0.2 {0.3 ～ 2.0}
80mm (3")	TYPE A	5.0 - 20.0	4:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE B	1.0 - 20.0	20:1	0.02 ～ 0.1 {0.2 ～ 1.0}
	TYPE C	2.0 - 20.0	10:1	0.03 ～ 0.2 {0.3 ～ 2.0}
	TYPE D	15.0 - 30.0	2:1	0.03 ～ 0.15 {0.3 ～ 1.5}
100mm (4")	TYPE C	10.0 - 60.0	6:1	0.03 ～ 0.2 {0.3 ～ 2.0}
	TYPE D	30.0 - 60.0	2:1	0.02 ～ 0.2 {0.2 ～ 2.0}

1m^3 /hr = 4.4033gal/min, 0.1MPa = 14.286psi

Product model code list

CONSTANT FLOW VALVE

ACTUATION	TYPE	OPERATING SYSTEM	BODY MATERIAL	SEAL MATERIAL	CONNECTION	STANDARD	SIZE
V	CF	＊T	U	＊	F	＊	＊＊＊
:	:	:	:	:	:	:	:
V MANUAL VALVE	CF CONSTANT FLOW	AT TYPE A	U U-PVC	E EPDM	F FLANGED	1 JIS 10K	015 15mm
		BT TYPE B		V FKM		5 JIS 5K	≀
		CT TYPE C				D DIN	100 100mm
		DT TYPE D				A ANSI	

Installation, Operation and Maintenance Manual

"For details of Installation, Operation and Maintenance, please refer IOM at below link"

http://www.asahi-yukizai.co.jp/en/product/mt_pdf/a_manual_Valve_7_01.pdf