

# HDVW

ウォーターハンマー低減PVC製2方弁 Water hammer less PVC 2way valve

Specialty Valves and Control Products **Dymatrix™**



## Water hammer less

The new design diaphragm achieved to reduce the water hammer. The sealing performance for the back pressure has been improved.

## Abundant line-up

Abundant nominal size (1/2 ~ 2 · 1/2 inch) can be selected.

## Specifications

### HDVW

項目 Items	Unit	Nominal size							
		15mm 1/2inch	20mm 3/4inch	25mm 1inch	32mm 1-1/4inch	40mm 1-1/2inch	50mm 2inch	65mm 2-1/2inch	
作動 Actuation	—	Air to open · Double acting						Double acting	
流体温度 Medium Temperature	°C	0 ~ 60			0 ~ 50				
使用圧力範囲 <sup>※1</sup> Working Pressure range	MPa	0 ~ 0.5 0 ~ 72.5psi			0 ~ 0.4 0 ~ 58psi				
弁座漏れ量 Leakage Rate	cm <sup>3</sup> /min	0 (at hydraulic pressure 23°C)							
背圧 <sup>※1</sup> Back Pressure	MPa	0 ~ 0.5 0 ~ 72.5psi			0 ~ 0.4 0 ~ 58psi				
周囲温度 Ambient Temperature	°C	0 ~ 60			0 ~ 50				
開閉頻度 Frequency of opening and closing	times/min	< 10			< 6				
取付姿勢 Installation direction	—	Any direction							
接続 Connection	—	Socket Threaded Flanged							
オリフィス <sup>※3</sup> Orifice diameter	mm	φ 16	φ 22	φ 22	φ 40	φ 40	φ 50	φ 65	
Cv値 <sup>※3</sup> Cv value	—	4.8	8	9.5	24	26	44	70	
Pilot	Pilot pressure	Air to open	0.4 ~ 0.5 58 ~ 72.5psi						—
		Double acting	0.3 ~ 0.4 43.5 ~ 58psi						—
	Pilot air consumption	Air to open	0.02	0.05	0.20		0.39	—	
		Double acting	0.13	0.30	1.21		2.13	2.78	
Pilot port		—							Rc1/8"

※1. For the details, please refer to the characteristic graph of "Medium temperature-Working pressure" and "Working pressure-Back pressure".

※2. The pilot air consumption is the value at 0.4 MPa.

※3. It is typical value.

Ordering Code

**HDV W** - [1] [2] [3] [4] [5] [6] [7]

**① Actuation**

G*1 (NC)	Air to open
F (DA)	Double acting

**③ Mounting**

0*1	Thread at bottom
1	Base plate

**⑤ Pilot port connection**

2 (Standard)	
0	
1	
3	

**⑦ Nominal size**

15	15mm	<input type="checkbox"/>	50
20	20mm	<input type="checkbox"/>	60
25	25mm	<input type="checkbox"/>	95
32	32mm	<input type="checkbox"/>	
40	40mm	<input type="checkbox"/>	
50	50mm	<input type="checkbox"/>	115
65	65mm	<input type="checkbox"/>	180

**② Connection**

TJ	Socket • JIS
TA	Socket • ASTM SCH80
TD	Socket • DIN
NJ	Threaded • Rc
NA	Threaded • NPT
ND	Threaded • RP
F1	Flanged • JIS10K
FA	Flanged • ANSI CLASS150
FD	Flanged • DIN PN10

**④ Option**

4 (Standard)	Indicator
0*1	ON-OFF only
1*1	Travel stop
2*1	Bypass
3*1	Travel stop • Bypass
5*1	Bypass • Indicator
6*1 *2	Travel stop • Indicator
7*1 *2	Travel stop • Bypass • Indicator

**⑥ O-ring**

V	FKM
E	EPDM
F	ビフロン®F*3 Viflon®F
K	Kalrez® 6190

Ordering code example  
 HDVW-GTJ142V25  
 HDVW-FTJ142V65

\*1: Size 65mm is not available  
 \*2: Size 32mm,40mm,50mm are not available.  
 \*3: "Viflon" is the Terpolymerization Fluorocarbon Elastomers.

● Upstream fitting and downstream fitting in case of different connections.

**HDV W** - [1] [2] [3] [4] [5] [6] [7] [8]

**① Actuation**

G*1 (NC)	Air to open
F (DA)	Double acting

**④ Mounting**

0*1	Thread at bottom
1	Base plate

**⑥ Pilot port connection**

2 (Standard)	
0	
1	
3	

**⑧ Nominal size**

15	15mm	<input type="checkbox"/>	50
20	20mm	<input type="checkbox"/>	60
25	25mm	<input type="checkbox"/>	95
32	32mm	<input type="checkbox"/>	
40	40mm	<input type="checkbox"/>	
50	50mm	<input type="checkbox"/>	115
65	65mm	<input type="checkbox"/>	180

**②③ Connection**

	Socket • JIS
TA	Socket • ASTM SCH80
TD	Socket • DIN
NJ	Threaded • Rc
NA	Threaded • NPT
ND	Threaded • RP
F1	Flanged • JIS10K
FA	Flanged • ANSI CLASS150
FD	Flanged • DIN PN10

**⑤ Option**

4 (Standard)	Indicator
0*1	ON-OFF only
1*1	Travel stop
2*1	Bypass
3*1	Travel stop • Bypass
5*1	Bypass • Indicator
6*1 *2	Travel stop • Indicator
7*1 *2	Travel stop • Bypass • Indicator

**⑦ O-ring**

V	FKM
E	EPDM
F	ビフロン®F*3 Viflon®F
K	Kalrez® 6190

Ordering code example  
 HDVW-GTJF1142V25  
 HDVW-FTJN142V65

\*1: Size 65mm is not available.  
 \*2: Size 32mm,40mm,50mm are not available.  
 \*3: "Viflon" is the Terpolymerization Fluorocarbon Elastomers.

Option

Nominal size 15 ~ 25mm (1/2 inch ~ 1 inch)

No.	Option No.	0	1	2	3	4	5	6	7
	Travel stop	-	○	-	○	-	-	○	○
	Bypass	-	-	○	○	-	○	-	○
	Indicator	-	-	-	-	○	○	○	○

Nominal size 32 ~ 50mm (1 1/4 inch ~ 2 inch)

Option No.	0	1	2	3	4	5	6	7
Travel stop	-	○	-	○	-	-	-	-
Bypass	-	-	○	○	-	○	-	-
Indicator	-	-	-	-	○	○	-	-

Nominal size 65mm (2 1/2 inch)

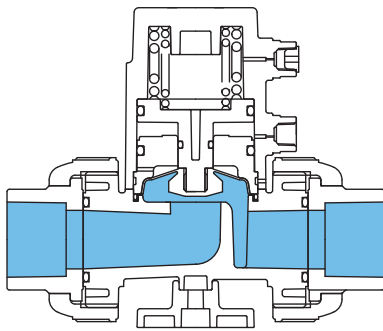
Option No.	0	1	2	3	4	5	6	7
Indicator	-	-	-	-	○	-	-	-

## Weight List (Reference)

(Unit) : kg

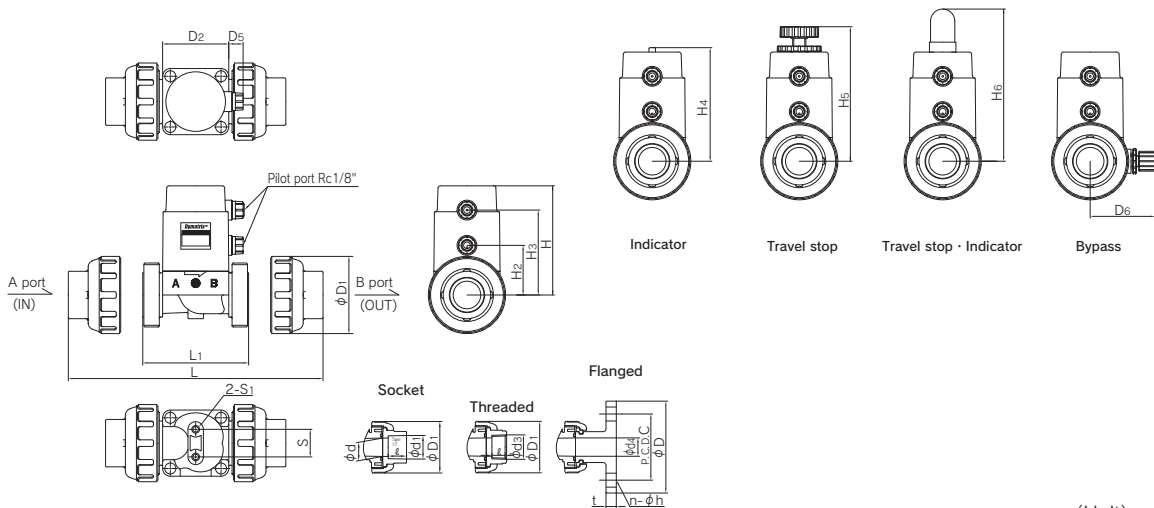
Actuation			Air to open			Double acting		
Connection			Socket	Threaded	Flanged	Socket	Threaded	Flanged
Nominal size	mm	inch						
	15	1/2	0.4	0.4	0.7	0.4	0.4	0.6
	20	3/4	0.7	0.7	1.0	0.7	0.7	1.0
	25	1	0.8	0.8	1.3	0.8	0.8	1.3
	32	1 1/4	2.7	2.7	3.4	2.3	2.3	3.0
	40	1 1/2	3.1	3.1	3.8	2.7	2.7	3.4
	50	2	5.6	5.6	6.4	4.9	4.9	5.7
65	2 1/2		—		5.0	5.0	6.5	

## Parts & Materials



Parts	Material	Wetted parts
Body	U-PVC	○
Diaphragm	PTFE	○
Actuator	PPS/PVDF/U-PVC	
O-ring	FKM EPDM <b>KYJOC®</b> <i>Viflon F</i> <b>Kalrez®</b> 6190	○
Metal parts	SUS304	

## Dimensions (Thread at Bottom)

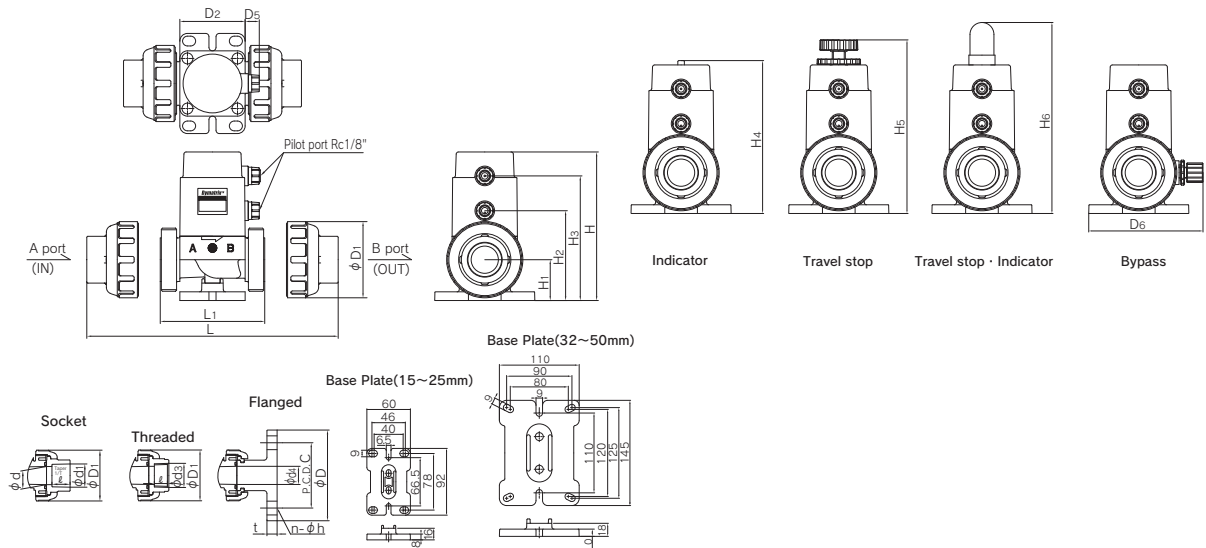


(Unit) : mm

Nominal size	d	Socket				Threaded				Flanged						L1	D1	D2	D4 (Office)	D5	H	H1	H2	H3	S	S1	H4 (MAX)	H5 (MAX)	H6	D6 (MAX)	
		d1	ℓ	1/T	L	d3	ℓ	L	L	d4	D	C	n	h	L																t
15	1/2	15	22.11	20	1/34	124.4	Rc1/2	15	117.0	15	95	70	4	15	158.0	12	79.0	48	□50	16	13	69	17.0	33	60	20	M6 L7	72.5	92	111	55.0
20	3/4	20	26.13	24	1/34	147.0	Rc3/4	17	139.0	20	100	75	4	15	191.0	14	88.0	60	□60	22	13	98	20.5	44	76	25	M6 L7	102.0	121.5	140	59.0
25	1	25	32.16	27	1/34	163.5	Rc1	20	149.5	25	125	90	4	19	205.5	14	94.5	70	□60	22	13	99	21.5	45	77	25	M6 L7	103.0	122.5	141	59.0
32	1 1/4	40	38.19	30	1/34	226.0	Rc1 1/4	22	215.0	32	135	100	4	19	264.0	16	146.0	100	□95	40	12.5	147	35.0	68	115	45	M10 L10	155.0	184.5	—	89.5
40	1 1/2	40	48.21	37	1/37	241.0	Rc1 1/2	25	215.0	40	140	105	4	19	264.0	16	146.0	100	□95	40	12.5	147	35.0	68	115	45	M10 L10	155.0	184.5	—	89.5
50	2	50	60.25	42	1/37	283.0	Rc2	28	260.0	50	155	120	4	19	297.0	16	177.0	126	□115	50	13	174	48.0	83	137	45	M10 L17	185.0	215.0	—	89.5

※ The dimensions of HDV12/HDVR is compatible with HDWV (15~50).  
 ※ Reference values.

Dimensions (With Base Plate)

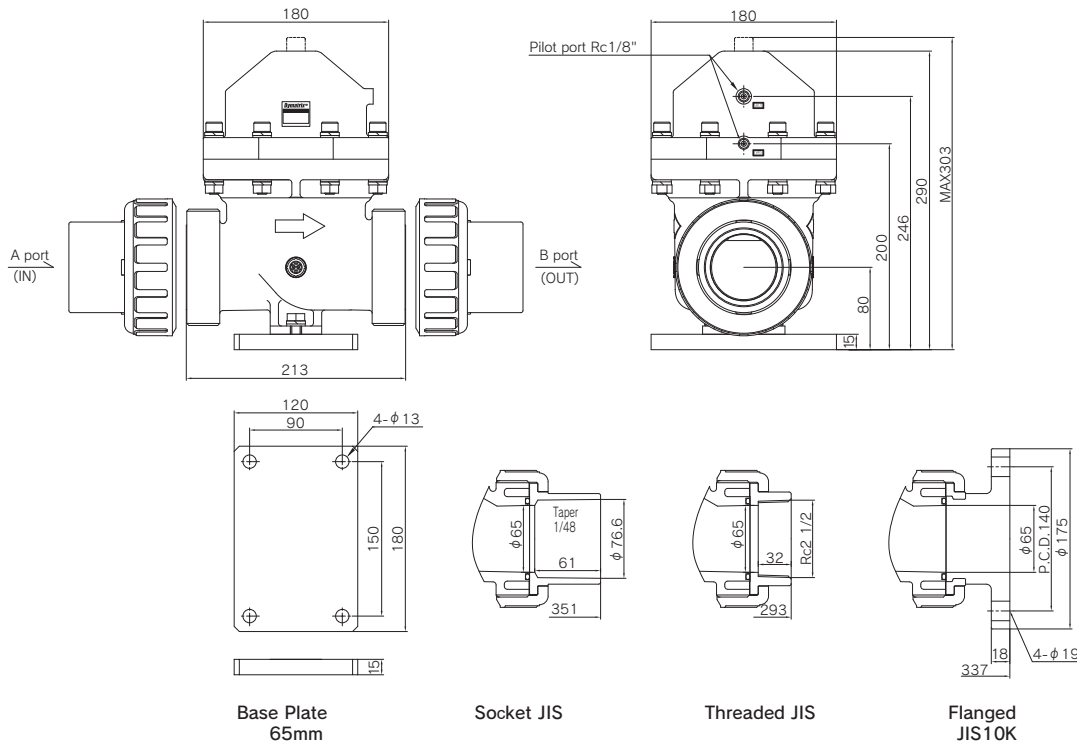


(Unit) : mm

Nominal size	d	Socket				Threaded			Flanged							L1	D1	D2	D4 (Orifice)	D5	H	H1	H2	H3	H4 (MAX)	H5 (MAX)	H6	D6 (MAX)	
		d1	ℓ	1/T	L	d3	ℓ	L	JIS 10K																				
mm	inch								d4	D	C	n	h	L	t														
15	1/2	15	22.11	20	1/34	124.4	Rc1/2	15	117.0	15	95	70	4	15	158.0	12	79.0	48	□50	16	13	102.0	33.0	66.0	93.0	105.5	125.0	144.0	101
20	3/4	20	26.13	24	1/34	147.0	Rc3/4	17	139.0	20	100	75	4	15	191.0	14	88.0	60	□60	22	13	134.5	36.5	80.5	112.5	138.5	157.5	176.5	105
25	1	25	32.16	27	1/34	163.5	Rc1	20	149.5	25	125	90	4	19	205.5	14	94.5	70	□60	22	13	136.5	37.5	82.5	114.5	140.5	159.5	178.5	105
32	1 1/4	40	38.19	30	1/34	226.0	Rc1 1/4	22	215.0	32	135	100	4	19	264.0	16	146.0	100	□95	40	12.5	200.0	53.0	120.5	168.0	208.0	237.5	—	162
40	1 1/2	40	48.21	37	1/37	241.0	Rc1 1/2	25	215.0	40	140	105	4	19	264.0	16	146.0	100	□95	40	12.5	200.0	53.0	120.5	168.0	208.0	237.5	—	162
50	2	50	60.25	42	1/37	283.0	Rc2	28	260.0	50	155	120	4	19	297.0	16	177.0	126	□115	50	13	240.0	66.0	149.0	202.0	251.0	281.0	—	172

※ The dimensions of HDWW is compatible with HDV12/HDVR (15~50).  
 ※ Reference values

Base plate 65mm

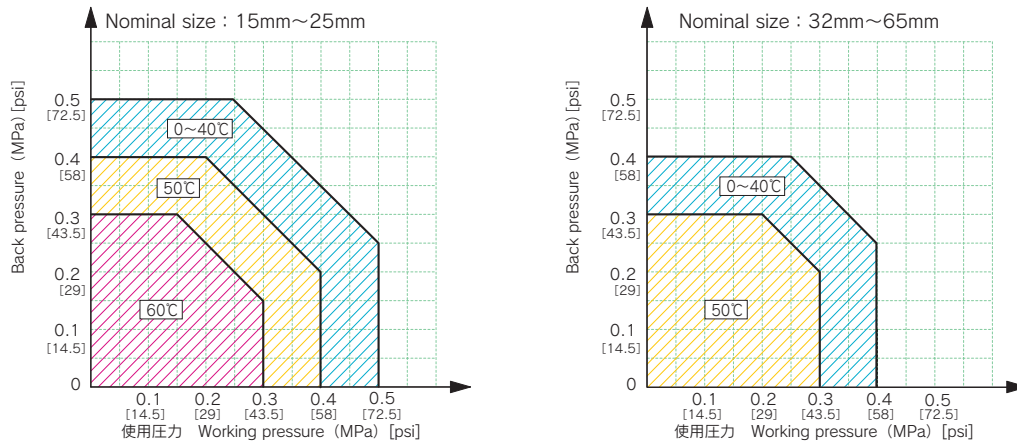


※ Reference values

- AVPV3
- AVPVM
- AVPVS
- AVPVS
- AVSDV
- AVSDVM
- AVSDVT
- AVSAS
- AVSAS
- AVMPV
- AVDIV
- AVVM
- AVHRL
- AVHRL-M
- AVHRS
- AVBPR
- AVCFV
- HDV12R
- HDVV
- AVQDV
- AVBVX
- AVPJX
- AVSIV
- AVFCS2
- AVFCN
- OTHER

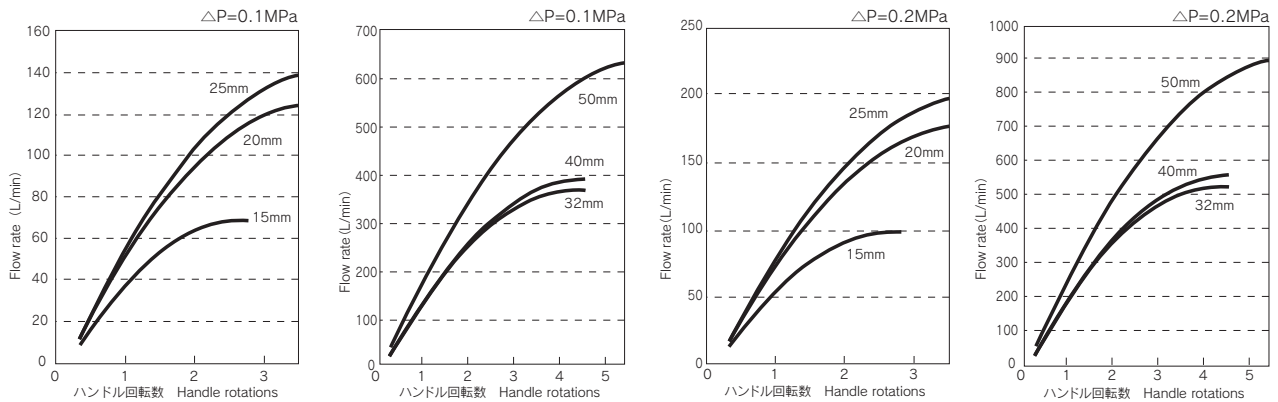
## Technical Data

### Working pressure – Back pressure

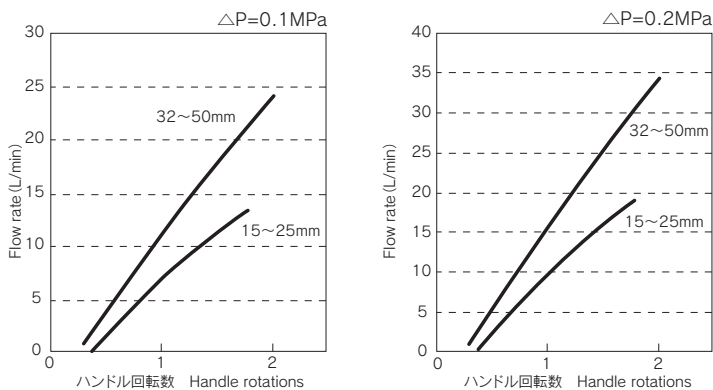


## Technical Data(Common data of HDV series)

### Handle rotations – Flow rate (Main Channel of Travel stop option)



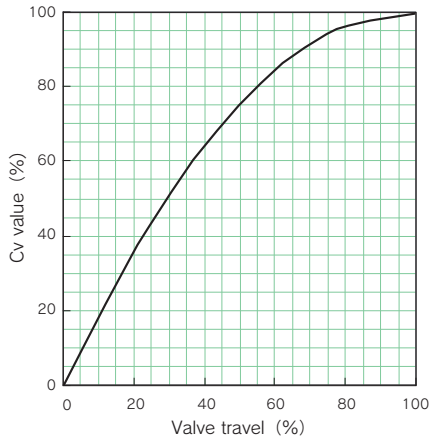
### Handle rotations – Flow rate (Bypass channel of Bypass option)



- ※1. Cavitation may be occur when using Travel Stop or Bypass with nearly closed position. Please open the handle at least 1/4 turns from the closure to prevent the cavitation.
- ※2. The data shown here is the experimental values and the reference values.

Technical Data (Common data of HDV series)

Valve travel – Cv value

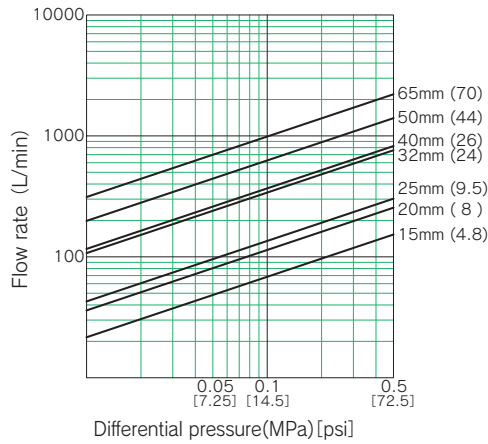


Cv value at full open

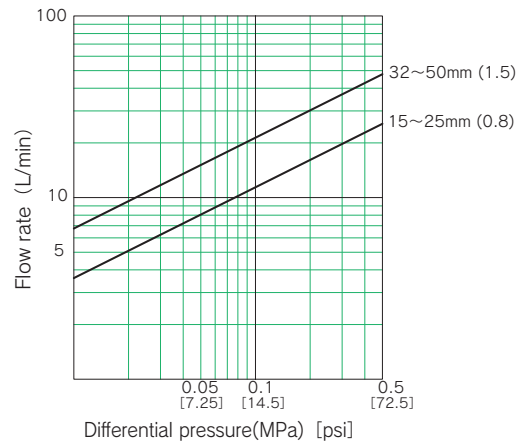
(mm) nominal size	15	20	25	32	40	50
Cv value	4.8	8	9.5	24	26	44

Differential pressure – Flow rate

Main channel



Bypass channel



※ Value in ( ) shows Cv value at full open. The data shown here is the experimental values and the reference values.

- AVPV3
- AVPVM
- AVPVL
- AVSDV
- AVSDVM
- AVSDVT
- AVSAS
- AVMPV
- AVDIV
- AVWVM
- AVHPRL
- AVHPRLM
- AVHPRS
- AVBPR
- AVCFV
- HDV12R
- HDVW
- AVQDV
- AVBVX
- AVPJX
- AVSIV
- AVFCS2
- AVFCN
- OTHER