

# HDV12/HDVR

## PVC製2方弁 PVC 2 way valve

Specialty Valves and Control Products **Dymatrix™**



### Excellent durability

HDV12 has excellent durability and reliability since it is designed based on our know-how cultivated for years as a pioneer of plastic valve and our experience in developing valves for semiconductor industry.

## Specifications

### HDV12

#### PTFE Diaphragm

項目 Items	Unit	Nominal size						
		15mm 1/2inch	20mm 3/4inch	25mm 1inch	32mm 1-1/4inch	40mm 1-1/2inch	50mm 2inch	
作動 Actuation	—	Air to open · Double acting			* Please consult us for the specification "Air to close" in the case of the hope.			
流体温度 Medium Temperature	℃	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 (23℃) 0 (at hydraulic pressure 23℃)						
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	℃	0 ~ 60			0 ~ 50			
開閉頻度 Frequency of opening and closing	times/min	< 20			< 15			
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	
Cv値 <sup>※3</sup> Cv value	—	4.8	8	9.5	24	26	44	
操作部 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	
Pilot port	—	Rc1/8", FNPT1/8"						

### HDVR

#### Rubber Diaphragm

項目 Items	単位 Unit	Nominal size			
		15mm 1/2inch	20mm 3/4inch	25mm 1inch	
作動 Actuation	—	Air to open · Double acting			
流体温度 Medium Temperature	℃	0 ~ 50			
使用圧力範囲 <sup>※1</sup> Working Pressure range	MPa	0 ~ 0.5 0 ~ 72.5psi			
弁座漏れ量 Leakage Rate	cm <sup>3</sup> /min	0 (23℃) 0 (at hydraulic pressure 23℃)			
背圧 <sup>※1</sup> Back Pressure	MPa	0 ~ 0.2 0 ~ 29psi			
周囲温度 Ambient Temperature	℃	0 ~ 50			
開閉頻度 Frequency of opening and closing	times/min	< 20			
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	
Cv値 <sup>※3</sup> Cv value	—	4.8	8	9.5	
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	
		Double acting	0.13	0.30	
Pilot port	—	Rc1/8", FNPT1/8"			

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

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

※3. Typical values

Ordering Code

HDV12

HDV 12 - ① ② ③ ④ ⑤ ⑥ ⑦ - ⑧

① Actuation

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

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

③ Mounting

0	Thread at bottom
1	Base plate

④ Option

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

⑤ Pilot port connection

2 (Standard)	
0	
1	
3	

⑥ O-ring

V	FKM
E	EPDM
F	¥¥¥¥¥¥ ¥¥¥¥¥¥ *2
K	Kalrez® 6190

⑦ Nominal size

15	15mm	□50
20	20mm	□60
25	25mm	
32	32mm	□95
40	40mm	
50	50mm	□115

⑧ Pilot port

n/a	Rc 1/8"
N	FNPT 1/8"

Ordering code example  
HDV12-GTJ142V25  
HDV12-GTJ112V32-N

\*1: Size 32mm ~ 50mm is not available.  
\*2: "¥¥¥¥¥¥" is the Terpolymerization Fluorocarbon Elastomers.

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

HDV 12 - ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ - ⑨

Actuation

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

④ Mounting

0	Thread at bottom
1	Base plate

⑤ Option

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

⑥ Pilot port connection

2 (Standard)	
0	
1	
3	

⑦ O-ring

V	FKM
E	EPDM
F	¥¥¥¥¥¥ ¥¥¥¥¥¥ *2
K	Kalrez® 6190

⑧ Nominal size

15	15mm	□50
20	20mm	□60
25	25mm	
32	32mm	□95
40	40mm	
50	50mm	□115

⑨ Pilot port

n/a	Rc 1/8"
N	FNPT 1/8"

Ordering code example  
HDV12-GF1TJ142V25  
HDV12-GFATA112V40-N

\*1: Size 32mm ~ 50mm is not available.  
\*2: "¥¥¥¥¥¥" is the Terpolymerization Fluorocarbon Elastomers.

Option

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

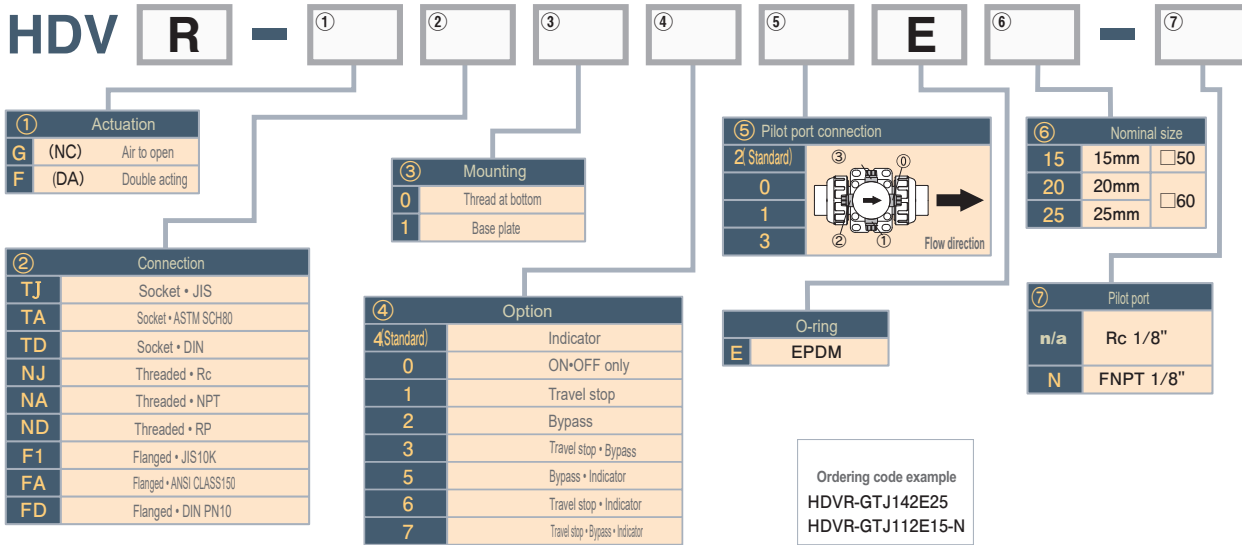
No.	Option No.	0	1	2	3	4	5	6	7
	Travel stop	—	○	—	○	—	—	○	○
	Bypass	—	—	○	○	—	○	—	○
	Indicator	—	—	—	—	○	○	○	○

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

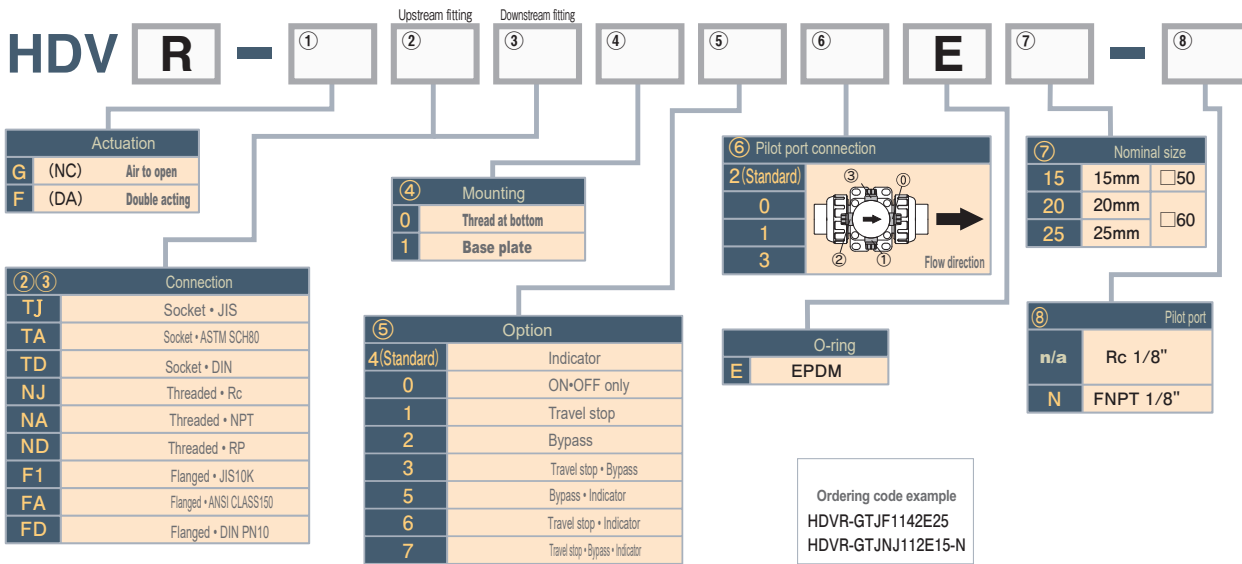
No.	Option No.	0	1	2	3	4	5	6	7
	Travel stop	—	○	—	○	—	—	—	—
	Bypass	—	—	○	○	—	○	—	—
	Indicator	—	—	—	—	○	○	—	—

## Ordering Code

### HDVR



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



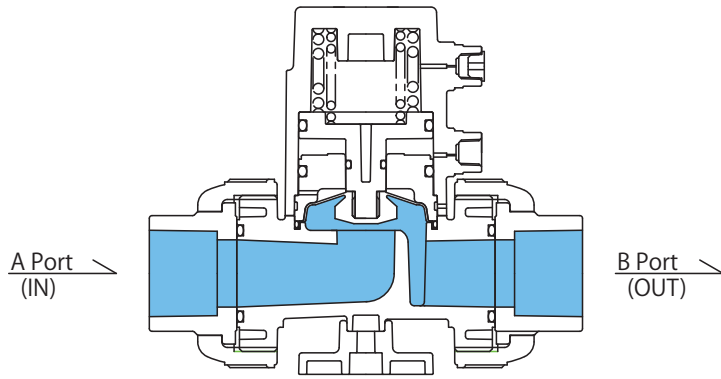
## Weight List (Reference)

(Unit) : kg

Actuation			Air to open			Double acting			
Connection			Socket	Threaded	Flanged	Socket	Threaded	Flanged	
Nominal size	m	inch							
	15	½		0.4	0.4	0.7	0.4	0.4	0.6
	20	¾		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	1¼		2.7	2.7	3.4	2.3	2.3	3.0
	40	1½		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	

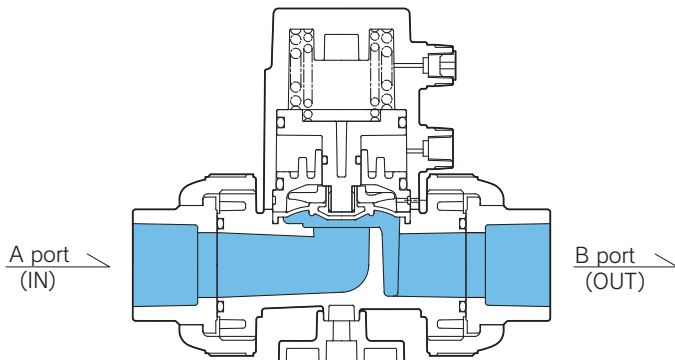
Parts & Materials

**HDV12**



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

**HDVR**

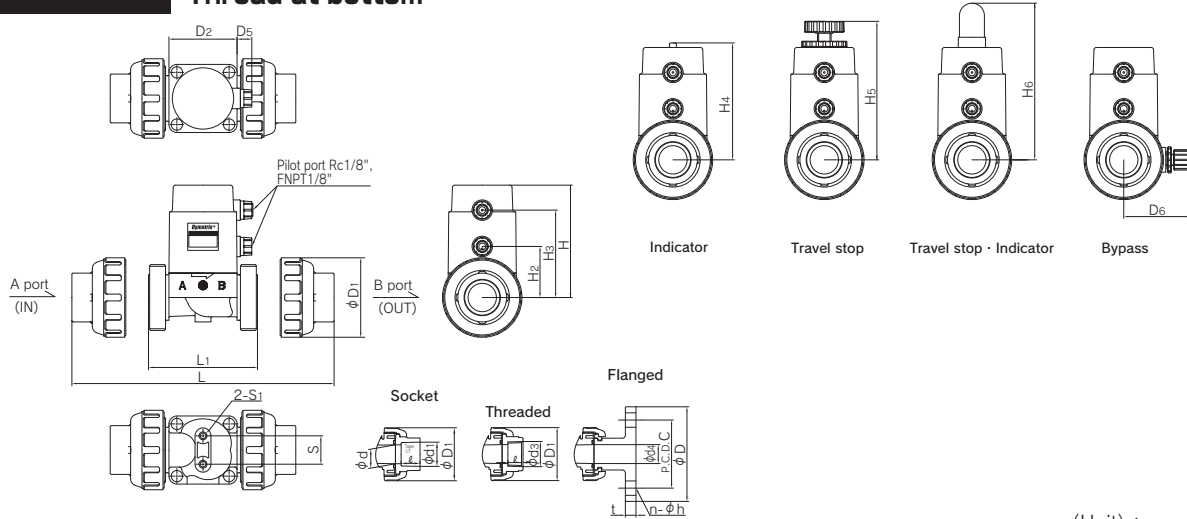


Parts	Material	Wetted parts
Body	U-PVC	○
Diaphragm	EPDM	○
Actuator	PPS/PVDF	
O-ring	EPDM	○
Metal parts	SUS304	

- AVPV3
- AVPVM
- AVPVS
- AVSDV
- AVSDVM
- AVSDVT
- AVSAS
- AVMPV
- AVDIV
- AVNVM
- AVHPR
- AVHPRM
- AVHPRS
- AVBPR
- AVCFV
- HDV12R
- HDVM
- AVQDV
- AVBVX
- AVPJX
- AVSIV
- AVFCS2
- AVFCN
- OTHER

## Dimensions

### Thread at bottom



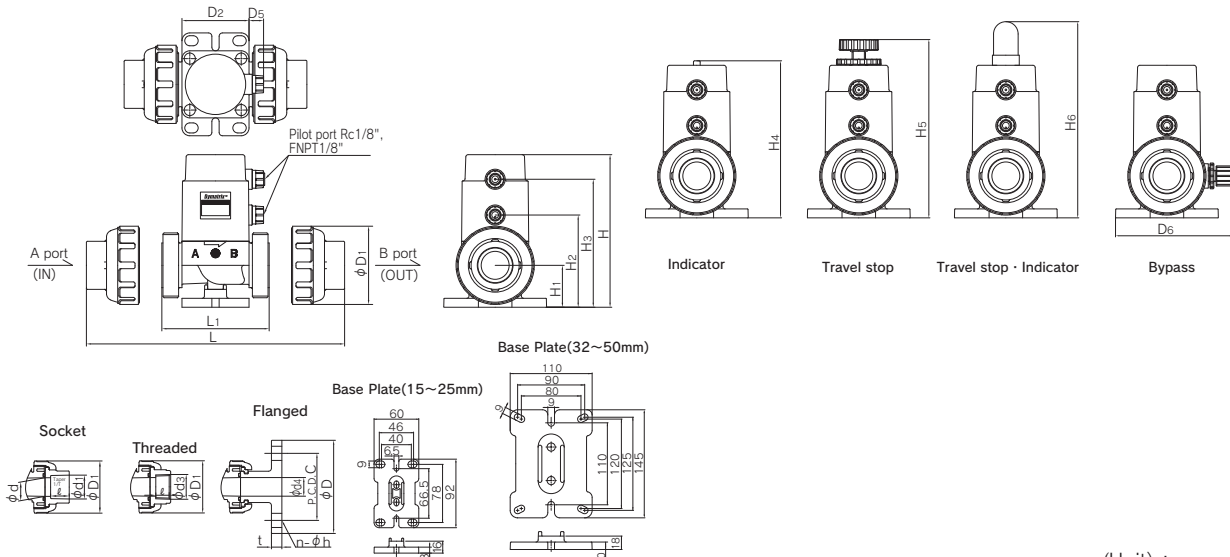
(Unit) : mm

Nominal size	d	Socket						Flanged										L1	D1	D2	D4 (Orifice)	D5	H	H1	H2	H3	S	S1	H4 (MAX)	H5 (MAX)	H6	D6 (MAX)
		Threaded			JIS 10K			d4	D	C	n	h	L	t																		
		d1	ℓ	1/T	L	d3	ℓ								L																	
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	92.0	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	121.0	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	122.0	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	67.5	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	—	99.5	

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

## Dimensions (With Base Plate)

### Base plate



(Unit) : mm

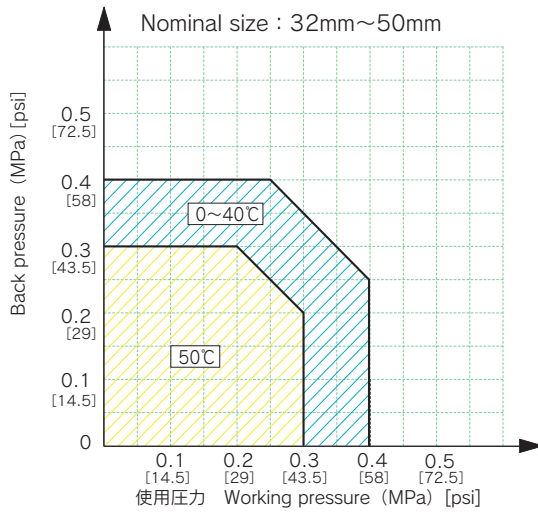
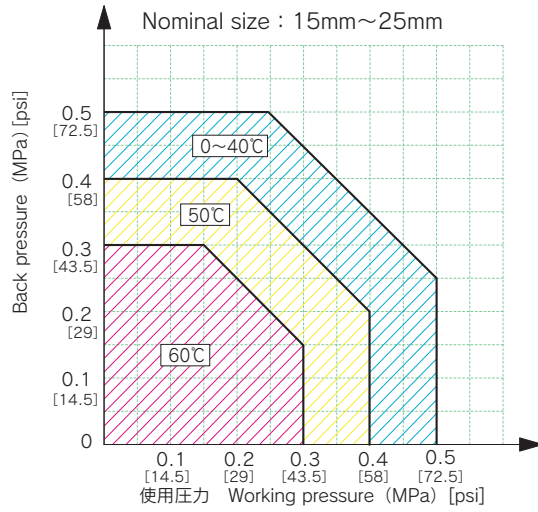
Nominal size	d	Socket						Flanged										L1	D1	D2	D4 (Orifice)	D5	H	H1	H2	H3	H4 (MAX)	H5 (MAX)	H6	D6 (MAX)
		Threaded			JIS 10K			d4	D	C	n	h	L	t																
		d1	ℓ	1/T	L	d3	ℓ								L															
15	1/2	15	22.11	20	1/34	124.4	Rc1/2	15	117.0	15	95	70	4	15	158.0	12	79.0	48	□50	16	13	102.0	33.0	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	202.5	251.0	281.0	—	172	

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

Technical Data

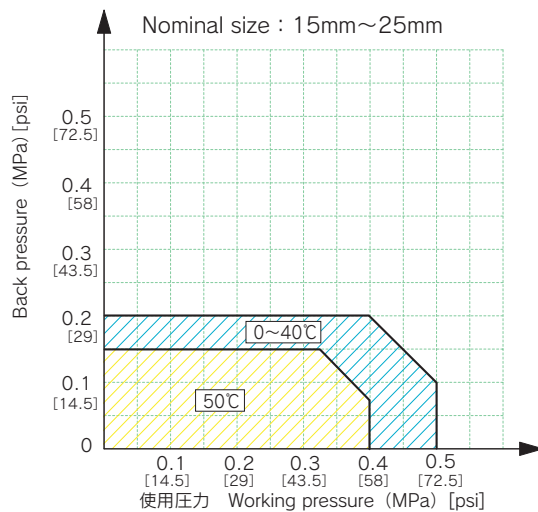
**HDV12**

**Working pressure – Back pressure**



**HDVR**

**Working pressure – Back pressure**



- AVPV3
- AVPVM
- AVPVS
- AVSDV
- AVSDVM
- AVSDVT
- AVSAS
- AVMPV
- AVDIV
- AVVM
- AVHPR
- AVHPRM
- AVHPRS
- AVBPR
- AVCFV
- HDV12R
- HDVM
- AVQDV
- AVBVX
- AVPJX
- AVSIV
- AVFCS2
- AVFCN
- OTHER