

AVHPRL

定圧弁 Regulator

Specialty Valves and Control Products **Dymatrix™**



Excellent stability

The flow can be maintained stable instantly in the change of setting due to the quick response of the valve. There is no overshooting even just after the valve started.

Specifications

項目	Items	Unit	Type			
			LF	MF	HF	SHF
流体温度	Medium Temperature	°C	10 ~ 90 ※ Please consult manufacturer for temp ranges of (10 ~ 200°C) HT			
構造耐圧	Proof Pressure	MPa	0.9 130.5psi			
使用圧力範囲	Working Pressure range	MPa	+0.05 ~ 0.5 Pilot pressure +7.25 ~ 72.5psi			
周囲温度	Ambient Temperature	°C	10 ~ 60			
取付姿勢	Installation direction	—	Any direction			
接続	Connection	—	Flowell 20 series Flowell 60 series Super Type Pillar Fitting Super 300 Type Pillar Fitting Flare Type Tube			
接続口径	Connection tubing size	mm	3×2(3.18×1.6)、 6×4(6.35×4.35)	6×4(6.35×4.35)、 10×8(9.53×6.35)、 12×10(12.70×9.53)	12×10(12.70×9.53)、 19×16(19.05×15.88)	19×16(19.05×15.88)、 25×22(25.40×22.20)
参考流量範囲	Reference Flow Range	L/min	10 ~ 500mL/min	0.4 ~ 15	5 ~ 50	10 ~ 100
精度	Accuracy	—	±5%F.S. Accuracy of flow rate when the range of inlet pressure is from minimum working pressure to 0.5MPa, and there is no back pressure change.			
重量	Weight	kg	0.2	0.4	1.0	2.0
操作部 Pilot	Pilot pressure	Open control	0.1 ~ 0.3	0.08 ~ 0.3		
		Feed back control	0.12~0.3			
	エア消費量※ Pilot air consumption	L/times(ANR)	0.06	0.11	0.32	0.65
	Pilot port	—	Rc1/8" , FNPT1/8"			

※ The pilot air consumption is the value at 0.3 MPa.

Ordering Code

AVHPR ① - G ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ - 3

① Type	
LF	Low Flow
MF	Medium Flow
HF	High Flow
SHF	Super High Flow

Actuation	
G	Air to open

② Body material	
A ^{※1}	PFA
T	PTFE

③ Connection	
2	Flowell 20 series
6	Flowell 60 series
S	Super Type Pillar Fitting
3	Super 300 Type Pillar Fitting
F ^{※3}	Flare Type
T ^{※4}	Tube

④ Tubing standard	
M	Millimeter
I	Inch

⑤ Mounting	
0	Thread at bottom
1	Base plate (Direction 1)
2	Base plate (Direction 2)
3	Attached parts

⑥ Pilot port	
R	Rc 1/8"
N	FNPT 1/8"

⑦ Pilot port connection	
0 (Standard)	
1	
2	
3	
4	Direction 0 horizontal
5	Direction 1 horizontal
6	Direction 2 horizontal
7	Direction 3 horizontal

⑧ Chemical-resistant ^{※5}		
	O-ring ^{※6}	Metal Coating
V	FKM	X
E	EPDM	X
F	FKM ^{※7} Viflon F	O
K	Kalrez 6190	O

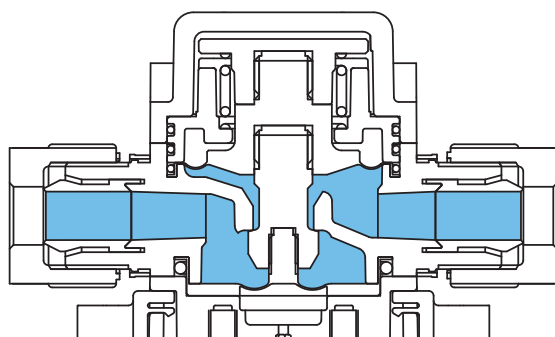
⑨	Connection tubing size					
	mm	inch	LF	MF	HF	SHF
03	3 × 2	3.18 × 1.6	○			
06	6 × 4	6.35 × 4.35	○	○		
10	10 × 8	9.53 × 6.35		○		
12	12 × 10	12.70 × 9.53		○	○	
19	19 × 16	19.05 × 15.88			○	○
25	25 × 22	25.40 × 22.20				○

Revision	
3	LF
	MF
	HF
	SHF

Ordering code example
 AVHPRLF-GT6M2N5K106-3
 AVHPRHF-GA310R0V019-3

※1: In the case of Body material "A", only "3" can be selected for the "Connection".
 ※2: In the case of Body material "A", only "12(MF)", "19(HF)" can be selected for the "Connection Tubing Size".
 ※3: In the case of the connection is "F", only "I (Inch)" can be selected for the "Tubing Standard".
 ※4: Please refer to page 105 for diameter of "Tube".
 ※5: Please consult us for the specification if the medium is a strong chemical, strong acid etc.
 ※6: O-rings are not wetted.
 ※7: "Viflon" is the Terpolymerization Fluorocarbon Elastomers.

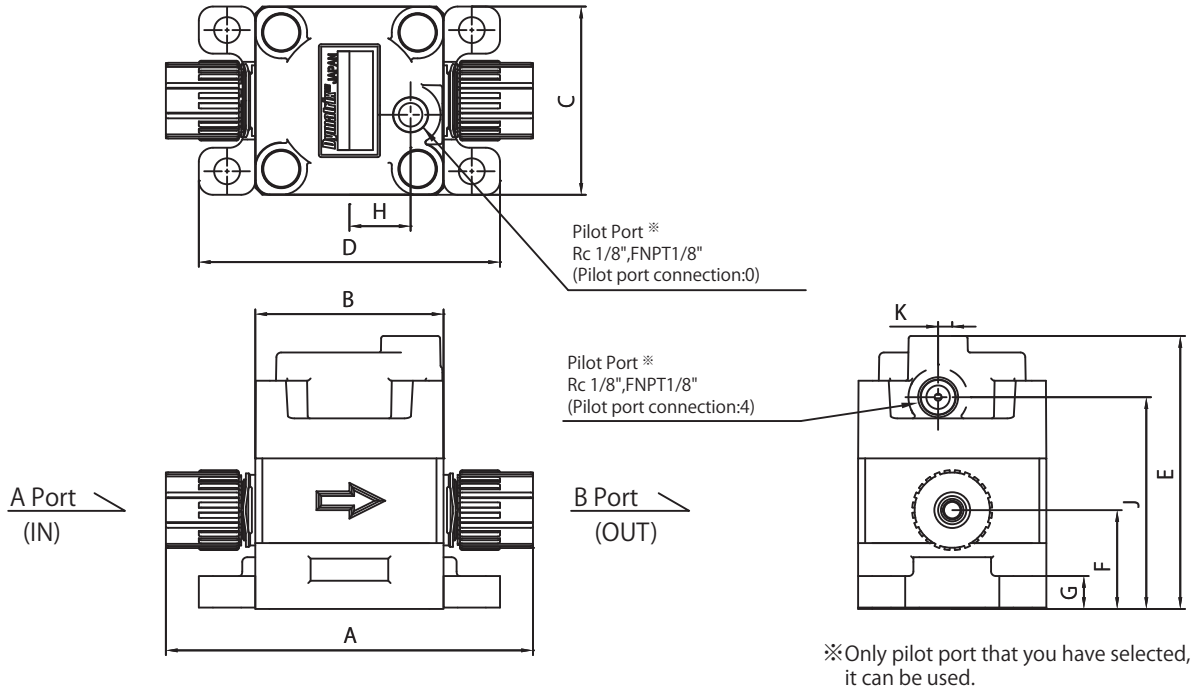
Parts & Materials



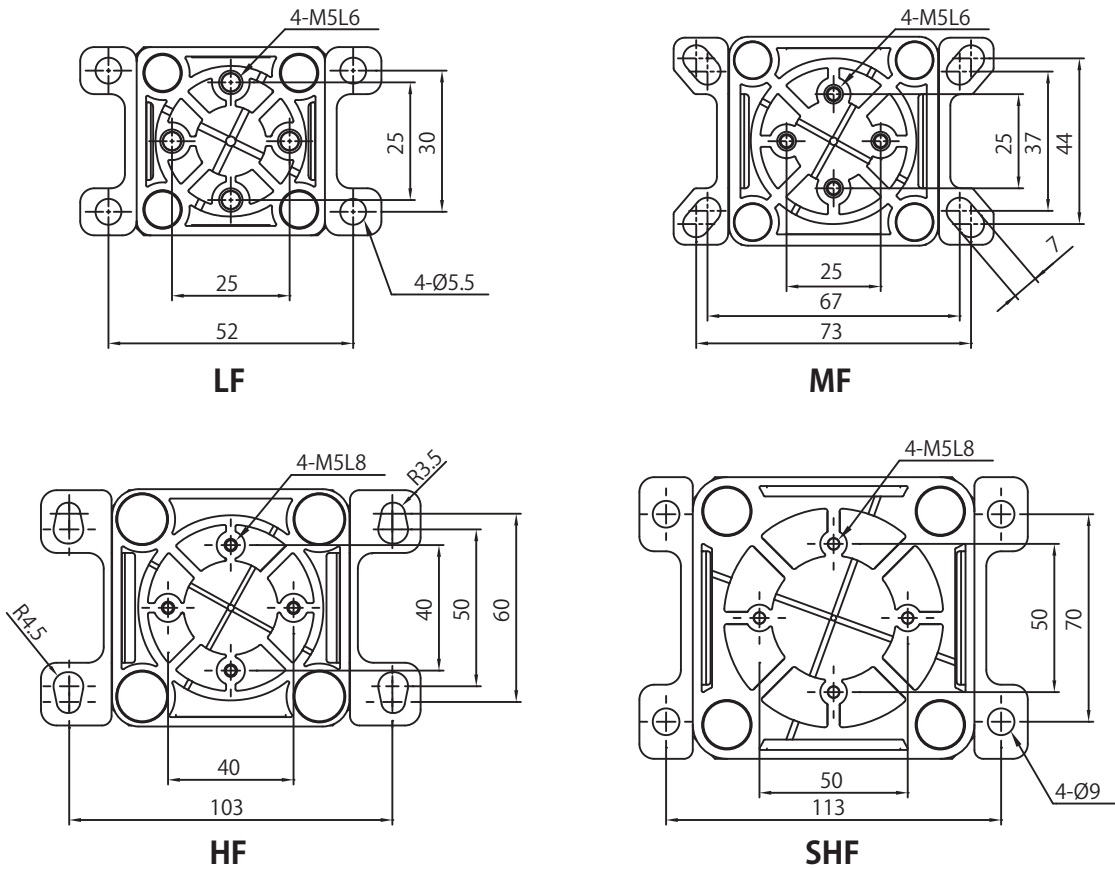
Parts	Chemical-resistant		Wetted parts
	0	1	
Body	PFA/PTFE		○
Diaphragm	PTFE		○
Actuator	PVDF		
O-ring	FKM/EPDM/ FKM ^{※7} Viflon F / Kalrez 6190		
Metal parts	SUS304	SUS304 PTFE Coating	

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

Dimensions



Base plate



Dimensions

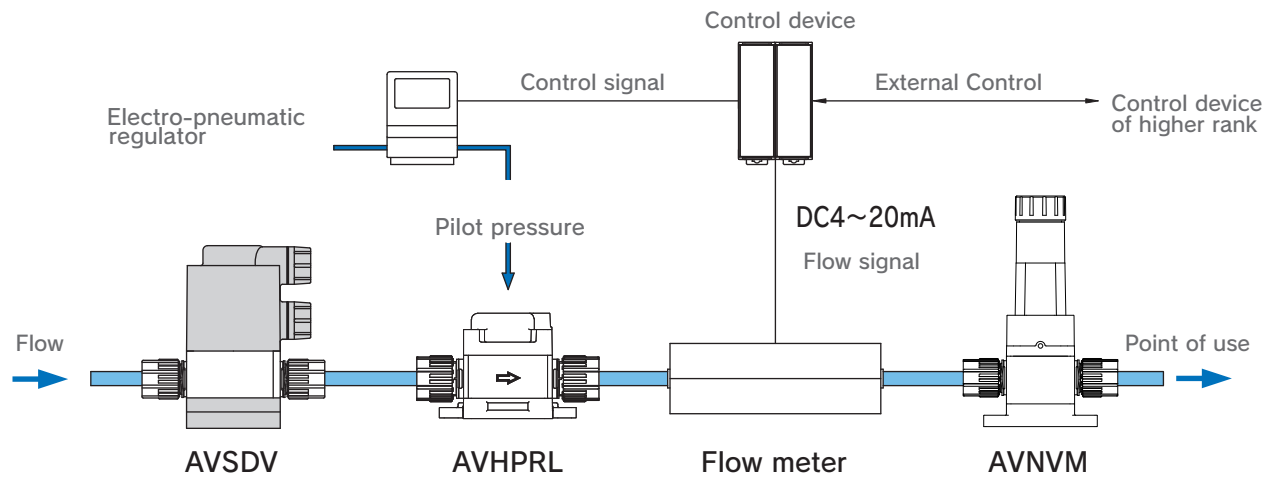
(Unit) : mm

Type	Tube size	Standard	Connection※	Dimension									
				A	B	C	D	E	F	G	H	J	K
LF	3 × 2 (3.18×1.6)	mm	2	58	40	40	64	58	21	7	13	45	3
		inch	6	75									
		mm		75									
		inch/mm	S	70									
		inch/mm	3	70									
		inch	2	76									
	6 × 4 6.35×4.35	mm	2	74									
		inch	6	102									
		mm		100									
		inch/mm	S	79									
		inch/mm	3	78									
		inch	F	96									
		inch/mm	T	100									
		inch	2	91									
MF	6 × 4 6.35×4.35	mm	2	89	55	55	85	67.5	25.5	7	20	52.5	11
		inch	6	117									
		mm	6	115									
		inch/mm	S	94									
		inch/mm	3	93									
		inch	F	111									
		inch/mm	T	115									
		inch	2	100									
		mm		97									
		inch	6	133									
		mm		129									
		inch/mm	S	108									
	inch/mm	3	105										
	inch	F	117										
	inch/mm	T	115										
	12 × 10 12.70×9.53	inch	2	108									
		mm		105									
		inch	6	133									
		mm		129									
		inch/mm	S	115									
		inch/mm	3	113									
		inch	F	121									
		inch/mm	T	115									
		inch	2	128									
mm			125										
inch		6	153										
HF		12 × 10 12.70×9.53	mm	6	149	75	75	121	94	34	8	23.4	74
	inch/mm		S	135									
	inch/mm		3	133									
	inch		F	141									
	inch/mm		T	135									
	inch		2	137									
	mm			137									
	inch		6	163									
	mm			163									
	19 × 16 19.05×15.88	inch/mm	S	154									
		inch/mm	3	147									
		inch	F	151									
		inch/mm	T	155									
		inch	2	157									
		mm		157									
		inch	6	183									
		mm		183									
		inch/mm	S	174									
SHF	19 × 16 19.05×15.88	inch/mm	3	167	95	95	131	114	39	8	26.6	87	18.6
		inch	F	171									
		inch/mm	T	175									
		inch	2	179									
		mm		179									
		inch	6	197									
	25 × 22 25.40×22.20	mm		194									
		inch/mm	S	185									
		inch/mm	3	181									
		inch	F	189									
		inch/mm	T	175									

※ Reference values
 ※ Connection
 2...Flowell 20 series
 6...Flowell 60 series
 S...Super Type Pillar Fitting
 3...Super 300 Type Pillar Fitting
 F...Flare Type
 T...Tube

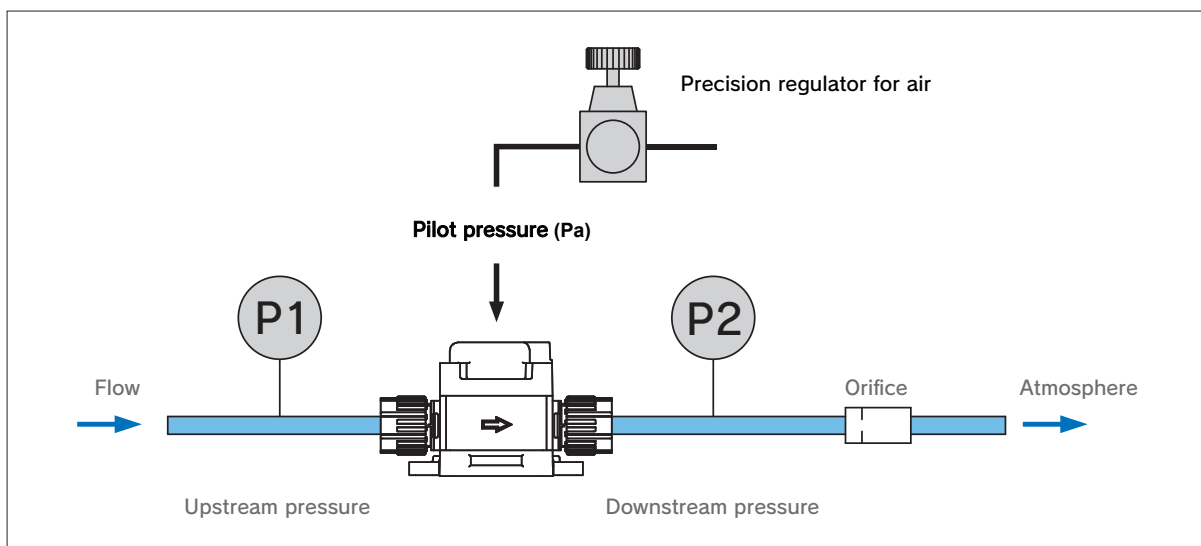


Example



Technical Data

Test line



Test condition

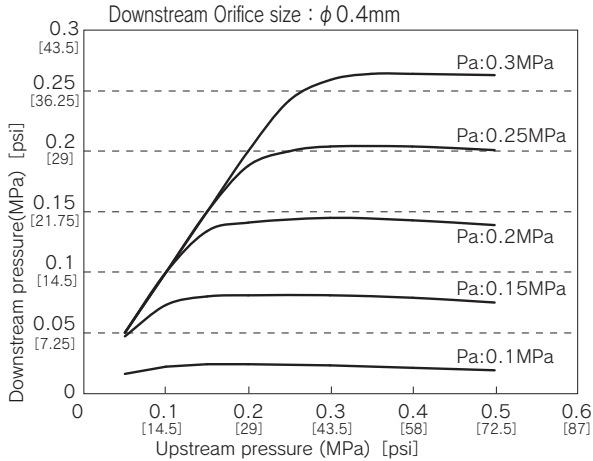
1. The characteristic graph shows the data in the case of horizontal piping.
2. The test temperature is 23°C.
3. The characteristic graph is by connection tubing size mentioned in each graph.
4. The data in the characteristic graph are the experiment value and the reference value.

Cautions for use

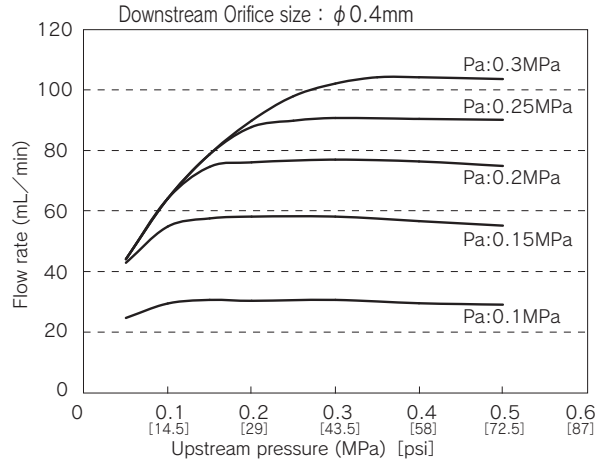
1. Please install a constriction such as the orifice at downstream side for proper flow control.
2. Please do not use the **AVHPRL** in negative pressure. (It would cause the breakage of the valve)
3. Please use CDA (clean, dry compression air) for pilot air. In case the pilot air contains foreign substance, such as chemicals, synthetic oil contains organic solvent, salt, corrosive gas and so on, it would cause the breakage and operation defectiveness.
4. We recommend to use the high quality regulator for pilot air control such as the precise regulator and Electronic-Pneumatic regulator.
5. Please do not use the regulator without the exhaust function. (The valve may not operate precisely)
6. Please leave the pilot air pressure off in case the valve is not used for long time.
7. The range of the flow rate differs with high viscosity fluid from the one for water. Please consult us in case of use of high viscosity fluid.
8. The valve is not suited to the use to the crystallizing nature fluid and Slurry.
9. Please use **AVHPRL** for the fluid that has passed filter.

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

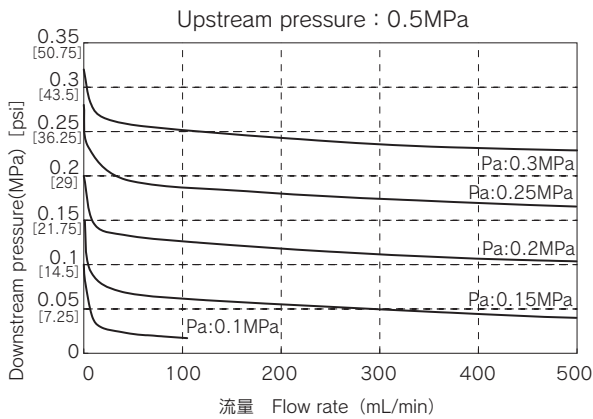
Upstream pressure - Downstream pressure



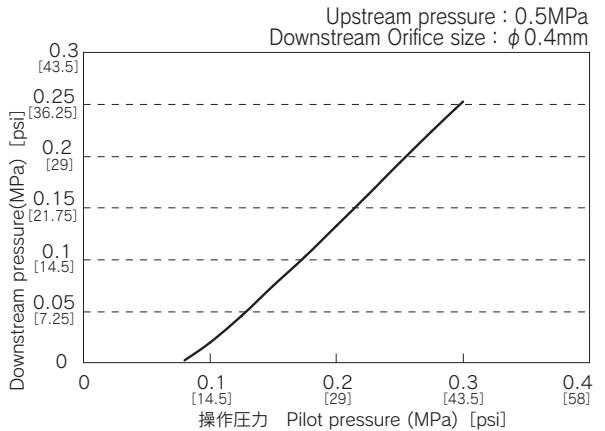
Upstream pressure - Flow rate



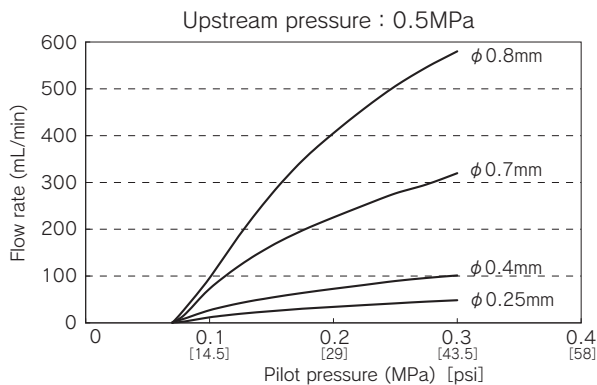
Flow rate - Downstream pressure



Pilot pressure - Downstream pressure



Pilot pressure - Flow rate



Orifice - Reference Flow Range

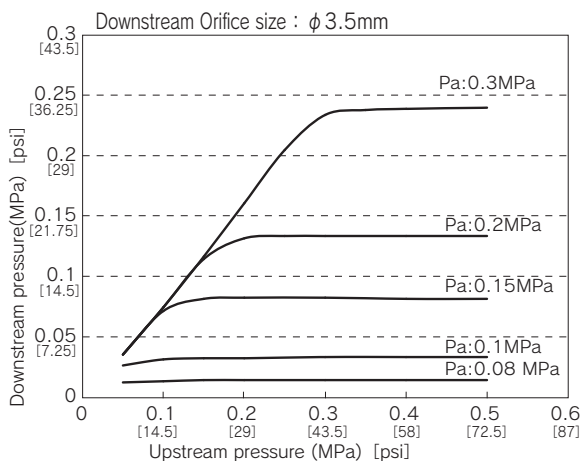
Orifice diameter (reference)	
Orifice (mm)	Flow rate (mL/min)
φ 0.25	10~ 50
φ 0.4	20~100
φ 0.7	65~330
φ 0.8	100~500

※ The data shown here is the experimental values and the reference values.

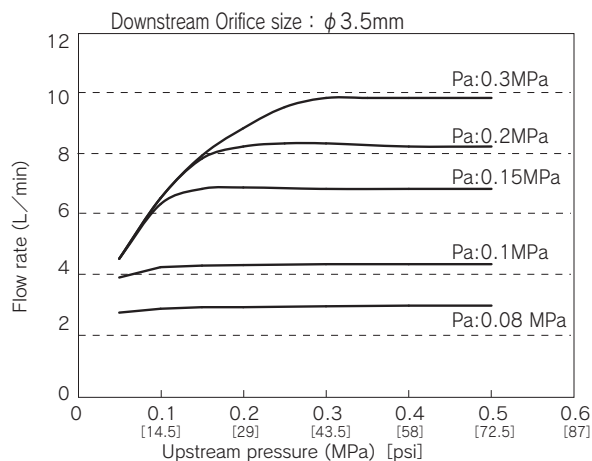
Technical Data

AVHPRMF <PTFE Body> Connection tubing size of test: 12.70×9.53

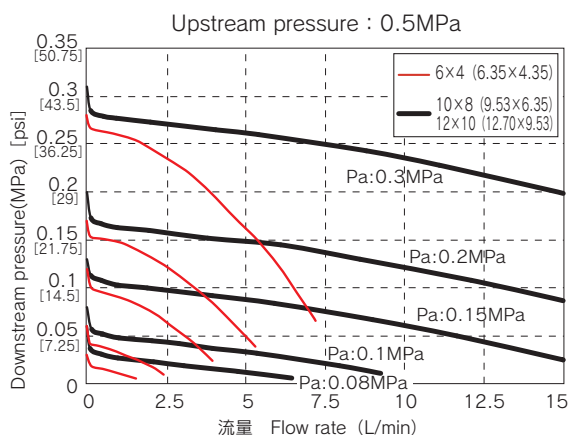
Upstream pressure - Downstream pressure



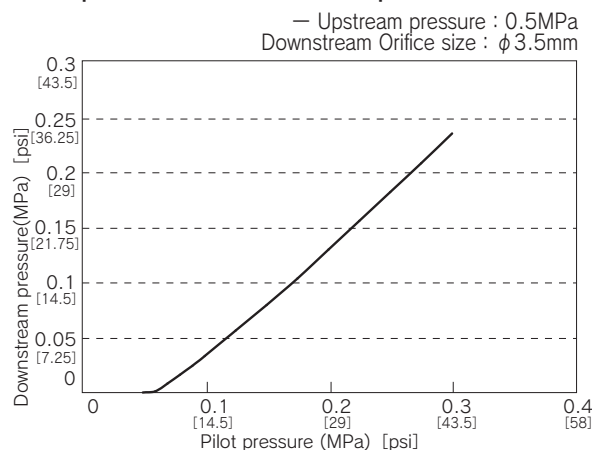
Upstream pressure - Flow rate



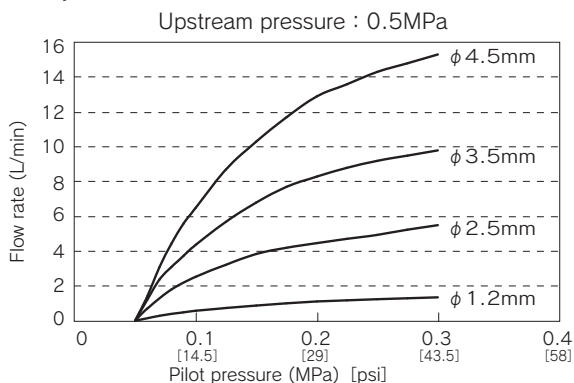
Flow rate - Downstream pressure



Pilot pressure - Downstream pressure



Pilot pressure - Flow rate



Orifice - Reference Flow Range

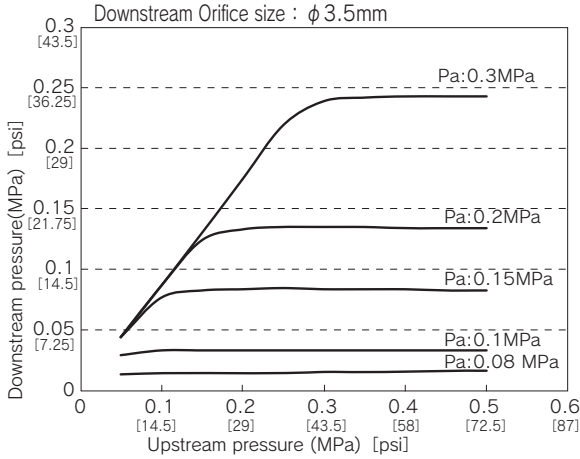
Orifice diameter (reference)	
Orifice (mm)	Flow rate (L/min)
ϕ 1.2	0.4 ~ 1.4
ϕ 2.5	1.8 ~ 5.5
ϕ 3.5	3.0 ~ 10.0
ϕ 4.5	4.5 ~ 15.0

※ The data shown here is the experimental values and the reference values.

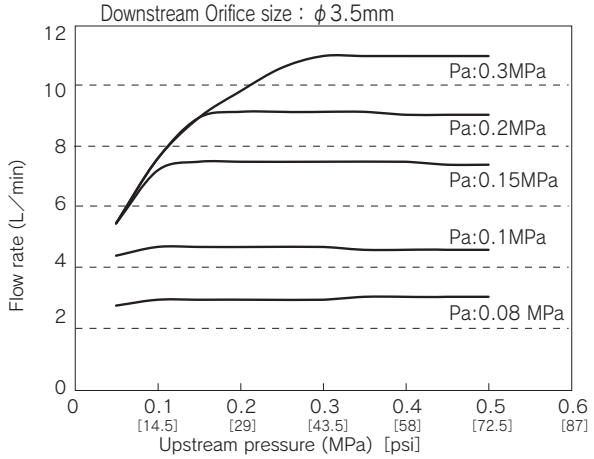
- AVPV3
- AVPVM
- AVPVS
- AVSDV
- AVSDVM
- AVSDVT
- AVSAS
- AVMPV
- AVDIV
- AVNVM
- AVHPR
- AVHPRM
- AVHPRS
- AVBPR
- AVCFV
- HDV12R
- HDVW
- AVQDV
- AVBVX
- AVPJX
- AVSIV
- AVFCS2
- AVFCN
- OTHER

AVHPRMF (PFA Body) Connection tubing size of test:12.70×9.53

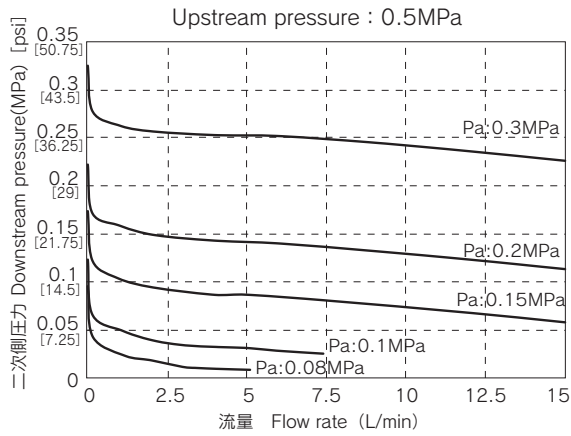
Upstream pressure - Downstream pressure



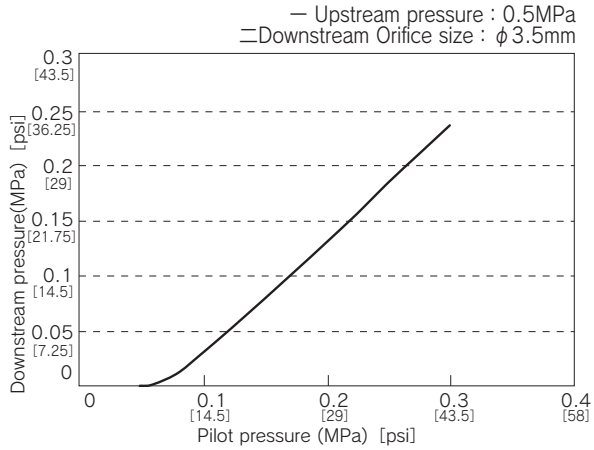
Upstream pressure - Flow rate



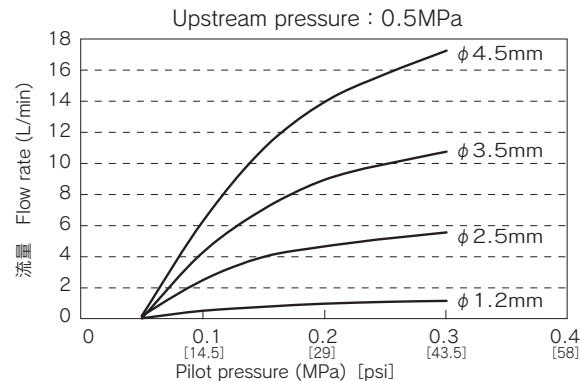
Flow rate - Downstream pressure



Pilot pressure - Downstream pressure



Pilot pressure - Flow rate



Orifice - Reference Flow Range

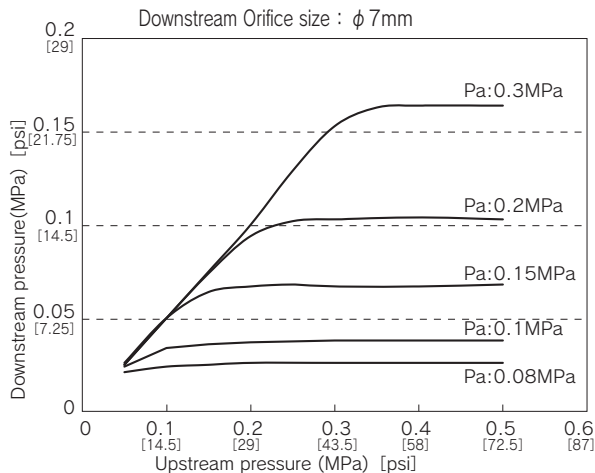
Orifice diameter (reference)	
Orifice (mm)	Flow rate (L/min)
φ 1.2	0.4 ~ 1.4
φ 2.5	1.8 ~ 5.5
φ 3.5	3.0 ~ 10.5
φ 4.5	4.5 ~ 17.0

※ The data shown here is the experimental values and the reference values.

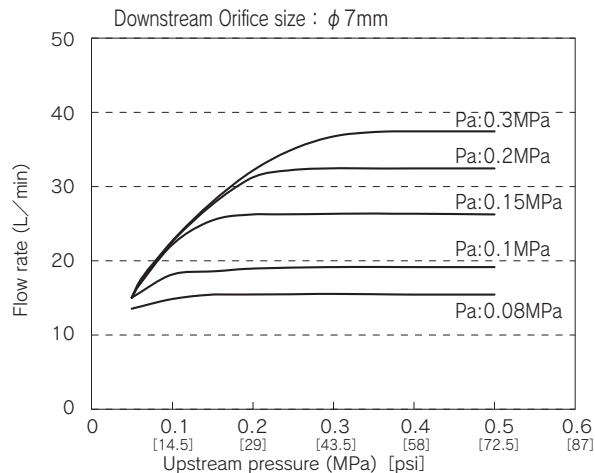
Technical Data

AVHPRHF (PTFE Body) Connection tubing size of test: 19.05×15.88

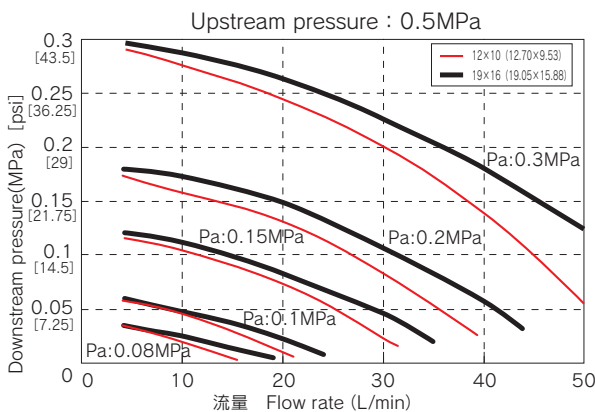
Upstream pressure - Downstream pressure



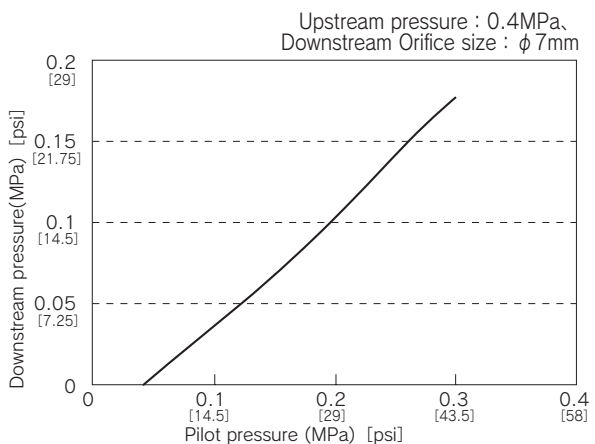
Upstream pressure - Flow rate



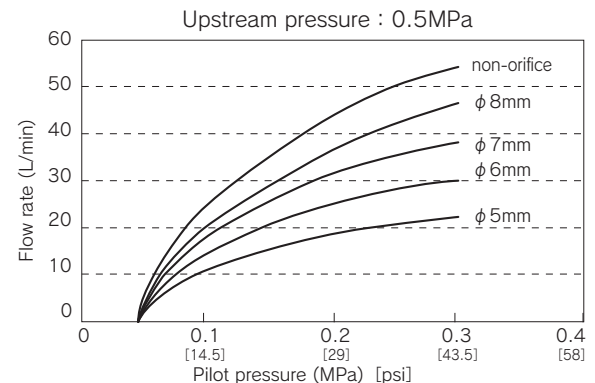
Flow rate - Downstream pressure



Pilot pressure - Downstream pressure



Pilot pressure - Flow rate



Orifice - Reference Flow Range

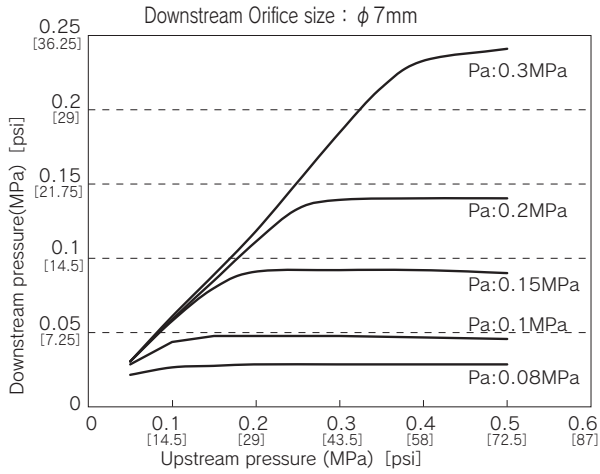
) Orifice diameter (reference)	
Orifice (mm)	Flow rate (L/min)
φ 5	10~22
φ 6	12.5~30
φ 7	15.5~39
φ 8	17.5~47
non-orifice	21~50

※ The data shown here is the experimental values and the reference values.

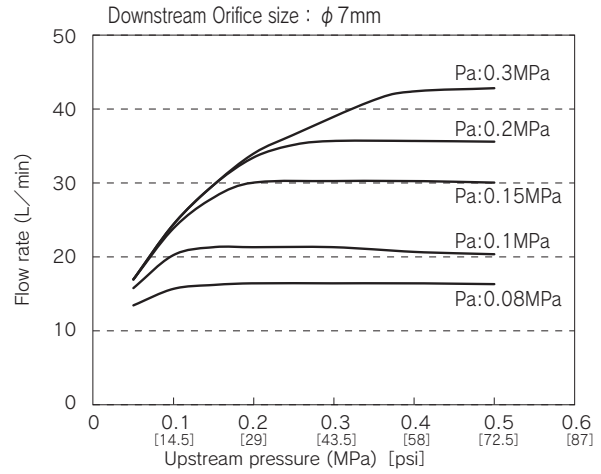
- AVPV3
- AVPVM
- AVPVS
- AVSDV
- AVSDVM
- AVSDVT
- AVSAS
- AVMPV
- AVDIV
- AVWVM
- AVHPR
- AVHPRM
- AVHPRS
- AVBPR
- AVCFV
- HDV12R
- HDVVM
- AVQDV
- AVBVX
- AVPJX
- AVSIV
- AVFCS2
- AVFCN
- OTHER

AVHPRHF (PFA Body) Connection tubing size of test: 19.05×15.88

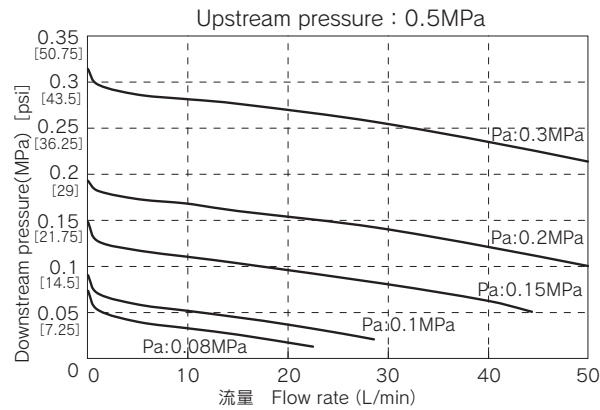
Upstream pressure - Downstream pressure



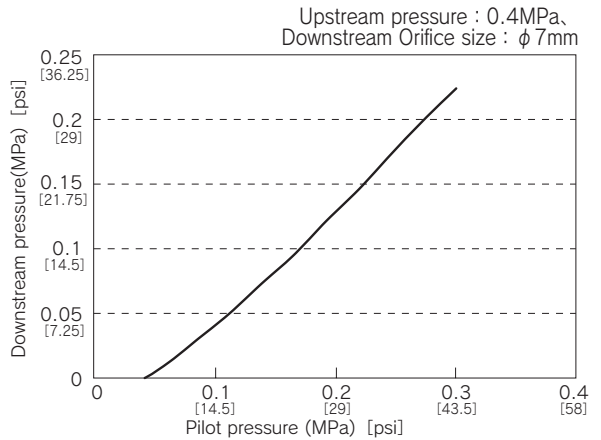
Upstream pressure - Flow rate



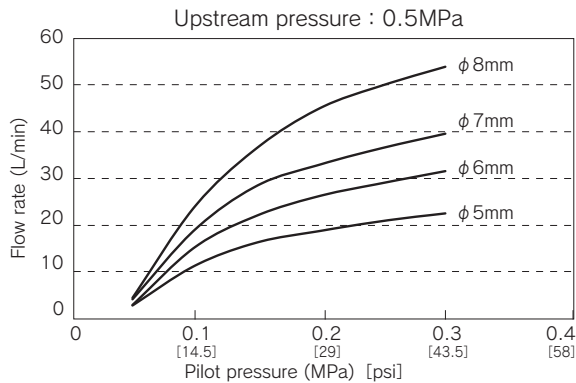
Flow rate - Downstream pressure



Pilot pressure - Downstream pressure



Pilot pressure - Flow rate



Orifice - Reference Flow Range

Orifice diameter (reference)	
Orifice (mm)	Flow rate (L/min)
φ5	10~22
φ6	12.5~30
φ7	15.5~39
φ8	17.5~53

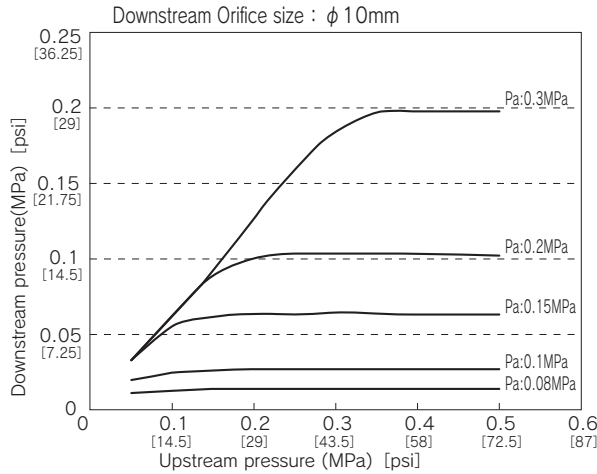
※ The data shown here is the experimental values and the reference values.

Technical Data

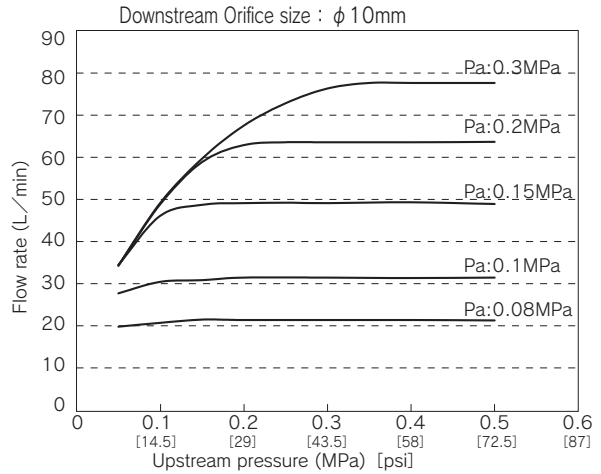
AVHPRSHF

Connection tubing size of test: 25.40×22.20

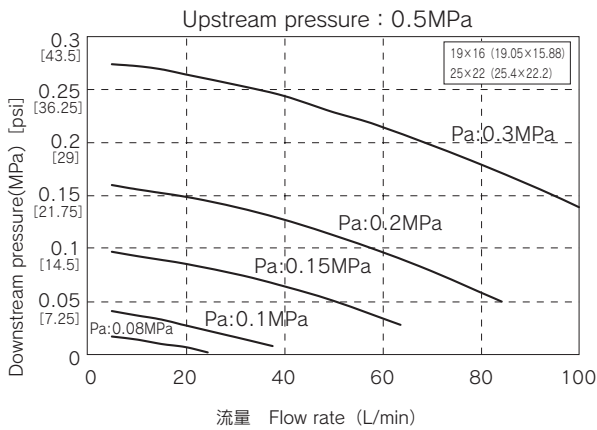
Upstream pressure - Downstream pressure



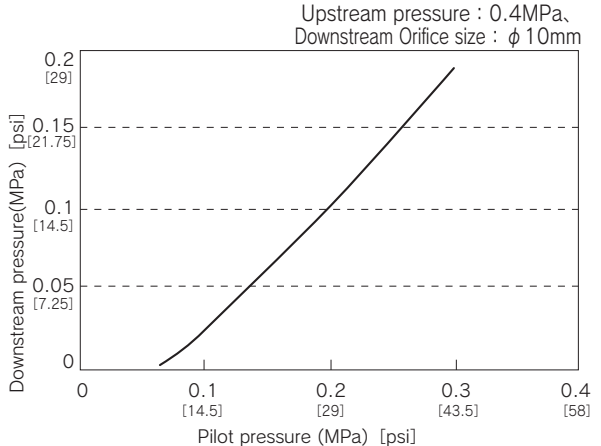
Upstream pressure - Flow rate



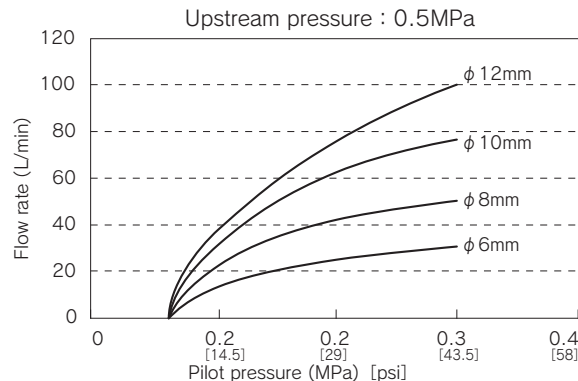
Flow rate - Downstream pressure



Pilot pressure - Downstream pressure



Pilot pressure - Flow rate



Orifice - Reference Flow Range

Orifice diameter (reference)	
Orifice (mm)	Flow rate (L/min)
ϕ 6	8~31
ϕ 8	15~51
ϕ 10	20~76
ϕ 12	25~100

※ The data shown here is the experimental values and the reference values.

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