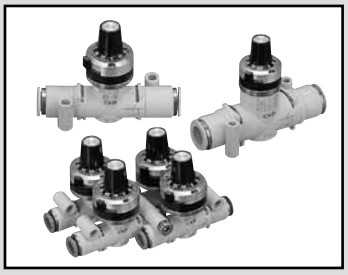


Needle valve with adjusting dial, check valve

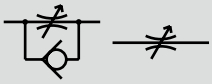
DVL-S Series

Needle valve with adjusting dial, needle valve/oil-prohibited

DVL-N Series

● Port size: φ4, φ6, φ8, φ10, φ12

JIS symbol



DVL-S DVL-N

RoHS CAD

Specifications

● Needle valve with adjusting dial, check valve DVL-S

Descriptions		DVL-S-06					DVL-S-08		DVL-S-10		
		020		080		160	240		400		
Compatible tube O.D.	mm	φ4	φ6	φ4	φ6	φ6	φ6	φ8	φ8	φ10	φ12
Working fluid		Compressed air									
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)									
Min. working pressure	MPa	0.1 (≈15 psi, 1 bar) (*3)									
Proof pressure	MPa	1.5 (≈220 psi, 15 bar)									
Fluid temperature	°C	5 (41°F) to 60 (140°F) (no freezing. *2)									
Ambient temperature	°C	0 (32°F) to 60 (140°F) (no freezing)									
Weight	g	54	48	54	48	48	60	61	82	86	88
Needle control range		1 to 12 rotations					1 to 13 rotations				
Free flow	Flow rate ℓ/min(ANR)	170	300	170	300	300	400	550	900	1100	1200
	Eff. X-sectional area mm^2	2.5	4.5	2.5	4.5	4.5	6	8	13.5	16.5	18
Controlled flow	Flow rate ℓ/min(ANR)	18		80		160	240		440		
	Eff. X-sectional area mm^2	0.15		1.2		2.4	3.6		6.6		

*1: Flow rate is the atmospheric pressure conversion at 0.5 MPa.
*2: Freezing may occur due to adiabatic expansion depending on the air quality (dew point).
*3: Evacuating up to -100 kPa is possible only in the direction of free flow. (Needle control is not available)

● Needle valve with adjusting dial, needle valve/oil-prohibited DVL-N

Descriptions	DVL-N-06					DVL-N-08		DVL-N-10		
	020		080		160	240		400		
Compatible tube O.D. mm	φ4	φ6	φ4	φ6	φ6	φ6	φ8	φ8	φ10	φ12
Working fluid	Compressed air/N_2 gas/low vacuum									
Max. working pressure MPa	0.7 (≈100 psi, 7 bar)									
Negative pressure kPa	-100 (≈-15 psi, -1 bar)									
Proof pressure MPa	1.5 (≈220 psi, 15 bar)									
Fluid temperature °C	5 (41°F) to 60 (140°F) (no freezing. *2)									
Ambient temperature °C	0 (32°F) to 60 (140°F) (no freezing)									
Weight g	54	48	54	48	48	60	61	82	86	88
Needle control range	1 to 12 rotations					1 to 13 rotations				
Flow rate ℓ/min(ANR)	18		80		160	240		440		
Effective cross-sectional area mm^2	0.15		1.2		2.4	3.6		6.6		

*1: Flow rate is the atmospheric pressure conversion at 0.5 MPa.
*2: Freezing may occur due to adiabatic expansion depending on the air quality (dew point).

How to order

DVL - S - 06 - H66 - 020

Model No.

Ⓐ Control method

Ⓑ Body size

Ⓒ Compatible tube O.D.

Refer to the table below for the body size, Compatible tube O.D. and flow rate combination.

Ⓓ Flow rate

Code	Content
Ⓐ Control method (oil removal)	
S	Check valve
N	Needle valve (oil-prohibited)
Ⓑ Body size	
06	1/8 thread equivalent
08	1/4 thread equivalent
10	3/8 thread equivalent
Ⓒ Compatible tube O.D.	
H44	φ4
H66	φ6
H88	φ8
H1010	φ10
H1212	φ12
Ⓓ Flow rate	*1
020	18 ℓ/min(ANR)
080	80 ℓ/min(ANR)
160	160 ℓ/min(ANR)
240	240 ℓ/min(ANR)
400	440 ℓ/min(ANR)

Precautions for model No. selection

*1: The flow rate is the guide value at 0.5 MPa.
*2: DVL-S and DVL-N can be identified with the color of the push ring.
DVL-S: White
DVL-N: Blue

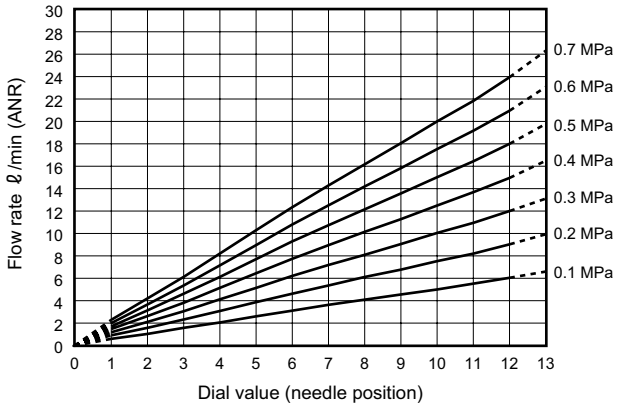
Combination of body size, Compatible tube O.D., and flow rate

	Ⓑ Body size						
	06		08		10		
Ⓒ Compatible tube O.D. / Ⓓ Flow rate	H44	H66	H66	H88	H88	H1010	H1212
020	●	●					
080	●	●					
160		●					
240			●	●			
400					●	●	●

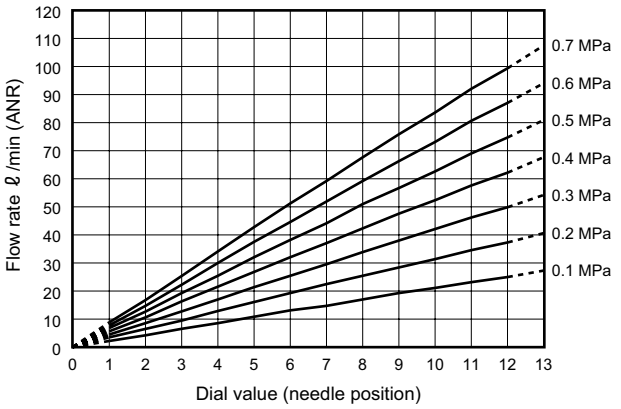
Flow characteristics

*The flow characteristics graph gives reference values and does not guarantee the values.

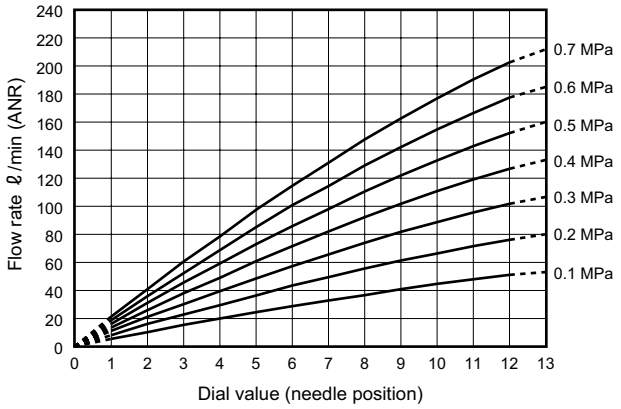
● DVL-*-020



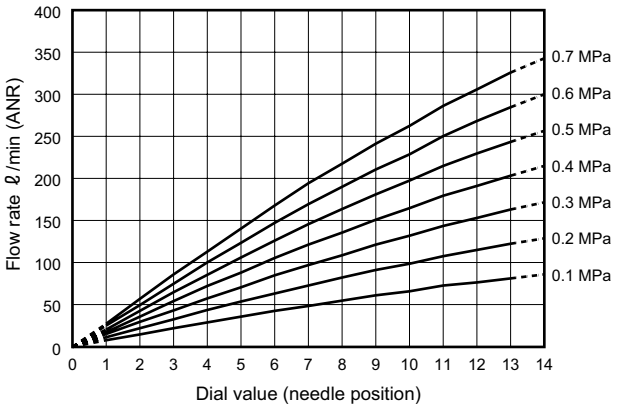
● DVL-*-080



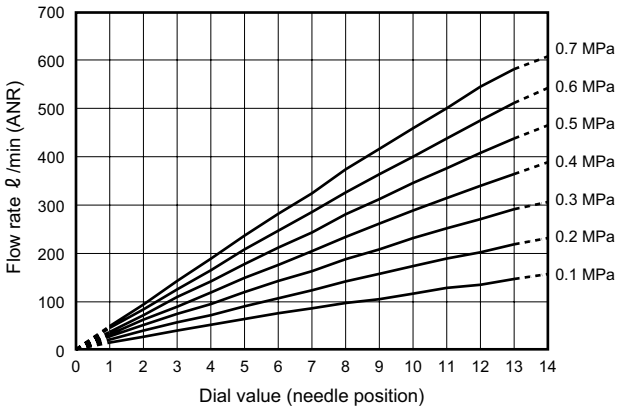
● DVL-*-160



● DVL-*-240

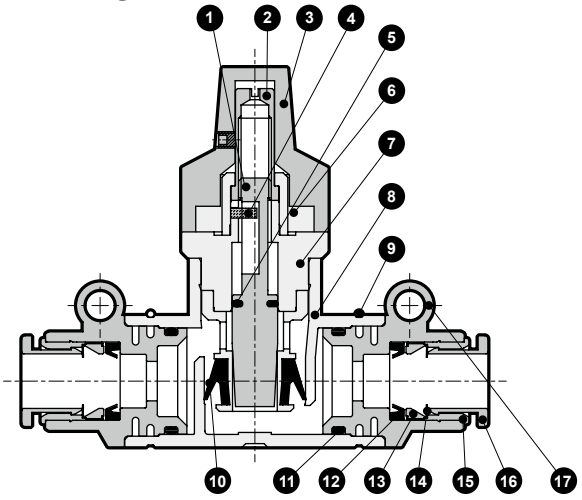


● DVL-*-400



Internal structure and parts list

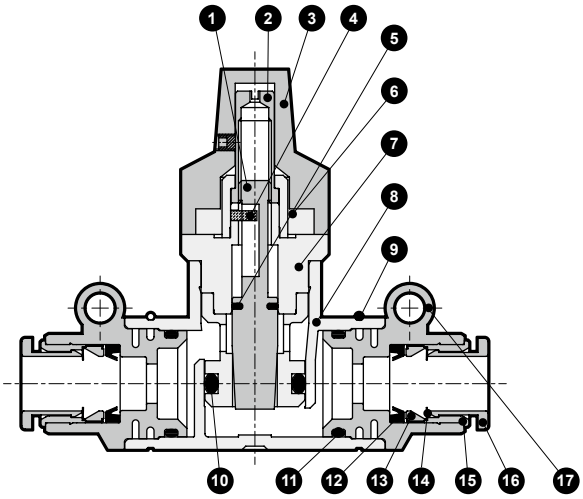
● DVL-S



No.	Part name	Material
1	Needle	Copper alloy
2	Rotary shaft	Copper alloy
3	Dial	Aluminum alloy, polyamide, etc.
4	Parallel pin	Stainless steel
5	O-ring	Nitrile rubber
6	Guide bush	Copper alloy
7	Check bracket	Copper alloy
8	Body	Polybutylene terephthalate
9	Stopper ring	Stainless steel
10	Check packing	Hydrogenated nitrile rubber
11	O-ring	Nitrile rubber
12	Packing	Nitrile rubber
13	Holder	Copper alloy or polyetherimide
14	Chuck	Stainless steel
15	Outer ring	Copper alloy
16	Push ring	Polybutylene terephthalate or polyacetal
17	Fitting case	Polybutylene terephthalate

*1: All the copper alloy parts have electroless nickel plating.
*2: Some structures differ depending on the type. (No material changed)

● DVL-N

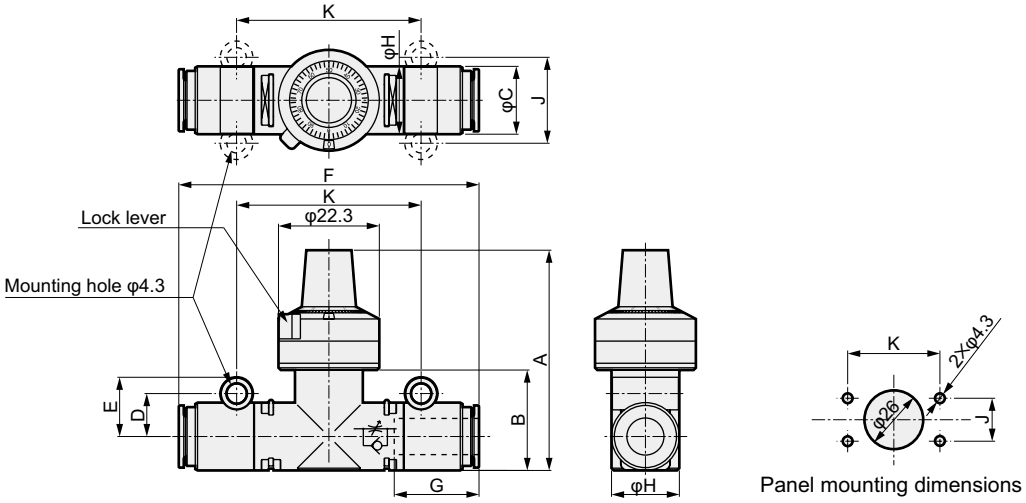


No.	Part name	Material
1	Needle	Copper alloy
2	Rotary shaft	Copper alloy
3	Dial	Aluminum alloy, polyamide, etc.
4	Parallel pin	Stainless steel
5	O-ring	Fluoro rubber
6	Guide bush	Copper alloy
7	Check bracket	Copper alloy
8	Body	Polybutylene terephthalate
9	Stopper ring	Stainless steel
10	O-ring	Hydrogenated nitrile rubber
11	O-ring	Hydrogenated nitrile rubber
12	Packing	Hydrogenated nitrile rubber
13	Holder	Copper alloy or polyetherimide
14	Chuck	Stainless steel
15	Outer ring	Copper alloy
16	Push ring	Polybutylene terephthalate or polyacetal
17	Fitting case	Polybutylene terephthalate

*1: All the copper alloy parts have electroless nickel plating.
*2: Some structures differ depending on the type. (No material changed)

Dimensions

CAD



Panel mounting dimensions

Model No.	Compatible tube O.D.	A	B	C	D	E	F	H	J	K	G (tube insert length)
DVL-*-06-H44-*	φ4	45.5	17	12	8.1	11.6	55	12	16.2	30.8	12.9
DVL-*-06-H66-*	φ6						49.5				13.7
DVL-*-08-H66-*	φ6	50	22.5	13	9.5	13.1	64	15	19	41	18
DVL-*-08-H88-*	φ8			15			66.5				19
DVL-*-10-H88-*	φ8	58	29		11.5	15.1	71	20	23	47	
DVL-*-10-H1010-*	φ10			18			75				21
DVL-*-10-H1212-*	φ12			20.4			79				22