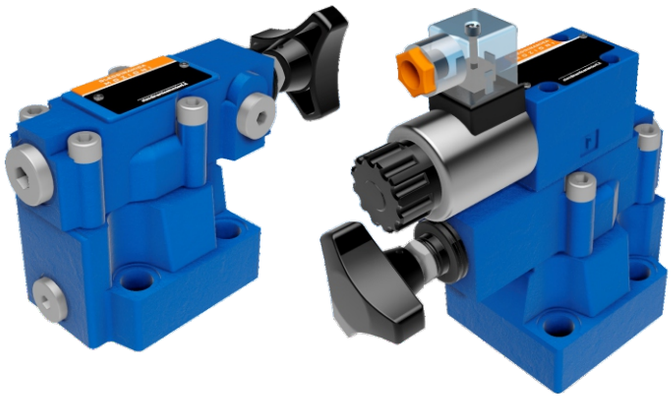
VALVOLE DI PRESSIONE

DB & DBW

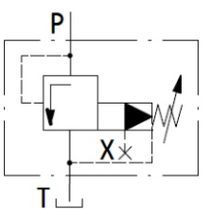
PILOT OPERATED PRESSURE RELIEF VALVES

DB AND DBW TYPE VALVE IS A PILOT OPERATED PRESSURE RELIEF VALVE, USED TO LIMIT (DB) OR LIMIT AND UNLOAD (DBW) PRESSURE VIA SOLENOID OPERATION. THE PRESSURE RELIEF VALVES CONSIST OF MAIN VALVE (1) WITH MAIN SPOOL CARTRIDGE (3) AND PILOT OPERATED VALVE (2) WITH PRESSURE ADJUSTMENT ELEMENTS.

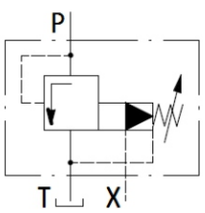


TECHNICAL DATA

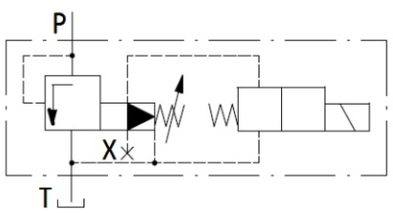
SIZE		10	15	20	25	30
MAX. FLOW RATE (L/MIN)	SUPLATE	250	–	50	–	650
	THREADED	250	500	500	500	650
OPERATING PRESSURE (MPA)	A,B,X,P PORTS	350				
	PORT T (DB)	315				
MAX. BACK PRESSURE (MPA)	PORT Y (DB)	315				
	PORT Y OR T (DBW)	AC UP TO 160, DC UP TO 210				
MAX. SETTING PRESSURE (MPA)		5; 10; 20; 31.5; 35				
FLUID TEMPERATURE (°C)		-20 – 80				
FILTRATION ACCURACY (μM)		25				
VALVE BODY (MATERIAL)		CASTING PHOSPHATING SURFACE				



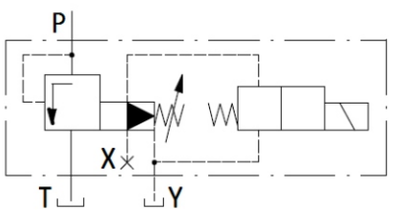
DB.../...



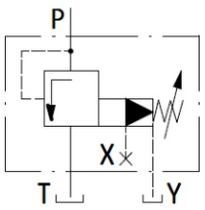
DB.../...X...



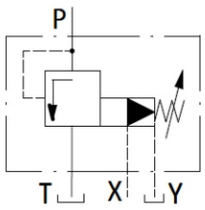
DBW.../...



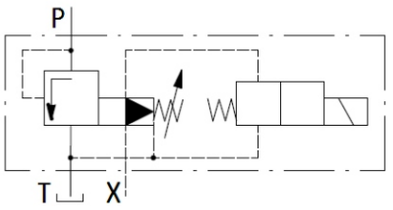
DBW.../...Y...



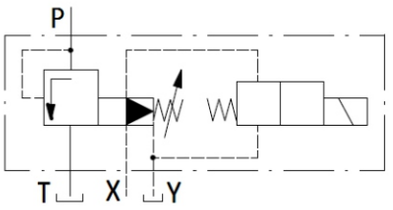
DB.../...Y...



DB.../...XY...



DBW.../...X...



DBW.../...XY...

Technical data

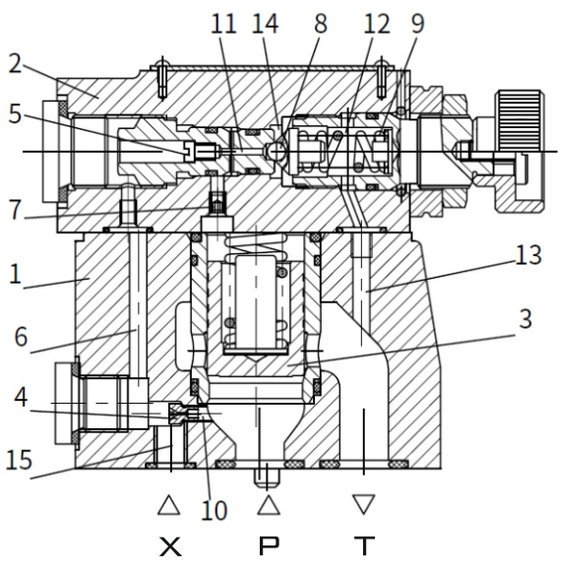
Type DB pressure relief valve

The pressure of channel P acts on the main spool (3), meanwhile, pressure is applied via control line (6) and (7) with orifice (4) and (5) on the spring loaded side of the main spool (3) and on the ball (8) in the pilot operated valve (2). If the pressure in channel P rises excess the setting value at the spring (9), the ball (8) opens against the spring (9). As for the internal control forms, signal is given by control oil (10) and (6) supplied by channel P. The oil from the spring loaded side of the main spool (3), via control line (7), orifice(11), and ball (8), then flows into spring chamber (12). Internal drain – type DB...50...Y, oil flows via control line (14) into the tank. In virtue of the orifice (4) and (5), the pressure drop arises at the main spool (3), and the connection from port P to port T is open while the operational pressure setting maintained stable. The pressure relief valve may unload or shift the different pressure (second rated pressure value) in virtue of external control port X (15).

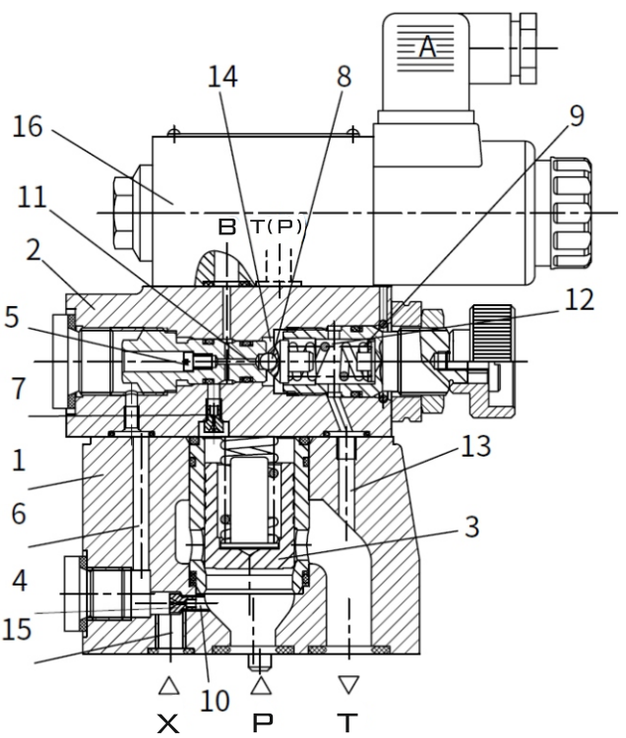
Type DBW pressure relief valve

The function of pressure relief valve type DBW is the same with pressure relief valve type DB, the difference is that valve type DBW operates unloading via a built-on directional valve (16).

DB

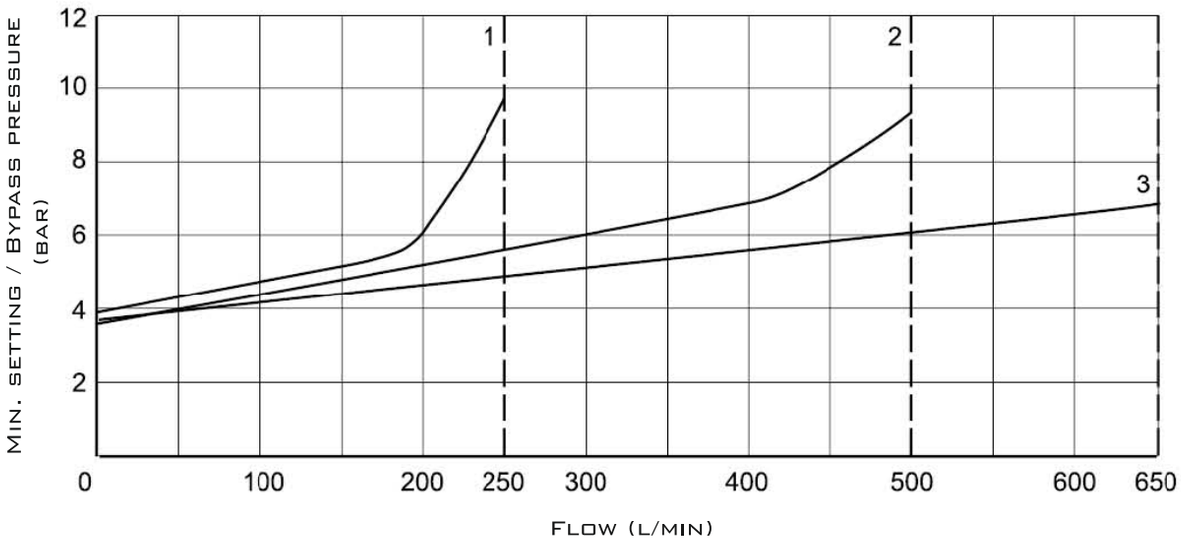


DBW



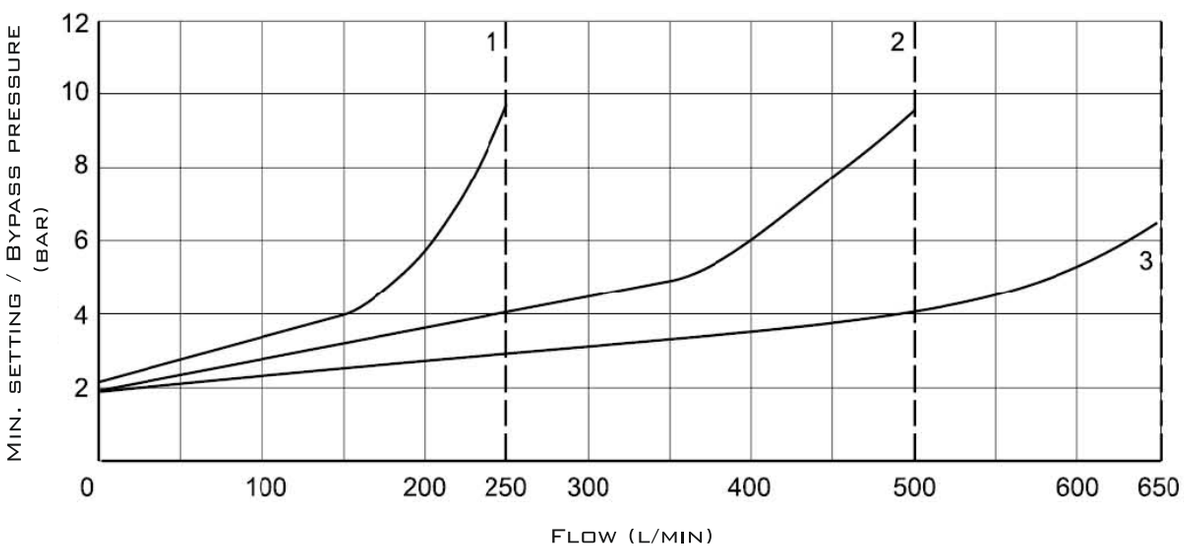
Characteristic Curves

Characteristic of min. setting pressure bypass / Bypass pressure and flow
Standart



1. Size 10
2. Size 20
3. Size 30

Characteristic of min. setting pressure bypass / Bypass pressure and flow
Type “U”



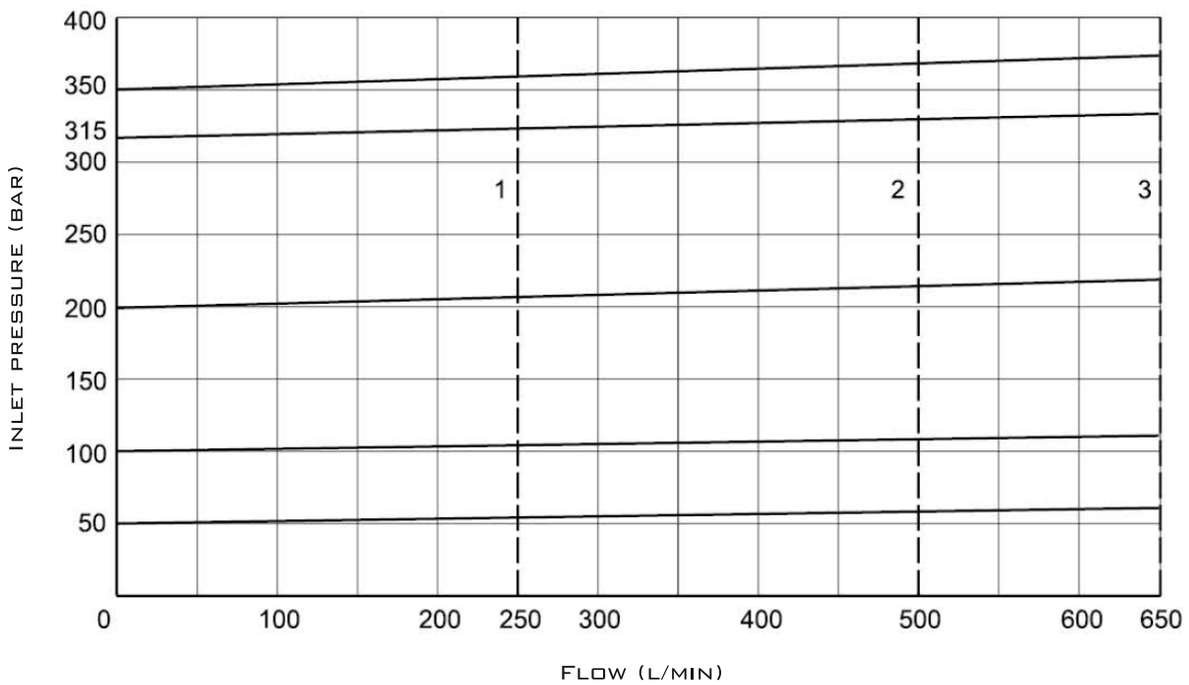
1. Size 10
2. Size 20
3. Size 30

Attention!
The curves measured without pressure when control oil back to the tank.
Refers to the back into housing of the control oil, the pressure of “T” port has increased against the input pressure.
The curves are available when the output pressure Pt=0 within the flow ranges.

See also:
DBD, ZDB

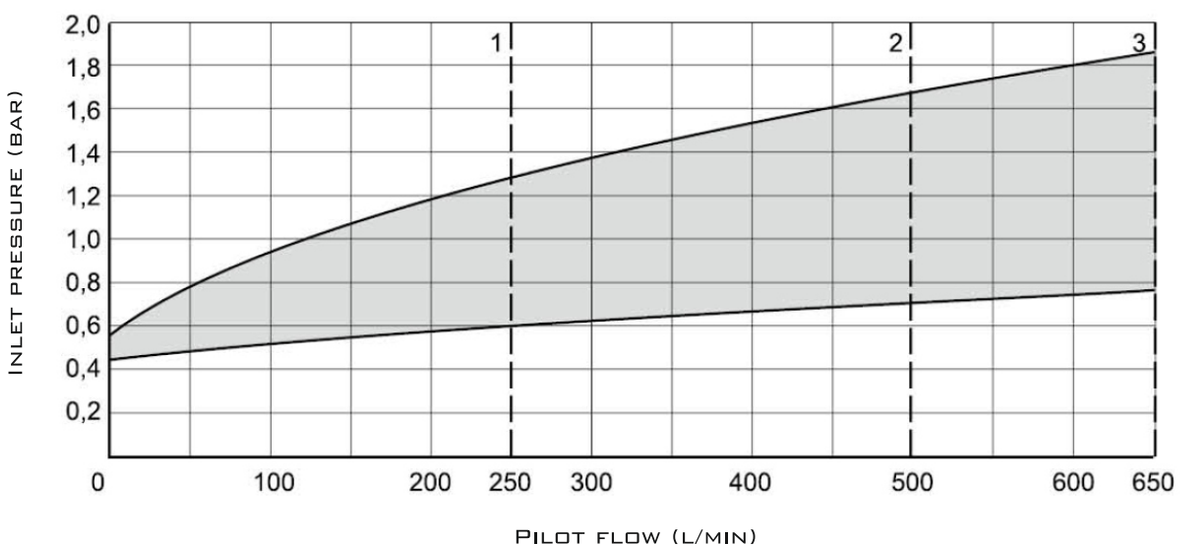
Characteristic Curves

Characteristic of inlet pressure and flow

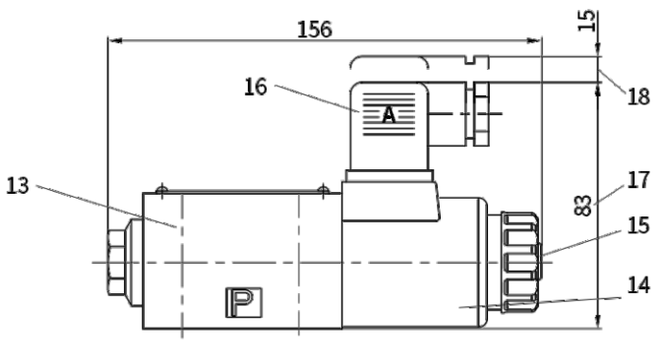


Attention!
Refers to the back into housing of the control oil, the pressure of “T” port has increased against the input pressure.

Pilot flow



Subplate Mounting

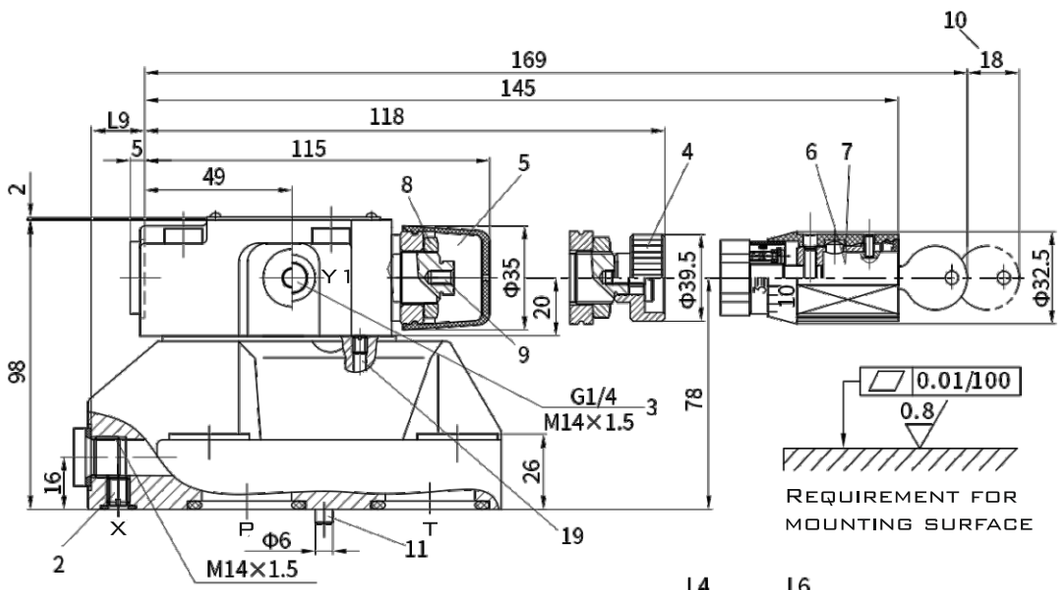


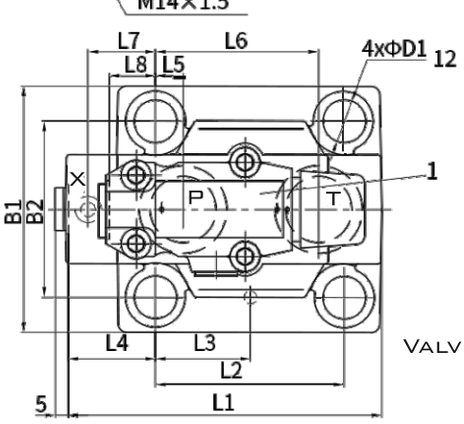
Valve fixing screws:

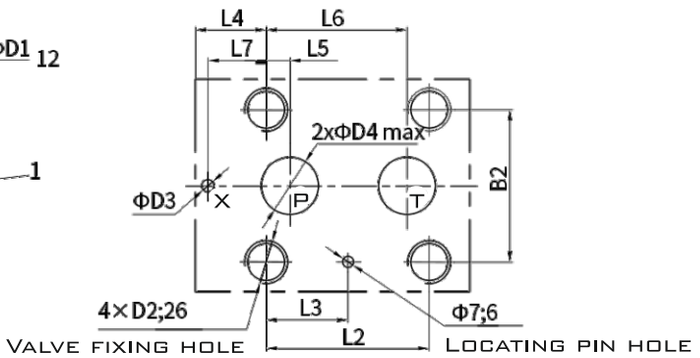
DB/DBW10:
GB/T 70.1-M12×50-10.9
Internal hexagon screw
Tighten torque MA=130N·m

DB/DBW20:
GB/T 70.1-M16×50-10.9
Internal hexagon screw
Tighten torque MA=310N·m

DB/DBW30:
GB/T 70.1-M18×50-10.9
Internal hexagon screw
Tighten torque MA=430N·m



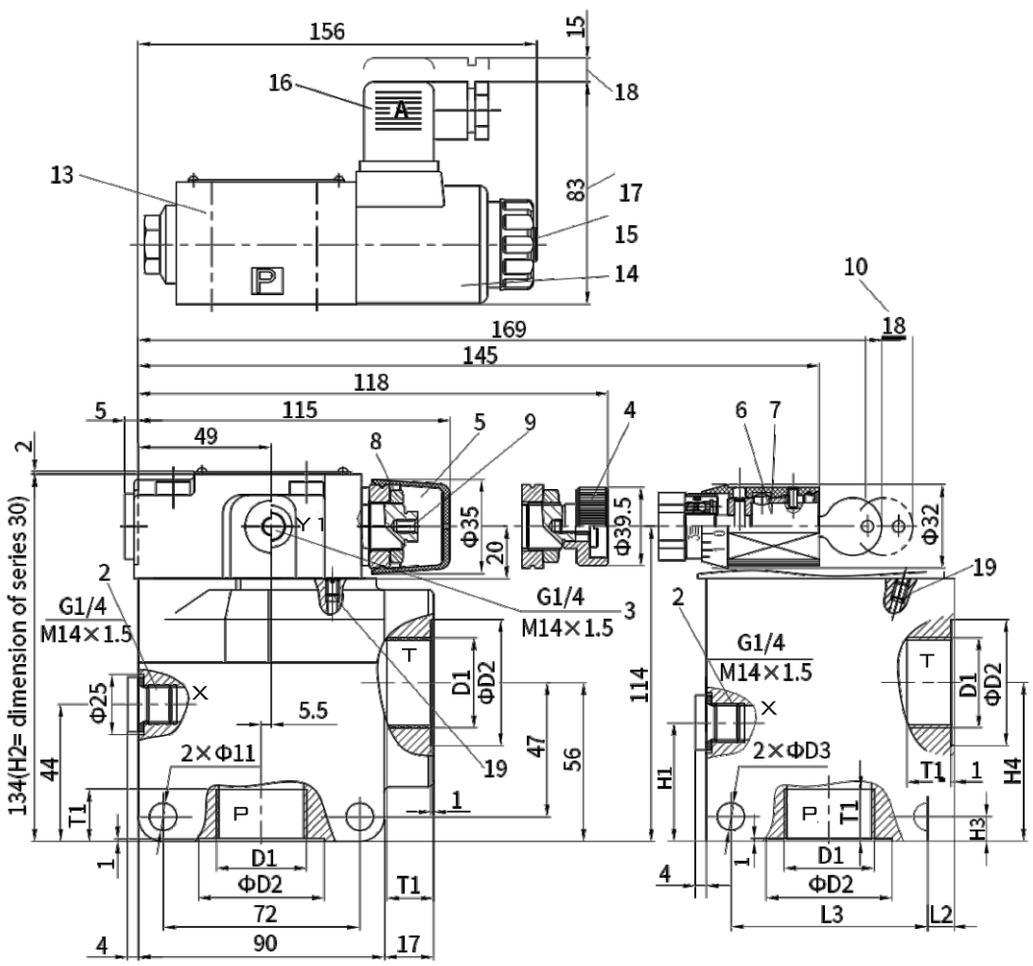




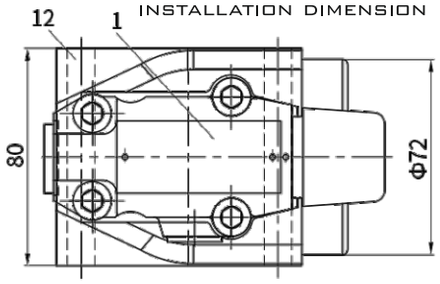
Model	L1	L2	L3	L4	L5	L6	L7	L8	L9	B1	B2	D1	D2	D3	D4
DB/DBW10	91	53.8	22.1	27.5	22.1	47.5	0	25.5	2	78	53.8	14	M12	6	12
DB/DBW20	116	66.7	33.4	33.3	11.1	55.6	23.8	22.8	10.5	100	70	18	M16	6	22
DB/DBW30	147.5	88.9	44.5	41	12.7	76.2	31.8	20	21	115	82.6	20	M18	7	30

O-ring (A,B): 10 – 17.12x2.62, 20 – 28.17x3.53, 30 – 34.52x3.53; **O-ring (X):** 10-30 – 9.25x1,78

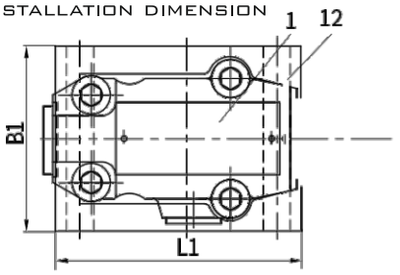
Threaded Mounting



DB..G..50 OUTLINE AND INSTALLATION DIMENSION



DB..G..30 OUTLINE AND INSTALLATION DIMENSION



Model	D1		D2	D3	D3	B1	H1	H2	H3	H4	L1	L2	L3
	Metric	Inch											
DB10G	M22x1.5	G1/2"	34	14	9	63	27	125	10	62	85	14	62
DB15G	M27x2	G3/4"	42	16									
DB20G	M33x2	G1"	47	18						57			
DB25G	M42x2	G1 1/4"	58	20	11	70	42	138	13	66	100	18	72
DB30G	M48x2	G1 1/2"	65	22									

Order code

DB							50											

No code=
=NBR seals
V=FKM seals

Only for port Y1 in pilot valve of threaded connection or subplate mounting
No code=Inch thread
2=Metric thread

For DBW../...S...:
R12=orifice Ø1.2 in port B of directional valve

For DBW:
Z4=Electrical plug without lamp
Z5L=Electrical plug with lamp

For DBW:
N=With hand override

G12=DC12V
G24=DC24V
W110R=AC110V
W220R=AC220V

For DBW:
6E=With high performance directional spool valve

No code=Without switching shock damping
S=With switching shock damping (only with type DBW)

No code=Standard type
U=Valve for lower opening pressure

No code=Internal supply, internal drain
X=External supply, internal drain
Y=Internal supply, external drain
XY=External supply, external drain

No code=
=Without solenoid valve
W=With solenoid valve

No code=Pilot operated valve
C=Pilot operated without main cartridge (not marked size)
C=Pilot operated with main cartridge (marked size)
T=Remote pressure adjusting valve

Subplate mounting size:
10, 20, 30
Threaded connection size:
10, 15, 20, 25, 30

For DBW:
A=Normally closed
B=Normally opened

No code=Subplate mounting
G=Thread connection

1=Rotary Knob
2=Adjusting bolt with protect cover
3=Lockable knob with scale
7=Knob with scale

30=30 series
50=50 series

50=Max. setting pressure 5 MPa
100=Max. setting pressure 10 MPa
200=Max. setting pressure 20 MPa
315=Max. setting pressure 31.5 MPa
350=Max. setting pressure 35 MPa