

**RELIEF VALVE**



**Technical Specification**

Specification	03		06		10
	10	15	20	25	30
Maximum Flow (L/min)	250	500	500	500	650
Maximum working pressure (Bar)	350				
Working fluid	Mineral oil; phosphate-ester				
Fluid temp. (°C)	-20~70				
Viscosity (mm²/s)	12~380				
Working press (Bar)	50	100	200	315	350
Cleanliness	The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS 1638. It is suggested that the minimum filter rating should be β 10 ≥ 75.				

This relief valve is a pressure control valve. It maintains constant pressure at inlet by discharging excess fluid in the system. Solenoids relief valve is a combination of electromagnetic directional valve and pilot-operated pressure relief valve, it is used to control or unload multi-stage pressure in hydraulic system.

**Model instruction**

**WDB \* \* - \* \* - \* \* - \* \* / \* \* \* \* / \* / \* \* 50 \***

Relief valve

Omit : without solenoids directional valve  
W : With solenoids directional valve

Omit : Pilot operated valve  
C : Pilot operated without main cartridge (not marked diameter)  
Pilot operated with main cartridge (marked diameter)

		DN	Screw thread connector
03	10	10	G1/2" or M22x1.5
	15	15	G3/4" or M27x2
06	20	20	G1" or M33x2
	25	25	G1 1/4" or M42x2
10	30	30	G1 1/2" or M48x2

Omit : Subplate connection  
G : Pipe type connection- G Scw  
G2 : Pipe type connection-M Scw

Working pressure  
5 : to 50 Bar  
10 : to 100 Bar  
20 : to 200 Bar  
31,5 : to 315 Bar  
35 : to 350 Bar

A : Always close <sup>1)</sup>  
B : Always open

1 : Rotary knob  
2 : Sleeve with hexagon and protective cap

Remarks

Serial number

Seal material  
Omit : NBR Seals  
V : FPM Seals

Pilot operated drainage port thread  
Omit : G1/4"  
2 : M14X1.5

Omit No damping<sup>2)</sup>  
08 : Φ 08 Damping  
10 : Φ 1.0 Damping  
12 : Φ 1.2 Damping

Omit : without push rod emergency<sup>3)</sup>  
N9 with concealed push rod emergency

Z5L Square connector with light<sup>4)</sup>

Working voltage<sup>5)</sup>

D12	DC12V
D24	DC24V
A110	AC110V
A220	AC220V
B110	(B110V Rectified)
B220	(B220V Rectified)

Omit : Standard Type<sup>6)</sup>

U : Minimum setting pressure is lower type

Omit Intl cntrl intl disch  
X : Extl cntrl intl disch  
Y : Intl cntrl extl disch  
XY : Extl cntrl disch

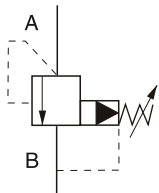
**RELIEF VALVE**

**Notice Explanation**

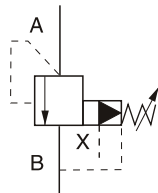
1. Item 1), 2), 3), 4), 5) is used in WDBW solenoid relief valves
2. Item 2) damping is fixed at port B of solenoid directional valves
3. 6) Type U characteristic refer to the curve

**Code symbol**

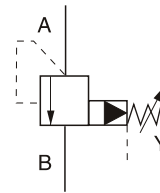
**WDB..**



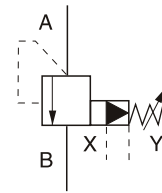
**WDB..X/..**



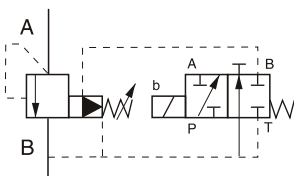
**WDB..Y/..**



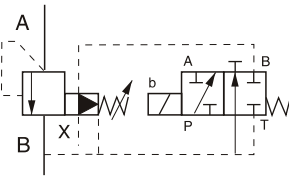
**WDB..XY/..**



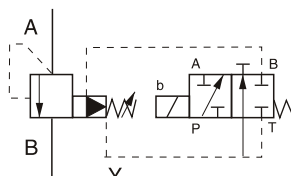
**WDBW..**  
Always close



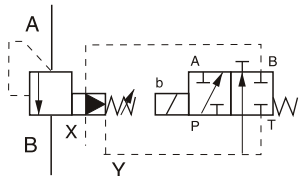
**WDBW..X/**  
Always close



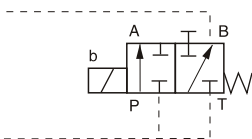
**WDBW..Y/**  
Always close



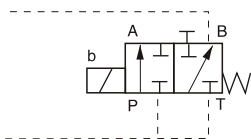
**WDBW..YX/**  
Always close



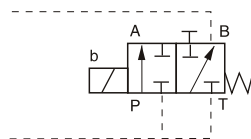
Always open



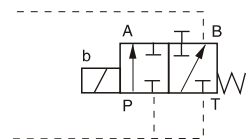
Always open



Always open



Always open

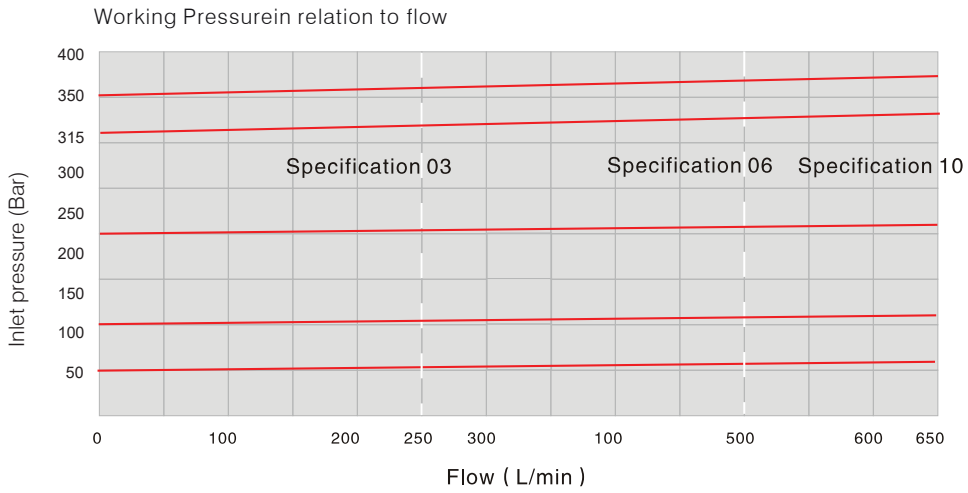


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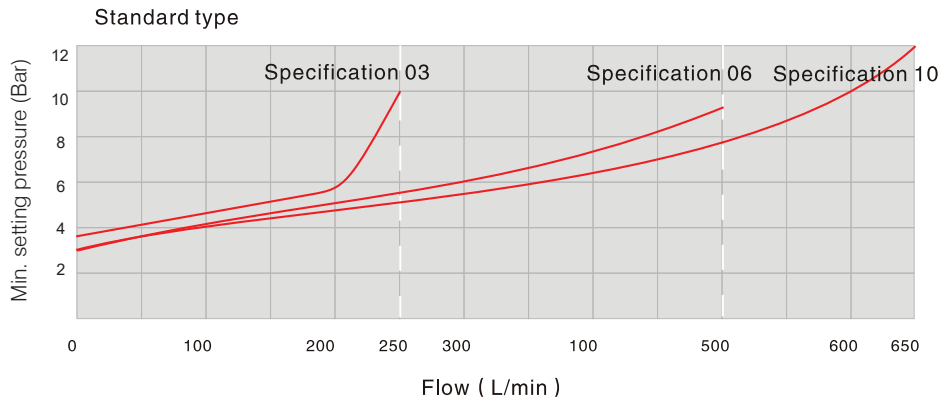
**Performance Curve** ( Measured at  $v=41\text{ mm}^2/\text{s}$  and  $t=50^\circ\text{C}$  )

- 1) The characteristic curves were measured with external, pressules, pilot oil drain.
- 2) In the case of internal pilot oil drain, the inlet pressure increases by the outlet pressure in port T.

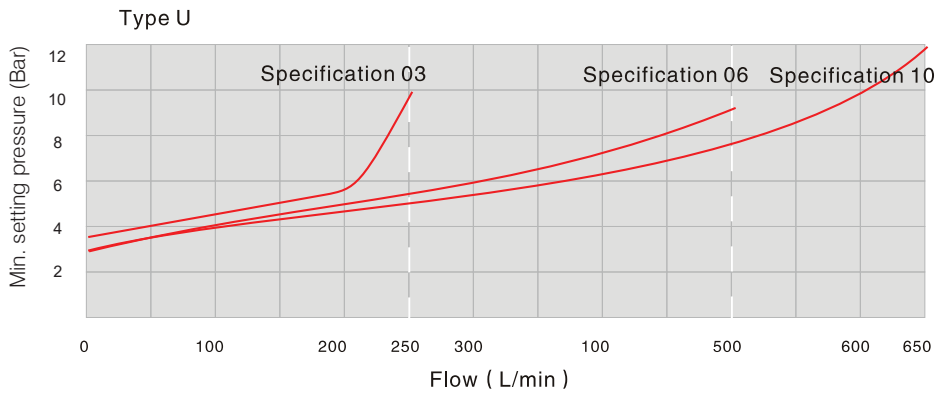
**Code symbol**



Minimum set pressure and circulation pressure in dependence upon the flow standard version.



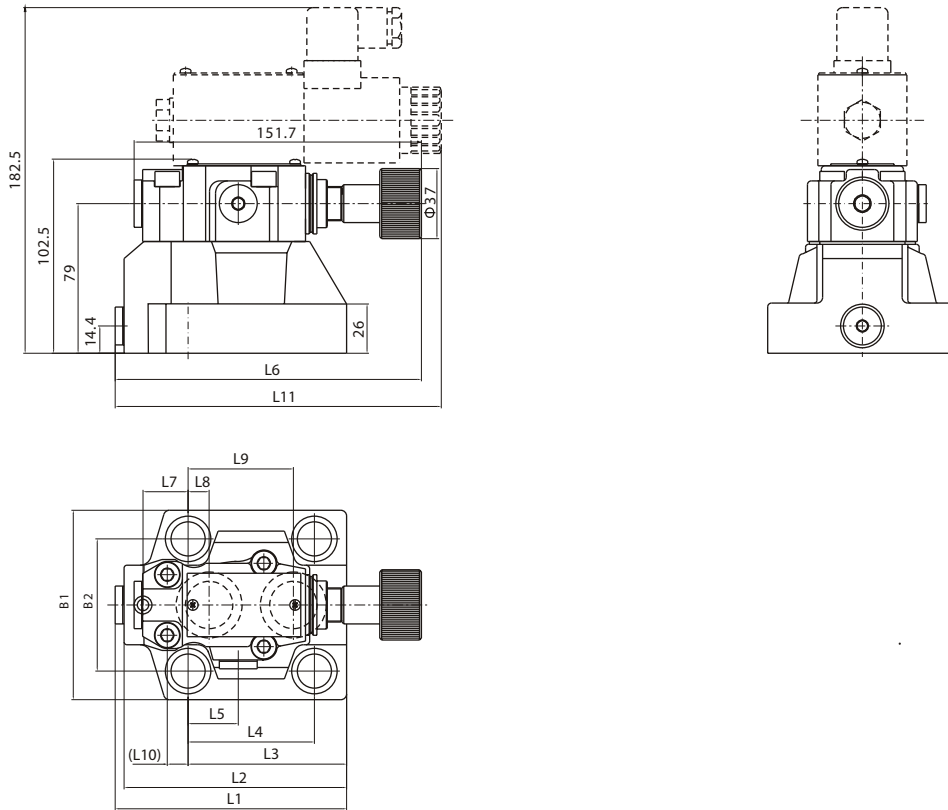
Minimum set pressure and circulation pressure in dependence upon the flow version "u"



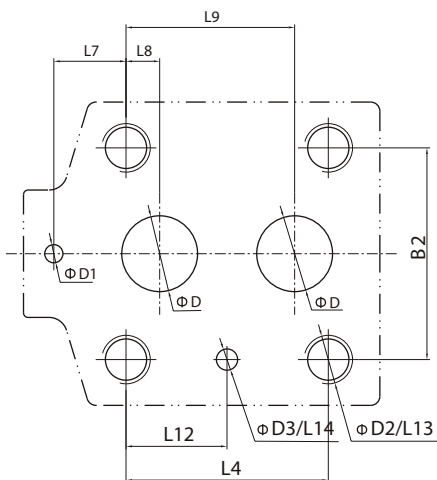
The characteristic curves are valid for outlet pressure B:0 over the entire flow range.

# RELIEF VALVE

## External Dimensions



## Subplate Mounting Size



Specification	Mounting screw	Tighten torque
WDB/WDBW-03	M12x45-10.9	130Nm
WDB/WDBW-06	M16x50-10.9	310Nm
WDB/WDBW-10	M18x50-10.9	430Nm

Notice: The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.

Specification	B1	B2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	D	D1	D2	D3
WDB/WDBW-03	78	54	98.5	91.5	67	54	23.5	149.3	0	22.1	47.5	14	159.7	22.1	20	5	12	6	M12	7
WDB/WDBW-06	100	69.8	122.2	117.5	83.7	66.7	26.5	161.8	23.8	11.1	55.6	11	172.2	33.3	25	6	25	6	M16	7
WDB/WDBW-10	115	82.6	154.5	149.5	106.9	88.9	28.1	172.5	31.8	12.7	76.2	9.4	182.9	44.4	30	6	32	6	M18	7