

Relief Valve



Function Instruction

The 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 4 hydraulic system.

Model description

Y X X-X X-X X-X X /X X X X /X /X X 50 *

Relief valve

Remarks

Without solenoids directional valve

Serial number

With solenoids directional valve

Omit Pilot operated valve

C Pilot operated without main cartridge

(not marked diameter)

Pilot operated with main cartridge

(marked diameter)

Seal material

Omit NBR seal

V FPM seal

2) Omit No damping

08 ø0.8 Damping

10 ø1.0 Damping

12 ø1.2 Damping

Specification

| Subplate type | Pipe type | |
|---------------|------------|------------------------|
| | | Screw thread connector |
| 03 10 NS10 | 10 10 NS10 | G1/2" or M22x1.5 |
| | 15 15 NS15 | G3/4" or M27x2 |
| 06 20 NS20 | 20 20 NS20 | G1" or M33x2 |
| | 25 25 NS25 | G1 1/4" or M42x2 |
| 10 30 NS30 | 30 30 NS30 | G1 1/2" or M48x2 |

Pilot operated drainage port thread

Omit G1/4"

2 M14X1.5

3) Omit without emergency push rod

N9 With emergency push rod

4) Z4 Standard connector

Z5 Large connector

Z5L Large connector with light

5) Working voltage

D12 DC12V

D24 DC24V

A110 AC110V

A220 AC220V

B110 AC110V Rectified

B220 AC220V Rectified

6) Omit Standard Type

U the minimum setting pressure is lower type

Omit Intl cntrl intl drain

Subplate type connection

G Pipe type connection-G Screw

G2 Pipe type connection-M Screw

Pipe grade

5 to 5MPa

10 to 10MPa

20 to 20MPa

31.5 to 31.5MPa

35 to 35MPa

A Always close

B Always open

1 Handle

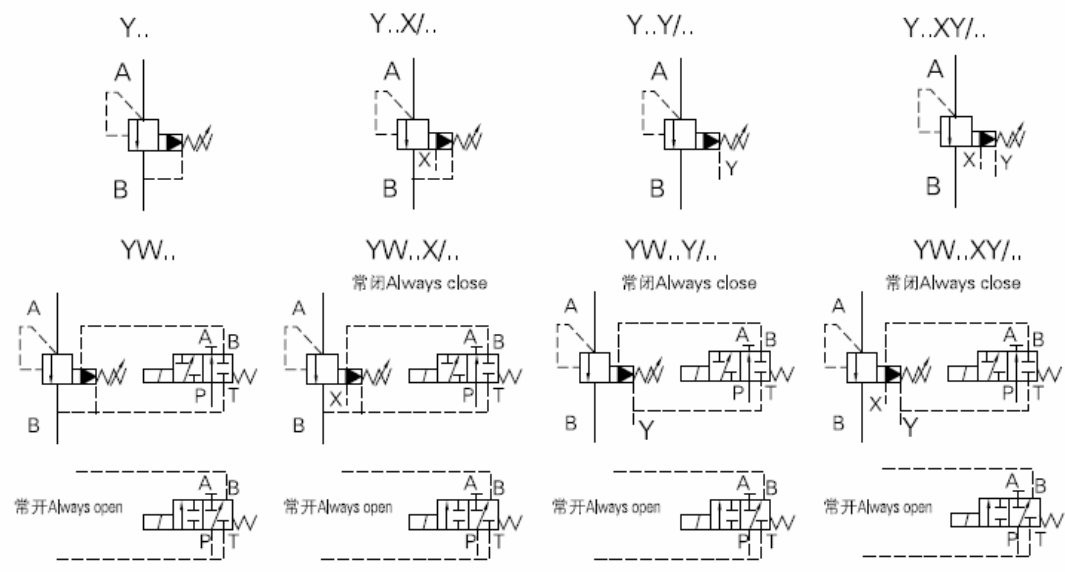
- 2 Setting screw with outside hexagon and boot cap
- 3 Handle with lock

- X Extl cntrl intl drain
- Y Intl cntrl extl drain
- X Y Extl cntrl extl drain

Explanation

- 1. Item 1),2),3),4),5) is used in YW 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



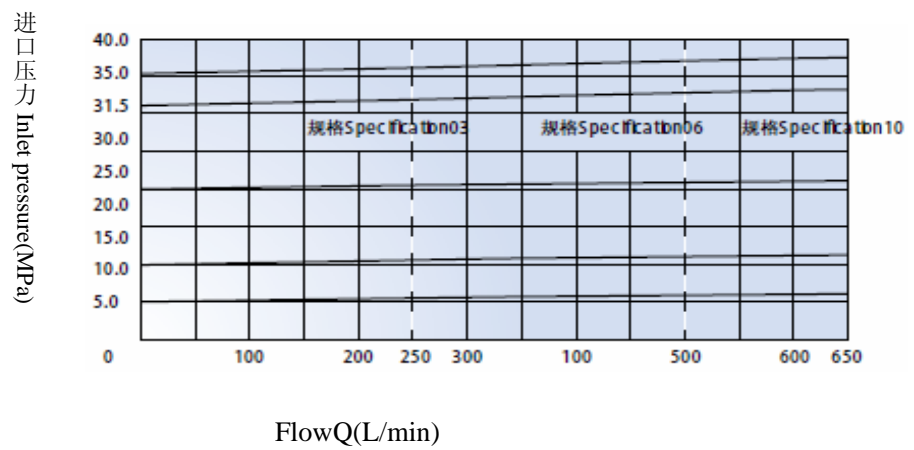
Technical specification

| Parameters | | 03 | 06 | 10 | | |
|-------------------------------|---------|------------------------------|-----|-----|------|----|
| Specification | | | | | | |
| Maximum working pressure(MPa) | | 31.5 | | | | |
| Maximum flow(L/min) | | 250 | 500 | 650 | | |
| Working fluid | | Mineral oil, phosphate-ester | | | | |
| Fluid temp(°C) | | -20~70 | | | | |
| Viscosity(mm ² /s) | | 12~380 | | | | |
| Working Press(Mpa) | | 5 | 10 | 20 | 31.5 | 35 |
| Weight(Kg) | Y Type | 2.6 | 3.5 | 4.4 | | |
| | YW Type | 3.8 | 4.7 | 5.6 | | |

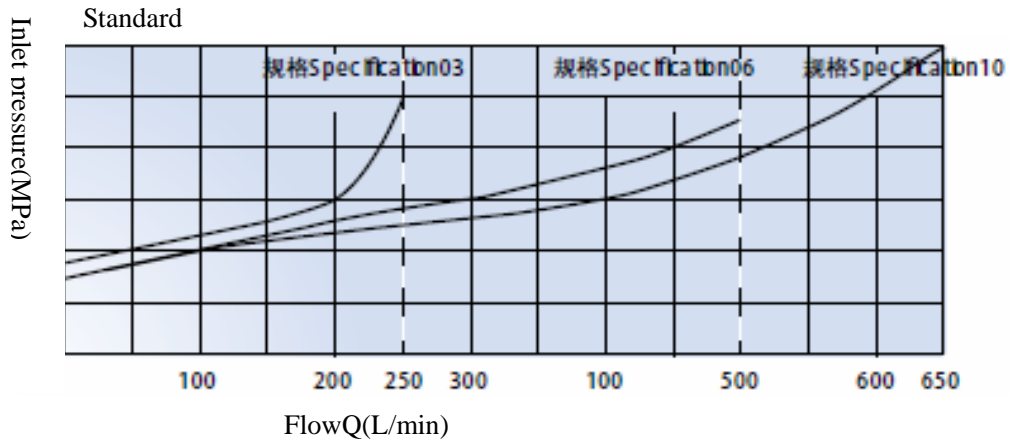
Performance curve

(Test under $v = 41 \text{ mm}^2/\text{s}$ and $t = 50^\circ\text{C}$)

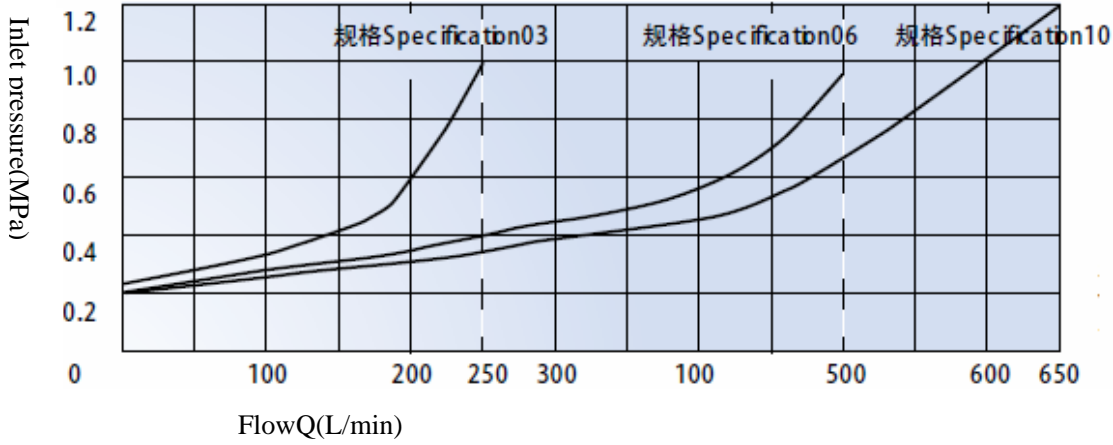
The curve is at the pilot oil drain freely, if internal drain should add port B pressure in the curve.



The relationship curve between minimum setting pressure and flow

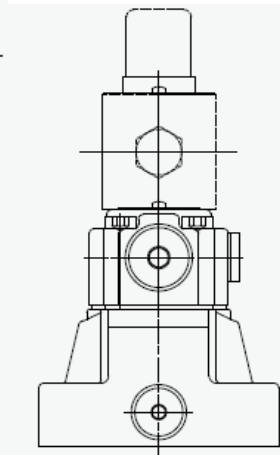
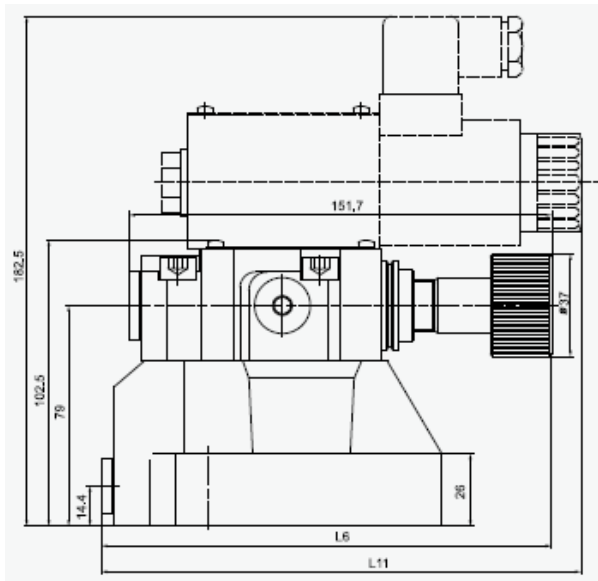


The relationship curve between minimum setting pressure and flow "U"Type

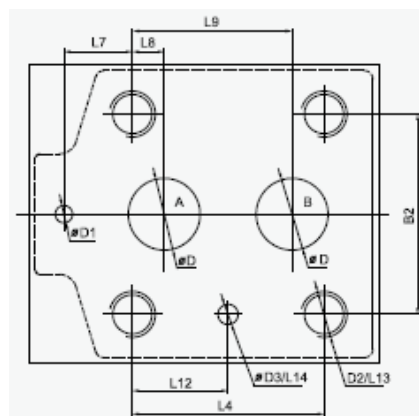
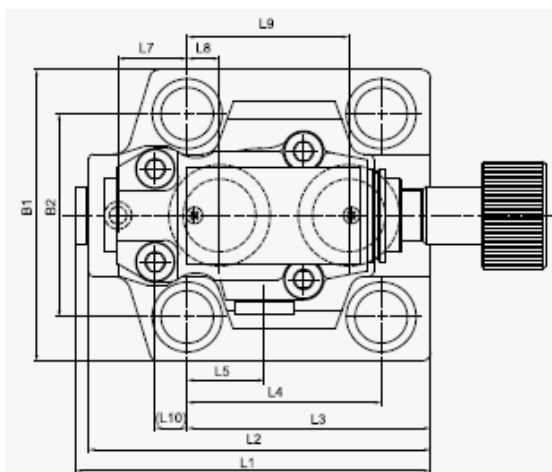


The pressure in B is zero in the entire flow range

External dimensions



Size of subplate oil port



| Parameter Specification | B1 | B2 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | L10 | L11 | L12 | L13 | L14 |
|----------------------------|-----|------|-------|-------|-------|------|------|-------|------|------|------|-----|-------|------|-----|-----|
| Y/YW-03 | 80 | 54 | 98.5 | 91.5 | 67 | 54 | 23.5 | 149.3 | 0 | 22.1 | 47.5 | 14 | 159.7 | 22.1 | 20 | 6 |
| Y/YW-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 |
| Y/YW-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 |

| Parameter Specification | D | D1 | D2 | D3 |
|----------------------------|----|----|-----|----|
| Y/YW-03 | 12 | 6 | M12 | 7 |
| Y/YW-06 | 25 | 6 | M16 | 7 |
| Y/YW-10 | 32 | 6 | M18 | 7 |

| Specification | Mounting screw | Tighten torquemoment |
|---------------|----------------|----------------------|
| Y/YW-03 | M12x45-10.9 | 130Nm |
| Y/YW-06 | M16x50-10.9 | 310Nm |
| Y/YW-10 | M18x50-10.9 | 430Nm |