

| | | | | |
|---|--|----------------|----------------|-------------------------------|
| BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD. | Directional control valves mechanical operation Type 4WMU/R | | | RE 22275/12.2004 |
| | Size 6 , 10 | up to 31.5 MPa | up to 120L/min | Replaces: RE 22275/05.2001 |

Features:

- Direct operated directional spool valve with adjustable roller operation
- Roller lever assembly may be stepped in 90°
- Radial forces absorb reliably (up to 30°)
- 19 kinds standard spool function

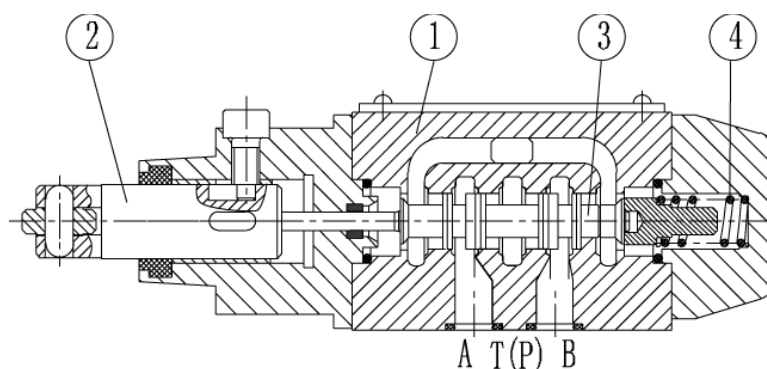


Funtion,section

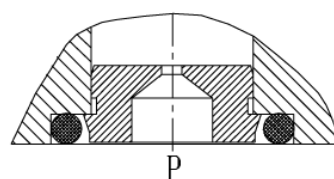
Directional valves type WMR are roller operated directional valves.

They basically consist of the housing (1), the roller lever (2), the control spool (3) and the return spring (4).

A plug-in throttle is required if flow greater than the permitted value may occur while the valve spool is being from one position to another. The plug-in orifice is fitted in the P port of the directional valve.



Type 4WMR6



Cartridge throttle

Ordering details

| | | | | | | | | | |
|--|----|--|--|--|--|---|---|--|---|
| | WM | | | | | B | / | | * |
|--|----|--|--|--|--|---|---|--|---|

Further details in clear text

No code = mineral oils
V = phosphate ester

3 service ports = 3
4 service ports = 4

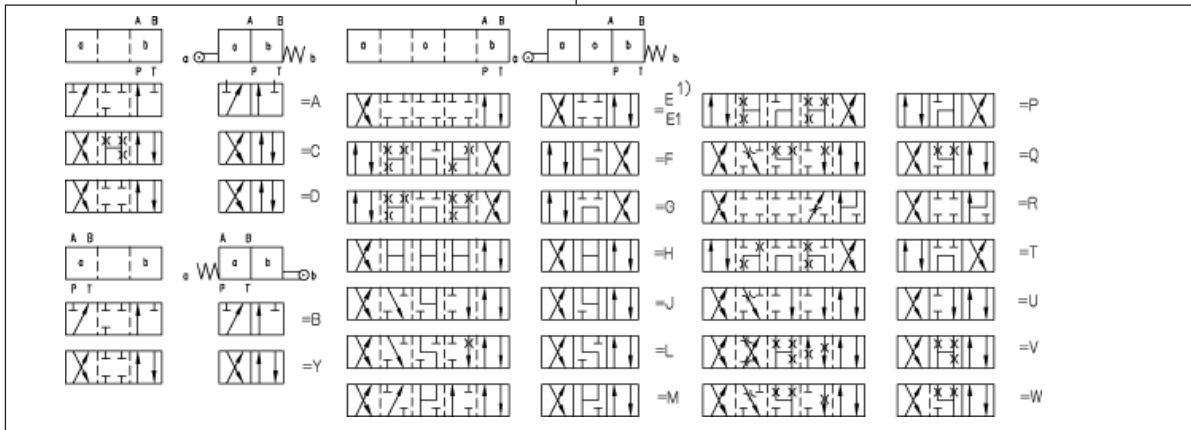


Size 6 = 6
Size 10 = 10

No code = Without throttle insert
B08 = Throttle Φ 0.8 mm
B10 = Throttle Φ 1.0 mm
B12 = Throttle Φ 1.2 mm

B = The technology of Beijing Huade Hydraulic

50 = Series 50 to 59
(50 to 59: unchanged installation and connection dimensions)
(for size 6)
30 = Series 30 to 39
(30 to 39: unchanged installation and connection dimensions)
* (for size 10)



1) Symbol E1:P to A and B with pre-opening

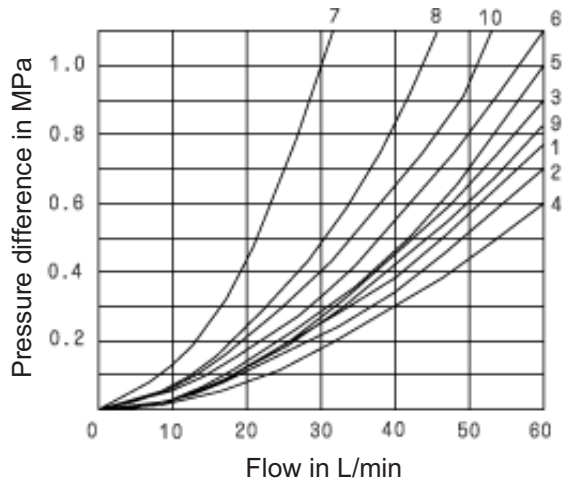
Warning: please consider pressure intensification with single rod cylinders

Technical data

| Size | 6 | | 10 | |
|---|---|------------|-----------------------|-----------|
| Operating ports A, B, P (MPa) | up to 31.5 | | | |
| Pressure port T (MPa) | up to 6 | | up to 16 | |
| In symbols A and B, the T port must be used as a drain connection if the operating pressure is above the pressure permitted at the T port | | | | |
| Max. flow (L/min) | up to 60 | | up to 120 | |
| Flow cross section (control position 0) | for symbol Q, 6% of nominal cross section | | | |
| | for symbol W, 3% of nominal cross section | | | |
| Pressure fluid | mineral oils or phosphate ester | | | |
| Pressure fluid temperature range (°C) | - 30 to + 80 | | | |
| Viscosity range (mm ² /s) | 2.8 to 500 | | | |
| Weight (kg) | approx. 1.4 | | approx. 3.3 | |
| Operating force at roller lever (N) | at zero tank pressure | 100 to 121 | two positions valve | 70 to 140 |
| | at a pressure | 184 to 205 | three positions valve | 70 to 175 |

Characteristic curves (measured at $v = 41 \text{ mm}^2/\text{s}$ and $t = 50 \text{ }^\circ\text{C}$)

WM_U^R6

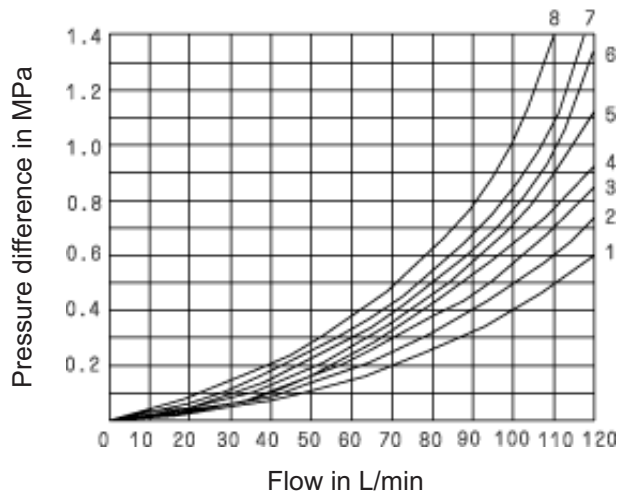


| Symbols | Direction of flow | | | |
|---------|-------------------|-------|-------|-------|
| | P → A | P → B | A → T | B → T |
| A | 3 | 3 | - | - |
| B | 3 | 3 | - | - |
| C | 1 | 1 | 3 | 1 |
| D | 5 | 5 | 3 | 3 |
| E | 3 | 3 | 1 | 1 |
| F | 1 | 3 | 1 | 1 |
| G | 6 | 6 | 9 | 9 |
| H | 2 | 4 | 2 | 2 |
| J | 1 | 1 | 2 | 1 |
| L | 3 | 3 | 4 | 9 |
| M | 2 | 4 | 3 | 3 |
| P | 3 | 1 | 1 | 1 |
| Q | 1 | 1 | 2 | 1 |
| R | 5 | 5 | 4 | - |
| T | 10 | 10 | 9 | 9 |
| U | 3 | 3 | 9 | 4 |
| V | 1 | 2 | 1 | 1 |
| W | 1 | 1 | 2 | 2 |
| Y | 5 | 5 | 2 | 3 |

7、 Symbol "R" with position A-B

8、 Symbols "G" and "T" with mid position P-T

WM_U^R10



| Symbols | Direction of flow | | | |
|---------|-------------------|-------|-------|-------|
| | P → A | P → B | A → T | B → T |
| A | 4 | 3 | - | - |
| B | 3 | 4 | - | - |
| C | 3 | 3 | 4 | 4 |
| D | 3 | 3 | 5 | 5 |
| Y | 4 | 4 | 6 | 6 |
| E | 2 | 2 | 4 | 4 |
| F | 1 | 2 | 3 | 4 |
| G、 T | 4 | 4 | 7 | 7 |
| H | 1 | 1 | 5 | 5 |
| J | 2 | 2 | 3 | 3 |
| L | 3 | 3 | 2 | 4 |
| M | 1 | 1 | 4 | 4 |
| P | 3 | 1 | 5 | 5 |
| Q | 2 | 2 | 2 | 2 |
| R | 3 | 4 | 3 | - |
| U | 3 | 3 | 5 | 2 |
| V | 2 | 2 | 3 | 3 |
| W | 3 | 3 | 3 | 3 |

7、 Symbol "R" with position A-B

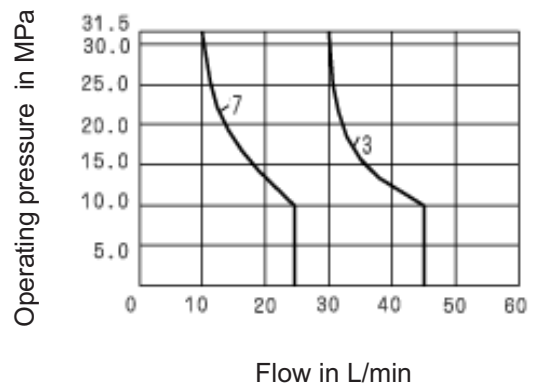
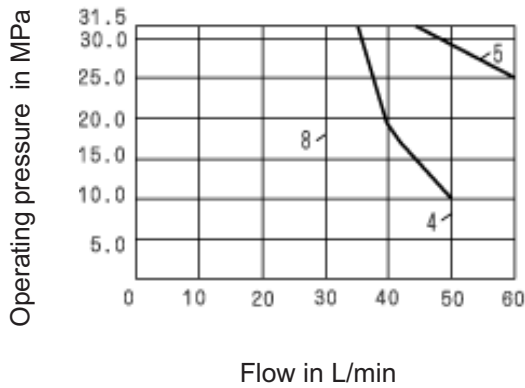
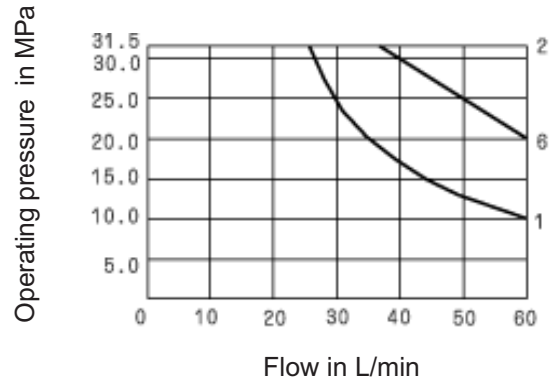
8、 Symbols "G" and "T" with mid position P-T

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

The operation of the valve is dependent upon the effect of filtration. In order to achieve the given permissible flow rates, full flow filtration $20\mu\text{m}$ is required. The flow forces operating within the valve influence the valve performance. For 4 way valves, the flows given are valid for normal operation with 2 directions of flow (e.g. from P to A and from B to T). If only one flow path is operative e.g. if port A or B is blocked and the valve is used as a 3 way valve, the permissible flows can be very much lower.

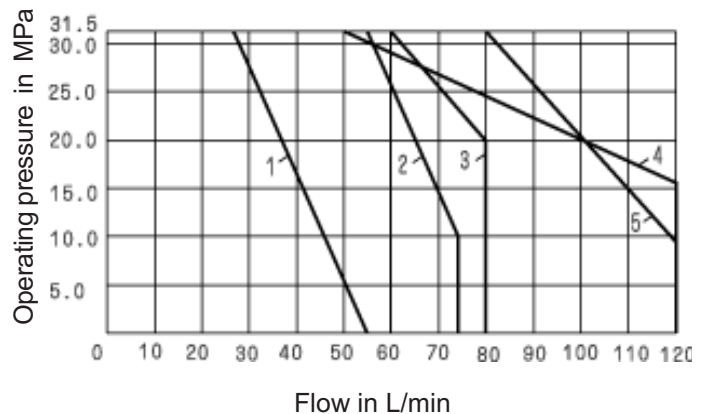
WM_U^R 6

| Curve | symbol |
|-------|-------------------------------|
| 1 | A, B |
| 2 | C, D, Y, E, E1, H, M, Q, U, W |
| 3 | F, P |
| 4 | G |
| 5 | J, L |
| 6 | R |
| 7 | T |
| 8 | V |



WM_U^R 10

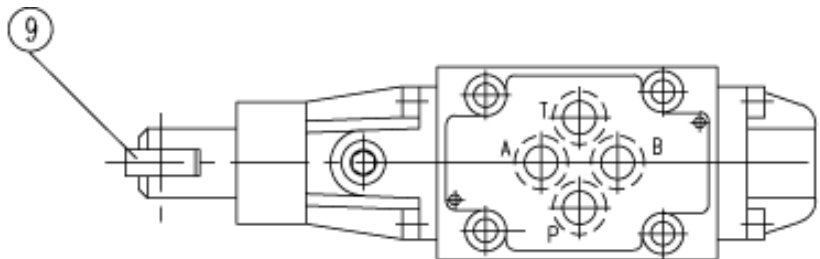
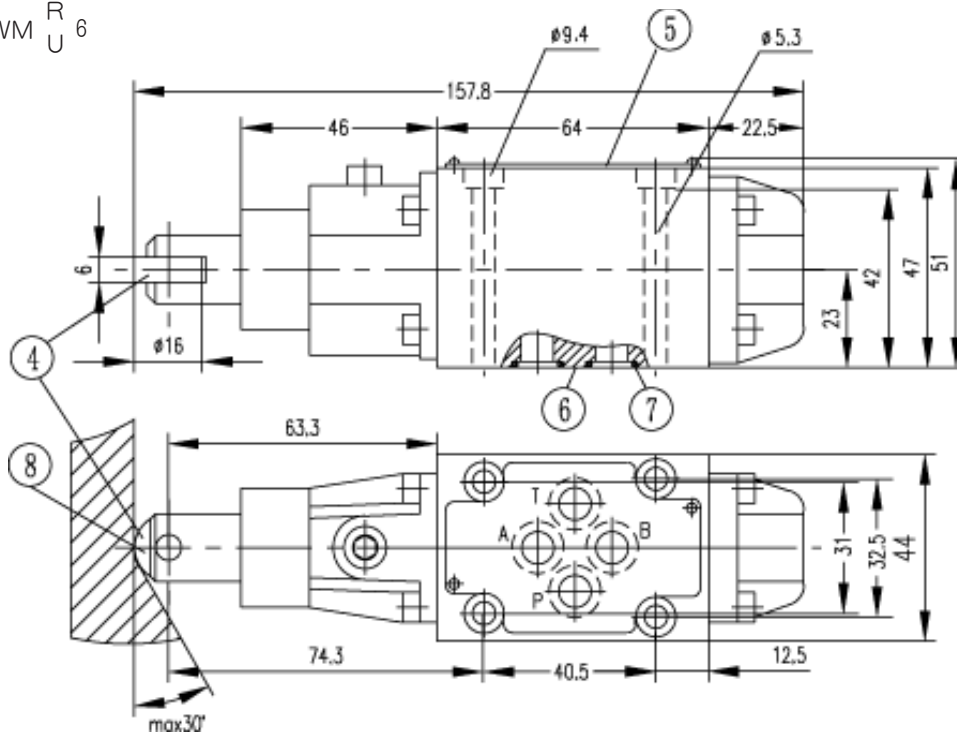
| Curve | Symbol |
|-------|------------------|
| 1 | A, B |
| 2 | H |
| 3 | F, G, P, R, T |
| 4 | J, L, Q, U, W |
| 5 | C, D, E, M, V, Y |



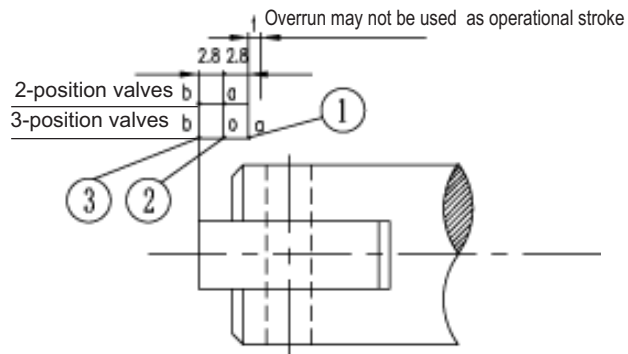
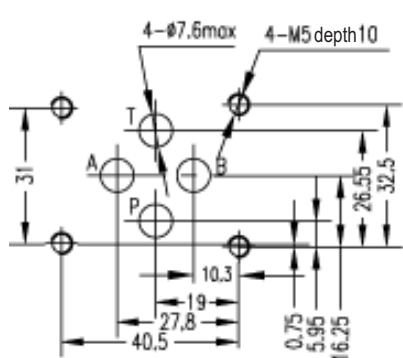
Unit dimensions

(Dimensions in mm)

WM $\begin{matrix} R \\ U \end{matrix}$ 6



Roller lever assembled next to B end in 2-position valves of spools B.Y



Subplates: see page 205

G341/01 (G1/4"); G341/02 (M14X1.5)

G342/01 (G3/8"); G342/02 (M18X1.5)

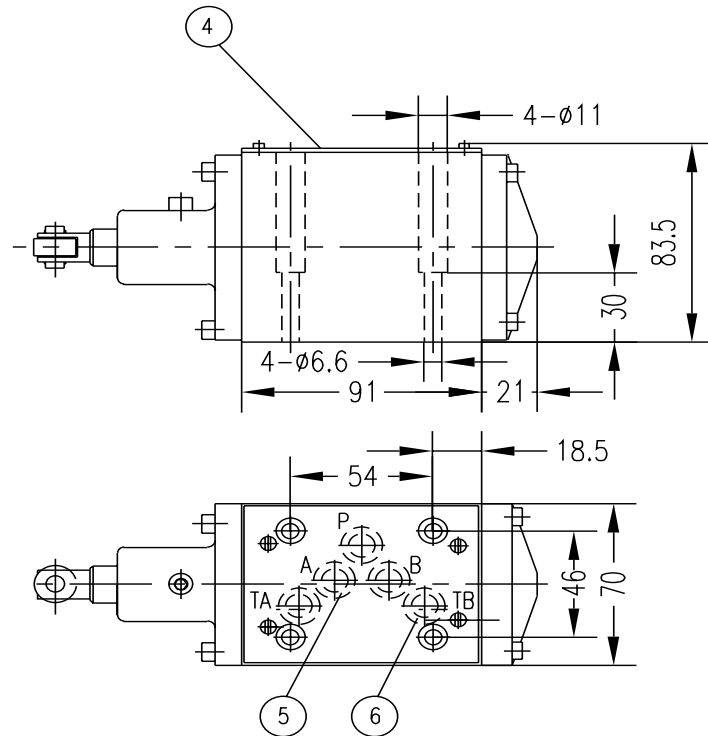
G502/01 (G1/2"); G502/02 (M22X1.5)

- 1、 Spool position "a"
- 2、 Spool position "o" and "a" (for 2-position valve)
- 3、 Spool position "b"
- 4、 Roller lever assembly may be stepped in 90°
- 5、 Nameplate
- 6、 Connection surface
- 7、 O-ring 9.25X1.78 (for ports A, B, P, and T)
- 8、 WMR, the code "R"
- 9、 WMU, the code "U"

Unit dimensions

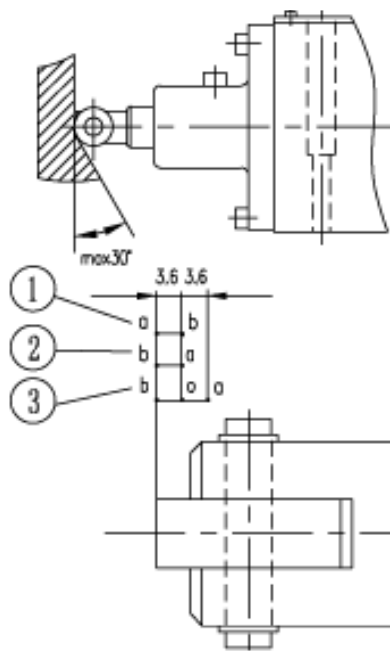
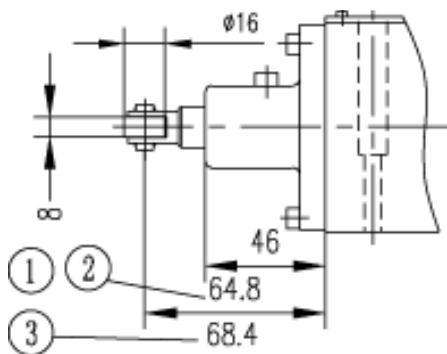
(Dimensions in mm)

WM $\begin{matrix} R \\ U \end{matrix} 10$



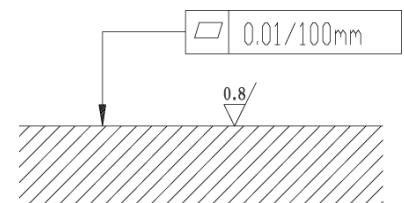
WMR

WMU



Roller lever assembled next to B end in 2-position valves of spools B.Y

Required surface finish of mating piece



Subplates: see page 206

G66/01 (G3/8"); G66/02 (M18X1.5)

G67/01 (G1/2"); G67/02 (M22X1.5)

G534/01 (G3/4"); G534/02 (M27X2)

- 1、 Two position valve (B, Y)
- 2、 Two position valve (A, C, D)
- 3、 Three position valve
- 4、 Nameplate
- 5、 O-ring12X2 (for ports A, B, P, and T)
- 6、 Adjunctive port T can be connected with ZDR10D... in special condition

Notice

1. The fluid must be filtered. Minimum filter fineness is 20 μm .
2. The tank must be sealed up and an air breather/filter must be installed on air suction/entrance.
3. Subplate are not supplied, if required, please ordering separately.
4. Valve fixing bolts/screws must be high tensile (class 10.9). Please select and consult manufacturer according to the parameter listed in the datasheet.
5. Roughness of surface mating with the valve is required to $\sqrt{0.8}$.
6. Surface straightness of mating piece is required to 0.01/100mm.

All rights reserved-Subject to revision

THM Huade Hydraulics (P) Ltd

F-127, Focal Point, Phase VIII

Ludhiana-141010, India

Phone: 0091+161+2672777, Fax: 0091+161+2672778

www.thmhuade.com

info@thmhuade.com, sales@thmhuade.com