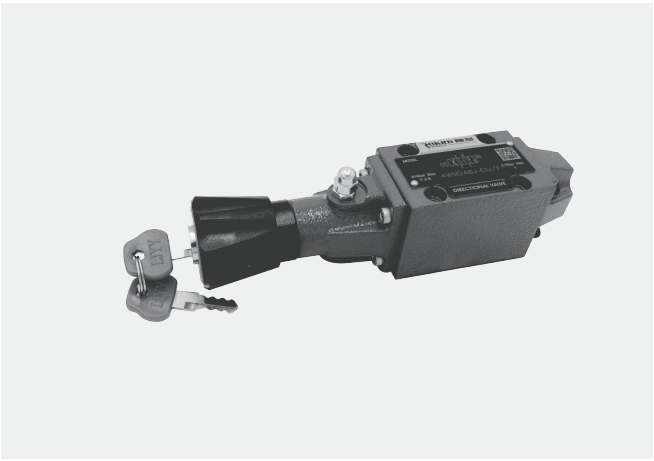
ГИДРООТВЕТ
доступная гидравлика

Rotary Directional Valve

Model: WMD6/10...



- Size 6 and 10
- Maximum working pressure 315 bar
- Maximum working flow 120 L/min

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Features

- Direct operated directional spool valve with rotary knob
- Subplate mounting

Function description, sectional drawing

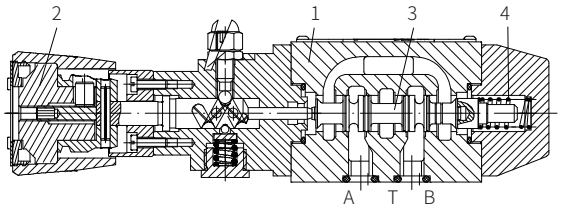
The WMD rotary directional valve is a direct operated directional spool valve that switches the oil circuit by rotating the handle to move the spool axially. It has 3/2-way, 4/2-way and 4/3-way as well as various spool symbols, and it is subplate mounting valve with detent.

The valve consists of valve body (1), rotary knob (2), control spool (3) and reset spring (4).

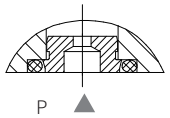
The control spool (3) is held in the neutral or initial position by the reset spring (4) in no operation on the rotary knob (2). When the rotary knob (2) is pushed to the right or left, the control spool (3) is directly controlled through the connecting rod and moved to the required position to obtain the required flow cross-section.

Plug-in throttle:

Due to working conditions limitations, it may occur that the flow rate of the valve exceeds the specified flow rate on the valve performance curve during the switching process. In this case, a throttle is required. It is installed in the P chamber of the valve or oil circuit.

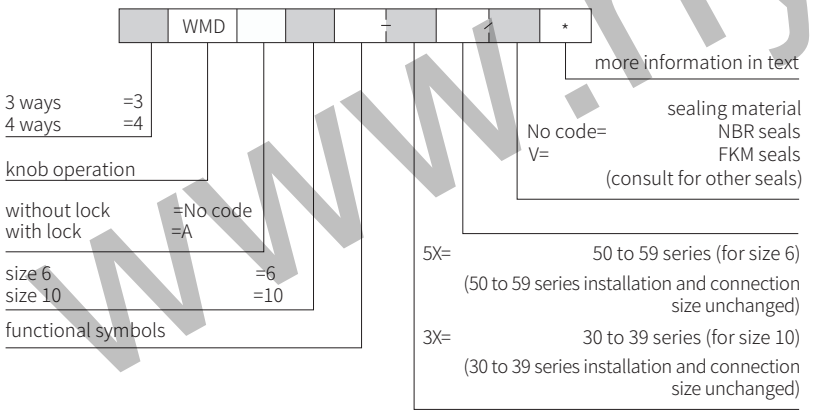


Model WMD6...5XJ/



Plug-in throttle

Models and specifications



Technical parametes

Size 6

Working medium temperature range		°C	-30 to +80 (NBR seal)
Maximum working pressure	Oil port A, B, P	bar	315
	Oil port T	bar	160
Maximum flow		L/min	60
Flow cross-section (middle position)	Q type	mm^2	6% of nominal cross-section
	W type	mm^2	3% of nominal cross-section
Working medium			Mineral oil; phosphate ester
Viscosity range		mm^2/s	2.8 to 500
Cleanliness of oil			The maximum allowable pollution level of oil is IS04406 Class 20/18/15
Weight		kg	1.5

Size 10

Working medium temperature range		°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Maximum working pressure	Oil port A, B, P	bar	315
	Oil port T	bar	160
Maximum flow		L/min	120
Effective flow cross-section (middle position)	V type	mm^2	11 (A/B→T) ; 10.3 (P→A/B)
	W type	mm^2	2.5 (A/B→T)
	Q type	mm^2	5.5 (A/B→T)
Working medium			Mineral oil; phosphate ester
Viscosity range		mm^2/s	2.8 to 500
Cleanliness of oil			The maximum allowable pollution level of oil is IS04406 Class 20/18/15
Weight		kg	4.2

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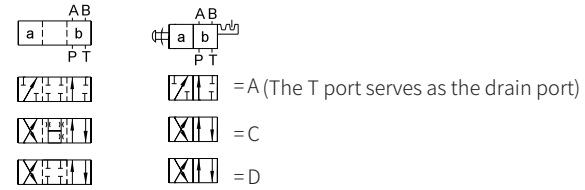
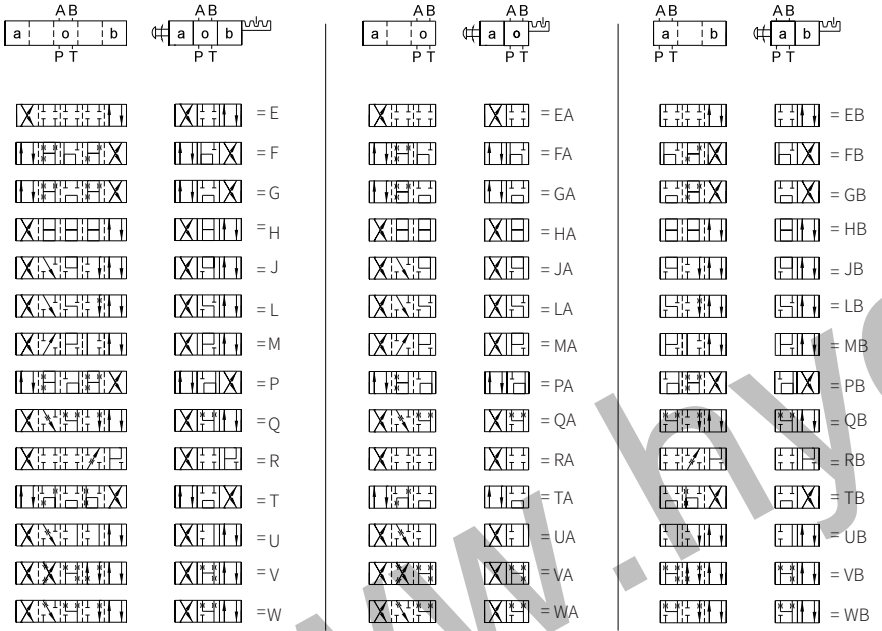
Functional symbols

Transition function / Spool valve function



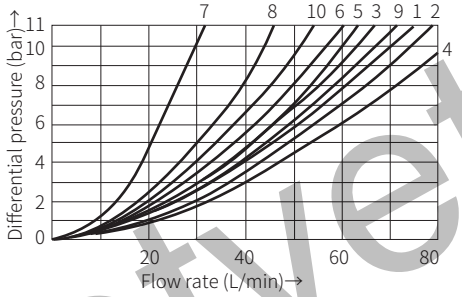
Transition function / Spool valve function



Characteristic curve

(Measured when using HLP46, ϑ_{oil}=40°C ± 5°C)

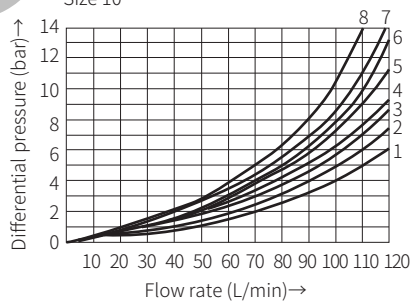
Size 6



7 Symbol "R" in switching position B→A
8 Symbols "G" and "T" in the middle position P→T
9 Symbol "H" in the middle position P-→T

Functional symbol	Flow direction			
	P to A	P to B	A to T	B to T
AB	3	3	-	-
C	1	1	3	1
DY	5	5	3	3
E	3	3	1	1
F	1	3	1	1
T	10	10	9	9
H	2	4	2	2
JQ	1	1	2	1
L	3	3	4	9
M	2	4	3	3
P	3	1	1	1
R	5	5	4	-
V	1	2	1	1
W	1	1	2	2
U	3	3	9	4
G	6	6	9	9

Size 10



7 Symbol "R" in switching position A→B
8 Symbols "G" and "T" in the middle position P→T

Functional symbol	Flow direction			
	P to A	P to B	A to T	B to T
A	4	3	-	-
B	3	4	-	-
C	3	3	4	4
D	3	3	5	5
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
Y	4	4	6	6

Working limit

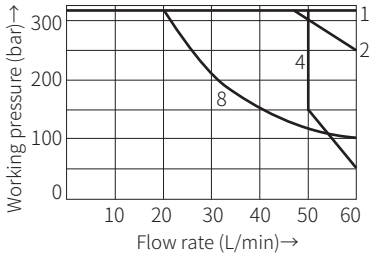
(Measured when using HLP46, ϑ_{oil}=40°C ± 5°C)

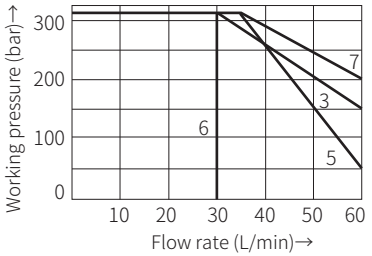
Due to blockage, the working performance of the valve is related to the filtration accuracy. In order to obtain the given flow value, it is recommended to use 25um full-flow filtration. The various forces inside the valve also affect its working limit.

Therefore, for a four-way valve, the given flow value is valid for normal operation when two flow directions(i.e. from P to A and return flow from B to T).

If only one direction of flow is required, when the four-way valve with chamber A or B blocked is used as three-way valve, the flow rate may be very small in severe cases.

Size 6

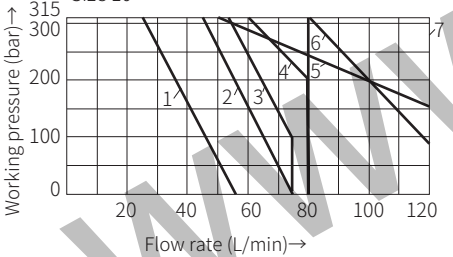




Performance curve	Functional symbol
1	E, M, H, C, D, Y, Q, U, W
2	J, L
4	G, P
8	T

Performance curve	Functional symbol
3	A, B
5	F
6	V
7	R

Size 10

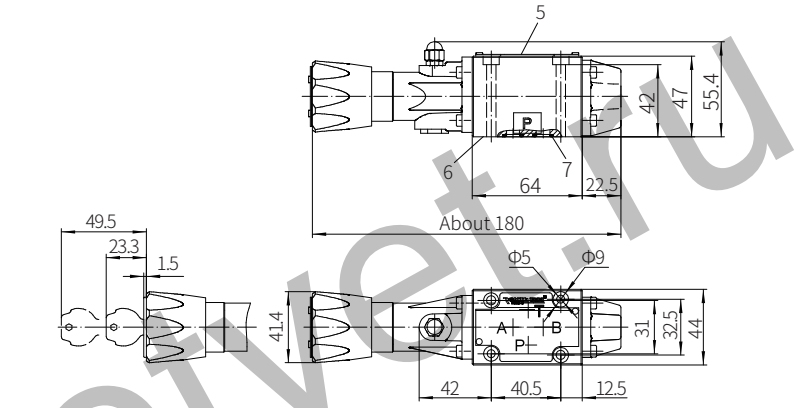


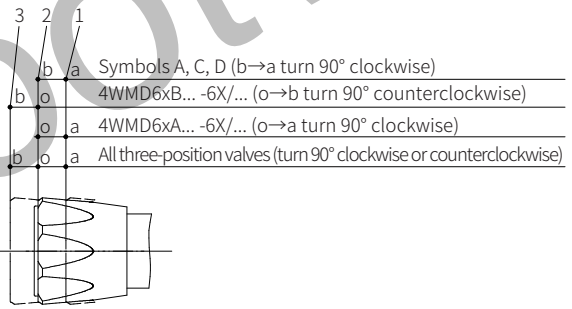
Performance curve	Functional symbol
1	A、B
2	A/O
3	H
4	F、G、P、R、T
5	J、L、Q、U、W
6	C、D、E、M、V、Y
7	C/O、C/OF D/O、D/OF

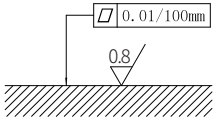
Component size

Size unit: mm

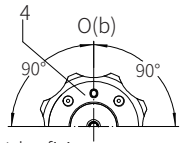
Model 4WMD6...5XJ/...







Required surface finishing of mating components



Valve fixing screw
M5x50-10.9 grade GB/T70.1-2000
Tightening torque M_A=7.8Nm

1 Switch position b→a,o→a

2 Switch position a→b,a→o,b→o

3 Switch position o→b

4 Three-position valve (including symbols *A and *B):
turn 90° clockwise or counterclockwise.
Two-position valve (symbols A, C, D): turn 90° clockwise

5 Name plate

6 Mounting surface

7 O-ring: 9.25x1.78 (for oil ports A, B, P, T)

It must be ordered separately if connection subplate is needed.
Subplate model:
G341/01(G1/4") ; G341/02(M14x1.5)
G342/01(G3/8") ; G342/02(M18x1.5)
G502/01(G1/2") ; G502/02(M22x1.5)