

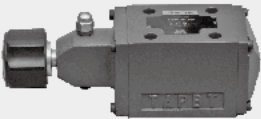


# 4/3, 4/2 and 3/2 directional valve with mechanical, manual operation

2.2

Type WMD10...L3X

Size 10  
Up to 315 bar  
Up to 120L/min



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## Features

- Direct operated directional spool valves with mechanical, manual operation
- For sub-plates mounting
- Rotary knob with or without lock
- 45 kinds standard spools, optional
- Porting pattern confirms to DIN 24 340 form A and ISO 4401

## Function and configurations

Directional valves type WMD... are mechanical, manual operated directional spool valves. They control the start, stop and direction of a flow.

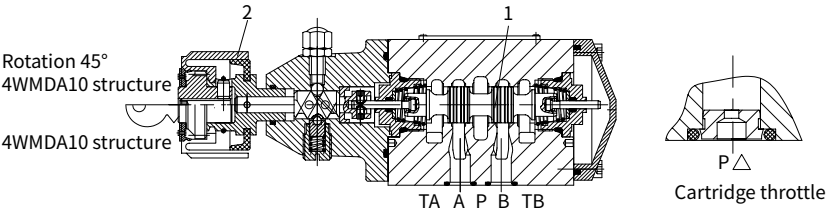
The rotary knob ( 2 ) operates (  $2 \times 90^\circ$  ) the spool( 1 ), the screw type rotation transforms into axial movement and direct acts on the spool(1). Then the spool ( 1 ) moves to the end position and gets the opening position as required.

Actual switch position of spool (1) can be controlled with rotary knob ( 2 ). All the switch positions can be orientated by locating device.

### Cartridge throttle

The use of a throttle insert is required, when operating, flows can occur during the switching processes that exceed the performance limit of the valve.

These throttles are to be inserted into the P-channel of the directional valve.



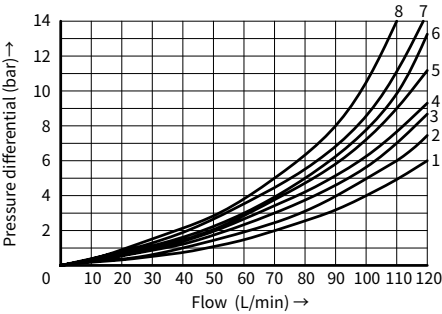
## Ordering code

	WMD	10	L3X / F	*
3 ways(version A) =3				Further details in clear text
4 ways =4				No code = NBR seals
Rotary knob				V = FKM seals
Without lock =No code				No code = Without cartridge throttle
With lock = A				B08 = Throttle - $\Phi 0.8$ mm
Nominal size 10 =10				B10 = Throttle - $\Phi 1.0$ mm
				B12 = Throttle - $\Phi 1.2$ mm
Symbols e.g. C, E, EA, EB etc. see below			F =	With detent
Series L30 to L39 ( L30 to L39: unchanged installation and connection dimensions)		=L3X		

Symbols

Transition position	Spool valve symbols	Transition position	Spool valve symbols	Transition position	Spool valve symbols
AB	AB	AB	AB	AB	AB
PT	PT	PT	PT	PT	PT

Characteristic curves (Measured at  $\vartheta_{oil} = 40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , using HLP46)



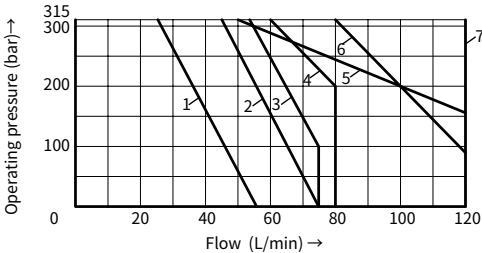
8 Symbols "G" and "T" in mid position(P → T)  
8 Symbol "R" in position b (A → B )

Spool 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

Operating limitation

The switching performance of the valves depends on the filtration. In order to achieve the specified admissible flow values, we recommend full flow filtration with 25  $\mu\text{m}$ . The flow forces acting within the valves also affect the flow performance. With 4 way valves the specified flow data thus apply to normal operation with 2 volume flow directions (e.g. from P to A and at the same time return flow from B to T) (see table).

If only one flow direction is available, in certain cases, the admissible flow can be significantly smaller (e.g. when using a 4 way valve as 3 way valve, due to blocked connection A or B).



Curve	Spool symbols
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

## Unit dimensions

(Dimensions in mm)

## Valve fixing screws:

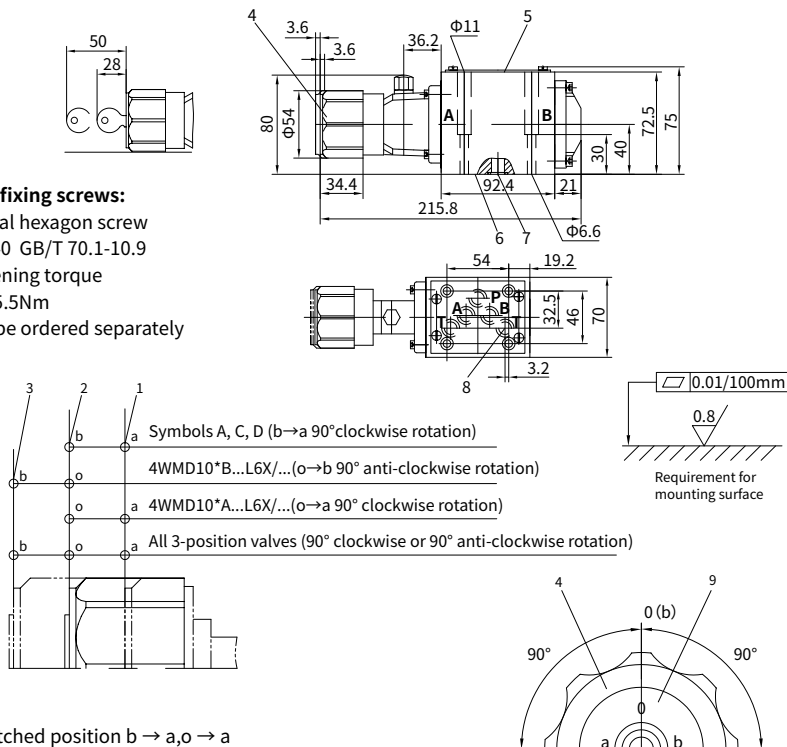
Internal hexagon screw

M6×40 GB/T 70.1-10.9

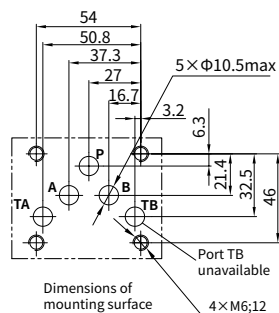
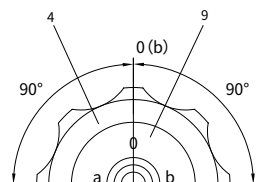
Tightening torque

 $M_A = 15.5 \text{ Nm}$ 

must be ordered separately



- 1 Switched position b → a, o → a
- 2 Switched position a → b, a → o, b → o
- 3 Switched position o → b
- 4 3-position valve (including spool \*A and \*B):  
Switched position b  
Operating valve 90° clockwise and 90° anti-clockwise  
2-position valve (spool A, C, D): Operating valve 90° clockwise
- 5 Nameplate
- 6 Fixing surface
- 7 O-ring 12×2 for ports A, B, P and T
- 8 Additional return port when using control block
- 9 Observe the spool position through the colorful disc in the front of the rotary knob



It must be ordered separately if connection plate is needed.

## Type:

G 66/01 (G 3/8), G 66/02 (M18×1.5)

G 67/01 (G 1/2), G 67/02 (M22×1.5)

G 534/01 (G 3/4), G 534/02 (M27×2)

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