

Manual Directional Valve

Model: WMM...5XJ



01

- ◆ Size 10
- ◆ Maximum working pressure 350 bar
- ◆ Maximum working flow 160 L/min

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Features

- Direct operated directional spool valve with handle
- With reset spring or detent, optional
- Subplate mounting

Function description, sectional drawing

The WMM manual directional valve is a direct operated directional spool valve which switches the oil circuit by rotating the handle to move the spool axially. It has 3/2-way, 4/2-way, 4/3-way as well as various spool symbols, and it is subplate mounting with optional detent and spring reset. Model 4WMM 5XJ/

The valve is composed of valve body (1), handle (2), control spool (3), one or two reset springs (4), etc.

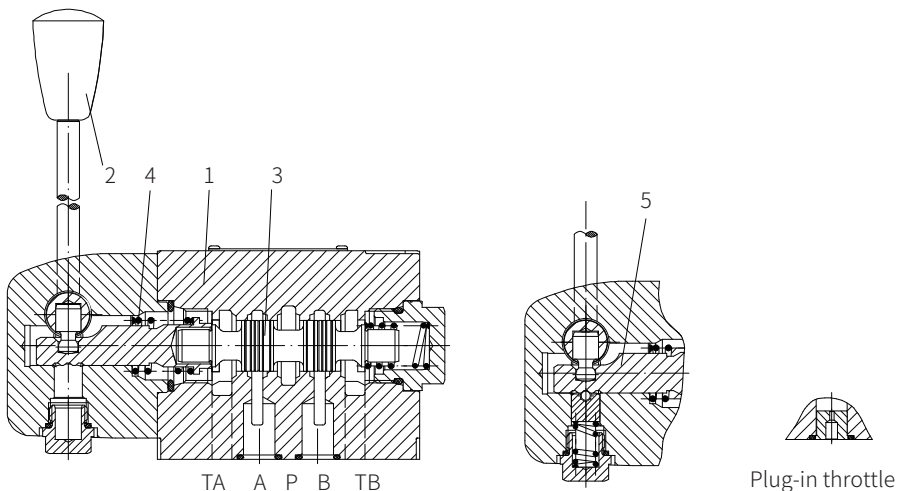
The control spool (3) is held in the middle or initial position by the reset springs (4) in no operation condition. When the handle (2) is pushed to the right or left, the handle pushes the push rod (5) via hinge and controls the valve spool (3) directly to force the spool to move to the required position to obtain the required flow cross-section. When the handle returns to the zero position, the control spool returns to the normal position by reset spring (4). The switching position of this valve is operated by the handle.

Model 4WMM 5XJ/F

The principle is basically the same with WMM...5XJ/. But this type valve is a control valve with two or three switching positions and one detent. Therefore, all the switching positions are fixed. Plug-in throttle

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

This type valve has advantages such as small volume, large flow capacity, and good reliability compared to other series of valves. It can be used together with the modular valves in same size, and widely used in engineering machinery, coal mining machinery, chemical machinery, light industry machinery, locomotives and many other industries.



Model WMM10...5XJ/

Models and specifications

		WMM	10	-5X	J			*
3 ways	=3							more information in text
4 ways	=4							sealing material
manual directional valve								No code= NBR seals
size 10	=10							V= FKM seals
symbols e.g.								(consult for other seals)
C、D、J、E, etc								No code= no plug-in throttle
50 to 59 series	=5X							B08= throttle Ø0.8mm
(50 to 59 series installation and connection size unchanged)								B10= throttle Ø1.0mm
								B12= throttle Ø1.2mm
Rekith	=J							No code= without detent, with reset spring
								F= with detent

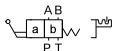
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Functional symbols

Transition function



Spool valve function



(The T port serves as the drain port)

= A

= c

= D

Transition function



Spool valve function



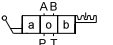
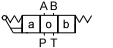
(The T port serves as the drain port)

= Y

Transition function



Spool valve function



= E

= F

= G

= H

= J

= L

= M

= P

= Q

= R

= T

= U

= V

= W

Transition function



Spool valve function



= EA

= FA

= GA

= HA

= JA

= LA

= MA

= PA

= QA

= RA

= TA

= UA

= VA

= WA

Transition function



Spool valve function



= EB

= FB

= GB

= HB

= JB

= LB

= MB

= PB

= QB

= RB

= TB

= UB

= VB

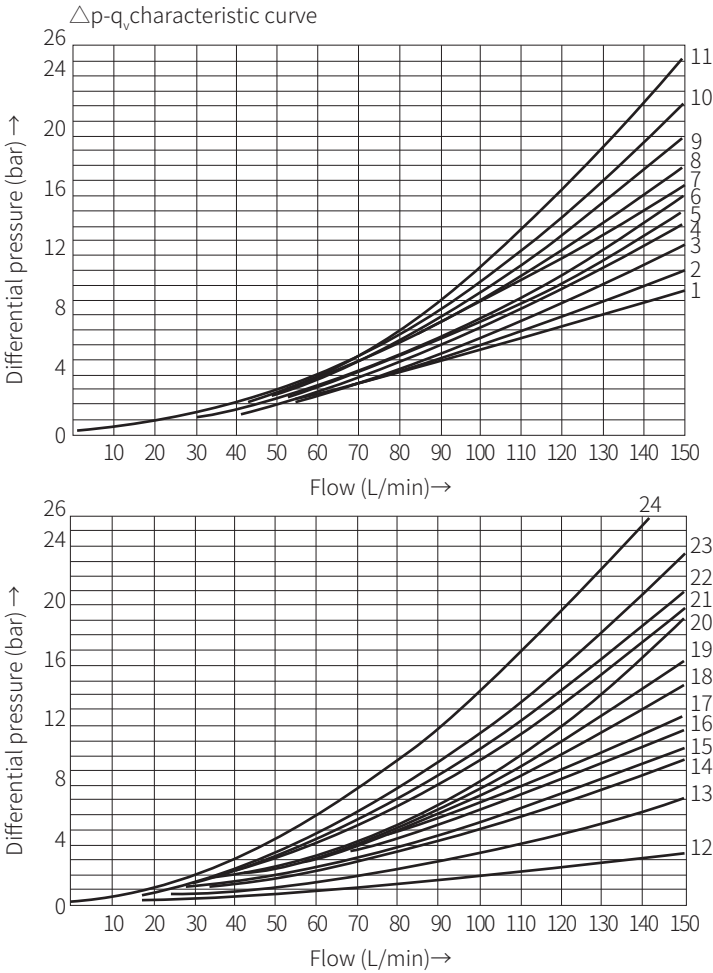
= WB

Technical parameters

Size		10
Working pressure	Oil port A、B、P	bar to 350
	Oil port T	bar to 210
Flow	L/min	to 160
Flow cross-section (middle position)		Q-type, 6% of nominal cross-section
		W-type, 3% of nominal cross-section
Medium		Mineral hydraulic oil or phosphate ester hydraulic oil
Oil temperature range	°C	-20 to 80
Viscosity range	mm ² /s	2.8 to 500
Weight	kg	about 3.6
Operating force	N	With detent about 30 to 40
		Without detent about 18 to 20

Characteristic curve

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



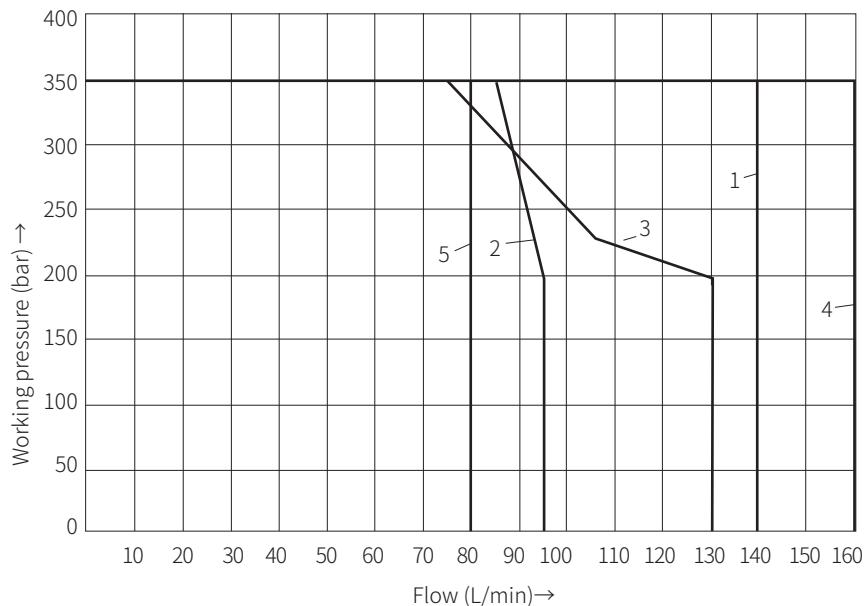
Functional symbol		A、B	C	D	E	F	G	H	J	L	M	P	Q	R	T	U	V	W
Flow direction	P-A	6	1	2	17	2	4	14	3	3	14	17	16	18	18	3	17	According to the requirements
	P-B	6	2	2	16	3	4	14	3	3	14	14	17	21	4	3	17	
	A-T	-	5	5	19	22	24	20	9	9	6	20	4	18	10	6	18	
	B-T	-	7	7	21	23	24	21	11	9	8	23	8	24	24	11	20	

Middle position

Functional symbol	Flow direction				
H	P-A	P-B	B-T	A-T	P-T
	12	12	13	13	15

Characteristic curve

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



With reset spring

Characteristic curve	Functional symbol
1	C、D、E、J、L、M、Q U、V、W
2	H
3	T、G

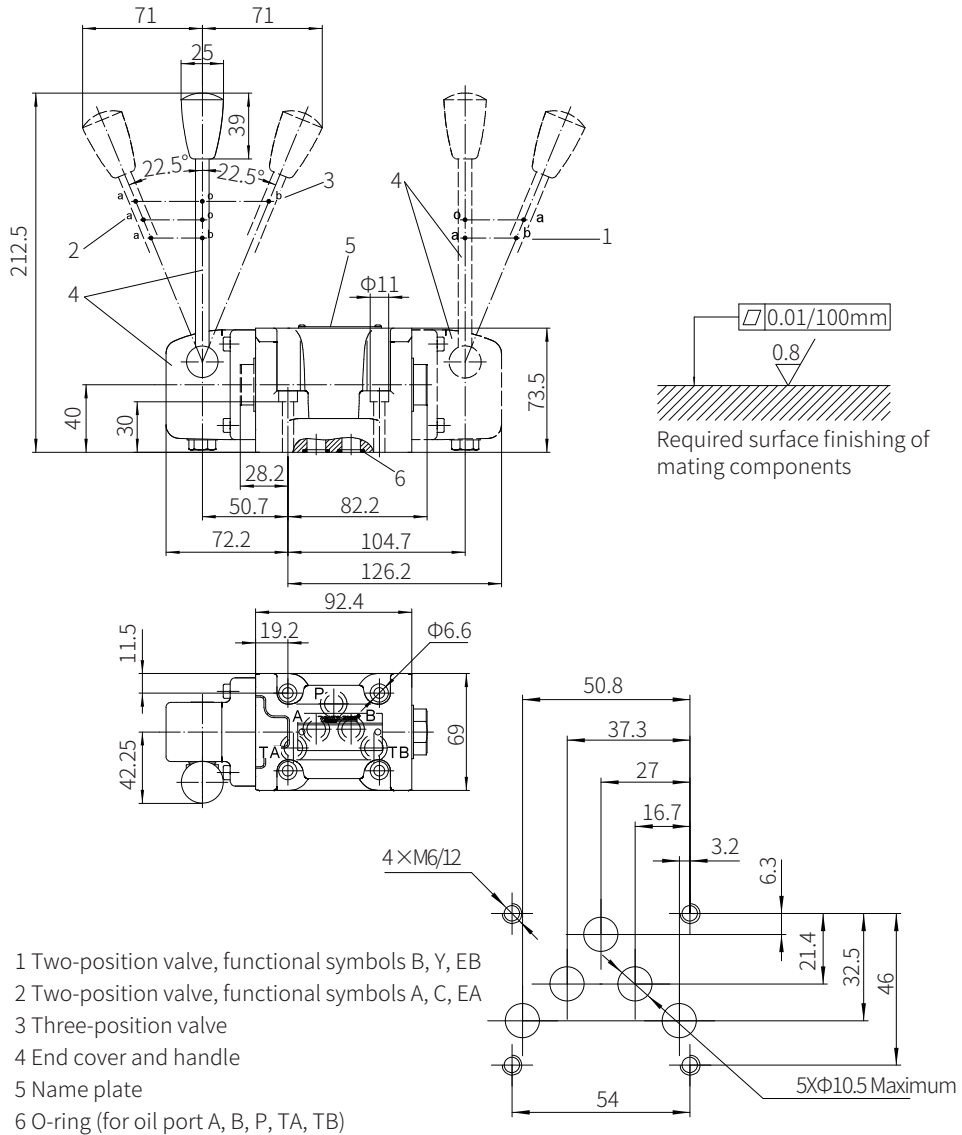
With detent "F"

Characteristic curve	Functional symbol
4	C、D、E、J、L、 M、Q、U、
5	T、G、H

Component size

Size unit: mm

Model WMM10...-5XJ/...



Valve fixing screw

M5×50-10.9 grade GB/T70.1-2000

Tightening torque $M_A = 13.7 \text{ Nm}$

It must be ordered separately if connection subplate is needed.

Subplate model:

G66/01 (G3/8"); G66/02 (M18x1.5)

G67/01 (G1/2"); G67/02 (M22x1.5)

G534/01 (G3/4") ; G534/02(M27x2)