



# WMM 10...type Manual Operated Direction Control Valve



WMM10...4XJ... type

Size 10

Max. Working Pressure: 315 bar

Max. Flow: 160L/min

## Contents

Function and configurations	02
Specifications	03
Symbols	03
Technical data	04
Characteristic curves	04
Operating limitations	04
Unit dimensions	05

## Features

- Direct operating directional spool valves with mechanical, manual operation
- For sub-plates mounting
- Hand lever
- Porting pattern conforms to DIN 24 340 form A, and ISO 4401

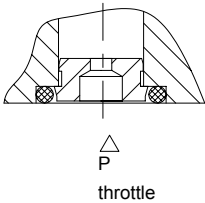
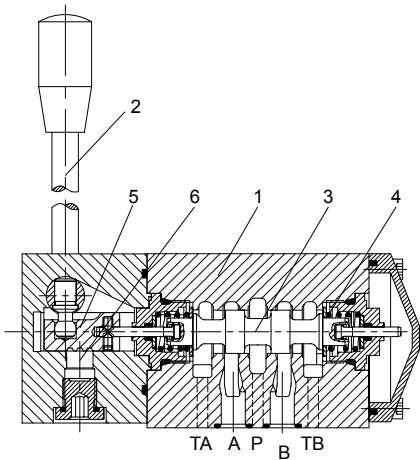
# Function and configurations

WMM 10...4XJ... type are manually actuated directional spool valves. They control the start, stop and direction of a flow. The directional valves consist of valve housing (1), handle (2), control spool (3), and one or two return springs (4). When de-energized, the control spool (3) is held in the central position or in the initial position by the return springs (4).The control spool (3) is moved to the desired spool position by means of the types of actuation.

## 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. Directional valves type WMM10...4XJ...type have two handles options with different pulling direction , the detail refer to the 'Specification' and 'Unit dimensions'.



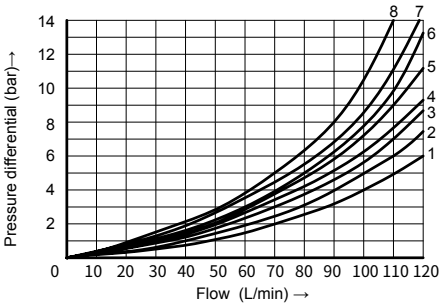
## Specification

		WMM	10	- 4XJ /				*
3 ways (version A and B) =3								Further details in clear text
4 ways =4								
Manual directional valve								
Nominal size 10 =10								
Symbols e.g. C, E, EA, EB etc. see below								
Series 40J to 49J =4XJ (40J to 49J: unchanged installation and connection dimensions)								

## Technical data

Fluid temperature range		°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)
Max. operating pressure	Port A,B,P	bar	315
	Port T	bar	160
Max. flow-rate		L/min	120
Flow cross section (switching neutral position)	Type V	mm <sup>2</sup>	For symbol V 11(A/B to T) 10.3(P to A/B)
	Type W	mm <sup>2</sup>	For symbol W 2.5(A/B to T)
	Type Q	mm <sup>2</sup>	For symbol Q 5.5(A/B to T)
Fluid			Mineral oil suitable for NBR and FKM seal Phosphate ester for FKM seal
Viscosity range		mm <sup>2</sup> /s	2.8 to 500
Degree of contamination			Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406
Weight		kg	4.4

## Characteristic curves (Measured at t=40°C ±5°C , using HLP46)

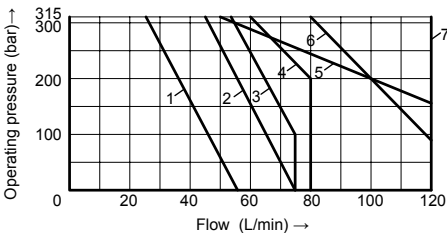


8 Symbols "G" and "T" in neutral position (P → T)  
8 Symbol "R" in position (A → B)

Spool symbol	Flow direction				Spool symbol	Flow direction			
	P to A	P to B	A to T	B to T		P to A	P to B	A to T	B to T
A	4	3	-	-	L	3	3	2	4
B	3	4	-	-	M	1	1	4	4
C	3	3	4	4	P	3	1	5	5
D	3	3	5	5	Q	2	2	2	2
E	2	2	4	4	R	3	4	3	-
F	1	2	3	4	U	3	3	5	2
G,T	4	4	7	7	V	2	2	3	3
H	1	1	5	5	W	3	3	3	3
J	2	2	3	3	Y	4	4	6	6

## Operating limitations

The switching performance of the valves depends on the filtration. To achieve the specified flow values, we recommend full flow filtration with 25 µm. 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. If only one flow direction is available, in certain cases, the admissible flow can be significantly smaller.



Curve	Spool 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

(Dimensions in mm)

Technical drawings of the 3-position valve assembly, including side and front views with dimensions and a mounting surface requirement.

**Side View Dimensions:**

- Top section: 50, 50, 16°, 16°, 2-position valves (Spoolsymbol A, C, D)
- Bottom section: 2-position valves (Spool symbol B, Y)
- Overall height: 201
- Mounting flange diameter:  $\Phi 11$
- Top flange diameter:  $\Phi 22$
- Top flange thickness: 50

**Front View Dimensions:**

- Overall width: 164.5
- Overall height: 72.5
- Internal dimensions: 55, 34, 92.4, 21, 30

**Top View Dimensions:**

- Overall width: 74.5
- Overall height: 70
- Internal dimensions: 28.5, 34, 3.2, 19, 46
- Port labels: TA, TB, A, B, P, 5, 4, 6
- Port diameters:  $\Phi 11$ ,  $4 \times \Phi 6.7$

**Mounting Surface Requirement:**

Requirement for mounting surface:  $0.01/100\text{mm}$  (surface texture) and  $0.8$  (fillet radius).

- 1 Switched position 0 → b
- 2 Switched position 0 → a,b → a
- 3 Switched position a → b
- 4 Nameplate
- 5 O-ring 12×2, for ports A, B, P,TA and TB
- 6 Additional return port when using control block