

## Catálogo de Produtos



4/3 and 4/2 Directional Control Valves with hand leverType WMM (New Series)

BEIJING HUADE HYDRAULIC INDUSTRIAL GROUP CO.,LTD.	4/3 and 4/2 directional control valves with hand lever, Type WMM (New Series)			RE 22331/12.2004				
	Size10	up to 31.5 MPa	up to 120L/min					
with hand lever - With spring return or dete - For subplate mounting	<ul> <li>Direct actuated directional spool valve with hand lever</li> <li>With spring return or detent, optional</li> <li>For subplate mounting</li> <li>Porting pattern to Din 24 340 form A, ISO 4401</li> </ul>							

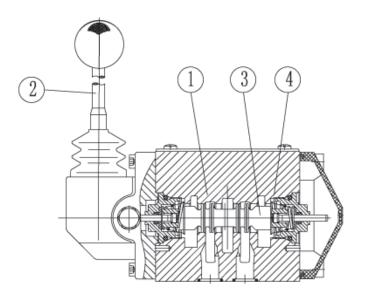
## **Function**, section

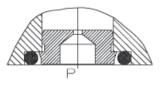
The type WMM valves are hand lever actuated directional spool valves. They control the start, stop and direction of a flow.

The directional valves basically comprise of a housing (1), hand lever(2), control pool (3), as well as one or two return springs (4). In the unoperated condition the control spool (3) is held in the neutral or its initial position by the return springs (4). The control spool(3) is actuated via the hand lever (2), this acts via a joint and the pin(5) directly onto the control spool (3). The spool is thereby moved out of its rest postion into its required switched position. After the hand lever (2) has been returned to the switched position zero, the spool (3) is returned to the neutral position via the return springs (4).

Type H-4WMM../F.. (with detent)

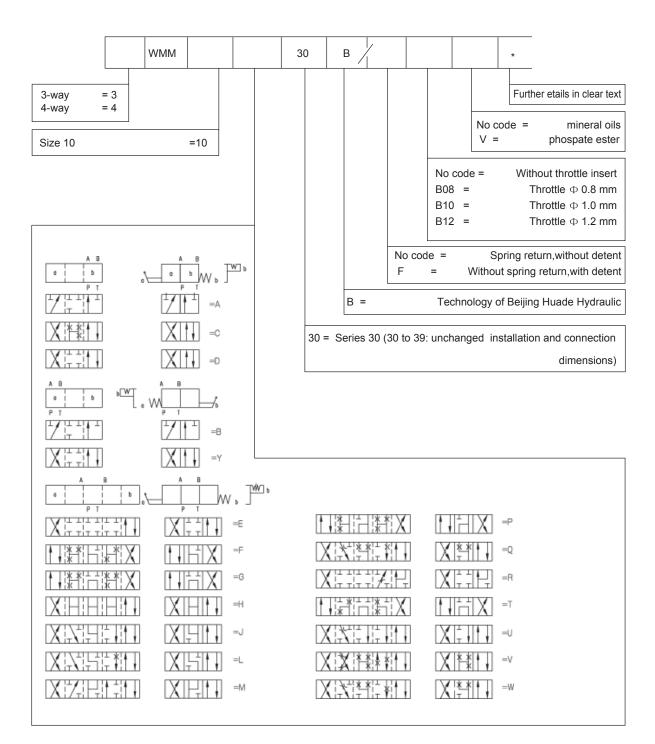
These valves are either 2 or 3 position directional control valves which are fitted with a detent , which operates in all of the switched positions.





Type 4WMM

Cartridge throttle



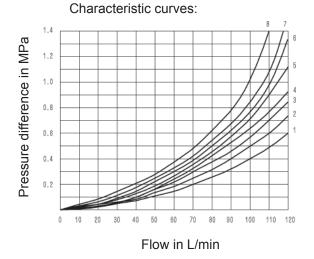
Example:

Spool E on side"a", Order example:...EA... Spool E on side"b", Order example:...EB...

Size			10	
Maximum	port A B	P (MPa)	to 31.5	
working pressure	port T	(MPa)	to 15	
Maximum flow (L/min)		(L/min)	to 120	
Flow cross section			for symbol Q, 6% of nominal cross section	
(control position 0)			for symbol W, 3% of nominal cross section	
Pressure fluid			Mineral oil or Phospate ester	
Fluid temperature range (°C)		(°C)	-30~+80	
Viscosity range		(mm²/s)	2.8~500	
Weight (kg)		(kg)	approx.3.3	
Control power on handle (N)		(N)	with detent approx.16~23 without detent approx.20~27	

**Operating pressure MPa** 

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



## Characteristic curves:

Characteris- tic curves:	Spool		
1	A, B		
2	A/O		
3	н		
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		

Spool	Shifted position					
	$P\toA$	$P\toB$	$A\toT$	$B\toT$		
A	4	3	-	-		
В	3	4	-	-		
С	3	3	4	4		
D	3	3	5	5		
Y	4	4	6	6		
E F	2	2	4	4		
	1	2 2 4	3	4		
GŢ	4		7	7		
H	1	1	5	5		
J	2 3	2 3	3	3		
L	3 1	3	3 2 4	4		
M P	2	1	4 5	4 5		
Q	3 2 3 3 2	2	2	2		
R	3	4	2 3			
U	3		5	2		
v	2	3 2	3	- 2 3		
Ŵ	3	3	3	3		
7 Sp	ool "R" a	t control	ler positio	on A to B		
8 Sp	ool "G" a	nd "T"at	middle po	osition P to	ъТ	
31.5						
25.0		$XX \neq$	6	- 7		
20.0		2 - 3-		5		
15.0		- 13-1		$\mathbf{X}$		
10.0						
5.0		$X \mid X$				
0 10 2	20 30 40	50 60 70	80 90 100	110 120		

Flow in L/min

