ACCESSHYDRO

AH-WMM 6...type
Manual Operated
Directional Control Valve

AH-WMM6...60S... type

Size 6
Max. Working Pressure: 315 bar
Max. Flow: 60L/min

Contents

Features

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

Function and configurations

AH-WMM6...60S... type manual directional Valves are direct operated spool valves which switch the flow fluid by rotating the handle to move the spool axially. The valves consist of valve housing(1), handle(2), control spool(3), and one or two return springs(4).
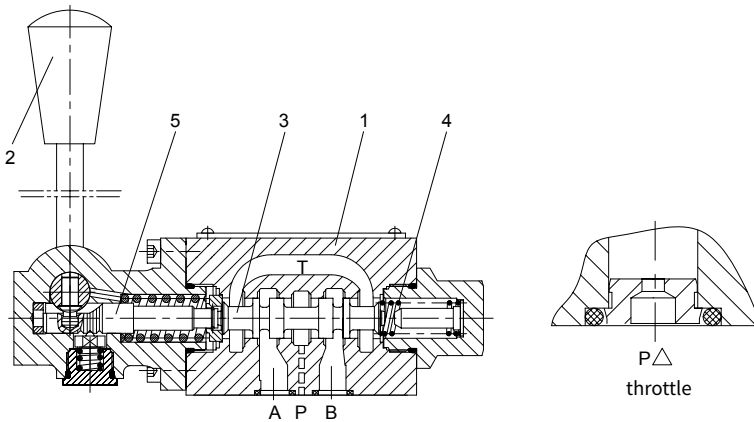The return springs (4) maintain the control spool (3) in central position when the handle is not operate. If the rotary button is actuated with a detent, the control spool (3) is moved to the desired spool position by the type of actuation (2).

Detent
Directional valves with rotary button are generally designed with detent. Directional valves with hand lever are optionally available as 2 or 3 position valves with detent. Directional valves with roller plunger are generally designed without detent. If types of actuation with detent are used, each spool position can be locked, depending on the valve type.

Throttle
The use of a throttle insert is required when due to given operating conditions, 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.


P△
throttle

Specification

AH	WMM	6	- 60S			*

3 ways
(version A and B)   =3
4 ways   =4

Manual directional valve

Nominal size 6   =6

Symbols e.g. C, E, EA, EB etc. see below)

Series 60S to 69S   =60S
(60S to 69S:unchanged installation and
connection dimensions)

Further details in clear text

No code =	NBR seals
V =	FKM seals

No code =	Wthout cartridge throttle
B08 =	Throttle - Φ0.8 mm
B10 =	Throttle - Φ1.0 mm
B12 =	Throttle - Φ1.2 mm

No code =	Return spring
F =	With detent

Symbols

Transition position / Spool valve symbols

=A =B
=C =Y
=D

=E   =EA   =EB
=F   =FA   =FB
=G   =GA   =GB
=H   =HA   =HB
=J   =JA   =JB
=L   =LA   =LB
=M   =MA   =MB
=P   =PA   =PB
=Q   =QA   =QB
=R   =RA   =RB
=T   =TA   =TB
=U   =UA   =UB
=V   =VA   =VB
=W   =WA   =WB

Technical data

Fixing position			Optional
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	60
Flow cross section (switching neutral position)	Type Q	mm^2	For symbol Q 6% of nominal cross section
	Type W	mm^2	For symbol W 3% of nominal cross section
Fluid			Mineral oil for NBR and FKM seal
			Phosphate ester for FKM seal
Viscosity range		mm^2/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	1.6

## Characteristic curves   (Measured at t=40°C ±5°C , using HLP46)
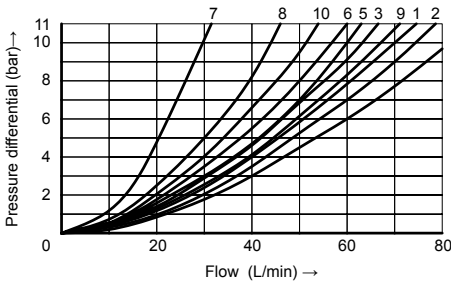
7 Symbol "R" in switched positions B → A
8 Symbol "G" and "T" in neutral position P → T
9 Symbol "H" in neutral position P → T

| Spool symbol	Flow direction			
	P to A	P toB	A toT	B toT
A B	3	3	-	-
C	1	1	3	1
D Y	5	5	3	3
E	3	3	1	1
F	1	3	1	1
T	10	10	9	9
H	2	4	2	2
J Q	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

Operating limitations

The switching function of the valves depends on the filtration. To achieve the specified admissible 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.
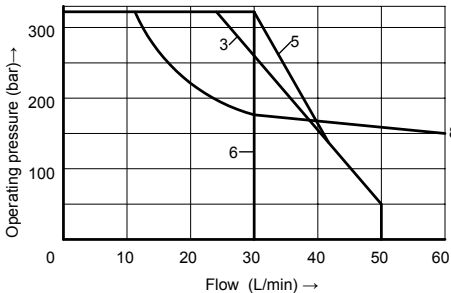
Without detent
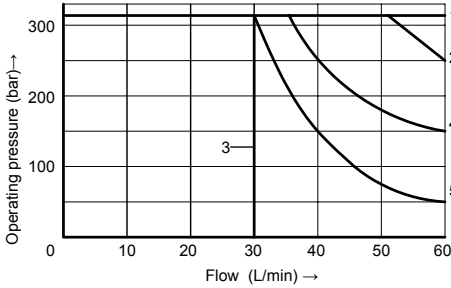
Curve		Spool symbol
Without detent	1	M
		E,J
		L,Q,U,W
		C,D,Y,G
		H,R
	2	A,B
	3	V
	4	F,P
	5	T

With detent
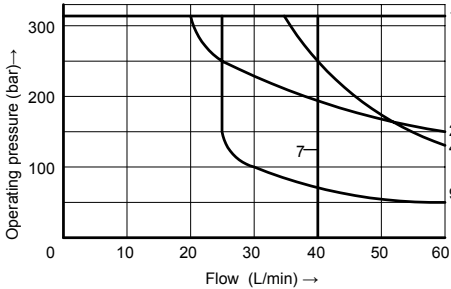
Curve		Spool symbol
With detent	1	M
		H,C
		D,Y
	2	E,J,Q,L
		U,W
	3	A,B
	4	G,T
	5	F
	6	V
	7	P
	8	R
	9	T

Unit dimensions

35 35
20° 20°
1
2

0.01/100mm
0.8
Requirement for
mounting surface

Φ16
36
140
Φ6

3
42
47
51
30.8
23
34.7 69 20
140.5
4

55.5
20
T
A B
P
4×Φ5.5 40.5 14.8 4×Φ9.4
31
32.5
46

a b 2-position valve:Symbols A, C, D
a b Symbols B and Y
a o b AH-4WMM6*A
o b AH-4WMM6*B
All 3-position valve a o b

Switched position

4×M5;10
Valve fixing screw holes

40.5
27.8
19
10.3
T
A B
P
31
26.55
32.5
0.75
5.95 16.25
4×Φ7.6max

Dimensions of
mounting surface
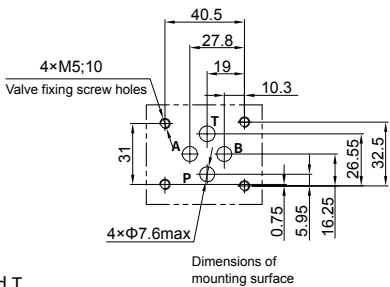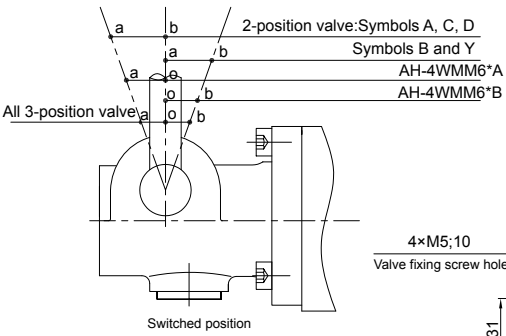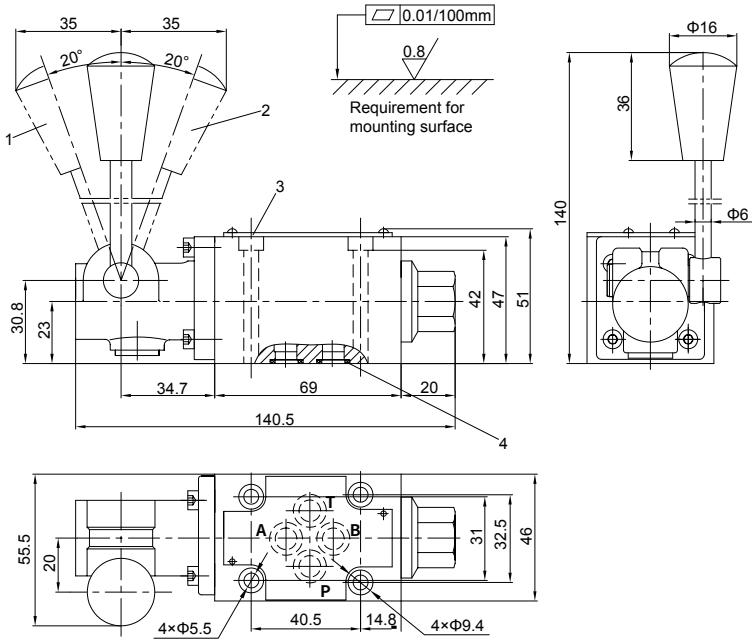
1 Switched position b → a, o → a
2 Switched position a → b, o → b
3 Nameplate
4 O-ring 9.25×1.78 for ports A, B, P and T