Directional spool valve type WMM 6 hand lever operated

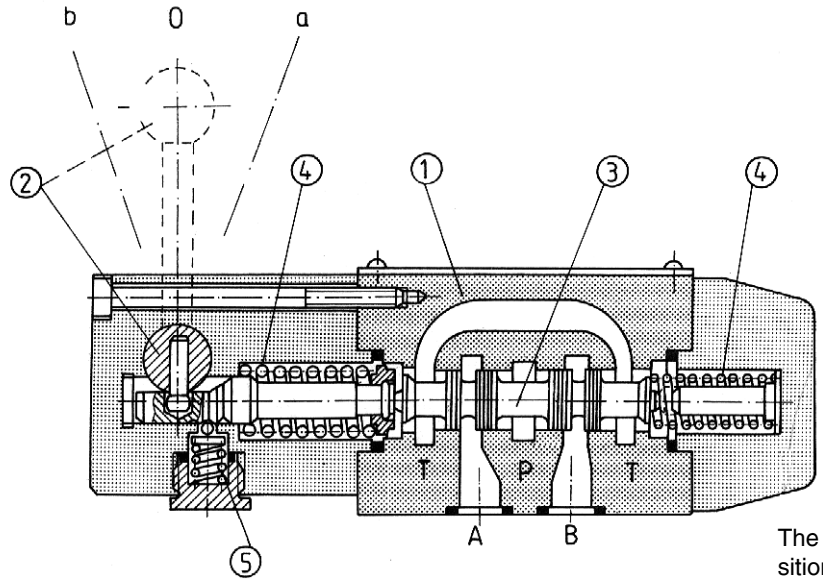
WK 450 358

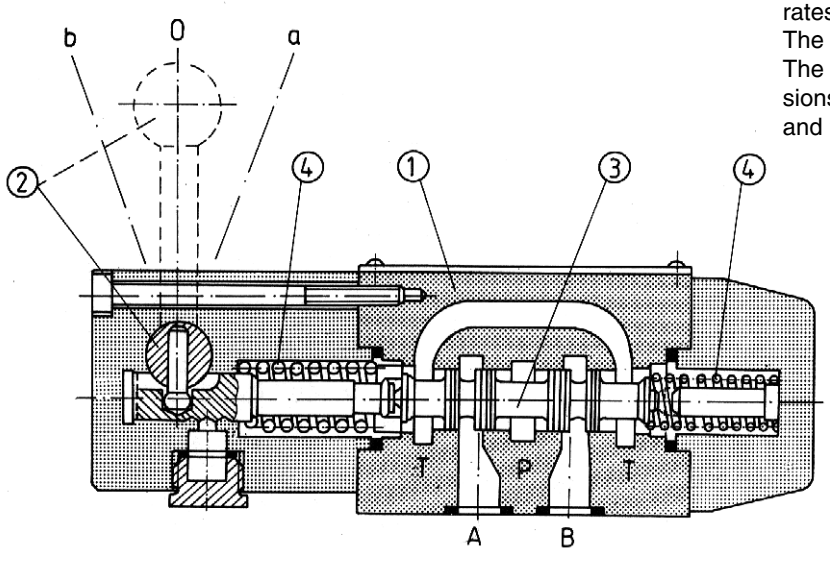
Size 6	31,5 MPa	60 dm³/min

04.1999

Directional control valves afford possibilities for controlling start, stop and direction of flow of a pressure fluid and thus accordingly start, stop and direction of movement of a user (cylinder or hydraulic motor).
The directional valves may be mounted in hydraulic systems in any desired position together with a subplate.
Sealing of mating faces is made by using O-rings which are included with the valve.

DESCRIPTION OF OPERATION



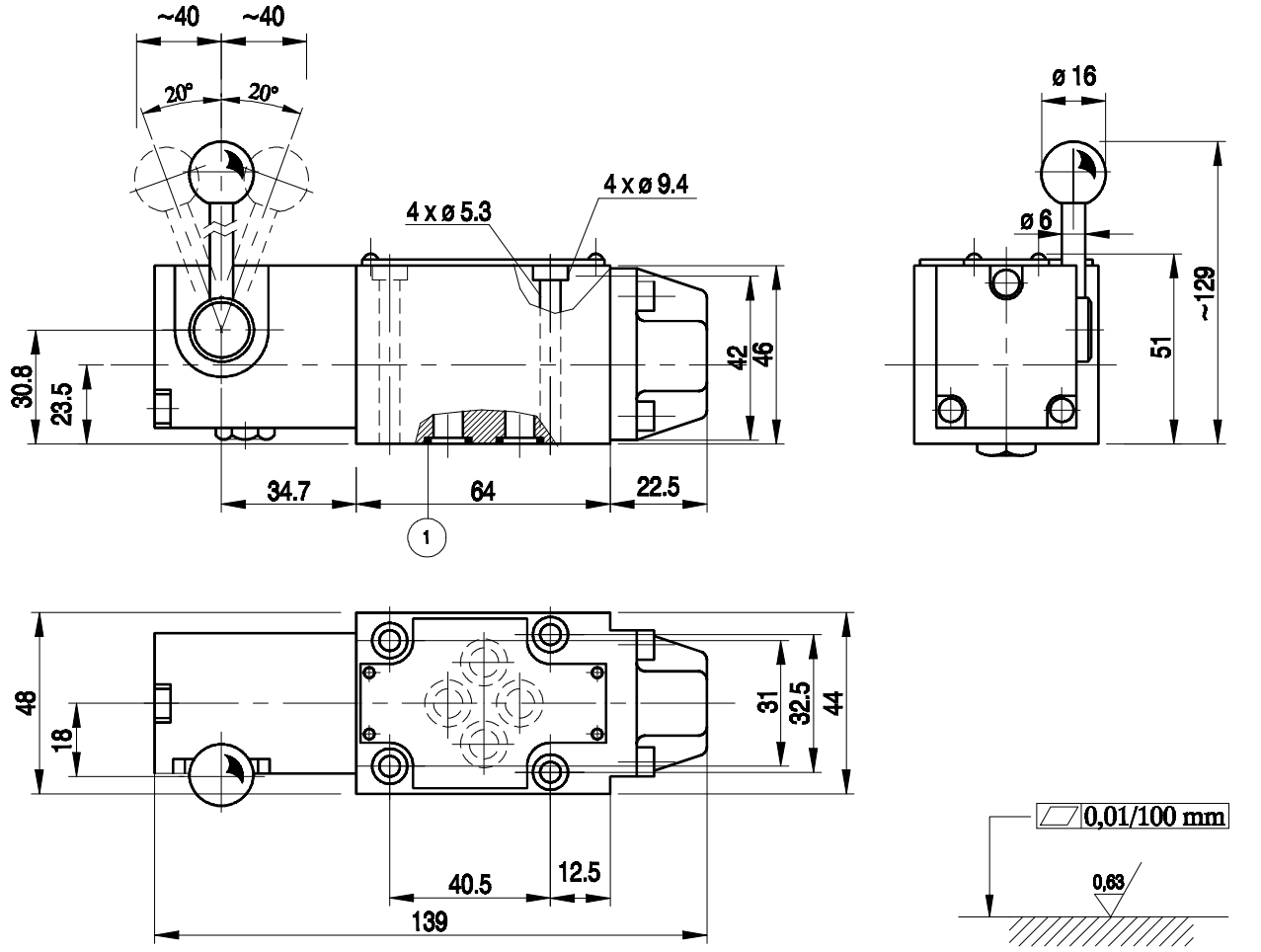


The directional valve is switched by changing the position of the spool 3 which moving along its axis separates or connects ports A, B, P or T in the housing 1. The spool is shifted by means of the hand lever 2. The directional valve is available in the following versions: three-position with return spring 4 or detent 5 and two-position with return spring 4 or detent 5.

TECHNAICAL DATA

Hydraulic fluid		Mineral oil, phosphate ester	
Required filtration		up to 16 μm	
Recommended filtration		up to 10 μm	
Nominal fluid viscosity		37 mm^2 at temp. of 328 K	
Viscosity range		2.8 to 380 mm^2/s	
Optimum working temperature (fluid in a tank)		313 - 328 K	
Fluid temperature range		243 - 343 K	
Maximum operating pressure		Port P, A, B	Port T
		31.5 MPa	16 MPa
Operating force on hand lever	without pressure in port T	approx. 20 N	
	pressure in port T 15 MPa	approx. 30 N	
Weight		1.4 kg	

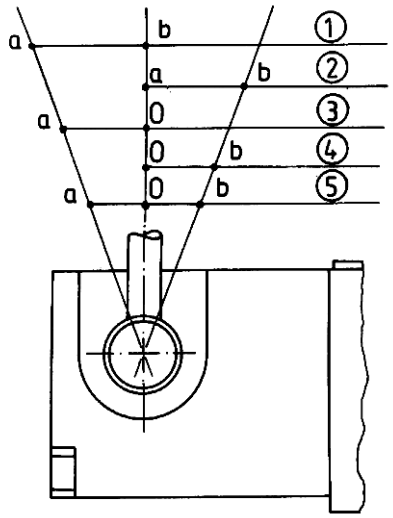
OVERALL DIMENSIONS



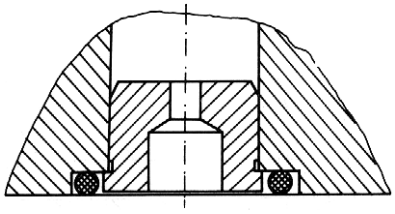
item 1 - O - ring 9.2 × 1.8 - 4 pieces

Permissible surface roughness and flatness deviation for a subplate face.

Hand lever position



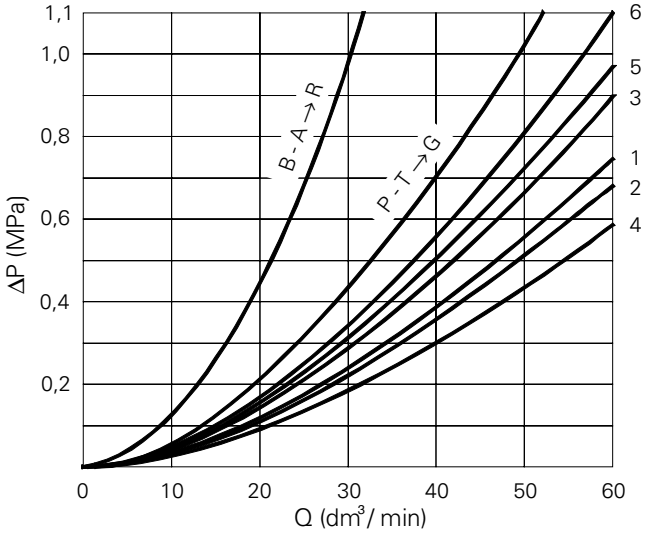
item 1 - for spool types A, C, D
item 2 - for spool types B, Y
item 3 - for spool types EA to WA
item 4 - for spool types EB to WB
item 5 - for spool types E to W



Mounting method for throttle insert in port P

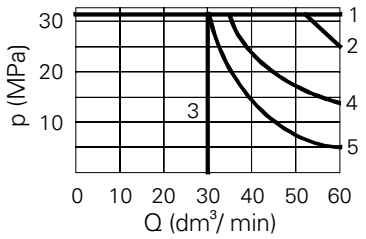
PERFORMANCE CURVES : measured at ν = 41 mm²/s and T = 323 K

Flow curves for various spool types



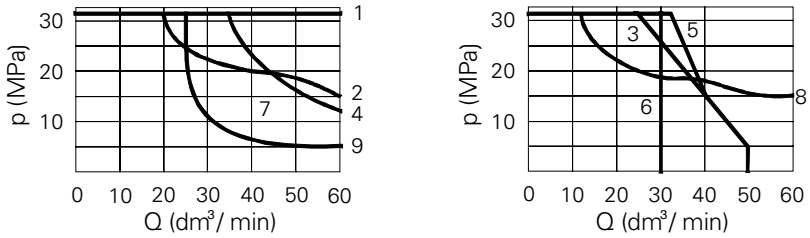
	A	B	C	D	E	F	G	H	J	L	M	P	Q	R	T	U	V	W	Y
P - A	3	3	1	5	3	2	5	2	1	1	2	2	1	5	5	3	1	1	5
P - B	3	3	1	5	3	3	3	4	1	1	4	3	1	5	3	1	2	1	5
A - T	-	-	3	3	1	3	6	2	2	2	3	3	2	4	6	3	1	2	3
B - T	-	-	1	3	1	5	6	2	1	2	3	5	1		6	3	1	2	3

Flow curves for valves with return springs and various spool types



1	2	3	4	5
E1, M, E, J, L, Q, U, W, C, D, Y, G, H, R	A, B	V	F, P	T

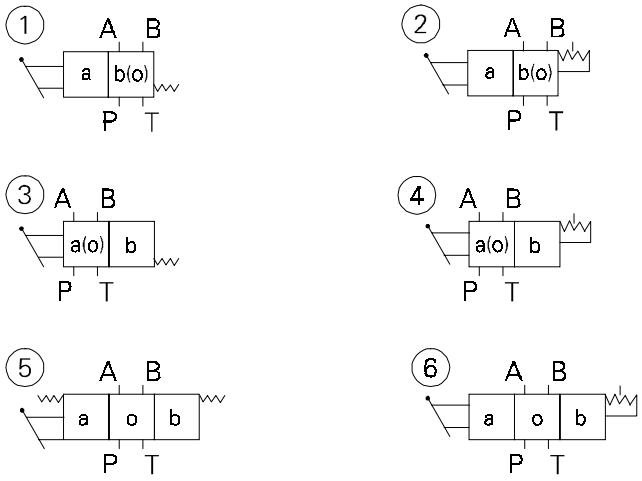
Flow curves for valves with detent and various spool types



1	2	3	4	5	6	7	8	9
E1, M, H, C, D, Y	E, J, Q, L, U, W	A, B	G, T	F	V	P	R	T

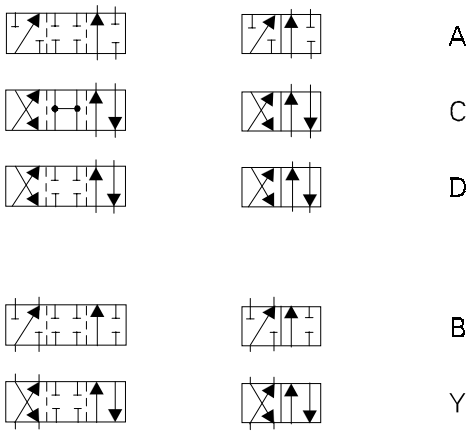
SCHEMES

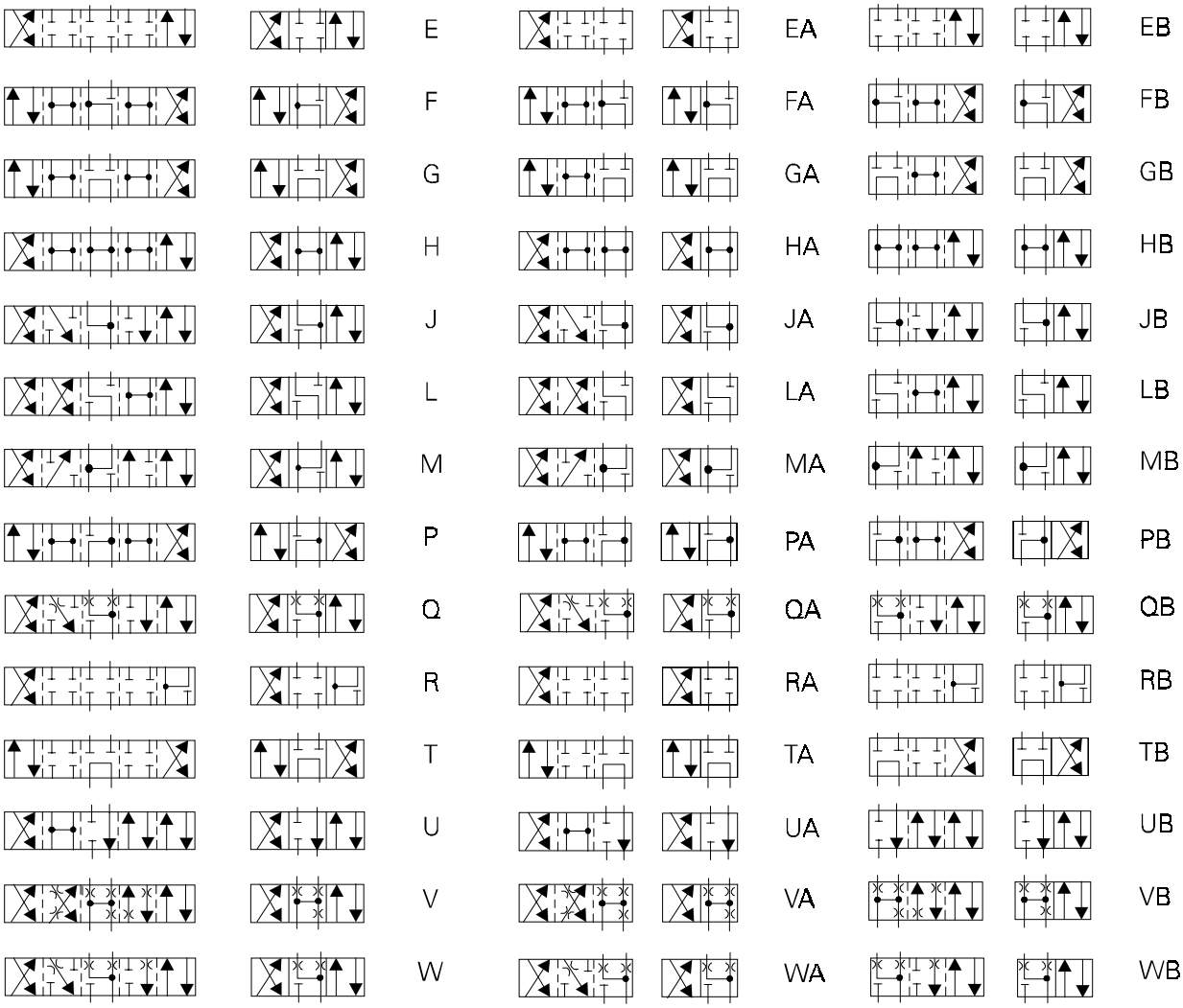
Hydraulic scheme for directional control valve



item 1, 3 - two - position directional valve with return spring
item 2, 4 - two - position directional valve with detent
item 5 - three -position directional valve with return springs
item 6 - three - position valve with detent

Spool schemes

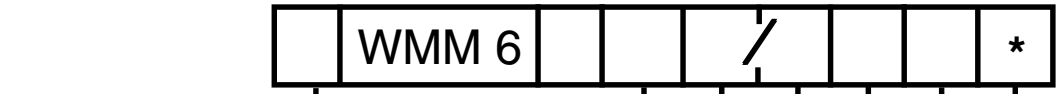




Note : Scheme E has version E1 with overlap positions as for spool P.
Spool type W makes section open in neutral position in approx. 3 % of nominal section.
Spool type W makes section open in neutral position in approx. 6 % of nominal section.

HOW TO ORDER

Orders coded in the way showed below should be forwarded to the manufacturer.



Number of service ports

3	= 3
4	= 4

Control spool type

See schemes on page 5

Series number:

50 = 50

(50 - 59) - Installation and connection dimensions unchanged

Control spool positioning

Spring centering	= with no designation
With detent	= F

Throttle insert

Without throttle insert	= with no designation
Throttle insert ∅ 0.8	= B08
Throttle insert ∅ 1.0	= B10
Throttle insert ∅ 1.2	= B12

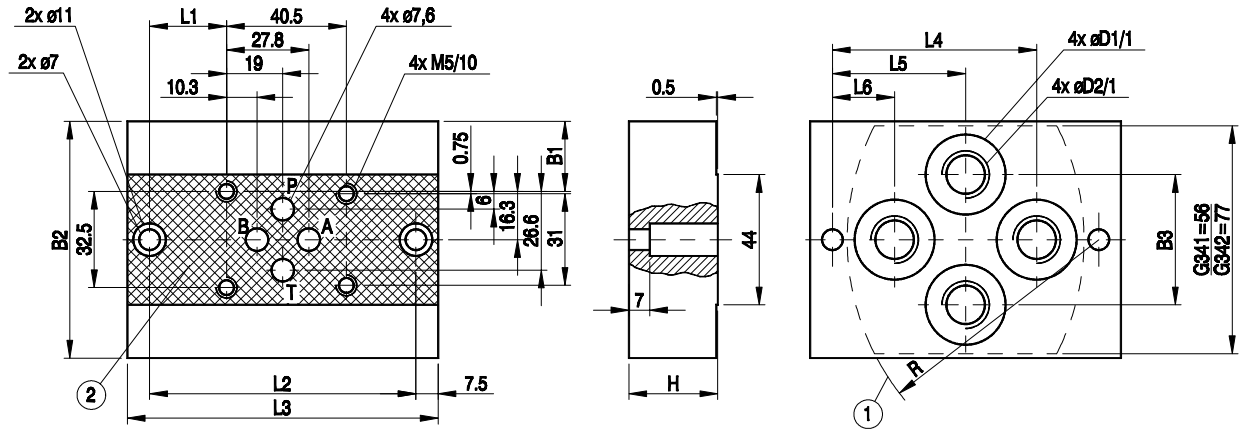
Sealing

For fluids on mineral oil base	= with no designation
For fluids on phosphate ester base	= V

Additional requirements in clear text (to be agreed with the manufacturer)

Coding example : 4 WMM6E1-50/B08

MOUNTING DIMENSIONS FOR SUBPLATE



1 - Mounting face
2 - Recess in subplate face

Subplate weight - approx. 0.8 kg

Type	B1	B2	B3	L1	L2	L3	L4	L5	L6	H	D1	D2	R	T
G341/01	12.7	58	34	21	80	95	55	40	25	25	22	G1/4	70	13
G342/01	23.7	80	44	26	90	105	69	45	21	30	28	G3/8	85	13
G341/02	12.7	58	34	21	80	95	55	40	25	25	22	M14×1.5	70	15
G342/02	23.7	80	44	26	90	105	69	45	21	30	27	M16×1.5	85	16

Bolts mounting valve to subplate	Torque
4 × M5 × 50 -10.9 per PN-74/M-82302 (DIN 912)	9 Nm

Note : Subplate and mounting bolts must be ordered separately

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