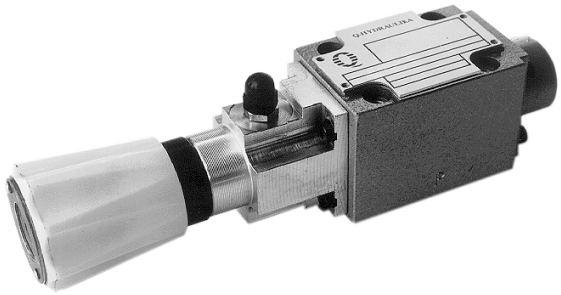
Directional spool valve type WMD 6 hand lever operated

WK 450 356

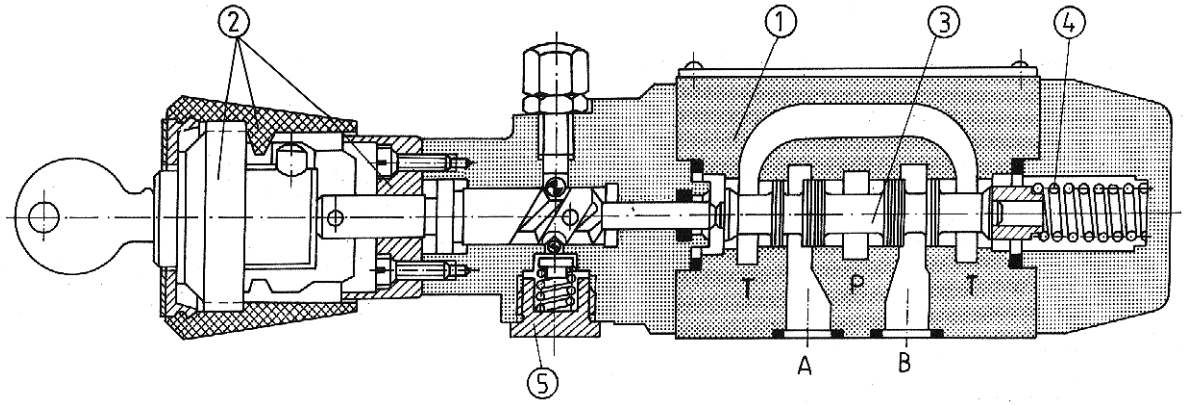
04 1999

Size 6	31,5 MPa	60 dm³/min

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

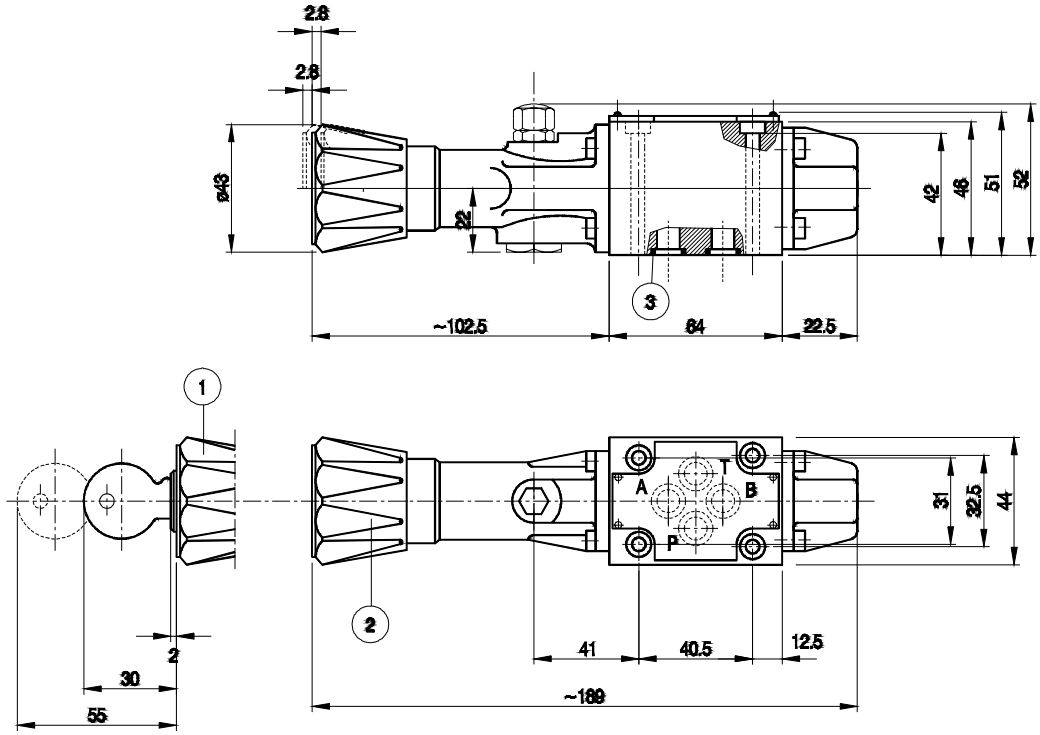


The directional valve is switched by changing the position of the spool 3 which moving along its axis separates or connects ports A, B, P or T in the housing 1.

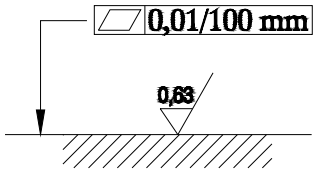
The spool is shifted by means of the rotary knob 2 and the spring 4.
The directional valve is available as three-position or two - position valve with detent.

Hydraulic fluid	Mineral oil, phosphate ester	
Required filtration	up to 16 µm	
Recommended filtration	up to 10 µm	
Nominal fluid viscosity	37 mm² at temp. of 328 K	
Viscosity range	2.8 to 380 mm²/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
Weight	1.4 kg	
Operating torque on rotary knob	1.5 Nm	

OVERALL DIMENSIONS



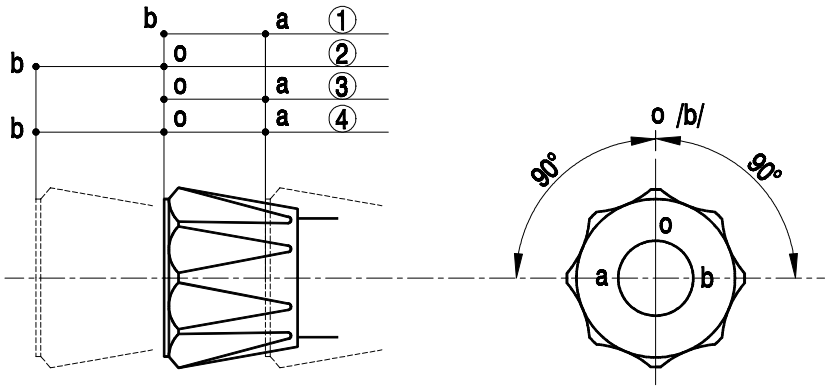
item 1 - directional valve version with lackable rotary knob
item 2 - directional valve version with non-lockable rotary knob
item 3 - O-ring 9.2 × 1.8 - 4 pieces

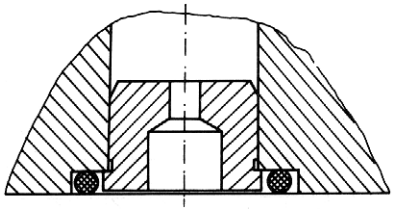


Permissible surface roughness and flatness deviation for a subplate face.

Rotary knob position

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

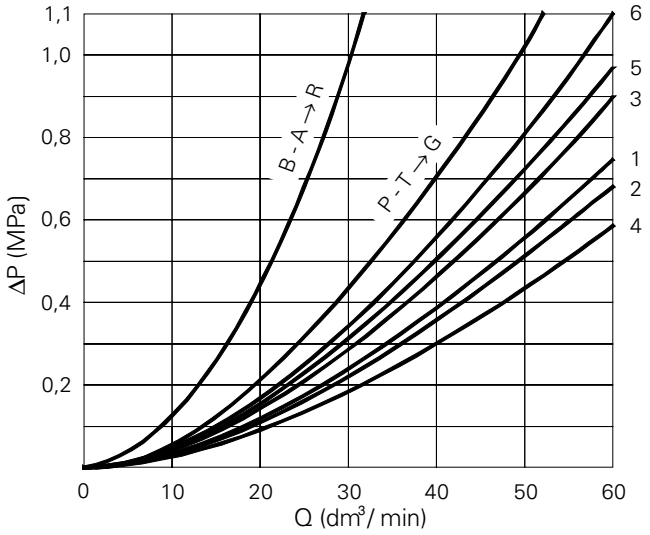




Mounting method for throttle insert in port P

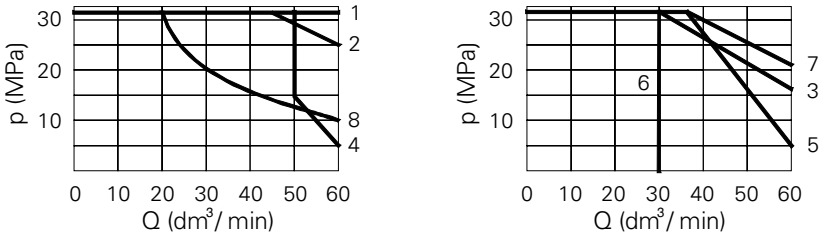
PERFORMANCE CURVES : measured at ν = 41 mm²/s and T = 323 K

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

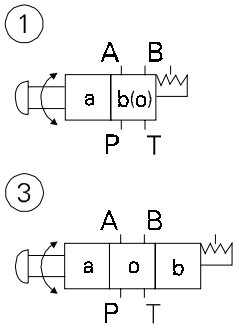
Flow curves for directional valve and various spool types



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

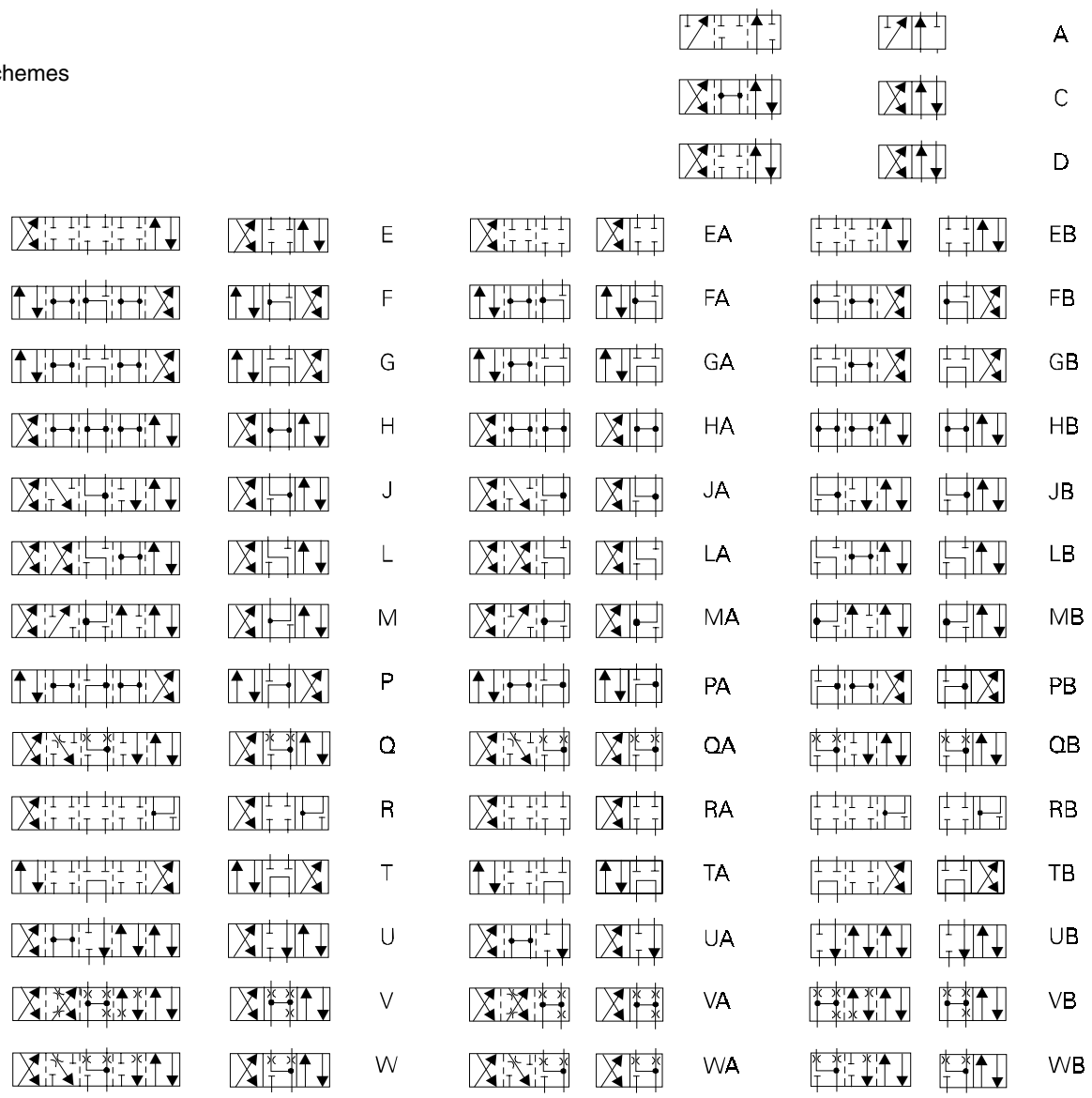
SCHEMES

Hydraulic scheme for directional control valve



item 1 - two - position directional valve with detent
item 3 - three - position directional 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.

	WMD		6		/ F			*

Number of service ports
3 = 3
4 = 4

Control rotary knob
non - lockable = with no designation
lockable = A

Control spool type
See spool schemes above

Series number
50 = 50
(50 - 59) - installation and connection dimensions unchanged

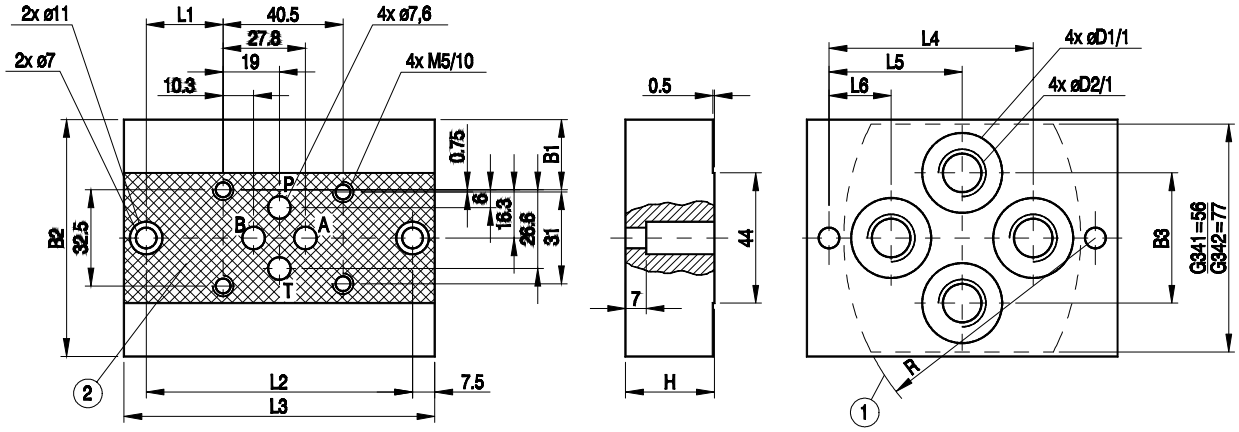
Additional requirements in clear text (to be agreed with the manufacturer)

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

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

Coding example : 4WMD6E1-50/FB08

MOUNTING DIMENSIONS FOR SUBPLATE



Subplate weight - approx. 0.8 kg

1 - Mounting face
2 - Recess in subplate face

Typ	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 x 1,5	70	15
G342/ 02	23,7	80	44	26	90	105	69	45	21	30	27	M16 x 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

NOTES :

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