

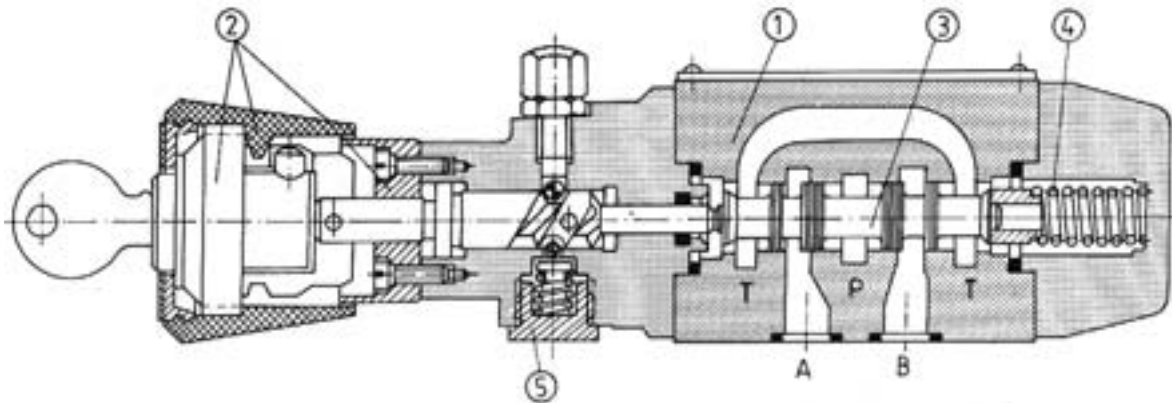
Directional control valves afford possibilities for controlling start, stop and direction of flow of a pressure fluid and thus accordingly start, stop and direction of movement of a user ( cylinder or hydraulic motor ).

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



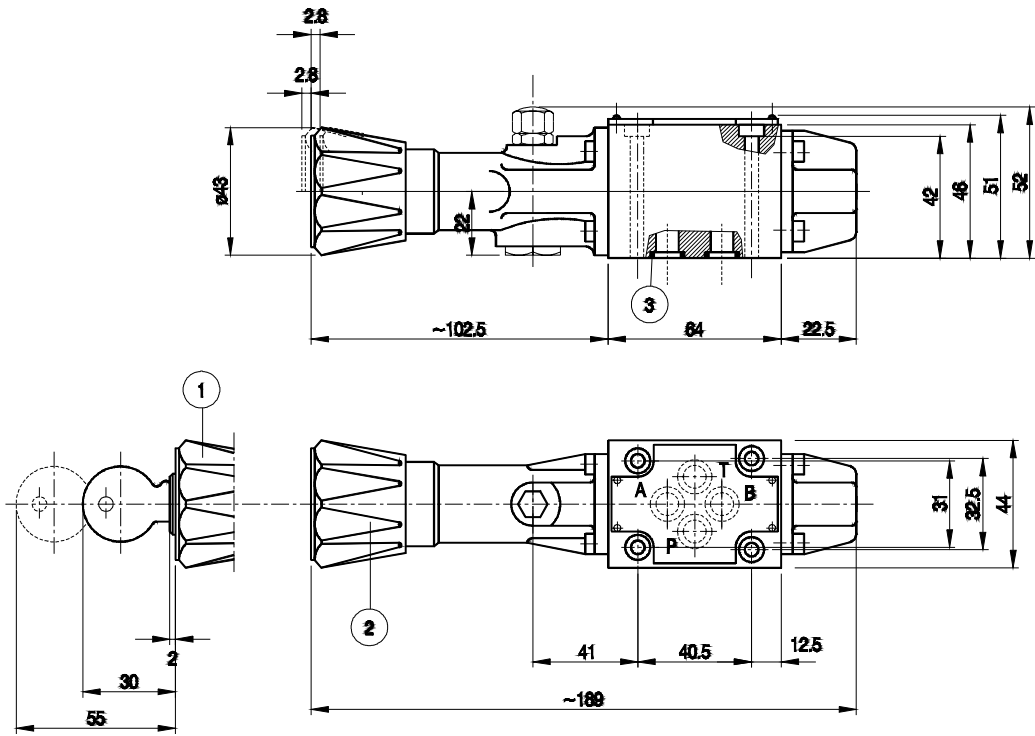
The directional valve is switched by changing the position of the spool 3 which moving along its axis separates or connects ports A, B, P or T in the housing 1.

The spool is shifted by means of the rotary knob 2 and the spring 4.

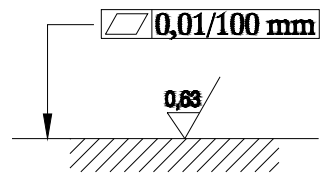
The directional valve is available as three-position or two-position valve with detent.

Hydraulic fluid	Mineral oil, phosphate ester	
Required filtration	up to 16 μm	
Recommended filtration	up to 10 μm	
Nominal fluid viscosity	37 mm <sup>2</sup> at temp. of 328 K	
Viscosity range	2.8 to 380 mm <sup>2</sup> /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



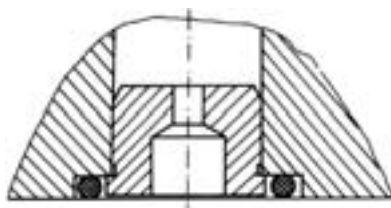
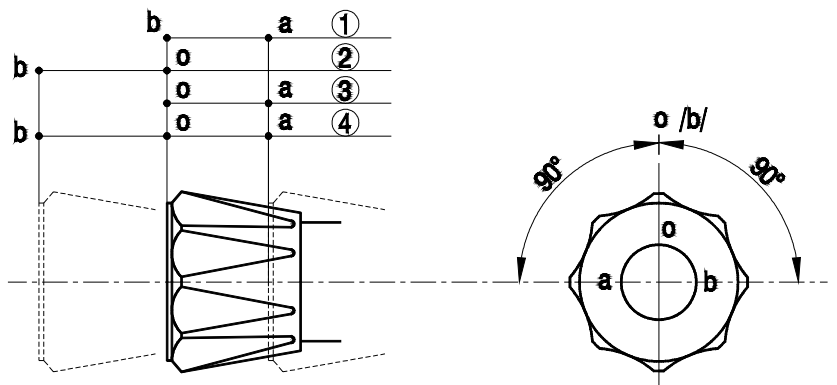
- item 1 - directional valve version with lockable rotary knob
- item 2 - directional valve version with non-lockable rotary knob
- item 3 - O-ring 9.2 × 1.8 - 4 pieces



Permissible surface roughness and flatness deviation for a subplate face.

## Rotary knob position

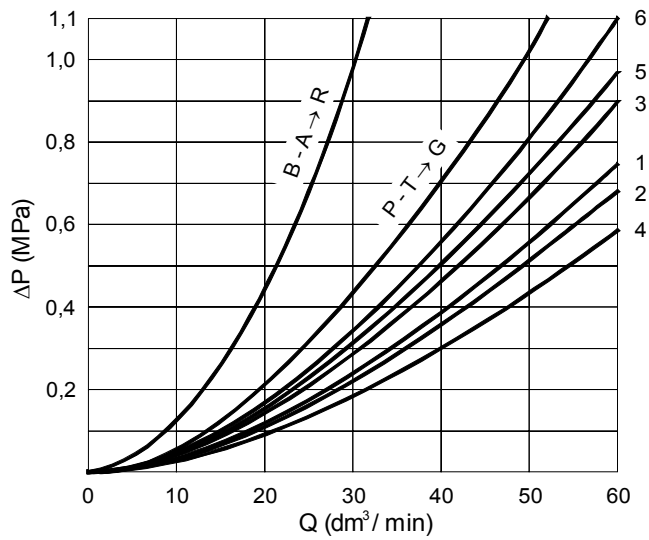
- item 1 - for spool types A, C, D
- item 2 - for spool types EB to WB
- item 3 - for spool types EA to WA
- item 4 - for spool types E to W



Mounting method for throttle insert in port P

**PERFORMANCE CURVES** : measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $T = 323 \text{ K}$

Flow curves for various spool types

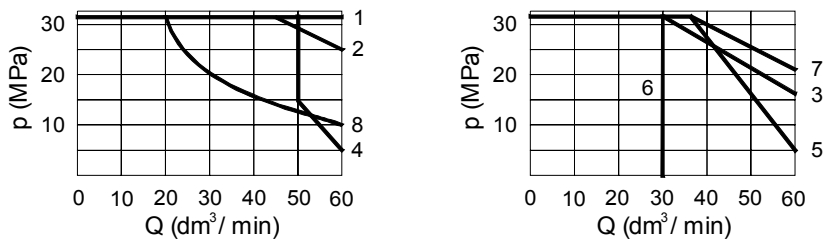


	A	B	C	D	E	F	G	H	J	L	M	P	Q	R	T	U	V	W	Y
P - A	3	3	1	5	3	2	5	2	1	1	2	2	1	5	5	3	1	1	5
P - B	3	3	1	5	3	3	3	4	1	1	4	3	1	5	3	1	2	1	5
A - T	-	-	3	3	1	3	6	2	2	2	3	3	2	4	6	3	1	2	3
B - T	-	-	1	3	1	5	6	2	1	2	3	5	1		6	3	1	2	3

Flow curves for directional valve and various spool types

**Note:**

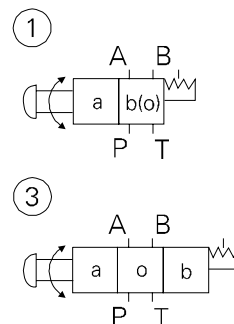
The flow limits refer to typical application of 4-way directional control valve i.e. with using two lines e.g. P to A and B to T at the same time. In case of using 4-way directional control valve with one flow line e.g. P to A ( B plugged ) or A to T ( B plugged ) actual flow limits are considerably lower.



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

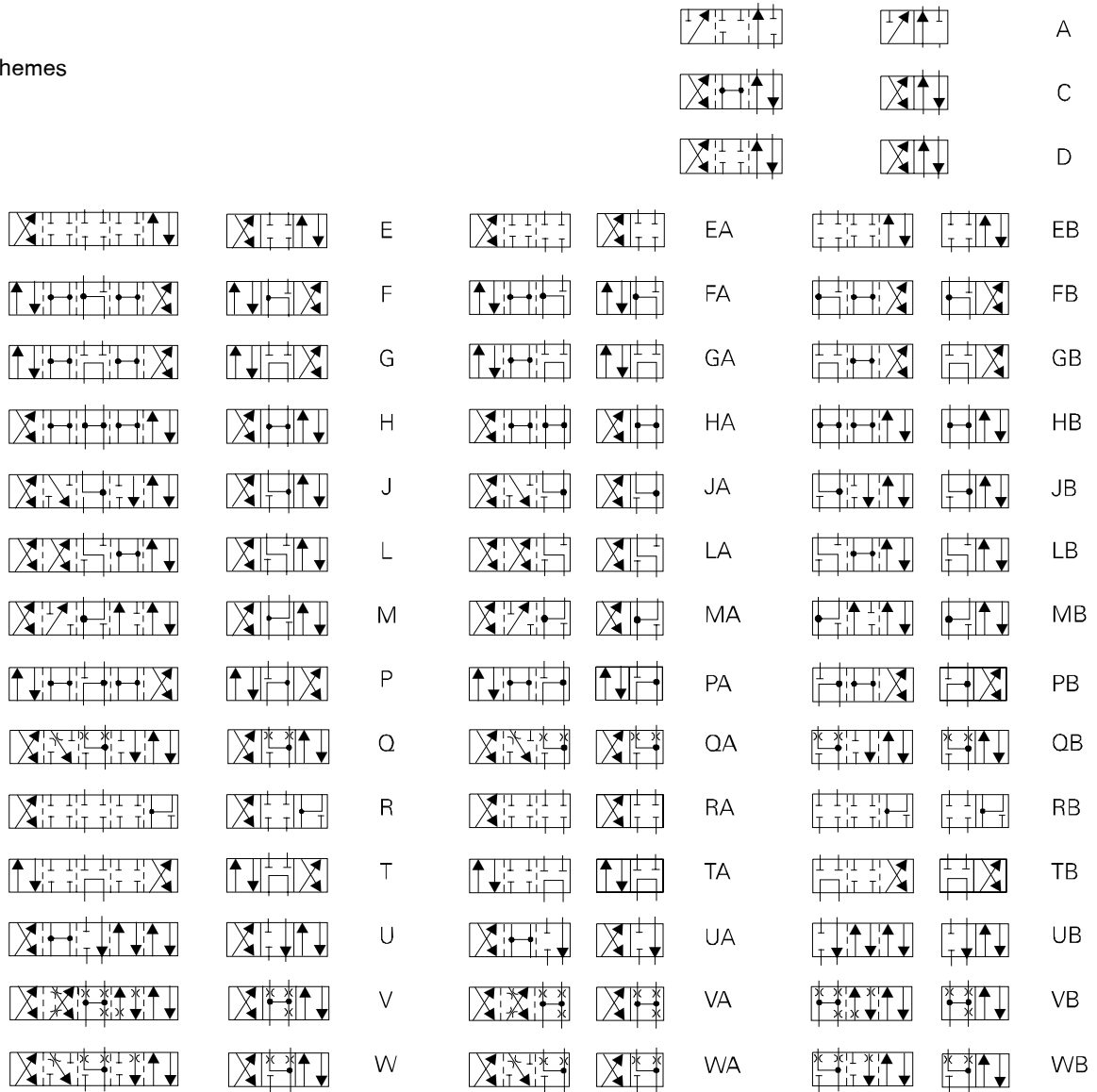
**SCHEMES**

Hydraulic scheme for directional control valve



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

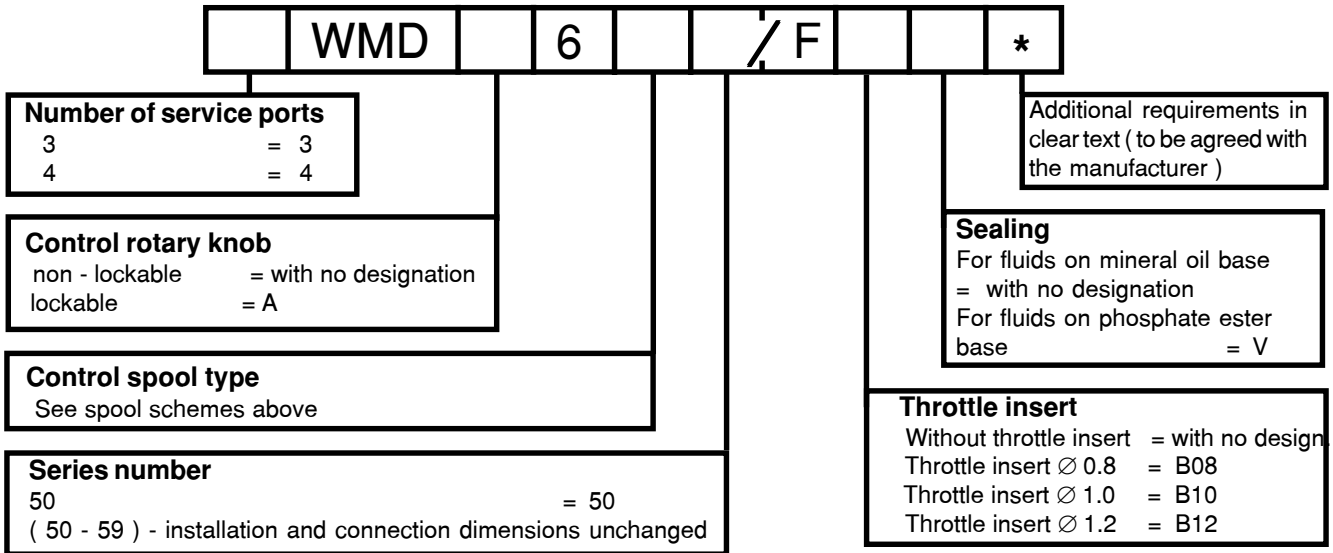
Spool schemes



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.

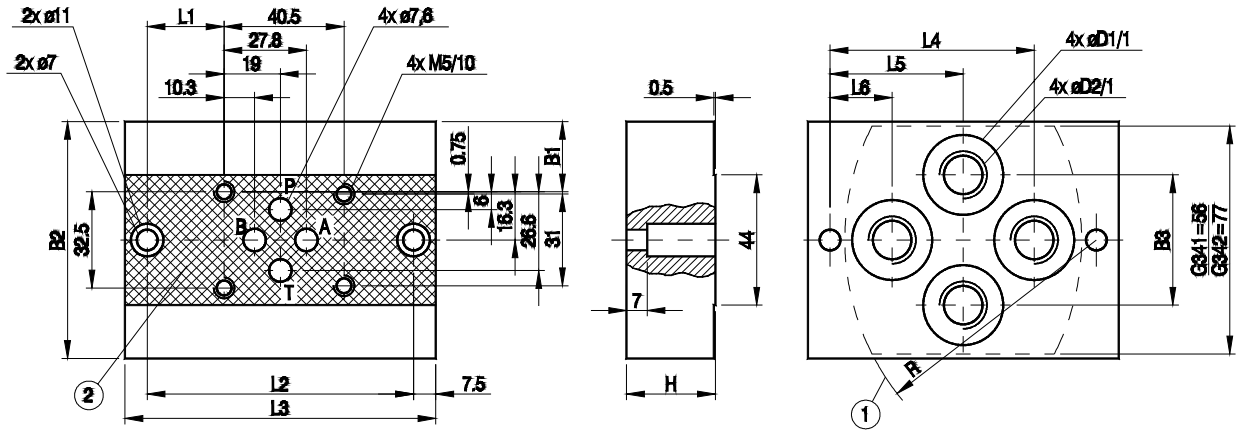
**HOW TO ORDER**

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



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 x M5 x 50 -10.9 per PN-74/M-82302 (DIN 912)	9 Nm

Note : Subplate and mounting bolts must be ordered separately

**NOTES :**

PONAR WADOWICE S.A.  
ul. Wojska Polskiego 29  
34-100 Wadowice  
tel. 033/ 823 39 43, 823 30 41  
fax 033/ 873 48 80  
e-mail: ponar@ponar-wadowice.pl

