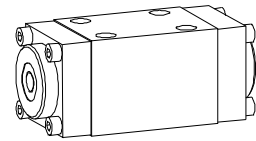


**Spool valve hydraulic operation**

- 4/2-way impuls valve
- 4/3-way with spring centered mid position
- 4/2-way with spring reset
- $Q_{max} = 30$  l/min,  $p_{max} = 350$  bar

**NG6**  
 ISO 4401-03


**DESCRIPTION**

Spool valve NG6, flange type in accordance to ISO 4401-03 with 4 connections. Direct hydraulic operation via pilot ports in end covers. 5 chamber system. Spool with spring return or detented. Precise spool fit, low leak, long life. Threaded ports by means of additional connecting plate. Hardened spool. Valve body made of high quality casting. Valve body painted, end covers phosphated.

**FUNCTION**

Pilot pressure shifts spool to end position.

- 4/2-way impulse  
 2 pilot ports. 2 detented spool positions. Spool held in position by detent unless opposite pilot port is pressurised to shift back.
- 4/3-way spring centered  
 2 pilot ports. 3 spool positions. Spool shifted to center position by spring as pilot pressure decays.
- 4/2-way spring offset  
 1 pilot port. 1 drain port on spring side, 2 spool positions. Spool shifted to home position by spring as pilot pressure decays.

**APPLICATION**

Hydraulically operated spool valves are mainly used to control the direction of movement and retain hydraulic cylinders and motors. The direction of movement is determined by the position of the valve spool and its symbol. Hydraulically operated valves are particularly suitable for use in installations where no electric current is available or for applications in areas with a risk of explosion (chemical industry, tunnel construction).

**CONTENT**

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**TYPE CODE**

	A	P	4		#	
International interface ISO						
Hydraulic operation						
Number of control ports						
Type charts/Symbols acc. to table 1.7-30/2						
Design-Index (Subject to change)						

**GENERAL SPECIFICATIONS**

Description	4/2-, 4/3-way spool valve
Nominal size	NG6 to ISO 4401-03
Construction	Direct operated spool valve
Operations	Hydraulic
Mounting	Flange 4 fixing holes for socket head cap screws M5x45
Connections	Threaded connection plates Multi-flange plates Longitudinal stacking system
Ambient temperature	-20...50°C
Mounting position	any, preferably horizontal
Fastening torque	$M_D = 5,5$ Nm (screw quality 8.8)
Weight	$m = 1,4$ kg

**HYDRAULIC SPECIFICATIONS**

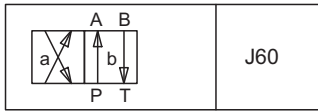
Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 20/18/14 (Required filtration grade $\beta_{10...16} \geq 75$ ) refer to data sheet 1.0-50/2
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Fluid temperature	-20...+70°C
Operating pressure in port P, A, B	$p_{max} = 350$ bar
Tank pressure in port T	$p_{max} = 150$ bar resp. 10 bar below $p_{st}$
Max. Volume flow	$Q_{max} = 30$ l/min, see characteristics
Leakage volume flow	see characteristics

**CONTROL HYDRAULIC**

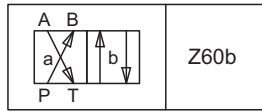
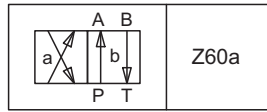
Min. pilot pressure	$p_{st min} = 10$ bar
Max. pilot pressure	$p_{st max} = 160$ bar
Control volume	$V_{st} = 0,28$ cm <sup>3</sup>

**TYPE LIST / DESIGNATION OF SYMBOLS**

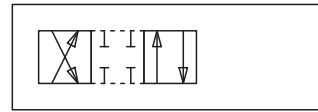
4/2-way valve impulse



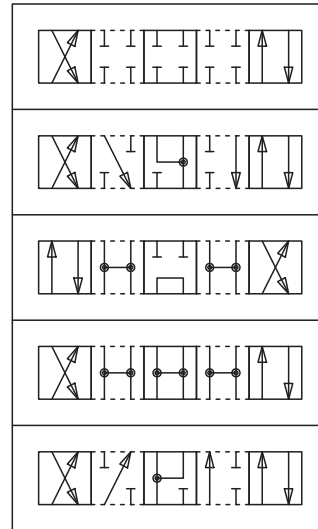
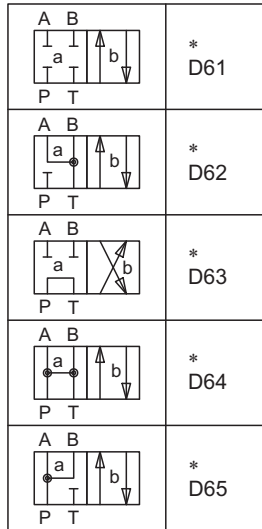
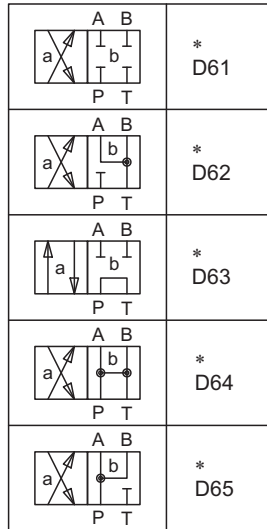
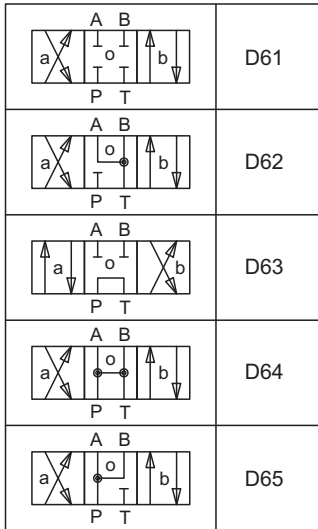
4/2-way valve with spring reset



Transitional functions

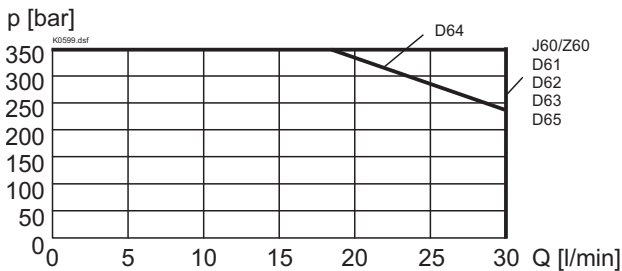
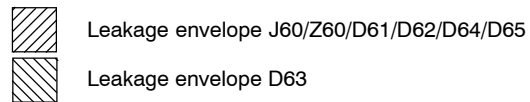
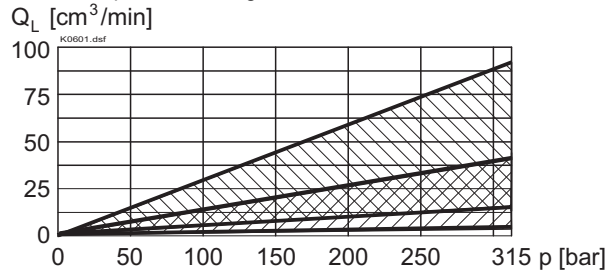
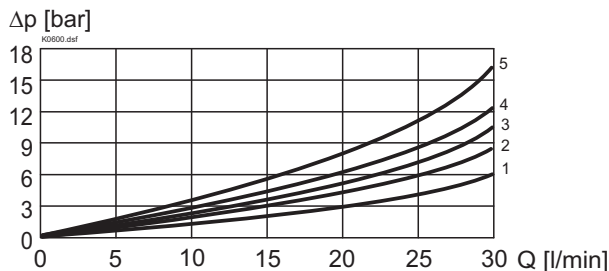


4/3-way valve spring centered or detented

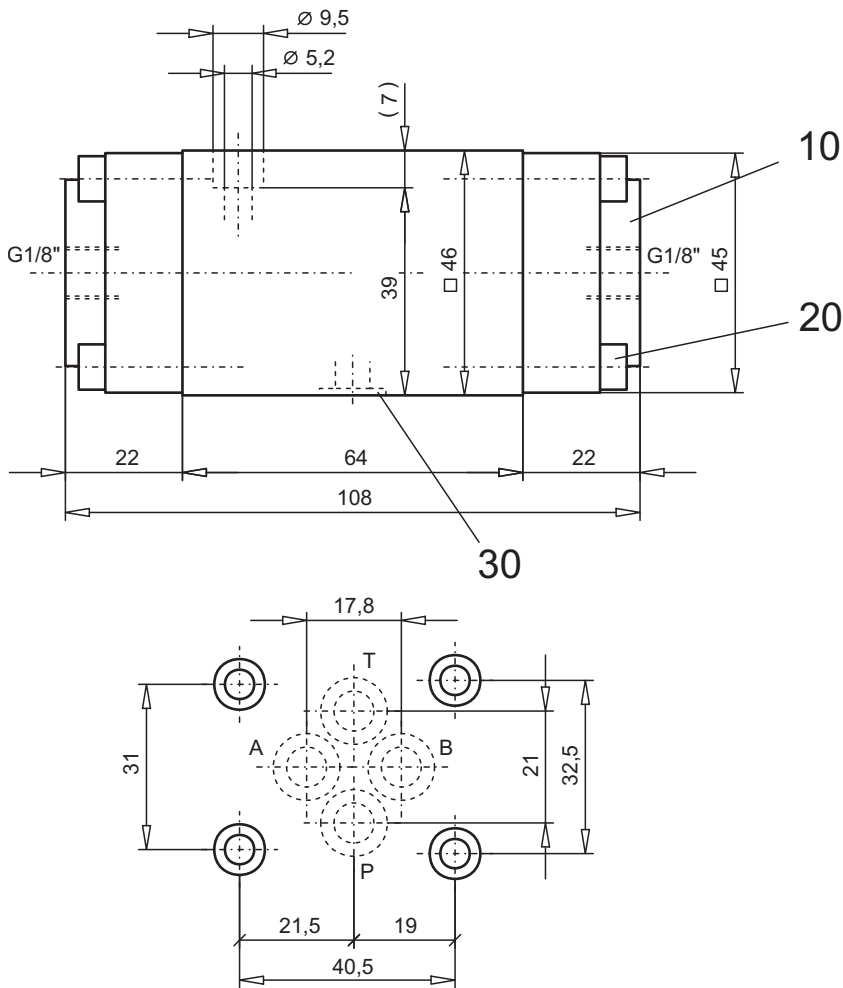


On all 4/2-way valves with spring reset the spring side must be connect to a tank or drain line.

\* The 4/2-way valves with spring reset are being delivered as 4/3-way valves.

**CHARACTERISTICS** Oilviscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 
 $p = f(Q)$  Performance limits

 $Q_L = f(p)$  Leakage volume flow characteristics per control edge

 $\Delta p = f(Q)$  Pressure drop volume flow characteristics


Symbol	Volume flow direction				
	P - A	P - B	P - T	A - T	B - T
Z60/J60	3	3	-	4	4
D61/Z61	3	3	-	4	4
D62/Z62	3	3	-	3	3
D63/Z63	2	2	5	2	2
D64/Z64	1	1	1	3	3
D65/Z65	1	1	-	4	4

**DIMENSIONS**

**PARTS LIST**

Position	Article	Description
10	058.4600	Cover
20	246.2120	Socket head cap screw M5x20 DIN 912
30	160.2093	O-ring ID 9,25x1,78

**ACCESSORIES**

 Threaded connection plates, Multi-flange plates  
 and longitudinal stacking system

register 2.9

Technical explanation see data sheet 1.0-100E