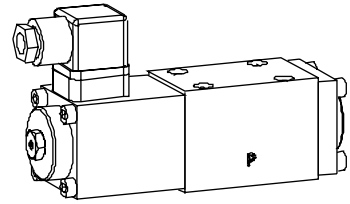


Solenoid operated spool valve

- 4/2-way impulse valve
- 4/3-way with spring centred mid position
- 4/2-way with spring reset
- $Q_{max} = 80 \text{ l/min}$, $p_{max} = 350 \text{ bar}$

NG6
ISO 4401-03

DESCRIPTION

Direct solenoid operated spool valve with a 5 annular chamber body design. Solenoid wet pin oil immersed armature type. Precision honed spool for low leakage. Low pressure drop due to the body design and spool profiling. Spool is of hardened steel, body is of high grade hydraulic cast iron for long service life. The valve is of flange-type design for direct mounting onto threaded subplates or more complex manifolds.

FUNCTION

- 4/2-way detent spool valve:
4 ports directional control valve with 2 position detented spool. With the solenoids deenergised the spool remains in the last switched position.
- 4/2-way spool valve:
4 ports 2 position spool valve, spring offset. With the solenoid deenergised the spool returns to the offset position.
- 4/3-way spool valve:
4 ports 3 position spool valve, spring centered. With the solenoids deenergised the spool returns to the center position.

APPLICATION

These solenoid operated directional control valves are mainly used for diverting and preventing fluids flows in hydraulic systems. There are now many more applications that can be catered for due to the high flow characteristics and low pressure drop of this new directional control valve.

CONTENT

GENERAL SPECIFICATIONS	1.2-55/1
HYDRAULIC SPECIFICATIONS	1.2-55/1
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DIMENSIONS	1.2-55/3
PARTS LIST	1.2-55/3
ACCESSORIES	1.2-55/3

TYPE CODE

WD	<input type="checkbox"/>	F	A06	-	<input type="checkbox"/>	-	<input type="checkbox"/>	#	<input type="checkbox"/>
Spool valve direct operated									
Medium-solenoid	<input type="checkbox"/>	Super-solenoid	<input type="checkbox"/>						
Flange type									
International standard interface ISO nominal size 6									
Description of symbols acc. to table 1.2-55/2									
Standard-nominal voltage U_N	12VDC	<input type="checkbox"/>	G12						
	24VDC	<input type="checkbox"/>	G24						
	110VAC	<input type="checkbox"/>	R110						
	115VAC	<input type="checkbox"/>	R115						
	230VAC	<input type="checkbox"/>	R230						
Design-Index (Subject to change)									

GENERAL SPECIFICATIONS

Description	4/2-, 4/3-spool valve
Nominal size	NG6 to ISO 4401/7790
Construction	Direct operated spool valve
Operations	Solenoid
Mounting	Flange
	4 fixing holes for socket head cap screws M5x50
Connections	Threaded connection plates Multi-flange subplates Longitudinal stacking system
Ambient temperature	-20...+50°C
Mounting position	any, preferably horizontal
Fastening torque	$M_0 = 5,5 \text{ Nm}$ (screw quality 8.8)
Weight: 4/2-way impuls	$m = 2,4 \text{ kg}$
4/3-way	$m = 2,4 \text{ kg}$
4/2-way (1 solenoid)	$m = 1,9 \text{ kg}$

HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406, classe 18/14 (Required filtration grade $\beta_{10...16} \geq 75$) refer to data sheet 1.0-50/2
Viscosity range	12 mm ² /s...320 mm ² /s
Fluid temperature	-20...+70°C
Working pressure in port P, A, B	$p_{max} = 350 \text{ bar}$
Tank pressure in port T	Medium: $p_{max} = 160 \text{ bar}$ Super: $p_{max} = 200 \text{ bar}$
Max. volume flow	$Q_{max} = 80 \text{ l/min}$, see characteristics
Leakage volume flow	on request

ELECTRICAL CONTROL

Construction	Solenoid, wet pin push type, pressure tight
Standard-nominal voltage	$U_N = 12$ VDC $U_N = 24$ VDC $U_N = 110$ VAC* $U_N = 115$ VAC* $U_N = 230$ VAC* AC = 50 to 60 Hz * Rectifier integrated in the plug, other nominal voltages and nominal performances on request.
Voltage tolerance	±10% of nominal voltage
Protection class	IP 65 to DIN 40050
Relative duty factor	100% DF (see data sheet 1.1-430)
Switching cycles	15'000/h
Operating life (number of switching cycles)	10 ⁷
Connection/Power supply	Over device plug connection to ISO 4400 / DIN 43650, (2P+E), other connections on request.

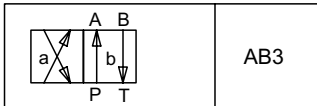
SOLENOID DESCRIPTION

With respect to the selection of the solenoid, the following statements are important:

- The solenoid is the most expensive component of the solenoid spool valve.
- For this reason, it is not economical to use the same solenoid for all applications.
- Depending on the application, sales area, and customer, the requirements for solenoid spool valves and solenoids differ very considerably.
- In order to be able to offer the customer an optimum, we can supply our solenoid spool valves NG6 in 2 different versions:
 - Medium SIN45V (data sheet 1.1-120)
 - Super SIS45V (data sheet 1.1-125)

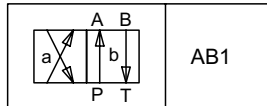
TYPE LIST / DESIGNATION OF SYMBOLS

4/2-way valve impulse



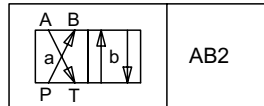
AB3

4/2-way valve with spring reset operation A-side



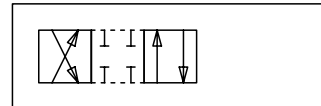
AB1

operation B-side

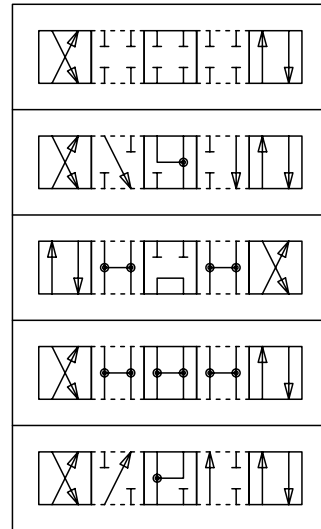
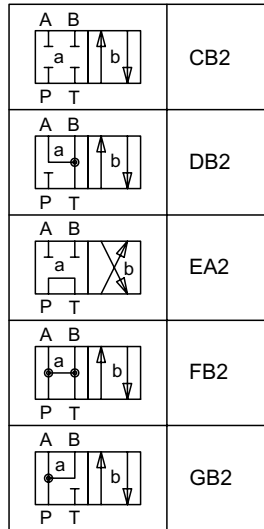
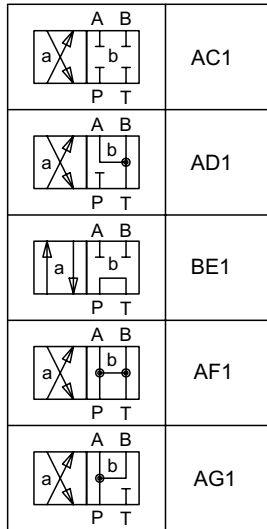
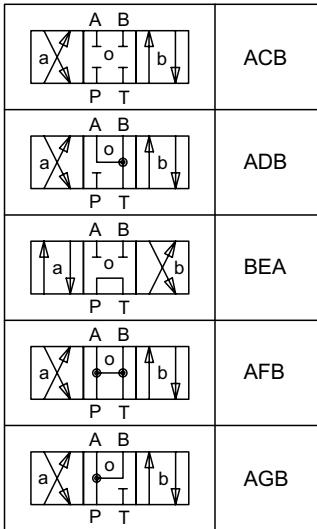


AB2

Transitional functions

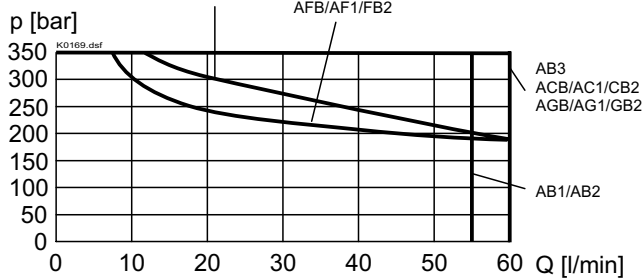


4/3-way valve spring centered

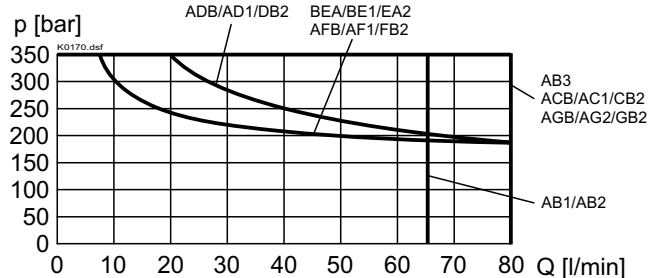

CHARACTERISTICS Oil viscosity $\nu = 30$ mm²/s

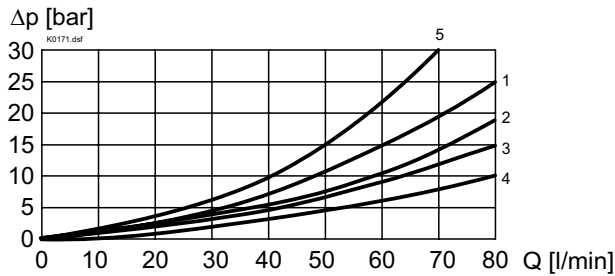
 $p = f(Q)$ Performance limits with standard voltage -10%

Medium



Super



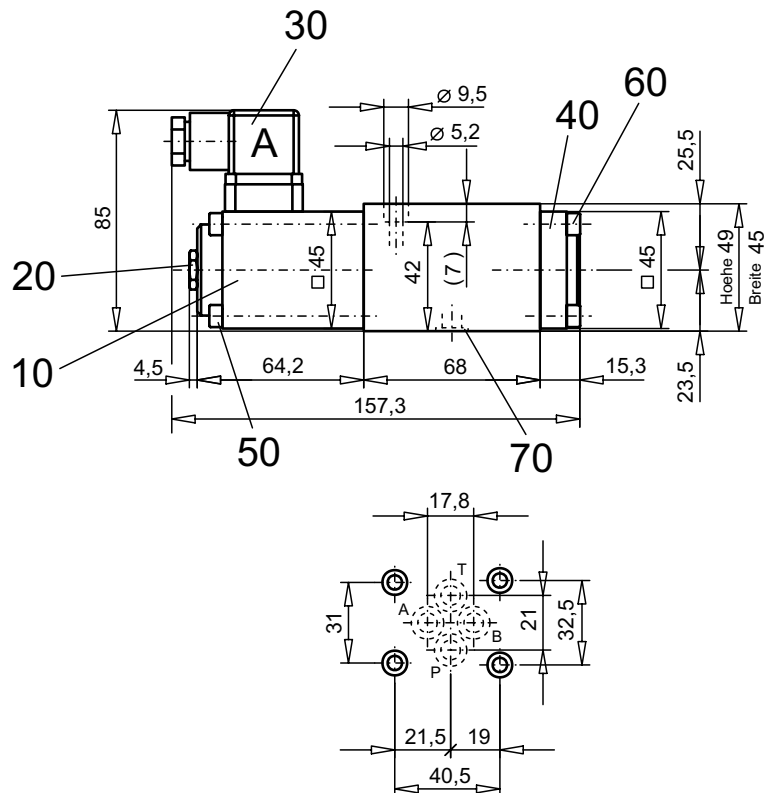
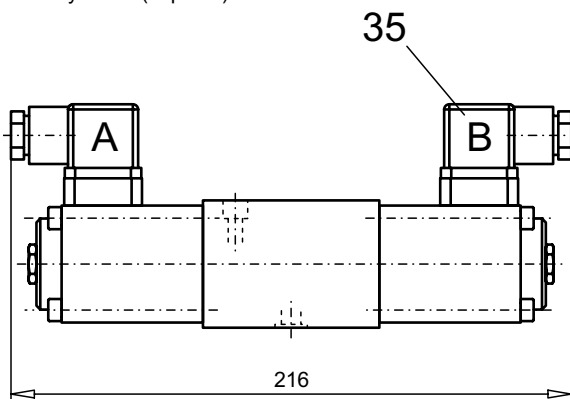
$\Delta p = f(Q)$ Pressure drop volume flow characteristics


Pressure drop Curve no. Symbol	Volume flow direction				
	P - A	P - B	P - T	A - T	B - T
AB1/AB2/AB3	2	2	-	1	1
ACB/AC1/CB2	2	2	-	1	1
ADB/AD1/DB2	2	2	-	3	3
BEA/BE1/EA2	2	2	5	2	2
AFB/AF1/FB2	4	4	-	3	3
AGB/AG1/GB2	4	4	-	1	1

DIMENSIONS

 4/3-way valve (spring centered)
 4/2-way valve (impulse)

4/2-way valve (spring reset)


PARTS LIST

Position	Article	Description
10	260.6... 260.7...	Medium-solenoid SIN45V Super-solenoid SIS45V
20	253.8001	Plug with integrated manual override HB6
30	219.2001	Electric plug A (grey)
35	219.2002	Electric plug B (black)
40	058.4211	Cover
50	249.2000	Socket head cap screw M5x60
60	246.2116	Socket head cap screw M5x16 DIN 912
70	160.2093	O-ring ID 9,25x1,78

ACCESSORIES

 Threaded connecting plates, Multi-flange subplates and
 Longitudinal stacking system see Reg. 2.9

Technical explanation see data sheet 1.0-100E