

Spool valve

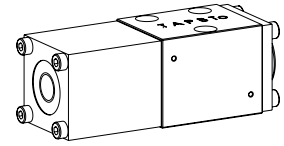
Flange construction

- ◆ pneumatically operated
- ◆ 4/2-way impulse valve
- ◆ 4/3-way with spring centred mid position
- ◆ 4/2-way with spring reset
- ◆ $Q_{max} = 8 \text{ l/min}$
- ◆ $p_{max} = 350 \text{ bar}$

DESCRIPTION

Direct operated spool valve, pneumatically operated, with 4 connections in a 5 chamber system. Spool detented or with spring reset. Without actuation, the spool is held in the center position by the spring (4/3), or switched back to the offset position (4/2). With the detent, the spool is held in the last switching position selected. Precise spool fit, low leakage, long service life time. Spool made from hardened steel, valve body from high quality hydraulic cast steel.

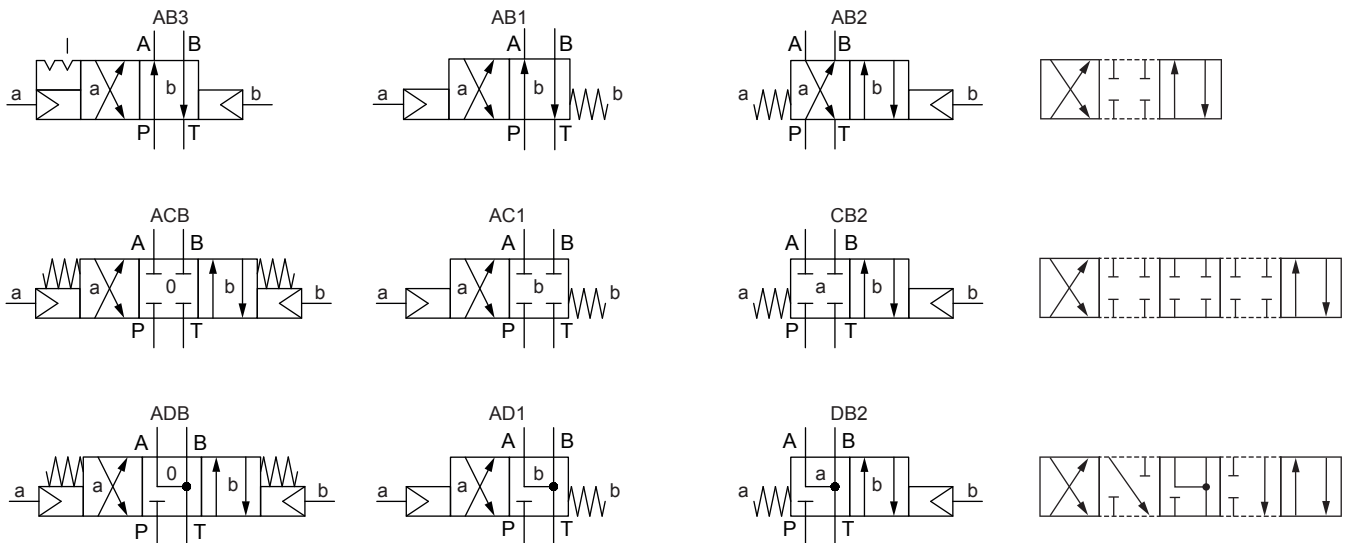
NG3-Mini



APPLICATION

Spool valves are mainly used for controlling direction of movement and stopping of hydraulic cylinders and motors. Miniature valves are used where both, reduced dimensions and weight are important.

SYMBOL



GENERAL SPECIFICATIONS

Designation	4/2-, 4/3-spool valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG3-Mini according to Wandfluh standard
Actuation	Pneumatically operated
Ambient temperature	-25...+70 °C
Weight	0.42 kg (1 actuation) 0.57 kg (2 actuations)
MTTFd	150 years

ACTUATION

Actuation	Pneumatically operated
Execution	Actuation CKIII
Pilot pressure	$p_{V_{min}} = 2 \text{ bar}$ at $p_T = 20 \text{ bar}$ $p_{V_{min}} = 5 \text{ bar}$ at $p_T = 100 \text{ bar}$
Control volume	$V = 2 \text{ cm}^3$

TYPE CODE

Spool valve, direct operated		WD	L	F	A03	-	<input type="text"/>	-	<input type="text"/>	#	<input type="text"/>
Pneumatically operated											
Flange construction											
Mounting interface acc. to Wandfluh standard, NG3-Mini											
Designation of symbols acc. to table											
Sealing material	NBR FKM (Viton)										
											<input type="text" value="D1"/>
Design index (subject to change)											

1.6-15

HYDRAULIC SPECIFICATIONS

Working pressure	$p_{max} = 350 \text{ bar}$ ($p_T < 20 \text{ bar}$) $p_{max} = 315 \text{ bar}$ ($p_T > 20 \text{ bar}$)
Tank pressure	$p_{Tmax} = 100 \text{ bar}$
Maximum volume flow	$Q_{max} = 8 \text{ l/min}$, see characteristics
Leakage oil	See characteristics
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm ² /s...320 mm ² /s
Temperature range fluid	-25...+70 °C (NBR) -20...+70 °C (FKM)
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade $\beta_{10...16} \geq 75$, see data sheet 1.0-50

SURFACE TREATMENT

- ◆ The valve body is painted with a two component paint
- ◆ The cover is zinc-nickel coated
- ◆ The pneumatic actuation is zinc coated

MANUAL OVERRIDE

None

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

STANDARDS

Mounting interface	Wandfluh standard
Contamination efficiency	ISO 4406

INSTALLATION NOTES

Mounting type	Flange mounting 3 fixing holes for socket head screws M4 x 30
Mounting position	Any, preferably horizontal
Tightening torque	$M_D = 2,6 \text{ Nm}$ (screw quality 8.8, zinc-coated) Fixing screws

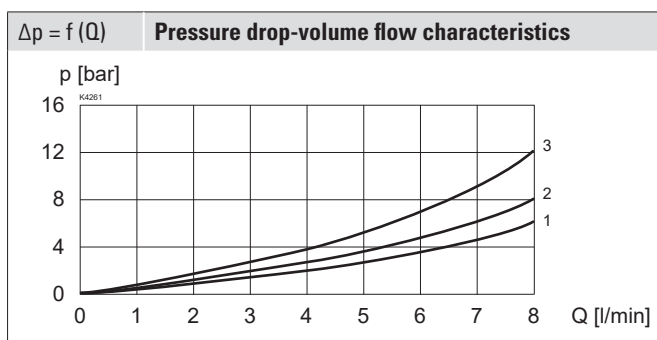
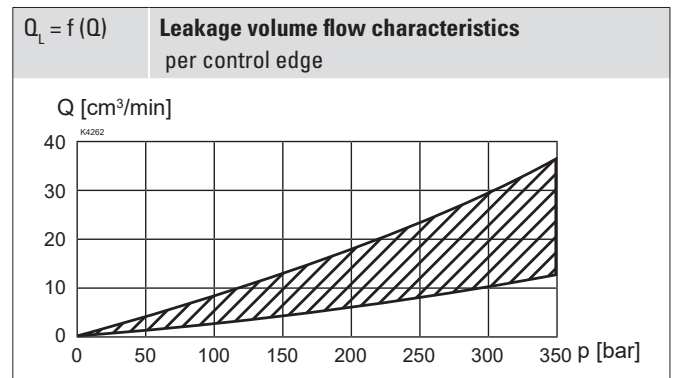
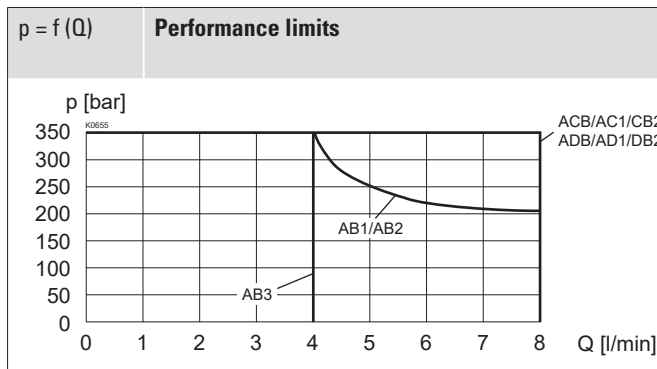
Note!


The length of the fixing screw depends on the base material of the connection element.

ACCESSORIES

Fixing screws	Data sheet 1.0-60
Threaded subplates	Data sheet 2.9-05
Multi-station subplates	Data sheet 2.9-45
Horizontal mounting blocks	Data sheet 2.9-85
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50

PERFORMANCE SPECIFICATIONS

 Oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$


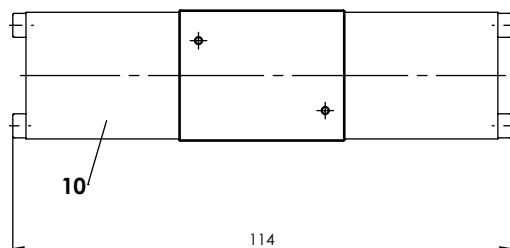
Volume flow direction

Symbol	P - A	P - B	P - T	A - T	B - T
AB1 / AB2 / AB3	3	3	-	2	2
ACB / AC1 / CB2	3	3	-	1	1
ADB / AD1 / DB2	2	2	-	1	1

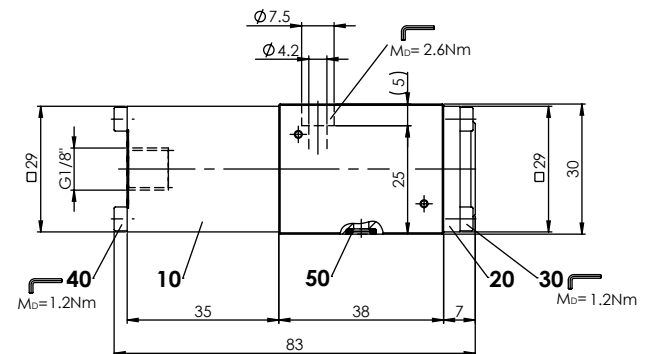
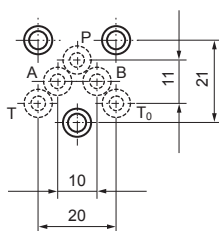
DIMENSIONS

4/3-way valve (spring centred)

4/2-way valve (impulse)



4/2-way valve (spring reset)


HYDRAULIC CONNECTION

PARTS LIST

Position	Article	Description
10	254.1000	Pneumatic actuation CKIII
20	056.4200	Cover
30	246.0109	Socket head screw M3 x 8 DIN 912
40	246.0141	Socket head screw M3 x 40 DIN 912
50	160.2045	O-ring ID 4,50 x 1,50 (NBR)

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