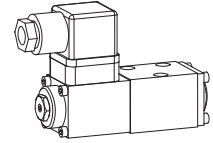


Solenoid operated spool valve

Flange construction

- ◆ 4/2-way impulse execution, detented
- ◆ 4/3-way with spring centred mid position
- ◆ 4/2-way with spring reset
- ◆ $Q_{max} = 15 \text{ l/min}$
- ◆ $p_{max} = 350 \text{ bar}$

NG3-Mini



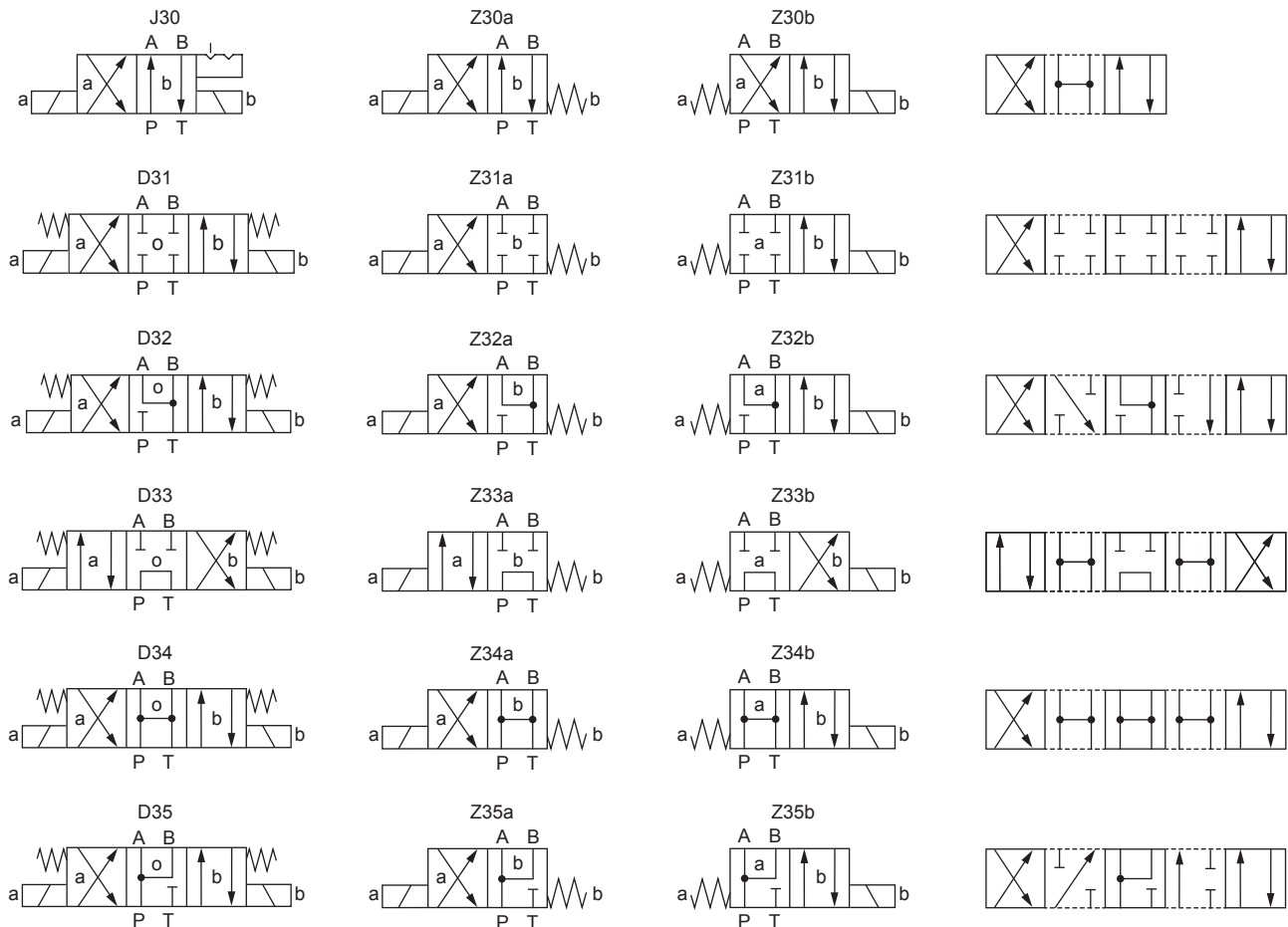
DESCRIPTION

Direct operated solenoid spool valve with 4 connections in 5 chamber design. Spool detented or with spring. With the solenoids de-energised, the spool is held in the center position by the spring (4/3), or switched back to the offset position (4/2). With the impulse spool (4/2), the spool is held in the switching position by the detent. Precise spool fit, low leakage, long service life time. Spool made from hardened steel, body from high quality hydraulic cast steel. Wide range of standard and special voltages.

APPLICATION

Spool valves are mainly used for controlling direction of movement and stopping of hydraulic cylinders and motors. Direction of movement depends on the position of spool and its flow symbol. Switching performance limits and leakage of the valves must be taken into account when designing the system. Solenoid operated spool valves are suitable for machine tools and handling systems of any kind. Miniature valves are used where both, reduced dimensions and weight are important.

SYMBOL



TYPE CODE

Mounting interface acc. to Wandfluh standard					B	M	4	-	#	
Solenoid, Medium										
Number of control ports										
Designation of symbols acc. to table										
Nominal voltage U_N	12 VDC	G12	115 VAC	R115						
	24 VDC	G24	230 VAC	R230						
Design index (subject to change)	1.2-26									

GENERAL SPECIFICATIONS

Designation	4/2-, 4/3-spool valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG3-Mini according to Wandfluh standard
Actuation	Switching solenoid
Ambient temperature	-25...+70 °C if > +50 °C, then no undervoltage is admissible
Weight	0,50 kg (1 solenoid) 0,65 kg (2 solenoids)
MTTFd	150 years

ELECTRICAL SPECIFICATIONS

Protection class	IP65
Relative duty factor	100 % DF
Switching frequency	15'000 / h
Service life time	10 ⁷ (number of switching cycles, theoretically)
Voltage tolerance	± 10 % with regard to nominal voltage
Standard nominal power	12 VDC, 24VDC, 115 VAC, 230 VAC AC = 50 to 60 Hz, rectifier integrated in the connector socket

Note! Other electrical specifications see data sheet 1.1-80


STANDARDS

Mounting interface	According to Wandfluh standard
Solenoids	DIN VDE 0580
Connection execution D	EN 1753301-803
Protection class	EN 60 529
Contamination efficiency	ISO 4406

ACTUATION

Actuation	Switching solenoid, wet pin push type, pressure tight
Execution	SIN29V (data sheet 1.1-80)
Connection	Connector socket EN 175301 – 803

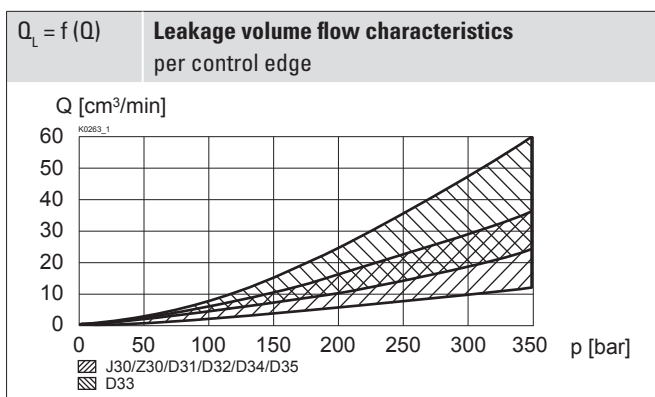
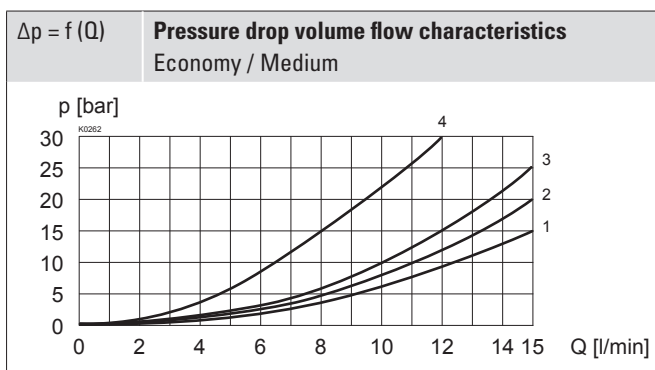
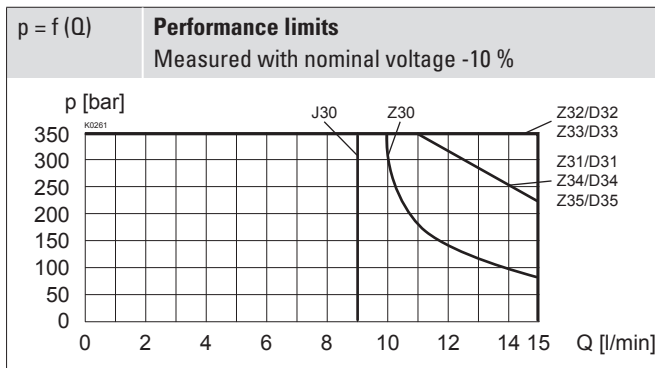
HYDRAULIC SPECIFICATIONS

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	$Q_{max} = 15 \text{ l/min}$, 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

MANUAL OVERRIDE

Screw plug with integrated manual override (HB4,5). Actuation by pressing the push button

PERFORMANCE SPECIFICATIONS

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


Symbol	Volume flow direction				
	P - A	P - B	P - T	A - T	B - T
Z30 / J30	3	3	-	2	2
D31 / Z31	3	3	-	2	2
D32 / Z32	3	3	-	1	1
D33 / Z33	4	4	3	4	4
D34 / Z34	2	2	1	1	1
D35 / Z35	2	2	-	2	2

SEALING MATERIAL

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

SURFACE TREATMENT

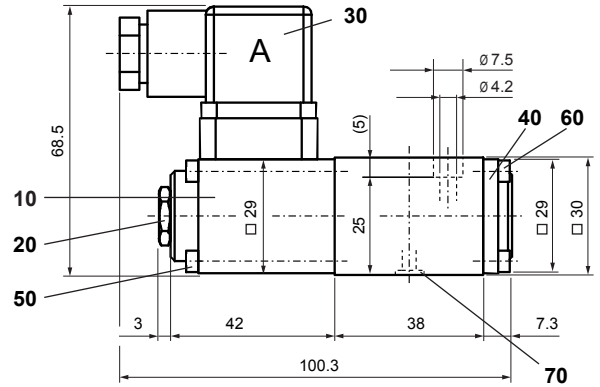
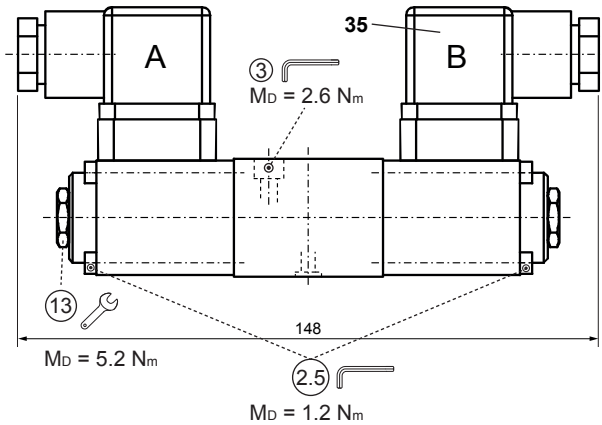
- ◆ The valve body is painted with a two component paint
- ◆ The solenoid and the cover are re zinc-nickel coated
- ◆ The socket head screws are zinc coated

DIMENSIONS

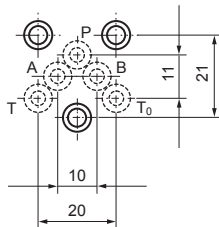
4/3-way valve (spring centred)

4/2-way valve (impulse)

4/2-way valve (spring reset)



HYDRAULIC CONNECTION



INSTALLATION NOTES

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

Note!



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

PARTS LIST

Position	Article	Description
10	260.2...	Solenoid SIN29V
20	253.8000	Screw plug with integrated manual override HB4.5 (Data sheet 1.1-300)
30	219.2001	Electric plug A (grey)
35	219.2002	Electric plug B (black)
40	056.4200	Cover
50	246.0141	Socket head screw M3 x 40 DIN 912
60	246.0109	Socket head screw M3 x 8 DIN 912
70	160.2045	O-ring ID 4,50 x 1,50 (NBR)

ACCESSORIES

Mounting 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
Manual override	Data sheet 1.1-300
Special manual override	Data sheet 1.1-310
Relative duty factor	Data sheet 1.1-430