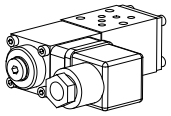
Solenoid poppet valve
- **2/2-way sandwich construction**
- **Q_{max} = 6 l/min**
- **p_{max} = 350 bar**

NG3-Mini®



DESCRIPTION
Poppet valve, sandwich design NG3-Mini according to Wandfluh standard, available as a 2/2-way valve normally open or closed. The central functioning element of all directly controlled poppet valves in the NG3 series is the poppet valve cartridge NG3. See data sheet 1.11-2010. The solenoids correspond to VDE stand-ard 0580.
Important: When commissioning, the valve must be vented under pressure (max. 2 revolutions of screw E).

FUNCTION
The valve is direct operated by a wet pin push type solenoid which in turn either opens or closes the poppet. The design of the poppet spool, which is equal in surface area on both sides and thus pressure balanced, means there are no undue opening and closing hydraulic forces. Due to this the oil flow through the poppet valve is possible in both directions. The valve is tight in both flow directions.

APPLICATION
Wandfluh poppet valves can be used anywhere absolutely leak tight closing functions are important. Completely sealed loading, gripping and clamping operations are all important functions which Wandfluh poppet valves can perform. NG3-mini valves are used where a light, compact unit is needed.

TYPE CODE

Z ☐ 2 2 03 ☐ ☐ - ☐ # ☐

- Poppet valve, construction sandwich
- Medium-solenoid M / Super-solenoid S
- 2-way (connections)
- 2 positions
- Nominal size 3-Mini
- Normally closed 1 / Normally open 0
- Type list / function Poppet valve: in P P; in T T; in A and B AB; in A A; in B B
- Nominal voltage U_N: 12 VDC G12; 24 VDC G24; 110 VAC R110; 115 VAC R115; 230 VAC R230
- Design-Index (Subject to change)

GENERAL SPECIFICATIONS

Description	2/2-way poppet valve
Nominal size	NG3-Mini acc. to Wandfluh standard
Construction	Direct operated poppet valve
Operations	Solenoid
Mounting	Sandwich constr., 3 mounting holes for socket head screws or locking screws M4
Connections	Threaded connection plates Multi-flange subplates Longitudinal stacking system
Ambient temperature	-20…+50 °C
Mounting position	any, preferable horizontal
Fastening torque	M_D = 2,8 Nm (quality 8.8)
Masse poppet valve in:	
A, B, P or T	m = 0,46 kg
A and B normally closed.	m = 0,56 kg
A and B normally open	m = 0,62 kg
Volume flow direction	any (see characteristics)

HYDRAULIC SPECIFICATIONS

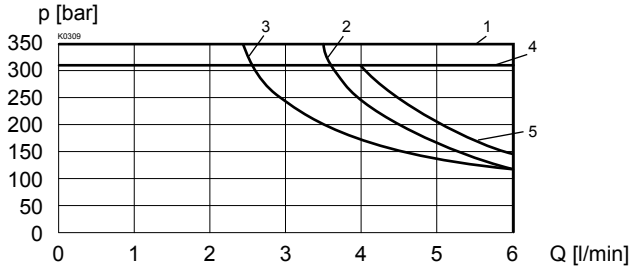
Fluid	Mineral oil, other fluid on request	
Contamination efficiency	ISO 4406:1999, class 20/18/14 (Required filtration grade ß10…16≥75) refer to data sheet 1.0-50/2	
Viscosity range	12 mm²/s… 320 mm²/s	
Fluid temperature	-20…+70 °C	
Working pressure	Medium:	p_{max} = 125 bar
	Super:	p_{max} = 350 bar
	to ZS22030AB	p_{max} = 315 bar
Max. volume flow	$Q_{max.}$ = 6 l/min see characteristics	

ELECTRICAL CONTROL

Construction	Solenoid, wet pin push type, pressure tight
Standard-nominal voltage	U_N = 12 VDC, 24 VDC U_N = 110 VAC∗, 115 VAC∗, 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 EN 60 529
Relative duty factor	100% DF (see data sheet 1.1-430)
Switching cycles	15000/h
Operating life	10^7 (number of switching cycles, theoretically)
Connection/Power supply	Over device plug connection to ISO 4400/DIN 43650, (2P+E), other connections on request
Solenoid:	– Medium SIN29V (1.1-80) – Super SIS29V (1.1-85)

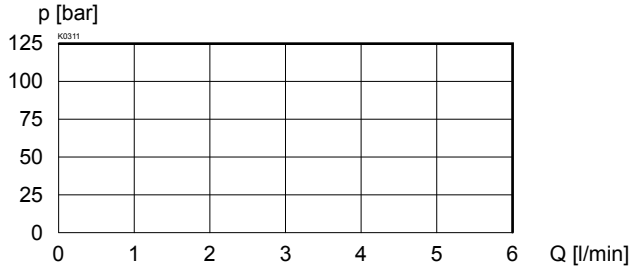
CHARACTERISTICS Oil viscosity υ = 30 mm²/s

p = f (Q) Performance limit with standard voltage -10% Super

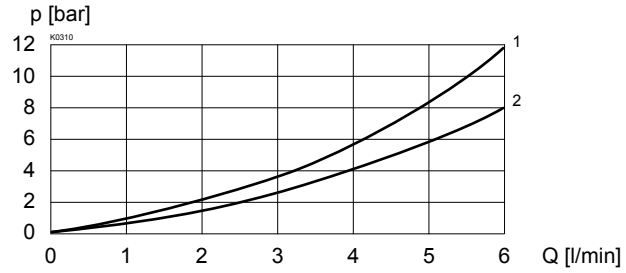


Type	Flow direction 1 → 2	Flow direction 2 → 1
ZS22031P	1	2
ZS22031T	1	2
ZS22031A	1	2
ZS22031B	1	2
ZS22031AB	1	2
ZS22030P	1	3
ZS22030T	1	3
ZS22030A	1	3
ZS22030B	1	3
ZS22030AB	4	5

p = f (Q) Performance limit with standard voltage -10% Medium

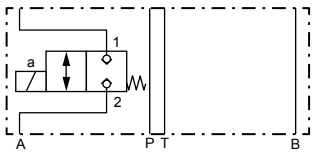


Δp = f (Q) Pressure loss/flow characteristics
1: characteristics from Z.22030AB
2: characteristics from all valves

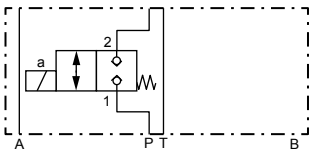


TYPE CHARTS

Z.22031A



Z.22031P



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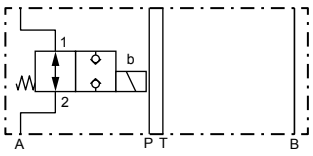
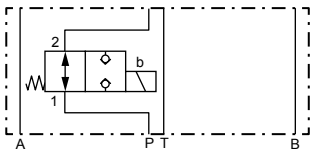
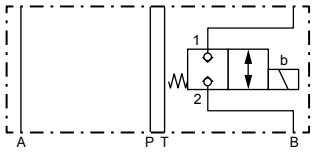


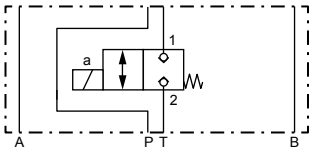
Z.22030P



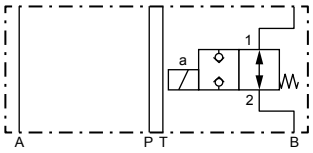
Z.22031B



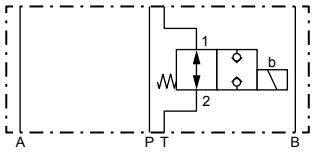
Z.22031T



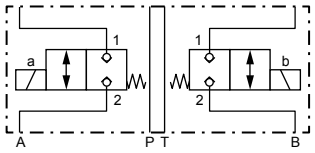
Z.22030B



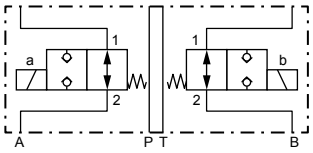
Z.22030T



Z.22031AB

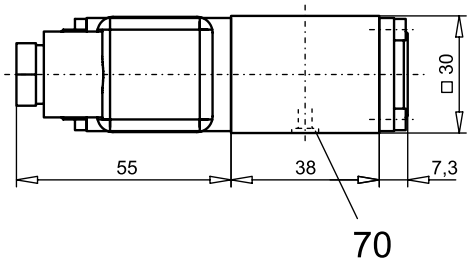


Z.22030AB

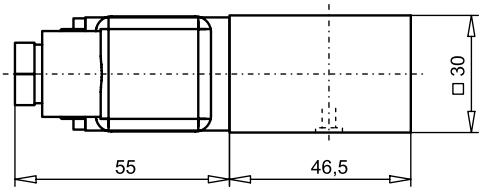


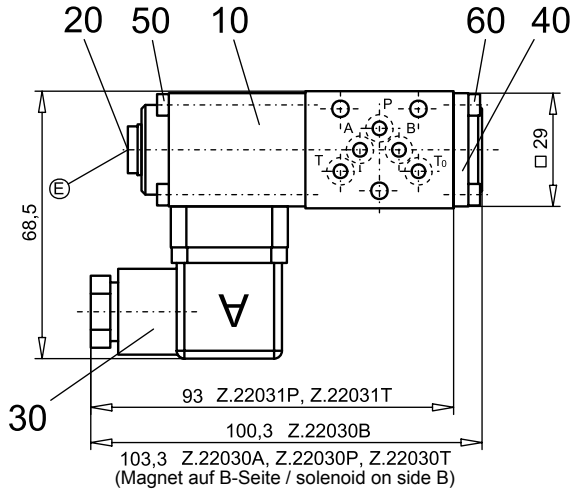
DIMENSIONS

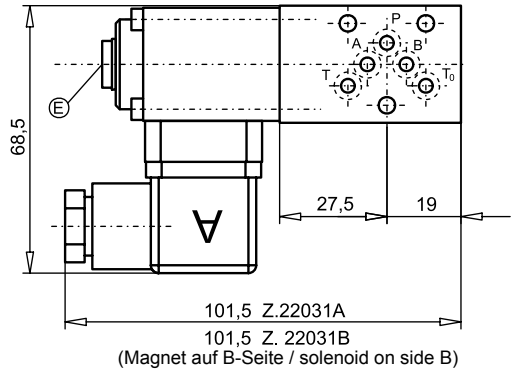
Poppet valve in A, B, P or T normally open
Poppet valve in P or T normally closed



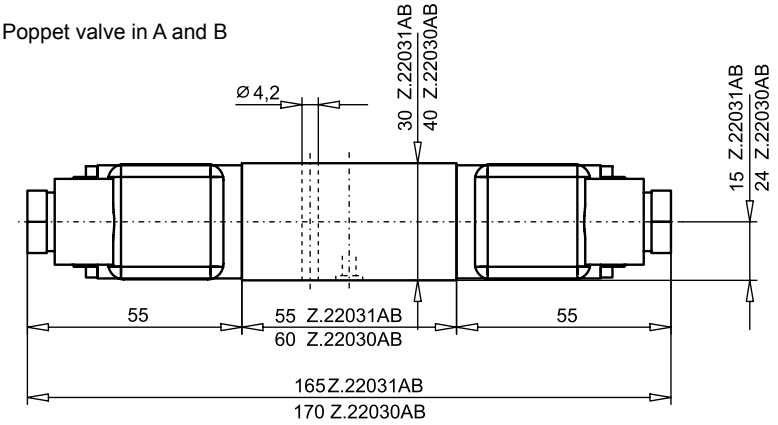
Poppet valve in A or B normally closed

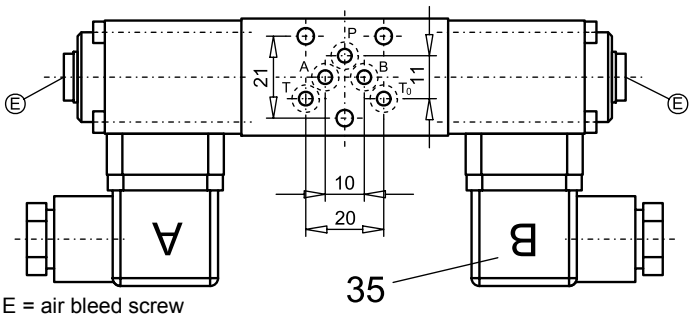






Poppet valve in A and B





E = air bleed screw

PARTS LIST

Position	Article	Description
10	260.2… 260.3…	Medium-solenoid SIN29V Super-solenoid SIS29V
20	239.2033	Plug (incl. seal) HB0
30	219.2001	Plug A (grey)
35	219.2002	Plug A (grey)
40	056.4203	Cover
50	246.0141	Socket head cap screw M3x40 DIN 912
60	246.0109	Socket head cap screw M3x8 DIN 912
70	160.2045	O-ring ID 4,50x1,50

ACCESSORIES

Threaded connection plates, Multi-flange subplates and
Longitudinal stacking system see Register 2.9

Technical explanation see data sheet 1.0-100