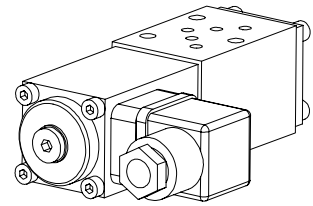


Solenoid poppet valve

- 2/2-way sandwich construction
- $Q_{max} = 15 \text{ l/min}$
- $p_{max} = 350 \text{ bar}$

NG4-Mini®

DESCRIPTION

Poppet valve, sandwich design NG4-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 NG4 series is the poppet valve cartridge NG4. See data sheet 1.11-2020. The solenoids correspond to VDE standard 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. NG4-Mini valves are used where a light, compact unit is needed.

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TYPE CODE

Z	☐	2	2	04	☐	☐	-	☐	#	☐
Poppet valve construction sandwich										
Medium	☐	M								
Super	☐	S								
2-way (connections)										
2 positions										
Nominal size 4										
Normally closed,	☐	1								
Normally open,	☐	0								
Poppet valve in:										
P	☐	P	T	☐	T	A	☐	A	B	☐
A and B	☐	AB	A	☐	A	B	☐	B		
Standard nominal voltage U_N :										
12 VDC	☐	G12	110 VAC	☐	R110					
24 VDC	☐	G24	115 VAC	☐	R115					
			230 VAC	☐	R230					
Design-Index (Subject to change)										

GENERAL SPECIFICATIONS

Description	2/2-way poppet valve
Nominal size	NG4-Mini to Wandfluh standard
Construction	Direct operated poppet valve
Operations	Solenoid
Mounting	Sandwich Constr., 3 mounting holes for socket head screws or locking screws M5
Connections	Threaded connection plates Multi-flange subplates Longitudinal stacking system
Ambient temperature	-20...+50°C
Mounting position	any, preferable horizontal
Fastening torque	$M_D = 5,5 \text{ Nm}$ (quality 8.8)
Masse poppet valve in:	
A, B, P or T	$m = 0,95 \text{ kg}$
A and B normally closed	$m = 1,45 \text{ kg}$
A and B normally open	$m = 1,85 \text{ kg}$
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 $B_{10...16} \geq 75$) 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	Medium: $p_{max} = 160 \text{ bar}$ Super: $p_{max} = 350 \text{ bar}$ to ZS220404AB $p_{max} = 250 \text{ bar}$
Max. volume flow	$Q_{max} = 15 \text{ l/min}$ see characteristics

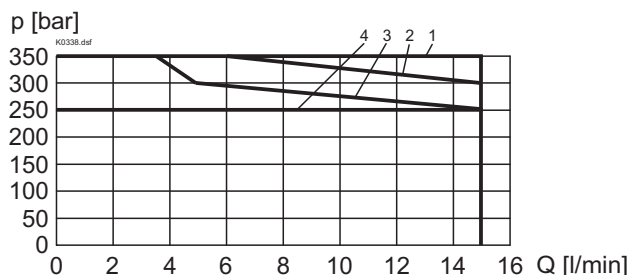
ELECTRICAL CONTROL

Construction Solenoid, wet pin push type, pressure tight
Standard-nominal voltage $U_N = 12 \text{ VDC}, 24 \text{ VDC}$
 $U_N = 110 \text{ VAC}^*, 115 \text{ VAC}^*, 230 \text{ VAC}^*$
AC = 50 to 60 Hz
* Rectifier integrated in the plug
Other nominal voltages and nominal performances on request
Voltage tolerance $\pm 10\%$ of nominal voltage
Protection class IP 65 to EN 60 529
Relative duty factor 100% DF (see data sheet 1.1-430)

Switching cycles 15'000/h
Operating life 10^7 (number of switching cycles, theoretically)
Connection/Power supply Over device plug connection to ISO 4400/
DIN 43 650, (2P+E), other connections on request
Solenoid:
- Medium SIN35V (1.1-105)
- Super SIS35V (1.1-110)

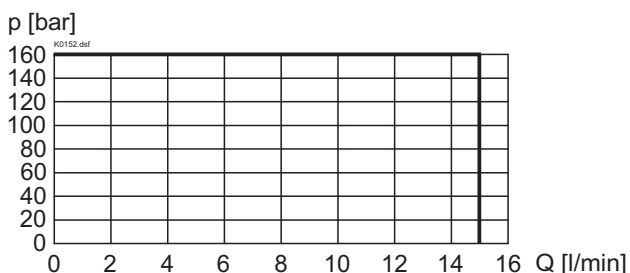
CHARACTERISTICS Oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$

$p = f(Q)$ Performance limit by standard voltage at -10 %
Super

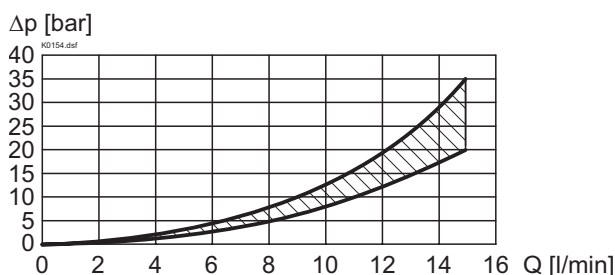


Type	Flow direction	
	1 → 2	2 → 1
ZS22041P	1	2
ZS22041T	1	2
ZS22041A	1	2
ZS22041B	1	2
ZS22041AB	1	2
ZS22040P	1	3
ZS22040T	1	3
ZS22040A	1	3
ZS22040B	1	3
ZS22040AB	4	4

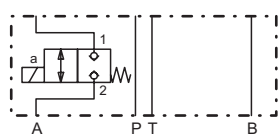
$p = f(Q)$ Performance limit by standard voltage at -10 %
Medium



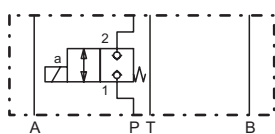
$\Delta p = f(Q)$ Pressure loss/flow characteristics


TYPE CHARTS

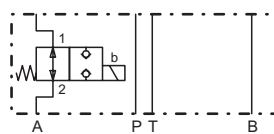
Z.22041A



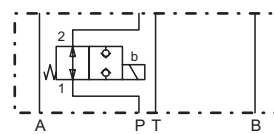
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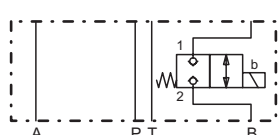
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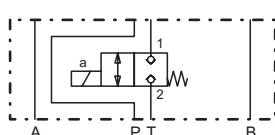
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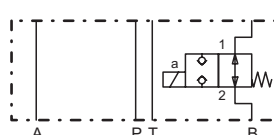
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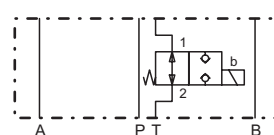
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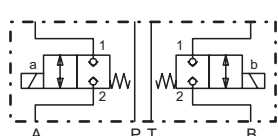
Z.22040B



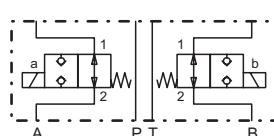
Z.22040T



Z.22041AB

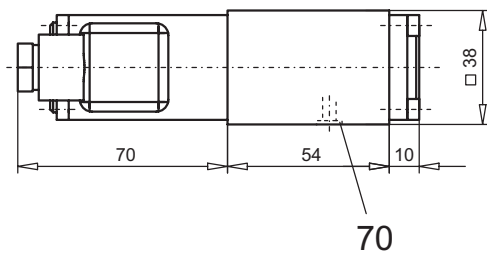


Z.22040AB

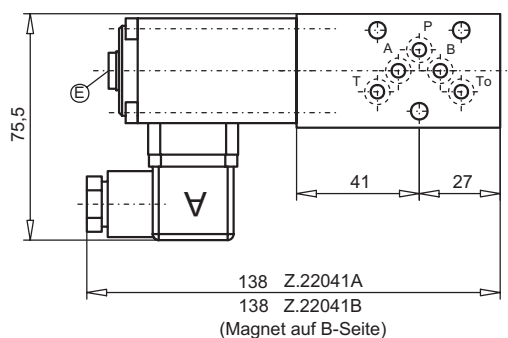
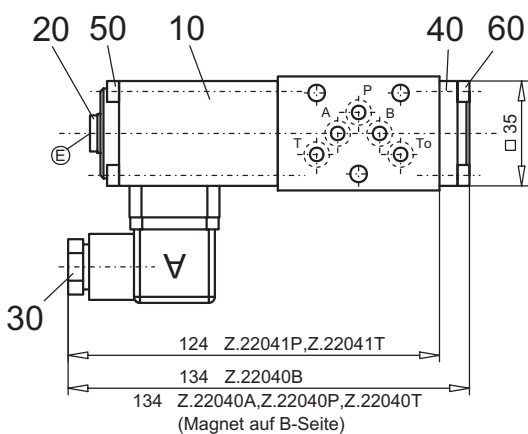
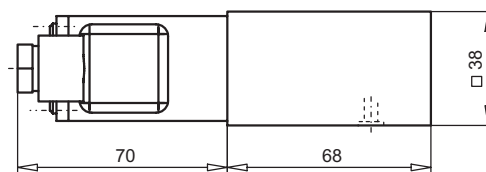


DIMENSIONS

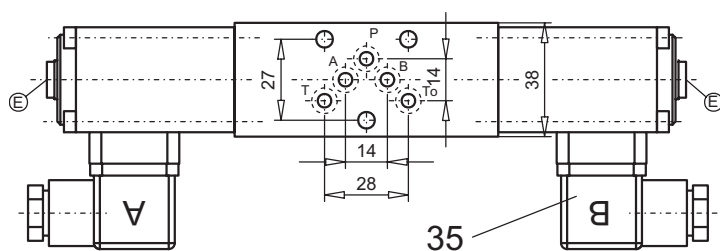
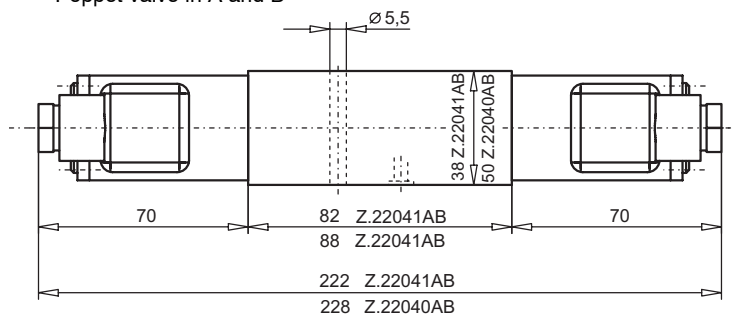
Poppet valve in A, B, P or T normally open
Poppet valve in P or T normally closed



Poppet valve in A or B normally closed



Poppet valve in A and B



E = air bleed screw

PARTS LIST

Position	Article	Description
10	260.4... 260.5...	Medium-solenoid SIN35V Super-solenoid SIS35V
20	239.2033	Plug (incl. seal) HB0
30	219.2001	Plug A (grey)
35	219.2002	Plug B (black)
40	057.4201	Cover
50	246.1161	Socket head cap screw M4x60 DIN 912
60	246.1113	Socket head cap screw M4x12 DIN 912
70	160.2052	O-ring ID 5,28x1,78

ACCESSORIES

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

Technical explanation see data sheet 1.0-100E