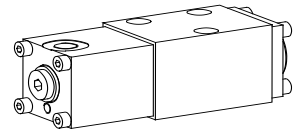


Poppet valve hydraulic actuation

- 2/2-, 3/2- and 3/4-way construction
- $Q_{max} = 15 \text{ l/min}$
- $p_{max} = 350 \text{ bar}$

NG4-Mini[®]

DESCRIPTION

Poppet valve, flanged design NG4-Mini according to Wandfluh standard, available as a 2/2 or 3/2-way valve (normally open or closed) and as a 3/4-way valve (normally closed). The central functioning element of all directly controlled poppet valves in the NG4-Mini series is the poppet valve cartridge NG4. See data sheet 1.11-2020.

FUNCTION

The valve is direct operated by a hydraulic control head which either opens or closes the poppet against a spring. 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. Cartridge type poppet valves can be neatly accommodated in valve blocks. From a mechanical and functional point of view, poppet valves can replace slide valves at any time. NG4-mini valves are used where a light, compact unit is needed.

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TYPE CODE

2/2- or 3/2-way construction	B	PC	<input type="checkbox"/>	2	04	<input type="checkbox"/>	-	<input type="checkbox"/>	#	<input type="checkbox"/>
3/4-way construction	B	PC	<input type="checkbox"/>	3	04	<input type="checkbox"/>	-	<input type="checkbox"/>	#	<input type="checkbox"/>
Mounting interface										
Hydraulic actuation										
2-way (connections)			<input type="checkbox"/>							
3-way (connections)			<input type="checkbox"/>							
2 switching positions										
4 switching positions										
Nominal size 4-Mini										
Normally closed, control head on side A			<input type="checkbox"/>							
Normally open, control head on side B			<input type="checkbox"/>							
Control head:	BPII			<input type="checkbox"/>						
	BPII-S1454			<input type="checkbox"/>						
	BPII with spring package			<input type="checkbox"/>						
	BPII-S1454 with spring package			<input type="checkbox"/>						

* only possible for 2/2-way valves normally open and 3/2-way valves
 Design-Index (Subject to change)

GENERAL SPECIFICATIONS

Description	2/2-, 3/2- and 3/4-way poppet valve
Nominal size	NG4-Mini acc. to Wandfluh standard
Construction	Direct operated poppet valve
Operations	Hydraulic operated
Type of mounting	Flange, 3 mounting holes for socket head screws M5x40
Connections	Threaded connection plates Multi-station subplates Longitudinal stacking system
Ambient temperature	-20 ... +50 °C
Mounting position	any, preferably horizontal
Fastening torque	$M_0 = 5,5 \text{ Nm}$ (Quality 8,8)
Weight:	
2/2-, 3/2-way	
without spring package	0,9 kg
with spring package	1,2 kg
3/4 way	1,3 kg
Volume flow direction	any (see characteristics)

HYDRAULIC CONTROL ACTUATION

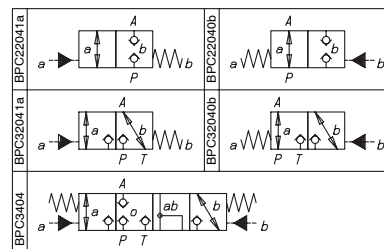
Control pressure	see characteristics
Control volume flow	v1/v3: $V_{st} = 2,5 \text{ cm}^3$ v2/v4: $V_{st} = 0,4 \text{ cm}^3$

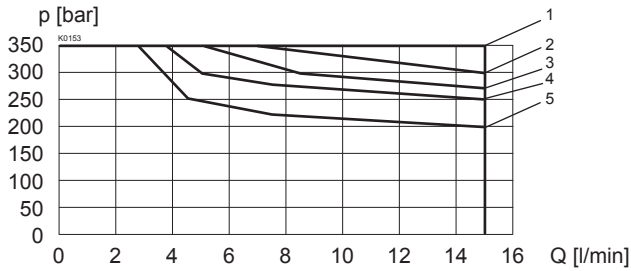
Important: At the control head BPII (v1/v3) in the inoperative position (relieved) the control pressure has to be $p_{st} < 0,8 \text{ bar}$

At the control head BPII-S1454 (v2/v4) in the inoperative position (relieved) the control pressure has to be $p_{st} < 10 \text{ bar}$

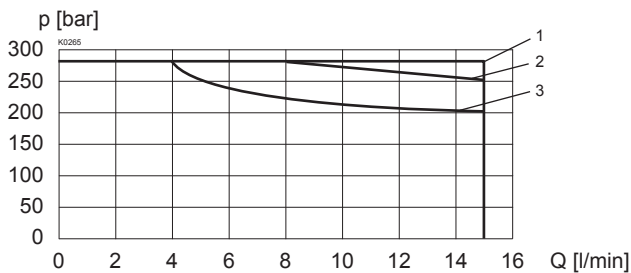
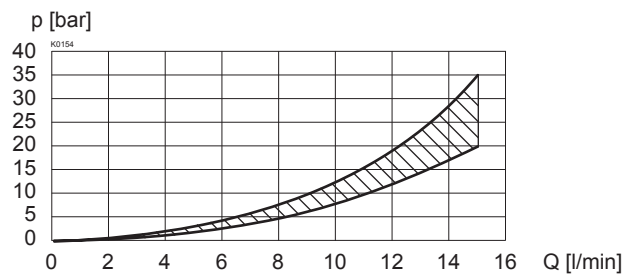
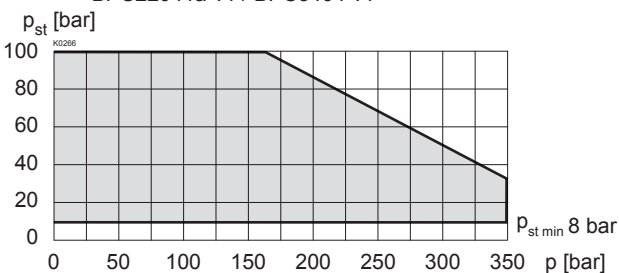
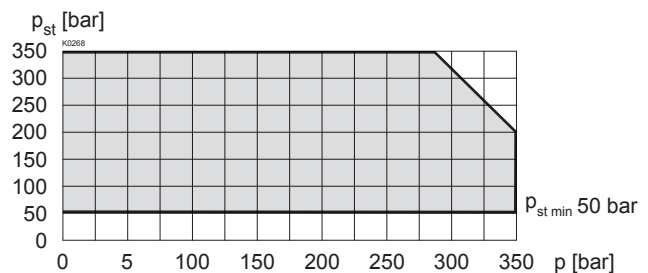
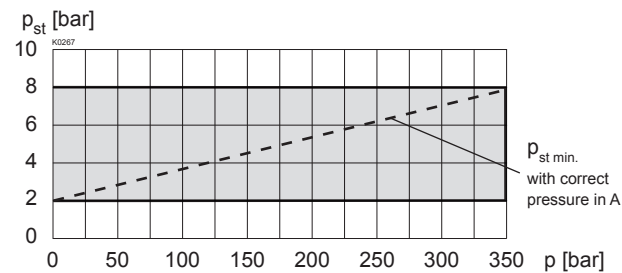
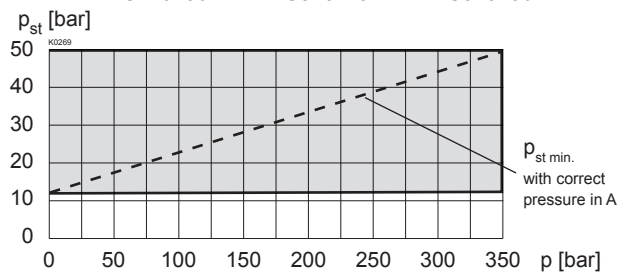
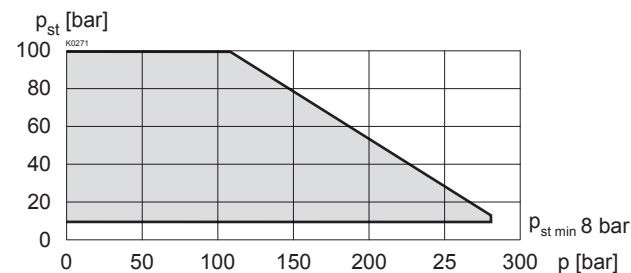
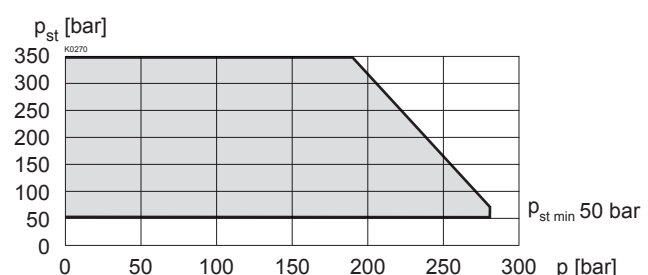
HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluids on request
Contamination efficiency	ISO 4406:1999, class 20/18/14 (Required filtration grade $\beta_{10...16} \geq 75$) refer to data sheet 1.0-50/2
Viscosity range	12 mm ² /s bis 320 mm ² /s
Fluid temperature	-20 ... +70 °C
Working pressure	Control head without spring package v1/v2 $p_{max} = 350 \text{ bar}$ Control head with spring package v3/v4 $p_{max} = 280 \text{ bar}$
Max. volume flow	$Q_{max} = 15 \text{ l/min}$ see characteristics

SYMBOLS


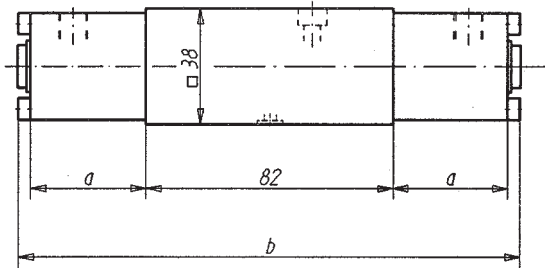
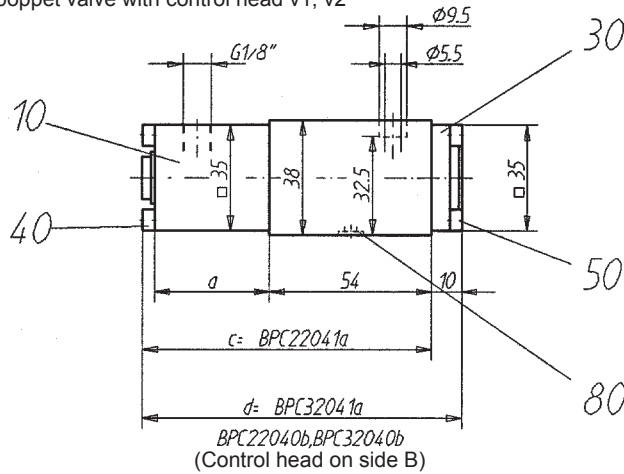
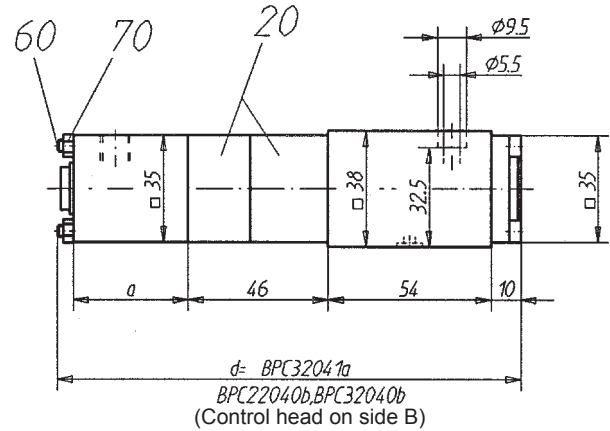
CHARACTERISTICS Oilviscosity $\nu = 30 \text{ mm}^2/\text{s}$
 $p = f(Q)$ Performance limit
 $v1/v2$ (without spring package)


Type	Flow direction			
	P - A	A - T	A - P	T - A
BPC22041a	1	-	2	-
BPC22040b	1	-	4	-
BPC32041a	1	3	5	1
BPC32040b	1	4	5	1
BPC3404	1	1	2	2

 $p = f(Q)$ Performance limit
 $v3/v4$ (with spring package)

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

 $p_{st} = f(p)$ Pilot pressure characteristics
 BPC22041a-v1 / BPC3404-v1

 $p_{st} = f(p)$ Pilot pressure characteristics
 BPC22041a-v2 / BPC3404-v2

 $p_{st} = f(p)$ Pilot pressure characteristics
 BPC22040b-v1 / BPC32041a-v1 / BPC32040b-v1

 $p_{st} = f(p)$ Pilot pressure characteristics
 BPC22040b-v2 / BPC32041a-v2 / BPC32040b-v2

 $p_{st} = f(p)$ Pilot pressure characteristics
 BPC22040b-v3 / BPC32041a-v3 / BPC32040b-v3

 $p_{st} = f(p)$ Pilot pressure characteristics
 BPC22040b-v4 / BPC32041a-v4 / BPC32040b-v4


DIMENSIONS

3/4-way poppet valve with control head v1, v2


 2/2-way poppet valve with control head v1, v2
 3/2-way poppet valve with control head v1, v2

 2/2-way poppet valve with control head v3, v4
 3/2-way poppet valve with control head v3, v4


Masse	v1	v2	v3	v4
a	38	60	38	60
b	166	210	-	-
c	96	118	-	-
d	106	128	152	178

PARTS LIST

Position	Article	Description
10	254.2100 254.2600	Control head BPII Control head BPII-S1454
20	500.1002	Spring package
30	57.4201	Lid
40	246.1146 246.1161	Zyl. screw M4x45 DIN912 for v1 Zyl. screw M4x60 DIN912 for v2
50	246.1113	Zyl. screw M4x12 DIN912
60	224.1008 224.1009	Double ended screw M4x97 for v3 Double ended screw M4x114 for v4
70	153.1101	Hexagonal nut M4
80	160.2052	O-ring ID 5,28x1,78

ACCESSORIES

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