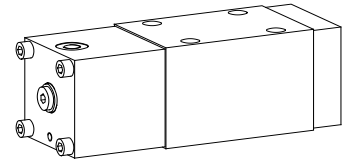


**Poppet valve hydraulic operated**

- 2/2-, 3/2- and 3/4-way construction
- $Q_{max} = 80$  l/min
- $p_{max} = 350$  bar

**NG10**  
 ISO 4401-05

**DESCRIPTION**

Poppet valve, flanged design NG10 according to ISO 4401, 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 NG10 series is the poppet valve cartridge NG10. See data sheet 1.11-2040.

**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.

**CONTENT**

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**TYPE CODE**

2/2- or 3/2-way construction	A	PC	<input type="checkbox"/>	2	10	<input type="checkbox"/>	-	<input type="checkbox"/>	#	<input type="checkbox"/>
3/4-way construction	A	PC	<input type="checkbox"/>	3	4	10	-	<input type="checkbox"/>	#	<input type="checkbox"/>
International mounting interface ISO										
hydraulic operation										
2-way (connections)	2									
3-way (connections)	3									
2 positions										
4 positions										
Nominal size 10										
Normally closed, control head on side A	1a									
Normally open, control head on side B	0b									
Control head:										
API	v1									
API-S1454	v2									
API with spring package	v3 *									
API-S1454 with spring package	v4 *									
* only possibility for 2/2-way normally open and 3/2-way valve										
Design-Index (Subject to change)										

**GENERAL SPECIFICATIONS**

Description	2/2-, 3/2- and 3/4-way poppet valve
Nominal size	NG10 acc. to ISO 4401
Construction	Direct operated poppet valve
Operations	Hydraulic operated
Mounting	Flange, 4 mounting holes for socket head screws M6x65
Connections	Threaded connection plates Multi-flange subplates Longitudinal stacking system
Ambient temperature	-20 ... +50 °C
Mounting position	any, preferable horizontal
Fastening torque	$M_D = 9,5$ Nm (Quality 8,8)
Weight:	
2/2-, 3/2-way	
without spring package	4,1 kg
with spring package	5,5 kg
3/4 way	5,4 kg
Volume flow direction	any (see characteristics)

**HYDRAULIC SPECIFICATIONS**

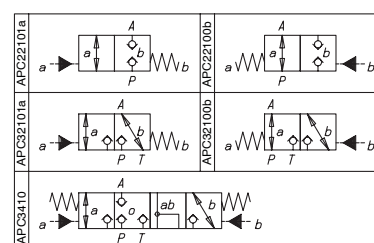
Fluid	Mineral oil, other fluid on request
Contamination	ISO 4406:1999, class 20/18/14
efficiency	(Required filtration grade $\beta_{10...16} \geq 75$ ) refer to data sheet 1.0-50/2
Viscosity range	12 mm <sup>2</sup> /s bis 320 mm <sup>2</sup> /s
Fluid temperature	-20 ... +70 °C
Working pressure	Control head without spring package v1/v2 $p_{max} = 350$ bar Control head with spring package v3/v4 $p_{max} = 300$ bar
Max. volume flow	$Q_{max} = 80$ l/min see characteristics

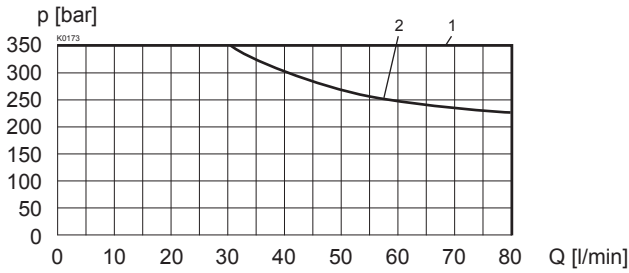
**HYDRAULIC CONTROL**

Pilot pressure	see characteristics
Pilot oil volume	v1/v3: $V_{st} = 10,7$ cm <sup>3</sup> v2/v4: $V_{st} = 0,8$ cm <sup>3</sup>

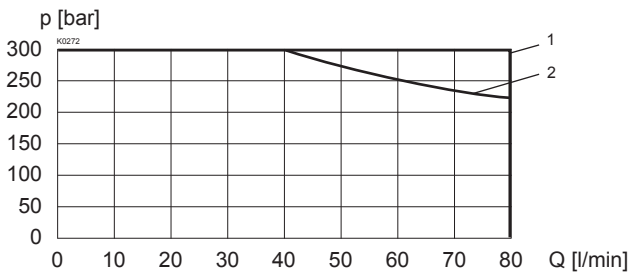
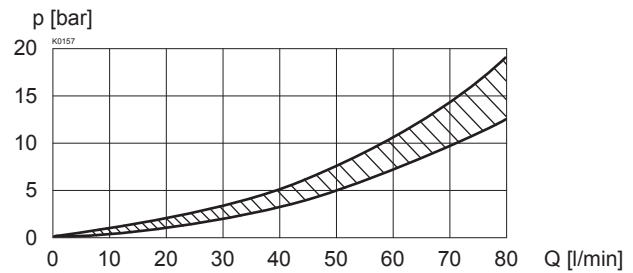
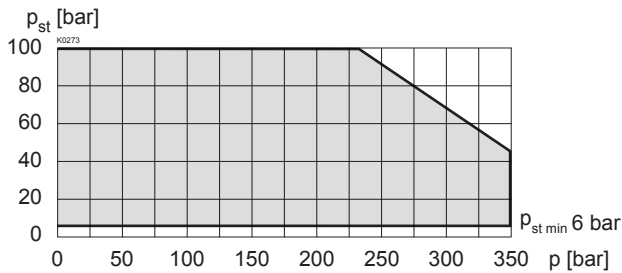
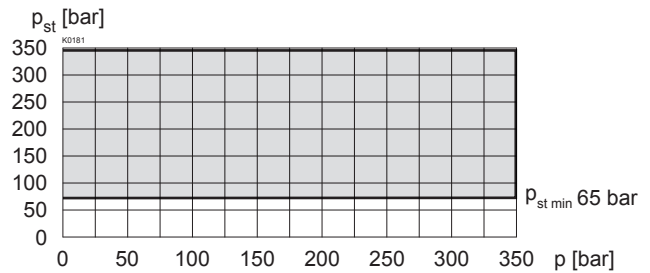
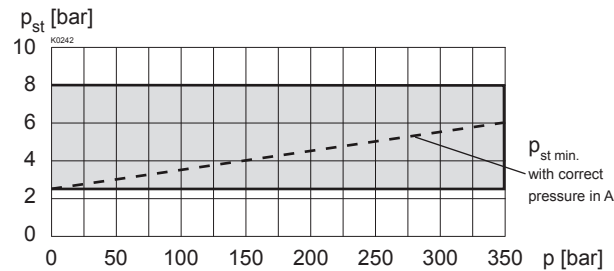
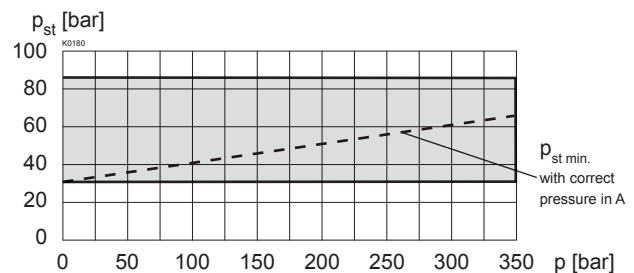
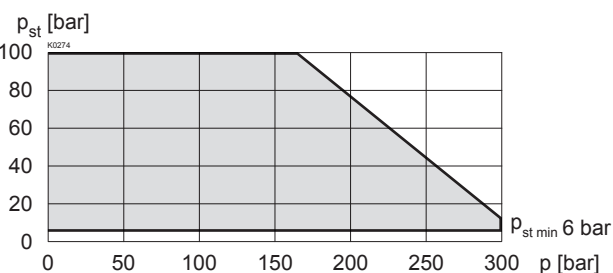
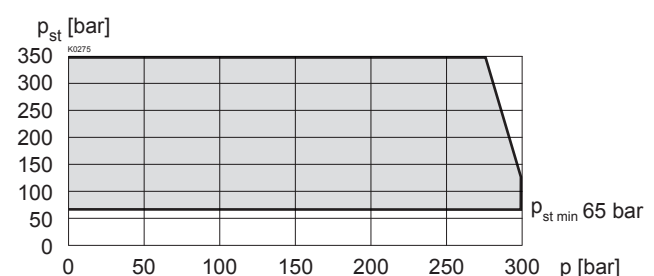
Important: With control head API (v1/v3) in reset position (relieved) pressure in pilot line  $p_{st} < 0,4$  bar

With control head API-S1454 (v2/v4) in reset position (relieved) pressure in pilot line  $p_{st} < 8$  bar

**SYMBOLS**


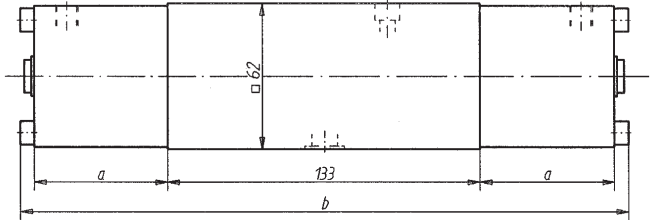
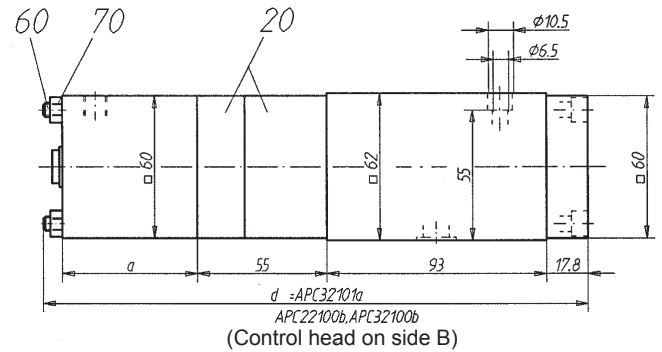
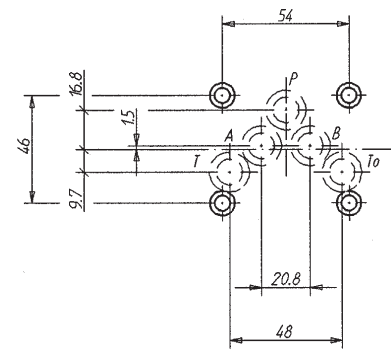
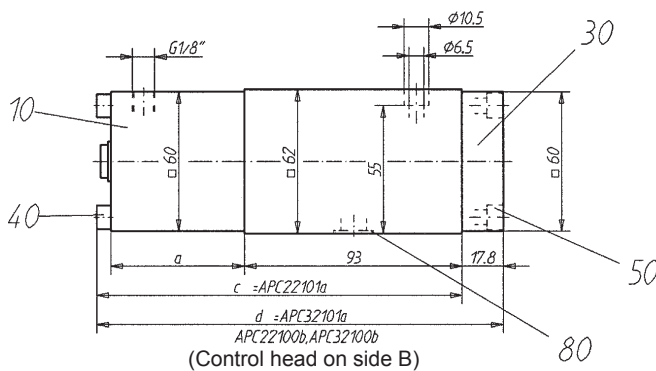
**CHARACTERISTICS** Oilviscosity  $\nu = 30 \text{ mm}^2/\text{s}$ 
 $p = f(Q)$  Performance limit  
 $v1/v2$  (without spring package)


Type	Flow direction			
	P - A	A - T	A - P	T - A
APC22101a	1	-	1	-
APC22100b	1	-	2	-
APC32101a	1	2	1	1
APC32100b	1	1	2	1
APC3410	1	1	1	1

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

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

 $p_{st} = f(p)$  Pilot pressure characteristics  
 APC22101a-v1 / APC3410-v1

 $p_{st} = f(p)$  Pilot pressure characteristics  
 APC22101a-v2 / APC3410-v2

 $p_{st} = f(p)$  Pilot pressure characteristics  
 APC22100b-v1 / APC32101a-v1 / APC32100b-v1

 $p_{st} = f(p)$  Pilot pressure characteristics  
 APC22100b-v2 / APC32101a-v2 / APC32100b-v2

 $p_{st} = f(p)$  Pilot pressure characteristics  
 APC22100b-v3 / APC32101a-v3 / APC32100b-v3

 $p_{st} = f(p)$  Pilot pressure characteristics  
 APC22100b-v4 / APC32101a-v4 / APC32100b-v4


**DIMENSIONS**

3/4-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

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


Masse	v1	v2	v3	v4
a	57	71	57	71
b	259	287	-	-
c	156	170	-	-
d	173,8	187,8	228,8	242,8

**PARTS LIST**

Position	Article	Description
10	254.5100 254.5601	Control head API Control head API-S1454
20	500.4004	Spring package
30	59.2200	Lid
40	246.3166 246.3181	Zyl. screw M6x65 DIN912 für v1 Zyl. screw M6x80 DIN912 für v2
50	246.3121	Zyl. screw M6x20 DIN912
60	246.3393 224.3004	Zyl. screw M6x120 DIN912 für v3 Double ended screw M6x141 für v4
70	153.1301	Hexagonal nut M6
80	160.2140	O-ring ID 14,00x1,78

**ACCESSORIES**

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