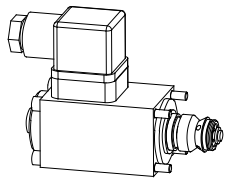
Solenoid poppet valve cartridge
- **normally closed**
- **Q_{max} = 15 l/min**
- **p_{max} = 350 bar**

NG4



DESCRIPTION
The 2/2-way seating valve in slip-in cartridge form is the central control element of virtually all directly-controlled seating valves in nominal size 4-Mini. The poppet valve cartridge, the stroke limiting piston and the spring are supplied separately. A solenoid (VDE standard 0580) is an optional addition.
Important: at the time the valve is taken into service, the valve must be vented under pressure (max. 2 revolutions of screw E).

FUNCTION
The poppet valve piston is held against the spring by the pressure-tight control solenoid. Because the seat-piston design has equal surface areas on both sides and since the seat/piston construction is balanced in terms of pressure, no undesirable closing and opening forces are generated. As a result, oil can flow in both directions through the seating valve. The seat/piston guide is sealed with an O-ring. The seat with a metallic seal closes off the valve so that there is no leakage oil.

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 typ poppet valves can be neatly accommodated in valve blocks. Cavity tools are available for hire or sale for machining aluminium or steel. See data sheet register no. 2.13.

TYPE CODE

Poppet valve cartridge				2 2 04K	# ☐
Poppet valve cartridge with solenoid				☐ 2 2 04 - ☐	# ☐
Medium-solenoid	M				
Super-solenoid	S				
2-way (Connections)					
2 Position					
Nominal size 4					
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
Construction	Direct operated poppet valve
Operations	Solenoid
Mounting	cartridge form 4 solenoid fixing screws M4
Ambient temperature	-20…+50°C
Mounting positions	any
Fastening torque	M_D = 2,6 Nm (quality 8.8)
Weight: 2204K	m = 0,035 kg
. 2204- . .	m = 0,5 kg
Volume flow direction	any

HYDRAULIC SPECIFICATIONS

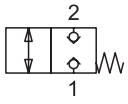
Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, classe 20/18/14 (Required filtration grade ß10…16≥75) refer to data sheet 1.0-50/2
Viscosity range	12 mm²/s…320 mm²/s
Fluid temperature	-20…+70°C
Working pressure	Medium: p_{max} = 160 bar Super: p_{max} = 350 bar
Max. volume flow	Q_{max} = 15 l/min, see characteristics

ELECTRICAL CONTROL

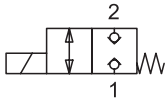
Construction tight	Solenoid, wet pin push type, pressure
Standard-nominal flow	U_N = 12 VDC U_N = 24 VDC U_N = 110 VAC∗ U_N = 115 VAC∗ U_N = 230 VAC∗ AC = 50 to 60 Hz ∗ Rectifier integrated in the plug Other nominal voltages and nominal performances on request
Voltage tolerance	±10% of nominal voltage
Protection class	IP 65 to EN 60 529
Relative duty factor	100% DF (see data sheet 1.1-430)
Switching cycles	15'000/h
Operating life	10^7 (number of switching cycles, theoretically)
Connections/ Power supply	Over device plug connection to ISO 4400/DIN 43 650, (2P+E), other connections on request
Solenoid:	- Medium SIN35V (data sheet 1.1-105) - Super SIS35V (data sheet 1.1-110)

SYMBOLS

2204K

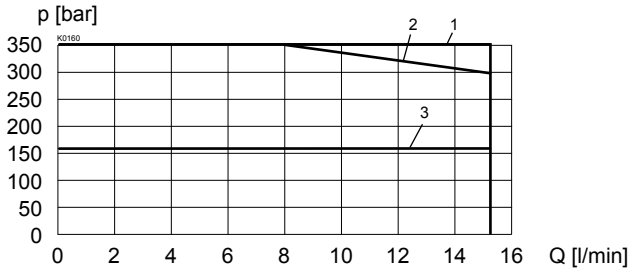


. 2204- . .



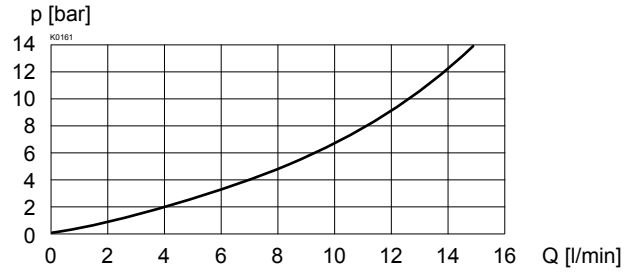
CHARACTERISTICS Oil viscosity υ = 30 mm²/s

p = f (Q) Performance limit at -10%



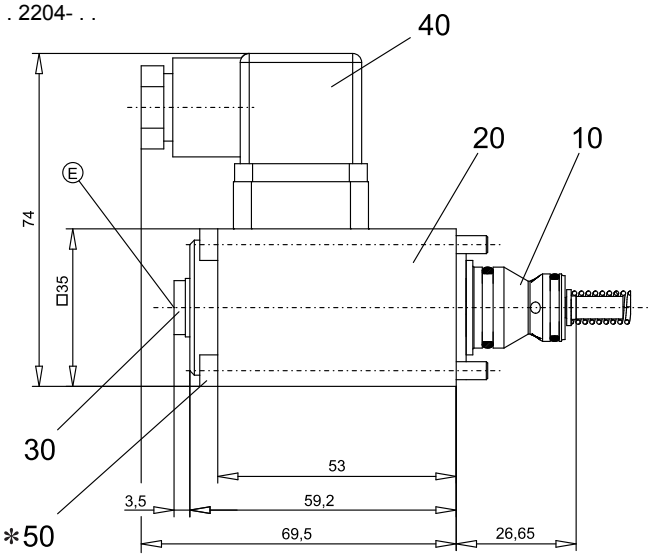
	Flow direction	
Type	1 → 2	2 → 1
M2204	3	3
S2204	1	2

Δp = f (Q) Pressure loss / flow characteristics



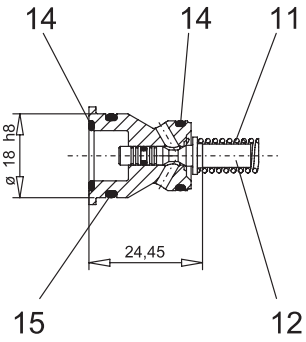
DIMENSIONS

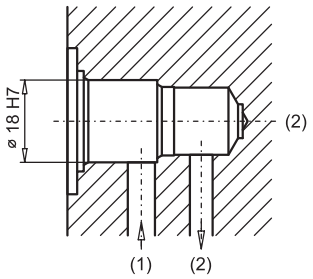
. 2204- . .



E = air bleed screw

2204K





For detailed cavity drawing and cavity tools see data sheet 2.13-1013

PARTS LIST

Position	Article	Description
10	500.9111	Poppet valve cartridge 2204K
11	053.2101	Spring 1x7,4x16,5
12	222.0056	Pin
14	160.2121	O-ring ID 12,00x1,5
15	160.2140	O-ring ID 14,00x1,78
20	260.4…	Medium-solenoid SIN35V
	260.5…	Super-solenoid SIS35V
30	239.2033	Plug (incl. seal) HB0
40	219.2002	Plug
50	246.1161	Socket head cap screw M4x60 DIN 912

* Cartridge supplied with fastening screw M4x60 for steel bodies/ blocs. For aluminium bodies/blocs longer screws are recommended (min. 2 screw diameter).

ACCESSORIES

Cartridge built-in flange- or sandwich body:

Flange Register 1.11

Sandwich Register 1.11

Special tool 983.2000 to poppet valve cartridge 2204K

Technical explanation see data sheet 1.0-100