BUCHER hydraulics

Directional valve 4-way/3-position

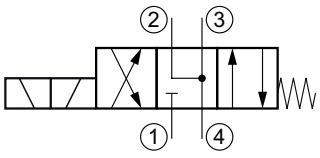
Q_{max} = 22 l/min, p_{max} = 250 bar
direct acting, spool type, switching solenoid
Type series: WK43G_A5...

- Screw-in cartridge valve
- For cavity AN
- All external parts with zinc-nickel coating according to DIN EN ISO 19598
- Installation in threaded port body type GANA
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Low head loss
- High pressure wet-armature solenoids
- Various plug-connector systems and voltages are available

Description

The 4-way/3-position solenoid operated spool valves, series WK43..., are size 5, direct acting, pressure balanced screw-in valves with a 3/4-16 UNF-2A mounting thread. They are designed based on the sliding-spool principle. The straightforward design delivers an outstanding price/performance ratio and excellent pressure-drop/flow rate values. All external parts of the screw-in valves are zinc-nickel plated, and are thus suitable for use in the harshest operating environments. The slip-on coils can be replaced without opening the hydraulic envelope and can be positioned at any angle through 360°. These valves are mainly used in mobile and industrial applications as pilot valves for controlling the travel direction of actuators such as hydraulic motors and cylinders. For self-assembly, please refer to the section related data sheets.

Symbol



Technical Data

General Characteristics	Description, value, unit
Function group	Directional valve
Function	4-way/3-position
Design	Screw-in cartridge valve
Controls	switching solenoid
Characteristic	direct acting, spool type
MTTFd value	150 years
Construction size	nominal size 5
Thread size	3/4-16 UNF-2A
Mounting attitude	unrestricted
Weight	0.64 kg
Cavity acc. factory standard	For cavity AN
Tightening torque steel	40 Nm
Tightening torque aluminium	40 Nm
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 25 °C
Maximum ambient temperature	+ 50 °C
Surface protection	All external parts with zinc-nickel coating according to DIN EN ISO 19598
Available seal types	several seal types available, see ordering code
Seal kit order number	NBR: DS-248-N / FKM: DS-248-V

Hydraulic Characteristics	Description, value, unit
Maximum operating pressure	250 bar
Maximum flow rate	22 l/min
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 25 °C
Maximum fluid temperature	+ 80 °C
Viscosity range	10 ... 500 mm^2/s (cSt)
Recommended viscosity range	15 ... 250 mm^2/s (cSt)
Minimum fluid cleanliness (cleanlineless class according to ISO 4406:1999)	class 20/18/15

Electric Characteristics	Description, value, unit
Actuator type	solenoid coil
Solenoid coils type	D36
Supply voltage DC	12/24 V DC
Supply voltage AC	115/230 V AC (50 ... 60 Hz)
Supply voltage tolerance	± 10 %
Maximum permissible power consumption	Version "E": V DC = 17 W / V AC = 17 W Version "N": V DC = 27 W / V AC = 25 W
Switching time	Version "E": 50...100 ms (energized) / 40...60 ms (de-energized) Version "N": 50...180 ms (energized) / 30...65 ms (de-energized)

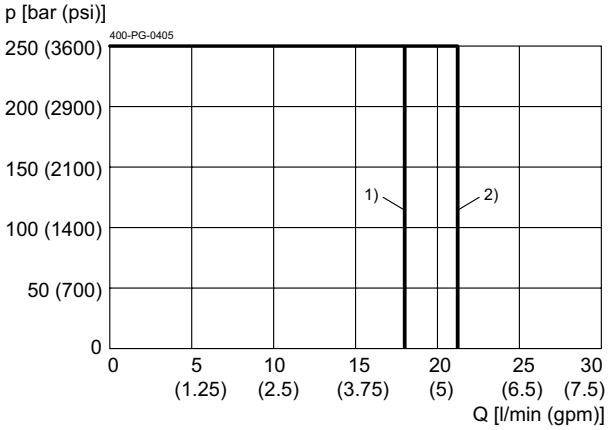
Electric Characteristics	Description, value, unit
Relative duty cycle	100 %
Electrical connection coil	several connection types available, see ordering code
Protection class solenoid coil to ISO 20 653 / EN 60 529	several classes of protection available, see ordering code (with appropriate mating connector and proper fitting and sealing)

NOTE!
The switching time can be strongly dependent on flow rate, pressure, oil viscosity and the dwell time under pressure. In practice, the switching time may therefore deviate from the specified value range.

Performance graphs

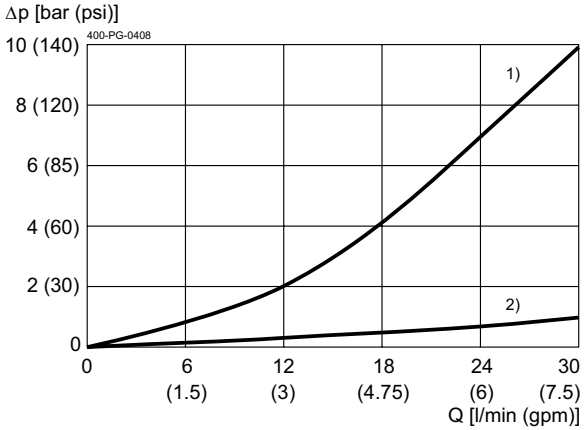
measured with oil viscosity 33.0 mm²/s (cSt), coil at steady-state temperature and 10 % undervoltage

p = f (Q) Performance limit



1) Version "E"
2) Version "N"

Δp = f (Q) Pressure drop-flow rate characteristic

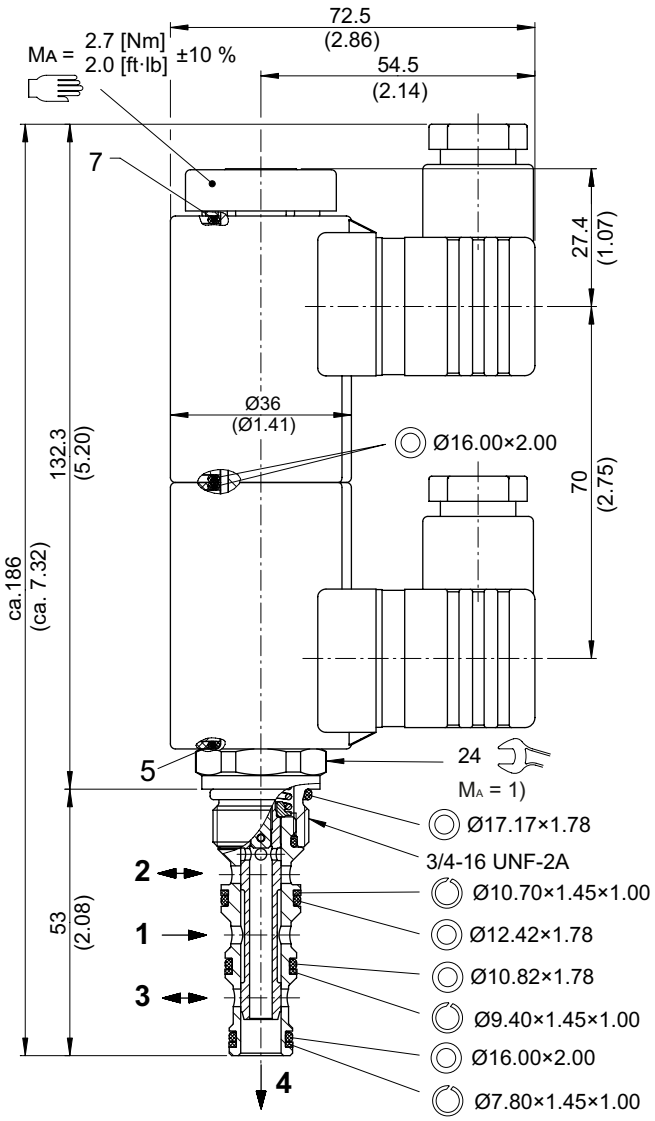


1) 1 → 2 / 1 → 3 / 2 → 4
2) 3 → 4

Dimensions and sectional view

Beispiel für die Masseinheit:
Example for the dimensional units:

0.79 = 0.79 mm millimeter
(.031) = 0.031" inch



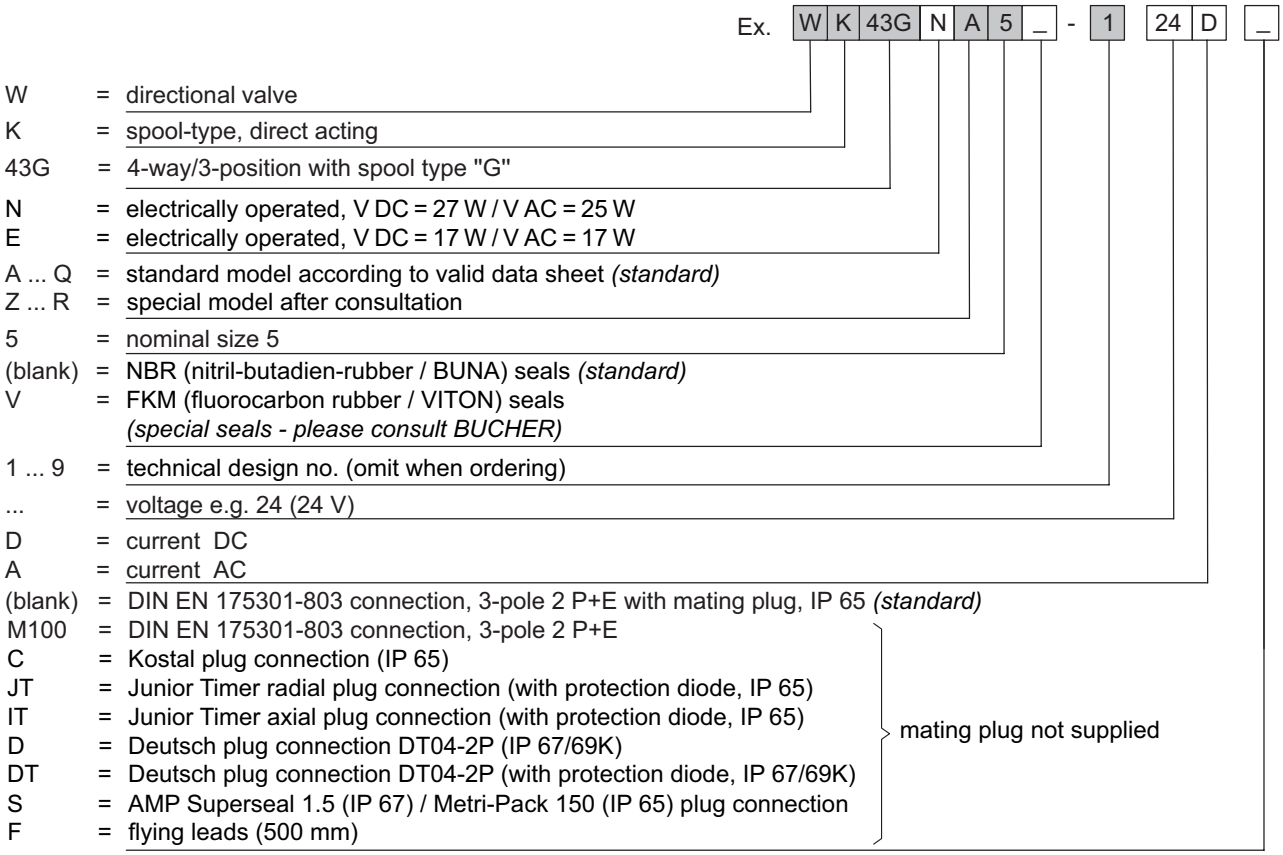
Installation information

NOTE!
1) When fitting the screw-in cartridge valve, use the specified tightening torque. The value can be found in the chapter "technical data".

NOTE!
The seals are not available individually. The seal kit order number can be found in the chapter "Technical data".

ATTENTION!
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Ordering code



Related data sheets

Reference	Description
400-P-040011	Forming tools
400-P-040191	Cavity AN
400-P-720121	Threaded port body GANA
400-P-120110	Solenoid coil D36
400-P-010101	MTTFD Values for Hydraulic Valves

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