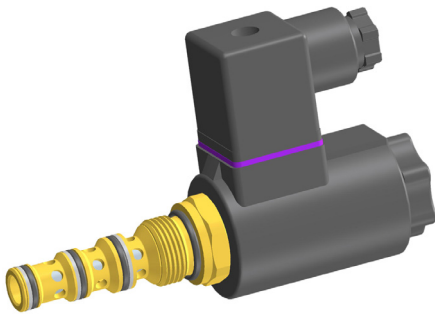


4/2 Cartridge Spool Valve, Size 1

$Q_{max} = 5 \text{ l/min}$, $p_{max} = 420 \text{ bar}$

Pilot valve, with solenoid operation, direct acting
 Series WKP42ALA1...



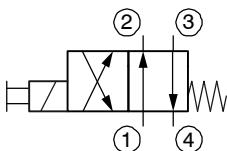
- Can be used as a high-pressure pilot valve
- "Low-Watt" model (8 W)
- Compact construction for cavity type AN – 3/4-16 UNF
- All exposed parts with zinc-nickel plating
- High pressure wet-armature solenoids
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Various plug-connector systems and voltages are available
- With manual override
- Can be fitted in a line-mounting body

1 Description

These direct acting 4/2 solenoid operated spool valves, series WKP42ALA1..., are size 1, pressure balanced screw-in cartridges with a 3/4-16 UNF mounting thread. They are designed on the proven sliding-spool principle. These solenoid operated spool valves are fitted with a low-watt coil (nominal power consumption 8 W). The straightforward design delivers an outstanding price/performance ratio. These 4/2 solenoid operated spool valves are primarily used in mobile and industrial applications as pilot valves for controlling the

travel direction of actuators such as hydraulic motors and cylinders. All external parts of the cartridge are zinc-nickel plated to DIN 50 979 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°. If you intend to manufacture your own cavities or are designing a line-mounting installation, please refer to the section "Related data sheets".

2 Symbol



3 Technical data

General characteristics	Description, value, unit
Designation	4/2 cartridge spool valve
Design	pilot valve, with solenoid operation, direct acting
Mounting method	screw-in cartridge 3/4-16 UNF
Tightening torque	60 Nm \pm 10 %
Size	nominal size 1, cavity type AN
Weight	0.48 kg
Mounting attitude	unrestricted
Ambient temperature range	-25 °C ... +50 °C

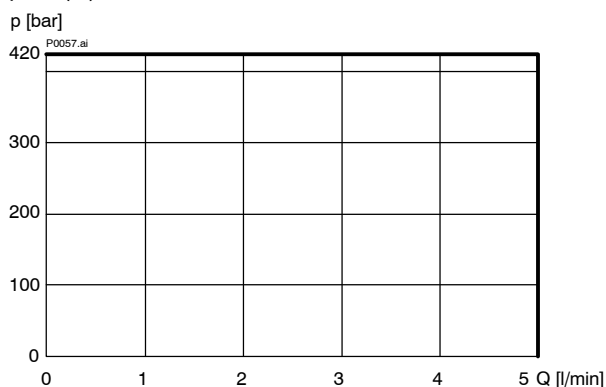
Hydraulic characteristics	Description, value, unit
Maximum operating pressure - ports 1, 2 and 3 - port 4	420 bar 250 bar
Maximum flow rate	5 l/min
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range	-25 °C ... +80 °C
Viscosity range	10...500 mm ² /s (cSt), recommended 15...250 mm ² /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 20/18/15

Electrical characteristics	Description, value, unit
Supply voltage	12 V DC, 24 V DC
Supply voltage tolerance	± 10 %
Nominal power consumption	8 W
Relative duty cycle	100 %
Protection class to ISO 20 653 / EN 60 529	IP 65 / IP 67 / IP 69K, see "Ordering code" (with appropriate mating connector and proper fitting and sealing)
Electrical connection	3-pin square plug to ISO 4400 / DIN 43 650 (standard) for other connectors, see "Ordering code"

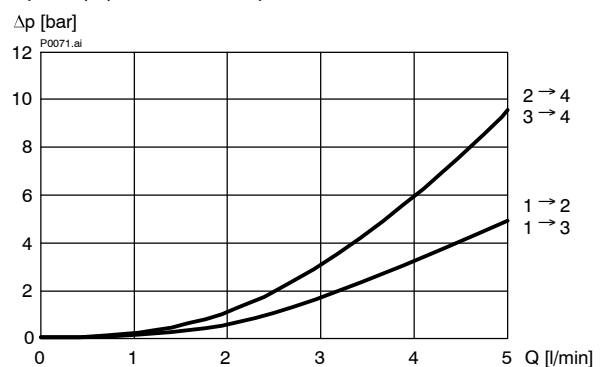
4 Performance graphs

measured with oil viscosity 33 mm²/s (cSt), coil at steady-state temperature and 10 % undervoltage

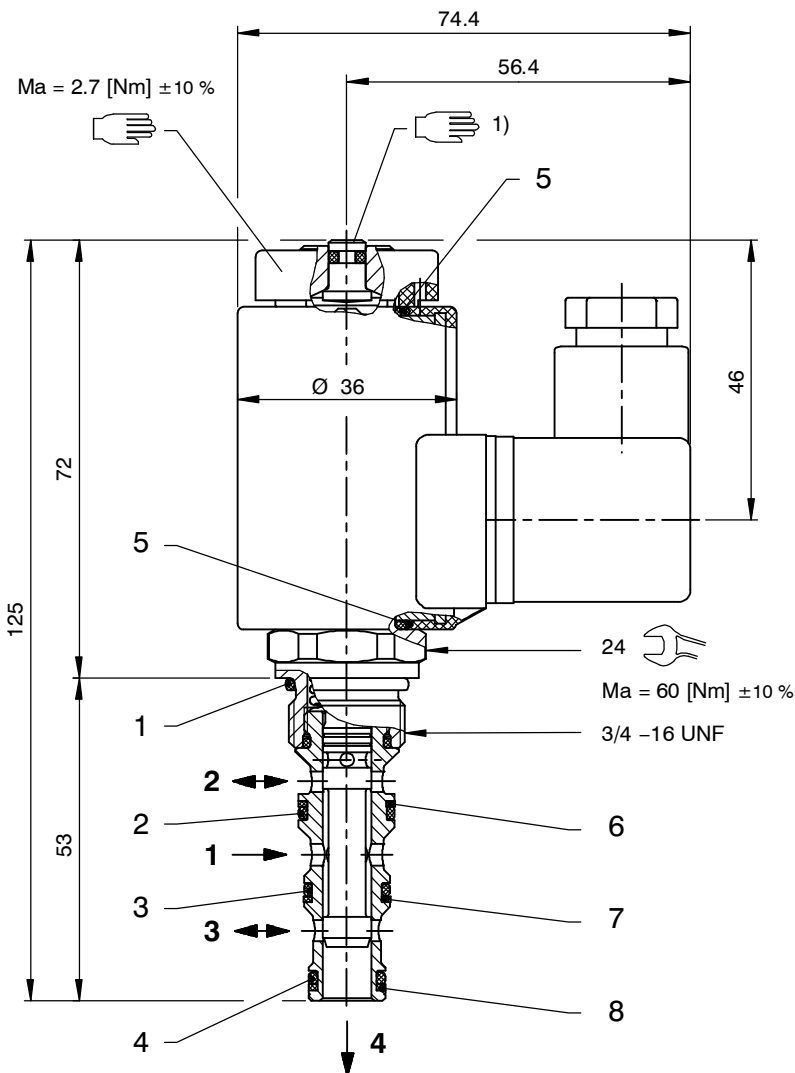
$p = f(Q)$ Performance limits



$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic



5 Dimensions & sectional view



IMPORTANT!

1) With manual override

6 Installation information



IMPORTANT!

When fitting the cartridges, use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



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.

NBR seal kit no. DS-248-N ²⁾

Item	Qty.	Description
1	1	O-ring no. 017 \varnothing 17,17 x 1,78 N90
2	1	O-ring no. 014 \varnothing 12,42 x 1,78 N90
3	1	O-ring no. 013 \varnothing 10,82 x 1,78 N90
4	1	O-ring no. 012 \varnothing 9,25 x 1,78 N90
5	2	O-ring \varnothing 16,00 x 2,00 Viton
6	1	Backup ring \varnothing 10,70 x 1,45 x 1,00 FI0751
7	1	Backup ring \varnothing 9,40 x 1,45 x 1,00 FI0751
8	1	Backup ring \varnothing 7,80 x 1,45 x 1,00 FI0751



IMPORTANT!

²⁾ Seal kit with FKM (Viton) seals, no. DS-248-V

7 Ordering code

Ex.

W	K	P	42A	L	A	1	_	-	1	24 VDC	_
---	---	---	-----	---	---	---	---	---	---	--------	---

- W = directional valve
- K = spool-type, direct acting
- P = high-pressure model, 420 bar
- 42A = 4/2 function, A-type spool
- L = electrically operated, VDC = 8 W
- A ... Q = standard model - see relevant data sheets
- Y ... R = special features - please consult BUCHER
- 1 = nominal size 1 (primarily for pilot controls)
- (blank) = NBR (Nitrile) seals (standard)
- V = FKM (Viton) seals
(special seals - please contact BUCHER)
- 1 ... 9 = design stage (omit when ordering new units)
- ... = voltage e.g. 24 (24 V)
- (blank) = ISO 4400 / DIN 43 650 mating plug (standard, IP 65)
- M100 = without mating DIN plug

for the following plug-variants, please consult Bucher:

<ul style="list-style-type: none"> C = Kostal plug connection (IP 65) JT = Junior Timer radial plug connection (with protection diode, IP65) IT = Junior Timer axial plug connection (with protection diode, IP65) D = Deutsch plug connection DT04-2P (IP 67/69K) DT = Deutsch plug connection DT04-2P (with protection diode, IP 67/69K) S = AMP Superseal 1.5 (IP 67) / Metri-Pack 150 (IP 65) F = flying leads (500 mm) 	} mating plug not supplied
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8 Related data sheets

Reference	(Old no.)	Description
400-P-040011	(i-32)	The form-tool hire programme
400-P-040191	(i-33.12)	Cavity type AN
400-P-120100	(W-2.140)	Overview directional solenoid cartridge valve Size 1...5
400-P-120110	(W-2.141)	Coils for screw-in cartridge valves
400-P-720121	(G-4.30)	Line-mounting body, type GANA (G 3/8")

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Classification: 430.300.-.305.300.300