

## 3/2 Cartridge Spool Valve, Size 5

$Q_{\max} = 30 \text{ l/min}$ ,  $p_{\max} = 250 \text{ bar}$   
 Direct acting, with solenoid operation  
 Series WK32G.../ WK32O...



- Compact construction for cavity type AM – 3/4-16 UNF
- Optimised  $\Delta p$  values
- Choice of nominal power rating – 17 W or 27/25 W
- 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

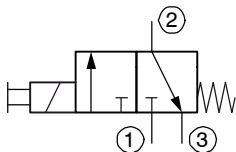
### 1 Description

These direct acting 3/2 solenoid operated spool valves, series WK32G.../ WK32O..., are size 5, pressure balanced screw-in cartridges with a 3/4-16 UNF mounting thread. They are designed on the proven sliding-spool principle. "De-energised closed" and "de-energised open" functions are available, each with a nominal power consumption of 17 W or 27/25 W. The straightforward design delivers an outstanding price/performance ratio and good  $\Delta p$  values. These 3/2 solenoid operated spool valves are primarily used in mobile and industrial applications for controlling the

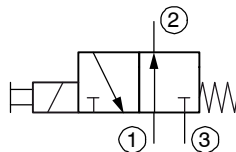
travel direction of actuators such as hydraulic motors and cylinders. All external parts of the cartridge are zinc-nickel plated to DIN 50 979 and are thus suitable for use in the harshest operating environments. The slip-on coils can be replaced without opening the hydraulic envelope and can be positioned 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

Standard functions

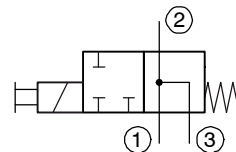


WK32GEA5...  
 WK32GNA5...



WK32OEA5...  
 WK32ONA5...

Extended function



WK32AN123EA5...

### 3 Technical data

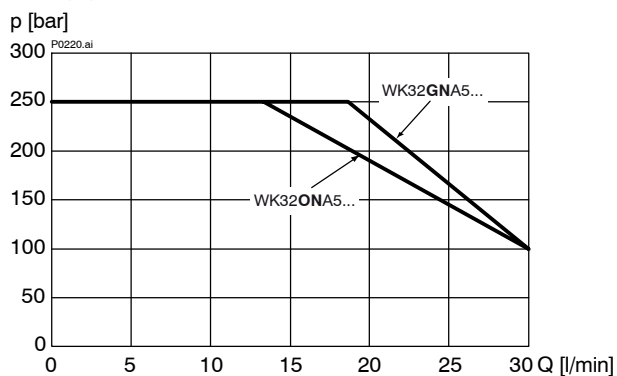
General characteristics	Description, value, unit
Designation	3/2 cartridge spool valve
Design	direct acting, with solenoid operation
Mounting method	screw-in cartridge 3/4-16 UNF
Tightening torque	40 Nm $\pm$ 10 %
Size	nominal size 5, cavity type AM
Weight	0.4 kg

General characteristics		Description, value, unit
Mounting attitude		unrestricted
Ambient temperature range		-25 °C ... +50 °C
MTTF <sub>D</sub> values		150 years, see data sheet 400-P-010101-en
Hydraulic characteristics		Description, value, unit
Maximum operating pressure		250 bar (27 / 25 W) 50 bar (17 W)
Maximum flow rate		30 l/min
Flow direction		see symbols (for other functions, consult BUCHER)
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 <sup>2</sup> /s (cSt), recommended 15...250 mm <sup>2</sup> /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 / 115 V AC, 230 V AC (50 ... 60 Hz)
Supply voltage tolerance		± 10 %
Nominal power consumption - version "N" - version "E"		V DC = 27 W / V AC = 25 W V DC = 17 W / V AC = 17 W
Switching time		Version "E" (17 W): 25 ... 70 ms (energising) 15 ... 50 ms (deenergising) Version "N" (27 / 25 W): 25 ... 100 ms (energising) 20 ... 70 ms (deenergising)  Depending on pressure, flow rate and viscosity, as well as the dwell time under pressure the switch times may vary from stated values.
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		DIN EN 175301-803, 3-pin 2 P+E (standard) for other connectors, see "Ordering code"

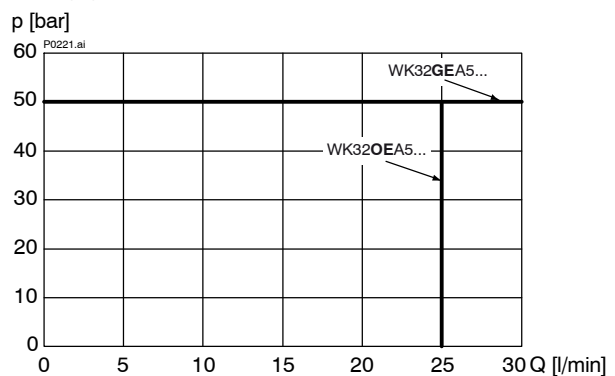
## 4 Performance graphs

measured with oil viscosity 33 mm<sup>2</sup>/s (cSt), coil at steady-state temperature and 10 % undervoltage

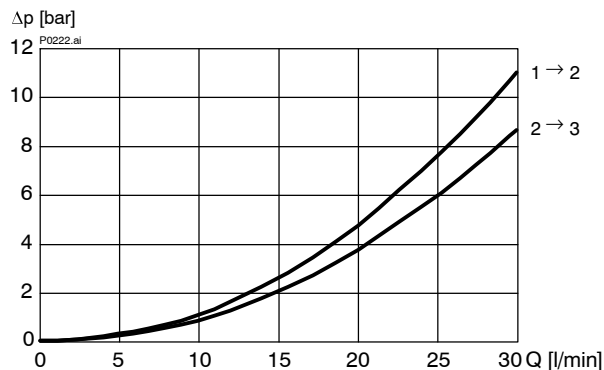
p = f (Q) Performance limits [ Version - 27 / 25 W ]



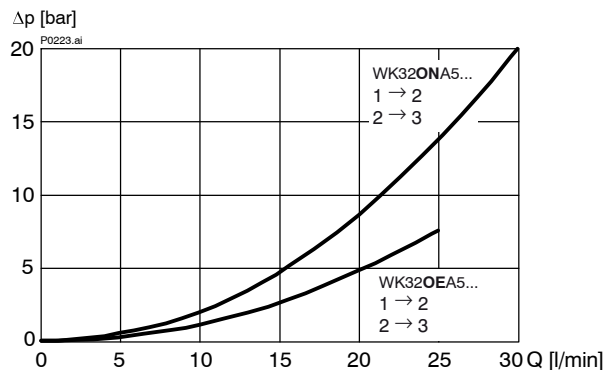
p = f (Q) Performance limits [ Version - 17 W ]



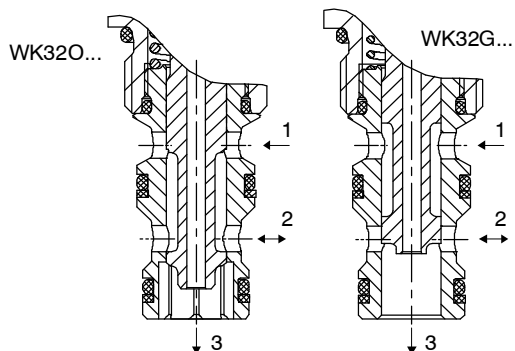
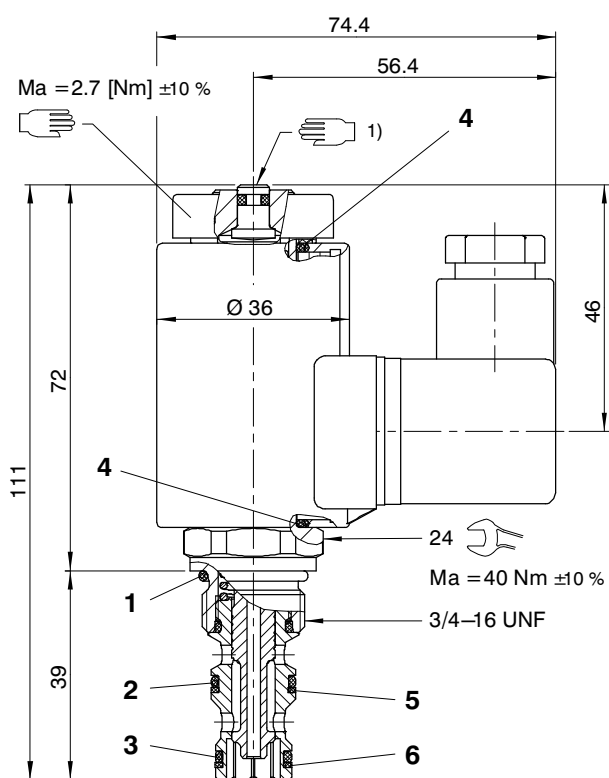
$\Delta p = f(Q)$  Pressure drop - Flow rate characteristic  
[ WK32GNA5.../ WK32GEA5... ]



$\Delta p = f(Q)$  Pressure drop - Flow rate characteristic  
[ WK32ONA5.../ WK32OEA5... ]



## 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-247-N <sup>2)</sup>

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



**IMPORTANT!**

<sup>2)</sup> Seal kit with FKM (Viton) seals, no. DS-247-V

### 7 Ordering code

Ex.	W	K	32G	N	A	5	-	1	24D	-
W	=	directional valve								
K	=	spool-type, direct acting								
32G	=	3/2 function, de-energised closed								
32O	=	3/2 function, de-energised open								
32AN123	=	3/2 function, special spool, see symbols								
N	=	electrically operated, V DC = 27 W / V AC = 25 W								
E	=	electrically operated, V DC = 17 W / V AC = 17 W								
A ... Q	=	standard model - see relevant data sheets								
Z ... R	=	special features - please consult BUCHER								
5	=	nominal size 5								
(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)	=	DIN EN 175301-803 connection with mating plug (standard, IP 65)								
M100	=	DIN EN 175301-803 connection without mating plug								
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 45° DT04-2P (IP67/69K)								
DT	=	Deutsch plug connection 45° DT04-2P (with protection diode, IP67/69K)								
S	=	AMP Superseal 1.5 (IP67) / Metri-Pack 150 (IP65) plug connection								
F	=	flying leads (500 mm)								

} mating plug not supplied

### 8 Related data sheets

Reference	(Old no.)	Description
400-P-040011	(i-32)	The form-tool hire programme
400-P-040181	(i-33.11)	Cavity type AM
400-P-120100	(W-2.140)	Overview of directional solenoid cartridge valves, size 1...5
400-P-120110	(W-2.141)	Coils for screw-in cartridge valves
400-P-720111	(G-4.20)	Line-mounting body, type GAMA (G 3/8")
400-P-010101		MTTF <sub>D</sub> values for hydraulic valves

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Classification: 430.300.-.305.310.300