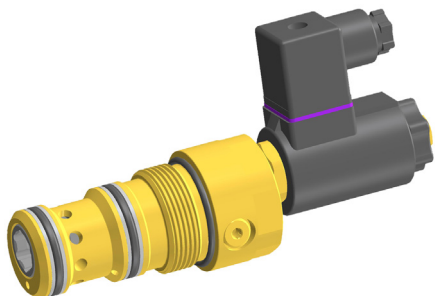


2/2 Cartridge Seat Valve, Size 16

$Q_{\max} = 350 \text{ l/min}$, $p_{\max} = 420 \text{ bar}$

Seat-valve shut-off, with solenoid operation, two stage

Series WR22G..., WR22O...



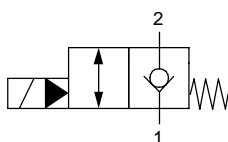
- With seat-valve shut-off from 2 → 1
- No external pilot drain required
- High flow values
- “Low watt” model (8 W) is available
- High pressure wet-armature solenoids
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope
- Various plug connections and voltages are available
- All external parts zinc plated, chromited (CrVI-free)
- Can be fitted in a line-mounting body
- Can be fitted in stack-mounting bodies

1 Description

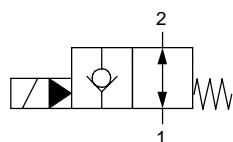
These two-stage 2/2 solenoid operated directional seat valves, series WR22G... / WR22O..., are size 16 high performance screw-in cartridges with an M42x2 mounting thread for cavity type EB, which conforms to ISO 7789. The main and pilot stages are designed on the poppet/seat principle and the 2 → 1 flow path is therefore virtually leak-free. “De-energised closed” and “de-energised open” functions are available. In addition, these solenoid operated seat valves can be supplied with a low-watt coil (nominal power consumption 8 W). The straightforward design delivers an outstanding price/performance ratio and good pressure/flow ratings. These screw-in cartridges are predominantly used

in certain mobile and industrial applications where leak-tight shut-off functions are crucially important. Examples are where loads, tensions, or clamping forces must be held without leakage. All external parts of the cartridge are zinc plated and chromited (CrVI-free) 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



WR22G...



WR22O...

3 Technical data

General characteristics	Description, value, unit
Designation	2/2 cartridge seat valve
Design	seat-valve shut-off, with solenoid operation, two stage
Mounting method	screw-in cartridge M42 x 2
Tightening torque	200 ± 10 Nm
Size	nominal size 16, cavity type EB to ISO 7789-42-06-0-07
Weight	1.20 kg
Mounting attitude	unrestricted
Ambient temperature range	-25 °C ... +50 °C

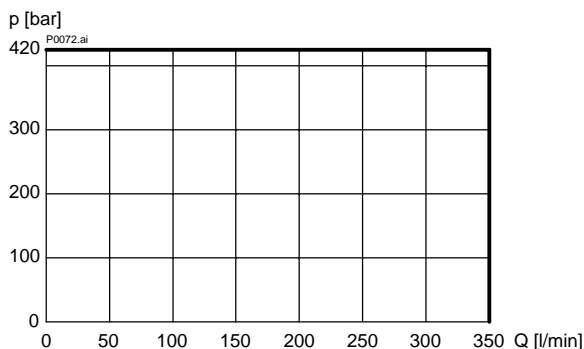
Hydraulic characteristics	Description, value, unit
Maximum operating pressure (ports 1 and 2)	420 bar
Maximum flow rate	350 l/min
Flow direction	1 → 2 / 2 → 1, see symbols
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please consult BUCHER
Hydraulic fluid temperature range	-25 °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 115 V AC, 230 V AC (50 ... 60 Hz)
Supply voltage tolerance	± 10 %
Nominal power consumption	V DC = 27 W, V AC = 25 W (WR22GN... / WR22ON...) V DC = 8 W (WR22GL... / WR22OL...)
Relative duty cycle	100 %
Protection class to EN 60 529	IP 65 / IP 67, see "Ordering code" (when connector plugs are properly fitted)
Electrical connection	3-pin square plug to ISO 4400 / DIN 43 650 (standard) for other connectors, see "Ordering code"

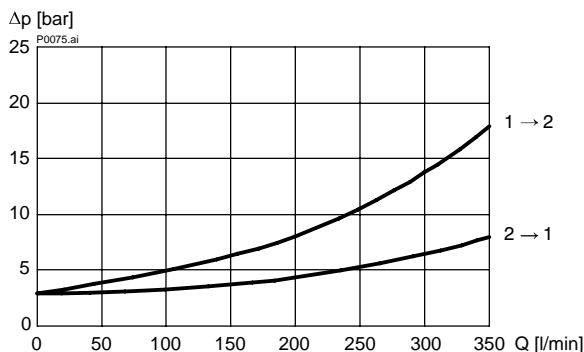
4 Performance graphs

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

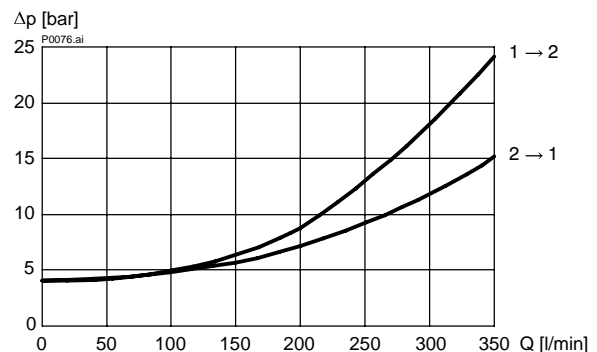
$p = f(Q)$ Performance limits



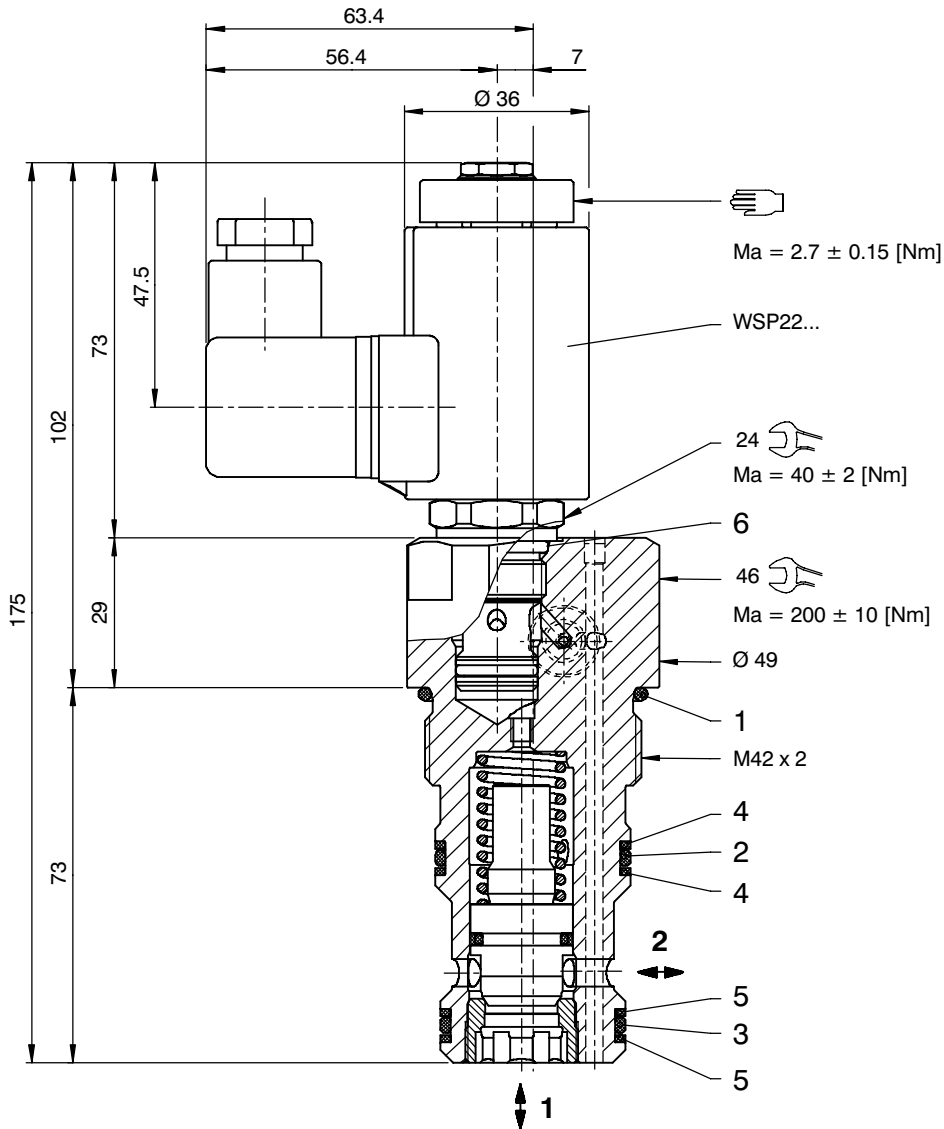
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
with annular groove in cavity type EB



$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
without annular groove in cavity type EB



5 Dimensions & sectional view



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-351-N ²⁾

Item	Qty.	Description
1	1	O-ring no. 129 Ø 39,34 x 2,62 N90
2	1	O-ring no. 125 Ø 32,99 x 2,62 N90
3	1	O-ring no. 124 Ø 31,42 x 2,62 N90
4	2	Backup ring Ø 32,00 x 2,00 x 1,40 FI0751
5	2	Backup ring Ø 30,00 x 2,00 x 1,40 FI0751
6	1	NBR seal kit no. DS-246-N for WSP22...



Important

²⁾ Seal kit with FKM (Viton) seals, no. DS-351-V

7 Ordering code

Ex.

W	R	22G	N	B	A	-	16	-	-	-	1	24 VDC	-
---	---	-----	---	---	---	---	----	---	---	---	---	--------	---

<p>W = directional valve</p> <p>R = check valve function, seated design, two stage</p> <p>22G = 2/2 function, de-energised closed</p> <p>22O = 2/2 function, de-energised open</p> <p>N = solenoid operated, V DC = 27 W / V AC = 25 W</p> <p>L = solenoid operated, V DC = 8 W</p> <p>B = cavity type EB</p> <p>A ... Q = standard model - see relevant data sheets</p> <p>Z ... R = special features - please consult BUCHER</p> <p>16 = nominal size 16</p> <p>(blank) = NBR (nitrile) seals (standard)</p> <p>V = FKM (Viton) seals (special seals - please consult Bucher)</p> <p>1 ... 9 = design number (omit when ordering new units)</p> <p>... = voltage and current plainly specified</p> <p>(blank) = ISO 4400 / DIN 43 650 mating plug (standard, IP 65)</p> <p>M100 = without mating DIN plug</p> <p><i>for the following plug variants with 8W coils, please consult Bucher:</i></p> <p>C = Kostal plug connection (IP 65)</p> <p>JT = Junior Timer radial plug connection (with quenching diode, IP65)</p> <p>IT = Junior Timer axial plug connection (with quenching diode, IP65)</p> <p>D = Deutsch plug connection DT04-2P (IP 67)</p> <p>DT = Deutsch plug connection DT04-2P (with quenching diode, IP 67)</p> <p>F = flying leads (500 mm)</p>	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 80%; border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;"> <p style="margin: 0;">16 - 1 24 VDC</p> </div> <div style="width: 15%; text-align: center; border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;"> <p style="margin: 0;">-</p> </div> </div> <div style="margin-top: 10px;"> <p style="margin: 0;">} mating plug not supplied</p> </div>
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8 Related data sheets

Reference	(Old no.)	Description
400-P-040011	(i-32)	The form-tool hire programme
400-P-080111	(i-55.2)	Cavity type EB nach ISO 7789-42-06-0-07
400-P-120110	(W-2.141)	Coils for screw-in cartridge valves
400-P-120601		Solenoid cartridge pilot valve, size 1, type WSP22GLA1.../ WSP22OLA1...
400-P-120801		Solenoid cartridge pilot valve, size 3, type WSP22GNA3.../ WSP22ONA3...
400-P-750115		Line-mounting body, type GEBAA (G 1")

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