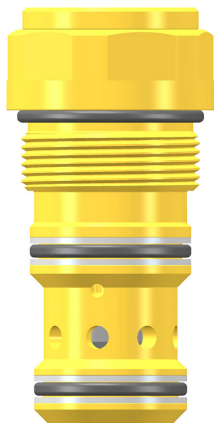


2/2 Logic Cartridge Valve, Size 16 Active Control, Seated Design Series WL22SD ...

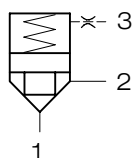


- 350 l/min, 420 bar
- Area ratio 2 : 1
- High flow rates with low Δp
- Seat-valve shut-off from 1 → 2 and 2 → 1
- No pilot oil consumption at port 3
- With or without seal on the seated valve spool
- Various opening pressures
- Orifice for pilot port is integrated in the cartridge
- all external parts are chromited and are Cr VI-free
- Can be fitted in a line-mounting body

1. Description

Series WL22SD...-16 logic cartridges are 2/2, screw-in, actively controlled valves with the 2 switched positions "ON" and "OFF", 2 main ports 1 and 2, a pilot port 3, and a closing spring. All external parts are chromited (Cr VI-free) and are thus suitable for use in the harshest operating environments. For customers who manufacture their own manifold blocks, we offer form-tool sets for sale or hire. Use the GEBAA body with threaded ports (G1") for line-mounting applications.

2. Symbol



WL22SD ...

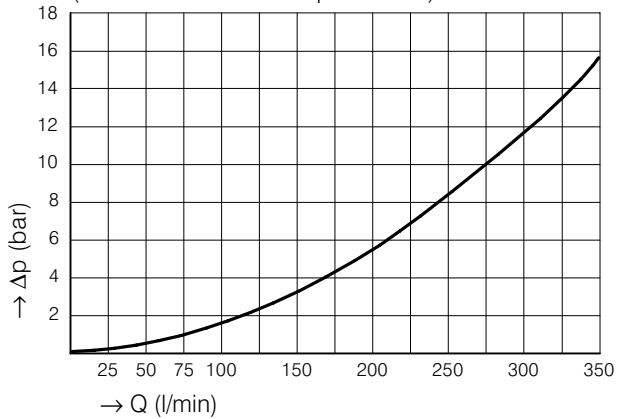
3. Main characteristics

Designation		2/2 logic cartridge valve
Design		direct acting conical-seat type
Mounting method		screw-in cartridge M42 x 2
Size		nominal size 16 mm, cavity type EB to ISO 7789-42-06-0-07
Weight	kg	1.10
Mounting attitude		unrestricted
Flow direction		1 → 2 / 2 → 1, see symbol
Operating pressure range in port 1, 2 and 3	bar	... 420
Opening pressure: standard as an option	bar	2.0 0.4 / 6 / 10 / 13
Flow rate Q_{max}	l/min	350
Hydraulic fluid		HL and HLP hydraulic oils to DIN 51 524; for other fluids, please consult BUCHER
Fluid temperature range	°C	-25 ... +80
Ambient temperature	°C	-25 ... +80
Viscosity range	mm ² /s (cSt)	10 ... 650 recommended 15 ... 250
Minimum fluid cleanliness level		20/18/15 to ISO 4406 : 1999

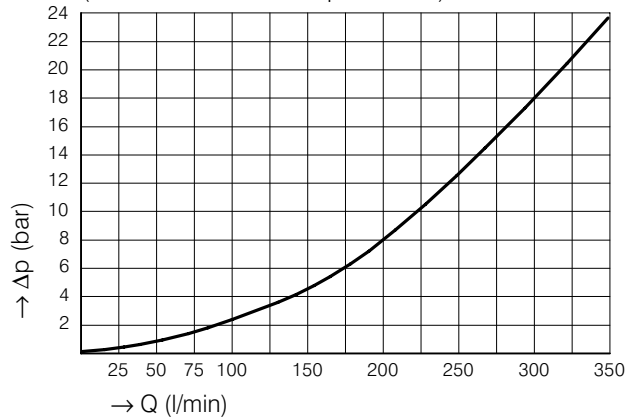
4. Performance graphs

measured with oil viscosity 33 mm²/s (cSt)

Δp -Q characteristics
in cavity type EB with annular groove
(1 → 2 and 2 → 1 with p₃ = 0 bar)



Δp -Q characteristics
in cavity type EB without annular groove
(1 → 2 and 2 → 1 with p₃ = 0 bar)

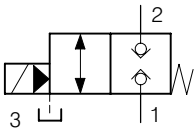


The Δp characteristic is valid when the load pressure in the connection 1 → 2 / 2 → 1 is greater than the opening pressure. If the load pressure is less than the opening pressure, the load pressure must first rise to overcome the opening pressure before flow can occur.

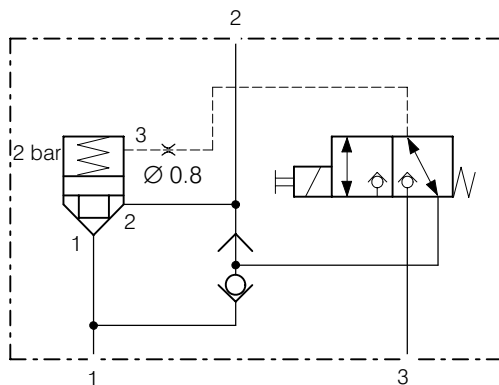
5. Application examples

for actively controlled logic valves

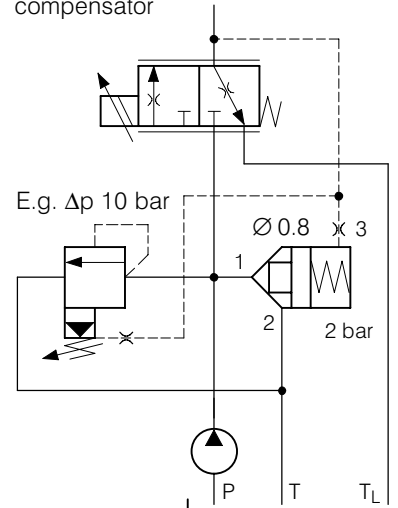
Simplified symbol



Application with seat valve



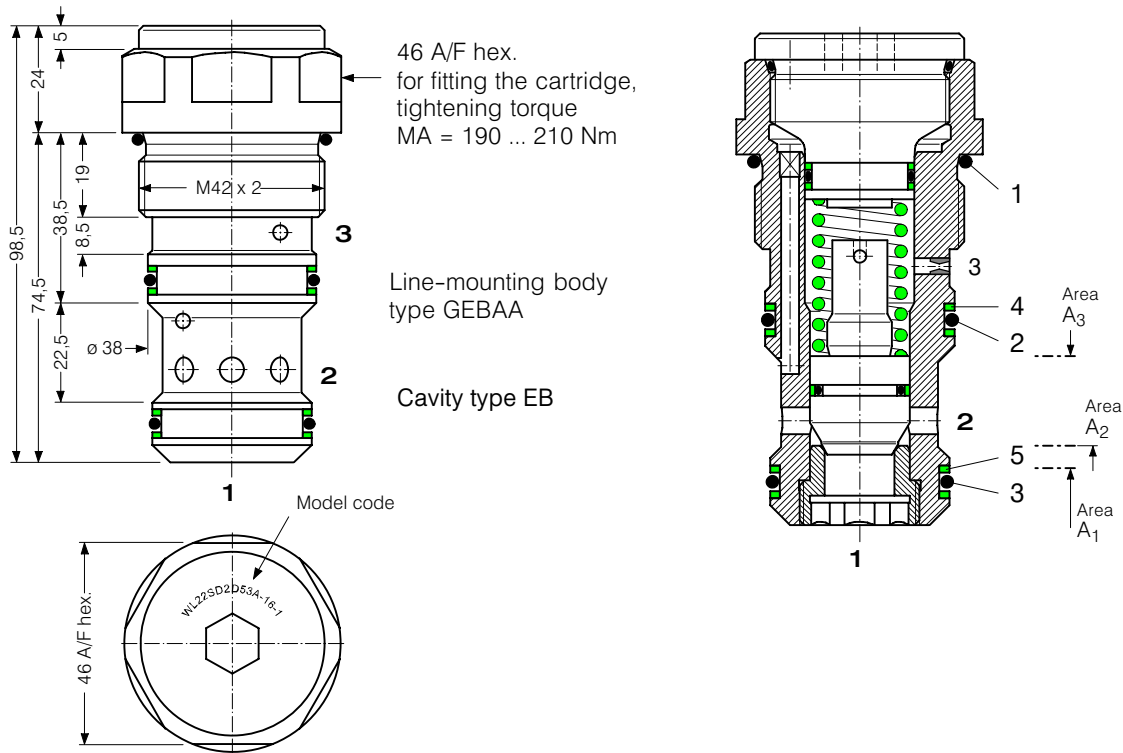
Application to give the lowest possible vented bypass, using proportional throttle and bypass compensator



Actively controlled:

In the open condition (flow 1 → 2 / 2 → 1), there is no continuous consumption of pilot oil

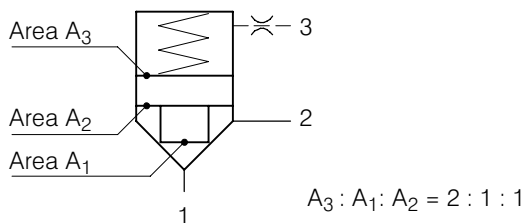
6. Dimensions / schematic section



Seal kit no. DS-359, comprising:

lt.	Qty.	Description	Size
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 x 2.0 x 1.4 FI0751
5	2	Backup ring	Ø 30 x 2.0 x 1.4 FI0751

7. Area- and pressure-relationships



8. Installation and servicing

All work must be carried out with care and by qualified personnel only. When fitting the cartridge, ensure that the seals are oiled or greased and use the specified tightening torque. When changing seals, oil or grease the new seals thoroughly before fitting them.

9. Ordering code

Ex.

WL22	SD	2	D1	3	A	-	16	_	-	1
------	----	---	----	---	---	---	----	---	---	---

WL22 = 2/2 logic valve

SD = seat valve with spool seal (standard)

S (*) = seat valve without spool seal

2 = area ratio (main spool : seat = 2 : 1)

D1 = orifice Ø 0.8 (standard)

D2 = orifice Ø 0.6

D3 = orifice Ø 1.5

D4 = orifice Ø 1.4

D5 = orifice Ø 1.3

D6 = orifice Ø 1.2

D7 = orifice Ø 1.1

D8 = orifice Ø 1.0

D9 = orifice Ø 0.9

D0 = orifice Ø 0.7

1 (*) = opening pressure 0.4 bar

3 = opening pressure 2.0 bar (standard)

5 = opening pressure 6.0 bar

6 = opening pressure 10 bar

7 = opening pressure 13 bar

A ... Q = standard model - see relevant data sheets

Z ... R = special features - please consult BUCHER

16 = nominal size 16 mm

(blank) = Nitrile seals (standard)

V = Viton seals

Special seals - consult Bucher

1 ... 9 = design number (omit when ordering new units)

(*) in applications with an opening pressure of less than 2 bar, valve type WL22S2 ... must be used.
I.e. the seal on the spool is omitted, and the valve does not have a seated shut-off from 1 → 2.

10. Related data sheets

Old no.	New no.	
i-32	400-P-040011-E	The form-tool hire programme
i-55.2	400-P-080111-E	Cavity type EB to ISO 7789-42-06-0-07
W-11.15	400-P-160121-E	2/2 logic cartridge valve, series WL22SDL...-16
W-11.20	400-P-160151-E	2/2 logic cartridge valve, series WL22SDUR...-16
G-29.22	400-P-750115-E	Line-mounting body, type GEBAA (G1")

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