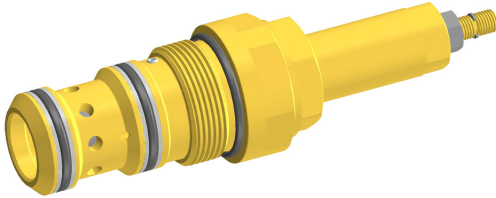


Pressure-Relief Cartridge Valve, Size 16

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

Seated pilot, spool-type main stage, with mechanical operation

Series DVPB-1...



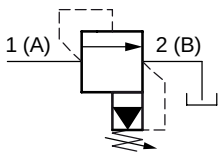
- High flow values
- Excellent stability over the whole pressure and flow range
- 6 pressure ranges available
- With internal pilot drain to port 2
- Responsive pressure adjustment
- Available with hand-knob or tamper-proof cap
- All external parts zinc plated, chromited (CrVI-free)
- Can be fitted in a line-mounting body
- Can be fitted in stack-mounting bodies

1 Description

Series DVPB-1... cartridges are two-stage pressure-relief valves with a seated pilot stage and a spool-type main stage. When the pilot stage is active (main stage relieving), pilot oil is drained internally to port 2. Any pressure at port 2 is additive to the valve setting, therefore port 2 should preferably be routed directly to tank. The straightforward design delivers an outstanding price/performance ratio and good pressure drop - flow rate characteristics. In order to obtain a good pressure adjustment over the entire pressure range, the total pressure range is subdivided into 6 pressure

stages. The pressure is set by means of an adjusting screw or a hand-knob. To safeguard pressure settings, the adjusting screw can be sealed with a tamper-proof cap. These pressure-relief cartridges are used to limit the system pressure in mobile and industrial applications. All external parts of the cartridge are zinc plated and chromited (CrVI-free) and are thus suitable for use in the harshest operating environments. 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	pressure-relief cartridge valve
Design	seated pilot, spool-type main stage, with mechanical operation, internal pilot drain to port 2
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	0.95 kg
Mounting attitude	unrestricted
Ambient temperature range	-25 °C ... +80 °C

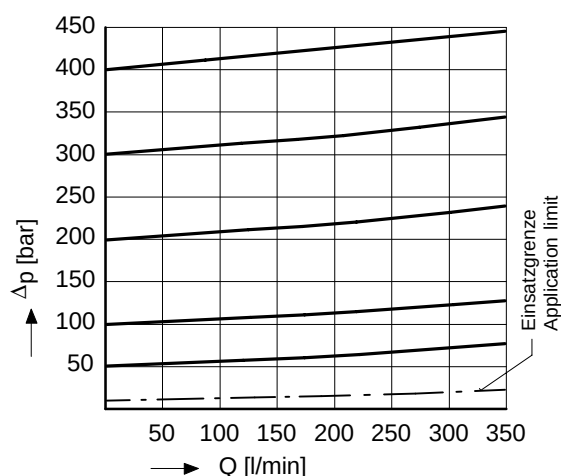
Hydraulic characteristics	Description, value, unit
Maximum operating pressure - in port 1 - in port 2	420 bar 250 bar ¹⁾
Maximum flow rate	5...350 l/min
Nominal pressure range	40 bar, 100 bar, 160 bar, 250 bar, 350 bar, 420 bar
Pressure adjustment range	1 turn $\cong$ 80 bar = pressure range 420 bar 1 turn $\cong$ 70 bar = pressure range 350 bar 1 turn $\cong$ 51 bar = pressure range 250 bar 1 turn $\cong$ 32 bar = pressure range 160 bar 1 turn $\cong$ 21 bar = pressure range 100 bar 1 turn $\cong$ 8 bar = pressure range 40 bar
Flow direction	1 $\rightarrow$ 2, see symbols
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please consult
Hydraulic fluid temperature range	-25 °C ... +80 °C
Viscosity range	10...650 mm ² /s (cSt), recommended 15...250 mm ² /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 20/18/15


Attention

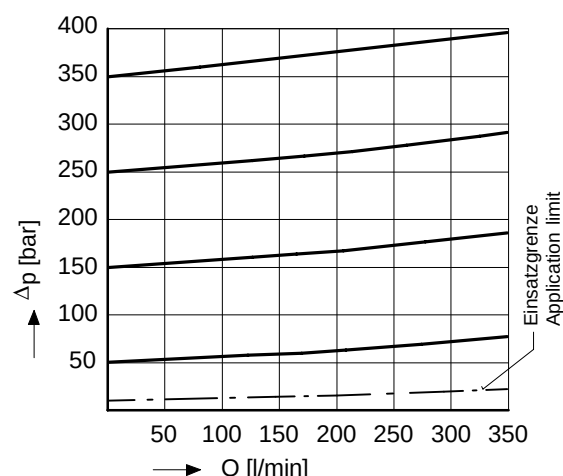
¹⁾ Any tank pressure acting at port 2 is additive to the pressure setting at the main port 1.

4 Performance graphs measured with oil viscosity 33 mm²/s (cSt)

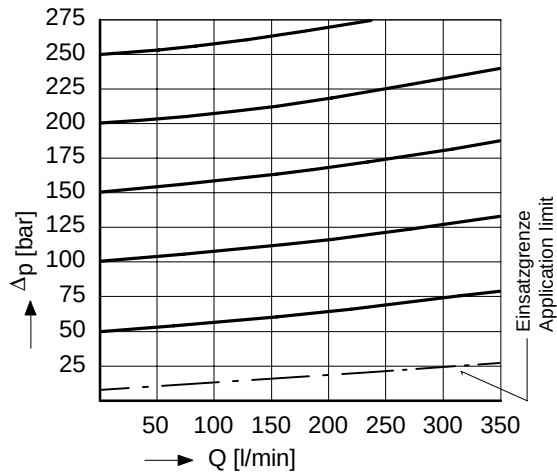
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
($p_N = 420$ bar)



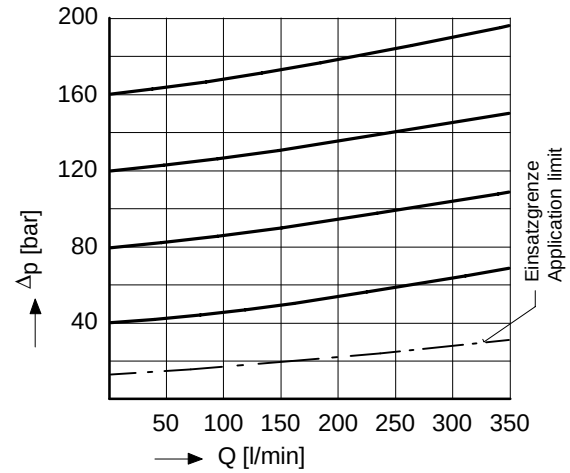
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
($p_N = 350$ bar)



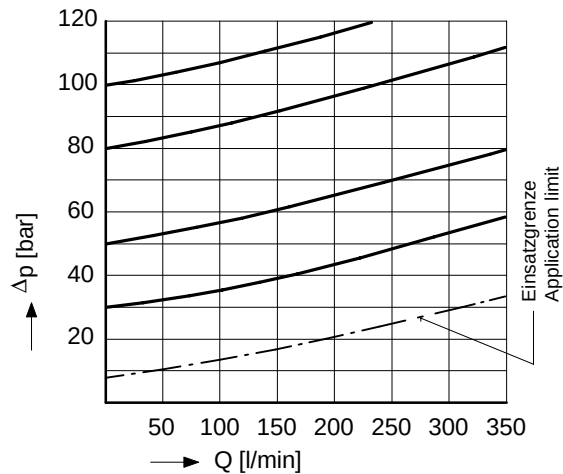
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
($p_N = 250 \text{ bar}$)



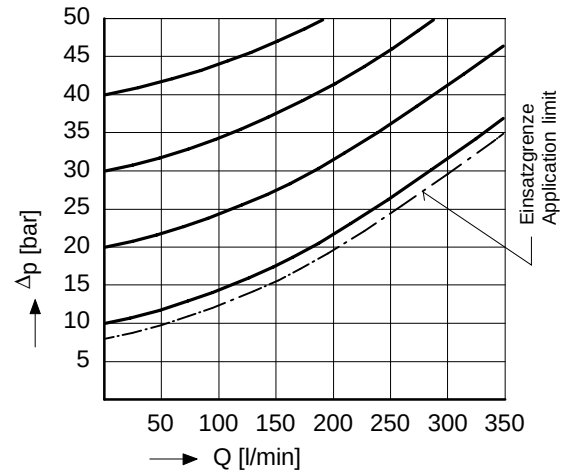
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
($p_N = 160 \text{ bar}$)



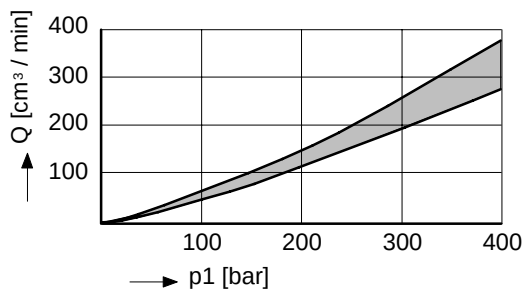
$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
($p_N = 100 \text{ bar}$)



$\Delta p = f(Q)$ Pressure drop - Flow rate characteristic
($p_N = 40 \text{ bar}$)



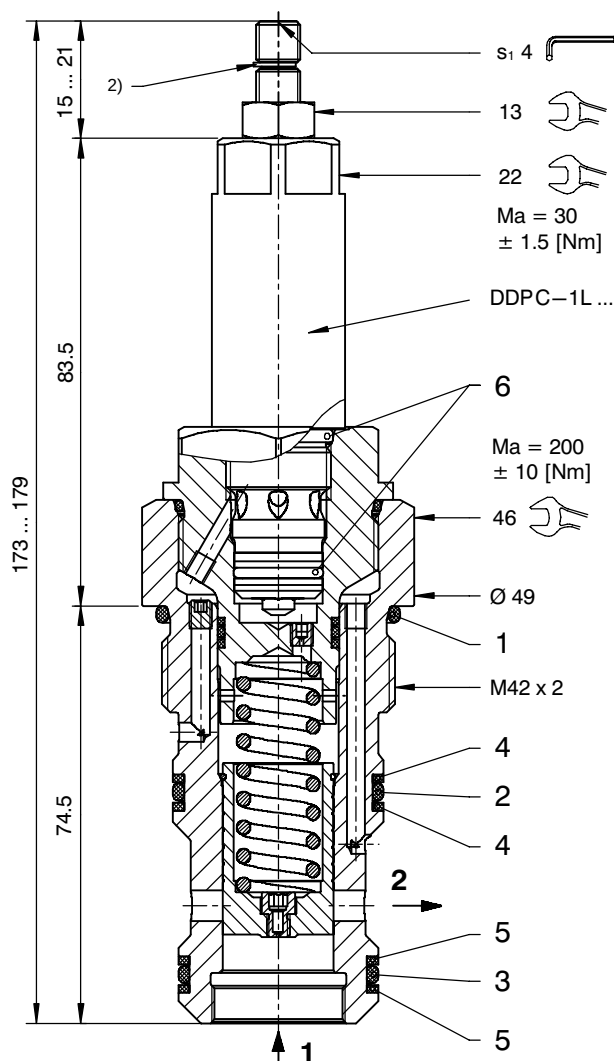
$Q_L = f(p)$ Leckvolumenstrom-Kennlinie [1 → 2]



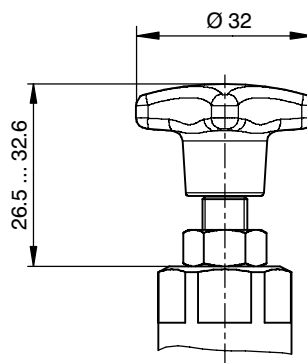
$p_2 = 0 \text{ bar}$, pilot stage closed

5 Dimensions & sectional view

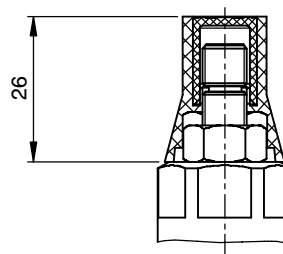
With adjusting screw "S"



With hand-knob adjuster "H"



Adjusting screw with tamper-proof cap
(order separately in plain language)



6 Installation information



Important

When fitting the cartridges, use the specified tightening torque. Set the required pressure with the adjusting screw (s₁). After you have set the valve, lock the adjusting screw with the lock nut.



Attention

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



Important

Valve settings can be sealed by fitting the tamper-proof cap. To fit the cap, the snap ring ²⁾ has to be removed. Subsequent adjustment is only possible by destroying the tamper-proof cap.

Seal kit NBR no. DS-344-N ³⁾

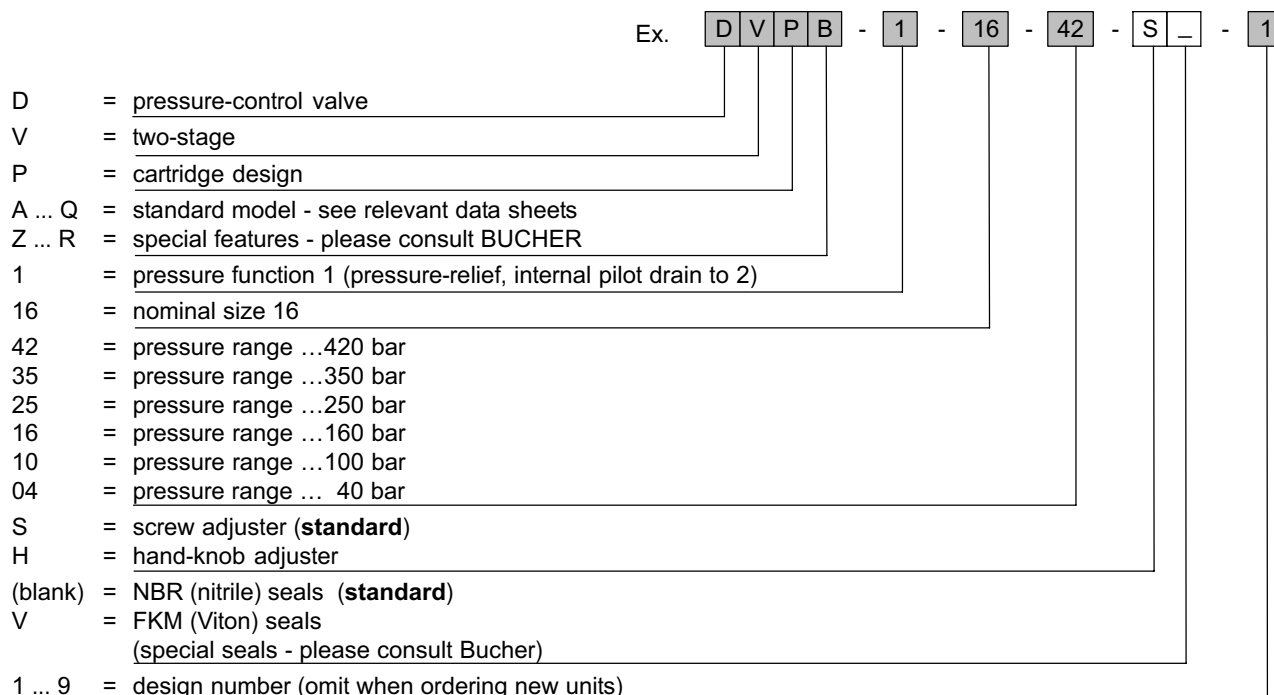
Item	Qty.	Description
1	1	O-ring no. 129 Ø 39,34 x 2,62 N90
2	1	O-ring no. 125 Ø 32,99 x 2,62 N90
3	1	O-ring no. 124 Ø 31,42 x 2,62 N90
4	2	Backup ring Ø 32,00 x 2,00 x 1,40 FI0751
5	2	Backup ring Ø 30,00 x 2,00 x 1,40 FI0751
6	1	Seal kit NBR no. DS-350-N for pressure-relief cartridge valve DDP-1L...



Important

³⁾ Seal kit with FKM (Viton) seals, no. DS-344-V

7 Ordering code



Important

When required, the tamper-proof cap (the adjustment seal) must be ordered separately in plain language.

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 to ISO 7789-42-06-0-07
400-P-260111	(D-2.151)	Pilot pressure-relief cartridge valve, size 4, type DDPC-1L...
400-P-308101	(D-14.10)	Sandwich pressure-relief valve, size 16, type SDVA...
400-P-750115	(G-29.22)	Line-mounting body, type GEBAA (G 1")

info.ch@bucherhydraulics.com

www.bucherhydraulics.com

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