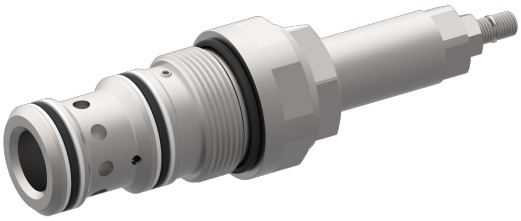
Pressure valve
Relief function

Q_{max} = 92 gpm, p_{max} = 6000 psi
pilot operated, spool type, mechanically adjustable
Type series: DVPB-1-16-...

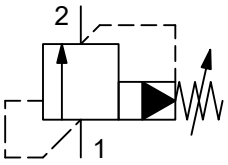


- Screw-in cartridge valve
- For cavity EB
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Installation in threaded port body type GEBAA
- Seated pilot stage
- Very stable operation
- Sensitive adjustment

Description

These two-stage pressure relief valves, series DVPB-1-..., are size 16, screw-in cartridge valves with a seated pilot stage and an M42×2 mounting thread. They are designed on the proven sliding-spool principle. The spring chamber is internally drained to the secondary connection. The secondary connection should be preferably drained to the tank without pressure. To obtain a reliable pressure setting over the entire pressure range, the overall pressure range is divided into different pressure levels. These valves are mainly used in certain mobile and industrial applications to limit the system pressure. The pressure is set by means of an adjusting spindle. All external parts of the screw-in valves are zinc-nickel plated and are thus suitable for use in the harshest operating environments. For installation and further information, please refer to the section related data sheets.

Symbol



Technical data

General characteristics	Description, value, unit
Function group	Pressure valve
Function	Relief function
Design	Screw-in cartridge valve
Controls	mechanically adjustable

General characteristics	Description, value, unit
Characteristic	pilot operated, spool type
Construction size	NG 16
Thread size	M42×2
Mounting attitude	unrestricted
Weight	2.09 lb
Cavity size acc. ISO	fits into ISO 7789: 42-06-0-07
Cavity acc. factory standard	For cavity EB
Tightening torque steel	147.5 ft·lb
Tightening torque aluminium	147.5 ft·lb
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 22 °F
Maximum ambient temperature	+ 176 °F
Surface protection	All external parts with zinc-nickel plating according to DIN EN ISO 19598
Sealing material	see ordering code
Seal kit order number	NBR: DS-344-N / FKM: DS-344-V

Hydraulic characteristics	Description, value, unit
Maximum operating pressure	6000 psi
Maximum flow rate	92 gpm
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 22 °F
Maximum fluid temperature	+ 176 °F
Viscosity range	10 ... 650 mm^2/s (cSt)
Recommended viscosity range	15 ... 250 mm^2/s (cSt)
Minimum fluid cleanliness (cleanlineless class according to ISO 4406:1999)	class 20/18/15
Pressure adjustment range	pressure range 04: 1 turn = ca. 120 psi pressure range 10: 1 turn = ca. 300 psi pressure range 16: 1 turn = ca. 455 psi pressure range 25: 1 turn = ca. 730 psi pressure range 35: 1 turn = ca. 1000 psi pressure range 42: 1 turn = ca. 1150 psi

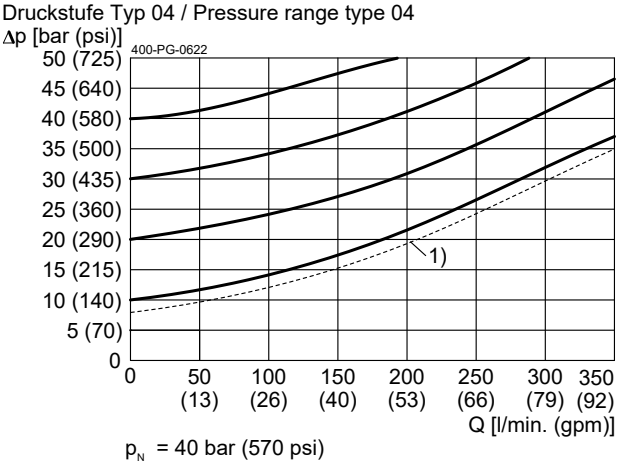
ATTENTION!
If there is pressure at the secondary connection, this is added to the set pressure value.

Performance graphs

measured with oil viscosity 33.0 mm²/s (cSt)

Δp = f (Q) Pressure drop-flow rate characteristic

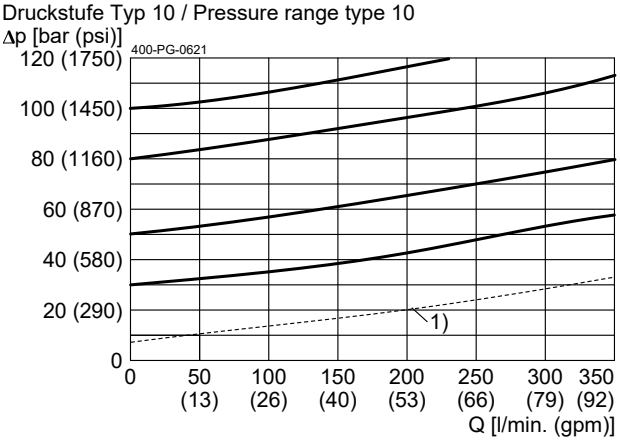
Druckstufe Typ 04 / Pressure range type 04



p_N = 40 bar (570 psi)
1) Einsatzgrenze / Application limit

Δp = f (Q) Pressure drop-flow rate characteristic

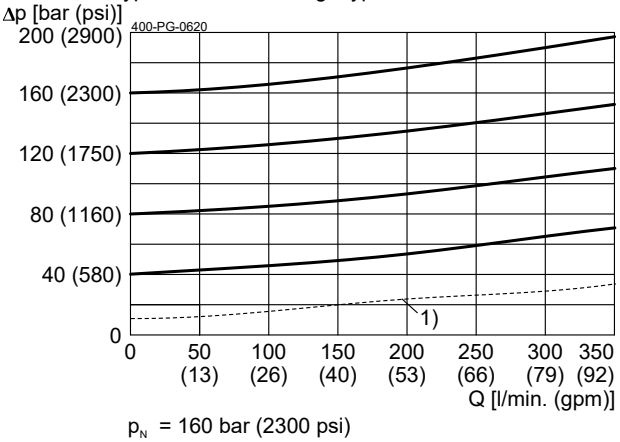
Druckstufe Typ 10 / Pressure range type 10



p_N = 100 bar (1400 psi)
1) Einsatzgrenze / Application limit

Δp = f (Q) Pressure drop-flow rate characteristic

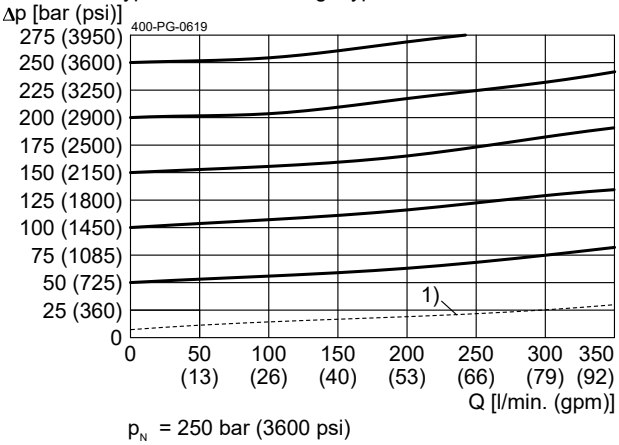
Druckstufe Typ 16 / Pressure range type 16



p_N = 160 bar (2300 psi)
1) Einsatzgrenze / Application limit

Δp = f (Q) Pressure drop-flow rate characteristic

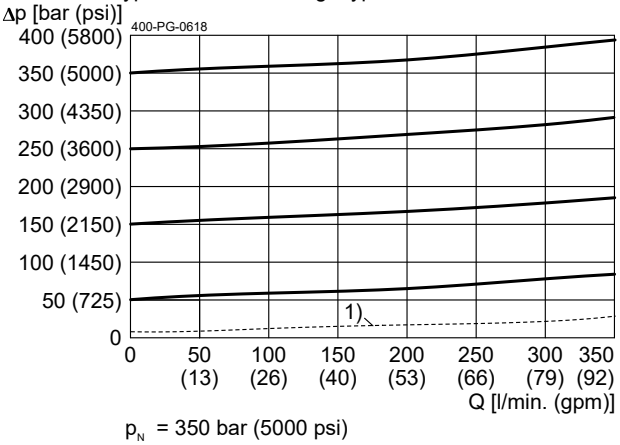
Druckstufe Typ 25 / Pressure range type 25



p_N = 250 bar (3600 psi)
1) Einsatzgrenze / Application limit

Δp = f (Q) Pressure drop-flow rate characteristic

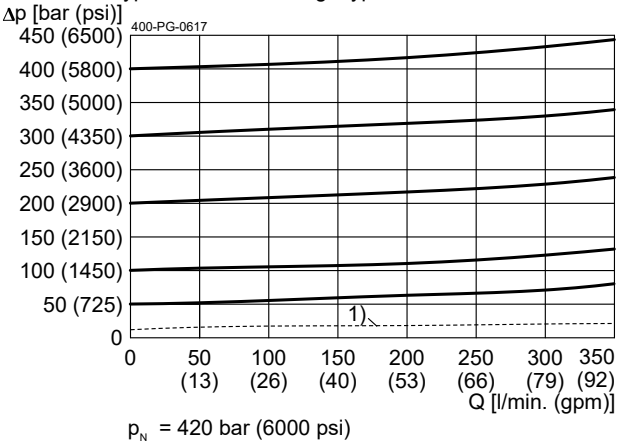
Druckstufe Typ 35 / Pressure range type 35



p_N = 350 bar (5000 psi)
1) Einsatzgrenze / Application limit

Δp = f (Q) Pressure drop-flow rate characteristic

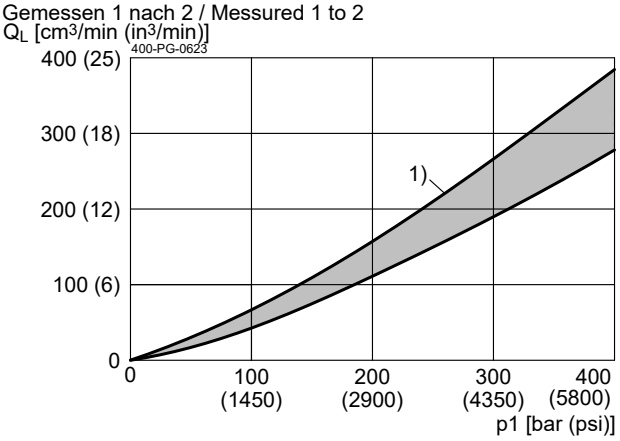
Druckstufe Typ 42 / Pressure range type 42



p_N = 420 bar (6000 psi)
1) Einsatzgrenze / Application limit

QL = f (l;Δp) Leakage flow rate

Gemessen 1 nach 2 / Messured 1 to 2



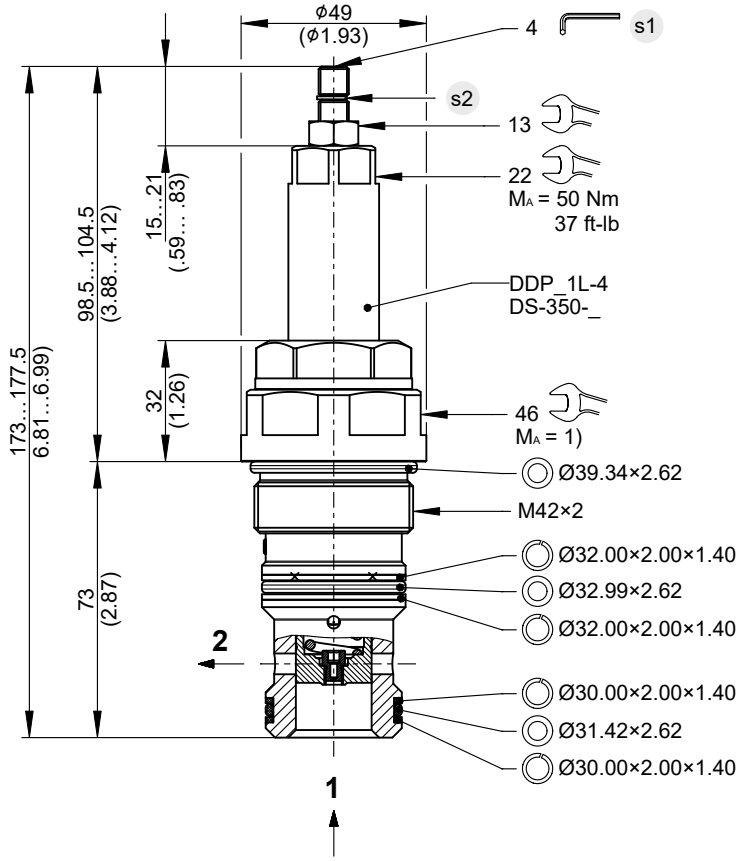
p2 = 0 bar (0 psi)
Vorsteuerung geschlossen / Pilot control closed

Dimensions and sectional view

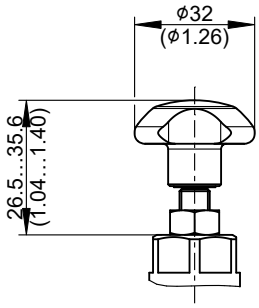
Beispiel für die Masseinheit:
Exampel for the dimensional units:

0.79	= 0.79 mm	millimeter
(.031)	= 0.031"	inch

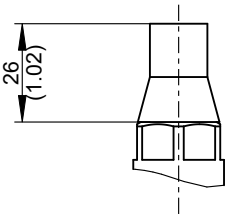
Version "S": Einstellschraube mit Innensechskant (Standard)
Version "S": adjustment screw with internal hexagon (standard)



Version "H": Einstellschraube mit Handrad
Version "H": adjustment screw with handknob



Einstellschraube mit Sicherungskappe
adjustment screw with tamper-proof cap



Installation information

NOTE!
1) When fitting the screw-in cartridge valve, use the specified tightening torque. The value can be found in the chapter "Technical data".

NOTE!
Set the required pressure with the adjusting screw (s1). After you have set the valve, lock the adjusting screw (s1) with the lock nut.

NOTE!
Valve settings can be sealed by fitting the tamper-proof cap. To fit the cap, the snap ring (s2) has to be removed. Subsequent adjustment is only possible by destroying the tamper-proof cap.

NOTE!
The seals are not available individually. The seal kit order number can be found in the chapter "Technical data".

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.

Ordering code

Ex. D V P B - 1 - 16 - 04 - S _ - _

D	=	pressure-control valve
V	=	pilot operated
P	=	cartridge design
A ... Q	=	standard model according to valid data sheet
Z ... R	=	special model (on request)
1	=	Control type 1 (Internal control oil outlet to the secondary connection)
16	=	nominal size 16
04	=	pressure range …40 bar / …580 psi
10	=	pressure range …100 bar / …1450 psi
16	=	pressure range …160 bar / …2300 psi
25	=	pressure range …250 bar / …3600 psi
35	=	pressure range …350 bar / …5000 psi
42	=	pressure range …420 bar / …6000 psi
S	=	adjustment screw with internal hexagon **(standard)**
H	=	adjustment screw with hand knob
(blank)	=	NBR (nitril-butadien-rubber / BUNA) seals **(standard)**
V	=	FKM (fluorocarbon rubber / VITON) seals
		(special seals on request)
1 ... 9	=	technical design no. (omit by ordering)

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

Related data sheets

Reference	Description
400-P-040011	Form tools
400-P-080111	Cavity EB
400-P-750115	Threaded port body GEBAA
400-P-260111	Relief function DDPC-1L-4-...

info.ch@bucherhydraulics.com **www.bucherhydraulics.com**