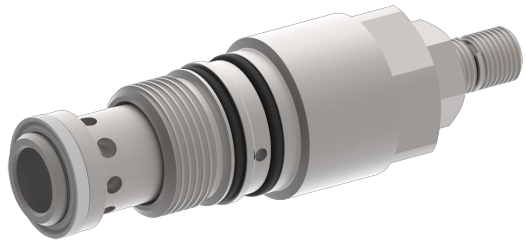
Pressure valve
Sequence function

Q_{max} = 36 gpm, p_{max} = 5000 psi
pilot operated, spool type, mechanically adjustable
Type series: DVPA-3D-10-...

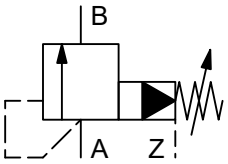


- Screw-in cartridge valve
- For cavity DD
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Installation in threaded port body type DDY-12
- Seated pilot stage
- Very stable operation
- Sensitive adjustment
- With external spring space relief

Description

These two-stage pressure relief valves, series DVPA-3D-..., are size 10, screw-in cartridge valves with a seated pilot stage and an M24×1.5 mounting thread. They are designed on the proven sliding-spool principle. The spring chamber is drained with an additional connection. The pressure applied to the secondary connection has no influence on the setting of the valve. 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	Sequence function
Design	Screw-in cartridge valve

General characteristics	Description, value, unit
Controls	mechanically adjustable
Characteristic	pilot operated, spool type
Construction size	NG 10
Thread size	M24×1,5
Mounting attitude	unrestricted
Weight	0.51 lb
Cavity acc. factory standard	For cavity DD
Tightening torque steel	48 ft·lb
Tightening torque aluminium	37 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-216-N / FKM: DS-216-V

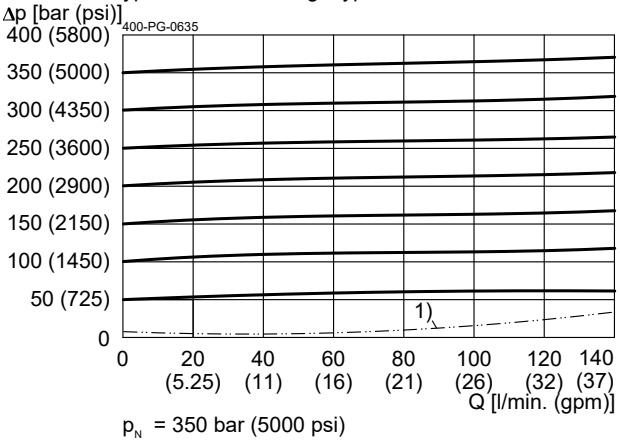
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	5000 psi
Maximum flow rate	36 gpm
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 22 °F
Maximum fluid temperature	+ 176 °F
Viscosity 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 L: 1 turn = ca. 180 psi pressure range M: 1 turn = ca. 540 psi pressure range N: 1 turn = ca. 940 psi

Performance graphs

measured with oil viscosity 33.0 mm²/s (cSt)

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

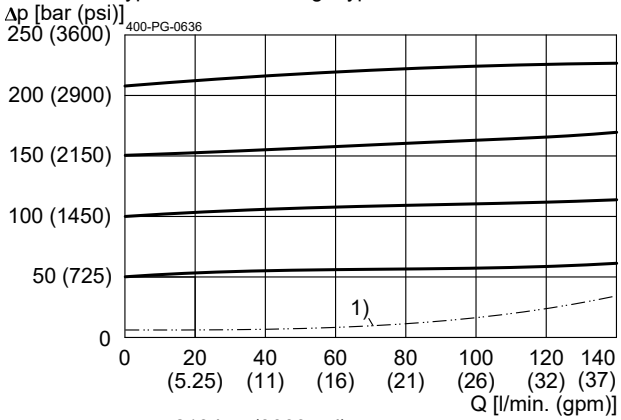
Druckstufe Typ N / Pressure range type N



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

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

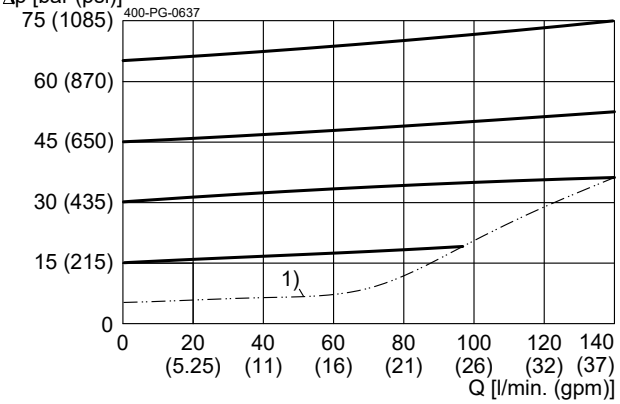
Druckstufe Typ M / Pressure range type M



p_N = 210 bar (3000 psi)
1) Einsatzgrenze / Application limit

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

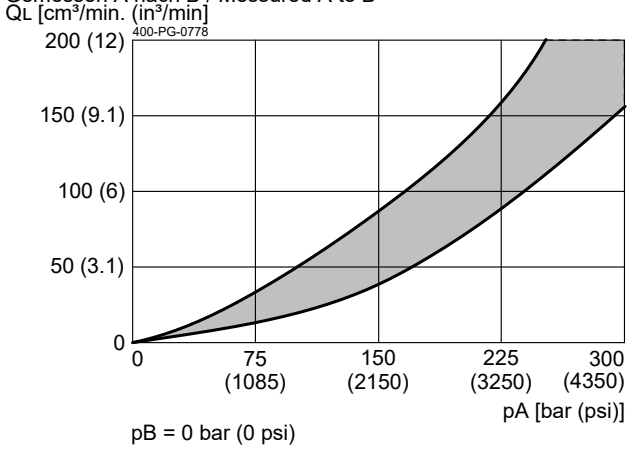
Druckstufe Typ L / Pressure range type L



p_N = 65 bar (640 psi)
1) Einsatzgrenze / Application limit

QL = f (l;Δp) Leakage flow rate

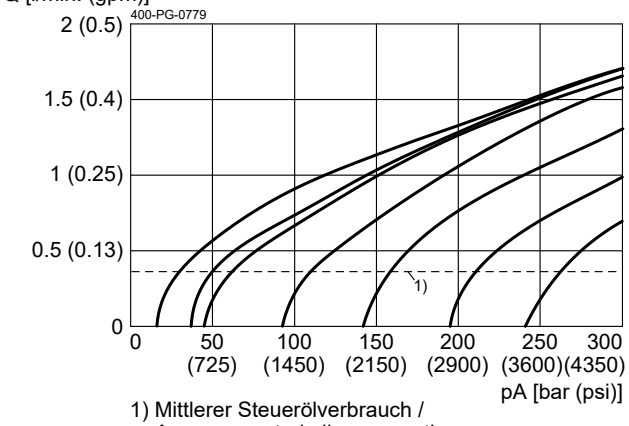
Gemessen A nach B / Messured A to B



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

p = f (Q) Pressure-flow rate

Steuerölverbrauch in Z / Control oil consumption at Z



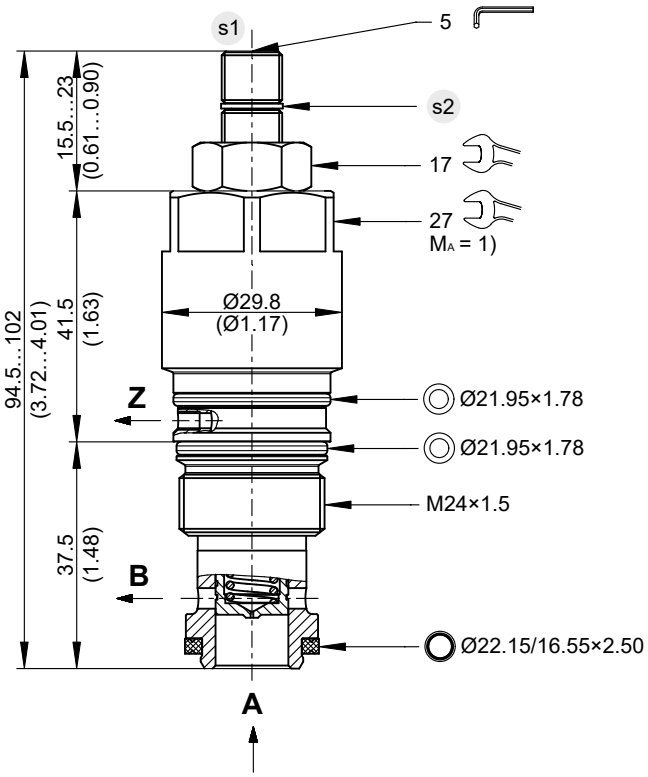
1) Mittlerer Steuerölverbrauch /
Average control oil consumption

Dimensions and sectional view

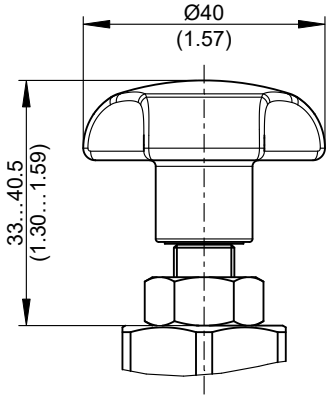
Beispiel für die Masseinheit:
Exampel for the dimensional units:

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

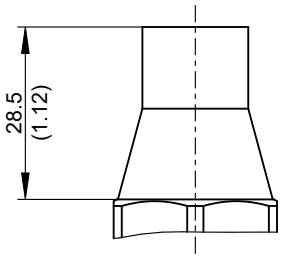
Version "S": Einstellschraube mit Innensechskant (Standard)
Version "S": adjustment screw with internal hexagon (standard)



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 A - 3 D - 10 - S N N - _

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)
3	=	Control type 3 (With external spring space relief)
D	=	cavity type DD
10	=	nominal size 10
S	=	adjustment screw with internal hexagon **(standard)**
H	=	adjustment screw with hand knob
N	=	pressure range 10…350 bar / 145…5076 psi(normal spring)
M	=	pressure range 10…210 bar / 145…3046 psi (medium spring)
L	=	pressure range 10…65 bar / 145…943 psi (light spring)
N	=	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-060121	Cavity DD
400-P-740112	Threaded port body DDY-12

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