

Pressure valve Relief function

$Q_{\max} = 31 \text{ gpm}$, $p_{\max} = 4500 \text{ psi}$

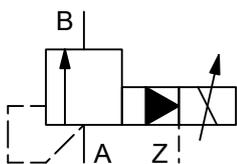
Pilot operated, spool type, proportional solenoid

Type series: DVPSA-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 DD-12
- Pilot oil drained externally to port Z
- Very stable operation
- Seated pilot stage
- High pressure wet-armature solenoids
- Large variety of plug connections
- The slip-on coil can be rotated, and it can be replaced without opening the hydraulic envelope

Symbol



Description

Series DVPSA-3D... are two-stage, spool-type proportional pressure-relief valves. They limit the inlet pressure in A to a value that is proportional to the solenoid current. All external parts are zinc plated and chromited (Cr VI-free) and are thus suitable for use in the harshest operating environments. The core tube / slip-on coil design allows coils to be changed without opening the

hydraulic envelope, even when the valve is under pressure. Coils can be secured at any angle through 360° and can be supplied with the most common electrical connectors (see ordering code). For customers who manufacture their own manifold blocks, we offer form-tool sets for sale or hire. Use the DDY-12 body with threaded ports (G 1/2") for line-mounting applications.

Technical data

General characteristics	Description, value, unit
Function group	pressure valve
Function	relief function
Design	screw-in cartridge valve
Controls	proportional solenoid
Characteristic	pilot operated, spool type
Construction size	NG 10
Thread size	M24×1,5
Mounting attitude	unrestricted (preferably vertical, coil down)
Weight	1.10 lb
Cavity acc. factory standard	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	+ 158 °F
Surface protection	all external parts with zinc-nickel plating according to DIN EN ISO 19598
Seal kit order number	NBR: DS-339-N / FKM: DS-339-V

Hydraulic characteristics	Description, value, unit
Maximum operating pressure	4500 psi
Maximum back pressure, return pressure, tank pressure	port Z: no back-pressure, 0 psi
Maximum flow rate	31 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	+ 158 °F
Viscosity range	10 ... 650 mm ² /s (cSt)
Recommended viscosity range	15 ... 250 mm ² /s (cSt)
Minimum fluid cleanliness (cleanliness class according to ISO 4406:1999)	class 18/16/13
Pressure adjustment range	pressure range 060 = ... 870 psi pressure range 100 = ... 1450 psi pressure range 160 = ... 2300 psi pressure range 250 = ... 3600 psi pressure range 315 = ... 4450 psi

Electric characteristics

Actuator type
Solenoid coils type
Supply voltage DC
Control current
Relative duty cycle
Coil resistance R
Recommended PWM frequency
Response sensitivity with PWM
Hysteresis with PWM
Reversal error with PWM
Electrical connection coil
Protection class solenoid coil to ISO 20 653 / EN 60 529

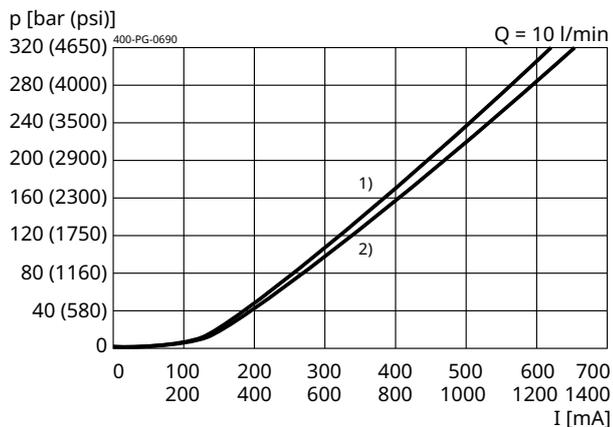
Description, value, unit

solenoid coil
D36
12/24 V DC
12 V = 0...1400 mA / 24 V = 0...750 mA
100 %
12 VDC = 5,8 / 8,6 / 24 VDC = 21 / 32 Ω
200 Hz
≤ 1 % I _N
2...4 % I _N
2...5 % I _N
ISO 4400 / DIN 43 650 connection, 3-pole (IP 65)
IP 65 / IP 67 / IP 69K, see "Ordering code"
(with appropriate mating connector and proper fitting and sealing)

Performance graphs

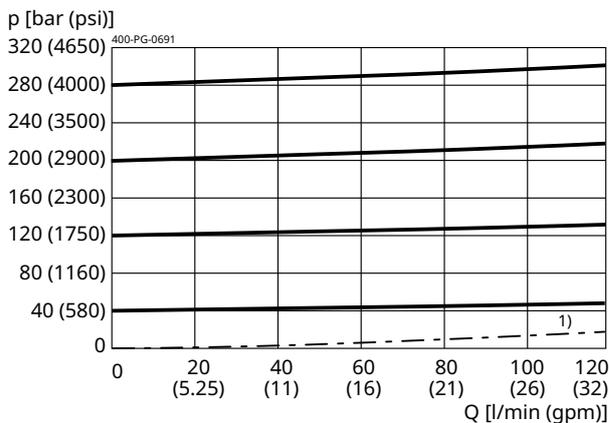
measured with oil viscosity 33.0 mm²/s (cSt)

p = f (I) Pressure adjustment



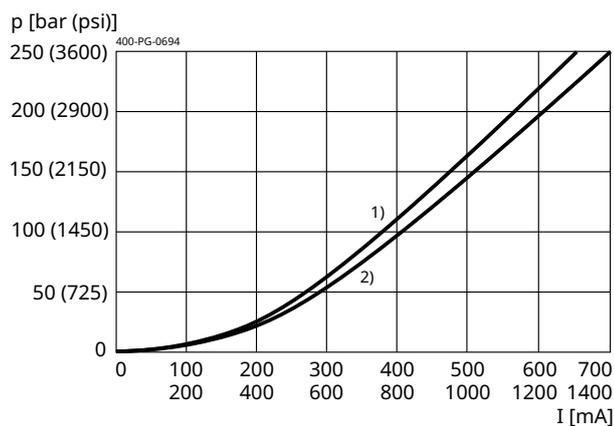
1) 12 VDC
2) 24 VDC
p_N 315 bar (4500 psi)

p = f (Q) Pressure-flow rate



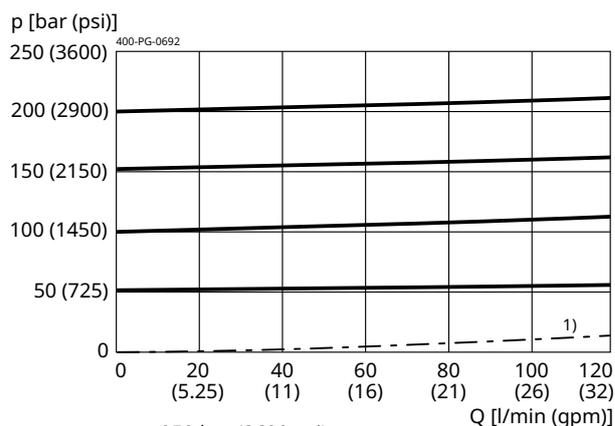
p_N = 315 bar (4500 psi)
1) Einsatzgrenze / Application limit
(p min. / I = 0 mA)

$p = f(I)$ Pressure adjustment



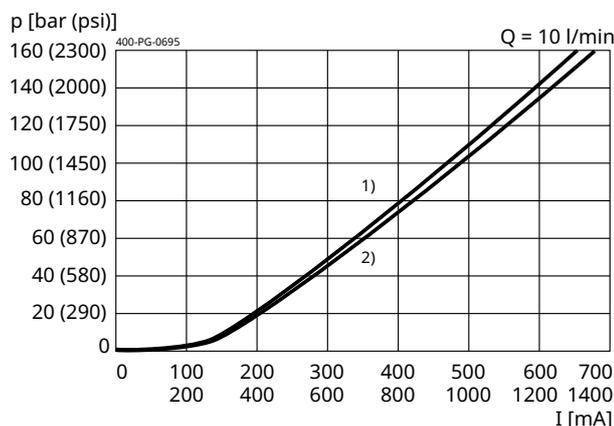
1) 12 VDC
2) 24 VDC
 p_N 250 bar (3600 psi)

$p = f(Q)$ Pressure-flow rate



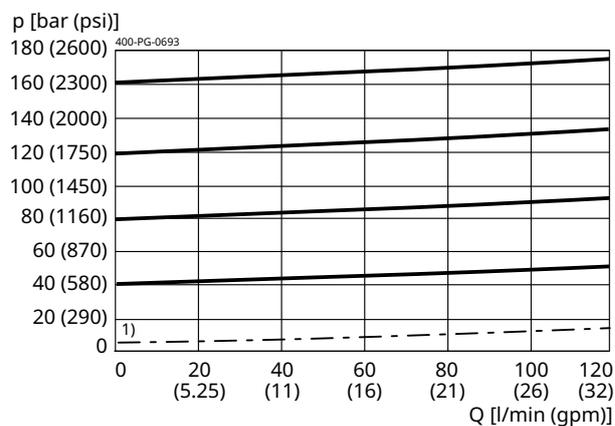
$p_N = 250$ bar (3600 psi)
1) Einsatzgrenze / Application limit
($p_{min.} / I = 0$ mA)

$p = f(I)$ Pressure adjustment



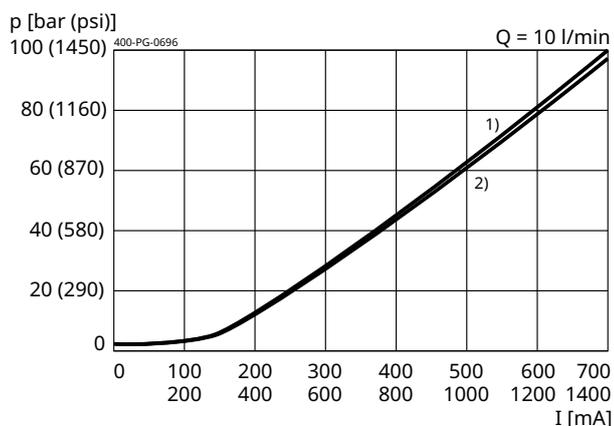
1) 12 VDC
2) 24 VDC
 p_N 160 bar (2300 psi)

$p = f(Q)$ Pressure-flow rate



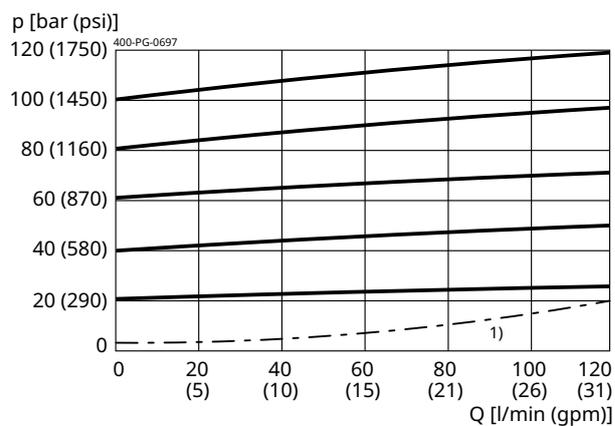
$p_N = 160$ bar (2300 psi)
1) Einsatzgrenze / Application limit
($p_{min.} / I = 0$ mA)

$p = f(I)$ Pressure adjustment



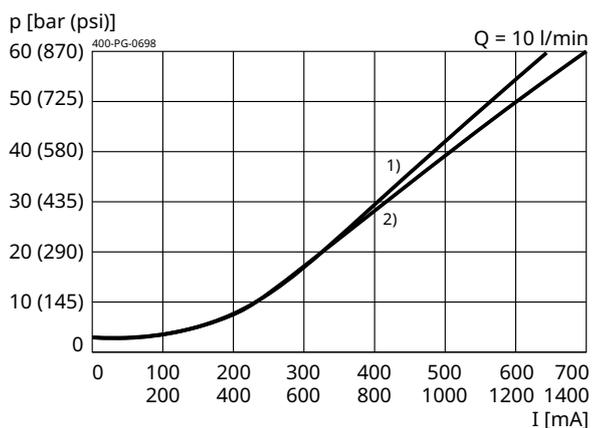
1) 12 VDC
2) 24 VDC
 p_N 100 bar (1450 psi)

$p = f(Q)$ Pressure-flow rate

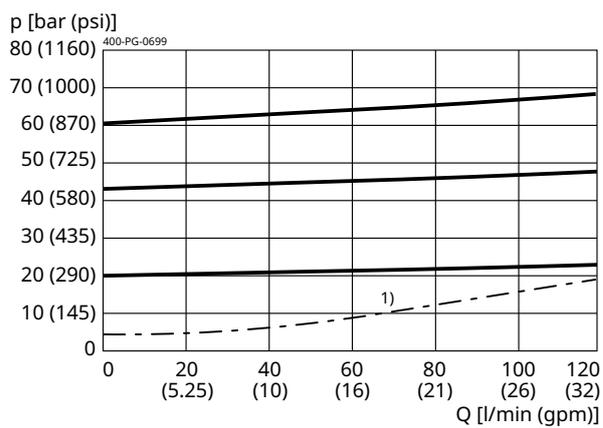


$p_N = 100$ bar (1450 psi)
1) Einsatzgrenze / Application limit
($p_{min.} / I = 0$ mA)

$p = f(I)$ Pressure adjustment

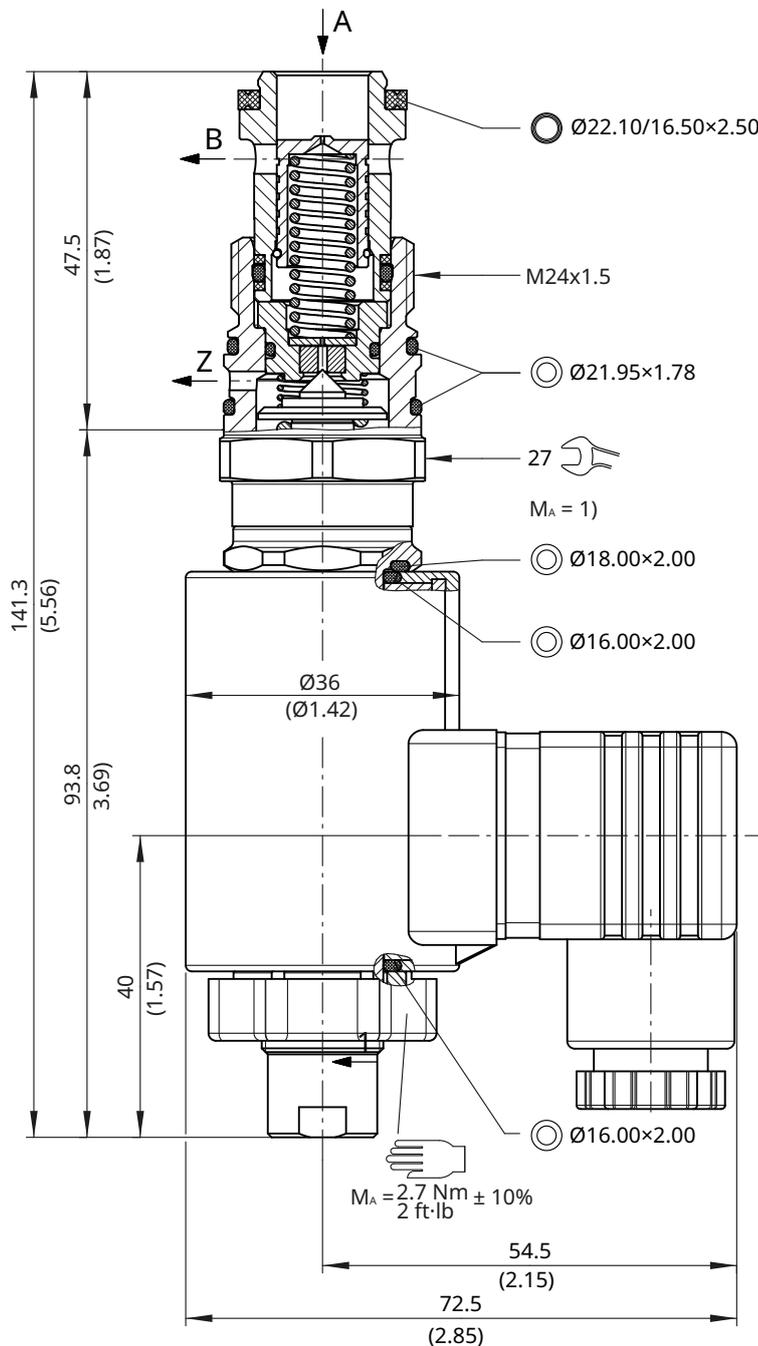


$p = f(Q)$ Pressure-flow rate



Installation

Beispiel für die Masseinheit:
Example for the dimensional units:
0.79 = 0.79 mm millimeter
(.031) = 0.031" inch



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

IMPORTANT!
To achieve the screw-in valve's maximum performance rating, fit the solenoid coil as shown (with the plug pins nearest the knurled nut). The valve must be installed in a steel body.

info.ch@bucherhydraulics.com

www.bucherhydraulics.com

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