Pressure valve
Relief function

Q_{max} = 30 l/min, p_{max} = 420 bar
direct acting, poppet type, mechanically adjustable
Type series: DDPC-1L-4-...

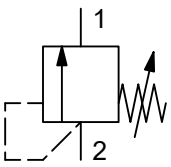


- Screw-in cartridge valve
- For cavity AL
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Installation in threaded port body type GALA
- High flow rates
- Compact construction
- High-pressure damping ensures very stable operation
- Suitable for use as anti-shock valve

Description

The pressure relief valves, series DDP-1L-..., are size 4, direct acting, screw-in cartridge valves with a 3/4-16 UNF mounting thread. The poppet seat design ensures that the valves are leak-tight. The straightforward design delivers an outstanding price/performance ratio and good pressure/flow ratings. To obtain a reliable pressure setting over the entire pressure range, the overall pressure range is divided into different pressure levels. Each pressure range corresponds to a particular spring that allows a certain maximum operating pressure to be set. 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. These valves are mainly used in certain mobile and industrial applications to limit the system pressure. Please note that any tank or return-line pressures are additive to the setting. For self-assembly, 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
Characteristic	direct acting, poppet type
Construction size	NG 4
Thread size	3/4-16 UNF-2A
Mounting attitude	unrestricted
Weight	0.19 kg
Cavity acc. factory standard	For cavity AL
Tightening torque steel	50 Nm
Tightening torque aluminium	50 Nm
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 30 °C
Maximum ambient temperature	+ 80 °C
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-350-N / FKM: DS-350-V

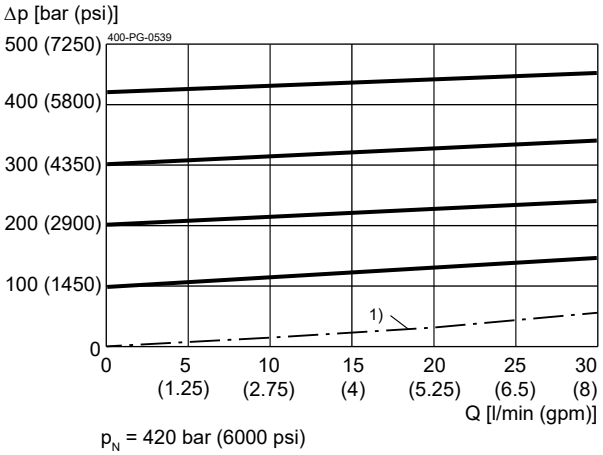
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	420 bar
Restriction of the operating pressure	port 1: max. 250 bar [1])
Maximum flow rate	30 l/min
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 30 °C
Maximum fluid temperature	+ 80 °C
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
Opening pressure	20 / 40 / 100 / 160 / 250 / 350 / 420 bar
Minimum set pressure	5 bar
Maximum set pressure	420 bar
Pressure adjustment range	pressure range 02: 1 turn = approx. 4 bar pressure range 04: 1 turn = approx. 8 bar pressure range 10: 1 turn = approx. 21 bar pressure range 16: 1 turn = approx. 32 bar pressure range 25: 1 turn = approx. 51 bar pressure range 35: 1 turn = approx. 70 bar pressure range 42: 1 turn = approx. 80 bar

NOTE!
[1]) Please note that any tank or return-line pressures acting at port 1 are additive to the pressure setting at port 2.

Performance graphs

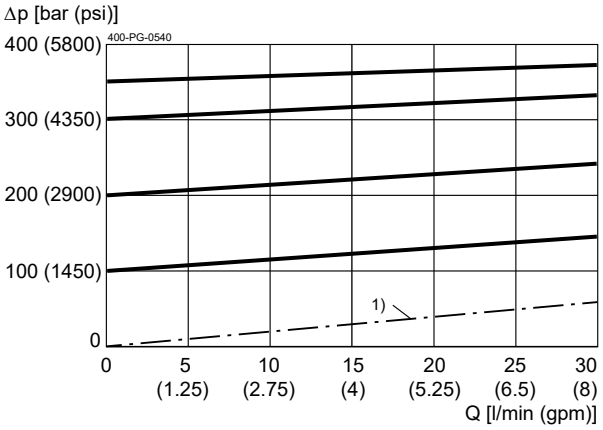
measured with oil viscosity 33.0 mm²/s (cSt)

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



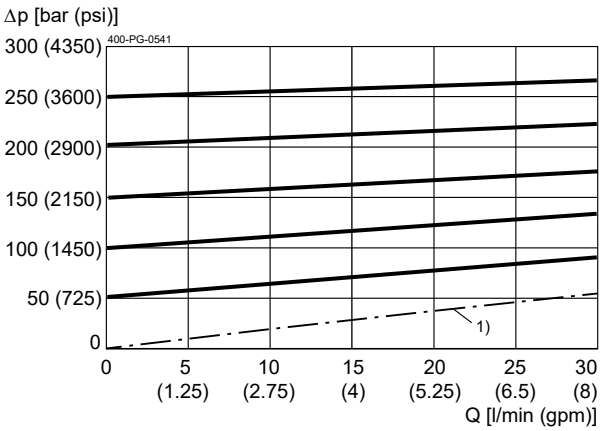
p_N = 420 bar (6000 psi)
1) = Application limit / minimum bypass pressure

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



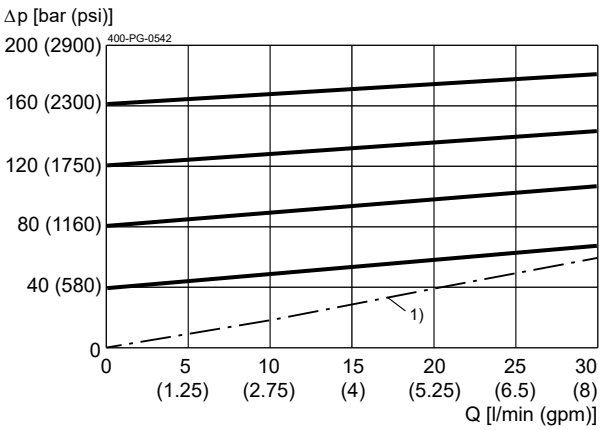
p_N = 350 bar (5000 psi)
1) = Application limit / minimum bypass pressure

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



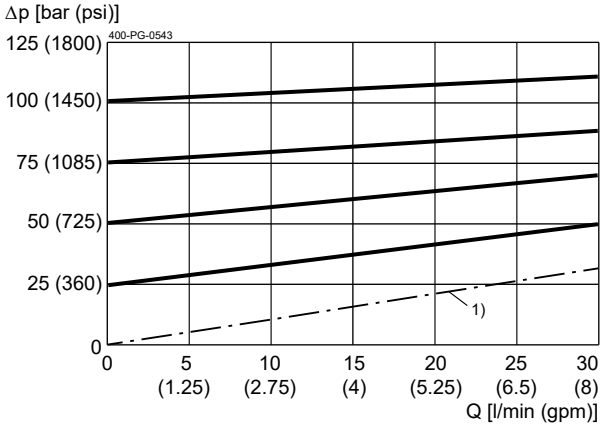
p_N = 250 bar (3600 psi)
1) = Application limit / minimum bypass pressure

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



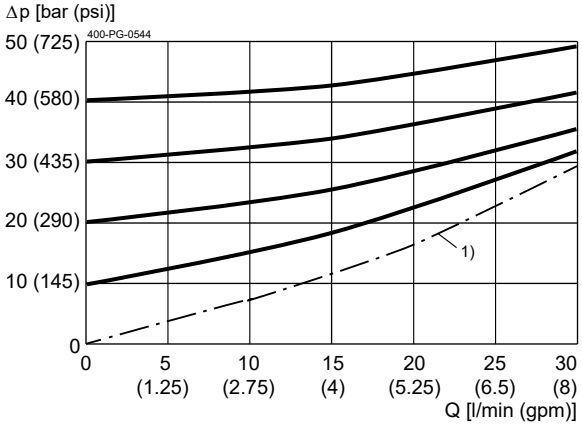
p_N = 160 bar (2300 psi)
1) = Application limit / minimum bypass pressure

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



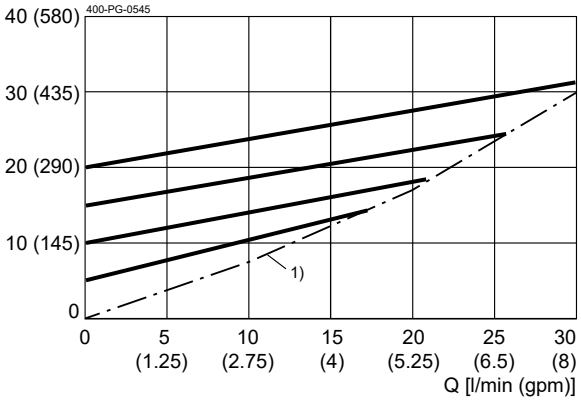
p_N = 100 bar (1450 psi)
1) = Application limit / minimum bypass pressure

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



p_N = 40 bar (580 psi)
1) = Application limit / minimum bypass pressure

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



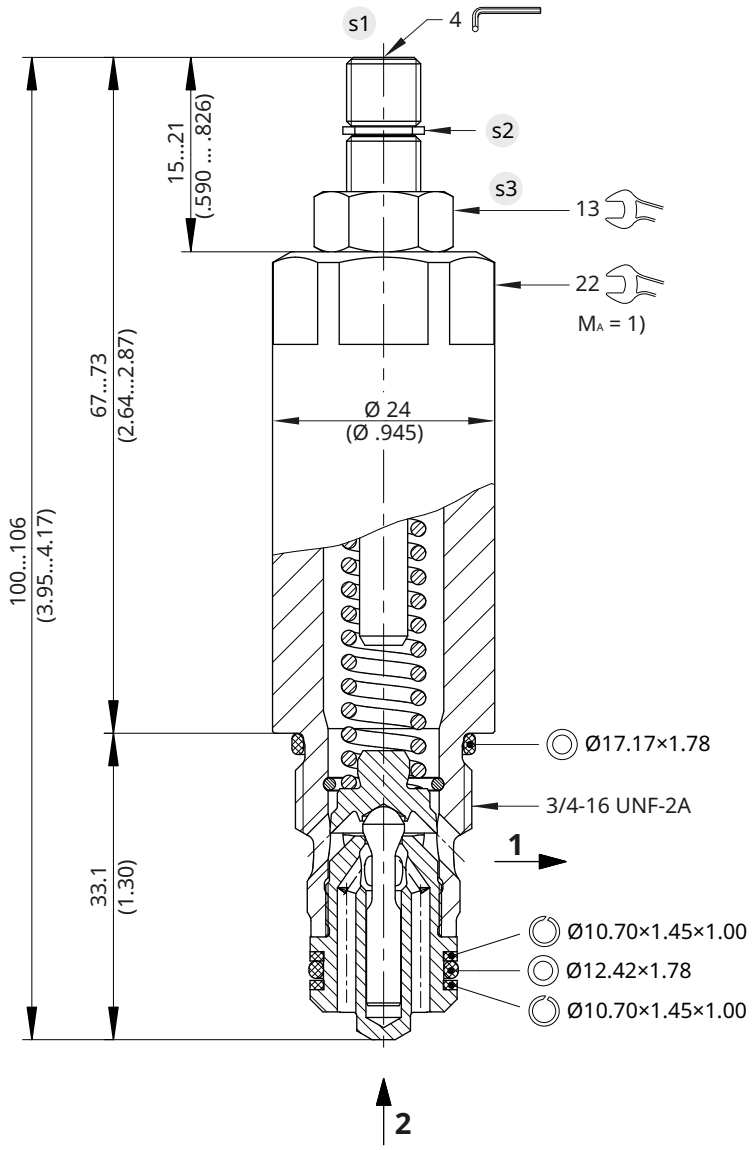
p_N = 20 bar (290 psi)
1) = Application limit / minimum bypass pressure

Dimensions and sectional view

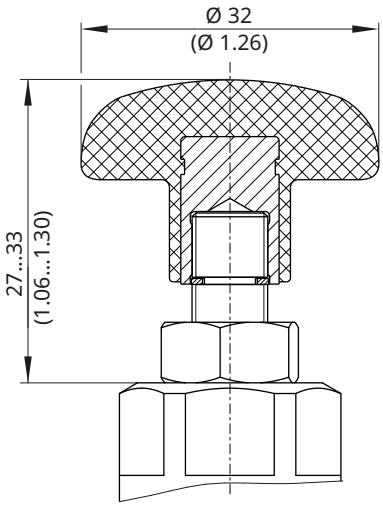
Beispiel für die Masseinheit:
Example for the dimensional units:

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

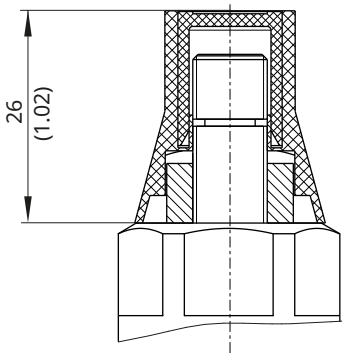
Version "S": Einstellschraube *(Standard)*
Version "S": adjustment screw (standard)



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



Einstellschraube mit Sicherungskappe
adjustment screw with tamper-proof cap



Installation information

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.

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

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".

Ordering code

Ex. D D P C - 1 L - 4 - 02 - S N - 2

D	=	pressure valve
D	=	relief-function, direct acting
P	=	cartridge design
A ... Q	=	standard model according to valid data sheet
Z ... R	=	special model (on request)
1	=	pressure relief with internal spring space relief
L	=	cavity type AL
4	=	nominal size 4
02	=	pressure range 5 ... 20 bar / 70...290 psi
04	=	pressure range 10 ... 40 bar / 145...580 psi
10	=	pressure range 25...100 bar / 360...1450 psi
16	=	pressure range 40...160 bar / 580...2300 psi
25	=	pressure range 50...250 bar / 725...3600 psi
35	=	pressure range 100...350 bar / 1450...5000 psi
42	=	pressure range 100...420 bar / 1450...6000 psi
S	=	adjustment screw with internal hexagon **(standard)**
H	=	adjustment screw with hand knob
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)

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

Related data sheets

Reference	Description
400-P-040011	Form tools
400-P-040171	Cavity AL
400-P-720101	Threaded port body GALA

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