

Pressure valve Sequence function

$Q_{\max} = 37 \text{ gpm}$, $p_{\max} = 6500 \text{ psi}$

direct acting, poppet type, mechanically adjustable

Type series: DDPDB-3D-10....



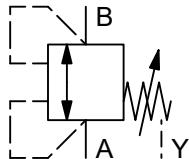
- Screw-in cartridge valve
- For cavity DD
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Installation in threaded port body type DDY-12
- All ports are closed leak-free by means of a poppet design
- The external oil drain allows pressure setting without interference by the secondary pressure
- Suitable for use as anti-shock valve (with cross-line relief function)
- Also available as stack valve

Description

The pressure relief valves, series DDPD-3D-..., are size 10, direct acting, screw-in cartridge valves with an M24x1.5 mounting thread. The poppet seat design ensures that the valves are leak-tight. With this valve type a so-called cross-line relief function can be realized (i.e. the pressure relief function takes place in both volume flow directions). The use of this type series eliminates the need for a second pressure relief cartridge. The spring chamber is externally drained via port Y and has to be led to the tank at zero pressure. 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. Thanks to the external oil drain, the actuator port can be pressurized without affecting 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	Sequence function
Design	Screw-in cartridge valve
Controls	mechanically adjustable
Characteristic	direct acting, poppet type
Construction size	NG 10
Thread size	M24x1,5
Mounting attitude	unrestricted
Weight	0.77 lb
Cavity acc. factory standard	For cavity DD
Tightening torque steel	74 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-255-N / FKM: DS-255-V

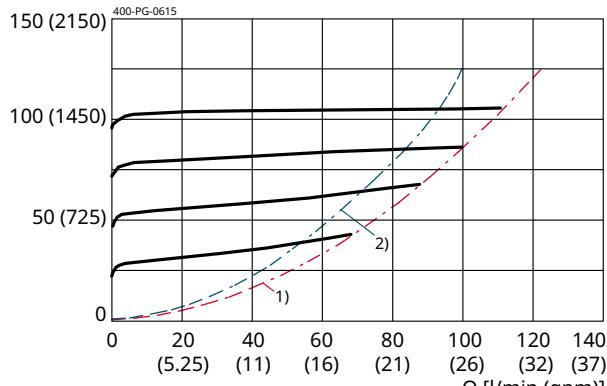
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	6500 psi
Restriction of the operating pressure	connection Y must be pressureless relieved to the tank!
Maximum flow rate	37 gpm
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other 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 (cleanliness class according to ISO 4406:1999)	class 20/18/15
Minimum set pressure	145 psi
Maximum set pressure	6500 psi
Pressure adjustment range	pressure range L: 145 ... 1450 psi pressure range M: 1160 ... 3500 psi pressure range N: 2600 ... 5000 psi pressure range O: 4350 ... 5800 psi pressure range P: 5000 ... 6500 psi

Performance graphs

measured with oil viscosity 33.0 mm²/s (cSt)

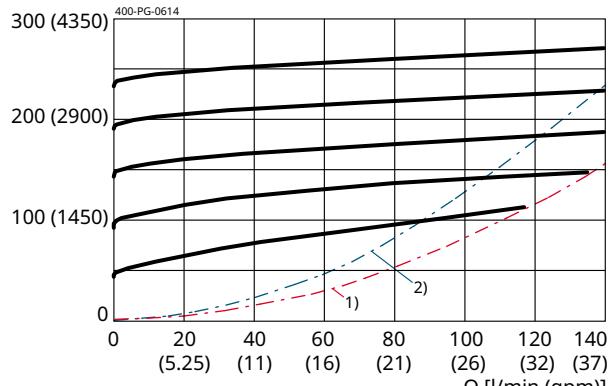
$p = f(Q)$ Pressure-flow rate

pA or pB [bar (psi)]



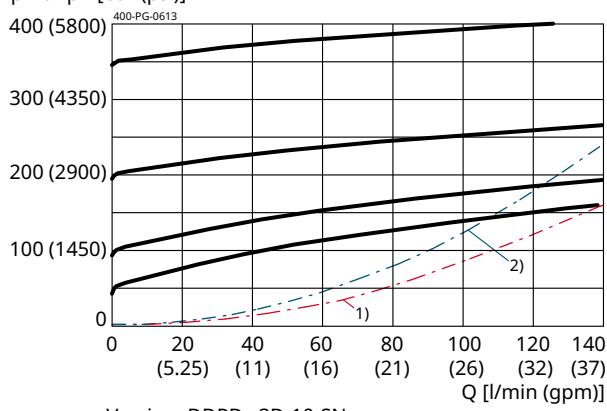
$p = f(Q)$ Pressure-flow rate

pA or pB [bar (psi)]



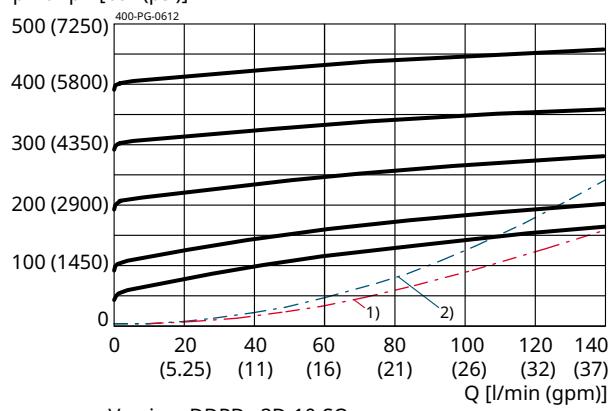
$p = f(Q)$ Pressure-flow rate

pA or pB [bar (psi)]



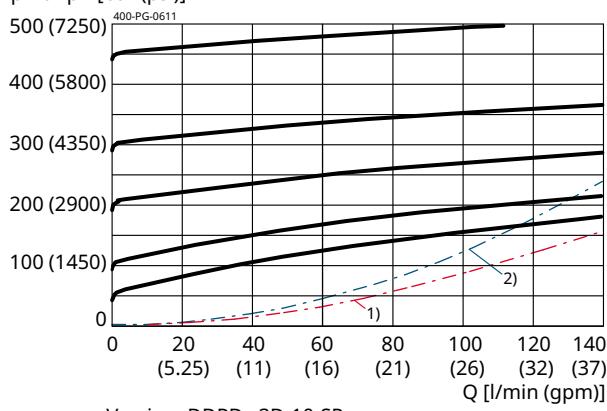
$p = f(Q)$ Pressure-flow rate

pA or pB [bar (psi)]



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

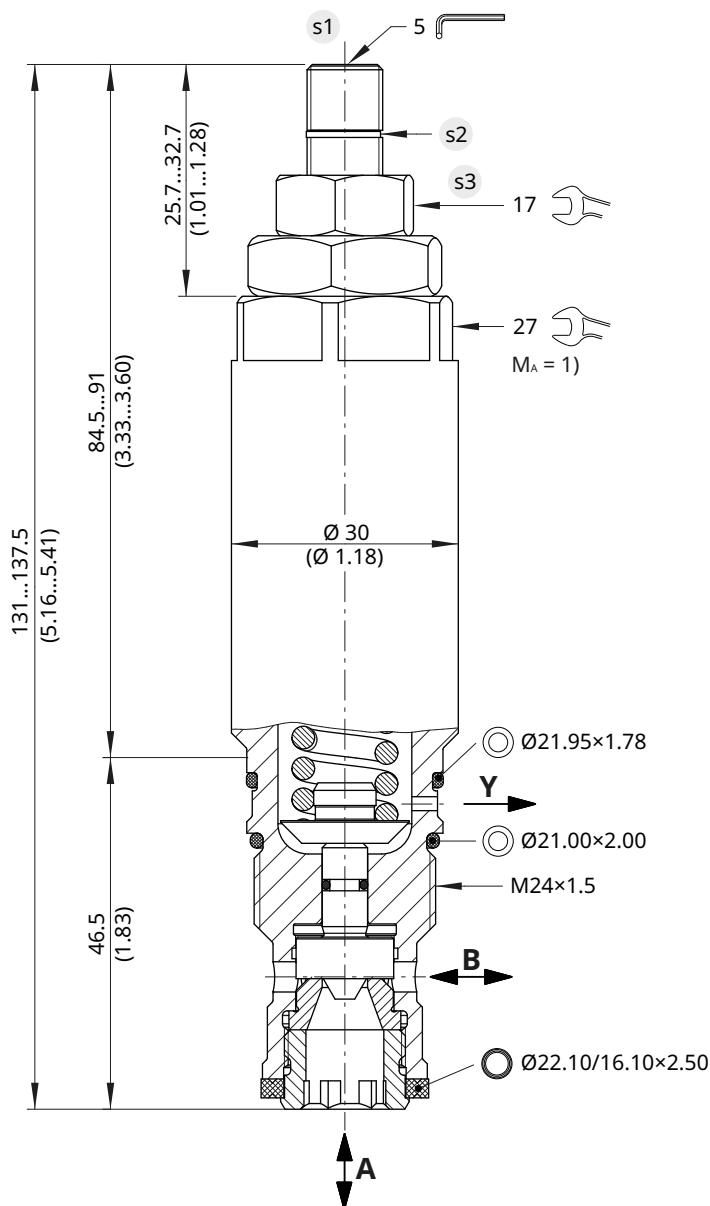
pA or pB [bar (psi)]



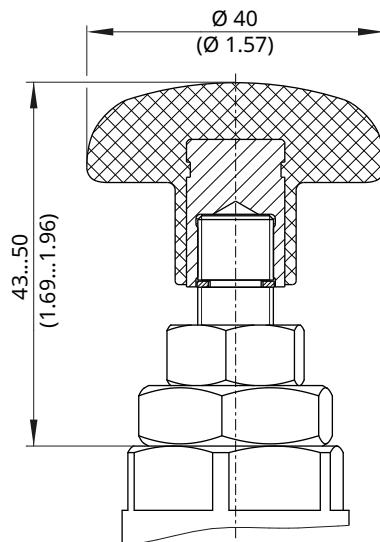
Dimensions and sectional view

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

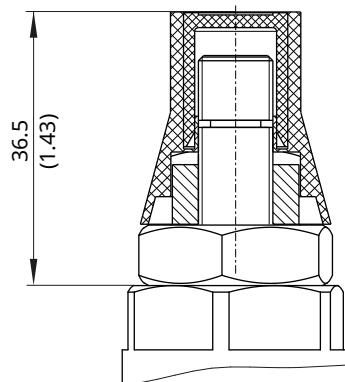
Version "S": Einstellschraube (Standard)
Version "S": adjustment screw (standard)



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 s_1 . After you have set the valve, lock the adjusting screw s_1 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!

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

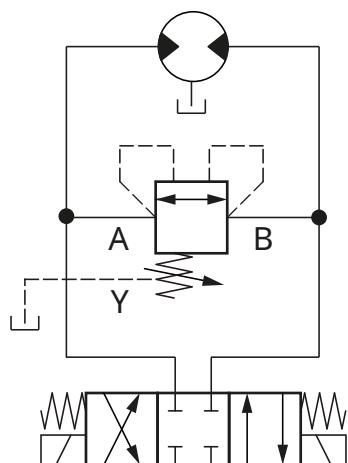


NOTE!

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.

Application example

In the application example, valve type DDPD_-3D-10... is used as shock protection for a hydraulic motor.



Ordering code

Ex. **D D P D B - 3 D - 10 - S L N - 2**

D = pressure valve
 D = relief-function, direct acting
 P = cartridge design
 D = cross-line relief function (dual)
 A ... Q = standard model according to valid data sheet
 Z ... R = special model (on request)
 3 = pressure function 3 (Y-outlet external)
 D = cavity type DD
 10 = nominal size10
 S = adjustment screw with internal hexagon (**standard**)
 H = adjustment screw with hand knob
 L = pressure range 10...100 bar / 145...1450 psi
 M = pressure range 80...240 bar / 1160...3500 psi
 N = pressure range 180...350 bar / 2600...5000 psi
 O = pressure range 300...400 bar / 4350...5800 psi
 P = pressure range 350...450 bar / 5000...6500 psi
 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-060121	Cavity DD
400-P-740112	Threaded port body DDY-12