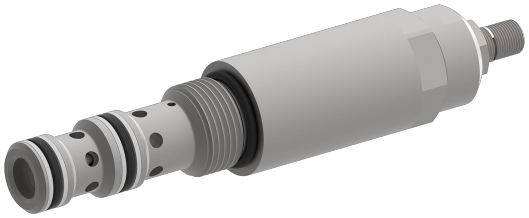
Pressure valve
Reducing function

Q_{max} = 18 gpm, p_{max} = 5000 psi
direct acting, spool type, mechanically adjustable
Type series: DDRA-7L-10-...

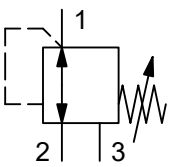


- Screw-in cartridge valve
- For cavity DL
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Installation in threaded port body type GCLA
- Excellent stability over the whole pressure and flow range
- Full-flow secondary pressure relief
- Sensitive adjustment
- Available with hand-knob

Description

Die Druckventile der Typenreihe DDRA-7L-... sind direktgesteuerte Einschraubventile mit Gewinde M27×2 der NG 10. These two-stage pressure valves, series DDRA-7L-..., are size 10, screw-in cartridge valves with a seated pilot stage and an M27×2 mounting thread. They are designed on the proven sliding-spool principle. The required secondary pressure (port 1) is controlled to the value set independently of the inlet pressure (port 2). If the specified pressure in connection 1 is exceeded, connection 1 opens to 3 to restore the balance. 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 reduce 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	Reducing function
Design	Screw-in cartridge valve
Controls	mechanically adjustable
Characteristic	direct acting, spool type
Construction size	NG 10
Thread size	M27×2
Mounting attitude	unrestricted
Weight	1.32 lb
Cavity size acc. ISO	fits into ISO 7789: 27-04-0-07
Cavity acc. factory standard	For cavity DL
Tightening torque steel	59 ft·lb
Tightening torque aluminium	59 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-324-N / FKM: DS-324-V

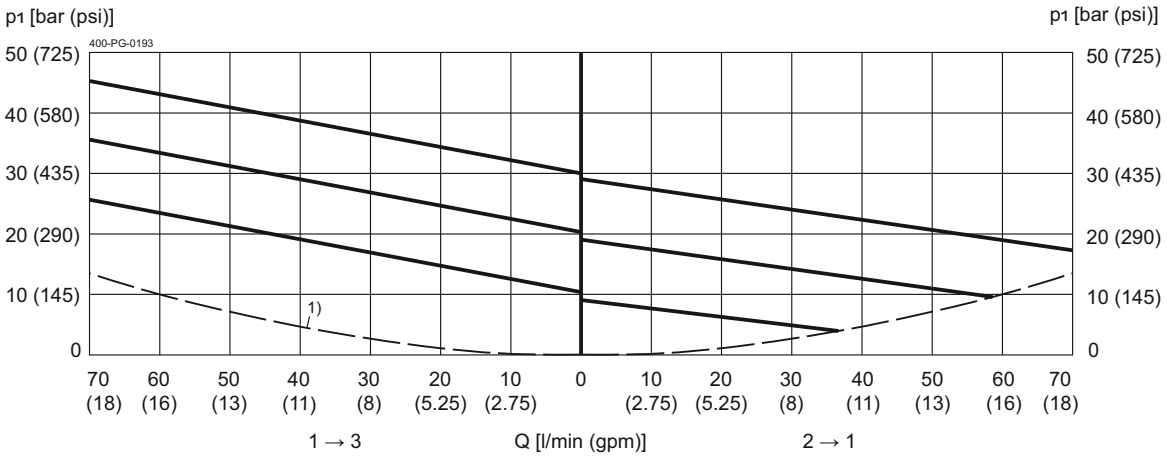
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	5000 psi
Maximum flow rate	18 gpm
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 22 °F
Maximum fluid temperature	+ 176 °F
Viscosity 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
Opening pressure	430 / 860 / 1400 / 2300 / 3600 psi
Pressure adjustment range	pressure range 215...435 psi: 1 turn = ca. 70 psi pressure range 290...870 psi: 1 turn = ca. 115 psi pressure range 435...1450 psi: 1 turn = ca. 200 psi pressure range 580...2300 psi: 1 turn = ca. 350 psi pressure range 725...3600 psi: 1 turn = ca. 290 psi

Performance graphs

measured with oil viscosity 33.0 mm²/s (cSt)

p = f (Q) Pressure-flow rate

Pressure range 215...435 psi

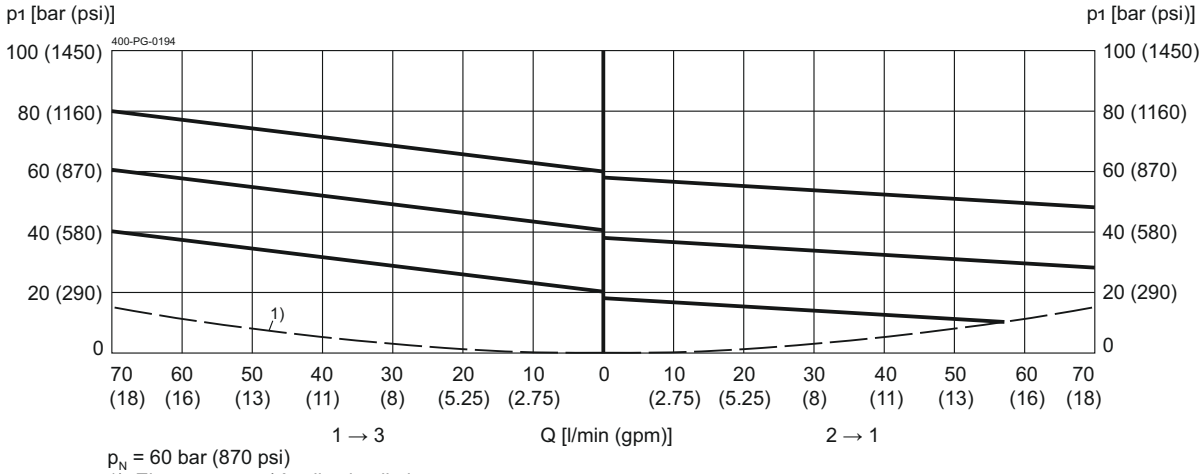


p_N = 30 bar (435 psi)

1) Einsatzgrenze / Application limit

p = f (Q) Pressure-flow rate

Pressure range 290...870 psi

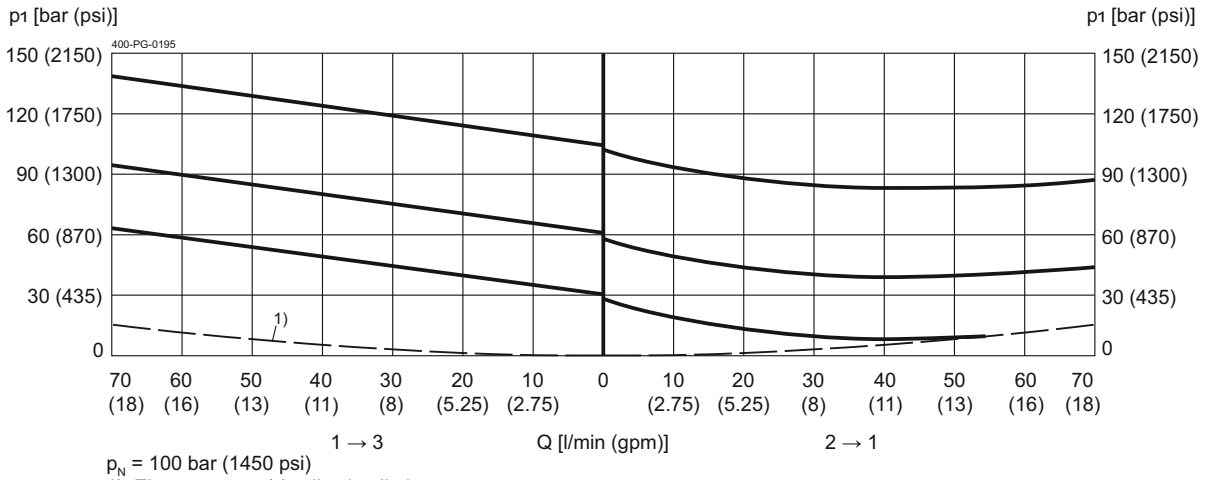


p_N = 60 bar (870 psi)

1) Einsatzgrenze / Application limit

p = f (Q) Pressure-flow rate

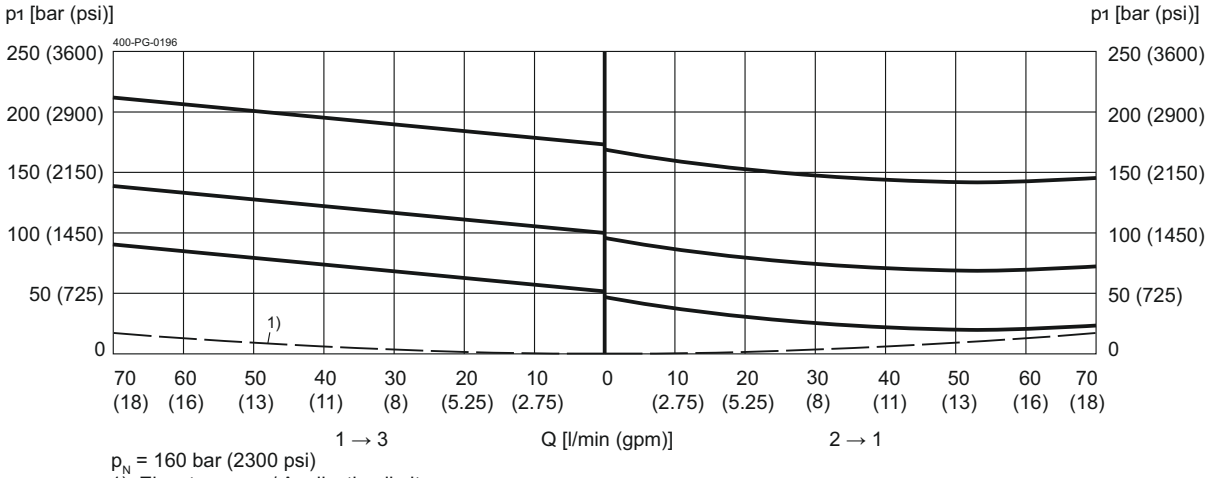
Pressure range 435...1450 psi



p_N = 100 bar (1450 psi)
1) Einsatzgrenze / Application limit

p = f (Q) Pressure-flow rate

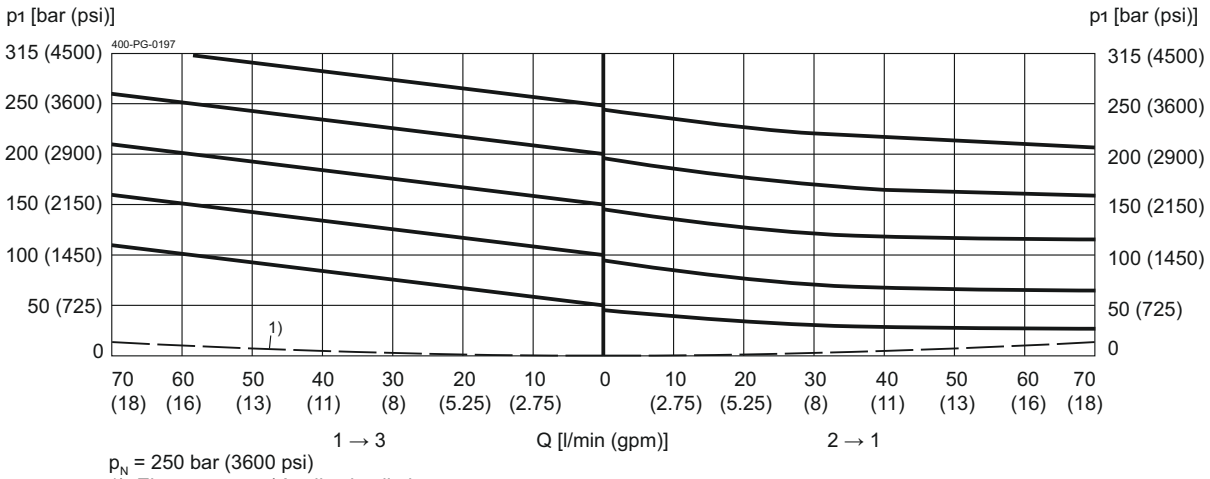
Pressure range 580...2300 psi



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

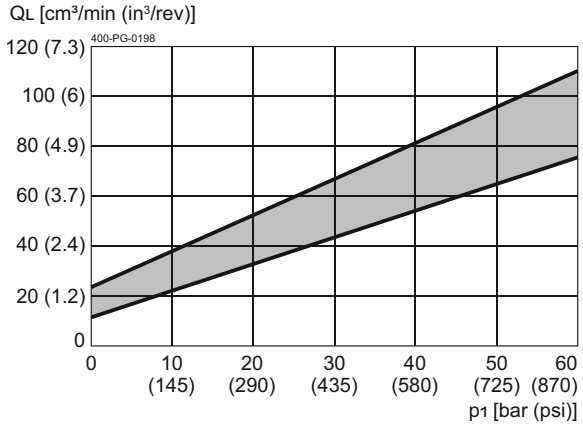
p = f (Q) Pressure-flow rate

Pressure range 425...3600 psi



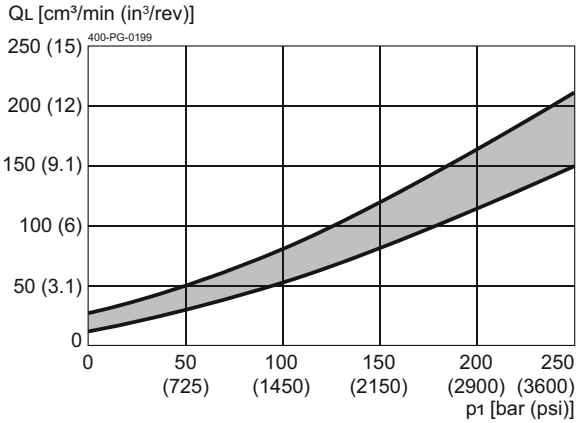
p_N = 250 bar (3600 psi)
1) Einsatzgrenze / Application limit

QL = f (l;Δp) Leakage flow rate



DDRA-7L-10-03…
DDRA-7L-10-06…

QL = f (l;Δp) Leakage flow rate



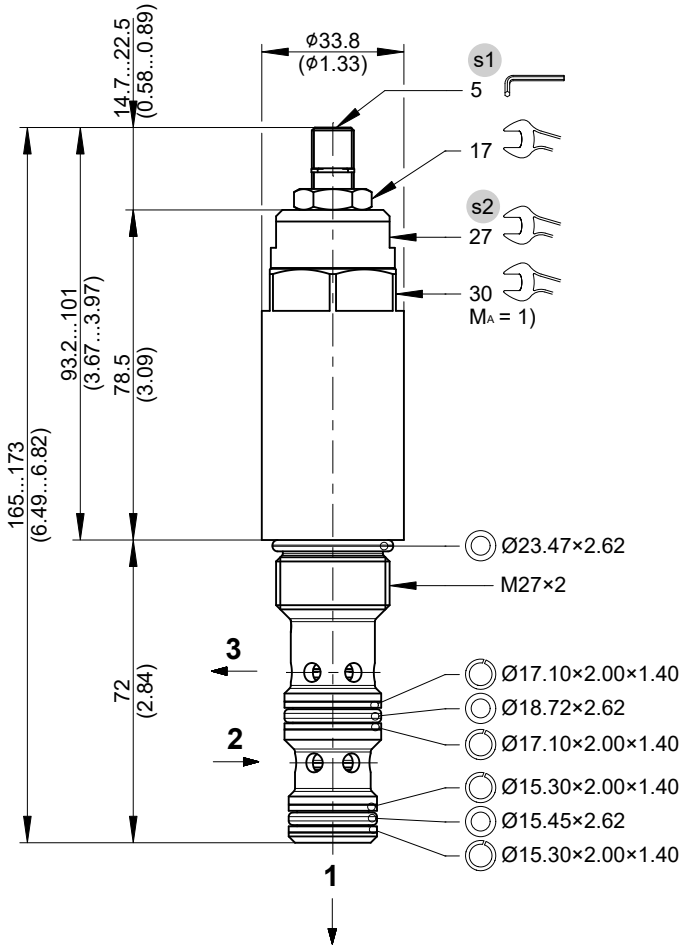
DDRA-7L-10-10…
DDRA-7L-10-16…
DDRA-7L-10-25…

Dimensions and sectional view

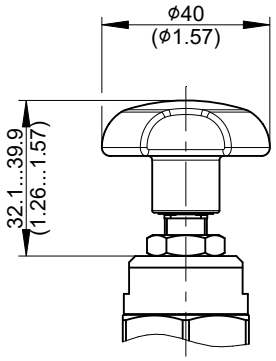
Beispiel für die Masseinheit:
Exampel for the dimensional units:

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



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".

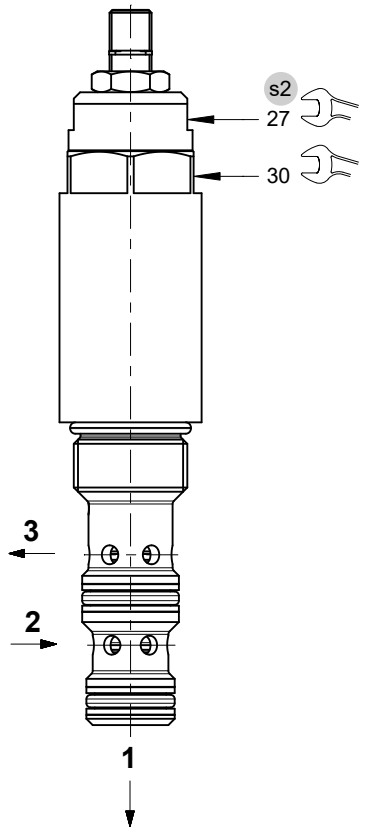
NOTE!
Set the required pressure with the adjusting screw s1 . After you have set the valve, lock the adjusting screw s1 with the lock nut.

NOTE!
To ensure proper function, the valve should be air-bled before commissioning. Refer to chapter "Air-bleeding before commissioning"

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.

Air-bleeding before commissioning



1. Loosen the plug screw s2 , unscrew approx. 2 turns.
2. Apply pressure to port 2 until oil escapes free of air bubbles from the plug srcew. s2 The Valve is deaerated when the pressure medium is free of air bubbles.
3. Tighten the plug screw s2 with a tightening torque of 30 Nm ±10%. (22 ft-lbs ±10%)

Ordering code

Ex. D | DR | A - 7 | L - 10 - 25 - S | _ - 1

D	=	pressure-control valve
DR	=	direct acting pressure reducing cartridge
A ... Q	=	standard model according to valid data sheet
Z ... R	=	special model (on request)
7	=	pressure-reducing with full-flow pressure relief
L	=	cavity type DL
10	=	nominal size 10
03	=	pressure range 15...30 bar / 215...435 psi
06	=	pressure range 20...60 bar / 290...870 psi
10	=	pressure range 30...100 bar / 435...1450 psi
16	=	pressure range 40...160 bar / 580...2300 psi
25	=	pressure range 50...250 bar / 725...3600 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)

Related data sheets

Reference	Description
400-P-040011	Form tools
400-P-060201	Cavity DL
400-P-740121	Threaded port body GCLA
400-P-740122	Threaded port body GCLAA

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