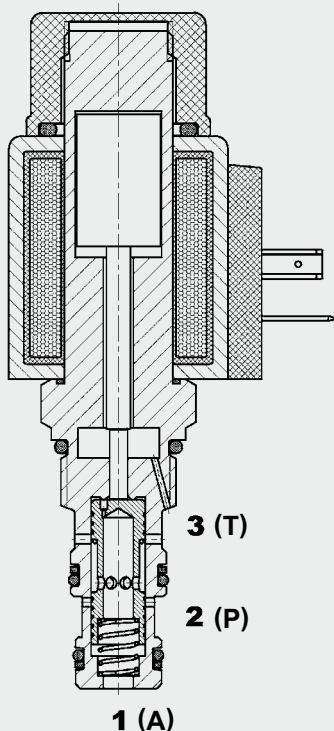


Up to 17 l/min
Up to 138 bar

FUNCTION



The proportional pressure reducing valve PDR08-02 is a direct-acting 3-way spool-type valve, with relief included. In the normal position (no current signal), the valve is closed on the inlet side (port 2) and the outlet side (port 1) is connected to tank (port 3). If the solenoid is energized, pressure is applied to the control piston in proportion to the electrical current. The control piston therefore moves and allows flow from port 2 to port 1. Any pressure at tank port 3 is additive to the pre-set control pressure. If, as a result of external factors, the pressure at port 1 rises above the set pressure, the valve opens from port 1 to tank port 3. To function correctly, the inlet pressure must be greater than the control pressure.

3-Way Proportional Pressure Reducing Valve Spool Type, Direct Acting SAE-08 Cartridge – 138 bar PDR08-02

FEATURES

- Main application is in accumulator charging circuits and as a pilot control for directional valves
- Particularly low pressure step when transferring from pressure reducing to pressure relief function
- External surfaces zinc-plated and corrosion-proof
- Excellent stability throughout the entire flow range
- Excellent dynamic performance
- Hardened and ground internal valve components to ensure minimal wear and extended service life
- Coil seals protect the solenoid system
- Wide variety of connectors available
- Low pressure drop due to CFD optimized flow path
- Fine adjustment available as an option
- **Differences between PDR08-02 and PDR08-01:** In contrast to the PDR08-01, the PDR08-02 is designed asymmetrically, i.e. the valve is rated from P to A (pressure reducing function) up to 17 l/min and from A to T (pressure relief function) up to 10 l/min. Moreover the valve has zero overlap which has the effect of reducing the hysteresis and leakage.

SPECIFICATIONS

Operating pressure:	At port 2: max. 350 bar
Control pressure:	At port 1: max. 138 bar
Tank pressure:	At port 3: max. 300 bar
Pressure ranges:	14 / 20 / 35 / 38 / 49 / 75 / 138 bar
Nominal flow:	max. 10 l/min A→T / max. 17 l/min P→A
Internal leakage from 2 to 1:	Less than 50 cm ³ /min at 350 bar, at port 2 (0 mA)
Media operating temperature range:	min. -20 °C to max. +100 °C
Ambient temperature range:	min. -20 °C to max. +60 °C
Operating fluid:	Hydraulic oil to DIN 51524 Part 1 and 2
Viscosity range:	min. 7.4 mm ² /s to max. 420 mm ² /s
Filtration:	Class 19/17/14 according to ISO 4406 or cleaner
MTTF _d :	150 years (see "Conditions and instructions for valves" in brochure 5.300)
Installation:	No orientation restrictions
Materials:	Valve body: steel Spool: hardened and ground steel Seals: NBR (standard) FKM (optional, media temperature range -20 °C to +120 °C) Back-up rings: PTFE
Cavity:	FC08-3 UNF
Weight:	Valve only: 0.5 kg, Coil: 0.22 kg
Electronic data:	
Type of voltage:	1050 mA, 8.8 Ohm (24 V) 2100 mA, 2.2 Ohm (12 V)
Voltage tolerance:	± 15% of nominal
Dither frequency:	140 – 250 Hz
Hysteresis with dither:	2 – 4 % of the max. control current
Repeatability:	≤ 1 % of the max. pressure
Hysteresis:	≤ 1 % of the max. control current
Response sensitivity:	≤ 1 % of the max. control current
Coil type:	Coil (12 or 24) P ...40-1836

Note:

The PDR08 can also be supplied with an emergency pressure adjustment (version -02M). This allows a manual pressure adjustment of the valve if the electrical signal is interrupted. This adjustment should be used only in the case of electrical failure since the manual setting would be additive to the electrical setting and the system could be damaged when power is restored. In order to achieve optimal function, any trapped air should be vented using the venting screw on the face of the pole tube (not fitted to version -02M).

MODEL CODE

PDR08-02 M - C - N - 50 - 12 PG - 2.2

Basic model

Proportional pressure reducing valve, UNF

Type

02 = standard

Options

No details = no option

M = manual override

T = tolerance compensation
(on request, with fine adjustment)

Body and ports*

C = cartridge only

Versions with bodies on request

Seals

N = NBR (standard)

V = FKM (optional)

Pressure range

20 = up to 14 bar outlet pressure (200 PSI +10)

30 = up to 20 bar outlet pressure (300 PSI +10)

50 = up to 35 bar outlet pressure (500 PSI +10)

55 = up to 38 bar outlet pressure (550 PSI +10)

(model T only)

60 = up to 42 bar outlet pressure (600 PSI +10)

70 = up to 49 bar outlet pressure (700 PSI +10)

110 = up to 75 bar outlet pressure (1100 PSI +10)

200 = up to 138 bar outlet pressure (2000PSI +10)

Coil voltage

12 = 12 V (2.2 Ohm)

24 = 24 V (8.8 Ohm)

Coil connectors ... 40-1836

PG = DIN connector to EN175301-803

PL = 2 flying leads, 457 mm long; 0.75 mm²

PN = Deutsch connector, 2-pole, axial

PU = AMP Junior Timer, 2-pole, axial

Other connectors on request

Coil resistance

2.2 = 2.2 Ohm (12 V)

8.8 = 8.8 Ohm (24 V)

Standard models

Model code	Part No.
PDR08-02-C-N-20-12PG-2.2	3437006
PDR08-02-C-N-30-12PG-2.2	3437007
PDR08-02-C-N-50-12PG-2.2	3436994
PDR08-02-C-N-70-12PG-2.2	3437008
PDR08-02-C-N-110-12PG-2.2	3437009
PDR08-02-C-N-200-12PG-2.2	3437010
PDR08-02-C-N-20-24PG-8.8	3437011
PDR08-02-C-N-30-24PG-8.8	3437012
PDR08-02-C-N-50-24PG-8.8	3437005
PDR08-02-C-N-70-24PG-8.8	3437013
PDR08-02-C-N-110-24PG-8.8	3437014
PDR08-02-C-N-200-24PG-8.8	3437015
PDR08-02T-C-N-55-24PU-8.8	3386613

Other models on request

*Standard in-line bodies

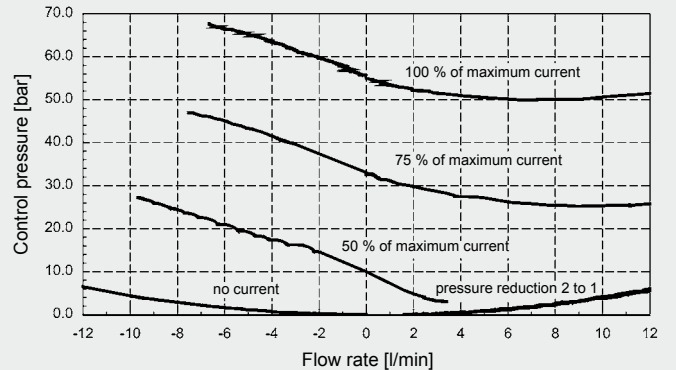
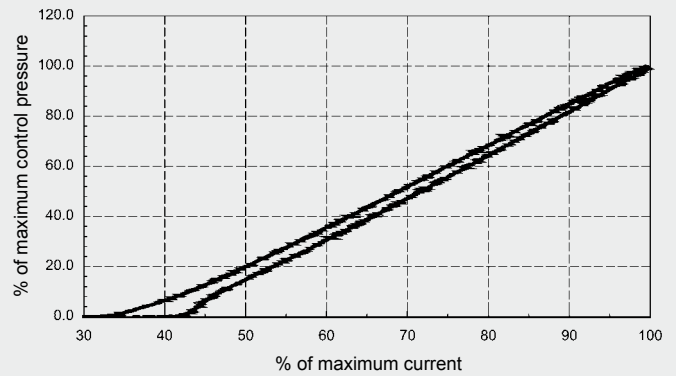
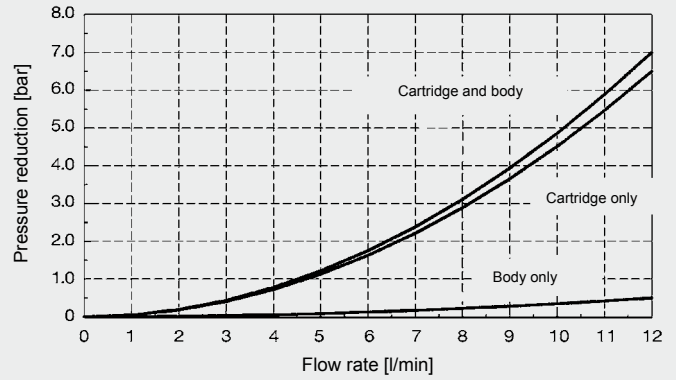
Code	Part No.	Material	Ports	Max. pressure
FH083-SB3	560922	Steel, zinc-plated	G 3/8	420 bar
FH083-AB3	3011427	Aluminium, clear anodized	G 3/8	210 bar

Seal kits

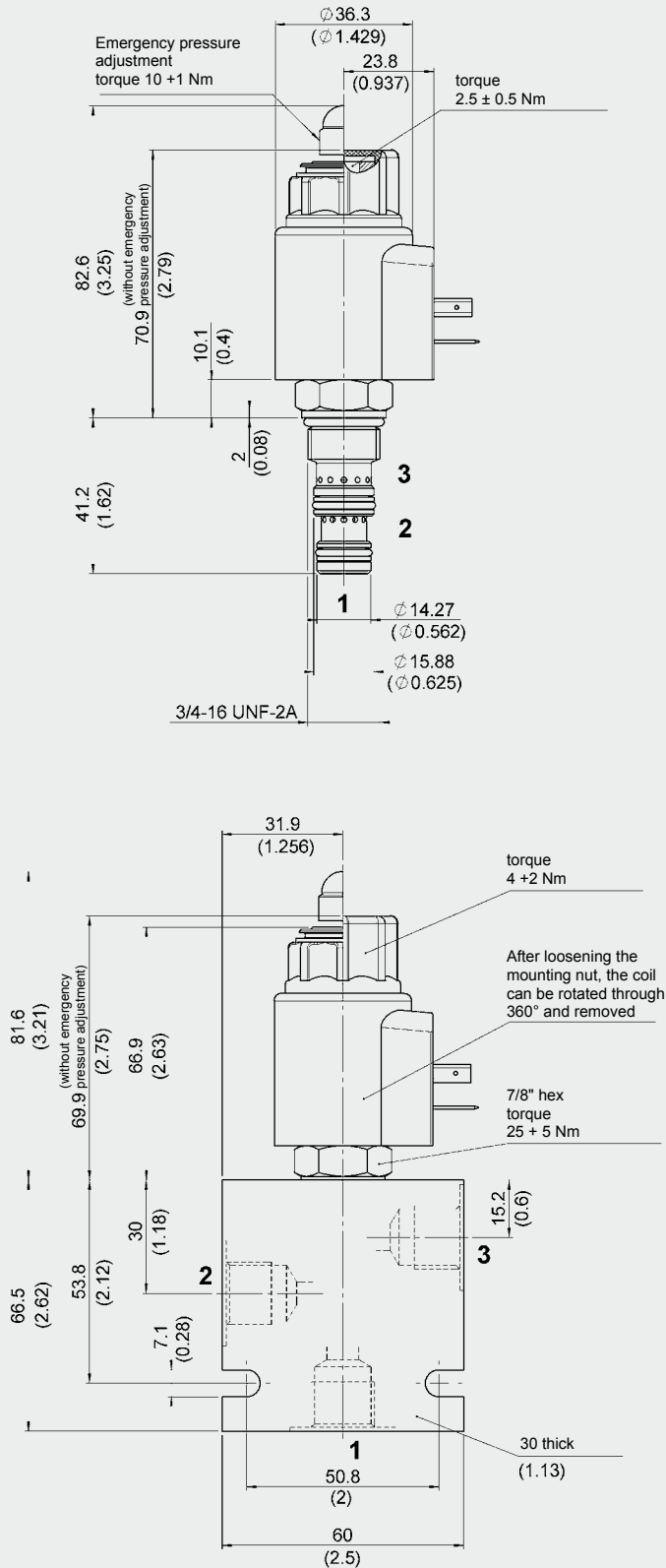
Code	Part No.	Material
FS083-N SEAL KIT	3054795	NBR
FS083-V SEAL KIT	2591059	FKM

PERFORMANCE

$T_{oil} = 46\text{ }^{\circ}\text{C}$, $v = 34\text{ mm}^2/\text{s}$



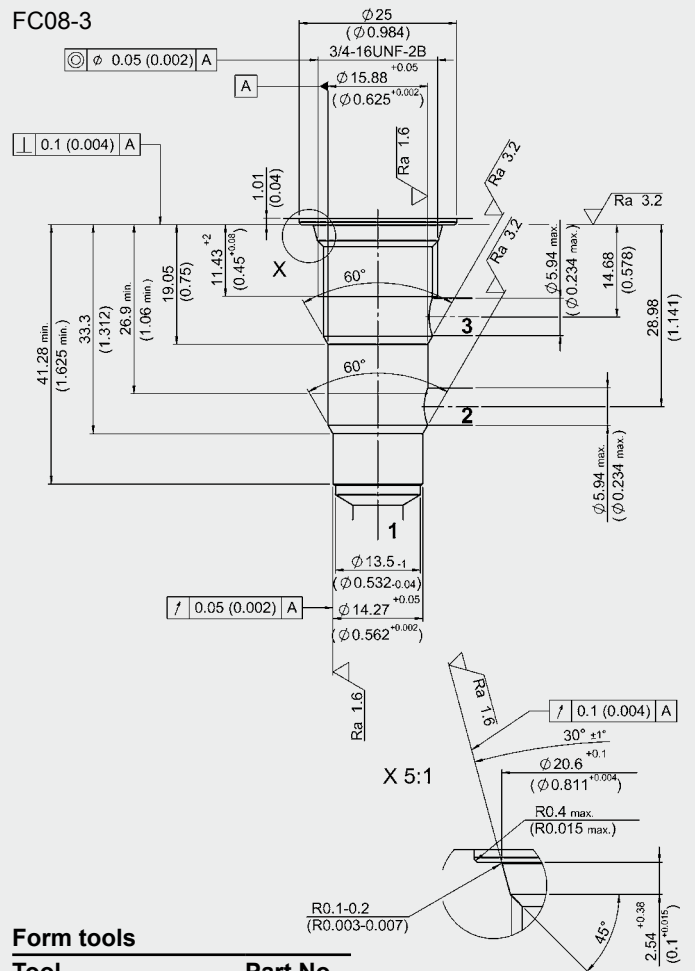
DIMENSIONS



mm (inch)
Subject to technical modifications.

CAVITY

FC08-3



Form tools

Tool	Part No.
Countersink FC08-3	175644
Reamer FC08-3	175645

mm (inch)
Subject to technical modifications.

NOTE

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department. Subject to technical modifications.

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