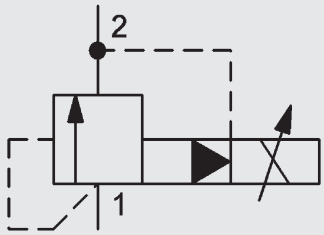
HYDAC INTERNATIONAL

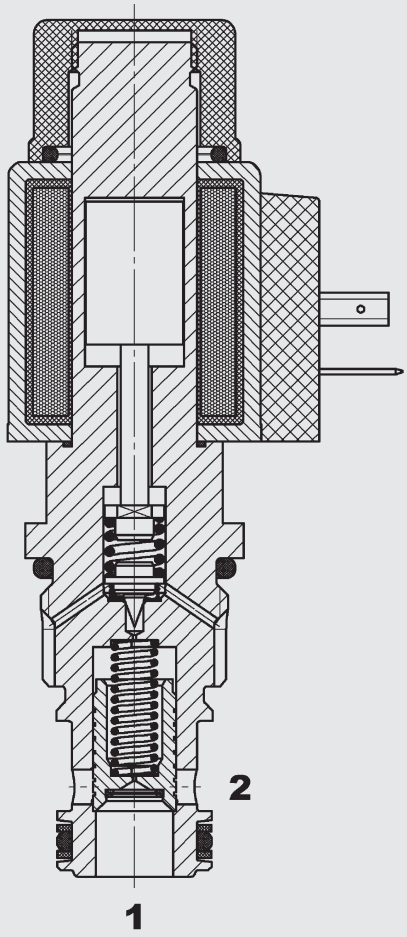


up to 200 l/min
up to 350 bar

Proportional Pressure Relief Valve spool type, pilot operated UNF Cartridge – 350 bar

PDB12P-01

FUNCTION



The proportional valve is a pilot operated, spool type pressure relief valve. If pressure at port 1 exceeds the setting defined by the electrical signal, the pilot poppet opens and oil flows from behind the main spool to tank port 2. The resulting pressure differential causes the main spool to lift against the return spring and allows flow from port 1 to port 2. As a function of the electrical signal, the relief pressure at port 1 can be changed steplessly.

FEATURES

- Coil seals protect the solenoid system
- Excellent stability throughout the entire flow range
- Excellent dynamic performance
- Screen-protected metering orifice enhances safety
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1000 h Salt spray test)

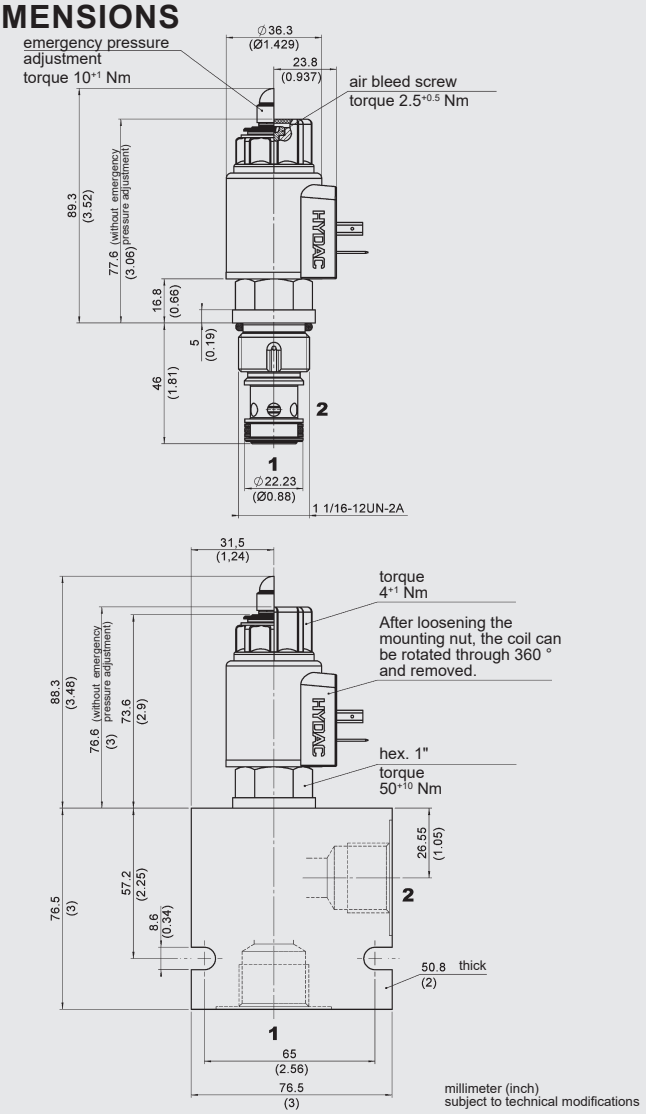
SPECIFICATIONS*

Operating pressure:	max. 350 bar	
Nominal flow:	max. 200 l/min	
Internal leakage:	< 0.5 l/min at 350 bar	
Operating pressure ranges:	up to 60 bar up to 230 bar up to 350 bar	
Media operating temperature range:	min. -30 °C to max. +100 °C	
Ambient temperature range:	min. -30 °C to max. + 60 °C	
Operating fluid:	Hydraulic oil to DIN 51524 part 1, 2 and 3	
Viscosity range:	min. 7.4 mm²/s to max. 420 mm²/s	
Filtration of operating fluid: (to ISO 4406)	p ≤ 210 bar: min. class 17/15/12 p > 210 bar: min. class 16/14/11	
$MTTF_d$:	150 - 1200 years, according to DIN EN ISO 13849-1	
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
	Coil:	steel / polyamide
Cavity:	FC12-2	
Weight:	Valve complete	0.55 kg
	Coil only	0.23 kg
Electronic data		
Control currents:	1050 mA, 8.8 Ohm (24 Volt) 2100 mA, 2.2 Ohm (12 Volt)	
Dither frequency:	approx. 160 Hz - 250 Hz	
Hysteresis with dither:	2 - 4 % of I_{nom}	
Repeatability:	≤ 1.5 % of p_{nom}	
Reversal error:	≤ 2 % of I_{nom}	
Response sensitivity:	≤ 1 % of I_{nom}	
Coil type:	Coil…-40-1836	

The PDB12P can also be supplied with an emergency pressure adjustment (version –01M). 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.

* see "Conditions and instructions for valves" in brochure 53.000

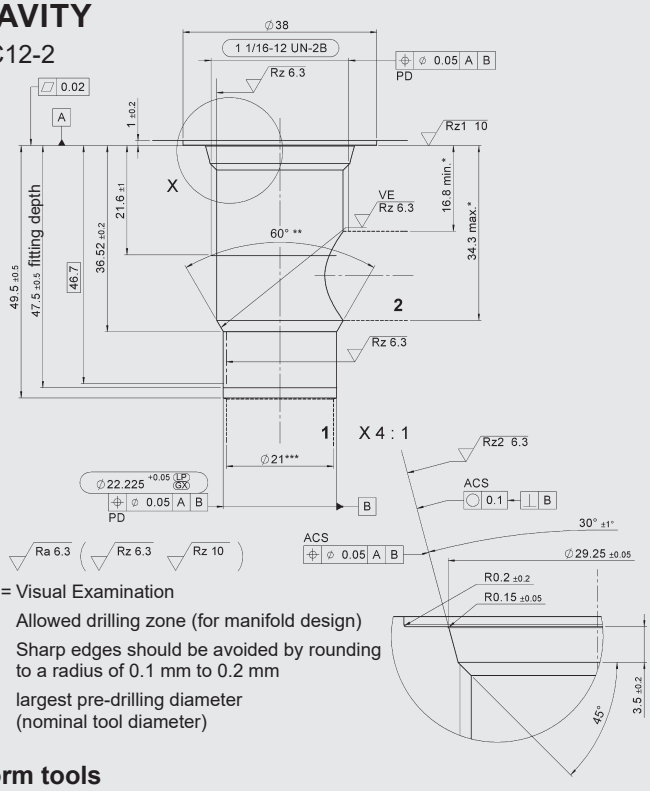
DIMENSIONS



millimeter (inch)
subject to technical modifications

CAVITY

FC12-2



VE = Visual Examination

* Allowed drilling zone (for manifold design)

** Sharp edges should be avoided by rounding to a radius of 0.1 mm to 0.2 mm

*** largest pre-drilling diameter (nominal tool diameter)

Form tools

Tool	Part No.
Countersink	176951
Reamer	176952

millimeter (inch)
subject to technical modifications

MODEL CODE

PDB12P-01 M - C - N - 330 - 24 PG - 8.8

Basic model
Proportional pressure relief valve, UNF

Manual override
no details = without manual override
M = manual override

Body and ports*
C = cartridge only
SB6 = G3/4 ports, steel body
AB6 = G3/4 ports, aluminium body

Seals
N = NBR
V = FKM

Pressure range
87 = up to 60 bar (870 PSI)
330 = up to 230 bar (3300 PSI)
500 = up to 350 bar (5000 PSI)

Coil voltage
12 = 12 V DC (2.2 Ohm)
24 = 24 V DC (8.8 Ohm)

Coil connectors (type 40-1836)
DC: PG = DIN connector to EN175301-803
PU = AMP Junior Timer, 2-pole, axial
PL = 2 flying leads, 457 mm long; 0.75 mm²
PN = Deutsch connector, 2-pole, axial, DT04-22P-EF 04
Other connectors on request

Coil resistance
2.2 = 2.2 Ohm (12V)
8.8 = 8.8 Ohm (24V)

Standard models

Model code	Part No.
PDB12P-01-C-N-87-12PG-2.2	3144462
PDB12P-01-C-N-330-12PG-2.2	3144463
PDB12P-01-C-N-500-12PG-2.2	3144464
PDB12P-01-C-N-87-24PG-8.8	3144465
PDB12P-01-C-N-330-24PG-8.8	3144466
PDB12P-01-C-N-500-24PG-8.8	3144467

*Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
FH122-SB6	3053782	Steel, zinc-plated	G3/4"	350 bar
FH122-AB6	3053843	Aluminium, anodized	G3/4"	210 bar

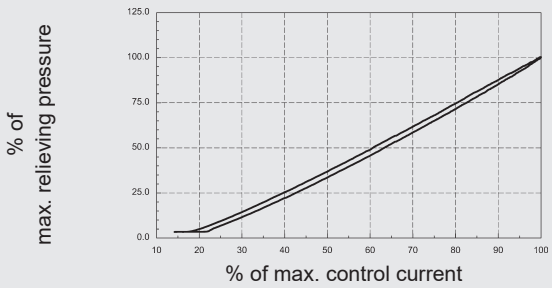
Other bodies on request

Seal kits

Code	Material	Part No.
FS UNF 12/S2/N	NBR	3651537
FS UNF 12/S2/V	FKM	3651539

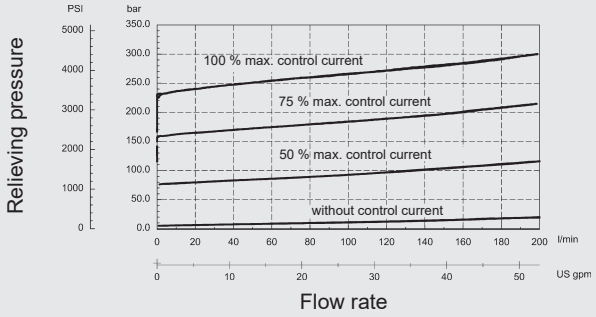
TYPICAL PERFORMANCE

measured at ν = 34 mm²/s, T_{oil} = 46 °C



Performance for valves with setting pressure 330

measured at ν = 34 mm²/s, T_{oil} = 46 °C



NOTE

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

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