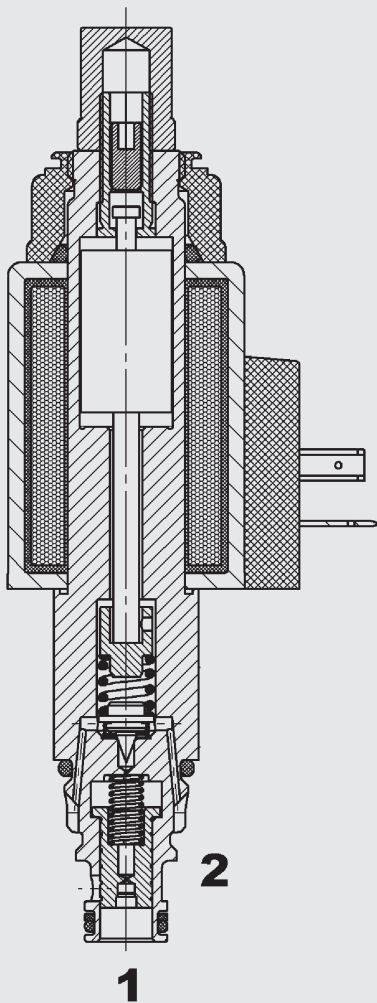


up to 60 l/min
up to 350 bar

Proportional pressure relief valve **PDB08PY-01**

spool type, pilot-operated
UNF Cartridge – 350 bar

FUNCTION



PRODUCT ADVANTAGES

- Highly space-saving 2-in-1 design saves the need for one valve
- Weight reduction
- Cavity reduction
- Can be used as a switching valve between two pressure levels when used in conjunction with a switching coil
→ simple control
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1,000 h salt spray test)

FUNCTION DESCRIPTION

The proportional pressure relief valve is a pilot-operated spool type valve. If pressure at port 1 exceeds the value that has been set electrically or mechanically, the pilot stage opens, creating a flow of oil from the back of 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. The pressure to be limited at port 1 can be adjusted steplessly depending on the electrical set value. A minimum and a maximum pressure value for the usable range of the proportionally controllable relief pressure can be defined at the valve.

Caution:

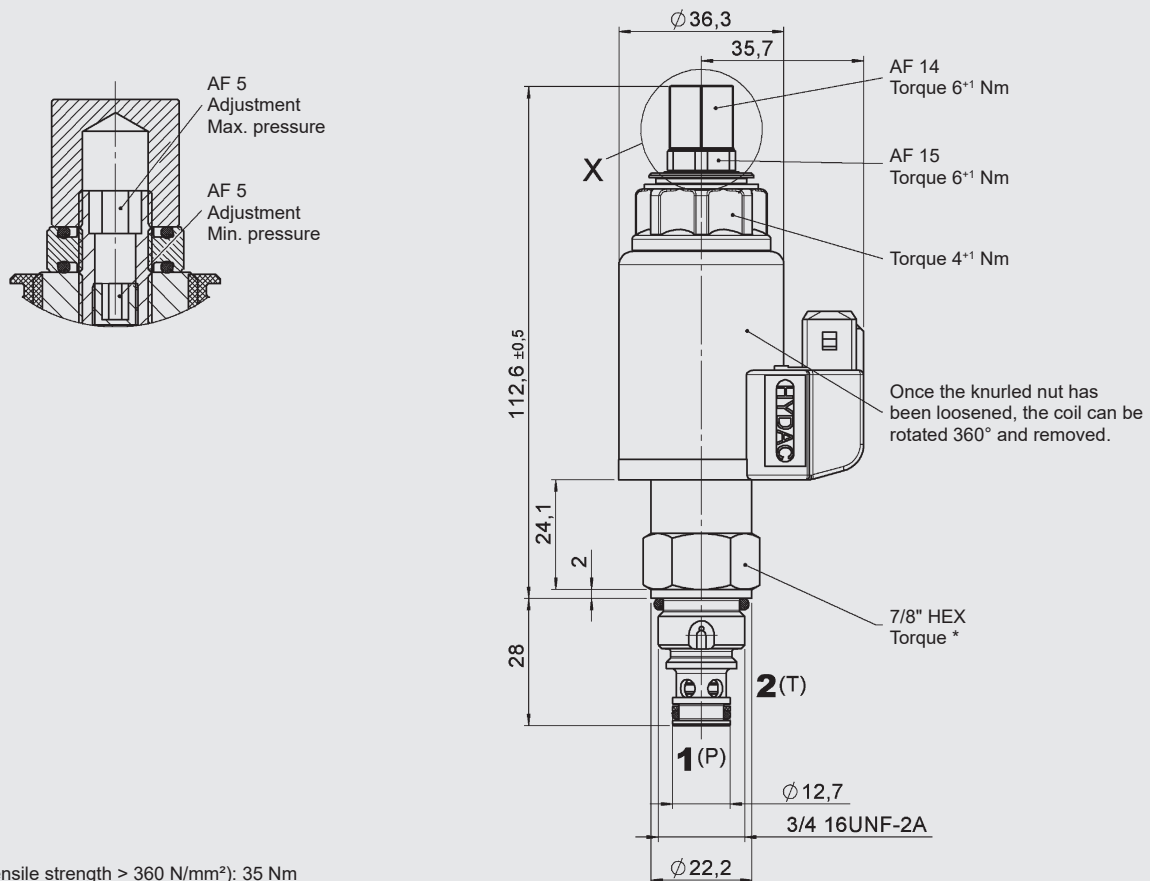
Pressure at port 2 increases the pressure setting.

SPECIFICATIONS*

Operating pressure	max. 350 bar	
Pressure setting range	5 to 75 bar 5 to 115 bar 5 to 205 bar 5 to 285 bar 5 to 350 bar	
Flow rate	max. 60 l/min	
Internal leakage	< 0.5 l/min at 350 bar	
Media operating temperature range	NBR: min. -30°C to max. +100°C FKM: min. -20°C to max. +120°C	
Ambient temperature range	NBR: min. -20°C to max. +60°C FKM: min. -20°C to max. +60°C	
Operating fluid	Hydraulic oil according to DIN 51524 Part 1, 2 and 3	
Viscosity range	min. 7.4 mm ² /s to max. 420 mm ² /s	
Filtration (to ISO 4406)	< 210 bar: min. 20/18/15 > 210 bar: min. 19/17/14	
MTTF _d	150 – 1200 years, measurement according to DIN EN ISO 13849-1	
Installation	No orientation restrictions	
Materials	Valve body	Steel
	Piston	Hardened and ground steel
	Seals	NBR (standard) FKM (optional)
	Back-up rings	PTFE
	Solenoid coil	Steel / polyamide
Cavity	FC08-2	
Weight	0.23 kg	
Electronic data		
Control current	1050 mA, 8.8 Ohm (24 Volt) 2100 mA, 2.2 Ohm (12 Volt)	
Dither frequency	200 Hz	
Hysteresis with dither	≤ 2.5% of max. control current	
Repeatability	≤ 1.5% of max. pressure range	
Reversal error	≤ 3% of max. control current	
Response sensitivity	≤ 2% of max. control current	
Coil type	Coil...-40-1836	

* see "Conditions and Instructions for Valves" in brochure 53.000

DIMENSIONS

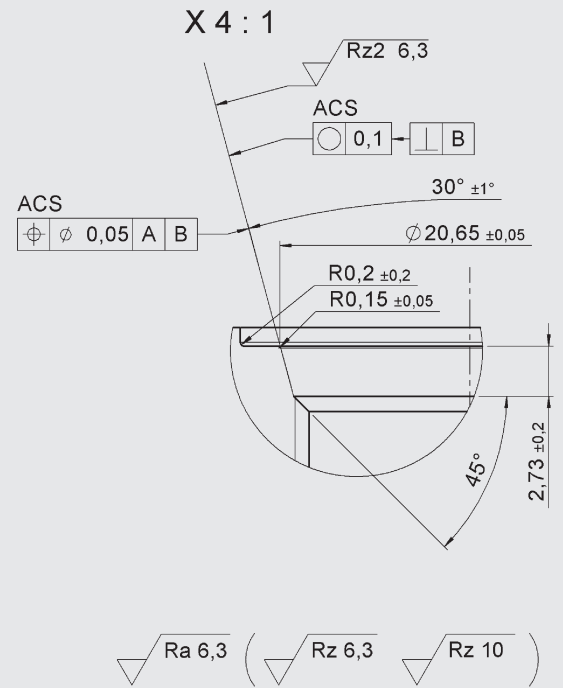
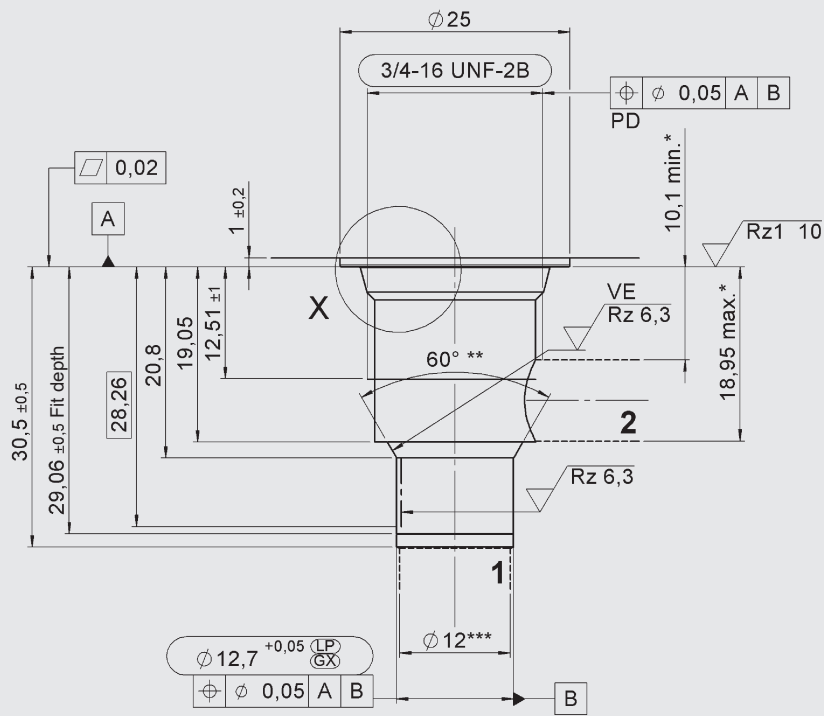


*Torque:
Steel manifold (tensile strength > 360 N/mm²): 35 Nm
Aluminium manifold (tensile strength > 330 N/mm²): 30 Nm
(With torque tool in acc. with DIN EN ISO 6789, tool type II class A or B)
For more information see "Conditions and Instructions for Valves"
in brochure 53.000

Millimetre (inch)
Subject to technical modifications

CAVITY

FC08-2



- VE = Visual examination
- * Permitted 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)

Millimetre (inch)
Subject to technical modifications

MODEL CODE

PDB08PY - 01 - C - N - 300 V 140 / 073 - 24 - PG - 8.8

Basic model

Proportional pressure relief valve, UNF

Type

01 = standard

Body and ports

C = cartridge only

Sealing material

N = NBR (standard)

V = FKM

Pressure setting range

110 = 5 to 75 bar (1100 PSI)

165 = 5 to 115 bar (1650 PSI)

300 = 5 to 210 bar (3000 PSI)

410 = 5 to 280 bar (4100 PSI)

500 = 5 to 350 bar (5000 PSI)

Adjustment type

V = adjustable using tool

F = fixed setting, cannot be adjusted

Max. pressure value limit

Not specified = preset p_{nom}

140 = preset customer-spec. maximum pressure setting (specified in PSI/10)

Min. pressure value limit

Not specified = preset p_{min} (5 bar)

073 = preset customer-spec. minimum pressure setting (specified in PSI/10)

Note: min. pressure value < 0.9 x max. pressure value

Nominal voltage

12 = 12 V DC (2.2 Ohm)

24 = 24 V DC (8.8 Ohm)

Coil connectors (40-1836)*

DC: PG = DIN connector to EN175301-803

PK = Kostal connector, M27x1

PL = Connector with two flying leads, 0.75mm²

PN = Deutsch connector, 2-pole

PT = AMP Junior Timer, 2-pole, radial

*See "Solenoid Coils for Proportional Valves" in brochure 5.215

Coil resistance

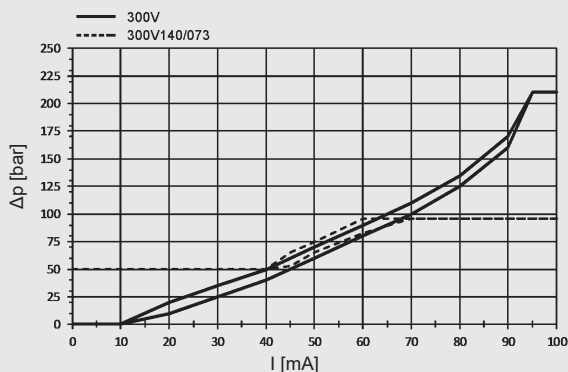
2.2 = 2.2 Ohm (12 V)

8.8 = 8.8 Ohm (24 V)

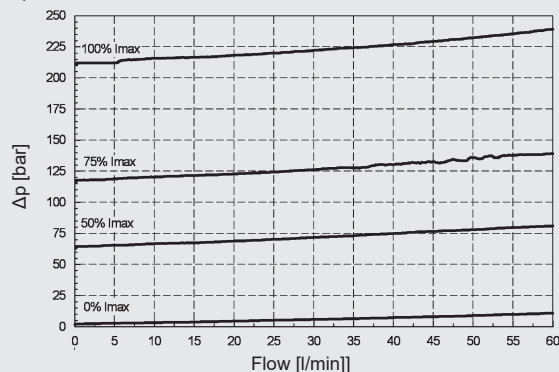
TYPICAL PERFORMANCE

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

p-I curve



Δp-Q curve



MATERIAL OVERVIEW

Standard models

Model code	Part no.
PDB08PY-01-C-N-110V-0	3949677
PDB08PY-01-C-N-165V-0	3949678
PDB08PY-01-C-N-300V-0	3949676
PDB08PY-01-C-N-500V-0	3949680

Other versions on request

Spare parts seal kits

Code	Material	Part no.
FH082-SB3	NBR	3651385
FH082-AB3	FKM	3651356

Accessories, standard in-line bodies

Code	Material	Ports	Pressure	Part no.
FH082-SB3	Steel, zinc-plated	G3/8"	350 bar	560919
FH082-AB3	Aluminium, anodised	G3/8"	210 bar	3011423

Other housings on request

Accessories, form tools for cavity

Tool	Part no.
Pre-countersink	175473
Reamer	175474

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.