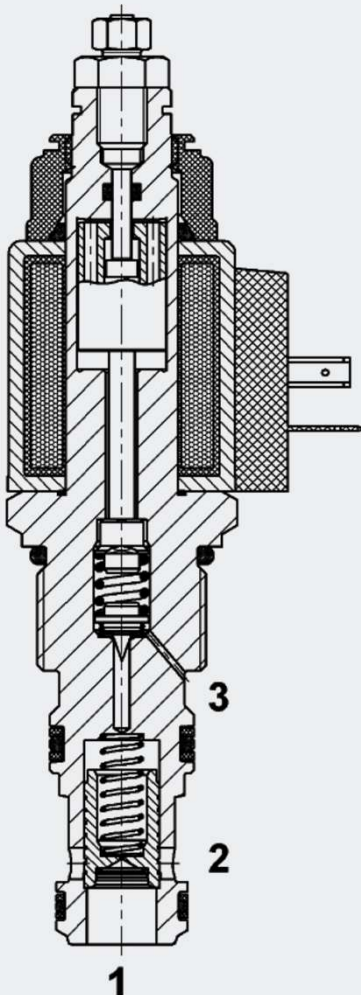


up to 200 l/min
up to 350 bar

Pressure relief valve **DBM12121PEY-01**

with spring chamber relief
spool type, pilot-operated
Metric Cartridge – 350 bar

FUNCTION



PRODUCT ADVANTAGES

- For applications in systems which need to maintain a constant minimum pressure to keep the consumer stable despite variable back pressures acting on the valve
- Independent of the outflow pressure → the set pressure value is constantly maintained
- With spring chamber relief at port 3
- Low Δp
- A factory-set, customer-specific pressure value of up to 350 bar is possible
- Various nominal sizes available on request
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1,000 h salt spray test)

FUNCTION DESCRIPTION

The pressure relief valve is a pilot-operated, spring-loaded spool valve. The pressure limiting function is magnetically activated and has spring chamber relief at port 3. Pressures at port 2 have no effect on the pressure setting.

When the solenoid is energised, its function is to limit pressure in the system. If the inlet pressure at port 1 exceeds the pre-set value, the pilot stage opens and a small amount of oil flows from behind the main spool to port 3. The resulting pressure differential causes the main spool to move against its return spring and allows oil to flow from port 1 to port 2. This continues until the system pressure at port 1 is equal to the pre-set value of the pressure spring and the pilot stage closes again. The return spring moves the main spool to the closing position.

When the solenoid is de-energised, the pressure limiting function is terminated and port 1 is connected to port 2. If there is still an inlet pressure at port 1, i. e. oil is flowing to the consumer, the pressure build-up at the consumer amounts to max. 10 bar.

Note

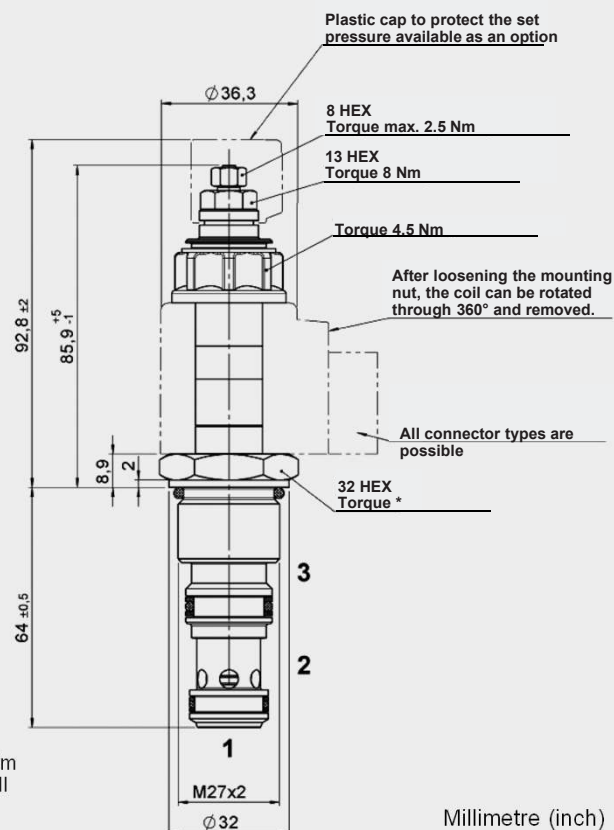
A small amount of pilot oil must be able to drain off at port 3. Pressure at port 3 adds to the setting pressure.

SPECIFICATIONS*

Operating pressure	max. 350 bar
Pressure setting ranges	10 to 60 bar 10 to 100 bar 10 to 230 bar 10 to 350 bar
Flow rate	max. 200 l/min
Internal leakage	< 0.6 l/min. at 80% of p_{nom}
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 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)	$p \leq 210$ bar: min. class 20/18/15 $p > 210$ bar: min. class 19/17/14
MTTFd	150 – 1200 years, measurement according to DIN EN ISO 13849-1
Installation	No orientation restrictions
Materials	Valve body steel Spool hardened and ground steel Seals NBR (standard) FKM Back-up rings PTFE
Cavity	12121
Weight	0.55 kg
Electrical data	
Type of voltage	<u>DC</u> : DC solenoid <u>AC</u> : AC solenoid with rectifier integrated into the coil
Voltage tolerance	± 15% of the nominal voltage
Coil resistance	30 Ω (12 V) 8 Ω (24 V)
Coil duty rating	Continuous up to max. 115 % of the nominal voltage at 60 °C ambient temperature
Coil type	40-1836

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

DIMENSIONS

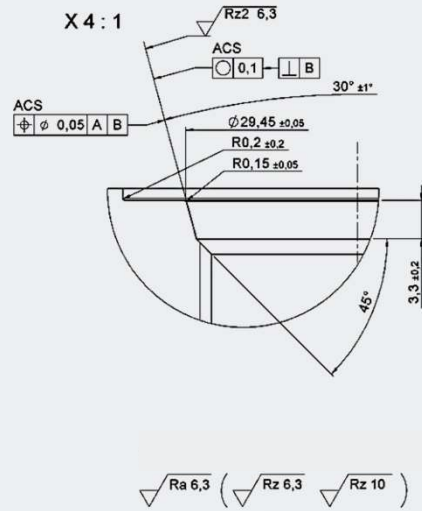
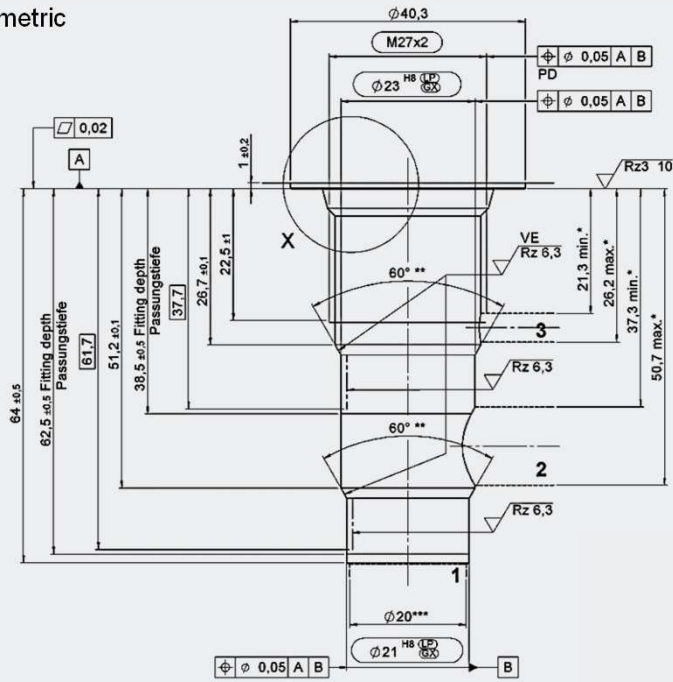


*Torque:
Steel manifold (tensile strength > 360 N/mm²): 105 Nm
Aluminium manifold (tensile strength > 330 N/mm²): 70 Nm
(With torque tool in acc. with DIN EN ISO 6789, tool type II class A or B)
For more information see "Conditions and Instructions for Valves" in brochure 53.000

Millimetre (inch)
Subject to technical modifications.

CAVITY

12121 metric



- 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.

MODE CODE

DBM12121PEY - 01 - C - N - 350 V 350 - 24 DG \$0504

Basic model

Pressure relief valve, metric

Type

01 = standard

Body and ports

C = cartridge only

Sealing material

N = NBR (standard)

V = FKM

Pressure ranges

60 = 10 to 60 bar

100 = 10 to 100 bar

230 = 10 to 230 bar

350 = 10 to 350 bar

Type of adjustment

V = adjustable using tool (standard)

C = with seal cap (only with coil)

Other types of adjustment on request

Max. setting pressure

350 = 350 bar (factory-set setting tolerance $\pm 3\%$ of the max. pressure range)

Note: Setting pressure 50% to 100% of the pressure range

Coil voltage

12 = 12 V (30 Ω)

24 = 24 V (8 Ω)

Coil connectors (40-1836)*

DC: DG = DIN connector design A to EN 175301-803

DK = KOSTAL threaded connection M27x1

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

DN = Deutsch connector, 2-pole, axial

DT = AMP Junior Timer, 2-pole, radial

AC: AG = DIN connector design A to EN 175301-803

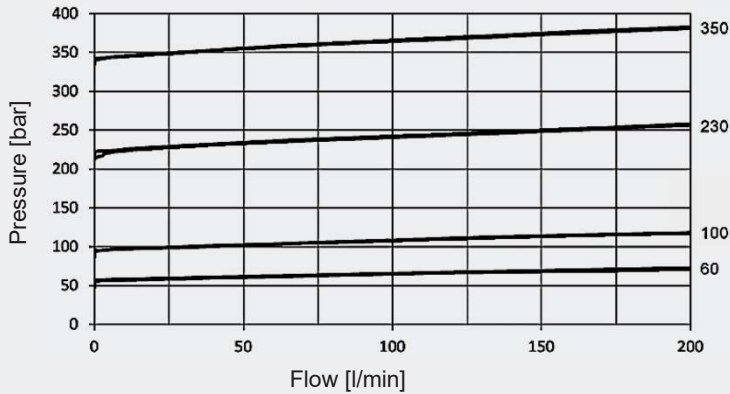
*see "Solenoid coils for directional valves" in brochure 5.207

Orifice

Internal version identification code

TYPICAL PERFORMANCE

measured at 41 mm²/s and T_{oil} = 42°C



MATERIAL OVERVIEW

Standard models

Model code	Part no.
DBM12121PEY-01-C-N-060V-0	4439873
DBM12121PEY-01-C-N-100V-0	4439874
DBM12121PEY-01-C-N-230V-0	4408044
DBM12121PEY-01-C-N-350V-0	4439895

Other versions on request

Spare parts, seal kits

Code	Material	Part no.
FS METRISCH 12121/N	NBR	3651335
FS METRISCH 12121/V	FKM	4080086

Accessories, standard in-line bodies

Code	Material	Ports	Pressure	Part no.
R12121-01X-01	Steel, zinc-plated	G3/4", G3/8"	350 bar	3130704

Other standard in-line bodies on request

Accessories, form tools for cavity

Tool	Part no.
KK-Countersink	177317
Reamer	175021

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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