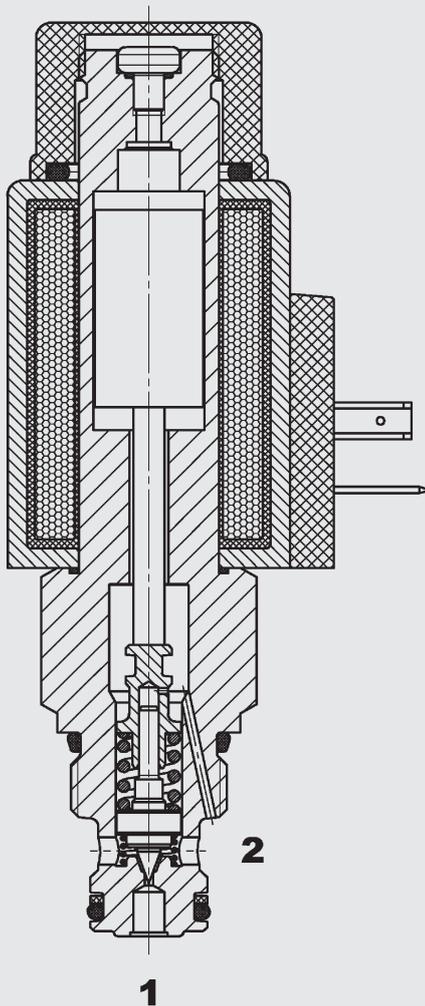


Up to 10 l/min  
Up to 350 bar

## FUNCTION



The proportional pressure relief valve is a direct-acting, poppet type valve.

If the pressure at port 1 exceeds the setting defined by the spring force, the valve opens and allows flow from port 1 to tank port 2. As a function of the electrical signal, the spring force is directly depending on the magnet force and therefore the relief pressure at port 1 can be changed steplessly.

## Proportional Pressure Relief Valve Poppet Type, Direct-Acting, Metric Cartridge – 350 bar PDBM06020-01

### FEATURES

- Patented design of poppet guidance enables small hysteresis and good response sensitivity
- High stability over the entire flow range by optimized flow geometry and internal damping
- Venting screw for simplified commissioning
- Efficient magnet system delivers good dynamic values and enables high pressure ranges up to 350 bar
- Exposed surfaces zinc-nickel plated for increased corrosion-protection (1.000 h salt spray test)

### SPECIFICATIONS\*

Operating pressure:	max. 350 bar
Nominal flow:	Pressure range 070 bar...max. 10 l/min Pressure range 210 bar...max. 6 l/min Pressure range 350 bar...max. 4 l/min
Leakage:	< 10 ml/min at 80% nominal pressure
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, 2 and 3
Viscosity range:	min. 7.4 mm <sup>2</sup> /s to max. 420 mm <sup>2</sup> /s
Filtration:	Class 19/17/14 according to ISO 4406 or cleaner
Installation:	No orientation restrictions
MTTF <sub>d</sub> :	150 - 1200 years, according to DIN EN ISO 13849-1
Material:	Valve body: steel Poppet: 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:	06020 metric
Weight:	Valve complete: 0.44 kg Coil only: 0.22 kg

### Electronic data

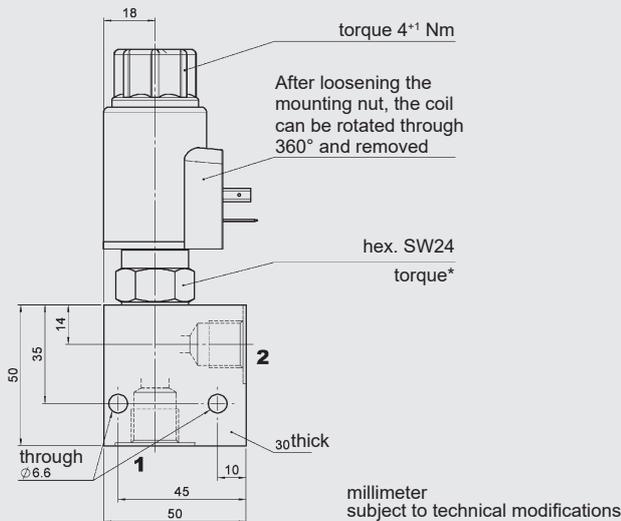
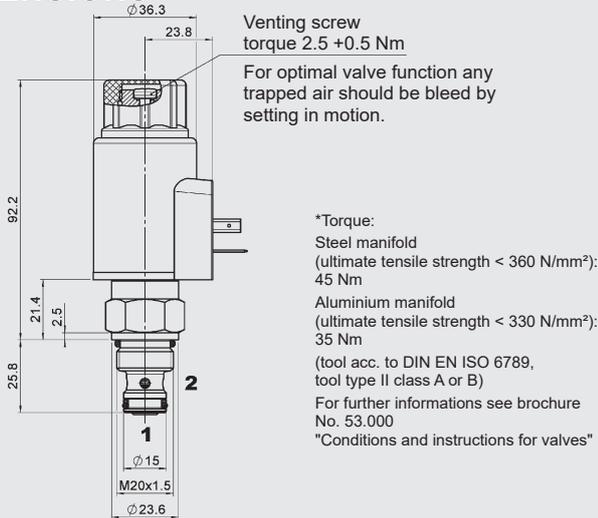
Control currents:	850 mA; 18 Ohm (24V) 1750 mA; 4.1 Ohm (12V)
Dither frequency:	160 - 250 Hz
Hysteresis with dither:	2-4% of I <sub>max</sub>
Repeatability:	≤ 1.5% of max. pressure range
Reversal error:	≤ 2-4 % of I <sub>max</sub>
Response sensitivity:	≤ 1% of I <sub>max</sub>
Coil type:	Coil...-50-1836

### Note:

In order to achieve optimal function, any trapped air should be vented using the venting screw on the face of the pole tube.

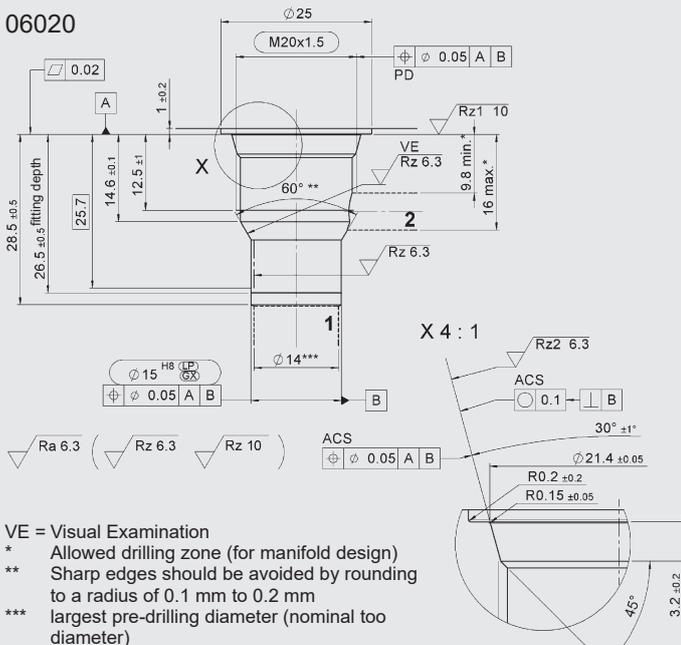
\* see "Conditions and instructions for valves" in brochure 53.000

## DIMENSIONS



## CAVITY

06020



## Form tools

Tool	Part No.	
Countersink (shank MK3)	170033	
Reamer (shank MK2)	1000768	
Tap	1002648	
Plug gauge	168840	millimeter subject to technical modifications

## MODEL CODE

**PDBM06020 - 01 - C - N - 350 - 24 PG - 18.0**

**Basic model**  
 Proportional pressure relief valve

**Type**  
 01 = standard

**Body and ports\***  
 C = cartridge only  
 Inline housings, see chart

**Seals**  
 N = NBR (standard)  
 V = FKM

**Pressure range**  
 070 = 0 up to 70 bar  
 210 = 0 up to 210 bar  
 350 = 0 up to 350 bar

**Coil voltage**  
 12 = 12 V (4.1 Ohm)  
 24 = 24 V (18 Ohm)

**Coil connectors (type 50-1836)**  
 PG = DIN connector to EN175301-803  
 PL = 2 flying leads, 457 mm long; 0.75 mm<sup>2</sup>  
 PN = Deutsch connector, 2-pole, axial  
 PU = AMP Junior Timer, 2-pole, axial  
 Other connectors on request

**Coil resistance**  
 4.1 = 4.1 Ohm (12 V)  
 18.0 = 18.0 Ohm (24 V)

## Standard models

Model code	Part No.
PDBM06020-01-C-N-070-12PG-4.1	3362793
PDBM06020-01-C-N-070-24PG-18.0	3362790
PDBM06020-01-C-N-210-12PG-4.1	3362794
PDBM06020-01-C-N-210-24PG-18.0	3362791
PDBM06020-01-C-N-350-12PG-4.1	3362825
PDBM06020-01-C-N-350-24PG-18.0	3258051

## \*Standard inline bodies

Code	Part No.	Material	Ports	Pressure
R06020-10X-01	276842	Steel, zinc-plated	G3/8"	max. 350 bar

Other bodies on request

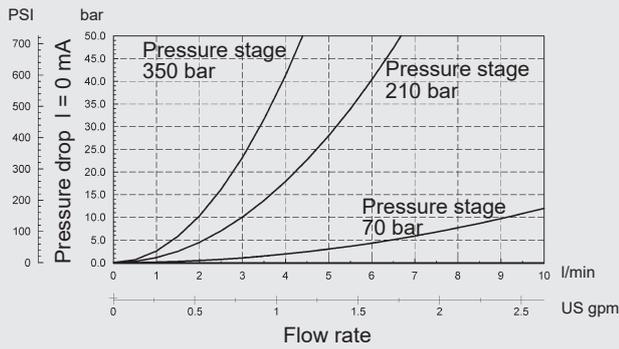
## Seal kits

Code	Material	Part No.
SEAL KIT 06020-NBR	NBR	3119017
SEAL KIT 06020-FKM	FKM	3262477

# PERFORMANCE

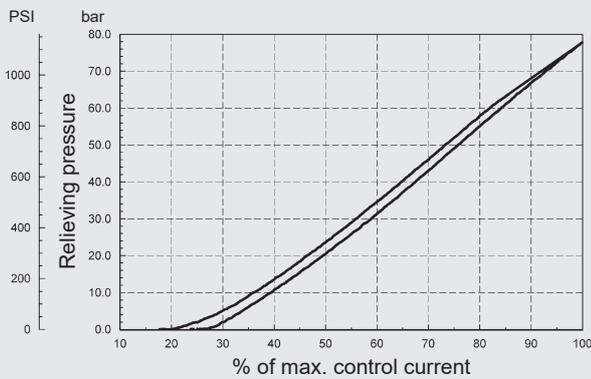
## $\Delta p$ -Q curve

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



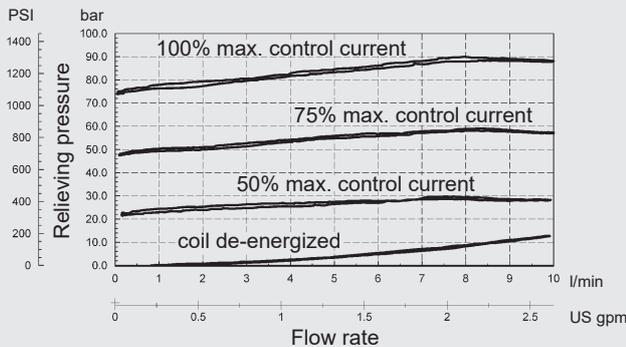
## p-I curve, Pressure range 70 bar

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



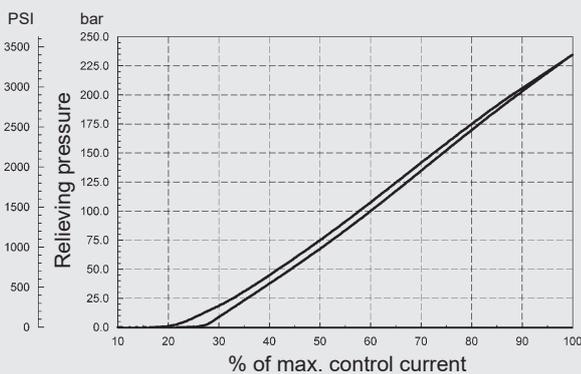
## Q curve, Pressure range 70 bar

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



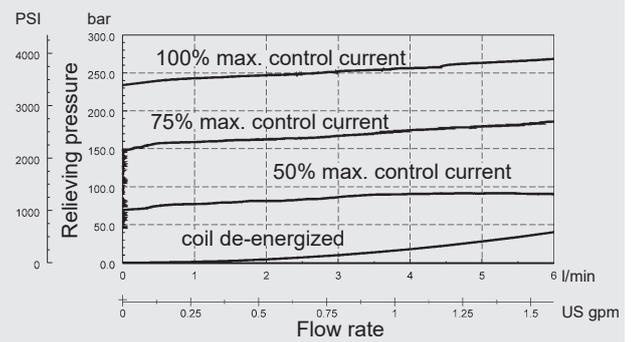
## p-I curve, Pressure range 210 bar

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



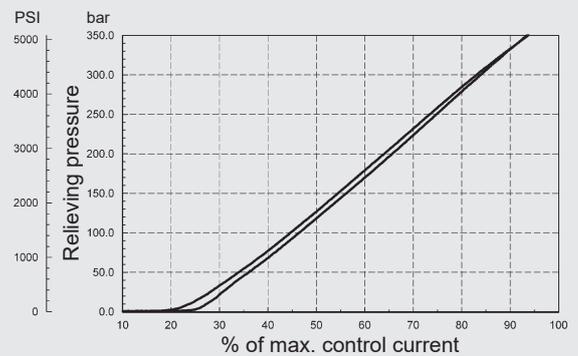
## p-Q curve, Pressure range 210 bar

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



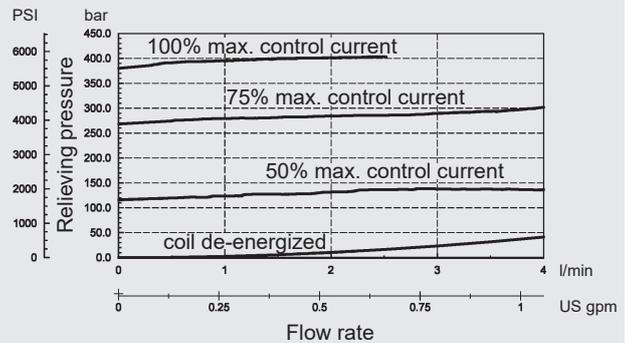
## p-I curve, Pressure range 350 bar

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



## p-Q curve, Pressure range 350 bar

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



### 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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