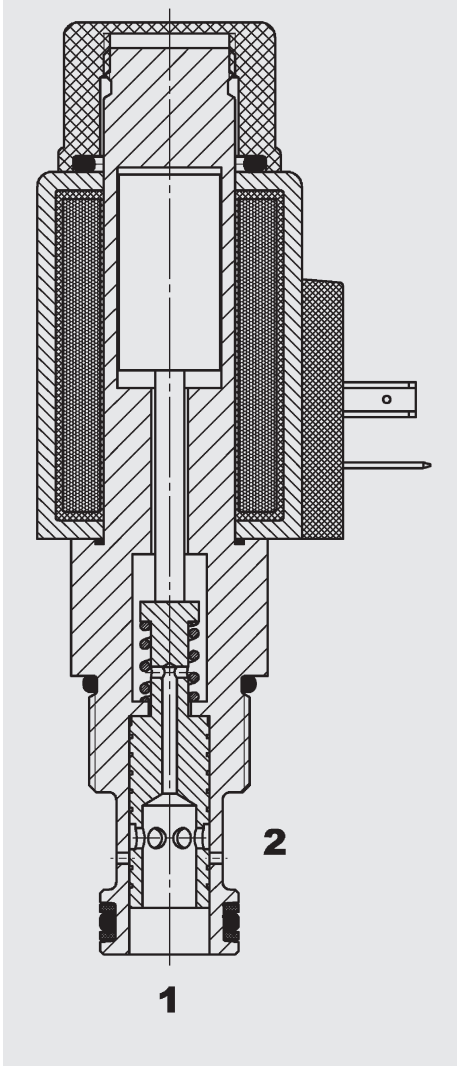


## FUNCTION



The proportional needle valve PWK10120W is a direct-acting 2-way spool valve, which is closed when deenergised. It is non-pressure compensated. Its job is to steplessly control flow from port 1 to 2. A throttle cross-section is opened or closed depending on the electric control signal.

Together with a pressure compensator the proportional flow control valve can be used as a 2-way flow regulator – for example when required to lift/lower variable loads at the same velocity.

## Proportional flow control valve Spool type, direct acting, Normally closed Metric Cartridge – 280 bar PWK10120W-10

### FEATURES

- External surfaces zinc-plated and corrosion-proof
- Stepless adjustment of the effective oil flow, depending on the coil current
- 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

### SPECIFICATIONS

Operating pressure:	max. 280 bar
Nominal flow:	max. 45 l/min
Internal leakage:	max. 0.7 l/min at 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 T1 + T2
Viscosity range:	min. 7.4 mm <sup>2</sup> /s to max. 420 mm <sup>2</sup> /s
Filtration:	ISO 4406 according to class 19/17/14 or cleaner
MTTF <sub>d</sub> :	150 years (see "Conditions and instructions for valves" in brochure 5.300)
Installation:	no orientation restrictions
Materials:	Valve body: High tensile steel Piston: 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:	10120 metric
Weight:	Valve complete 0.50 kg coil only 0.22 kg

### Electronic data:

Control currents:	1750 mA; 4.1 Ohm (12V) / 850 mA; 18 Ohm (24V)
Dither frequency:	120 Hz (60 - 250 Hz)
Hysteresis with dither:	4 - 6 % at I <sub>nom</sub>
Repeatability:	≤ 1 % of I <sub>nom</sub>
Reversal error:	≤ 1.5 % of I <sub>nom</sub>
Response sensitivity:	≤ 1 % of I <sub>nom</sub>
Coil type:	Coil P...-50-1836

## MODEL CODE

**PWK10120W - 10 M - C - N - 30 - 24 PG - 18.0**

### Basic model

Proportional flow control valve,  
normally closed

### Type

10 = standard

### Manual override

No details = without manual override  
M = with manual override

### Body and ports\*

C = cartridge only  
Combinations with housing on request

### Seals

N = NBR (standard)  
V = FPM (optional)

### Flow rate

30 = 30 l/min  
other flow rates on request

### Coil voltage

DC: 12 = 12 Volt DC  
24 = 24 Volt DC  
other voltages on request

### Coil connector (type... 50-1836)

DC: PG = DIN connector to EN175301-803  
PT = AMP Junior Timer, 2 pole, radial  
PL = 2 flying leads, 457mm long  
PN = Deutsch connector, 2 pole  
other connectors on request

### Coil resistance

4.1 = 4.1  $\Omega$  (1750 mA, 12 V)  
18.0 = 18.0  $\Omega$  (850 mA, 24 V)

### Standard models

Model code	Part No.
PWK10120W-10-C-N-30-24DT	3396552
PWK10120W-01-C-N-30-12PT	3975140

### \*Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
R10120A	395234	Steel, zinc-plated	G 1/2	420 bar

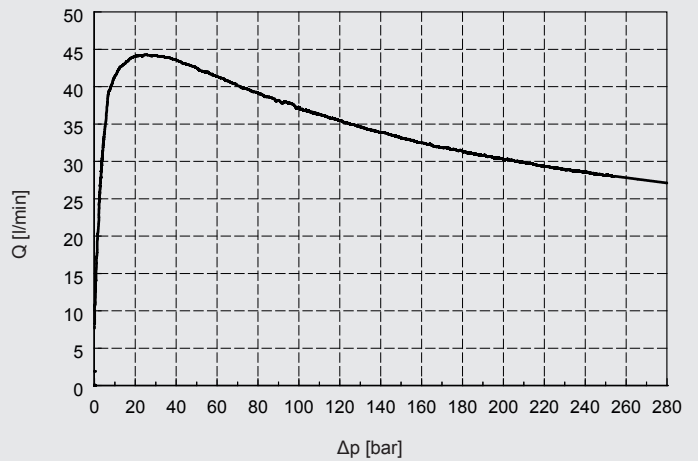
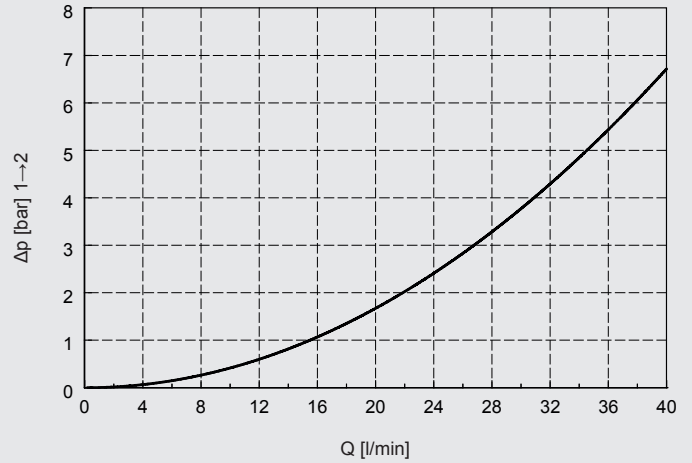
other connection housings on request

### Seal kits

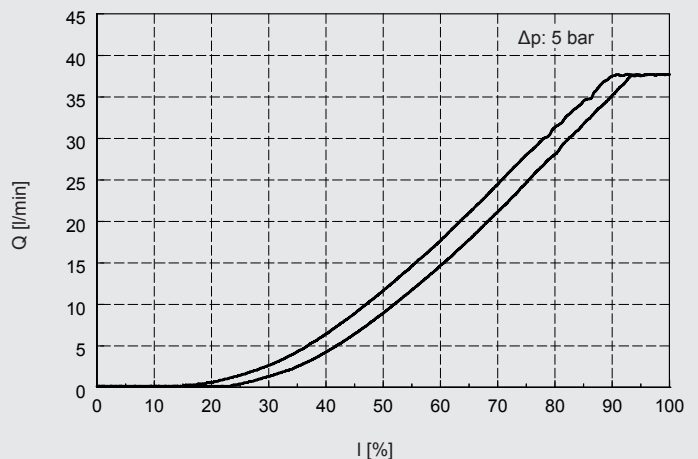
Code	Part No.
SEAL KIT 10120-NBR	3382346
SEAL KIT 10120-FKM	3178281

## PERFORMANCE

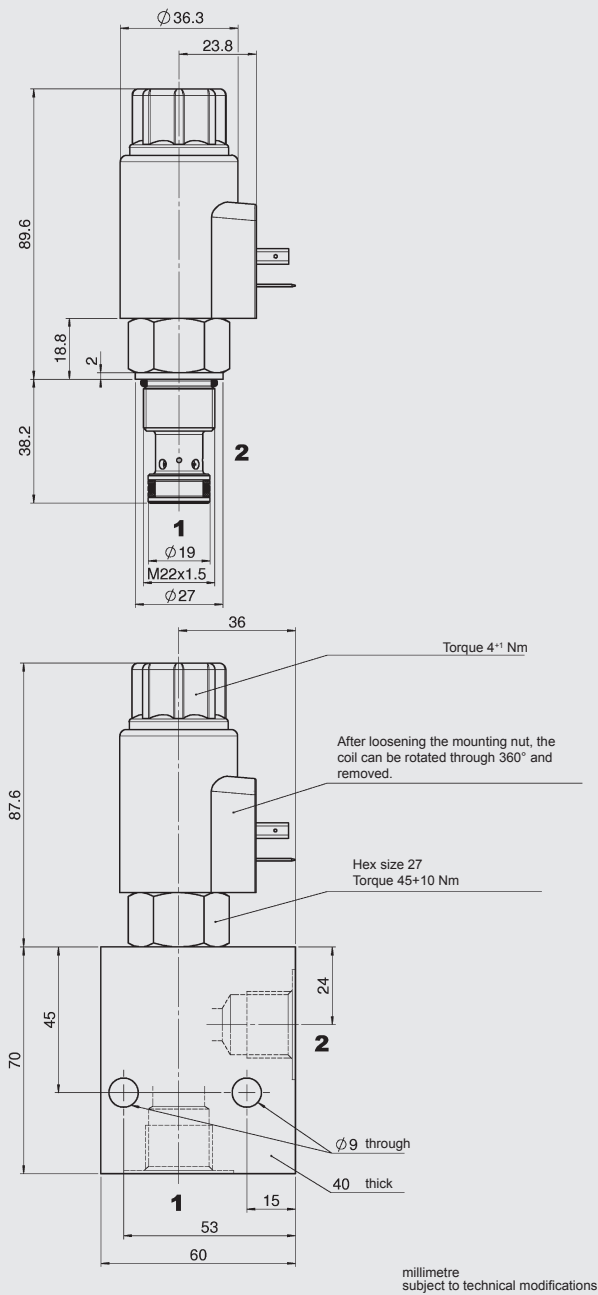
measured at  $v = 33 \text{ mm}^2/\text{s}$ ,  $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$ , PWM = 120 Hz



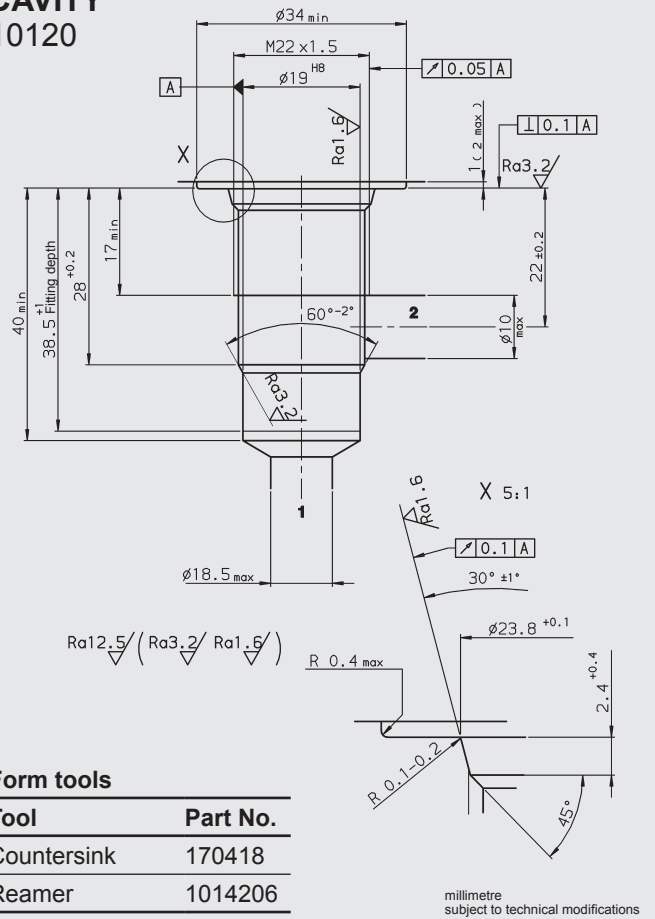
The curve is measured without pressure compensator.



## DIMENSIONS



## CAVITY 10120



### Form tools

Tool	Part No.
Countersink	170418
Reamer	1014206

### 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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