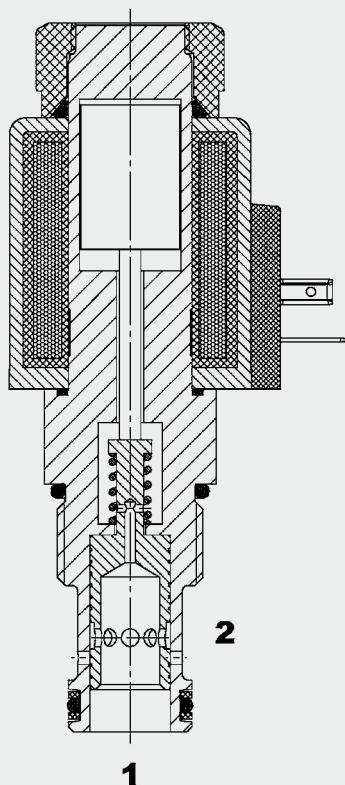


70 l/min
250 bar

FUNCTION



The PWK12120W is a normally closed, direct-acting, spring-loaded, spool type proportional flow control valve.

It smoothly controls the flow from port 1 to port 2.

The energization of the coil reduces or increases an orifice cross-section and thus controls the flow.

Together with a pressure compensator the proportional flow control valve can be used as a proportional 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 – 250 bar

PWK12120W

FEATURES

- Stepless adjustment of the effective oil flow, depending on the coil current.
- Excellent stability throughout the entire flow range
- Low hysteresis
- Excellent dynamic performance
- External surfaces zinc-plated and corrosion-proof
- 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
- Different flow rate ranges available

SPECIFICATIONS

Operating pressure:	max. 250 bar
Nominal flow:	max. 70 l/min
Internal leakage:	max. 900 ml/min at 250 bar
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 and 2
Viscosity range:	min. 10 mm ² /s to max. 420 mm ² /s
Filtration:	Class 19/17/14 to ISO 4406 or cleaner
MTTF _d :	150 years (see "Conditions and instructions for valves" in brochure 5.300)
Installation:	No orientation restrictions
Materials:	Valve body: steel Spool: hardened and ground steel Seals: NBR (standard) FKM (optional, media temperature range -20 °C to +210 °C) Back-up rings: PTFE
Cavity:	Metric 12120
Weight:	Valve complete 0.75 kg Coil only 0.35 kg

Electronic data:

Control currents:	800 mA, 19.2 Ohm (24 Volt) 1600 mA, 5.0 Ohm (12 Volt)
Dither frequency:	approx. 120 Hz
Coil duty rating:	100 %
Hysteresis with dither:	≤ 5 % of I nom
Repeatability:	≤ 1 % of I nom
Hysteresis:	≤ 1 % of I nom
Response sensitivity:	≤ 1 % of I nom
Coil type:	Coil...-50-2345

MODEL CODE

PWK12120 W-01 M-C-N-25-24 PG-19.2

Basic model

Proportional flow control valve
Cavity
12120 = metric

Function symbol

W = normally closed

Type

01 = standard

Manual override

No details = without manual override
M = manual override

Body and ports*

C = cartridge only

Seals

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

Flow rate code

20 = 20 l/min at 5 bar Δp and I_{max}
25 = 25 l/min at 5 bar Δp and I_{max}
45 = 45 l/min at 5 bar Δp and I_{max}

Coil voltage

12 = 12 Volt DC (5.0 Ohm)
24 = 24 Volt DC (19.2 Ohm)
Other voltages on request

Coil connectors (type 50-2345)

PG = DIN connector to EN175301-803
PL = 2 flying leads, 457 mm long; 0.75 mm²
PN = Deutsch connector, 2-pole, axial
PT = AMP Junior Timer, 2-pole, radial

Coil resistance

5.0 = 5.0 Ohm (12V)
19.2 = 19.2 Ohm (24V)

Standard models

Model code	Part No.
PWK12120W-01-C-V-20-24PG-19.2	3578776
PWK12120W-01-C-V-25-24PG-19.2	3578775
PWK12120W-01-C-V-45-24PG-19.2	3356245
PWK12120W-01M-C-V-20-12PG-5.0	3578798
PWK12120W-01M-C-V-25-12PG-5.0	3578796
PWK12120W-01M-C-V-45-12PG-5.0	3354970

Other models on request

*Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
R12120-10X-01	396708	Steel, zinc-plated	G3/4	420 bar
R12120-10X-02	396707	Steel, zinc-plated	M 27 x 2	420 bar

Other line bodies on request

Seal kits

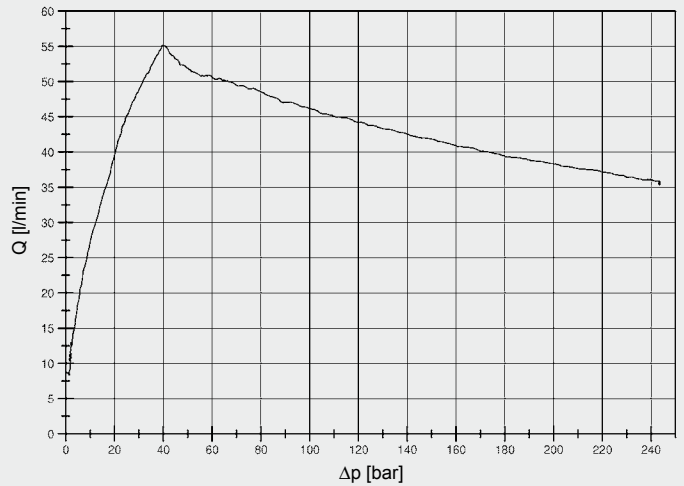
Code	Part No.
SEAL KIT 12120-NBR	3454001
SEAL KIT 12120-FKM	3454002

$\Delta p/Q$ CURVES*

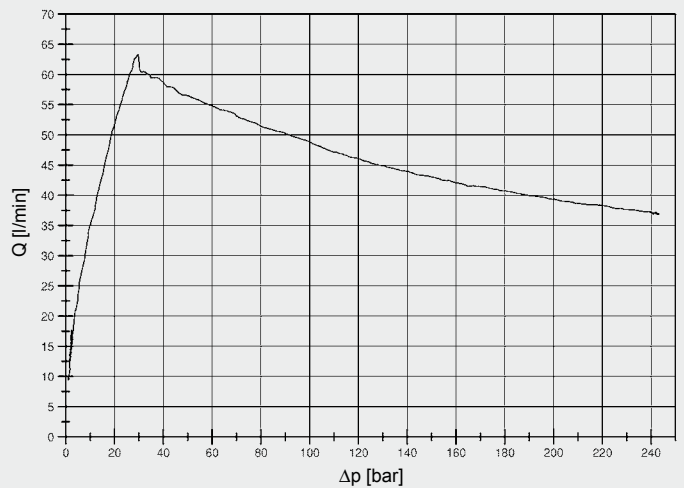
Measured at $v = 40 \text{ mm}^2/\text{s}$

$T_{oil} = 42 \text{ }^\circ\text{C}$

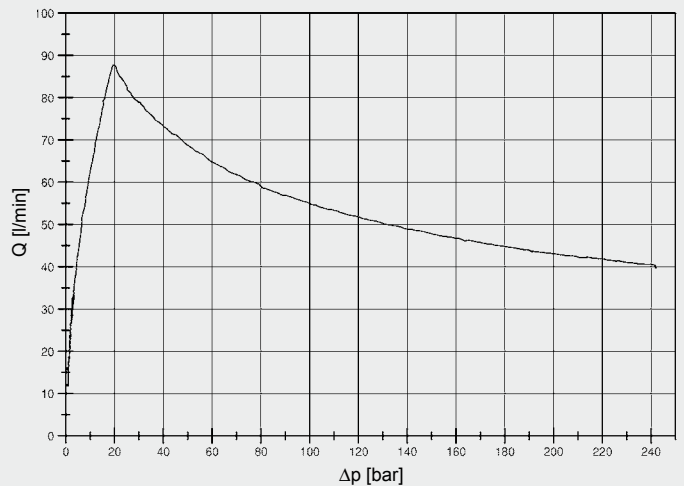
Flow rate: 20 l



Flow rate: 25 l



Flow rate: 45 l



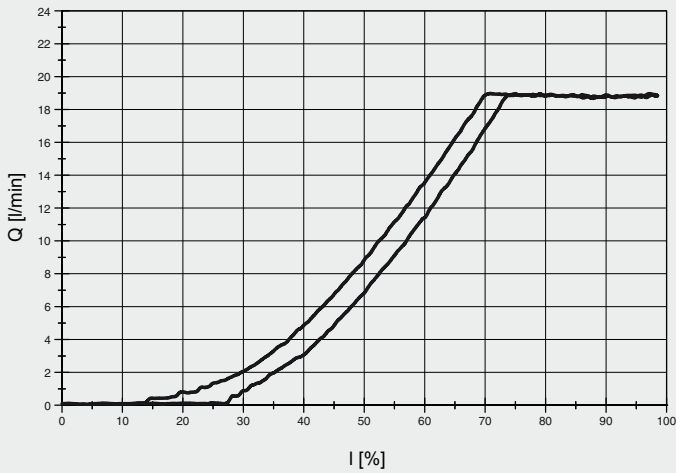
* Curves are measured without pressure compensator!
By using a pressure compensator with $\Delta p = 15 \text{ bar}$ please refer to x-axis.

Q/I CURVES*

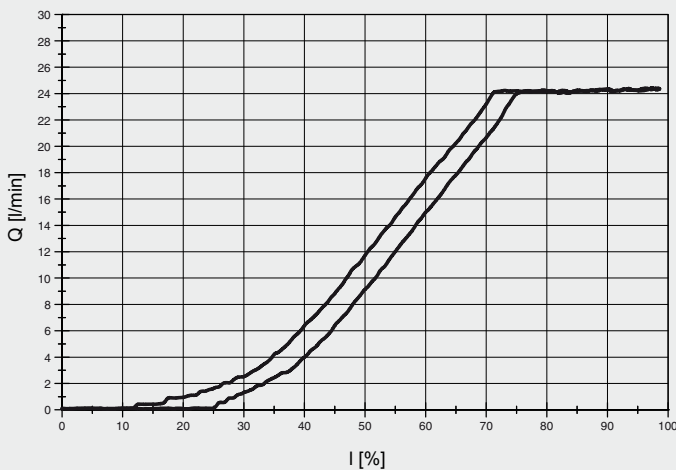
Measured at $v = 40 \text{ mm}^2/\text{s}$

$T_{\text{oil}} = 42 \text{ }^\circ\text{C}$

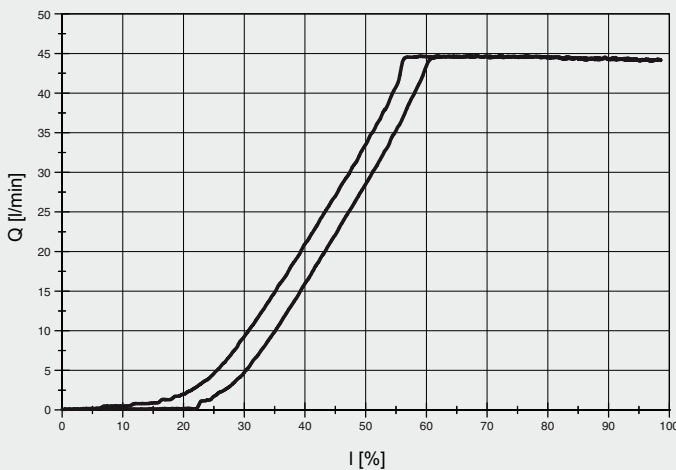
Flow rate: 20 l, $\Delta p: 5 \text{ bar}$



Flow rate: 25 l, $\Delta p: 5 \text{ bar}$

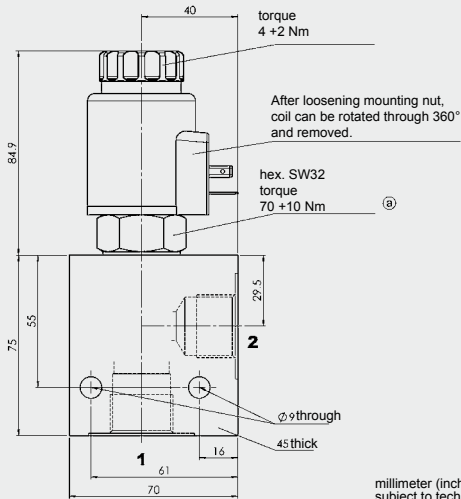
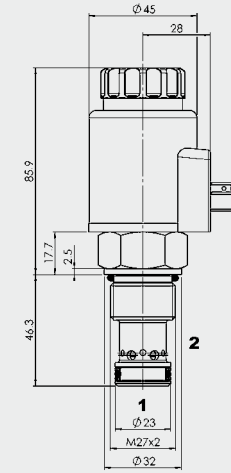


Flow rate: 45 l, $\Delta p: 5 \text{ bar}$



* Curves are measured at $\Delta p=5 \text{ bar}$.
By using a different pressure compensator with $\Delta p=15 \text{ bar}$ the valve reaches 70 l/min!

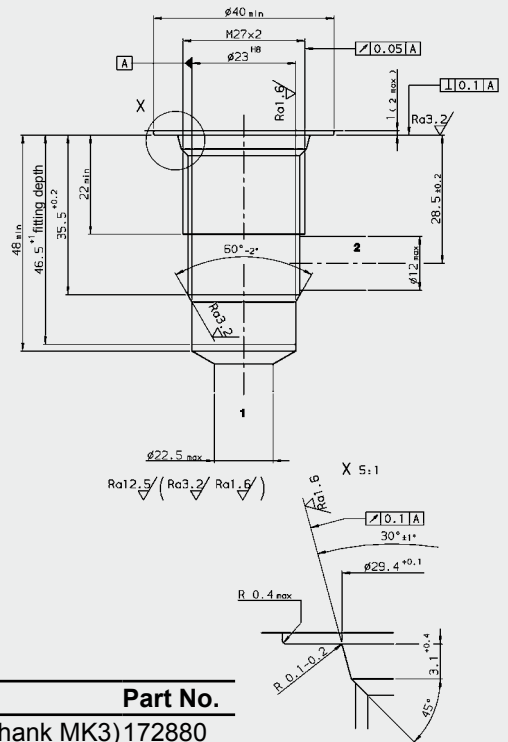
DIMENSIONS



millimeter (inch)
subject to technical modifications

CAVITY

Metric 12120



millimeter (inch)
subject to technical modifications

Form tools

Tool	Part No.
Countersink (shank MK3)	172880
Reamer (shank MK2)	1014207

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.

HYDAC Fluidtechnik GmbH
Justus-von-Liebig-Str.
D-66280 Sulzbach/Saar
Tel: 0 68 97 /509-01
Fax: 0 68 97 /509-598
E-Mail: flutec@hydac.com

