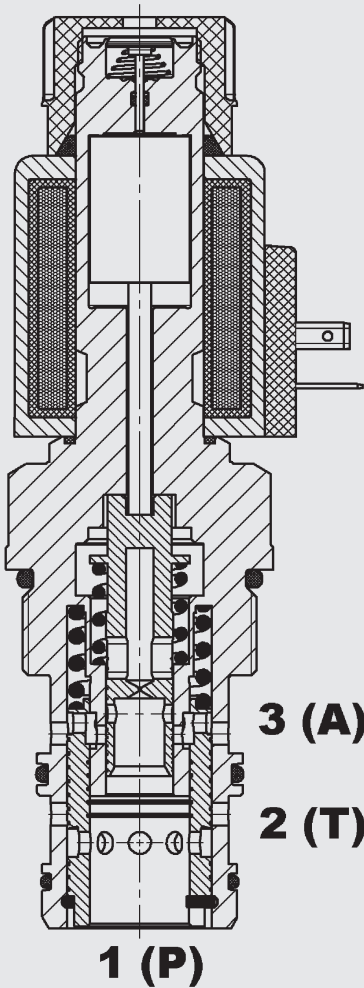


up to 100 l/min
up to 315 bar

3-way proportional flow control valve PSRPM20330-22 /-32

Spool type, direct-operated
Metric Cartridge - 315 bar

FUNCTION



PRODUCT ADVANTAGES

- Full nominal flow range from 0 to Q_{max}
- Various nominal flow ranges Q_{max}
- Compact design: Proportional throttle valve and pressure compensator integrated in one housing
- Stable control behaviour due to integrated damping
- Low hysteresis
- Energy efficient by relieving the residual volume flow with low circulation pressure at port 2
- Residual flow load capacity - port 2 can be loaded to port 3 irrespective of the load pressure
- Can also be used as 2-way flow control valve (port 1 to 3) when port 2 is closed
- Optional: with additional hand wheel available
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1000 h Salt spray test)

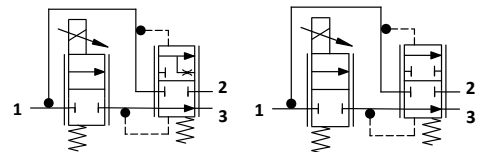
FUNCTION DESCRIPTION

The flow control valve is a full-range flow regulator with an electroproportionally adjustable cross section of the measuring orifice. An integrated pressure compensator keeps the pressure drop across the orifice constant. This combination results in an electroproportionally adjustable preferred volume flow rate at port 3, which is independent of the pressure ratios at ports 2 and 3. The excess input flow is derived from port 1 to port 2. Port 2 is pressure resistant. When port 2 is blocked, the valve functions as a 2-way flow control valve.

Detached representation of symbols:

Version 32

Version 22

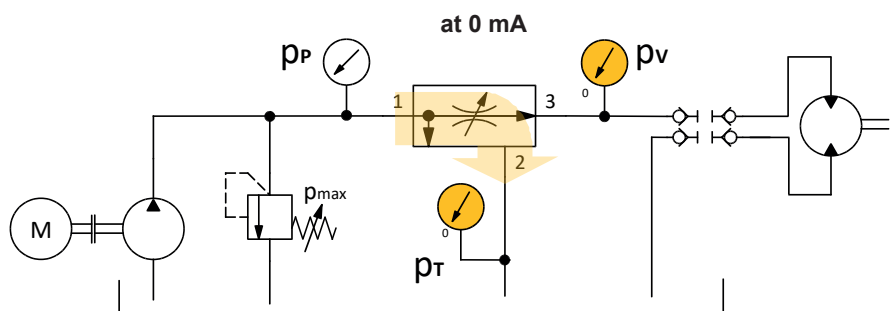


Version 22:

When port 3 is blocked, the valve blocks the outflowing volume flow to port 2.

Version 32:

When port 3 is blocked and the valve is de-energized, the load in port 3 is relieved of pressure to port 2.

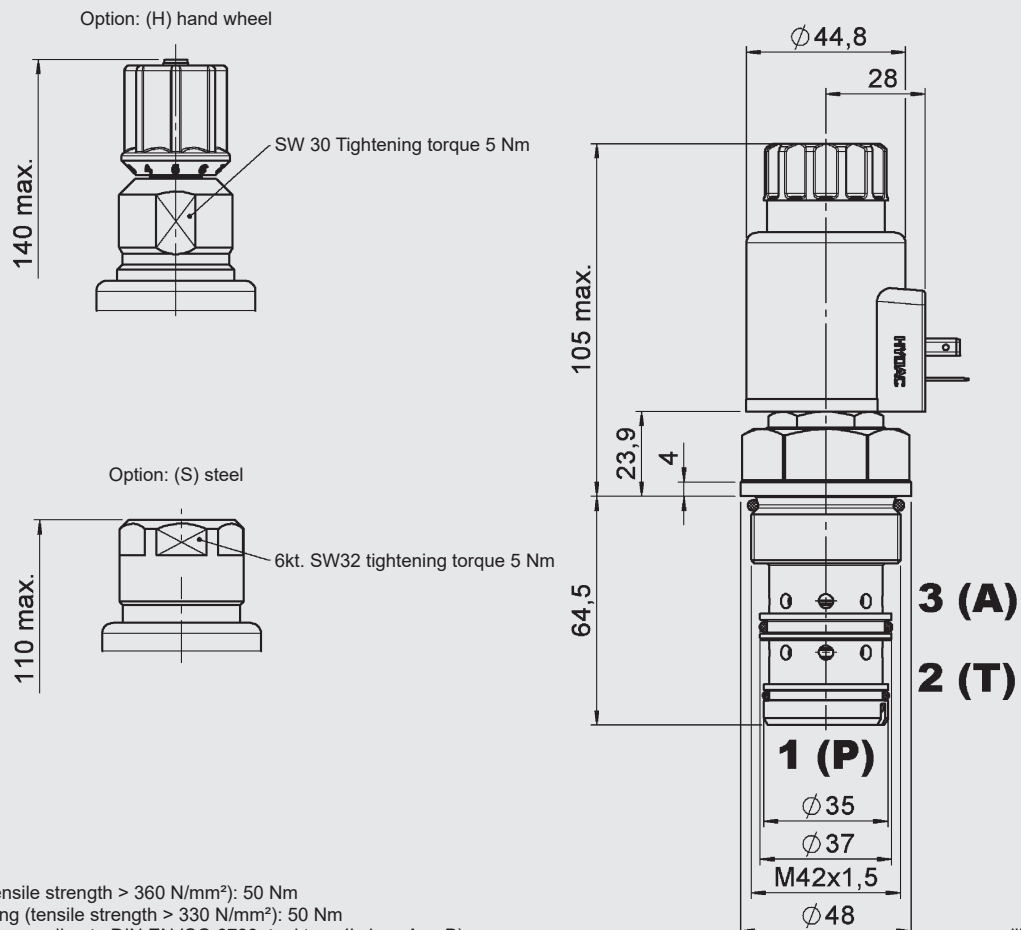


SPECIFICATIONS*

Operating pressure	max. 315 bar	
Input volume flow	max. 100 l/min	
Flow control range	max. 80 l/min	
Temperature range of operating fluid	NBR: min. -30 C to max. + 80 C FKM: min. -20 C to max. +120 C	
Ambient temperature range	NBR: min. -30 C to max. + 60 C FKM: min. -20 C to max. + 60 C	
Hydraulic fluid	Hydraulic oil according to DIN 51524 part 1, 2 and 3	
Viscosity range	min. 10 mm ² /s to max. 420 mm ² /s	
Filtration	Class 19/17/14 according to ISO 4406 or better	
MTTFd	150 – 1200 years, according to DIN EN ISO 13849-1	
Installation	No orientation restrictions	
Materials	Valve body	steel
	Pistons	hardened and polished steel
	Seals	NBR (Standard) FKM (optional)
	Back-up rings	PTFE
	Coil	steel / polyamide
Cavity	20330 metric	
Weight	1.2 kg	
Electronics		
Control current range	800 mA; 19.2 Ohm (24 Volt) 1600 mA; 5.0 Ohm (12 Volt)	
Duty cycle	100% ED (continuous operation) to max. 115% of the nominal voltage at 60 C	
Dither frequency	100 – 160 Hz (120 Hz recommended)	
Hysteresis with dither	<8% of rated flow	
Repeatability	≤ 1.5 % of p _{max}	
Reversal error	≤ 2 % of rated flow	
Response sensitivity	≤ 2 % of rated flow	
Coil	Coil...-50-2345	

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

DIMENSIONS



*Torque:

Steel housing (tensile strength > 360 N/mm²): 50 Nm

Aluminium housing (tensile strength > 330 N/mm²): 50 Nm

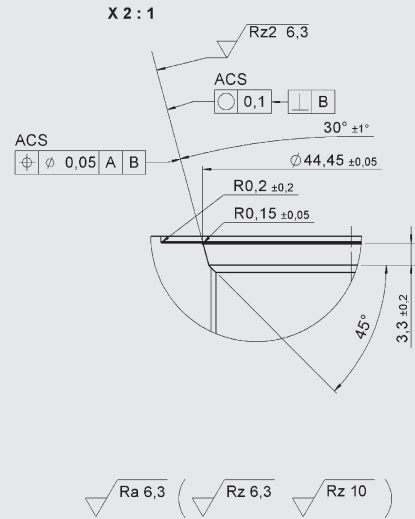
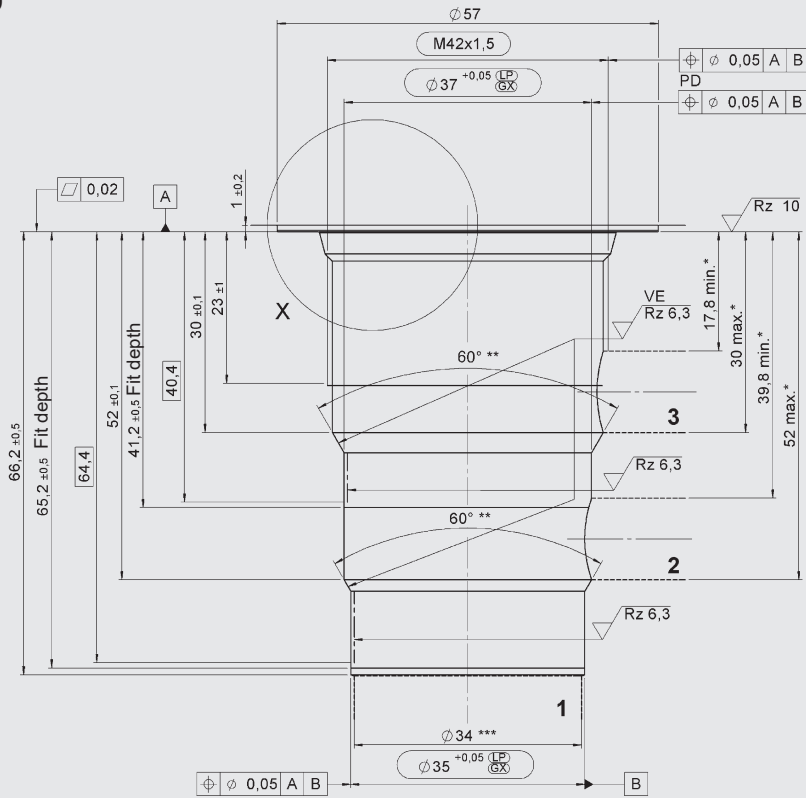
(With torque tool according to DIN EN ISO 6789, tool type II class A or B)

For more information see "Conditions and instructions for valves" in brochure 53.000

millimetre (inch)
subject to technical modifications

CAVITY

20330



PU = optical test

* Authorised boring zone (for block design)

** Sharp edges should be avoided using 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

PSRPM20330 - 22 H - C - N - 08 - L40 - 12 PG - 5.0

Basic model

Proportional flow control valve, metric

Type

22 = standard (without relief, with damping)
32 = with relief, with damping

Manual override

no details = with hidden manual override

H = hand wheel
S = steel cap

Body and ports

C = cartridge only

Seals

N = NBR (standard)
V = FKM

Cracking pressure of pressure compensator

08 = 8 bar (start of flow control)

Flow range

L06 = 0 to 6 l/min
L10 = 0 to 10 l/min
L16 = 0 to 16 l/min
L25 = 0 to 25 l/min
L32 = 0 to 32 l/min
L40 = 0 to 40 l/min
L50 = 0 to 50 l/min
L63 = 0 to 63 l/min
L80 = 0 to 80 l/min

Coil voltage

12 = 12 V DC
24 = 24 V DC
Other voltages on request

Coil connectors (type 50-2345)

DC: PG = DIN connector type A according to EN175301-803
PL = Connector with 2 free strands, 457 mm long, 0.75 mm²
PN = Deutsch connector, DT04-2P, 2-pole, axial
PT = AMP Junior Timer, 2-pole, radial

Other connectors on request

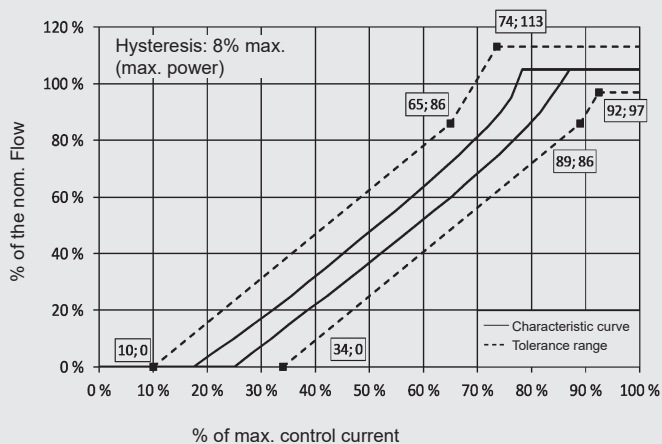
Coil resistance

5.0 = 5.0 Ohm (1600 mA, 12 V)
19.2 = 19.2 Ohm (800 mA, 24 V)

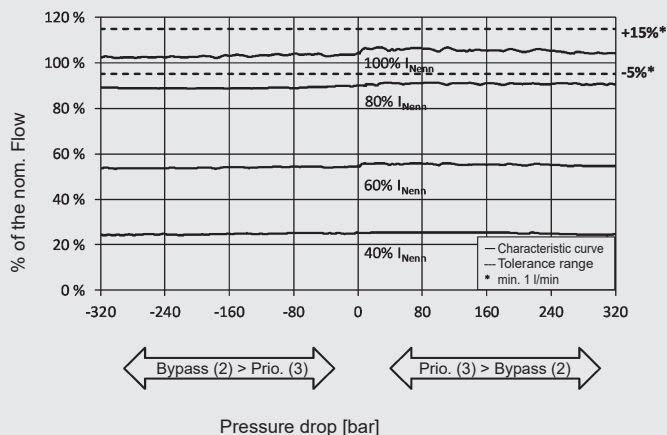
TYPICAL PERFORMANCE

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

Q-I performance



p-Q performance



MATERIAL OVERVIEW

Standard models

Model code	Part No.
PSRPM20330-22-C-N-08-L40-24PG-19.2	4131306
PSRPM20330-22-C-N-08-L63-12PG-5.0	4072418
PSRPM20330-32-C-N-08-L40-0	4331224
PSRPM20330-32-C-N-08-L80-0	4255018

Other versions on request

Standard in-line bodies

Code	Material	Ports	Pressure	Part No.
R20330-01X-01	Steel, zinc-plated	G3/4"	315 bar	3837589
R20330-02X-01	Aluminium, anodized	G3/4"	210 bar	3904888

Other models on request

Spare parts sealing kits

Code	Material	Part No.
Sealing kit (P) SRPM20330 - NBR	NBR	4439878
Sealing kit (P) SRPM20330 -VITON	FKM	4439880

Form tools

Code	Part No.
Countersink	on request
Reamer	on request

NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications not described, please contact the relevant technical department.

All technical details are subject to change without notice.