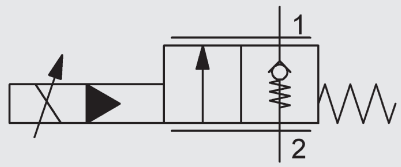
HYDAC INTERNATIONAL

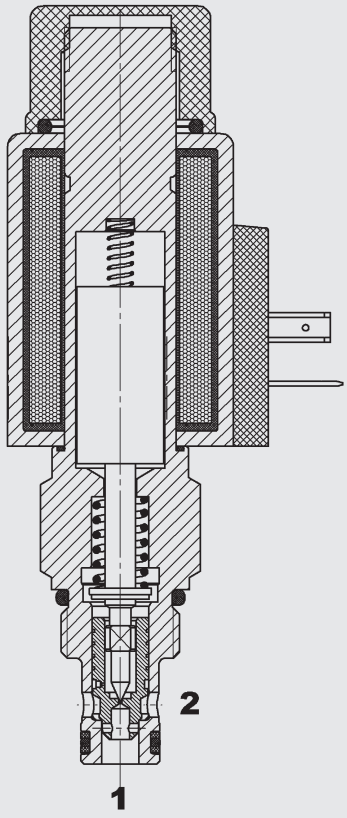
Proportional Flow Controller poppet type, pilot-operated normally closed UNF Cartridge – 350 bar

PWS08Z-01



up to 55 l/min
up to 350 bar

FUNCTION



The proportional flow controller is a pilot-operated, normally closed, spring-loaded poppet-type flow control valve.
It is non-compensated and its function is to smoothly control the flow from port 2 to port 1.
The energization of the coil opens the pilot stage and oil flows across an orifice to the back of the main piston. The resulting pressure differential causes the main piston to follow the pilot stage. When combined with a pressure compensator the proportional flow controller can be used as a 2-way flow regulator – for example when required to lift/lower variable loads at the same velocity.

FEATURES

- Stepless adjustment of the flow, depending on the coil current.
- Excellent stability throughout the entire flow range
- Excellent dynamic performance
- On request: mechanical adjustment of one point of the curve (Version 01, without option M)
- Optional: Soft shift function with extended switching times possible
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1000 h Salt spray test)

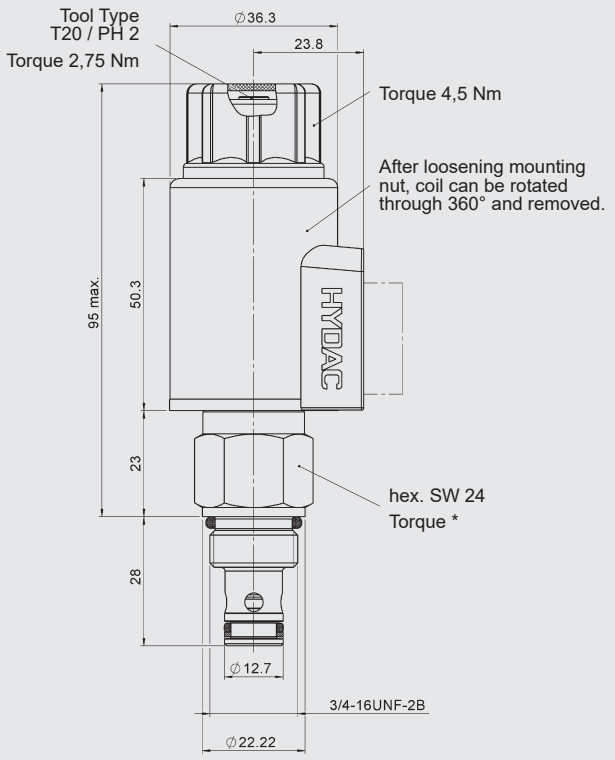
SPECIFICATIONS*

Operating pressure:	max. 350 bar	
Nominal flow:	max. 55 l/min	
Internal leakage:	leakage-free max. 5 drops/min (0.25 cm³/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 Part 1, 2 and 3	
Viscosity range:	min. 10 mm²/s to max. 420 mm²/s	
Filtration:	Class 19/17/14 to ISO 4406 or cleaner	
$MTTF_d$:	150 - 1200 years, according to DIN EN ISO 13849-1	
Installation:	No orientation restrictions	
Material:	Valve body:	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:	FC08-2	
Weight:	0.5 kg	
Electronic data		
Control current:	850 mA, 18.0 Ohm (24 Volt) 1750 mA, 4.1 Ohm (12 Volt)	
Dither frequency:	120 Hz – 250 Hz (120 Hz recommended)	
Hysteresis with dither:	4 - 6% of I_{nom}	
Repeatability:	≤ 1.5 % of I_{nom}	
Reversal error:	≤ 2 % of I_{nom}	
Response sensitivity:	≤ 1 % of I_{nom}	
Type of coil:	Coil (12 or 24) P...-50-1836	

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

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

DIMENSIONS



*Torque:

Steel manifold
(ultimate tensile strength < 360 N/mm²):
40 Nm

Aluminium manifold
(ultimate tensile strength < 330 N/mm²):
35 Nm

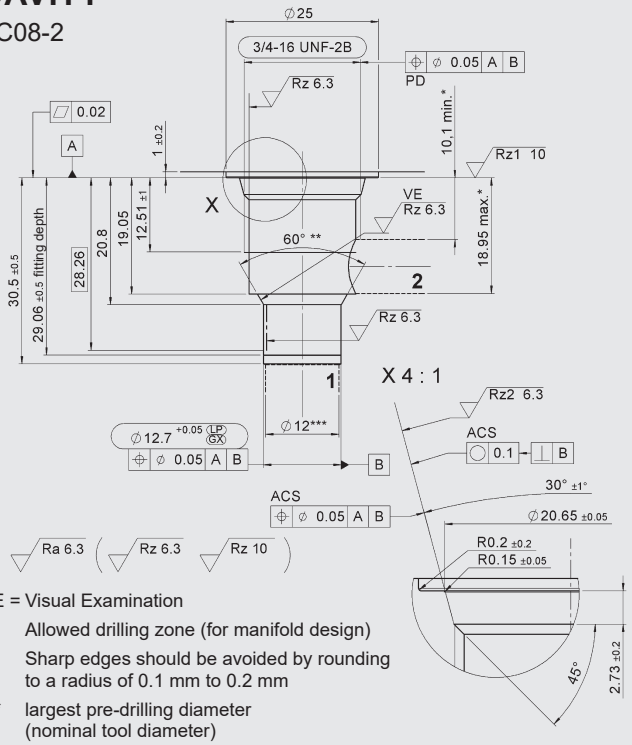
(tool acc. to DIN EN ISO 6789,
tool type II class A or B)

For further informations see brochure
No. 53.000
"Conditions and instructions for valves"

Millimeter (Inch)
Subject to technical modifications

CAVITY

FC08-2



VE = Visual Examination

* Allowed 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)

Form tools

Tool	Part No.
Countersink	175473
Reamer	175474

Millimeter (Inch)
Subject to technical modifications

MODEL CODE

PWS08Z – 01 M – C – N – 20 – 24 PG 18.0

Basic model
Proportional flow control valve

Type
01 = standard

Manual override
No details = without manual override
M = manual override

Body and ports
C = cartridge only
*Combinations with body on request

Seals
N = NBR (standard)
V = FKM

Flow rate
20 = 20 l/min
Other flow rates on request

Coil voltage
DC: 12 = 12 Volt DC
24 = 24 Volt DC
Other voltages on request

Coil connectors (type 50-1836)
DC: PG = DIN connector to EN175301-803
PT = AMP Junior Timer, 2-pole, radial
PL = 2 flying leads, 457 mm long; 0.75 mm²
PN = Deutsch connector, 2-pole, axial
Other connectors on request

Coil resistance
4.1 = 4.1 Ω (12 V)
18.0 = 18.0 Ω (24 V)

Standard models

Model code	Part No.
PWS08Z-01-C-N-20-12PG-4.1	3525174
PWS08Z-01-C-N-20-24PG-18.0	3486507

Other models on request

Standard in-line bodies

Code	Material	Ports	Pressure	Part No.
FH082-SB3	Steel, zinc-plated	G3/8"	350 bar	560919
FH082-AB3	Aluminium, clear anodized	G3/8"	210 bar	3011423

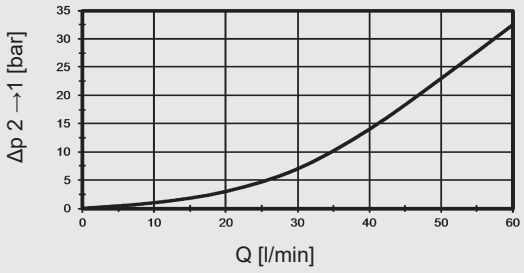
Other line bodies on request

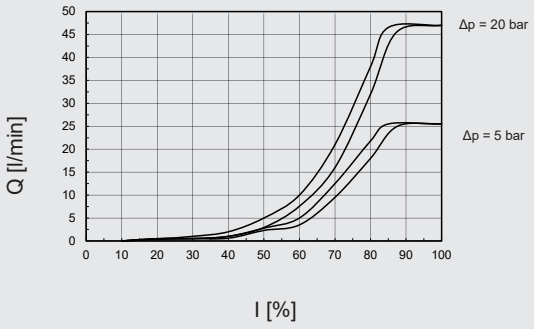
Seal kits

Code	Material	Part No.
FS UNF 08/N	NBR	3651385
FS UNF 08/V	FKM	3651356

TYPICAL PERFORMANCE

measured at
ν = 34 mm²/s
T_{oil} = 46 °C





Hint:
optional mechanical adjustment of a point of the performance curve possible at factory

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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