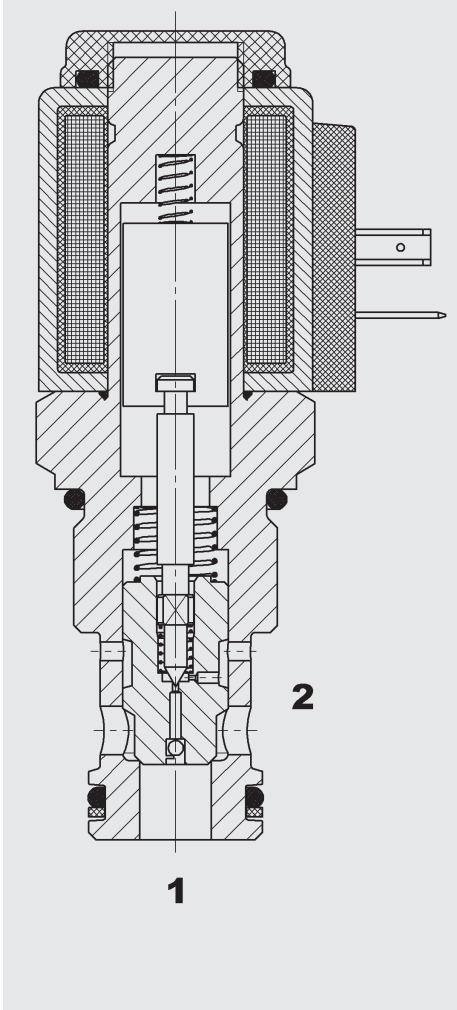


FUNCTION



The directional valve is a pilot operated valve in poppet style. When the solenoid coil is de-energized, the valve is closed from port 2 to port 1. In the reverse direction there is free flow through the valve. The valve poppet opens at a differential pressure of approx. 1.5 bar (check function). When energized the valve allows flow in both directions. Please mind: In pilot operated solenoid valves, shift performance and response times depend i.a. very much on pressure drop and volume flow during actuation.

2/2 Solenoid Directional Valve Poppet Type, Pilot Operated Normally Closed (Reverse Flow) Metric Cartridge - 350 bar WSM12120ZR-01

FEATURES

- Coil seals protect the solenoid system
- Wide variety of connectors available
- Excellent switching performance by high power HYDAC solenoid
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1.000 h Salt spray test)

SPECIFICATIONS*

Operating pressure:	max. 350 bar
Nominal flow:	max. 110 l/min
Internal leakage:	Leakage-free max. 5 drops/min (0.25 cm ³ /min) at 350 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, 2 and 3
Viscosity range:	min. 7.4 mm ² /s to max. 420 mm ² /s
Filtration	Class 21/19/16 according to ISO 4406 or cleaner
MTTF _d :	150 - 1200 years, according to DIN EN ISO 13849-1
Installation:	No orientation restrictions
Material:	Valve body: free-cutting steel Poppet: hardened and ground steel Seals: NBR (standard) FKM (optional, media temperature range -20 °C to +120 °C) Back-up rings: PTFE
Cavity:	Metric 12120
Weight:	Valve complete: 0.46 kg Coil only: 0.19 kg

Electrical data

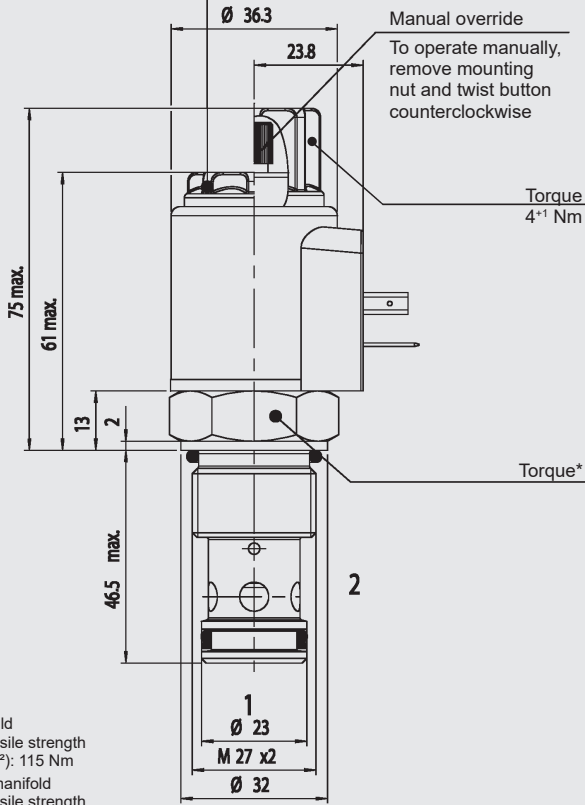
Type of voltage:	DC: direct current solenoid AC: alternating current solenoid with a bridge rectifier built into the coil
Current draw at 20 °C:	1.5 A at 12 V DC 0.8 A at 24 V DC
Response time: (at p _{max} , Q _{max} , v = 34 mm ² /s)	energized: approx. 30 ms de-energized: approx. 70 ms substantially extended response times possible at other operating conditions
Voltage tolerance:	± 15 % of nominal voltage
Coil duty rating:	Continuous up to max. 115 % of nominal voltage at max. 60 °C ambient temperature
Coil type:	Coil...-40-1836

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

DIMENSIONS

torque 4⁺¹ Nm

After loosening the mounting nut, the coil can be rotated through 360° and removed



*Torque:

Steel manifold
(ultimate tensile strength < 360 N/mm²): 115 Nm

Aluminium manifold
(ultimate tensile strength < 330 N/mm²): 75 Nm

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

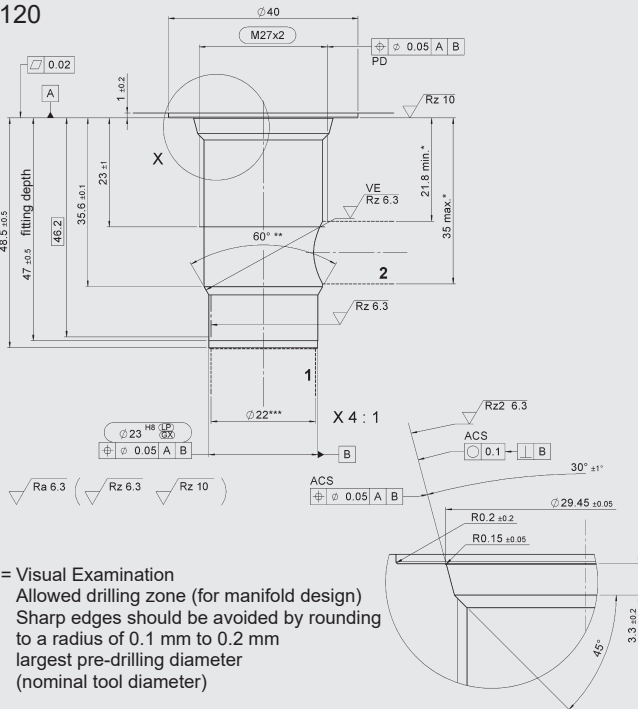
For further informations see brochure No. 53.000

"Conditions and instructions for valves"

millimeter subject to technical modifications

CAVITY

12120



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 (shank MK3)	172880
Reamer	1014207

millimeter subject to technical modifications

MODEL CODE

WSM12120ZR - 01 M - C - N - 24 DG

Basic model

Directional poppet valve, metric

Type

01 = standard

Manual override

no details = without manual override

M = manual override

Body and ports *

C = cartridge only

Seals

N = NBR (standard)

V = FKM

Coil voltage

DC voltages

12 = 12 V DC

24 = 24 V DC

AC voltages (bridge rectifier built into the coil)

115 = 115 V AC

230 = 230 V AC

Other voltages on request

Coil connectors (type 40-1836)

DC: DG = DIN connector type A to EN 175301-803

DK = KOSTAL-threaded connection M27x1

DL = 2 flying leads, 457 mm long; 0.75 mm²

DN = Deutsch connector, 2-pole, axial

DT = AMP Junior Timer, 2-pole, radial

AC: AG = DIN connector type A to EN 175301-803

Other connectors on request

Standard models

Model code	Part No.
WSM12120ZR-01-C-N-12DG	3230893
WSM12120ZR-01-C-N-24DG	3230898
WSM12120ZR-01-C-N-230AG	3230897

Other models on request

*Standard in-line bodies

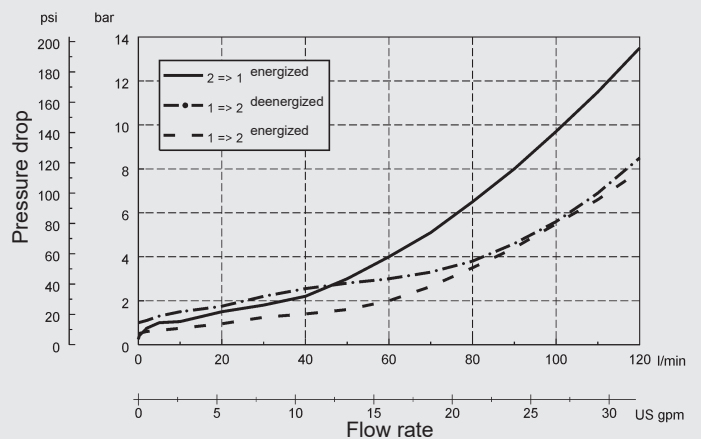
Code	Part No.	Material	Ports	Pressure
R12120-10X-01	396708	Steel, zinc-plated	G3/4"	350 bar
R12120-10X-02	396707	Steel, zinc-plated	M27x2	350 bar

Seal kits

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

TYPICAL PERFORMANCE

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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