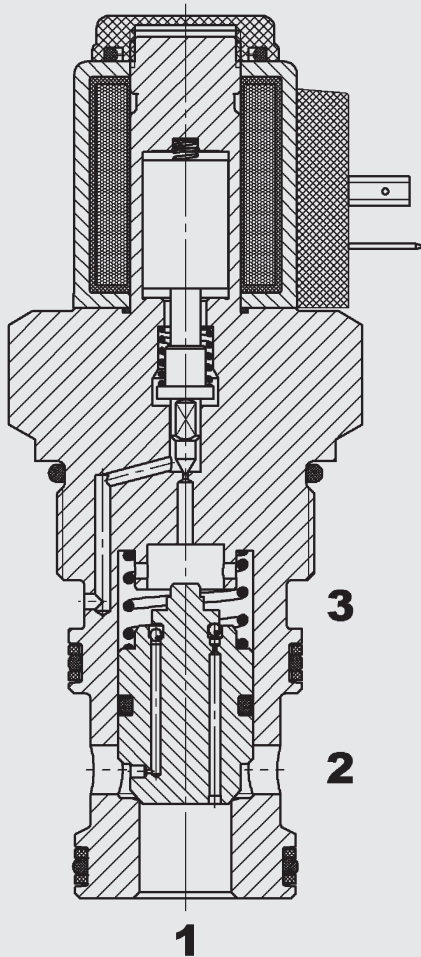


up to 350 l/min
up to 420 bar

FUNCTION



The directional valve is a pilot operated solenoid poppet valve – de-energized closed. When energized the valve opens in both directions. In addition the pilot oil flow will be drained to port 3.

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. This applies particularly to valves with piston seals and/or position sensors.

2/2 Solenoid Directional Valve poppet type, pilot operated normally closed Metric cartridge – 420 bar WSM20121W-01

FEATURES

- High flow rate at low Δp
- Coil seals protect the solenoid system
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1.000 h Salt spray test)

SPECIFICATIONS*

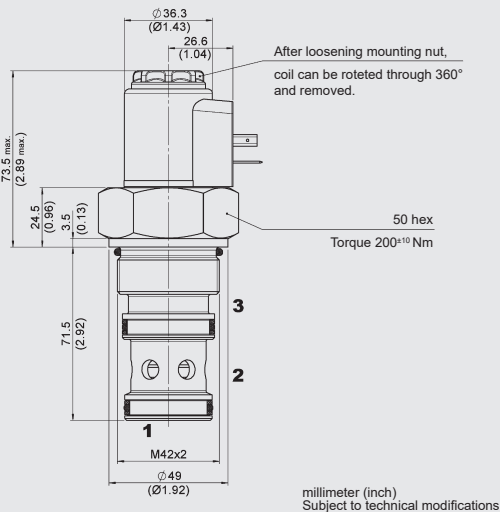
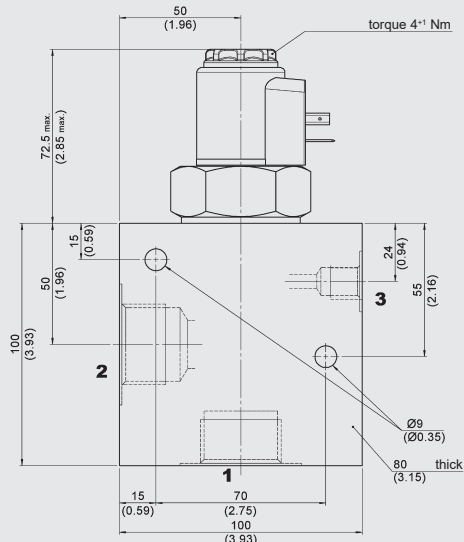
Operating pressure:	max. 420 bar (port 1 and 2)
Nominal flow:	max. 350 l/min
Internal leakage:	leak-free max. 5 drops/min (0.25 cm ³ /min) at 420 bar
Pilot oil at port 3:	< 4 l/min at 420 bar
Media operating temperature range:	min. -20 °C up to max. +100 °C
Ambient temperature range:	min. -20 °C up to max. + 60 °C
Fluids:	Hydraulic oil to DIN 51524 Part 1, 2 and 3
Viscosity:	min. 7,4 mm ² /s up 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 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:	20121 metric
Weights:	Valve complete: 1.1 kg Coil only: 0.19 kg

Electrics

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
Voltage tolerance:	± 15 % of nominal voltage
Coil duty rating:	Continuous up to 115 % of nominal voltage at max. 60 °C ambient temperature
Response time: ($\alpha \tau \pi_{\mu a \xi}, \Theta_{\mu a \xi}, v = 33 \text{ mm}^2/\text{s}$)	energized: approx. 80 ms de-energized: approx. 300 ms substantially extended response times possible at other operating conditions
Coil type:	Coil... -40-1836

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

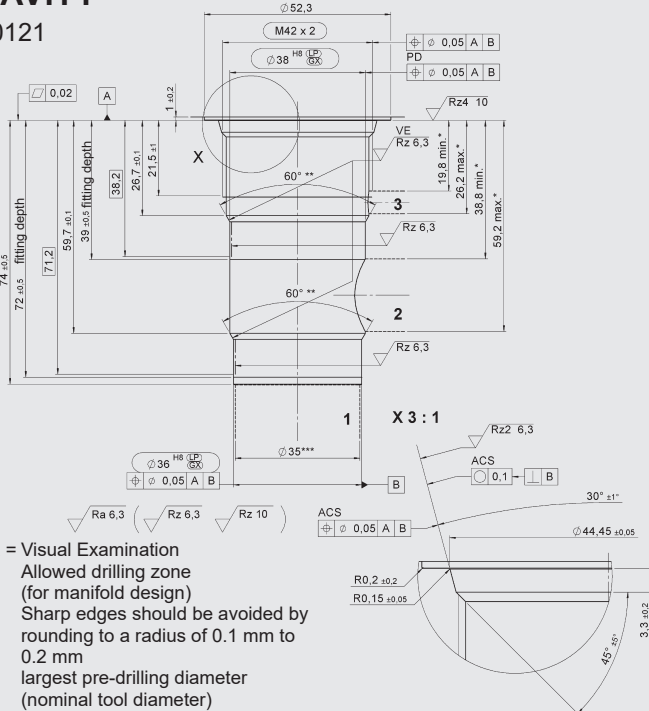
DIMENSIONS



millimeter (inch)
Subject to technical modifications

CAVITY

20121



Form tools

Tool	Part No.
KK-Countersink	177936
Countersink	179658
Finisher	3820716

millimeter (inch)
Subject to technical modifications

MODEL CODE

WSM20121W - 01 M - C - N - 24 DG

Basic model

Solenoid poppet valve, metric

Type

01 = standard

Manual override

No details = without manual override

M = Manual override

Body and ports*

C = cartridge only

Combinations with line bodies on request

Seals

N = NBR (standard)

V = FKM

Coil voltage

DC voltage

12 = 12 VDC

24 = 24 VDC

AC voltage (internally full wave rectified)

115 = 115 V AC

230 = 230 V AC

Other voltages on request

Coil connector (Coil type 40-18-36)

DC: DG = DIN connector type A to EN175301-803

DT = AMP Junior Timer, 2 pole, radial

DK = Kostal threaded connector M27 x 1

DL = Leadwires (2) - 475mm (18") long

DN = Deutsch connector, 2pole, axial

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

Other connectors on request

Standard models

Model code	Part No.
WSM20121W-01-C-N-12DG	3631731
WSM20121W-01-C-N-24DG	3588177

Other models on request

*Standard line bodies

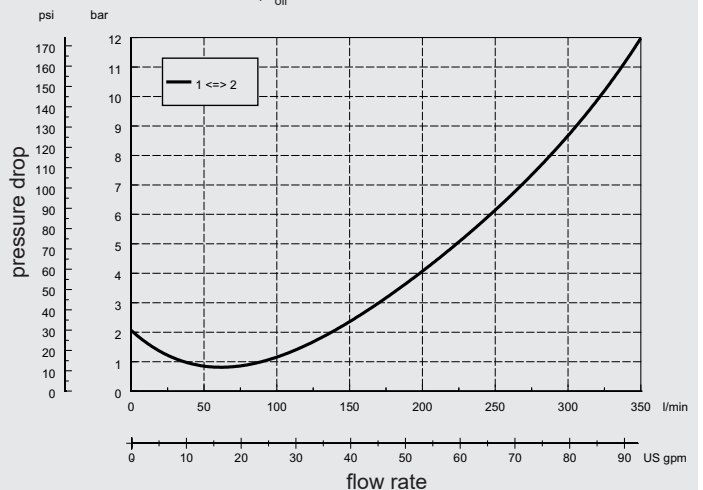
Code	Part No.	Material	Ports	Pressure
R20121-01X-01	3507023	Steel, zinc-plated	1 BSP, 1/4 BSP(3)	350 bar

Seal kits

Code	Material	Part No.
SEAL KIT WSM20121-NBR	NBR	3812987
SEAL KIT WSM20121-FKM	FKM	4192292

TYPICAL PERFORMANCE

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



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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