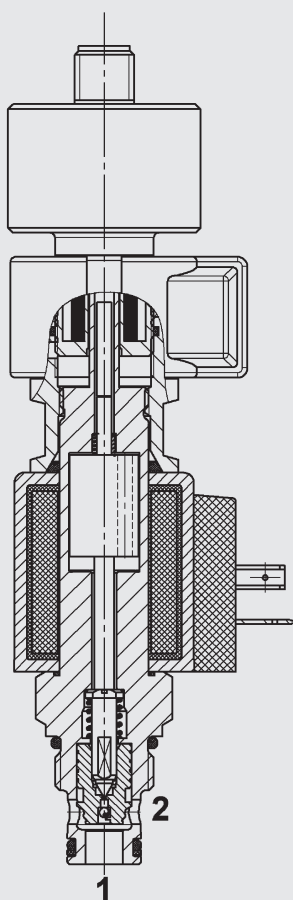


FUNCTION



The directional valve is a pilot operated poppet valve with electronic switch position monitoring.

When de-energised, there is free flow through the valve in both directions.

When energised the valve is blocked from port 2 to port 1 – this switch position is recorded inductively. In the reverse direction the valve will allow flow from port 1 to 2 when the hydraulic force on the piston overcomes the solenoid force (approx. 2.5 to 10 bar).

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 open (reverse flow) with electronic switch position monitoring Metric Cartridge – 350 bar WSM06020YR-01E

GENERAL

- With electronic switch position monitoring
- The valve can be used to increase the level of diagnostic coverage
- Excellent switching performance by high power HYDAC solenoid
- Coil seals protect the solenoid system
- External surfaces with advanced corrosion protection due to Zn-Ni coating (1,000 h salt spray test)

SPECIFICATIONS*

Operating pressure:	max. 350 bar
Nominal flow:	max. 40 l/min
Internal leakage:	leakage-free, max. 5 drops/min (0.25 cm ³ /min) at P ₂ = 350 bar and P ₁ = 0 bar, v = 34 mm ² /s
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 of operating fluid: (according to ISO 4406)	p ≤ 210 bar: min. 20/18/15 for extended lifetime 17/15/12 p > 210 bar: min. 18/16/13 for extended lifetime 16/14/11
MTTF _d :	150–1200 years, according to DIN EN ISO 13849-1
Installation:	No orientation restrictions
Materials:	Valve body: steel Piston: hardened and polished steel Seals: NBR (standard) FKM (optional, media temperature range -20 °C to +120 °C) Backup rings: PTFE Solenoid coil: steel/ polyamide
Cavity:	06020 metric
Weight:	0.5 kg

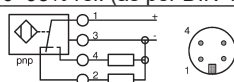
Electrical data

Type of voltage:	DC: direct current solenoid AC: alternating current solenoid with a bridge rectifier built into the coil
Nominal current at 20 °C:	1.5 A at 12 V DC 0.8 A at 24 V DC
Voltage tolerance:	± 15% of rated voltage
Coil duty rating:	Continuous up to max. 115% of rated voltage at max. 60° C ambient temperature
Response time: (at p _{max} , Q _{max} , v = 34 mm ² /s)	energised: approx. 30 ms; de-energised: approx. 50 ms substantially extended response times possible at other operating conditions
Coil type:	Coil...-40-1836

Sensor data

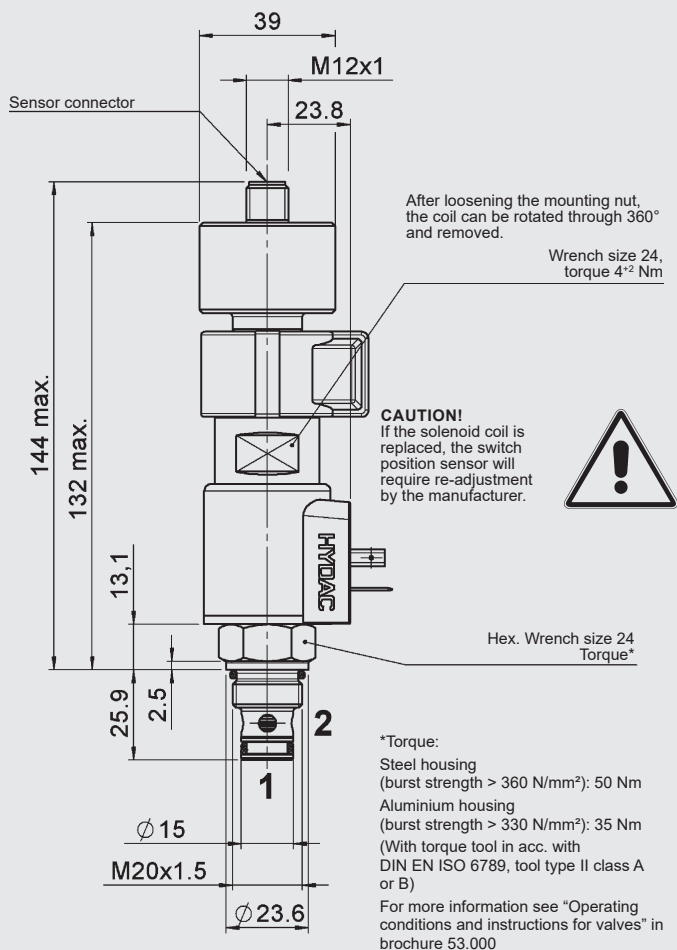
Supply voltage:	24 V: 20 to 32 V DC 12 V: 10.5 to 16 V DC
Reverse polarity protection of supply:	Yes
Outputs:	2 with change-over function, PNP, positive switching
Output load:	≤ 400 mA, 100% continuous
Short circuit protection:	Resistant to short circuits
Connector:	Round connector M12x1 (4-pin)
Protection class:	IP65 as per DIN 40050
CE conformity:	93/68/EEC 2014/30/EU
EMC:	DIN EN 61000-6-1-2-3-4
Humidity requirements:	0–95% rel. (as per DIN 40040)

Diagram:



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

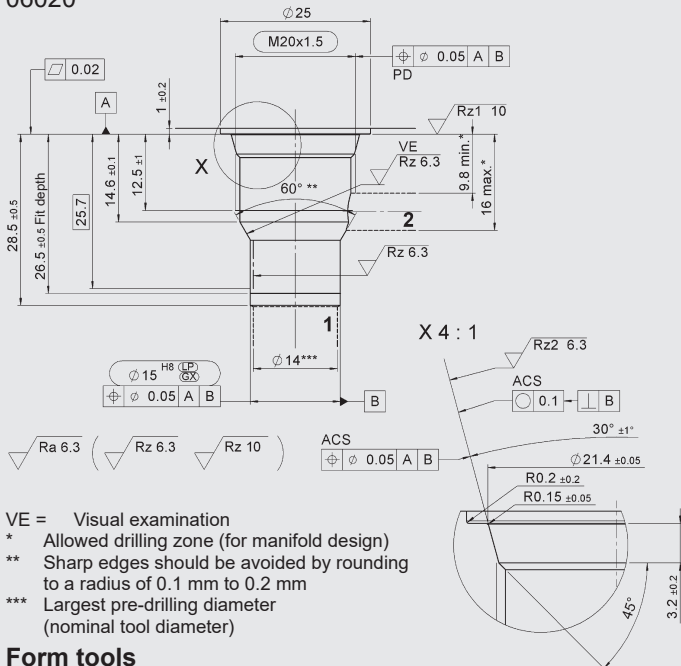
DIMENSIONS



Millimetre
Subject to technical modifications

CAVITY

06020



Form tools

Tool	Part no.
Countersink (shank MK3)	170033
Reamer (shank MK2)	1000768
Tap	1002648
Plug gauge	168840

Millimetre
Subject to technical modifications

MODEL CODE

WSM06020YR - 01E - C - N - 24 DG - 12

Basic model

Directional poppet valve, metric

Type

01E = with electronic switch position monitoring

Body and ports

C = cartridge only

Sealing material

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, design A to EN175301-803

DK = Kostal threaded connection M27 x 1

DL = two flying leads, 457 mm long, 0.75 mm²

DN = Deutsch connector DT04-2P, 2-pole, axial

DT = AMP Junior Timer, 2-pole, radial

AC: AG = DIN connector, design A to EN175301-803

Other connectors on request

Supply voltage for sensor

Without specification = 24 V DC
12 = 12 V DC

Standard models

Model code	Part no.
WSM06020YR-01E-C-N-12DG	3980689
WSM06020YR-01E-C-N-24DG	3968015

Other models on request

Standard in-line bodies

Code	Part no.	Material	Connections	Pressure
R06020-01X-01	275266	Steel, zinc-plated	G3/8"	Max. 350 bar

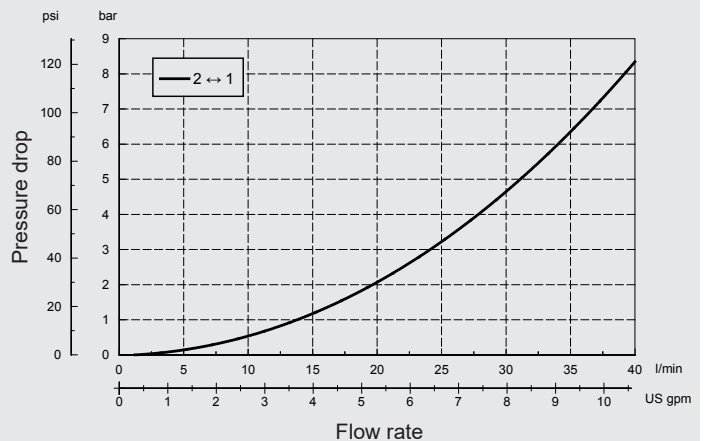
Other bodies see brochure EN 5.252.

Seal kits

Code	Material	Part no.
SEAL KIT 06020-NBR	NBR	3119017
SEAL KIT 06020-FKM	FKM	3262477

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.

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: valves@hydac.com