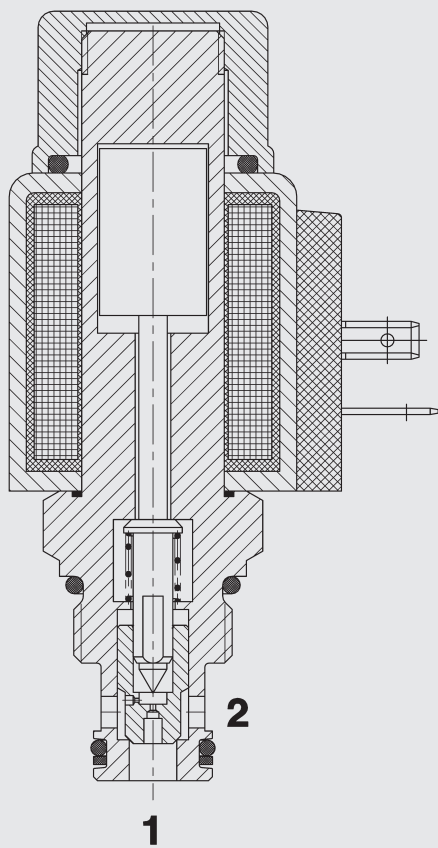


up to 40 l/min  
up to 350 bar

## FUNCTION



When de-energized, there is free flow through the valve from port 2 to 1. Flow in the reverse direction is not permitted. When the solenoid coil is energized, the valve is closed from port 2 to port 1. In the reverse direction there is free flow through the valve when the hydraulic force on the piston exceeds the solenoid force (approx. 9 to 20 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.

## 2/2 Solenoid Directional Valve Poppet Type, Pilot-Operated Normally Open Metric Cartridge – 350 bar WSM06020Y-01

### FEATURES

- Excellent switching performance by high power HYDAC solenoid
- Coil seals protect the solenoid system
- Compact design enables space-saving installation in connection housings and control blocks
- Exposed surfaces zinc-nickel plated for increased corrosion protection (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 <sup>3</sup> /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. 10 mm <sup>2</sup> /s to max. 420 mm <sup>2</sup> /s
Filtration:	Class 21/19/16 according to ISO 4406 or cleaner
MTTF <sub>d</sub> :	150 - 1200 years, according to DIN EN ISO 13849-1
Installation:	No orientation restrictions
Materials:	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 Coil: steel / polyamide
Cavity:	06020
Weight:	Valve complete: 0.33 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
Voltage tolerance:	± 15 % of the nominal voltage
Coil duty rating:	Continuous up to max. 115 % of the nominal voltage at 60 °C ambient temperature
Response time:	energized: approx. 50 ms de-energized: approx. 35 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

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

Manual override, with HNBR-rubber cap.

torque 4<sup>+1</sup> Nm

72 max.

10.8

2

26 max.

74.5 max.

23.8

ø36.3

hex. SW 24 torque \*

1

ø15

M20 x 1.5

ø23.6

\*Torque:  
Steel manifold  
(ultimate tensile strength  
< 360 N/mm<sup>2</sup>): 50 Nm  
Aluminium manifold  
(ultimate tensile strength  
< 330 N/mm<sup>2</sup>): 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  
subject to technical modifications

**WSM06020Y - 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 to EN175301-803  
DK = Kostal threaded connection M27 x 1  
DL = 2 flying leads 475 mm long, 0.75 mm<sup>2</sup>  
DN = Deutsch connector type A, 2 pole, axial  
DT = AMP Junior Timer, 2 pole, radial

AC: AG = DIN connector type A to EN175301-803

Other connectors on request

Model code	Part No.
WSM06020Y-01-C-N-24DG	3056077
WSM06020Y-01-C-N-230AG	3056075

Code	Part No.	Material	Ports	Pressure
R06020-01X-01	275266	Steel, zinc-plated	G3/8"	350 bar
For other connection housings, see brochure no. E 5.252				

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

A line graph showing the pressure drop (in bar) versus flow rate (in L/min) for the 2 → 1 de-energized state. The y-axis ranges from 0 to 8 bar with major grid lines every 2 units. The x-axis ranges from 0 to 40 L/min with major grid lines every 5 units. A single curve starts at (0,0) and rises to approximately (40, 5.5). An arrow points from the text '2 → 1 de-energized' to the curve at a flow rate of about 27 L/min and a pressure drop of about 2.5 bar.

Flow rate (L/min)	Pressure drop (bar)
0	0.0
5	0.2
10	0.5
15	0.8
20	1.2
25	1.8
27	2.5
30	3.0
35	4.0
40	5.5

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.

06020

Technical drawing of a countersink and reamer tool. The main view shows a countersink with a 60° angle, a 14.6 ±0.1 mm diameter, and a 12.5 ±1 mm length. It includes surface texture symbols (Ra 6.3, Rz 6.3, Rz 10) and a position tolerance (0.02). A detail view shows a reamer with a 14 mm diameter and a 16 mm length. A cross-section view shows a 45° angle and a 3.2 ±0.2 mm diameter. The drawing is labeled with '06020' and 'Form tools'.

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	Part No.
Countersink (shank MK3)	170033
Reamer (shank MK2)	1000768

millimeter  
 subject to technical modifications