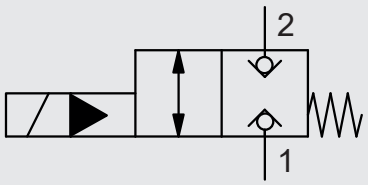
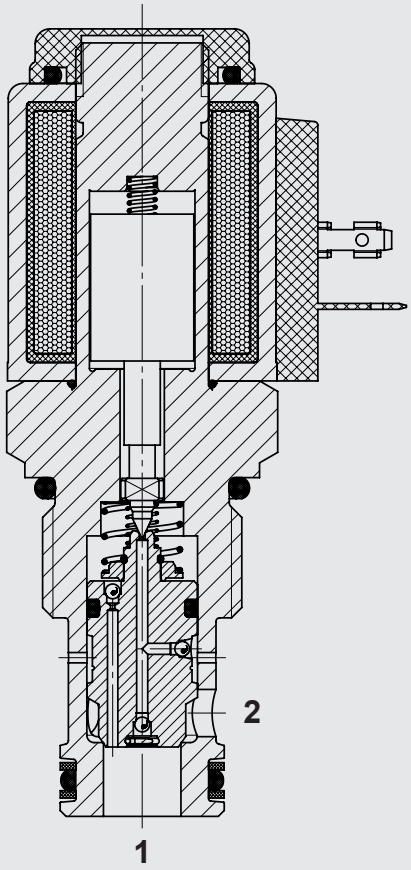


up to 110 l/min
up to 350 bar

2/2 directional poppet valve
WSM12120W-01

Poppet type, pilot-operated, normally closed solenoid-operated Screw-in cartridge valve metric – 350 bar

FUNCTION



PRODUCT ADVANTAGES

- Coil seals protect the solenoid system
- Wide variety of connectors available
- Excellent switching performance by high-performance HYDAC solenoid
- External surfaces with advanced corrosion protection thanks to ZnNi coating (1,000 h salt spray test)

DESCRIPTION OF FUNCTION

In the initial position, when the solenoid coil is de-energised, the valve blocks flow in both directions. When the solenoid coil is energised, there is free flow through the valve in both directions.

Note:

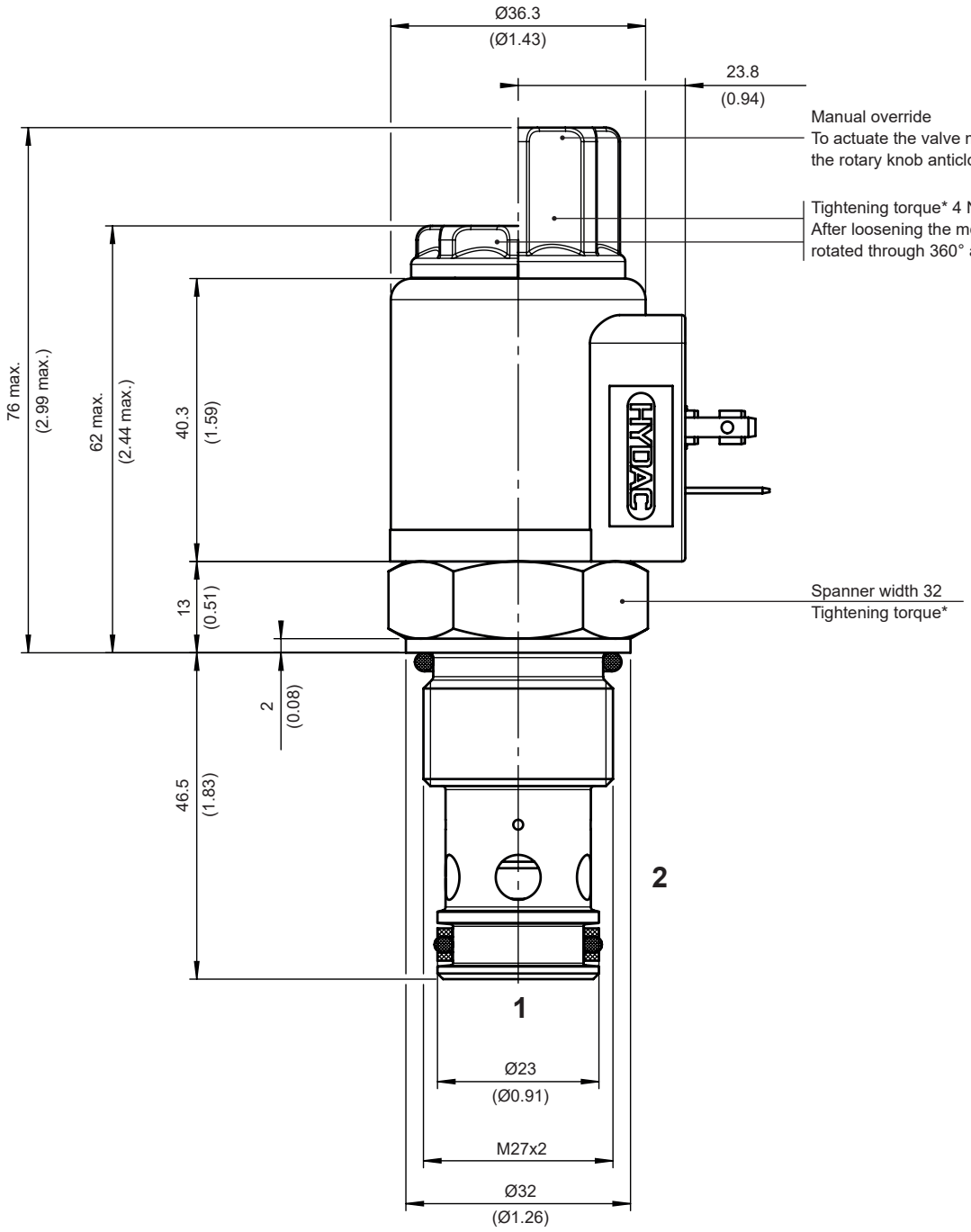
Switching characteristics and response times are strongly dependent on the pressure difference and the flow rate during the switching process. This is especially the case for valves with poppet seal.

TECHNICAL CHARACTERISTICS[1)]

Operating pressure	max. 350 bar
Flow rate	max. 110 l/min
Internal leakage	Leakage-free, max. 5 drops/min (0.25 cm³/min) at 350 bar
Pressure fluid	Hydraulic oil to DIN 51524 Part 1, 2 and 3
Ambient temperature range	min. -20 °C to max. +60 °C
Temperature range of operating fluid	NBR: min. -30 °C to max. +100 °C FKM: min. -20 °C to max. +120 °C
Viscosity range	min. 7.4 mm²/s to max. 420 mm²/s
Filtration	Permitted contamination level of the operating fluid as defined by ISO 4406 p ≤ 210 bar: min. class 20/18/15 p > 210 bar: min. class 19/17/14
$MTTF_D$	150–1200 years, assessment according to DIN EN ISO 13849-1:2016, Table C.1, Confirmation of ISO 13849-2:2013; Tables C.1 and C.2
Installation position	User-definable
Materials	Valve body: Steel Spool: Steel, hardened and ground Seals: NBR (standard) FKM (optional) Support rings: PTFE
Cavity	12120
Weight	0.36 kg 0.46 kg with coil
Electric system	
Response time	Energised: approx. 30 ms De-energised: approx. 70 ms Greatly increased reaction times possible for other operating conditions.
Type of voltage	DC: DC solenoid AC: AC solenoid with rectifier integrated into the coil
Voltage tolerance	±15 % of nominal voltage
Nominal current at 20 °C	1.5 A at 12 V DC 0.8 A at 24 V DC
Duty cycle	100% duty cycle (continuous operation) up to max. 115% of the nominal voltage at 60 °C ambient temperature
Coil design	Coil ... 40-1836

[1)] See “Conditions and Instructions for Valves” in brochure 53.000.

DIMENSIONS

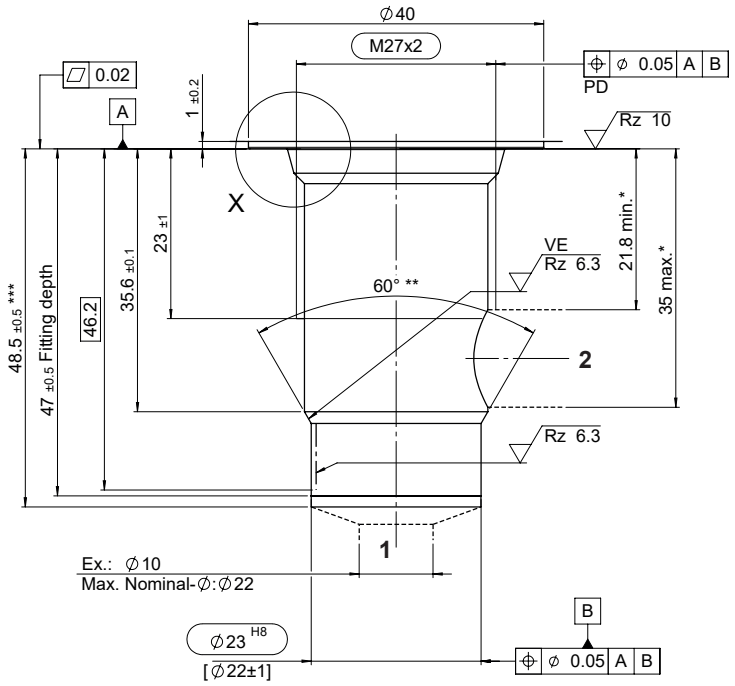


*Tightening torque:
Steel housing (burst strength > 360 N/mm2/): 115 Nm
Aluminium housing (burst strength > 330 N/mm²): 75 Nm
(With torque tool according to DIN EN ISO 6789, tool type II class A or B).
For more information, see “Operating conditions and instructions for valves” in brochure 53.000.

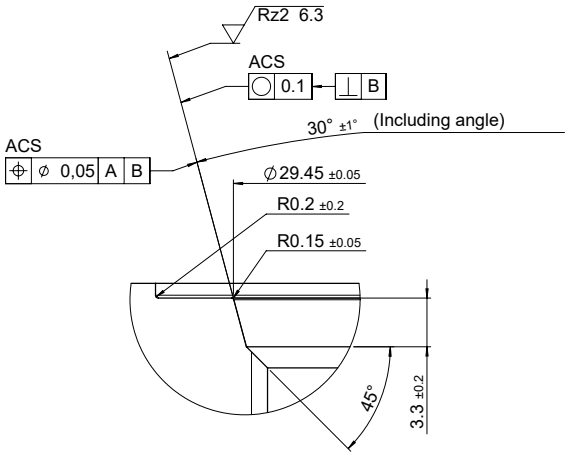
Millimetre (inch)
Subject to technical modifications.

CAVITY

12120



X 4 : 1



VE = Visual Examination

Ra 6.3 (Rz 6.3 Rz 10)

* Permitted boring zone (for block design).
** Sharp edges should be avoided by using a radius of 0.1 mm to 0.2 mm.
*** Largest pilot hole diameter (nominal tool diameter).

Millimetres
Subject to technical modifications.

MODEL CODE

WSM12120W – 01M – C – N – 24 DG

Designation
2/2 directional poppet valve, metric

Design
01 = standard
01M = with manual override

Body and ports
C = Screw-in cartridge valve

Sealing material
N = NBR (standard)
V = FKM (optional)

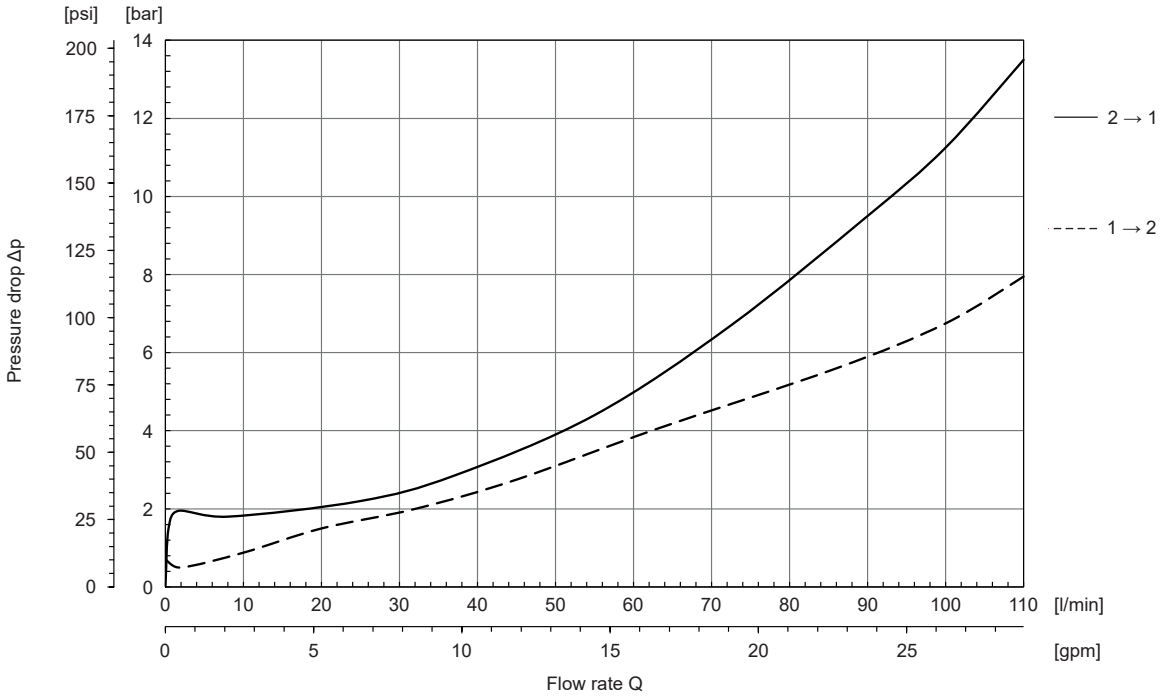
Nominal voltage
DC voltage:
12 = 12 V DC
24 = 24 V DC
AC voltage (rectifier integrated into coil):
115 = 115 V AC
230 = 230 V AC
Further versions on request.

Solenoid coil design (type 40-1836)	Number of pins	Connection	Protection class
DC:			
DG = design A acc. to DIN EN 175301-803	3-pole	radial	IP65
DK = KOSTAL plug connector M27x1	2-pole	radial	IP65 / IP67
DL = two flying leads 0.75 mm² x 457 mm (18")	2-pole	radial	IP65 / IP67
DN = DEUTSCH plug connector DT04-2P	2-pole	axial	IP65 / IP67
DT = AMP Junior Timer	2-pole	radial	IP65 / IP67
AC:			
AG = design A acc. to DIN EN 175301-803	3-pole	radial	IP65

Further versions on request.

SAMPLE CHARACTERISTICS

Δp/Q characteristics measured at ν = 33 mm²/s, T_{Oil} = 46 °C



MATERIAL OVERVIEW

Standard models

Designation	Part no.
WSM12120W-01-C-N-12DG	3354399
WSM12120W-01-C-N-24DG	3354400
WSM12120W-01-C-V-24DG	3671734
WSM12120W-01-C-N-230AG	3354401
WSM12120W-01M-C-N-24DG	3555993
WSM12120W-01M-C-V-24DG	3685433

Further versions on request.

Spare parts, seal kits

Designation	Material	Code	Part no.
Seal kit	NBR	12120-NBR	3454001
Seal kit	FKM	12120-FKM	3454002

Housing

Designation	Material	Code	Pressure max.	Connections	Weight	Part no.
Inline connection housing	Steel, zinc-plated	R12120-10X-01	350 bar	G3/4"	1.43 kg	396708

Cavity tools

Designation	Part no.
Countersink (shank MK3)	172880
Reamer	1014207

NOTE

The information in this brochure relates to the operating conditions and fields of application described. For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

Documents are only valid if they have been obtained via the website and are up-to-date.

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