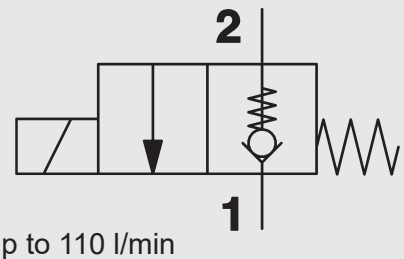
HYDAC INTERNATIONAL

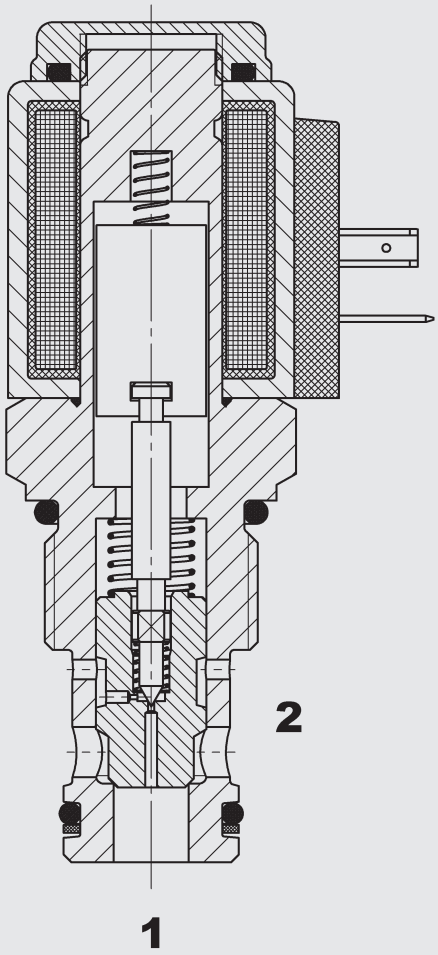


up to 110 l/min
up to 350 bar

2/2 Solenoid Directional Valve Poppet Type, Pilot Operated Normally Closed UNF Cartridge – 350 bar

WS12Z-01

FUNCTION



The directional valve is a pilot operated valve in poppet style.
When the solenoid coil is not energized, the valve is closed from port 2 to port 1. There is free flow from port 1 to port 2.
When energized, there is free flow through the valve from port 2 to 1. Flow from port 1 to 2 is not permitted.
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.

FEATURES

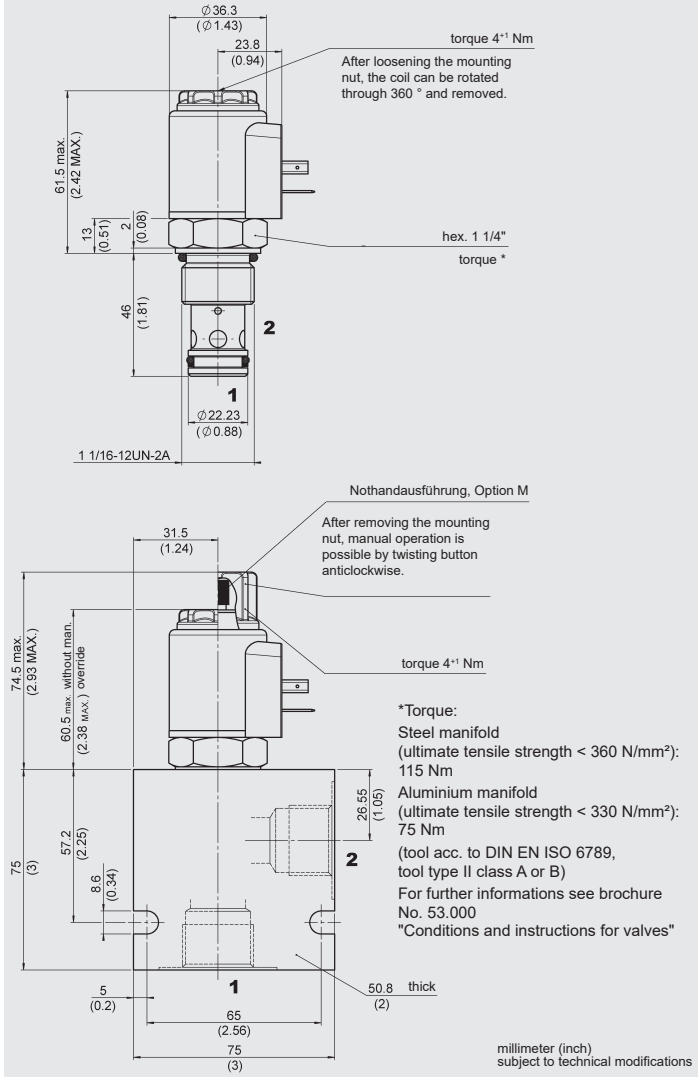
- Excellent switching performance by high power HYDAC solenoid
- Wide variety of connectors available
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1.000 h Salt spray test)

SPECIFICATIONS*

Operating pressure:	max. 350 bar	
Nominal flow:	max. 110 l/min	
Leakage:	Leak-free max. 5 drops (0.25 cm³/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 mm²/s to max. 420 mm²/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	
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:	FC12-2	
Weight:	Valve complete:	0.46 kg
	Coil only:	0.19 kg
Electrical data		
Coil duty rating:	Continuous up to max. 115 % of the nominal voltage at 60 °C ambient temperature	
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	
Response time: (at p_{max}, Q_{max}, ν = 34 mm²/s)	energized:	approx. 30 ms
	de-energized:	approx. 70 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

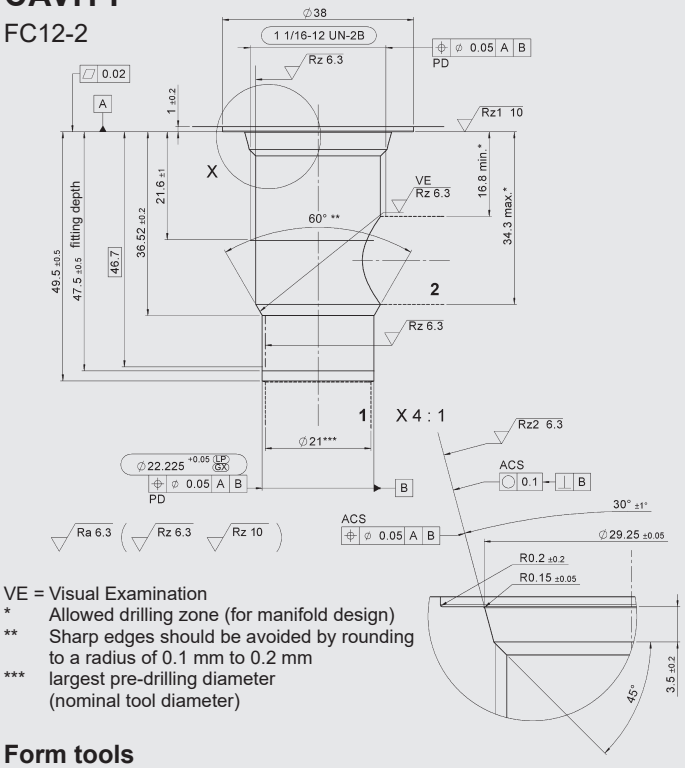
DIMENSIONS



millimeter (inch)
subject to technical modifications

CAVITY

FC12-2



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	176951
Reamer	176952

millimeter (inch)
subject to technical modifications

MODEL CODE

WS12Z – 01 M – C – N – 24 DG

Basic model
Directional poppet valve, UNF

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.
WS12Z-01-C-N-24DG	3157866
WS12Z-01-C-N-115AG	3157909

*Standard in-line bodies

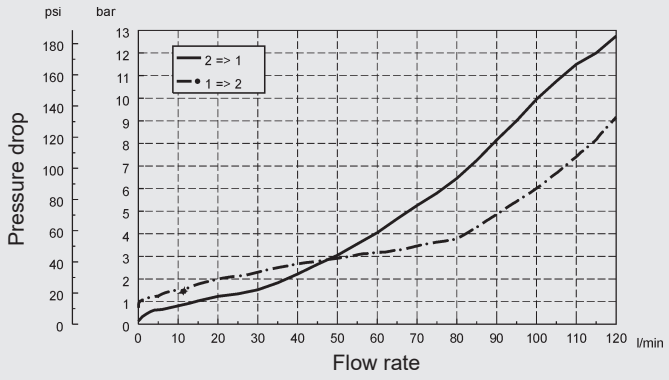
Code	Part No.	Material	Ports	Pressure
FH122-SB6	3053782	Steel, zinc-plated	G3/4"	350 bar
FH122-AB6	3053843	Aluminium, anodized	G3/4"	210 bar

Seal kits

Code	Material	Part No.
FS UNF 12/S2/N	NBR	3651537
FS UNF 12/S2/V	FKM	3651539

TYPICAL PERFORMANCE

Measured at ν = 34 mm²/s, T_{oil} = 46 °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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