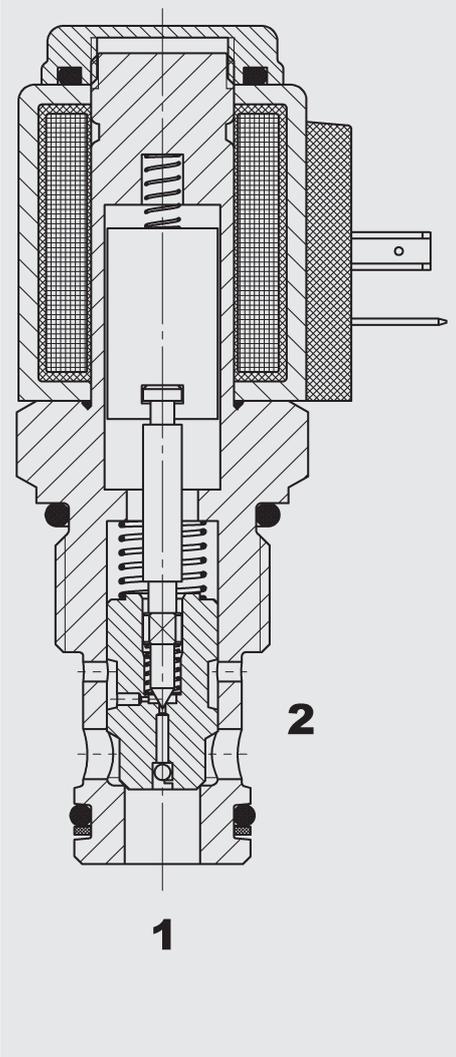


## FUNCTION



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 the valve allows flow in both directions.  
**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 Closed (Reverse Flow) UNF Cartridge – 350 bar

### WS12ZR-01

## FEATURES

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

## SPECIFICATIONS\*

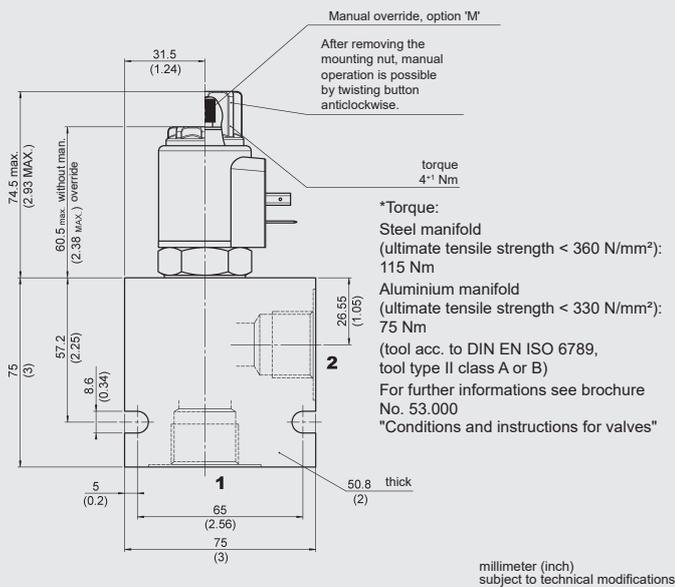
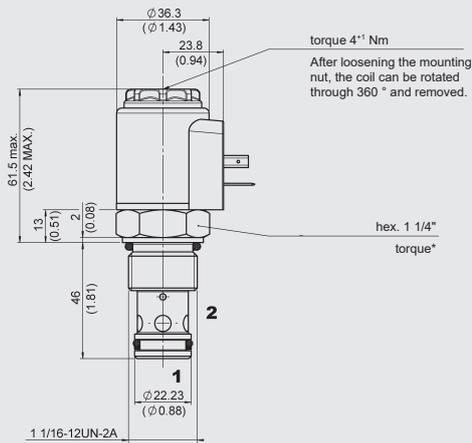
Operating pressure:	max. 350 bar
Nominal flow:	max. 110 l/min
Leakage:	Leak-free max. 5 drops (0.25 cm <sup>3</sup> /min) at 350 bar
Media operating temperature range:	min. -20 °C to max. +100 °C
Ambient temperature range:	min. -20 °C to max. + 60 °C
Operating fluid:	Hydraulic oil to DIN 51524 Part 1, 2 and 3
Viscosity range:	min. 7.4 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:	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 <sub>max</sub> , Q <sub>max</sub> , v = 34 mm <sup>2</sup> /s)	energized: approx. 30 ms de-energized: approx. 70 ms substantially extended response times possible at other operating conditions
Coil type:	Coil...-40-1836

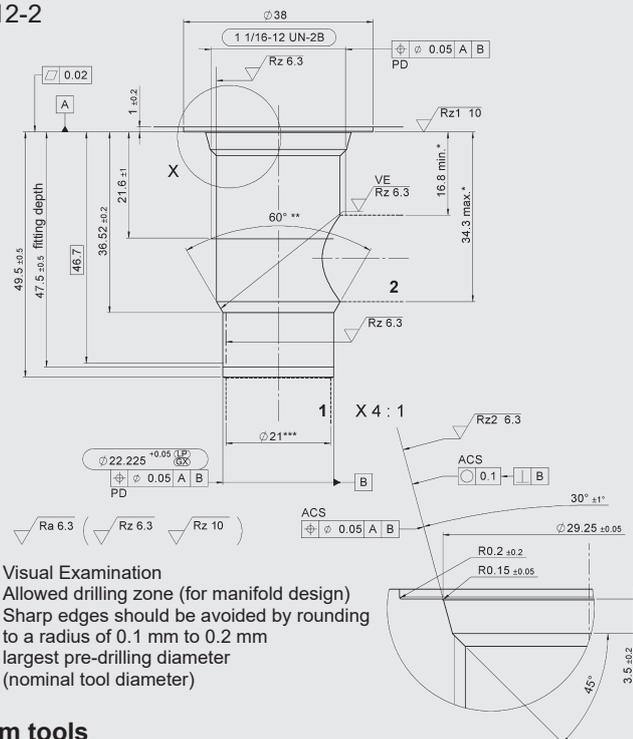
\* see "Conditions and instructions for valves" in brochure 53.000

## DIMENSIONS



## CAVITY

### FC12-2



### Form tools

Tool	Part No.
Countersink	176951
Reamer	176952

millimeter (inch) subject to technical modifications

## MODEL CODE

**WS12ZR-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

30 = 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 mm<sup>2</sup>

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.
WS12ZR-01-C-N-24DG	3157869
WS12ZR-01-C-N-115AG	3157945

## \*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

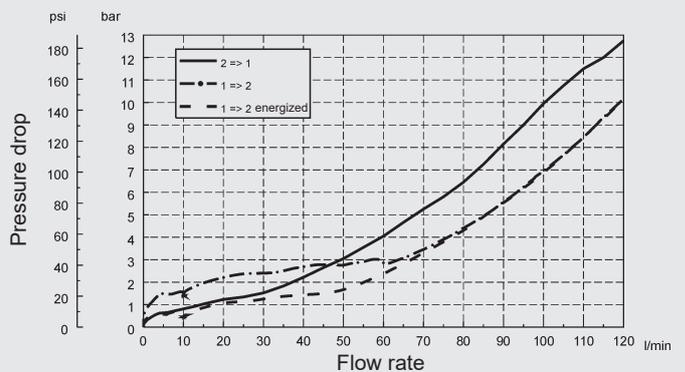
Other line bodies on request

## Seal kits

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

## TYPICAL PERFORMANCE

Measured at  $v = 34 \text{ mm}^2/\text{s}$ ,  $T_{oil} = 46 \text{ °C}$



## 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