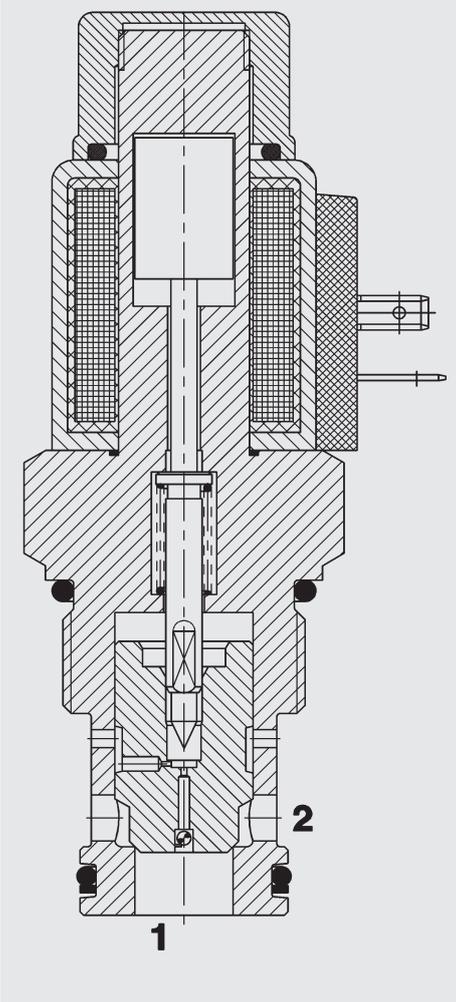


## FUNCTION



The directional valve is a pilot operated valve in poppet style. When the solenoid coil is de-energized, the valve is open in both directions. When the solenoid coil is energized, the valve is closed from port 2 to port 1. 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. 1 to 3 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 (Reverse Flow) UNF Cartridge – 350 bar

### WS16YR-01

## FEATURES

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

## SPECIFICATIONS\*

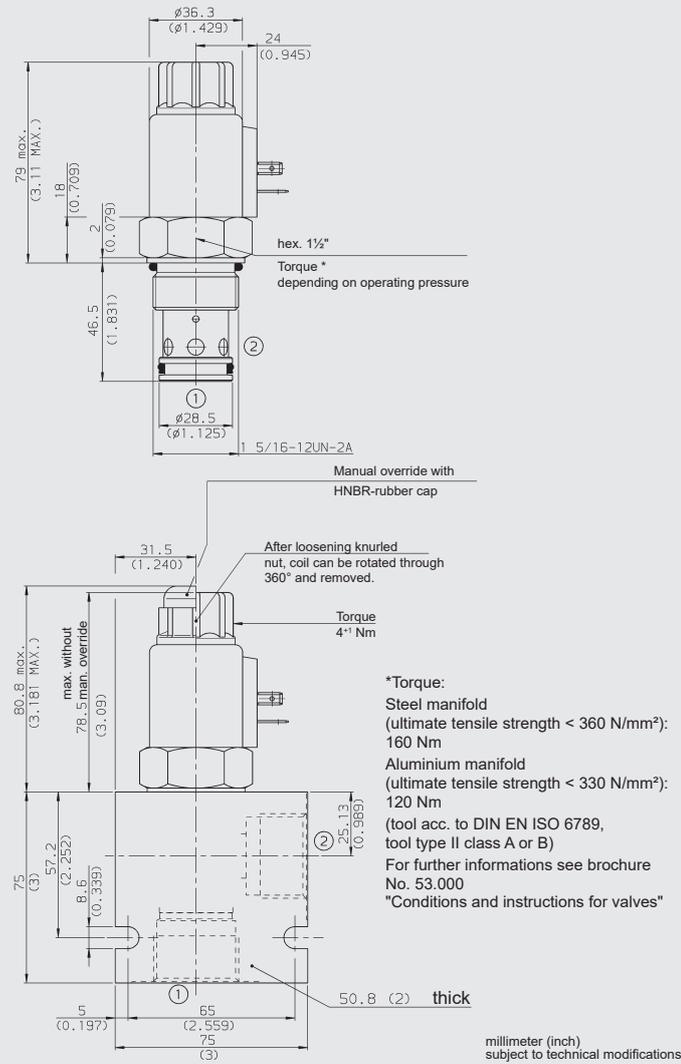
Operating pressure:	max. 350 bar	
Nominal flow:	max. 150 l/min, up to 280 bar max. 100 l/min, from 280 to 350 bar	
Leakage:	Leakage-free max. 5 drops (0.25 cm <sup>3</sup> /min) at 350 bar	
Media operating temperature range:	min. -20 °C to max. +100 °C	
Ambient temperature range:	min. -20 °C to max. + 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:	FC16-2	
Weight:	Valve complete:	0.65 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:	energized:	approx. 150 ms
	de-energized:	approx. 35 ms
	substantially extended response times possible at other operating conditions	
Coil type:	Coil...-40-1836	

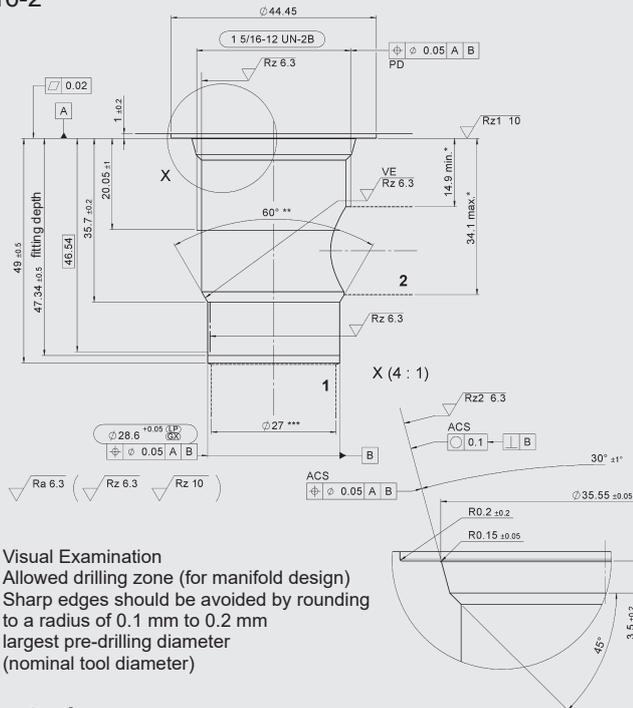
\* see "Conditions and instructions for valves" in brochure 53.000

## DIMENSIONS



## CAVITY

### FC16-2



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	176218
Reamer	176219

millimeter (inch)  
subject to technical modifications

## MODEL CODE

**WS16YR - 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 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.
WS16YR-01-C-N-24DG	3049625
WS16YR-01-C-N-230AG	3049650

## \*Standard in-line bodies

Code	Part No.	Material	Ports	Pressure
FH162-SB8	3032496	Steel, zinc-plated	G1"	350 bar
FH162-AB8	3037193	Aluminium, anodized	G1"	210 bar

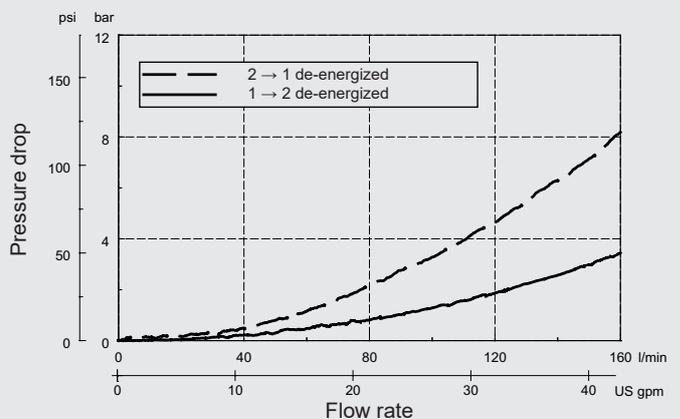
Other housings on request

## Seal kits

Code	Material	Part No.
FS UNF 16/N	NBR	3651395
FS UNF 16/V	FKM	3651396

## TYPICAL PERFORMANCE

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



## 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