



# DSH\*

## LEVER OPERATED DIRECTIONAL CONTROL VALVE

### MOUNTING SURFACES

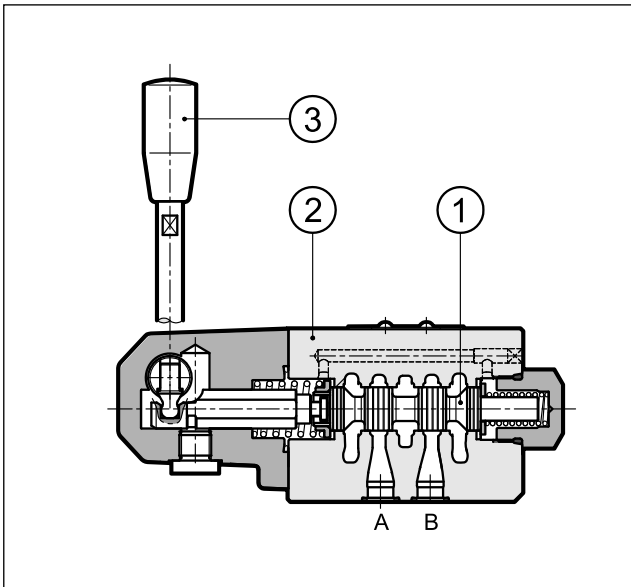
**DSH3 ISO 4401-03**

**DSH5 ISO 4401-05**

**p** max (see performances table)

**Q** nom (see performances table)

### OPERATING PRINCIPLE



- The DSH\* are lever operated directional control valves, available with 3 or 4 ways and with several types of interchangeable spools (1).
- The valve body (2) is made with high strength iron castings provided with wide internal passages in order to minimize the flow pressure drop.
- They are available with 2 or 3 positions with return spring or mechanical retention.
- On DSH3 version is possible to rotate the lever (3) by 180° compared with the standard position, depending on installation requirements.

### PERFORMANCES (with mineral oil of viscosity of 36 cSt at 50°C)

		DSH3	DSH5
Maximum working pressure:	- P - A - B ports	350	320
	- T port	210	160
Nominal flow rate	l/min	75	150
Ambient temperature range	°C	-20 / +60	
Fluid temperature range	°C	-20 / +80	
Fluid viscosity range	cSt	10 ÷ 400	
Fluid contamination degree		according to ISO 4406:1999 class 20/18/15	
Recommended viscosity	cSt	25	
Mass	kg	1.3	4.2

## 1 - IDENTIFICATION CODE

	<div style="display: flex; justify-content: space-around; align-items: center;"> <span style="border: 1px solid black; padding: 2px 10px;">D</span> <span style="border: 1px solid black; padding: 2px 10px;">S</span> <span style="border: 1px solid black; padding: 2px 10px;">H</span> <span style="border: 1px solid black; padding: 2px 10px;"> </span> <span style="border: 1px solid black; padding: 2px 10px;">-</span> <span style="border: 1px solid black; padding: 2px 10px;">/</span> <span style="border: 1px solid black; padding: 2px 10px;"> </span> <span style="border: 1px solid black; padding: 2px 10px;"> </span> </div>		
Directional control valve with spool			Option: / W7 = Zinc-nickel surface treatment (see NOTE 2). Omit if not required.
Lever operated (see NOTE 1)			Seals: N = NBR seals for mineral oil (standard) V = FPM seals for special fluids
Size: 3 = ISO 4401-03 5 = ISO 4401-05			Series No.: 11 for DSH3 (the overall and mounting dimensions remain unchanged from 10 to 19) 30 for DSH5 (the overall and mounting dimensions remain unchanged from 30 to 39)
Spool type			

**NOTE 1:** On request it is possible to have the lever mounted in different positions from those in the catalogue. Please consult our Technical Department.

**NOTE 2:** Standard surface treatment: phosphating. The zinc-nickel finishing makes the valve suitable to ensure a salt spray resistance up to 600 hours.

## 2 - SPOOL TYPE

<p><b>Type S*:</b> 3 positions with spring centering</p> <p>S1 S2 S3 S4</p>	<p><b>Type SK*:</b> 3 positions with mechanical retention</p> <p>SK1 SK2 SK3 SK4</p>	<p><b>Type SA*:</b> 2 positions (central + external) with spring centering</p> <p>SA1 SA2 SA3 SA4</p>	<p><b>Type SAK*:</b> 2 positions (central + external) with mechanical retention</p> <p>SAK1 SAK2 SAK3 SAK4</p>
<p><b>Type TA:</b> 2 external positions with return spring</p> <p>TA TA02 TA23</p>	<p><b>Type TAK:</b> 2 external positions with mechanical retention</p> <p>TAK TAK02 TAK23</p>	<p>Besides the diagrams shown, which are the most frequently used, other special versions are available: consult our Technical Department for their identification and operating limits.</p> <p><b>NOTE:</b> TA02, TA23, TAK02 and TAK23 spools are available only for DSH3.</p>	

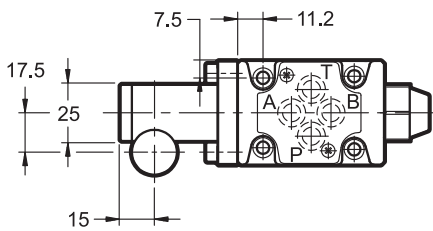
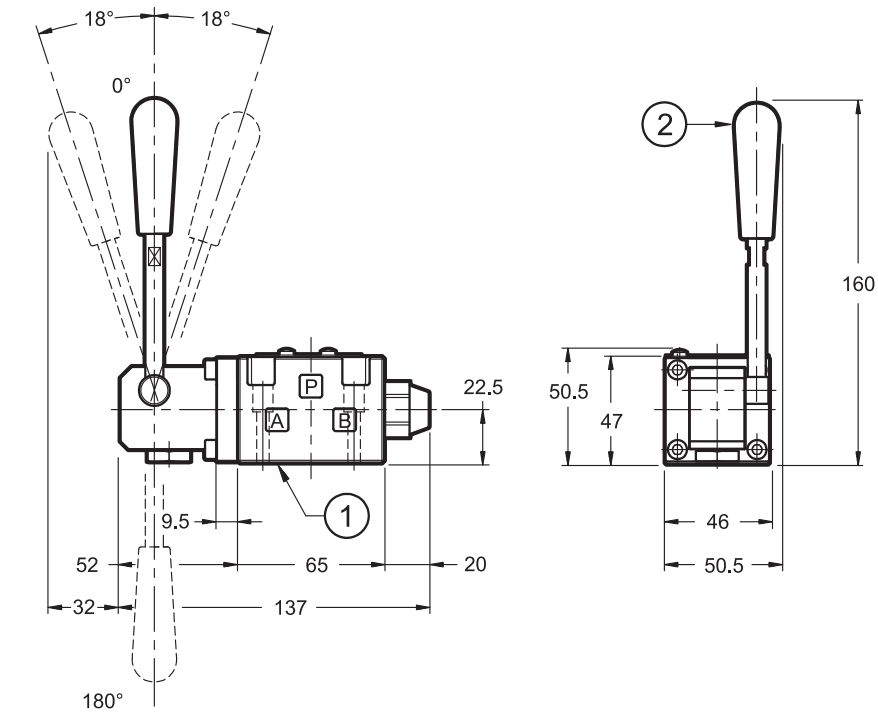
## 3 - HYDRAULIC FLUIDS

Use mineral oil-based hydraulic fluids HL or HM type, according to ISO 6743-4. For these fluids, use NBR seals (code N). For fluids HFDR type (phosphate esters) use FPM seals (code V). For the use of other fluid types such as HFA, HFB, HFC, please consult our technical department. Using fluids at temperatures higher than 80 °C causes a faster degradation of the fluid and of the seals characteristics. The fluid must be preserved in its physical and chemical characteristics.

## 4 - OVERALL AND MOUNTING DIMENSIONS DSH3

DSH3 - S\*  
DSH3 - SK\*

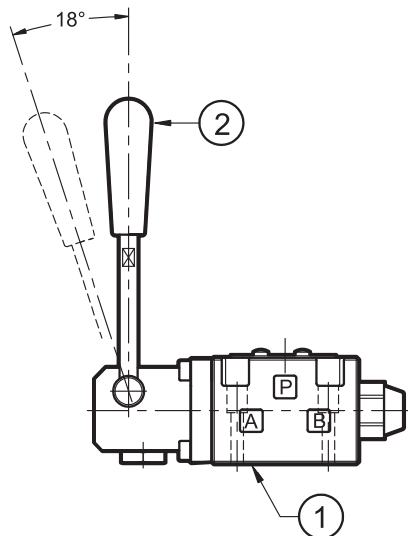
dimensions in mm



DSH3-TA  
DSH3-TAK

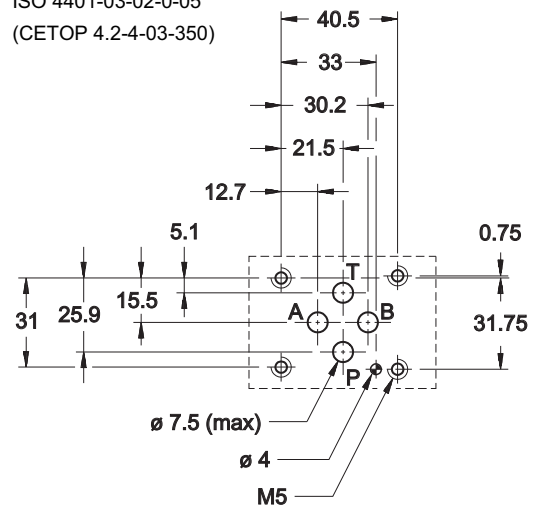
DSH3-TA23  
DSH3-TAK23

DSH3-SA\*  
DSH3-SAK\*



### DSH3 MOUNTING SURFACE

ISO 4401-03-02-0-05  
(CETOP 4.2-4-03-350)



1	Mounting surface with sealing rings: N. 4 OR type 2037 (9.25x1.78) - 90 Shore
2	Hand lever ( <b>NOTE</b> )

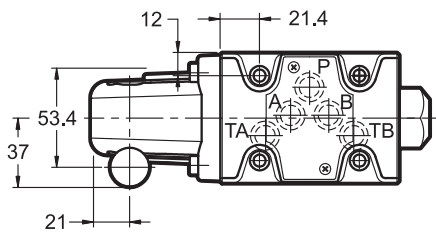
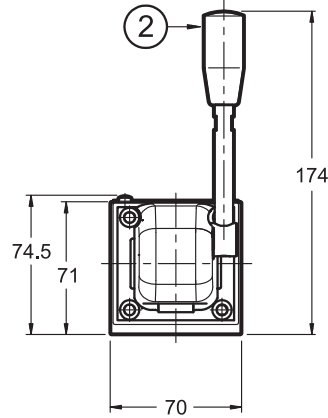
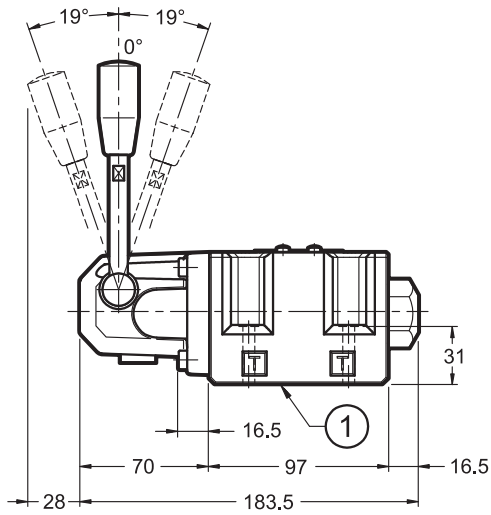
Valve fastening:	N. 4 SHC screws M5x30 ISO 4762
Tightening torque:	5 Nm (bolts A 8.8)
Threads of mounting holes:	M5x10

**NOTE:** The valve is supplied with the hand lever oriented in a perpendicular position with respect to the mounting surface (as indicated in the above drawing). For installation needs the hand lever can be oriented by the user directly at 180° to the standard position, simply by unscrewing the lever and re-screwing it in the desired position.

## 5 - OVERALL AND MOUNTING DIMENSIONS DSH5

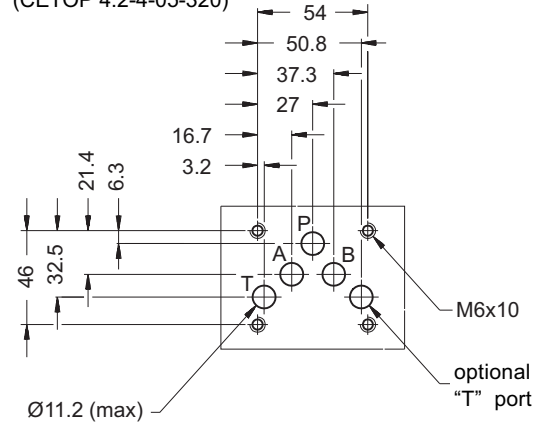
dimensions in mm

DSH5-S\*  
DSH5-SK\*

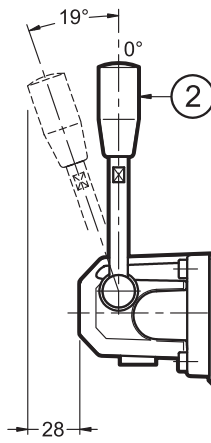


### MOUNTING SURFACE DSH5

(CETOP 4.2-4-05-320)



DSH5-TA  
DSH5-TAK



DSH5-SA\*  
DSH5-SAK\*

1	Mounting surface with sealing rings: N. 5 OR type 2050 (12.42x1.78) - 90 Shore
2	Hand lever ( <b>NOTE</b> )

Valve fastening:	N. 4 SHC screws ISO 4762 M6x40
Tightening torque:	8 Nm (A 8.8 screws)
Threads of mounting holes:	M6x10

**NOTE:** the valve can be supplied with hand lever oriented in different positions; ask our technical department for details.