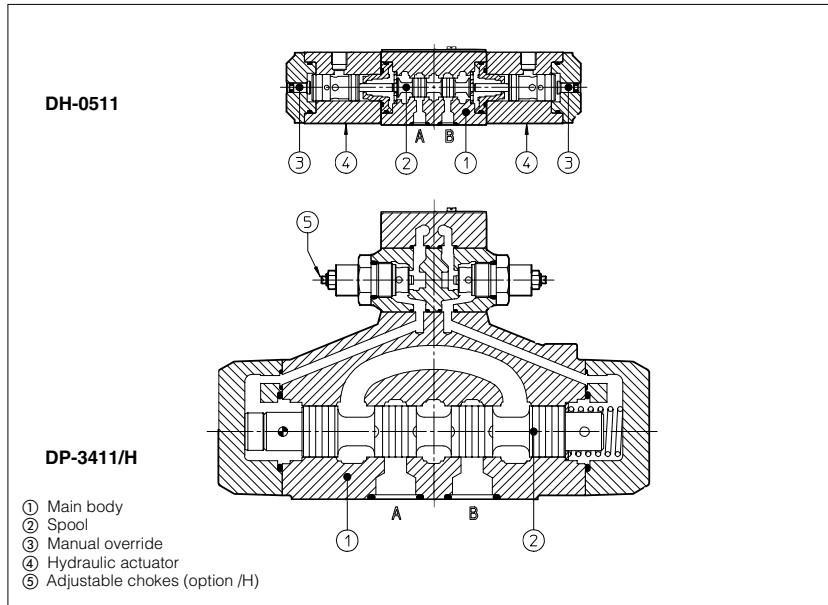


Hydraulic operated directional valves

ISO 4401 size 06, 10, 16, 25 and 32



Hydraulic operated directional valves are spool type, three or four way, two or three position, designed to operate in oil hydraulic systems.

Available with single or double hydraulic actuator.

Rugged execution suitable for outdoor use.

DH-0 = ISO 4401 size 06 interface: flow up to 50 l/min.

DK-1 = ISO 4401 size 10 interface: flow up to 100 l/min.

DP-2 = ISO 4401 size 16 interface: flow up to 300 l/min.

DP-3 = ISO 4401 size 25 interface: flow up to 650 l/min.

DP-6 = ISO 4401 size 32 interface: flow up to 1000 l/min.

Pressure up to 350 bar.

1 MODEL CODE

DH-0	4	1	3	/A	**	/*
Directional control valve, size: DH-0 = 06 DK-1 = 10 DP-2 = 16 DP-3 = 25 DP-6 = 32						Synthetic fluids: WG = water-glycol PE = phosphate ester
Type of actuator: 4 = single actuator 5 = double actuator					Options: only for DH-04 and DK-14, see section 4: /A = actuator device mounted on side of port B	Design number
Valve configuration, see section 4: 0 = free, without springs 1 = spring centered, without detent 3 = spring offset external position 5 = 2 external positions, with detent (only for DH and DK) 7 = center and external positions					only for DP: /H = adjustable chokes for controlling the main spool shifting time (flow controlled from the pilot chambers to the pilot valve) /H9 = adjustable chokes for controlling the main spool shifting time (flow controlled from the pilot valve to the pilot chambers) /M = hydraulic pressure centering device (only for DP-51*) /R = with check valve on port P /S = main spool stroke adjustment	
				Spool type, see section 5		

2 HYDRAULIC CHARACTERISTICS

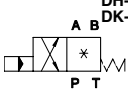
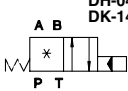


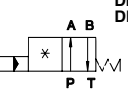
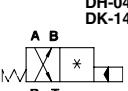
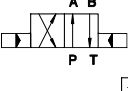
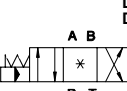

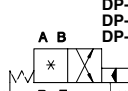

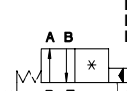
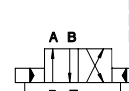
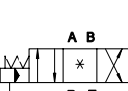
Valve model	DH-0	DK-1	DP-2	DP-3	DP-6
Max recommended flow [l/min]	50	100	300	650	1000
Max pressure on port P, A, B [bar]	350	315		350	
Max pressure on port T (also X, Y for DP) [bar]	65 (1)	210		250	
Max pressure on port L [bar]	-		null pressure		
Minimum pilot pressure [bar]	3 (min) 5 (suggested)		4 (10 for option /M)		
Max recommended pressure on piloting line [bar]	70		250		
Operation	Acting the actuator on port A, the hydraulic connections are P→B, A→T, except for: DH-0*14, DH-0*15 and DK-1*14, DK-1*15 where the connections are P→A, B→T; DH-0*7 and DK-1*7 where by acting the actuator on port A, the spool is driven to centre position.		The spool displacement is achieved by hydraulic pressure on one of the pilot chambers, while the other is unloaded. When pressurizing port X, the port Y has to be directly connected to the tank at null pressure and viceversa. By pressurizing port X, the hydraulic connections are P→B, A→T, except for DP-514 where the connections are P→A, B→T, and DP-47* where by pressurizing port X the spool reaches the central position. In the spring centered versions the spool is centered by the spring action when both the pilot chambers are unloaded. For valves provided with pressure centering device (option /M), the spool is centered by the simultaneous application of pilot pressure at both X and Y ports: the hydraulic centering device provides different section areas and the spool is actuated into centre position by the resulting hydraulic force. When /M device is fitted, the drain port L has to be connected to tank at null pressure.		

1) The max pressure on port T has to be 5 bar lower than the pressure on port P

3 MAIN CHARACTERISTICS OF HYDRAULIC OPERATED DIRECTIONAL VALVES




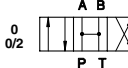
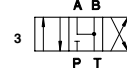
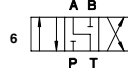
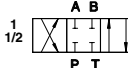


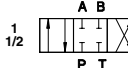

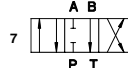
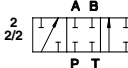
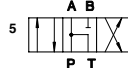

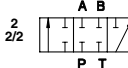
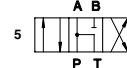
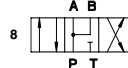
Assembly position / location	Any position except for valves type DH-050, DK-150, DP-*50 (without springs) that must be installed with their longitudinal axis horizontal.
Subplate surface finishing	Roughness index $\sqrt{0.4}$, flatness ratio 0,01/100 (ISO 1101)
Ambient temperature	-20°C to + 70°
Fluid	Hydraulic oil as per DIN 51524...535, for other fluids see section I
Recommended viscosity	15 ÷ 100 mm ² /s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 19/16, achieved with in line filters at 25 µm value and $\beta_{25} \geq 75$ (recommended)
Fluid temperature	-20°C +60°C (standard and /WG seals) -20°C +80°C (/PE seals)

4 VALVE CONFIGURATION

Where the symbol doesn't show the hydraulic connection (*), it depends by the central configuration of the spool, see table 5.

5 SPOOLS - for intermediate passages, see tab. E001

DH-0 DK-1				DP-2 DP-3 DP-6			
							
							

NOTES

- Spools type 0 and 3 are also available as 0/1 and 3/1, where in centre position oil passage from ports to tank are restricted;
- Spools type 1,4 and 5 are also available as 1/1, 4/8 and 5/1 (not available for DP-6). They are properly shaped to reduce water-hammer shocks during the switching;
- Spool type 1, 3, 8 and 1/2 for DH-0 and DK-1 are available as 1P, 3P, 8P (only for DH-0), and 1/2P to limit valve leakage.
- On request, other type of spools are available.

6 Q/Δp DIAGRAMS

DH-0	See note and diagrams on table E010 relating the DHO valve from which DH-0* are derived
DK-1	See note and diagrams on table E020 relating the DKOR valve from which DK-1* are derived
DP-2	See note and diagrams on table E075 relating the DPHO-2 valve from which DP-2* are derived
DP-3	See note and diagrams on table E075 relating the DPHO-3 valve from which DP-3* are derived
DP-6	See note and diagrams on table E075 relating the DPHO-6 valve from which DP-6* are derived

Mounting surface

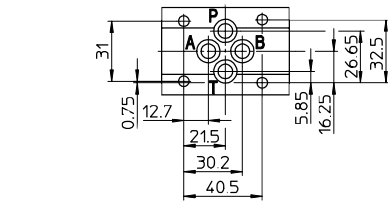
ISO 4401-AB-03-4 size 06

Fastening bolts: 4 socket head screws M5x50
 Diameter of ports A, B, P, T: $\varnothing = 7,5$ mm (max)
 Seals: 4 OR 108

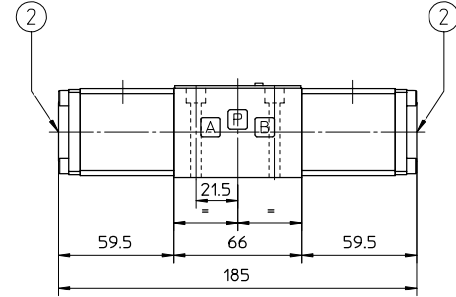
P = PRESSURE PORT
A, B = USE PORT
T = TANK PORT

For the max pressures on ports, see section 2

DH-04**

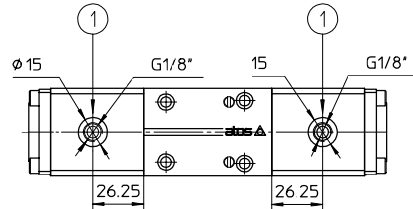
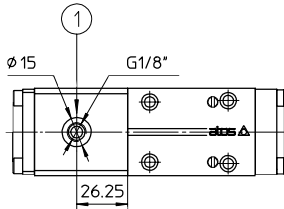


DH-05**



Mass: 1,2 Kg

Mass: 1,6 Kg



- ① Pilot pressure port
- ② Manual override

Mounting subplates: see tab. E010

Mounting surface

ISO 4401-AC-05-4 size 10

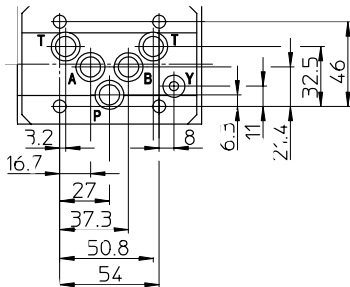
Fastening bolts: 4 socket head screws M6x40
 Diameter of ports A, B, P, T: $\varnothing = 11,2$ mm (max)
 Diameter of port Y: $\varnothing = 5$ mm
 Seals: 5 OR 2050, 1 OR 108

P = PRESSURE PORT
A, B = USE PORT
T = TANK PORT
Y = DRAIN PORT

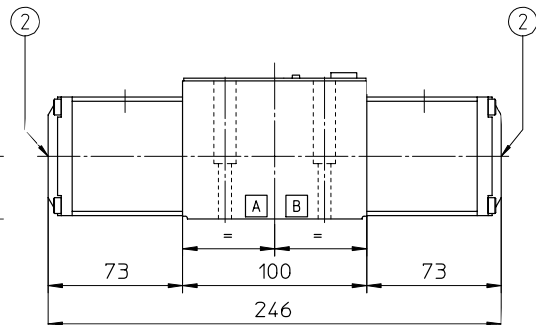
For the max pressures on ports, see section 2

Note: Line Y must be always present and no counter pressure are allowed on this line.

DK-14**

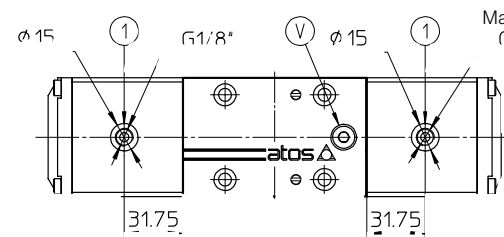
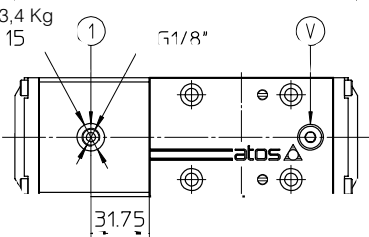


DK-15**



Mass: 3,4 Kg

Mass: 4,2 Kg



- ① Pilot pressure port
- ② Manual override
- Ⓥ Air bleed

Mounting subplates: see tab. E020 (only version Y)

