

Subsea Hydraulic Ball Valves

Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- Hydraulic supply pressure: 3,000 psig (207 bar)
- Working temperature: 0 to 200°F (-17.8 to 93°C)
- High tensile 316 stainless steel or S17400 stainless steel for valve body and S17400 for hydraulic actuator
- Fluorocarbon FKM O-ring and PEEK seal provide excellent resistance against chemicals, heat and abrasion
- Three types of hydraulic actuators (YC, YO, YXTD) available
- Maximum water depth: 13,800 ft. (4200 m)



Subsea Hydraulic Ball Valves (2-way)



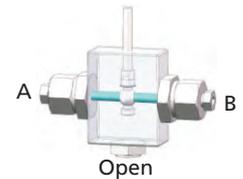
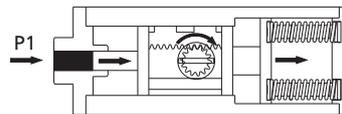
Subsea Hydraulic Ball Valves (3-way)

Working Principle

2-way (90° on-off)

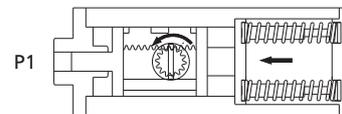
YC: Hydraulic to open, single acting with spring return (Normally Closed)

Hydraulic pressure applied to port P1 forces the piston to move towards right and compress the spring, causing a clockwise rotation by 90 degrees. The valve fully opens.



Open

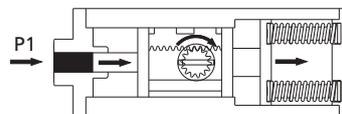
Following loss of hydraulic pressure on port P1, the compressed spring forces the piston to move towards left, causing a counterclockwise rotation by 90 degrees. The valve closes.



Closed

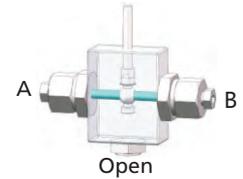
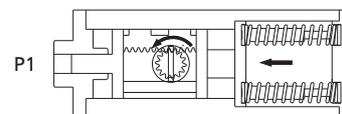
YO: Hydraulic to closed, single acting with spring return (Normally Open)

Hydraulic pressure applied to port P1 forces the piston to move towards right and compress the spring, causing a clockwise rotation by 90 degrees. The valve closes.



Closed

Following loss of hydraulic pressure on port P1, the compressed spring forces the piston to move towards left, causing a counterclockwise rotation by 90 degrees. The valve fully opens.

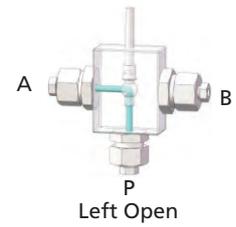
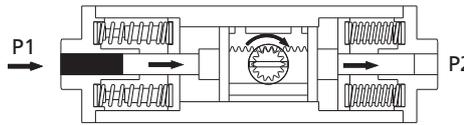


Open

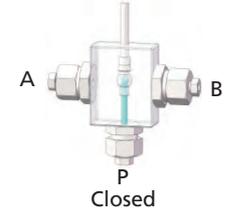
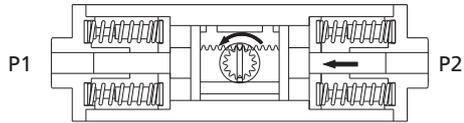
3-way (180° switching)

YXTD: 180° Normally Closed, double acting with spring return

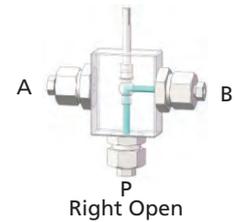
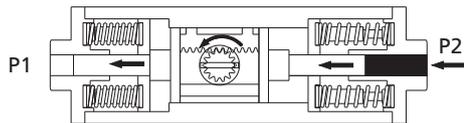
Hydraulic pressure applied to port P1 forces the piston to move towards right and compress the spring, causing a clockwise rotation by 90 degrees. The flow is allowed from bottom inlet port P to outlet A.



Following loss of hydraulic pressure on port P1, the compressed spring forces the piston to move towards left, causing a counterclockwise rotation by 90 degrees. The valve closes.



Hydraulic pressure applied to port P2 forces the piston to move towards left and compress the spring, causing a counterclockwise rotation by 90 degrees. The flow is allowed from bottom inlet port P to outlet B.



Ordering Number Description

15SBSS - MF6 - 6VI - 1 - YC - FNS4

Series	Body Material	Connection	Orifice No.	O-ring Material	Flow Pattern	Hydraulic Actuator	Hydraulic Connection Type	Hydraulic Connection Size		
10SB	4P S17400	For 10SB Series	For 2-way	VI NBR Fluorocarbon FKM	1 2-way Straight Valves	FNS US	FNS US	4 1/4" 7 7/16"-20 8 1/2"		
15SB	SS 316SS		4 1/4"						For 3-way	2 3-way Valves, 180° Turn
20SB			6 3/8"							
For 10SB Series			4 3/16"	For 2-way, 3-way		YC 90° Normally Closed Hydraulic Actuator				
FNS12 3/4" Female NPT			6 3/8"	YO 90° Normally Open Hydraulic Actuator		YXTD 180° Spring Return Double Acting Hydraulic Actuator				
FNS16 1" Female NPT										
MF12 3/4" Female Medium Pressure										
MF16 1" Female Medium Pressure										
For 15SB Series										
DFF4 1/4" Female 20D Series										
DFF6 3/8" Female 20D Series										
FNS4 1/4" Female NPT										
FNS6 3/8" Female NPT										
FNS8 1/2" Female NPT										
For 20SB Series										
MF4 1/4" Female Medium Pressure										
MF6 3/8" Female Medium Pressure										
MF9 9/16" Female Medium Pressure										
MF12 3/4" Female Medium Pressure										
HF4 1/4" Female High Pressure										
HF6 3/8" Female High Pressure										

NOTES: 1. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on I-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Tools and Installation Instructions
Technical Information
Part Number Crossover Charts