



FS™ 21"-500 psi Marine Riser Diverter

Gas Diversion Made Simple for Safety

Pressure Control Equipment: Diverters



APPLICATIONS & BENEFITS

Hydril diverters are known for significant safety enhancement and rig protection. The FS™ 21"-500 psi (Flow Safe) Marine Riser Diverter is designed to achieve these objectives for all types of floating offshore drilling rigs. Featuring a 21" bore and a 500-psi working pressure rating, the FS:

- **Can be installed through 49-1/2" or 60-1/2" rotary tables.**
- **Can be used in conjunction with the Seal-All™ Diverter Insert to radically improve safety during workover and completion operations.**

KEY FEATURES

The FS Diverter is fundamentally simple. Its design avoids the functional complexities that increase chance for human error and equipment breakdown, which can cause rig damage and injury to personnel. Features that deliver this enhanced performance include:

- **The patented integral valve.** This design eliminates the need for equipment such as vent valves, flowline valves and interconnecting circuitry, so there is no sequencing.
- **The single control function.** A solitary hydraulic signal simultaneously moves the piston up and closes the annular packing unit, opening the vent line, stopping upward flow, shutting off the flowline to the shaker and shutting off the fill-up line.
- **A vent line that is always open.** There is no closed position on the FS, so flow is always allowed, even during actuation of the flow selector.
- **Elimination of stagnant vent line space.** This prevents caking of solids or ice formation that could obstruct or shut off the flow.
- **The ability to close on an open hole.** This eliminates a serious safety gap that can be caused by cartridge inserts and their installation.

THE FS 21-500 ADVANTAGE

The FS 21"-500 psi Marine Riser Diverter increases uptime and enhances safety. It can be installed or removed quickly because no line disconnections or reconnections are required at each installation. It can be run quickly, too, as there is a model for a 49-1/2" or 60-1/2" rotary table with the handling-test tool capable of supporting the diverter, riser and BOP stack.

ENGINEERING DATA

FS 21-500 (49-1/2" Rotary Table)		
System Of Measure	U.S.	Metric
Bore Size	21.00 inches	533 mm
Working Pressure	500 psi	35 bars
Closing Pressure	1,500-3,000 psi	103-207 bars
Seal Off Range	13.38 inches to CSO	340 mm to CSO
Closing Chamber Volume - Total	25 gal	94.6 L
Opening Chamber Volume	2.6 gal	9.8 L
Weight (w/o Housing)	22,000 lbs	10,000 kg
Vent Outlet Size (Nominal)	12.00 inches	304.80 mm
Flowline Outlet Size (Nominal)	12.00 inches	304.80mm
Nominal Rotary Table Size	49.5 inches	1,257.30 mm
Bottom Connection	API 21.25 inches 2,000 psi Studded	1,257.30 mm
FS Body O.D.	49.00 inches	1,245 mm
FS Minimum Bore	21.00 inches	533 mm
FS Diverter Housing Minimum Bore	48.25 inches	1,226 mm
Housing Height	45.88 inches	1,165 mm
FS Top to Outlet Clearance	34.125 inches	867mm
FS Height	70.50 inches	1,791 mm
FS Clearance to Outlet Face (Minimum)	36.00 inches	914 mm
FS 21-500 (60-1/2" Rotary Table)		
System Of Measure	U.S.	Metric
Bore Size	21.00 inches	533.4 mm
Working Pressure	500 psi	34.5 bar
Closing Pressure	1,500-3,000 psi	103 - 207 bar
Seal Off Range	16.00 inches to CSO	406.40 mm
Closing Chamber Volume - Total	65.1 gal	246.4 L
Opening Chamber Volume	4.6 gal	17.4 L
Weight (w/o Housing)	46,500 lbs	21.10 metric tons
Vent Outlet Size (Nominal)	16.00 inches	406.40 mm
Flowline Outlet Size (Nominal)	16.00 inches	406.40 mm
Nominal Rotary Table Size	60.5 inches	1,536.70 mm
Bottom Connection	API 21.25 inches 2,000 psi Studded	API 539.80 mm 137.9 bar Studded
FS Body O.D.	60.44 inches	1,535.20 mm
FS Minimum Bore	21.00 inches	533.40 mm
FS Diverter Housing Minimum Bore	59.75 inches	1,517.65 mm
Housing Height	62.0 inches	1,574.80 mm
FS Top to Outlet Clearance	39.5 inches	1,003.30 mm
FS Height	84.39 inches	2,143.51 mm
FS Clearance to Outlet Face (Minimum)	50.00 inches	1,270.00 mm

