

OptiValve™ Hydraulic Ball Valve

Provides a bidirectional barrier to isolate well pressure in the tubing string

Applications

- Extending the length of the production tree to enable thru-tubing deployment of long intervention assemblies without killing the well
- Controlling flow to the lower zone of an intelligent well system
- With the OptiMax™ tubing-retrievable safety valve, forming a well-suspension system

Features and Benefits

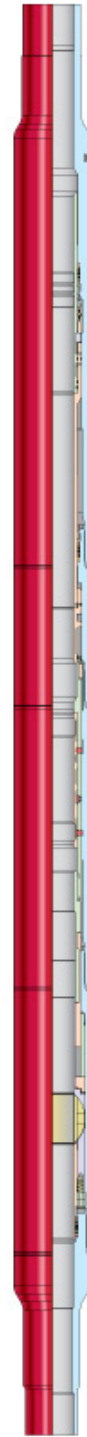
- The bidirectional sealing mechanism provides an ISO 28781 V1-qualified downhole barrier.
- The valve enables remote, hydraulic actuation from the surface, which eliminates the need for intervention.
- The inside diameter (ID) remains at full bore throughout the operation, which facilitates greater access to the formation and maximizes production.
- The valve can be opened and closed an unlimited number of times, which enhances operational flexibility.
- The ball mechanism is rotationally locked to facilitate contingency milling, although milling has never been necessary in more than 150 installations.
- A built-in hydraulic disconnect provides contingency mechanical actuation in the event of a control-line failure.
- The valve provides increased differential opening rating compared to standard ball valves.
- The valve has been subjected to extended debris and life-cycle testing for added reliability.
- Weatherford metal-to-metal proprietary body connections can be incorporated upon request.

Tool Description

The Weatherford OptiValve hydraulic ball valve is a surface-controlled tubing-retrievable, and fully testable valve that provides a bidirectional barrier. The valve effectively isolates well pressure in the tubing string during thru-tubing interventions.

The user has multiple options for opening and closing the valve: applying hydraulic pressure via dual control lines; deploying the Weatherford RFID-enabled hydraulic power unit; or if the hydraulic mechanism fails, using standard shifting tools.

The valve can be manufactured in a variety of metallurgies, from basic 4140 to high-nickel premium alloys.



The OptiValve tool can be used as a lubricator valve, as a flow-control device, or as part of a well-suspension system.



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Specifications

Tool size	4.5 in. (114.3 mm)	5.5 in. (216.0 mm)
Maximum OD	7.75 in. (196.9 mm)	8.00 in. (203.2 mm)
Minimum ID	3.75 in. (95 mm)	4.63 in. (117.6 mm)
Maximum differential pressure rating across the ball*	10,000 psi (68.9 MPa)	7,500 psi (51.7 MPa)
Operating temperature range	39 to 302°F (4 to 150°C)	
Connections	4 1/2-in. premium	5 1/2-in. premium
Qualification standard	ISO 28781 V1	

*Pressure rating is dependent on metallurgy

