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.
OptiValve Hydraulic Ball Valve

Specifications

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