18-15m NXT BOP Assembly Features

Boltless BOP Doors
Shaffer™"NXT BOP" systems are unique in providing a means of significantly improving safety and efficiency in the critical path of activity. With the replacement of the door bolts in ram BOPs, National Oilwell Varco has eliminated the time-consuming manual practice of using brute force to torque up numerous large door bolts. A number of benefits have been realized with this development:
- Reduced Weight (lightest BOP systems in the industry)
- Reduced Height (smallest BOP systems in the industry)
- Elimination of Manual Labor Under Time Pressure

Multi-Rams
Shaffer™ addresses the need for changing out rams on a tapered drilifling by offering Multi-Ram assemblies to cover a range of varying ODs of drill pipe:
- Supported Inner Diameter Range: 3 1/2” - 5 7/8”
- 4 1/2” - 6 5/8”
- 5” - 7 5/8”

Hydraulic System
Hydraulic power to operate a Model NXT ram BOP can be furnished by any standard oil field accumulator system. Hydraulic passages drilled through the body eliminate the need for external manifold pipes between the hinges. Each set of rams requires only one opening and one closing line. There are two opening and two closing hydraulic ports, clearly marked, on the back side of the BOP. The extra hydraulic ports facilitate connecting the control system to the preventer. A standard hydraulic accumulator unit will close any Model NXT ram with rated working pressure in the well bore.

Ultra-Temp™
The conservative Shaffer™ testing procedures call for maintaining pressure and temperature for the duration of the test. Even with these stringent demands, the Ultra-Temp rams hold in witnessed testing. Shaffer™Ultra-Temp rams are designed to safely withstand wellbore pressures up to 15,000 psi and extreme temperatures up to 390°F (199°C) for prolonged periods. This translates into rig time capability to safely evacuate personnel and equipment in the event of a major high temperature, high pressure kick.

Low Force Blind Shear (LFS) Rams
The force required to shear casing is reduced by at least 50%. The LFS ram shear 14", 113ppf, Q-125 casing at 2700 psi with a 22" operator. Multiple shear and seal sequences can be performed with the same assembly, including conditions where the drill pipe is hung off below the shear ram cavity, enhancing reliability and extending the length of the BOP stack deployment.

Hydraulic Data

18-15m NXT BOP Assembly

Technical Marketing Sheet
18-15m NXT BOP Assembly

14" UXLB
14" UXB/LL
22"PSLK SMX
22"PSLK BSTR
14"BSTR
14"BSTR

<table>
<thead>
<tr>
<th>Operator Characteristics</th>
<th>ø14 UXLB</th>
<th>ø14 UXLB LL</th>
<th>ø22 PSLK SMX</th>
<th>ø22 PSLK BSTR</th>
<th>ø14 BSTR</th>
<th>ø14 BSTR</th>
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</thead>
<tbody>
<tr>
<td>Operator Weight (w/fluid)</td>
<td>5,300 lbs</td>
<td>5,300 lbs</td>
<td>8,600 lbs</td>
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<tr>
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<td>51.9 lbs</td>
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<tr>
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<td>22.5 Gal</td>
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<tr>
<td>Max. Working Pressure</td>
<td>5 ksi</td>
<td>5 ksi</td>
<td>5 ksi</td>
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</table>

Weldless Cavity
The introduction of no weld cavities in previous Shaffer™ BOP designs is carried on in the NXT models. This feature introduces replaceable parts to the cavity to eliminate extensive in-shop repairs and post weld heat treatments. The seal seat, skid plate and side pads can be replaced upgrading the BOP cavity tolerances to as new condition.

NXT Body-CREP Level 7

Door Area: Inconel
Top Seat: Inconel
Bottom Seat: Inconel
Cylinder Head: Inconel
Lock Rod Groove: Inconel
Tail Shaft Bore: Inconel

Door, Cylinder Head and Cylinder Body: Phosphor Bronze

14" Ultra Lock II (BL) Door

Hydraulic Ports (Top and Bottom)

13" Peelback Door

Door, Cylinder Head and Cylinder Body: Phosphor Bronze

NXT Door-CREP Levels*

Door Area: CRP Level 1
Cylinder Head: CRP Level 1
Cylinder Body: CRP Level 1

Door Seal Race Track: Inconel
Hydraulic Port: Phosphor Bronze
Inconel

Hydraulic Port: Inconel

Door Seal Race Track: Inconel

Door Area: CRP Level 1

*For 22" Pits select specific applications, refer to the table above "NXT Door-CREP Level Variants-22 Door" on Doc# 1U8325-1NF

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rig@nov.com nov.com