TVR Safety Joint

PROVIDES A RELEASE POINT ABOVE A STUCK PACKER

OVERVIEW
The TVR Safety Joint is an optional emergency backoff device. If the packer becomes stuck during operations, then the safety joint is used to release the workstring and tools above the packer. The design of the TVR Safety Joint makes unintentional disconnect difficult.

FEATURES AND BENEFITS
» Sequence of operation helps prevent premature release
» When the workstring is stuck, the tools above the safety joint can be retrieved

OPERATION
The TVR Safety Joint is run immediately above the packer, helping to enable the removal of all of the tools above the packer. Before the TVR Safety Joint can be used, a tension sleeve must first be parted. This tension sleeve is located on the bottom of the lug mandrel, and is parted by pulling up on the workstring. This tension sleeve must be considered whenever additional tools or workstrings are run below the packer. During the tool make up process, excessive weight can cause unexpected parting of this sleeve.

After the tension sleeve is parted, the TVR Safety Joint is released by right-hand torque while the workstring is reciprocated a specified number of cycles.

Equipment Specifications

<table>
<thead>
<tr>
<th>Nominal Tool Size in.</th>
<th>Outer Diameter in. (cm)</th>
<th>Inner Diameter in. (cm)</th>
<th>Makeup Length in. (cm)</th>
<th>End Connections</th>
<th>Differential Pressure1 psi (bar)</th>
<th>Tensile Load2 psi (MPa)</th>
<th>Service Temperature °F (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5.03 (12.78)</td>
<td>2.25 (5.72)</td>
<td>65.98 (167.59)</td>
<td>3 ⅞ CAS</td>
<td>15,000 (1034)</td>
<td>193,000 (1331)</td>
<td>450 (232)</td>
</tr>
<tr>
<td>7</td>
<td>7.03 (17.86)</td>
<td>3 (7.62)</td>
<td>70.42 (178.87)</td>
<td>5 ¼ CAS</td>
<td>15,000 (1034)</td>
<td>410,000 (2827)</td>
<td>450 (232)</td>
</tr>
</tbody>
</table>

Notes:
1 Differential pressure is the difference in pressure between the casing annulus and the tool ID.
2 The values of tensile, burst, and collapse strength are calculated with new tool conditions, Lame's formulas with Von-Mise's Distortion Energy Theory for burst and collapse strength, and stress area calculations for tensile strength.
» Meets NACE MR0175 requirements (>175°F / 79°C)
» These ratings are guidelines only. Refer to the equipment data book for individual equipment specifications.

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