RapidStart® Initiator Sleeves

DESIGNED FOR SELECTIVE MULTI-ZONE FRACTURING AND PLUG AND PERF INITIATION

FEATURES
» Interventionless completion compatibility
» Tubing/casing internal pressure activation
» Available up to 15,000 psi differential ratings or up to 20,000 psi absolute
» Positive locking engagement when sleeve is opened
» Available in standard service and CO₂ (S13Cr)
» Shiftable version that can be reclosed after the initial opening
» Full bore ID available in select configurations

BENEFITS
» Allows for interventionless opening of cemented completion string toe eliminating coiled tubing perforating
» Provides flow path to pump first frac stage and displace first stage ball
» Shiftable version can be closed in case of water breakthrough or if other wellbore interventions are required
» Casing test can be achieved at a pressure below the opening pressure of the sleeve, or above the opening pressure by landing a ball

OVERVIEW
The RapidStart® Initiator sleeve provides an interventionless means of establishing an initial flow path from the tubing/casing ID to the OD during multi-zone fracturing or plug and perf operations. Activation is achieved by using absolute pressure on the ID of the sleeve that exceeds a predetermined shear pinned value. Designed for extreme environments, the sleeve can be cemented in place without losing functionality.

The RapidStart Initiator sleeve uses an air-chambered mechanism that operates solely off absolute tubing pressure. Prior to running the completion, the sleeve is pinned according to opening requirements dictated by the hydrostatics of the well, other tubing pressure-operated tools, and casing pressure ratings. Opening the internal sleeve allows flow to be diverted through ports in the outer case from the ID. Once opened, the sleeve can be used for stimulation of the first zone in a “plug and perf” type completion, thereby eliminating the need for coiled tubing to establish a flow path.

The rugged construction and debris-tolerant design allows the RapidStart Initiator sleeve to be successfully run in cemented applications in both horizontal and vertical wells.
RAPIDBALL™ DISSOLVING METAL BALLS UNLOCK ADDITIONAL VALUE

Operators that utilize RapidStart Initator sleeves to achieve a casing test are able to test against a RapidBall™ that has landed on a seat above the injection ports. This enables the sleeve to be set to open at a pressure below the casing test pressure, and is available if integrated into some sleeve versions or with the application of a RapidBall Landing Collar. Similarly, a ball may land below the sleeve in applications where opening assurance is required in the event of a wet shoe.

RapidStart® Initiator Sleeve Specifications

<table>
<thead>
<tr>
<th>Casing Size in.</th>
<th>Tool OD in. (mm)</th>
<th>Tool ID in. (mm)</th>
<th>1 Minimum Open Hole Size in. (mm)</th>
<th>Maximum Temperature °F (°C)</th>
<th>Maximum Absolute Pressure psi (kPa)</th>
<th>Maximum Differential Pressure psi (kPa)</th>
<th>Maximum Pump Rate bbl/min (m³/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1/2</td>
<td>4.4 (111.76)</td>
<td>2.265 (57.53)</td>
<td>4.75 (120.65)</td>
<td>350 (177)</td>
<td>15,000 (103,421)</td>
<td>10,000 (68,948)</td>
<td>100 (15.899)</td>
</tr>
<tr>
<td>4-1/2</td>
<td>5.60 (142.24)</td>
<td>3.00 (76.20)</td>
<td>5.875 (149.23)</td>
<td>350 (177)</td>
<td>15,000 (103,421)</td>
<td>10,000 (68,948)</td>
<td>100 (15.899)</td>
</tr>
<tr>
<td>2 4-1/2 OC</td>
<td>5.60 (142.24)</td>
<td>2.82 (71.63)</td>
<td>5.875 (149.23)</td>
<td>350 (177)</td>
<td>15,000 (103,421)</td>
<td>10,000 (68,948)</td>
<td>100 (15.899)</td>
</tr>
<tr>
<td>4-1/2 HP/HT</td>
<td>5.75 (146.15)</td>
<td>3.00 (76.20)</td>
<td>6.00 (152.40)</td>
<td>400 (204)</td>
<td>20,000 (137,880)</td>
<td>15,000 (103,410)</td>
<td>100 (15.899)</td>
</tr>
<tr>
<td>5-1/2</td>
<td>6.50 (165.10)</td>
<td>4.00 (101.60)</td>
<td>7.875 (200.03)</td>
<td>350 (177)</td>
<td>15,000 (103,421)</td>
<td>10,000 (68,948)</td>
<td>100 (15.899)</td>
</tr>
<tr>
<td>5-1/2 HP/HT</td>
<td>6.50 (165.10)</td>
<td>4.00 (101.60)</td>
<td>7.875 (200.03)</td>
<td>350 (177)</td>
<td>18,500 (127,55)</td>
<td>13,000 (89.63)</td>
<td>100 (15.899)</td>
</tr>
<tr>
<td>3 5-1/2</td>
<td>7.15 (181.61)</td>
<td>4.67 (118.62)</td>
<td>7.875 (200.03)</td>
<td>350 (177)</td>
<td>15,000 (103,421)</td>
<td>10,000 (68,948)</td>
<td>100 (15.899)</td>
</tr>
</tbody>
</table>

1 Recommendation only; smaller open hole sizes should be reviewed as per Halliburton HMS guidelines and CriticalWell Review process.
2 OC is the open/close or shiftable version.
3 Full bore casing ID, reduced length.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com