Rhino XM on-demand multiactivated reamer

Complete and reliable control of reamer activation and deactivation

Applications
- Boreholes requiring multiple reaming and nonreaming intervals
- BHA placement below ID-restricted components, such as LWD and MWD tools
- Rotary BHA, near-bit reamer placement
- Highly abrasive formations
- Close-tolerance and expandable casing programs
- Extended-reach-drilling (ERD) operations and other well profiles with inclinations greater than 65° where conventional pumpdown activation is limited

How it improves wells
More reliable than third-party reamers, the Rhino XM* on-demand multiactivated reamer features an indexing system with protective oil-filled chamber and functional design redundancy.

- More efficient multiactivation and deactivation
- True on-demand wellbore enlargement
- Better drilling performance
- Compatibility with full-gauge concentric wellbores

How it works
Rhino XM reamer provides complete control of reamer activation, eliminating pumpdown device activation. This enables placing the Rhino XM reamer below ID-restricted BHA components, such as MWD and LWD tools. Additionally, the reamer’s flow actuation changes the reaming mode in minutes, reducing reamer activation time and enabling an unlimited number of activation cycles during a run.
- Incorporates innovative rotating cam stop to provide movement redundancy and reduce rotating seals
- Minimizes the translational and rotational force needed to move the cam
- Prevents sticking by enclosing hydraulic oil and sealing the actuation system from the annular, throughbore flow
- Provides clean and lubricated environment free of mud, reducing sticking and static friction

What it replaces
- Conventional reamers

Features
- Unlimited activations regardless of wellbore inclinations
- Full-flow capability in reaming and nonreaming modes
- Quick deployment and retraction of PDC cutter blocks
- Effective cleaning of borehole with integrated jet nozzle and flow paths
- A one-time lockout mechanism keeping the reamer dormant until needed, providing preshear operation flexibility

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Size 11625</th>
<th>Size 13000</th>
<th>Size 14250</th>
<th>Size 16000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. neck length, ft [m]</td>
<td>2 [0.61]</td>
<td>2 [0.61]</td>
<td>2 [0.61]</td>
<td>2 [0.61]</td>
</tr>
<tr>
<td>Fishing neck OD, in</td>
<td>8¼ or 9</td>
<td>8¼ or 9</td>
<td>9½</td>
<td>9½</td>
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<tr>
<td>Body diameter, in</td>
<td>11½</td>
<td>13</td>
<td>14¼</td>
<td>16</td>
</tr>
<tr>
<td>Min. ID, in</td>
<td>2½</td>
<td>2½</td>
<td>2½</td>
<td>2½</td>
</tr>
<tr>
<td>Min. flow by area, in² [cm²]</td>
<td>12.10 [78.06]</td>
<td>22.20 [143.23]</td>
<td>24 [154.84]</td>
<td>66.7 [430.32]</td>
</tr>
</tbody>
</table>

Operating Parameters

| Hole opening size, in                   | 13½–15     | 15–16½     | 16–18      | 18–22      |
| Min. pilot hole size, in               | 12½        | 13½        | 14½        | 18         |
| Min. collapsed diameter, in            | 11½        | 13         | 14½        | 17½        |
| Max. operating pressure, psi [MPa]     | 3,000 [20.68] | 3,000 [20.68] | 3,000 [20.68] | 3,000 [20.68] |
| Standard PDC cutter size, mm           | 13, 16, or 19 | 13 or 16  | 13, 16, or 19 | 13, 16, or 19 |

Connections

- Top 6½ or 7½ Reg box
- Bottom 6½ or 7½ Reg pin


Maximum lost circulation material (LCM), lbm/bbl [kg/m³] | 50 [190] medium nut plug

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