Frontier Immediate Open Toe Sleeve

OVERVIEW

The Immediate Open Hole Toe Valve eliminates the need for Tubing Conveyed Perforating (TCP) Toe Prep by providing a simple and reliable hydraulically actuated injection path. The Immediate Open Toe Valve can be pressure tested multiple times below the activation pressure.

FEATURES

- Multiple Low-Pressure Tests can be Applied Prior to Opening
- Open Upwards and held in open position by 3 means,
  - Snap Ring
  - Hydraulic Pressure
  - Morse Taper
- Each Valve Toe Valve Configured to Suit Well Application
- Adjustable Activation Pressure
- Rupture Disc’s with +/- 2% Accuracy
- Large Flow Area Injection Ports Reduces the Risk Of Plug in the First Stage
- Opening Pressure Not Affected By Well Bore Pressure
- Optional Ball Seat, which allows for DFIT to be Performed
- Absolute Pressure Rating 22,000 psi

APPLICATIONS

- Multistage Frac Completions
- Toe Initiation

Specifications and Dimensions

<table>
<thead>
<tr>
<th>Liner Size</th>
<th>OD</th>
<th>ID</th>
<th>Length</th>
<th>Flow Port Area</th>
<th>Rupture Disc Increments</th>
<th>Threads</th>
<th>Material</th>
<th>Tensile (lbs)</th>
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</thead>
<tbody>
<tr>
<td>3.5&quot;</td>
<td>4.250&quot;</td>
<td>2.450&quot;</td>
<td>35.3&quot;</td>
<td>7.12&quot;</td>
<td>500psi</td>
<td>**</td>
<td>110ksi</td>
<td>183,000</td>
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<tr>
<td>4.5&quot;</td>
<td>5.875&quot;</td>
<td>3.755&quot;</td>
<td>37.8&quot;</td>
<td>18.6&quot;</td>
<td>500psi</td>
<td>**</td>
<td>140ksi</td>
<td>248,750</td>
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<tr>
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<td>500psi</td>
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<td>125ksi</td>
<td>285,000</td>
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<td>38.4&quot;</td>
<td>23.6&quot;</td>
<td>500psi</td>
<td>***</td>
<td>140ksi</td>
<td>459,375</td>
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** Connections as Requested
*** High Pressure