Halliburton’s LockJar® Multi-Conductor E-Line Jar and Enhancer provide a simple way to help avoid time-consuming and expensive stuck strings and fishing jobs in wireline logging operations.

Available in 3.5-in. OD and 2.75-in. OD, the LockJar hydraulic jar can be activated multiple times in multiple intervals to free a stuck tool string and preserve a logging run without costly delays.

Rated to 500°F and 30,000 psi, the versatile LockJar hydraulic jar uses hydraulic time delay that overcomes the limitations of mechanical tools to maximize available force through surface pull.

Unlike mechanical jars, the LockJar hydraulic jar can be triggered at any load above the preset lock load, so maximum force is available for impact. This feature enables full use of new wireline technology, including high-strength cable and solid weak points, and is critical in situations where stuck conditions are severe.

All internal parts of the LockJar hydraulic jar are sealed and segregated from the wellbore, minimizing wear on critical parts and increasing tool reliability both as a data transmitter and as a power supply.

The LockJar hydraulic jar can be run with an Enhancer that increases the velocity of the hammer mass to yield a greater impact load while protecting the cable head by defusing any impact load moving upwards.

Rugged enough for multiple jobs before redress is required, the LockJar hydraulic jar arrives ready to run.

Since its commercial introduction in 2002, the LockJar hydraulic jar has routinely freed stuck tool strings in areas where fishing jobs are common and unproductive rig time is prohibitive.

The LockJar tool is also available for cased-hole operations in a mono-conductor version.

**Benefits**
- Helps minimize the risk of stuck or lost tool string in openhole logging and perforating
- Does not interrupt or impede tool-string functionality
- Enables full use of new high-strength cable technology
- Can be activated many times in multiple intervals
- Arrives ready to run
- Rugged enough for multiple jobs before redress is required, an advantage in remote or international locations

**Features**
- The mechanical lock prevents triggering until preset load is exceeded.
- The hydraulic time delay enables triggering at any load above the preset lock load.
- The pressure-compensated design eliminates sensitivity to changes in pressure or temperature.
- The sealed design protects seals and impact surfaces for greater reliability.
- A multipin wiring harness provides flexibility in tool-string placement.
- The jar runs with an available Enhancer for a greater impact load at a stuck point.
LockJar® Multi-Conductor Jar

Dimensions and Ratings

<table>
<thead>
<tr>
<th>OD</th>
<th>Maximum Temperature</th>
<th>Maximum Pressure</th>
<th>Minimum Hole</th>
<th>Maximum Hole</th>
<th>Length</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.63 in.</td>
<td>400°F (204°C)</td>
<td>22,500 psi (155 MPa)</td>
<td>4 in. (10.2 cm)</td>
<td>*</td>
<td>135.5 in. (344.2 cm)</td>
<td>287 lb (130.2 kg)</td>
</tr>
<tr>
<td>2.75 in.</td>
<td>500°F (280°C)</td>
<td>30,000 psi (207 MPa)</td>
<td>4 in. (10.2 cm)</td>
<td>*</td>
<td>111.125 in. (282.3 cm)</td>
<td>153 lb (69.4 kg)</td>
</tr>
</tbody>
</table>

* Tool not restricted to hole sizes over minimum hole

Physical Strengths*

<table>
<thead>
<tr>
<th>Maximum OD</th>
<th>Maximum Tension</th>
<th>Maximum Compression</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.63 in. (92.10 mm)</td>
<td>130,000 lb (58,967 kg)</td>
<td>130,000 lb (58,967 kg)</td>
</tr>
<tr>
<td>2.75 in. (69.90 mm)</td>
<td>100,000 lb (45,359 kg)</td>
<td>100,000 lb (45,359 kg)</td>
</tr>
</tbody>
</table>

* Strengths apply to new assemblies at 70°F (21°C) and 0 psi (0 MPa).

Hardware Characteristics

<table>
<thead>
<tr>
<th>OD</th>
<th>Actuation Type</th>
<th>Lock Setting</th>
<th>Stroke Length</th>
<th>Combinability</th>
<th>Impact Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.63 in.</td>
<td>Hydraulic Actuation with Mechanical Lock</td>
<td>1,800 lb to 4,000 lb (816.47 kg to 1,814.37 kg) (Adjustable on site)</td>
<td>4.5 in. (11.43 cm) total (1 in. (2.54 cm) metering, 3.5 in. (8.89 cm) jarring)</td>
<td>DITS</td>
<td>Variable with Hole Conditions</td>
</tr>
<tr>
<td>2.75 in.</td>
<td>Hydraulic Actuation with Mechanical Lock</td>
<td>1,000 lb to 3,000 lb (453.59 kg to 1,360.78 kg) (Adjustable in shop)</td>
<td>4.25 in. (10.80 cm) total (0.75 in. (1.905 cm) metering, 3.5 in. (8.89 cm) jarring)</td>
<td>Hostile</td>
<td>Variable with Hole Conditions</td>
</tr>
</tbody>
</table>

To see the LockJar tool in action and for more information, visit us at www.halliburton.com/loggingjar

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