The DJ10 is assembled with the same dependable mechanical lock (latch) mechanism as the Cougar DS DJ6, but with the capacity to jar down hydraulically.

All Cougar DS jars have internal locking mechanisms that eliminate the need for “safety collars” found on many other jars. Even better, the internal lock ensures the tool will not misfire.

QUALITY AND PERFORMANCE

Cougar DS has been designing and manufacturing downhole drilling tools since 1969 and nobody does it better. An ISO 9001 accredited company since 1992, our in-house manufacturing, quality control and strict material specification ensure complete control for high performance drilling tools.

Cougar DS is the premier supplier of downhole drilling equipment that sets the standard by which all others are judged.

FEATURES

- The mechanical latch ensures the jar will not fire pre-maturely
- The mechanical latch eliminates component wear while drilling
- The mechanical latch eliminates the need for a safety collar
- Hydraulic delay up and down allows the operator to vary jarring loads in both directions
- With adjustable lock loads, the jar can be run in compression or in tension
- The jars can be dressed to handle temperatures of up to 400°F
- The jar is designed with a locking mechanism in place, but it can be produced without a lock
The operation of the DJ10 is similar to the DJ6 Hydraulic Jar but the DJ10 Hydraulic Jar requires a slight modification of the jarring procedure.

**JARRING UP**

In order to fire the jar upwards, the operator must determine the force or pull required to unlatch the jar to begin metering.

Formula:

\[
\text{Pulling force} = \text{lock setting} + \text{buoyed drill string weight above the jar} + \text{hole drag} - \text{pump open force.}
\]

\(\text{Pump open force} = \text{washpipe area} \times \text{pressure drop across the bit}\)

Once this pull force is exceeded and applied to the jar, it will unlatch and begin the metering sequence. During metering, the jar can be pulled with more/less force to increase/decrease the jarring impact. The force or pull used will determine the delay time of the jar until impact.

**JARRING DOWN**

To fire the jar down, the drill string is lowered applying weight to the latch that exceeds the preset mechanical latch setting. At this point, the latch will release allowing the jar to meter downwards until the jar fires, creating a downward blow.

Formula:

\[
\text{Pushing force} = \text{lock setting} + \text{pump open force} + \text{hole drag.}
\]

Once the latch is released, push down no higher than the maximum allowable push for firing. If the jar is required to fire again, lift and reset the jar to repeat the process. To return to drilling, the operator must lift up until off bottom, and then continue drilling.

**OPERATING PROCEDURE**

Cougar DS DJ10 Double Acting Hydraulic Jar operating instructions

Drill collars will assist the performance of the jars enhancing their performance and increasing their impact. The harder the jar is pulled, the greater the impact, the lighter the jar is pulled the lesser the impact.

It is recommended to run the jars in the lower section of the drill collars if possible. Cougar DS drilling jars should not be run in the neutral point.

*Note: Maximum pre-fire up information is provided in this brochure.*
### ENGLISH UNITS

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<tr>
<th>OD (in.)</th>
<th>ID (in.)</th>
<th>Length (ft.)</th>
<th>Weight (lb.)</th>
<th>Latch Setting Up (lb.)</th>
<th>Latch Setting Down (lb.)</th>
<th>Maximum Pull for Firing (lb.)</th>
<th>Maximum Pull/Push After Firing (lb.)</th>
<th>Pump Open Area (in.²)</th>
<th>Maximum Torque (ft.-lb.)</th>
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<td>18.5</td>
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<td>0 - 85,000</td>
<td>0 - 56,000</td>
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### SI UNITS

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<th>Weight (kg)</th>
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<th>Latch Setting Down (daN)</th>
<th>Maximum Pull for Firing (daN)</th>
<th>Maximum Pull/Push After Firing (daN)</th>
<th>Pump Open Area (cm²)</th>
<th>Maximum Torque (Nm)</th>
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