

Catapult

The Catapult is designed to enable electric or slickline tool strings to penetrate deep into deviated wells allowing operating depth to be reached with certainty. It can be mobilised in a single container, which makes it an ideal contingency package and a low cost alternative to electric line tractors or coiled tubing operations.

Normally, as tools are lowered into a well, they build up kinetic energy, which is a function of the speed and weight. The kinetic energy built up in a vertical section can help the tools to run into a deviated well for some distance. However, once the kinetic energy has dispersed due to friction, the tools come to a halt. The Catapult allows the toolstring to be re-energised with kinetic energy many times using line pull, thus allowing the operation to be completed to target depth with certainty.

The Catapult features a central rod, which becomes a solid link in the downhole string. Around this are mounted a gripper and spring assembly. The gripper allows progress into the well by resisting upwards movement. Once the toolstring has run into a deviated section of the well and come to a halt, picking up on the wire allows the gripper to lock with the tubing, which charges the large spring with energy from the wireline unit. Releasing the wire and running into the well permits the large spring to discharge, accelerating the tools downwards.

One function of the Catapult may progress the tools many hundreds of feet into the well depending on the degree of deviation. This operation may be repeated as often as necessary.

When the string has reached the target depth, a constant line pull of around 500 lbs for a minimum of 30 seconds needs to be applied. This causes a hydraulic metering device to remove support from the gripper assembly, allowing it to collapse inwards. The toolstring may then be moved either up or down the well with the disabled Catapult supported by roller subs. In S-shaped wells this would permit logging passes to be performed at the perforation intervals. The Catapult is run in conjunction with Omega Roller Subs (to reduce friction) and the Omega Horizontal Jar.

Features

- Field proven Hydraulic Release Mechanism.
- Variable Gripper range.
- 500lb Power Spring.
- Central Rod transfers impact through tool.

Applications

- Deployment of Bridge Plugs in highly deviated wells.
- Running memory logging tools & pressure temperature gauges.
- Deployment of Downhole Memory Camera.

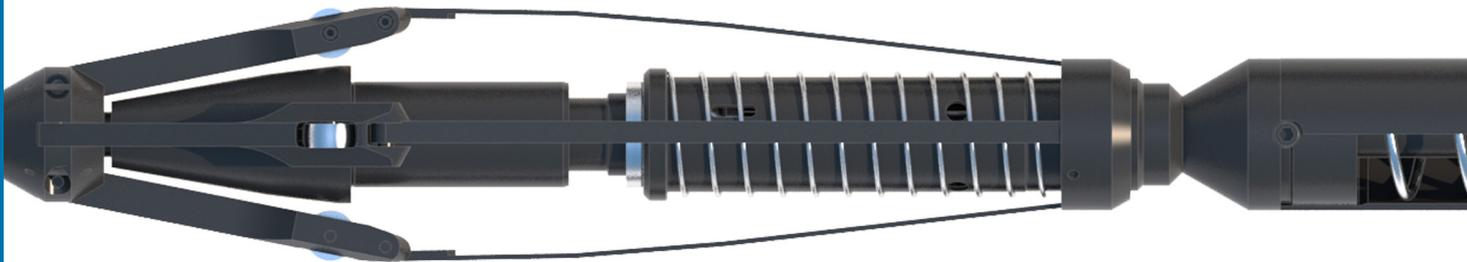
Benefits

- Deployed on standard wireline.
- Reduces cost commonly associated with E- Line deployed Tractors.
- Provides impact forces downwards via 500lbs Power Spring.
- Enables access in highly deviated wells.



Technical Specifications

Tool Size	3.32"
Top Connection	1-1/16"
Gripper Range	3.70" to 5.00" 4.30" to 6.39"
Gripper OD	3.32" or 4.125"
Length	83"
Weight	100 lbs
Tensile Rating	55,000 lbs
Pressure Rating	15,000 psi
Temperature Rating	175 °C
Service	H2S and Standard



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