

Case Study

i-Jar™

i-Jar™ Offers Heavy Stroke Fishing Support in Gas Well



The i-Jar™ allows variable tension and high impact to be generated at very close range.

Business Need

A North Sea operator's gas well had the broken core of a running tool stuck inside the downhole safety valve. The fish was located at 580 m (1900 ft) in depth. The wellhead pressure (WHP) was 35 bar. The customer needed a hydraulic power jar that could operate in a gas environment and assist during the fishing operation. It was also important that the jar be able to operate at different tensions during the same run, as this would allow them to start jarring with low impact on the fish and increase tension to increase the jar impact as required without having to POOH to change settings. This feature would allow time and cost savings to the operator.

Solution

Our team of experts proposed the 1 7/8 in. hydraulic heavy stroke i-Jar™ with mounted accelerator, which is a pressure and temperature compensating power jar. Its unique design allows impact to be generated at very close range to the fish object, and it has proven to be very debris-tolerant. The working range is from 90-1800 kg (200-4000 lb), and it is capable of high impact even at a low pull force. The hydraulic oil chamber is pressure tested during assembly, and is ideal for use in gas wells. The i-Jar is a robust and reliable jar with long service intervals.

The fishing operation was performed with 0.125 in. slickline and 7/32 in. Dyform braided cable. The slickline pressure control equipment and lubricators were rigged up, and the jar and accelerator were tested on surface with 500 kg (1100 lb) and 900 kg (2000 lb) pull. Impact came after approximately 100 seconds. The design comprised running in hole to set the special flow release fishing tool on top of the fish with the 4 in. GR running tool, and then pull the fish with a 4 in. GS pulling tool. A total of 23 runs were performed, firing the jar 408 times with varying tension. There were no issues with the jar during the entire fishing operation, which lasted 10 days.

Result

The fishing job for the broken running tool core was successful, and the customer has indicated they will use the i-Jar as their primary tool for upcoming fishing operations. Although the entire fish was not recovered, the Trican i-Jar proved to be a robust and flexible solution, even in gas wells. The performance of the i-Jar was not affected by well conditions, including the high debris content.

Case Study Snapshot

Study Area: North Sea

Challenges:

- Achieving jar action on a hydraulic mechanical jar in a gas well during the entire fishing operation
- Exposing the jar to different tensions during the same run in order to control the impact and retrieve the stuck object

Solution:

- The 1 7/8 in. i-Jar hydraulic heavy stroke fishing jar and accelerator with long service intervals - ideal for a harsh environment
- The tool has a pressure and temperature compensating hydraulic chamber, which enables the jar to be operated in gas wells
- Tool string comprised 1 7/8 in. rope socket, 1 7/8 in. Trican accelerator, 2 1/8 in. 5 ft stem, 1 7/8 in. Trican hydraulic i-Jar, 1 7/8 in. Spangjar, the 4 in. GR running and 4 in. GS pulling tool. The tool string weighed 150 kg (330 lb)

Result:

- Fishing job for the broken running tool core was successful
- No issues with the jar during the entire fishing operation that lasted 10 days, with a total of 408 jar strokes being performed using varying tensions
- The customer will use the i-Jar as primary tool for upcoming fishing operations

