

CHAMP® Ion Retrievable Packer

ACOUSTICALLY CONTROLLED PACKER FOR COMPLETE WELL TESTING CONTROL

OVERVIEW

The CHAMP® Ion Telemetry Controlled Retrievable Packer is an acoustically-controlled multi-set packer with a setting process fully independent of well conditions. As part of the RezConnect® Well Testing System, the Ion is controlled by sending an acoustic signal from DynaLink® to the packer which enables the packer to be set. Following the confirmation the Ion is ready to be set, weight is slacked off causing the slips to engage the casing, the concentric by-pass to close and the packer elements to engage the casing isolating the annulus above the packer from the casing below. Retrieving or resetting the Ion is easy by simply picking up the string opening the bypass and unsetting the packer.

Telemetry control simplifies pipe movements compared to conventional retrievable packers. The Ion can be repositioned in a well up to five times providing greater flexibility for well testing operations compared to production type packers which cannot be repositioned after setting. In situations where the rig is a floater and there is high heave, the Ion will not set when RIH or POOH ensuring that the workstring does not stack out on the packer when it is set in the slips.

Based on the CHAMP V 15K Packer, the CHAMP Ion is a 15,000 psi HPHT hook-wall retrievable packer with a concentric bypass. As the tool is lowered into the hole, a telemetry controlled J-slot holds the bypass valve open and controls when the packer can be set. When the packer is set, a balancing piston that responds to tubing and annulus pressure holds the bypass closed. Each tool assembly includes mechanical slips, packer elements, hydraulic slips, and an integral bypass. Round, piston type slips are used in the hydraulic hold down body to help prevent the tool from being pumped up the hole when injecting fluids into the formation. → The bypass allows fluid an alternate path past the packer elements while RIH and POOH helping keep the packer elements from damage as well as reducing surging and swabbing effects with open perforations.

FEATURES

- » The setting control system:
 - Places the packer in the “ready to set” mode for a programmed time
 - Re-positions the setting system to “RIH” mode after a programmable time delay
 - Programmable time delay can be changed via DynaLink telemetry system
- » Backup mechanical setting method is rotate to set
- » Five acoustic controlled set/unset cycles
- » Unlimited “rotate to set” cycles, independent of acoustic operation

BENEFITS

- » Ideal for extended reach and highly deviated wellbores
- » Acoustic controlled setting system provides greater confidence of the packer setting process
- » Multiple set/unset cycles in a single trip enables multi-zone treating, testing, or squeezing
- » Utilizes proven technology
- » Ideal for high rig heave offshore environments



HAL92924

Equipment Specifications

| | | | | |
|---|------------------------------------|------------------------------------|------------------------------------|------------------|
| Casing Size In. | 9 5/8 | 9 7/8 | 10 3/4 HW | |
| Outer Diameter in. (cm) | 8.165 (20.74) | 8.165 (20.74) | 8.165 (20.74) | |
| Inner Diameter in. (cm) | 3.00 (7.62) | 3.00 (7.62) | 3.00 (7.62) | |
| Makeup Length in. (cm) | 254.29 (645.90) | 254.29 (645.90) | 254.29 (645.90) | |
| End Connections | 5 1/4 CAS (Box) 5 1/4 CAS (Pin) | 5 1/4 CAS (Box) 5 1/4 CAS (Pin) | 5 1/4 CAS (Box) 5 1/4 CAS (Pin) | |
| Nominal Casing weight lb/ft | 47 to 61.1 | 62.8 | 91.2 to 109 | |
| Minimum Casing ID in. (cm) | 8.231 (20.91) | 8.480 (21.54) | 8.434 (21.42) | |
| Maximum Casing ID in. (cm) | 8.681 (22.05) | 8.632 (21.93) | 9.032 (22.94) | |
| Absolute Pressure ¹ psi (bar) | 20,000 (1378) | 20,000 (1378) | 20,000 (1378) | |
| Burst Pressure ² psi (bar) | Open Ended | 15,000 (1034) | 15,000 (1034) | 15,000 (1034) |
| | Bull Plugged | 15,000 (1034) | 15,000 (1034) | 15,000 (1034) |
| Collapse Pressure ² psi (bar) | Open Ended | 15,000 (1034) | 15,000 (1034) | 15,000 (1034) |
| | Bull Plugged | 15,000 (1034) | 15,000 (1034) | 15,000 (1034) |
| Tensile Load ³ lb (kg) | 330,000 (150,000) | 330,000 (150,000) | 330,000 (150,000) | |
| Service Temperature °F (°C) | 320 (165) | 320 (165) | 320 (165) | |

Notes:

¹ Absolute pressure is the total hydrostatic plus applied pressure.

² Differential pressure is the difference in pressure between the casing annulus and the tool ID.

³ The values of tensile, burst, and collapse strength are calculated with new tool conditions, Lamé formulas with von Mises' Distortion Energy Theory for burst and collapse strength, and stress area calculations for tensile strength.

» Meets NACE MR0175 requirements (>175°F / 79°C).

» These ratings are guidelines only. Refer to the equipment data book for individual equipment specifications.

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