

TerraForm[®] CZI Openhole Packer System

Provides discrete zonal isolation in challenging wellbore environments

Applications

- Deployed to provide zonal isolation when:
 - Stimulating or injecting fluids into long horizontal sections
 - Tube movement threatens life-of-well sealing performance
 - Thermal or pressure changes are anticipated over the life of the well
 - Swell-time delays are cost prohibitive
 - Operational challenges increase the risk that swell packers may not reach the target depth
 - The hole is soft, irregular, key seated, or washed out
 - High seal expansion is required

Features and Benefits

- The friction-based ROKANKOR* system centers and secures the packer to the open hole to enable high-tensile loading.
- The cup-seal assembly is expanded mechanically via numerous independent levers, which enables the high-expansion cup system to set in irregularly shaped and key-seated boreholes.
- Cup-seal technology enables mechanical setting without reliance on hydrostatic chambers, inflate systems, or compressive loads.
- A proprietary clutch mechanism limits the load on the formation to minimize the risk of micro-fractures to the rock.
- A built-in anti-preset feature enables the packer to remain in the retained non-release position during deployment.
- The integral expansion joint protects the packer and the formation from excessive loads and minimizes packer movement for the life of the well.
- The packer sets immediately, which eliminates the delays associated with other setting methods.
- Multiple applications and setting methods provide operational flexibility.

Tool Description

The Weatherford TerraForm CZI openhole packer system addresses life-of-well challenges related to changing pressure differentials, thermal fluctuation, tubing expansion and contraction, and irregular borehole geometry. The tubing-deployed packer system combines patented cup-seal technology with the ROKANKOR system and an integrated expansion joint.



The TerraForm CZI openhole packer system includes two cup seals, a ROKANKOR system, and an integral expansion joint.



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The tubing-deployed system is restrained during run-in with the anti-preset system. Once the packer reaches the desired location, it is actuated by releasing the anti-preset using either shifting tools or applied tubing pressure. The release sleeve shifts, disengaging the restraining keys from the packer, and either applied pressure or the natural hydrostatic pressure of the reservoir immediately initiates the setting process.

First, the ROKANKOR system centers and anchors the packer. Next, the packer levers engage and expand the lower and upper cup seals. The proprietary clutch mechanism engages when the cups contact the open hole. The expanded cup seal is energized using the bottomhole pressure.

The integral expansion joint is also released during the setting process, which enables the tubing to float and thereby protects the formation from excessive loads related to tube movement.

Specifications

Tool size	6.125 in. (156 mm)	8.5 in. (216 mm)
Hole size	6 to 6.5 in. (152.40 mm to 165.10 mm)	9 to 9.25 in. (228.60 mm to 234.95 mm)
Maximum OD	5.63 in. (143 mm)	8.25 in. (210 mm)
Minimum ID	2.95 in. (75 mm)	4.56 in. (116 mm)
Maximum differential rating across the cup	7,500 psi (52 MPa)	6,000 psi (41 MPa)
Temperature range	39 to 302°F (4 to 150°C)	
Connections	4 1/2-in. (114.3-mm) premium	5 1/2-in. (139.7-mm) premium

ROKANKOR is a registered trademark of Weatherford in the United Kingdom.

