

# Protech™ II Centralizers

## PREMIUM RESIN COMPOSITE CENTRALIZERS MOLDED ONTO PIPE TO REDUCE FRICTION, ENHANCE FLOW AREA, AND KEEP POSITIVE STANDOFF

### OVERVIEW

Achieving optimal standoff is essential to create the best possible barrier, and proper centralization during cementing is a critical operational component. Frictional forces caused by the wellbore on the centralizer body can make it difficult to reach planned depth, especially on extended laterals or areas where a rigid centralizer is needed, but with ultra-low-friction coefficients. Leading the way with the lowest industry friction factors, the Protech™ II centralizer offers a significant reduction in frictional forces and allows customers the best chance possible at reaching planned depth while still maintaining positive standoff, with virtually no restriction of flow area, in order to maximize cementing efficiency. Reengineered to meet higher standards across the industry, the Protech II centralizer provides improved performance in both temperature and pressure ratings compared to earlier versions of Protech centralizers.

### PROVIDES FRICTIONAL FORCE REDUCTION

The Protech II centralizer blades consist of a ceramic and carbon fiber blend that is adhered directly to the casing or pipe substrate with chemical bonding, resulting in very high adhesion values for superior downhole impact resistance, toughness, and flexibility. The centralizer blades' nonmetallic composite blend design is resistant to compression stresses. Additionally, this design will not cause galvanic corrosion on the corrosion-resistant alloy (CRA) pipe, and will not slip or move due to the blades' integration onto the casing. The Protech II centralizer's composite blend provides significant frictional force reduction due to its coefficient of friction at 0.08 compared to polymer (0.14–0.17) and steel (0.2–0.25) products, ultimately allowing for the placement of more centralizers along the casing and ensuring optimal placement of the cement sheath.

### HIGHLY CUSTOMIZABLE FOR OPTIMAL STANDOFF AND COVERAGE

Protech II centralizers are custom-tailored to address well-specific challenges. Because the spacing and geometry of the Protech II centralizer blades are customized based on the specific wellbore, they can provide a full circumference standoff while allowing unrestricted flow paths. The centralizer blades can be molded in any geometry, and are designed with low-angle upsets to help lift the casing away from obstructions. Since the blades can be staggered and placed at any location, and are directly bonded to the casing, they allow for greater flow over conventional centralizers. This improved flow path and lower equivalent circulating density (ECD) results in more efficient mud removal, the ability to prevent packoff

### HIGHLIGHTS

- » Significant reduction in frictional forces
- » Customized to wellbore specifics
- » Provides 360° cement coverage
- » Rated up to 400°F and 15,000 psi
- » Corrosion resistant



*Customizable Friction Reduction > The Protech™ II centralizer features configurable blades crafted of a ceramic and carbon fiber composite that are bonded directly to the casing via a premium bonding agent.*

during cementing, and an even distribution of cement for full coverage and effective zonal isolation.

Additionally, in bonding the blades to the casing, Protech II centralizers act as a single unit with the casing, and can be used when the pass-through internal diameter (ID) is too narrow for conventional centralizers and/or centralizer subs.

### **OPTIMIZED RUN-IN SPEEDS TO LAND CASING TO DEPTH**

Protech II centralizers are designed for reliability. Their unique resin composite and customized blade design enhance flow and reduce frictional forces, allowing casing to run to planned depths at optimized run-in speeds. The single-unit design means Protech II centralizers will not hang up on casing windows and liner tops, and can provide centralization in extended-reach and tight-tolerance wellbores, delivering optimized standoff for effective zonal isolation.

For more information, contact your local Halliburton representative or visit us on the web at [www.halliburton.com](http://www.halliburton.com)

---

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

H014099 11/21 © 2021 Halliburton. All Rights Reserved.