

# Refrac Solutions

Downhole Technologies



NOV

# Reliable refrac tools for today's toughest wells

Refracturing demands technology you can count on. Smaller wellbores and harsher conditions leave no room for unreliable tools. That's why our refrac-ready portfolio of completion tools is engineered with one goal: fit-for-purpose reliability that brings new life to mature wells.

Each refrac presents its own challenges, and we model every well to identify the most effective combination of tools and designs. Our in-house testing validates each system's performance before it reaches the field, ensuring market-ready reliability. Combined with dedicated reliability and application engineering support, we assist operators in planning and executing refrac programs with confidence from start to finish.

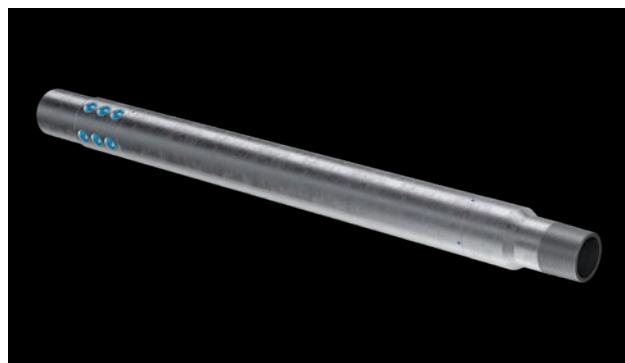
## Technologies that Deliver



### SURESET Liner Hanger Packer

Designed to securely anchor and seal in challenging refrac environments, the SURESET™ packer ensures long-term well integrity when liner reliability is critical.

- One-piece mandrel eliminates leak paths
- Fully recessed slips simplify installation
- Proven 13,000 psi performance in slim refrac sizes
- Standard mechanical and rotational locks enhance reliability



### Wet Shoe Sub

Our Wet Shoe Sub provides reliable cement displacement and a positive plug landing, helping operators achieve dependable toe initiation without explosives or costly coiled tubing intervention.

- Proven performance in slimhole refrac applications
- Large flow area supports continuous pumping
- Safer and more efficient than traditional toe perforating



### BPS Maxx Toe Initiation Sub

The BPS Maxx™ delivers reliable, intervention-free toe initiation using a precision-engineered rupture disc. When paired with the Wet Shoe Sub, it provides redundant access in debris-laden refrac environments.

- Available in slim 3 1/2 in. casing sizes
- Large-bore ID improves wiping efficiency with MSF-style dart
- No moving parts, ensuring reliability in heavy debris



## Cementation Equipment

NOV's cementation equipment assures cement quality in slim-hole refrac applications.

- Up to 15 ksi rating providing cement assurance
- Slim-hole compatible configurations and eccentric noses available
- Helps reduce deployment risks and costs



## ST500 Fortress Setting Tool

Built as a durable, oil-free alternative to disposable wireline tools, the Fortress™ setting tool improves safety and efficiency while providing powerful setting tool capability in refrac environments.

- Gas operated with patented dampening stage
- Compact, lightweight, easy to handle by one person
- 30,000 lbs setting force with redundant safety mechanisms
- Serviced by best-in-class setting tool program



## TerraMAX Milling BHA

The TerraMAX™ Milling BHA delivers dependable cleanout and milling performance in slim refrac wells, engineered with rugged TerraTECH components for durability and downhole efficiency.

- TerraPULSE™ CT Agitator reduces drag and improves weight transfer
- Optimized twin flapper check valve withstands pulsations without premature wear
- Compatible with nitrogen and aerated mud systems
- Deployed with NOV's Thru Tubing team

Your refrac program deserves tools that perform the first time, every time.

Our comprehensive completion solutions are proven to deliver reliable, safe, and cost-effective refrac execution.

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