

TuffTRAC iX

Extreme-performance wireline tractor

APPLICATIONS

- Highly deviated wells
- Sour conditions
- Wireline powered interventions
- Perforating operations
- Production logging, analysis behind casing, and cement and corrosion evaluation
- High-temperature wells

BENEFITS

- Efficiency gains from high-speed, maneuverable, bidirectional, intelligently controlled tractoring
- Reduced risk for tubing reentry and sticking with enhanced navigation of independently controlled drive sections and reverse tractoring capability in complex completion profiles
- Real-time informed decision making enabled by logging while tractoring
- Operational time saving via modular configurability to address well and surface complexities
- Access to hostile-condition wells

FEATURES

- Twice as fast as comparable conventional tractors
- Sour service qualified
- High-pressure and high-temperature rated
- Bidirectional logging while tractoring
- Versatile individual drive opening and closing operations
- Debris tolerant
- Explosive services shock resistant
- Fully combinable with
 - Production logging tools
 - Perforating gun systems
 - Powered intervention services
- Gamma ray and optional active CCL while tractoring for any application
- New-generation high-strength inline release device

Power, control, agility, and intelligence—condensed

The TuffTRAC iX* extreme-performance wireline tractor is a high-performance intelligent machine that not only condenses the capabilities of larger tractors into a 2½-in-diameter package but also improves on them. This bidirectional high-speed tractor provides large pull and push forces that are precisely controlled and monitored from surface for confirmed performance. Its seamless combination of innovative downhole and surface electronics is an unprecedented integration of speed, maneuverability, and agility that delivers payloads farther and faster downhole—and then reliably returns uphole.

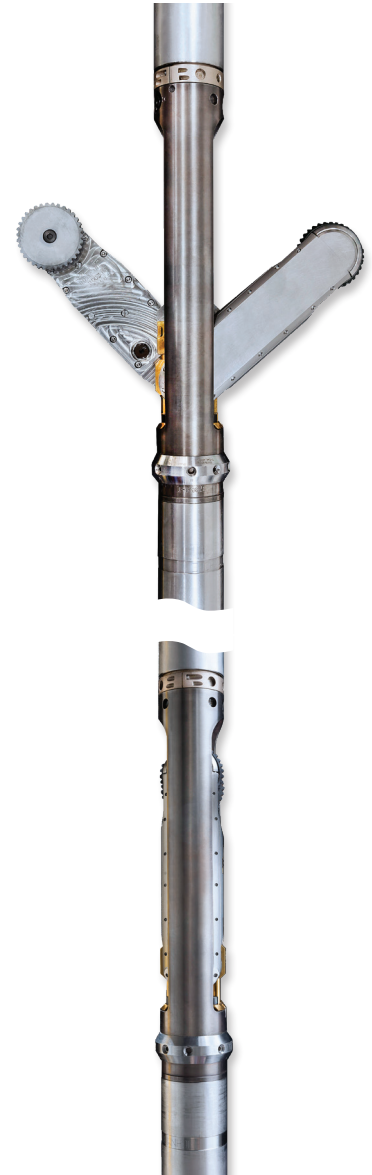
Navigation of even the most complex completions is guided by data reported in real time from downhole sensors. The engineer at surface or at a remote operations center has a wealth of information for making optimal decisions, each of which is effected by a click of a button to operate each drive section—comprising a set of two wheels—independently in both directions.

Active traction control is built in to the TuffTRAC iX tractor, providing continuous control of the radial force applied by the tractor arms. When slippage is detected by the downhole sensors, the radial force can be increased to increase the traction. Once the difficult section of the well is successfully traversed, the radial force is decreased to extend the lifetime of the wheels and other drive components. Because the tractor incorporates an opening cam system design, the radial force that the arms apply is independent of the wellbore size. This means that for their slim diameter, TuffTRAC iX tractors can achieve the same tractoring force in well inner diameters up to 10.5 in to support a large operating envelope.

Withstanding the challenges of shock, sour environments, and complex operations

Engineered to withstand the impact of perforating guns and colliding tools for pipe recovery, the TuffTRAC iX tractor has low sensitivity to well conditions that cripple most conventional tractors, such as CO₂, H₂S, and any type of debris. Once a conveyance operation is completed, the tractor is closed for reliable recovery to surface.

The TuffTRAC iX tractor seamlessly runs with any Schlumberger cased hole services, including powered ReSOLVE* instrumented wireline intervention services and WIREd* wireline inline release devices in both the 3½- and 2½-in sizes. WIREd devices can be run above or below a TuffTRAC iX tractor to increase fishing capacity. The critical systems of head tension and gamma ray or active CCL logging are already built in to the tractor.



Digitally enabled TuffTRAC iX tractors confirm their downhole performance, including individual opening (top) and closing (bottom) of the drive sections.

TuffTRAC iX

Active CCL is the powered detection of collars or tubular changes in less-magnetic well completions with reporting to surface in real time.

Logging-while-tractoring functionality is part of the tractor's standard configuration to greatly increase the efficiency and accuracy of tractored production logging or well integrity monitoring operations.

Modular versatility

TuffTRAC iX tractors are easily configured from two drive sections (each with a set of 2 wheels) to eight drive sections (4 to 16 wheels, respectively) to best fit the well and surface configuration. Because the tractors are electromechanically driven, they achieve more than 45% conversion efficiency from the supplied electrical power. This low power requirement means that auxiliary systems are not additionally stressed, and smaller cables can be used for the same application.

| Specifications | |
|--|---|
| TuffTRAC iX Extreme-Performance Wireline Tractor | |
| Output | Gamma ray and optional active casing collar locator (CCL) Logging while tractoring |
| Drive section operation | Up and down directions Independent opening and closing |
| Max. speed [†] | 5,000 ft/h [1,524 m/h or 25.4 m/min] |
| Pressure rating | 20,000 psi [138 MPa] |
| Temperature range | 32 to 350 degF [0 to 177 degC] |
| Hole size — min. | Tractoring: 2.5 in [63.5 mm] Restriction: 2.2 in [55.9 mm] |
| Hole size — max. | 10.5 in [266.7 mm] |
| Outside diameter [†] | 2 ¹ / ₈ to 2 ¹ / ₂ in [53.97 to 63.5 mm] |
| Min. length [†] (two drive sections) | 21.85 ft [6.66 m] |
| Weight [†] (two drive sections) | 184.80 lbm [83.82 kg] |
| Max. tractoring force | Per drive section with up to eight drive sections: Up to 225 lbf [1,000 N] |
| Tension | 25,000 lbf [111,000 N] |
| Compression | 20,000 lbf [89,000 N] |
| Special applications | NACE MR0175 compliant for H ₂ S and CO ₂ resistance API RP-67 compliant for explosives operations Cased hole completions Fishing capability: Optional 3 ¹ / ₈ - or 2 ¹ / ₈ -in [79.38- or 53.97 mm] WIReD wireline inline release devices above and below tractors |

[†] Configuration dependent

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