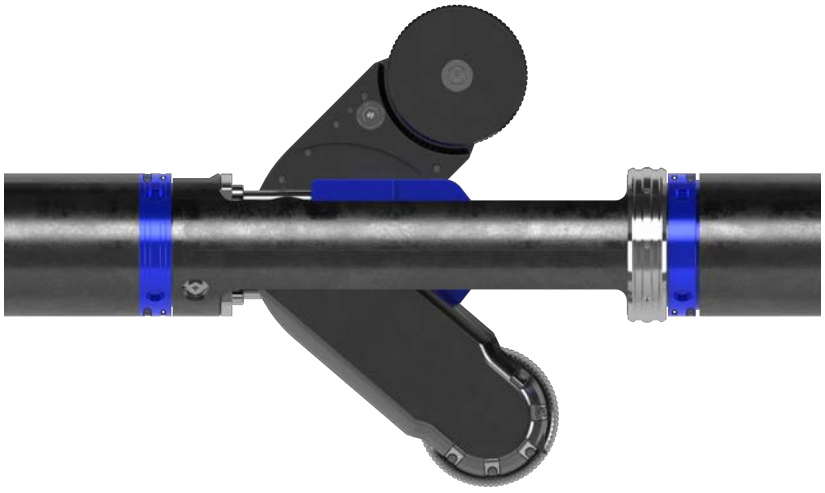
TuffTRAC

Wireline tractor

A short, modular system with reverse tractoring and traction control in highly deviated wells

Temperature:
up to 350 degF [177 degC]

Pressure:
20,000 psi [138 MPa]



TuffTRAC wireline tractor.

Applications

- Production logging
- Cement and corrosion evaluation
- Perforating and plug setting
- ReSOLVE™ instrumented wireline intervention service
  - Nonexplosive plug setting
  - High-force axial shifting
  - Selective shifting with a universal shifting tool
  - Milling
- ABC™ analysis behind casing service

How it improves performance

- Reduces fishing risk with reverse tractoring capability
- Reduces slippage via active traction control
- Conveys tools in complex wellbores at lower cost than coiled tubing or drillpipe
- Enables efficient rig-up and rig-down
- Acquires data faster during multiple logging passes
- Operates continuously (no cooldown stops required)
- Operates on any wireline cable
- Uses less power than conventional systems
- Low sensitivity to wellbore conditions

Features

- Shortest length available for greater accessibility
- Reverse tractoring and active traction control
- Modular design with up to eight drive sections
- Logging while tractoring capability
- Simple and robust design
- Built-in critical systems for perforations

Shortest tractor available at 14.2 ft

TuffTRAC™ wireline tractor is the shortest tractor available in the industry and the only tractor with reverse tractoring and traction control capability. This bidirectional, high-speed tractor provides large pull and push forces that are precisely controlled from the surface. Built-in sensors monitor tractor response and the progress of downhole operations while responsively controlling the tractor for optimal performance.

Active and continuous control

The active traction control system enables continuous control of the radial force applied by the tractor arms. Radial force can be increased if slippage is detected in difficult sections of the well; otherwise it can be decreased to avoid unnecessary wear and conserve energy. Special design enables this tool to apply the same tractoring force in well IDs from 3.4 to 10.6 in [8.6 to 26.9 cm].

Built-in critical systems for perforation jobs

Engineered to withstand the impact of perforation gun detonation, the TuffTRAC tractor has built-in critical systems for perforating operations including an electrical release mechanism, head tension control, shock absorption, casing collar locator (CCL), and an addressable tractor perforating safety switch.

Although the TuffTRAC tractor has low power requirements, all TuffTRAC tractor modular configurations can achieve a maximum speed of 3,200 ft/h [975 m/h]. The tractor is compatible with all multiconductor wireline cables and can be run with low-power requirements and a maximum speed of 2,400 ft/h [732 m/h] on monocable for ready combination with a telemetry cartridge to convey both up and down logging-while-tractoring toolstrings.

Modular versatility

The two-drive TuffTRAC tractor configuration, including the perforating systems, is only 14.2 ft [4.3 m] long, although TuffTRAC tractor configurations typically employ two to four drive sections. Adding a tandem sub increases functionality by enabling independent surface control of the drives above and below the tandem. Up to eight drive sections can be run to pull long cables and push heavy loads in difficult completions.

High-efficiency operation

Most hydraulic tractors require high power levels that can cause auxiliary systems such as heads, collectors, rope sockets, and cables to fail. TuffTRAC tractors optimize power and deliver more than 45% efficiency when compared with the 10% to 20% efficiency of conventional systems. This kind of efficiency means that the TuffTRAC tractor does not have to be stopped to cool down, even in dry gas wells.

Integrated systems reliability and safety features

Despite its compact length, the TuffTRAC tractor incorporates multiple systems that increase the reliability of tractor operation. The tension load cell located in the TuffTRAC tractor upper head provides valuable real-time information about tool motion, slippage, and additional loading caused by the winch. An addressable cable-release device prevents unintentional pull-off when gun firing causes the toolstring to jump. It also enables reliable cable release if the tool is stuck in an extended-reach horizontal well and if the tension force available at the head is insufficient to break the weakpoint by pulling on the cable.

Perforation safety components prevent accidental application of the drive motors' high voltage to the perforating guns. Other safety features are the multiple-use shock absorber and fail-safe opening system, which automatically closes the arms if power is lost. The TuffTRAC tractor is CE-certified and meets the low-voltage, machinery, and pressure-equipment directives of the European Union.

TuffTRAC Wireline Tractor Specifications†

Standard OD, in‡	3 1/8	3 1/8	3 3/8	3 3/8
Power, cable compatibility	AC, heptacable	DC, mono- and heptacable	DC, mono- and heptacable	AC, heptacable
Automated tractoring capability	Yes	No	No	Yes
Output	Tractor speed, arm force, head tension	Tractor speed, arm force, pressure, temperature, head tension, CCL with optional gamma ray (GR)	Tractor speed, arm force, pressure, temperature, head tension, CCL with optional GR	Tractor speed, arm force, head tension
Max. hole size, in [mm]	10.6 [267]	10.6 [267]	15 [381]	15 [381]
Drilling fluid type and weight	All	All	All	All
Pressure rating, psi [MPa]	20,000 [138]	20,000 [138]	20,000 [138]	20,000 [138]
Temperature rating, degF [degC]	350 [177]	302 [150]	302 [150]	350 [177]
400 degF [204 degC] version	Yes	No	No	Yes
Max. pull per drive section, lbf [N]	300 [1,334]	300 [1,334]	350 [1,557]	350 [1,557]
Max. drive sections per string	8	6	6	8
Max. speed, ft/h [m/h]				
Standard configuration	3,200 [975]	2,200 [671]	2,200 [671]	3,200 [975]
High-speed configuration	6,000 [1,829]	4,300 [1,311] 4,700 [1,433]	4,300 [1,311] 4,700 [1,433]	6,300 [1,920]
Tension, lbf [N]	60,000 [266,890]	60,000 [266,890]	60,000 [266,890]	60,000 [266,890]
Special applications	API RP 67 compliant for explosives operations			
	Cased hole completions and glass-reinforced epoxy (GRE) liners			
	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			

† All values are for standard specifications and are subject to change without notice. A dedicated engineering team is available for customizing tools to address your challenges.

‡ Values depend on configuration, pipe size, and weight to be cut. Applications outside the defined operating envelope should be shared with an SLB representative for risk assessment.

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