

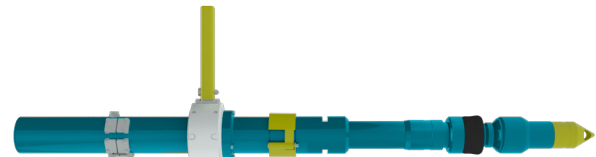
Well Construction

Frank's Tubular Running Services (TRS) – Drilling Services

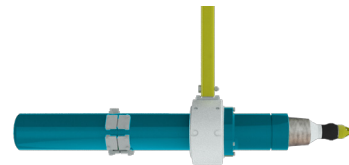
VERSAFLO™ - Casing and Drill Pipe Flowback and Circulation Tool

Features and benefits

- Drill pipe and casing flowback/circulation capability accomplished with one tool without the need to swap bails
- Casing Module is efficiently rigged down with a special breakout plate that holds the backup against the rig's bails
- Drill Pipe Module is ready to stab into the landing string after connecting a packer cup
- Casing Module (lower portion of VERSAFLO™ tool)
 - Packer cup seal assembly can be outfitted to stab into a range of casing sizes from 7-inch to 18 5/8-inch
 - Fill-up, circulation, and flowback can be accomplished while casing is being run; no shut down required
 - Automatically-operated internal valve prevents unwanted drilling fluid spilling out on the rig floor
 - Capable of sealing up to 5,000 psi
- Drill Pipe Module (upper portion of VERSAFLO™ tool)
 - Hydraulically-operated piston allows stabbing into drill string for circulation and flowback operations
 - Wireless controls allow tool operations from outside of the red zone
 - Special packer cup creates an effective seal on a range of drill pipe IDs
 - Automatically-operated internal fluid valve prevents unwanted drilling fluid spilling out on the rig floor
 - Hydraulic swivel allows rotation without the need to disconnect
 - umbilical lines
 - The drill pipe module can be screwed into a 6 5/8-inch full hole drill pipe connection without the need to disconnect or remove the piston or the packer cup from the ID of the drill string
 - Compact tool design allows the use of 16-foot bails based on rig survey



Casing configuration



Drill pipe configuration



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| Specifications | |
|-----------------------------|--|
| Drill pipe module operation | Hydraulic (via wireless control) |
| Tensile capacity | 2,577,000 lbs [1,168,908 kg] |
| Minimum flow area | 3.258 in ² [2,102 mm ²] |
| Maximum operating pressure | 5,000 psig [34.5 megapascals] |
| Drill pipe module stroke | 24 in [610 mm] |
| Minimum bails required | 16.6 ft [5,060 mm] |
| Torsional capacity | 70,000 ft-lbs [94,907 newton meters] |
| Maximum mud flow rate | 750 gallons per minute [2,840 litres per minute] |
| Box/pin connection | API 6 5/8 full hole |
| RPM, maximum | 40 RPM |
| RPM, continuous | 20 RPM |