

Thru-Tubing Turbodrill

Powerful turbo drilling system for demanding thru-tubing applications.

APPLICATIONS

- Coiled tubing operations
- Thru-tubing sidetracking: openhole, from cement plug or whipstock
- High-Pressure, High-Temperature (HPHT) environments
- Acidizing
- Milling scale, cement, barium, bridge and frac plugs, and steel
- Well deepening

BENEFITS

- Delivers industry's highest power downhole regardless of conditions or drilling fluids
- Durable design for acids and high temperatures up to 350 degC
- Provides reliable turbodrilling for a variety cased and openhole operations
- TT Turbodrill enables multi-plug milling runs in the operational time required to work on live wells and adapt to pressure changes as they occur

FEATURES

- All-metallic construction endures exotic drill fluid combinations and HPHT conditions
- Power section generates 73 hp
- Efficient turbo-drive system works single and dual-phase drilling fluids without sacrificing output power
- Adjustable bent housing facilitates a range of dogleg severity (DLS) requirements

Efficient output in harsh environments

The Thru-Tubing (TT) Turbodrill delivers the industry's highest mechanical power output downhole by efficiently converting hydraulic energy into mechanical energy.

Capable of producing tailored power in the most demanding thru-tubing applications, all-metal TT Turbodrill systems are immune to temperature and acid. And, their drive train is ideally suited for two-phase, gas cut, mud systems regardless of gas-cut percentages.

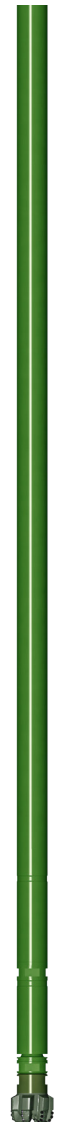
The TT Turbodrill is based on a concentric design with a fluid connect rotor and stator-power drive system, which produces less reactive drilling torque than conventional positive displacement motors, protecting downhole tools and coil from extended torsional stress.

The thru-tubing turbodrill sets the benchmark for downhole drive systems with unmatched downhole reliability.

Components

- Power section
- Optional lower-bearing stabilizer
- Pin down straight- or steerable-bearing section
- Power and Bearing Section

The power section consists of two components: the all metallic rotor and stator. The TT Turbodrill offers these components in standard and stackable double power section configurations to produce a range of power characteristics that ensure job success regardless of downhole conditions or fluids used.



TT Turbodrill

TT TURBODRILL SPECIFICATIONS

Size, in.	Length, ft	Dual-Phase Flow		Operating Torque, ft.lbf	Stall Torque, ft.lbf	Operating Speed, rpm	Pressure Drop, psi
		Fluid, galUS/min	Gas, scf/min				
27/8	15.9	80	1300	48	96	2,500+	595

Thru-Tubing Turbomill

APPLICATIONS

- Scale clean outs
- Copper headed bridge plugs
- Composite bridge plugs
- High-temperature conditions
- Low-pressure conditions where nitrogen is required to keep well flowing

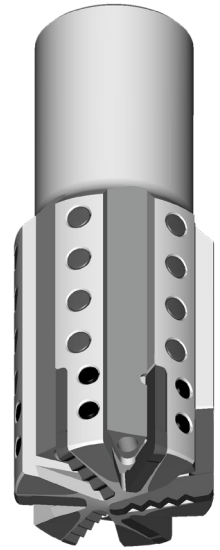
FEATURES

- Extended gage protection combats turbodrill's output speed
- Two rows diamond-enhanced insert (DEI) gage inserts ensures durability
- Limited-depth cutting profile reduces torque demand cuttings production
- Box connection matches the 2 $\frac{7}{8}$ in. TT Turbodrill

Thru-Tubing (TT) Turbomill is specifically designed for coiled tubing cleanouts and is used with the 2 $\frac{7}{8}$ in. TT Turbodrill.

TT TURBOMILL SPECIFICATIONS

Outer Diameter, in.	Overall Length, ft	Fishing Neck Outer Diameter, in.	Fishing Neck Length, in.	Connection
3.250	10	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box
3.500	10	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box
3.625	10	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box
3.750	10	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box
3.875	10	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box
4.375	10.5	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box
4.415	10.5	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box
4.625	10.5	2 $\frac{7}{8}$	4	2 $\frac{3}{8}$ in. PAC Box



TT Turbomill