

TrackMaster Select™ TT

Thru-Tubing Whipstock System

APPLICATIONS

- Casing exits below production tubing or other restrictions above desire kick off point (KOP)

BENEFITS

- Production string remains in place saving time and money
- Efficient rig time by deploying, orienting, setting a whipstock, milling window and drilling rathole
- Provides consistent, fast milling with a TrackMaster Select* one-trip mill
- Milling assembly deployed with whipstock in the same run, if desired

FEATURES

- Anchor provides solid foundation throughout operations
- Assembly designed to pass through restrictions and set in larger ID casing/ tubing
- Hydraulically actuated expandable anchor for stable positioning
- Slips designed for maximum centralization and stability

The TrackMaster Select™ TT thru-tubing whipstock system offers a cost-effective alternative to pulling completion tubing from existing wells prior to sidetracking. The tool is designed to pass through the tubing ID. Once below the tubing string, it can be oriented and hydraulically anchored inside the liner to enable window milling operations. Its unique geometry compensates for the relative size difference between the whipstock and casing diameters.

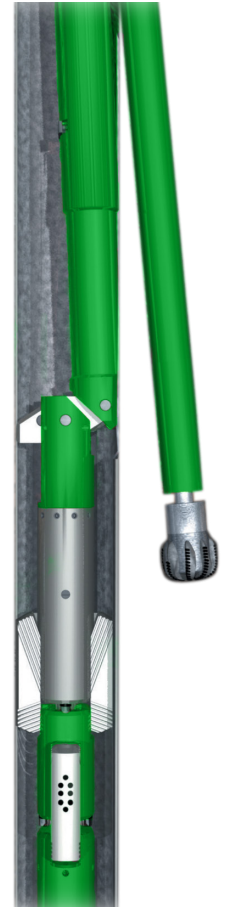
Running in with the whipstock, orienting and setting it, milling the window, and drilling the rathole can all be accomplished in a single trip. Alternatively, the milling assembly can be run in separately. Once the whipstock is set, the running assembly shear bolt is severed and both parts of the bolt are retained within the tool. Coiled tubing or jointed pipe can be used to deploy the whipstock.

Rotary Anchoring

The hydraulically actuated expandable anchor spans multiple casing sizes and weights. It uses an anti-rotational, high-axial-load, tongue-and-groove slip design, which enables precise slip extension and provides a greater slip contact area compared with other systems. Slips are assembled in pairs, which are placed at 90° to each other, providing maximum centralization and stability. A specially designed body lock ring ensures the setting force is maintained once the slips are deployed.

Kickover Hinge

A hydraulically actuated hinge section kicks the bottom of the whipstock ramp against the casing wall. It spans the ID of the



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TRACKMASTER SELECT TT SPECIFICATIONS

Tool Size	4 ½ in. × 7 in.	7 in. × 9 ⅝ in.
System OD, in. [mm]	3⅝ [92]	5⅝ [143]
Mill OD, in. [mm]	3⅝-3⅞ [92-98]	5¾-6¼ [146-159]
Setting pressure (hinge), psi [MPa]	939 [6.5]	955 [6.6]
Setting pressure (anchor), psi [MPa]	3,000 [20.7]	3,000 [20.7]
Release load (whip), lbf [N]	14,400 [64,054]	32,000 [142,343]
Release load (anchor), lbf [N]	32,400 [144,122]	64,800 [288,245]
Torque, ft.lbf [N.m]	6,000 [8,135]	30,000 [40,675]

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casing, locking the whipstock ramp in place and preventing movement during the window milling operation. In addition, it helps to keep the mill on the ramp, forcing the mill to engage the casing.

Casing Mills

Two different mills are available with the TrackMaster TT system:

- TrackMaster Select one-trip mills are designed to mill casing and require less torque and weight on bit (WOB) than standard milling assemblies. They can be fitted with cylindrical carbide mill inserts or PDC inserts to suit the application.
- TrackMaster hard formation PDC cutter steerable mills are engineered with a force-balanced cutting structure that can efficiently mill casing, and also drill formations with compressive strengths up to 40,000 psi.