

The Helix

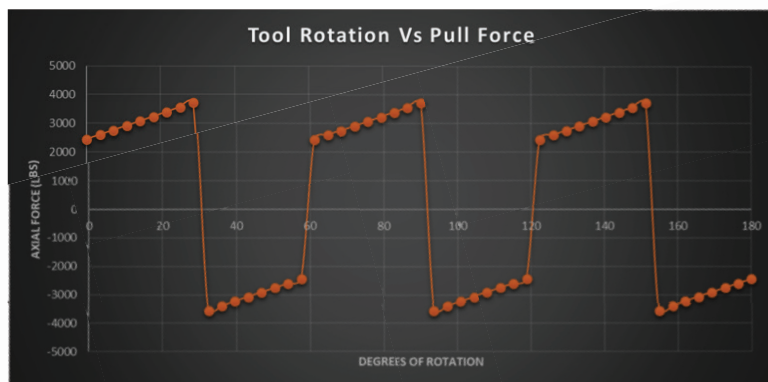
STABILIZED ROLLER REAMER WITH OFF AXIS CUTTING RINGS

The Helix is a stabilized roller reamer designed to improve the wellbore profile by reaming the doglegs and microedges that hinder the completion of a well when running liner or casing to bottom.

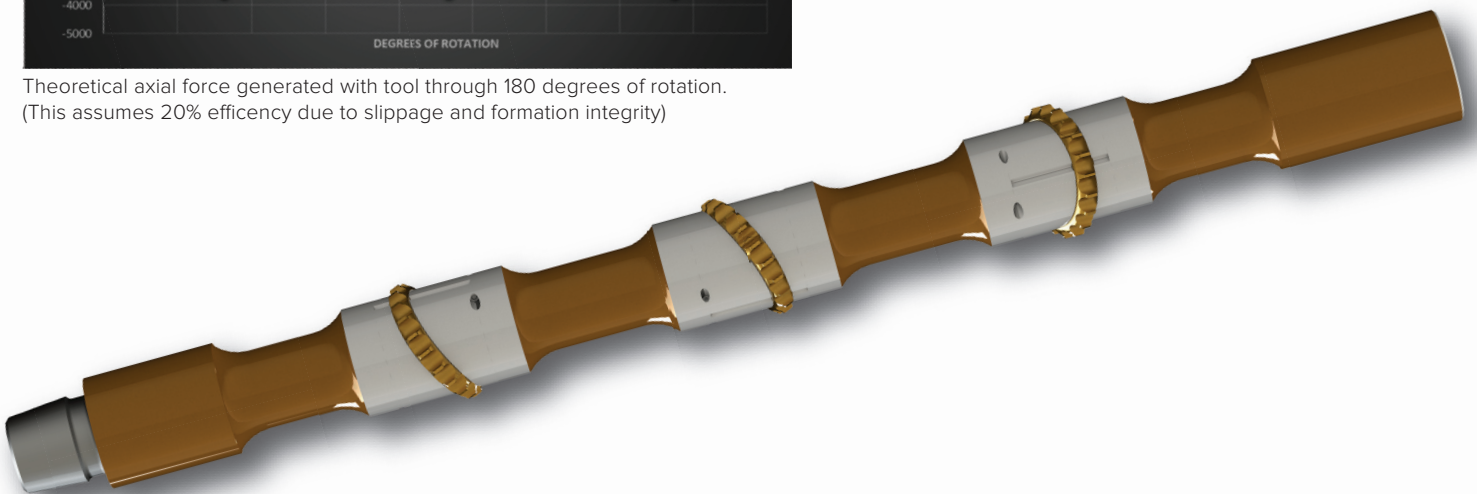
Designed to reduce friction and drive weight to bit, the patented helical profile of the cutting rings stabilize the drill string while driving the tool downhole.

KEY POINTS

- Reduce microedges and bring the hole to gauge with nominal OD
- Stabilize the drill string with the offset helical points of contact
- Minimize localized drag while sliding due to the rotating cutting rings
- Induce a "tractor" effect during drill string rotation to add a push or pull force based on the direction of travel



Theoretical axial force generated with tool through 180 degrees of rotation. (This assumes 20% efficiency due to slippage and formation integrity)



HOW IT WORKS

- Three offset cutting rings rotate around the mandrel on carbide running surfaces. The angle of these rings generate six points of contact, evenly distributed in a helical configuration, providing 360° wall contact and bringing the hole to gauge
- Tilted cutting rings provide flow passage for cutting returns
- Localized friction is reduced and a "tractor" effect is generated by isolating the drill string from the wellbore through the free spinning cutting rings

Technical Specifications

Tool Size (OD)	5.00" (127 mm)
Tool ID	2.25" (57.1 mm)
Available Cutter Head Size (Cutting OD)	5.875" (149.2 mm) to 6.75" (171.5 mm)
Overall Length	63" (1.60 m)
Total Weight	225 lbs. (102 kg)
Recommended Flow Range	150-350 gpm (0.57-1.325 m ³ /min)
Temperature Range	N/A
Recommended RPM	0-120 rpm
Operational Pressure Drop Generated	5-10 psi (35-70 kPa)
Max Pull	320,000 lbs. (1,356 kN)
Torsional Load to Yield Body Connection	20,000 ft.lbs (27,050 Nm)
Connections*	3 1/2 IF, 4 FH & DS40 PIN & Box

*Other connections available upon request



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