HTK™ (High Torque Keys)

ARTICULATED UNIVERSAL JOINT WITH BACKLASH MITIGATION

SCOUT DOWNHOLE®
A Business Unit of Turbo Drill Industries, Inc.

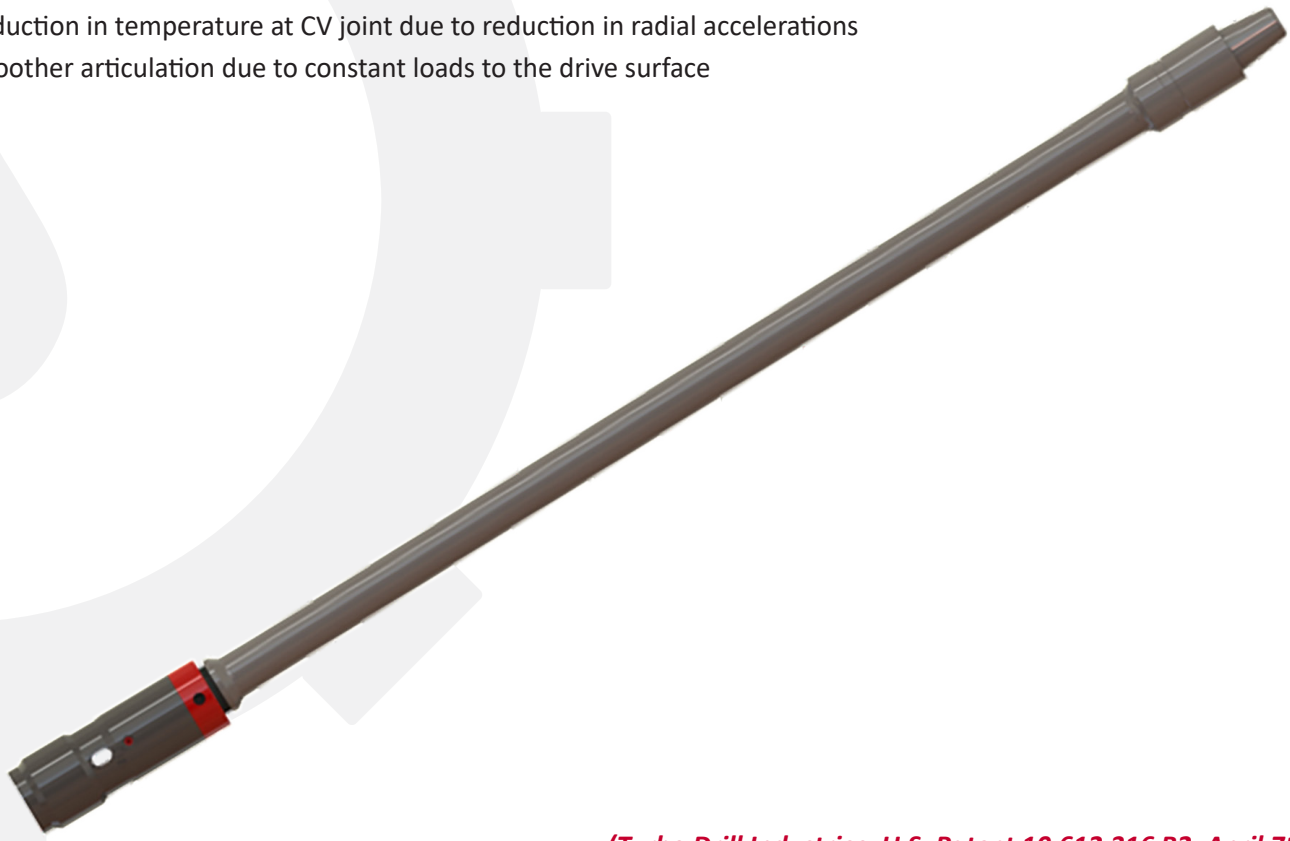
When PDM motors are run with PDC bits, stick-slip is a common dysfunction encountered while drilling that exerts excessive stresses and loads across the lower end of the drilling motor. Most motors in the industry consist of universal joints that are designed to drive clockwise while rotating. However, with the nature of stick-slip, the universal joint is often subjected to cyclical backlash (reverse rotation) at high frequency.

When backlash occurs, the universal joint disengages from the respective driving faces, resulting in extreme shock loading to the drive surfaces as they come back into contact with each other at a high radial velocity. These high impact and high cyclical loads can lead to premature wear, and sometimes catastrophic failure to certain motor components.

Turbo Scout motors from Turbo Drill Industries, incorporates **HTK**, a patented secondary set of drive keys for the sole purpose of mitigating reverse rotation in the universal joint, thereby eliminating potential catastrophic damage to motor lower ends. This patented technology has proven to dramatically increase reliability and extend the life of the drilling motor. The self-aligning keys maintain minimal backlash throughout all motor bend configurations.

Benefits:

- Substantially reduces shock loading on the shaft and housing
- Reduces wear to drive surfaces by eliminating radial movement between the shaft and housing
- Reduction in temperature at CV joint due to reduction in radial accelerations
- Smoother articulation due to constant loads to the drive surface



(Turbo Drill Industries, U.S. Patent 10,612,316 B2, April 7th, 2020)

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