

ReedHycalog™ Roller Cone Drill Bits

100 years ago, a legacy was born. The Reed Roller Bit Company was founded and the company sold its first roller cone bits in 1916. These bits delivered on a promise to design, manufacture and sell the highest quality products.

A century later, the tradition of pioneering technology and forward-thinking design continues with $ReedHycalog^{TM}$ bits from NOV.



Hercules™ Roller Cone Drill Bits

For our most robust roller cone bits yet, we went back to the fundamentals to re-engineer our standard lug. The result was the Hercules™ roller cone bit platform, which is designed to withstand the harshest and most challenging drilling environments.

Hercules roller cone bits provide a combination of durability, control and speed that enhances the efficiency of any operation. Fieldproven design philosophies provide stable and reliable directional performance in interbedded and intrusive formations, to drill harsh directional sections faster and more consistently. Each bit is equipped with a premium bearing system and designed with optimized hydraulics for increased cleaning and efficient drilling.

Bit Types: Insert and Mill Tooth

Applications







Unconventional







Low angle









Hard rock





Re-engineered lug design

Greater stability, efficient cone cleaning and cuttings removal, increased durability, and better steerability

Benefits

Greater stability - reduces g-forces, improves cutting structure life, and provides higher instantaneous and average ROP

Efficient cone cleaning and cuttings removal - ensures the bit engages new rock on every rotation

Increased durability - more effective seal life and bearing reliability

Better steerability - reduced length decreases bit-to-bend, enhancing directional capabilities and lowering stress during rotation

Titan™ HD Large Diameter Milled-Tooth and Insert Bits

Our *Titan*™ HD drill bits provide superior performance in the most challenging large-diameter drilling applications. Combining proven technology with the latest enhancements for wear-resistance and toughness, *Titan* HD bits can improve your rates of penetration and increase durability in these demanding applications.

Titan HD bits feature a new lug design that delivers efficient fluid flow through optimized bit hydraulics. Iterative computational fluid dynamics (CFD) is used to determine optimal nozzle placement and flow direction, improving cone cleaning and cuttings evacuation for the specific cutting structure and lug geometry of the bit. The lug design also incorporates updated vent-to-the-bowl pressure compensation technology to improve bearing reliability and seal life.

Wear-resistant inserts provide protection in abrasive environments while withstanding impact in demanding directional applications. Additionally, the wear-resistant inserts and precision-placed hard metal across the shirttail edges and face provide optimum coverage without limiting flow.

Bit Types: Insert and Mill Tooth

Applications







Directional



Low angle





Benefits

Proven reliability - precision ground, logarithmic roller (PLR) bearings with encapsulated ball retention for longer runs

Greater stability - improved HD lug geometry and stability features

Improved durability - Wear-resistant inserts and precision-placed hard metal provide protection in abrasive environment

Efficient cone cleaning and cuttings removal - ensures the bit engages new rock on every rotation

Increased ROP and interval length - sharper bits provide higher instantaneous and average ROP delivering extended runs



ShredR™ Drill Bits

Specifically designed for coiled tubing (CT) operations, *ShredR*™ smalldiameter. With a premium journal bearing, self-sharpening hardmetal, directed nozzles, and full ring heel protection, ShredR bits offer exceptional performance when drilling numerous composite plugs in one run.

Bit Types: Mill Tooth

Applications







Composite plug drilling





Benefits

Extended bit life – self-sharpening *ArmorClad*™II hardmetal stays sharper longer

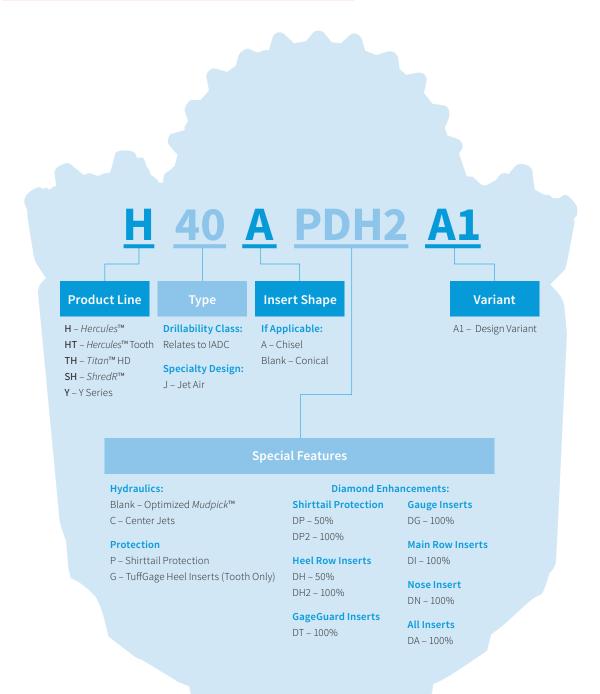
Reliable performance – premium, silver-plated journal bearing

Efficient cuttings removal – directed nozzles remove cuttings quickly and efficiently

Greater durability – full ring heel protection and optional shirttail protection reduce gauge wear and support bearing and seal reliability

Increased safety – the safety neck provides a smooth gripping surface, which greatly reduces the chance of pipe wrench slippage and potential injury

Improved flexibility - optional PAC connection eliminates the need for crossover sub for small diameter motors



Reliability at Every Turn

With our experience and more than 150 facilities worldwide, we deliver the highest quality solutions and support to meet the needs of your operation.

Each drill bit from NOV includes local engineering support specific to your job requirements for quick delivery and optimal results. Everything we do is geared toward providing reliability and improving the efficiency of your operation.

When our solutions arrive at your drill site, we want to deliver performance-so you can.



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