

GeoTech® HE Drill Bits for High-Energy Applications

SYSTEM ENABLES OPERATORS TO MEET MORE CHALLENGING DRILLING DEMANDS

OVERVIEW

All facets of the drilling system have been challenged in recent years to add capabilities while reducing drilling cost, which translates into drilling wells farther and faster than previous systems allowed. Significant technology advancements in rig equipment and operations, and in drilling techniques, have enabled operators to deliver higher levels of energy to the drill bit. Comparatively, operators are now able to effectively apply wider operating parameters down hole in terms of weight on bit (WOB), torque on bit (TOB), and rotational speed.

These high-energy applications have greatly raised the bar on drill-bit durability requirements while maintaining high levels of efficiency. The GeoTech® HE product platform delivers optimum results through unique state-of-the-art bit connections, body materials, cutting elements, and design technologies.

FEATURES AND BENEFITS

GeoTech HE drill bits incorporate unique and advanced technologies as required to meet these high-energy demands, including:

- » Specialized connections that are manufactured from a high-end alloy and a modified geometry, which significantly increases its toughness and strength
- » GeoTech HE matrix body drill bits that incorporate an advanced blend of copper and a selection of application-specific tungsten carbide powder materials for increased erosion resistance, while also providing a tougher and more crack-resistant bit body
- » GeoTech HE steel-body drill bits that are machined from a modified high-alloy material, which enables improved heat treat properties, resulting in a stronger and more resilient bit body
- » GeoTech HE polycrystalline diamond compact (PDC) cutter series that enables selection of the right cutter for the application, depending upon specific needs of abrasion, impact, or toughness
- » High-energy design characteristics that are incorporated in combination with these specialized materials to provide maximum bit durability while maintaining high levels of drilling efficiency in order to meet the increasing demands of drilling farther and faster



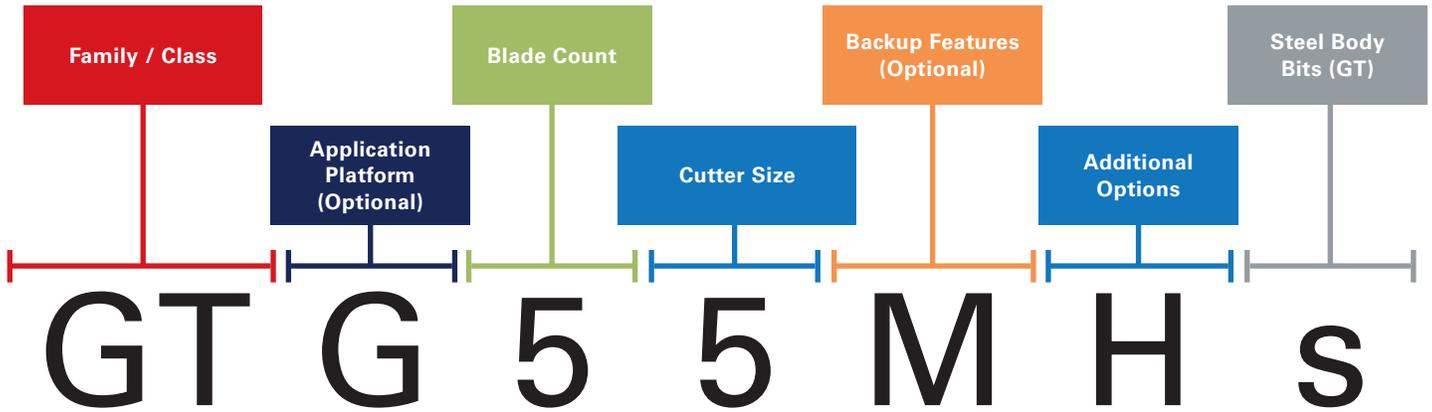
The Design at the Customer Interface (DatCI™) process of developing GeoTech® HE drill bits brings together the differentiating bit design features needed for a given application, along with specific features to meet and exceed operators' expectations in today's high-energy drilling environment.

DATCI™ SERVICE PLATFORM PROVIDES EFFECTIVE BIT OPTIMIZATION SOLUTION

Combining powerful design and simulation tools with a global network of technical resources, the Design at the Customer Interface (DatCI™) service platform uses direct customer input to rapidly optimize each GeoTech HE bit. Members of our global network of Application Design Evaluation (ADESM) service specialists work directly with the customer to define specific bit solutions, drawing from a toolbox of the industry's most sophisticated software systems for comprehensive planning, modeling, and engineering – with real-time performance optimization capabilities. This toolbox includes:

- » IBitS™ patented and proprietary drilling software system for creating 3D bit designs anywhere, using the latest bit dynamics modeling, including upgrades that better simulate cutting structures for specific applications
- » Enhanced hydraulics modeling that provides a more accurate bottomhole pattern, and also enables quantitative analysis on cutter faces and through junk slots to minimize erosion

Fixed Cutter Nomenclature Guide



Family / Class

GT = GeoTech®
 MM = MegaForce™
 SF = SteelForce™

Application Platform (Optional)

D = Push-the-Bit RSS and Directional Motor
 E = GeoPilot® Dirigo RSS System
 G = Point-the-Bit RSS System
 T = Turbine High Rotational Speed

Blade Count

Blade count indicates the number of blades on the bit.

- 3 = Three Blades
- 4 = Four Blades
- 5 = Five Blades
- 6 = Six Blades
- 7 = Seven Blades
- 8 = Eight Blades
- 9 = Nine Blades
- 0 = Ten Blades
- 1 = Eleven Blades
- 2 = Twelve or More Blades

Cutter Size

The cutter size digit describes the main cutter size on the bit in 1/8" increments.

- 2 = 1/4" (8 mm)
- 3 = 3/8" (10.5 mm)
- 4 = 1/2" (13 mm)
- 5 = 5/8" (16 mm)
- 6 = 3/4" (19 mm)

Backup Features (Optional)

- D = Dual Row Backup PDC Cutters
- I = Impregnated Diamond Backup Discs
- R = R1™ Backup Cutter
- U = Cruiser™ Depth of Cut Rolling Element
- M = Modified Diamond Round
- C = Carbide Impact Arrestor

Additional Options

- K = Scribe™ Cutters
- H = Highly Abrasive Wear
- HE = High Energy

Steel Body Bits (GT)

s = Steel Body Bits

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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