

# Compass<sup>™</sup> SERIES

SUPERCHARGED FOR SLIMHOLE



SUPERIOR RELIABILITY  
IN SLIMHOLE DRILLING

## Overview

### Introducing: Compass™ Series Slimhole Bits

Reduced size casing programs, re-entries, multi-laterals, and coiled tubing drilling all require steerability, reliability and efficient rate of penetration. Engineered with application specific technology, the new Compass Series Slimhole Bits provide excellent steerability and high rates of penetration even when weight on bit is limited. The bearing provides long, reliable performance in deep hole, long reach sections where increased RPMs in motor applications are commonly encountered.

### Series Features and Benefits

#### › Advanced cutting structure and gage

Compass series bits are made with highly responsive cutting structures designed for increased drilling speed and unsurpassed steerability. The dense shirttail protection included in the gage of slimhole bits provides superior durability in directional applications.

Custom gage row designs are available to optimize the bit for specific drilling applications. Semi-round top (SRT) inserts or flat topped diamond inserts are applied to harden the gage where required.

#### › Patent pending conical seal gland

Constructed to resist cuttings packing in the seal area, the unique geometry of the seal gland provides significant benefits during high angle drilling.

#### › Patent pending heat shield

Deployed between the seal and inner bearing, this shield provides life extending thermal insulation to the seal from heat generated in the bearing.

#### › High temperature, high lubricity bearing grease

Advanced synthetic grease allows for improved lubrication and greater reliability in high speed motor applications.

#### › High capacity reservoir

The redesigned reservoir is capable of delivering bearing lubrication over longer and higher RPM runs.

#### › Patented High Energy Tumbled™ (HET) cutting inserts

Cutting elements undergo the HET process to alter the surface attributes, resulting in inserts that are more abrasion and impact resistant.

#### › Advanced bearing metallurgy

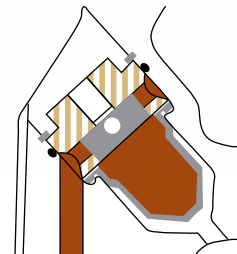
Compass bits are equipped with a silver plated journal bushing, silver plated floating thrust washer, pilot pin and enhanced bearing hardmetal alloy for increased durability and reliability.



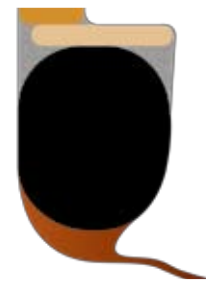
*Cutting structures designed for high ROP and steering response.*



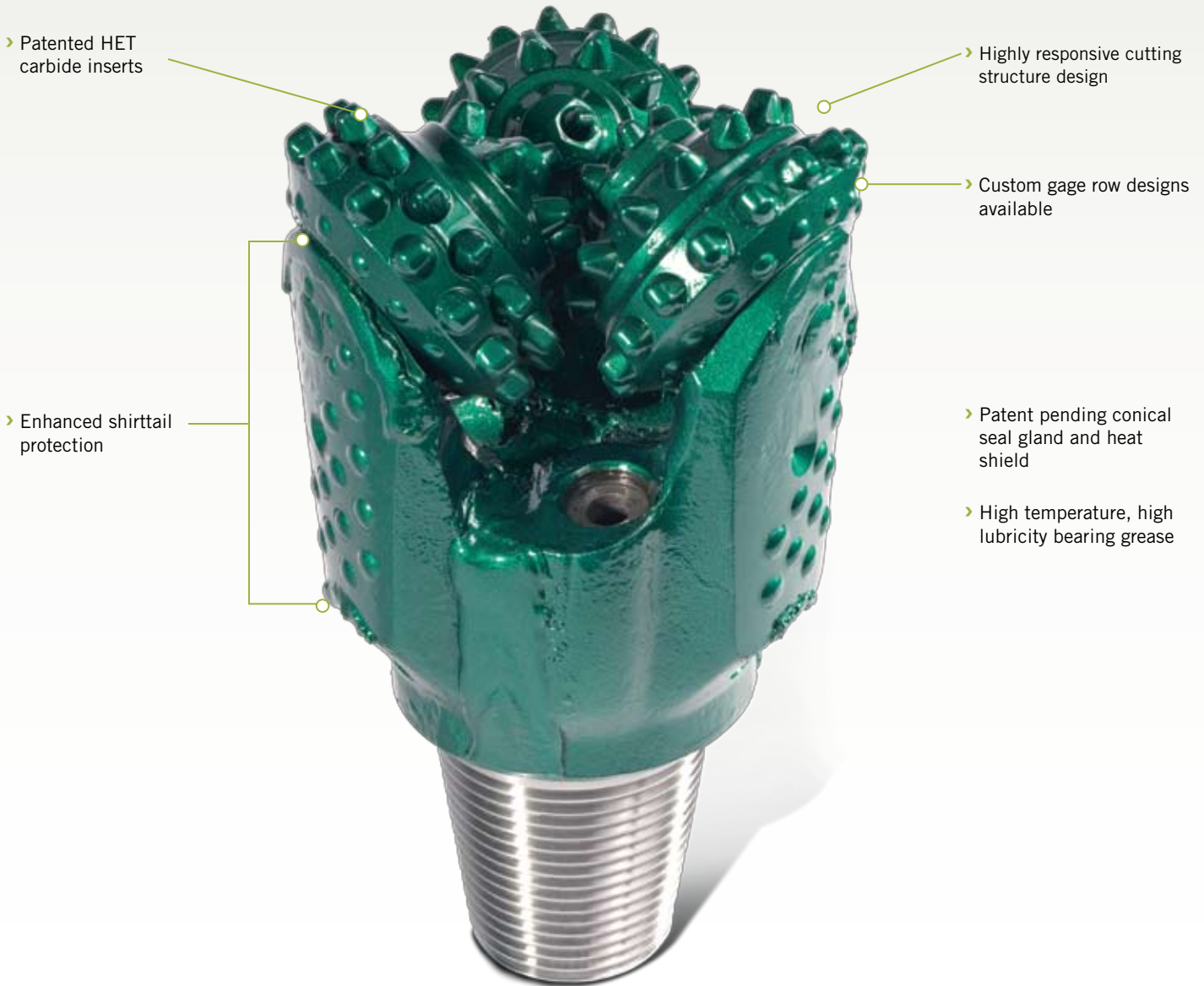
*View of the internal bearing structure. The advanced bearing metallurgy included in this series provides for a stronger, more stable bearing surface.*



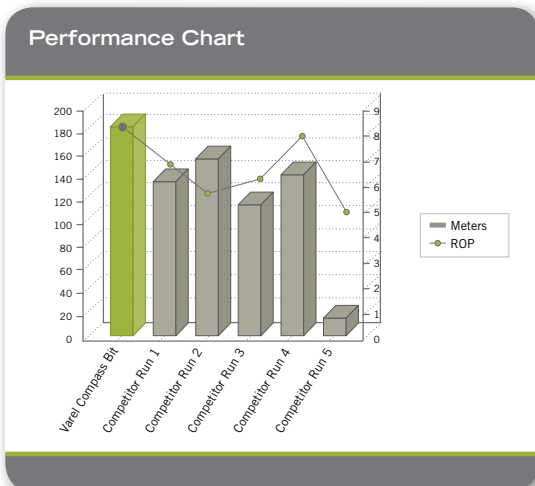
*High capacity grease reservoir improves lubrication within the bearing.*



*Heat shield ring with a conical seal gland helps prevent thermal degradation of the seal.*



6-1/4" CM24MRS



Through extensive field tests, Compass series bits have proved highly effective across the spectrum of slimhole operations. Available in sizes ranging from 3-3/4" to 7-3/8," the smaller diameter tungsten carbide insert bits meet the extreme demands of slimhole applications.

In one slimhole application for a major operator in Western Canada, a 158.7mm Compass bit was challenged to increase meters drilled while maintaining an acceptable rate of penetration (ROP). This application requires the bit to pass through increasingly hard formations including the abrasive, sharp sands of the Cadomin/Nikanassin formations. Varel supplied the operator with the Compass CM44DMRS bit, which is equipped with a diamond enhanced back row, as well as leading edge shirrtail inserts and stabilization inserts. The bit successfully drilled 180 meters, down to 1985 meters depth. This performance netted a 19.4 percent improvement in meters drilled when compared to the closest competitor offset. Using this same competitor offset, a 31 percent improvement in ROP was realized.

**Compass**   
SERIES™



**VAREL**  
INTERNATIONAL

**World Headquarters**

**Dallas, Texas USA**

Tel: 1.800.827.3526

Tel: +1.972.242.1160

Fax: +1.972.242.8770

[info@varelintl.com](mailto:info@varelintl.com)