

Sandvik RT300-series large threaded bits

New threaded bits for bench drilling and underground long-hole drilling



All RT300 bits have the new *Uniface* front design, combining the benefits from both the former Drop-Center and Flat-Face designs.



The new Sandvik RT300 bit range is designed for surface bench drilling and underground long-hole drilling.

Tailored rock drilling tools for all major threads

As a rock drilling professional, you are already using a highly advanced and powerful drill rig to secure your drilling performance. To gain maximum return on your capital investment, Sandvik's tailored rock drilling tools up front will capitalize fully on your potential.

The new *RT300* bits in larger dimensions for surface bench drilling and underground long-hole drilling will be launched step by step, starting with the bit range of *GT60* threads to be followed by the bit range of *T51*, *T45*, *T38*, *T35* and *R32*.

Unique in-house R&D and manufacturing facilities

Sandvik's R&D engineers consistently upgrade our tool systems using unique in-house R&D and manufacturing facilities for tailoring the steel and the cemented carbides. We have all the resources required to respond to market demands and adapt the products to provide new, profitable solutions for rock drilling professionals. Advanced CAD/CAM and FEM analyses provide the ability to simulate the application of our designs long before the solution even touches rock.

XT48 cemented carbide offers better resistance to side-forces

Overloading is the essential factor behind button failure. With standard Sandvik drill bits, damage from frontal overloading is rare. However, shear stresses generated by side-forces cause most damage. In this context side-forces

are normally not substantial in hard, competent rock. But as soon as the drill string reaches a crack or fracture, the distribution of load on the drill bit becomes irregular and erratic. Only part of the bit face is loaded reactively by the rock, while shear stresses stem from just one or two jagged areas on the periphery of the hole, changing continually. Naturally, this causes uneven loading of the gauge buttons, resulting in imbalance and acute overloading.

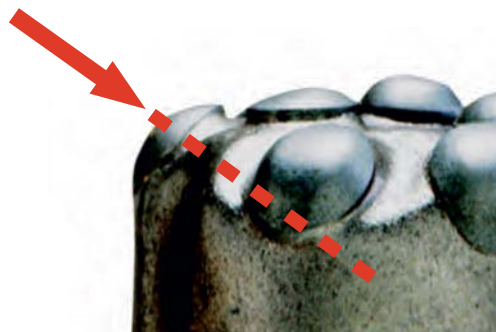
With new manufacturing techniques, Sandvik *XT48* cemented carbide has gained greater density and a more homogenous structure. Toughness has been increased without compromising the exceedingly high wear resistance – making the material stronger, but not sacrificing its hardness.

Excellent performance

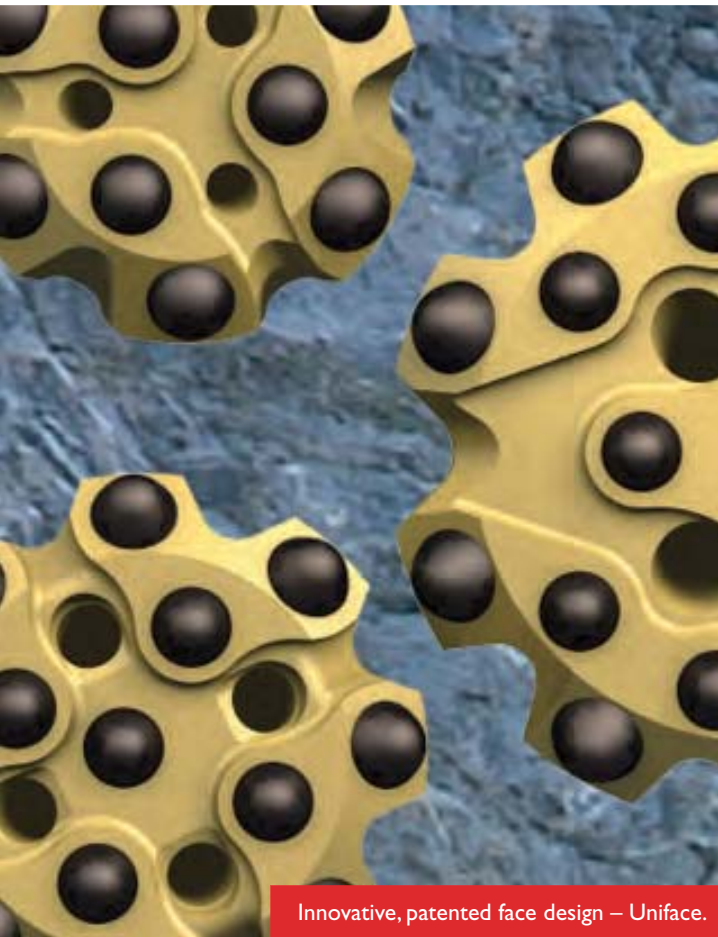
Another factor is uneven gauge-wear when drilling in abrasive rock. Especially in these conditions the *RT300* drill bit series dramatically outperform all other bits. Wear-resistance is assured and breakage resistance strengthened by the extra toughness of the cemented carbide. Hole straightness, high penetration rates and long service lives are assured by the unique Uniface and Retrac designs. After using the Sandvik *RT300* bits, one of the world's biggest base-metal underground mines – long troubled by button breakage – saw a twofold increase in bit service life compared with previously used grades. Stoppages are down, productivity is up and bit costs have been halved.



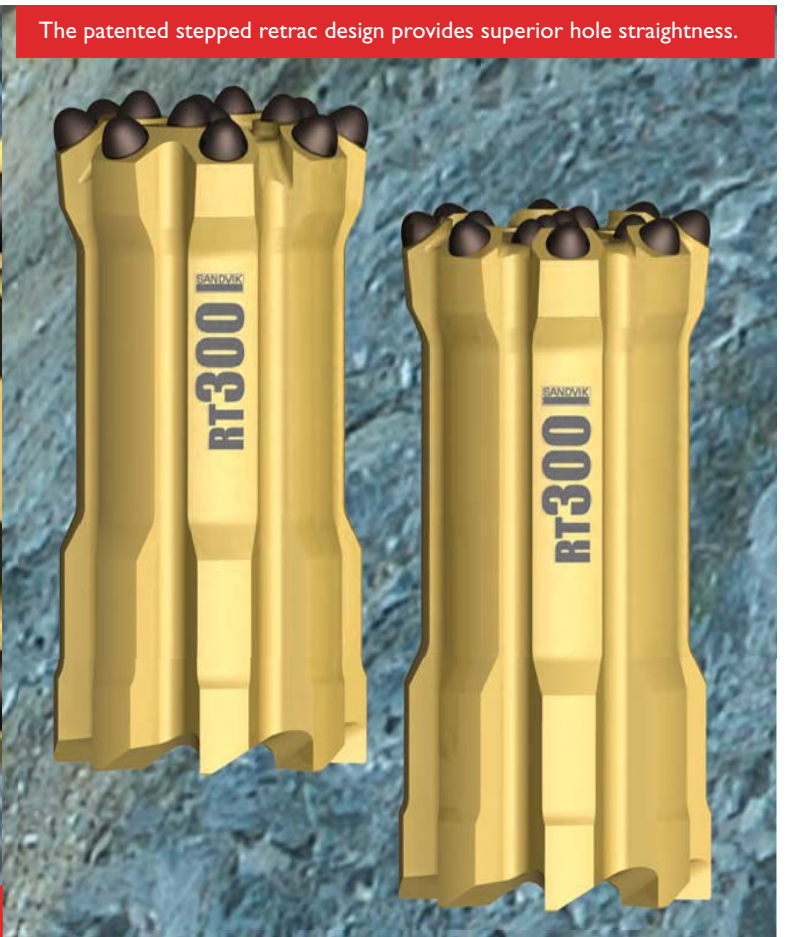
The gauge buttons of a new drill bit are exposed to axial forces. Sandvik's former cemented carbides have always been able to handle that type of load with minimal risk of breakage.



When the bit wears, the load angle changes and the risk for button breakage increases. The *XT48* cemented carbide has significantly higher resistance to that type of failure.



Innovative, patented face design – Uniface.



The patented stepped retrace design provides superior hole straightness.



Sandvik RT300 bit range – for any application and rock formation.

Designed to last

With the introduction of the *RT300* series of *small* bits for drifting and tunneling, Sandvik presented the optimum cemented carbide (called grade *XT48* – XT for Extra Tough) for drilling in a wide range of rock conditions. The *XT48* cemented carbide is now incorporated into the new larger bits for surface bench drilling and underground long-hole drilling. The new *RT300* bits are available for hole diameters from Ø51 to 152 mm (2" to 6").

To help our customers meet all rock formation contingencies (as well as simplifying worksite logistics) the bits come in specific design combinations. Variables include the type of button insert (full spherical or robust ballistic) and the type of skirt (regular or retrac).

Uniface – the new innovative front design

All the new bits have an innovative, patented face design that combines the former flat-face and drop-center to form a single universal design. Compared with traditional designs, the new Uniface offers superior rock crushing properties, more efficient flushing properties and improved distribution of energy to crush the rock.

The patented stepped retrac design provides superior hole straightness throughout the entire service life of the bit, thanks to the uniform wear on the front and skirt diameters. Combined with superior flushing properties,

this extends the grinding intervals and service life. Additional advantages are smoother drilling and less vibrations and stress reflections in the drill string.

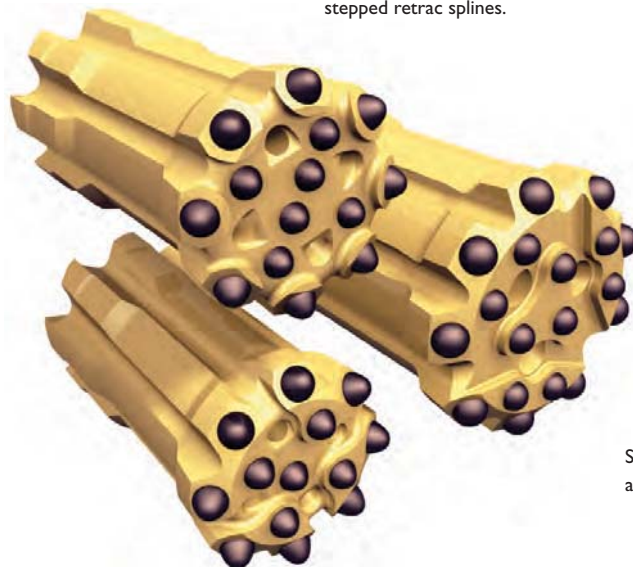
Simpler drilling, higher earnings

Born to be completely and uniformly worn out, the new *large* Sandvik *RT300* bits perform superbly in almost any rock conditions, especially in those where button breakage was previously a problem, one can still expect up to 20 percent longer bit service life. The tailored metallurgical properties of the Sandvik *XT48* cemented carbide buttons, their precision manufacture and the R&D programs used for their development, plus the numerous field tests to perfect them, complete a worldwide success – the Sandvik *RT300* bit series.

The drill bit is the spearhead of production. When it fails, the expensive drill rig is the first to fall idle, resulting in costly effects all the way up the production chain. With Sandvik *RT300s* up front, top production performance can be obtained with:

- *Extended bit life*
- *Higher productivity*
- *Less downtime*
- *Fewer bits in circulation*
- *Reduced drilling costs*

A Sandvik *RT300* Guide bit with stepped retrac splines.



Sandvik *RT300* Retrac bits with new faces and stepped retrac splines.

