Tyrolit's dry drilling system

mobile device hardware platform with an Android operating system.

The remote screen will be available as an optional extra for the Dino DC400Ri this year. The system is currently being field tested by selected customers that applied for the remote screen beta-test programme earlier this year.

Andreas Gundersen from Vestfold Fjellboring in Norway was the one of the first to try out latest drill rig technology when his employer bought its first compact Dino DC400Ri rig.

This was used for site clearance work among the rocky outcrops of a building project beside a fjord in southern Norway.

Within hours of starting to work with the combination of the Dino and the remote screen, Gundersen, an experienced rig operator, was finding new ways to perform many of the tasks needing to be done on the busy site better. He realised that many tasks could be done in parallel, including such activities as marking-up the next drill holes, planning and grinding bits, all while the Dino was drilling.

These were accomplished as Gundersen was using the remote small screen to monitor the rigs performance safely as he moved around.

To provide new and enhanced remote control capability to help drilling rig operators, Sandvik has created an app that is installed on an ordinary Android phone. The rig operator can click the phone into place on a mobile grip, itself locked to the operation console hanging from the shoulder, and then tap the app and the remote screen is ready to go.

Sandvik said that as the operator moved around, choosing to be either close to or far from the Dino DC400Ri, the operator received the same key drilling data to read on the phone screen as standing by the rig.

HIGH TORQUE

New drilling products from Wimmer feature high torque, large bore diameter and the use of in-hole hammer drills.

Among the drilling units launched recently by the Austrian-based manufacturer are the patented AB2300 Drill & Split rig. It is described as a tailormade high-performance drilling unit with automatic split mechanism.

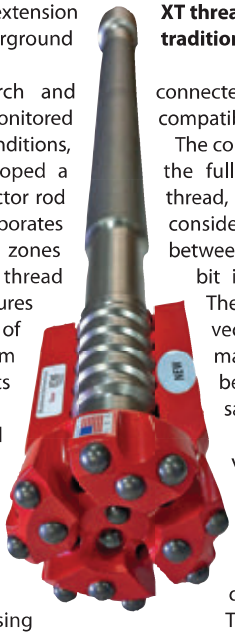
It is equipped with a Darda splitter, and is described as a perfect interaction of drilling and splitting, specially developed for quarries. It features 360° endless rotation, as well as a 90° tilt function.

The AB2300 also has a no load stroke system, hollow protection and an anti-jamming system. With a smooth drill start, it is fully radio remote controlled, with drilling functions proportionally controlled.

Rockmore International has introduced a new vector rod system which is said to be a major breakthrough in improving performance and service life of extension drill tools in surface and underground percussive drilling applications.

After several years of research and development followed up by monitored field tests in various ground conditions, Rockmore engineers have developed a new thread design, XT, for the vector rod system. The new XT design incorporates new guided cylindrical contact zones between the male and female thread joints. These guided surface features are located in the nose and rear of the thread connections and claim various benefits and improvements over traditional threads.

The XT thread profile is based on the traditional trapezoidal T thread design and is, therefore, compatible with industry standard thread types such as T38, T45 and T51. Rockmore said that while they could be interchanged and connected using standard T-style threaded components with the new XT thread, the new advantages would be neglected. For example, it said, a T45 threaded bit or shank adapter could be connected to a XT45 threaded rod with full compatibility.



XT thread profile is based on the traditional trapezoidal T thread design

The company said that in order to achieve the full engineered benefits of the XT thread, however, the drill string should be considered as a system of connections between the shank adapter, rods and the bit in extension drilling applications.

The XT thread design used in the vector rod system is said to enable many performance and reliability benefits leading to major overall cost savings in the drilling cycle.

Pejman Eghdami, executive vice president of Rockmore International, said, "We specifically targeted to increase thread service life while enhancing drilling performance in extension drilling applications."

The dual cylindrical contact zones in the nose and rear of the XT threads are said to increase significantly the lateral support between thread joints, and stabilise the connections with more rigidity to provide better energy transfer. >

The LB24 at work in Paris

Liebherr in Paris

Close to the city centre of Paris, France, a Liebherr LB 24 rotary drilling rig is being used by the Bouygues construction company for the erection of a new apartment building.

In the business district La Défense, located west of the inner city, an 18-storey building housing both apartments and a school is being constructed. As the new building complex is situated directly beside a track of the Parisian rapid transit system RER, a subway is also being built.

A Liebherr LB 24 rotary drilling rig belonging to Franki Fondation Groupe Fayat was used for laying the foundation. The LB 24 installed piles of up to 30m and a diameter of approximately 1,500mm, using the Kelly drilling method. Beams of 2m in width, 4m in height and 20m in length are now being placed on these piles.

The LB 24 belongs to the LB series of Liebherr rotary drilling rigs. With a total weight of 76 tonnes, it is equipped with a 270kW diesel engine. A special technical benefit of the LB 24 is said to be its rope crowd system with a push-and-pull force of 20 tonnes.

Eghdami said that the enhanced thread support and geometry extended thread life and increased the overall component service life of the shank adapters, rods, and bits with XT threads that comprise the vector rod system.

Because the XT thread guide feature improves thread alignment, the impact duration when rattling rods, as required in uncoupling connections, is minimised, said Rockmore. This leads to lower wasted energy transmission, cooler couplings on rods, and ultimately to longer rod life, it said. Thread grease is also better retained on the thread pitches resulting from the new XT geometry, further increasing thread life in all XT components, it added.

Another key advantage of this rod system over traditional threaded components, according to Rockmore, is providing straighter holes and minimising its deviation, and it added that this was inherently critical in modern drill and blast techniques.

The guided XT thread feature increases the rigidity and stability of the connections between the shank adapters, rods, and bits so significantly that overall rod bending is minimised and hole straightness improved, it said. This improvement allows for larger and deeper blast holes to be achieved using existing rod diameters, but only by converting to XT threaded components, said Rockmore.

Eghdami said, "As a major breakthrough for extension drilling systems, we have significantly improved drilling productivity and increased drill string lifetime by introducing new design features in the XT thread configuration.

"And just as important, the new XT design is fully reverse compatible with industry standard T-style threads, enabling the vector rod system to be truly remarkable, yet a practical choice for premium drilling tools."

DRY DRILLING

Last year, Austrian-based Tyrolit introduced what it claimed was the world's first solution for easy, cost-effective dry drilling of reinforced concrete.

The dry drilling system consists of the DME19DP*** drill motor with soft impact function and TGD dry drill bits that have been specially developed for dry drilling.

Tyrolit said the new dry drill bits featuring TGD technology were vital to the success of the drilling process for reinforced concrete, setting new standards with their intelligent distribution of the diamonds.

Product manager Sergiy Avramenko said, "Our TGD dry drill bits have proved their worth in a variety of situations, including decommissioning nuclear power plants. We're not at all surprised that our customers on smaller construction sites also achieved excellent results."

The company claimed that unlike other methods on the market, the new system did not need accessories such as air compressors. In addition, any conventional dry vacuum cleaner can be attached to the integrated vacuum cleaner connection.

The drilling system can be operated as a handheld tool or mounted on the DRU160*** drill rig.

General Equipment Company has launched a new M235 two-man hole digger, saying the new model was well suited for a range of hole digging applications in various soil types.

The M235 features new polymeric Gen 2 Comfort-Flex operator handle technology with integrated flex-type handle grips, which the company said took the next step in absorbing torque-related kickback forces and damping machine vibrations.

It said operators would benefit from the reduced physical stress, strain and fatigue normally experienced when digging holes. It is also a lighter weight, more compact unit – 30% lighter than other General two-man hole digger models.

The newly-designed, heavy-duty, oil-cooled transmission includes a centrifugal all-metal clutch and machine-cut spur gears with a >

General Equipment Company's new M235 two-man hole digger

Atlas Copco offers flexibility

According to Atlas Copco, the growing number of geothermal drilling applications in the world today are forcing the drilling industry to rethink operational practices that were previously set in stone.

Dmitry Karablinov, product marketing manager at Atlas Copco Portable Energy, said the accepted norm for operating pressure had settled at 25 bar, which was perfectly acceptable for water well drilling where average wells are between 100m and 150m in depth and most jobs could be completed in a single day.

However, geothermal drilling applications require companies to make two holes in one location. Unlike water well applications, geothermal drilling is happening far below the water table level, where back pressure slows down the drilling process.

He said the emergence of 35 bar compressors had allowed operators to finish the job in one day and move on to another location the next day.

"Simply speaking," he said, "an extra 10 bar can allow you to drill deeper below the water table. This is important for geothermal, coal bed methane and exploration drilling, where you need to drill faster and operational efficiency has utmost importance. These are major considerations when the drilling depth exceeds 150m, and when drilling is occurring against a high water table."

He said that it did not make sense to buy a drilling machine that only worked at 35 bar, but the introduction of flow and pressure regulating in Atlas Copco's Y35 allowed users to customise options to the needs of the application.

"This advanced compressor can be set to drill at 25 bar or even as low as 15 bar, and produce a much higher flow rate compared to 35 bar, depending on the application."

The Y35 allows customisation