

CONSTRUCTION europe

A large red CNH industrial drilling rig is the central focus of the image. It is positioned on a rocky, uneven terrain, likely a construction or mining site. The rig's long, articulated arm extends upwards and then down towards the ground, where it is equipped with a drilling mechanism. Two large, flexible black hoses are connected to the rig, snaking across the ground. In the background, a dense forest of tall evergreen trees stands under a blue sky with scattered white clouds. The overall scene conveys a sense of heavy industrial work in a natural environment.

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the hole. To operate, the system is simply connected in-line with the air compressor and uses the flushing air to power the water injection pump.

HAND-HELD ALTERNATIVE

Hand-held drills are still important, on construction sites, at roadworks or for quarrying and mining applications.

The traditional pneumatic rock drill has been the standard for decades, but Hycon has developed a hydraulic alternative, the HRD 30 Rock Drill, available from August this year.

Hycon says the new drill offers enhanced precision, performance and power, as well as the benefit of lower emissions. However, it could be the ease of transport that attracts contractors and rental companies to the hydraulic solution.

Hycon CEO Martin Møller says, "Conventional rock drills require large and heavy compressors to operate them. These compressors can only

Hycon has developed a hydraulic alternative to the hand-held pneumatic rock drill, the HRD 30 rock drill



be towed, so if you also need to take a excavator to the worksite, you'll most likely need to make two trips. Using hydraulics, you can transport a compact power pack in the truck, or even use the excavator's own hydraulics to work the drill."

In developing the new drill, Hycon made minor modifications to its hydraulic saw motor, adding an air-driven flushing system for removing debris from the drill hole. The tool's built-in compressor delivers high airflow at low pressure.

Hycon says the HRD 30 is ideally suited to drilling deep and large-diameter anchoring holes, as well as blast or splitting holes, measuring between 25 mm and 50 mm.

The company says its precision drilling makes it suitable for non-dynamite destruction solutions, such as expanding smoke cartridges or an expanding cracking agent (Bentonamit).

Møller says, "In Sweden, one of the testing contractors was able to create nicely rounded holes that were very straight and far closer to the desired tolerance than a pneumatic drill can achieve. If you're putting in an anchor bolt for a power mast, for example, you really need that sort of accuracy."

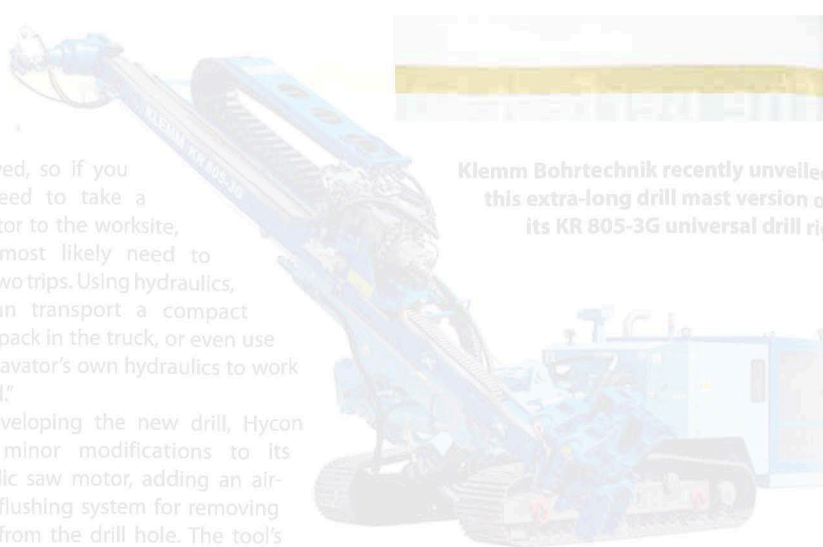
As a ready-to-operate package, Hycon says the new HRD 30 rock drill is particularly suited to utility roadworks such as traffic signage, barrier erection or gas detection. The low weight of the drill and power pack offer benefits in the erection of power masts or antennas on mountaintops, negating the need to potentially airlift in a heavy air compressor.

TOOLS AND TECHNIQUES

Klemm Bohrtechnik – part of the Bauer Group – recently unveiled the extra-long drill mast version of its KR 805-3G universal drill rig, specifically developed for applications such as soil nails, augers or casings for drill depths of up to 6 m, using the single-pass method.

With an optional swivel magazine, Klemm

Klemm Bohrtechnik recently unveiled this extra-long drill mast version of its KR 805-3G universal drill rig



says the drill depth can be extended by a further 6 m without the need for manual reloading. The drill string magazine can also be adjusted to drill tools with a usable length of 3 m, using flexible positioning of the upper grab system. In this way, the magazine can hold drill tools with a diameter of up to 150 mm and 6 m or 3 m in length.

The rotary drives and hydraulic hammer are matched to the drill rig and drives are operated with a system pressure of 310 bar.

The kinematics enable the mast to reach drill points perpendicular to the crawlers at angle: between 0° and 90°. The mast can also be positioned to drill vertically beside the tracks.

With the drill mast, Klemm says it is possible to reach drill points up to a height of approximately 4500 mm, which is an advantage in slope stabilisation work.

The rig has a 129 kW Volvo Penta diesel engine, which complies with EEC 97/68 EC Stage 4 regulations.

The hydraulic system operates with two load-sensing main pumps, each with a displacement of 190 litres/min and a pressure level of 350 bar. The optimum power level is automatically adjusted by the Energy Efficient Power System (EEP), and Klemm says fuel consumption is reduced by up to 25% compared with machines of the same power class without EEP system.



A Tiger on the Paris Express

French company Sefi-Intrafor, part of the Fayat Group, is currently undertaking foundation work ahead of construction on the new metro station of Saint-Denis Pleyel in Paris.

The station is one of the first on the forthcoming 16 Line – part of the Grand Paris Express project.

The Sefi-Intrafor is using a Soilmec hydromill SC-135 Tiger to excavate diaphragm wall panels with a thickness of 1.8 m and a depth of 55 m.

The technology onboard the SC-135 includes advanced contaminant protection for its hydraulic system, 90° module rotation and high-precision verticality control, as well as data production via a DMS control system.

The machine's safety enhancements include an anti-falling system, handrails, ladders and lashing points, while the modular design of the equipment allows for easy and safe maintenance and assembly.

The Tiger's drilling mate system (DMS) allows for real-time monitoring of operating parameters and the production process, with a dual-axis positioning sensor (or optional triple-axis version) controlling the geometry of the panel, with 2D and 3D graphics print outs.

The Soilmec SC-135 Tiger at work on the new Saint-Denis Pleyel metro station in Paris

The Soilmec SM-22 is an evolution of the PSM-1350 and SM-20 models



Solid upgrades from Soilmec

Soilmec has introduced several innovations and range upgrades for various of its technologies, including large diameter piles, micropiles and hydromills.

With the SR125 High Tech platform, customers can choose a model and then create the rig that best suits their needs.

Four different models built on the same base machine are said to satisfy most industry through a plug-and-play system.

The Soilmec SM-22 is an evolution of the PSM-1350 and SM-20 models that have sold more than 300 units worldwide, and are said to have been completely redesigned to ensure high efficiency and productivity levels on site, together with the highest safety standards.

Soilmec also recently revealed its new Tiger SC-135 hydromill.

The company said its tried and tested technology has been further refined and it now offers some of the most advanced equipment currently on the market.

Liebherr drill rig goes electric

New all-electric LB 16 rig promises no loss of performance compared with predecessors, plus noise reduction and local zero emissions

Liebherr has launched the world's first battery-powered drilling rig.

The LB 16 Unplugged has an electro-hydraulic and battery mode, which the company says will benefit customers through a combination of efficiency and local zero emissions.

The deep foundation machine has a maximum drilling diameter of 1,500 mm, a maximum drilling depth of 34.5 m and an operating weight of 55 tonnes – equivalent to its diesel predecessor.

The LB 16's electric engine generates an output of 265 kW of power, and the rig's battery is designed to last throughout a 10-hour working day, delivering 180 kN/m of torque, before being recharged via a conventional jobsite electricity supply. Liebherr says the battery can also be fast-charged via a 125 A supply in as little as seven hours.

Liebherr says the new rig is ideal for working in urban environments.

Wolfgang Pfister, Liebherr's

head of strategic marketing and communication, said, "Drilling rig operation is one of the most powerful operations construction machines can have. This battery charge is the equivalent of a typical electric car running for 3,000km on a charge."

"Once charged, the machine can run through ten hours of continuous operation; not only under perfect conditions, but in typical heavy-duty working conditions."

The rig's local zero emissions benefits the environment, and also means a reduction in the machine's noise – of increasing importance due to increasingly strict regulations for operations in urban environments.

The LB 16's new technology also includes a ground pressure visualisation system, which calculates the rig's situation in relation to ground pressure data in real time, relaying it to the cab and alerting the operator when the drilling rig is approaching a critical area.

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Liebherr's LB 16 Unplugged drill rig is designed to last throughout a 10-hour working day



New mobile crane from Kato

Japanese manufacturer Kato Cranes has launched a 100-tonne capacity all terrain mobile wheeled crane, the KA-1000RX.

The crane is on four axles and has a 51.3 m six section pinned boom. Extra length is provided by an 8.8 to 20.4 m hydraulic telescoping jib. It is claimed as the longest fly jib in its class.

The KA-1000RX is a single engine design, with a 320 kW Stage IV Daimler OM470LA diesel driving a six-speed Allison 4000SP-R transmission and it runs on Kessler axles.

Included are Knorr-Bremse air disc brakes with Wabco ABS and an option is a tyre pressure monitoring system.

Outriggers are controlled with a radio remote and the operating cabin tilts to give a better view of the load.



Kato CR-250RV

