

CONSTRUCTION europe

THE MAGAZINE FOR EUROPE'S CONSTRUCTION INDUSTRY

www.construction-europe.com

A KHL Group publication

June 2012

Volume 23 Number 5

A red excavator bucket is shown in the process of dumping a large quantity of crushed material, likely aggregate or recycled concrete, into a large pile. The excavator's arm and bucket are the central focus, with the material falling in a thick stream. The background shows a clear blue sky and some industrial structures.

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Right for the job

New drilling technology is appearing all the time, and making the correct choices is important – no matter which area of drilling that technology is required for. Sandy Guthrie investigates.

Improvements in drilling technology are aimed at producing better, faster, easier-to-maintain equipment that increases uptime and makes the jobsite more efficient, according to Randy Stevens, vice president of sales at US-based E-Z Drill.

He said that professionals in the concrete paving industry, for example, had seen significant changes to their dowel drilling equipment over the years.

"Many years ago, only one option existed – hand-held models," he said. "When the first machine, a hydraulic drill, was launched more than 30 years ago, it was the first time the industry had seen innovation and advancement come to the equipment. Higher production was possible, and less manual, back-breaking labour required."

He said that at the time, hydraulic drills had been a step in the right direction, but they were accompanied by many drawbacks, including the need for additional equipment not necessarily common to the jobsite, the risk of hydraulic fluid spills, and maintenance protocols that were time consuming and costly.

"Within a short time, a third option became available to address these concerns. Pneumatic drill systems have since emerged as the equipment of choice, essentially becoming the industry standard," he said.

Drills are now offered in various styles within the category of pneumatics, differing in operation, production capabilities, and more.

He said that rather than a matter of personal preference, drill selection should be down to one primary factor – application.

"All characteristics of the job must be considered. Naturally, a major factor is how many total holes are to be drilled. Combine that with outside factors such as conditions, deadlines and expected production rate and

Soilmec's SM-28 is the largest in its range.



you begin to get the complete picture."

He said that while basic jobsite conditions would be a major factor and help narrow the choice down, that alone was not enough to make the selection.

"When the final choice is to be made," said Mr Stevens, "one remaining factor needs to be considered. While selecting the proper unit does ultimately boil down to the application on which it will be used, it's important to approach the decision with the big picture in mind. Consider, not just the job at hand, but the primary type of work the company or agency does. A drill is an investment, not a throw-away item, so be sure it's going to fit the company long-term, not just a single project."

HEAVY DUTY RIG

New products and technology are being introduced constantly in many areas of drilling technology. For example, Italian company Soilmec has introduced a heavy duty microdrilling rig – the SM-28, which is the largest in its range. It claimed that as a result of previous studies and models, it

was possible to provide a rig with "the best performance and flexibility with minimum operating costs".

The company said the use of the powerful Cummins QSB 6.7 diesel engine with 194kW rated power, the range of high performance rotaries of up to 33kNm maximum torque, high quality components and advanced circuit design enabled Soilmec to increase performance under extreme conditions.

There is a telescopic zoom with mast tilting +/-18° using a short mast, or +/-10° with a long mast, and ground telescopic stabilisers – two at the front and two at the rear – to increase stability.

In addition, the SM-28 can be radio-controlled either in the set up or drilling phase. The rig, equipped with up to 430mm size clamp and breaker, can reach 17,500kN hoist pull, 8,750kN feed force and 6,000mm maximum stroke.

Soilmec said the rig versatility was further demonstrated by the jet grouting version which is available. It has a rod diameter up to 114mm and 34m maximum treatment depth.

DRILLING

A multi-gang option from E-Z Drill could be the right choice for a job.

It added that its SM-10 multipurpose drilling rig had been developed through a synergy between parent company Trevi Group's job-site experience and Soilmec technological research.

This rig is powered by 129kW diesel engine and can be supplied with a large range of rotary heads up to 1,300daNm torque value for high drilling capacity. Double rotary is also available.

For underground mine and tunnel expansion projects, Atlas Copco claims that production targets will be hit sooner with a new Atlas Copco Boomer E1 C-DH face drilling rig.

The single-boom, diesel-hydraulic multipurpose unit is specifically designed for mines or construction sites lacking water and electrical infrastructure. The Boomer E1 C-DH comes with dual onboard 450 litre water tanks and a 6-cylinder, 173kW Deutz diesel engine to drive the rig, its boom and the drill's hydraulic pumps.

The new Boomer E1 C-DH rig claims to be one of the largest diesel-hydraulic face-drilling rigs on the market, with a coverage area of up to 95m². This is a 38% improvement over its predecessor, the Boomer L1 C-DH drill rig, said Atlas Copco.

GETTING AHEAD OF SCHEDULES

Johan Jonsson, product manager for Atlas Copco Underground Rock Excavation, said the new rig provided particular advantages in the field.

"In the case of a new project, the Atlas Copco Boomer E1 C-DH drill rig can be used to get started even before water and electricity are installed at the job site," he said. "Mines begin earning sooner, and contractors are able to get ahead on their schedules."

Jonsson also pointed to the new drill rig's advantages in widening existing tunnels or adding bolts in older workings, as it is not necessary to install power and water infrastructure to support the rig on-site.

The new drill rig is also said to contribute



to more economical use of a fleet's resources. The Boomer E1 C-DH rig is able to handle small construction jobs more efficiently than larger rigs, said Atlas Copco, and is compact and manoeuvrable enough to get the job done in tight spaces.

The multipurpose capabilities of the new rig are enhanced with the addition of the optional basket attachment. This allows the Boomer E1 C-DH rig to be used as a bolting rig and as a utility rig for drilling holes and installing ventilation ducting, among other tasks.

The Boomer E1 C-DH drill rig comes standard with Atlas Copco's Rig Control System (RCS) with the option to upgrade to a higher degree of automation. Jonsson said, "As a member of the Atlas Copco Boomer E-series of face-drilling rigs, the new rig has access to the wide range of existing options for that established product family," which he said he believed to be another important consideration for those in the market for a large diesel-hydraulic rig.

The Boomer E1C-DH was developed together with the

Scandinavian contractor Veidekke, based on its request for a diesel hydraulic driven rig with large coverage area combined with a service basket.

Atlas Copco has also released a smart phone/tablet app from its underground rock excavation division. By downloading its app free of charge, users will be able to get access to details of the company's wide range of underground face drilling rigs, loaders, trucks and other equipment.

The exclusive content in the app includes high resolution images of the products presented as 3D turntables, which enables the products to be viewed from all angles. In addition, all of the content can be



The new app from Atlas Copco includes details of the company's range.



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