



Handling it well

The demand for automatic handling systems to improve operation safety is one of the main trends within the drilling industry in recent years. One of the latest developments in this direction comes from Comacchio

Earlier this year the Italian manufacturer launched the new MC 22 drill rig version featuring an innovative hydraulic rod-and-casing carousel.

The carousel was designed specifically to allow the handling of single rods for open-hole drilling and the combination of rods and casing for overburden drilling. The construction of the carousel includes a hydraulic gripper system and a rotating magazine.

The hydraulic gripper moves on a special track parallel to the mast so it can position the tubes during loading and unloading.

When the drilling and grouting

are completed, the carousel remains fully loaded and ready for the next borehole, without requiring manual handling of the drilling tools. The carousel allows for the use of a range of possible rod and casing diameters from 45mm to 178mm, and is suitable for drilling tools with a length up to 3m. No adjustment of the gripper system is required when changing from one diameter to the other. The magazine can accommodate seven pairs of rods and casings.

The unit also features a special slot on the side of the mast for the parking of the starting rod, when the operating conditions

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shafts (bored piles) by cross-hole sonic logging. Versus previous models, it has a cleaner, tablet-like look, a larger screen and significantly more memory.

CHAMP-XV has four USB ports, making data transfer more convenient and operates on Windows 7. Reprogrammed tomography analysis software (SLICE) is also scheduled for release in the near future. ▼



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An MC 22 drill rig shown with the carousel working with both rods and casing

“The first to experience the advantages of this machine were the US clients of Comacchio”

require that the borehole should be free for the insertion of the anchor bars or strands, or any other reinforcement.

“The system offers advantages in terms of increased safety standards on site and productivity,” explains Flavio Durigan, sales manager at Comacchio. “It eliminates the risks related to manual handling of the drilling equipment. Moreover, thanks to the Comacchio radio-control system, the MC 22 A is completely radio-controlled. A single operator can not only manage the tramping, drilling and machine set-up from his control panel, but also operate the hydraulic rod-and-casing carousel. This simplifies his work and speeds up production, while also offering enhanced security due to the ability to work at a distance from the machine, while maintaining complete vision of the machine in movement and the surrounding area.



“The MC 22 A can be used for vertical drilling, but it’s on anchor-drilling job sites that the benefits of this system are especially evident, as adding and removing rods and casing in an inclined position is a much more difficult and risky operation. Many clients use auxiliary equipment and/or additional personnel for the handling of the drilling tools in such cases. With the MC 22 A, no additional equipment is

required, and the entire work cycle can be performed by one person, instead of two or three.”

FIRST CASE

The first to experience the advantages of this machine were the US clients of Comacchio. The West Coast-based foundation contractor Case Pacific implemented the rod-and-casing carousel to install tiebacks required for a part of the founda-



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tion work at a large construction project in Cupertino, California.

A total of four Comacchio machines were involved in the project, which required using different drilling techniques, due to the very challenging operating conditions.

According to Comacchio's dealer Hammer & Steel, throughout the works Case Pacific experienced varying degrees of drilling difficulty related to soil conditions. Once drilling began, the work was accomplished by open-hole drilling with drag bits and 90mm rods in sandy/clay material, flushing with air. However, as the project developed, more clay was encountered, and Case Pacific was forced to switch to drilling with augers.

Further on, more gravel was encountered, and the contractor switched to cased holes to eliminate risk of hole collapse.

The MC 22A with dual carousel made the difference in this



Here, the Comacchio carousel is only handling rods

particular phase of the project. It allowed Case Pacific to drill cased holes with one operator.

Also, the rig allowed the contractor to drill daily to depths of up to 1,200ft (366m), which was critical for a job of this scale, as some walls have tiebacks 13 rows tall.

The environmental characteristics of the machine were also a key factor: since this project is being certified LEED (Leadership

in Energy and Environmental Design), the most widely used green building rating system in the US, all equipment used on the job site is required to run Tier 4i engines. Powered by a Cummins QSB 6.7 Tier 4i engine, the MC 22 A high-tech line, as well as the other Comacchio machines involved in the project, complies with the latest emission standards and was a good match for this type of job.♥

“The MC 22A with dual carousel made the difference in this particular phase of the project”

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