

LB 44 Rotary Drilling Rig expands Liebherr's range of Deep Foundation Machines

March 2014 – At Conexpo Con/Agg 2014 in Las Vegas (USA), Liebherr is displaying its LB 44 rotary drilling rig. This latest development of the company's deep foundation products expands the LB series at the upper end of the scale. With its many years of experience and extensive know-how in special deep foundation, Liebherr is thus reacting to the need for larger, more powerful machines, taking the toughest demands now placed on rotary drilling rigs into account.

The LB 44 has a weight of approx. 381,000 lb (173 t) and offers a torque of 376,000 lbf-ft (510 kNm). It is thus one of the most powerful drilling rigs currently available on the market. The main advantages of the hydraulic drive manufactured by Liebherr are automated torque adjustment, continuous speed optimization and four electronically adjustable speed ranges. Further advantages of this rotary drive are its simple structure, its low maintenance requirements and, above all, its exceptional efficiency.

In Kelly drilling operation the LB 44 has been designed for drilling diameters of up to 10 ft (3 m) and drilling depths of maximum 302 ft (92 m). It is driven by a V8 diesel engine offering 505 kW / 677 hp and complies with the exhaust certifications stage IIIB / Tier 4i.

At Conexpo Con/Agg 2014 the drilling rig is being shown with continuous flight auger equipment. In maximum configuration with Kelly extension it reaches a depth of 108 ft (33 m) and a drilling diameter of 4.6 ft (1,400 mm). Another possible application of the LB 44 is drilling with double rotary head. Here, the maximum drilling depth is 75 ft (23 m) and the maximum diameter 3.9 ft (1,200 mm).

The powerful rope crowd system with approximately 123,000 lb (56 t) pull force allows utilization of the entire length of the leader. This provides the operator with maximum performance and reliability even with the most difficult soils and extreme operational conditions.

Fast set-up and easy transportation

Distinguishing advantages of the rotary drilling rig are its easy transportation and the short period of time between set-up and operation. As the leader can be folded back for transportation with all hydraulic hoses connected and ropes reeved, no disassembly is required when moving between two jobsites. Subsequently, the LB 44 can be set up rapidly using the quick assembly system - this process barely requires more time than for smaller machines. On a jobsite in Darmstadt, Germany, where the first model of this new series is operating since August 2013, the whole process was completed in only six hours.

If required, the LB 44 can be disassembled into single parts weighing a maximum of 90,000 lb (41 t). Thus, the rotary drilling rig can easily be transported throughout the world.

For the basic design of the drilling rig, Liebherr remains true to its proven principles. This includes a large operating area thanks to parallel kinematics. Another aspect relates to the direct mounting of all winches on the leader. On the one hand, this allows for a direct view from the operator's cab to the main winch and, on the other hand, ensures that the ropes do not move during leader adjustment. The undercarriage provides good stability thanks to long crawlers. Moreover, the uppercarriage provides nearly the same small swing radius as the smaller rigs of the same product line.

The use of many components manufactured by Liebherr guarantees the customer a product of highest quality. This is complemented by the drilling rig's robust design in order to provide a long service life of the new LB 44.

Intelligent software solutions

Like all Liebherr piling and drilling rigs the LB 44 is also fitted with the proven Litronic® control system and thus offers a multitude of program options for the various drilling methods as well as for clearly displayed information on service requirements and the condition of the machine.

The optional LiDAT® data transmission and positioning system provides information on the location and operation of the machines, enabling their efficient management, optimal operation scheduling and remote supervision. With LiDAT®, all the most important machine data can be viewed at any time. Depending on the type of subscription selected, data are updated several times a day and can be accessed at any time using a web browser. Particularly important items of information, such as communications on specific operating conditions and parameters, can also be accessed.

As an option, the LB 44 can be equipped with the PDE® process data recording system and with the PDR process data reporting software. With these two elements, Liebherr offers important software solutions for modern deep foundation applications. The documentation of working processes can thus be improved.

PDE® records and visualizes the process data. Operation and display is carried out via the PDE® color touchscreen in the operator's cab. The PDE® records process data from the Litronic® control system as well as data from external sensors. Depending on the working process the data are interlinked and stored on a CompactFlash memory card together with individually configurable details, such as jobsite name, pile number, date or time.

PDR enables comprehensive data evaluation and report generation on a PC. The recordings generated by the PDE® system can be imported and managed in PDR.

Contact person

Wolfgang Pfister

Phone: +43 50809 41-444

E-mail: Wolfgang.Pfister@Liebherr.com

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www.liebherr.com