

CONSTRUCTION

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Demag® PC 3800-1 Pedestal Crane provides versatility

The new Demag® PC 3800-1 Pedestal Crane offers extended possibilities in lifting performance and lifting abilities. It provides access to jobsites previously not reachable with a standard crawler model. The PC 3800-1 boasts strong load charts, especially with main boom-only configurations, helps reduce ground preparation, and is easy to transport.

Applying the PC 3800-1 can significantly reduce the amount of time needed to prepare a jobsite for crane operation. Typically, crawler cranes require an adequately leveled supporting ground (slope of 0 to 0.3 degrees) over a large area to achieve the nominal lifting capacity — leading to extensive ground preparation before the lift job. In contrast, the PC 3800-1 only needs four spots to be prepared for the outrigger supports, which do not need to be perfectly leveled as the outrigger cylinders can compensate some tolerance on the ground's flatness — up to 2.1 degrees with a 12 x 12 meter outrigger base. On top of this, existing pile foundations can be used as outrigger supports for the PC 3800-1 when providing sufficient stability. This setup makes the equipment especially beneficial on jobsites where ground layout and structure already exist, which is often the case on harbor quays and refineries, as well as when installing bridges from river banks.

The new pedestal crane features hydraulic extendable and foldable outriggers that can be positioned at 12 x 12 meters and 14 x 14 meters with all configurations including Superlift, and 16 x 16 meters without Superlift. It offers additional possibilities for long-reach lifts where the lifting capacity of a crawler crane would nor-



The new Demag® PC 3800-1 Pedestal Crane offers extended possibilities in lifting performance and abilities. (Courtesy: Terex)

mally be limited. The PC 3800-1 also provides increased lifting performance in several configurations or requires less counterweight for the same or slightly higher lifting capacities. Less counterweight means fewer trucks, translating into significantly reduced transportation costs.

For additional versatility, Demag has also developed an adapter to connect the carbody (center pot) of the crane to a self-propelled modular trailer or axle lines. Axle lines are commonly found on jobs involving lifting bridge sections, gantries, or wind-turbine assemblies, which means that the crane can be easily relocated on a jobsite partially rigged, while leveraging the use of axle lines.

Depending on road regulations, the Demag PC 3800-1 equipped with axle lines can be adapted easily to match a 12 metric ton load per axle or to have a cross vehicle weight below 100 metric tons. This can be done with many axle

lines from multiple manufacturers. All a customer would need are axle lines with matching adapters between the carbody (center pot) and axle lines.

Other optional accessories for the Demag PC 3800-1 pedestal crane include a quick connection to un-deck the superstructure from the chassis, and different sizes of outrigger mats.

The PC 3800-1 can be purchased as a complete crane, or the carrier only can be purchased as a retrofit option for the Demag CC 3800-1 crawler crane and its predecessor, Superlift 3800. The quick connection system allows efficient switching between crawlers and pedestal carrier on Demag CC 3800-1 cranes with or without the Superlift, and is compatible with wind-turbine combinations, as well as Boom Booster kits. ↪

Source: Terex

For more information, go to www.terex.com



The project used the CS Recorder, which has DP2 dynamic positioning; the Q1000, a powerful remotely operated vehicle (ROV) jet trenching system; as well as a skilled onshore and offshore engineering team. (Courtesy: Global Marine Group)

CS Recorder completes cable reburial project in three weeks

Global Marine Group (GMG), a leading provider of offshore engineering services to the renewables, telecommunications, and oil and gas industries, announced recently that it has successfully completed a remedial cable burial project for Prinses Amaliawindpark (PAWP), a wind farm off the Netherlands' West Coast. PAWP covers an area of about 14 square kilometers and includes 60 wind turbines connected by eight in-field cable strings that converge at the central offshore high voltage station.

The project, operated by Eneco, (an energy company responsible for generating and supplying sustainable energy originating from wind, heat, biomass, and solar farms) was completed on schedule and in conjunction with operational and safety standards. Upon completion, the customer described the outcome as having met 'superb standards.'

GMG's first project with Eneco has been executed by CWind, which is part of GMG and is responsible for delivering the company's power capabilities. The contract was secured, in part, due to GMG's proven track record of completing complex cable burial projects and to having the trenching equipment already mobilized for rapid deployment. The project used CWind's in-house resources including the CS Recorder, which has DP2 dynamic positioning; the Q1000, a powerful remotely operated

vehicle (ROV) jet trenching system; as well as a skilled onshore and offshore engineering team.

The 28-kilometer shore-connection cable responsible for delivering power to the onshore substation was installed in 2007 and was trenched below the seabed to depths of up to three meters. Natural movement of the seabed in the subsequent 10 years reduced its burial depth. As such, the main objective of the project was to rebury the cable to ensure its protection in commercial waters, and to comply with the site's permit requirements.

"We are extremely pleased with the work carried out for us by the CWind team," said Jeroen Achterberg, Eneco project manager. "With a 100-percent clean safety record and high levels of safety awareness during the reburial project, the results led to the project being completed within schedule and to superb standards."

"Key to the success of the PAWP assignment was our ability to respond quickly to the client's requirements by drawing on available in-house resources and, of course, our wide experience in offshore wind farm engineering," said Lee Andrews, managing director of CWind. "We completed the project in just three weeks with utmost safety and efficiency — great work by all concerned." ↵

Source: Global Marine Group

For more information, go to www.globalmarine.co.uk

Arkona completes electrical offshore substation assembly

Fewer than three weeks after laying the first block, the STX France team has laid the third and last block of the Arkona project (a joint venture of E.ON and Statoil with transmission system operator 50 Hz) electrical offshore substation topside onto the transportation barge in the dry dock of the yard in St.-Nazaire.

In the meantime, the offshore works at the Arkona wind farm site have started with the installation of the four piles of the substation jacket foundation.

The substation is one of the biggest HVAC (high voltage alternating current) substations ever built — 5,000 tons (4,000 tons topside and 1,000 tons jacket), transmitting a total of 385 MW power — and will be delivered in 2018. The project is running according to schedule.

The three blocks of the topside are now assembled on the barge, which will be used for the transport offshore in spring 2018. Equipment installation and commissioning will continue until 2018 on the barge in the dry dock in St.-Nazaire. The jacket fabrication is in progress in a dedicated workshop in Saint-Nazaire.

Recently, with STX and subcontractor SHL, the first part of the offshore installation was in the Baltic Sea. SHL heavy-lift vessel Oleg Strashnov has installed the pile foundation for the jacket. Due to close collaboration of all involved parties, the project is on schedule.

A full EPCIM contract makes STX France one of the major European industrial stakeholders of the energy transition. From the contract award in July 2015 up to the fabrication start, STX France team has carried out the design of Arkona electrical substation. Building of the topside and the jacket has been realized in the offshore-energy dedicated workshop of STX's St.-Nazaire yard. The contract includes the transport, the installation, and one-year maintenance period.

Finally, the biggest single lift for an HVAC substation so far — 4,000 tons — will be carried out next spring. This will be a key achievement in the offshore wind market. ↵

Source: 4C Offshore

For more information, go to www.4coffshore.com



A Connex cast resin joint.
(Courtesy: Pfisterer)

Pfisterer to network EA1 wind farm

In cooperation with British cable manufacturer JDR, Pfisterer has received the order for the delivery of Connex cast resin joints and Connex plug connectors for up to 72.5 kV for the networking of the new East Anglia ONE (EA1) wind farm. In the initial phase, the new wind farm includes the construction of 102 Siemens turbines with total output of 714 MW. Because of the high output level, the networking will take place with 66 kV. Pfisterer is the only manufacturer with a solution that has proven itself for 20 years in the offshore area.

The new East Anglia ONE wind farm of operator ScottishPower Renewables is being constructed 43 kilometers from the coast of Suffolk in the southern North Sea, and is in the axis between Amsterdam and London. It will be capable of supplying about 500,000 households when it reaches its planned completion in 2020. 102 Siemens turbines, each with 7 MW, will be set up from the middle of next year, and will be connected via two converter stations in a 66 kV network. East Anglia ONE is the first large-scale wind farm to be set up with this voltage level.

“Because the efficiency and output of wind turbines are constantly on the increase, wind farms all over the world are changing from the previous 33 kV networks to 66 kV networks,” said Peter Müller, senior sales manager at Pfisterer. “We have already had a suitable connection for this output range for connecting the inter-array cables to the turbines for 20 years with the size 4 Connex cast resin joint, and the Connex plug connector. The inner cone technology is ideal for this level of capacity, which is why we are receiving many inquiries at present.”

MORE FLEXIBILITY

ScottishPower Renewables is also convinced by the solution. The inter-array sea and tower cables are connected with the cast resin joints in the lower tower section of the wind turbines. The dry, i.e. gas-free, Connex cast resin joints from Pfisterer are solidly insulated, pluggable, touch-safe, resistant to salt water and UV radiation, and are also submersible. They are offshore-certified by classification company DNV GL and do not require any additional protection. Their integrated longitudinal water barrier prevents water that is entering because of a cable fault from getting into the other connected cable. Also, each phase is connected using a separate joint, therefore making positioning and installation in the tower much more flexible. This also makes it possible for the Connex joint to be re-installed and re-used without having to replace



The solidly insulated, pluggable Connex joints make installation in the tower easier, faster, and more flexible. (Courtesy: Pfisterer)

the entire submarine cable in the event of a fault. Pfisterer has been established in the offshore area for decades and provides a complete range of products for all voltage levels from 12 kV to 550 kV with the Connex family. In this way, the entire cabling within a wind farm can be carried out using the same tried and tested technology — from the submarine cable to the converter platform.

COOPERATION WITH JDR

Pfisterer received the order for the delivery of the HV fittings in close cooperation with cable manufacturer JDR. The presentation of the Connex solution to ScottishPower Renewables also took place in cooperation between the two companies. This was preceded by type testing of the JDR submarine cables in combination with the Connex fittings, which was immediately successful. In April, JDR was commissioned to supply more than 155 kilometers of inter-array cable by VBMS (UK), including the connecting fittings from Pfisterer. VBMS is a globally experienced

offshore installer, and is responsible for the construction of the wind farm.

“We are delighted that we were able to convince ScottishPower Renewables and VBMS with our experience and the tried-and-tested Connex solution. The implementation of East Anglia ONE with a 66 kV network is a flagship project for the industry, and proof that the entire technology that is required for global conversion to 66 kV is available, from the transformer to the switchgear, and also for transmission,” said Karl McFadden, Pfisterer UK project leader.

Pfisterer is a competent partner for cable manufacturers and offshore companies, and provides a continuous solution from the inter-array connection to the cabling of the platform with Connex. The products in Pfisterer’s IXOSIL series are available for the shore connection. ↵

Source: Pfisterer

For more information, go to us.pfisterer.com