

CS Wind Offshore Selects CNC Onsite for Precision Milling on one of Germany's Largest Offshore Wind Farm

New automated magnet-mounted gantry machine ensures precision for cable penetrations for perfect waterproof seals to protect vital offshore wind turbine wiring

VEJLE, DENMARK, August 18, 2026 /EINPresswire.com/ -- Offshore wind foundation manufacturer [CS WIND Offshore](#) has begun operating a custom-built, automated milling machine from Danish machining expert [CNC Onsite](#) at its Aalborg facility in Denmark to create high-precision cable penetrations in transition pieces destined for offshore wind farms. This process ensures that cables powering external workspace lighting and platform cranes can be sealed with maximum reliability.



Magnet-mounted gantry milling system machining inside a wind turbine transition piece.

“

Our mobile gantry milling system delivers consistent, high-precision results on steel components. As these parts are massive, we bring the machine to the workpiece”

Søren Kellenberger, CEO of CNC Onsite

Delivering sub-millimeter precision, CNC Onsite’s new magnet-mounted gantry machine replaces manual cutting with a CNC-controlled milling machine that produces clean-cut penetration holes. These six cable holes per transition piece require precise edges to allow for the flawless sealing required around the power cables, a requirement in harsh ocean environments. CS WIND Offshore ordered the customized gantry machine to also mill the 12 pressure relief holes per transition piece, holes designed to relieve pressure and prevent structural warping under rough sea conditions.

“We required a tolerance of one millimeter to eliminate micro-gaps and completely isolate the internal electrical routing,” says Flemming Smidt Pedersen, Senior Manager, Production

Engineering, at CS WIND Offshore. "At sea, this watertight integrity is absolute."

The cables passing through these points power the platform cranes tasked with hoisting critical spare parts to the turbines, as well as the signal lights that illuminate identification numbers on each wind turbine.

"Surpassing our target to achieve a tolerance of just 0.3 millimeters through this entirely dust-free process has allowed us to secure this vital infrastructure while maintaining a cleaner, optimized manufacturing environment," adds Pedersen.

Engineering Precision for Large-Scale Components

With a height of 2 meters, a length of 3.6 meters and a width of 2.3 meters, CNC Onsite's 4-axis gantry machine was developed at the company's headquarters in Vejle, Denmark, in a workshop dedicated to producing customized, high-precision solutions.

"We specially developed the mobile gantry milling system to deliver consistent, high-precision results on steel components. These parts are massive and virtually impossible to move into a standard machine. Therefore, we bring the machine to the workpiece instead. This project was a perfect fit for us, as our specialty is bringing precision machining directly to the component," says Søren Kellenberger, CEO of CNC Onsite.

Leveraging CNC Onsite's background in



CNC Onsite's milling machine performing a 45-degree angled cutout for a cable penetration hole.



CNC Onsite's mobile 4-axis gantry milling machine prepared for lifting and transport at the facility in Aalborg.

maritime and energy projects, the company designed the mobile gantry machine to produce cable transits in a single automated pass, completely eliminating the need for manual flame-cutting and grinding.

The company also developed a proprietary magnetic fastening mechanism to provide a stable, vibration-free foundation without the need for traditional, invasive clamping. By utilizing powerful electromagnets, the machine locks directly onto the curved structure of the transition piece with high clamping force, yet leaves the high-grade steel surface completely unmarked. This approach is a significant benefit for transition piece manufacturers, as it prevents surface scarring and eliminates rework.

Managing Complex Geometry

To accommodate the diagonal routing of the cables through the structure, the penetration wall requires a 45-degree angle. CNC Onsite easily meets this specification with its adjustable machining angle ranging from 28 to 90 degrees. For this specific scope of work, the penetration holes measure 180 millimeters by 350 millimeters. However, the gantry machine is highly versatile, capable of processing openings ranging from minor 50-millimeter-diameter utility holes up to large-scale structural oval penetrations measuring 2,575 millimeters by 550 millimeters.

The 4.8-ton mobile machine manages significant geometric challenges in the manufacturing facility, where each 370-ton transition piece spans 7.8 meters in diameter and must be rotated on rollers to align the cutting zones. Equipped with an adjustable wheeled maneuvering setup, the machine tracks the cylinder's rotation, minimizing manual handling during repositioning.

"This integration of advanced gantry engineering and sub-millimeter precision confirms that manufacturing of large complex steel structures can be optimized to meet the increasingly stringent technical standards of the global offshore energy sector," concludes Kellenberger.

About CNC Onsite

Headquartered in Vejle, Denmark, CNC Onsite designs and delivers high-precision mobile machining for wind turbines, including offshore foundations. Machinery built by CNC Onsite is designed to be flexible using its proprietary "building blocks" approach, meaning machinery can be built to match a range of tasks. Founded in 2012, CNC Onsite serves the onshore and offshore wind energy sector, delivering standard solutions such as machining of large-diameter steel flanges and blade root ends, along with specialized repair services covering yaw rings, blade root inserts, rotor locks, generator shafts, bearing housings, and threaded holes. Removal and replacement of worn and broken bolts round off the offering. The company operates with ISO 9001, ISO 14001, and ISO 45001 certifications. CNC Onsite A/S is a privately held Danish company. www.cnc-onsite.com

Notes to Editors

Additional Technical Specifications for the 4-Axis Gantry Machine:

Physical Footprint: The complete, integrated system measures 3.6 meters long, 2.3 meters wide and 2 meters high, with an approximate total weight of 4.8 metric tons.

Milling Envelope: Features an internal machining range of 2.6 meters on the X-axis, 0.6 meters on the Y-axis and 0.6 meters on the Z-axis.

Head Angular Tilt: The intelligent computer numerical control (CNC) tilt function automatically adjusts the milling head to accommodate machining angles ranging from 28 degrees to 90 degrees.

Tooling Adaptability: The milling spindle is engineered with an industry-standard ISO 50 interface coupled with a Capto SI50-QC-C6-105 adapter to maximize rigidity and permit rapid tool changes.

Maximum Tooling Diameters: The machine's spindle capacity accommodates heavy-duty cutting gear, supporting a maximum milling tool diameter of 15 centimeters and a maximum drilling tool diameter of 11 centimeters.

Electrical System Demands: To support automated manufacturing operations, the system requires a standard industrial power connection consisting of a three-phase 400-volt line plus protective earth and neutral running at 32 amperes.

Digital Telemetry and Control: The system is managed using an external HT10 handheld remote control unit tethered by a cable, allowing the technician to control all three-axis movements and adjust the machine's independent support legs safely from a distance.

Dr. M Conlong
Moller International ApS
[email us here](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/935116697>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2026 Newsmatics Inc. All Right Reserved.