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A Turbine Grease for Lower Temperatures

New synthetic grease protects wind-turbine bearings from extreme temperature conditions.



Extreme cold temperatures commonly occur in many places that also have high wind-energy potential. (Courtesy: ExxonMobil)

By Luis Rojas

ExxonMobil has developed Mobil SHC™ Grease 102 WT, a synthetic wind-turbine grease that can protect pitch, yaw, and generator bearings from extreme temperature conditions as high as 248 degrees F (120 degrees C) to as low as minus-58 degrees F (minus-50 degrees C).

Mobil SHC Grease 102 WT helps meet the industry need for extreme low temperature grease. While comparable high performance greases will face solidification challenges at minus-22 degrees F (minus-30 degrees C), Mobil SHC Grease 102 WT enables performance at even lower temperatures.

ADVANTAGES

Extreme low temperature grease can help with:

- Optimize flow in central lubrication systems.
- Minimize bearing torque during low temperature startups/operation.
- Resist fretting wear, rust, and corrosion.
- Maximize equipment uptime.

“Extreme cold temperatures commonly occur in many places that also have high wind-energy potential,” said Greg Engel, global grease and services marketing manager at ExxonMobil. “In places like northern Asia, Scandinavia, the northern United States, and Canada, high wind conditions make protecting wind-turbine equipment challenging.”

“With Mobil SHC Grease 102 WT, operators can keep turbines running in these extreme conditions, helping them minimize downtime and reduce maintenance costs,” Engel said.

Along with its low temperature performance, test results show that Mobil SHC Grease 102 WT can deliver a range of other performance benefits. These include enhanced bearing life, long lubrication intervals, outstanding mechanical stability, and high levels of water resistance.

Mobil SHC Grease 102 WT is part of a family of Mobil-branded lubricants chosen by many of the leading wind-turbine operators worldwide for their outstanding performance and dependability.

ExxonMobil’s global supply reliability enables wind customers to

get best-in-class lubrication solutions where and when they need them and its globally consistent product offer helps to ensure operators meet all international standards and product integrity requirements.

ExxonMobil is one of the world’s largest suppliers and marketers of fuels, lubricants, and specialties, including lubricant base stocks, waxes, and asphalt. Tracing its lubricants history to the Vacuum Oil Company, formed in 1866 and acquired in 1879, ExxonMobil has been at the forefront of lubricant technology innovation for more

than 150 years. Its breakthrough products have helped to power some of mankind’s greatest technological feats, including the first gasoline-powered automobile, the first electric generating system, the first powered flight, and the first space shuttle launch. Today, ExxonMobil continues to develop new lubrication solutions for tomorrow’s machinery. ↴

For more information about Mobil SHC Grease 102 WT, go to mobil.com/industrial.



Luis Rojas is Americas Industrial Marketing Adviser at ExxonMobil Fuels & Lubricants.

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Modulift Centerpiece to Gantry-Crawler Crane Tandem Lift



A Modulift spreader was combined with a 45-meter-long beam attached to a gantry and a crawler crane in order to tandem lift 760-metric-ton monopiles from pontoons onto land in Cuxhaven on Germany's North Sea coast.

Schmidbauer GmbH & Co. KG was challenged by Cuxport GmbH to develop a solution for lifting the monopiles bound for the Nordsee One offshore wind farm, using an existing gantry. However, the crane only offered 600 metric tons of lifting capacity, and the beam itself had a net weight of 100 metric tons, which meant the gantry was only suitable for 500 metric tons of lift.

Consideration also had to be given to a number of additional complications. There was a special coating on the monopiles, so attaching rigging equipment at all points wasn't possible. Height was limited, and there were 20 meters between the gantry's hooks positioned 10 meters to each side of the center.

The lift planning team discovered there were two lifting lugs in the center of the 45-meter beam offering a more convenient distance of just 4.75 meters. However, Philipp Verges, sales manager for global projects and key account manager offshore at Schmidbauer, said they were

A Modulift spreader combines with a 45-meter-long beam attached to a gantry crane at one end of a tandem lift. (Courtesy: Cuxport GmbH)

90 degrees in the wrong direction. The beam was originally manufactured for special lifting of three-legged tripiles, so the forces applied during lifting would have broken the eye plates.

Eventually, a MOD 400/600 beam, sourced from Schmidbauer stock, was used as an inverted spreader, owing to the two pick points above it and the need to bring the slings together in one point. MOD 400/600s offer capacity to 600 metric tons from 12 meters (40 feet) up to 23 meters (76 feet) at lower capacity.

"Slings came together in a 600 (metric ton) hook block that allowed us to complete turning of the monopiles," Verges said. "The rigging around the monopiles had to be kept short, so we had to deliver (125 metric ton) Polytex slings at a special length to fulfill the requirements."

At the other end of the tandem lift, Schmidbauer provided a Liebherr crawler crane (model LR 1600/2) with wheeled counterweight carrier that allowed it to lift even the second row of each pontoon load from the barge without turning it.

The Modulift beam was used as an inverted spreader, owing to the two pick points above it and the need to bring the slings together in one point. (Courtesy: Cuxport GmbH)

Thirty monopiles were lifted in a five-month period. Two traveled on each pontoon to Ambau GmbH in Germany. Verges said if a smaller crawler crane was used, after picking up the first row, Schmidbauer would have had to turn the barge prior to lifting the second unit. Otherwise, the distance would be too far.

The Nordsee One wind farm has one offshore substation platform and 54 wind turbines to be installed in water depths between 25 meters and 29 meters. The wind farm is in a special spatial planning area reserved for offshore wind energy. ↴

Source: Modulift

For more information, go to www.modulift.com



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Altitec Seals International Blade Inspection Contract

Blade repair and inspection specialist Altitec has partnered with a leading manufacturer of onshore and offshore wind turbines to provide end of warranty (EOW) blade inspections and repairs in the U.K. and Australia, expanding the company's global presence.

Under the terms of the contract, Altitec will provide EOW inspections at 100 sites throughout the U.K. In addition, Altitec technicians returned to Victoria, Australia, in October to carry out further EOW blade repairs, following the successful completion of an initial six-week tour in June.

Blade damage is the most common cause of downtime across the wind-energy sector, according to a recent report from renewable energy insurer, GCube, and EOW inspections and repairs are an essential part of ensuring long-term operational performance. The end of the warranty period is a crucial phase for both manufacturer and project

owner, since it marks a transition where responsibility lies for technical issues experienced on site.

Any problems identified during EOW inspections are covered by equipment warranties and must therefore be resolved by the manufacturer, prior to the commencement of long-term service contracts. Detecting and repairing faults and routine damage at this stage helps to avoid project downtime and financial losses later in the project lifecycle.

At the projects in the UK and Australia, Altitec will make use of its considerable experience conducting specialist blade inspection and repair on wind farms throughout the world. Altitec's inspections and thorough reporting will play a key part in helping the manufacturer fulfill its warranty obligations.

Altitec is positioned to carry out this work as a trusted global service provider with enhanced logistical capabilities. The company, which is

based out of London, benefits from strong contacts within the Australian market, and has partnered with a Melbourne-based distributor to secure the use of ActSafe Ascenders for efficient and environmentally friendly blade access. The use of powered rope ascenders allows Altitec's trained rope access technicians to conduct up to 35 percent more work on average than without, significantly boosting the efficiency of the firm's operations.

"Altitec's unparalleled experience in blade repair and ability to draw on a well-established network of ActSafe partners was crucial to securing this contract," said Tom Dyffort, managing director for Altitec Group. "The deal represents a first foray into the Australian market, and we're looking forward to further expanding our global reach." ↵

Source: Altitec

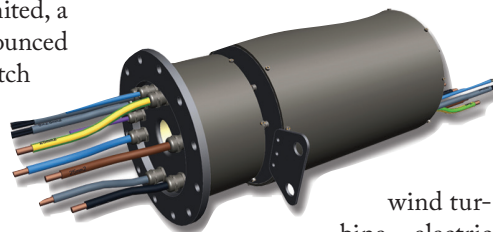
For more information, go to www.altitec.co.uk

High Reliability Slip Ring Brings New Tech to Turbines

Moog Components Group Limited, a division of Moog Inc., has announced the introduction of a new pitch control slip ring. The EPA3 slip ring is the next generation of advanced slip ring products specifically developed for the wind-energy market. It is well suited for both large and small wind turbines.

A key advantage of the Moog slip ring is its high reliability, modular design that can be scaled, and optimized for most requirements. The slip ring provides the most advanced contact technology available in the market while extending the life of the product to reduce field maintenance. No maintenance (cleaning) is required.

The slip ring can be part of a large



Moog introduces EPA3 pitch control slip ring. (Courtesy: Moog Inc.)

wind turbine electric pitch control system with the option to integrate hydraulic pitch control systems if required. It can also be used on the yaw axis of small wind turbines. Speeds range from 0 to 100 rpm with through-bore model sizes up to 54 millimeters available.

Building on Moog's heritage in the wind-turbine market, this new product offers customers a technically more advanced slip ring solution

with extended life at a lower cost of ownership. The slip ring uses Fiber On Tip (FOT) power contacting technology. The new flexible design is easier to manufacture than conventional slip rings and decreases time to market.

In addition to wind-turbine applications, the new slip ring can also be used in industrial machinery and medical equipment. ↵

Source: Moog, Inc.

For more information, go to www.moog.com/products/slip-rings.html

Siemens and Duke Energy Offering More Services to Wind-Energy Operators

Siemens and Duke Energy Renewable Services announced an agreement to offer North American wind-farm owners operations and maintenance services for multiple brands of wind turbines. Siemens and Duke Energy will combine their complementary service capabilities on Siemens and other OEM equipment.

The agreement offers a one-stop shop for customers who are managing multiple brands of wind turbines in their fleet, helping them stay competitive and derive maximum value from their wind energy assets.

The cooperation between one of the world's top turbine manufacturers alongside one of North America's leading wind-energy owner-operators with vast experience working on non-Siemens turbines, means the market now has a new and powerful choice. Customers may turn to either Siemens or Duke Energy Renewable Services when it comes to serving their multiple-brand O&M needs.

"This services cooperation between Siemens and Duke Energy Renewable Services combines the complementary strengths and experience of two key wind-energy companies in the North American market," said Darnell Walker, head of Siemens Power Generation Services, Wind Power and Renewables, Americas region. "This is a powerful duo, and by working together, we can offer our customers new and expanded service product offerings and capabilities."

"We are pleased to be working with Siemens to offer flexible, effective, and reliable O&M services for wind-asset owners," said Jeff Wehner, vice president of Duke Energy Renewables Operations. "In addition to our services business for third parties, we are experienced wind-energy owners and operators." ↵

Source: Duke Energy

For more information,
go to www.duke-energy.com

Altech Power Backup Systems Optimized for Seamless Switchover

Ultra Capacitor DC UPS power backup systems from Altech Corp. have been optimized for seamless switchover during power outages, interruptions, peak power demand, or power dips and sags. Their advanced capacitor technology contributes to environmentally safe operation, compared with battery-based systems prone to emit toxic chemicals from discharging batteries.

The technology further enables excellent energy storage, fast microcontroller-based charging and discharging, and extended energy release (up to 55 minutes). These systems will deliver higher energy (up to 10,000 watts) than electrolytic capacitor-based technologies and higher power than batteries. They ultimately will help to ensure reliable and consistent power for applications in any industry or setting where uninterrupted power supply is both critical and essential.

The Ultra Capacitor UPS (Uninterruptible Power Supply) systems are available in 12VDC and 24VDC output versions from 3 amps to 40 amps, depending on model. The CTEC and C-TEC P versions perform in conjunction with separate main power supplies (with the C-TECH P system able to produce an output spike for applications requiring a temporary surge of power). The AC-C-TEC systems augment these designs by incorporating a built-in power supply with AC input for maximized ease and convenience. Compatible with all models, a CEM (Capacitor Extension Module) ideally extends buffer times for applications exhibiting increased power demands.

The systems excel at controlled shutdown functions, resist shock and vibration, and feature compact and sturdy convec-



The ultra capacitor DC UPS power backup systems from Altech Corp. It enables seamless power switchover during power outages, interruptions, and more. (Courtesy: Altech Corp.)

tion-cooled metal housings built to weather extreme conditions. They are engineered to operate over a wide temperature range from minus-40 degrees C to 65 degrees C (minus-40 degrees F to 149 degrees F), require virtually no maintenance over their 15-plus years of expected service life, and can be DIN-rail mounted.

All systems meet relevant worldwide product standards and are covered by a three-year warranty. Altech additionally offers setup/monitoring software and comprehensive product support. Customized solutions (including available output models up to 600 amps) can be developed to meet particular application requirements. ↵

Source: Altech Corp.

For more information,
go to www.altechcorp.com