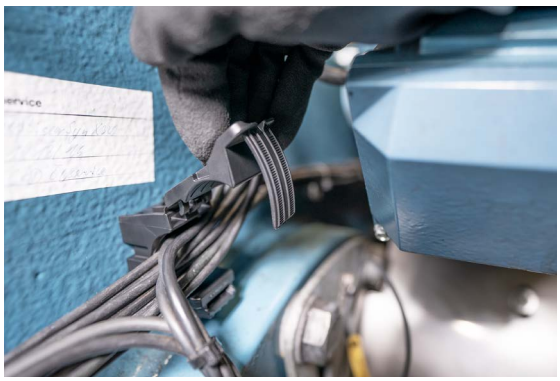
HellermannTyton

THE CHALLENGE

Reliable cable fastening on curved surfaces in wind turbines.

A success story.



Effective cable management in complex environments

Wind turbine nacelles, situated atop towers reaching heights of 100 meters or more, house an intricate network of cables in tight spaces that get very hot. These cables connect a lot of drives, pumps and sensors needed to operate and monitor the turbine.

The main machine carrier and rotating hub area at the front of the nacelle present unique challenges for cable management. These components, typically made of cast iron, feature predominantly curved surfaces. Securing cables along these parts has traditionally been accomplished using pre-bent metal rods or cable trays attached to pre-drilled holes. However, this approach is costly due to the variety of individual brackets and trays required, which increases logistical expenses.

Further complicating the issue, some components such as azimuth (yaw) drives and electric pitch drives are located away from the main cable pathways, making them difficult to access with conventional bracket solutions. Simply allowing cables to hang freely is not a viable option, as it poses risks to wind turbine installers and service technicians working in the area. Additionally, the constantly rotating hub introduces its own set of challenges for cable management.

This situation calls for an innovative approach to cable fastening that can address the unique demands of wind turbine environments while improving efficiency and reducing costs.

HellermannTyton

THE SOLUTION

Raising efficiency with unique cable clamps

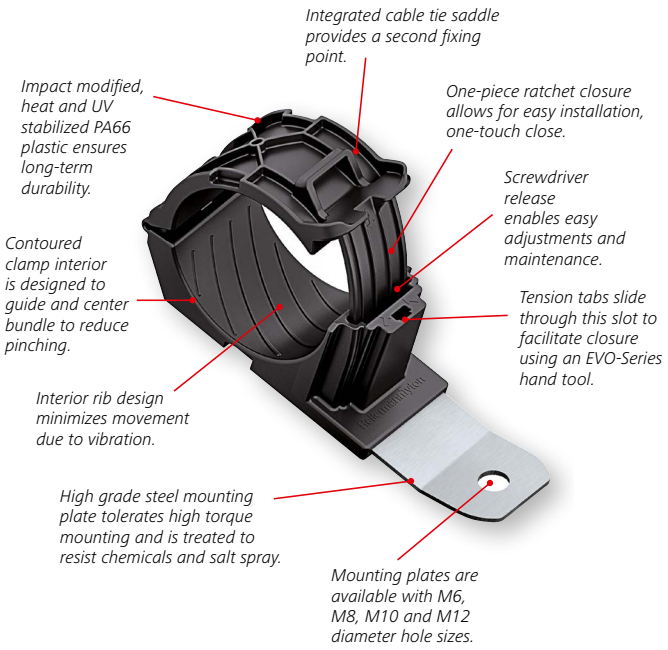
Cost saving solution keeps cables secure and protected.

„The abundance of existing fastening points in wind turbines – whether on brackets, cable trays, or gearbox covers – provides ideal mounting locations for HellermannTyton's innovative Ratchet P-Clamps (RPC). These versatile cable fasteners leverage existing infrastructure to streamline cable management without additional drilling or modification."

Georg Neureiter
Market Manager Renewable Energy EMEA

The key to optimising cable management in wind turbines

Ratchet P-Clamps provide a flexible and efficient cable management solution, allowing multiple configurations on a single mounting point. They accommodate bundle diameters from 6.2 mm to 51 mm and can be combined with galvanised stainless steel mounting plates, available in a range of lengths, hole sizes (M6, M8, M10, M12), and angles (180°, 90°, 30°, 15°). These options allow versatile alignment and stacking configurations, such as fixing clamps face-to-face or stacking them with spacers. Soft silicone inserts provide extra additional cables protection and a saddle on top enables additional cable tie fastening for routing multiple bundles.with cable ties for routing multiple bundles.



Further information

HellermannTyton

OUR RESULT

A lower Levelized Cost of Energy (LCOE).

Inventive cable management solutions help streamline costs.

Minimising turbine service downtime

The wind industry continually seeks to reduce its Levelized Cost of Energy (LCOE). Our Ratchet P-Clamp (RPC) plays an important role in this effort by enabling a more streamlined, automotive-like production approach. This unique, inventive part can significantly reduce turbine service downtime – a critical factor since every offline minute translates to lost revenue for wind park operators.

Enhancing predictive maintenance

The RPC product range provide installers and service technicians with an innovative wire bundling solution. At the heart of the RPC is a robust and adjustable ratchet clamp mechanism that clicks as when it closes around a bundle. This ensures that it perfectly fits around the bundle diameter and is locked in place. The clamp is mated with a metal die or can be fixed centre-mounted or inline. An integrated release feature allows for easy and non-destructive removal of cables with just a flat-head screwdriver. This allows the clamp to be reused or serviced without removing it from the mounting surface simplifying and speeding up time spent on the turbine when replacing cable harnesses or pipes.

Get in touch!
Contact our wind industry expert Georg Neureiter and take your project forward with innovative solutions from HellermannTyton.

Wind Energy Hub
Please visit our website for more information and other topics related to the wind industry.