

# TriSteel™ & Ultracomp® Bearings Clean up in Renewable Energy



*There are numerous individual applications hidden away beneath the massive turbine cowlings of today's wind energy systems. Many of these applications draw on past and emerging technologies as these systems get larger and more sophisticated.*

*TriStar Plastics works with both OEM and service organizations to supply (and improve upon) current bearing technology.*

*Here are three examples of applications on wind turbines where our self-lubricating bearing products are improving reliability, performance, and even safety.*

■ A partnership with TriStar gives you a competitive edge.



## **TriSteel Bearings in Turbine Pitch and Yaw Actuators**

Our [TriSteel metal-backed bearings](#) have been used for several years in turbine pitch and yaw actuators because customers can install them and not have to worry about lubrication – ever!

These bearing systems are simple, can withstand high loads/speeds, and are impervious to any turbine fluids present. They also withstand temperatures from cryogenic to +500°F in service.

## **Turbines in New Environments Bring New Challenges**

The evolving nature of the clean energy market has resulted in more equipment in areas where exposure to environmental contaminants can wreak havoc. In ocean-based turbines we have seen debris work its way under cowlings and contaminate metal bearing lubricants, resulting in failure.

Our self-lubricating composite bearings eliminate this problem completely. Two specific examples are [Ultracomp](#) bearings in yaw brake pistons and [FCJ bearings](#) in pitch adjusters on smaller wind systems.

Cost savings to the end user are easy to quantify – no lubrication required, service life measured in years, and (critically) less time needed for humans to spend 200 feet off the ground!

We're ready to put our engineering expertise to work for you from prototype to production.

Engineering | Custom Fabrication | Manufacturing



## CJ Composite

- Self-Lubricating
- Low weight | High Strength
- Chemical Resistance
- Direct replacement for Bronze



## Ultracomp<sup>®</sup>

- Self-Lubricating
- High Load | Low Speed
- 54,400 PSI Compressive Strength
- Exceptional Resistance to Vibration and Impact



## TriSteel<sup>™</sup>

- Self-Lubricating
- High Load | High Speed
- Metal Backed Bearing System
- 100% Lead Free



## Rulon<sup>®</sup>

- Self-Lubricating
- Low weight | High Strength
- Low Coefficient of Friction
- Chemically Resistant



## Enhanced Materials Division

- Plasma Surface Treatment
- Specialized Primers & Coatings
- Material ID & Selection
- Process Engineering | Analysis & Testing



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