

FCJ Bearings a Ray of Sunshine in Solar Panel Arrays

■ A partnership with TriStar gives you a competitive edge.



From stationary roof top panels to massive solar fields in the southwest deserts, the sun is changing the way we keep our homes cool and our factories running.

A large solar array manufacturer contacted TriStar about a design flaw in their tracking systems. They had originally designed very simple, low-cost HDPE [High-Density Polyethylene] sleeve bushings to support 48" x 72" panels that [followed the sun](#) as it passed from east to west. Each panel weighs approximately 400 lbs on the steel frame, and that load on the HDPE was compressing the bushing.

Another problem was that HDPE has a very high thermal expansion rate and tolerances started sloppy and just got worse from daily wear. It became a maintenance nightmare and warranty claims were high.

FCJ Composite Bearings Handle Extreme Loads – and Keep the Tracking Arrays Moving

TriStar's engineering solution was our [FCJ bearing](#) — a filament-wound, high-load bearing with a very low friction liner. Unlike the HDPE, the FCJ can handle extreme loads without deformation. While HDPE has a compressive strength of 1500-2000 psi, FCJ's strength is over 20,000 psi, dynamically.

FCJ is thermally stable with a CoTE [Coefficient of Thermal Expansion] about the same as the surrounding metal housing. FCJ's do not absorb moisture, are UV stable, self-lubricating and will not corrode in harsh environments. They are also made in the USA.

Higher Initial Cost Recouped via Longer Bearing Life - and Increased Uptime

While the initial cost for the FCJ is considerably higher, our customer found in a cost/benefit study that it could all but eliminate warranty claims and give their customers several years of maintenance-free performance, versus several months with HDPE.

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®

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



TriSteel™

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



Rulon®

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



Enhanced Materials Division

- Plasma Surface Treatment
- Asymmetric & Symmetric Filtration Membranes
- Specialized Primers & Coatings
- Material ID & Selection



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