

FASTENING SYSTEMS ENGINEERED FOR PERFORMANCE™

Benefits of Improving Step Bolt Design for Fiberglass Utility Poles



The challenge:

A manufacturer of fiberglass utility poles was using several expensive hardware configurations for installing step bolts.

- Depending on the type of pole, one of three hardware configurations was used: a large one piece through bolt with a step feature, a two piece mounting system, and an all stainless step system.
- The multiple-step process of installing the step bolts was a safety concern, as the linemen needed to use two hands to install as they ascended the pole.

The solution:

Working closely with the customer, the Sherex engineering team designed a large size rivet nut with a special wedge head design.

- After thorough testing, the new design exceeded all application performance and safety requirements including maximum retention in the fiberglass material and increased spin out resistance.
- The rivet nut solution eliminated all previous configurations the manufacturer was using.
- The safety concern was eliminated, as the new rivet nut design allowed the installation of the step bolts to become a one hand operation.

The savings:

Annual step bolt production: 5,000

**Cost savings: \$8.00 per step =
\$40,000 annual savings!**

Sherex is a global manufacturer with a unique market approach in engineered fastening solutions that combines fasteners, tooling, and automation to deliver the best solution at the **lowest total installed cost**.



FASTENING SYSTEMS ENGINEERED FOR PERFORMANCE™

Benefits of Improving Step Bolt Design for Steel Utility Poles



The challenge:

A manufacturer of steel utility poles was experiencing production line bottle necks when welding step bolt attachment clips onto the poles.

- The clip welding process made it difficult to align the clips along the full length of the pole leading to clip misalignment, improper welds, missing clips, and damage during shipping.
- The full installation method utilized a welded clip and two hex nuts to attach hot dip galvanized step bolts.
- There were safety concerns due to the fact that the Lineman had to install the step bolts using two hands while ascending the pole.

The solution:

Leveraging our engineering, tooling and manufacturing capabilities, Sherex developed the industry's first large size rivet nut product line.

- The large size rivet nut was designed with an oversized thread for use with hot dip galvanized step bolts.
- Sherex collaborated with its tooling partner, MDS, to develop the FLEX-18, an installation tool powerful enough to pull the large rivet nuts. This hydro-pneumatic tool provided the capability to pull 18,000lbs and allowed the operators to install rivet nuts accurately and efficiently.
- Utilizing the rivet nut solution, the manufacturer was able to laser cut holes into the pole to ensure each hole was properly spaced and in a straight line.
- The fast, turnkey solution eliminated the welding process, the clip, and one of the hex nuts, and allowed for the installation of the step bolts to become a one hand operation on the assembly line.

The savings: Annual step bolts produced: 25,000

**Cost savings: \$6.00 per step =
\$150,000 annual savings!**

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