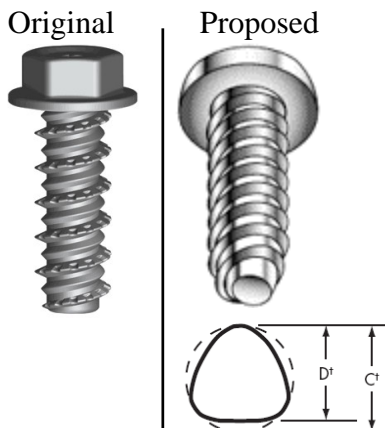




Report #6-10

Key Components:

- Reduced Piece Price
 - Increased Joint Design
 - Easier Assembly
 - Supplier Consolidation
 - Decreased Assembly Time
 - **Field Validated**
- Recommendations**



High Cost Fastener Redesign *Part Evaluation – Improved Fastening*

Opportunity:

High Piece Price and competitive markets created competitive pressure on the finished product. Large thread angles created **quality problems** and boss stressing and cracking that was not easily detected.

Previous Design:

The previous design had a modified high and low thread design. The high thread was measured to have a **60 degree thread angle**. This thread angle is not typically preferred in plastic components because of high stresses. This fastener had a round shank, so it created hoop stresses on the plastic boss. This did **not allow the material to relieve** stresses. This part was also a **proprietary design** and was hard to find from alternative suppliers.

New Design:

The new design utilized a **tri-roundular fastener** with a thinner **48 degree** thread design. This thinner thread angle reduced stresses on the plastic components. The fastener chosen also had a **twin lead** thread design which has two threads starting 180 degrees apart, allowing the fastener to install in half the time. Additionally, the tri-round design allowed the fastener to drive **at a lower torque value**. Once driven, the plastic micro-relaxes into the low points on the fastener thus increasing the resistance to **loosening**. **Field performed testing** on all components that used this screw to provide engineering reports validating the tests. In the test reports, **Field provided** recommended **seating torques** to maximize the fastener's performance.

Field's Design

40% Piece Price Reduction

Increased Sourcing Capabilities

Annual Cost Reduction

\$34,148

Cost Reduction = 40% Piece Price Reduction