



Tru-Torq® and Tuff-Torq® Assemblies

Overview – Maintenance-Engineered Fastening Systems

Implications of Fastener Failures

When a piece of machinery fails and production is disrupted, or when a piece of expensive machinery comes to a grinding halt because of a failure of a fastener, the cost of the replacement fastener is the wrong place to economize. The total overall cost of maintenance requirements must be measured in terms of lost production, idle workers, maintenance labor and interrupted schedules. The only answer is to carry out maintenance and repair bolting operations with fasteners that will actually improve equipment reliability, decrease the frequency of equipment downtime and decrease product liability claims.

Failed Fastener Replacement

Fasteners are normally installed in original equipment by calibrated power wrenches with conventional-style hex or 12-point sockets. The equipment is assembled in sequence so that there is never a problem of wrenching accessibility. Close control is maintained over the surface conditions of the fasteners to prevent the use of bolts or nuts that have dirty, rusty, excessively oily or nicked threads. This is a far cry from the conditions that exist when it is necessary to replace fasteners in maintenance operations.

Most maintenance bolting has to be done under conditions that are far from ideal, so maintenance fasteners need to be stronger and deliver greater consistent clamp loads than the fasteners they are replacing. The use of inexpensive, lower-strength fasteners in critical connections results in repetitive maintenance and downtime costs that far exceed the slight extra cost of high-quality matched strength fasteners.

Features/Benefits

The use of maintenance-engineered, matched strength fasteners can add up to very significant savings in overall operating costs by decreasing the frequency of maintenance bolting and by helping to eliminate the penalties of non-productive costs: lost production time, idle machines, idle labor and upset production schedules. For example, the use of maintenance-engineered matched-strength fasteners to replace either SAE Grade 2 or SAE Grade 5 (3-line) fasteners will result in:

- Increased safety factor against sheared or broken bolts of 40% to 100%
- Increased safety factor against stretched bolts by 50% to 250%
- Stronger, more reliable, trouble-free bolted connections that are superior to original equipment design

