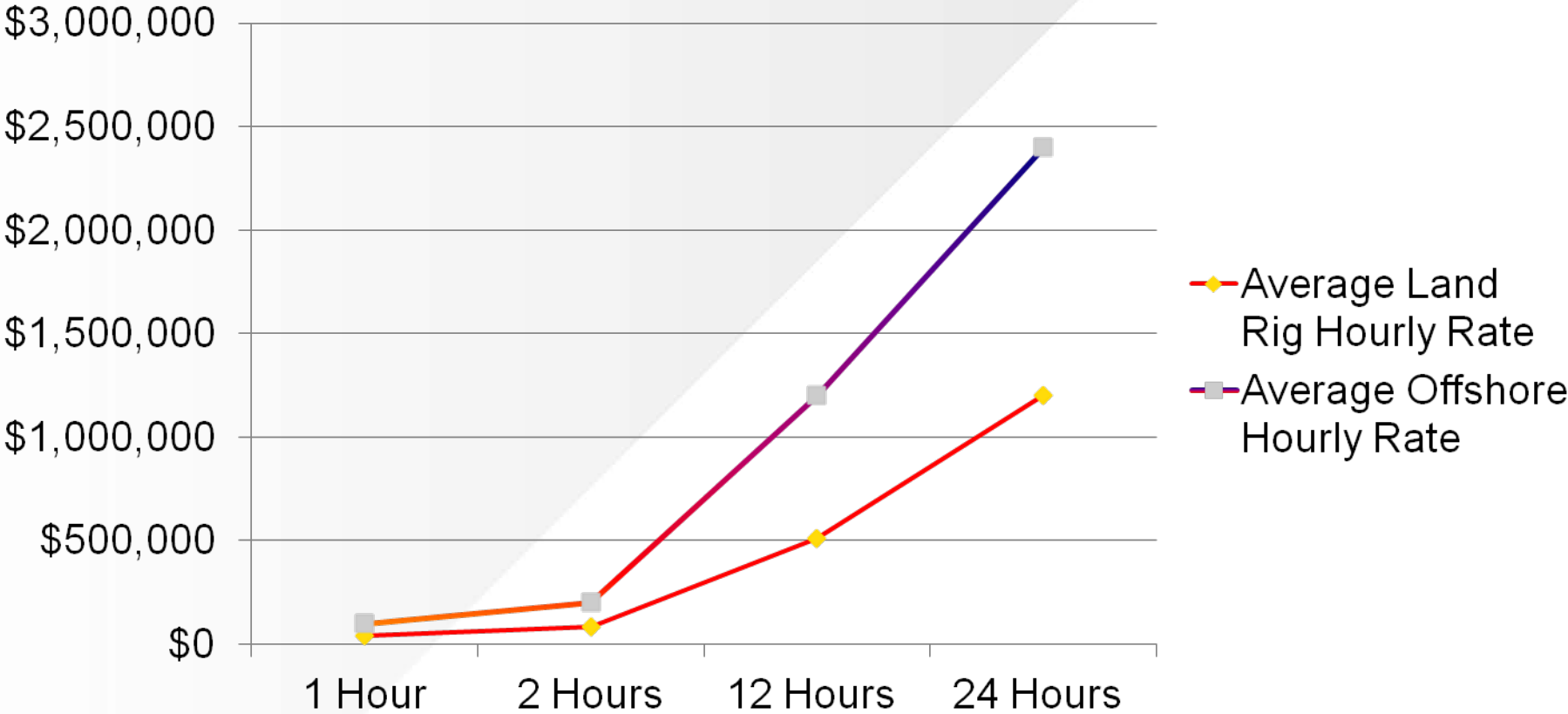


**Why do standard
threads loosen, and
how much downtime
repair cost will that
equal?**

Topside Downtime = Major Lost Money!!



Drilling Rig failure or repair cost based on an Inoperable Rig



(www.offshore-mag.com 2015)

Contributors

Repair & Replacement Costs of current locking options.

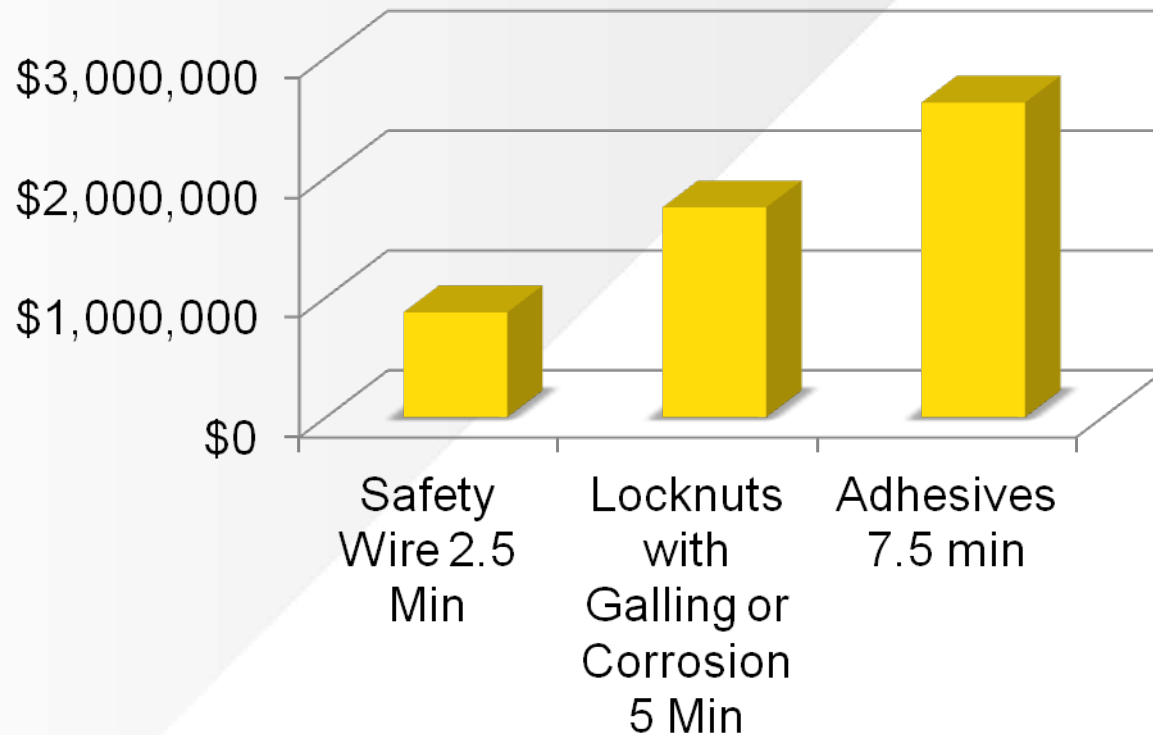
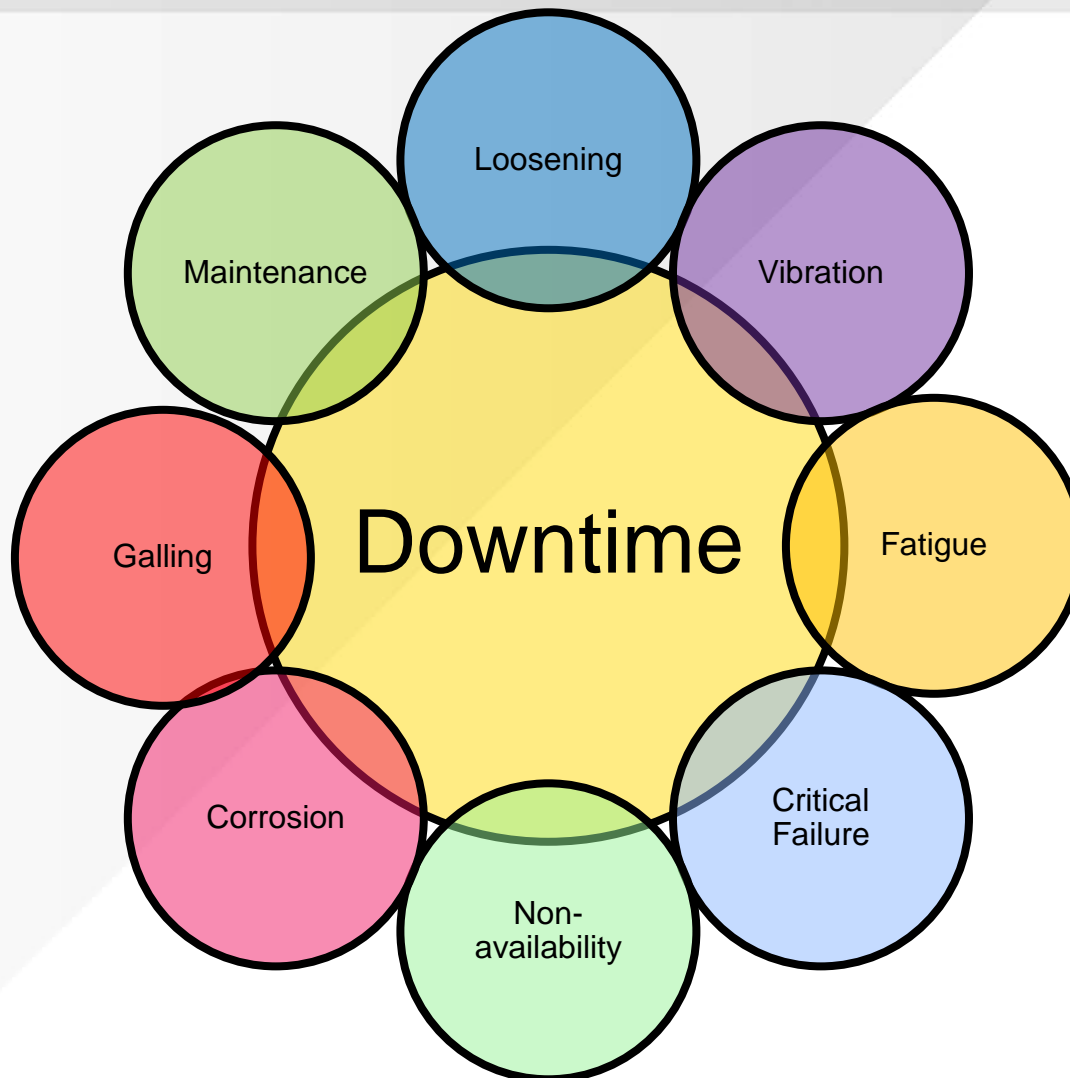


Chart Based on 500 Replaced Nuts annually and cost associated with a inoperable drilling rig

Sleepless Nights



Locking Failures Have Deadly Implications!



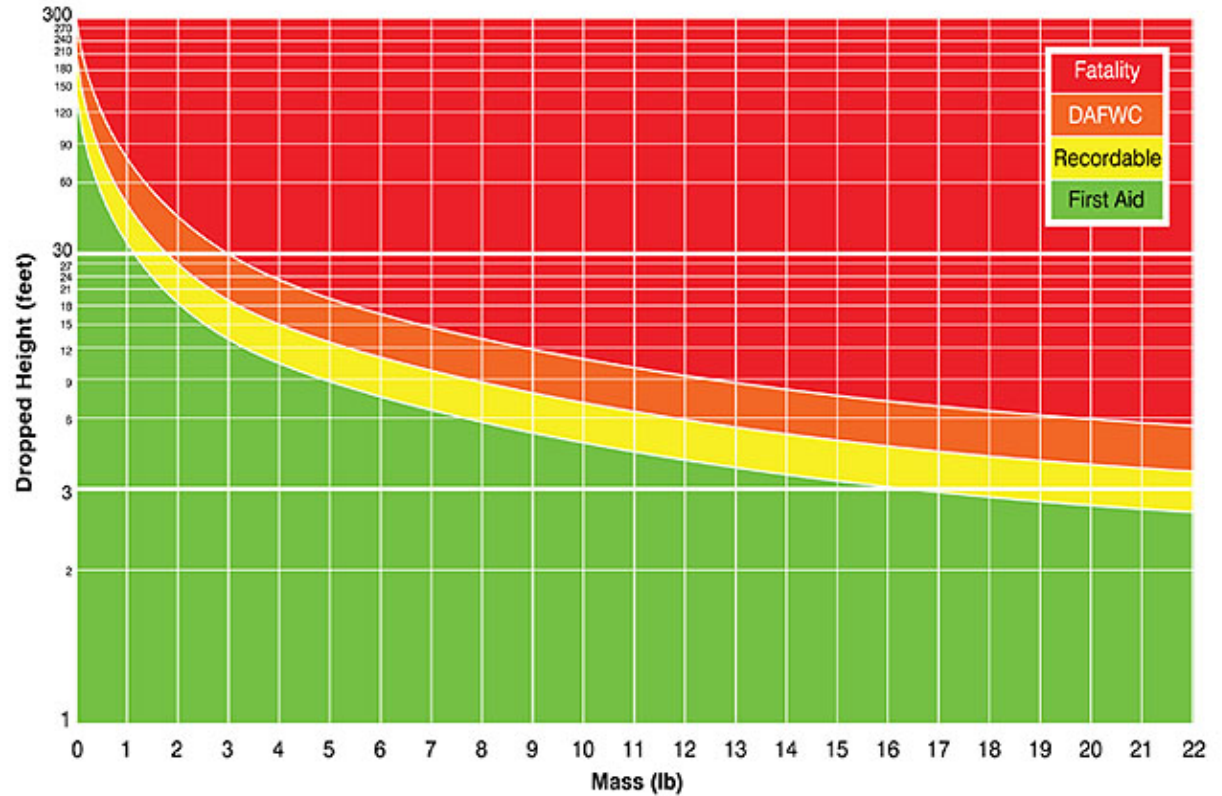
Shell found that 50% of incidents in wells were related to dropped objects (Drillingcontractor.org, 2010)

Red = Dead!



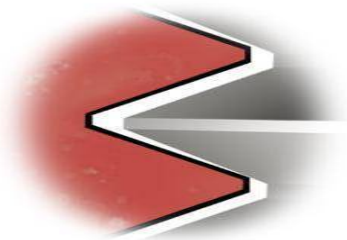
Typical Dropped Objects

11.0 The DROPS Calculator

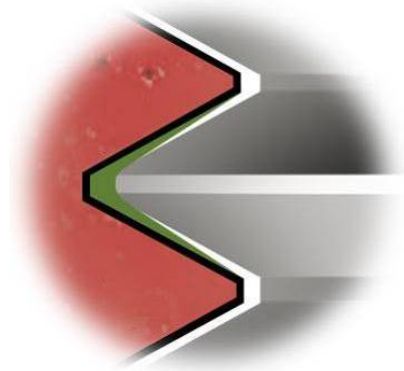


Reasons Threads Loosen with a Standard Thread

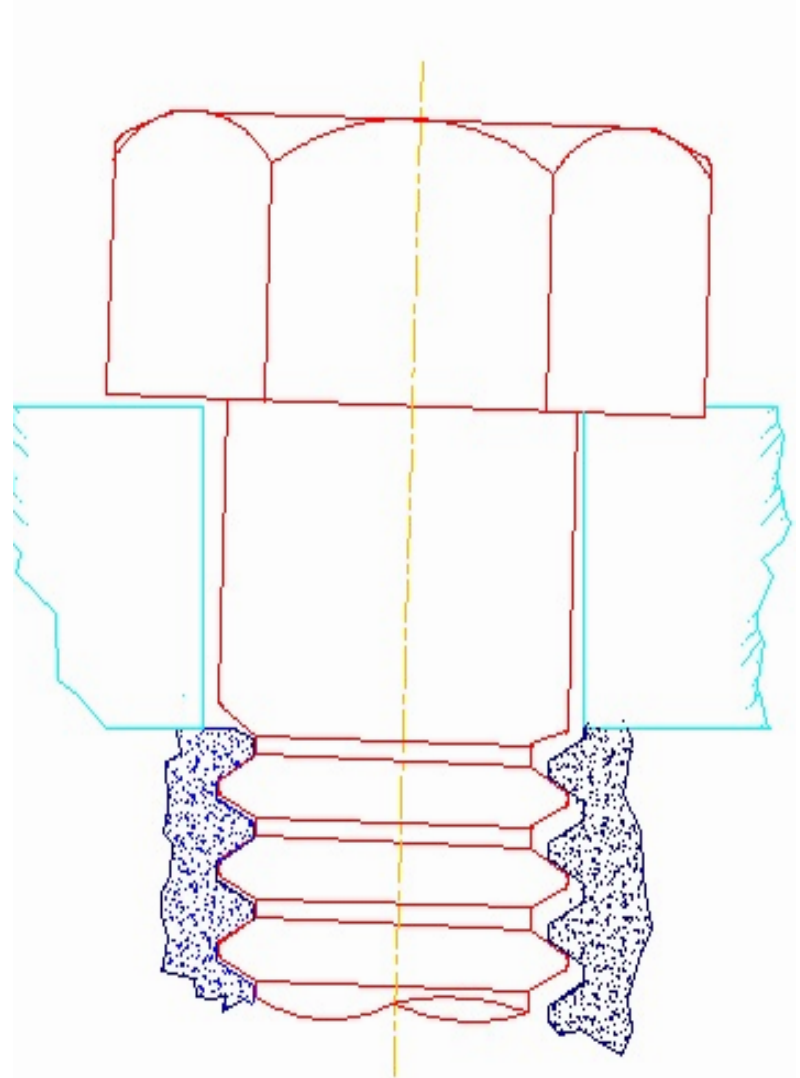
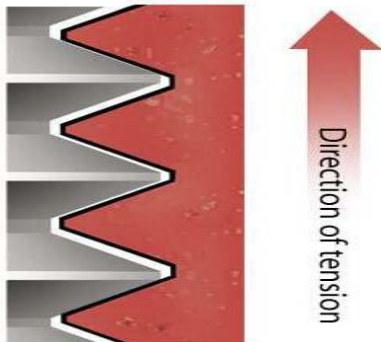
Mismatched flank angles prevent proper flank contact



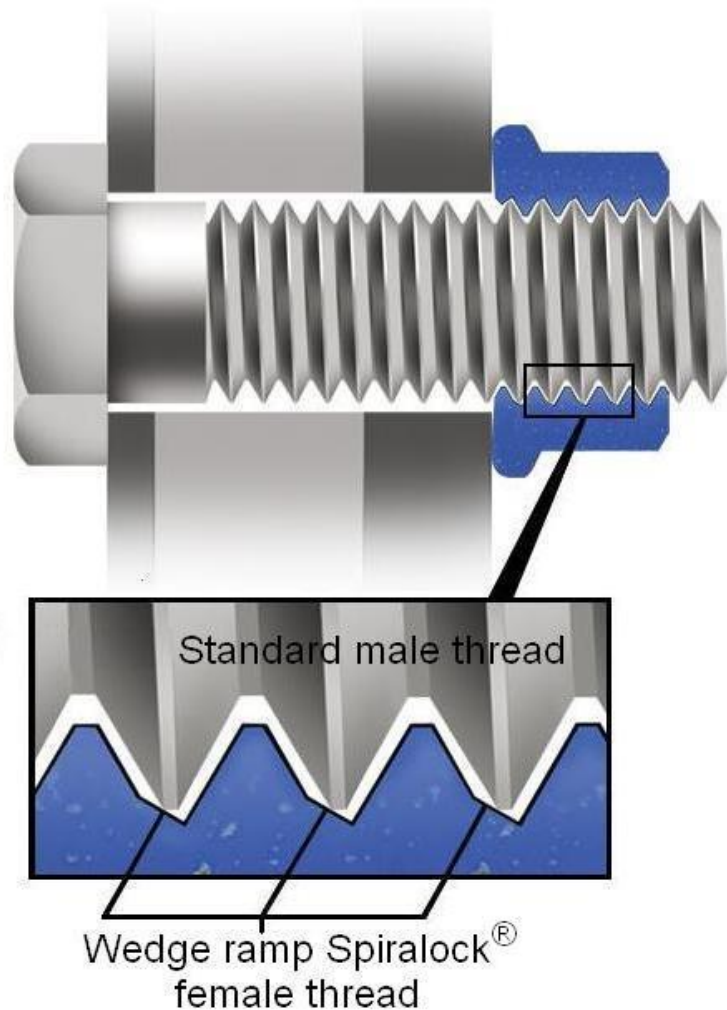
1. Relaxation of dispersions will cause **loosening**
2. Friction buildup **lowers tension** component



Lead error prevents threads from seating properly and may cause interferences

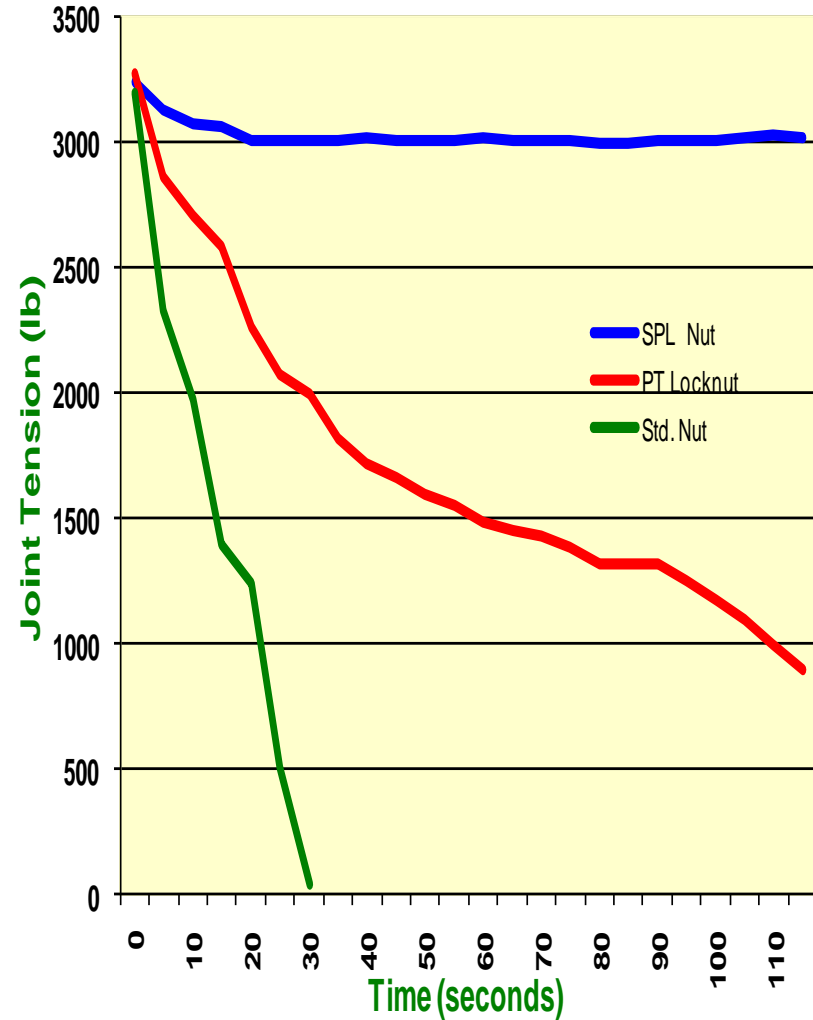
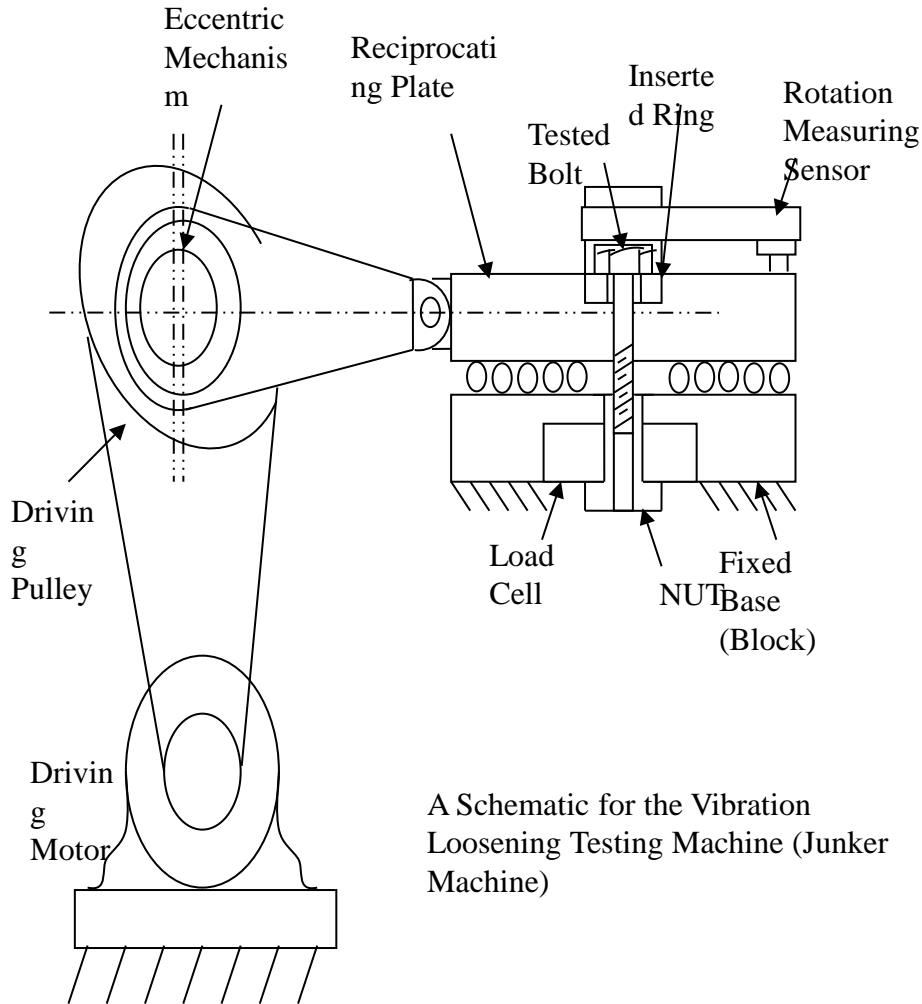


SPL Wedge Ramp Technology

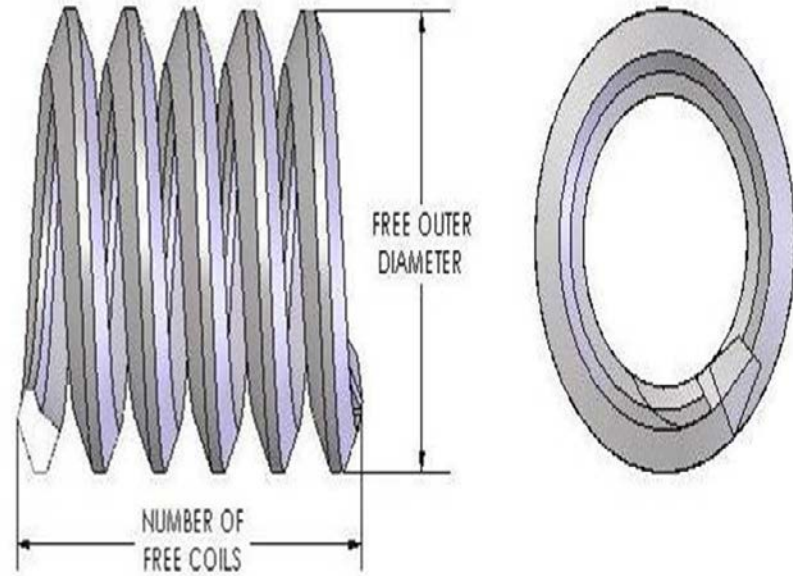


- Modified female thread form with a 30° wedge ramp at the thread root
- An **evolutionary** change in standard threads
- Compatible with standard fasteners
- **Free-spinning** until joint is snug
- 95% reduction in galling or corrosion
- Continuous spiral line of contact along entire length of thread engagement
- Wedge ramp generates radial load, **prevents vibration loosening**
- **100% Reusable for quick repairs turnarounds!**

Junkers Vibration Test Results



SPL Options for Secondary Retention



Threading Holes with Spirallock Tools

Tapping – Cut and Forming

Multi-Purpose

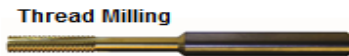
T-10 Straight Flute

Cold Forming

High Performance



Thread Turning

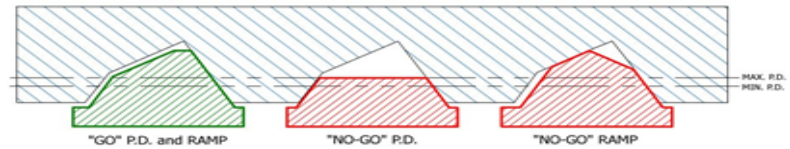


Thread Milling

The purchaser of Spirallock® tools shall have the right to use Spirallock® tools to thread blind and through holes in all elements other than "Fasteners", which are defined to mean discrete male and female threaded elements, the primary purpose of which is to engage or accept a complimentary threaded element. If your application requires a Spirallock® Fastener, Spirallock Corporation offers a full line of Spirallock fasteners to meet your needs.

Spirallock Gaging System

- Three Part Gaging System
- Checks Pitch Diameter & Thread Geometry



- Practices per National Bureau of Standards for Screw Threads, **FED-STD-H28**, Sec. VI
- Tolerances: ANSI / ASME / B1.2 (Inch) & ANSI / ASME / B1.16M (Metric) - Class "X"
- Certified per MIL-STD-45662A & ANSI / NSCL Z540-1-1994



Thank you for your time!

Ryan Bostick

281-832-4597