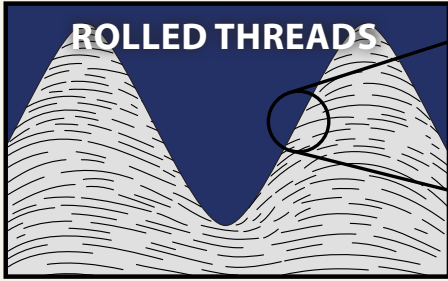


# ELIMINATE GALLING

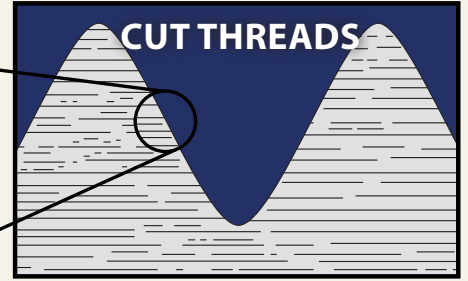
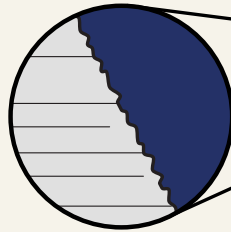
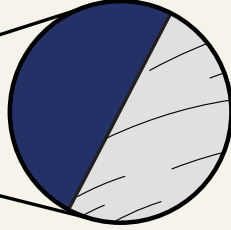
## ROLLED VS CUT THREADS

### What is Galling?

Galling is a rapidly-occurring form of wear caused by the friction of sliding metal surfaces. It is common in threaded parts, pistons in engines, hydraulic cylinders and other industrial applications and can result in problems such as loosening, seizing, or premature failure. One way to prevent these problems is with proper lubrication. Another effective, but less frequently considered solution is specifying rolled vs. cut threads.



Rolled Threads are free of tears or chatter, which are starting points for galling.



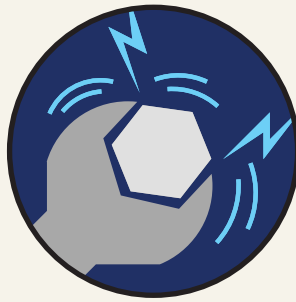
Cut Threads have particles on the surface that can tear away and cause friction.

### What Problems Result?

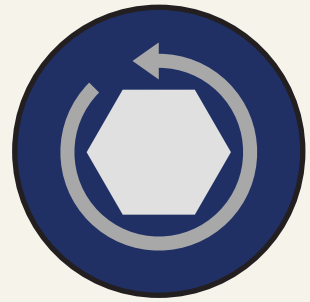
#### CONTAMINATION



#### SEIZING



#### LOOSENING



### Negative Impact on Your Application

#### PREMATURE FAILURE.

Threads can seize and tear from the fastener or hole. When a bolt locks up to the point where it can only be turned by friction, the fastener can break down quickly.

#### EXPENSIVE REPAIRS.

Damage to the threads of a bolt or screw is generally an easy fix, but galling can damage threads inside of a hole, which is more costly and complicated.

### How to Eliminate Galling

#### OPTION 1: ROLLED VS CUT THREADS

Rolled threads are less likely to gall because they are...

- Smoother** – Fewer opportunities for frictional resistance
- More Precise** – Easier to assemble to mating parts
- Tighter Tolerances** – Parts fit better, less chance of sliding

#### OPTION 2: LUBRICATION

Proper lubrication can prevent galling by...

- Limiting Contact** – Less metal-to-metal contact of threads
- Reducing Friction** – Eliminates friction, the main cause of galling
- Prevents Corrosion** – Corrosion-resistant lubricants are available

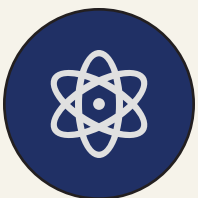
### When to Choose Rolled

Galling can be eliminated through the use of lubrication or by working with a high-precision machine shop to roll threaded parts (vs. cutting – cutting is not a machining method that will reduce galling).

#### When should a product designer specify rolling?

- Food processing and manufacturing environments:** Stainless steel fasteners, which are commonly used in food processing equipment, are susceptible to galling. Lubrication may not be an option to mitigate galling so specifying rolled threads is an effective solution.
- Military, aerospace and nuclear applications:** For applications that require threaded fasteners without burrs in hard-to-machine materials, rolling is an efficient means of achieving a burr-free surface.
- Applications requiring consistent thread geometry to resist part interference and friction.
- Applications demanding a total absence of loose metal fragments that might foul assemblies.
- Applications that are assembled and disassembled frequently but require tight tolerances to be maintained.

### Target Applications



NUCLEAR



MILITARY



VALVES



FOOD



MEDICAL



AIRCRAFT/  
AEROSPACE