

# 7 Ways to Prevent Thread Galling

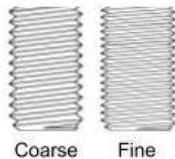
Pre-applied or applied on site, dry film lubricants and lubricants rich in molybdenum disulfide (moly), graphite, mica, talc and even extreme pressure waxes are effective at reducing friction. They include [Perma-Slik® RAC](#), [Xylan](#), and [DELTA® SEAL](#). Fluoropolymer coatings are also effective. They include PTFE, commonly referred to as Teflon, PVDF, PFA and FEP. Other remedies include [Loctite](#) and [Aero-Chem®](#) lines of anti-seize products.

## 1. Use proper lubricants

## 2. Slow down tightening speed

The slower the power tool speed, the less heat is generated and the less likely galling will occur - during installation and removal. So, control speed when using powered equipment, or use hand tools where galling may occur.

## 3. Choose coarse threads where possible



Fine threads can have more surface area and their thread clearance may be reduced. Higher thread friction can result. Use coarse threads where possible.

## 4. Avoid cut bolt threads

Photo courtesy of Horst Engineering/Thread Rolling Inc.

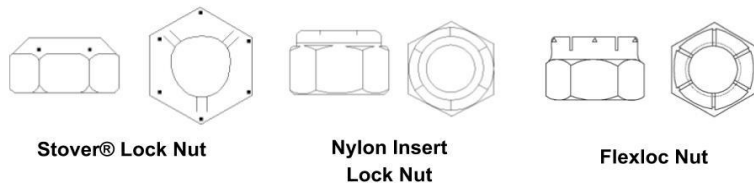
Ordinary bolt threads are rolled between dies, which produce relatively smooth surfaces. Lathe-cut bolts typically have rougher threads which create more heat when coupled with nuts that usually have tapped threads.



## 5. Mix nut and bolt grades while maintaining mechanical properties

Metal grades have different hardnesses and when mixed, can stop galling. Example: use a type 304 stainless steel nut with a type 316 bolt. Generally, the softer the metal, the more apt it is to gall. Thread galling is excessive mechanical contact between mating surfaces.

## 6. Beware of prevailing torque lock nuts



Lock nuts like these are designed to add resistance when installed and generate lots of heat. So avoid them, or install them very slowly. Nylon insert lock nuts paired with stainless steel is a common troublesome issue.

## 7. Keep threads clean and nick-free; follow torque specs

Dirt and nicks on threads create friction and, in turn, heat. Similarly, over-torquing can stretch fasteners beyond their ability to continue creating tension (they lose their elasticity) which can lead to thread binding.



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