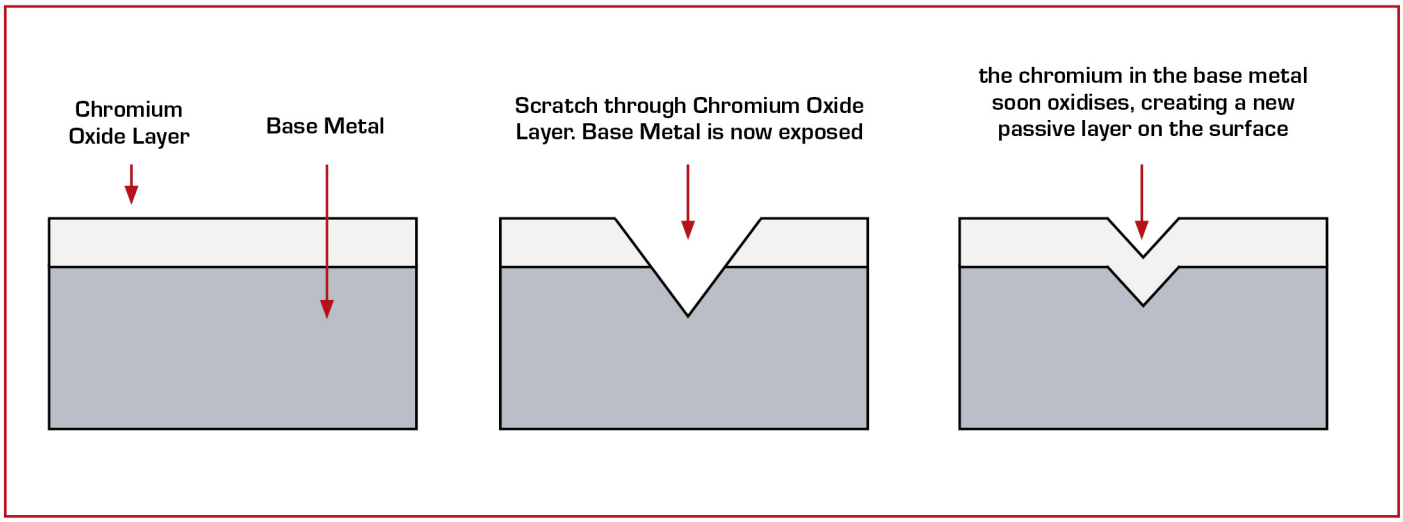
GALLING

Galling, also known as seizing, cold welding or pick-up, occurs under high stresses where stronger bonds are formed between base metals. In particular, stainless steel presents the majority of galling problems.

Stainless steel self generates a passivation layer of chromium oxide. This layer protects the metal beneath as it is impervious to air and water. When stainless steel nuts and bolts are together during installation, the oxide layer can be scraped off, allowing the two surfaces of base metals to weld together. Threads can be ripped out or the fastener twisted off if the tightening continues.



Solutions

To reduce the risk of galling, we recommend the following:

- Slow down the RPM during installation
  The higher the RPM, the higher the heat generated
- Lubricate threads with anti-seize lubricants
- Where possible, use a different grade of stainless steel nut and bolt
  Use a grade 304 nut with a grade 316 bolt, or vice versa

You may need to try one or all of these steps to eliminate the occurrence of galling. It may not happen often, but when it does, galling can be highly problematic.