

# Guideline for handling Stainless fasteners

- General instructions for avoiding galling
- Installation speed and torque
- Stop when you feel resistance
- Avoid using the fastener thread to pull items in place

Fasteners such as bolts and nuts made of austenitic stainless steel of qualities like AISI 304 and 316 are often prone to thread galling when mounting. Galling, also known as cold-welding, is the wear and tear where the bolt/nut because of friction "gets stuck" or becomes damaged during assembly. Typically, stainless steel fasteners have a protective coating (lubrication film), which reduces friction between the exterior thread of the bolt and the inner thread of the nut. If the coating is worn, dry or washed, the risk of galling is high.

## General instructions for avoiding galling

Keep bolts and nuts dry.

Do not use bolts with defective or dirty threads.

Lubrication of the threads, both when assembling and loosening the connection, reduces the risk of galling; lubrication is especially important if the thread has been wet. There are special "anti-seize" assembly lubricants which are suitable for the task.

## Installation speed and torque

By reducing the installation speed and installation torque, you reduce the friction between the materials and thus ensure, that the heat disappears through the material instead of concentrating in the threads.

Pay extra attention to heat development due to friction if lock nuts are used.

## Stop when you feel resistance

When you start to feel resistance when assembling bolt and nut, stop immediately, wait a few minutes to let the connection cool down, and unscrew the bolt. If you stop the galling in time, you can still disassemble the parts before welding them completely together. Inspect the parts and if they have clear wear marks, they should not be reused, but discarded.

## Avoid using the fastener thread to pull items in place

If possible, avoid pulling the items together over a longer distance, as the contraction will create unnecessary heat in the threads, thereby increasing the risk of galling. Therefore, make sure to put the items in place prior to tightening by, for example, using a clamp or similar.

