

# Thread Galling Maintenance and Prevention

## Best Practices for Inline Pressure Transmitters and Manifolds

### 1.0 Overview

Galling is a mechanical issue that can occur when metallic materials slide across each other. This is especially common in threads and can range from surface scratches to full thread deformation. Important threads to maintain are the process connection threads on inline pressure transmitters. Damage to these threads may cause delayed maintenance schedules, process readiness concerns, or transmitter replacement costs.

Emerson uses industry standard NPT thread specifications for inline pressure transmitters and considers thread maintenance and integrity during factory assembly and shipping. Further recommendations for maintenance of the threads to ensure safe, consistent, and reliable process connections are outlined below.

### 2.0 NPT thread care

Emerson ensures consistent thread quality through a variety of controls including raw material selection, thread creation techniques, transmitter assembly, and final quality tests. As galling occurs in metal to metal connections (e.g. NPT connections), thread care extends beyond the factory. The following steps can be taken to help maintain current and future thread integrity.

#### 2.1 Lubrication

If assembled at the factory, Emerson applies thread lubricants to avoid galling upon installation.

Replacement parts and on-site installation allows for multiple lubricants being used. Please consult the specific lubrication manufacturer's recommendations and requirements to ensure appropriate application. Excessive or insufficient application of thread lubricant may cause a variety of adverse results to the threads and overall process connection.

#### 2.2 Installation

Upon request, threaded inline manifolds and transmitters are assembled at the factory by way of threaded connection. For process ready assemblies, leak tests ensure proper thread engagement, process ready seal, and thread integrity.

Overtightening the transmitter can lead to thread galling, which may make it difficult or impossible to remove the unit from the manifold. Emerson does not recommend overtightening for this reason.

Heat can also contribute significantly to thread galling. During installation, an increase in fastening speed can cause thread overheating, which may lead to thread galling; this is also known as cold welding. Slowing the rate of fastening during maintenance may help mitigate this risk.

## 2.3 Transmitter housing and manifold alignment

After installation, it is common that the transmitter and manifold faces are not in the same plane. It is not recommended that the transmitter be loosened or overtightened as this can increase galling or safety issues. Most Emerson pressure transmitters have rotatable housings to resolve this issue. Please consult the manual for the instructions on how to rotate the housing.

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