Strainlabs

Stop inefficient torque inspections
Start remote preload monitoring

The most common way of inspecting bolted joints is to ensure correct preload level by torque check or retightening. However, most of the input torque is lost to friction which challenges the relevancy of time consuming manual inspections.

In addition, there is usually uncertainty related to the accuracy of the tightening process itself.

Preload in operational bolts also changes over time due to natural causes including thermal cycling, vibrations and dynamic loads, material relaxation & settlements.

Strainlabs propose to instead utilize sensor-equipped bolts that continuously measure and report preload, a more efficient inspection method and a direct enabler of Industry 4.0.
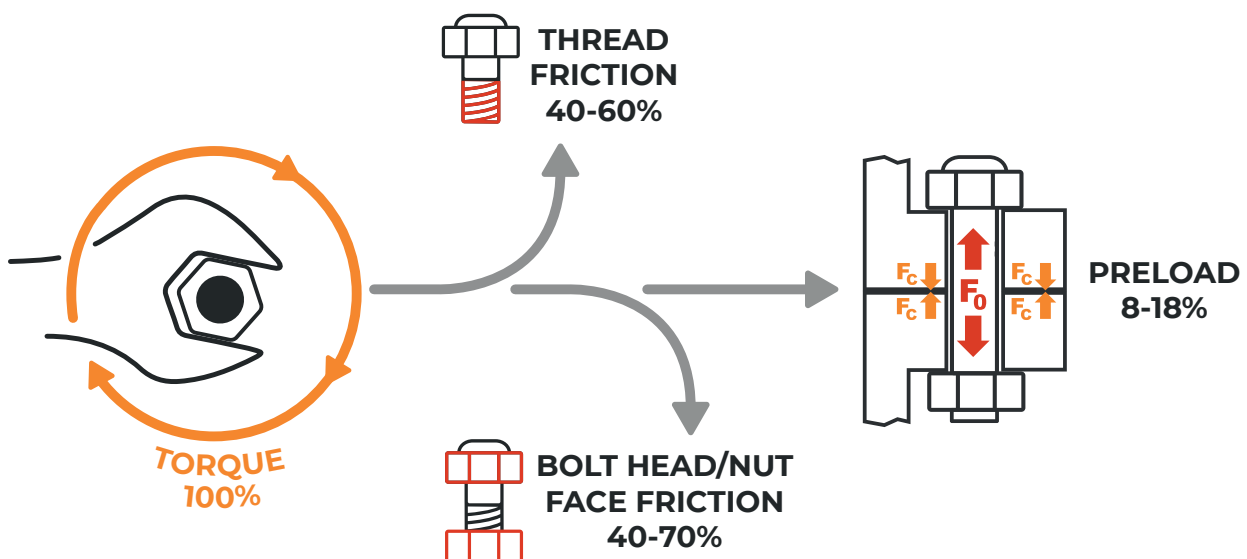

THREAD FRICTION 40-60%

BOLT HEAD/NUT FACE FRICTION 40-70%

TORQUE 100%

PRELOAD 8-18%

Figure: Most of the torque applied to a bolted joint is needed to overcome friction in the joint. This is one of several reasons why acheiving and maintaining the correct preload in bolts is not as straightforward as it may seem.

A new approach to an old problem

Strainlabs is a Swedish IndTech innovation targeted to meet the industry's demand for digitalization and development on existing equipment & systems. Strainlabs preload-sensing IoT bolts use patented LED technology to measure preload data.

Preload knowledge and insights can help avoid failures before they happen, enable remote / automated inspections and reduce overall maintenance costs. Access to preload data can further support analysis and improvements related to design and process optimizations.

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Internet of Bolts

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# A complete IoT System for a more wireless & automated maintenance strategy

Strainlabs enables industrial digitalization, challenging costly maintenance processes with a modern approach. Allow maintenance teams to spend more time on value-creating activities whilst allowing for a tighter inspection scheme. Strainlabs Bolts report how tight they are, i.e. their preload level, and give alerts before an accident happens.

The Internet of Bolts

- Strainlabs System reports preload data every 10 minutes.

- Strainlabs Bolts has been examined and CE-marked by the independent certification body Intertek.

CE
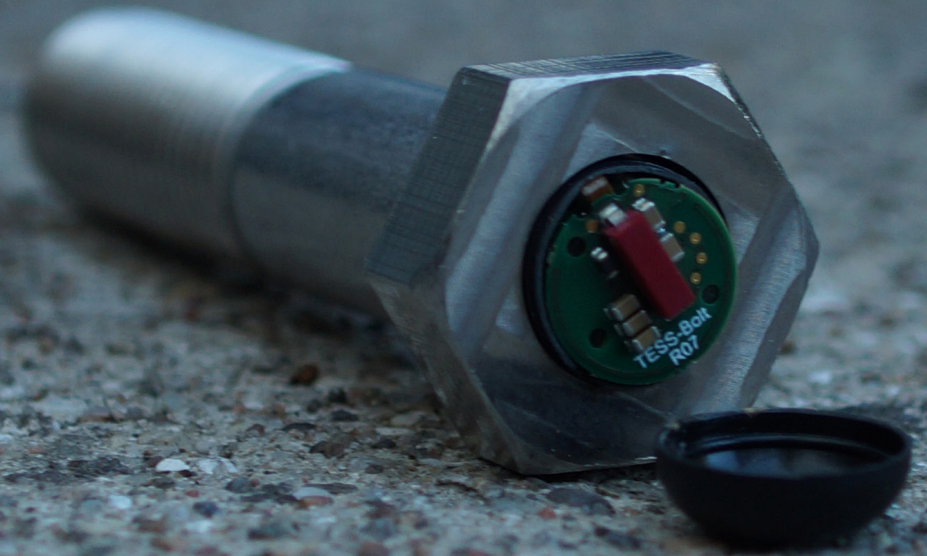
Try out remote preload monitoring, alerts & analysis on your application

Getting started with or testing Strainlabs System is extremely simple - just select your application! Our standard range includes bolt sizes M10-M20 in steel and stainless steel. Upon receipt you just plug in the router, tighten the bolts & get started!

✓ Get valuable & actionable data to virtually any mechanical process or asset.

✓ Enables remote inspections and alerts through user friendly dashboards & graphs.

✓ Aggregated data per specific bolt, joint or machine/site for insights & developments.

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