



J. LANFRANCO

LOCKNUTS FOR CRITICAL BOLTED JOINTS

Fastener Integrity is Key to Smooth Railway Traffic

THU locknuts reduce maintenance and ensure track availability for Class 1 railway

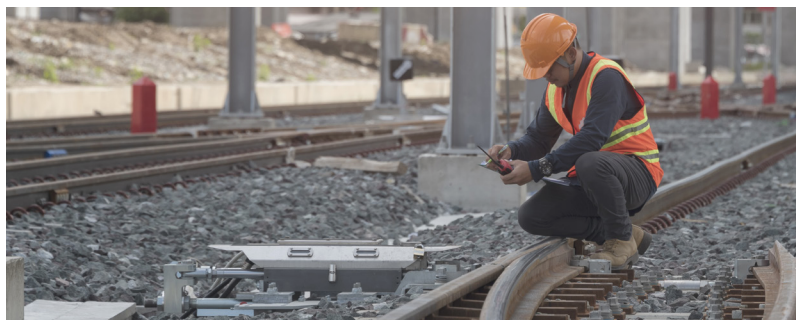


CHALLENGE

Bolted Joint Failures Halt Rail Traffic

One of North America's largest Class 1 railways had to contend with the ongoing challenges of operating a diamond that is relied upon by three different railways. Every year, the diamond is subjected to heavy tonnage and environmental damage caused by repeated freezing and thawing cycles.

After trying various locking washers, rivet-type bolts, and conventional locknuts, the only reliable method for keeping traffic moving and ensuring the integrity of the diamond was to schedule daily on-site maintenance inspections to re-tighten loosened bolted joints. In winter, the crew had the added responsibility of transporting equipment to blow snow from the track to carry out the maintenance.



Track inspection

THU LOCKNUT CHARACTERISTICS

Prevailing torque

ASME B18.16.6
(IFI 100/107)

Mechanical

SAE J995- Gr.5 & Gr.8
ASTM A563, A194
ASME B18.16.6

For use with

Standard track bolts
Threaded rods
Frog bolts/hex bolts

Features

Installs with standard impact wrench
Suitable for hand tools
Locks in any position
Highly reusable



WHY USE THE THU?

Benefits of THU Locknuts

- 1 Increase track time**
by reducing service interruptions caused by track damage and the associated maintenance.
- 2 Improve operational efficiency**
by eliminating the need for regular maintenance visits to repair or re-tighten loosened/broken fasteners.
- 3 Reliable and predictable performance**
with no galling and no damage to bolt threads.
- 4 Easy to install**
with standard tools and bolts — no need for specialized equipment or training.

SOLUTION

THU Locknuts Keep Railway Operations Moving

In December 2017, operators sought to eliminate the need for these daily maintenance visits. Working with J.Lanfranco, they installed 1³/₈UNC Gr.8 THU locknuts using existing track bolts on both interior and exterior locations. The nuts were torqued to existing values and then monitored — at first daily, then monthly.

After more than three months with no movement or loosened nuts, heel blocks and steps were also outfitted with THU locknuts. In February 2019, after being subjected to two freezing and thawing cycles, **none of the installations experienced any loosening.** And best of all, standard bolts, tools, and installation procedures were used by the crews.



THU installed on Class 1 diamond

What are THU locknuts?

With an all-metal design made of a single unique material, the J.Lanfranco THU locknut requires no insert. It derives its prevailing torque from two radially de-pitched locking slots positioned parallel to the thread pitch in the turret portion of the nut.

The locking slots are opened by the bolt threads and apply precise and controlled locking torque directly on the thread flank. As a result, this non-galling fastener technology resists all forms of dynamic and cyclical vibration without damaging the bolt threads.

Clamp force was consistent even six months after installation.

