

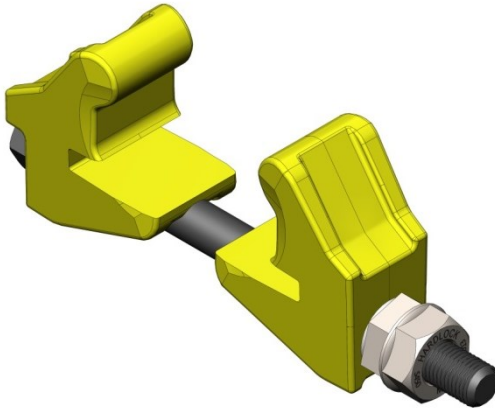
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## Temporary Rail Clamps

### Operation & Maintenance Manual

Clamps are permitted for use on following rail profiles:



- BR109
- BS110A
- BS113A (CEN56E1)
- UIC60 (CEN60E1)

*For operation of lines with clamped rail, utilising the Henry Williams TRC the following steps must be adhered to. Failure to do so could result in rail joint failure.*

#### IMPORTANT:

- Bolts must only be used once. Deformed or damaged bolts **must be replaced** with an identical Class 10.9 bolt. (**BS EN ISO 898-1**)
- A clamp can only be re-used if undamaged. Assess clamp condition before installation.
- Maximum speed over a temporary rail clamped joint is **50mph**.

# 1 Pre-Fitment

- The items listed below are required for correct assembly: [Fig. 1]
  - A. 2x Clamp Inner [2013.016-B1-001]
  - B. 2x Clamp Outer [2013.016-B1-002]
  - C. 2x M27x3.0 345mm Bolts (Class 10.9) [BLT-M27-001]
  - D. 2x M27 Conical Washers [NUT-M27-001]
  - E. 2x M27x3.0 Hardlock Convex Nut (Class 10.9) [NUT-M27-001]
  - F. 2x M27x3.0 Hardlock Concave Nut (Class 8.8) [NUT-M27-001]
  - G. 2x Fishplates\*
- Sleepers should be free from voids, this limits vertical rail movement. Ballast should be packed correctly.
- Sleepers both sides of the joint should be of the same type.
- All pandrols and rail seat fixings within the vicinity of the joint must be present and in serviceable condition.
- Measure rail, rail wear and:
  - \*Choose correct fishplate (liftplate, joggle or otherwise)
  - Grind rail head to accommodate side wear if present.
  - Impose appropriate speed limit, refer to: **NR - RT/CE/S/103.**

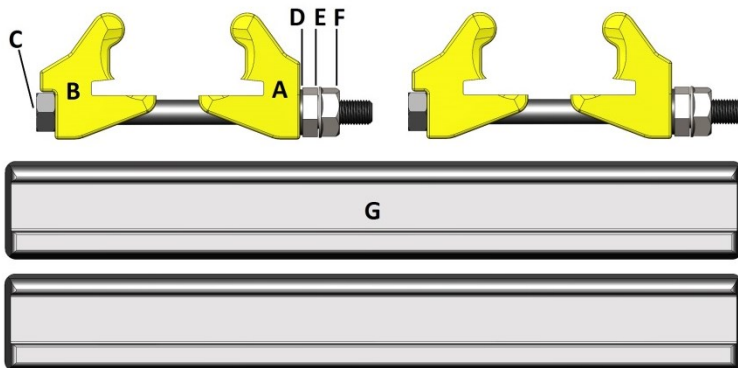


Figure 1 - Items Required

## 2 Fitment

- Fishplates should be located properly within the web of the rail. [Fig.2]
- Install clamps both sides of the joint, equidistant from the joint.
- Install clamps square with fishplate, perpendicular to the rail.  
**(not over fish bolt holes or over raised text)**
- Clamp should be flush with rail foot, as per [Fig.3].
- The **washer** must be placed under the **nut** and *not* the bolt head.
- Nuts must be fitted in order, convex-concave. [Fig.4]
- Tighten convex nuts to **400-475 N·m (300-350 ft·lbf)**  
Tighten concave nuts to **250-390 N·m (185-290 ft·lbf)**  
*Under-torque can result in a joint failure.*  
*Over-torque can result in a bolt/nut failure.*
- Hard Lock nuts should have a gap [Fig.5] between convex and concave nut faces, the absence of this gap means bolt or nut threads are deformed. *Both* nuts and bolt must be replaced in this instance.
- **\*\*Advisable:** Mark bolt head after installation torque is achieved.
- **Advisable:** Mark clamp positions using marker or similar.

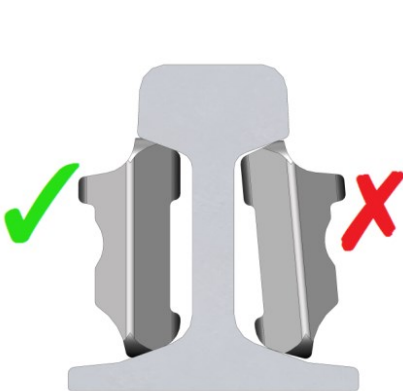


Figure 2 – Fishplate Fitment Diagram

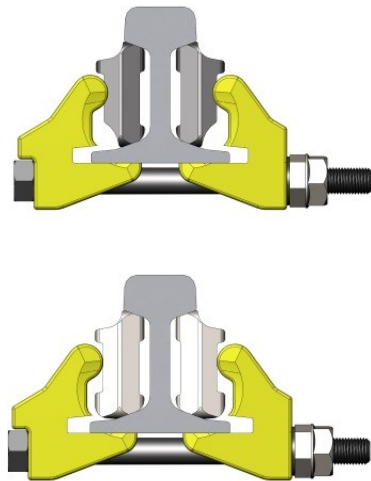
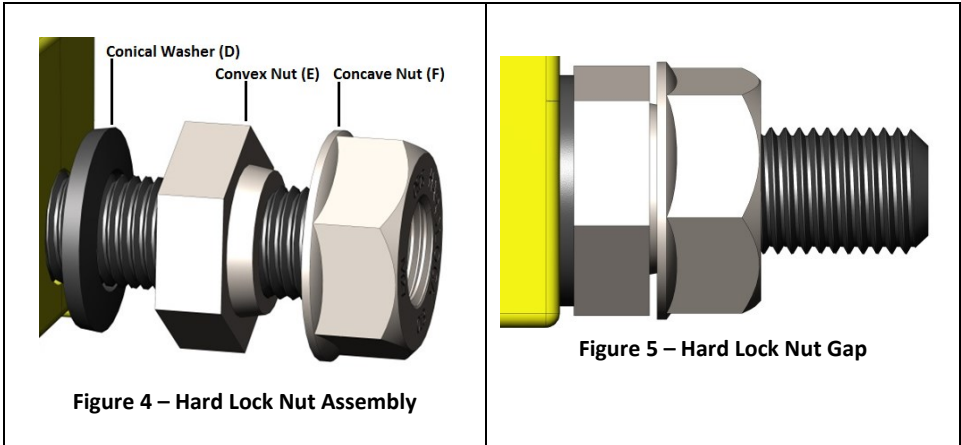


Figure 3 – Clamp Position



### 3 Post-Fitment

- Speed limits must be determined based on rail/joint condition, refer to **NR/L2/TRK/2102** for guidance. Note: **50mph** maximum.
- It is essential that the rail joint is inspected within a week of installation. *Nut torque must be preserved.* Temporary Rail Clamps are not designed to be in service for more than **7 days**.
- **\*\*Marked bolts should not be re-used if they have been removed, as they are no longer fit for purpose.**
- If the clamp has moved from its installation position, inspect joint and clamp, and replace with serviceable parts as required. Otherwise, if the clamp has not moved, release only the concave nut and re-torque both nuts, in sequence and to the correct values.