

5.4.3 Installation instructions



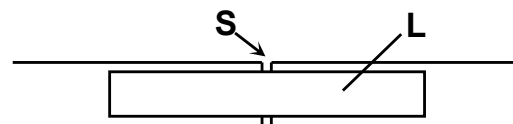
Danger of trapped fingers!

- Wear heavy-duty gloves

ATTENTION

Installation is only permitted if underside of foot of the rail is flat!

- Clear away enough ballast beneath the rail joints so that the rail clamps can easily be pushed under the rails.
- Check that the underside of the foot of the rail is flat, e.g. without any interfering weld beads.
- On both sides of each rail web insert the appropriate (approved) fishplates in the space between rail head and foot so that the middle of each fishplate (L) lies against the rail joint (S) (see the following schematic drawing and picture).



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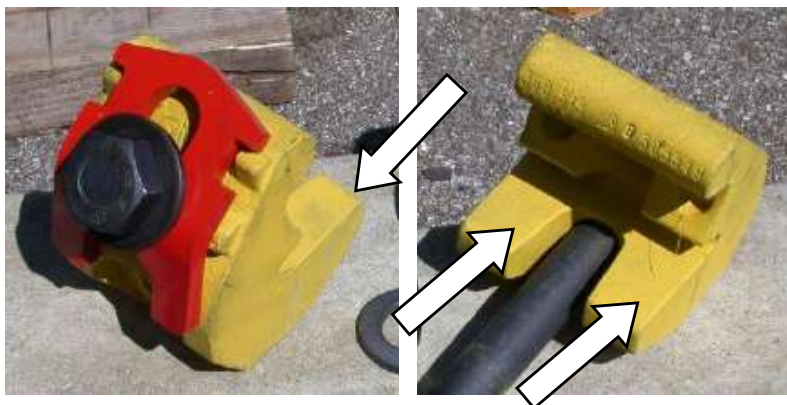
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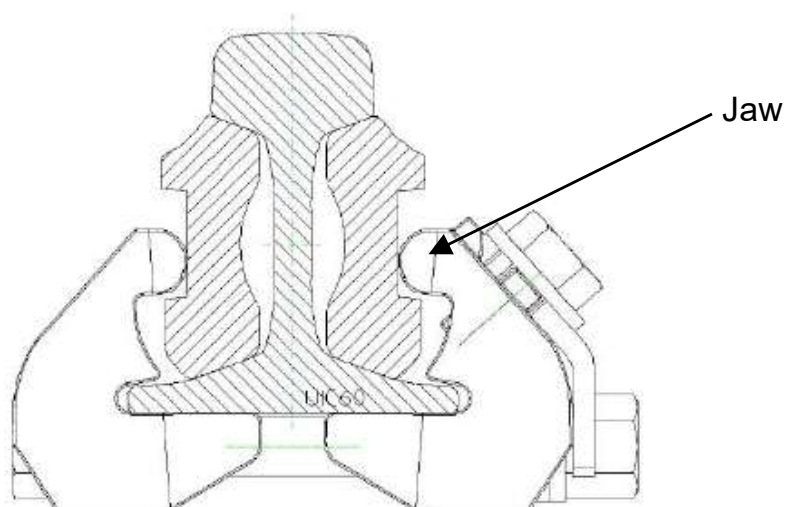
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- Install the rail clamps such that the guide surface of the two jaws (see arrows in figure below) lies tightly on the underside of the rail.



This guarantees that the rail clamps press the fishplates correctly against the web of the rail – see the following schematic drawing:



The functionality of the rail clamp matches the rail profile UIC60 only.



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68.05 / 13**RAIL CLAMPS**

- Insert the hexagonal bolts into the jaws such that the nut can be screwed onto the side of the locking plate (see arrow in figure below).



- Fit the lock washer, mount the nut with the collar-side facing the rail and tighten by hand.
- Check that the rail clamps are fitted securely and correctly.
- Tighten the nuts with a suitable tool SW41 (e.g. torque spanner) and with a torque value of **580 Nm**. After tightening, the fishplates have to be bashed with a sledge hammer **and the nuts re-tightened with a torque value of 580 Nm** (see pictures below).



- This procedure has to be repeated until no further signs of settlement can be observed.

ATTENTION**Do not bash the rail clamps!**Signature Not
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Spanner surfaces of the collar nut have to be vertical after tightening so the locking plate can fully lock into place (see arrows):

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- Pull the locking plate downwards and tighten bolt (pos. 7) with a suitable tool (SW41) and a torque of **580 Nm**.



- The rail clamps will remain in place for as long as it is necessary.

ATTENTION

Corrosion due to rusting may occur between fishplates and rail!

- Rail clamp bolts are to be checked regularly and re-tightened if necessary!

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5.5 Removal

For the removal of the rail clamps proceed in reverse order of the installation procedure described above.



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6 MAINTENANCE

Rail clamps are virtually maintenance-free.

- Dirty and/or rusty threads have to be cleaned using a wire brush. Grease afterwards.
- Keep threads smooth-running (grease).



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RCCL The Rail Clamp Company Limited

Codiun Rail Clamp



Application, Installation, Use and Maintenance
Instructions for the Codiun Rail clamp

Issue 4

October 2021

Original Instruction in English Language



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Issue Record

<i>Issue 1: Initial Release</i>	<i>June 2015</i>
<i>Issue 2: Incorporating Hardlock System</i>	<i>May 2018</i>
<i>Issue 3: Incorporating Hardlock System</i>	<i>January 2020</i>
<i>Issue 4: Amended Bolt Thread Lubrication details</i>	<i>October 2021</i>

Executive Summary

The Codiun Rail clamp is a unique product combining the functions of a temporary rail repair clamp with an optional built-in sensor array capable of providing real-time data gathering of a number of infrastructure parameters (for example rail temperature, axle count, clamp tension and many others).

The versatility of the rail clamp system means that the sensor functions are too many to incorporate into a single instruction book and these are therefore the subject of supplementary instruction documents.

This document deals with the installation and care of the rail clamp itself and its use as part of a temporary rail repair clamp system.

Parts and features of the rail clamp are illustrated and a complete installation sequence is illustrated with line drawings of each stage.

The design of the rail clamp incorporates a significant safety factor to prevent damage occurring even if the clamp is abused by over tightening. Nevertheless extreme abuse will ultimately damage the clamp so a short section is provided on the care and inspection of the integral parts of the clamp.

The document concludes with the Certificate of Conformity and guidance on disposal of the rail clamp at end-of-life.

Technical Specification

Clamp Thickness	60 mm
Shipping Weight	10.2 kg
Shipping Dimensions	312 x 153 x 60 mm
Bolt (std.)	1" V-Grade Bolt
Bolt Head (std.)	1.5" Square
Clamp Applicability	See Page 4

Introduction and Application

The Codiun Rail clamp is a unique product performing the function of a temporary rail joint clamp but also allowing the user to gather data on rail usage and infrastructure condition through a range of embedded sensors.

The data gathering functions are described in different instruction manuals according to the sensor type selected. This document provides instructions for the installation of the rail clamp and its use as a rail defect and temporary rail joint clamp.

Codiun Rail clamps are used to clamp standard fish plates to rails and a wide variety of rail and fish plate combinations are suitable for fixing by the clamp. These include but are not limited to:

Catalogue Number	Description	Supplier Code	Manufacturer
113lb Flat Bottom Rail			
57/054263	CEN56E1 4 Hole 6mm Gap	MJ1030	LB Foster / Coronet
57/054281	CEN56E1 4 Hole Tight Joint		LB Foster / Coronet
57/054031	CEN56E1 Dimple Maintenance Plate	MJ1032	LB Foster / Coronet
57/054031	113lb Emergency Straight Fishplate		Henry Williams
57/054029	113lb Emergency Joggled Fishplate		Henry Williams
57/054263	BS113A Standard 4 Hole Joint Fishplate		Acieries et Lamnoirs de Rives (ALR)
57/054281	BS113A Standard 4 Hole Tight Joint Fishplate		Acieries et Lamnoirs de Rives (ALR)
UIC54 Section	56E1 Emergency Straight Fishplate 1200mm Long		Acieries et Lamnoirs de Rives (ALR)

UIC60 / CEN60 Rail

57/054035	CEN 60E2 4 Hole 6mm Gap	MJ1007	LB Foster / Coronet
57/060539	CEN 60E2 4 Hole Tight Joint	MJ1008	LB Foster / Coronet
57/60101	UIC60 Emergency Joggled Fishplate		Henry Williams
57/054035	CEN60 4 Hole 6mm Gap Fishplate		Acieries et Lamnoires de Rives (ALR)
57/060539	CEN60 4 Hole Tight Joint Fishplate		Acieries et Lamnoires de Rives (ALR)
57/060543	CEN60 6 Hole Tight Joint Fishplate		Acieries et Lamnoires de Rives (ALR)
57/060540	CEN60 New – 113lb New 6 Hole Fishplate		Henry Williams
57/060541	CEN60 New – 113lb 3mm Worn 6 Hole Fishplate		Corus
57/060542	CEN60 New – 113lb 6mm Worn 6 Hole Fishplate		Corus

The Rail Clamp Company Limited are committed to the continual development of all their products and the application list is continually updated as new fish plates become available. If the rail / plate combination you require is not listed above please contact The Rail Clamp Company Limited for advice.

A key feature of the Codiun Rail clamp is its unique and patented shape which is designed to minimise the load on the rail foot whilst applying the maximum amount of the bolt tension to the fish plates without risk of bending the Bolt.

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The Codiun Rail clamp is a very robust product and is designed for a long service life. Nevertheless it is important to observe some basic safety precautions and good engineering practice when installing and maintaining the device.

NOTE

Failure to follow the instructions for installation and the use of the Codiun Rail clamp for any purpose NOT described in this instruction will invalidate the warranty and may be dangerous

Always Adopt a Safe System of Work

It is vital that all on-track operations are carried out in a safe manner. Be aware of train movements and of other infrastructure hazards.

No person should work on rail infrastructure without the necessary training and supervision.

Wear Appropriate PPE

Always wear gloves and safety boots when handling fishplates and clamp parts.

Hard Hats, Goggles and Hi-Vis outerwear are mandatory on most rail sites.

Do Not Exceed Specifications

Over tightening the bolt may cause damage to the Bolt thread, the Nuts or even the clamp itself. Such damage may be hard to spot and may lead to failure of the thread or the clamp at a later time.

Do not exceed the recommended bolt torque.

Note that if a nut is unusually difficult to turn on the bolt thread this may indicate that the threads have been stretched due to severe overtightening. In case of doubt, renew both the Bolt and the Nut.

Use Genuine Rail Clamp Company Parts

All the parts of the Codium Rail clamp are manufactured using high strength steels and precision manufacturing techniques. Do NOT substitute parts from other manufacturers as to do so could lead to impaired performance or failure of the clamp itself.

Always Fit the Washer

The Washer has smooth surfaces to ensure that more of the torque applied to the Nut is turned into clamping force at the Pressure Points. Failure to fit the Washer reduces the clamp force and impairs the efficiency of the clamp.

Check the Approval Certificate

Local rail authority approval certificates such as the Network Rail Certificate of Product Acceptance give details of permitted line speeds and rail clamp configurations.

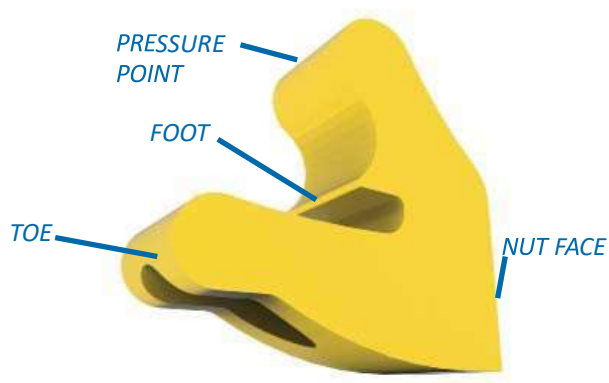
Check that the approval certificate permits the intended use.

Do Not Join Track Circuits

The rail clamp and fish plates must not be used for connecting insulated joints.

The parts and features of the Codiun Rail clamp are illustrated below and on Page 7.

This part of the rail clamp is fitted first. The Bolt passes through the hole in this section and the shoulder feature prevents the head of the Bolt turning when the Nut is tightened.



This part of the rail clamp supports the toe of the Bolt Section and is tightened into the Bolt Section using the Nut and Washer.

The complete rail clamp assembly includes the Bolt Section, the Nut Section, the Clamp Bolt, Nuts (X2) and Washer.

The Pressure Points press against the fish plates to secure them, the Foot features rest on the upper surface of the rail foot, the Toe features pass below the rail foot.

