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Issue:	2
Date:	4 September 2010
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Level 3 Module

Signalling Installation – Fixings: Nuts, Bolts, Screws, Washers, etc.

Endorsement and Authorisation

For endorsement and authorisation, please refer to NR/L3/SIG/11303.

This module is a reformatted version of the previous Signalling Installation Handbook with no change to the content other than correction of terminology.

It represents historic best practice which may no longer be relevant.

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Issue record

Issue	Date	Comments
2	September 2010	Reformatted version of previous document incorporating the text of the installation handbook.
1	August 2000	First issue

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 4 December 2010.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 4 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

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For points fitting arrangements see:-

NR/L3/TRK/1202 for systems with fixed stretcher bars

NR/L3/SIG.10179 for systems with adjustable stretcher bars

NR/L3/SIG/00111 for systems with mechanical supplementary drives etc

1 Types

Examples of various patterns and types of nuts, bolts, screws and washers are shown in Figures 1 to 6. They also come in different materials, and may be plated to avoid corrosion.

Use the specified type, material, and plating.

2 Threads

Modern practice calls for the use of Metric threads. Several others are still in use. Examples include:

- Whitworth (Whit).
- Unified Fine or Coarse (UNF or UNC).
- British Association (BA).

Spanners for most Metric and Unified thread nuts and bolts are sized by their “across the flats” (A/F) dimension, and this will be shown on the spanner. A Metric size is given as a number of millimetres (e.g. 15mm) and a Unified thread as a number, or fraction, of inches (e.g. 5/8).

Whitworth spanners are marked with their size as a number, or fraction, of inches followed by “W” (e.g. 3/4 W).

BA spanners are marked with a number. You will frequently use sizes “0” and “2” for cable and link terminals, but smaller sizes (e.g. “4” and “6”) may be found on older electrical and electronic equipment.

Make sure that the nuts and bolts you are using match each other. If in doubt, try screwing them together gently by hand before using tools.

3 Tools

Use only tools of the correct type and size. A spanner that only loosely fits is not good enough, and will damage the flats of the nut.

Check that fixings are tight, but not overtight. If a torque is specified, then use a torque wrench. (See Module 1H25.)

Do not use pliers for tightening nuts, as this damages any protective plating on the nut.