

1-100 Under-baseboard tie-bar

Introduction

This 3D printed, under-baseboard tie-bar is designed for use with hand built turnouts that have fine dropper wires attached to the point blade ends which can be threaded into two vertical metal tubes coming up from the tie-bar below. This unit should work well with the new Easitrac turnout kits.

Although primarily intended for use with 2FS track, the tie-bar tubes can be adjusted to sit between 8mm and 19mm apart, so the tie-bar can be used with a wide variety of track gauges.

The dropper wires can be formed from 0.3mm diameter phosphor-bronze wire, normally formed with two 90 degree bends, so the wire can be soldered along the bottom edge of the point blade, then run at right angled underneath the adjacent stock rail, then at right angles down into the baseboard.

By running under the stock rail, the wire stops the point blade from lifting, especially if caught during track cleaning.

Parts list

Base unit

Tie-bar half, lower adjustment arm

Tie-bar half, upper adjustment arm

2 x 1.10mm stainless steel tube (19G hypodermic needle)

3 x 2.2mm (No 2) self-tapping screw 4.5mm long

Assembly instructions

The base unit and two halves of the tie-bar are 3D printed, and supplied connected by small sprue tags.

Cut the sprue tags using a razor-saw to separate the three components.



As a by-product of the 3D manufacturing process, some white powder may still be packed inside the tie-bar ends and in the holes. This can be dislodged with a cocktail stick and cleaned up using a 0.90mm – 1.00mm drill twisted by hand in the holes.

3D printing in this type of plastic results in a rough surface, which can adversely affect the smooth operation of the assembled tie-bar. Therefore, the outside faces of the tie-bar and the inner faces of the square base unit 'rings' should be lightly dressed with a file or emery paper until the tie-bar pieces run smoothly inside the base unit 'rings'.

The two halves of the tie-bar should now be inserted into each other. Again, some dressing with a small file may be needed if the fit is too tight. It should be possible to push the two halves completely together and then pull them apart again, until almost separated again.



Now thread the tie-bar into the base unit 'rings' so the needle holes are away from the base unit fixing holes, and the screw hole in the tie-bar is on the lower arm.



Insert one of the self-tapping screws through the slot in the upper arm into the round hole in the lower arm. Screw in until the thread starts to bite, but do not tighten it yet.

Next, clean up the ends of the stainless steel tubes with files or emery paper.

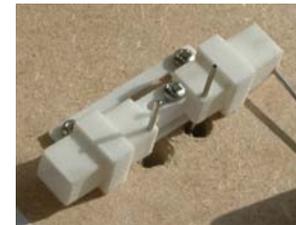
If the stainless steel tubes have not been already prepared in the kit – *see note at end of the instructions.*

The tubes are a tight push fit into the holes. Hold the tubes gently in pliers to insert them. They will push out more of the plastic powder as they are inserted.



Adjust the distance between the two tubes to roughly match the holes in the baseboard and adjust the tubes so that the top ends will be about 1mm below the baseboard surface when in position.

Locate the tie-bar carefully, ensuring the dropper wires from the point blades thread into the tubes, and that the tie-bar is as close as possible to right angles to the track direction.



Drill pilot holes for the fixing screws and screw the base unit to the underside of the baseboard.

The distance between the tubes can now be finely adjusted, and then the lock-screw tightened to secure the two halves of the tie-bar together.

Small holes are provided at both ends of the tie-bar, both horizontal and vertical, for attaching the operating mechanism of choice, or new holes can be drilled as required.

Note

Take the hypodermic needles from their packaging and remove the pointed end and the syringe fitting end to leave just a plain tube. The needles can be cut either with a carborundum slitting disk in a mini-drill, or with a fine triangular file used like a saw.