



Generic Diamond Crossing Assembly Instructions

Thank you for purchasing this Easy Build Finescale Diamond Crossing kit. Prior to beginning assembly, please read through these instructions thoroughly, ensuring that all components of the kit are present and that, prior to assembly, you have the appropriate tools required.

If in the event that any parts are missing please contact British Finescale directly at sales@britishfinescale.com

Parts Included

- Diamond Crossing Base
- 8 Crossing 'V's (frog) Point and Splice Rails
- Bullhead Rail for Stock Rails, Check, Closure and Wing Rails

Tools and Materials Required

Although the components are largely preformed and gauges are not required, a few simple tools and facilities will be required to facilitate construction including:

- Super Glue
- Track Cutters, Fine Razor Saw or Hobby Drill with disc cutter
- Flat Nose Pliers
- File
- Tweezers
- A suitably sized flat surface.
- A soldering iron with a small tip and suitable solder and flux to attach additional wires to switch rails, etc.
- Electrical Feed Wires (decoder wire is recommended)

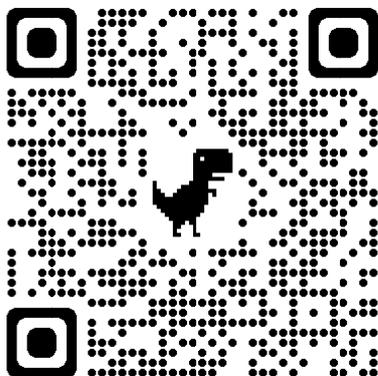
Anatomy of a Turnout

To aid assembly, please familiarise yourself with the names of the key parts that make up a standard turnout (a Diamond Crossing shares many components with a standard turnout) by watching this YouTube video below:

Please use this link: <https://www.youtube.com/watch?v=e-lkBI7QmfQ>

Or

Scan the QR code:



Rail Orientation

The bullhead rail used in this kit has a top and a bottom which differs in thickness/width (the top is wider).



It is VERY important to insert the rail into the chairs in the correct orientation. Otherwise difficulty will be experienced in sliding the stock, check and crossing V rails into the chairs and doing so may cause damage to the chairs of the track base. Please familiarise yourself with the rail orientation and, if necessary, mark the top of the rail with a felt tip pen to aid correct assembly. The switch blades have a lug on the bottom which is located into the tie bar so incorrect orientation should be obvious.

Diamond Crossing Templates

To aid layout construction, full size PDF templates for all FinetraX Diamond Crossing kits are available on the web site.

Assembly

Having familiarised yourself with these instructions, let assembly begin..!

Filing and Cleaning Rail Ends

Once the rails are cut to the required length, it is VERY important that the rail ends are cleaned up with a small file (a needle file is ideal for this). To allow free and easy insertion of the rail into the chairs, both the foot and web of the rail must be slightly 'chamfered'. Failure to properly clean and chamfer the rail may result in difficulty threading the rail into the chairs, causing breakage of the chairs.

Cutting and Bending Check Rails

Check Rails must be cut to length and a small bend (flare) put on each end. The bends can be easily put onto each Check Rail using a pair of small pliers. The appropriate full size template for your kit should be downloaded, printed and used to ensure correct length and bends for the Check Rails. Downloadable templates for each kit are available at www.britishfinescale.com.

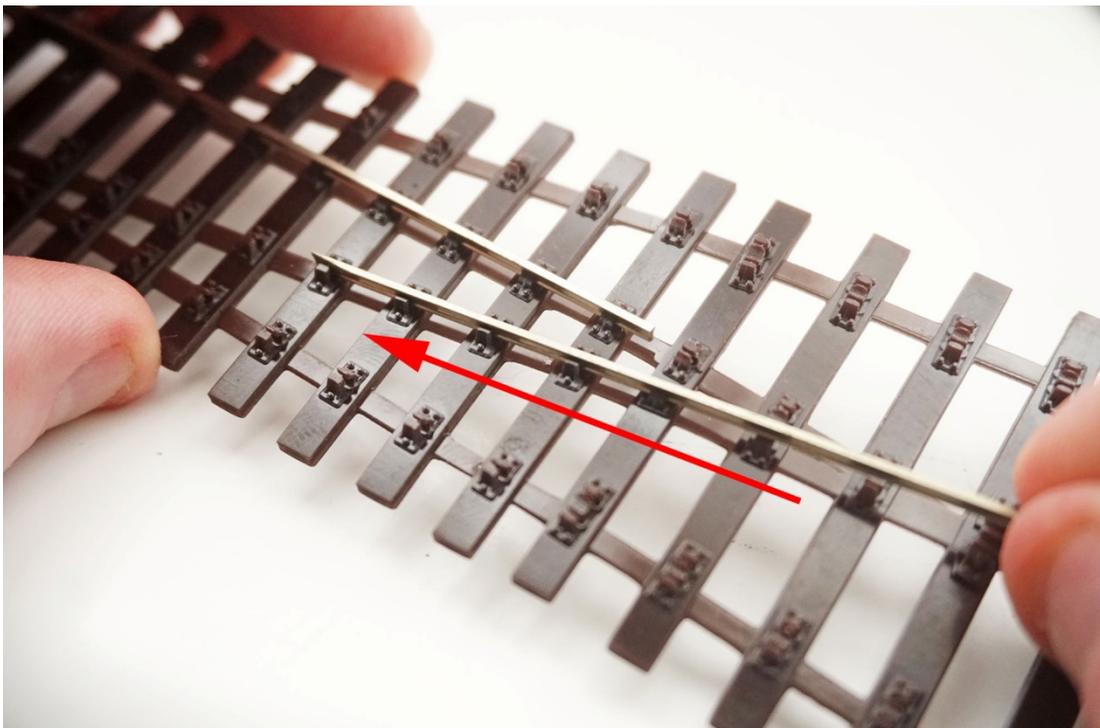
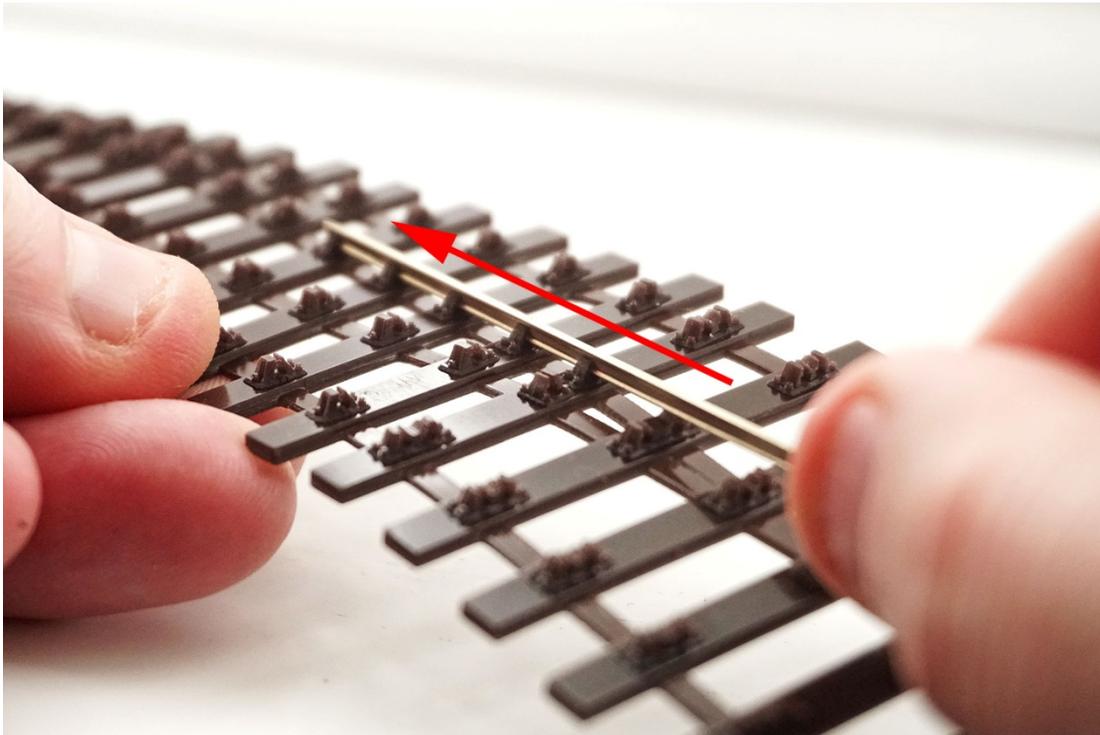
Cutting and Bending Wing Rails

Wing Rails must be cut to length and a small bend (flare) made to in each. The bends can be easily made to each Wing Rail using a pair of small pliers. The appropriate full size template for your kit should be downloaded, printed and used to ensure correct length and bend for each Wing Rail. Downloadable templates for each kit are available at www.britishfinescale.com.

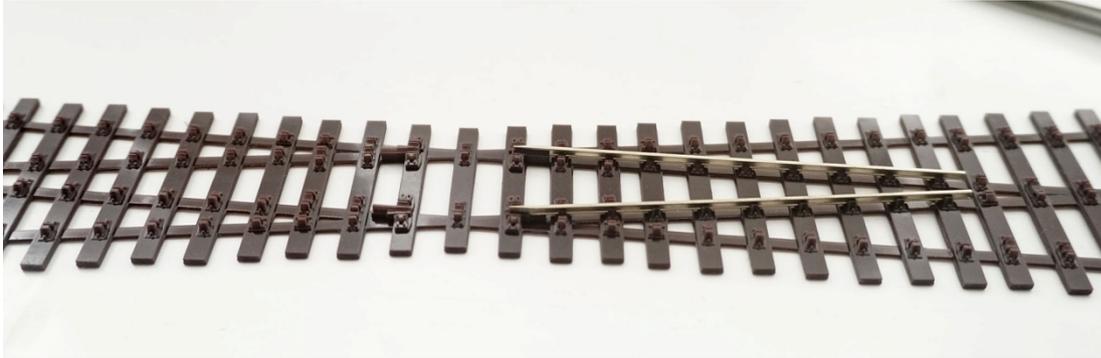
Cutting and Fitting the Diamond V Rails

Diamond 'V' Rails must be cut to length using the appropriate full size template for your kit. There are eight 'V' rails in the kit and they have the ends of the rail pre machined to a point at the correct angle. Four of the 'V' rails are for the diamond, the other four are for the crossing 'V' (frogs) at either end of the diamond. These are 'handed' one left and one right; please ensure you instead them in the correct orientation (see 'Rail Orientation').

Thread the V Rails in from the crossing 'V' (frog) 'knuckle' (see Anatomy of a turnout and downloadable template) and towards the middle of the diamond. You will need to bend the plastic turnout base **slightly** and **carefully** in order to make clearance for the rail, otherwise the chairs around the Crossing 'V' (frog) will be in the way of the rail. This is easily done on the edge of the desk/work-top you are assembling on. WARNING – DO NOT over-bend the plastic turnout base, otherwise there is a risk of snapping the base! Only bend just enough to allow the rail to slide in.



Push the V rails in until the V wedges in and cannot be pushed any further. The other end of the rail must end where shown on the downloadable template.

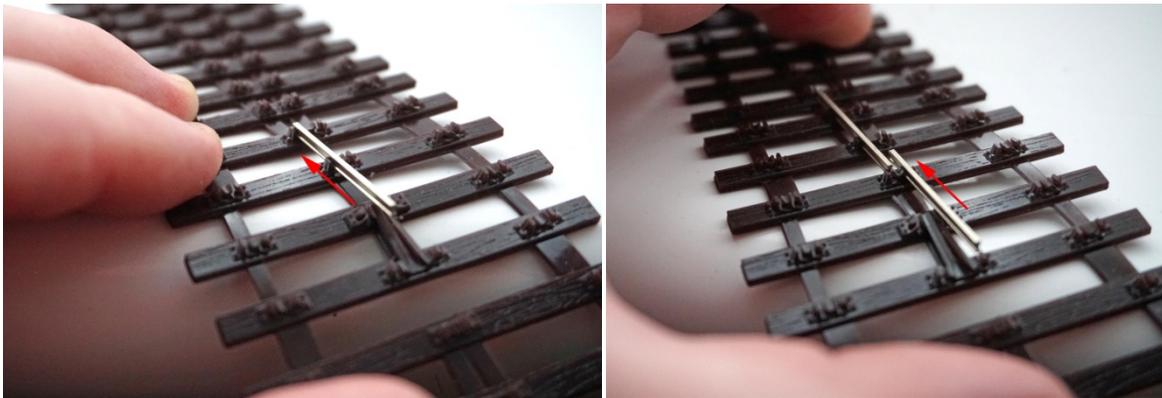
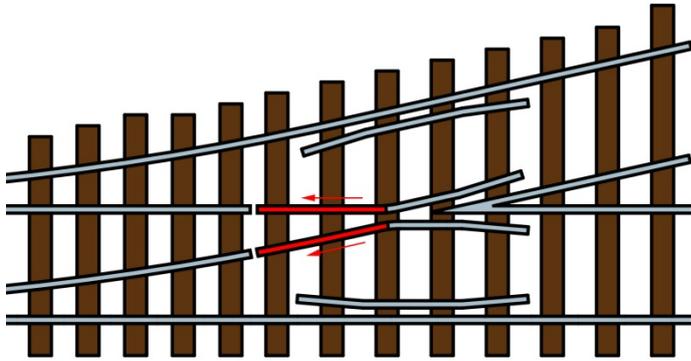


The same can be repeated for the opposite side.



Cutting and Fitting Closure Rails

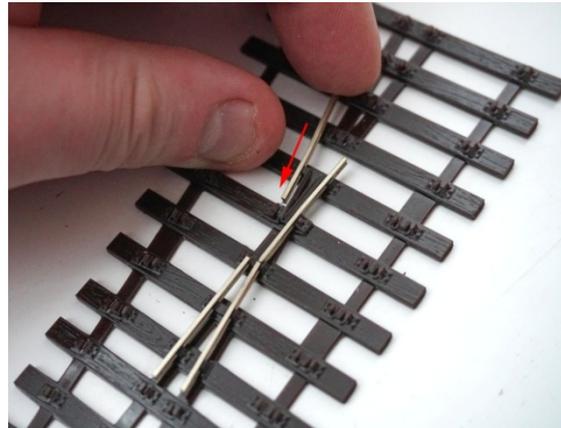
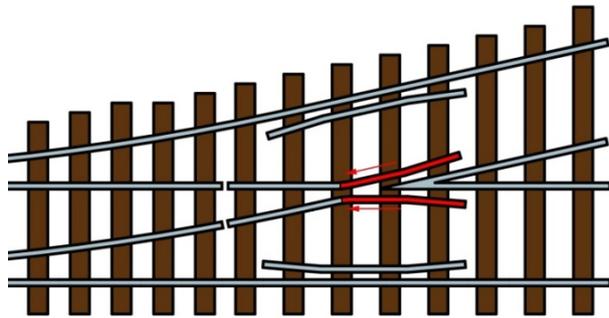
Closure Rails must be cut to length using the appropriate full size template for your kit. Thread the Closure Rails in from the 'knuckle' (see Anatomy of a turnout and downloadable template) and towards the middle of the diamond. You will need to bend the plastic turnout base **slightly** and **carefully** in order to make clearance for the rail, otherwise the chairs around the Crossing 'V' (frog) will be in the way of the rail. This is easily done on the edge of the desk/work-top you are assembling on. **WARNING – DO NOT** over-bend the plastic turnout base, otherwise there is a risk of snapping the base! Only bend just enough to allow the rail to slide in. Repeat for the opposite side of the diamond.



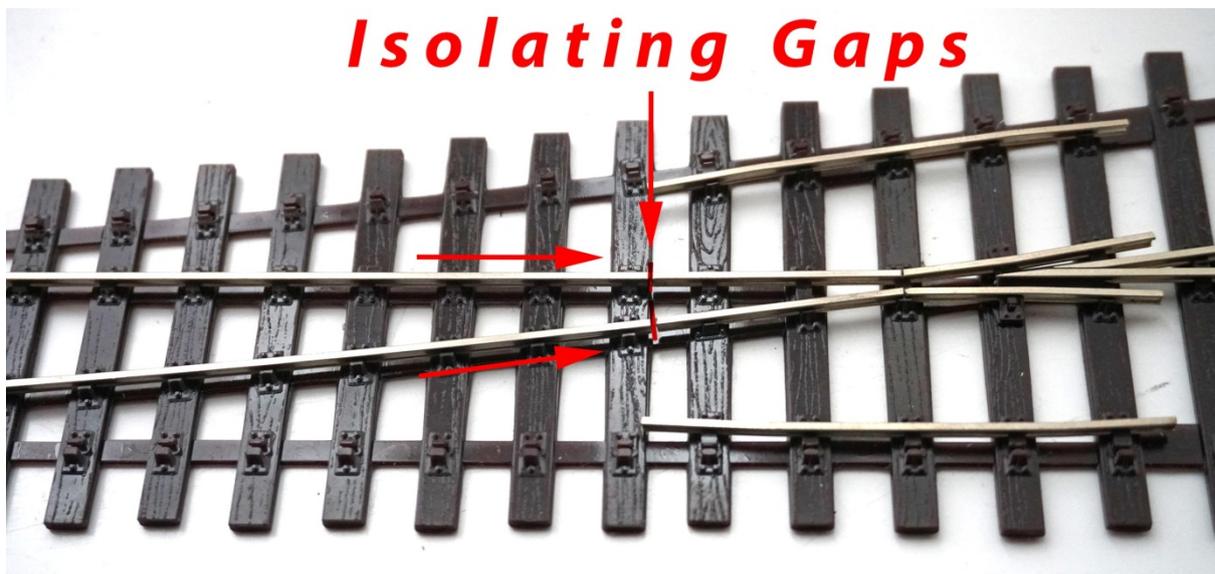
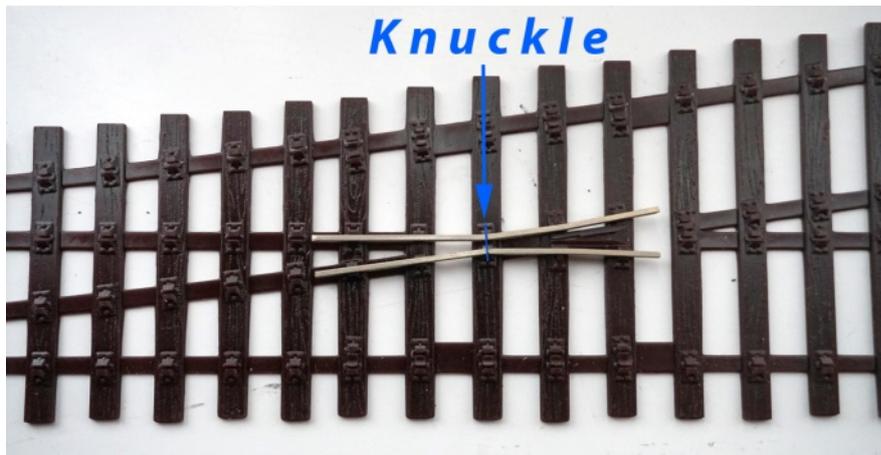
Note: There should be an isolating gap between the closure rails and the diamond V rails that were previously inserted.

Fitting Wing Rails

Wing Rails can be threaded in towards the Closure Rails as shown below.



IMPORTANT! The join between the Wing Rails and the Closure Rails **MUST** be located exactly at the 'Knuckle' position. This position will be different for each kit, so **you MUST refer to your kits downloadable template which will show the exact position of the knuckle**. There is also a small indentation on the plastic base indicating the precise position of the 'Knuckle' join. Repeat for the opposite side of the diamond.



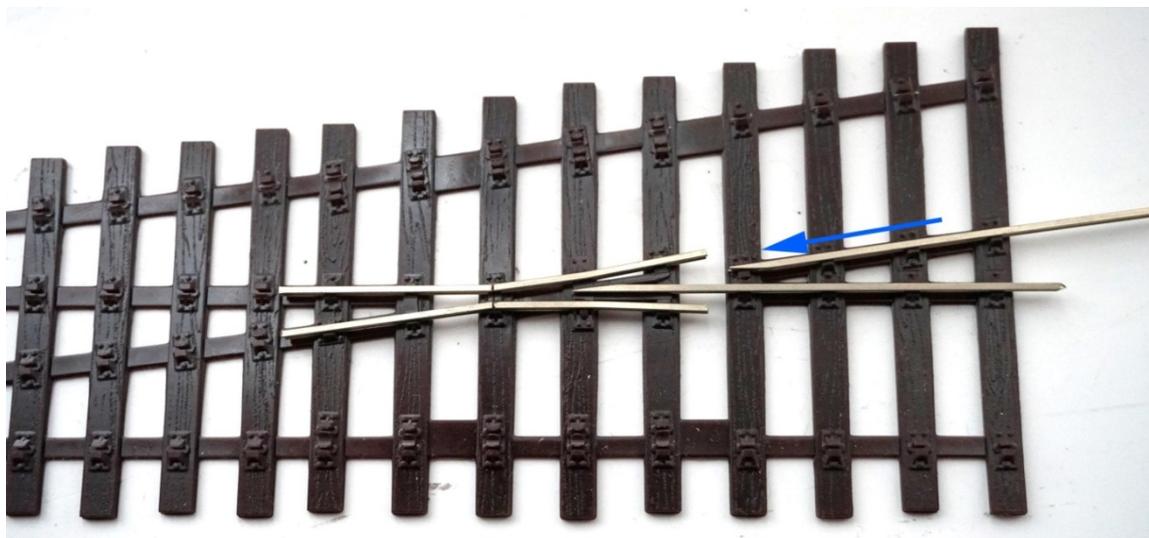
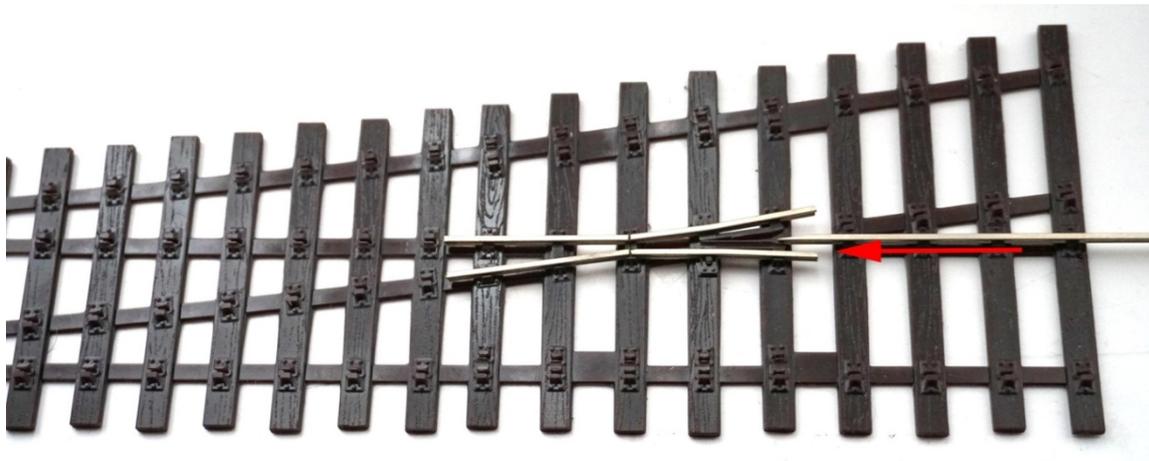
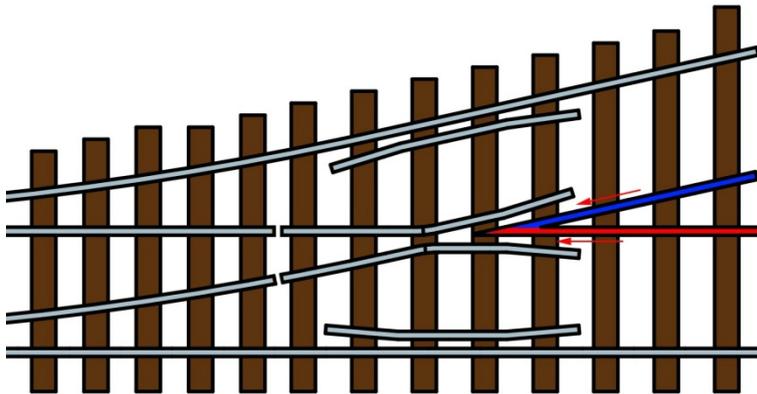
Fitting Crossing 'V' (Frog) Point and Splice Rails

The crossing 'V' (Frog) is made of two pieces of rail called the **Point** and **Splice** rails. These have the ends of the rail machined to a point at the correct angle, and come pre machined in the kit. These are 'handed' one left and one right; please ensure you instead them in the correct orientation (see 'Rail Orientation').

The **Point** Rail location is shown on the downloadable template and is inserted first and pushed all the way until it stops (it will wedge in). You should find the point of the V on 2 thirds over that sleeper/timber.

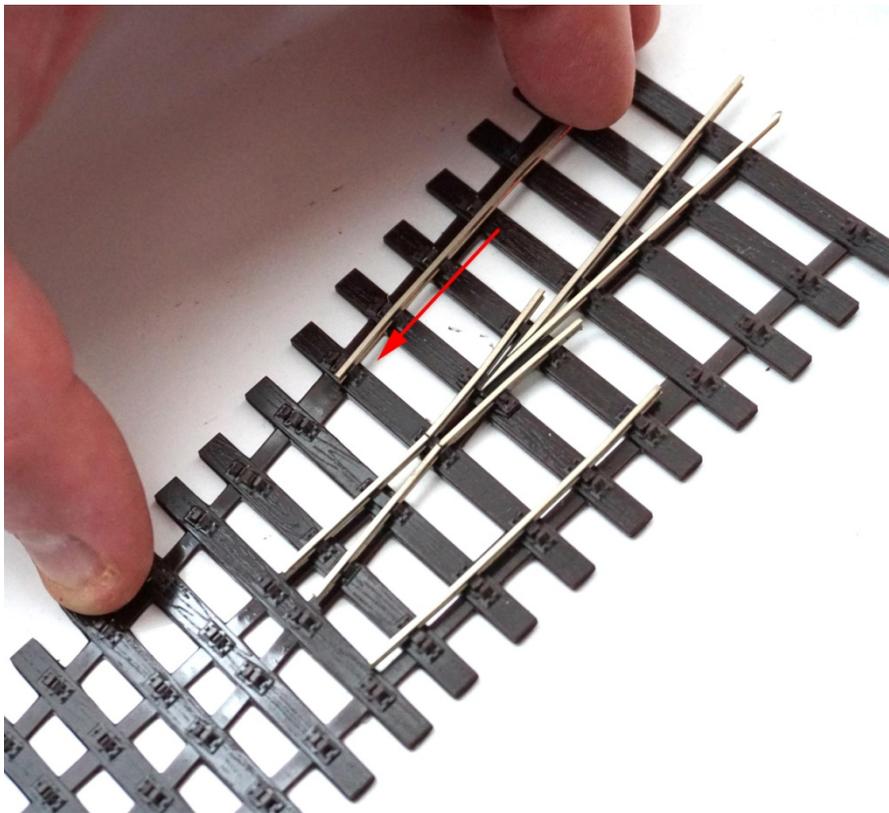
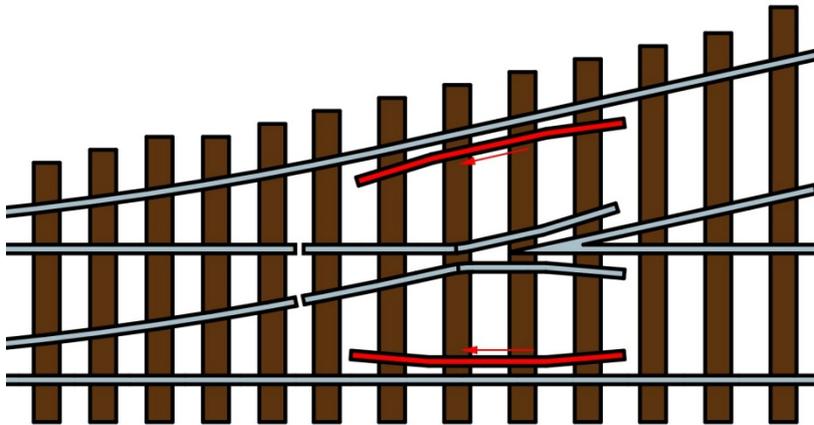
The **Splice** Rail is then inserted and pushed-in until it butts up to the first **Point** Rail.

Repeat for the opposite side of the diamond.

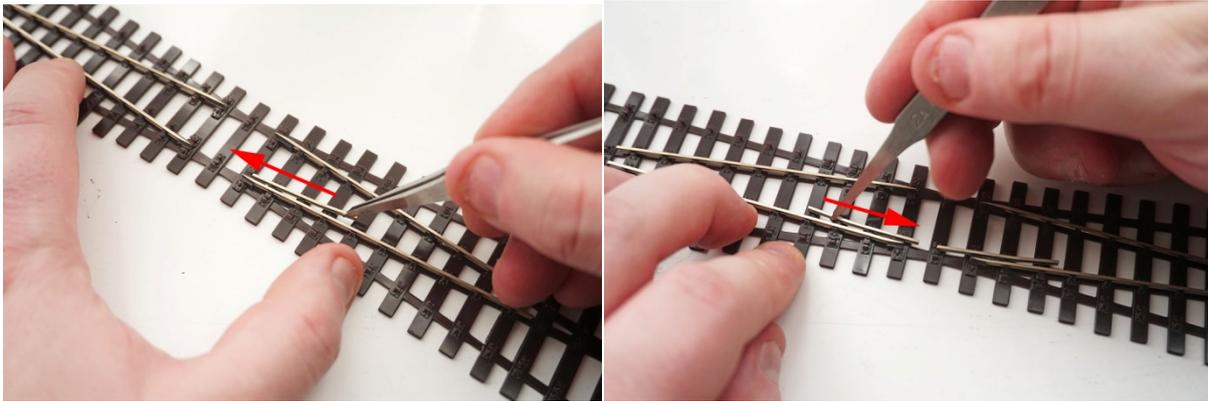


Fitting Check Rails

The Check Rails can be threaded-in one at a time, taking care to guide the end of the Check Rails through the slots in the chairs. Check against the downloadable template for correct alignment.

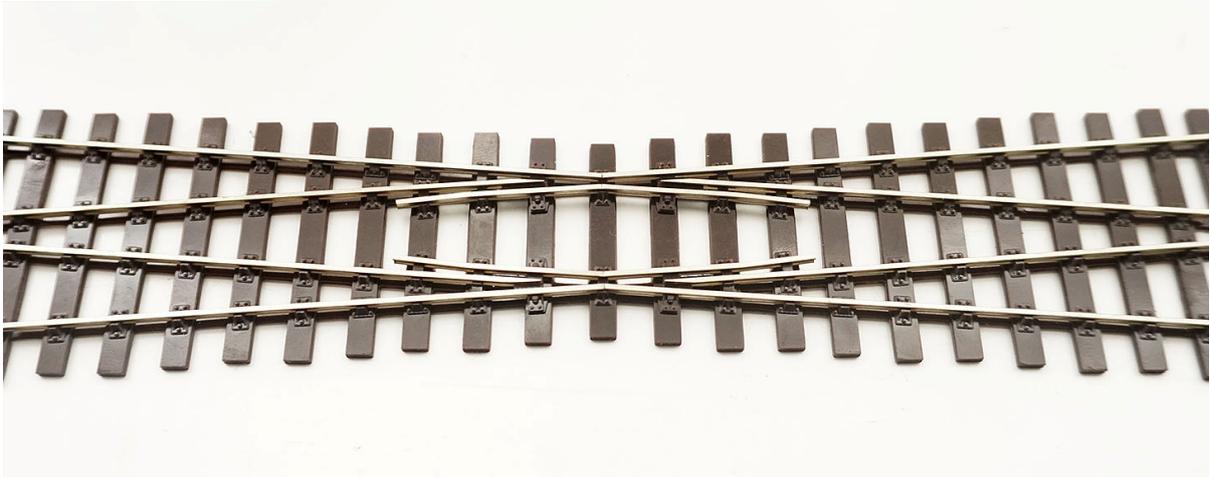
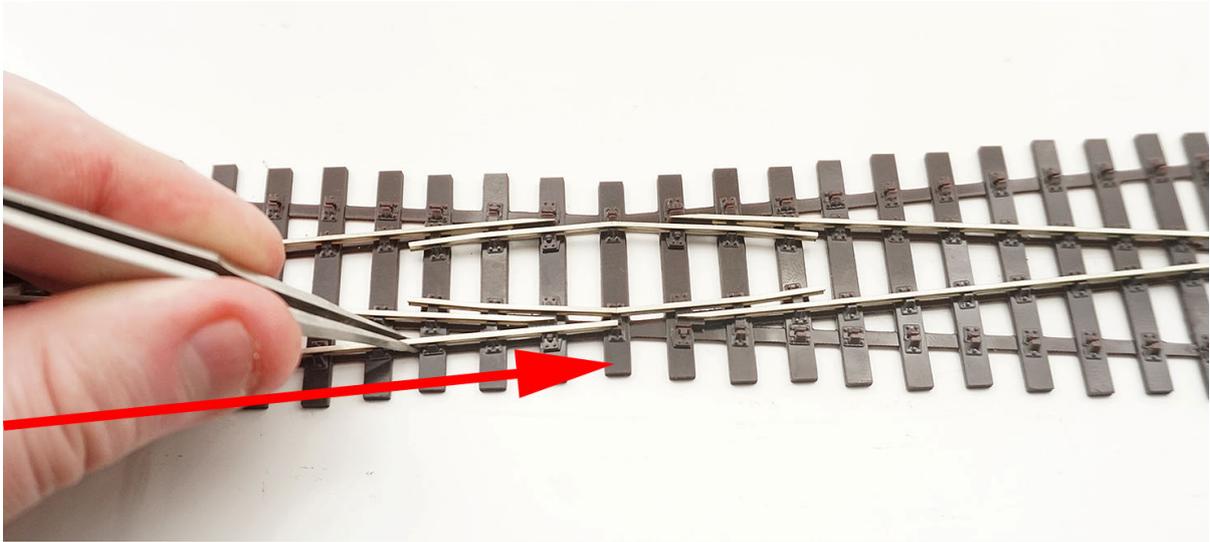


The four Check Rails located in the middle of the diamond can then be inserted. They must meet EXACTLY in the middle of the sleeper at the 'Knuckle' location (see Anatomy of a Turnout).



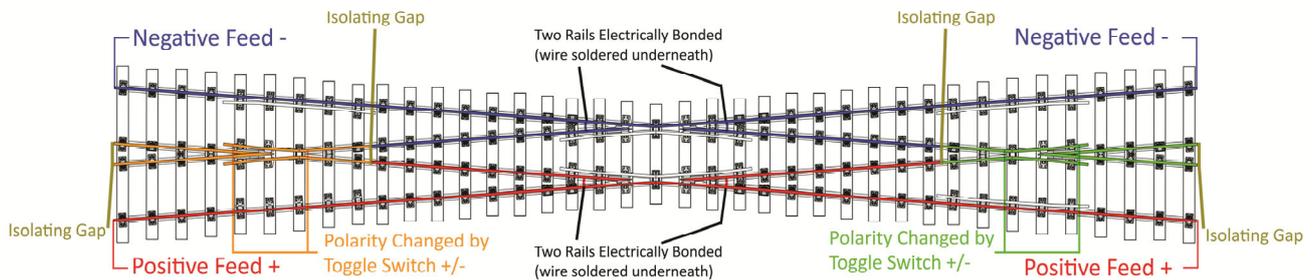
Fitting Stock Rails

All four stock rails can now be slid into the chairs from the end of the base towards the middle of the diamond. They must meet EXACTLY in the middle of the sleeper at the 'Knuckle' location (see Anatomy of a Turnout).



Electrical Wiring

Please refer to the diagram for suggested electrical connection. A positive feed wire should be soldered to the bottom two Stock Rails and negative feed wire to the top two Stock Rails.



Each V Rail that runs to the middle of the diamond should be electrically bonded to its adjacent Stock Rail by soldering a small piece of wire between them under the rails at the point shown in the diagram.

One wire should also be soldered to the bottom of the Crossing V 'Frog' Rails and Wing Rails and another wire soldered to the bottom of the Closure Rails, as indicated below in green and orange in the diagram above.

Fixing the Rails in Place

Once happy with all of the rail positions (checking especially the 'knuckle' location), the rails can be permanently fixed in-place using a small amount of super-glue on one or 2 chairs for each piece of rail.

Laying the completed Diamond

The completed turnout can be installed into the layout and fixed into place using PVA glue or Copydex. Please ensure that no glue gets into the Switch Blade or Tie Bar area, otherwise this will restrict movement or create unnecessary friction.

Ensuring the Plastic Base is Flat

Depending on environmental temperature, slight curving of the plastic base may be experienced. To guarantee smooth running of trains, it is important to ensure that the completed turnout lay absolutely flat on the baseboard surface. This can be accomplished by use of weights or temporary 'pins' to ensure flatness while the turnout is being glued in position.