Finetrax 2FS Turnout Kit - Assembly Instructions

Please read through these instructions thoroughly, prior to beginning, ensuring that all components of the kit are present and that you have the appropriate tools.

Parts Included:

- Turnout Base
- Crossing 'V' (frog) Point and Splice Rails
- Code 75 Rail including 2 Stock Rails
- 2x pre machined Switch Blades
- Tie Bar, Pins and Spacer

Tools and Materials Required:
Although the components are largely preformed and gauges are not required, a few simple tools and materials will aid construction:

- 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/flux
- Electrical Feed wires

Anatomy of a Turnout:
To aid assembly, please familiarise yourself with the names of the key parts that make up a turnout by watching the YouTube video below:
www.youtube.com/watch?v=e-lkBl7QmfQ

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.

Turnout Templates:
To aid layout construction, full size PDF templates for Finetrax 2FS turnouts can be accessed from the shop listing. A drawing for each item is linked.

Assembly

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). Both the foot and web of the rail must be slightly chamfered to allow free and easy insertion of the rail into the chairs. 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:

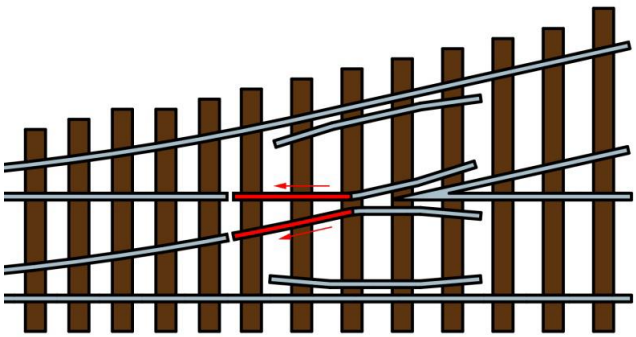
Check rails must be cut to length and two small bends (flares) put on each end. The bends can be easily put onto the check rail using a pair of small pliers. The appropriate full size template for your kit should be downloaded, printed, and used to ensure correct length and bends for the check rails.

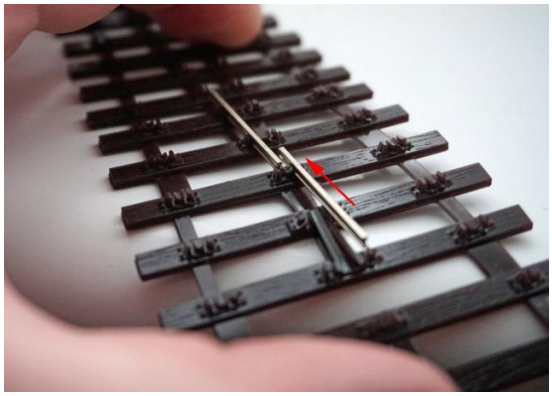
Cutting and Bending Wing Rails:

Wing Rails must be cut to length and a small bend (flare) put in each. The bends can be easily put onto the wing rails 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 wing rails.

Cutting and Fitting Closure Rails:

Closure Rails must be cut to length against the appropriate full size template for your kit. Thread the closure rails in from the knuckle towards the tie bar end of the turnout. 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' will be in the way of the rail. This is easily done on the edge of the desk or work top you are assembling on.

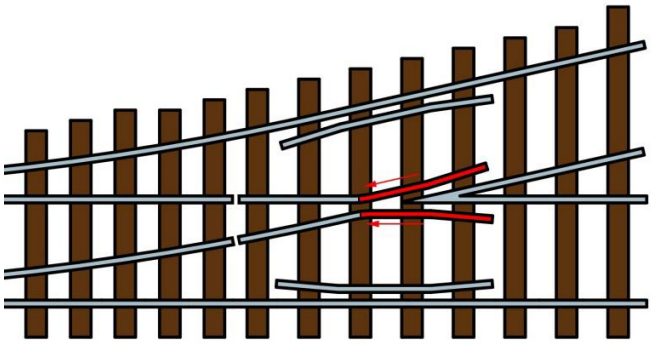


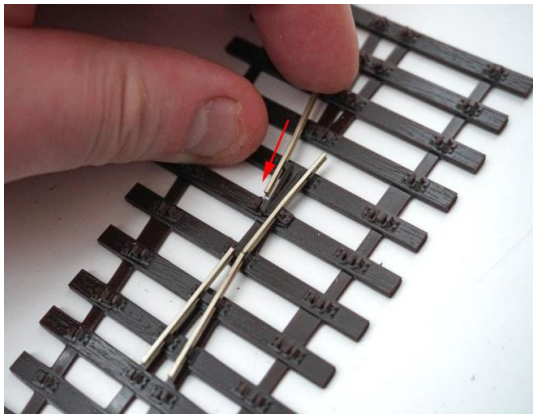


WARNING! – DO NOT over bend the plastic turnout base otherwise there is a risk of snapping the base! Only bend just enough to allow the rail to slide in.

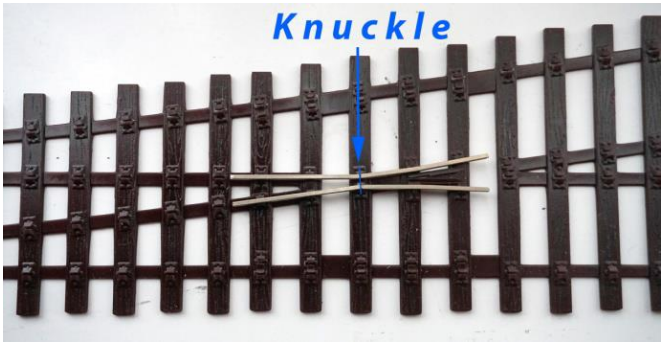
Fitting Wing Rails:

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



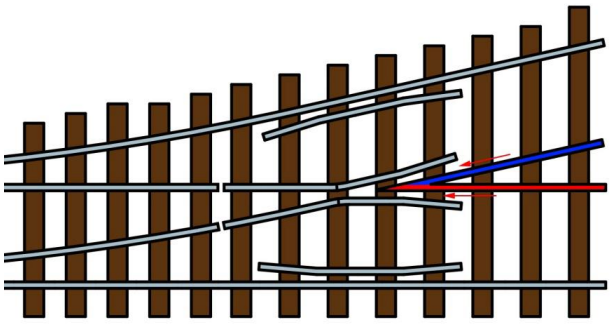


IMPORTANT! The join between the Wing Rails and the Closure Rails MUST be located exactly at the knuckle position. This position will be different for each kit, so you MUST refer to the downloadable template for your kit which will show the exact position of the knuckle. There is also a small indentation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



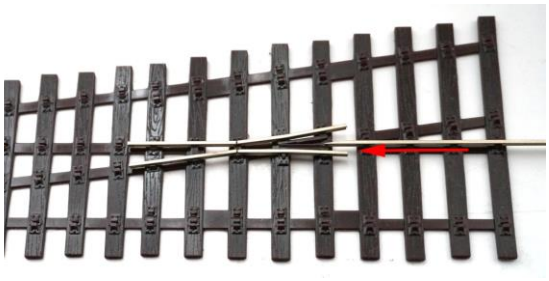
Fitting Crossing V Point and Splice Rails:

The crossing V is made up 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 included, pre machined, in the kit. These are handed, one left and one right, please ensure you insert them in the correct orientation.

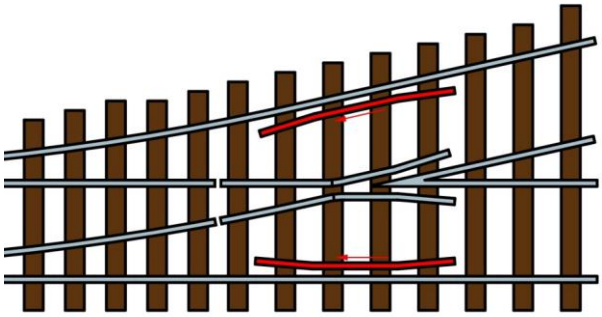


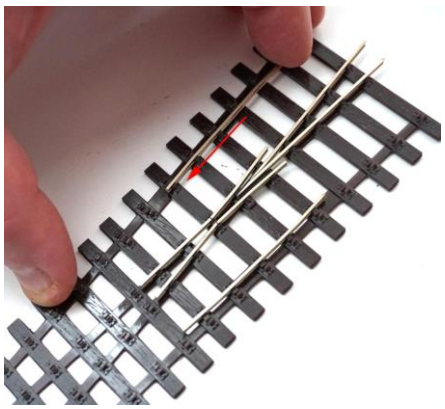
The Point rail is located on the main route and is inserted first and pushed all the way until it stops (it will wedge in). You should find the point of the V is 2 thirds over the sleeper.

The Splice rail that is on the diverging route is then inserted and pushed until it butts up to the Point rail.

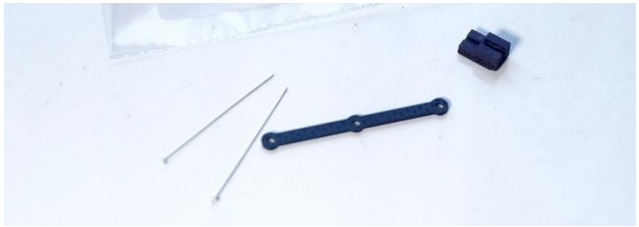


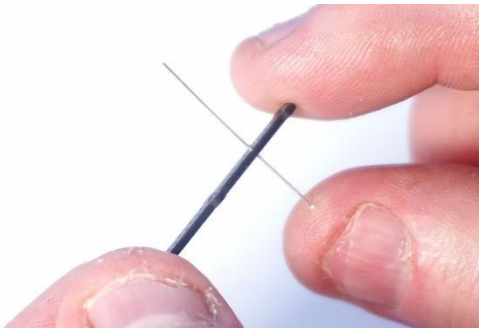
Fitting Check Rails:
The Check Rails can be threaded in one at a time taking care to guide the end of the Check Rails through the slots in the chairs. Check against the downloadable template for correct alignment.





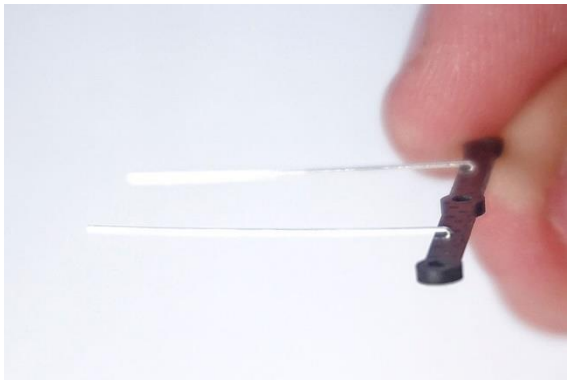
Tie Bar Assembly:
The kit contains a small bag that includes the main Tie Bar, 2 metal ‘headed’ pins and a Switch Blade ‘Spacer’. The ‘Spacer’ is used to maintain the correct gap between Switch Blade and Stock Rail when soldering the Switch Blades to the pins.





The 2 metal pins are inserted through the predrilled holes in the tie base.

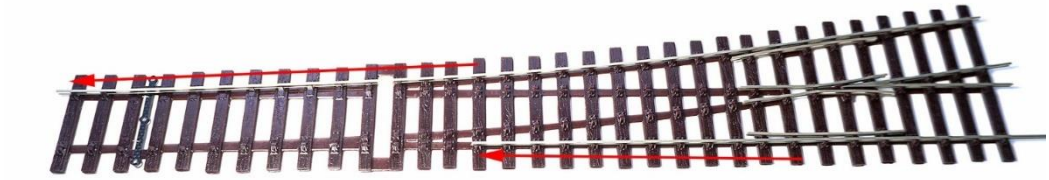
Make sure that the headed 2 pins are pushed all the way through until the heads of the pins are flush with the bottom of the tie bar. Then bend both pins by 90 degrees so that they face forward as shown above.



The pins can then be cut short leaving about 2 – 3mm of length as shown above.

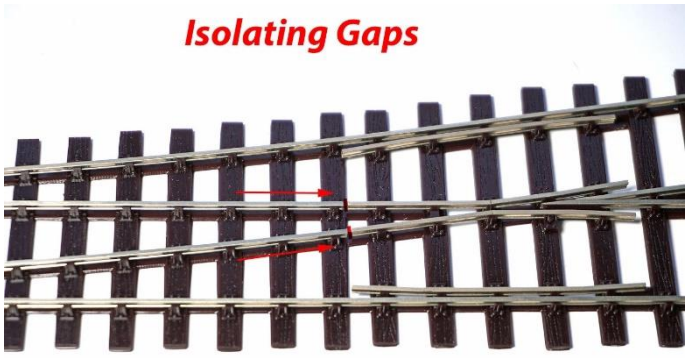
Fitting Tie Bar and Stock Rails:
The assembled Tie Bar can now be placed on the Turnout Base between the last 2 Slide Chairs. It will locate into the slots as shown in the picture below:

Once the Tie Bar is in place, both Stock Rails can then be inserted from either end of the turnout. Care must be taken so each Stock Rail slides over the Tie Bar. The Tie Bar must be free to slide under the Stock Rails when operating the Switch Blades.



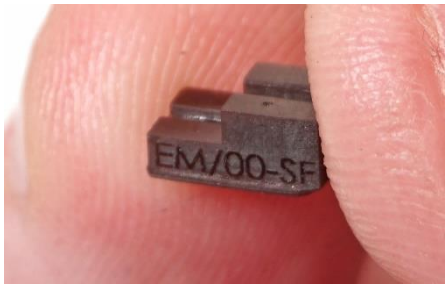
Fitting Switch Blades:
The Switch Blades are packaged with a plastic protector fitted to the end to prevent damage to the fine edges at each tip. Carefully slide each Switch Blade out of the protective clip.

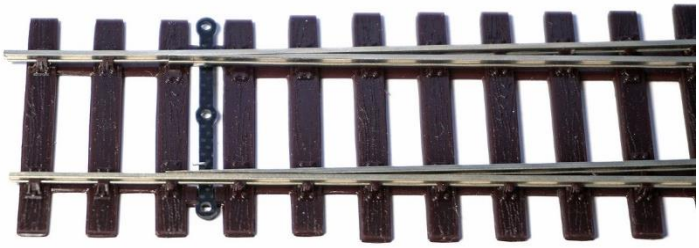
Each Switch Blade can be offered-up to the base and cut to length. When the tip of the Switch Blade is lined up over the last Slide Chair, there needs to be an 'isolating gap' between the Switch Blade Rail and the Closure Rail. Once cut to size and the rail end filed and chamfered, each Switch Blade can be slid into the chairs and into place.



Soldering Switch Blades to Tie Bar Pins

A small Switch Blade 'Spacer' is provided. This 'Spacer' is used to maintain the correct gap between Switch Blade and Stock Rail when soldering the Switch Blades to the pins. It has a slot in the middle which clips onto the Stock Rail. One end is raised to give clearance for the Slide Chair (the 'Spacer' pictured is for EM/00-SF).

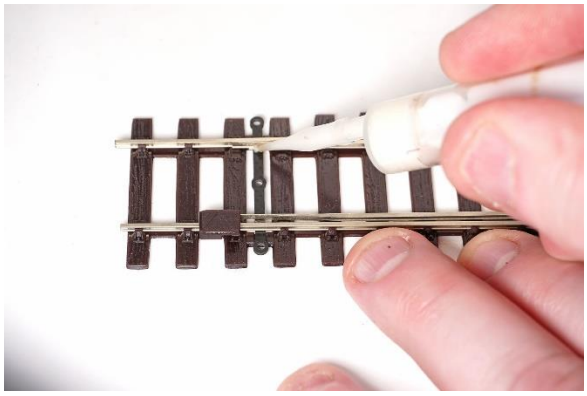




The Spacer can be clipped onto one stock rail while its adjacent Switch Blade is held open. Once in position, the Spacer holds the Switch Blade open at the correct gap. The other Switch Blade remains against its Stock Rail.

Soldering is done while the Switch Blade sits flush against the Stock Rail as this ensures best alignment. If you notice a gap between Switch Blade and Stock Rail, this can be taken up by squeezing them together at the top of the rail head with a small pair of tweezers, whilst soldering.

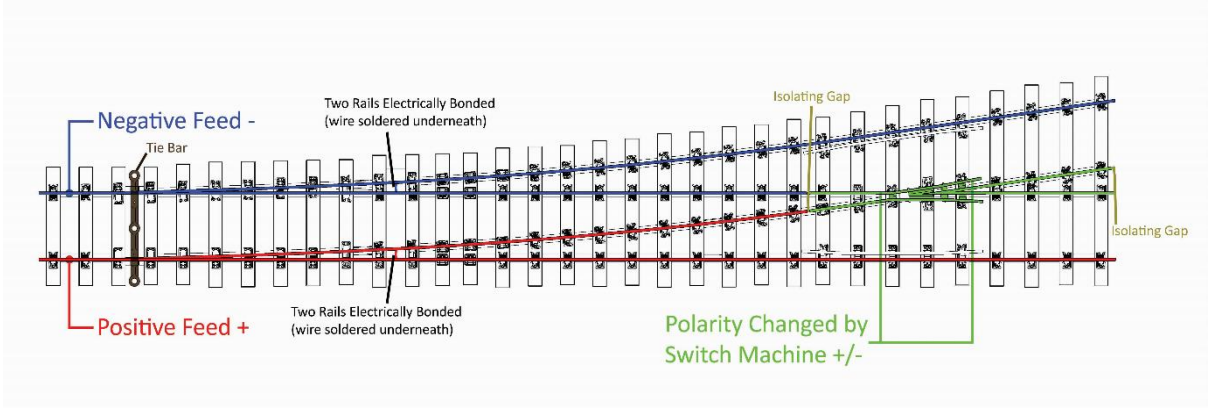
A small amount of Soldering Flux can then be applied to the Pin and Switch Blade. With a small amount of solder applied to the tip of the soldering iron, touch the pin with the tip of the iron and then up against the Switch Blade. The solder will flow with the help of the flux and a soldered joint with be created.



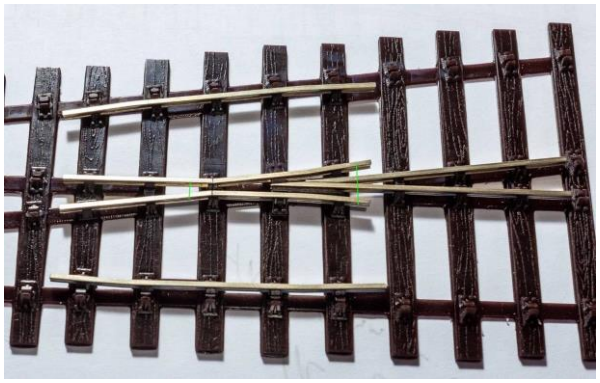
NOTE: Please only use a small amount of solder, otherwise there is a risk of solder flowing under the Switch Blade and bonding the Switch Blade to the Stock Rail.

The same can then be repeated for the other Switch Blade. Move the 'Spacer' to the other Stock Rail which will hold the Switch Blade you just soldered open at the correct gap.

Electrical Wiring:
Please refer to the diagram for suggested electrical connection. A positive feed wire should be soldered to one stock rail and a negative feed wire to the other stock rail.



Each switch blade 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 rails and wing rails and another wire soldered to the bottom of the closure rails as indicated below in green:



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 uses a small amount of super glue on one or 2 chairs for each piece of rail.

Laying the completed Turnout:
The completed turnout can be installed onto the layout and fixed into place using PVA or Easitrac glue. Please ensure 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. It is important to ensure that the completed turnout lay absolutely flat on the baseboard surface to guarantee smooth running of trains. This can be accomplished by use of weights or temporary pins to ensure flatness while the turnout is being glued in position. This is especially important around the crossing to ensure the height rail tops of the frog align with tops of the adjoining rail, otherwise, a bump can occur as stock rides over the join.