

FR5 – Brake Shoes for Farish BR1 Bogies v1.3

This etch provides an easy method for adding in line brakes shoes to Farish BR1 bogies. It will also fit Commonwealth bogies with a little filing to the Farish mouldings. It is not suitable for the older Mk1 bogies (including those on the current Mk1 suburban stock) due to excess slop in the bearings, nor for B4 bogies which are a different design.

Earlier versions came in two separate varieties, one of which assumes the builder will remove the NEM pocket on the coaches and one suitable for those who want to keep the NEM pocket (for use with replacement buckeye couplings). The current version provides for both on a single etch. Please note that the photographs in this document are of the earlier versions and may differ slightly from the current etch.

There is also a video available on the web site at <http://www.festiveroad.net/pages/shared-etches/> though this too was made using the earlier etch.

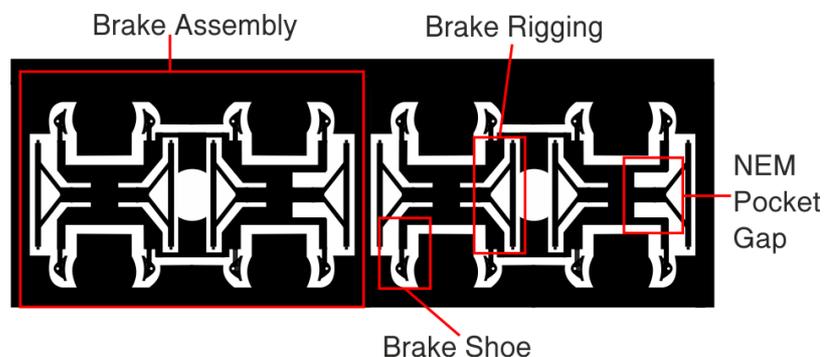
Additional parts required from Association shop (Part numbers in brackets)

2 pairs of 7mm wheels disc on 15.2mm axles (2-025)

For beginners, general instructions on building these kits can be found in a separate document. For experts, or if you don't like reading instructions and just want to know the suggested order, you can simply **follow the text in bold** and dip into the detail where necessary.

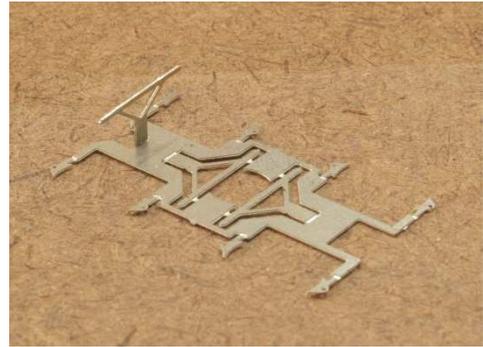
Building the etch

The etch for each bogie is a single fold-up piece containing two brake shoe assemblies. Once folded up, the piece locates on the Farish bogie around the raised boss surrounding the pivot hole. All **half-etched fold lines are on the inside** of the fold.

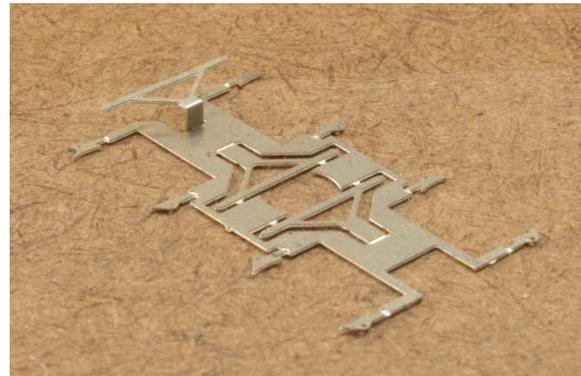


1. **Remove one assembly from the sheet** by cutting through the tabs that join the assembly to the fret, then file away the remains of the tabs (particularly those on the outside brake rigging which will be visible). Take care when cutting the tabs not to exert any sideways force on the parts. The brake rigging is connected to the etch with a relatively thin piece of metal and sideways movement when being cut or filed will weaken the piece making it more prone to detach before it has been soldered.

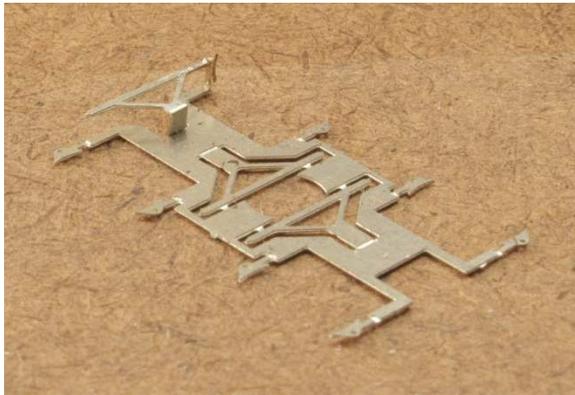
2. The brake rigging is connected to the floor of the etch by a piece of metal that has two fold lines, one on each side. Using a pair of long nosed pliers, hold one piece of brake rigging so that the nose of the pliers is just shy of the fold line, then **bend the entire piece of brake rigging up at 90° to the floor**. Do not solder it as we need some movement here for adjustment later.



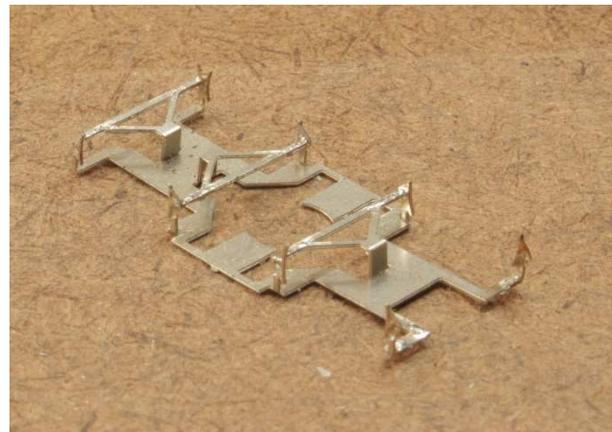
3. Using tweezers, hold the bottom part of the brake below the second fold line, and use your finger or a steel ruler to **fold the top of the brake rigging down 90° so that it is parallel to the floor**. Again do not solder this yet, but take some time to check it is square with the floor and not twisted.



4. The ends of the brake rigging should be more or less in line with the holes in the brake shoes. Fold up one shoe and see if the rigging fits into the hole on the shoe. If it does not then you may need to open up the hole in the shoe with a reamer, but take care as there is not much metal surrounding the hole. It may be that the rigging needs to be tweaked slightly to align the two parts. When the end of the rigging fits neatly into the shoe, repeat for the opposite shoe. When both are correctly aligned apply some solder cream to the ends of the brake rigging, then **solder the brake rigging to each shoe**. If you have difficulty getting both shoes to align with the rigging, get one to fit and the other as close as possible, solder the first, then tweak the second to fit and solder.



5. **Repeat for the other brake rigging.** If you are retaining the NEM pocket you could remove the rigging at this end, but it will fit if left and it does help keep the brake shoes aligned. If removing it, apply some solder cream to the brake shoe fold line, then fold these up and after ensuring they are square, solder them in position.



Altering the Farish bogie

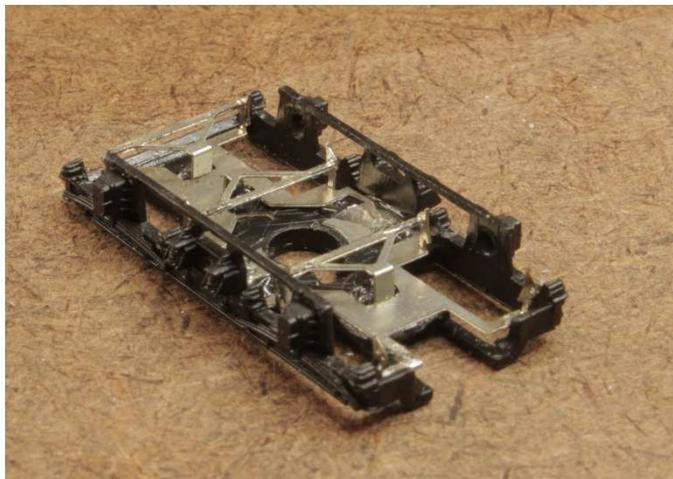
6. The only alteration needed to the Farish BR1 bogie is to **remove the moulded brake shoes**. These are quite easy to remove with two cuts using a sharp scalpel. They are moulded adjacent to the conical spring dampers which can be used to guide the blade diagonally before cutting horizontally towards the damper to remove the shoe. If you are careful very little if any filing is necessary.

7. If you are fitting these to a Farish Commonwealth bogie, you will also need to file the outer frames slightly to enable the brake shoes to fit.

Final Assembly

8. **Clean and paint the assemblies.** You can leave the painting until the end and paint the entire bogie if you prefer.

9. Roughen up the faces of the parts to be joined and **glue the assembly to the bogie**, locating the hole in the centre of the assembly around the raised boss of the pivot hole in the bogie. Take care that the etch is straight and exactly centred, and ensure the assembly remains flat as the glue dries.



10. **Fit the wheelsets and check they run freely.** If the brake shoes are catching the wheel the brake assemblies can be adjusted a little because we haven't soldered the folds in the rigging support. It is important to ensure that the brake shoes are not touching the wheels – if shoes from opposite sides touch their respective wheels you will get a short. The Association wheels are chemically blackened which might get you out of trouble, but the level of blackening can vary so it is best to be on the safe side. If you run the bogie across a flat surface whilst pressing down slightly you will hear and feel if the shoes are touching.

Document v1.3.0 May 2016

Change History

V1.0 – Initial Release

V1.1 – Corrected height & width of brake rigging supports

V1.2 – Extra clearance for brake shoes

V1.3 – Combined Standard and NEM versions into a single joint etch