

## **General Kit Instructions**

These kits have been designed for my own use but some may be of wider interest to 2mm modellers and we are making these available to others as a service rather than a profit making enterprise. If you have problems you may email me at [richard@festiveroad.net](mailto:richard@festiveroad.net) but I cannot guarantee a speedy response.

We have tried to make the kits as easy to build as possible and we hope that these instructions will cover most issues you are likely to encounter. If a kit is faulty in any way then you will of course be entitled to a refund or replacement. The kits should be broadly free of defects, though there may be the odd minor issue that is easily resolved, and if so full details will be provided in the instructions.

The following general notes are common to all kits and are aimed at the beginner. Not all sections may apply to the particular kit you are building.

### **Tools needed:**

Soldering Iron and solder

Glues to fix metal parts to plastic (or as an alternative to solder) – cyanoacrylate (super glue), Araldite, Serious glue etc.

Tweezers

Thin Nosed Pliers

Needle Files

A glass fibre scratch pen or fine emery paper for cleaning parts before soldering or gluing.

A set of taper broaches for opening out holes

Hand Vice for holding small parts for filing

Knife /scalpel for separating parts from the etch

Engineer's square for ensuring everything is square and true

Steel ruler

A pair of digital callipers will assist with measuring but are not essential

### **Preparing parts**

The parts for this kit come as a sheet of etched metal, with the parts held on by half thickness tabs. You will need to cut through the tabs to separate the parts. Try to cut as close to the part as possible to minimise the amount of cleaning up needed. If the part is delicate it is sometimes better to cut a little further away to avoid damage to the part.

When cutting out parts do so on a hard surface such as hardboard with the half etch of the tab facing upwards. A cutting mat is too giving and will result in the parts becoming distorted or damaged. Always use a sharp blade – if it takes more than a firm push to separate the parts it's probably time for a new blade.

After separating the parts it will be necessary to clean the edges and remove any remnants of tabs. The etching process results in a small cusp on the edge of the parts. A few swipes with a file will remove this making the part look crisper and align with other parts more accurately. When filing you might be able to hold larger parts in your fingers, but smaller parts should be held in a hand vice.

You can buy hand vices from decent tool suppliers or you can make your own using a hinge as described by Geoff Jones in past issues of the 2mm Magazine.

Before soldering or gluing parts ensure that the parts are clean and free from grease. A glass fibre scratch pen or fine emery paper is good for this. However, if you use a glass fibre pen do so over some double sided tape to catch the loose fibres which will otherwise find their way into your skin – ouch!

### **Folding Parts**

The parts of this kit may need to be folded. Unless stated otherwise, all folds are done with the half etch on the inside of the fold. There are several ways to fold the parts, and the best method to use depends on the amount of metal holding the piece.

For a small piece with a single small fold (such as a single brake shoe) it is sufficient to hold the main etch flat on the work surface and use a scalpel blade to lift the part into position.

A small piece with more metal (such as an axleguard (W-iron)) can be held in the fingers with the part held with a pair of pliers with the jaws close to the half etch and carefully bent to shape. If the piece is larger, hold the etch flat on the work surface but with the part overhanging the edge and use a steel ruler to fold the part up.

In designing our kits we try to avoid long fold lines which can be tricky to get square. If any kits do require this then we would recommend holding the etch in a vice long enough to hold the entire part. You can make a suitable hand vice made from a long hinge and there are commercial products such as the hold and fold which, whilst not cheap, will repay themselves over time in giving square and accurate folds.

As a general rule, the easier a piece is to fold, the easier it is to break it off, so take care with small delicate parts until they are soldered into position.

### **Assembly**

We recommend the use of solder in assembling this kit. Solder creams, such as those available in a syringe from Carrs, allow you to place a small amount with precision, reducing excess which can clog detail and require cleaning up. You can even place some solder cream into fold lines *before* making the fold, ensuring that the solder is right in the join where you need it. A Resistance Soldering Unit will also help in this regard, though a traditional soldering iron is more than adequate.

It may be possible to assemble the kit using glue, such as cyanoacrylate (super glue), though we have not tested this. You may choose to affix any detail parts using glue after completing the main assembly in solder. This reduces the likelihood of other parts coming adrift. If doing this then always ensure that all soldering has been completed first. The heat from a soldering iron will cause very toxic fumes to escape from cyanoacrylate. Other glues may break down and fail in the presence of heat.

Some parts may be designed to be fixed to existing plastic parts on a model with glue. If so the face of the metal should be roughed up with the end of an old file or a knife blade in order to provide a

key for the glue to grab hold of. The plastic to which the part is to be attached may also benefit from roughing up in the same manner.

All solders and many glues contain some less than ideal chemicals and it is always sensible to limit our exposure to them as much as possible. Always work in a ventilated area and if possible use an extractor fan. Be sensible, but have fun.

### **Cleaning and painting.**

If you have soldered using a corrosive flux then it is important to clean away the flux residues as you go to avoid corrosion. Whatever you have used you will need to clean the parts before painting.

To remove corrosive acid flux wash the part in an alkaline solution, such as kitchen cleaner. If the parts are robust you can scrub at them using an old tooth brush to get them really clean, but if they are delicate you may have to moderate this. A session in an ultrasonic cleaner is a good final step to remove accumulated crud from hard to reach places.

When clean and fully dry you can give the parts a thin coat of grey primer, such as from a Halfords spray can. If the top coat is black (or close to an existing Halfords colour) then a spray can will allow you to apply several light coats, otherwise you will have to brush paint or use an airbrush.

If using a spray can beware that breathing in the microscopic paint particles is very bad for your health. You should use a proper paint mask (a builder's dust mask is not good enough) and work in a well ventilated area.

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