

Vee Presflo Instructions

This set of instructions covers two kits, both for the Lima bogie vee presflo wagon. The first (X.33A) covers the fitting of replacement skirts along with detailing fret which includes ladders and walkways. The second kit (X.33B) is just for the detailing parts included with kit X.33A and doesn't include the skirts. If you've brought kit X.33B, wishing only to fit the detailing parts, you will need to skip the section on fitting the skirts as these are covered first in the instructions. This project was conceived and paid for by Mike Whitchurch, so you have him to thank for its existence.



General Notes

The venerable Lima bogie vee Presflo can be made into a nice model with the addition of some detailing and fixing the main error, the lengths of the tanks at the outer ends which are too short as it comes. If you wish to correct the tank length then new skirts will be needed which is the general gist of this kit. We appreciate that some may not want to go to that effort which is why the detailing etches are available separately.

Construction Notes - 3D Prints

This kit includes high quality 3D printed parts. They are produced using the latest stereolithography technology to cure photosensitive resin. They have been thoroughly cleaned and then cured to produce the parts you have. As they are cured by a certain wavelength of light there is the possibility that if left exposed to sun light for a prolonged period of time the parts may go brittle. This is not unlike some plastics. To avoid this please consider the following:

- Do not leave unpainted resin parts exposed to direct sunlight for any length of time. Store in a dark place.
- Make sure all 3d printed parts are properly primed and painted.
- If the kit is not intended to be built for a while, consider priming the printed parts before storing.

If these points are followed, then the printed parts will be fine. However, if you leave them for several years on a south facing windowsill, then you might have end up having problems with them...

The printed parts are pushing the boundaries of what is currently possible with the printing technology. Whilst they have been road tested and tweaked for strength where necessary some still feature very thin walls and should therefore be handled with care. Parts have been left on the supports they were printed with to help prevent damage to them before use. They will need removing from the supports and cleaning up. When removing them from the supports and cleaning them up please note the following:

- Parts should be removed from the supports using a pair of flush cutters or a piercing saw with a fine blade (size 6/0 is recommended). Only use flush cutters, one side of the blade needs to be straight, so it makes a ∇ shape. Cutters where each blade forms a ∇ rather than being completely flat on one side should be avoided as they may cause damage. I tend to mostly use a piercing saw.
- If using cutters, the place to cut them is where the support meets the part. Often this is right against the printed part. This is the designed in weak point. Avoid the temptation to cut the supports away from the printed parts as this may damage the parts. If using a piercing saw, then the closer you cut to the part the less you will need to clean up. Be aware of the following point though:
- The material files/sands and cuts with a saw blade very easily, almost too easily. Go slowly and take care. When cleaning up, wet and dry paper is recommended, preferably with a little water to contain any dust. You can also use fine files.
- The material does not cut that well with a knife blade. Whilst not so brittle that it will crack as soon as look at it, it may fracture if you try and cut it with a blade. I can't imagine why anyone would want to try and slice the prints, but I thought I'd say it anyway. You can however use a sharp scalpel blade to pare away material if needed.
- Due to the process used to produce these parts they may need fettling to fit, i.e. parts may come out slightly oversize.
- Holes will almost certainly need opening out. Use a sharp drill or a cutting broach. Smaller holes such as those in the steam manifold will almost certainly appear as an indentation rather than a hole.
- Dispose of the waste support material responsibly. At this time, it cannot be recycled.

Fixing the printed parts in place can be done using either cyanoacrylate (superglue) or epoxy glue. I have used both successfully. In both cases makes sure the printed parts and what they are being attached to are free from any grease. I have found that in both cases the glues can provide a good bond with the brass parts, so much so that the parts can break rather than the joint if you try to remove them. I put this down to the surface of the parts being not entirely smooth so there is something for the glue to key to.

The printed parts need no special cleaning before painting. A wash with a cream cleaner to remove any grease will be sufficient. Like plastics avoid using prolonged contact with cellulose thinners as this may damage them. IPA will be fine as this is what is used to clean them after printing.

Construction Notes - Etches

Read through the instructions first and familiarise yourself with the components. Drawings and photographs are included to attempt to make my waffle clearer.

All fold lines are through 90° with the fold line on the inside unless stated otherwise.

Everyone has their own soldering methods. I now use an Antex temperature controlled soldering iron with predominantly 145° solder and La-Co paste flux. For a long time I used an Antex 18W soldering iron on virtually everything with few problems, especially on small detailing parts like these

Check all holes before removing parts from the fret. The drawing process for etching if you use a CAD program as I do is extremely accurate but the actual etching process itself not an exact science. If the fret is slightly over etched then there is no problem but if they are under etched the holes will need enlarging. I find that this is easiest to do before removing parts from the fret. The hole sizes will be noted at the appropriate points.

Materials Needed

In order to complete the detailing several sizes of wire will be needed. Cambrian Models are a good source for these:

0.31m (ladders and levers)
0.4mm (hand wheel)
0.5mm (for use with walkway drilling jig)
1mm (jig pins)

You will also need some tube. This size is available from Albion Alloys (code BT1M)
1mm x 0.5mm tube (hand wheel location)

If lengthening the tank, you will need some plastic strip. This needs to be ¼" wide by 0.040" thick. You can either do it with one layer of 0.040" or two layers of 0.020" depending on what you think will be easier. 0.020" will bend more easily. Evergreen sell something suitable:

Evergreen 129 0.020" x 0.250" or Evergreen 149 0.040" x 0.250".

Bogies are not included but Colin Craig does a nice replacement type (Gloucester Mk III) which was marketed via Stenson Models. These are available from Will's Workbench.

Contact details for the above suppliers can be found at the end of the instructions.

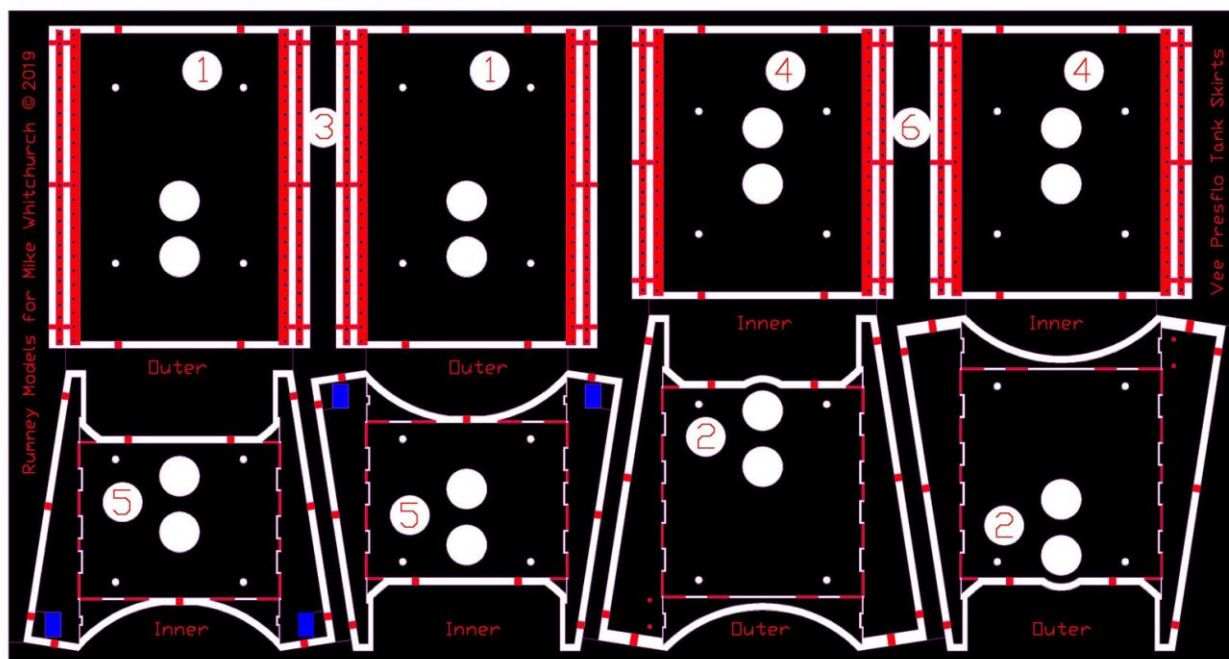
Parts List - Skirts

1 - Outer support base	4 - Inner support base
2 - Outer side unit	5 - Inner side unit
3 - Outer support rivet overlay	6 - Inner support rivet overlay

3D Prints

Outer end x 2
Inner end x 2

Vee Presflo Tank Skirts



Parts list - Detailing

7 - End anchors

8 - Walkway drilling jig

9 - Walkway supports

10a - Long walkway

10b - Medium walkway

10c - Short walkway

11 - Platform base

12 - Platform top

13 - Ladder assembly jig

14 - Ladder sides

14A - Ladders top handrails

15 - Ladder solebar bracket

16 - Ladder/platform stays

17 - Lifting bracket drilling jig

18 - Lifting brackets

19 - Hand wheels

20 - Pipe levers

21 - Label clips

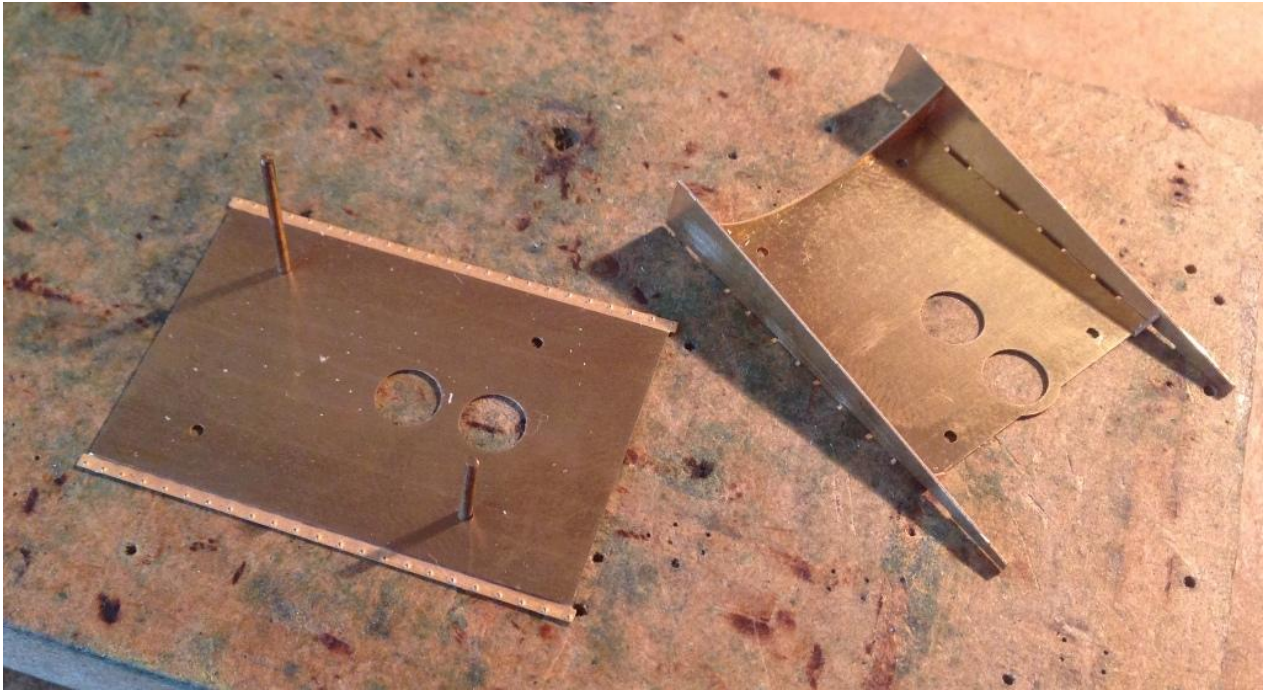
22 - Builders plates

23 - Lamp irons

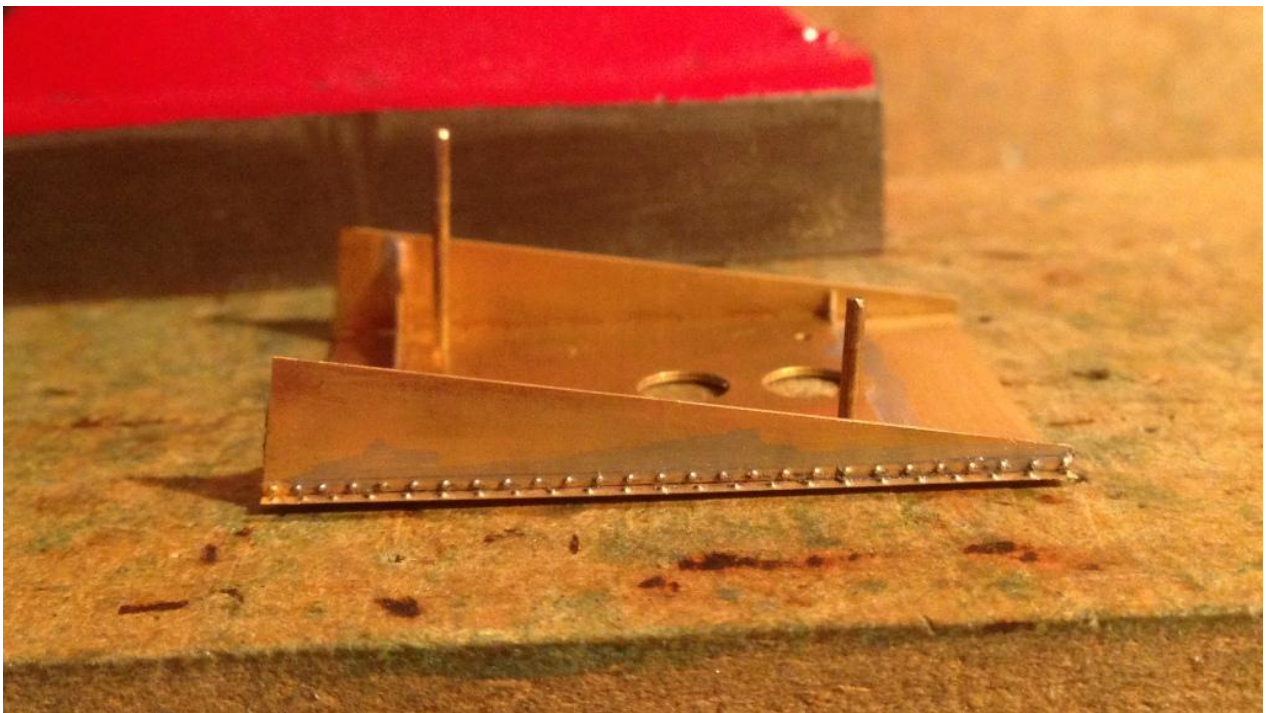
The area shaded yellow on the detailing parts diagram is a drilling jig for the lamp irons.

3D Prints

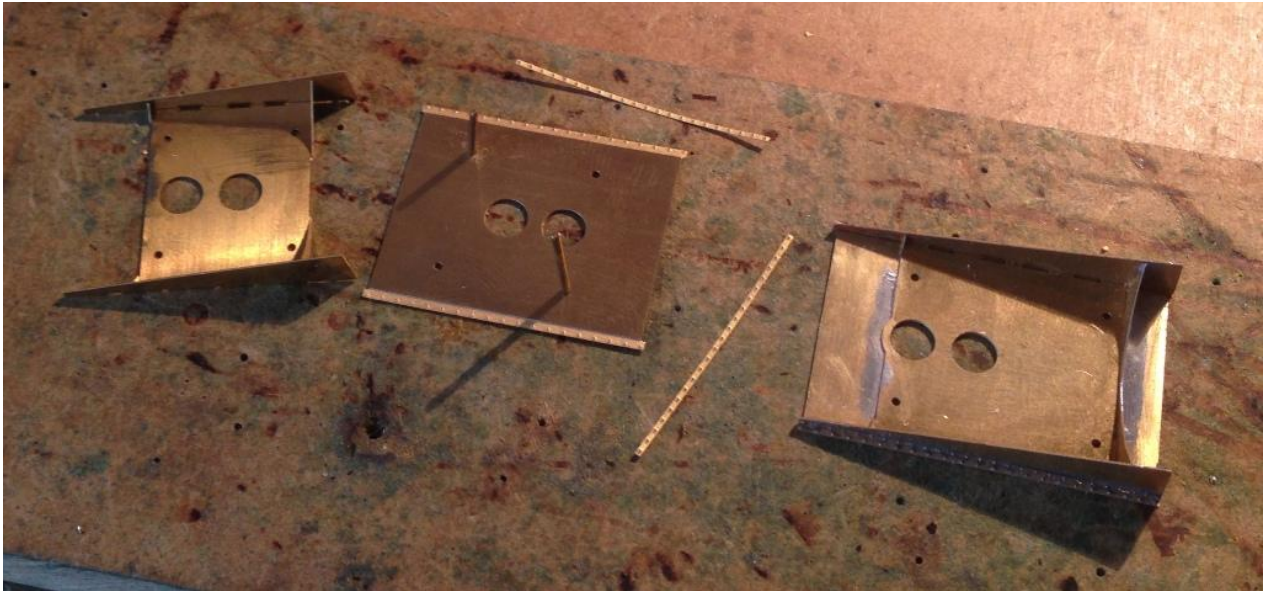
Manholes x 4



Clamp the piece of wood that the support base and sides are attached to in a vice and solder the outer support rivet strips in place.



Repeat for the inner parts (4-6).



Remove all traces of the skirts from the Lima tank but make sure the locating lugs on the base are retained. Use these locating lugs to align the etched skirts and place on the underframe.



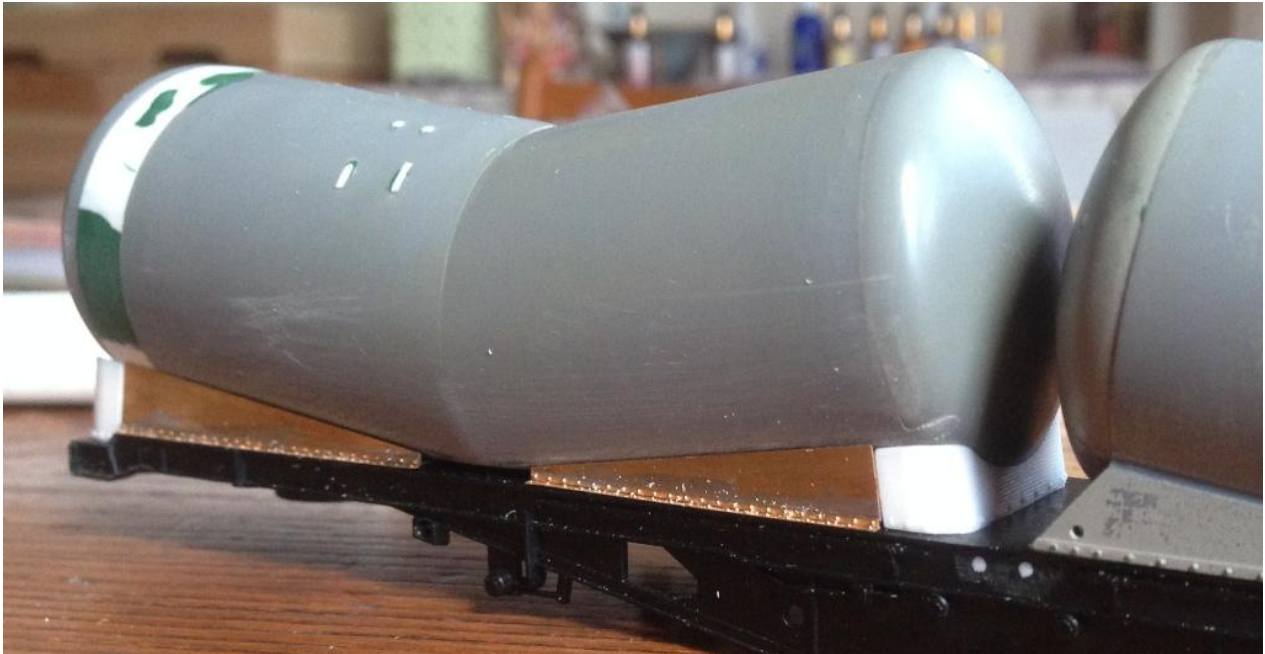
The tank ends on the Lima model are too short on the outer ends. Make a cut just behind the domed ends on each tank and use a piece of strip $\frac{1}{4}$ " x to extend them.

The printed ends will need tidying up before fitting. The top area around the tank will need filling but that should be straightforward and easy to clean up.

You will note that there are etched rectangular recesses on the sides of the inner skirts. On the prototype these were boxes. Use 0.75mm or 1mm thick plasticard cut into 3mm x 2mm rectangles to represent these.

Vee Presflo - Detailing

Before starting work on detailing the wagon you will need to remove some moulded detail and make good. This will include the walkways and brackets on the side of the tanks as well as the end anchors in the four outer corners of the wagon and the moulded lifting brackets. For the last item please refer to the Solebar & Headstock Detailing section below for details on what parts to remove and what not to. All this work should ideally be completed before starting to add the detailing parts.



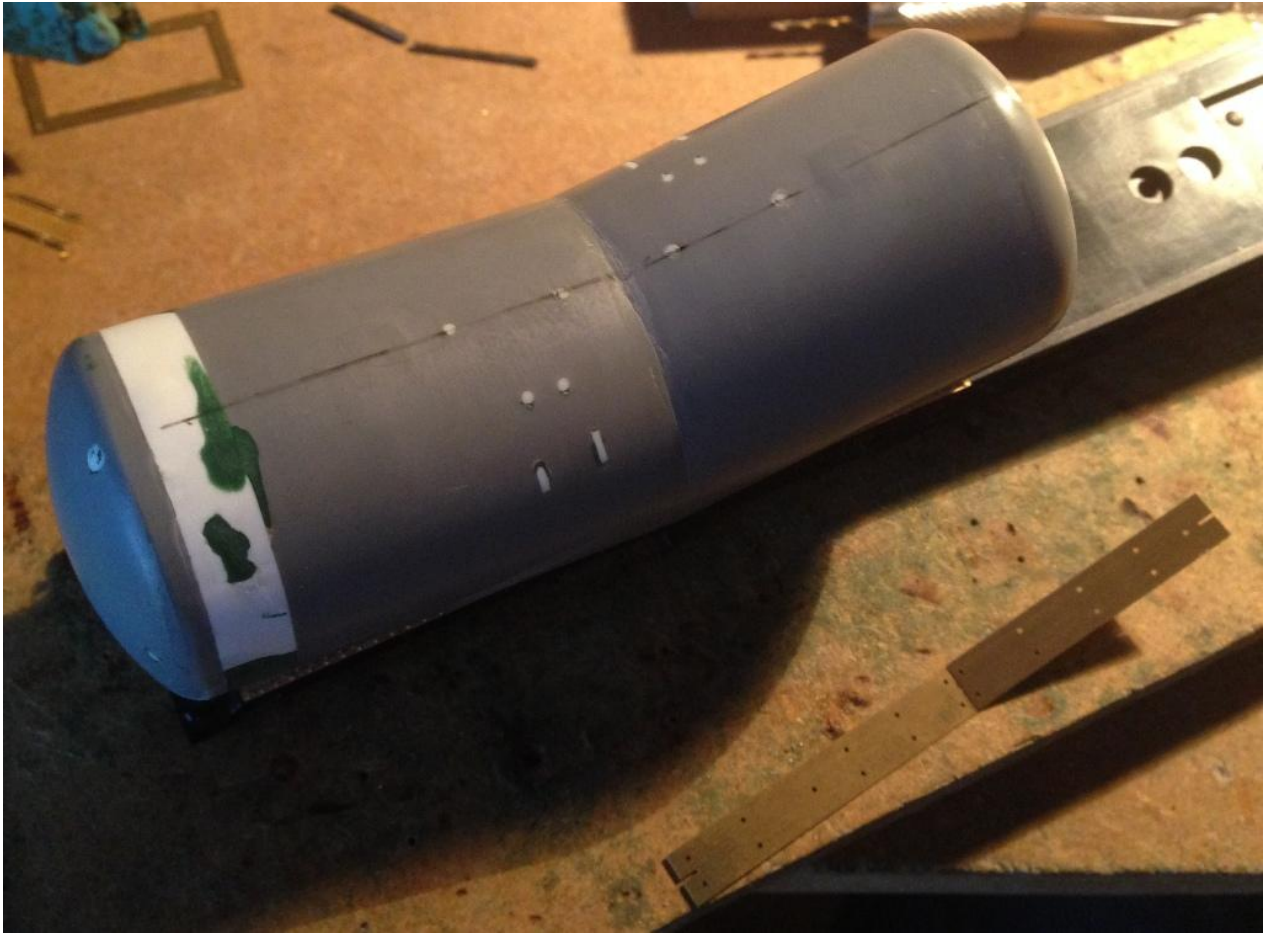
End Anchors

Start with the end anchors (7). It is useful to sort out these bits before the tank and underframe are worked on too much.

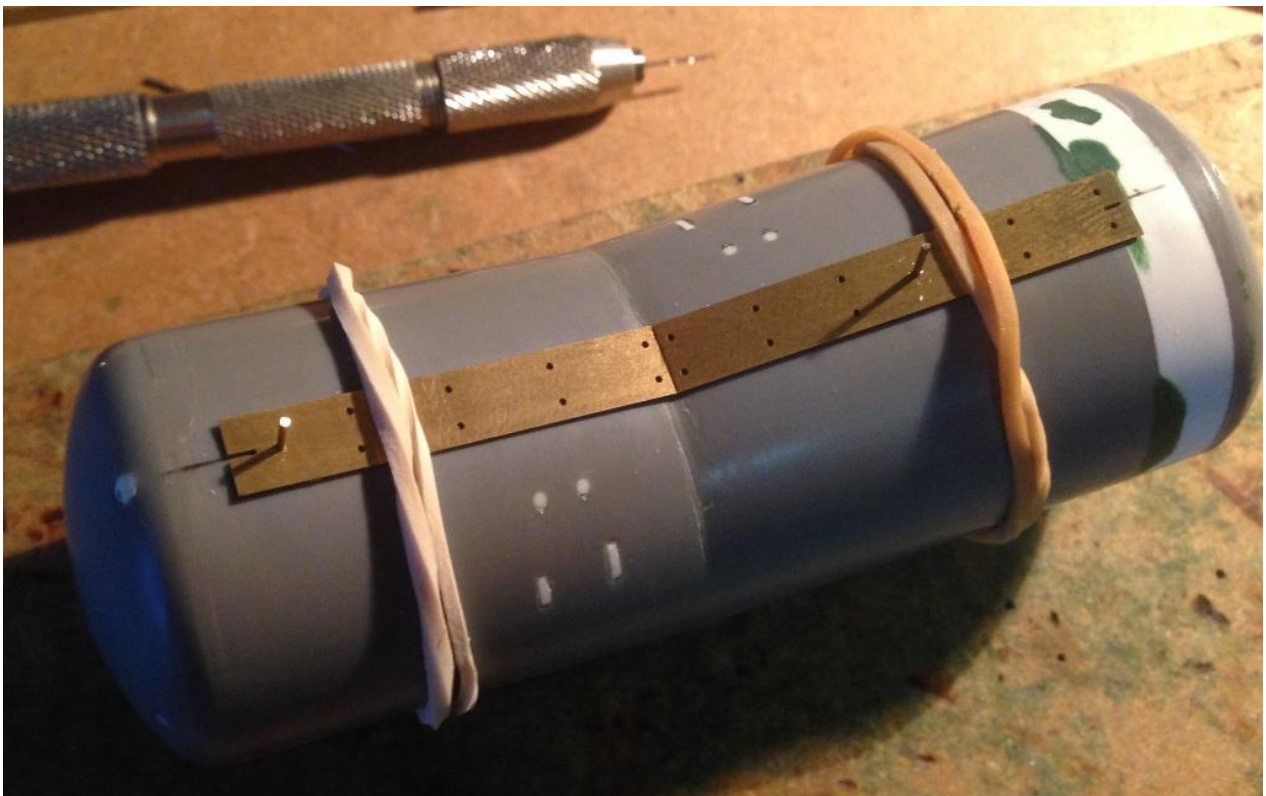
The end anchors are designed to be folded double with the fold line on the outside and then be soldered together. Be careful when cutting the parts out as the connecting tag at the base forms part of the locating spigot for the anchors; remove the tapered part of the connecting tag only. Use a 0.5mm drill for the locating holes, making sure they clear the castings if you've replaced the skirts. Put the etched anchors to one side for the moment while the tanks are worked on further.

Walkways

A walkway drilling jig (8) is included. This is designed to fold up to match the change in angle of the tanks and then sits on top whilst holes are drilled for the walkway supports. In order to use the jig a line needs to be marked along the top of the tank. Use the holes for the removed fittings as a guide. See the photo below.



The holes on the jig are generally in pairs but there are two single ones which mark the position of the fillers. Use a couple of elastic bands as an aid and the slots in the end of the jig to align the drilling jig on the top of the tank and drill two 0.5mm holes through the single holes. Insert two pieces of 0.5mm wire into these holes to help stop the jig moving.



The rest of the holes for the walkway supports can be drilled using a 0.5mm drill. Try and drill the holes perpendicular the base of the tank rather than the top as they were vertical not angled.

Remove the walkway supports (9) from the fret and fit to the tank.

The walkways (10a-c) can now be removed from the fret. You will need to fold over the parts shaded green on the detailing etch parts diagram. Some sort of hold and fold would be a good idea for these. If you don't have one I'd suggest scoring the fold lines first to make them easier to fold up. The walkways can then be fitted to the walkway supports using the slots in the sides. Use the photo below and Fig. 1 as a guide.

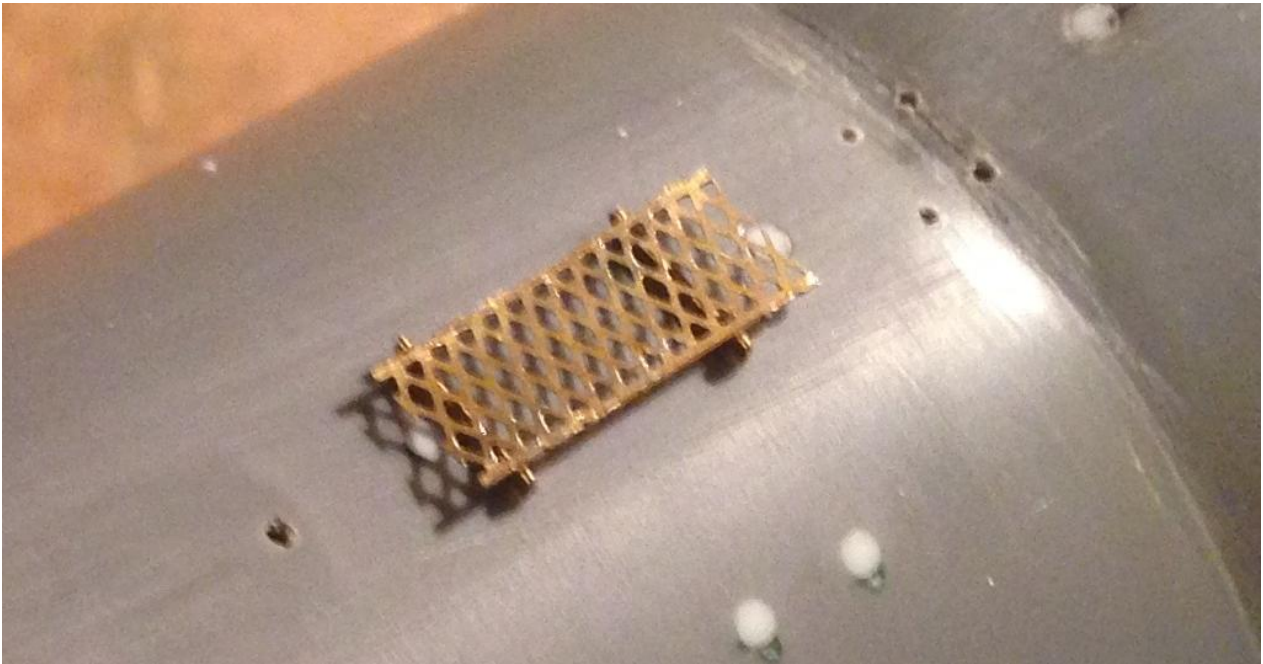
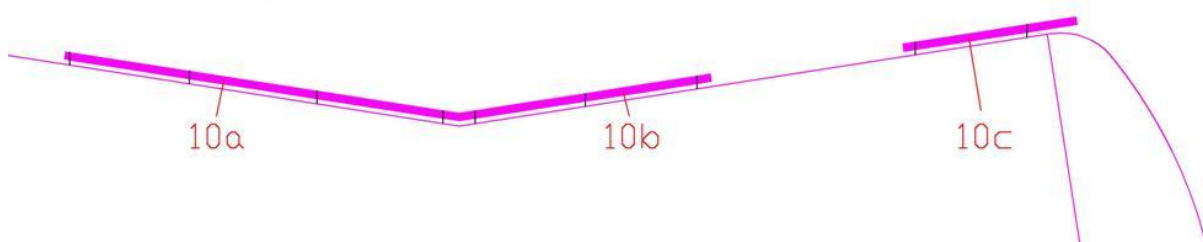


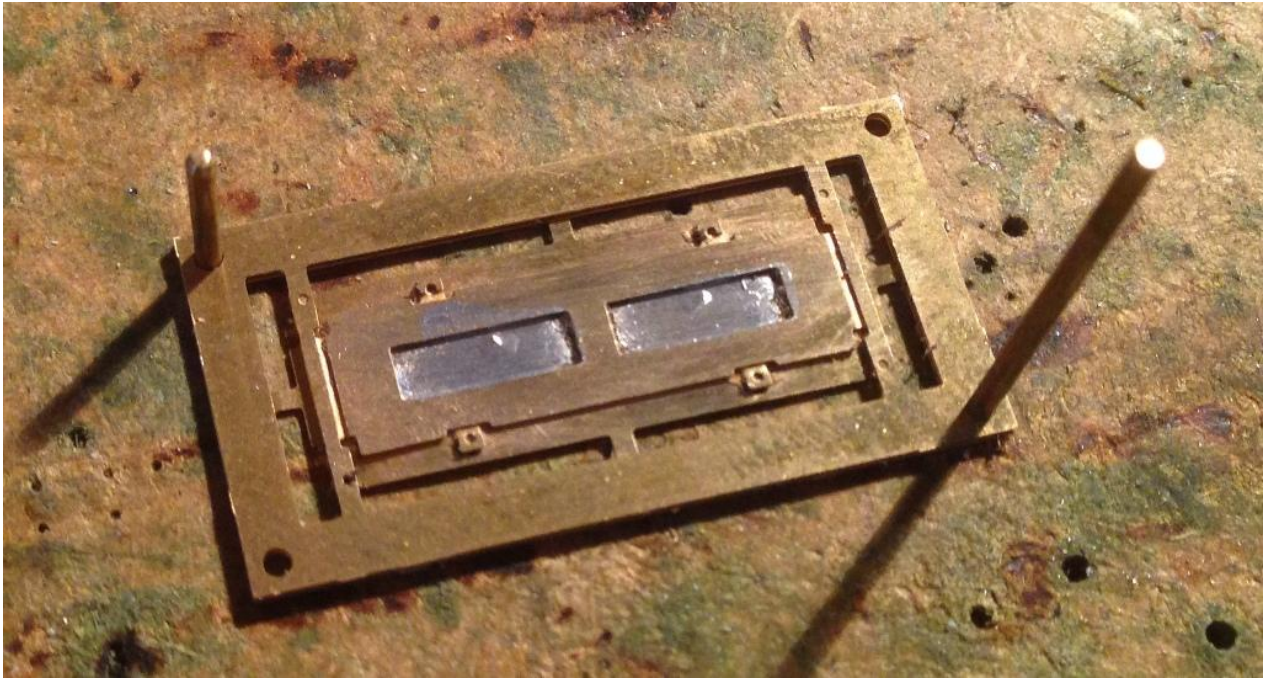
Fig. 1

Inner end

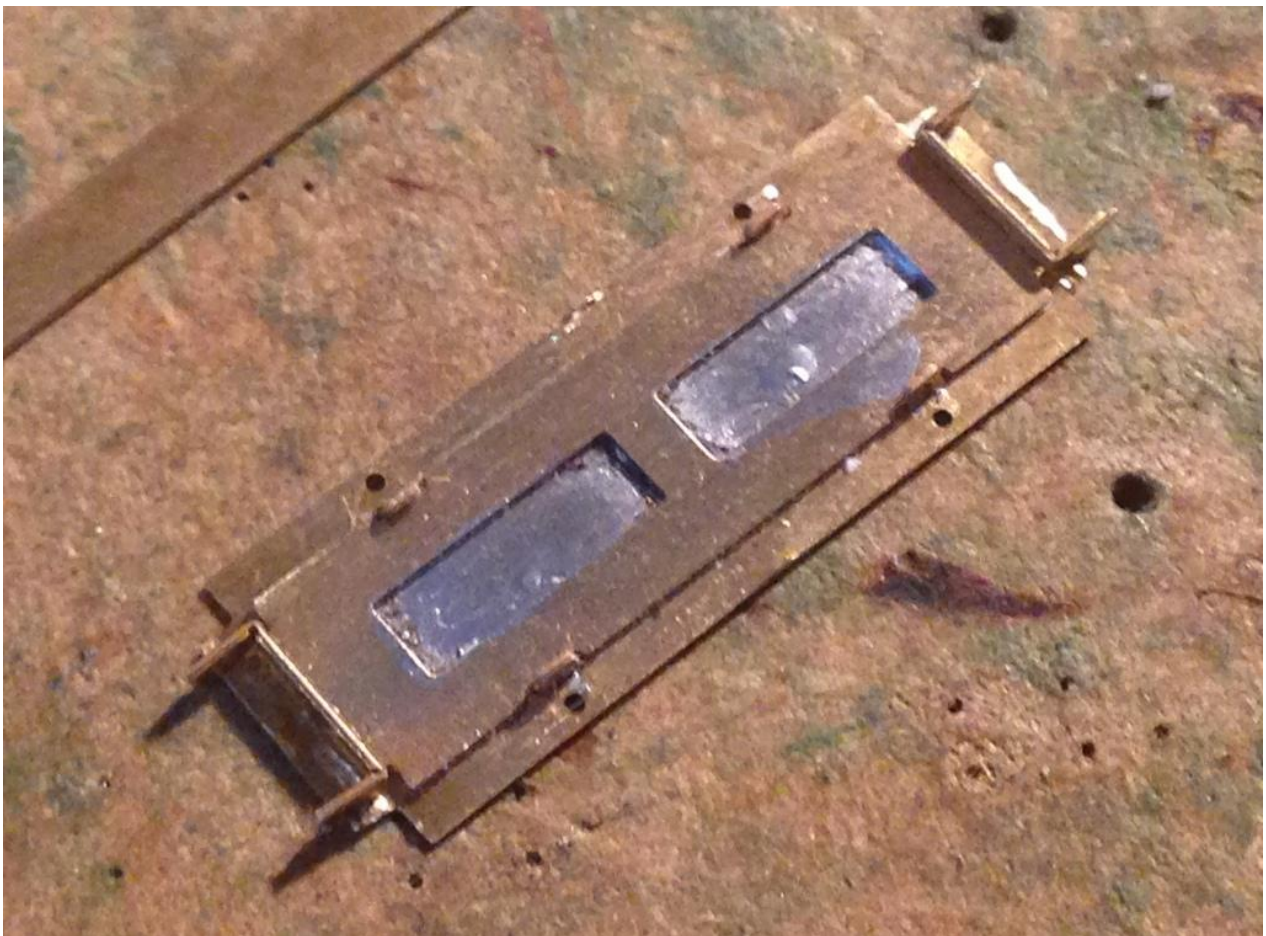


Ladders & Platform

Start with the platform. This comes in two parts the platform base (11) and the platform top. Pin the top to a scrap piece of wood or mdf using 1mm wire pins. On top of this place the platform base so that the various half etched fold lines face away from the platform top. Solder together in the middle being careful not to get solder around the outside of the base. See photo below.



Remove the parts from the fret and using the blade of a knife to get between the layers fold up the four little tabs with holes in and the strips along the ends. Fold out the four tabs on the end pieces. See photo below.

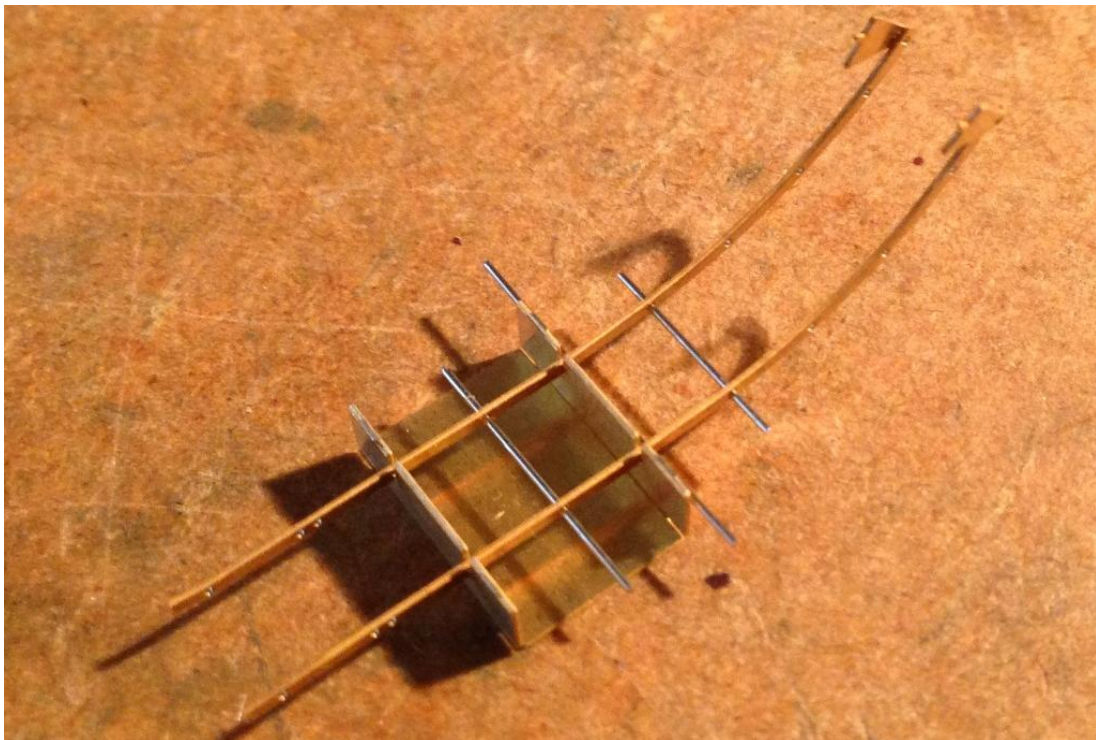


Next fold down the sides of the platform top and reinforce the parts with solder.



Fit 2 lengths of 0.31mm wire through the holes in the underside of the platform. Trim them so that there is approximately 5mm protruding each side.

The ladders and associated brackets can be done next. The ladders sides (14) are designed to be soldered together along with 0.31mm wire using the ladder assembly jig (13) as an aid. See photo below. The general arrangement of the ladder/platform can be seen in Fig. 2 below, refer to this as you go along.



Make sure that the small holes in the various components can accept 0.31mm wire and remove from the fret. Note that the end of the ladders nearest the edge of the fret is the top. This may be useful as both ends are similar, but different. Fold up the ladder assembly jig into a channel shape. You can use this to hold the two sides whilst soldering the rungs in place. Alternatively, you can use the one designed by Colin Craig and marketed by Will's workbench. Contact details can be found at the end of these instructions. Start with the ladder sides and solder the rungs in using 0.31mm wire. The holes for these are marked in blue in Fig. 2. Leave the holes for the brackets clear for the moment. Once in place clean the wire up so that it is flush with the sides.

Fold up the ladder solebar bracket (15) and attach to the ladder using 0.31mm wire passing all the way through. Note that the bracket goes on the left of each ladder side. Lightly solder in place at about the right angle as shown in Fig. 2. This may need to be tweaked when fitting the whole assembly to the wagon so leave removing the wire between the ladder sides and tidying the wire until this is done.

Fit the ladder units to the platform using 0.31mm wire. The wire passes through the brackets on the ends of the platform and the top hole in the ladder. Leave the wire over long and do not solder in place at the moment. Fold up the ladder/platform stays (16) into L section and fit in place, again using 0.31mm wire. Slightly bend the ends of the stay to allow for the different widths of ladder and platform. Solder the stays in place along with the ladder to the ends of the platform. Tidy the wire used to join the stay and ladder up to represent bolts. Leave the wire connecting the top of the ladder and platform for the moment.

Next we need to fit the ladder top handrails (14a). These are attached to the top of the ladders using the wire that locates the ladder and platform together. Note that on the ladder top handrails there are two fold lines (one all the way through and a smaller one) and these should face outwards from the ladder unit when fitting. Fit a ladder top handrail to the ladder unit using the wire connecting the ladder and platform and solder in place making sure that the handrail is in line with the ladders. Once all four handrails are fitted the wire joining them, the ladders and platforms can be trimmed to represent bolts. Note that there is no rung between the ladders sides at this point and folding of the handrails should be left until the ladder unit is fitted in place.

Use a piece of wood 28mm wide to sit the assembled ladder unit on. This will allow you to tweak the ladder solebar brackets before final fitting to the wagon. Adjust the brackets as necessary.

Fitting Ladder Unit

You may wish to leave this until any solebar/headstock detailing has been done but I will cover it now as I have just covered the construction of them. With the ladder solebar brackets adjusted it should be a simple matter to fit the unit between the two tanks. The remaining thing to be done is to fold up the ladder handrails. I mentioned earlier the two fold lines in each of the handrails. The fold line which goes all the way across and is on the outer end of the handrail needs to be folded through 90° and you can reinforce the fold lines with solder. At the other smaller fold line you will need to fold and twist the handrail so that the outer end sits roughly perpendicular to the domed tank end. You can mark where the ladders meet the tank ends and drill 0.45mm holes to help locate the handrails in place.

When finally fitting the ladder unit glue the ladder solebar brackets to the wagon underframe and the handrails into the holes that you've drilled to locate them.

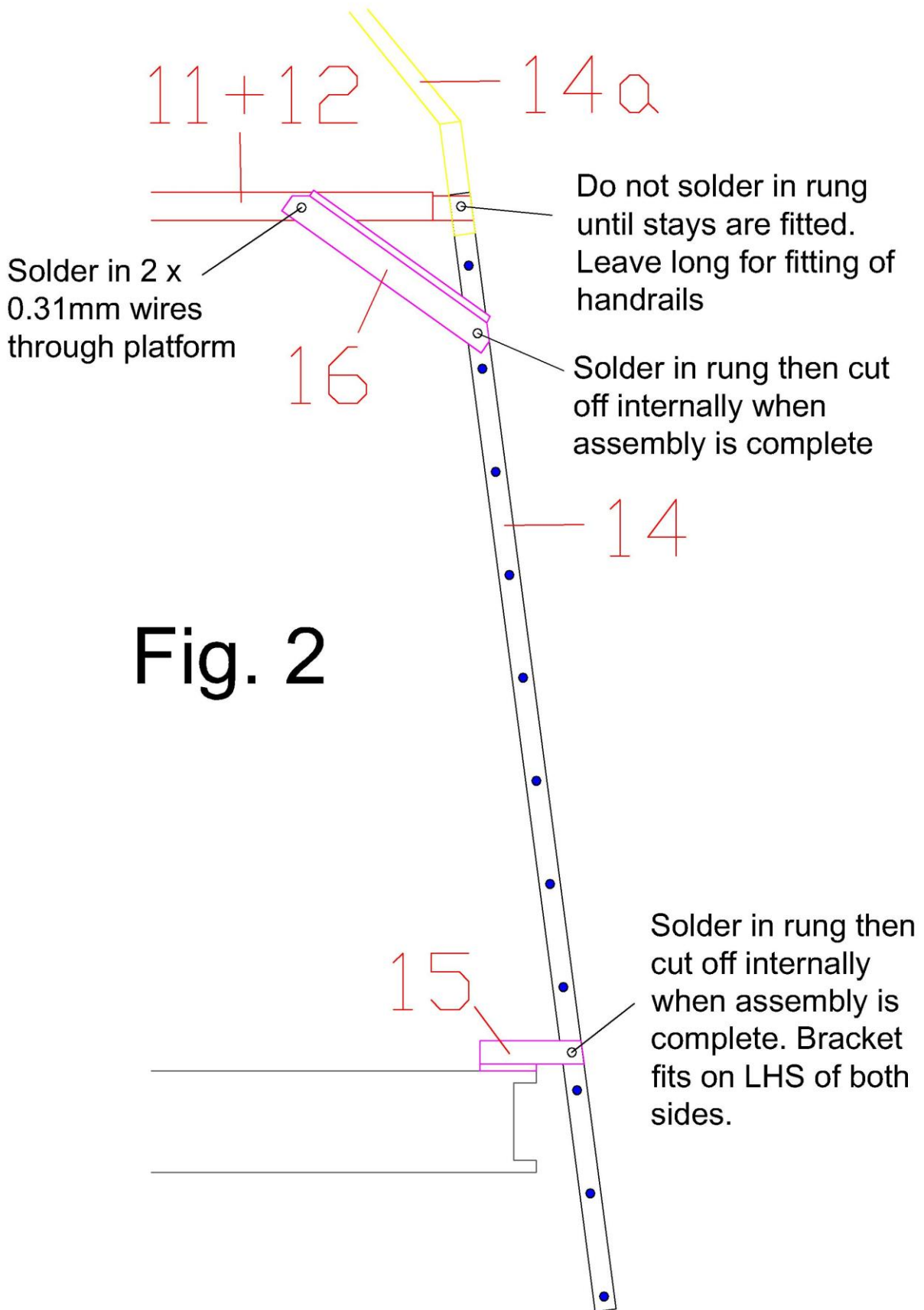


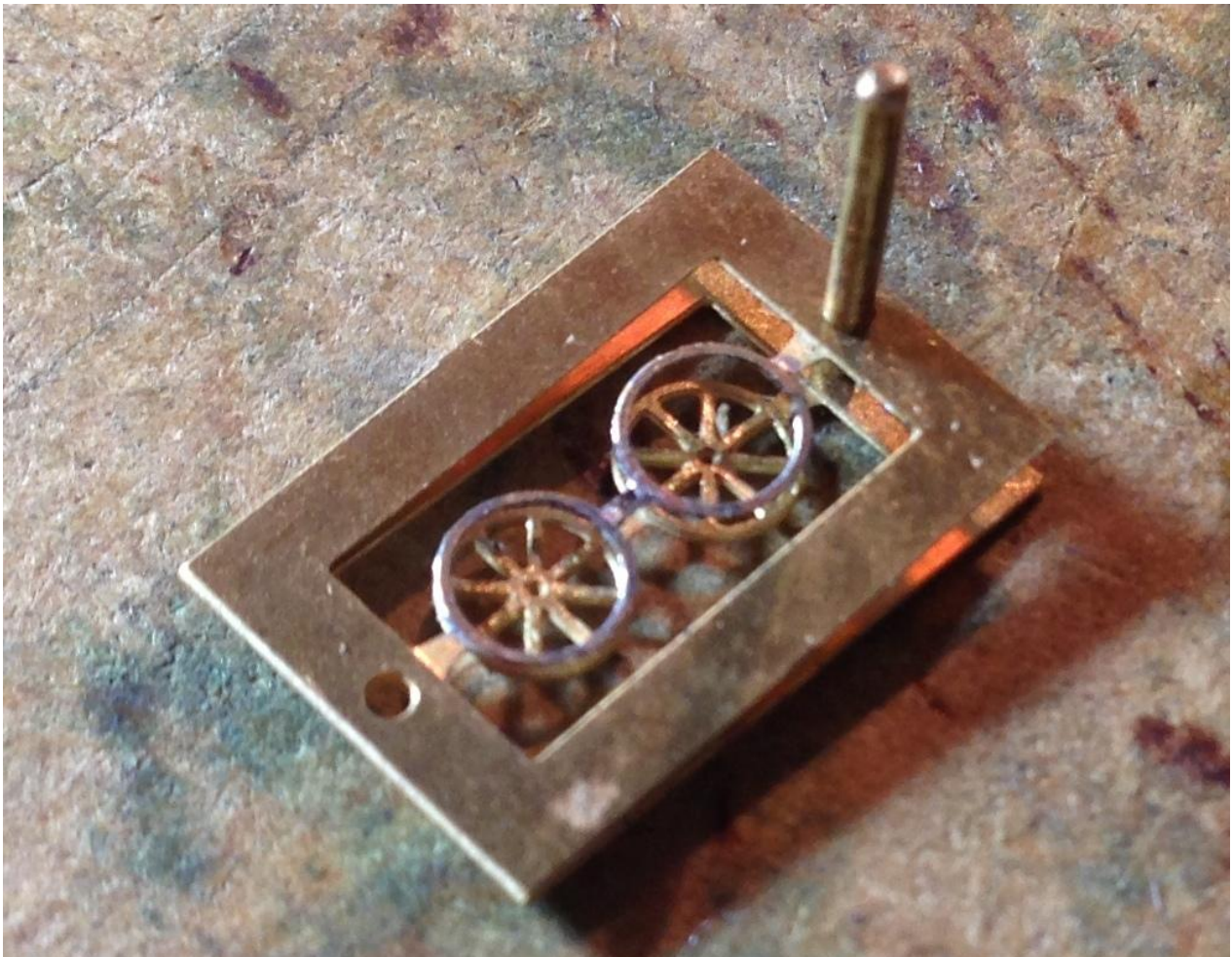
Fig. 2

Solebar & Headstock Detailing

Replacement lifting brackets (18) are included. These are to be folded double with the fold line on the outside and soldered together. They can then be fitted using 1mm diameter holes drilled into solebar to locate them. A lifting bracket drilling jig (17) is included for this purpose which will need to be folded up into an L.

You will need to remove the moulded attempt at a lifting bracket from the underframe. Note that there is a trapezoidal shaped bracket on the underside of the solebar; this should be left on the model. Fold the lifting bracket drilling jig into an L and use the moulded trapezoidal bracket to locate the drilling jig in place. Use the jig to drill a 1mm hole for the lifting bracket. Remove the lifting brackets from the fret, fold double with the fold line on the outside and solder together. Use the 1mm hole to glue the lifting bracket in place.

Hand wheels (19) are included. These come in two parts. They should be soldered together whilst still attached to the small frets surrounding them. Tin the side of the wheel where it will meet the rim. Use 1mm wire pins through both frets and into a piece of scrap wood or mdf to locate everything and solder together. The prototype wheels were dished. Stenson Models markets a dishing jig designed by Colin Craig to help achieve this which may prove useful. You will need the 7mm diameter one. Solder a length of 0.5mm wire in the centre of each hand wheel to act as a shaft. Remove from the fret and tidy up. Fit a length of 1mm x 0.5mm brass tube into the existing hand wheel brackets and glue in place. Remove the lime moulding and the insert replacement hand wheels in place.

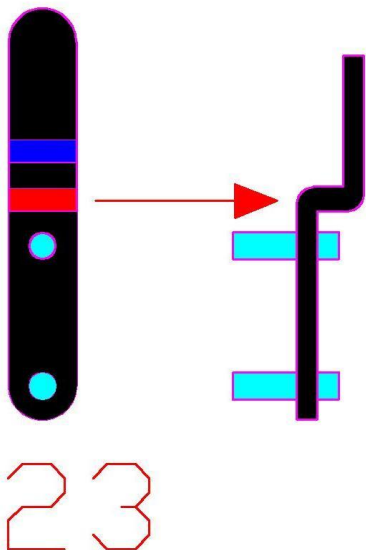


There are numerous levers fitted to the pipes running along the wagon solebars and also to a valve on the skirts at the right hand end of each side. You will need to refer to pictures of the prototype for their exact locations. The pipe levers (20) will need short lengths of 0.31mm wire soldering to them. You can then drill 0,3mm holes into the wagon and use the wire to help locate them in place.

Label clips (21) and builder's plates (22) are included for detailing the solebar. They were both located towards the left hand end of the solebar on each side. Refer to pictures of the prototype for their exact locations.

Finally lamp irons (23) have been included for fitting to the headstocks.

Fig. 3



There are six included, three with half etched holes for pressing out the bolt heads and three with the bolt holes etched out completely. I dislike relying on glued joints for these sorts of things on plastic bodies and so have included these for use with 0.31mm wire pins to provide a more positive location. I have also included a drilling jig which has the correct spacing for drilling holes in plastic bodies. This is the part shaded yellow on the detailing parts diagram. Use a 0.3mm drill.

If you wish to use the half etched bolt type then press out the rivets whilst still in the fret and then remove and fold up and fix in place.

If using the pinned type then check that the holes will accept 0.31mm wire, remove from the fret and fold up. Two short lengths of 0.31mm wire can be soldered in the holes and then the lamp iron glued in place on the body having drilled receiving holes for them. Alternatively simply glue the wire and lamp iron in place at the same time without the solder.

Thanks

Another mention for Mike Whitchurch who conceived this project and who's funding made it possible.

Justin Newitt - September 2023

Suppliers List

Cambrian Models (wire)
<https://www.cambrianmodelrail.co.uk/>

Will's Workbench (Colin Craig/Stenson Models)
<https://www.willsworkbench.com/>