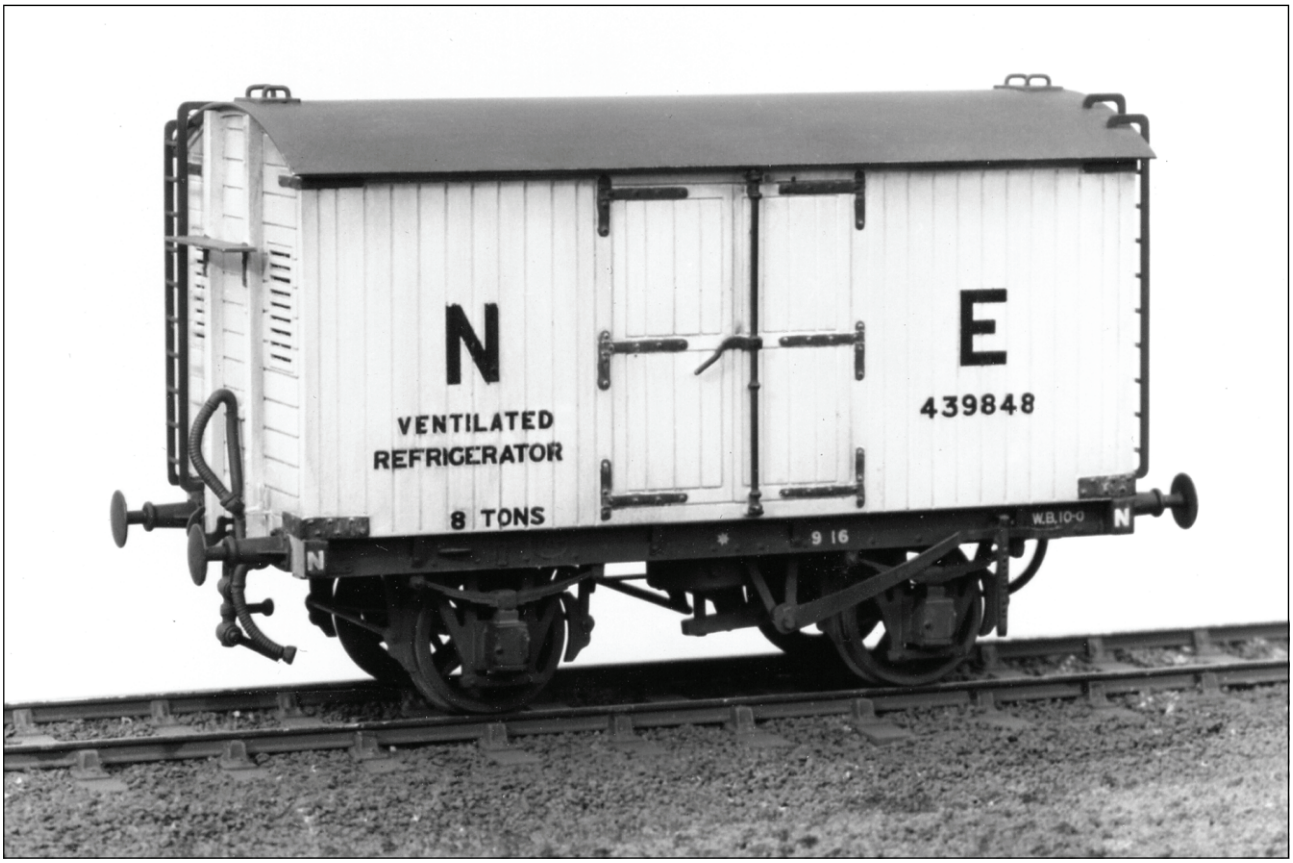
CONNOISSEUR MODELS

- 0 Gauge -

LNER 8 Ton Refrigerator Van



Prototype. These vans were built by the LNER in the 1920's as a continuation of a similar GNR design. They were refrigerated by ice placed in roof hatches that were reached by end ladders. They carried a very distinctive white livery with black lettering and ironwork. Naturally rapid transit was required for their loads of meat etc and so they were fully fitted to work in fast freight and passenger trains.

Kit. Main construction is straightforward. A number of overlays for hinge detail and ironwork and construction of end ladders provide some pleasantly challenging work.

Wheels, 3'1", 3 Hole Disc (7122) or 8 Spoke (7121) are required to complete, Available from Slater's, Temple Road, Matlock Bath, Derbyshire, DE4 3PG, Telephone 01629 583993.

Connoisseur Models, 33 Grampian Road, Penfields, Stourbridge, DY8 4UE, Telephone 01384 371418

GENERAL INSTRUCTIONS

Please read this section carefully, especially if this is your first etched brass kit. Many modellers fight shy of working in this medium, but the basic skills are relatively easy to acquire. Once you've learned how to form and solder brass, you'll find all kinds of modelling possibilities will open up for you.

Assembling an etched kit involves exactly the same skills that a scratchbuilder uses – the only difference is that the cutting out of the parts is already done for you. Some filing and trimming will, however, be necessary from time to time. Where this is the case, I have highlighted it in the instructions.

The main skill to master is soldering and I would recommend a Weller 40 Watt soldering iron. This has a 6mm diameter, removable copper bit. The bit is shaped like a screwdriver and has a bright coating of solder (tinned). This combination of iron and bit shape is ideal for running fillet joints and has a good reserve of heat, that is necessary for soldering small parts on to large components. Note the shape and condition of a new bit, as this won't last long and will need restoring back to this condition.

It is important to keep the bit clean and in good condition as you work. Get a soldering iron stand containing a damp sponge; old oxidized solder is wiped off on this before picking up fresh solder for each joint. If you haven't made a joint for some time you may find that a hard black crust has formed on the bit. Remove this with a brass wire brush (suede brush) and then feed some multicore solder onto each side of the bit to restore a bright surface (referred to as wetting or tinning the bit). After about 8 hours use you will find the bit is in poor condition, with holes and a ragged edge. File the bit back to its original shape using a hand bastard file and then polish the surfaces on emery cloth. Coat the bit with Fluxite Soldering Paste (traditionally used by plumbers) and this will prevent the bare copper oxidizing as the iron heats up. Then feed multicore solder onto the bit to form a generous coating and leave to bubble away for a couple of minutes before wiping excess off to give a bit almost as good as new.

A smaller Antex 25 Watt iron with a 3.2mm screwdriver bit is very useful for small assemblies and detail work such as handrails, but will have insufficient heat reserve for main assembly work. The Antex has a plated iron bit, after a little use with 145° solder a grey oxide appears on the bit that will prevent you from picking up the solder. Touch the bit to some multicore solder and it will flash over the bit, wetting it so that you can continue picking up 145° solder. I have found no problems with mixing the two solders in this way.

I use 145° solder for virtually all assembly work. I prefer it in wire form, available from Branchlines, but it is also produced in stick form by Carrs. I find that its lower working temperature helps to give a quick clean joint. Limiting the build up of heat in components, which may cause distortion. I find that I can hold parts together with my finger ends and make a joint before heat reaches my fingers or other etched parts drop off.

I use 60/40, tin/lead, fluxed multicore electrical solder (melting point about 190°) mainly to keep the iron bits in good condition. As it gives a slightly stronger joint than 145° I sometimes use it for small spot joints on handrail wire, lamp brackets etc, but still use extra liquid flux.

For all brass and nickel silver work I use Carrs green label liquid flux. You will soon get the feel for how much to use but more problems are caused by too little flux than too much.

Before soldering components together, thoroughly clean both surfaces along the join line with a glass fibre burnishing brush. Using your tweezers or a knife blade etc, hold the parts together in the correct position and, with an old paintbrush, run some flux along the area to be joined. Still keeping the parts correctly aligned, pick up a small quantity of solder on the tip of your iron and carry it to the joint (unlike electrical soldering, when you feed solder into the joint). Hold the iron against the joint just long enough for the solder to flash between the parts. Don't let go of the parts until the solder has cooled – this takes from five to ten seconds. To run a fillet of solder along a joint, wait until the solder flashes between the parts and then pull the molten solder along

the joint with the iron tip. Don't load the iron tip with a lot of extra solder, but work the joint in 1" lengths, bringing in small quantities of solder. Brass is a very forgiving material and if you get something out of alignment, use heat from the iron to desolder the joint before starting again. For complicated assemblies, it is a good idea to only tack solder parts together. You can then make adjustments by desoldering until you are happy with the location of parts and then solder solid.

When you need to laminate two or more layers of brass together, align the parts and carefully clamp them together, either in the vice or by holding them with miniature crocodile clips. Run flux around the edges, and then go around with the soldering iron. Clean up thoroughly afterwards.

To fit small parts and overlays on to a larger assembly, such as strapping to a wagon side, when you need to prevent finely detailed areas such as planking becoming clogged up with solder. Tin the back of the small component first, then hold in place on the model and apply flux. Carefully wipe the tip of your iron on a sponge to remove any solder from it (dry iron), and then touch it against the parts to be joined. After a few seconds you'll see molten solder bubbling from the edges. Remove the iron, still holding the parts in place, and allow the joint to cool. An alternative is to use solder paint (I would recommend Carrs 188 solder paste). As the name suggests, this is a flux and solder in one. Simply apply a thin coat of solder paint to the back of the component instead of tinning. Still apply a small amount of liquid flux before you solder the part into place.

Any surplus solder should be removed using a craft knife, I find No 10 curved scalpel blades ideal, then burnish clean with a glass fibre brush. With practice, you'll learn how to use the minimum amount of solder to do the job. Flux is corrosive so, after each soldering session, give your model a good scrub with washing up liquid or Jif. After a day or two, any remaining flux residues will show as a green film, which should be washed away.

To cut parts from the fret, use a sharp Stanley knife on a piece of hardboard or a pointed scalpel blade on a block of softwood. Remove tags and burrs with a fine file.

Three-dimensional parts are formed by folding. On an etched brass kit, the fold lines are normally half-etched on the inside of the fold. You'll be able to fold most parts using smooth-jawed pliers. For longer parts folding bars are desirable.

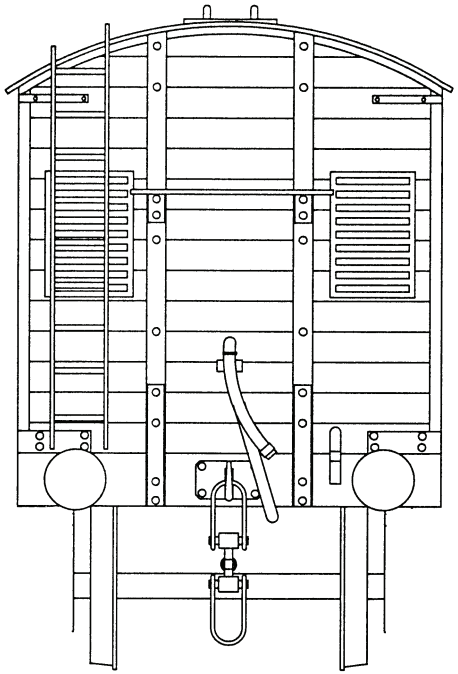
Other useful tools include a bench vice, a good pair of tweezers, a set of Swiss files (get a full set of cheap ones and then buy quality replacements for the three that you use the most), a pin vice with a selection of drills from 0.5mm to 2.1mm plus a few larger sizes that you use regularly (2.6mm for axle bearings etc), some square-nosed pliers and some very pointed-nosed ones, preferably with smooth jaws. Buy cheap tools first and duplicate the most used ones with quality.

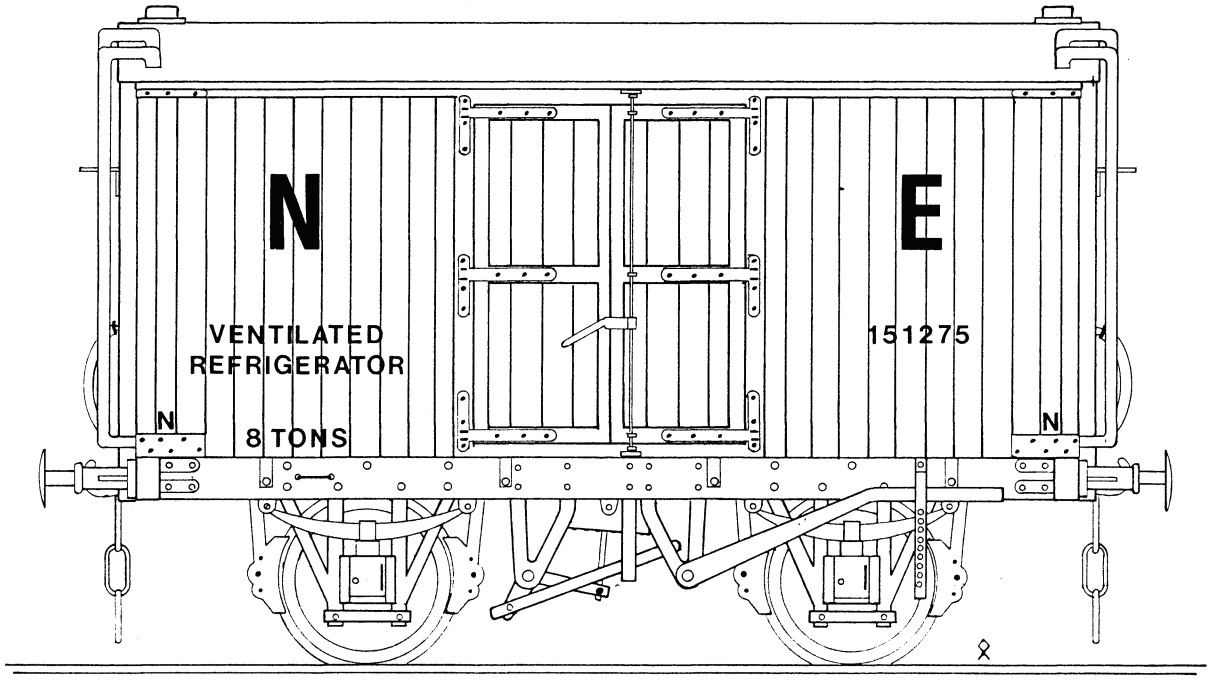
Try to complete all high-temperature soldering before attaching any of the cast whitemetal parts. These can be attached with two-part epoxy resin such as Devcon or Araldite Rapid. Ensure the surfaces to be glued are clean and free of grease.

A better alternative is to solder your white metal castings using Carrs 70 degree low melt solder and Carrs red label white metal flux. The iron should be run at a much lower heat so that you do not melt the castings. I have a domestic light dimmer switch and plug socket fixed to a piece of wood, wired up with a lead and 3 amp mains plug to the input side of the dimmer switch and the output of the dimmer switch into the plug socket (remember to continue the earth). Plug your 40 Watt iron (25 Watt iron won't work) with a clean and freshly tinned bit into this and experiment with adjusting the switch until you find the range of temperature at which the solder melts, but a scrap casting does not. **Note** as the iron is running at a lower voltage it will take longer to heat up, so when you think the adjustment is correct do check a few minutes later on another scrap casting to see that it doesn't melt. Then scribe a mark on the switch knob to indicate this position.

When attaching white metal fittings to brass the surface of the brass must be tinned with 145° solder, to allow the solder to grip. The surface of the casting at the joint should be burnished bright. The casting can then be soldered into place with 70° solder and fillets of solder run into any gaps with no risk of melting the casting.

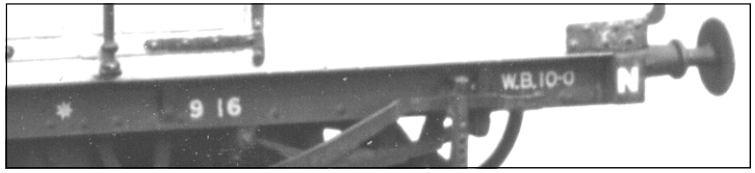
LNER 8 TON REFRIGERATOR VAN



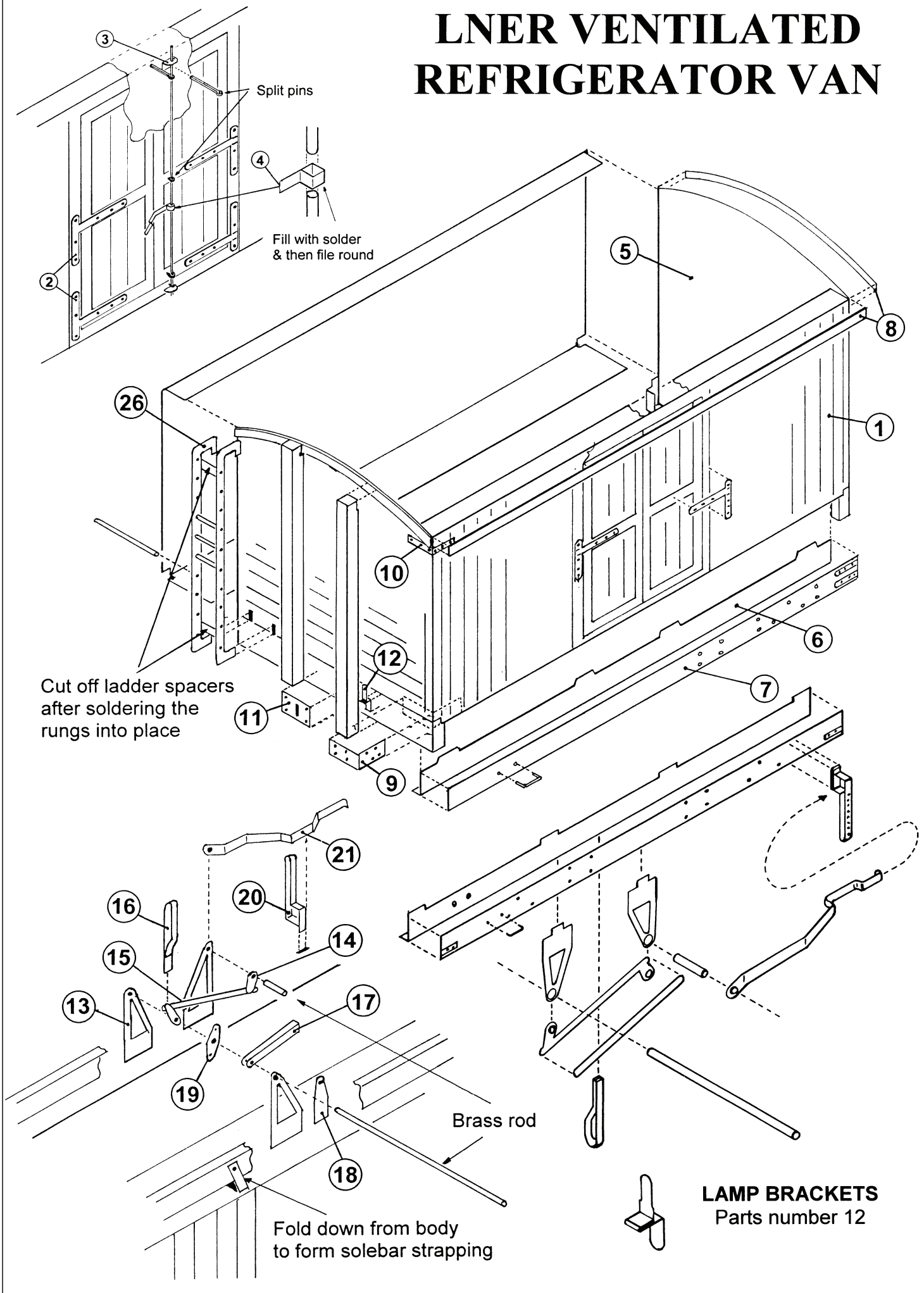


Livery. Bodywork – white (Humbrol matt white No 34 with a little linen No 74 mixed in to give a slightly yellowing weathered tint). Body ironwork, ladders, hinges, corner strapping etc – black (Humbrol matt black No 33 with a little Tarmac No 112 mixed in to give a weathered blue tint). Solebars and running gear – Black (Humbrol matt black No 33 with bauxite No 133 and gunmetal No 53 mixed in to give a brown tint particularly for wheels and brake gear). Roof – light grey No 64 with tarmac No 112 blended in to give a weathered finish.

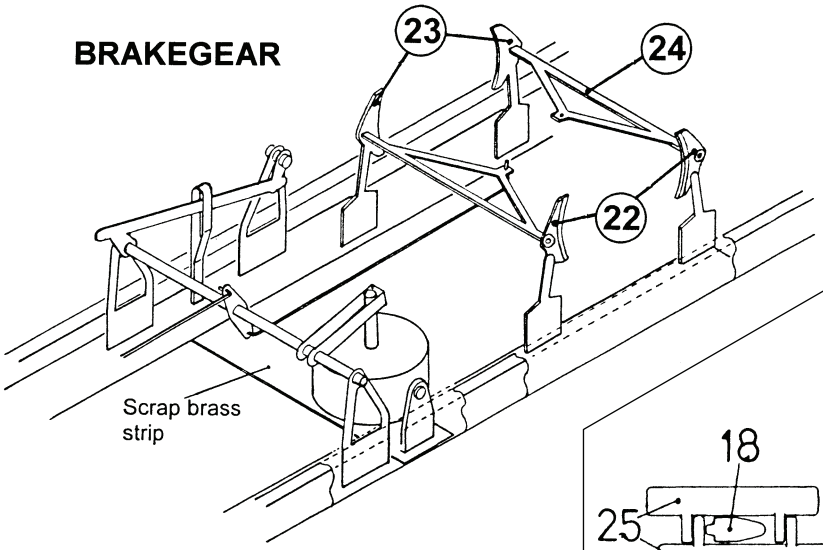
Lettering – black. Transfers for lettering are available from the Historical Model Railway Society, 8 Gilpin Green, Harpenden, Herts, AL5 5NR. They are also stocked by the specialist 0 gauge model shops. You will require sheet No 12, LNER goods vehicle insignia.

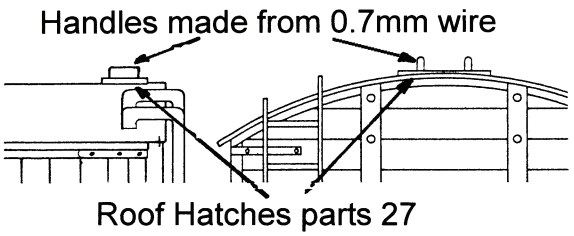


LNER VENTILATED REFRIGERATOR VAN

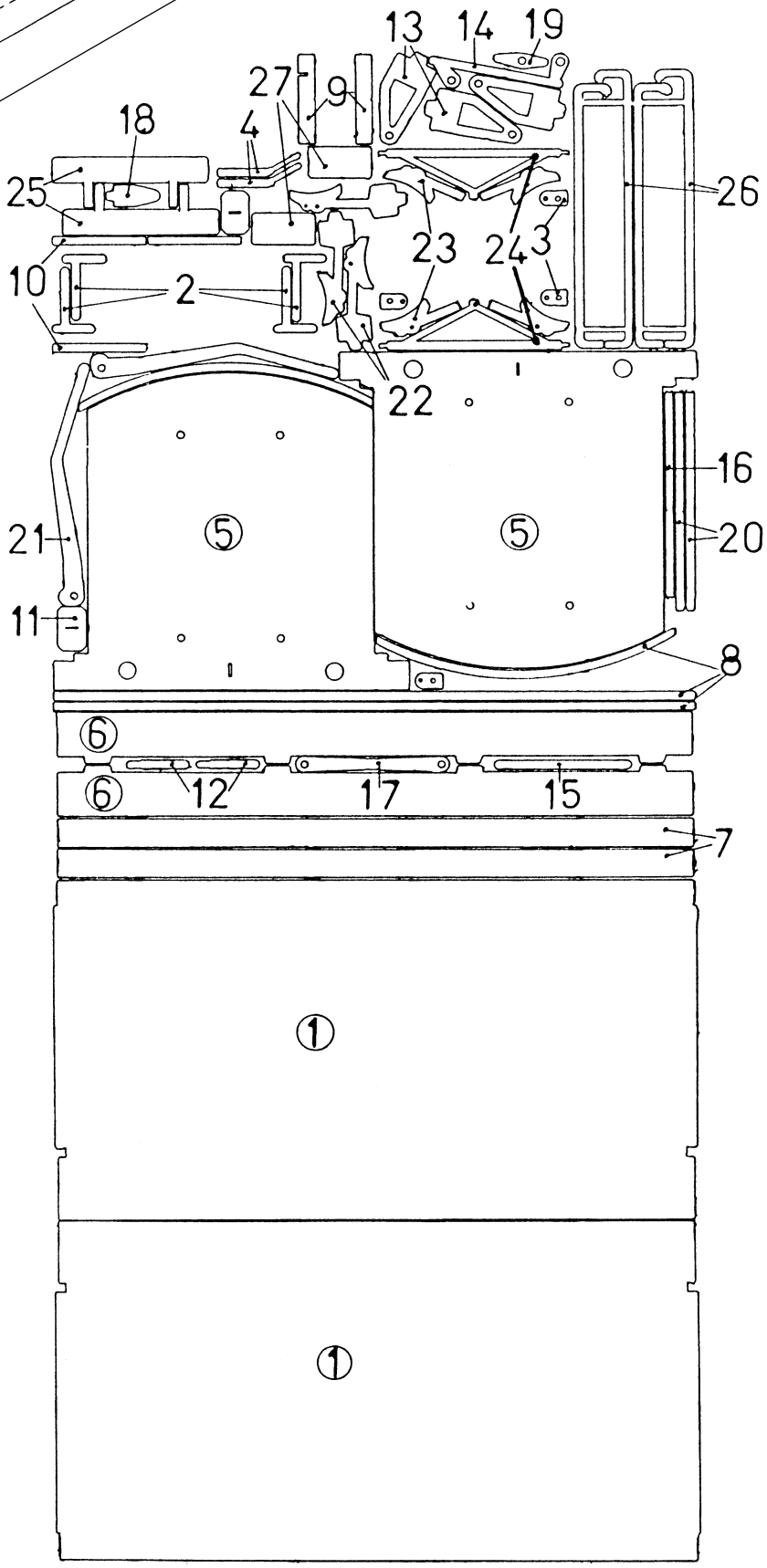


BRAKEGEAR

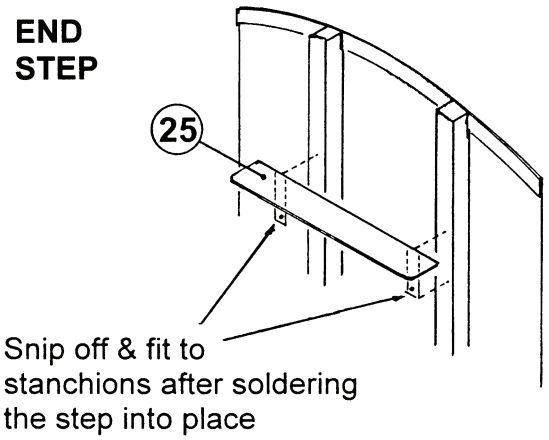




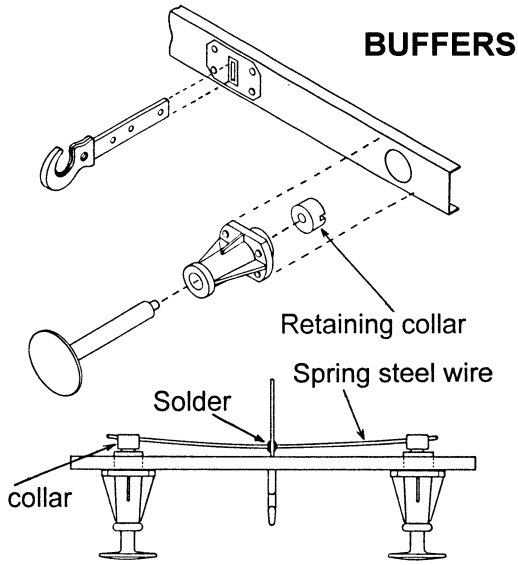
ETCHED PARTS IDENTIFICATION

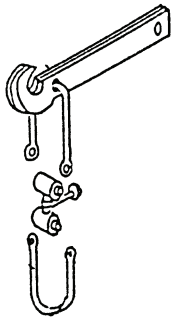


END STEP



BUFFERS





COSMETIC SCREW COUPLINGS

LNER 8 TON REFRIGERATOR VAN

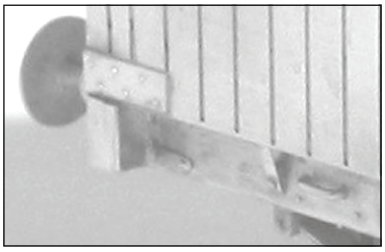
Construction Instructions & Suggested Assembly Order

1. Remove the van sides (parts 1) from the fret. If you look at the R/H doors you will see that one van side has six round holes and the other only four, I missed two and both sides should have six holes. Place the side with six holes on top of the side with four holes and drill through to make the missing holes. Then fold the top and bottom of the sides through 90°. I prefer to fit the door details now as I find it easier to fit to the sides before assembly. Laminate the door hinges (parts 2) to the sides referring to the main drawing for positioning.

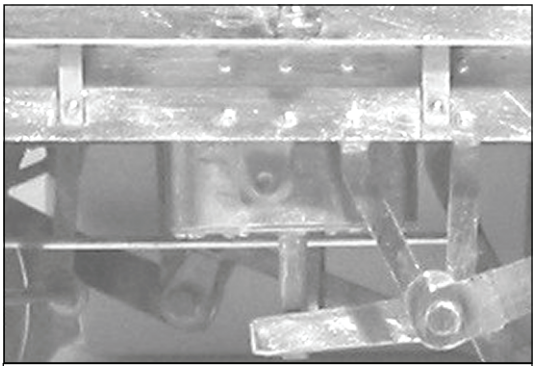
Fold up the door lock plates (parts 3) and fit into the slots at the top and bottom of the door. I found that I had to dress off the cusp at the sides of the plates to get a snug fit into the slots. Fold around the thick end of the door handles (parts 4) to form a box section. Pass a length of 0.9mm brass wire through this box section and solder into place so that the solder fills the box section fully. Dress the box section with a file to form a half round and then bend a set into the thin end of the door handle. Fit five split pins into the holes, two at the top, one in the centre and two at the bottom (note the photo shows the door handle incorrectly fitted in the centre and it should be fitted lower down as shown on the main drawing). I closed up the heads of the split pins slightly before fitting by threading onto a length of wire and gently squeezing the necks with a pair of long nosed pliers. Then thread wire with door handle through the top three split pins and lock plate and then down through the bottom two split pins and lock plate. Position door handle over the lower hole and solder the wire at the two lock plates. Then solder each split pin to the wire before turning the side over and soldering the split pins into their holes. Snip off the ends of wire just proud of the lock plates

2. Remove the van ends (parts 5) from the fret and fold around the ends of the buffer beams to form a box section. Then solder sides and ends together to form the box of the van. The buffer beam-ends will provide a positive location for positioning the sides but it may be necessary to dress off the etching cusp to get a snug fit. Solder both sides to one end first and then fit the second end, checking as you go that everything is square. The sides should just slightly overlap the ends and you should be able to dress them back with a flat file to form a crisp corner and blend the joint in so that they will be invisible after painting.

Fold the edge of the solebars (parts 6) through 90°. Emboss the four bolt heads at each end of the solebar overlays (parts 7). Solder overlays to solebars. Then fit handles (hooking point for horse shunting) made from 0.7mm brass wire. Fold down the body to solebar strapping (located in the bottom part of the sides) and then fit the solebars to the body. Note that the bolt head detail is different on each solebar, this corresponds with the slots on the underside of the body for the brake gear vee hangers. Two sets of four bolts 10mm apart on the two vee hanger side and four bolts central and four bolts to the right on the vacuum cylinder and single vee hanger side. It may be necessary to dress the solebar ends to get a snug fit. Once the solebars are fitted, spot solder the body to solebar brackets to the solebars.

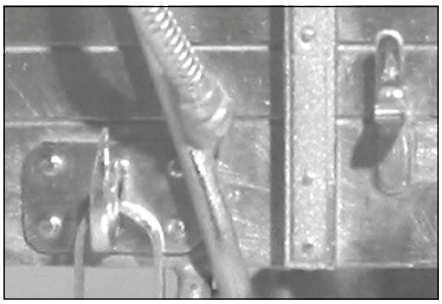


3. Fit the beading strips (parts 8) to the top of the ends and sides. First fit the curved strips to the ends so that they slightly overlap the sides and then trim and fit the side strips. Place a spot of solder at each corner joint and blend in with a file. Fit the bottom corner strapping (parts 9). I fitted the left hand strapping to the ends first so that I could line up the slot for the ladder with the corresponding slot in the van end. I then folded the strapping through 90° and solder it to the van side. If the top of the buffer beam ends are slightly proud of the sides, dress them flush with a flat



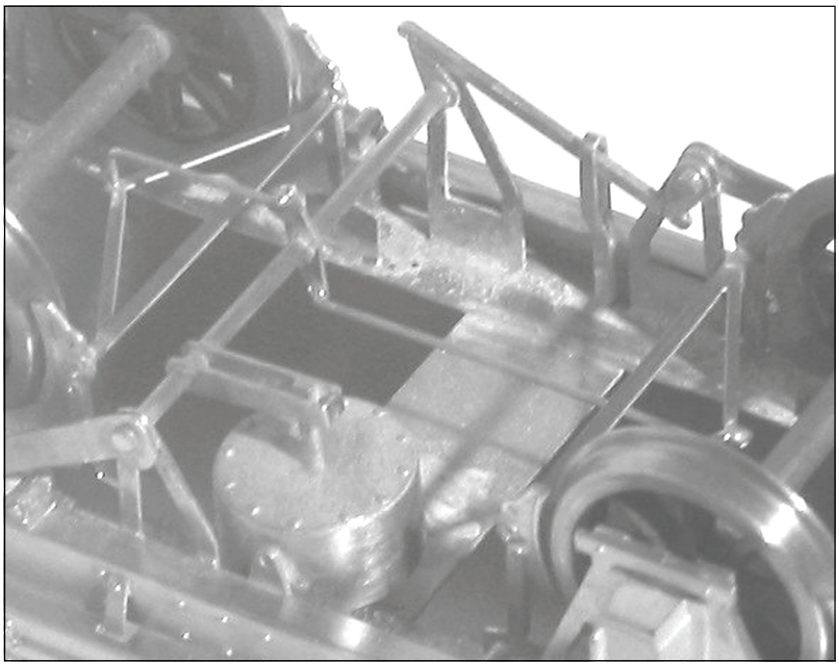
Vacuum cylinder & single vee hanger side

file before fitting the strapping. Fit the top corner strapping (parts 10) and coupling plates (parts 11).



Fold up the lamp brackets (parts 12) noting that the centre fold is a reverse fold and then fit the bracket to the buffer beam 14mm from the R/H end and 3.5mm from the bottom. Before fitting, hold the top of the bracket with tweezers and apply a generous blob of flux. Then touch the side of the lamp bracket with the tip of the soldering iron coated with 60/40 electrical solder. The flux should draw the solder off the iron tip into the fold lines to reinforce them.

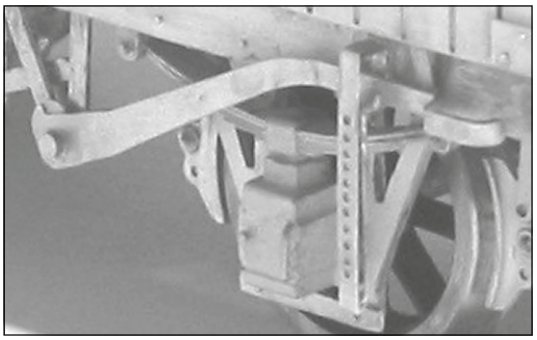
4. Fit the central brake linkage components with reference to the two diagrams shown on pages 4 and 5. Fit two vee hangers (parts 13) opposite each other and then laminate together the two parts of the cross-link, (parts 14 and 15). Then pass a length of 1.6mm brass rod just over 2" long through the vee hangers and cross-link (don't solder rod). Now fit the third vee hanger using the cross-link and remaining brass rod to check that it is positioned correctly. Then solder this brass rod into the vee hanger, apply plenty of flux and the solder should also flow through and solder the cross-link that is spaced just behind the vee hanger. The brass rod will be trimmed to length later.



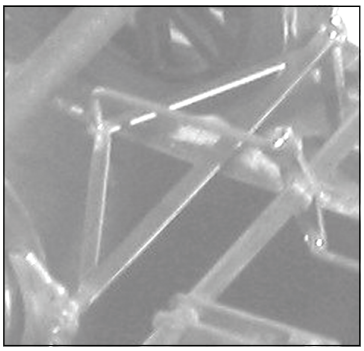
Form up and fit the cross-link safety loop (part 16). Withdraw the brass rod from the two vee hangers and file one end square. Fold up the vacuum cylinder linkage (part 17) and then tin the inside faces. Pass the brass rod back through one vee hanger, thread (part 17) over the rod and then the brake pull rod crank (part 19) then pass the brass rod through the cross link and into the second vee hanger. Now solder the brass rod into this second vee hanger so that the squared off end projects about $^{3}/_{4}$mm. Again use plenty of flux so that the solder runs through and also solder the cross-link. Fit the vacuum cylinder support (part 18) and then solder a scrap of brass strip across the inside of the body to support the cast vacuum cylinder. Solder the cast support, set at a slight angle, to the vacuum cylinder. Fit vacuum cylinder to the scrap of brass and also solder at the etched support. Fit the end of the vacuum cylinder linkage over the peg (peg may require two flats filing onto it) of the vacuum cylinder and also solder at the brass rod. Solder the pull rod crank (part 19) in the centre of the brass rod and at a slight angle. Hopefully reference to the diagrams will make this description clear.

5. Fit axle guards and wheel sets. My casting technology is not very sophisticated and I never seem to be able to cast axle guards cleanly, so clean out any flash between the W irons with a sharp pointed scalpel blade. File about $^{1}/_{2}$mm off the top of the casting so that the spring ends will fit hard against the bottom of the solebar. Drill out to 2.6mm diameter the hole to take the brass axle bearing (go carefully as you don't want to drill through the front of the axle box). This hole is formed by a small rubber peg in the mould which tends to flex as metal flows into the mould cavity and you will probably find that the hole is not quite square to the back of the axle guard. To correct this use a drill held in a hand pin vice (chuck) and by applying a gentle sideways pressure as you drill out the hole, you will be able to square it up. Then fit the axle bearing into the slightly oversize hole in the axle guard with a blob of Evostick, as this takes a little time to set you can make adjustments to the axle guards and then leave the wagon on a flat surface for the glue to set.

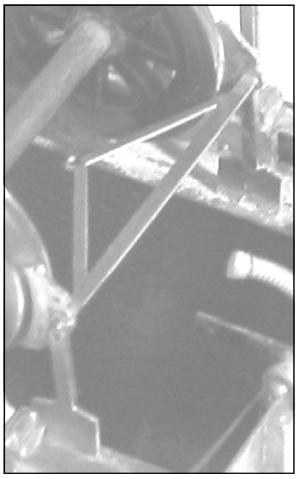
Slip wheel sets with the axle guards on between the solebars and tack solder each axle guard with low melt solder to the solebar. Check that the axles are parallel and the wheel centres are about 63mm apart, there are etched centre marks on the underside of the body that I find useful to eye up to. Place the van onto a flat surface and adjust if necessary, by re-soldering each axle guard until the van sits without rocking, when happy solder solid.



6. Fold up the brake pin guides (parts 20) note that the bottom 180° fold is a curved bend. Reinforce the folds with 60/40 solder and fit to solebar with the top locating in the hole on the underside of the body. Dress the cusp off the brake levers (parts 21) to make them look a little more delicate. Then form up (note etched dots to mark the position of the handle folds), thread handle through pin guide and solder at vee hanger and pin guide. Cut excess off ends of 1.6mm brass rod and file ends square.

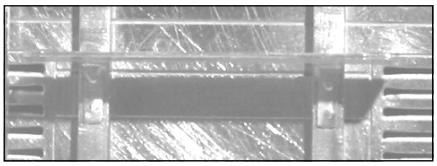


Solder together the two parts of each brake block and hanger (parts 22 and 23). Holding the brake block with a crocodile clip etc, position just clear of the wheel tread and locate and solder the base into the slot on the underside of the body. Spring the brake yokes (parts 24) between the brake hangers and spot solder at each end. Link the inside brake yokes to the pull rod crank (part 19) with 0.7mm brass wire.



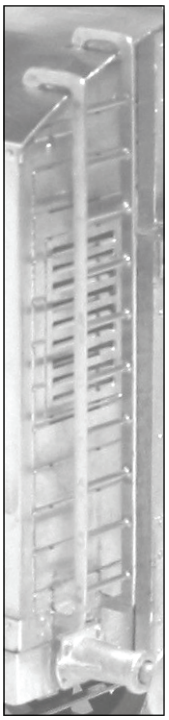
7. Fit the cast end stanchions. The etched holes may require opening up to 2.1mm and the top holes filing slightly oval to accept the cast pegs. File the top of the stanchions to fit snugly over the roof beading. Fit the roof, I have passed the roof through my rolling bars but it may still require a little work with fingers and thumb to get it to the exact profile. I tack soldered it in the centre at each end so that I could check that it was square and with an equal overhang at each end and side. I then soldered it solid in three places at each end (don't get to close to the cast stanchions or you will melt them) and at a couple of places down each side. I didn't bother with a floor but if you want to fit one, thick plasticard may be best and fit it before fitting the roof. Open out the holes in the buffer beam to accept the cast buffer body. I used a tapered reamer to do this. I found that a slightly oversize hole to give a sloppy fit was best and you may have to dress the back of the top edge of the casting if the corner strapping prevents it sitting down level. The buffers are to be fitted later.

Fit the end steps (parts 25) to the cast stanchions 43mm from the bottom (just above a plank line). I made a slight mistake with this part and the step brackets are slightly too close together. Tin with 145° solder the edge of the step and the backs of the brackets. Snip off the brackets flush with the step and place to one side. Low melt solder the step into place and then solder the brackets to the stanchions below the step.



8. Remove the end ladders (parts 26) from the fret but leave each side of the ladder attached to the two spacers. Place each pair of ladder sides onto a flat block of wood and drill out the rung holes 0.75mm. This is to clear out any etch cusp and ensure that the 0.7mm wire rungs are an easy fit. Fold the ladder sides through 90° at each spacer and check that the sides are straight and parallel. Solder in lengths of 0.7mm wire to form the top and bottom rung. This should give some strength to the ladder but still allow some adjustment if the sides are not straight or parallel. Load the sides with 11mm lengths of 0.7mm wire to form the other rungs and solder into place. Solder two rungs to one side and then the other, working from each end to the centre and this should prevent a build up of heat buckling the sides. I used 60/40 solder and a generous blob of flux. I placed the iron onto the wire near its end and let the flux pull the solder into the joint. Once all the rungs are soldered, snip off the wire ends at the sides and dress back to the sides with a flat file. Offer the ladder into place and dress down the pips at the top of the ladder until the

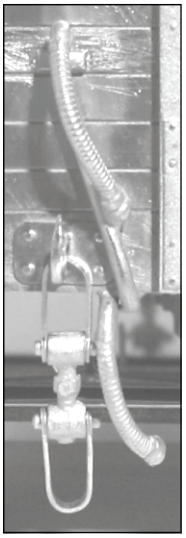
bottom of the ladder fits into the bottom slots.

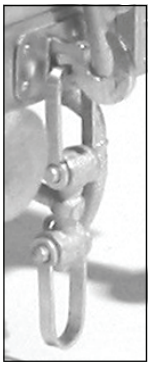


Cut a strip of card 80mm long and 25mm wide from the card the fret was packed on. Place this strip across the cast end stanchions and hold firmly in place with the second finger of the left hand. Place the ladder onto the card and hold in place with the first finger. The card strip should keep the ladder spaced out but parallel to the van end. As you spot solder one side of the bottom of the ladder into its slot and one side of the top to the roof. Check that you are happy with the ladders position and adjust if necessary by re-soldering at the roof joint. Then solder the other side of the ladder at the slot and roof. The slots are a little oversize and can be filled by flooding with solder or using Milliput before painting.

Fit the ice tank hatches (parts 27) to the roof. These fit in the centre of the radius of the roof with their edge 3mm from the edge of the roof. These parts remain flat and should not be bent to follow the roof curve. If you hold them in place with a knife point at their centre and flood solder around all four sides this should fill the gaps at the ends. Drill 0.75mm through the four holes into the roof and fit two handles made from 0.7mm wire. Use a sliver of card cut from the fret packing to space the handles away from the hatch as you solder them into place. With a knife blade scrape away the excess solder from around the four sides of the hatch and clean up with a fibre brush to give crisp edges.

9. Drill out the buffer bodies with a 2.1mm drill to take the cast buffer head/shank. Hold the drill in a hand pin vice (chuck) and grip the buffer body between finger and thumb. Drill through the body from each end so that the hole breaks through in the middle. Use a little spot of spit on the end of the drill (some more technical people have a block of furniture polishers bees wax that they smear on the drill end) and this will help prevent the drill wandering in the white metal and breaking through the side of the buffer. Then fit shank through buffer body, snip off some of the narrow end of the shank to leave just over 1mm from the step and solder a retaining collar onto the shank. Fit the steam heat pipe behind the buffer beam just to the right of the coupling plate (so that the mounting plate on the casting just clears the coupling slot). Fit the cast vacuum pipe on the centre line of the van end (over small hole) with its bottom end hooking underneath the buffer beam (trim off some of the tail) to the right of the steam heat pipe.





Make up screw couplings. Solder both halves of each hook together and using round-nosed pliers form the four links into U shapes. Dress the tops of two links with a file so that they will pivot freely in the slot in the hooks. Thread one of these links through the hook and spring the ends over the pegs on the cast centre. Then fit the bottom link. Pass the coupling hook through the slot in the buffer beam and retain it with a length of spring wire. The ends of which press on the ends of the buffer retaining collars as shown in the drawing on page 5. Polish the centre of this wire with emery cloth first so that you can solder it to the coupling hook shank once you are happy that the buffers spring freely.

10. Painting is a vast subject that cannot be covered fully here. The important thing with a metal model is to get a good base coat of primer. Hopefully you have been cleaning up and washing the model at the end of each modelling session, but it will still need thoroughly cleaning before painting. I give my models a good scrub with a stiff-bristled paint brush in a sink full of hot water, as hot as your hands can bear, and cheap washing up liquid (the expensive stuff that's kind to your hands has an oil in it that will stop the paint keying to the metal). If you know somebody who works in catering and can scrounge you some industrial-strength liquid, this is better still. Then rinse the model a couple of times in clean warm water and place in a dust-free box to dry. I use car aerosol primer and Halfords grey primer is one of the best. For the best results you want to spray at room temperature (25°C) on a dry day, avoid cold, damp or humid days. I find it helps to warm the model to about 30°C (put it in the airing cupboard overnight) and I warm up the paint tin

by putting it onto a radiator (about 40°C, but use your common sense as I don't want anybody blowing themselves up). I find it best to prime the model in two light coats, about 15 minutes apart and then leave for 48 hours to harden off (in the airing cupboard in a dust-free box).

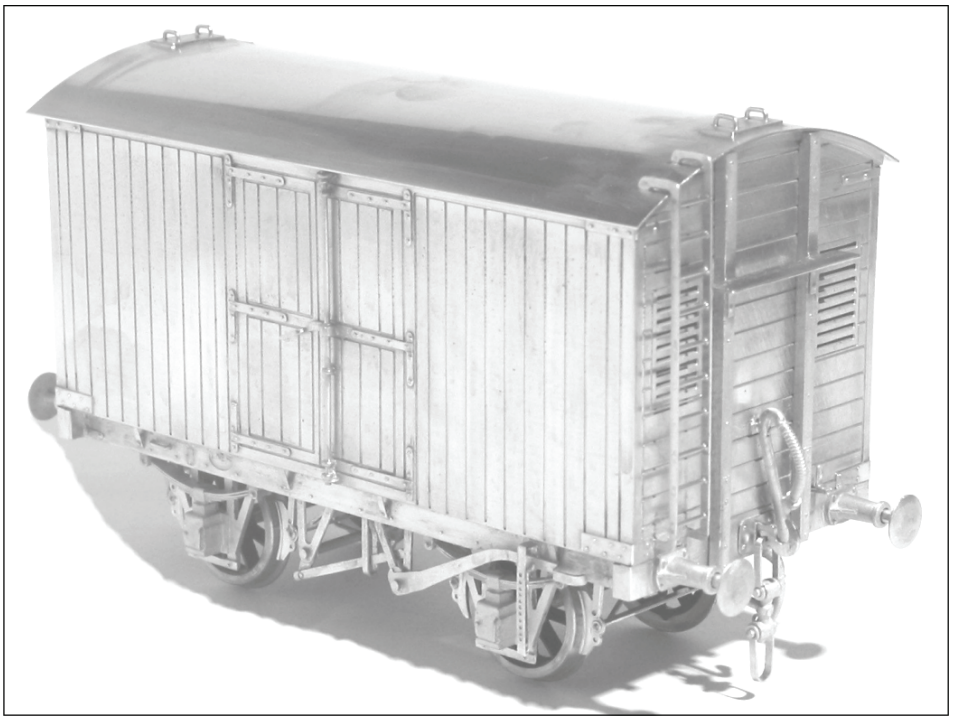
I brush-paint my models with Humbrol enamel. For years I just stirred it up and painted straight from the tin but I was never completely happy with the results. Recently two things have transformed my painting. The first was a copy of Martyn Welch's book, The Art of Weathering, Wild Swan Publications, ISBN 1 874103 11 9. Martyn's basic techniques are very useful and almost foolproof. Martyn's method of mixing coarse talcum powder into the paint to give a textured roof is particularly effective. The second thing is to mix the paint in the tin and then transfer it to a palette (a sheet of clean plasticard) with blobs of lighter and darker shades of paint surrounding the main colour. Then work the paint with the brush on the palette, slightly varying the tones of the paint. This seems to totally change the texture of the paint and the way it goes on and covers on the model.

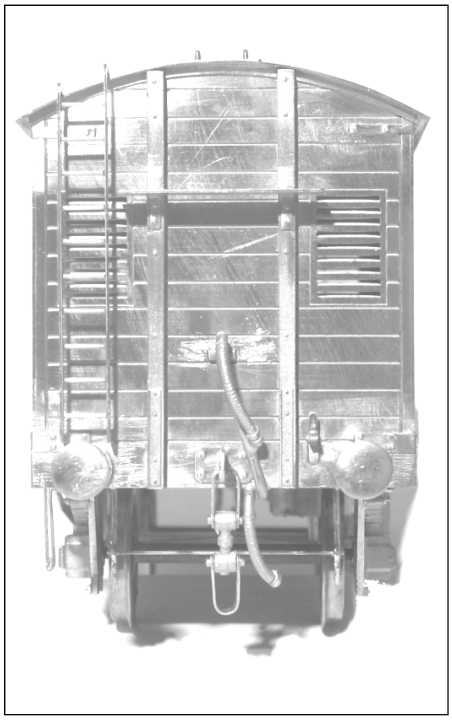
My knowledge of the prototype vans is limited to the information contained in Peter Tatlow's book, A Pictorial Record of LNER Wagons, Oxford Publishing Co, ISBN 0-92888-92-7, pages 47 & 48. Get it from your local library through their book order system. This contained sufficient information to produce the kit but running number information is very hazy, particularly as vans were built on wood and steel underframes. If any customer has more detailed information it would be gratefully received.

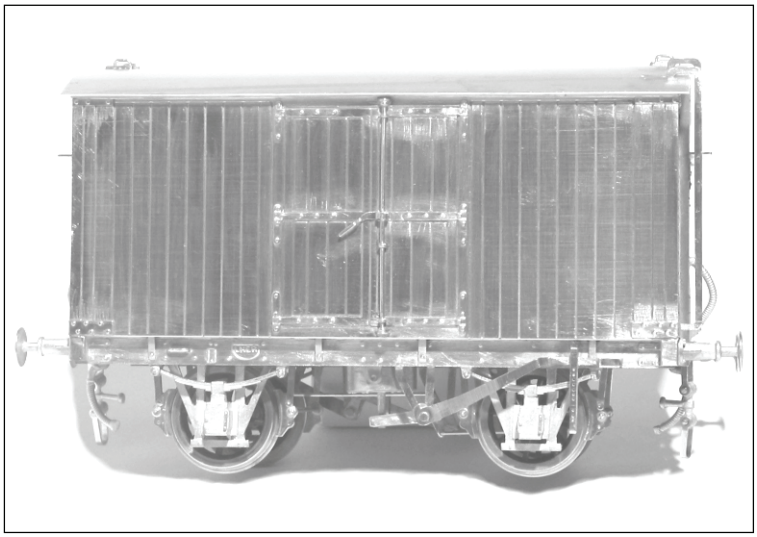
One customer, Tony Evans of Loughborough, has already responded to this appeal for information and very kindly provided numbers and building dates. 297 vans were built between 1924 and 1931. Unfortunately photographic evidence shows a number of variations in underframe details and it looks as if a number of the vans built at Stratford made use of surplus GER solebar channels and vee hangers and so some of the vans did not even have standard LNER fitted brake gear.

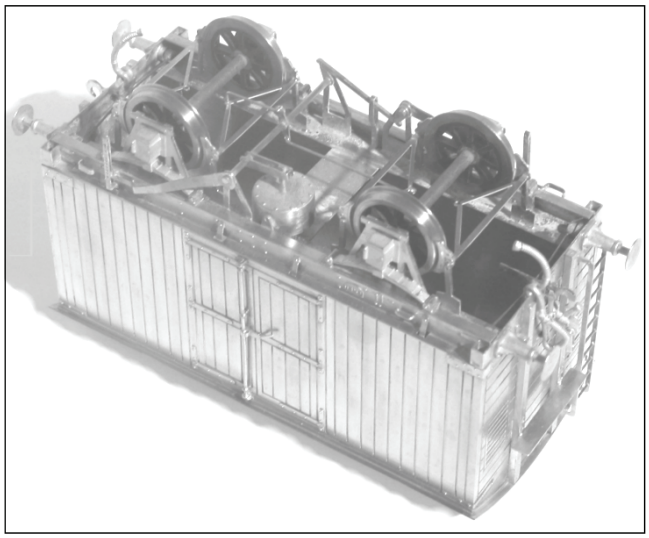
From Tony's information it looks as if the first batch of 80 vans built 1924-1925 would be the best to base your model on. These were numbered 139242-139321 and any one of the numbers in this batch would be suitable to put onto your wagon.

From this you can see that the number 439848 (a GNR built van) that I put on to my built wagon and the number 151275 (Stratford built with GER solebars and vee hangers) are both incorrect. I will have to live with this but hopefully you will get your wagon correct.







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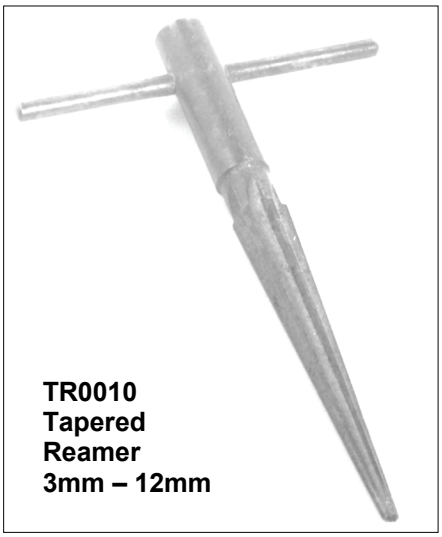
Tapered reamer & Fibreglass Scratch Brush

The use of these tools is mentioned in the instructions. These and most other general modelling tools can be obtained from Squires Model and Craft Tools, 100 London Rd, Bognor Regis, West Sussex, PO21 1DD, Tel 01243 842424. They do a free catalogue and a very good mail order service.

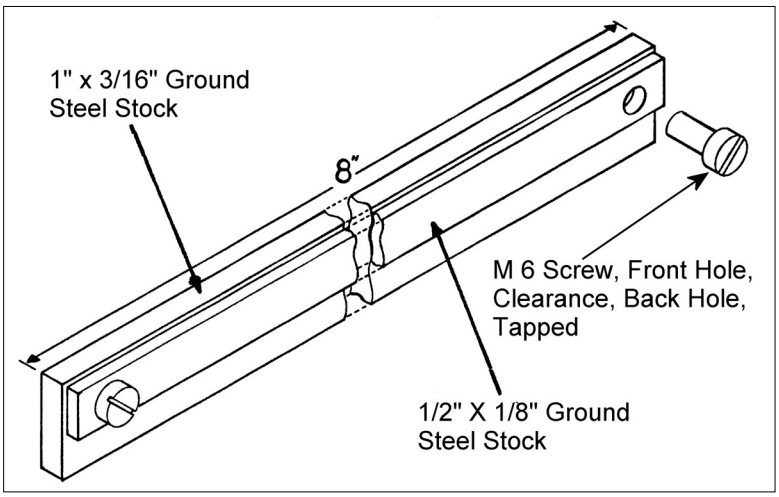


TR0010 Tapered Reamer 3mm – 12mm

The scratch brush is like a propelling pencil holder into which a fibreglass refill is fitted and which will give a vigorous abrasive action. I find this tool indispensable for cleaning up and removing solder. One very useful tip is to soak the refills in dilute PVA glue (Evostick resin W wood glue let down 50/50 with water and a spot of washing up liquid) and then drill holes in a block of wood and stick the ends of the refills in the holes while they harden off. This will make the refills much more abrasive and longer lasting, and also stops the fibres breaking off and ending up in your fingers. You will need to give the refill a good rub to get it started but if you use green label flux you will soon have plenty of rusty tools that need cleaning.

I used a tapered reamer to open up the holes in the buffer beams. I find this tool invaluable for building etched kits

Folding Bars



You will find a set of these very useful and here are details of the set that I have made for myself, in fact I have made three sets of different sizes. The dimensions or materials are not critical so make yourself a set to suit the materials you can get hold of. The important thing is that you can clamp the part along its entire length, with the etched fold line just above the front bar. Then clamp the bars in the jaws of your vice, a couple of 1" G clamps are also useful for long folds, and laying a steel rule at the back of the part to help transfer the pressure from your fingers evenly, pull forward to make the fold. Once the fold is close to 90° you can finish by pressing down on it with a block of wood and moving the block along the fold with a stroking action or by giving gentle taps with a small hammer on the wood block. Occasionally it is necessary to emboss bolt heads onto a part before folding, by lining the face of one of the bars with two or three layers of masking tape, you can still clamp the part without crushing the bolt heads but you wont get such a tight fold, so deepen the fold line with a triangular file.

Can You Help Me?

If you have enjoyed building this kit and have been satisfied with the quality, I would be most grateful if you could recommend it to your friends and fellow modellers. Although my kits are not perfect, I try to put a lot of time and effort into producing them. If I can get extra sales of a kit through customer's personal recommendation and I find that word of mouth is the best form of advertising. This will help me to put extra time and money into developing the next kit. Hopefully this will give me more satisfied customer to recommend my kits to their friends.

If you are not happy with this kit then please tell me. Hopefully I will then be able to help and sort out any problem.

Best Regards And Happy Modelling

Jim McGeown