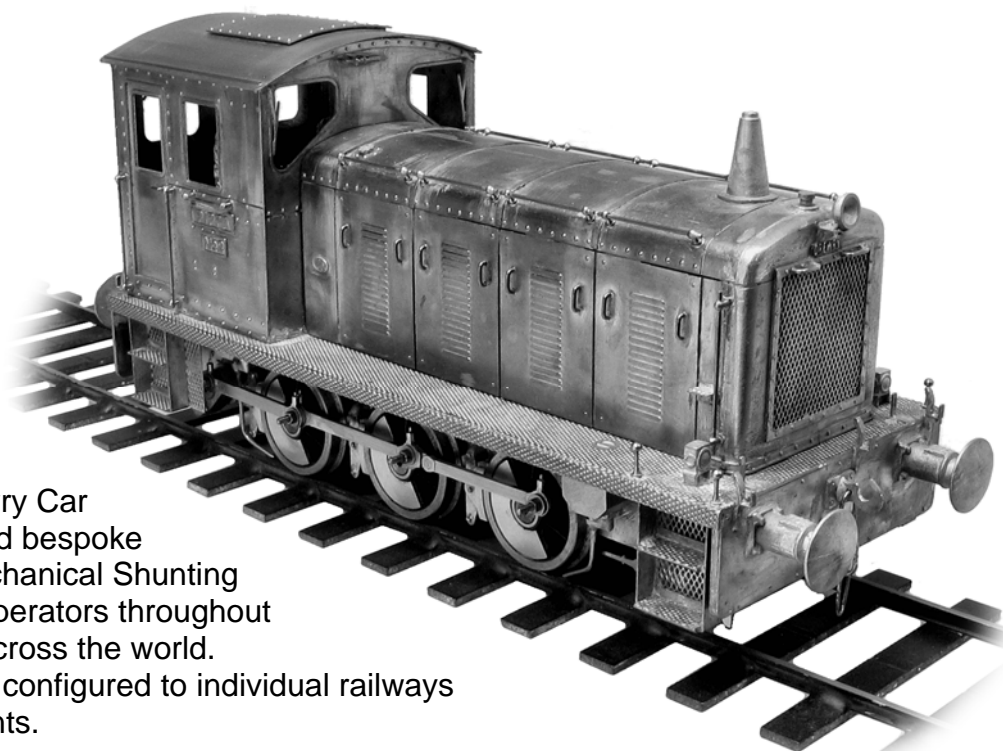


CONNOISSEUR MODELS

- 0 Gauge -

Drewry 204hp, 0-6-0 Diesel Mechanical Shunter British Railways Class 04 & Industrial Operators Body Assembly Instructions



Prototype

The Drewry Car
Co supplied bespoke
Diesel Mechanical Shunting
Locos to operators throughout
Britain & across the world.
They were configured to individual railways
requirements.

These 204hp, 0-6-0's, built in considerable numbers, were developed as a larger and more powerful complement to the original 153hp 0-4-0 that had proved highly successful.

British Railways purchased from 1952, 15 locos of this initial design, D2200 - D2203 noted for working on the Wisbech & Upwell Tramway & D2204 - D2214 distributed throughout the British Railways system. A number of these locos remain in operation today on preserved railways & heritage sites.

Parts Required To Complete

1 X Slater's Drewry 040 Shunter Wheel Pack (Slater's Catalogue Number 7839id)

This pack contains 4 X wheels, 3 X axles, 6 X crankpins.

1 X Slater's 3' 3" Driving Wheel (Slater's Catalogue Number 7839i)

This pack contains 2 X wheels, 1 X axle & crankpins, everything additional for 060

Plunger Pickups if desired (Slater's Catalogue Number 7157)

Available From Slater's Plastikard, Old Road, Darley Dale, Matlock,
Derbyshire, DE4 2ER, Telephone 01629 734053.

1833 Motor and 40/1 Gear set, *available from Connoisseur Models.*

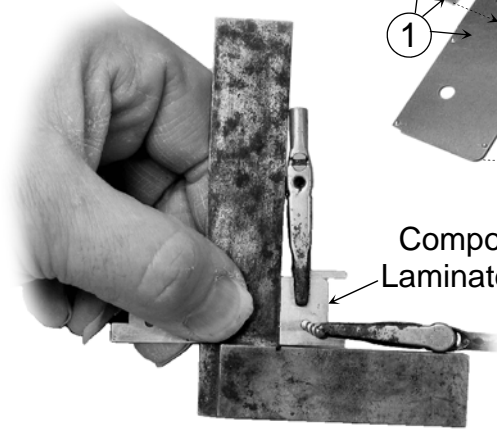
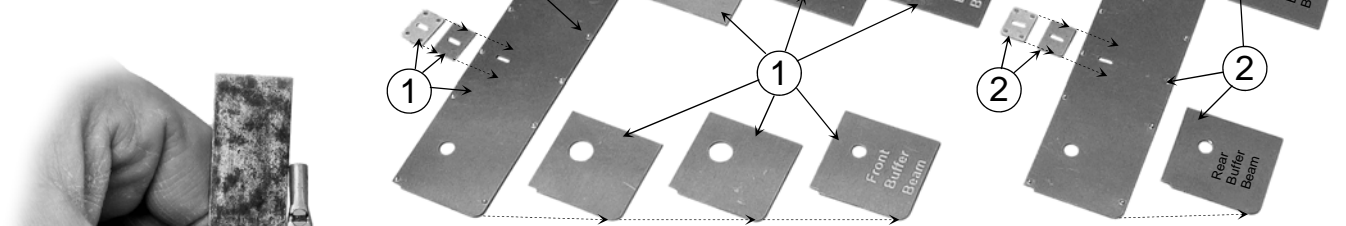
**Jim McGeown, Connoisseur Models, 1 Newton Cottages,
Nr Weobley, Herefordshire, HR4 8QX, Telephone 01544 318263**

Stage 1, Main Footplate Assembly

Emboss rivet heads onto buffer beam front faces. Front buffer beam is twice as thick as rear.

Pre tin top face of each thickener to aid lamination.

Ensure etched lettering is on inside face.

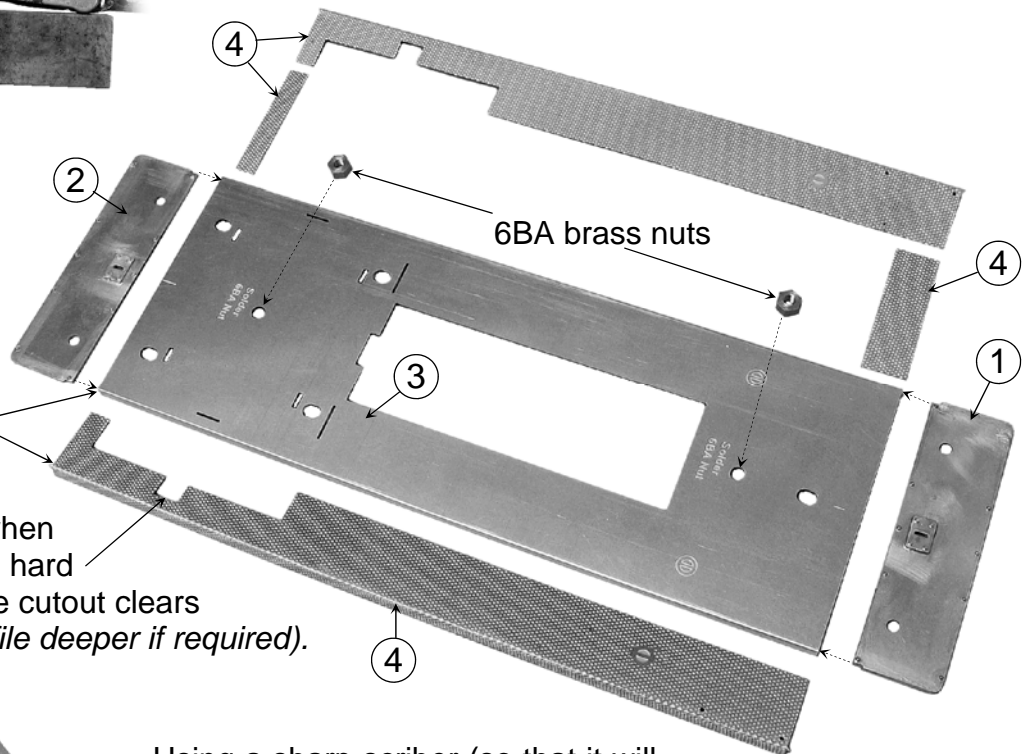


Component Alignment is aided by drill shank & square.
Laminate together by soldering around edges.

Rear bufferbeam two layers.

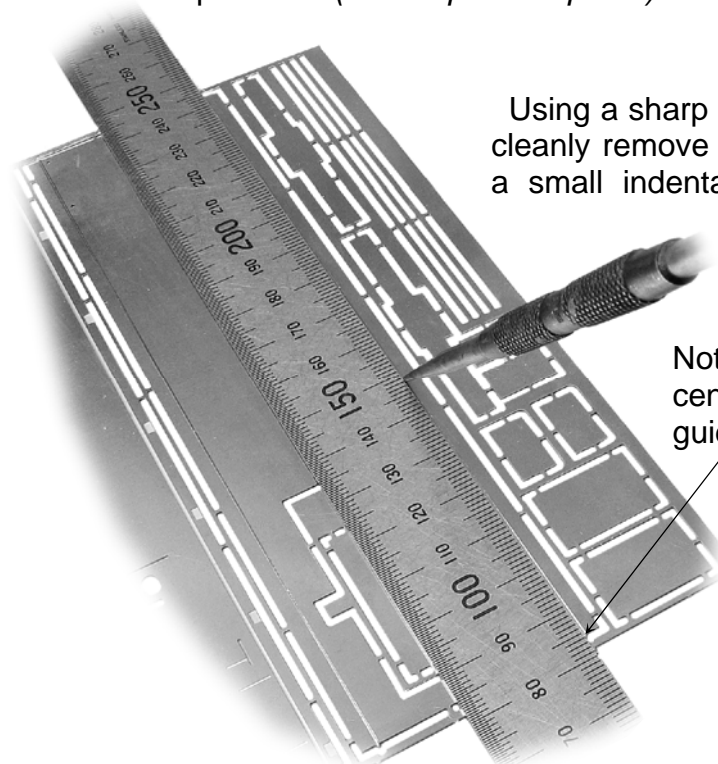
Fold footplate edges (*valances*) 90°. Make folds as tight as possible.

Ensure that when overlay is fitted hard against valance cutout clears footplate slot (*file deeper if required*).

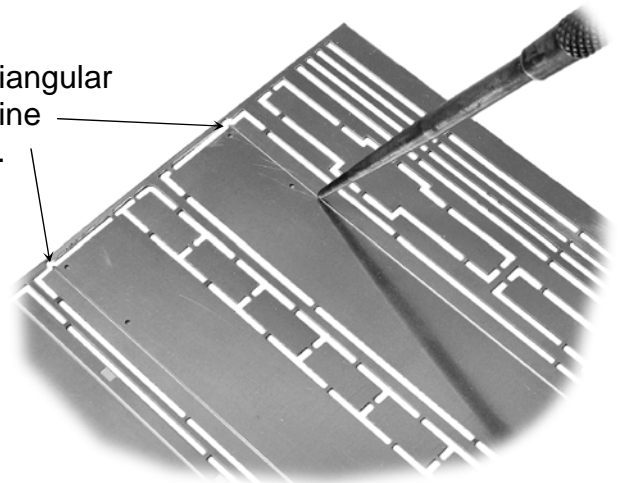


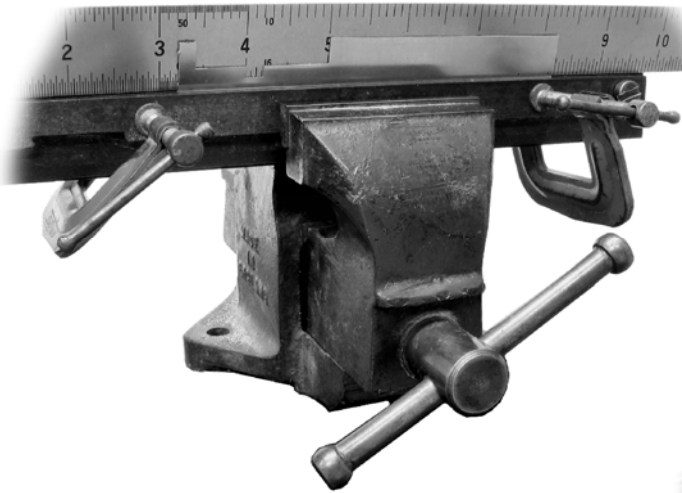
Using a sharp scribe (so that it will cleanly remove a little metal to form a small indentation to aid folding) mark a fold line on the plain underside.

Front bufferbeam four layers.

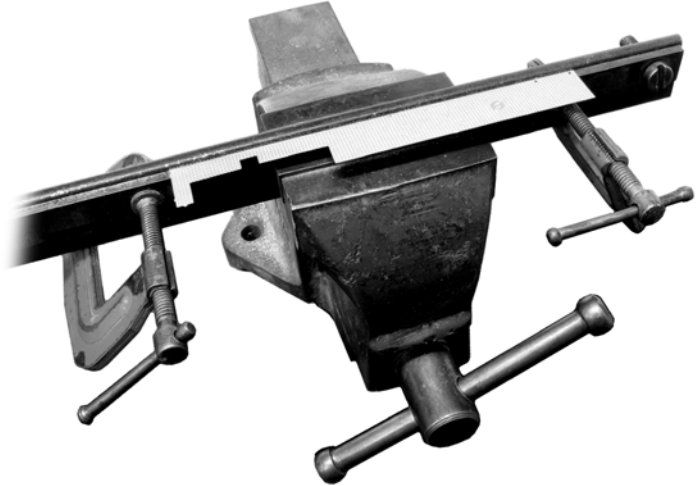


Note triangular centreline guides.





Clamp in folding bars so that scribed line is slightly above (*fully visible*) the top edge of the front bar. A steel rule is used to evenly distribute the folding force as pressure is applied to the back of the rule with finger ends positioned as low as possible (*fingertips touching back bar*).

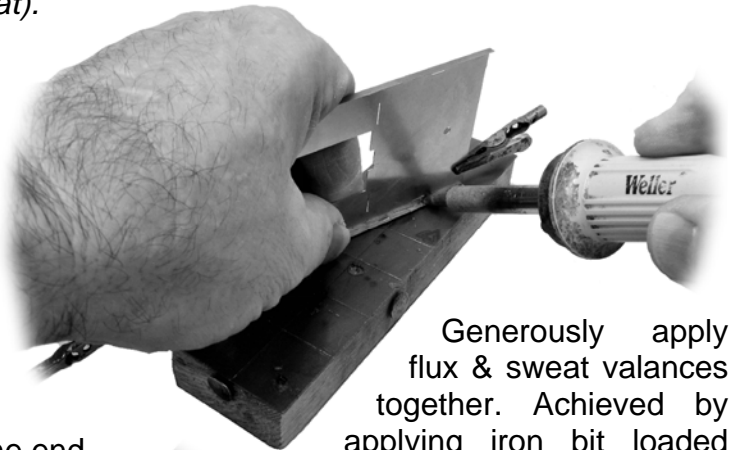


Form into a tight 90° bend. A little gentle taping with a soft wood (*offcut 2"x1"*) block down onto the top edge of the front bar should even up & sharpen the bend along its full length.

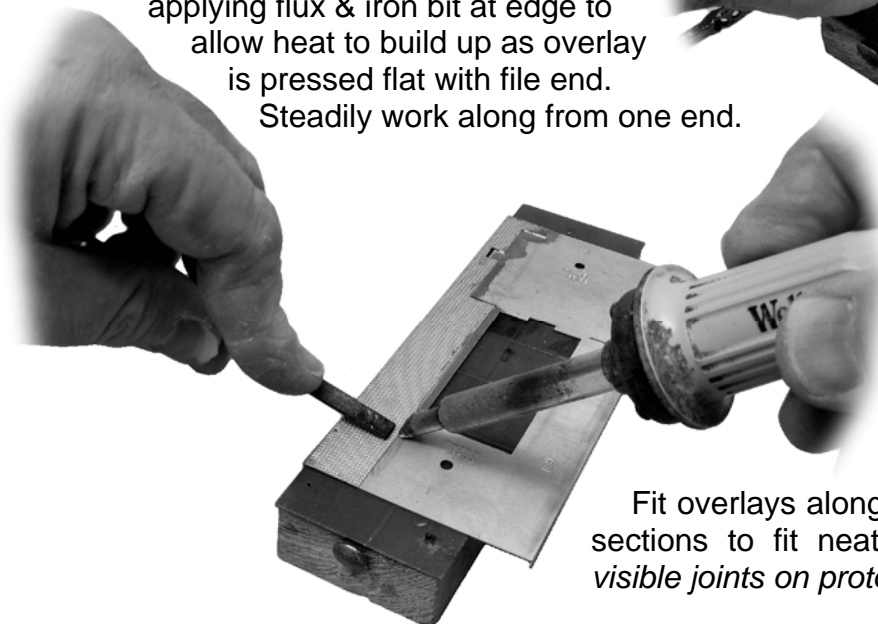


First pre tin the underside (*plain surface*) of all the overlays. Then locate overlay valance over main footplate valance as tight as possible. Note hand gently pressing the footplate edge down onto the work block as finger ends press overlay onto footplate surface using strip of wood (*protection from heat*).

When valance joint is complete fix top surface. Again this is sweated together by applying flux & iron bit at edge to allow heat to build up as overlay is pressed flat with file end. Steadily work along from one end.



Generously apply flux & sweat valances together. Achieved by applying iron bit loaded with solder to the valance back and allowing the heat to build up & activate the pre tined solder between. Work steadily along valance length.



Fit overlays along each side first then trim & file end sections to fit neatly between (*separate plates with visible joints on prototype*).

Offer a chassis side between buffer beams to check for easy fit (about 0.5mm gap would be good). If required file front edge back to achieve this. Leave rear edges untouched to provide a datum for setting up spacers.

File rebates if required to achieve snug fit between valances

Set buffer beams slightly back to provide visible footplate overhang

Trim & file end sections to fit neatly between sides (this is a separate plate with visible joints on prototype).

Trim & file end sections to fit neatly between sides (this is a separate plate with visible joints on prototype).

Solder nuts using 60/40 solder & Fluxite type paste flux for strength.

Tram Loco Option

The board of trade had rigid requirements for locomotives that operated on public roads and quayside lines. These locos had to be fitted with cowcatchers and side skirts.

Locate nut with screw, place a little oil on thread to prevent solder flowing under the nut and locking everything solid.

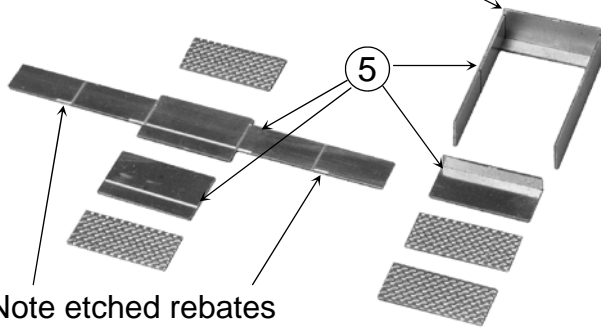
The first four British Railways class 04, D2200-D2203 were all tram fitted for working the Wisbech & Upwell Tramway. D2204-D2214 could be fitted with removable tram gear depending on allocation. Not all locos carried the gear all of the time. Photos show at least two locos, D2210 & D2212 with tram gear.



Screenshot from:- <https://www.pinterest.co.uk/pin/wisbech-amd-upwell-tramway--473581717048817434>

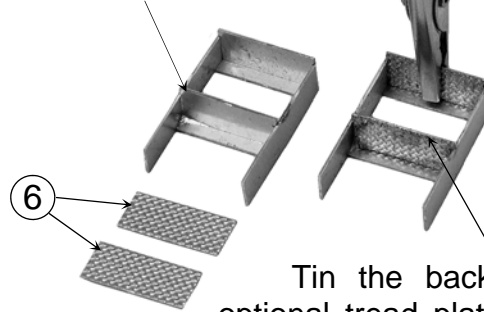
Side Skirts

Fold up bottom step and sides.
Reinforcing joints with solder



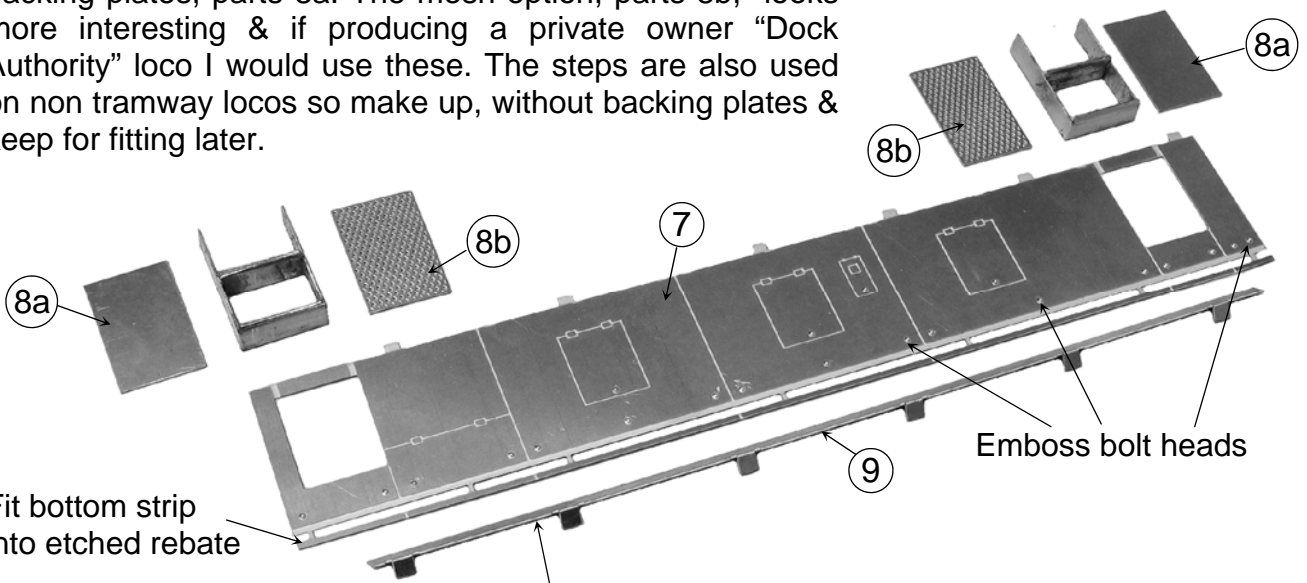
Note etched rebates
for location of second step

Solder second step
solidly into position



Tin the backs of the
optional tread plates before
removing from etch. Dress with file to
achieve easy fit and solder in position
using plenty of flux and application of
iron bit to step edge.

The British Railways Class 04 tram locos had solid step
backing plates, parts 8a. The mesh option, parts 8b, looks
more interesting & if producing a private owner "Dock
Authority" loco I would use these. The steps are also used
on non tramway locos so make up, without backing plates &
keep for fitting later.



Fit bottom strip
into etched rebate

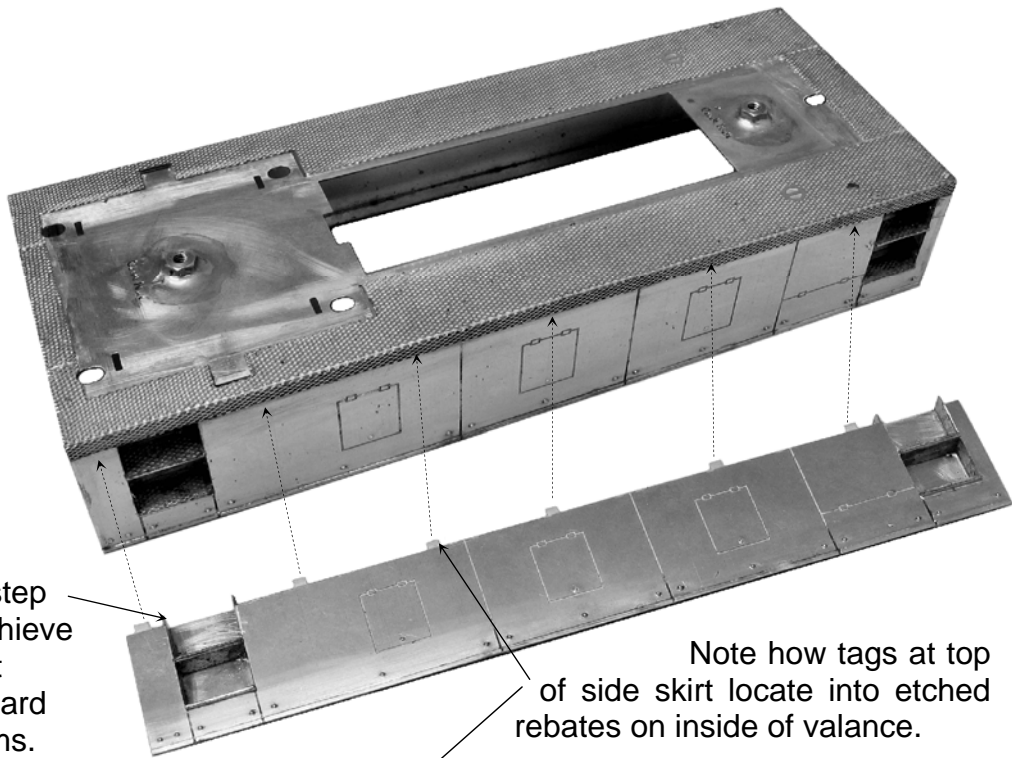
Bottom of side skirt strengthening strip
fitted on inside face

Emboss bolt heads

Solder backing plate solid
with a seam of solder
along each side

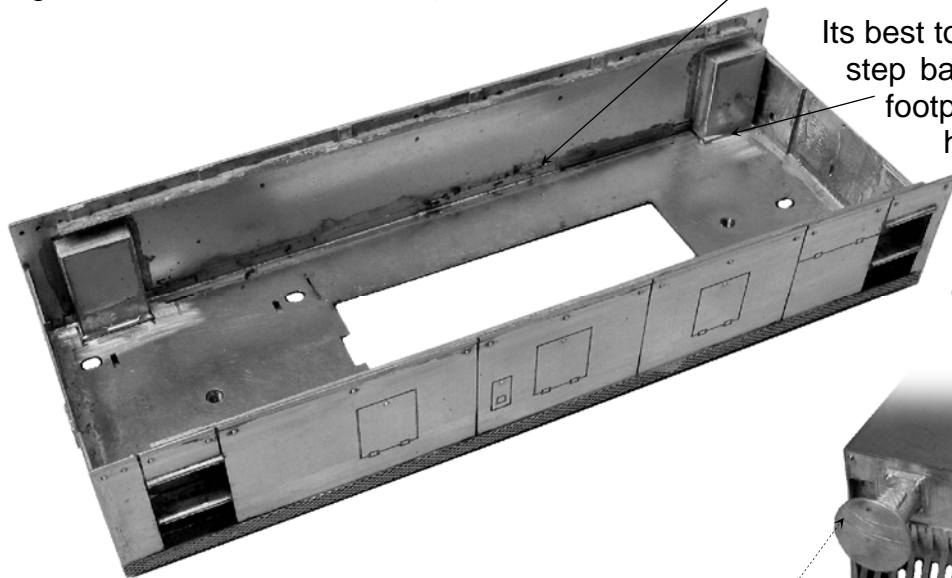
Fit steps from rear.
Dress edge of step
tread with file if
required to achieve
snug fit through cut
out. Step treads
project about 0.5mm
from side skirt.
Then fit backing
plate.

When backing plates are solidly
fixed snip out top strengtheners
from cut outs.



If required dress step sides with file to achieve snug fit of side skirt behind valance & hard against buffer beams.

Note how tags at top of side skirt locate into etched rebates on inside of valance.



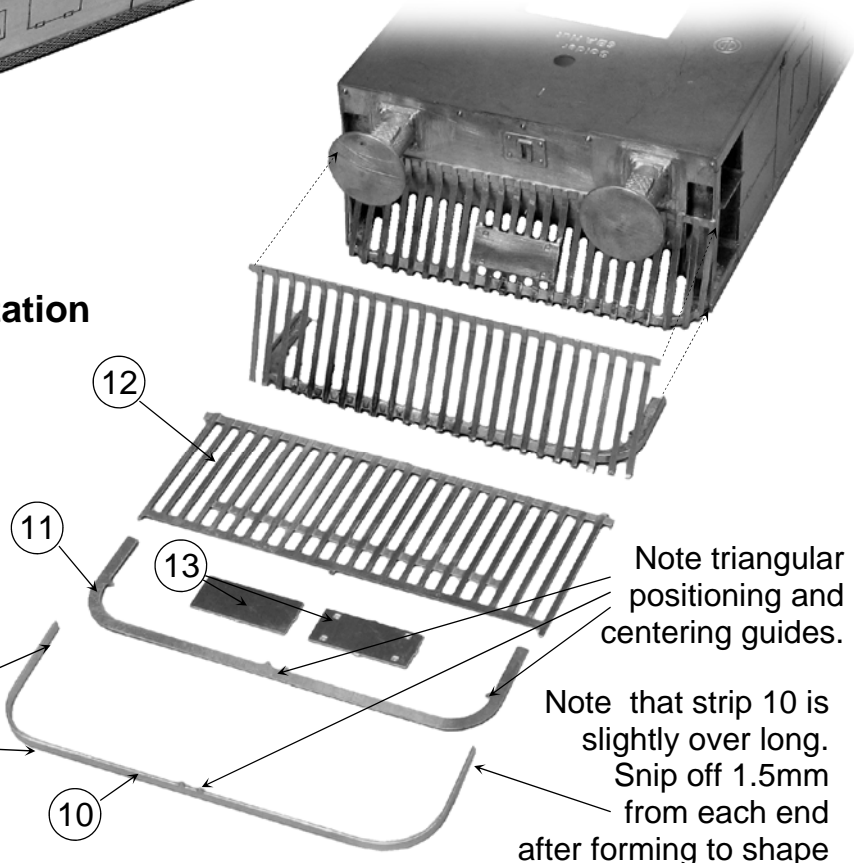
Its best to have a slight gap between step backing plate & underside of footplate. Then when you are happy that side skirts are positioned correctly & square. Fit short length of wire into gap and run in a good seam of solder.

Cow Catchers Parts identification & orientation

A reinforcing L shaped angle iron is made up from two parts. Only remove strip 10 from fret and form to shape.

Do the best you can but don't worry about being absolutely precise as adjustments can be made at next stage.

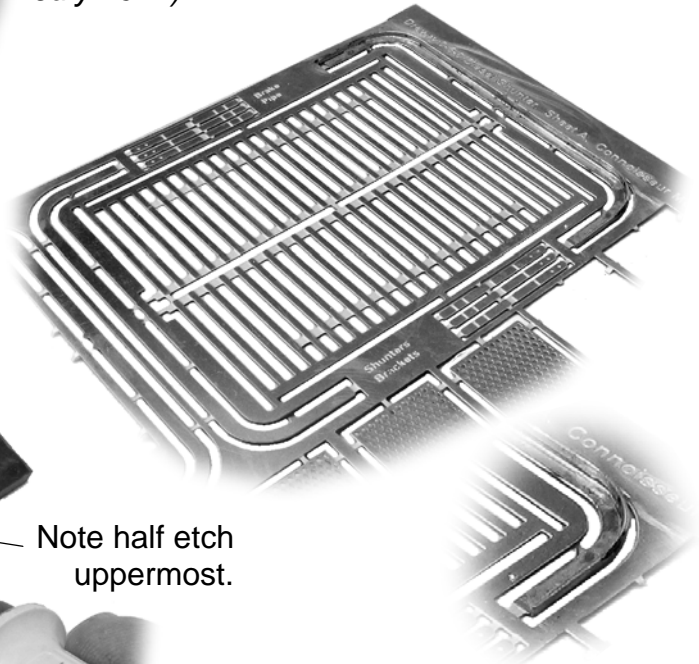
Note etched rebate at bottom to help locate ends onto strip 11. Rebate also gives start point for bend.



Note triangular positioning and centering guides.

Note that strip 10 is slightly over long. Snip off 1.5mm from each end after forming to shape

Only remove tags from front edge of strip 11 so that it still remains firmly supported within the fret to act as a former. Solder strip 10 to it to form L section. Align positioning triangles and solder from the centre working along and around each curved corner, adjusting as required. Note job made easy by heat resistant Tufnol Work Block (code, TUF22, Eileens Emporium, Tel 01531 828009, www.eileensemporium.com, correct July 2022).



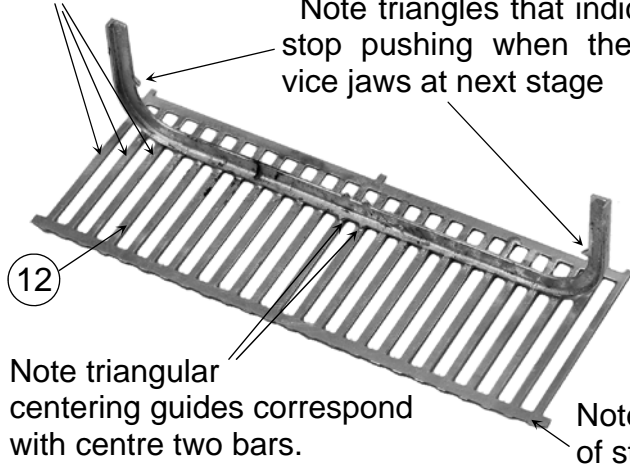
Note half etch uppermost.

Remove completed L section from fret and solder to bars 12 (this again remains within the fret for support). Position over solid strip and centre by eye aligning triangles over centre two bars. Do not solder L section to the outer three bars at each end.

Note extra 10 & 11 to cover mishap.

Do not solder outer three bars at each end

Note triangles that indicate when to stop pushing when they align with vice jaws at next stage

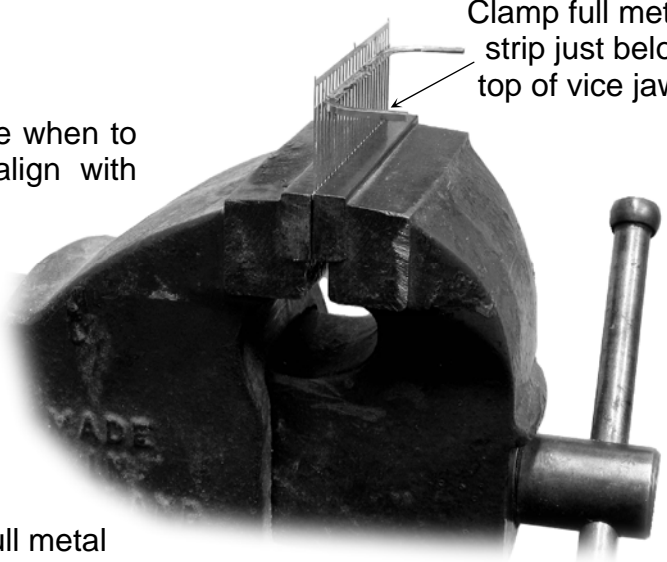


12

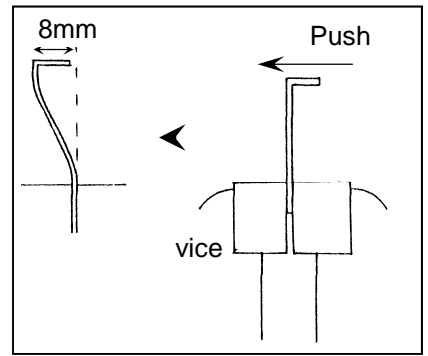
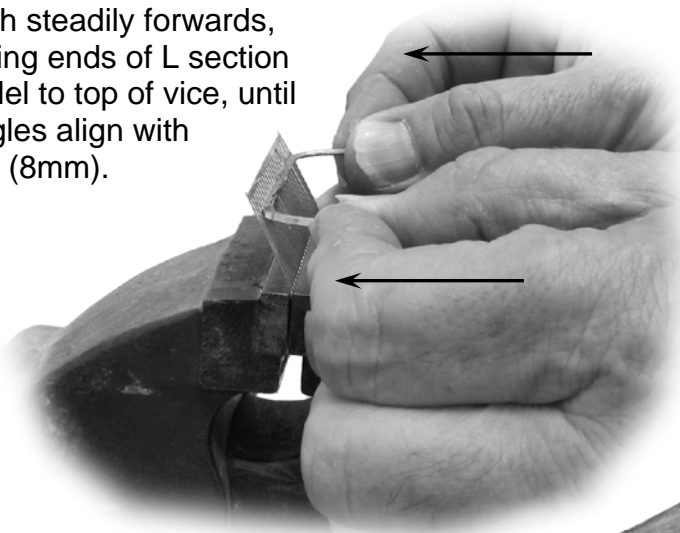
Note triangular centering guides correspond with centre two bars.

Note full metal of strip uppermost

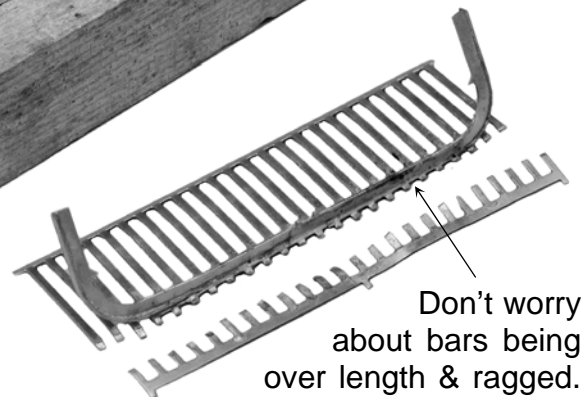
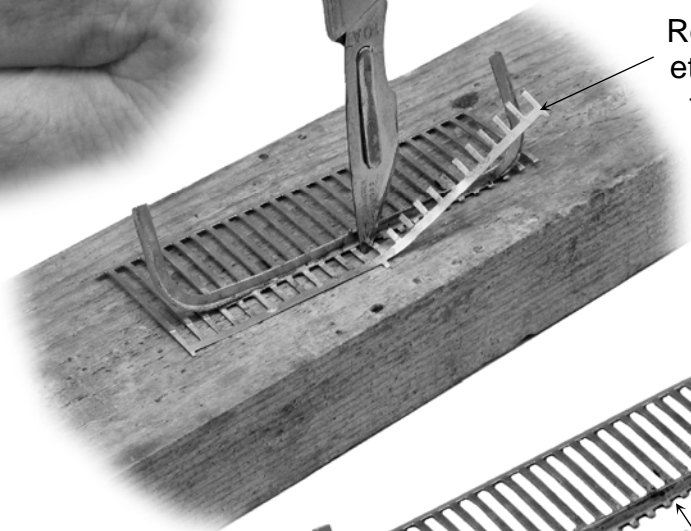
Clamp full metal strip just below top of vice jaws



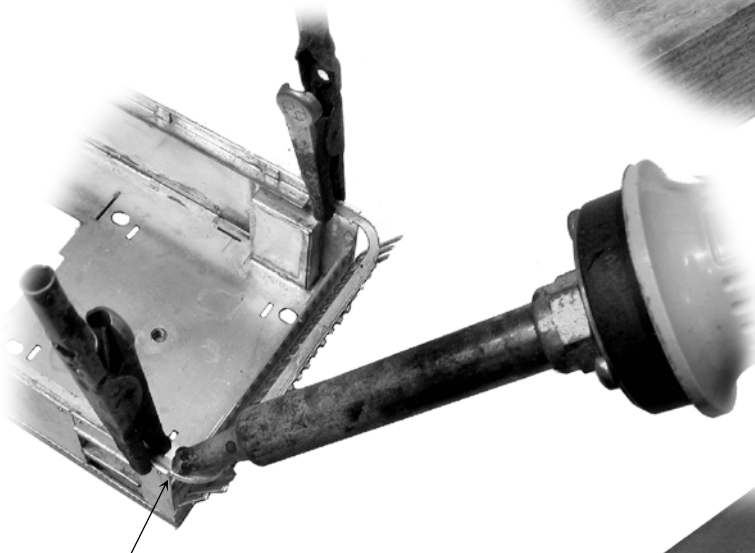
Push steadily forwards, keeping ends of L section parallel to top of vice, until triangles align with Jaws (8mm).



Remove half etch support from below L section



Don't worry about bars being over length & ragged. Cleaning up and levelling off the cow catcher will be done using a flat file after soldering solid between side skirts.

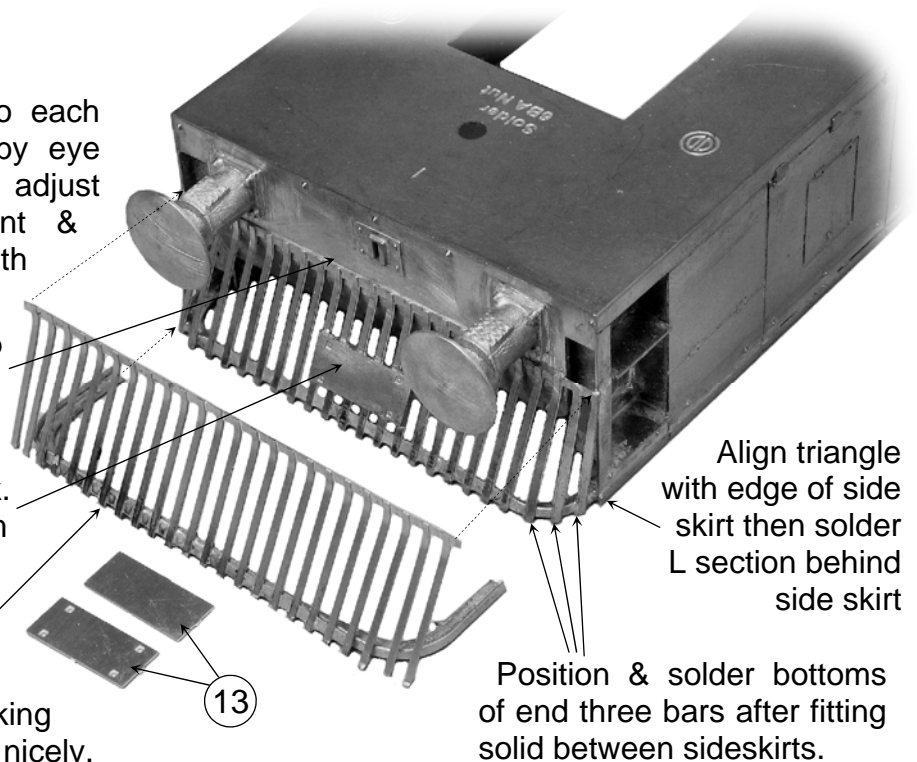


First tack solder L section to each side skirt. Check thoroughly by eye that all will be level. If required adjust by re-soldering at each joint & tweaking cowcatcher bars with finger pressure.

When happy Solder top strip to buffer beam. Positioning level by eye.

Fit coupling link protection block. Position by eye about 4mm from bottom of cowcatcher.

As you can see the L section is not that visible when fitted so try your best but you are not looking for perfection as it will all tidy up nicely.



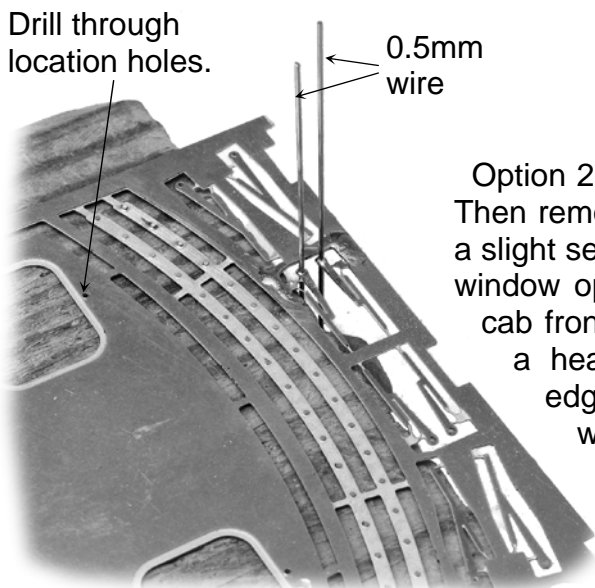
Align triangle with edge of side skirt then solder L section behind side skirt

Position & solder bottoms of end three bars after fitting solid between sideskirts.

Stage 2, Cab Assembly, Window Wiper Options

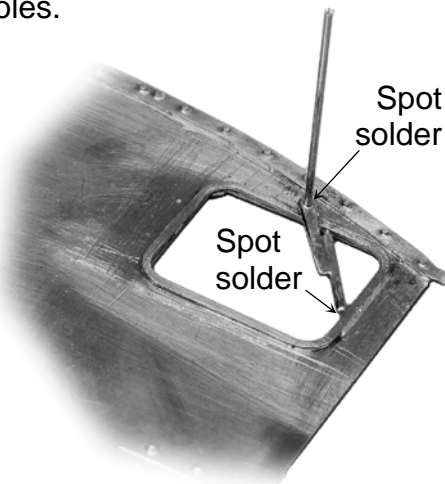
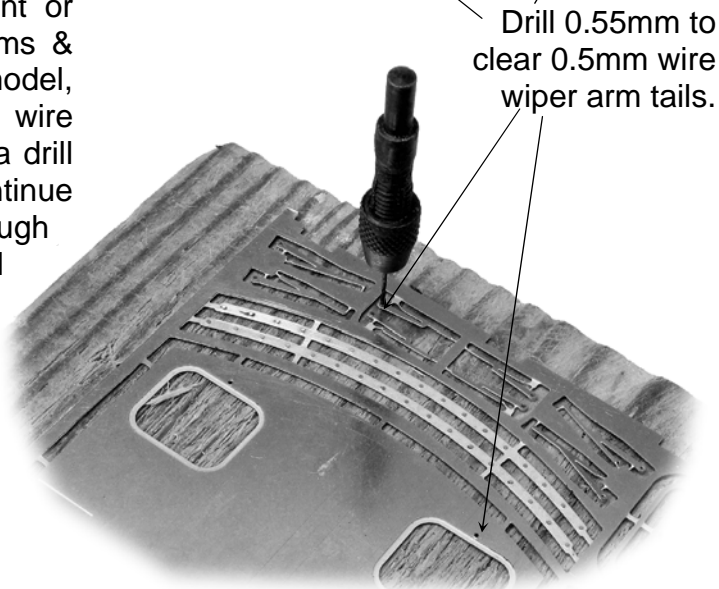
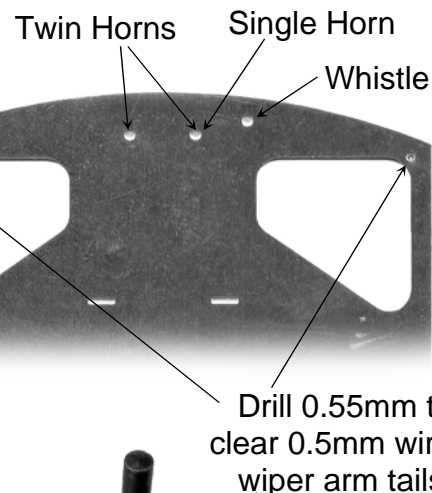
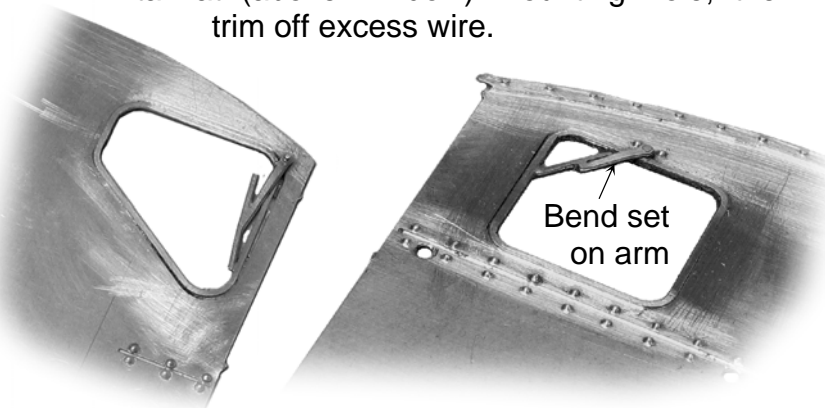
The wiper arms are best worked on while still contained in the main fret. The arms are repeated twice with one set slightly heavier. Select the ones that will be the most durable to the way you work. Drill all holes but fit wire tail & remove arm from fret one at a time.

Option 1, fit wire tails with wipers retained within fret. Then remove (sharp knife point or snips) & separate into individual wiper arms & place safely to one side. After painting model, including separate wipers (the over length wire will aid handling) and glazing cab. Locate a drill into mounting hole above window to continue hole through glazing. Then fit wire tail through hole so wiper blade rests on glazing (bend a slight set into arm). Secure wire tail with a spot of glue inside cab then when set trim off wire tails.



Option 2, Again fit wire tails with wipers retained within fret. Then remove & separate into individual wiper arms, bending a slight set on each arm so the blades will sit down within the window opening. Then after fitting window surrounds etc to cab front/ back. Place these, inside face downwards, onto a heat proof work block. Positioned overhanging the edge so that the window opening is blocked but the wire tails of the wipers will pass through the above window mounting holes.

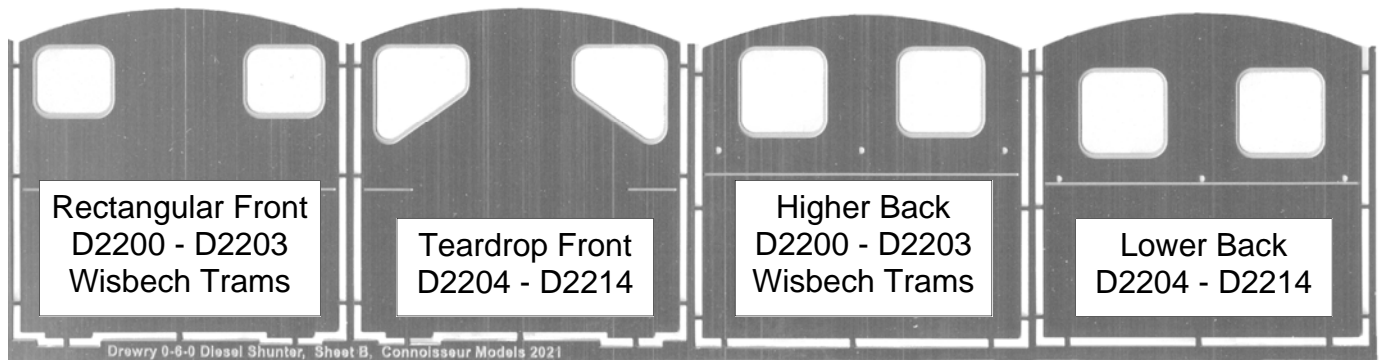
Position wiper blades into parked position touching window surround and spot solder, then spot solder wire tail at (above window) mounting hole, then trim off excess wire.



Clean up and dress inside face of window opening so that when, after painting, the glazing is glued into position it will lay flat.

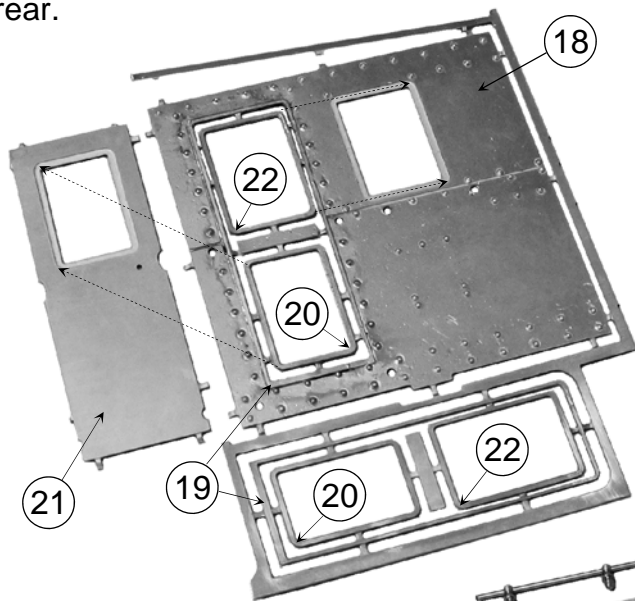
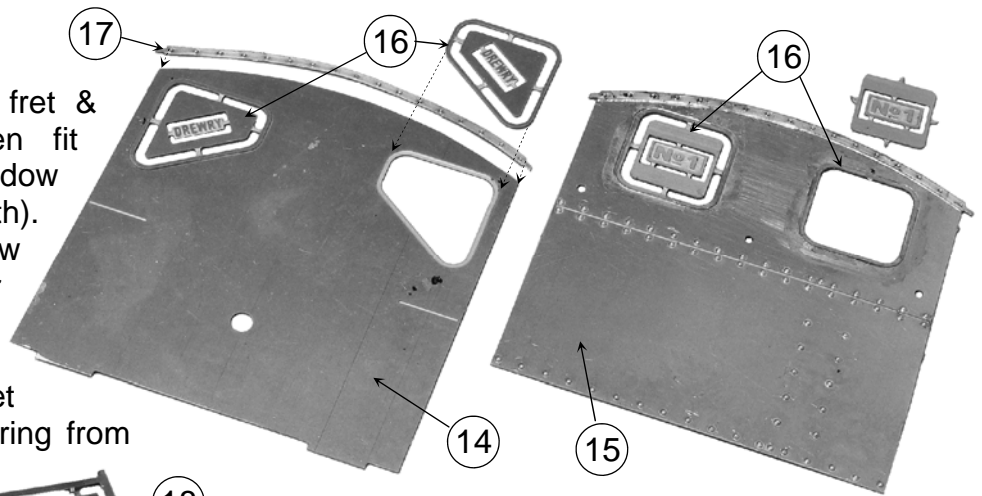
Cab Assembly, Front & Back Options

Select you desired window option by reference to photographs of chosen prototype. I have detailed the options for the British Railway locos to assist. A rule of thumb for industrial locos, rectangular front-early, teardrop-later, lower back-most if not all.

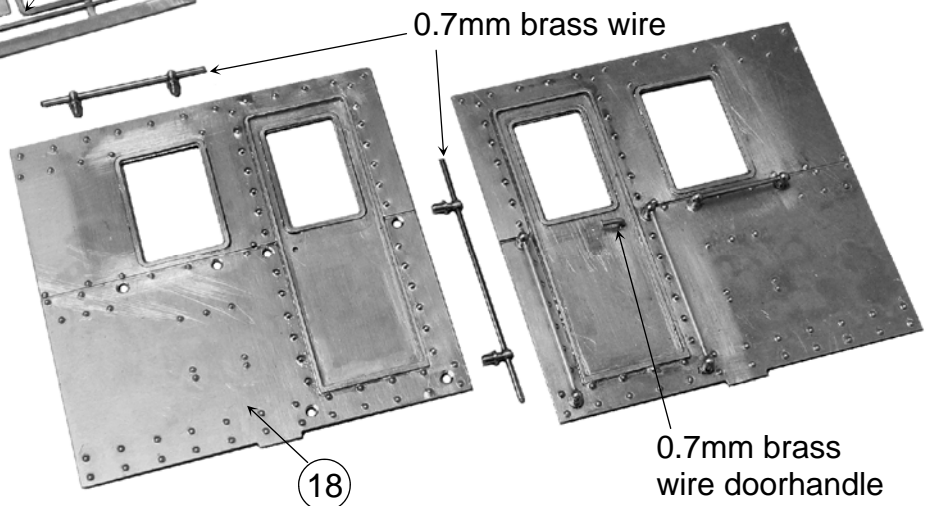
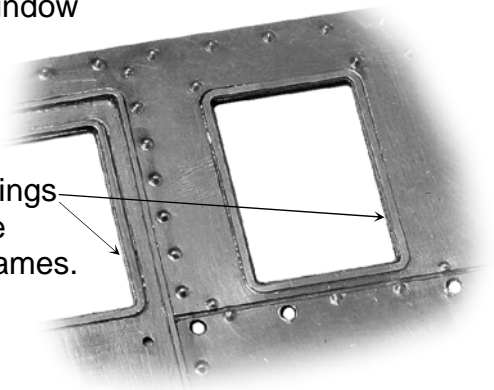


Cab Exterior Detail

Remove cab sides from fret & emboss bolt heads. Then fit doorway beading (with window beading retained for strength). Then remove window beadings and clean up door opening. Fit window beading to door, clean up door, remove door from fret & fit behind doorway soldering from rear.



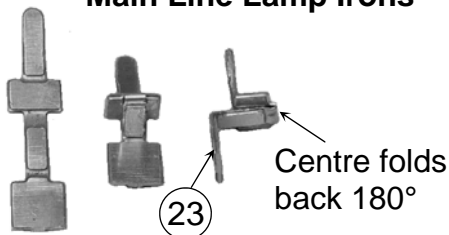
Fit cab side window beading. The half etch rebate should remain visible inside the beadings to represent the windowglass frames.



Then fit handrails & door handle (see page 21 for achieving best results from the handrail knobs).

Cab Back Detail Options

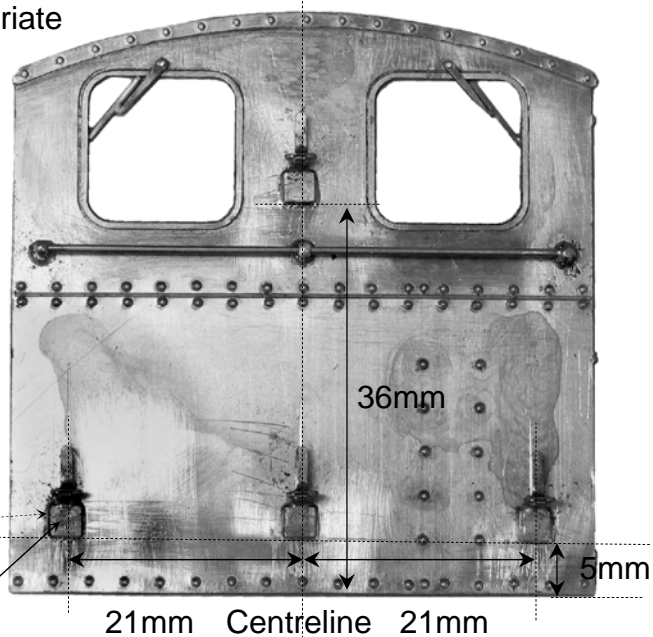
Main Line Lamp Irons



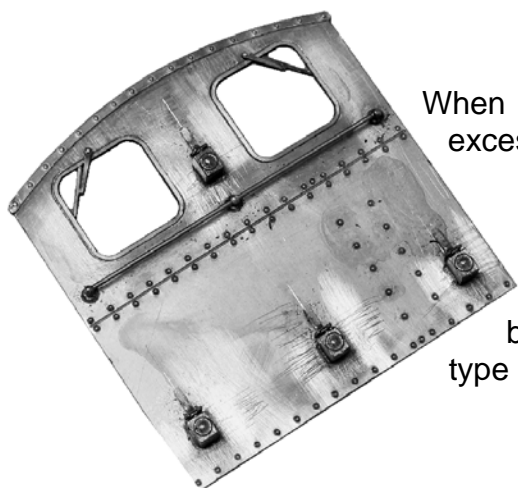
Form up lamp irons and reinforce all folds with 60/40 solder. Tin front & back of square plate with 145° solder.

Pencil in some positioning guidelines. Then solder square plate of lampiron into place allowing solder to tin cab back.

Then fit cast lamp boxes using low melt (70°) solder.

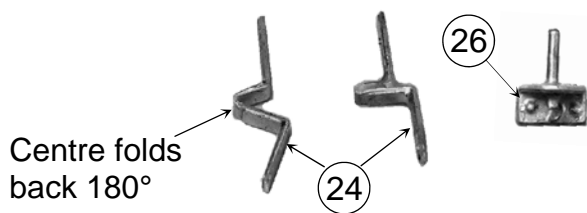


When soldering cab bottom edge to footplate be aware of excessive heat as you don't want the cast lamp boxes falling off.

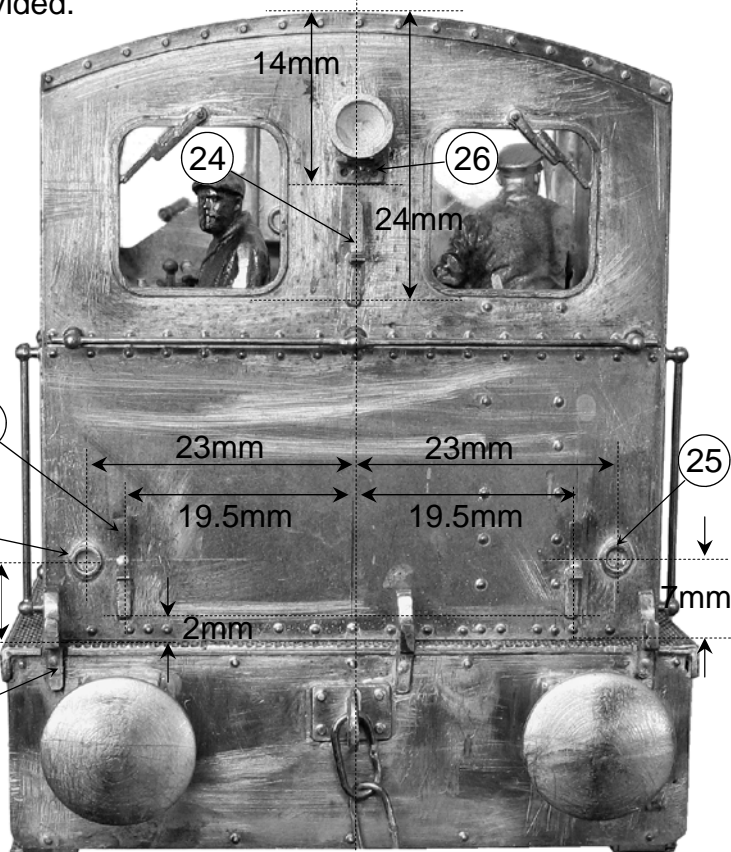


Locos intended for industrial operation tended to have a top electric spot lamp mounted on a projecting bracket & two electric side lights built into the cab back with external lens bezels. Three additional lamp irons of traditional oil lamp type were provided.

Industrial Lamp Irons



Side light external lens bezel. Lenses coloured, Port-red (L/H side), Starboard-white (R/H side)



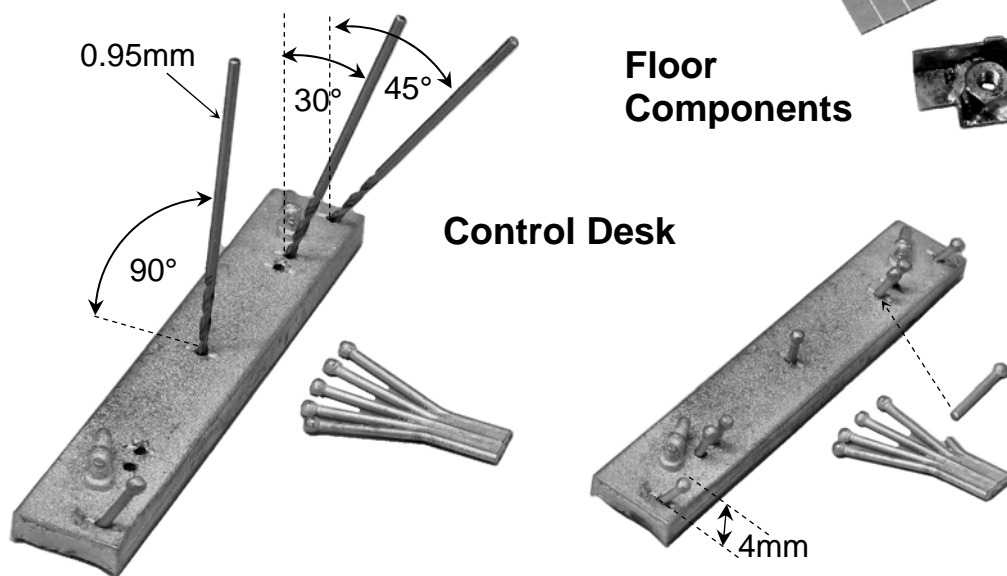
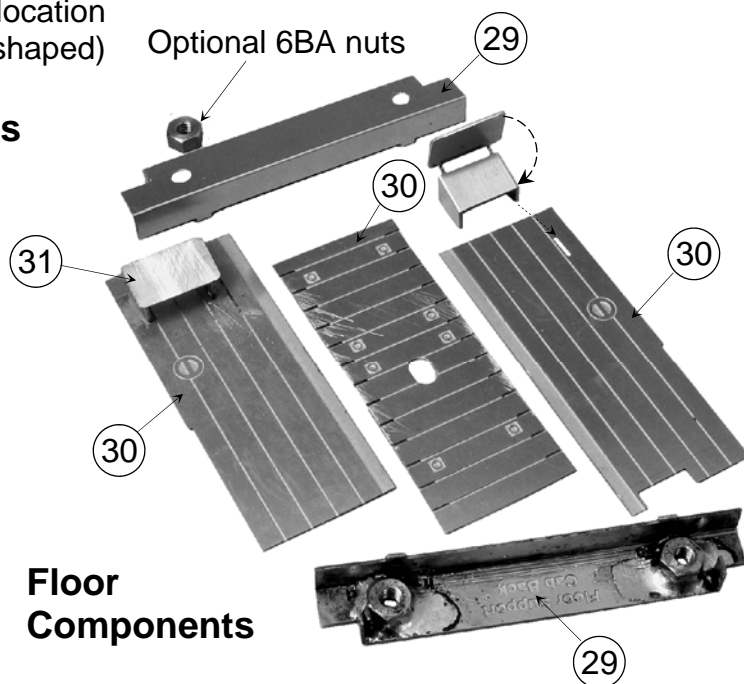
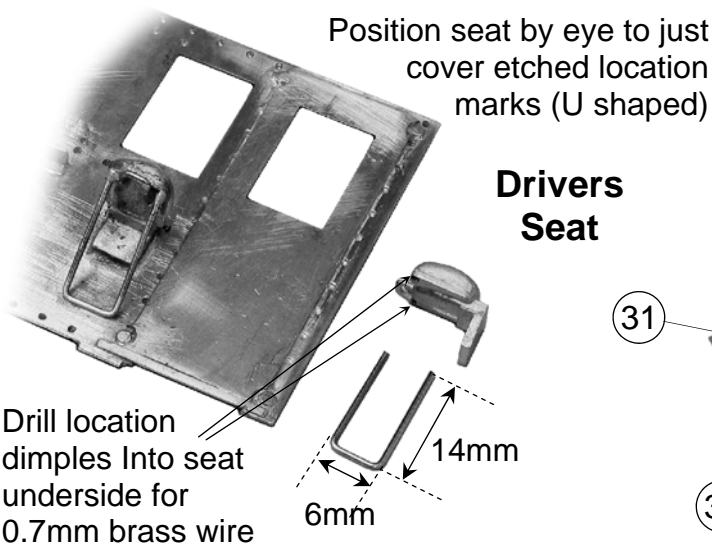
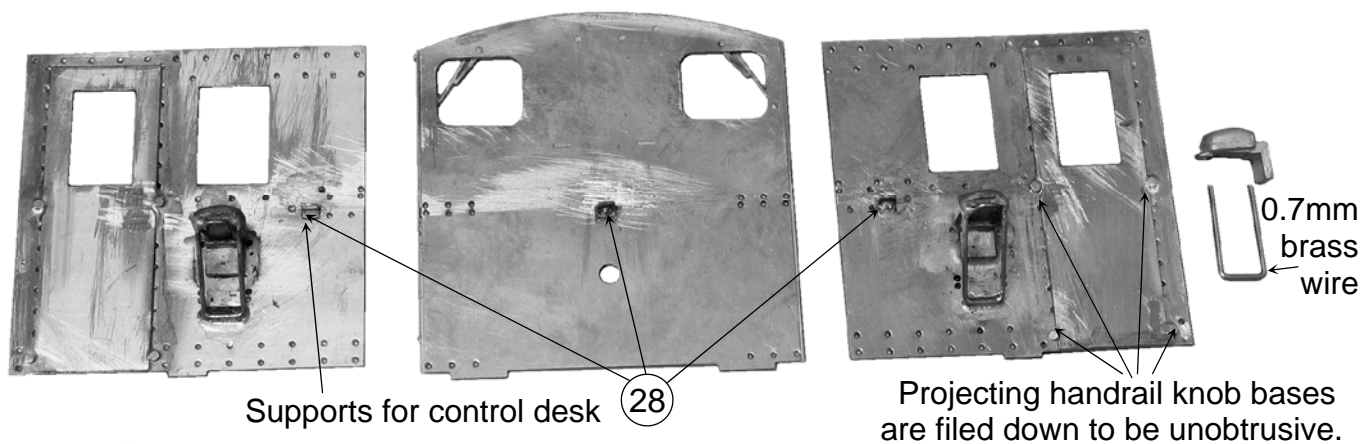
Brackets for stowing the shunters uncoupling pole as he rode along on cab steps

Centreline

Stage 3, Cab Interior, Elements

The cab floor consists of etched components but the Interior detail is produced mainly from castings. The recommendation is that, with the exception of the cab seats, these are sub assembled and painted separately. Then once the inside of the cab is painted and glazed. The interior can be built up by gluing (evo-stik impact adhesive) each finished element into position.

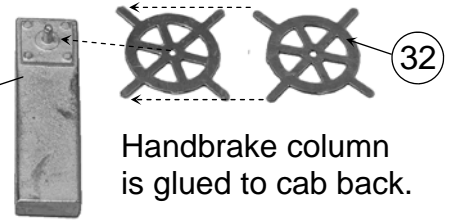
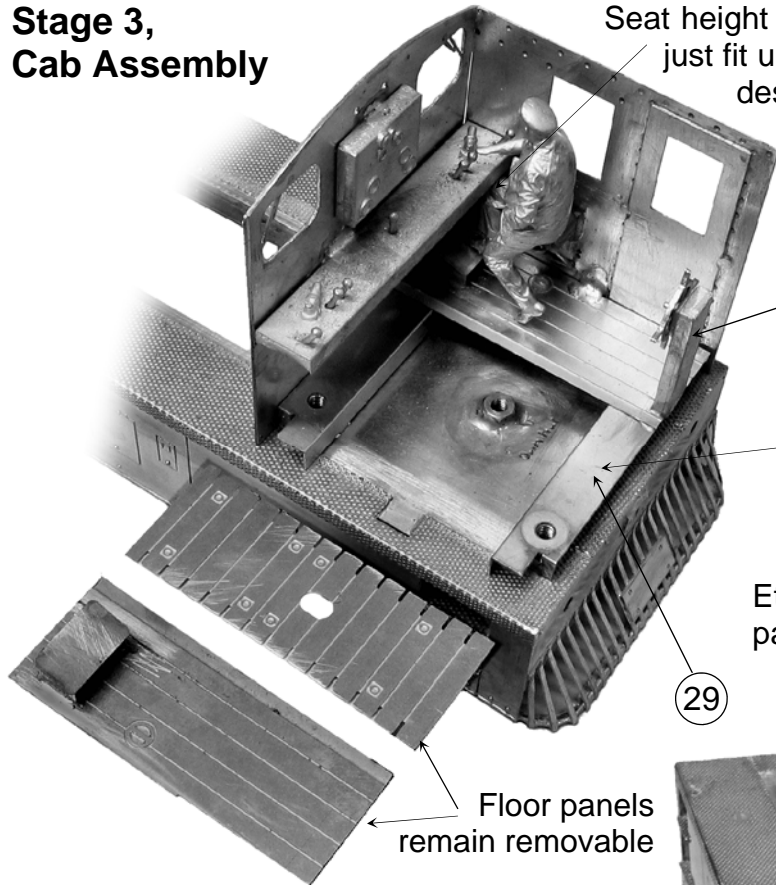
So with cab front and sides initially only tack soldered into position make up each interior element & test position & adjust. Then they can be pre painted with complete confidence knowing that all will fit perfectly within the more restricted space created once the cab back is fitted & interior walls painted & windows glazed.



Control knobs should be a positive, but not tight fit, into holes and set (solder on underside) to project about 4mm from desk. so that drivers hand will rest against them.

Stage 3, Cab Assembly

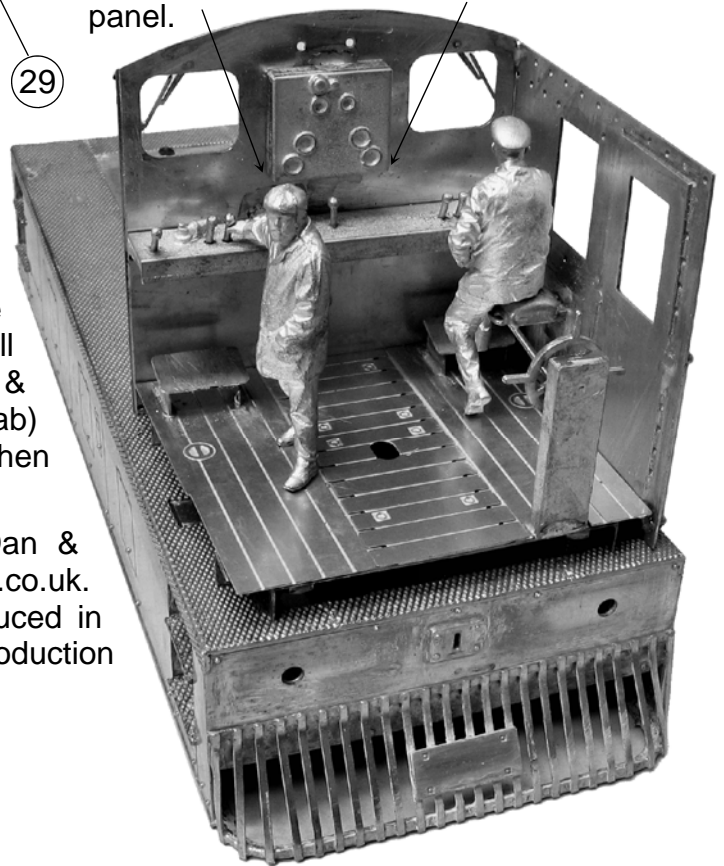
Seat height should be such that drivers knee should just fit under control desk (if required file notch in desk not kneecap) and drivers feet rest naturally on footrest & floor.



Handbrake column is glued to cab back.

Floor supports, solder to cab front/back & footplate unless removable cab option is required, if so solder to front/back only

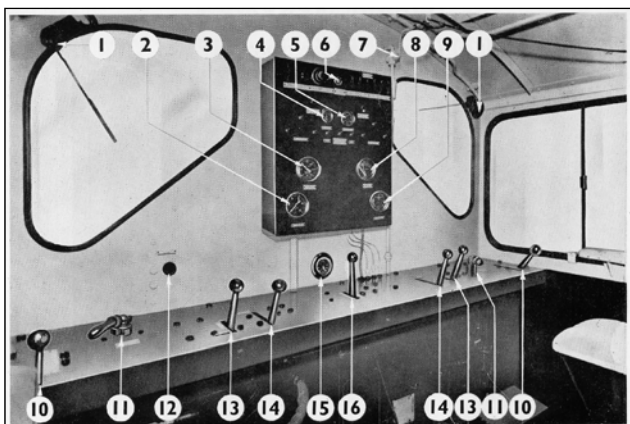
Etched marks aid positioning of instrument panel.



Floor panels remain removable

I have mocked up the cab for illustrating the positioning of elements. In practice you will tack solder the front & sides at corners & footplate (unless opting for removable cab) Check positions & when happy solder solid, then fit floor supports & cab back.

To provide drivers in suitable postures Dan & myself were scanned by: www.modelu3d.co.uk. Then 3d printed casting masters were produced in brass, these could then be included in the production moulds for the kits set of white metal castings.



ARRANGEMENT OF CONTROLS

- | | |
|--------------------------------|--------------------------------|
| 1. Screen Wipers | 9. Speedometer |
| 2. Engine Oil Pressure Gauge | 10. Change Speed Lever |
| 3. Gear Box Air Pressure Gauge | 11. Straight Air Brake Lever |
| 4. Ammeter | 12. Engine Stop Control |
| 5. Tachometer | 13. Engine Speed Control Lever |
| 6. Engine Starter Switch | 14. Reverse Lever |
| 7. Whistle Valve | 15. Fuel Tank Gauge |
| 8. Brake Air Pressure Gauge | 16. Sanding Lever |

It will be noted that Items 10, 11, 13 and 14 are duplicated on each side of the Control Desk.

Jim "Steady Hand" McGeown closes the engine throttle having slowly propelled a raft of wagons into the exchange sidings. Driving the loco forwards from the sitting position.

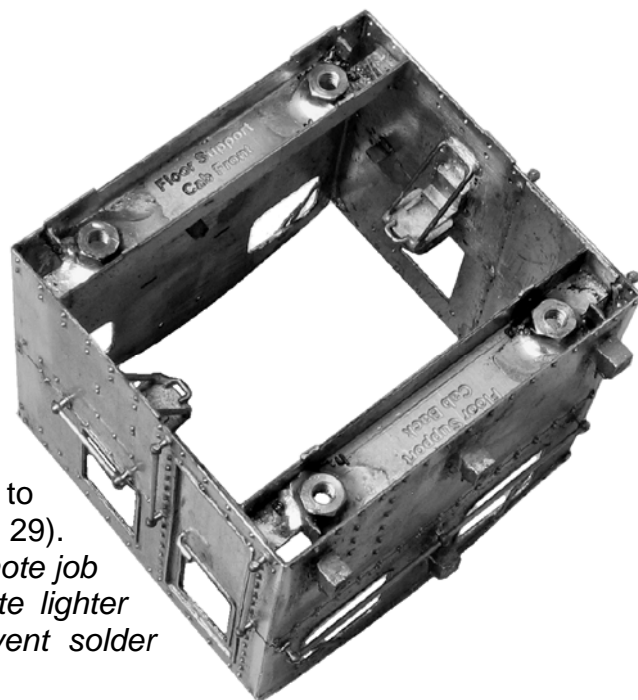
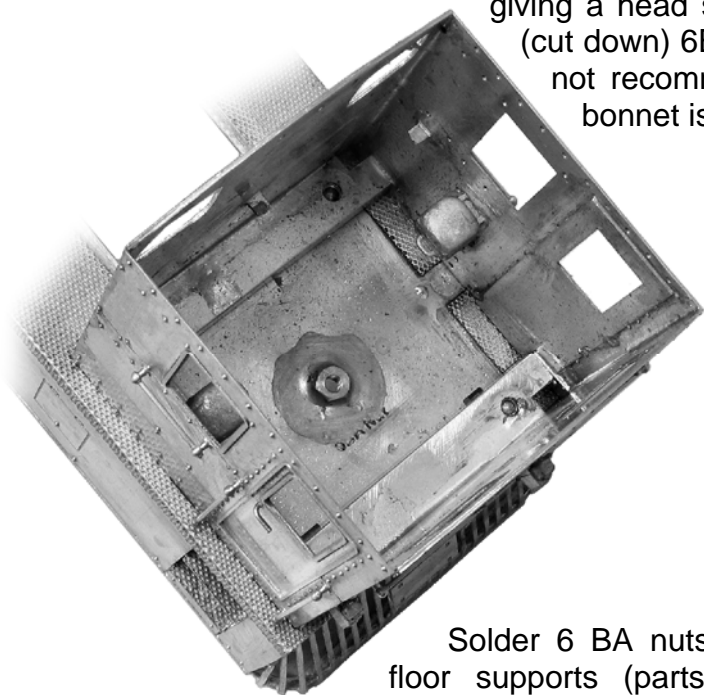
Dan "Hell Raiser" Hains selects reverse and prepares to push the throttle fully open to return down the mineral branch at full speed. Driving from the standing position and keeping a sharp lookout through the cab rear window.

Left, Illustration of typical Drewry control layout (not exactly the same 204hp loco as this kit) taken from manufactures brochure.

Stage 3, Optional Removable Cab

Having produced & sold the 0-4-0 Drewry kit a number of customers enquired about incorporating a removable cab & bonnet into the design. They informed me this would be a useful feature for complex liveries or fitting DCC with sound/ radio control battery power.

By strategically positioning round & slotted holes into the design I have giving a head start for this to be achieved using 5mm long (cut down) 6BA screws & nuts (not included in kit). I would not recommend the extra work unless removable cab/ bonnet is particularly desired.



Solder 6 BA nuts to floor supports (parts 29).

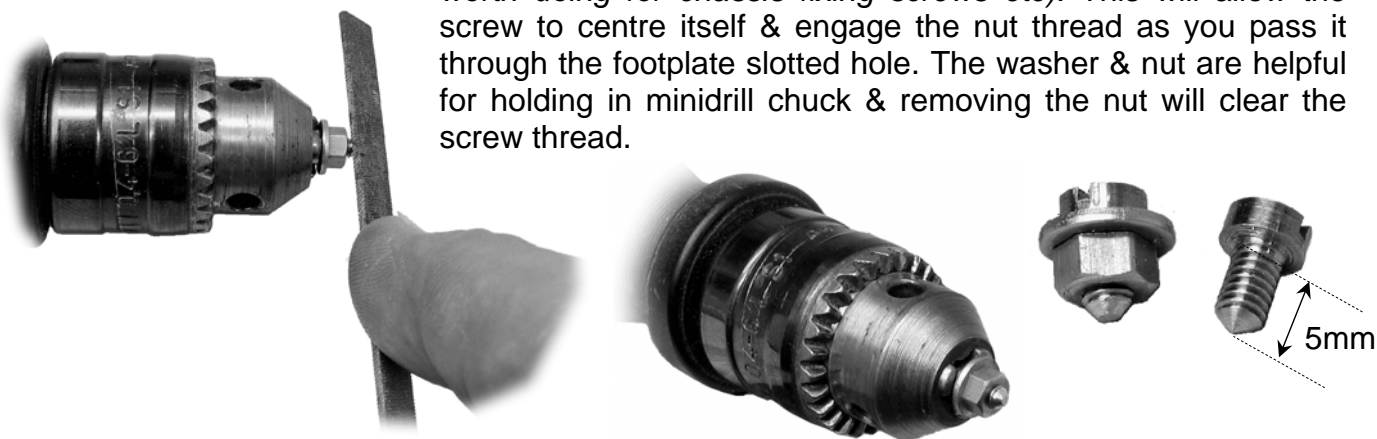
Locate nut with a screw, *note job is made easier by blackening screw in cigarette lighter flame & placing a little oil on thread to prevent solder flowing under the nut & locking everything solid.*

Screw floor supports into position with the screws just nipping up so that they are secure but can be repositioned by sliding in slotted holes.

Position cab front & secure to footplate with a single, central, temporary, tack solder joint. Then position each cab side soldering at corner joint only. Check positioning & when happy slide floor support hard against inside of cab front & solder at corners. Then fit cab back, again soldering at corner joints only. Check positioning & when happy slide back floor support into position & solder corners.

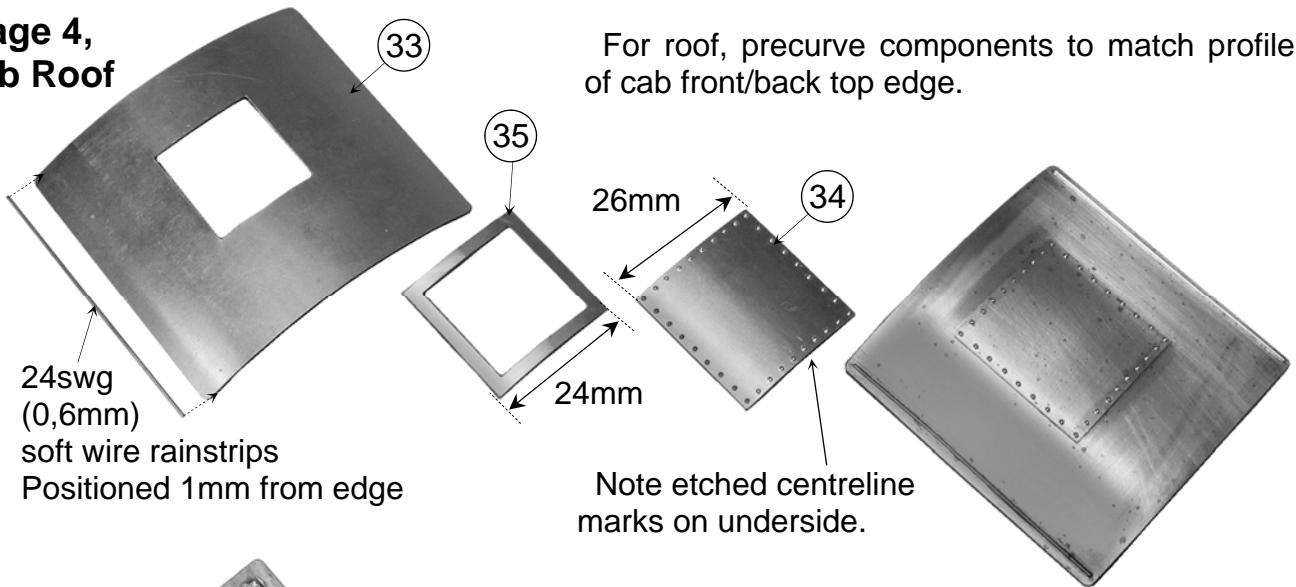
Remove screws, unsolder tack joint & you should have a removable cab. Complete soldering all joints for maximum strength.

A very useful refinement is to cone the end of the screws (*also worth doing for chassis fixing screws etc*). This will allow the screw to centre itself & engage the nut thread as you pass it through the footplate slotted hole. The washer & nut are helpful for holding in minidrill chuck & removing the nut will clear the screw thread.



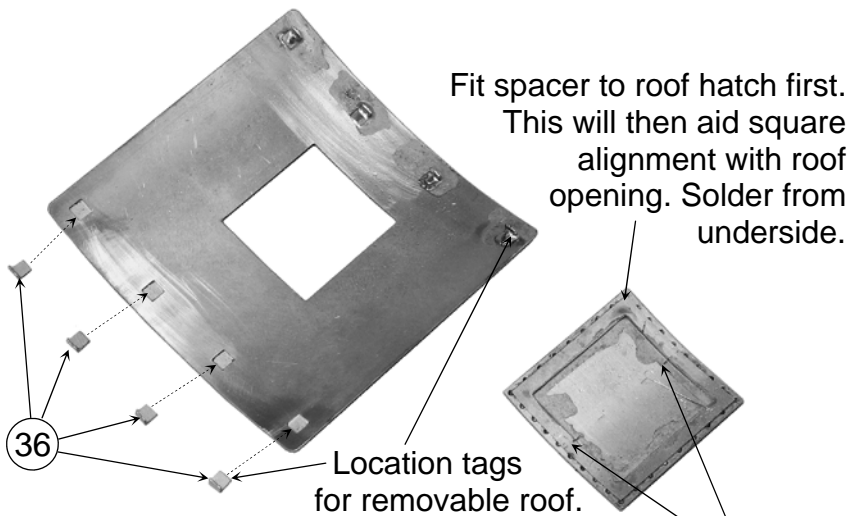
Stage 4, Cab Roof

For roof, precurve components to match profile of cab front/back top edge.



24swg
(0,6mm)
soft wire rainstrips
Positioned 1mm from edge

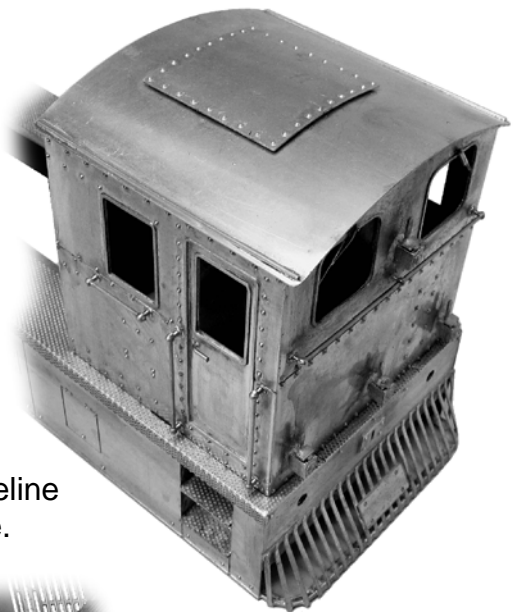
Note etched centreline
marks on underside.



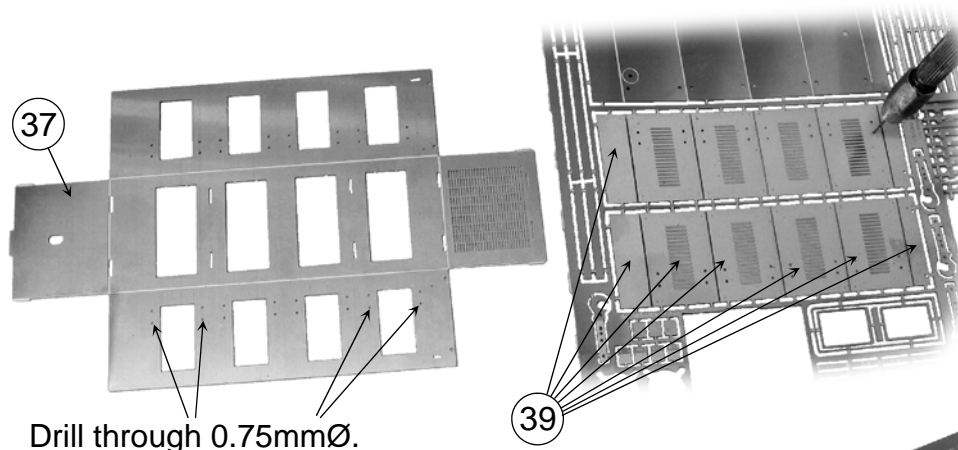
Fit spacer to roof hatch first.
This will then aid square
alignment with roof
opening. Solder from
underside.

Location tags
for removable roof.

Note etched centreline
marks on underside.



Stage 5, Bonnet Sides

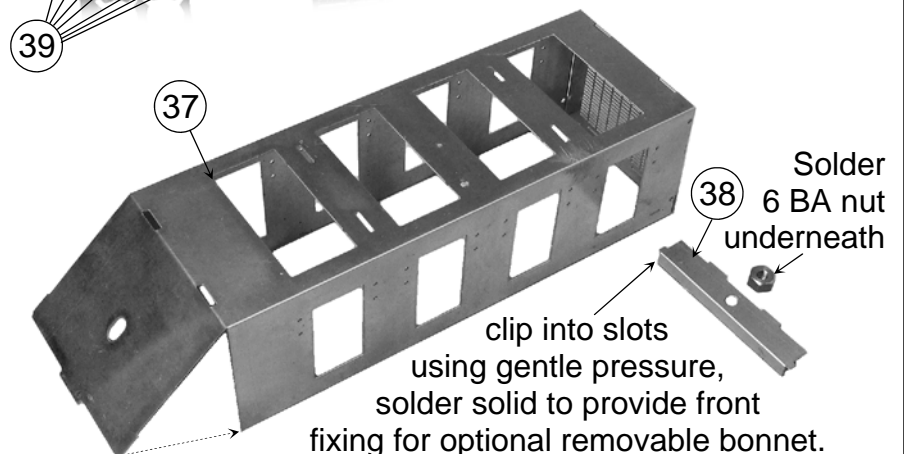


With bonnet side sheets
retained within fret drill
through lifting handle holes
0.75mm to ensure all have
the same clearance
diameter.

Then pre tin rear surface
of panels.

Drill through 0.75mmØ.

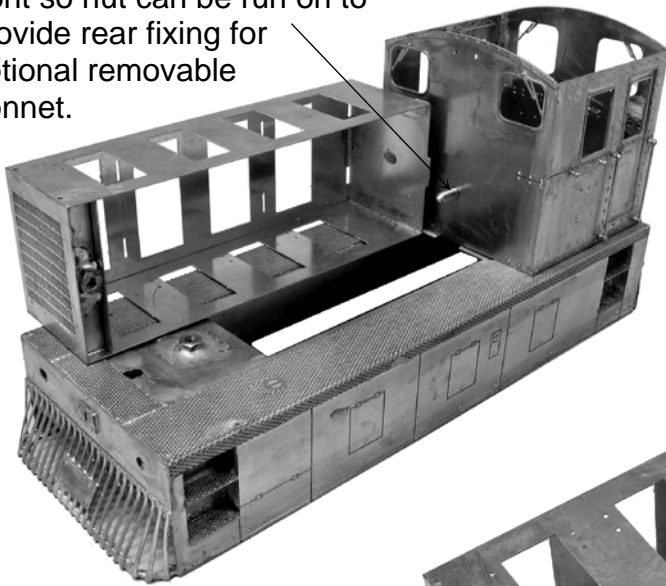
Form up bonnet framework &
solder the corners with generous
fillets on the inside. Take care
that fold lines are adequately
supported (*block of wood/ steel
rule*) to prevent distortion during
folding.



Solder
6 BA nut
underneath

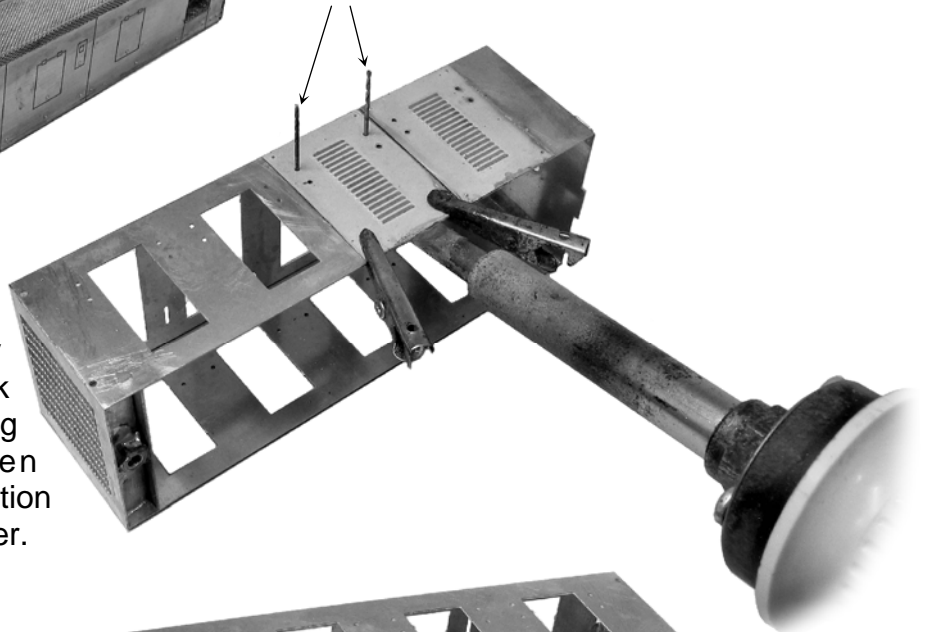
clip into slots
using gentle pressure,
solder solid to provide front
fixing for optional removable
bonnet.

Solder (at screw head) 6 BA screw through cab front so nut can be run on to provide rear fixing for optional removable bonnet.



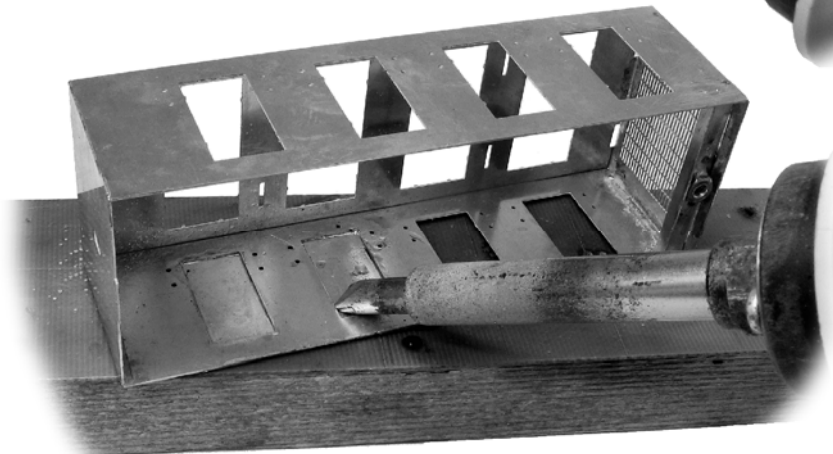
Remove side panels from fret and solder into position one at a time. Fit louvered panels first then the small end panels.

Drill shanks passed through handle holes to aid alignment.

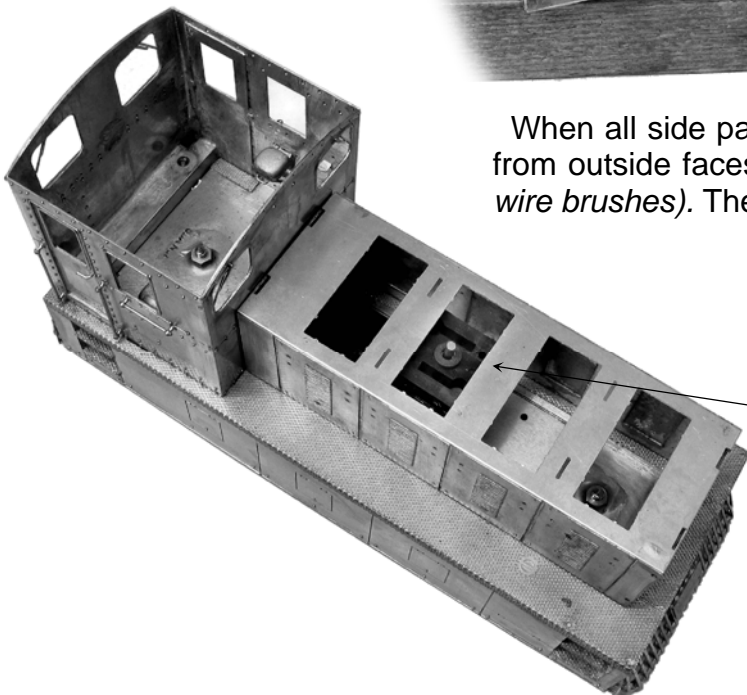


Locate side panels aided by drill shanks & then check panel side will be vertical using engineers square. When satisfactory fix bottom position with clips & then a dab of solder.

Place face downwards onto heat proof work block & sweat panel into position by running a generously loaded iron bit around the edges of the rectangular cutout.



When all side panels are fixed clean off any surface solder from outside faces and clean up louvers (*fibreglass & brass wire brushes*). Then try in position on footplate.



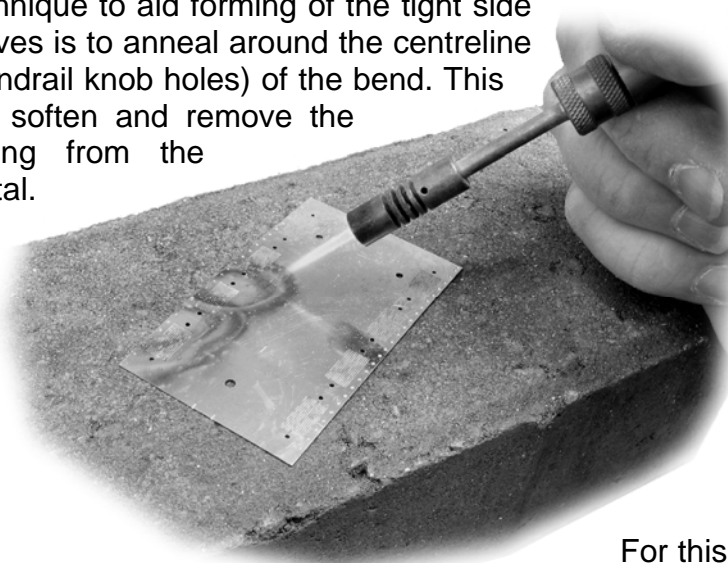
I now recommend switching construction to the chassis and building this to the point of trial fitting the motor.

In this way the chassis and body can be offered together and a check made on clearance between the back end of the motor and underside of the bonnet top.

All is designed to provide clearance but the back shaft of the motor will require cutting down.

Stage 5, Bonnet Top, pre forming

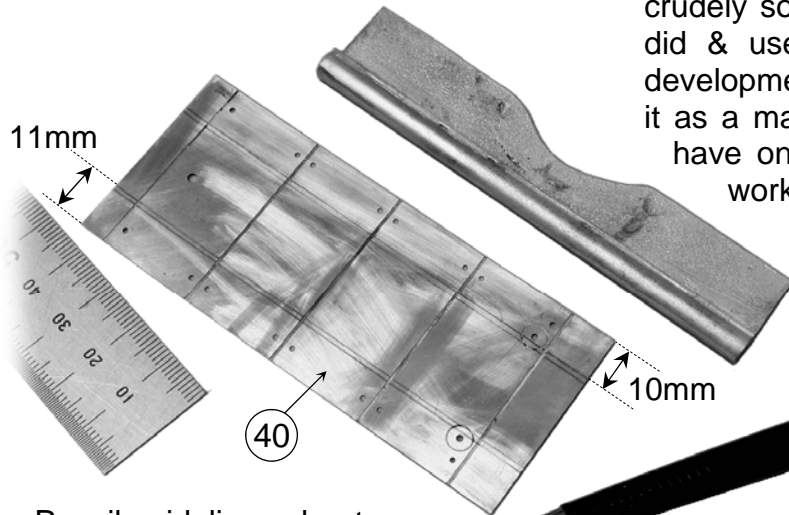
A useful, although not essential, technique to aid forming of the tight side curves is to anneal around the centreline (handrail knob holes) of the bend. This will soften and remove the spring from the metal.



A pencil torch powered by butane lighter fuel is ideal (*Squires Cat ref:185-656*).

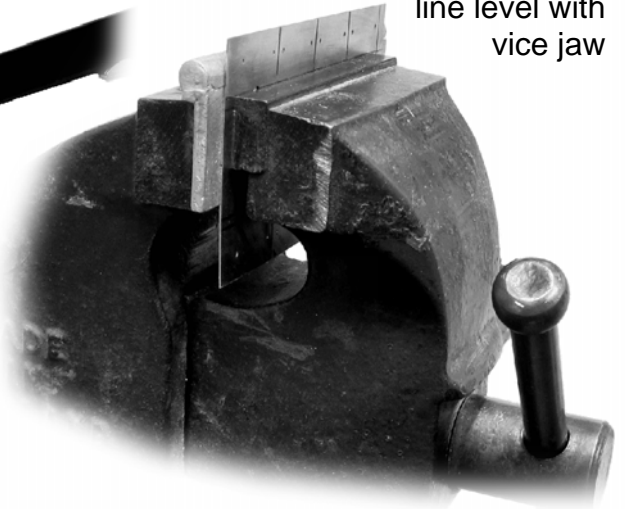
Heat part by playing flame along bend centre until a purple band appears. Then remove heat & allow to cool naturally in the air. DO NOT overheat part as it will then become too soft & unworkable. Remember you can reheat if required to keep it workable.

For this sort of job a simple forming bar that the part can be worked over is often fabricated by crudely soldering brass rod & flat together. This I did & used it to form the bonnet for the first development model. I then thought that if I placed it as a master in one of the moulds we could all have one. I found the white metal superior for working the brass over.

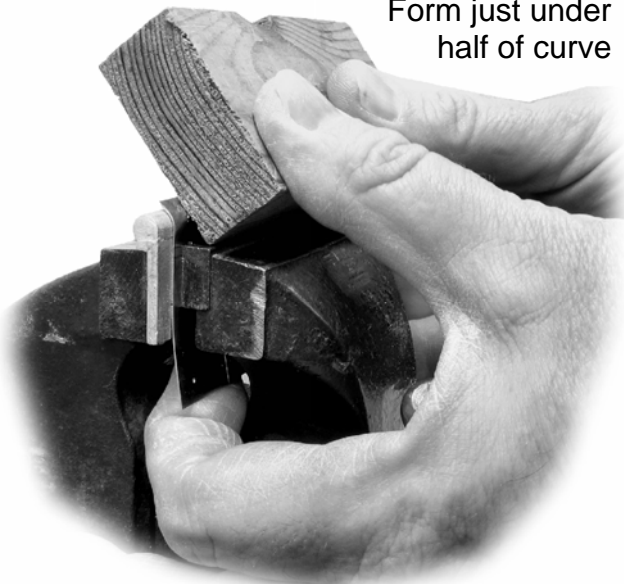


Pencil guidelines about 10mm & 11mm from each side edge.

Clamp with 10mm line level with vice jaw



Form just under half of curve

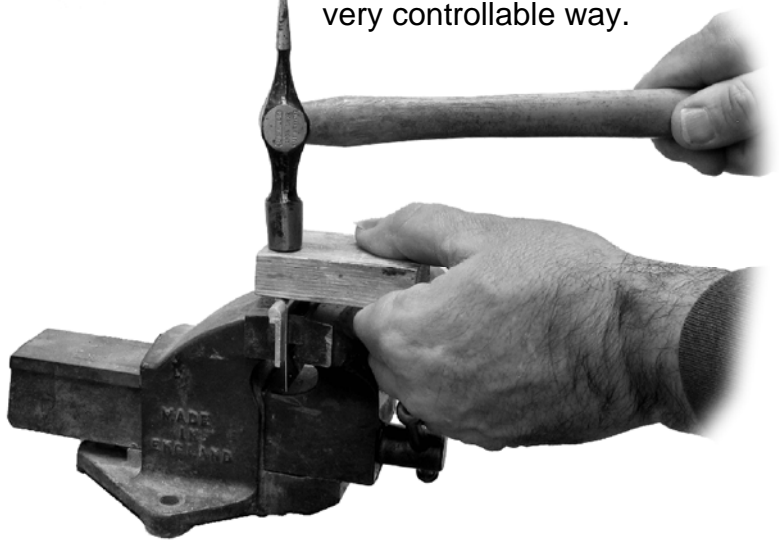
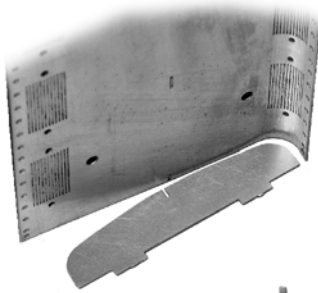


Offer up a support rib to check start of bend position. If low clamp & flatten edge slightly in vice jaw. If high form over more at edge.

41

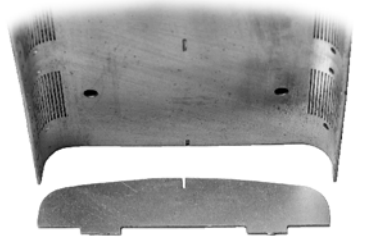
Clamp with 11mm line level with vice jaw & then form around $\frac{7}{8}$ of curve. Offer against support rib to check that you are happy the bend is still running correctly.

The bend can then be completed by gently tapping with a block of softwood. This will tighten the bend to 90° and by working along the length any unevenness can be worked out & slight distortion corrected in a very controllable way.

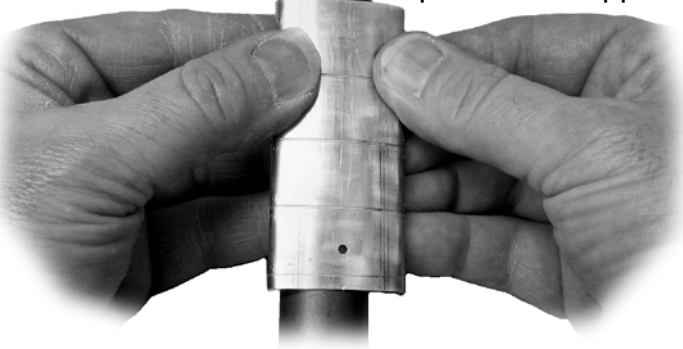


Repeat process for other side. Again regularly offering against support rib to guide progress.

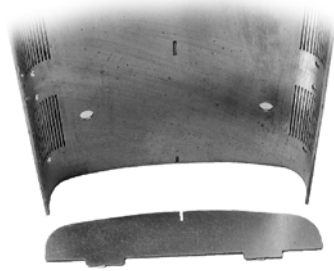
Then form centre curve by gently working with fingers and thumbs over an off cut of copper water pipe. Roll pipe with finger ends as forming pressure is applied by thumbs.



$\frac{3}{4}$ " \varnothing copper pipe off cut. $\frac{1}{2}$ " \varnothing is also very useful.

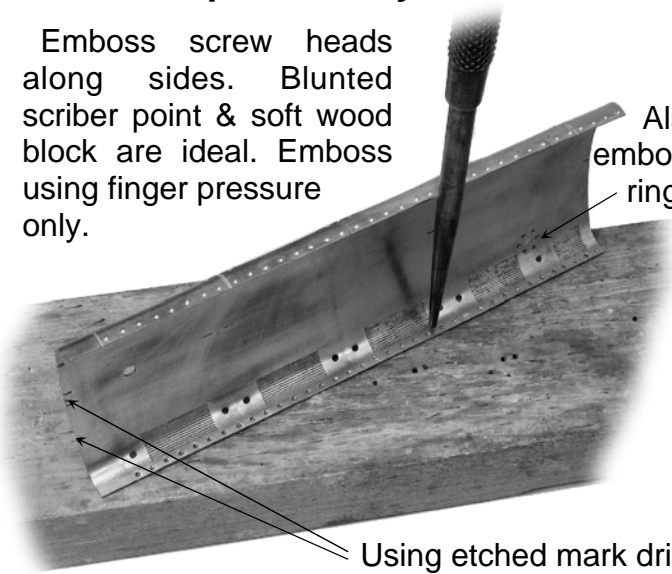


Side bends are now excessively tight so clamp sides (bottom flat 1mm) in vice jaws & ease up slightly to match support rib profile.



Stage 6, Bonnet Top Assembly

Emboss screw heads along sides. Blunted scribe point & soft wood block are ideal. Emboss using finger pressure only.



Also emboss rings.

Using etched mark drill radiator filler cap pilot hole. Central for D2200-D2209, each side for D2210-D2214.

The support ribs are there to work for you by providing a framework that will achieve a level bonnet top with consistent corners & top radius. If you are having to force it down over them, then they are working against you, so don't be afraid to slightly dress and re-profile ends so that bonnet top is a snug fit. With sides sitting down flat just above the louvered panels.

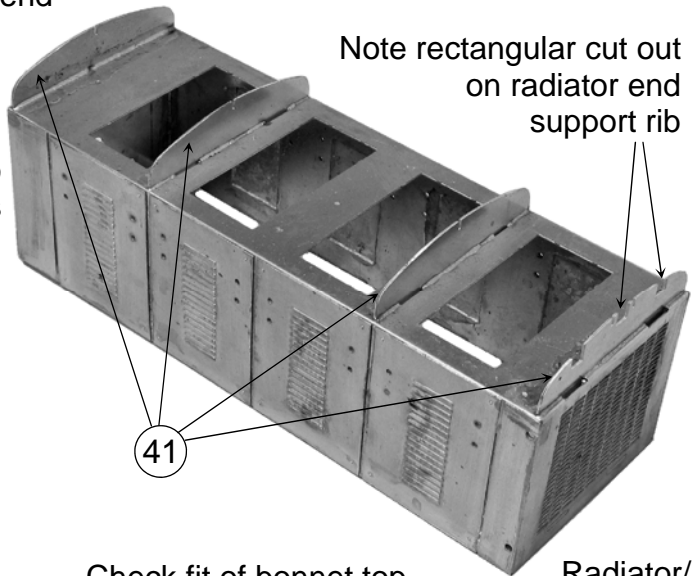


If required rub bonnet top on wet & dry sandpaper to ensure it sits level & flat.

Fit strips flush with ends of support ribs. These strips provide a useful solid backing to locate the side edges of the bonnet top against.

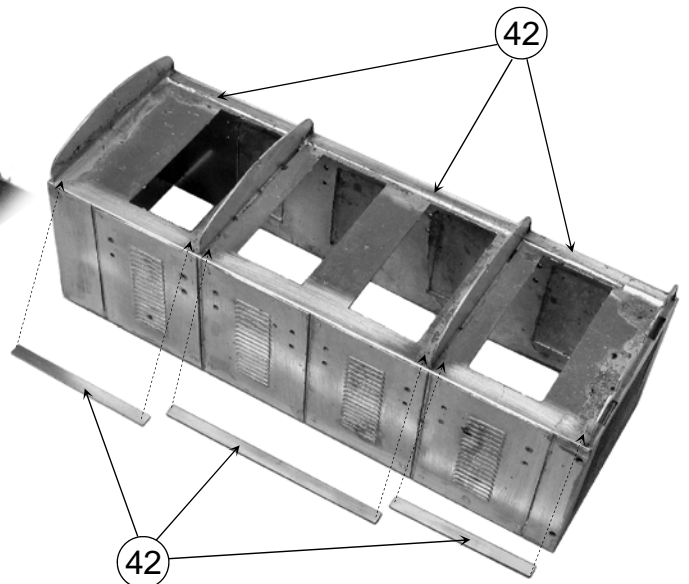
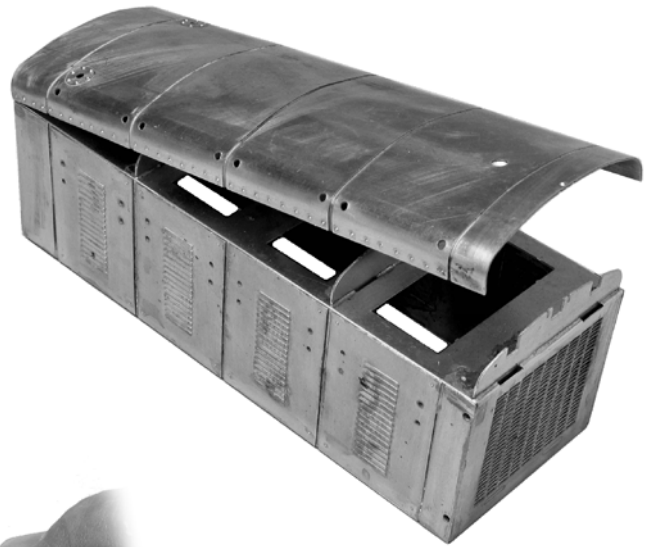
Cab end

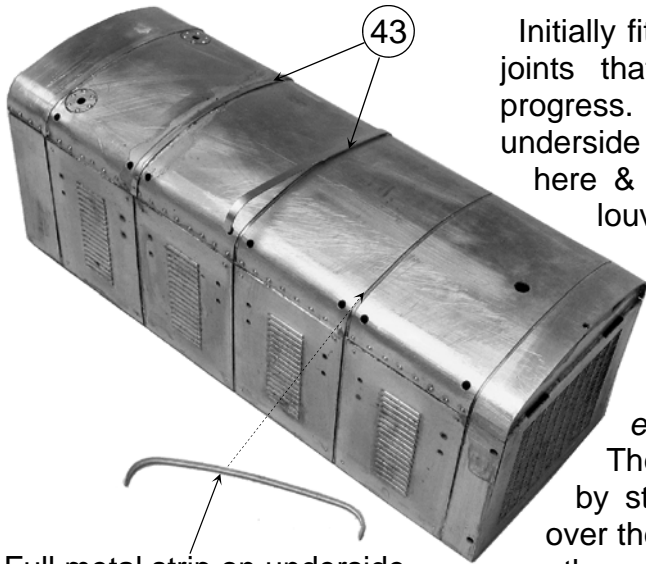
Note rectangular cut out on radiator end support rib



Check fit of bonnet top over support ribs

Radiator/Nose end



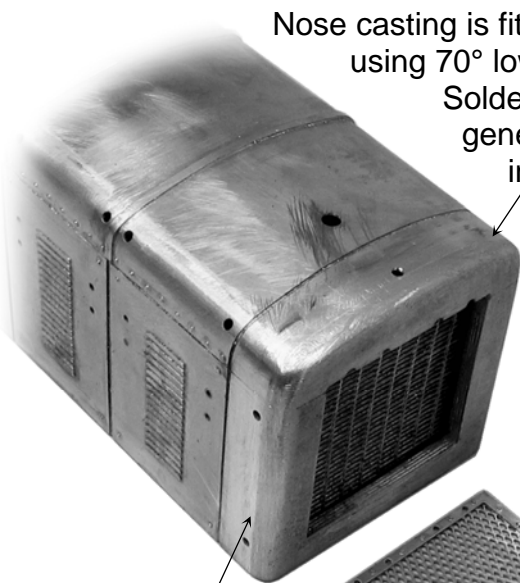


Full metal strip on underside locate into groove on bonnet top.

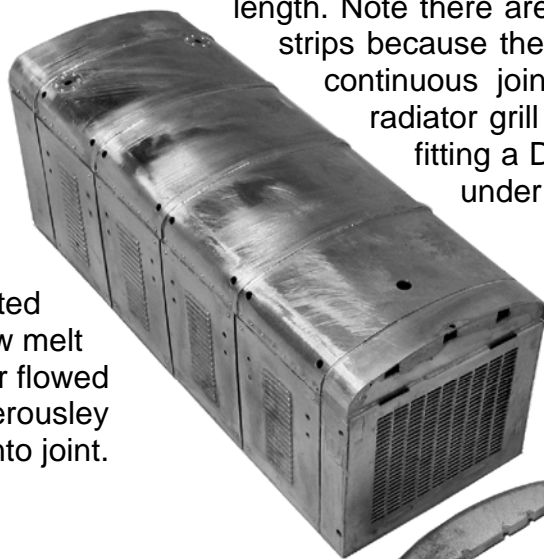
Initially fit bonnet top using a number of small tack solder joints that will allow adjustment, if required, as you progress. Note corresponding etched centre line marks on underside that correspond with support ribs. Tack joints here & about four on the outside joint between top & louvered panels along each edge should be sufficient to determine that all is positioned correctly & assembly is not twisted. When happy fully solder all joints.

Fit top panel sections joint covering strips (*in effect the same as boiler bands on a steam loco*). These are correct length/slightly over long so that by starting flush at one edge they can be soldered over the top then the other end sniped off to end flush at other edge. So roughly preform first and just try for length. Note there are only four covering strips because the nose has a visible continuous joint line. The etched radiator grill should be ideal for fitting a DCC sound speaker under the bonnet.

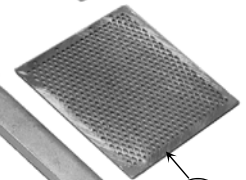
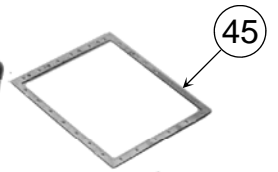
Stage 7, Nose/ Radiator Grill



Nose casting is fitted using 70° low melt Solder flowed generously into joint.



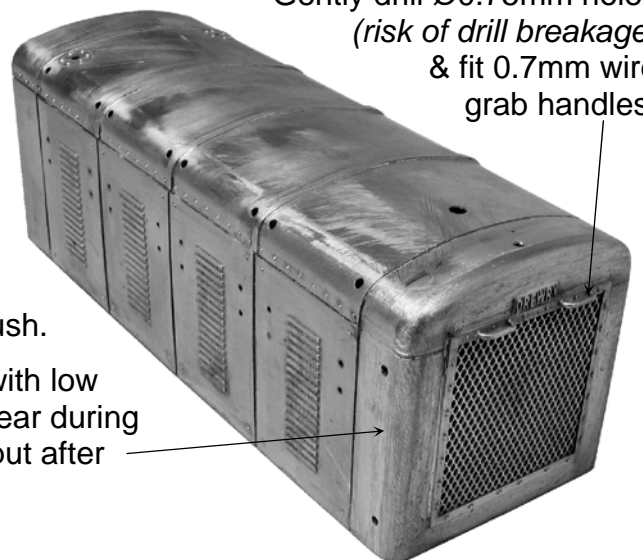
Pre tin around grill edges (*to allow fitting with low melt solder*) & clear grab handle holes.



Gently drill Ø0.75mm holes (*risk of drill breakage*) & fit 0.7mm wire grab handles.

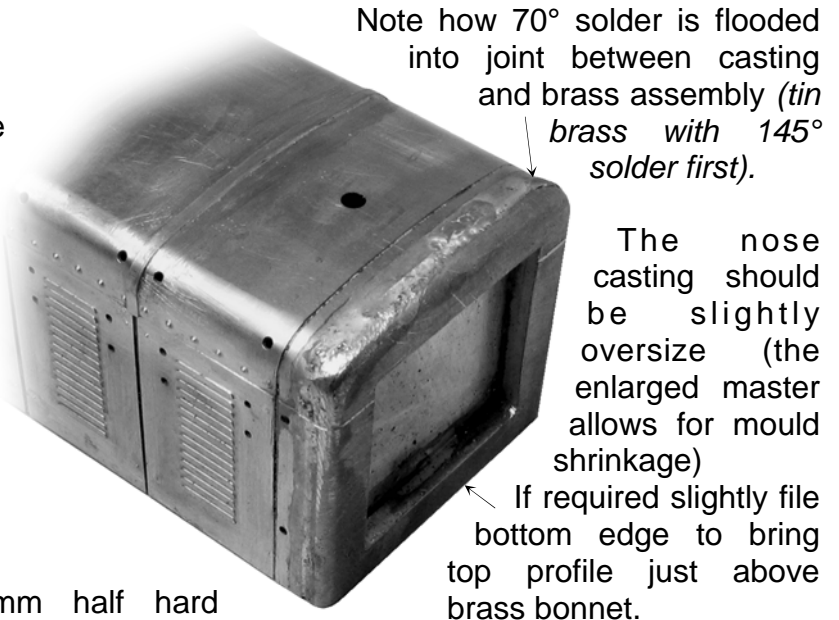
Casting/low melt solder filed back and then blended into brass bonnet sides by scraping with curved No10 scalpel blade & burnishing with fibreglass brush.

This is about as good as you need to get it with low melt solder. Any slight gaps or holes that appear during fitting of handrails etc are best filled with milliput after soldering operations.



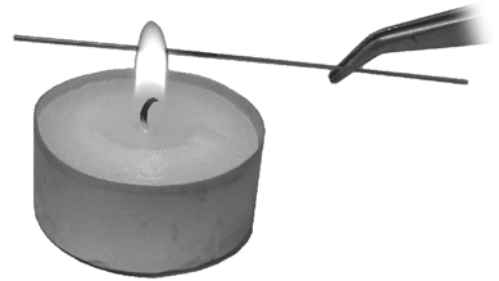
Cast Nose to Brass Bonnet Joint Technique

The cast nose is intended to be fitted using 70° low melt solder flowed generously into the joints. Then the cast parts filed and blended into the etched assembly. This technique is covered in my Hints & Tips booklet, page 11, download from:- <http://www.jimmcgeown.com/Print%20Outs.html> or contact me for printed copy.

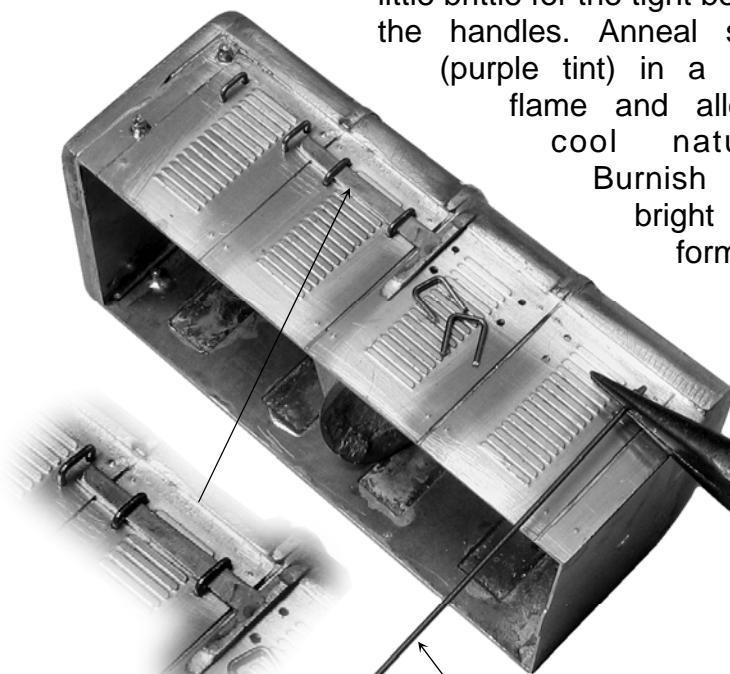


Stage 8 Handles & Handrails

The 0.7mm half hard brass wire may be found a little brittle for the tight bends of the handles. Anneal slightly (purple tint) in a candle flame and allow to cool naturally. Burnish wire bright before forming.



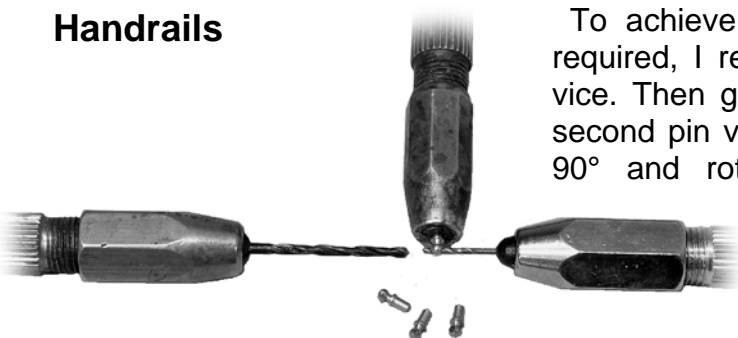
Form access panel handles to be a snug fit into holes so they will retain position when soldered from inside.



Make positioning spacer from double thickness of scrap fret. Withdraw before soldering

0.7mm brass wire

Handrails



To achieve best results from the handrail knobs, if required, I recommend holding base by locking in pin vice. Then gently pass through a 0.75mm drill held in second pin vice. Ensuring that the two pin vices are at 90° and rotate gently and this will correct any misalignment of the cross drilled hole.

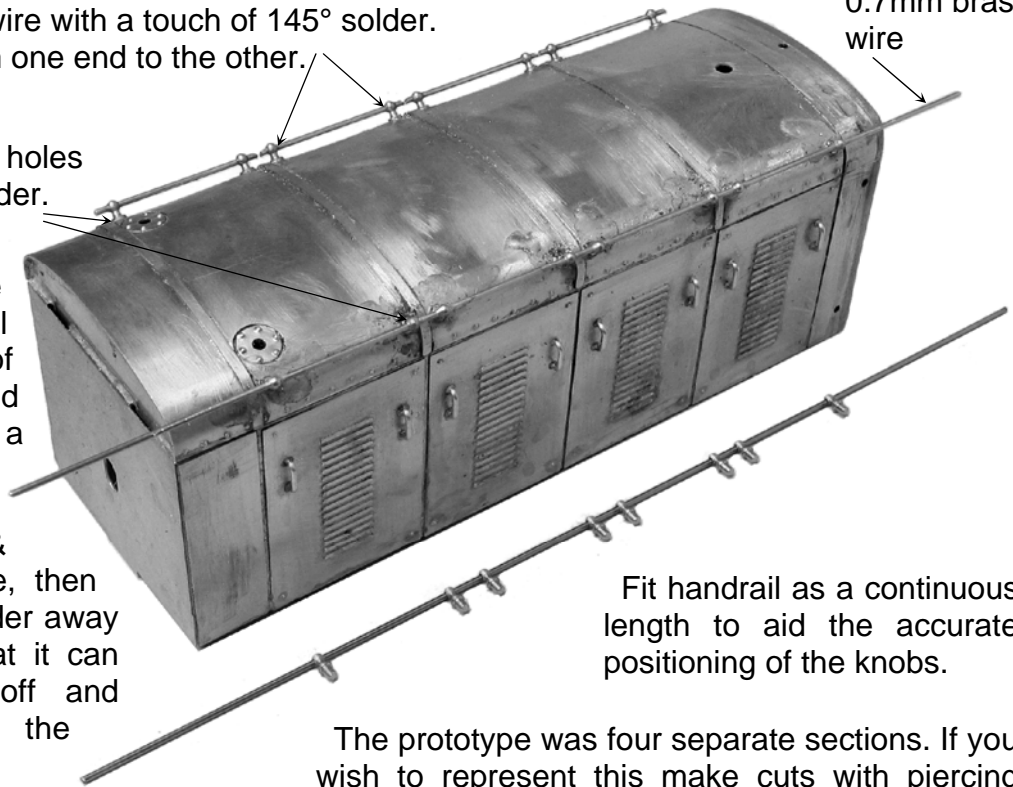
Then using a larger drill (about Ø2mm) gently twist a couple of turns to remove any swarf or raggedness around each side of the hole.

Secure wire with a touch of 145° solder.
Work from one end to the other.

0.7mm brass wire

Secure knobs into holes with a spot of 145° solder.

When all knobs are secured and you are happy that the handrail is level place a spot of green label flux around the base. Then with a hot clean iron retouch the joint and this solder should flash & flow around the base, then draw any excess solder away from the base so that it can easily be scraped off and cleaned up from the bonnet top.



Fit handrail as a continuous length to aid the accurate positioning of the knobs.

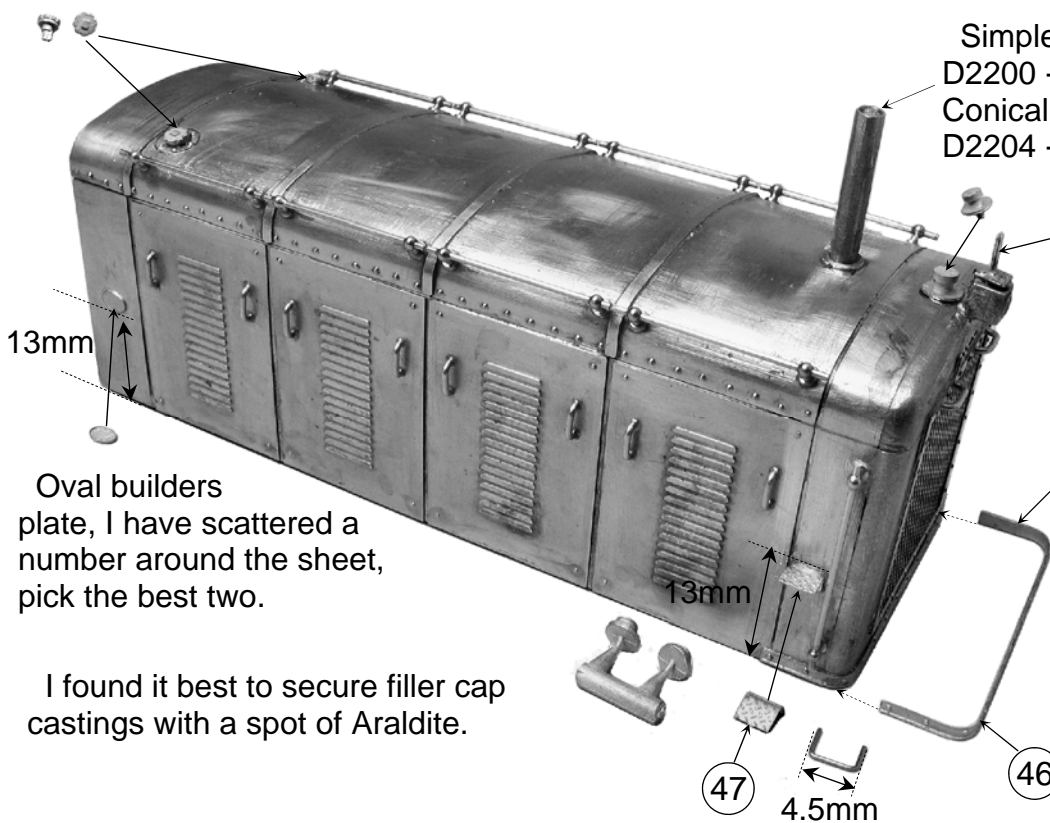
The prototype was four separate sections. If you wish to represent this make cuts with piercing saw after handrails are soldered solid.

Simple exhaust pipe fitted to D2200 - D2203.
Conical exhaust fitted to D2204 - D2214.

For lamp iron see page 24

Pre tin etched strip with 145° solder.

Then pre form and fit with 70° solder.



13mm

Oval builders plate, I have scattered a number around the sheet, pick the best two.

I found it best to secure filler cap castings with a spot of Araldite.

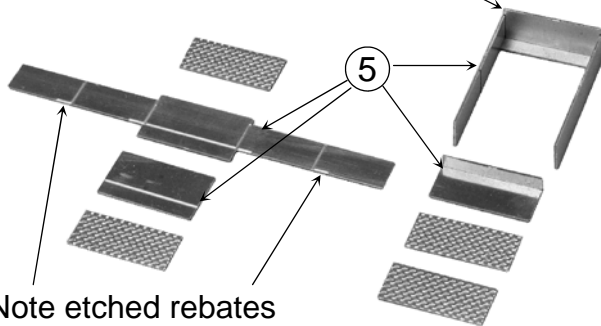
D2210 - D2214 had radiator filler cap, footstep and a light weight grab handle (drill 0.5mm holes in nose top and use 0.45mm brass wire) fitted to each side of the nose. I have included two types of step, one with tread plate and bolt heads that is a little tricky to fold up and a simple L shaped one.



The bonnet is now ready to be fitted to the footplate towards the end of construction.

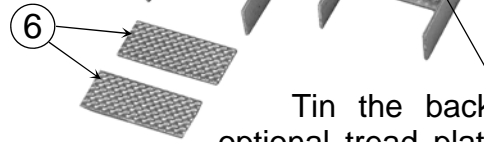
Stage 9, Foot Steps

Fold up bottom step and sides.
Reinforcing joints with solder



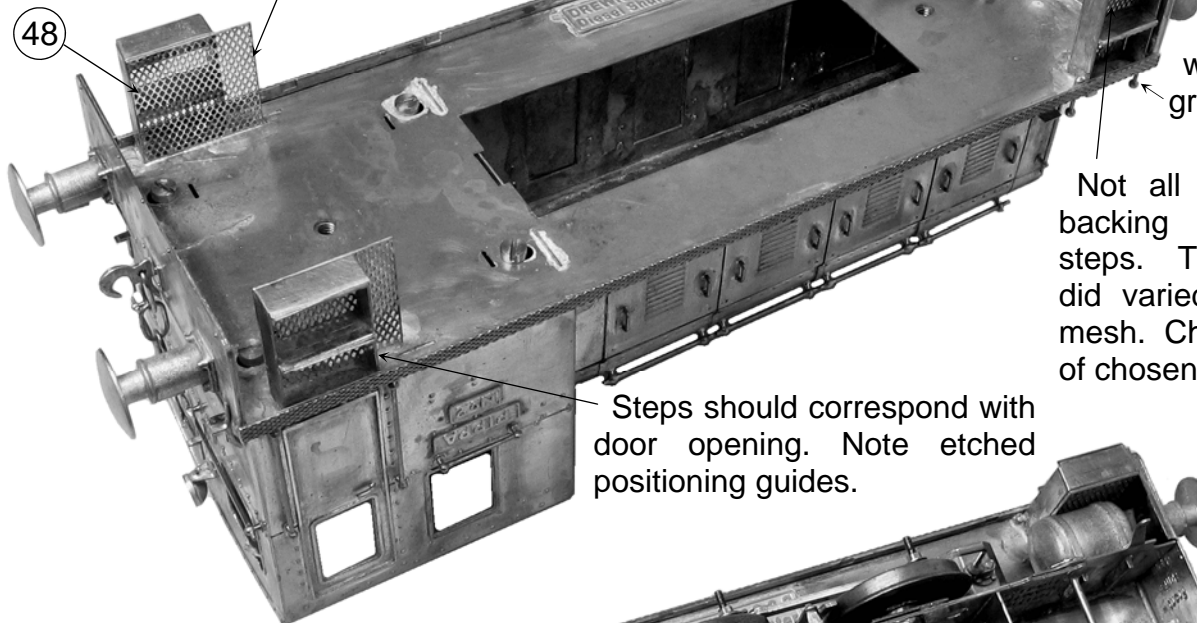
Note etched rebates
for location of second step

Solder second step
solidly into position



Tin the backs of the
optional tread plates before
removing from etch. Dress with file
to achieve easy fit and solder in
position using plenty of flux and
application of iron bit to step edge.

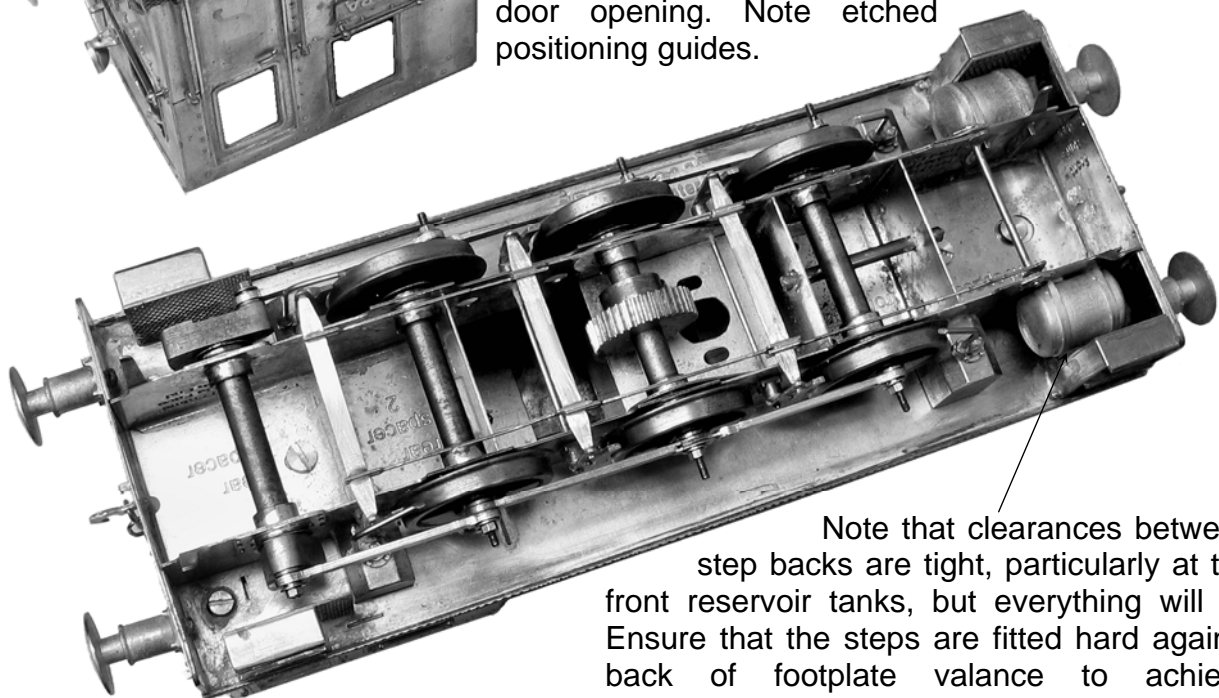
When satisfied with step positioning fit mesh
backing. Soldering at footplate & rear of bottom
step. All locos appear to have backing for cab
steps but this varies from solid or mesh step width
only to extended mesh as shown.



About 1mm gap
between back of
buffer beam
& step.
This will
become
significant
when fitting
grabhandles.

Not all locos had
backing to front
steps. Those that
did varied, solid or
mesh. Check photo
of chosen prototype.

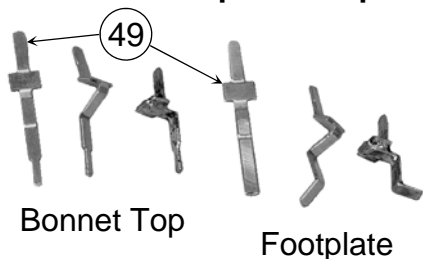
Steps should correspond with
door opening. Note etched
positioning guides.



Note that clearances between
step backs are tight, particularly at the
front reservoir tanks, but everything will fit.
Ensure that the steps are fitted hard against
back of footplate valance to achieve
maximum clearance.

Stage 10, Front Footplate & Lamps

Main Line Lamp Irons Option



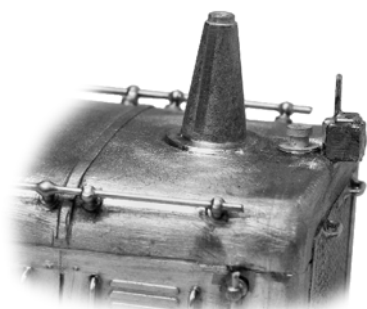
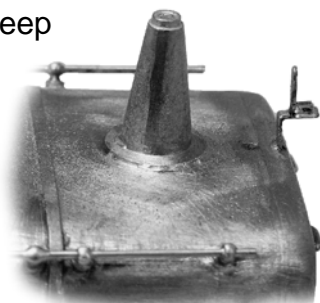
As with the cab back (page 11) the front end was fitted with four fixed electric lamp boxes with lamp Irons incorporated.

Form up lamp irons and reinforce all folds with 60/40 solder. Then Tin front & back of lower part (where cast lampbox fits) with 145° solder.

Drill location hole into bonnet top to accommodate lamp iron tail & fit with low melt (70°) solder. Then fit cast lamp box again using 70° solder.

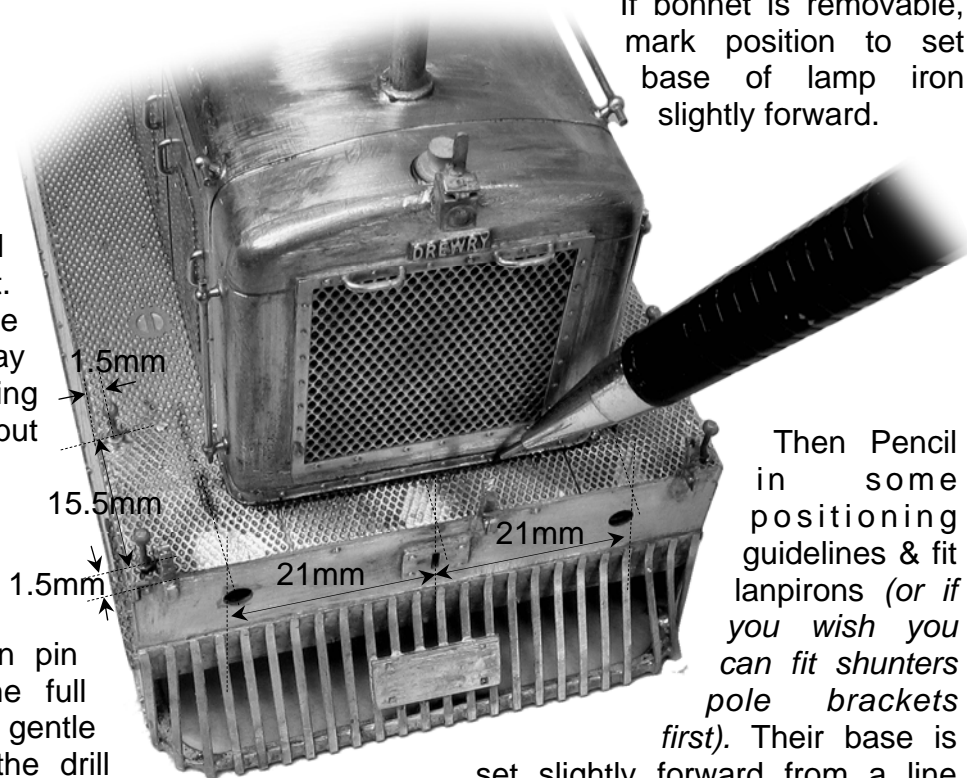


0.75mm hole
3mm deep



If bonnet is removable, mark position to set base of lamp iron slightly forward.

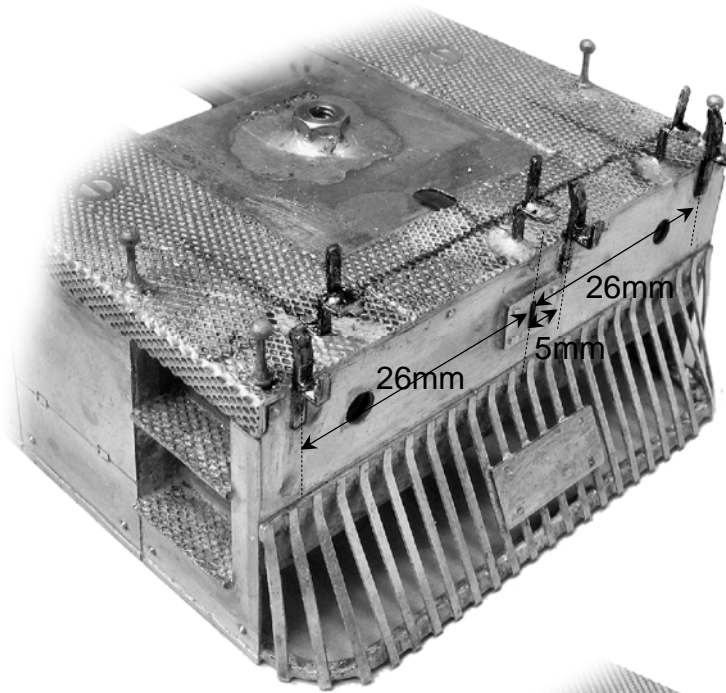
I recommend drilling Ø1.3mm holes & fitting step hand hold (grabhandle) pillars first. There are holes in the etched tread plate overlay that should provide a starting position for the drill but double check with a rule.



Then Pencil in some positioning guidelines & fit lanpiron (or if you wish you can fit shunters pole brackets first). Their base is

Hold a new/sharp drill in pin vice and drill through the full metal main footplate using gentle hand pressure only. As the drill starts to break through you should be able to feel the gap between the buffer beam and step (noted on page 23). If required carefully change the angle of the drill until you are drilling down between buffer beam and step (risk of drill breakage) for about 3mm depth.

set slightly forward from a line marking the end of the bonnet and about 2mm back from footplate edge. The rear of the cast lampbox will slide into and rest upon the footplate in this 2mm space. Don't panic if a little solder gets onto the tread plate surface as this can be easily scraped away level and the tread plate texture restored with glass fibre burnishing brush. After the first spray of primer paint, all will blend in.



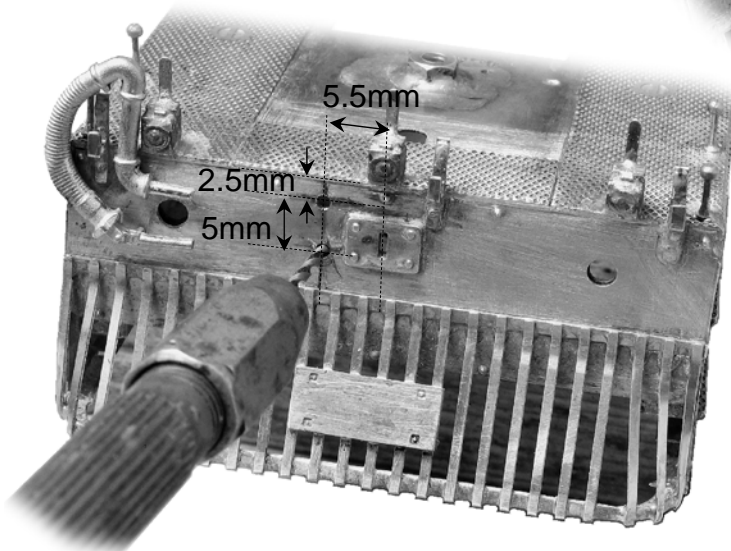
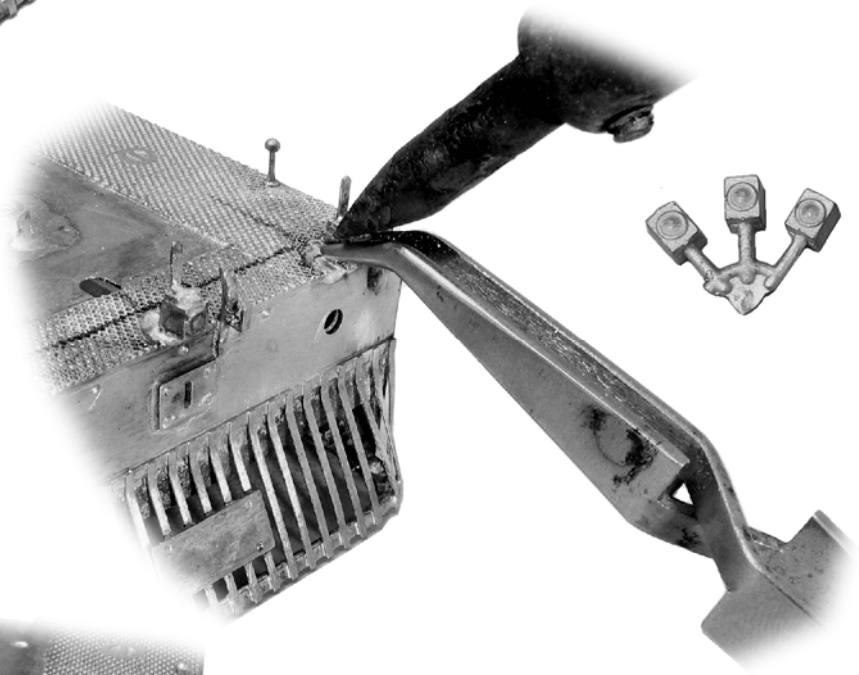
27



Brackets for stowing the shunters uncoupling pole as he rode along on front steps, hanging onto grabhandle pillars, not fitted to all locos throughout their lives (absent on 1961 photo of D2201).

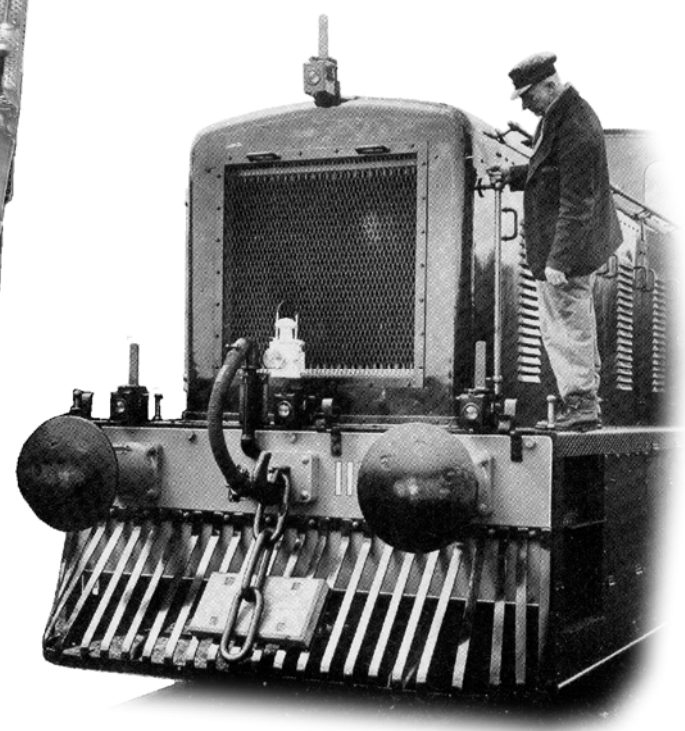
Fit cast lamp boxes using low melt (70°) solder. I was surprised to find this was a fairly easy operation.

By holding cast boxes in position using self locking tweezers & generously applying red label flux. I found I could touch the top of the box/etched lampiron with the soldering iron tip carrying 70° solder. The solder naturally pulled around the lampiron & cast box. If required, another quick touch at the footplate added strength.



If brake pipes are required, not fitted to all locos, drill Ø1.3mm holes for fixing pegs. Repeat in same position on cab buffer beam but don't fit pipes until after soldering coupling hook into slot.

Newly delivered No11102 fully fitted out and ready to operate anywhere on the British Railways main line network.

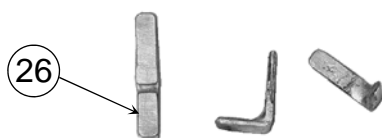


Industrial Lamp Irons Option

Locos intended for industrial operation tended to have a bonnet top electric spot lamp mounted on a projecting bracket & two footplate mounted electric side light boxes, Lenses coloured, Port-red (*L/H side looking forward from cab*), Starboard-white (*R/H side*).

Spotlight bracket has 0.7mm wire spike. Spotlight casting has drilled hole to locate onto this after painting. Opaque lens glass is represented by a spot of Araldite (26) (*polish bowl & rim of casting first*).

Two additional lamp irons of traditional oil lamp type were provided on the front footplate edge (*third on bonnet top if no spotlight fitted*).



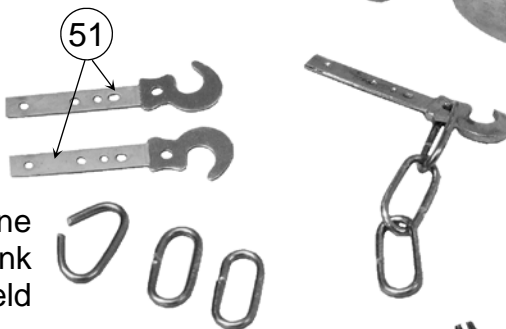
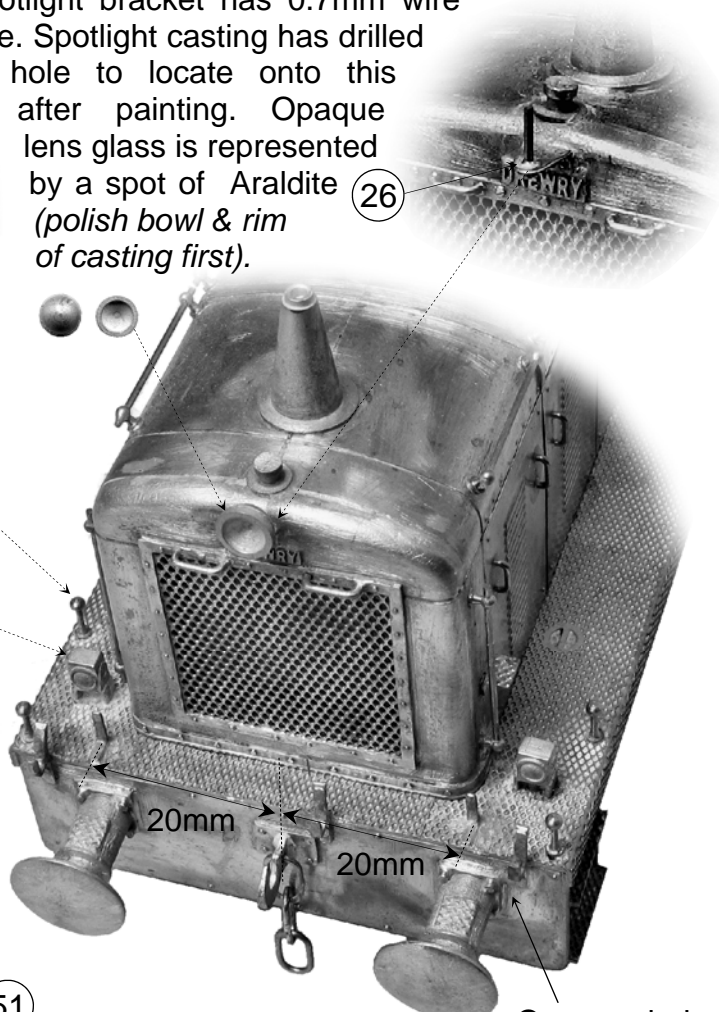
Form up lamp irons and reinforce fold with 60/40 solder. Tin underside of base with 145° solder.

Pencil in some positioning guidelines. Then solder lamp iron base to footplate.

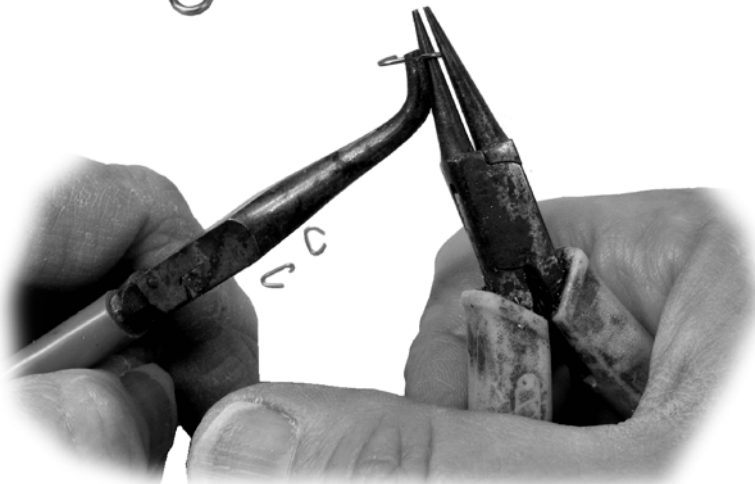
Make up the coupling links. I close up the links by holding the curved end in the jaws of round-nosed pliers in one hand and squeeze the flat parts of the link parallel with angled long-nosed pliers held in the other hand.

Once six even-shaped closed links are produced, open each one slightly & thread three together. The last link passes through the hole in the double thickness coupling hook.

I reinforce the joint of each link with a spot of 60/40 solder. Pass the tail of the hook through the buffer beam slot and then solder solid to the rear of the buffer beam. Then snip off the tail of the coupling.



Open up holes in buffer beams with tapered broach to accommodate cast buffer peg.

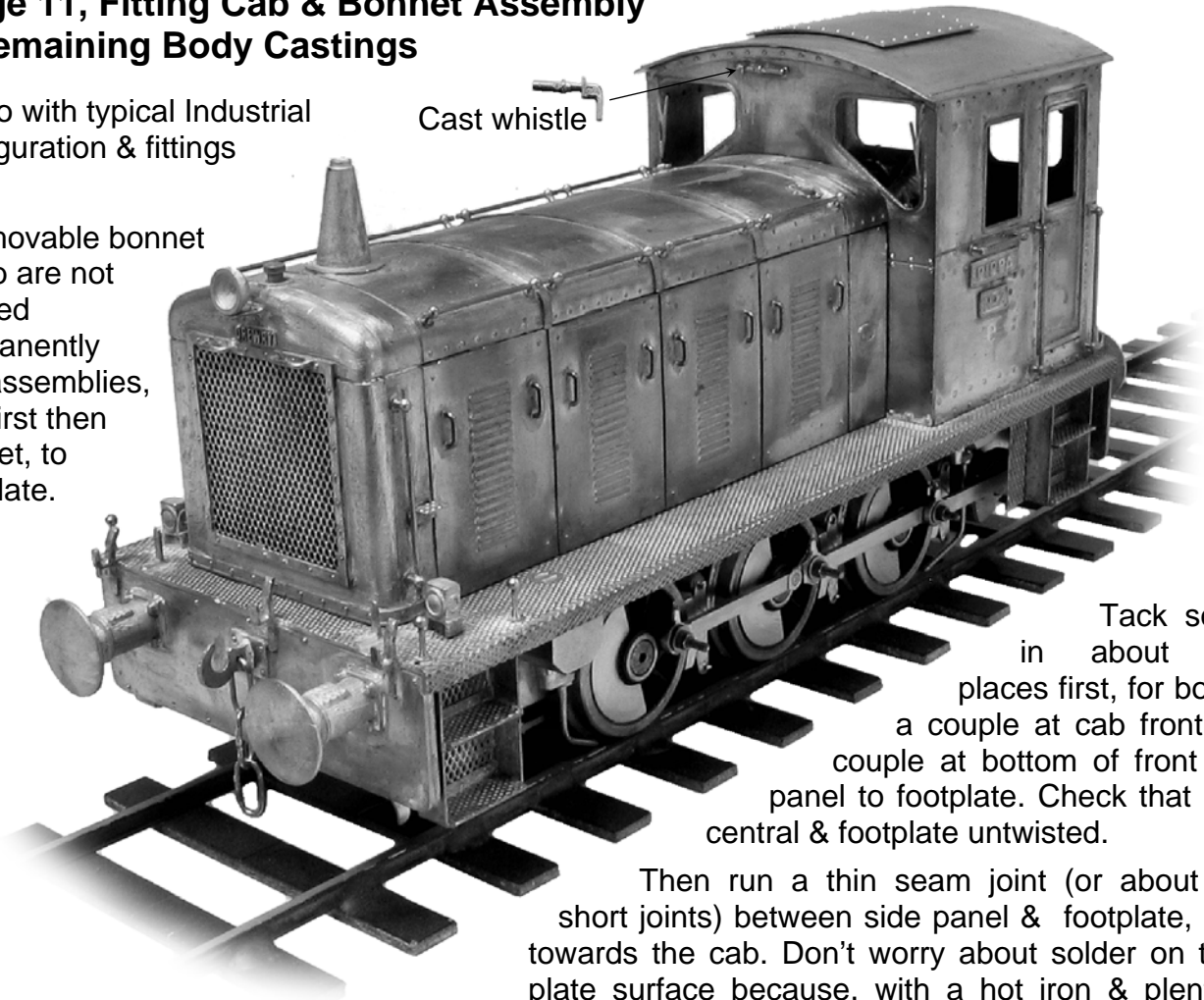


Stage 11, Fitting Cab & Bonnet Assembly & Remaining Body Castings

Loco with typical Industrial configuration & fittings

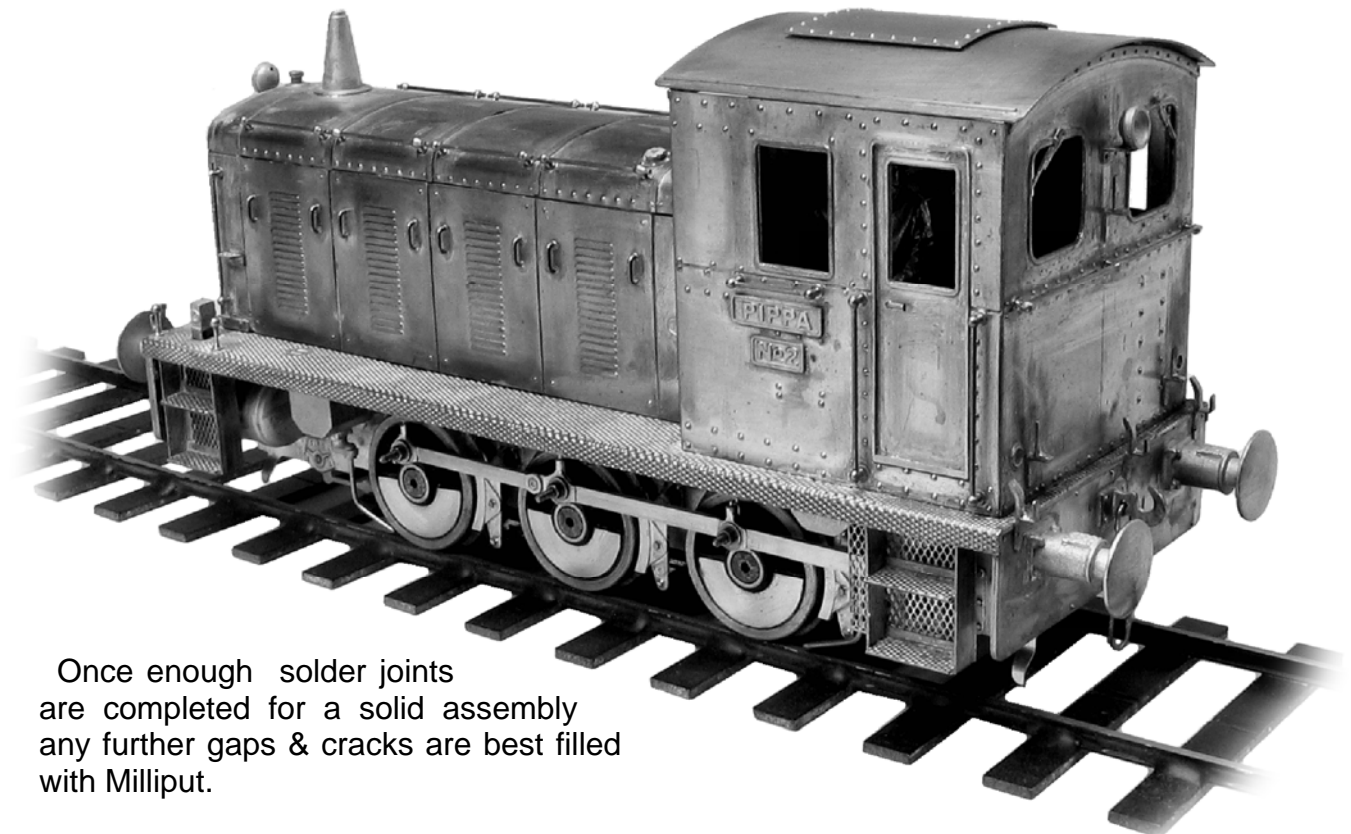
If removable bonnet & cab are not desired permanently join assemblies, cab first then bonnet, to footplate.

Cast whistle

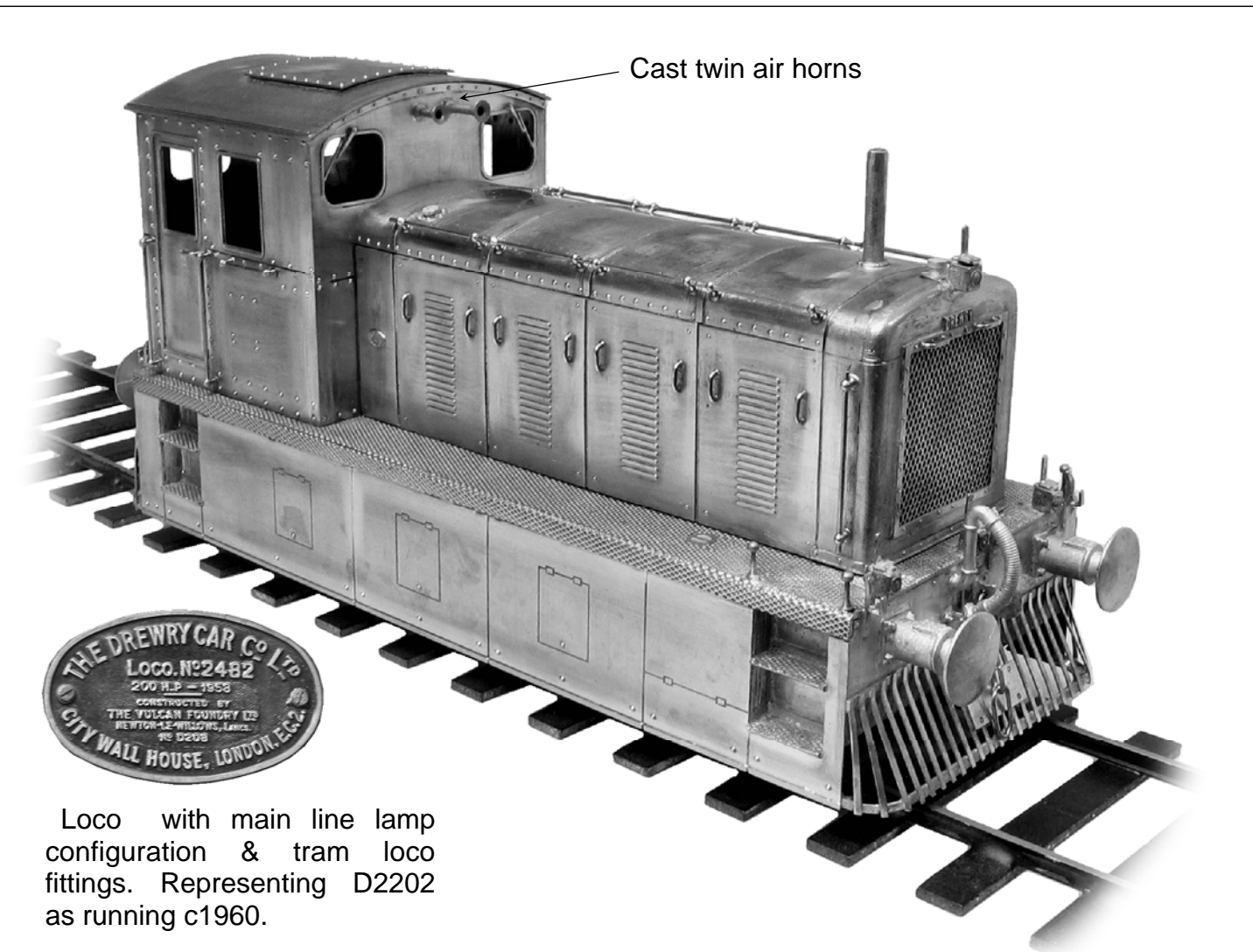


Tack solder in about four places first, for bonnet a couple at cab front & a couple at bottom of front side panel to footplate. Check that all is central & footplate untwisted.

Then run a thin seam joint (or about four short joints) between side panel & footplate, back towards the cab. Don't worry about solder on tread plate surface because, with a hot iron & plenty of flux, the excess solder will flatten down & be unnoticeable after painting.



Once enough solder joints are completed for a solid assembly any further gaps & cracks are best filled with Milliput.



Cast twin air horns



Loco with main line lamp configuration & tram loco fittings. Representing D2202 as running c1960.

