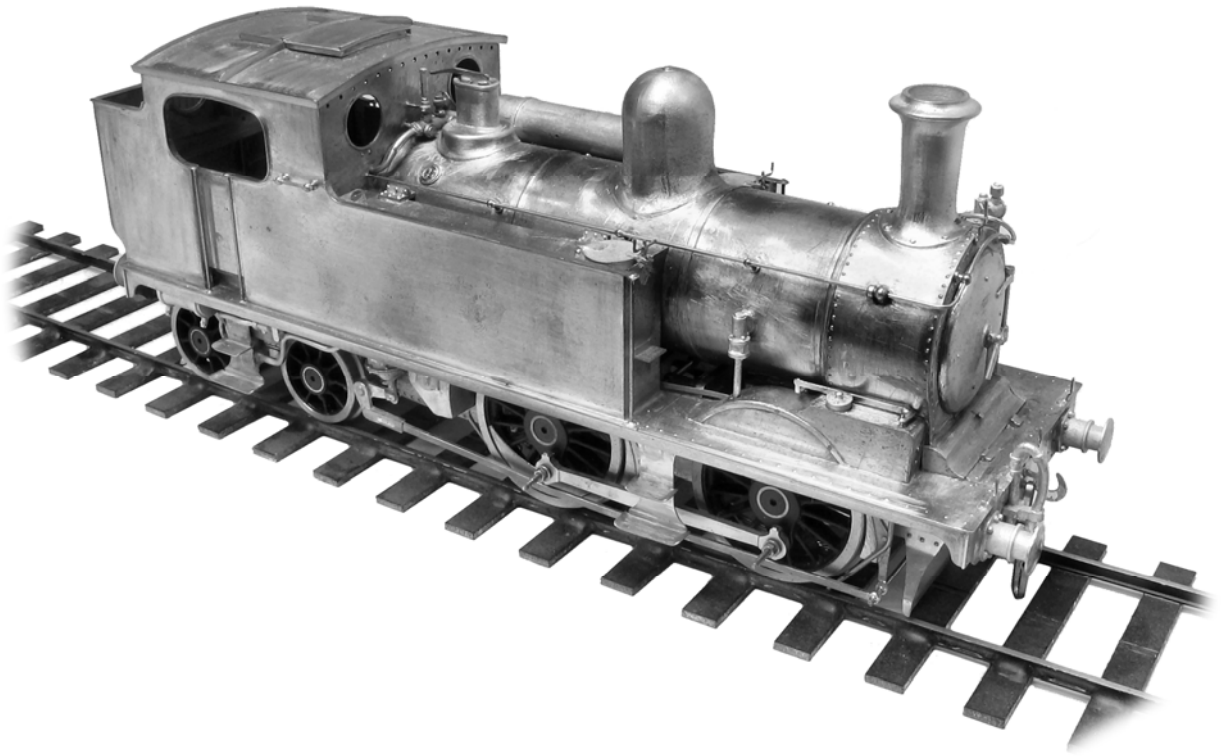
CONNOISSEUR MODELS

- 0 Gauge -

Southern Railway Class 02 Body Construction



Prototype. These locos were built by the LSWR for working a wide range of secondary passenger, branch line and local goods duties. From London Suburban services to West Country branch lines but their iconic work was performed on Isle of Wight summer holiday trains.

Kit. The body & chassis components are a mixture of brass & heavier nickel silver. This is a very detailed kit with a lot of small fittings, pipework & cab interior detail. A range of fittings to cover changes through to BR days and alternative coal bunkers for Mainland & I-O-W versions are provided.

Parts Required To Complete

2 Sets 4' 10", 16 Spoke Driving Wheel (Slater's Catalogue Number 7858SW)
2 Sets 3', 9 Spoke Bogie Wheel (Slater's Catalogue Number 7836SW) This wheel uses a smaller diameter axle than standard so if required obtain the appropriate wheel key when ordering.
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.
Mashima 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

Because the 02 is a 0-4-4 tank & the level of this kits sophistication I have made a number of assumptions about you the modeller.

I assume that you are relatively experienced and have successfully built a couple of sweet running simple 0-6-0 type locos.

I assume that you only require the instructions to show when and where to fit parts but not how to because you have your own construction techniques. If this is not the case all is not lost as you can contact me for extra advice.

I assume that you have selected an 02 because you are familiar with the prototype and have available a reference library of books and photos and have a fixed prototype & period that you want the kit built loco to represent. In effect you probably know more about 02's than I do.

If this is not the case and like me you were only inspired to have a 02 because of a holiday visit to the wonderful Isle-of Wight steam railway with its fantastically friendly & helpful staff. Then the best place for information to give a good overview of the class is the internet. Visit the Southern E-Group, www.semgonline.com/steam/o2class_01.html

Livery & Finishing, Again I assume that you have reference material for your desired livery & supplies of paint & transfers, particularly if you model the LSWR period.

If this is not the case then fortunately the Isle-of Wight steam railways preserved class 02, No 24, "Calborne" has been painted in just about every post 1923 livery that the 02's carried.

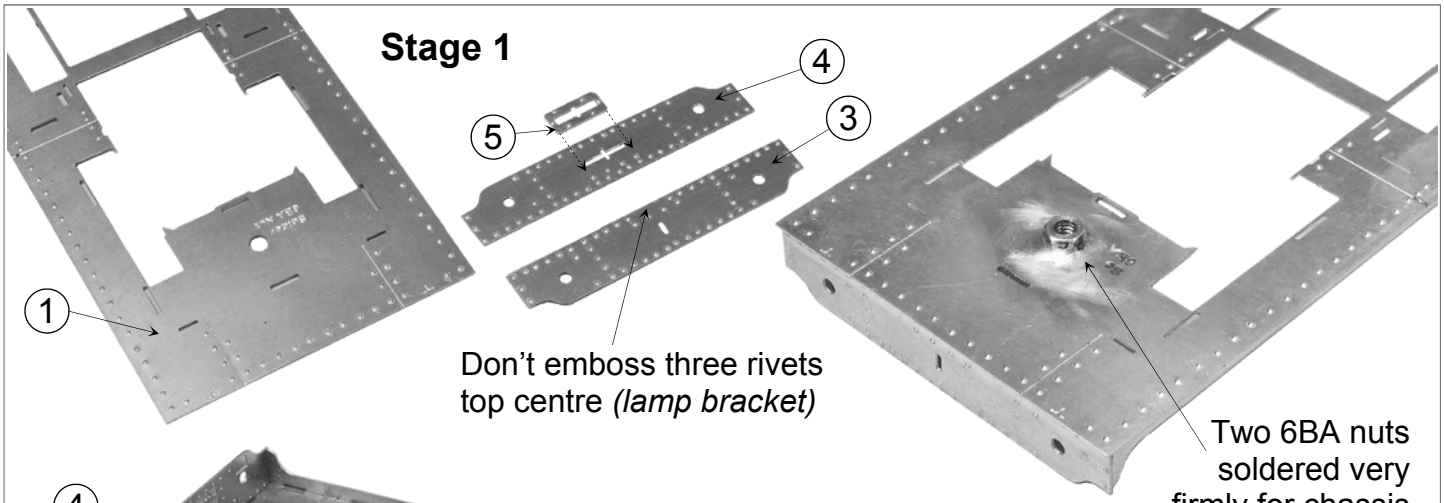
From BR plain black to fully lined Southern Sunshine Green livery you will find plenty of colour reference photos if you search on google, images, Southern Railway Class 02, Calborne.

Transfers for lettering are available from the Historical Model Railway Society (HMRS) www.hmrs.org.uk for order form or send to:- Voluntary sales officer, 8 Gilpin Green, Harpenden, Herts, AL5 5NR, SAE for list & order form. You will require sheet 9, SR Maunsell Loco & Coach insignia (includes LSWR) for early period. Sheet 10, SR Bulleid Loco & Coach, for later period or sheet 14 BR Steam era Loco & Coach.

After painting, glaze the spectacle windows, I cut flat sheets from the clear blister packs that many items are packaged in nowadays. A hole template is provided & holding a sewing needle in a pin chuck scribe circles on this material. Cut out & these should pop perfectly into the inner spectacle rings.

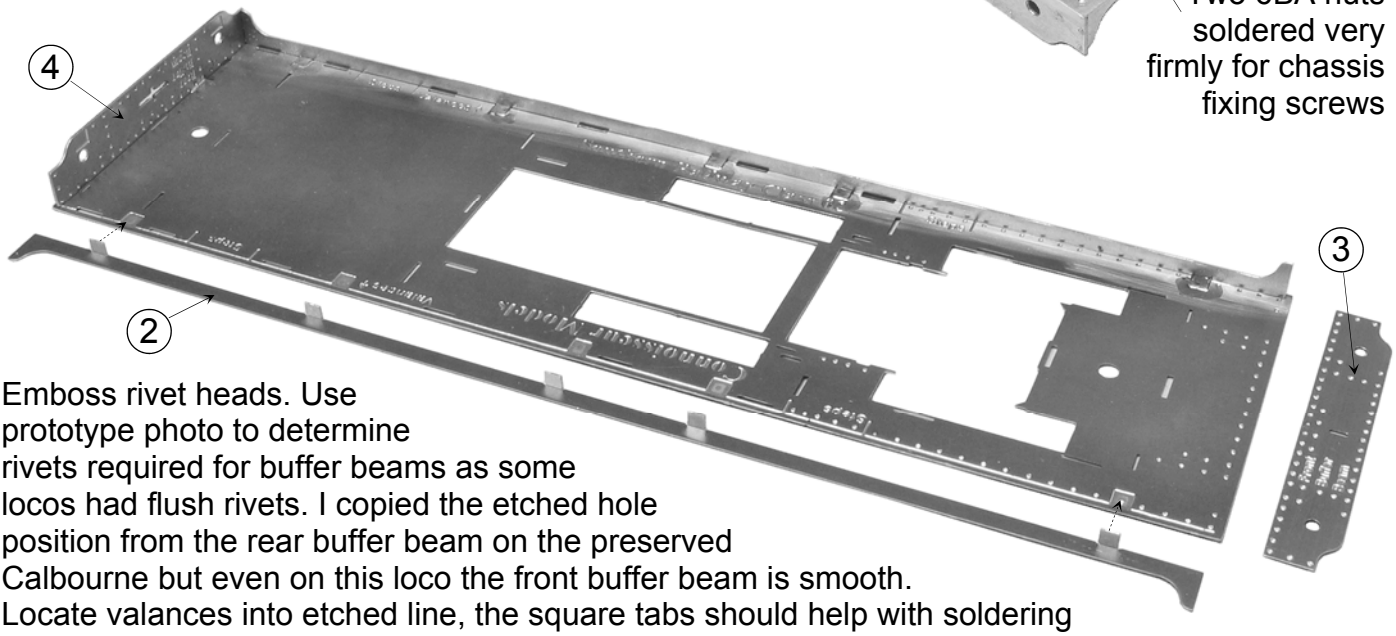
If you enjoy building this kit and are satisfied with the quality, I would be most grateful if you could recommend it to your friends and fellow modellers. If you are not happy please tell me. Hopefully I will then be able to help and sort out any problem.

Stage 1



Don't emboss three rivets top centre *(lamp bracket)*

Two 6BA nuts soldered very firmly for chassis fixing screws

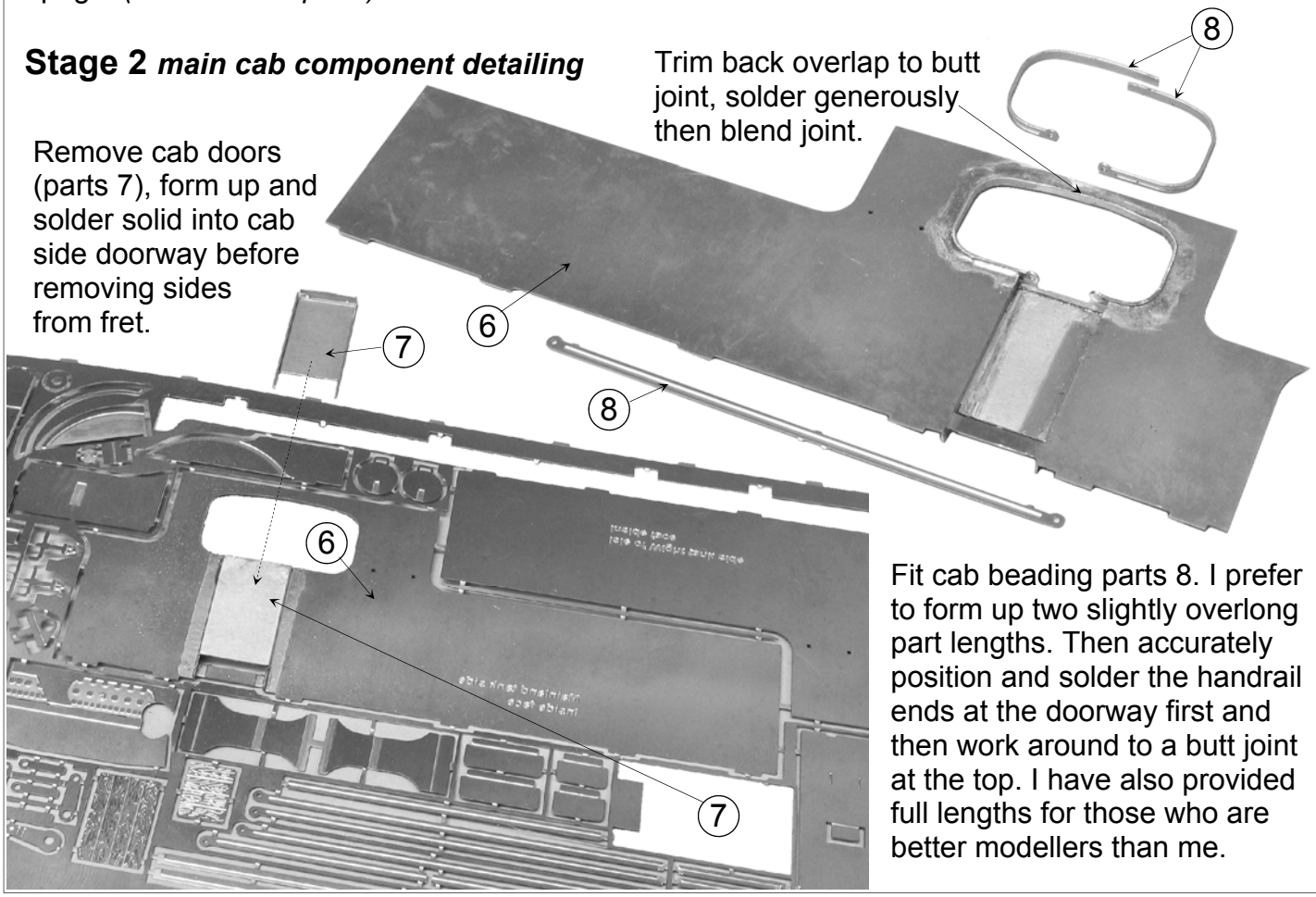


Emboss rivet heads. Use prototype photo to determine rivets required for buffer beams as some locos had flush rivets. I copied the etched hole position from the rear buffer beam on the preserved Calbourne but even on this loco the front buffer beam is smooth. Locate valances into etched line, the square tabs should help with soldering upright *(90° from footplate).*

Stage 2 *main cab component detailing*

Trim back overlap to butt joint, solder generously then blend joint.

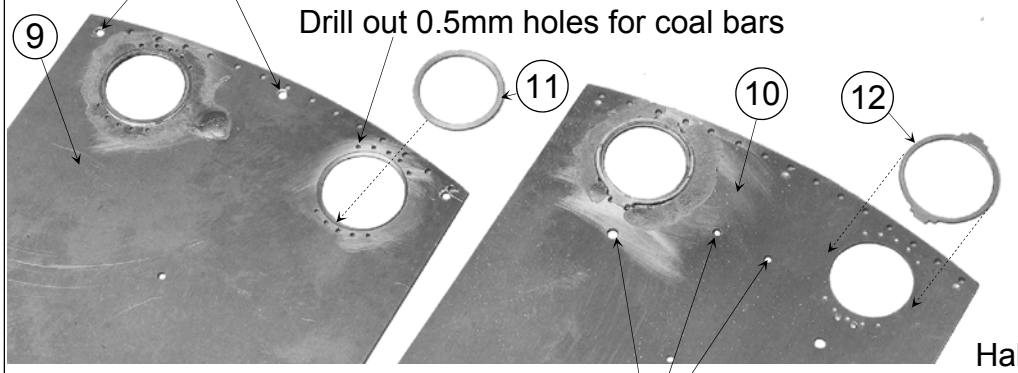
Remove cab doors (parts 7), form up and solder solid into cab side doorway before removing sides from fret.

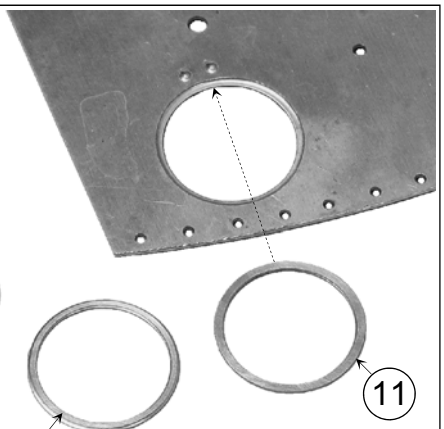


Fit cab beading parts 8. I prefer to form up two slightly overlong part lengths. Then accurately position and solder the handrail ends at the doorway first and then work around to a butt joint at the top. I have also provided full lengths for those who are better modellers than me.

Some locos had curved handrail on cab back, if required drill out support holes.

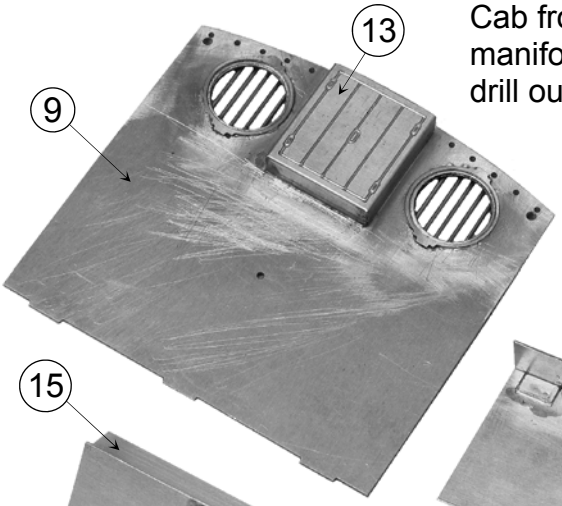
Drill out 0.5mm holes for coal bars



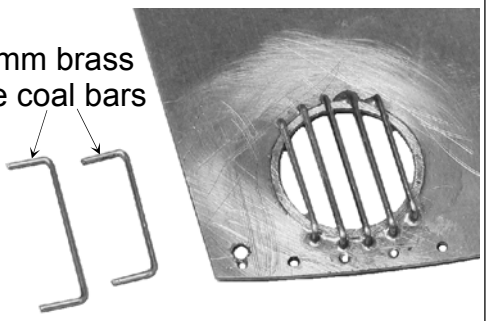


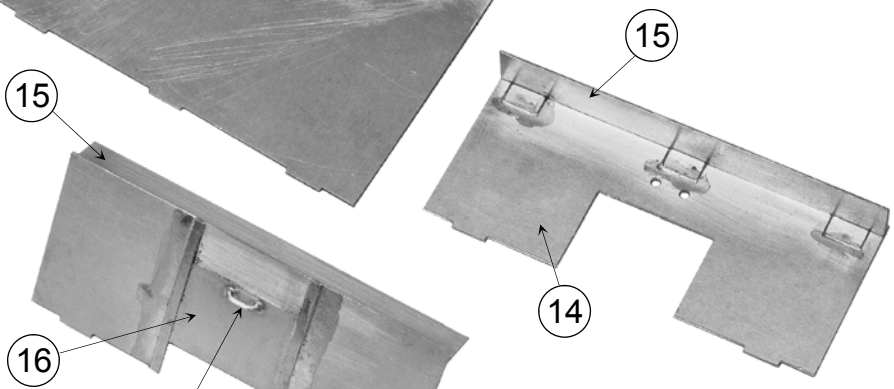
Half etched step on top surface, place face down into etched rebate to give sharp edge to spectacle ring.

Cab front has holes for steam manifold pipework only. Don't drill out any half etched holes.



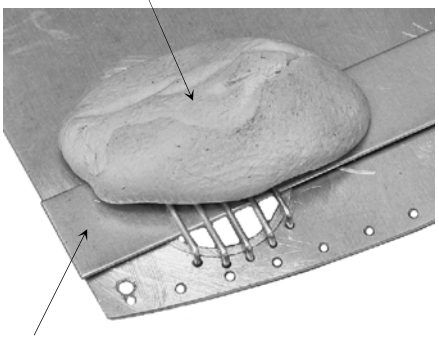
0.5mm brass wire coal bars



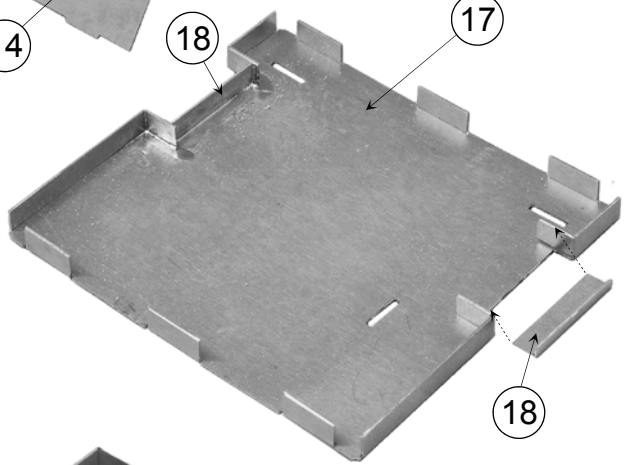


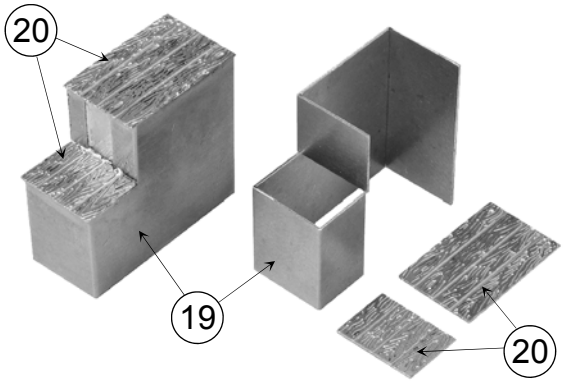
Fit 0.7mm wire handle

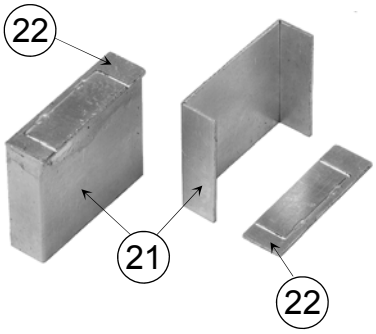
Blob of BluTack to hold bars in position so they can be turned over to solder from rear. *(Use fresh BluTack blob to lift off any melted BluTack).*

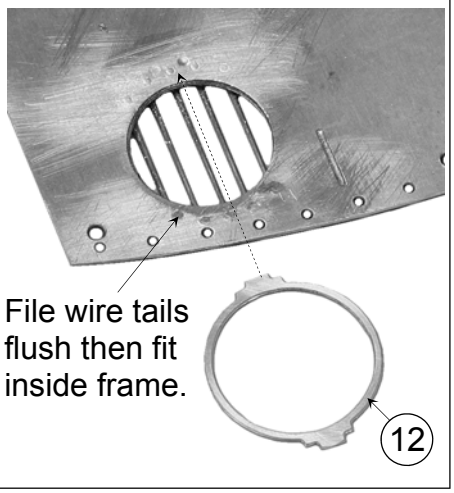


Scrap brass strip to space coal bars away from spectacle ring



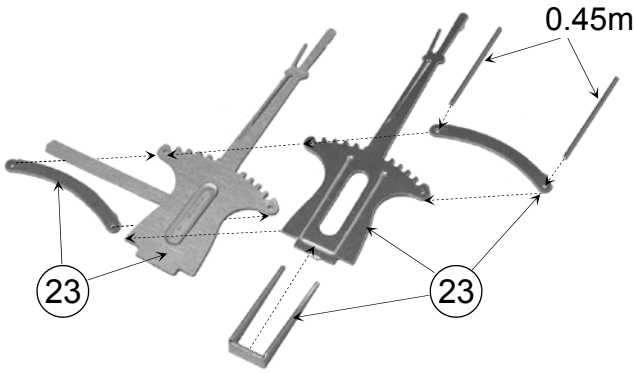






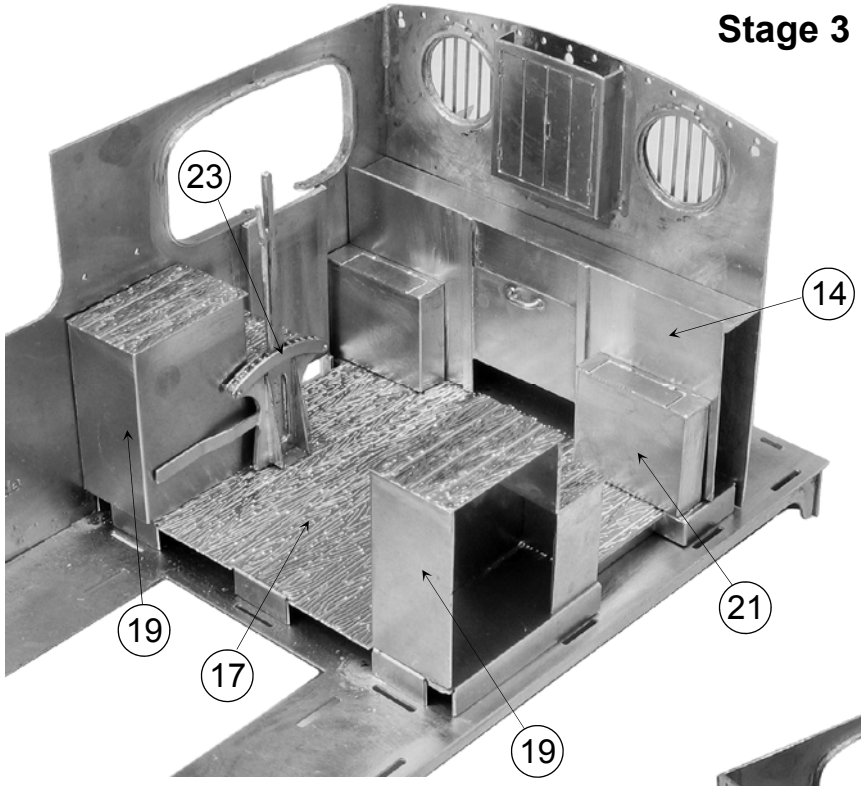
File wire tails flush then fit inside frame.

Stage 2 *continued*



I have also fabricated a casting master from these etched parts so if desired use the one piece casting.

Stage 3 *cab & cab/tank side assembly*

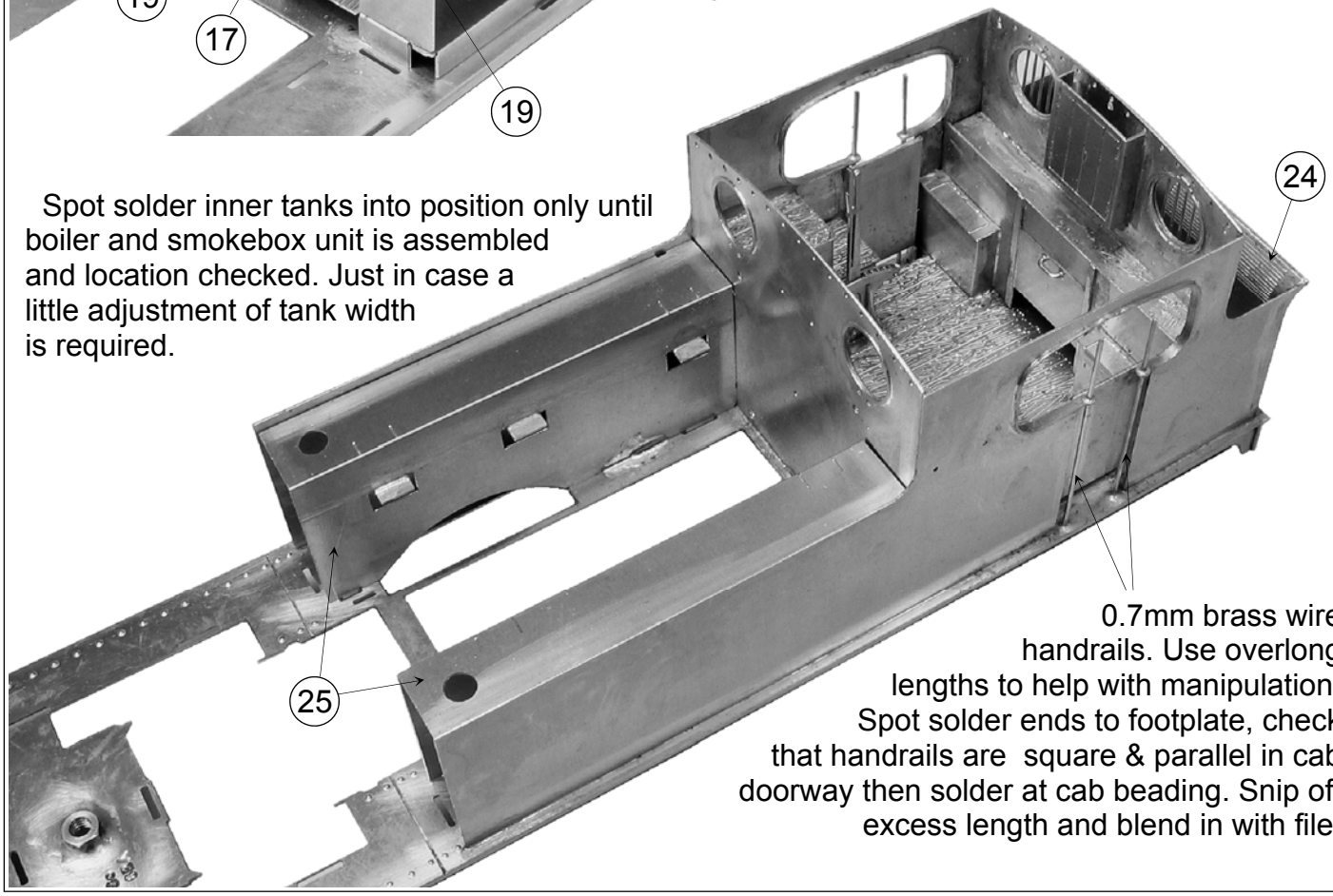


Mock up to show positioning of cab components. In reality I would suggest first fitting cab front & both cab/tank sides. Then cab floor followed by cab tanks (parts 19 & 20) & reversing lever (parts 23).

Then place coal space front (parts 14-16) into its slots and fit cab back. Then solder coal space front firmly into position and fit floor lockers (parts 21 & 22).

Curve bunker back to match profile of bunker sides and then fit.

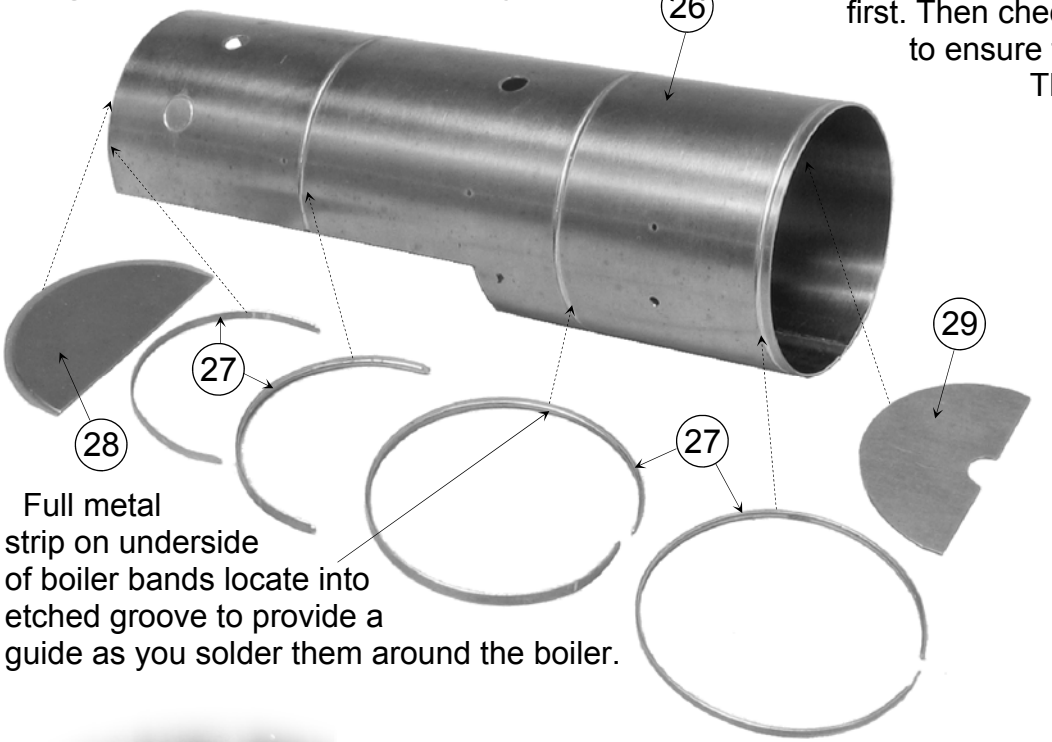
Spot solder inner tanks into position only until boiler and smokebox unit is assembled and location checked. Just in case a little adjustment of tank width is required.



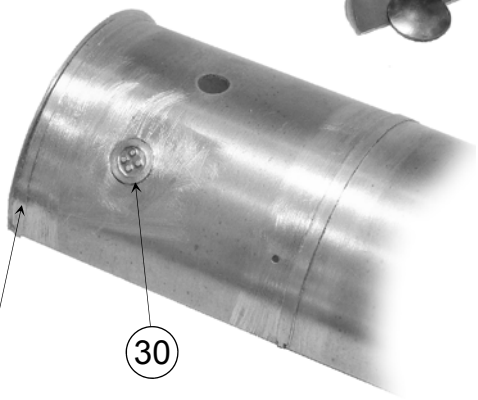
0.7mm brass wire handrails. Use overlong lengths to help with manipulation. Spot solder ends to footplate, check that handrails are square & parallel in cab doorway then solder at cab beading. Snip off excess length and blend in with file.

Stage 3 Boiler Sub Assembly

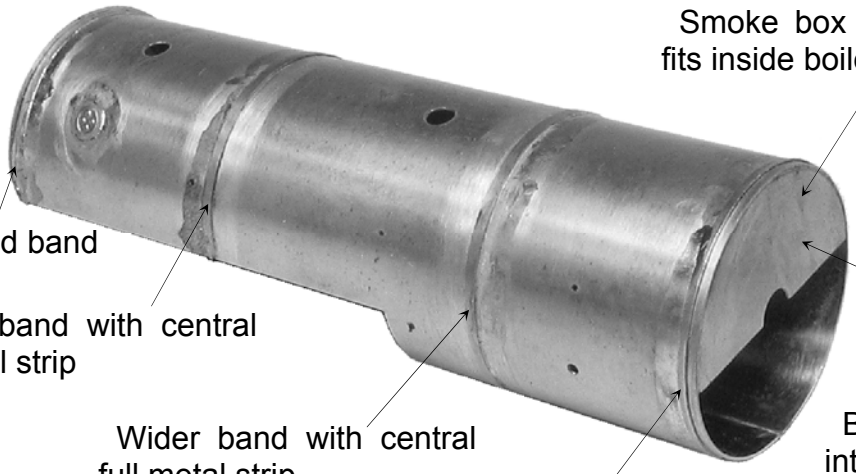
Solder boiler ends around both formers first. Then check and adjust if required to ensure that end is truly circular. Then solder overlap joint.



Full metal strip on underside of boiler bands locate into etched groove to provide a guide as you solder them around the boiler.



Pin formers firmly to a block of wood and solder boiler end around. The cab end sits into an etched rebate. This projecting rebate will then represent the L angle iron when the half etch band is soldered around the boiler.



Smoke box end former fits inside boiler barrel.

Half etched band

Wider band with central full metal strip

Wider band with central full metal strip

Narrower band fits about 1mm short of boiler end.

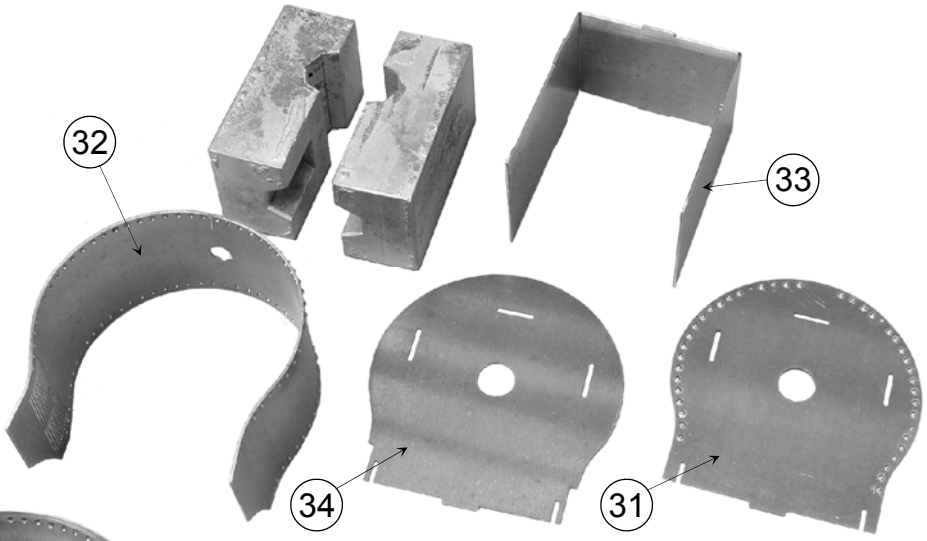
29

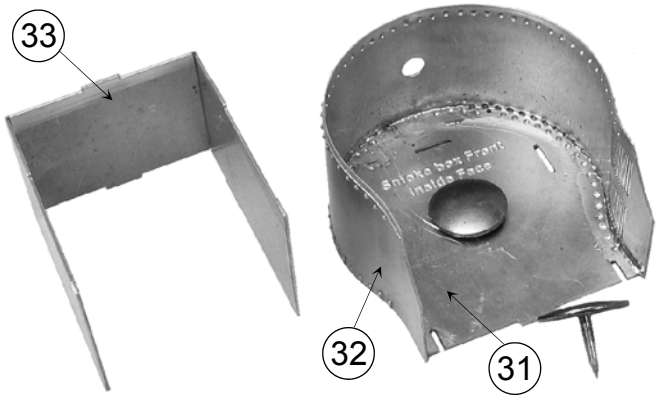
Ballast weight is best fitted into boiler barrel after uniting with smoke box assembly but check that it will slide freely inside as overlap joint is soldered

Stage 3 *continued*
Smokebox Sub Assembly

If required emboss rivet heads on front and wrapper to match your chosen prototype loco.

Then pre form the wrapper by working with fingers and thumbs around off cuts of tube.

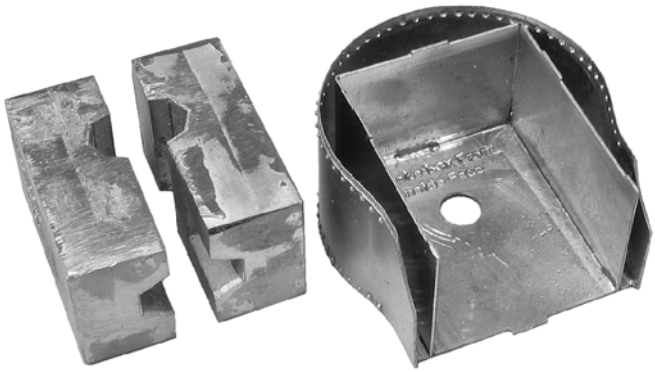


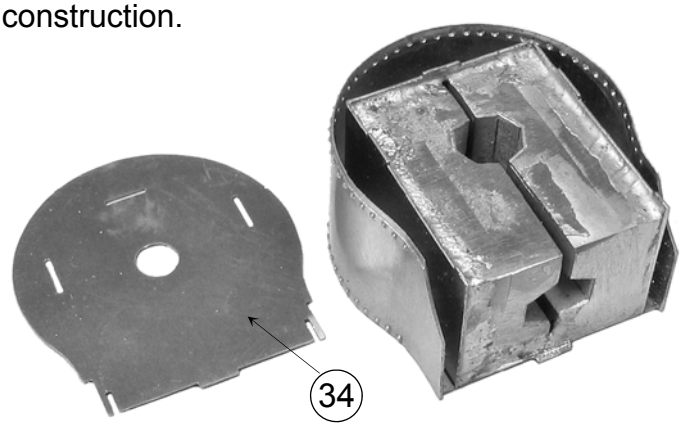


Pin the smoke box front to a block of wood so that it will act as former as you solder the wrapper around it *(the edge of the wrapper needs to be flush with the front and the embossed rivets may prevent this. I suggest a piece of soft card between front and wood block so that the rivets will sink into it)*

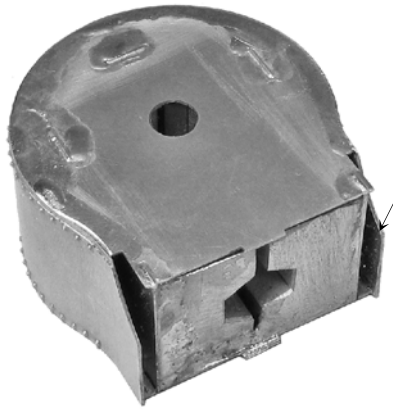
Fit spacer so that it will support the rear plate flush with or slightly below the side wrapper.

0-4-4 tank locos are notorious for requiring experimentation with ballast weights so I have provided some that can be built in during construction.





You can build in these weights now and then fit the smoke box rear plate *(but they will become a heat sink)* or check now that they will slide in freely and fit after uniting boiler and smoke box.



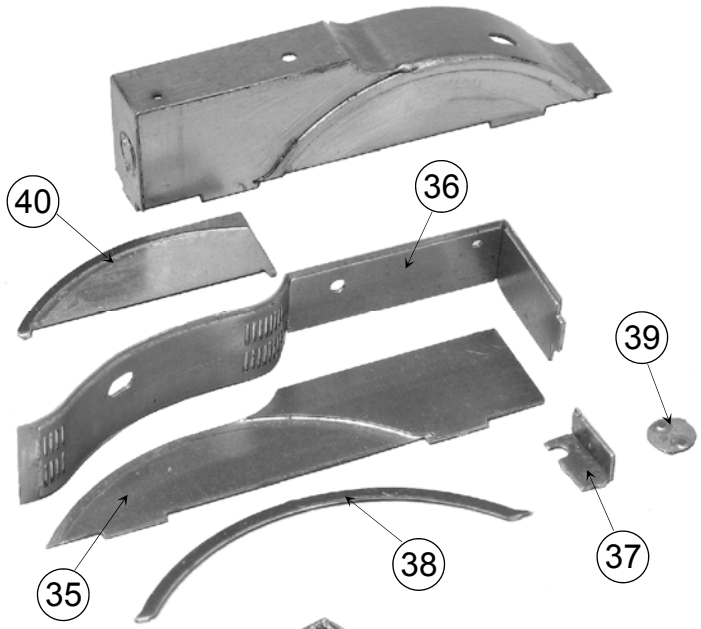
Fit smoke box rear plate and then dress joint with wrapper flush.

The wrapper is slightly over length so file off excess level with front/rear.

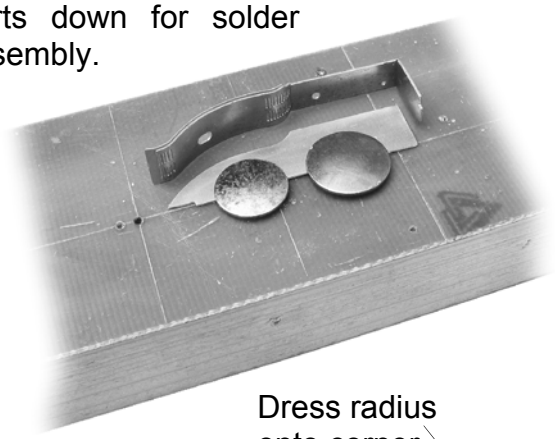
Offer boiler and smoke box assemblies to main construction to ensure you are happy with their position and appearance.

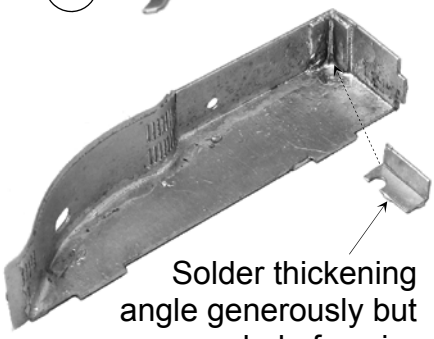
When you are happy, the inner tanks (parts 25) can be soldered firmly into position.

Stage 3 *continued* Sand box & Splasher Assembly

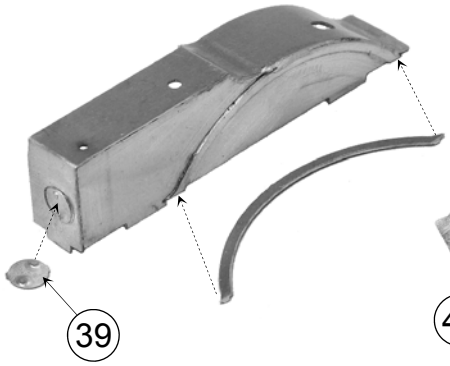


A very useful item is a block of soft wood with some single sided Printed Circuit Board pined to it insulation side upwards. With a grid of scribed lines and strategic holes I find it an ideal surface for pining parts down for solder assembly.

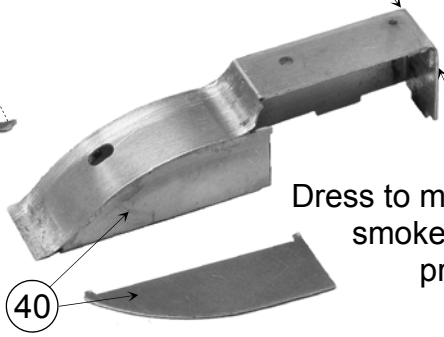




Solder thickening angle generously but ensure hole for wire peg remains clear.

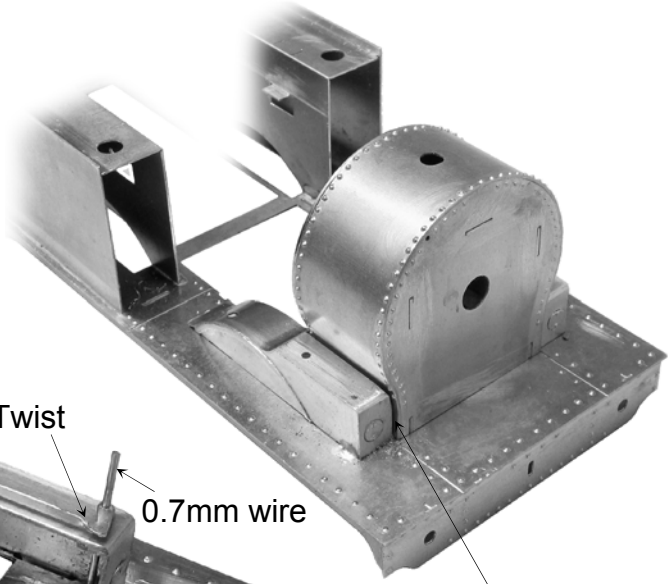


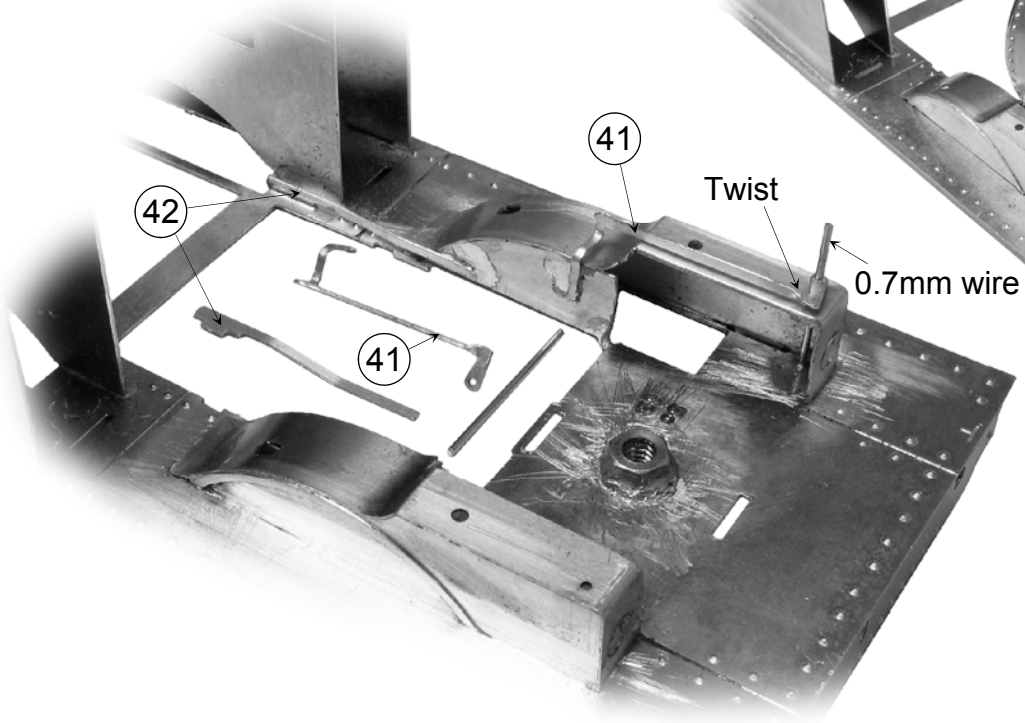
Dress radius onto corner



Dress to match smoke box profile

Use smoke box sub assembly to position sandbox/splashers onto footplate. Dressing with a file as required to match smoke box profile.

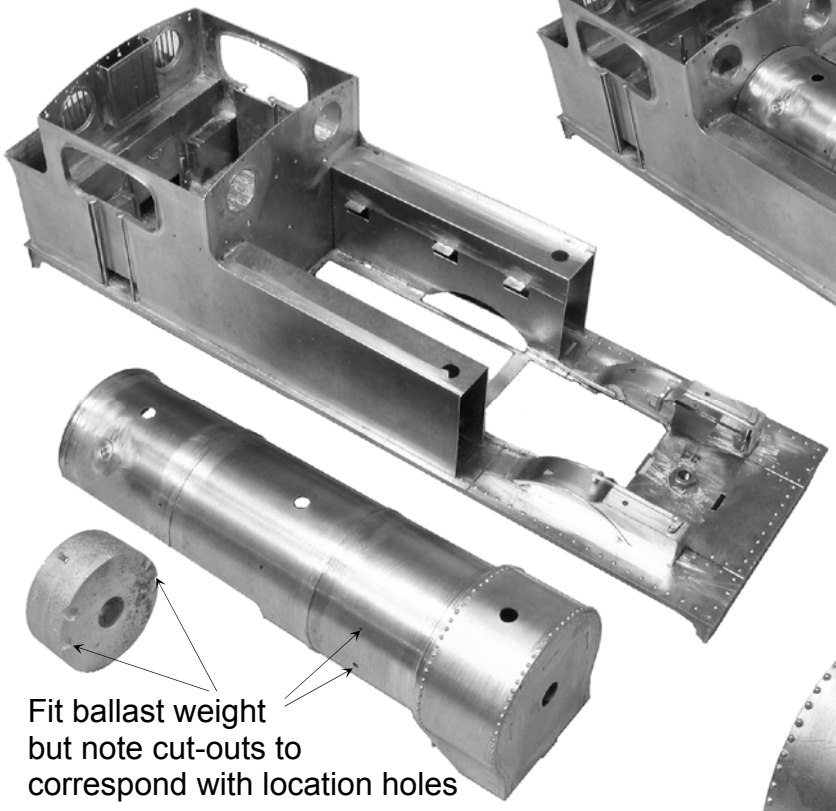




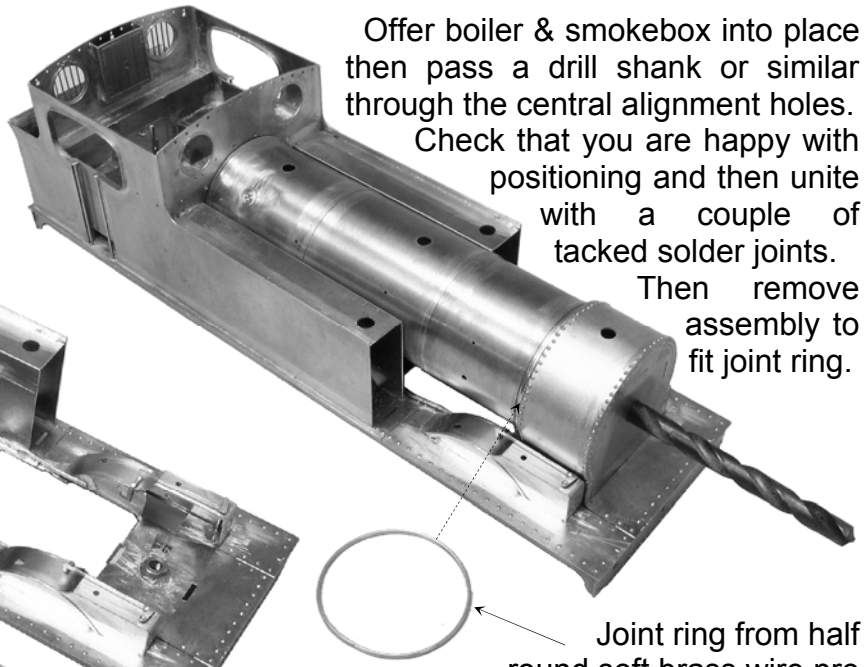
On the prototype loco the sand boxes were separate fabrications and a crack is visible between them and the smoke box.

Then fit sand box linkage rods.

Stage 3 *continued*
Smokebox & Boiler



Fit ballast weight but note cut-outs to correspond with location holes



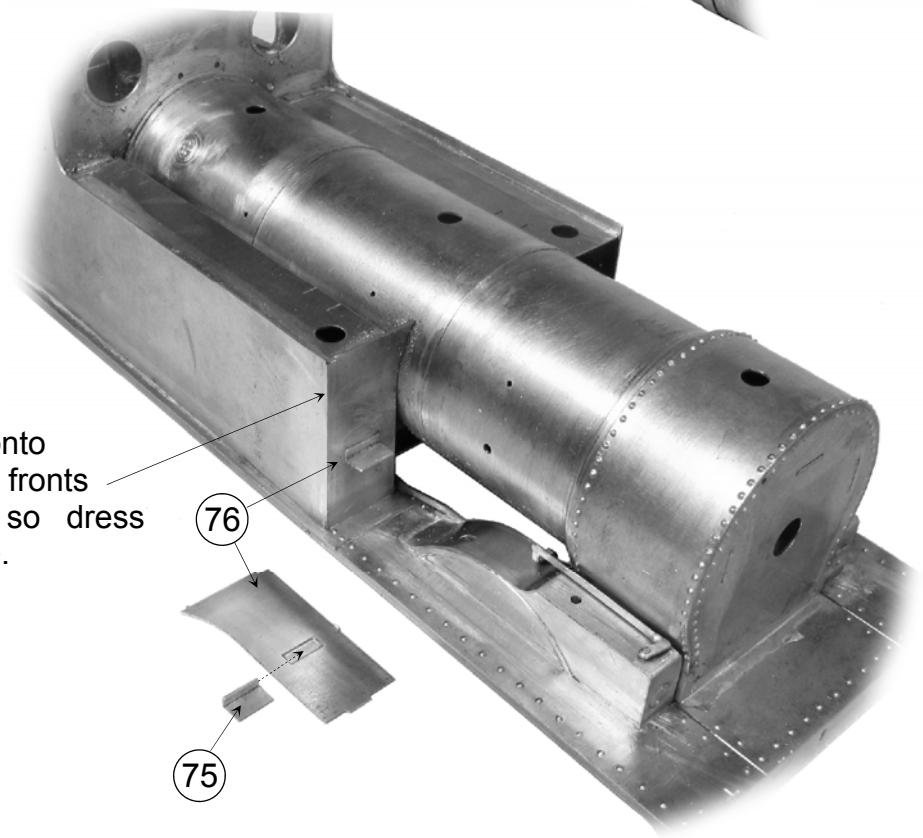
Offer boiler & smokebox into place then pass a drill shank or similar through the central alignment holes. Check that you are happy with positioning and then unite with a couple of tacked solder joints. Then remove assembly to fit joint ring.

Joint ring from half round soft brass wire pre formed around tube. Solder generously and clean back to blend in.

I would now recommend starting chassis construction. As with the boiler & smokebox removable wheel clearances and motor position can be checked and adjusted with ease.

Stage 4

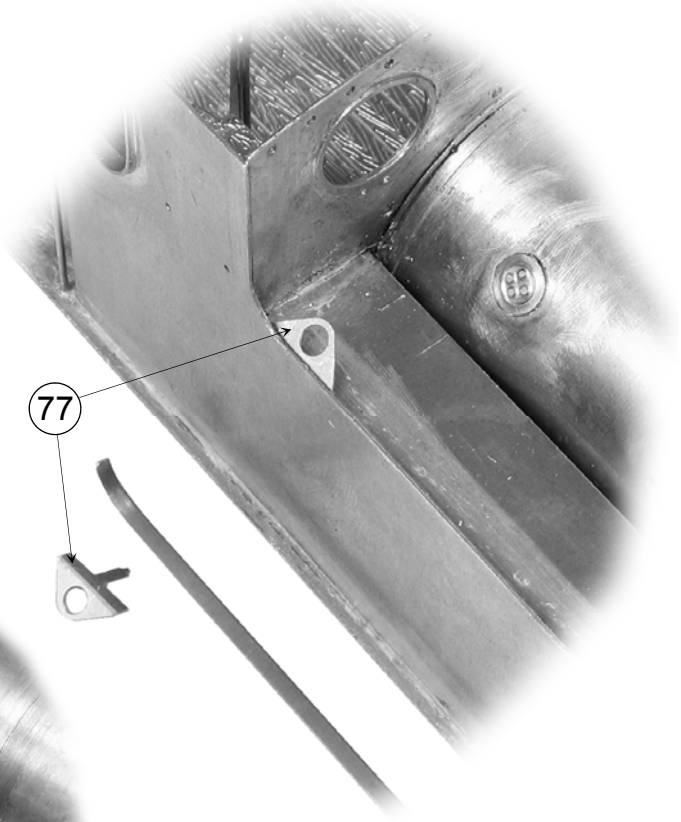
When you are confident with the fit & running of the chassis. Body construction can continue by soldering the boiler & smokebox firmly into place. Then fit tank fronts.

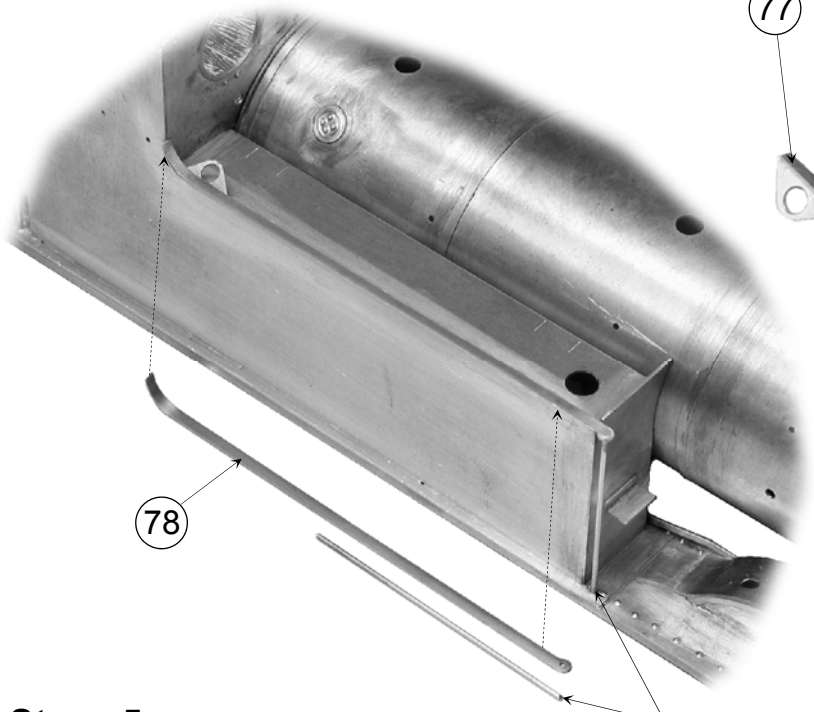


Locate half etch rebate onto end of tank side. The tank fronts are slightly over wide so dress corner flush with tank side.

Fold tank lifting shackle plates about 45° and fit into location holes on left & right tank tops. They must sit below the top edge of the tank side to provide clearance for the tank side top beading. File bottom edge to achieve this.

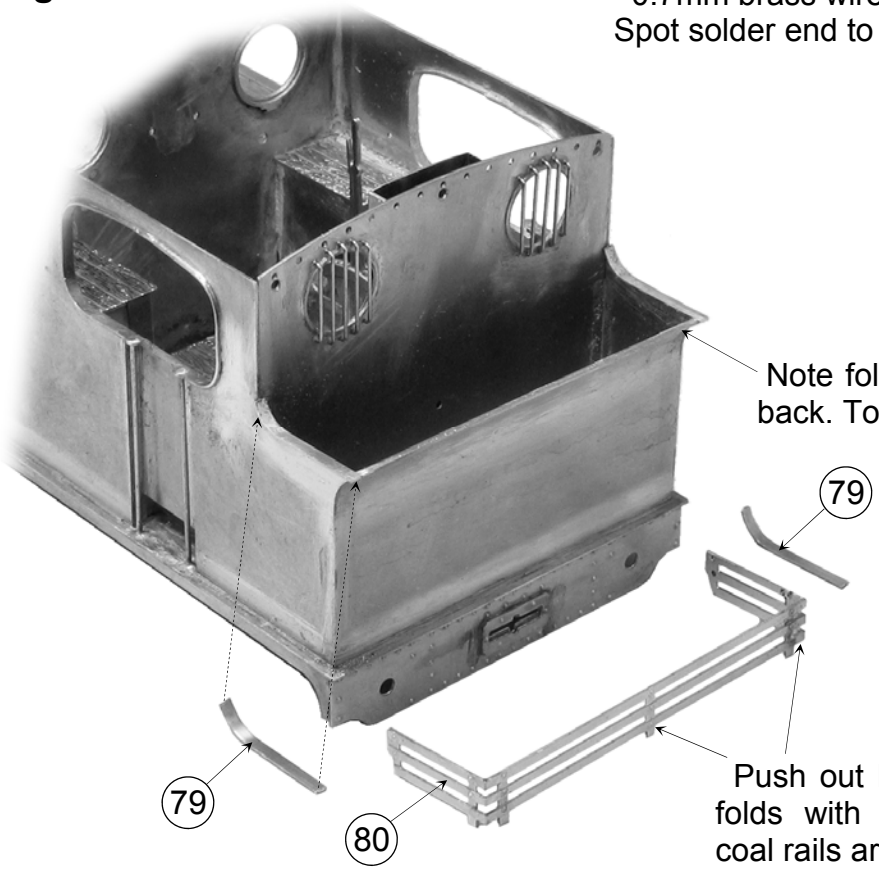
If fitting tank top air reservoir for I-O-W locos do not fit shackle plate to left hand tank top.





0.7mm brass wire handrail
Spot solder end to footplate

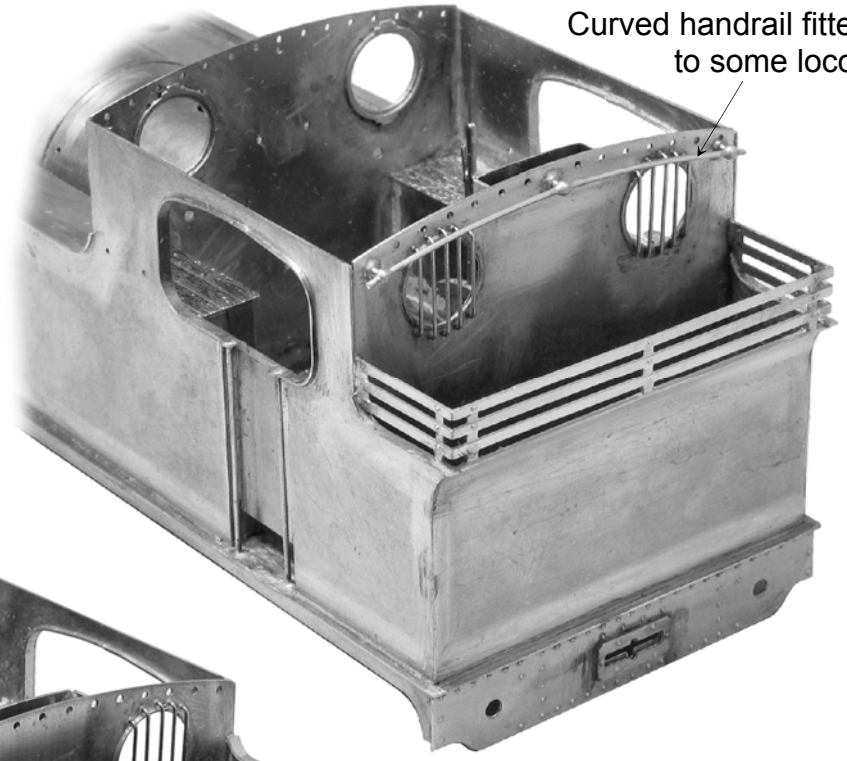
Stage 5

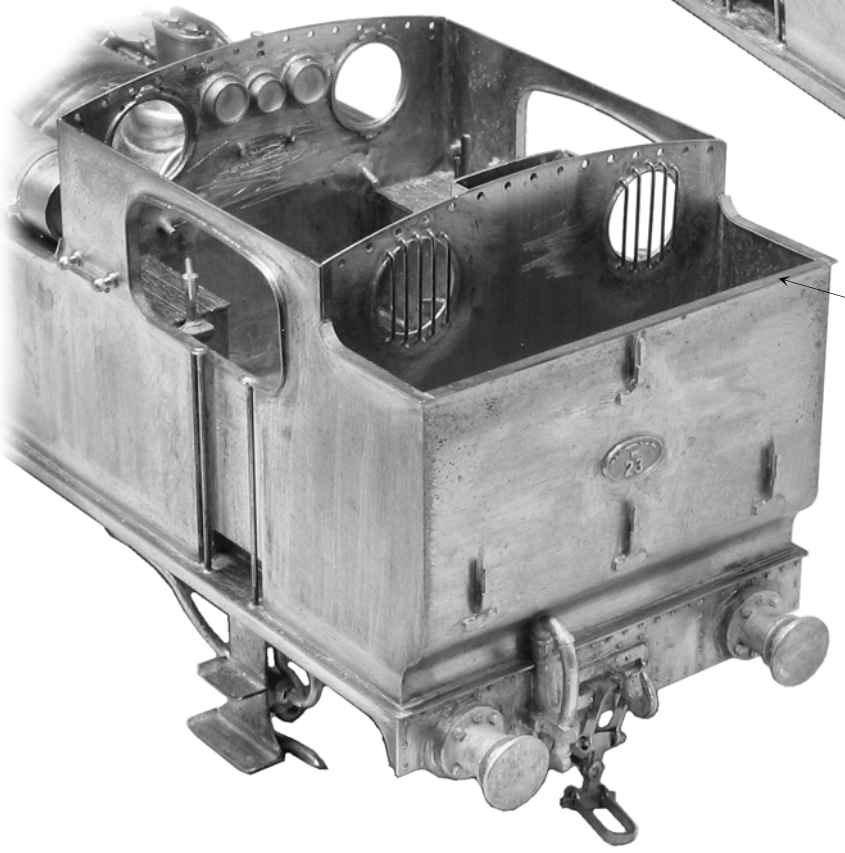


Note fold over beading only on bunker back. Top beading on sides only.

Push out bolt heads & reinforce corner folds with solder. Alternative plated in coal rails are also provided.

Some locos had a curved handrail fitted. This handrail is shown on original GA drawing but may have been removed on some locos in later years. It does not appear to be fitted on locos with large Isle-of Weight bunker.

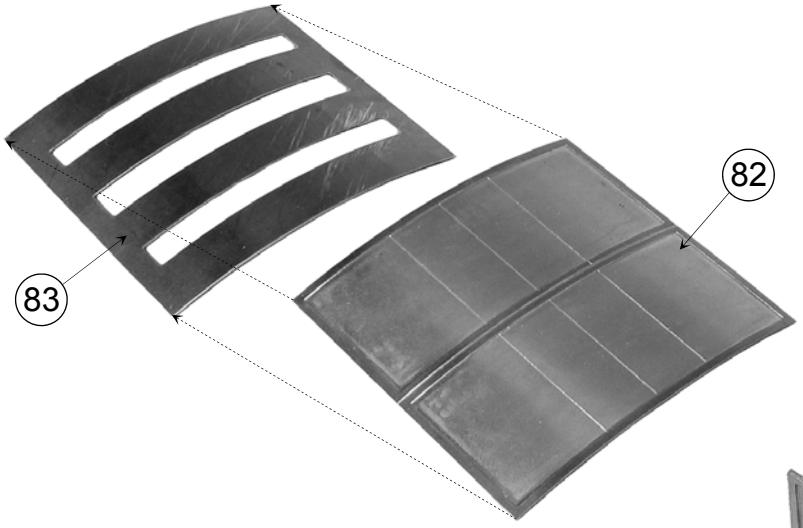




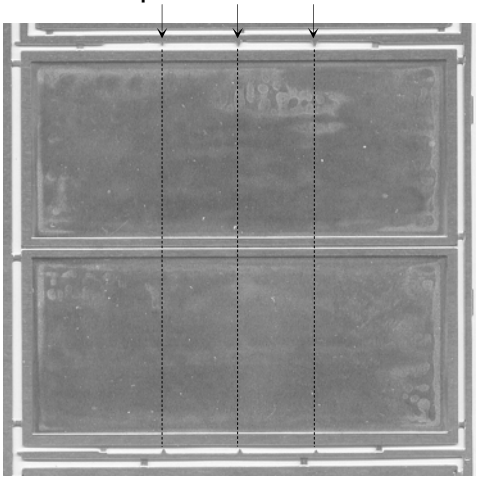
Top beading fitted on Isle-of Wight bunker. Also note lamp iron positions.

Stage 6

A number of locos were fitted with a sliding roof ventilator. This was not an original feature but appears to have been eventually fitted to all the I-O-W locos. How widespread this was on mainland locos is unclear. If fitting ventilator scribe guidelines before removing roof top from etch.

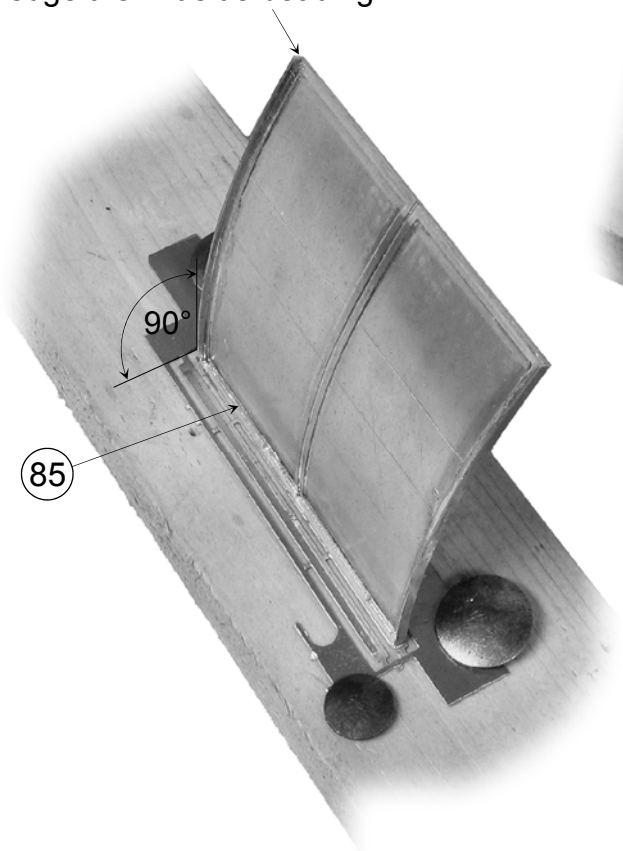


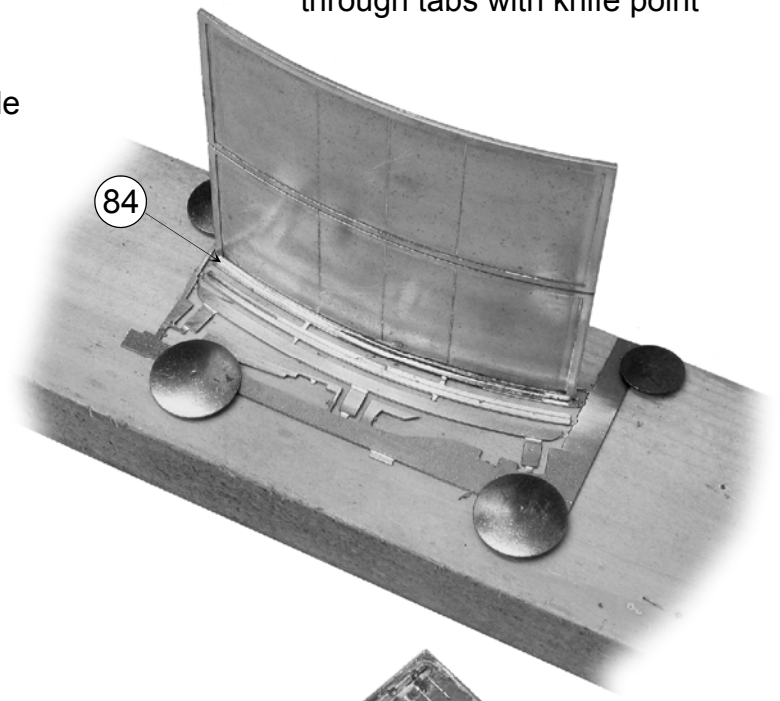
Mark points on waste etch



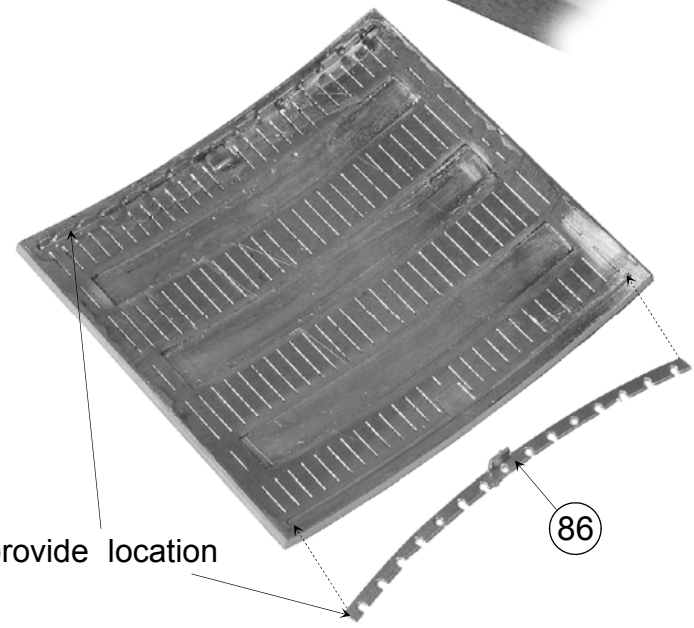
For easy fitting of side & end beading I recommend pining parts in fret to a block of wood and soldering roof into etched rebate. Then release by cutting through tabs with knife point

Dress end beading back level with side edge then fit side beading.



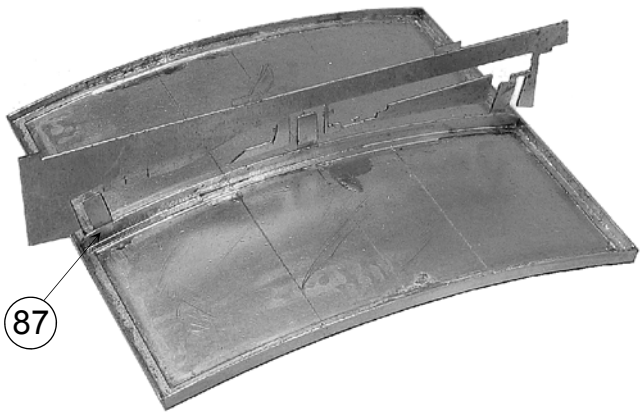


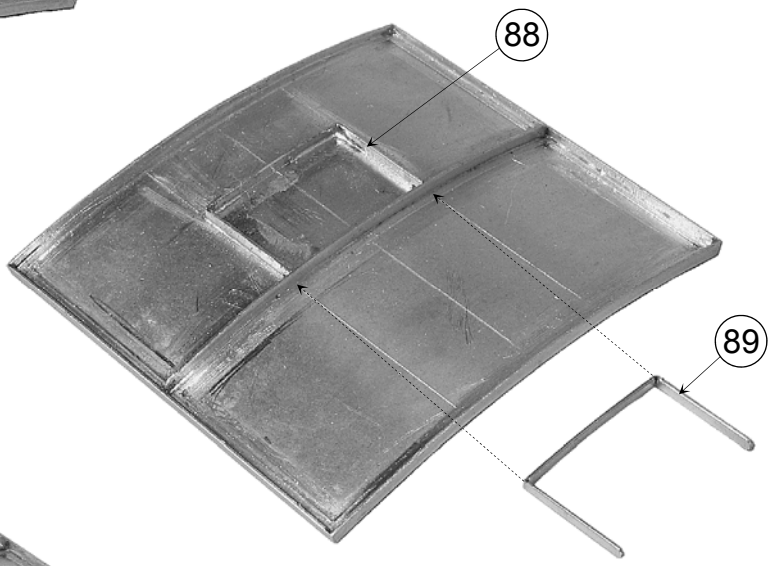
Parts for roof edge beading are repeated twice to cover mishaps.

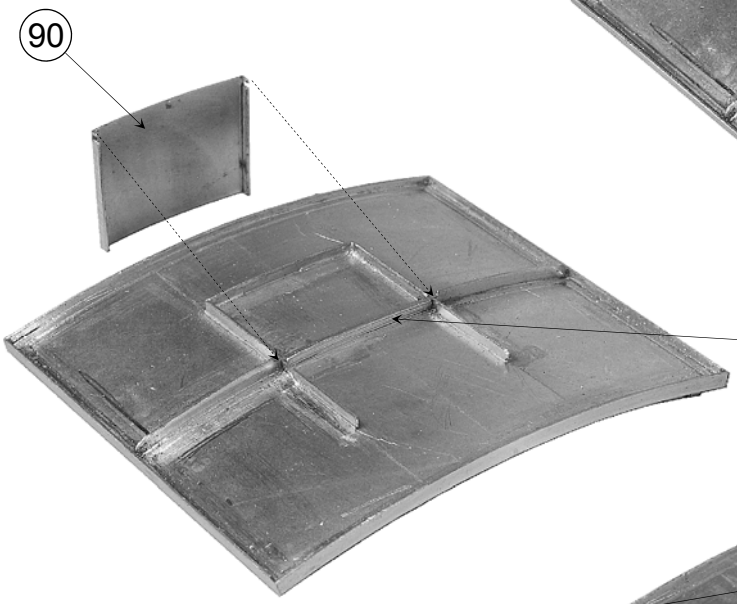


Curved strip should provide location for removable cab roof.

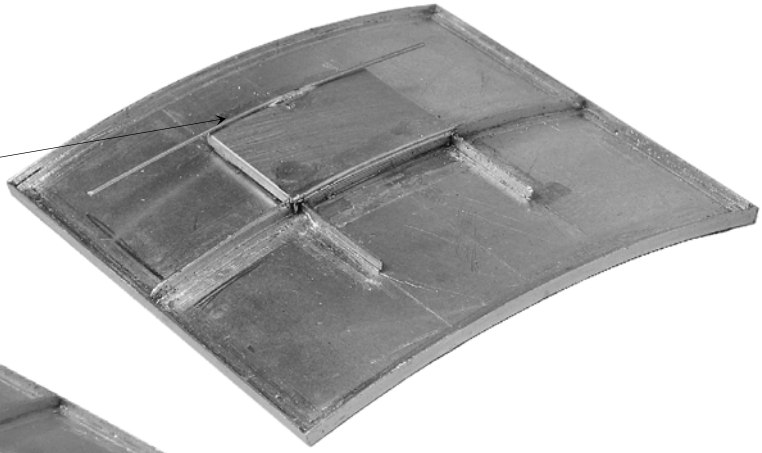
To make handling the central rib easier when soldering it square and upright into the etched groove on the rooftop. I would recommend leaving it attached to the waste fret. When soldered solid the handling pieces can be snapped off at the half etch.



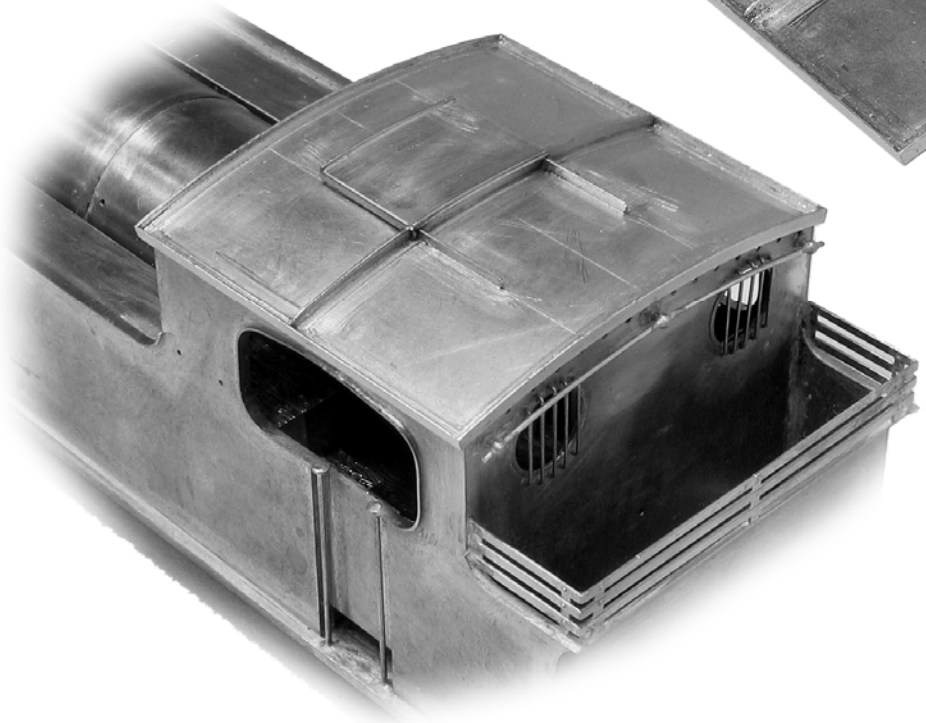




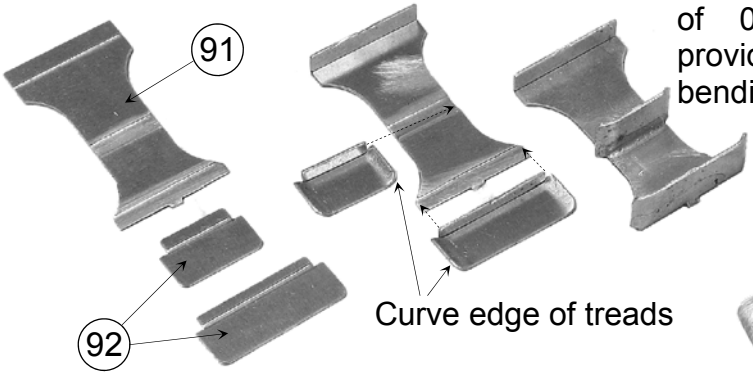
File centre of rib down to match height of sliding vent runners



Fit beading made from 24swg soft tinned copper wire

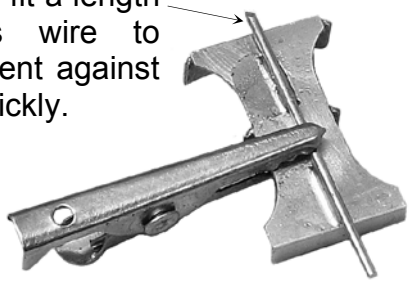


Stage 7

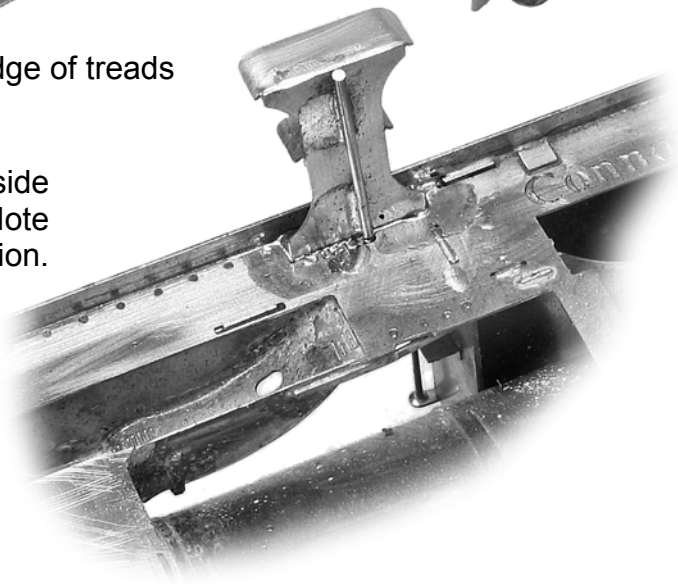


Curve edge of treads

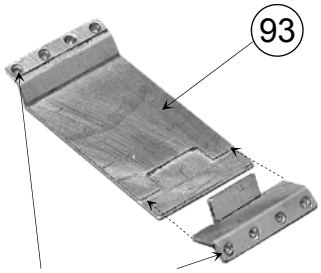
A refinement is to fit a length of 0.9mm brass wire to provide reinforcement against bending. Solder quickly.



Fit footsteps hard against inside edge of footplate valance. Note etched marks to indicate position. Solder generously.

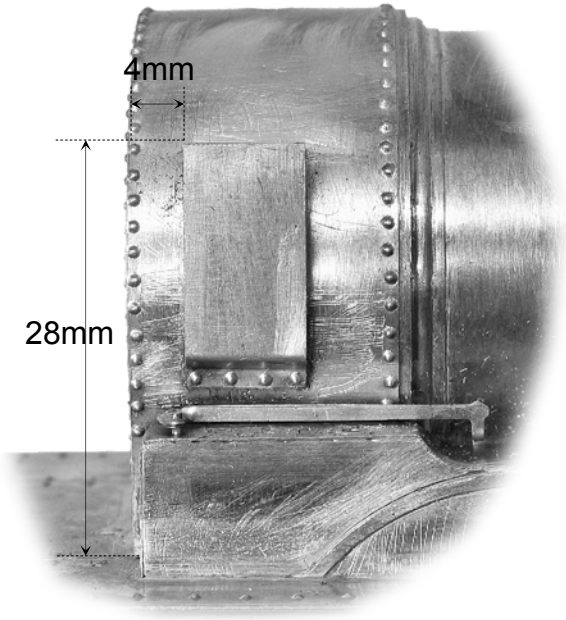


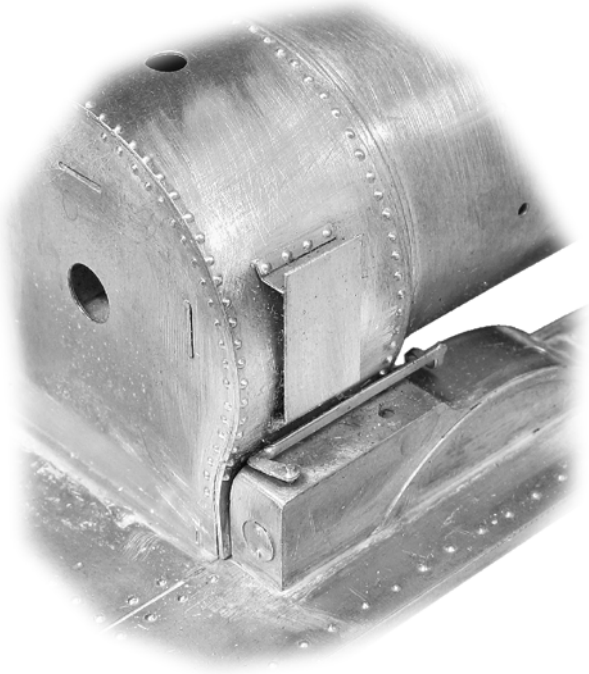
Stage 8



Emboss bolt head detail before folding.

Westinghouse brake pump mounting plate if required by your prototype loco.

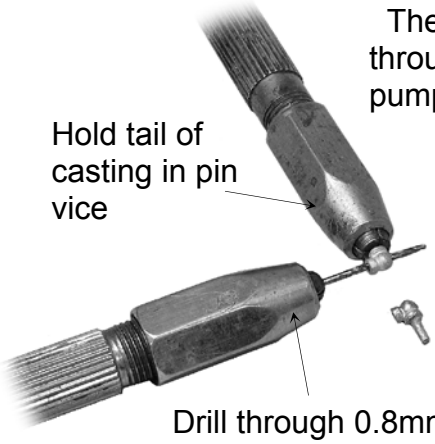




I have given dimensions but in practice I position the mounting plate by eye. The important thing is that it looks square and upright from all angles

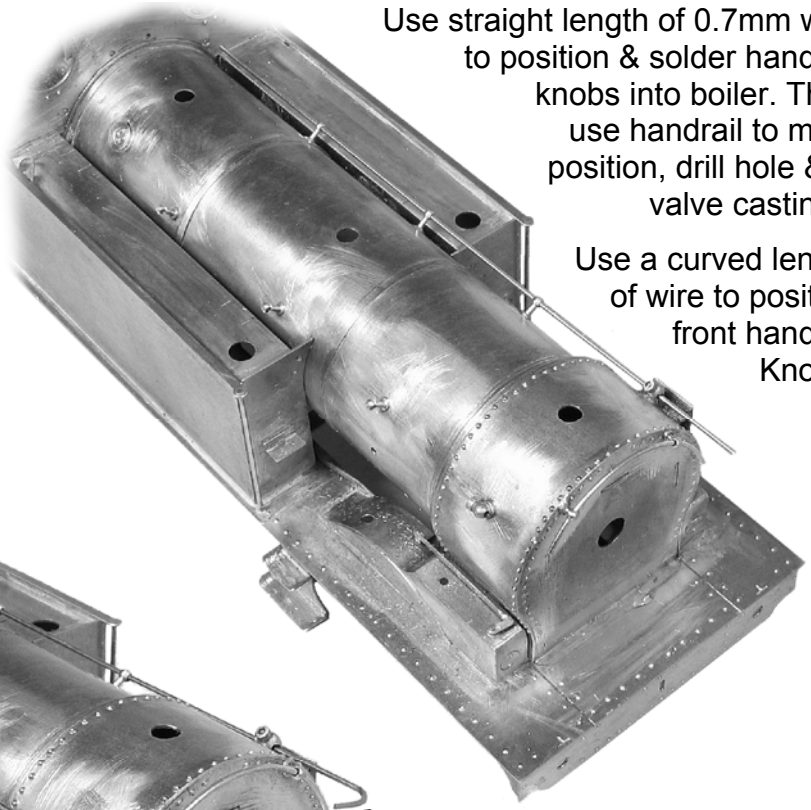
Stage 9 Fit boiler handrails. This is not the easiest of operations on most locos & modellers have different ideas of how to do it so this is only how I did it.

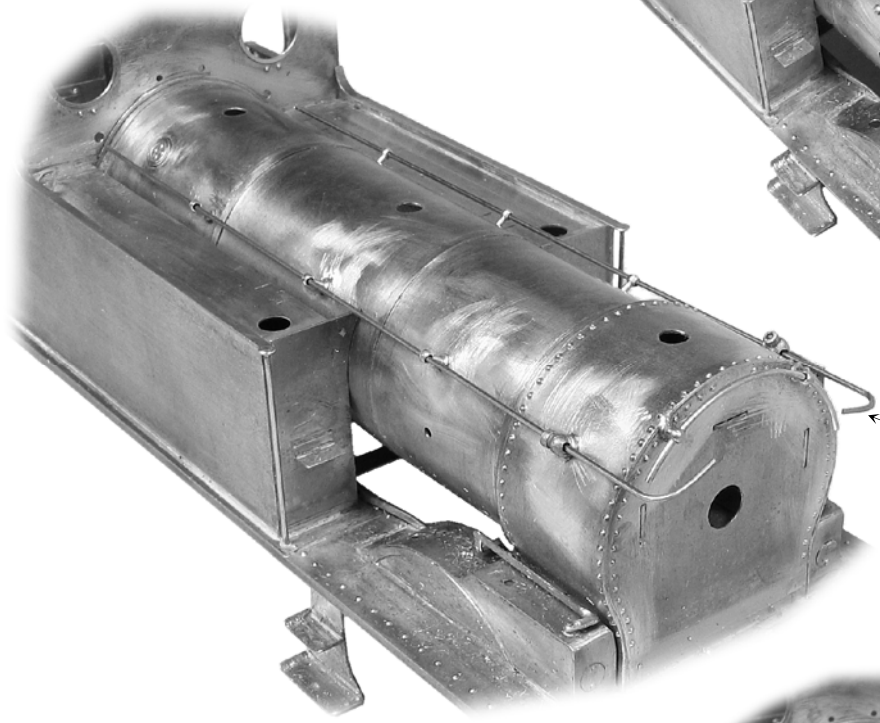
There are two cast valves on the smokebox that the handrail passes through, blower valve on R/H side fitted to all locos, Westinghouse pump valve on L/H side, so no pump then fit plain handrail knob.



Use straight length of 0.7mm wire to position & solder handrail knobs into boiler. Then use handrail to mark position, drill hole & fit valve castings.

Use a curved length of wire to position front handrail Knobs.

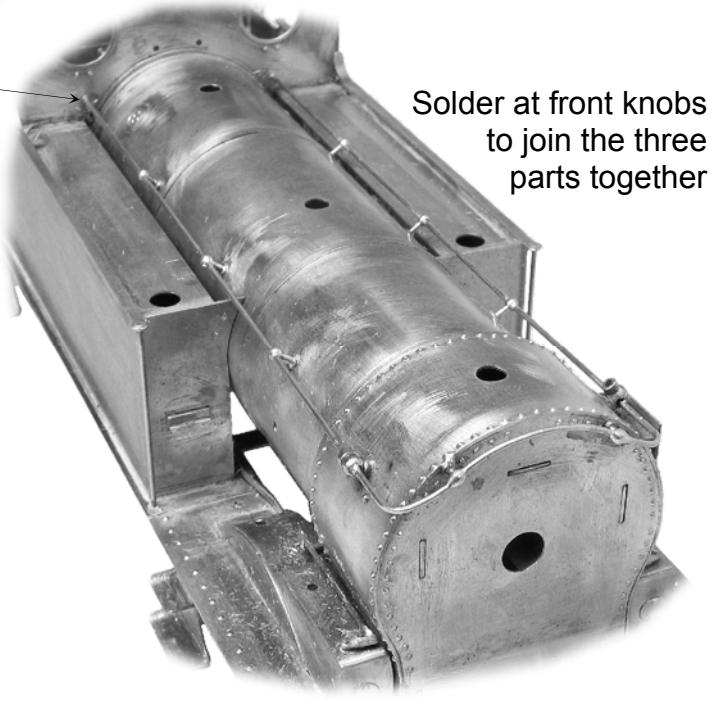




Form side handrails & trim to terminate part way into front knobs then solder at boiler knobs. Then trim curved front handrail to spring into knobs.

Spot solder wire to cab front

Solder at front knobs to join the three parts together

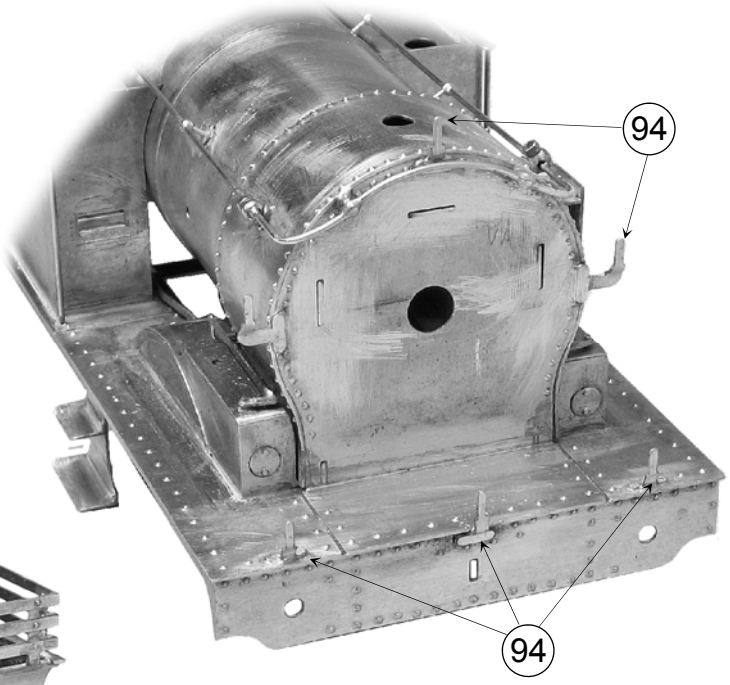


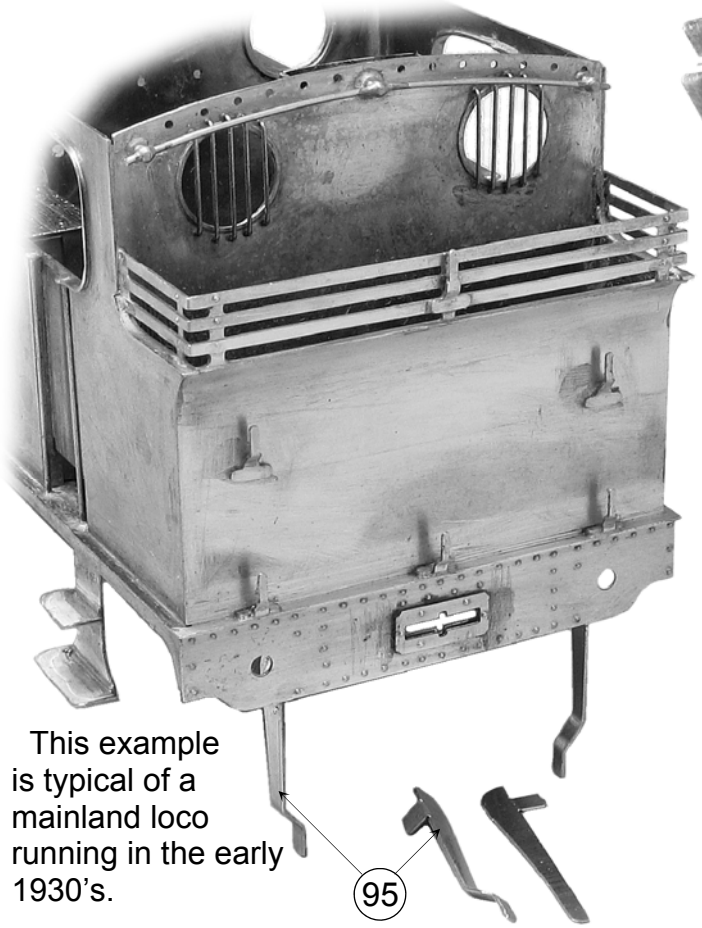
For boiler handrails you will require six long knobs & two (three) short for smokebox.

Fit cab side handrails using short knobs

Stage 10

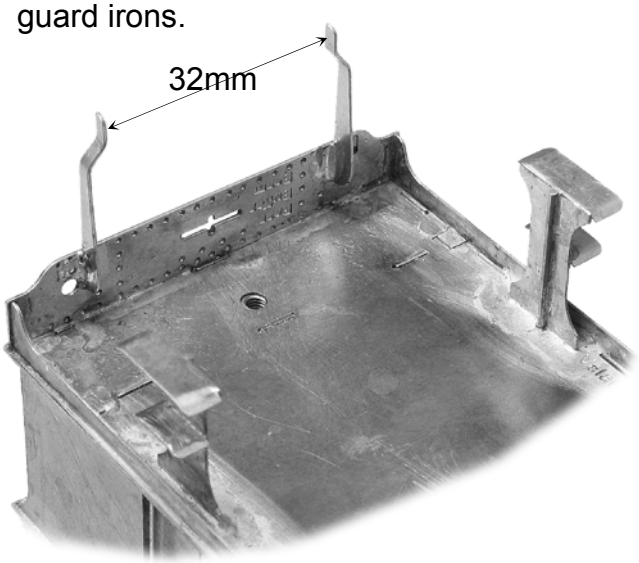
The number and precise length & shape of lamp brackets appeared to vary between locos and periods so work from photos of your chosen prototype. I have provided a generous selection of different shaped brackets that with a little bending and tweaking should provide for all your requirements.



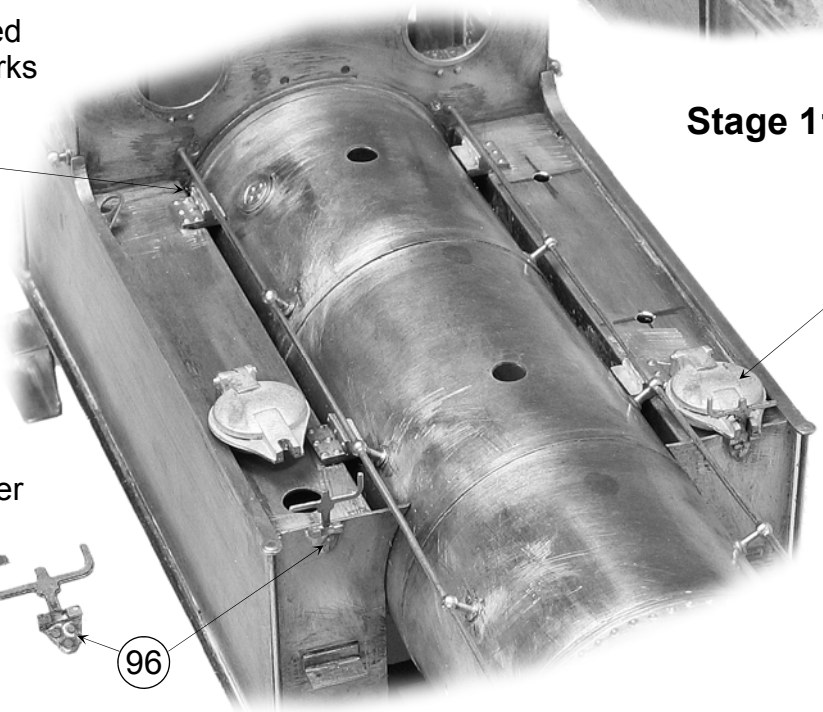


This example is typical of a mainland loco running in the early 1930's.

Rear guard irons were originally fitted to rear buffer beam but removed on some locos in later years if fitted with bogie guard irons.



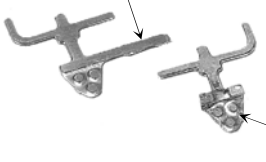
Note etched location marks for brackets



Stage 11

Locate filler onto etched handle & secure with blob of Araldite on underside (peg may require slight dressing with file)

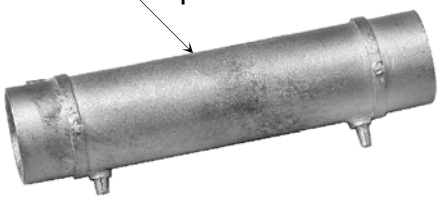
Fold over



Early Tank Fillers

Later Tank Fillers

Stage 12 Fill & file moulding line if required



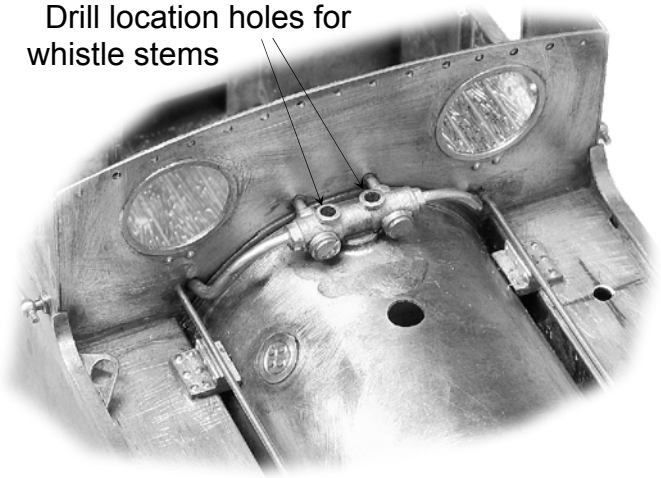
20swg tinned wire

Drill 0.8mm & dress edge so end caps fit freely into cylinder, secure with Araldite

Drill location holes for cylinder & secure with Araldite

Steam Manifold

Drill location holes for whistle stems

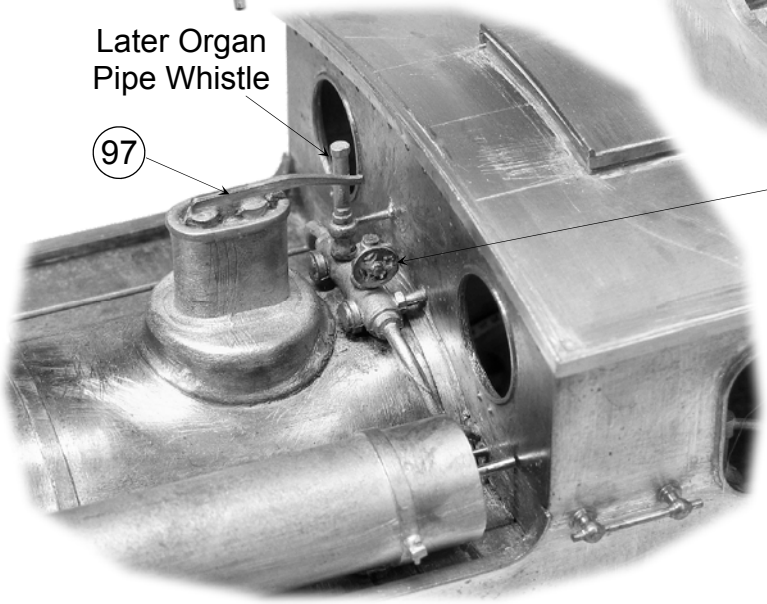


Original Twin Whistles

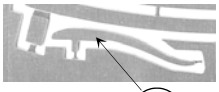
Trim tails & spot solder to cab front

Later Organ Pipe Whistle

97



To represent valve fitted on some locos, cut off top of original whistle, fit at 90°, solder etched handwheel onto wire tail.

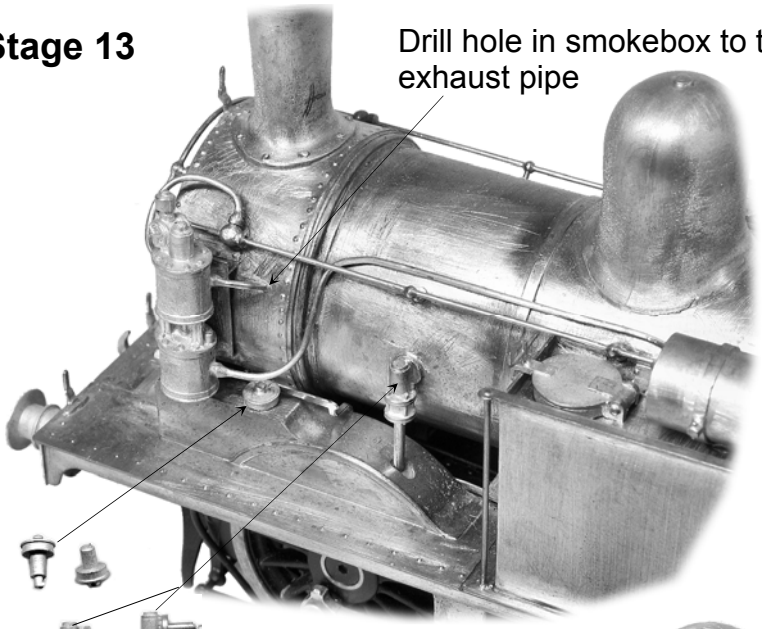


97

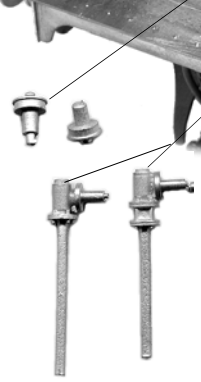
Safety Valve

Stage 13

Drill hole in smokebox to terminate exhaust pipe

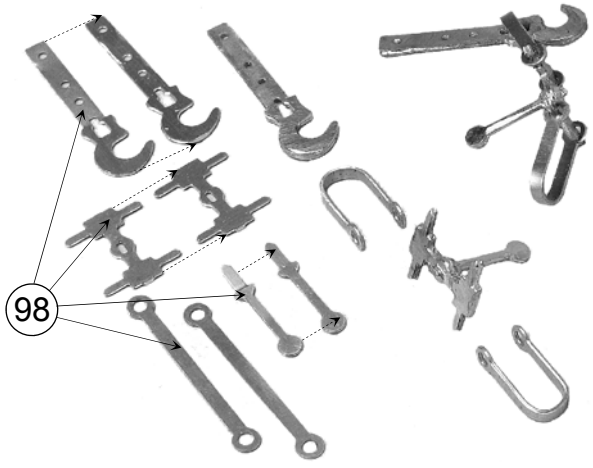


Drill 0.8mm diameter holes into casting to provide firm fixing for 20swg soft tinned wire pipework

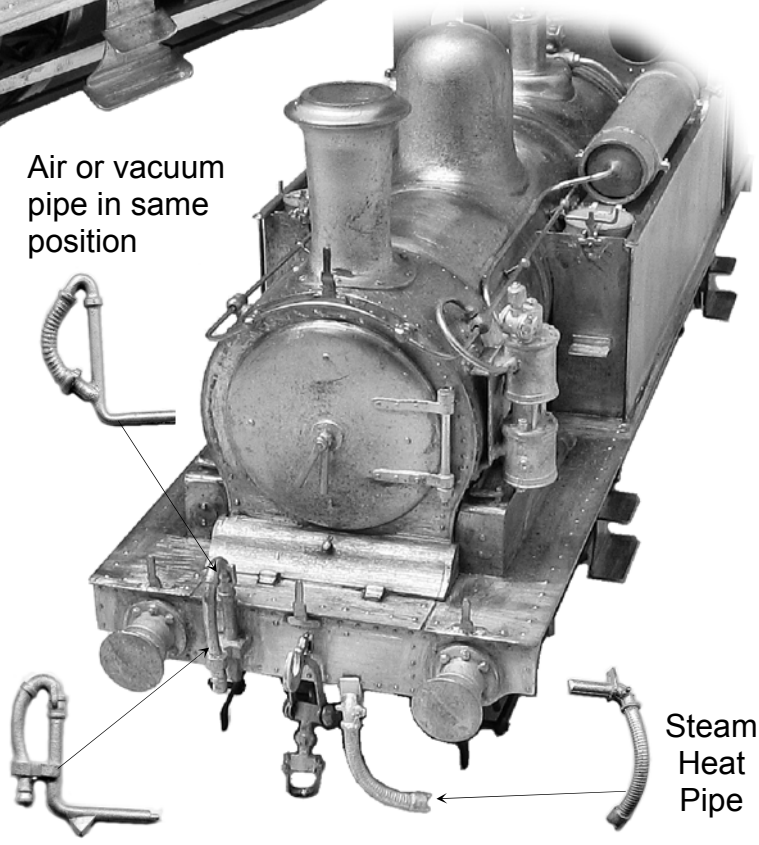


Track pin handle

Air or vacuum pipe in same position



98



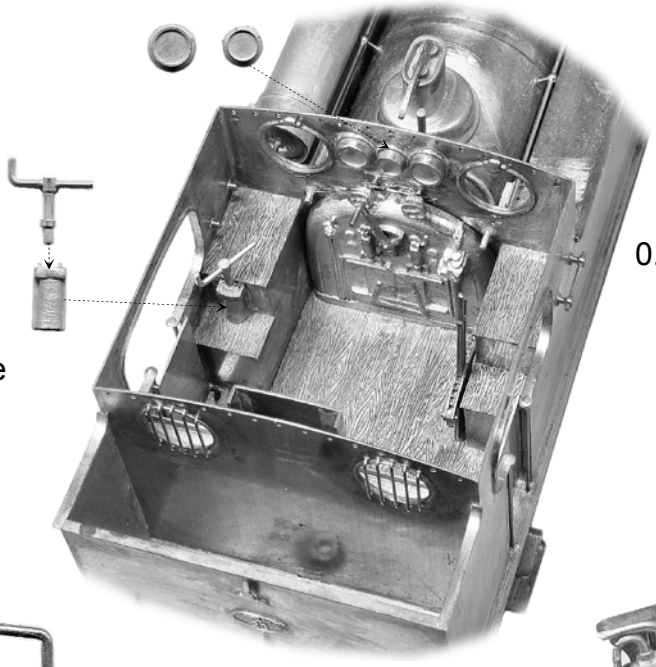
Steam Heat Pipe

Fit assembled coupling into buffer beam slot & solder tail solid at rear. Then snip of excess tail.

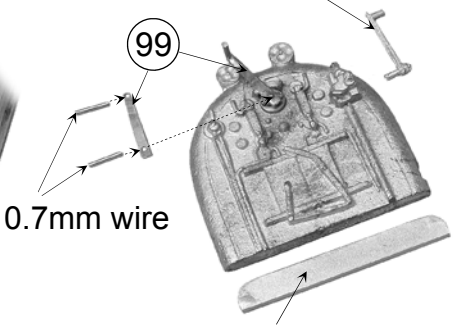
Stage 14

I recommend gluing finished & painted backhead into cab as a last job on finished loco.

Locate cast body into etched rebate



Alternative cast regulator

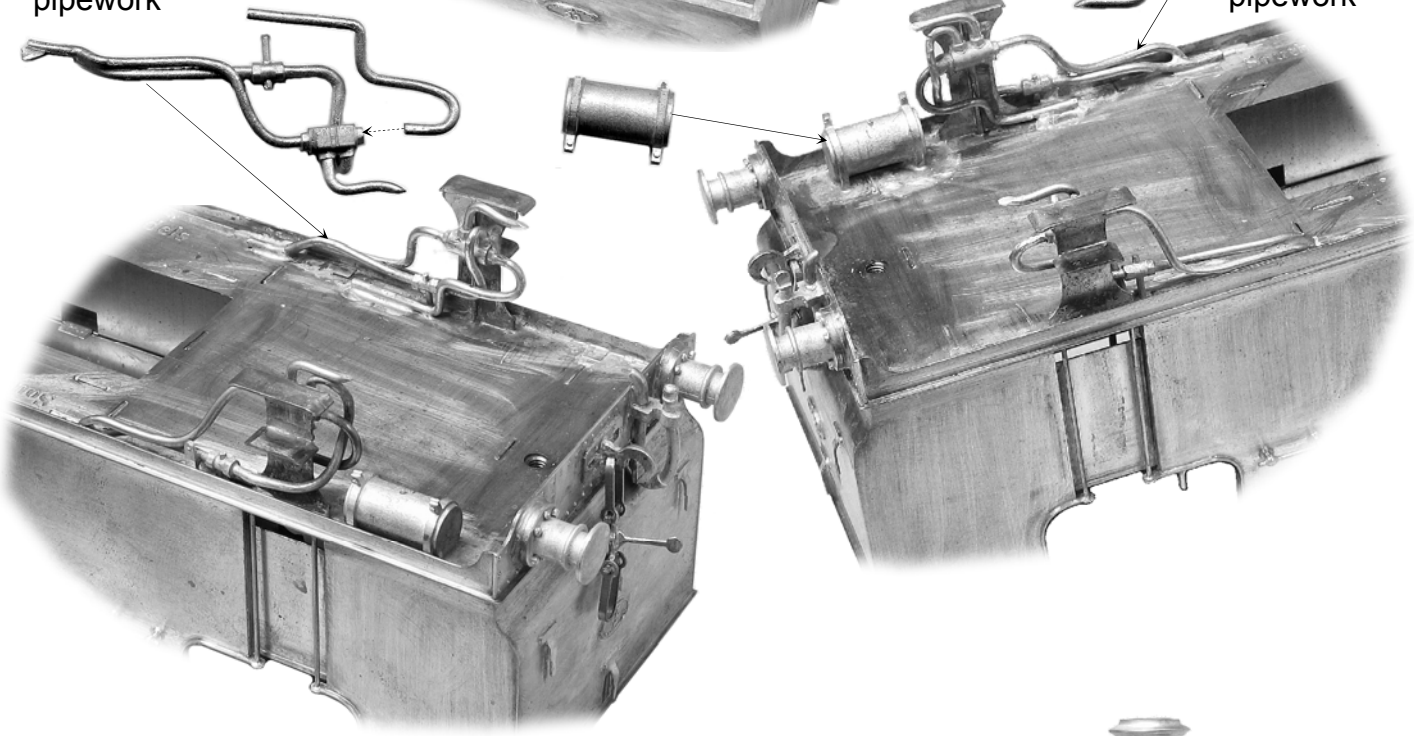


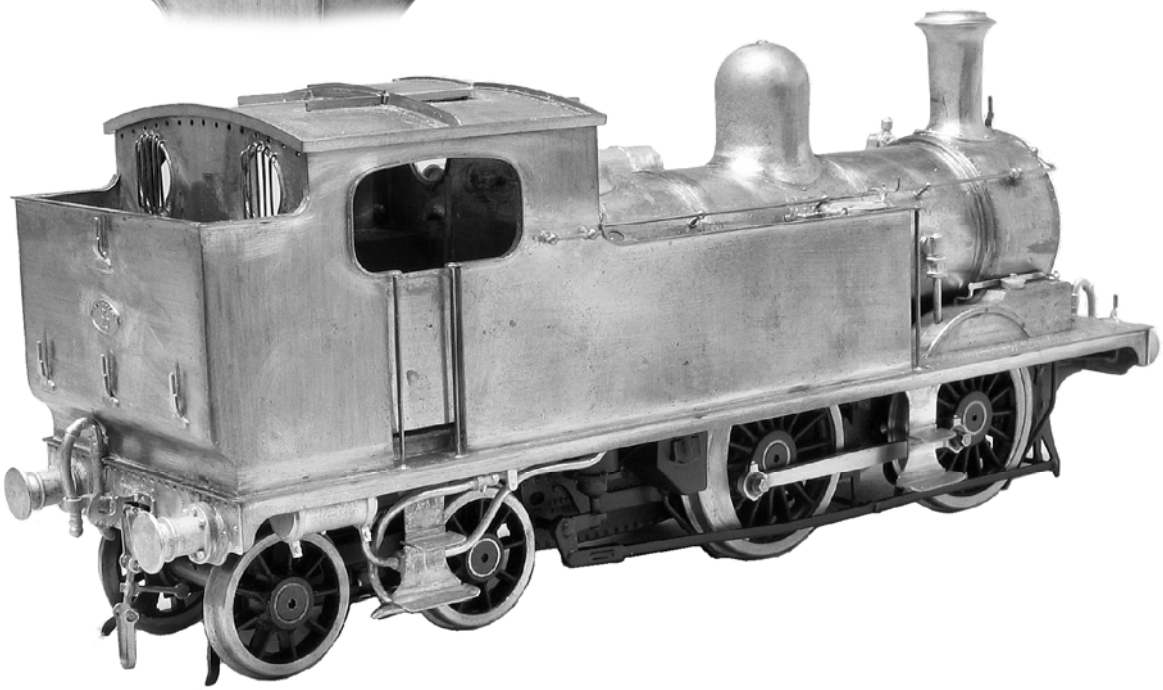
Backhead height spacer

Stage 15

L/H injector pipework

R/H injector pipework





Southern Railway Class 02