

CONNOISSEUR MODELS

LNER Class B12/3

Locomotive Assembly Instructions



This kit has been designed to represent the Great Eastern built locos, in the Thompson rebuilt condition. Alternative parts are provided to build most examples of the class, from first rebuilding in 1932 until withdrawal by British Railways. The kit is not intended to cover the ten Beyer Peacock built members of the class.

This is the most complicated and ambitious kit that I have produced. In producing the instructions, I have assumed that the builder has already built one of my kits. Perhaps a simple tank loco and so is familiar with basic kit building techniques. If this is not the case then I would recommend building the tender first as this will give a good lead into the loco.

I have also assumed that the builder will be happy to do some research. To provide photographs of the member of the class that is wished to be represented. This is half the fun of modelling.

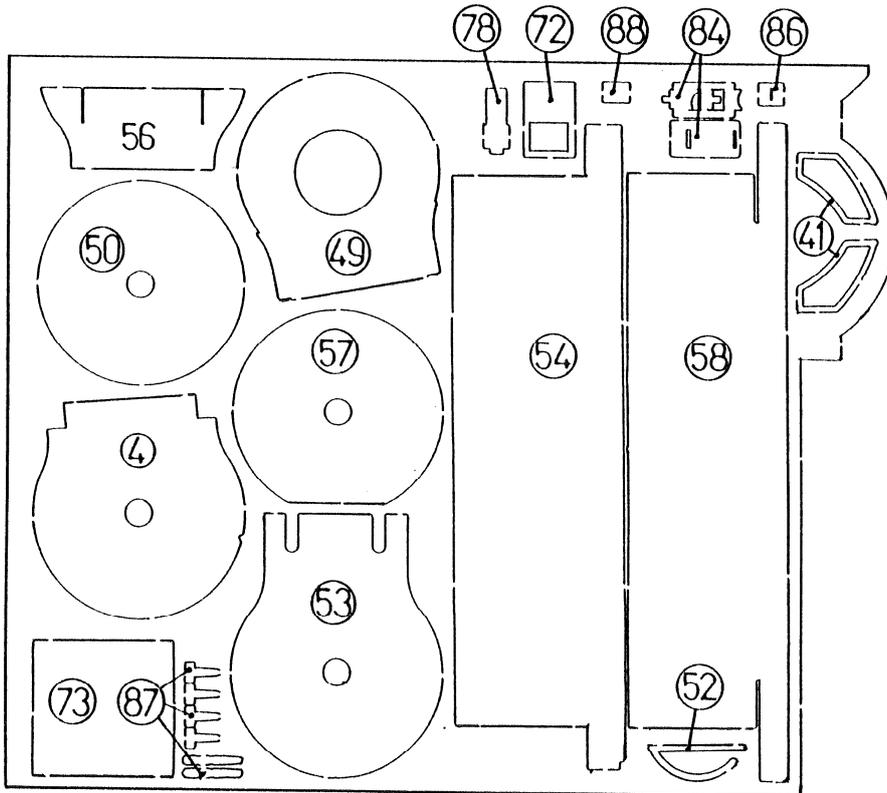
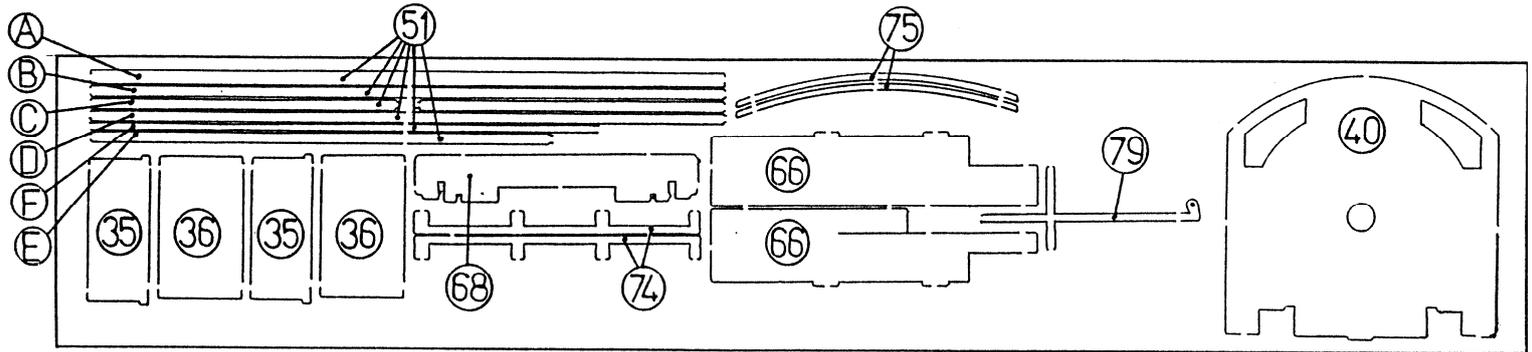
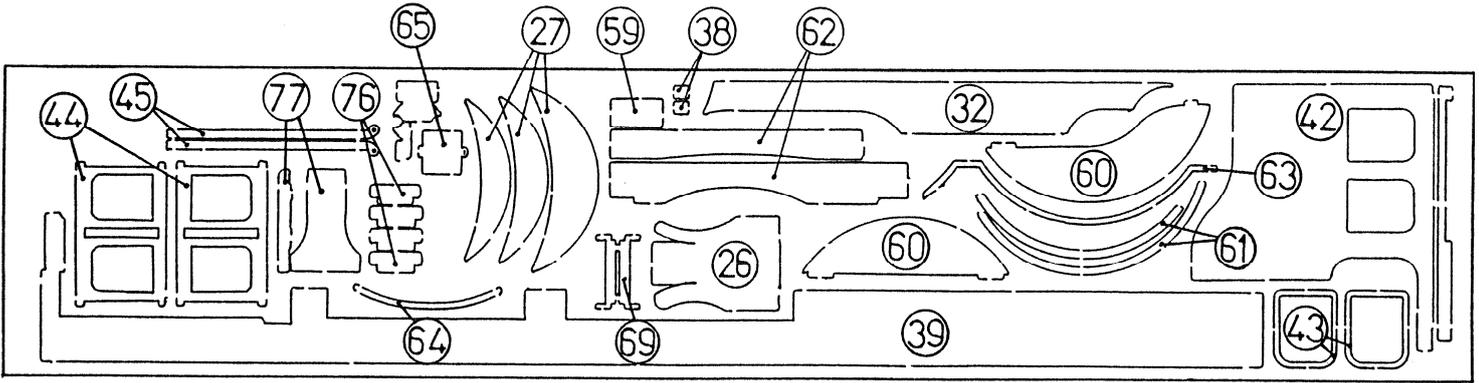
Parts Required To Complete

3 Sets 6'6", 20 Spoke Driving Wheels (Slater's Catalogue Numbers 7878GE)
2 Sets 3'3", 10 Spoke Bogie Wheels (Slater's Catalogue Numbers 7839)
3 Sets 4'1", 10 Spoke Tender Wheels (Slater's Catalogue Numbers 7848GE)
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.

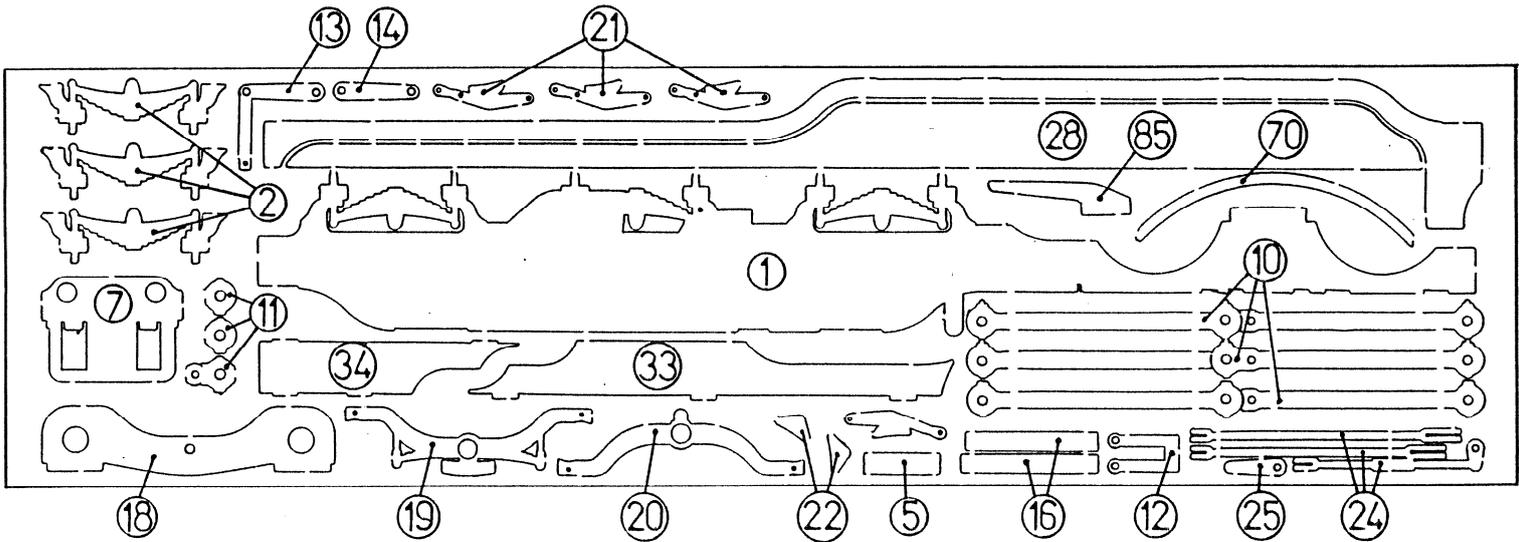
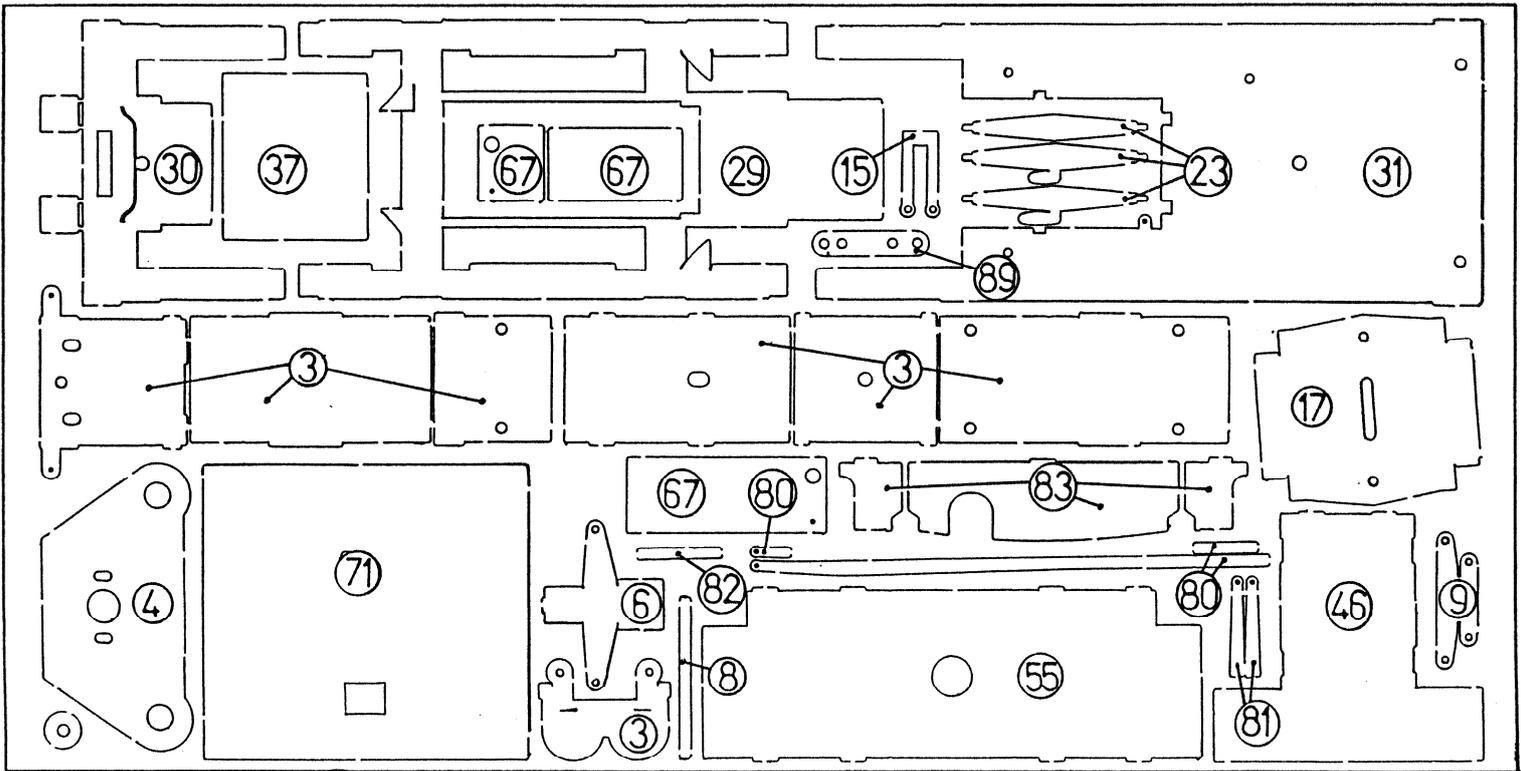
**Connoisseur Models, 1 Newton Cottages, Nr Weobley,
Herefordshire, HR4 8QX, Telephone 01544 318263
Proprietor Jim McGeown**

Brass Etched Parts Identification

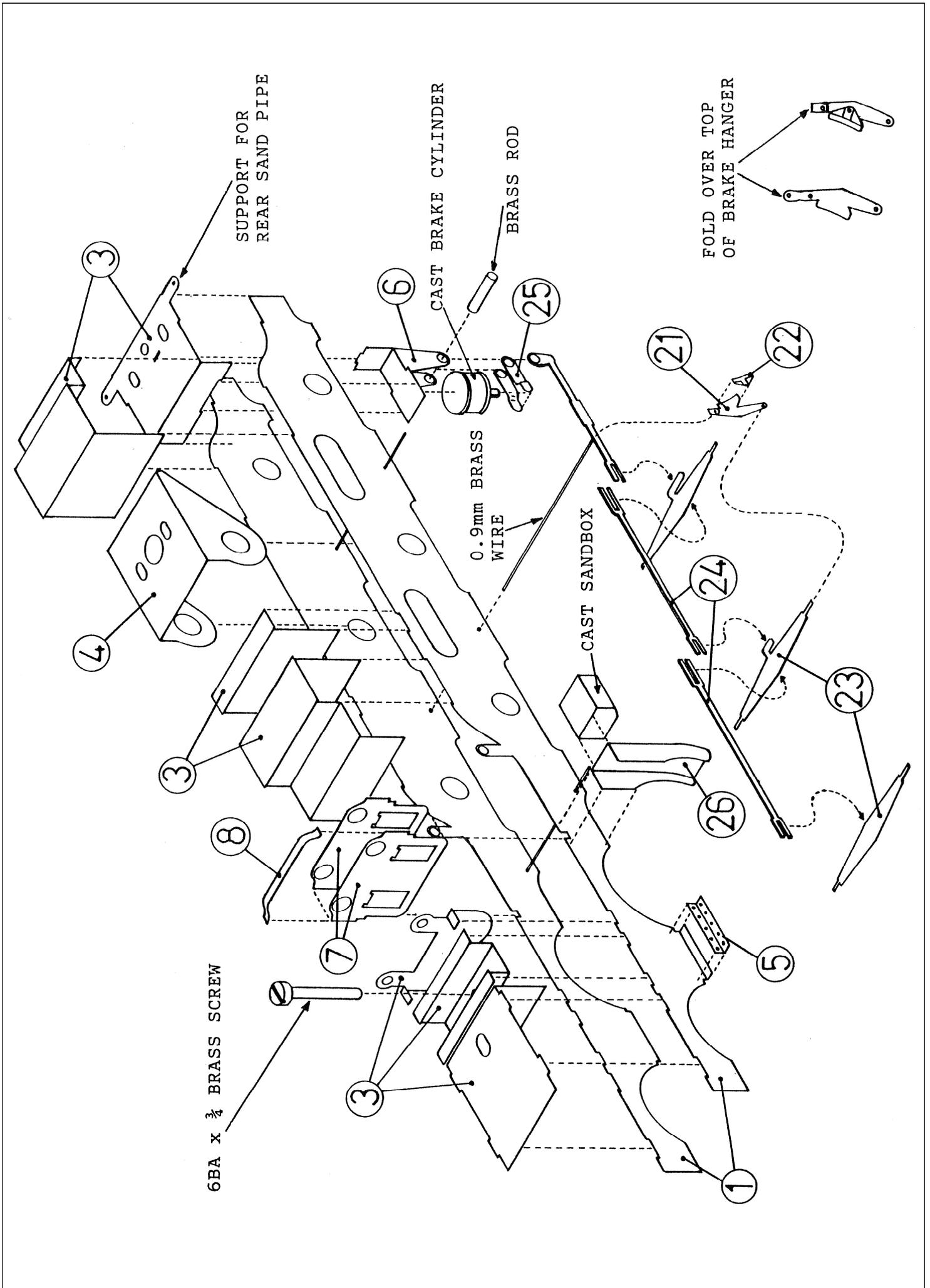
Sheet containing cab side (part 42) is repeated photographical as a mirror image to provide Left Hand & Right Hand parts.



Nickel Silver Etched Parts Identification



Sheet containing coupling rods (parts 10) is repeated photographical as a mirror image to provide Left Hand & Right Hand parts.

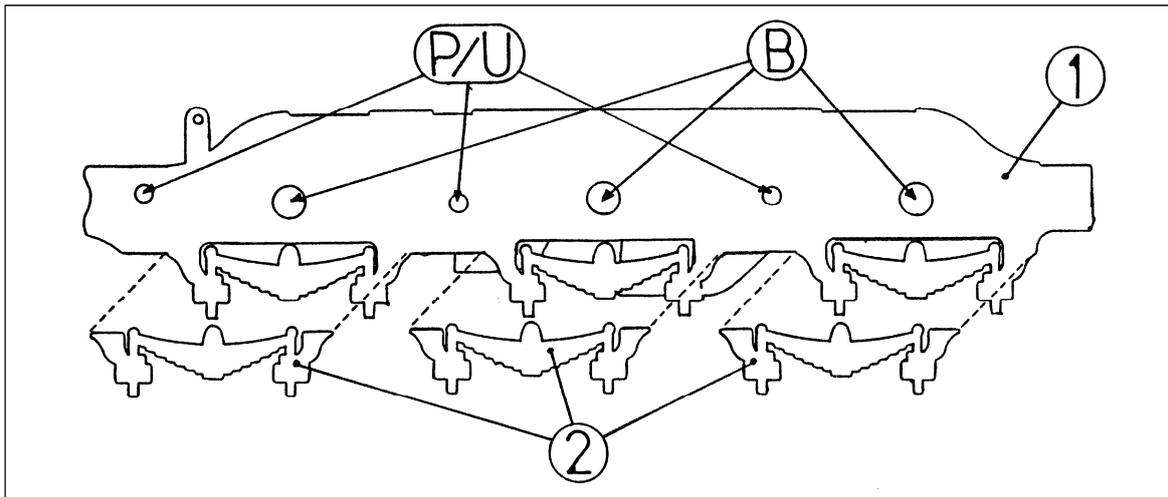


MAIN CHASSIS CONSTRUCTION

The first section of the instructions, show full chassis construction, but in practice you can build a basic chassis, use this to check body clearance and then complete the chassis after the body.

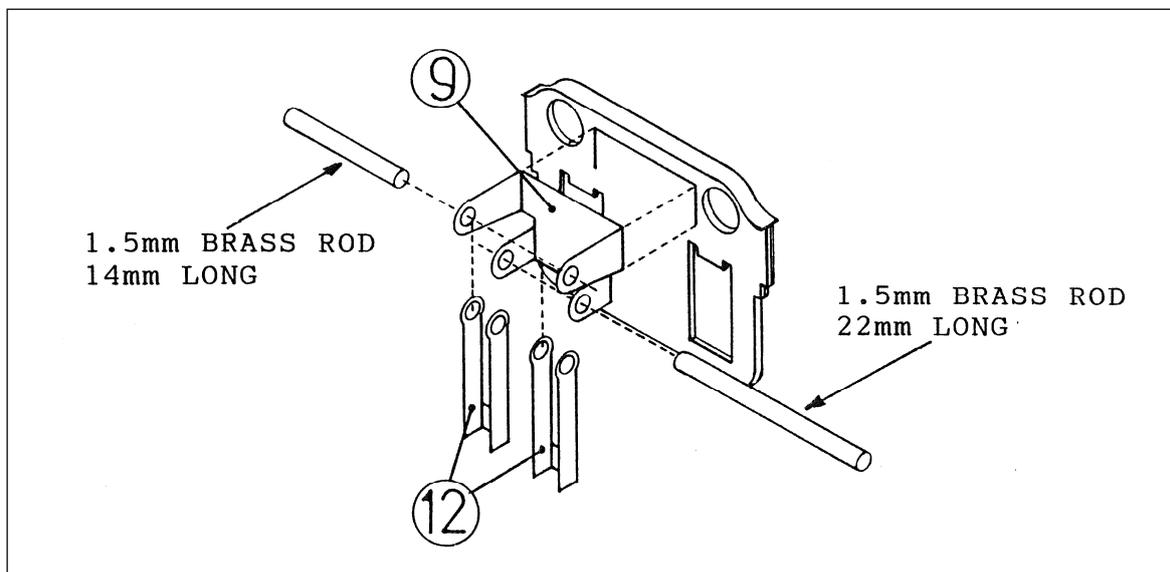
I have decided not to cover the construction of every part in this text, as much of the construction will be obvious from the exploded drawings.

The first job is to open out the bearing holes in the chassis sides, parts 1. Also if using plunger pickups, open out the holes for these. Then fit spring detail overlays, parts 2.

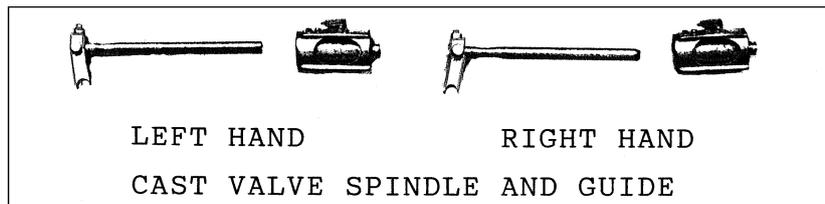
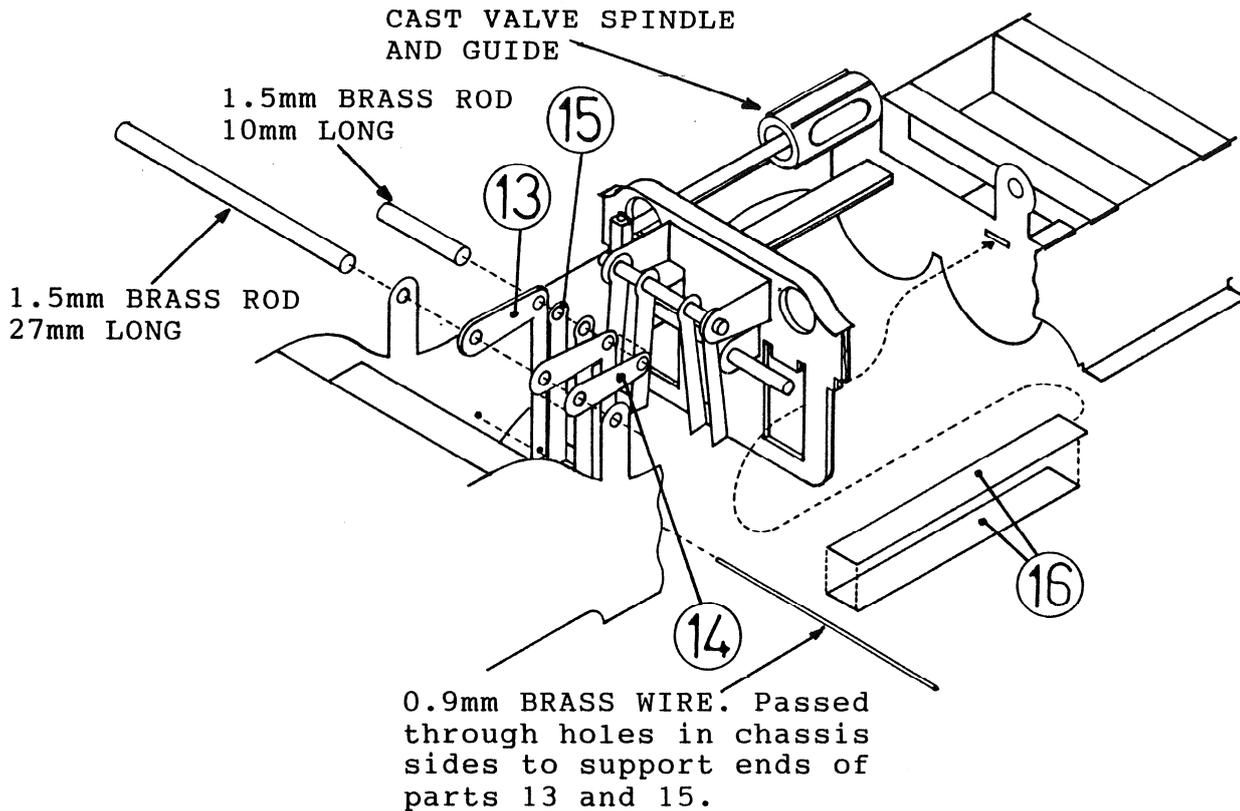


I then pined a chassis side to a flat block of wood and soldered the spacers, parts 3, to this. Then solder second chassis side to spacers. Start in the middle and work out to the ends. Tack solder only. Remove from block of wood and check that chassis is straight and square. When happy, solder solid. Fit bearings and motor mount, part 4. I found it necessary to cut down the back shaft of the Mashima motor when I came to fit it.

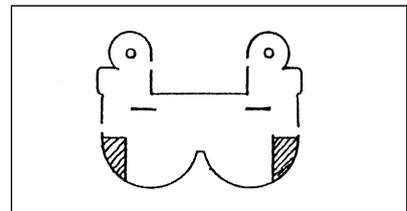
Make up motion bracket from parts, 7,8,9 and 12. Then fit between frames. The inside valve gear is covered later but because it would be difficult to fit the brass rod. With the motion bracket between the frames, it is best to fit it all now.



INSIDE VALVE GEAR



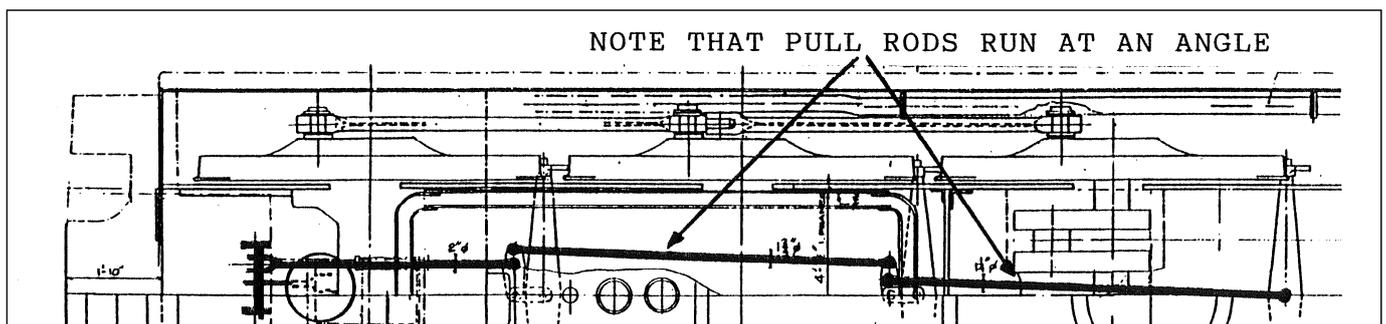
You may find it necessary to file part 3, to clear the bogie wheel on tight curves. You can get in to do this with a flat file, after the chassis is built. So try the loco on your layout first.



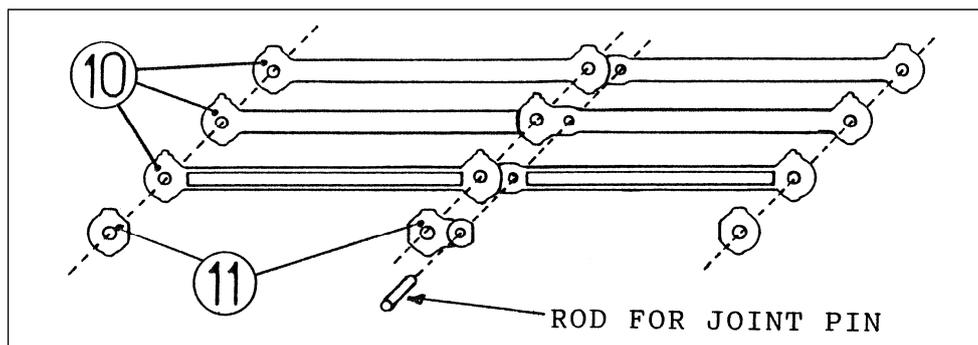
BRAKEGEAR

Fit lengths of 0.9mm wire across chassis to support brakes. Fold over and solder the top part of the brake hanger, parts 21, then solder on brake blocks, parts 22. Position brake blocks just clear of wheels and solder top of brake hanger to wire. Spring cross shafts, parts 23, between brake hangers. Note that cross shafts are marked, F,C,R, for, front, centre, rear.

Laminate the two parts of the pull rods together, parts 24, then fit to cross shafts. They can be twisted into place. Fit cast brake cylinder and make up linkage, parts 25, as shown in main drawing.



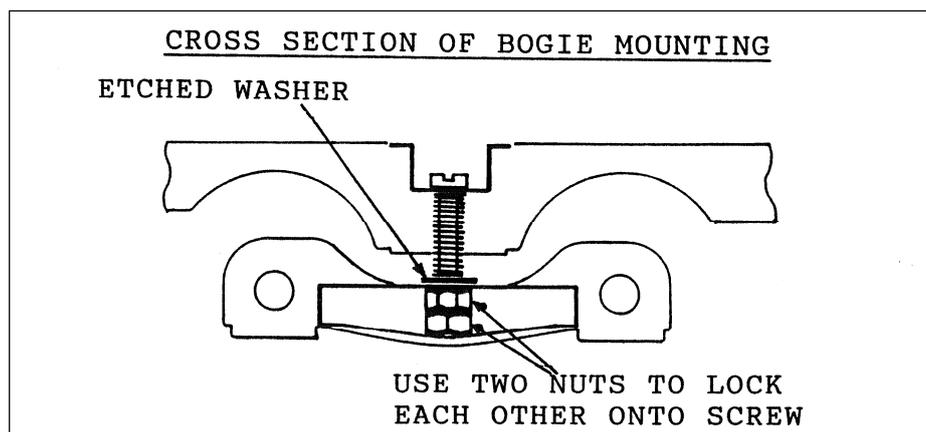
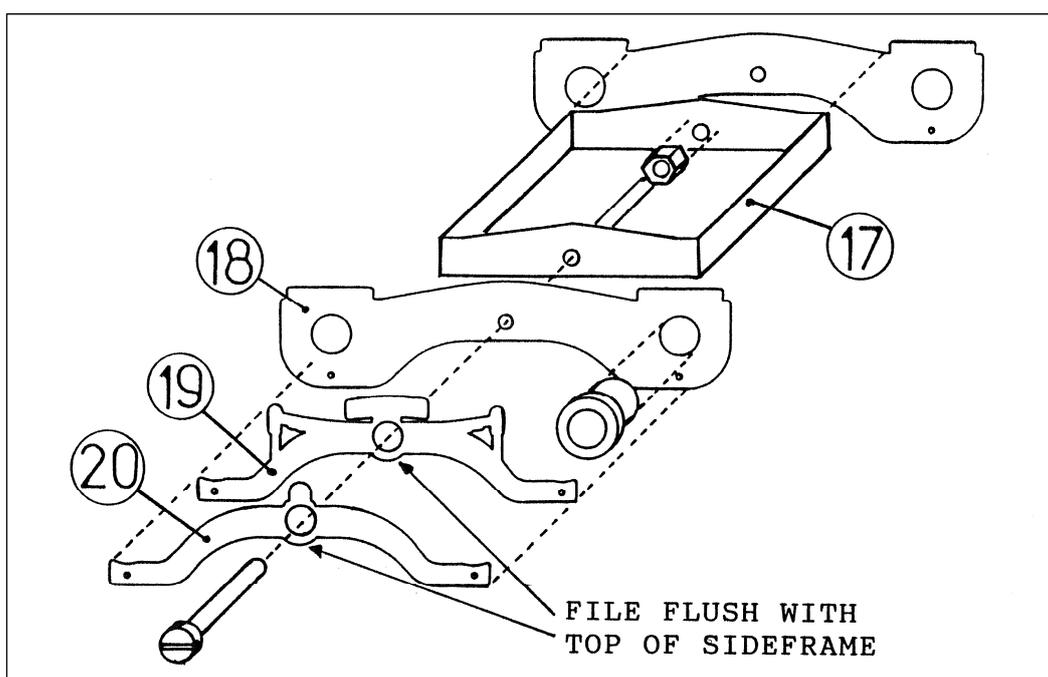
Make up coupling rods, they are jointed on the centre crank pin. Then fit wheels and rods. Note that the centre axle is raised slightly. At this point I then started on the body construction.



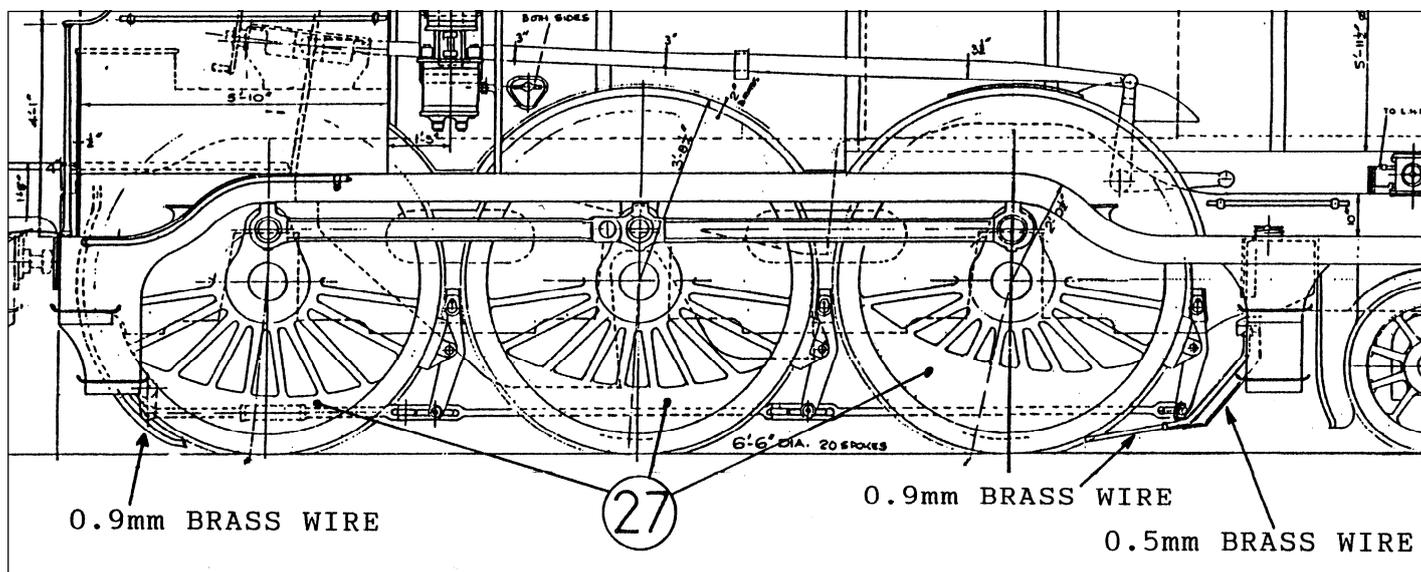
BOGIE CONSTRUCTION

To build a compensated bogie, solder parts 19 and 20 to sideframe, part 18. Fold up part 17 and solder two 8BA nuts over the holes in the sides. Fit one sideframe to, part 17, locking in place with a screw. Make sure that the sideframe is parallel with the top of part 17. Then tack solder to part 17.

Fit second sideframe, locking in place with a screw, then back off screw, $\frac{1}{4}$ turn. Solder screwhead into the hole in parts 19 and 20. The sideframe should then pivot on the screw thread. When happy with the running of the loco, file screwheads flush with part 20.



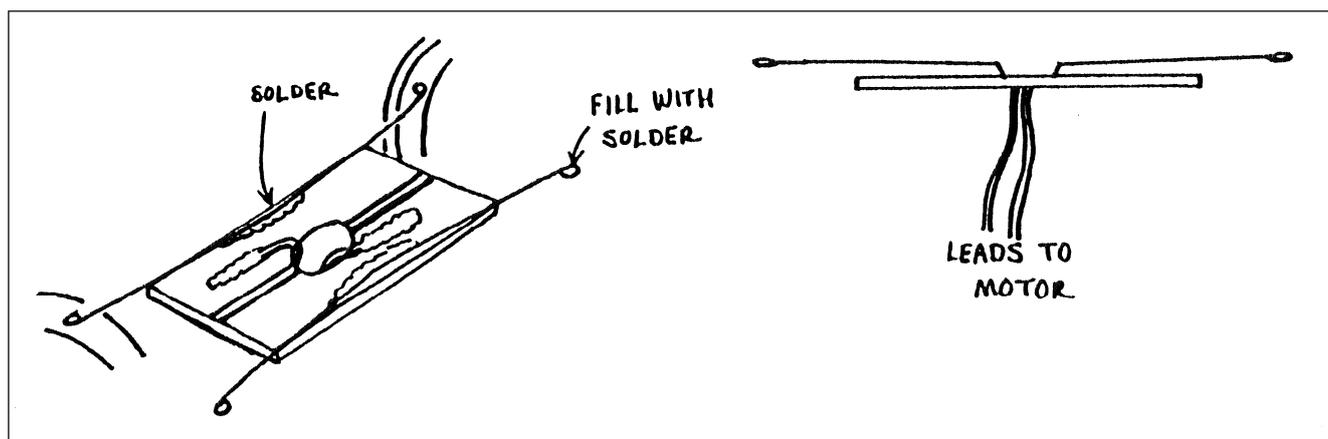
Fit front bogie mudguards, parts 26, to chassis sides. Tack solder them in place and try the loco on your tightest curve. If the bogie wheel fouls it, move it back a bit. When you are happy, solder solid. Fit cast sandboxes to this. It is spaced out from the chassis side so that the outlet for the sand pipe is in line with the brake hanger. Fit sand pipes, made from 0.9mm wire. The front ones go down just below the brake hanger. I spot soldered the pipe to the bottom of the brake hanger for strength.



Fit balance weights, parts 27. Note that they are marked F,C,R, for, front, centre, rear.

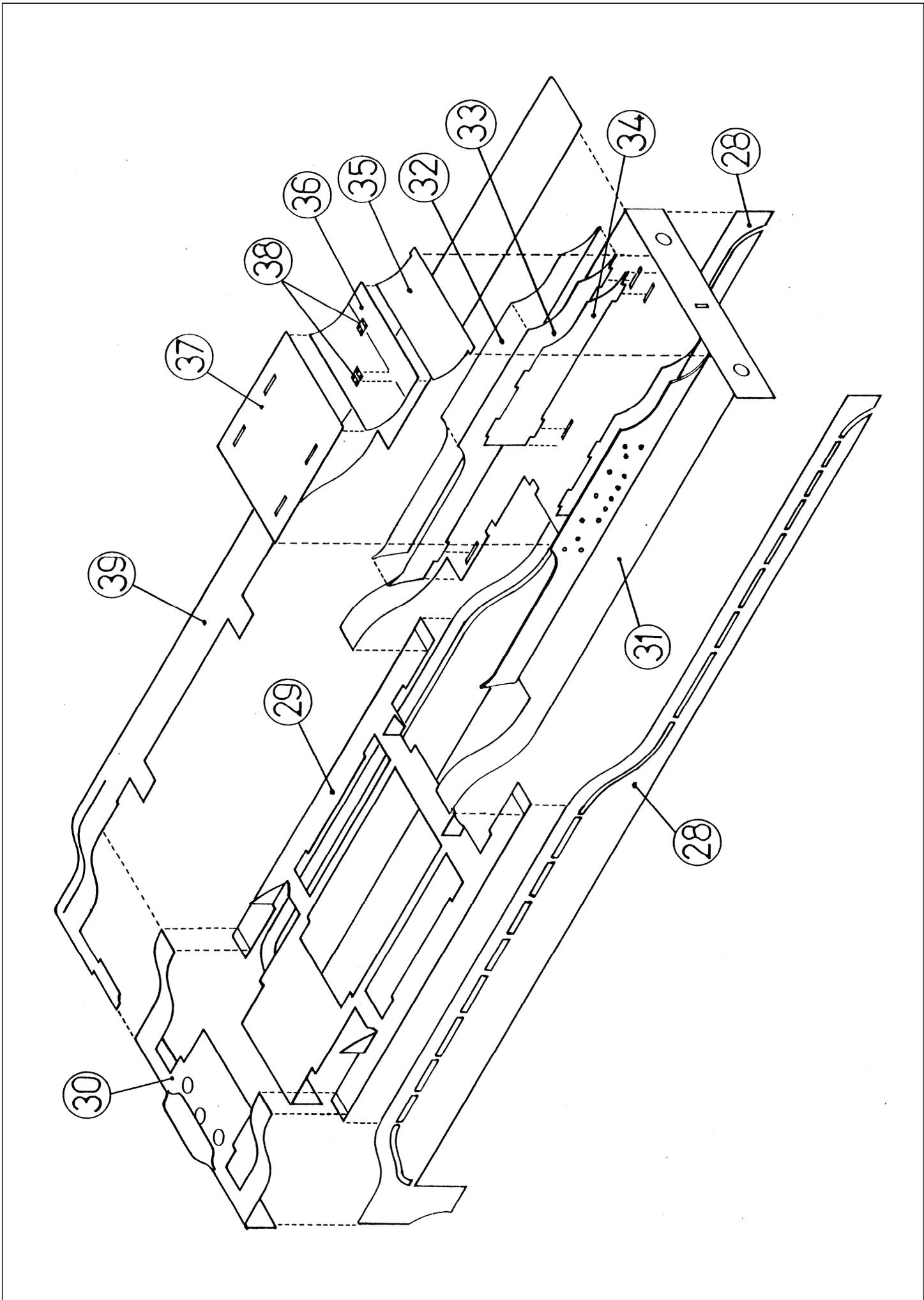
ELECTRICAL PICKUPS

I prefer to use plunger pick ups. Alternatively, parts are provided to make wire wiper pickups from Copper clad board and 0.45mm Brass wire. You will find holes in the chassis spacers to rout the wires back to the motor.



MOTOR

I have designed the kit to use the Mashima motor. I have found this to be ideal for the loco if used on a small layout. This is also the cheapest alternative. I have tried to allow plenty of room for fitting a larger motor, but if doing so, try to use the motor mount as an extra chassis spacer, for strength.



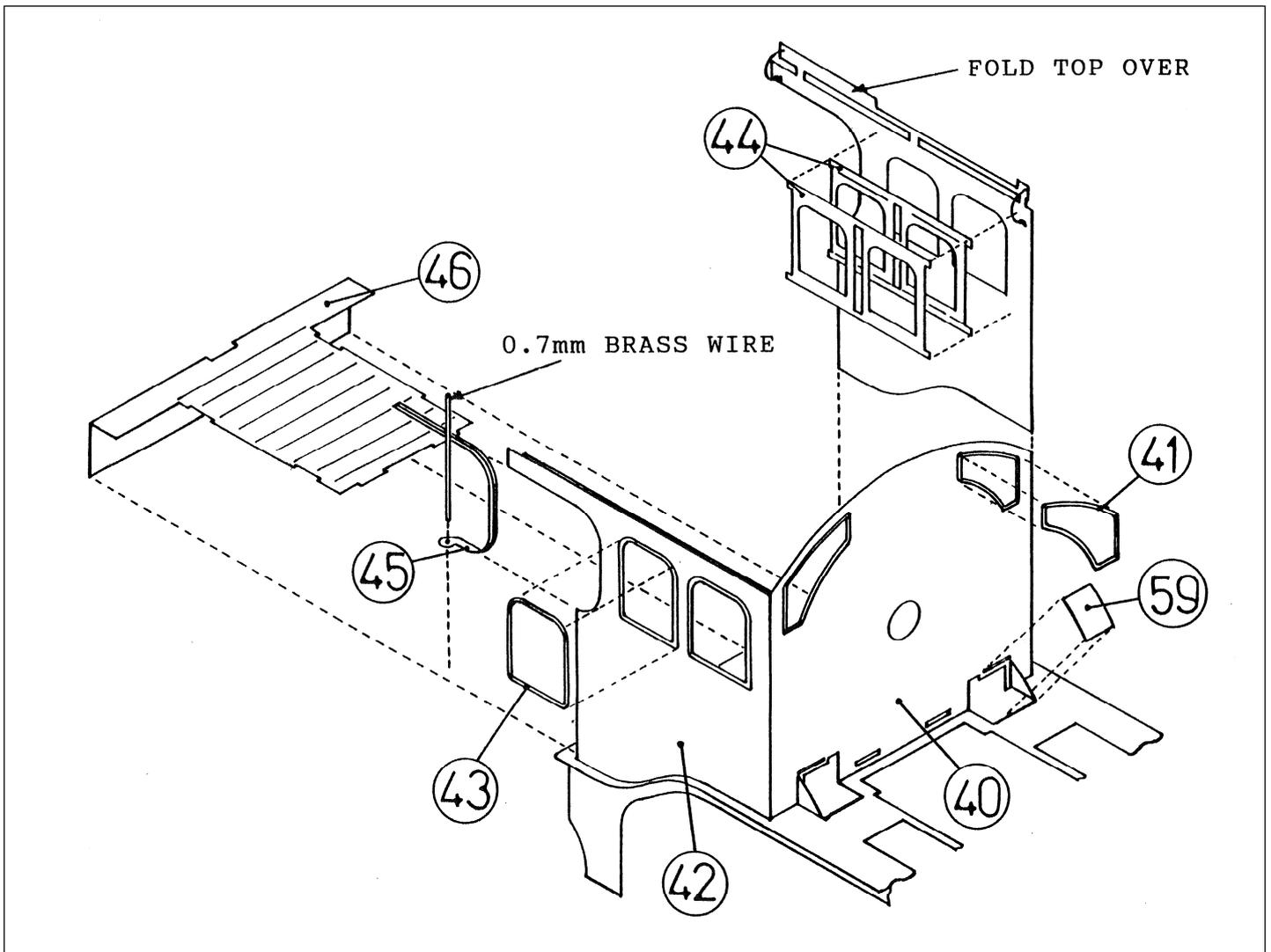
MAIN BODY CONSTRUCTION

The valances, parts 28, have a strip of waste attached to them. This should give strength to the footplate and is intended to be sniped off after the boiler and splashers are fitted. The body should then be self supporting.

As I thought that it would be difficult to form up the footplate in one piece. I have designed a separate base of Nickel Silver, that is made up in three sections. The visible parts of the footplate are then formed up from thinner brass and fitted on top of this.

Fit centre section, part 29, to one valance. The valance should locate into the half etch on the underside. Solder this valance solid. Then tack solder the second valance in place. Now check by using a square at the back and front of the valances, that they are exactly opposite each other. Then solder solid.

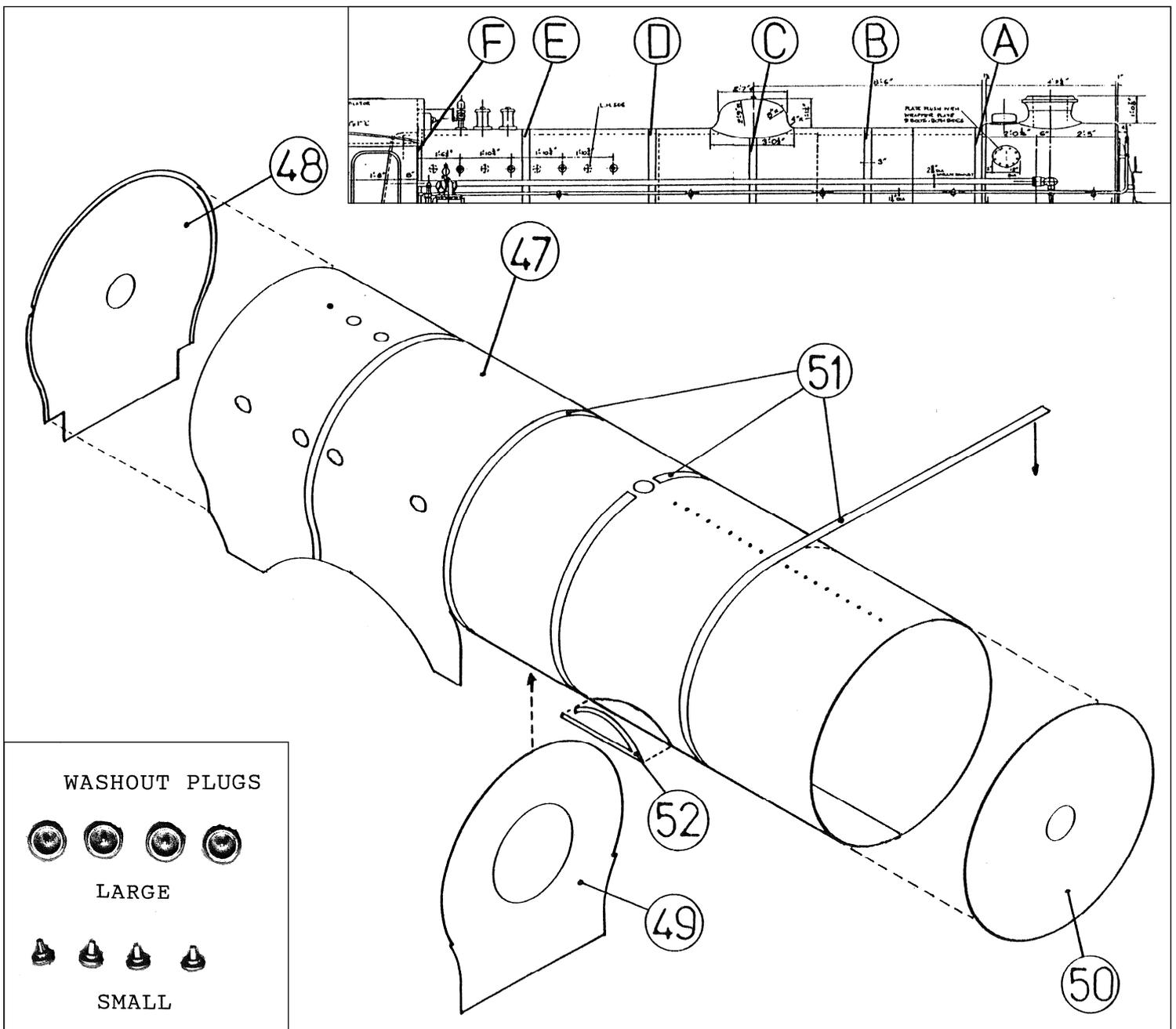
Form curves on the rear section, part 30 and fold down rear draw beam. Fold up and solder the two square rubbing plates. Now fit rear section to valances. There should be a bit of adjustment at the overlap joint on part 29. Try to get the curve to match the curve on the valance as best as you can, but dont let the top come above the side of the valance. Fit front section, part 31, in the same way. Solder chassis fixing nuts in place, 6BA at front, 2X 8BA at rear.



Laminate parts 32, to parts 33, and then fit to base with the front ends, level with the buffer beam. Fit parts 24, note etched location marks. Now form up and fit valve covers, parts 35 and 36. I have provided two sets. One with bend relieving lines and one with half etch. I found the ones with bend relieving lines the easiest to form up, but its up to you which one you prefer. Fit part 35 first, then file the top edge down, so that the front edge of part 36, will just overlap it. Fit part 36, in the same way, then fit part 37. Fit the two hinges, parts 38. Form up footplate tops, parts 39 and fit to base.

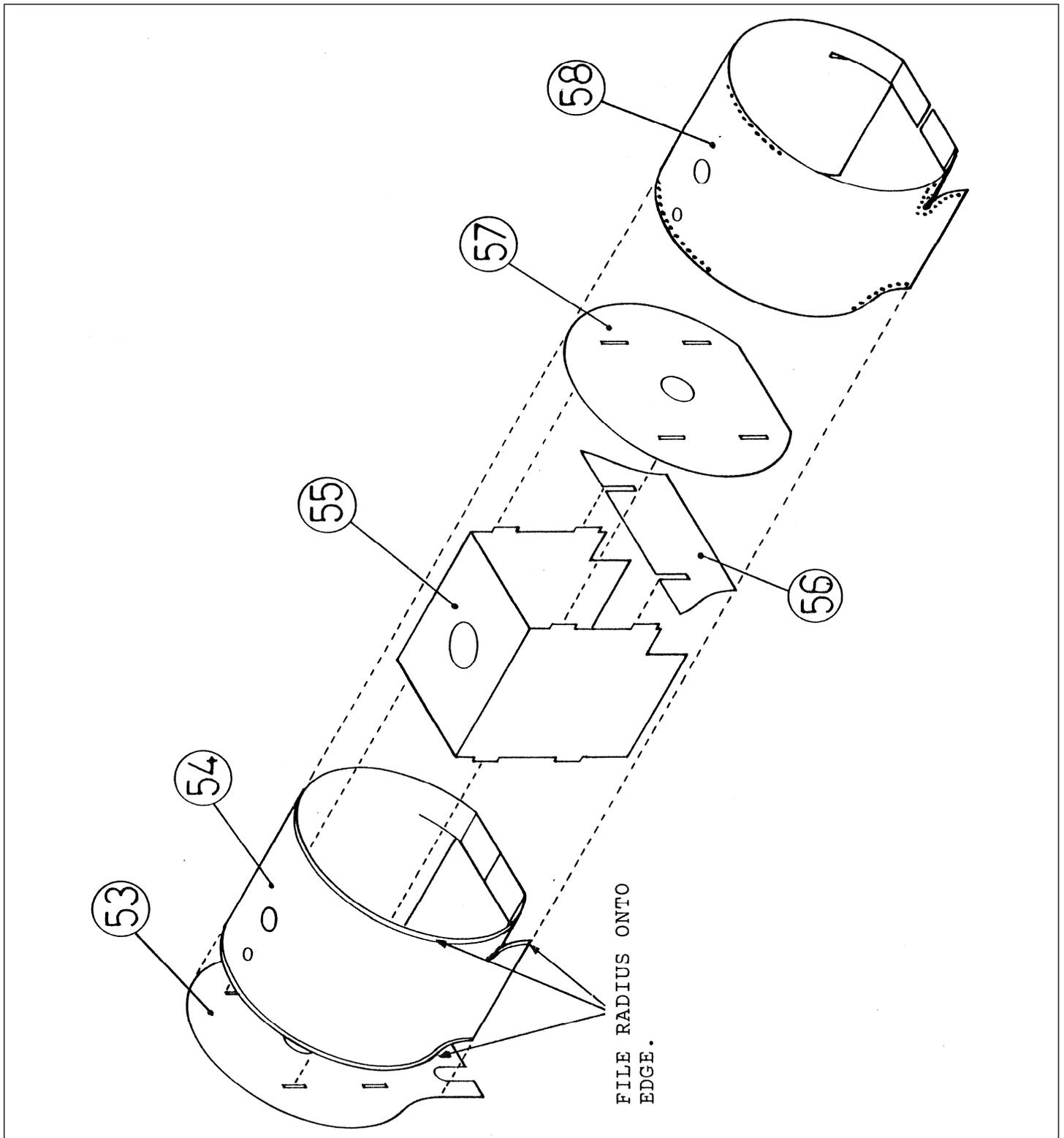
I find it best to detail up the cab front and sides before fitting to footplate. Make sure that the cab front is central on the footplate. The inside window frames, parts 44, are designed to be soldered together with the half etch on the inside, to form a rebate. The glazing can then be slid into this, after painting. By folding over the strip at the top of the cab, this will give a location for the window frame. Fit cab floor, part 46. Check that the rear wheels of the chassis, clear the cutouts in the floor.

BOILER AND SMOKE BOX CONSTRUCTION



I make up the boiler and smoke box as separate units. Then join them together, before fitting them to the footplate.

I found it best to form the flared bottom of the fire box first, use the fire box ends, parts 48 and 49, to help to get the shape. Then push out the rivets on the top of the boiler. I then open out the holes for the cast wash out plugs. Two types are provided. Both fit from the inside and pass through the holes. Early locos had the small ones, check a photo of your prototype, as the length of the square shaft varied between locos. If fitting the large ones, open the holes up with a tapered reamer. Then after fitting plugs, a few minuets work with a file, will blend the flange into the radius of the fire box. I dont fit the cast plugs at this stage but I find this is the best time to open up the holes. As any distortion you cause, can be corrected easily now.

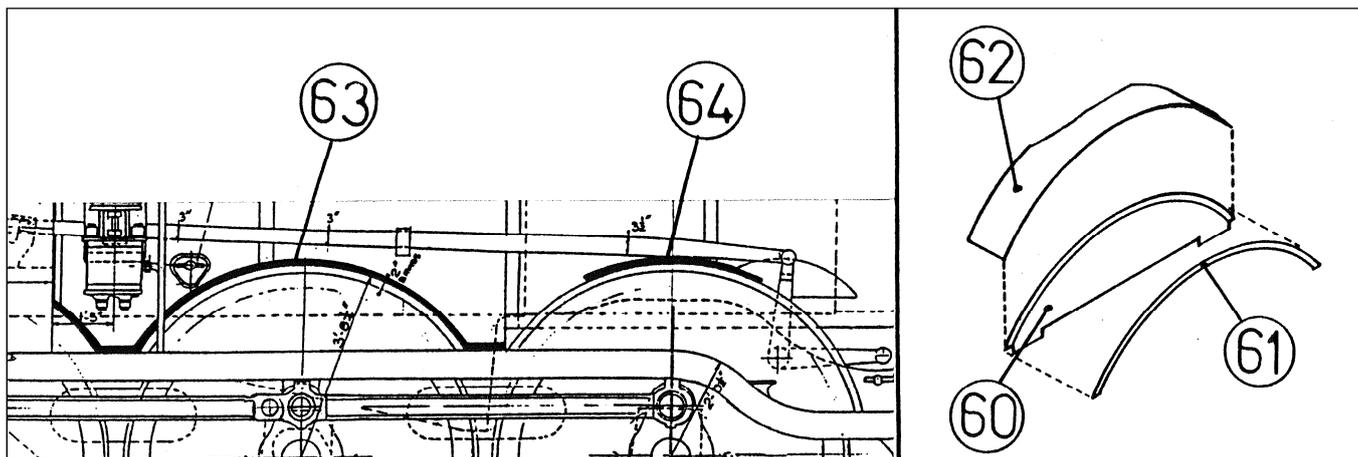


I now solder the fire box end to part 48, so that the half etch surround, comes outside the fire box. Fit fire box front, part 49, note etched centre marks at the top and on the inside of the fire box top. Fit the front end of the boiler into the etched ring on part 50. By squeezing the boiler around this ring, it will act as a former, to give the right diameter to the end of the boiler. Start soldering at the top and work around the boiler end, from each side, until you get to the bottom joint. Then solder the overlap joint along the underside of the boiler. Then file the half etch on part 50, flush with the outside of the boiler. Fit boiler bands. The full metal strip in the centre of the band, locates into the half etch groove around the boiler. Fit beading, part 52, into the etched cutout for the reversing lever.

For the smoke box, first form up the wrapper, part 54. If modelling a flush riveted smoke box, form up with the half etch around the ends, to the outside and push out the few rivets from the inside. If modelling a riveted smoke box, form up with the half etch to the inside. Solder smoke box wrapper to the smoke box back, part 53, start at the top and work around each side, using the back as a former. Then fit spacer, part 55. Then fit part 56, there should be just enough spring in the front of the smoke box, to force this part into place. Fit front, part 57, start soldering at the top and work around to the overlap joint, on the flat section at the bottom. Fill any gaps with solder and blend in with a file. File a radius onto the edges of the smoke box. If fitting the riveted wrapper, part 58, start at the top, by lining up the chimney hole. Work around each side to the bottom.

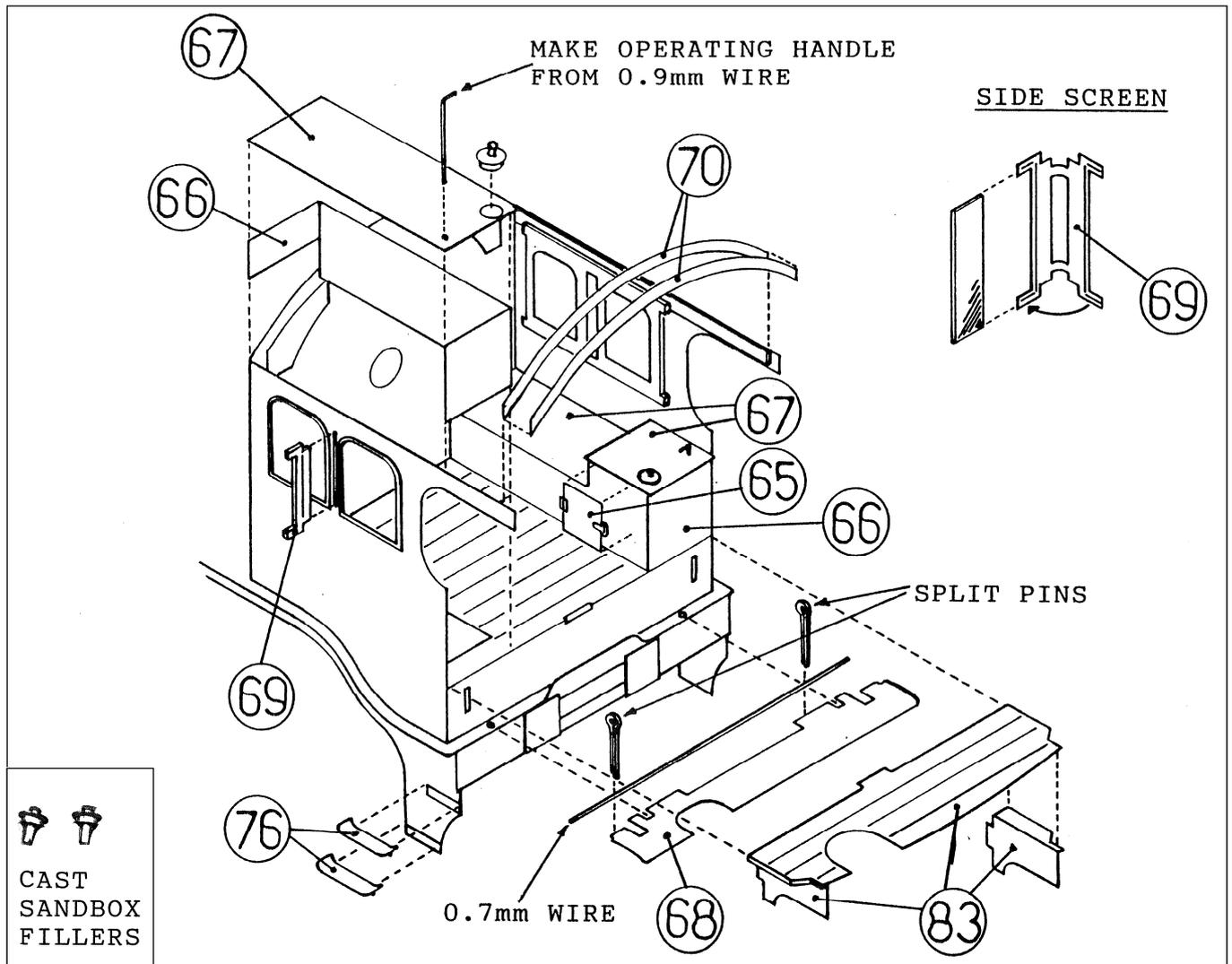
Now check that the smoke box and boiler fit onto the footplate OK. You may have to file a little from the bottom edge of the smoke box wrappers, to get the smoke box to sit down nice and square onto the valve chest. Also check that the fire box end of the boiler, sits square onto the footplate. When happy with this, I solder the boiler to the smoke box. I do this by passing a drill shank through the holes in the centre of the smoke box and boiler front. This should line the two up and centre them, so that you can tack solder the boiler to the smoke box. Then remove them from the footplate and solder the joint all the way around.

Now check that the boiler and smoke box still sit OK onto the footplate, before soldering into position at cab and smoke box ends. It is at this stage, that you risk getting a twisted footplate and once the boiler is soldered solid, you wont get the twist out again. I did this on the first loco I built ! So tack solder first at the cab end, cab end, then at the smoke box end, then check that the footplate is still square and untwisted. Do this until the boiler is tacked in place at six or seven points. You should then be able to solder everything solid without the footplate twisting. This worked on the second loco I built. Now try the chassis for wheel clearance.



Now fit splashers. The ones at the cab end, parts 59, first. I now make up the centre and front splashers, as separate units, parts, 60, 61, and 62. I then fit these one at a time, checking that they sit square and blend into the boiler OK. Also checking that they don't pull the footplate up towards the boiler.

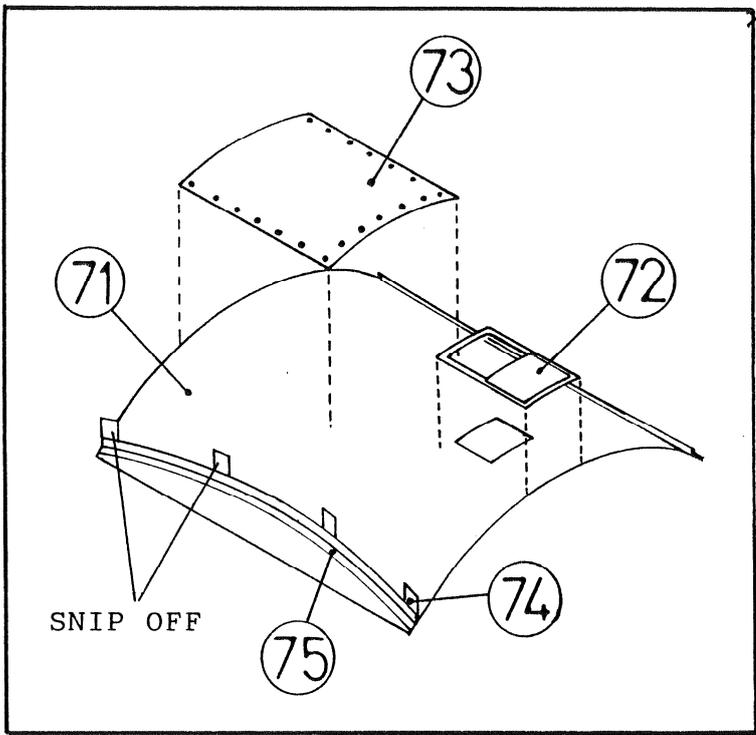
I now fit the beading between footplate/splasher and boiler, parts, 63, 64. This is very useful to hide any gaps. I found that I had to cut part 63, into two and trim the two halves, to get it to fit right. As I had to cut it in different places for each side, I am still not sure if the part is wrong or my building was out. So have a dry run first. Now you can remove the waste from the valances. Snip out the tags and clean up with a file. The model should now start looking like a B12.



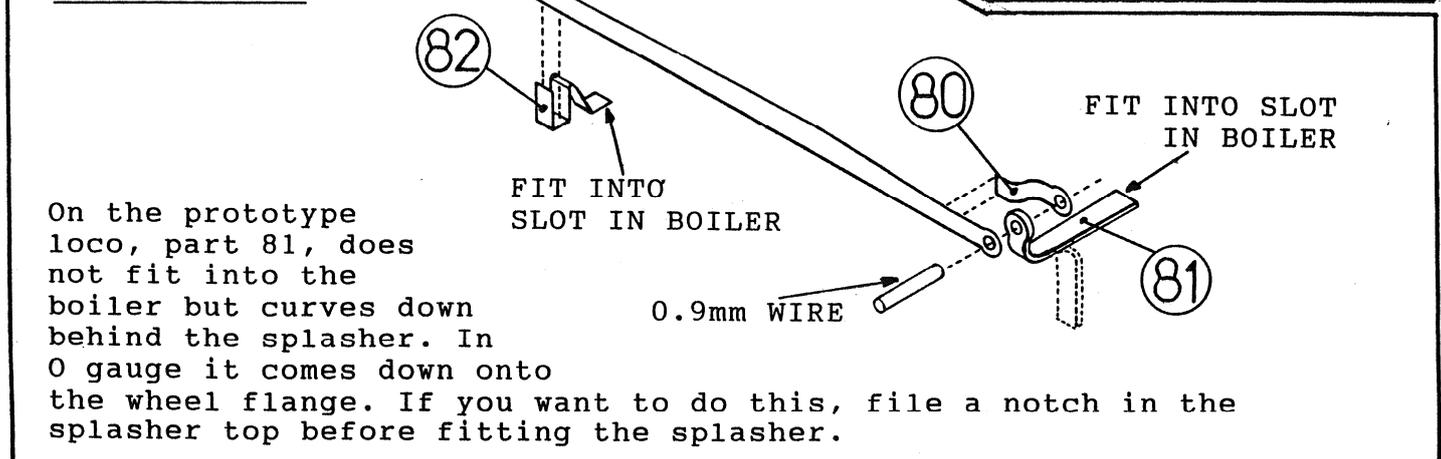
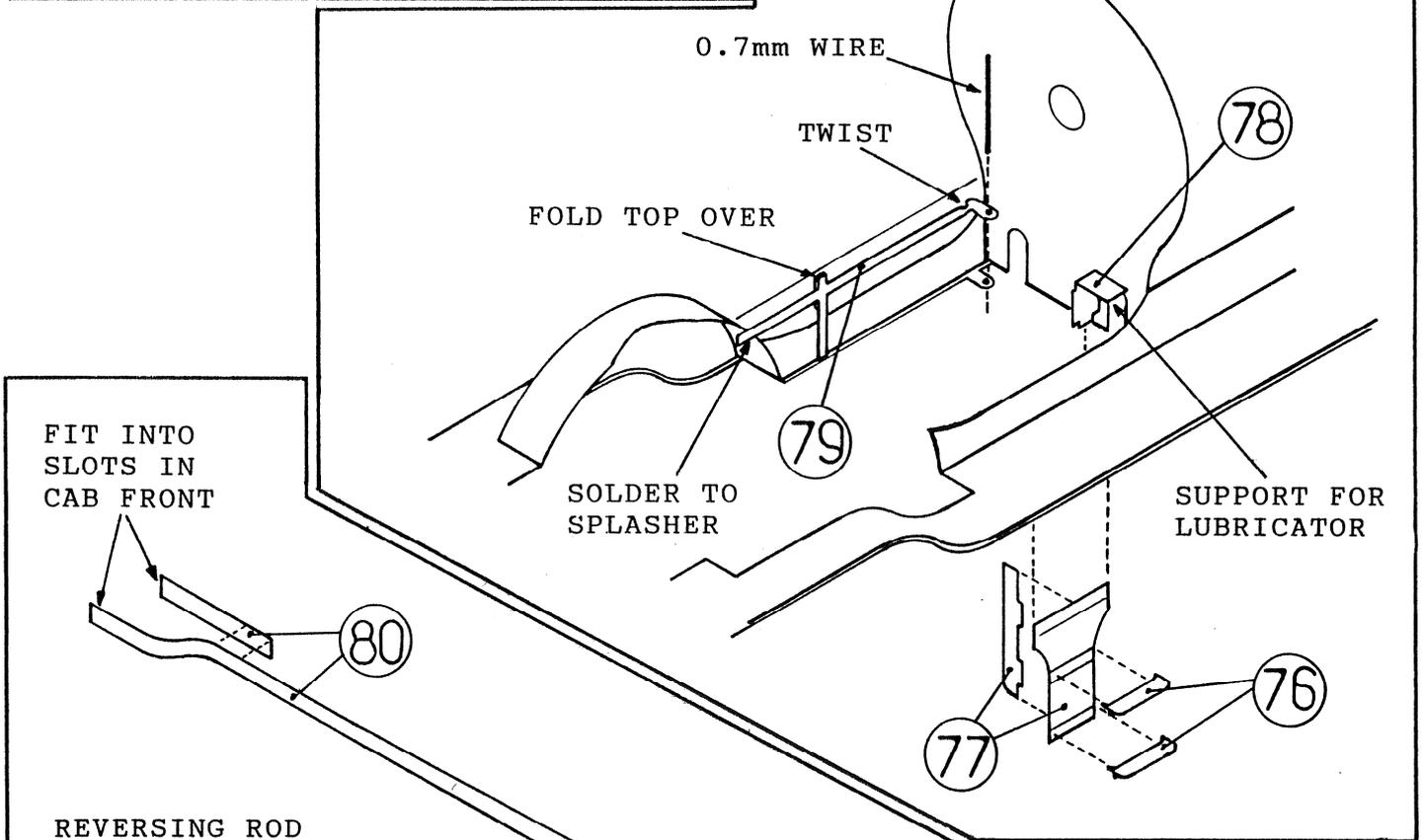
I then fit the remaining etched parts. The fit of most of these should be obvious from the drawings. So I am not covering all of them in this text, but some require a little comment.

The loco to tender fall plate, part 68, should be curved slightly, with the bend lines on the underside.

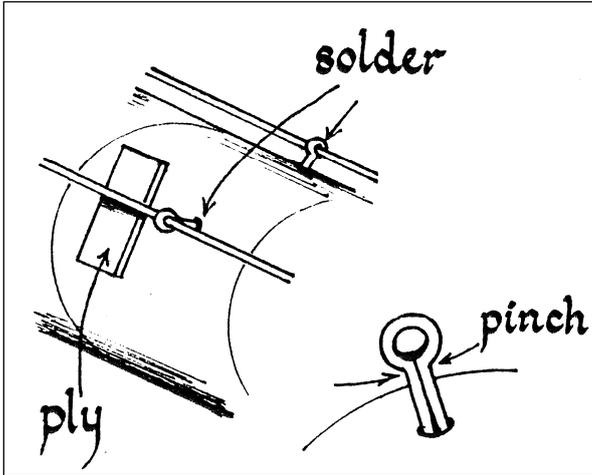
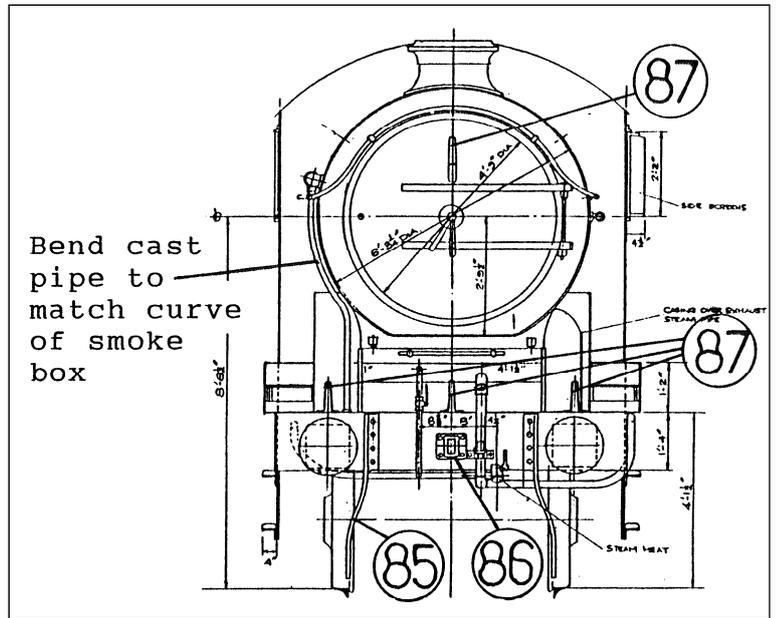
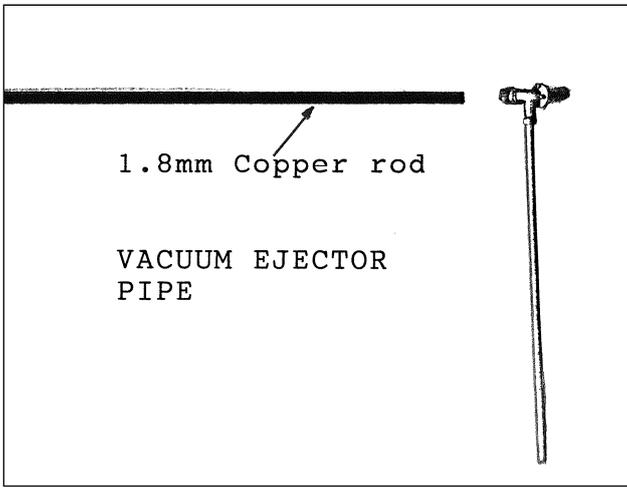
The side screen, part 69, is designed to fold together with the half etch on the inside. If you solder it together carefully, you should have a rebate into which the glazing can be fitted after painting. After soldering together, the back tab should be filed down. So that it does not prevent sliding the glazing into the inside window frames. After the side screen has been located into the slot in the cab side.



The cab roof rain strip is made by soldering part 74 into the etched groove, at 90 degrees to the roof. Then snip off the four tabs, these are only to give you something to hold on to when soldering into place. Then fit the half etched strip, part 75.

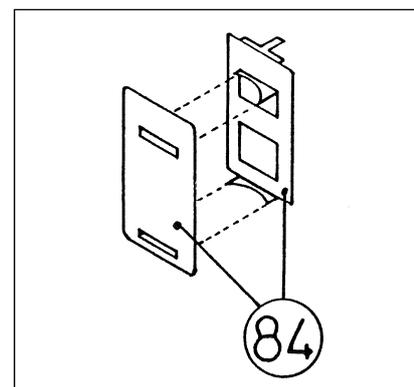
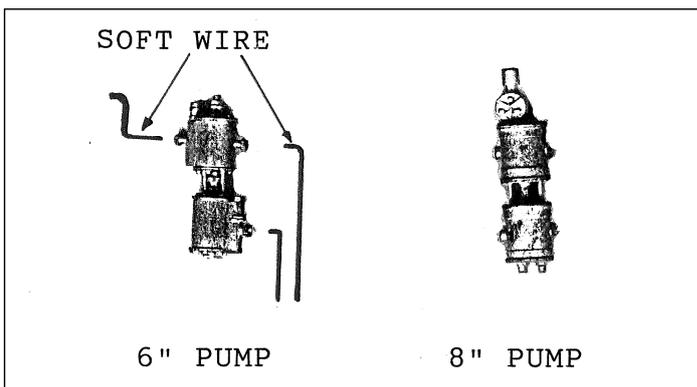


On the prototype loco, part 81, does not fit into the boiler but curves down behind the splasher. In 0 gauge it comes down onto the wheel flange. If you want to do this, file a notch in the splasher top before fitting the splasher.

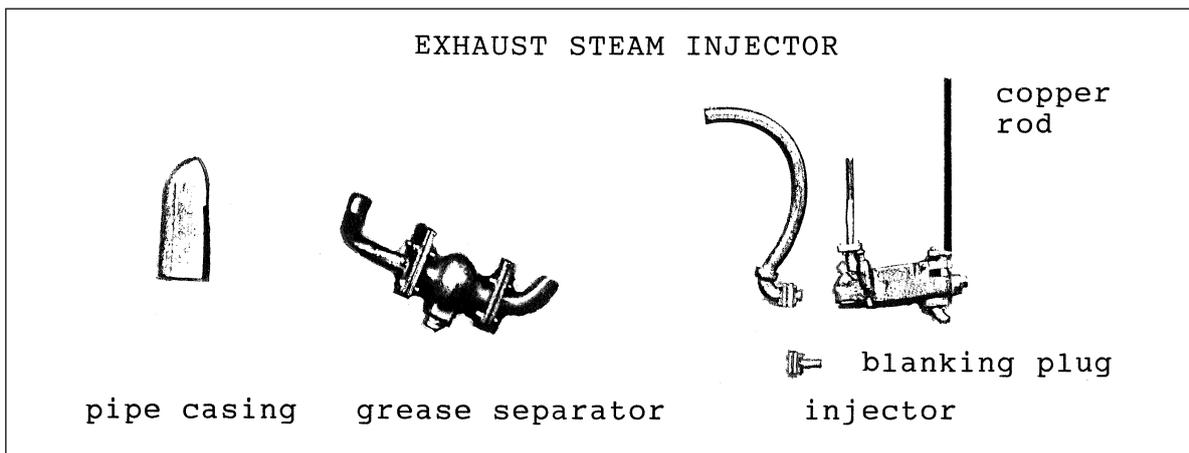
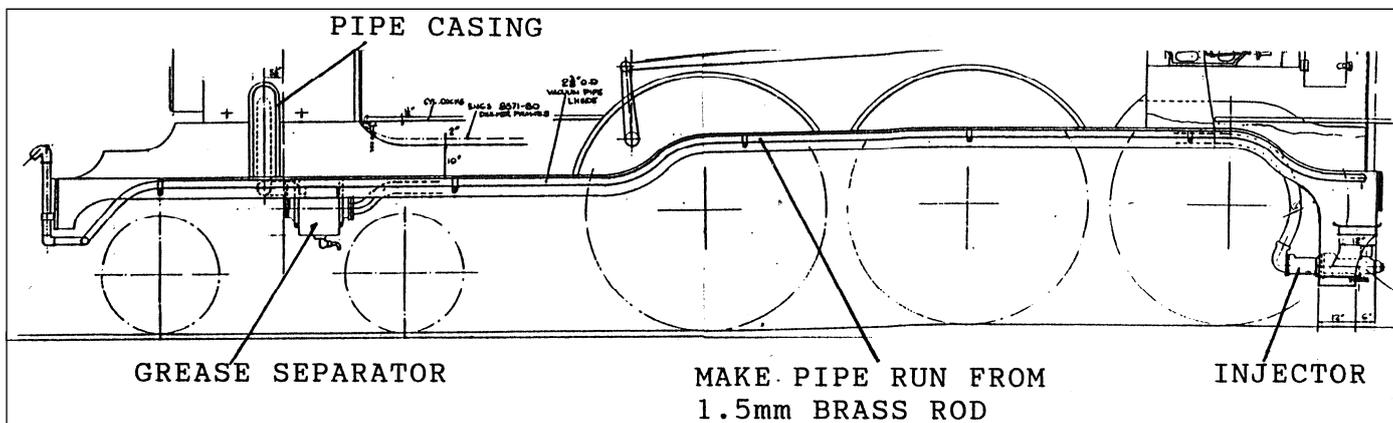


We are now down to the detailing and fitting of castings. First is the vacuum ejector pipe. The pipe is made from copper rod and runs from a hole in the cab front. If you form up the pipe first, it will help you to locate, where to drill the hole in the smoke box. to fit the cast union and drain pipe. You will find a blind hole on the underside of the footplate to allow the end of the drain pipe to pass through the footplate.

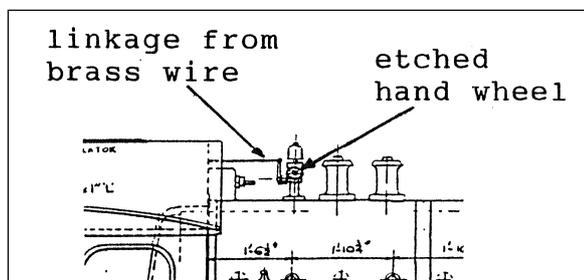
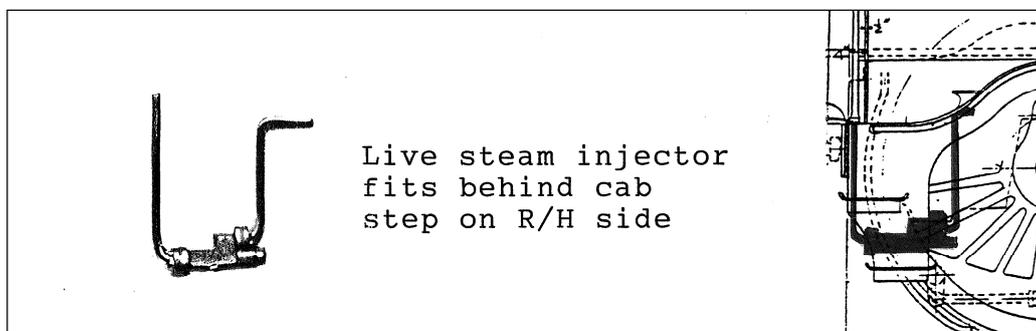
Next is the boiler handrails, split pins are provided for handrail knobs. I found it best to make the handrail in three parts. The two that run along the boiler, including the curve up to the smoke box knobs and a short curved section over the top of the smoke box. The joints are at the two smoke box knobs. Remember to put a set in the right hand rail to clear the ejector drain pipe. You will have to drill two holes in the smoke box sides for the knobs.



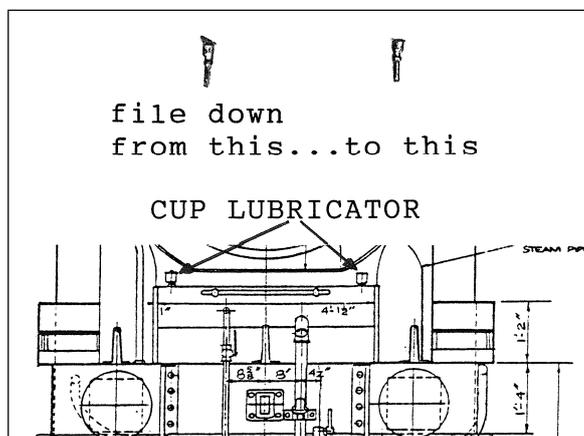
The main drawing shows an 8" Westinghouse pump, but most B12'S were fitted with a 6" pump. This is the one that was designed for the kit. I have also included the 8" pump from my N7 kit. If you wish to use this, you will have to modify the mounting bracket. The mounting bracket, parts 84, designed for the 6" pump. It mounts onto the fire box using the two holes, just above the reversing rod. Make pipe work from soft wire.



When rebuilt, the B12'S were fitted with exhaust steam injectors on the L/H side. In later years these were converted to run off live steam. This involved removing the inlet pipe and replacing it with a blanking plug. Also the pipe casing and grease separator were removed. The grease separator casting is different from the one shown on the drawing but matches photos of the prototype.



Etched hand wheels will be found on the tender sheet. Use the best one that is there. These handwheels are at the borderline of what can be done, but hopefully at least one has come out.



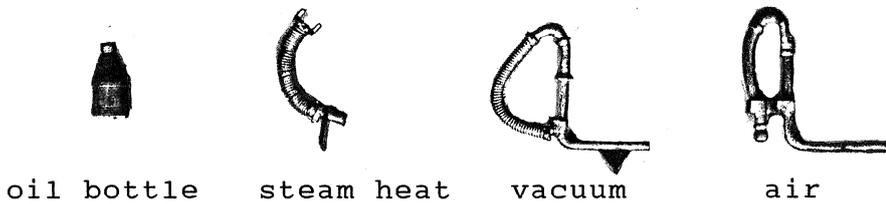
CASTING IDENTIFICATION



- (a) footplate steps (b) safety valve (c) whistle (d) anti carbonisers (e) mechanical lubricator

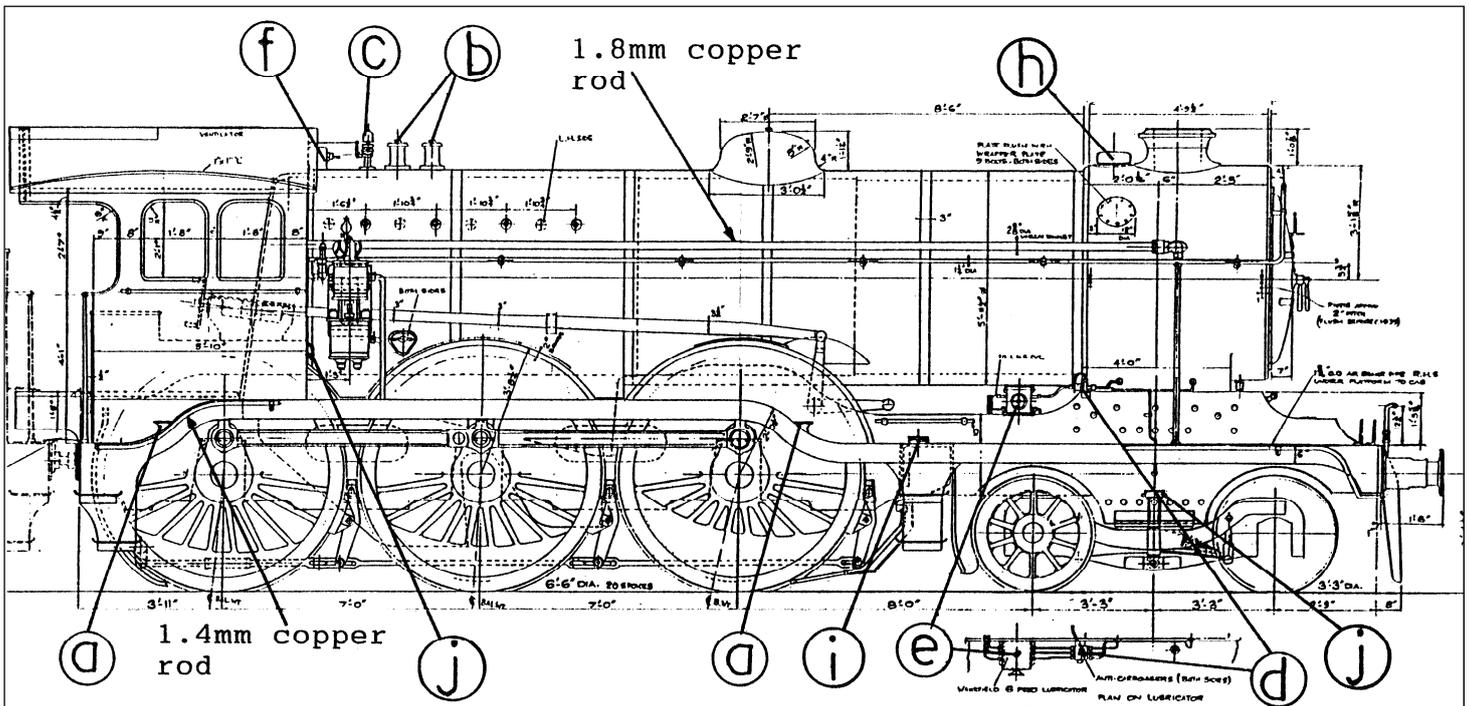


- (f) manifold cover (g) regulator handle (h) sniffing valve (i) sandbox filler cap (j) lubricator



- oil bottle steam heat vacuum air

BUFFER BEAM PIPES



Now fit the rest of the castings and detail. Most of this is obvious but some requires a little comment.

Footplate steps, the cab one are intended to provide R/H and L/H. So file one side off, so that it fits flush against the cab.

Mechanical lubricator, the casting for this is different to the one shown on the drawing, but matches the type that seemed the most common from studying photographs of B12'S. If you are fitting the pipe work, use a photograph, as this plumbing varied from loco to loco.

Sniffing valve, two types are provided, so use a photograph and pick the one that matches.

The pipe work that runs along the valances, is made from copper and brass rod. I found it next to impossible to form up in one go. So I made each side in three sections and spliced them together.

Etched part 88, This is a step that is mounted to the R/H side of the smokebox on some locos. Check photographs.

Etched part 89, this is a loco to tender coupling bar. The holes are spaced to give two different gaps, between loco and tender.

The backhead may need a bit of filing to get it to fit between the cab boxes. It may be an idea to do this before fitting the cab roof. It can then be painted separately and glued into place.

I hope that you enjoy building this kit. Although it is not perfect, I have tried my best and I think it is the best thing I have done yet. I am very grateful to John Gardner of the Great Eastern Railway society, for letting me plunder his drawings. Also to Jackie Thomas for making the patterns for the castings.

PROTOTYPE REFERENCES

Just about any book on East Anglian steam will have lots of photographs of B12'S. In addition, two books that I think that you will find useful are.

LOCOMOTIVES OF THE LNER, RAILWAY CORRESPONDENCE AND TRAVEL SOCIETY.

EAST ANGLIAN STEAM, SPECIAL EDITION, THE B12'S, by J D Mann, South Anglia Productions, 26 Rainham way, Frinton on sea, Essex, CO13 9NS, Tel 01255 677965.

If you drop John a line, he will sell you as many different books on East Anglian steam, as you have money to spend.

CAN YOU HELP ME

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

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

Best regards and happy modelling
Jim McGeown