

Dean Tender chassis

General notes on Construction

Read the instructions carefully - preferably more than once - before starting work. Study the diagrams until you become familiar with all the parts and the assembly sequence. We have tried to make these instructions as comprehensive as possible, which may make some assembly sequences appear more complex than they actually are.

Leave the parts in the fret until they are required for use. This will protect them and makes identification simpler. Small holes can be drilled more easily while the parts are still attached. Where an accurate hole size is specified, holes are etched undersized so they can be drilled or reamed out to the correct diameter.

We want you to enjoy building your kit, but remember that even railway modelling has its risks. Frets contain sharp edges, soldering irons get very hot, adhesives may give off toxic fumes, knives and files are designed for cutting. Please be careful . . .

Chassis assembly

The chassis can be built rigid, or with full compensation so the wheels follow the undulations of the track. Remove the Chassis Frames (1) from the fret, taking care **not to** clip out the hornstays (A) at the bottom of the axle cutaways (Figure. 1).

For a rigid chassis, bend the ends of the Rigid Bearing Carriers (2 x6) though 90 degrees, locate the units in the chassis, as shown, and solder them in place. The hornstays (A) should be left in place. Now open out the holes in the Rigid Bearing Carriers so they accept the circular bearings and solder the bearings in the etches.

For a compensated chassis, follow the separate instructions and bend up the hornblock etches, then fettle the bearings so they are a good, sliding fit in the etches. Once this is done, each bearing and etch should be kept as a matched set, so it's a good idea to label the parts in order to avoid getting them mixed up.

Remove the hornblock bearings and open out the small central holes in the etches, and in the frames, then use a short length of 0.4mm wire to locate the hornblock etches in the frames using the holes marked 'B'. Solder the etches in place on the inside of the frames (the same side as the bend lines) making sure they sit vertically. Clip off the hornstays then, using a pointed tool and/or a blade, remove all traces of solder from the sliding surfaces of the etches. Try the square bearing in place and, when they all slide freely, remove them and set them to one side.

If you wish to use a **CSB** (Continuous Springy Beam) suspension system (this is illustrated in Figure 5) with this chassis then drill out the holes marked 'C' to accept your fulcrum anchors, which will be 0.7mm diameter wire. You'll also need to open out the appropriate holes in part 3 (see below) to accept your CSB wire, as shown in Figures 1 &5. During the assembly sequence, leave out the compensation beams and the rear axle pivot – instead, solder 'High Level Carrier Tags' to the rear of the square hornblock bearings, using the top hole in the tags to carry the 'CSB' wire when you come to assemble the wheelsets. For more information on CSBs go to <http://www.clag.org.uk/beam-annex3.html>

With the bearing locations or hornblock etches in-situ, you can go on to bend up the frames themselves, checking that they are square, and tweaking as necessary. For CSB tenders, slide a length of 0.7mm wire through holes 'C', so they bridge across the frames, solder them in place and file them flush at the outsides.

Bend the Water Scoop Resting Plate (3) to the correct angle, as shown in Figure 2. For OO chassis, remove the small circular CSB anchor boss (D in Fig. 1) and tidy up this edge, but leave the extended tabs near the bend in place. If you're going to use 'CSB' suspension, then you'll need to drill out the Fulcrum Holes in the plate to accommodate the CSB wires shown in Figure 5. Once you've sorted the part, slot it into its location and solder it in place. For 'OO' chassis, trim off the excess tabs, flush with the outer face of the chassis, as shown in Figure 1.

Clip the Chassis End (4) into place and secure it with solder – if you're fitting CSBs, then file out the areas 'E' before fitting the part. For a beam-compensated chassis, solder an M2 nut in place in the recess on the Pivot Box (5) check a bolt will screw into in, then fold up the box; if you're going to 'CSB' your chassis then omit this nut and, instead, file out areas 'F'. For all types, locate the tabs at the front of the box into the underside of the chassis as you simultaneously guide the rear tabs into their corresponding slots in the chassis end. Solder the box to the chassis and end plate.

Solder the Carrier Brace (6) to the frame so the etched text is displayed, as shown in Figure 1. Take care not to accidentally clip off set-up guides (shaded in Fig. 6) when removing the Crossshaft Carrier (7) from the fret. Open out the holes in the Carrier to suit the shafts, as shown, then before bending it to shape, solder it in place on the frame top. Now bend the sides down, locating the slots over the tabs on the brace. Use a couple of bits of wood to squeeze the sides of the carrier, check they are vertical, and then solder the carrier in place on the chassis, and to the brace. When the carrier is fitted, you'll notice that the locating tabs protrude well beyond the top surface of the etch. This is intentional as they will support the body at the correct height, although you can remove material from them to fine-tune the buffer height.

Body Preparation

Once you have the basic chassis you can adapt the plastic underframe to suit. Start by undoing the screws that hold the motor bogie in place, then remove whole motor unit and discard it. Prize off the rear bufferbeam and then separate the tender top from the underframes. Other than removing the circular coupling boss at the front, the tender top can be left as it is, although you can add extra detail if you wish.

Turn your attention to the underframe and trim the side portions from the bottom of the front bufferbeam, so the whole beam is level with the centre section. Cut the box-shaped drawbar housing from the front end and then, using a small grinder or burr wheel, carefully dress up the rough surface, removing any ribs or irregularities, so you have a smooth, flat surface on the underside. Do the same along the rear face of the front bufferbeam. Go on to grind away part of the sideframe members, where they run behind the front steps. This will form a pocket at either side, flush with the rear face of the steps and extending approximately 8mm back from the rear face of the front bufferbeam.

Cut out the rear inner bufferbeam/crossmember and dress up the surface, as above, but make sure you leave the rectangular buffer locations in place. The Sideframes are now quite fragile and so should be handled with care. For extra strength, and also to provide a good fixing for the chassis, you can glue a rectangular piece of Plasticard over the top surface of the central void. When you come to assemble the body for the final time you can, if you wish, strengthen the whole unit by gluing the tender top permanently in place.

Brake crossshaft

Identify the brake crossshaft parts (8 –11) and open out the various holes to suit the shafts and wires shown in the diagram, then remove the parts from the fret. Use a short length of 0.5mm wire to layer up 2 of the Weights (8 x4) on the end of the Handbrake Lever (9) then solder them together before trimming the wire slightly proud at the sides. Use another short length of the same wire to represent the pivot at the end of the Steambrake Lever (10).

Now slot a length of 1mm wire through one side of the brake crossshaft carrier (using holes 'G') through the various parts, making sure they are in the correct order and not forgetting the small Actuators (11 x4). Once the levers are all in place, and the wire is located through both sides of the carrier, you can solder the ends of the wire into the carrier, before trimming it flush with the outsides. Note that the actuators must be left free to rotate on the shaft at this stage and then, after making a final check that they are vertical and straight, solder all the other parts in place.

Water Scoop Lifting Shaft

Open up the holes in the water scoop Lifting Shaft Mount (12) the Journal Details (13 x2) and the Lifting Link (14) so they accept 1mm wire, then clip out the mount and bend it to shape, ready to be detailed.

If you're building an EM/P4 chassis (this doesn't apply for 'OO') and plan to use CSB wires, then snap off the area from part 12, which is shown shaded in the exploded diagram. Study Figures 1 and 5, then bend over the tab on part 15 and detail it using one of the details (13). Add the second detail to the mount (12) and then fix this in place in the chassis, along with the water scoop push rod assembly (16 &17, described below). Test-fit the CSB journal assembly, using 1mm wire to line up the parts, then solder the CSB journal and shaft in place. Don't forget to include the Lifting Link, which should be free to rotate at this stage.

For non-CSB/rigid types, slot a 12mm length of 1mm wire through sides of the mount and through the Lifting Link, then use this to locate the Journal Details (13). Slide the link to the centre and solder the wire and the details in place, so the wire is almost flush at one side and protrudes from the other, as shown. The link must be free to rotate on the shaft at this stage. Take this completed assembly and solder it securely in place under the chassis, hard up against the water scoop plate.

For all types, use a short length of 0.5mm wire to locate the Push-rod Detail (16) on the end of the Water Scoop Push-rod (17) and solder it in place. Trim the wire slightly proud at either side to represent the pivot pin. If you're building a 'OO' chassis, then you'll need to trim off the front end of this pull rod, as shown in Figure 1. For EM/P4, leave the rod as it is.

Open out the large hole(s) in the rod to accept 1mm wire, and then position the rod on the chassis side, using short lengths of 0.4mm wire to locate it. As you do this, slot the rear end of the rod over the long end of the shaft from the water scoop lifting assembly. Solder the rod in place, along the side of the chassis, and to the lifting shaft. Grind the location wires and both ends of the water scoop lifting shaft, so they are flush with the etches

Clip the Water Scoop casting (18) from its sprue and open out the holes in the part to suit the wires shown. Check the recess at the front of the scoop (this locates the lifting link) is free from flash and, if necessary, clean it out.

Using the mounting pins, locate the scoop on the model, check it's straight, solder it in place between the plate and spacer then grind the front location pin flush with the water scoop plate. Swing the lifting link through the slot in the plate, so it sits in the notch on top of the scoop, and solder it to the shaft. Finish off the scoop by soldering in place two L-shaped lengths of 0.4mm wire, about 15mm long, running from holes in the sides of the scoop, slotted through the baffle plate and continuing upwards. If you wish to take the level of detail even further, you can add adjusters to the ends of the stays, using 3.5mm lengths of 0.8mm O.D. tube to represent them.

Now you can fit the water scoop halfshaft at the front of the tender. First, use a short length of 0.5mm wire to layer up the Weights (8 x2) on the end of the Water Scoop Lever (19) then solder them together before trimming the wire slightly proud at the sides.

Start a length of 1mm wire in hole 'H' at the right hand side of the crosshaft carrier. Locate the small tab on the water scoop lever assembly in the carrier brace, as you push the shaft through the lever. Include part 20 if you're modelling a 'OO' chassis, or slot the wire through the front end of the Water Scoop Push-rod (17) for EM/P4,

Add the Halfshaft Journal (21) which also locates in the crosshaft carrier, and continue to push the shaft out through the left side of the carrier – this should help to line up all the parts. After checking they are sitting straight and square, solder the journal and lever in place in the chassis, and to the shaft. Solder the crosshaft into the right hand side of the carrier, and into journal, then clip off the rest of the wire, just beyond the journal, then trim this inner end almost flush with the journal and the outer end completely flush with the carrier etch.

For EM/P4 models, after checking the Push-rod (17) runs straight, solder the end to the scoop shaft. For 'OO' versions, position part (20) so it's butted hard up to the side face of the journal then solder it to the shaft and journal (Fig. 3). Finally, remove the area (Hole 'H' in Fig. 3) from the left side of the carrier and tidy up the edge.

Compensation

If you're going to build beam compensation into the tender, as illustrated in Figures 1 and 4, cut 2 lengths of 1.6mm O.D. tube, so they fit snugly between the frames, but without being tight. Ream out the central hole in the Compensation Beams (22 x2) so the tube is a good fit, and then open out the beam pivot wire hole 'J' in the frames to 0.8mm diameter.

Bend the strengthening rib on the compensation beams through 90 degrees (use a vice or bending bars if available) then position the beams 1mm from the edge of the tubes and solder the tube in place to make a handed pair. Manoeuvre these assemblies into position and then slot a length of 0.8mm wire through the holes ('J' in Fig. 1) in the frames, and through the tubes. Now try the bearings in place - the 'feet' sit on top of the brass hornblock bearings, as is illustrated in the cutaway view in Figure 4. Check the beams pivot freely - if they don't, look for obstructions, for example, the beams catching on the hornblock etches. Ensure that the beams sit parallel to the frame sides, and that the beams and hornblocks work correctly together in a smooth see-saw motion with no tight spots.

Refit the bearings and after making a final check that they are still free to slide in the etches, slot in the keeper wire and bend the ends down to retain the bearings. When satisfied, the pivot wire can be trimmed so it fits between the plastic sideframes. Alternatively, you can leave the parts off until the chassis is painted.

For all types of chassis, bend the strengthener on the Steampipe Bracket (23) and open up the hole so a length of 1mm wire is a sliding fit before soldering the bracket into the frame.

Brakegear

Start by setting the position of the actuators on the brake crosshaft. Slot a length of 0.5mm wire through the set-up holes 'K' and through the outer pair of actuators on the brake crosshaft. Slide the inner pair of

actuators nearer to the centre of the tender, as shown in Figure 3 – they will be set up later. Position the outer pair of actuators using the Jig, which will space the actuators at the correct distance from the frames – the inside face of these actuators should touch the outer edges jig's protruding blades, and the jig should be held between the inner faces of the crossshaft carrier. When the outer actuators are correctly positioned, solder them in place on the shaft, making sure the set-up wire can still be withdrawn.

You have the option of building the brake hangers with prototypical daylight between the front and back layers. Although this improves their appearance slightly (when viewed from certain angles) it also reduces their strength, and is tricky to execute. If you decide to model this feature, remove the bottom part of the double hanger middle layers (26 x6) and, when you come to fit the assembly onto the brake stretcher wire, include the double hanger spacer washers (29 x6 - see Fig.3).

The brake hangers have small folding tabs at the tops of the front layers (parts 24 x3 & 25 x3) which spaces them the correct distance from the frames. For P4 models these can be left in place, but for OO/EM, the small pieces 'L' will need to be filed off.

Take one of the Brake Hanger Front Layers (24 x3 & 25 x3) and carefully make the bend at the top. Use a short length of 0.5mm wire, pushed through the centre holes, to locate the Middle (26 x6) and Rear Layers (27 x3 & 28 x3) onto the front, then solder them together and trim the wire flush at the both sides. Repeat this process for all the hangers, so you have three handed pairs and then check the top and bottom holes are free from solder.

Make sure all wires are a sliding fit in the holes in the hangers, and in the Brake Pull Rods (30 x2). Take one of the hanger assemblies (including washer '26' if applicable) and, using a 30mm length of 0.7mm diameter wire for the crosswire, slot this wire through the bottom hole in the hanger. Solder the wire in place so it is slightly proud of the outer face of the hanger, then slot the long end of the wire through the rear hole in both brake pull rods. Now take one of the opposite-handed hangers and push it over the outer end of the 0.7mm wire, but don't solder anything in place just yet.

Invert the chassis and offer the above assembly up (or down?...) to the frames, sliding a length of wire through the top of the hangers, and through the chassis to hold it in place. Move the pull rods to the centre of the wire (so they don't accidentally get soldered in place) then push both hanger tops up to the chassis sides. It helps to work on a flat surface – this way you can set the inverted chassis down as you swing the hangers over to rest the bottom ends on the surface at the rear of the chassis. Check the hangers are straight in relation to the frame sides, and that they sit at the same angle on the wire, adjust them as necessary and then solder the bottom end of the free hanger to the wire.

Move to the front of the chassis and pull the set-up wire out from the actuators. Bring the front end of the pull rods up to the inside face of the outer pair of actuators and then slot the set-up wire back through all parts, and out through the set-up holes at the opposite side, but this time include the inner pair of actuators which have not yet been fixed in place.

Now slide the inner pair of actuators hard up to the pull rods' inner faces and solder them to the 1mm crossshaft, but do not solder the 0.5mm set-up wire in place – instead, trim this wire slightly proud of the faces of the actuators (Figs. 4 & 5) so you have two short retaining wires. They should not be permanently fixed - when you come to refit the brakegear they should stay in place, but if they work loose you can secure them using a small amount of glue or paint.

Add the other two pairs of brake hangers to the chassis and, after checking they are straight and square solder the bottoms to the crosswires, as before. When all the hanger assemblies are done, carefully slide the pull rods along the set-up wire, right up to the inner face of the outer (fixed) pair of actuators. Adjust the rods on the crosswires so they run parallel to the frames then solder them to the crosswires, but don't solder anything to the actuators.

Now you can remove the brakegear by pulling out the loose top wires from the hangers, and the short retaining wires from the actuators. If you haven' already done so, trim the ends of the bottom crosswires, just proud of the hanger faces.

Remove the guide holes from the sides of the crossbrace carrier (shown shaded in Figure 6) to achieve the shape shown in Figure 4.

Solder the Pivot Pin securely in place – this is a piece of 1mm silver steel, cut to length - making sure it passes through both the crossshaft carrier and brace. If you're using the tender with a High Level Loco Chassis, then trim the pin flush at the top and leave about 3mm projecting downwards – for other makes, leave this pin longer (about 6mm) so you can trim it later (see below).

Final assembly

Clean up all the parts and paint them, then fit the wheels to the chassis using washers to eliminate sideplay and try the model on the track. Test-fit the body to check clearances.

For a compensated model, cut an M2 bolt to a suitable length, and then screw it into the nut which you've previously soldered into the pivot box (5). Sit the chassis on a level surface and adjust the nut until the model sits level. If necessary, run a tiny amount of adhesive into the thread to lock it in place.

If you're fitting CSBs, the spring wires should be cut so their length is fractionally less than the distance between the inside faces of the bufferbeams - when the body is fitted, the bufferbeams prevent the wires from sliding out from under the outer fulcrums. Feed the wires through the top holes in the CSB carriers, making sure they pass under the fulcrums and through the holes in part 15 (see Fig.5).

Once the wheelsets are in place you can fit the Steampipe, which can be made using a length of 0.7mm wire, bent to shape as shown in the scale drawing (Fig. 4). This can be slotted in from the rear of the chassis, as shown, but be sure not to solder the pipe in place, or you won't be able to get the wheels off. Once the brakes are in place, the pipe cannot work free.

When you come to refit the brakes, offer up the hangers to their locations as you slot the front ends of the brake rods between the actuators. Refit the short retaining wires at the actuators (see above) slide lengths of 0.7mm wire in at the tops of the hangers and trim these so they fit between the plastic tender sideframes.

Fixing the body

For fixing to RTR bodies, hold the chassis in place under the body and run a 2mm drill through the front and rear mounting holes ('M' Fig. 1) to gain clearance for the fixing screws. Now cut two rectangular pieces of brass or nickel plate, to about 10mm x 15mm, although their size doesn't have to be exact - a couple of bits of scrap may do just as well. Drill a 2mm hole in the centre of the plates and solder an M2 nut over each hole.

Separate the plastic tender body from the sideframes. Remove any irregularities from around the holes on the top surface of the sideframe unit, then offer up the chassis, slotting the bolts through the fixing holes 'M' and screwing them into the plates, which should be held above the footplate with the nuts uppermost. Tighten up the bolts, if necessary, making adjustments to the clearance holes so the chassis is central and the wheels line up with the axle boxes. When all is well, slacken off the plates slightly, run Epoxy under them, then re-tighten the screws and allow the adhesive to set.

Coupling up to the Loco.

If you're using this tender kit with our High Level Dean Goods loco chassis, once you have the loco drawbar trimmed to the correct length (see loco instructions) locate the tender's pivot pin into the drawbar and sit both chassis on a flat surface. For other makes of tender, (where the drawbar may be at a different height) trim the pin to length, so about 2mm protrudes below the bottom of the drawbar.

For all types, tack the Brake Cylinder (31) in place (see Fig 1) and try pushing the loco and tender around your curves. Check the drawbar doesn't catch the cylinder as it pivots around the pin - this should be fine using a High Level Loco Chassis (on all but the tightest of curves) but for other makes it's possible you may need to relieve some material from either the side of the brake cylinder, or from the drawbar, or both. In some instances, you may even have to omit the cylinder altogether.

Once you achieved the necessary clearances, and have re-tested the loco and tender on your track, fix the brake cylinder securely in place using Epoxy.

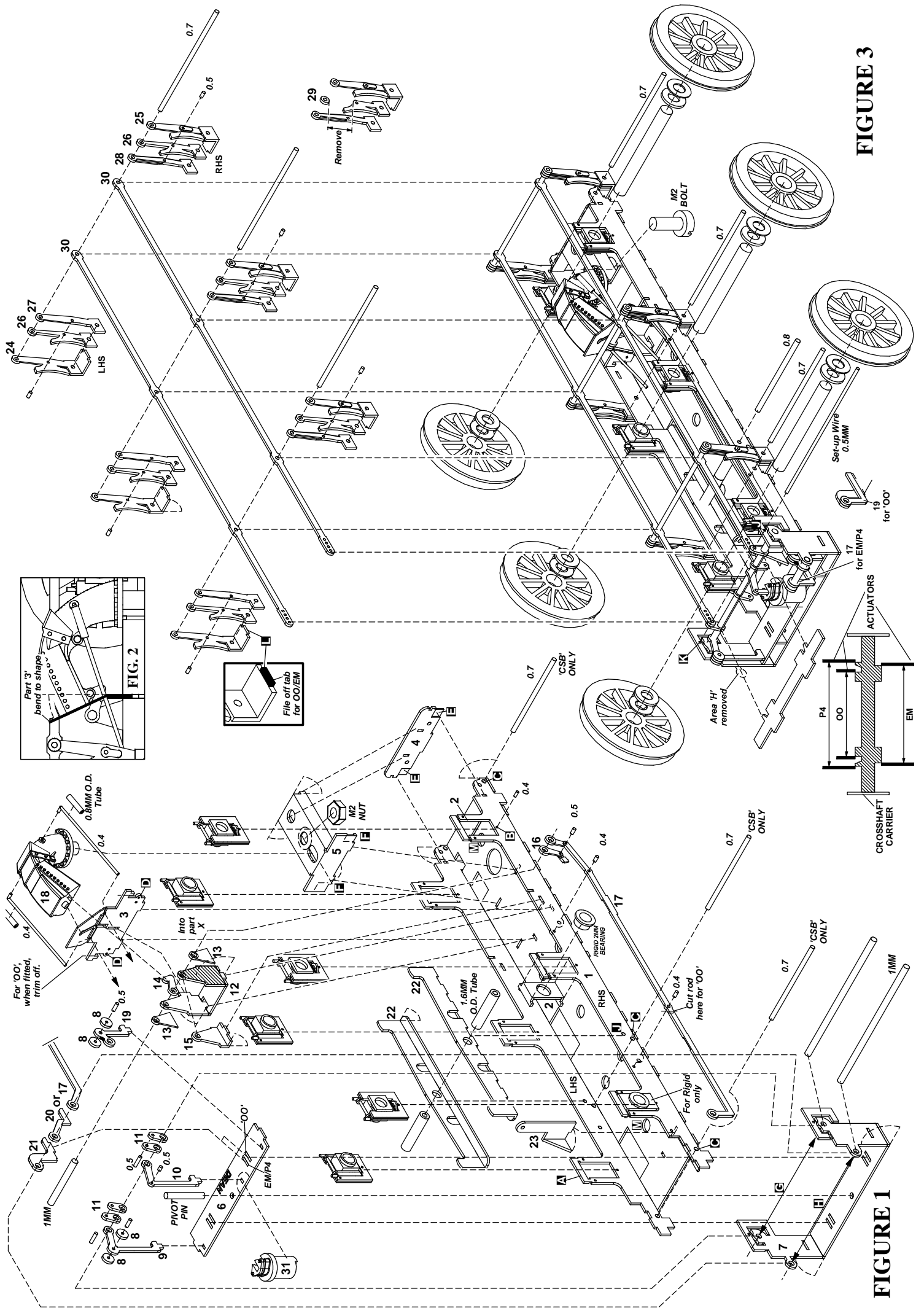


FIGURE 3

FIGURE 1

STEAM PIPE - Scale 1:1

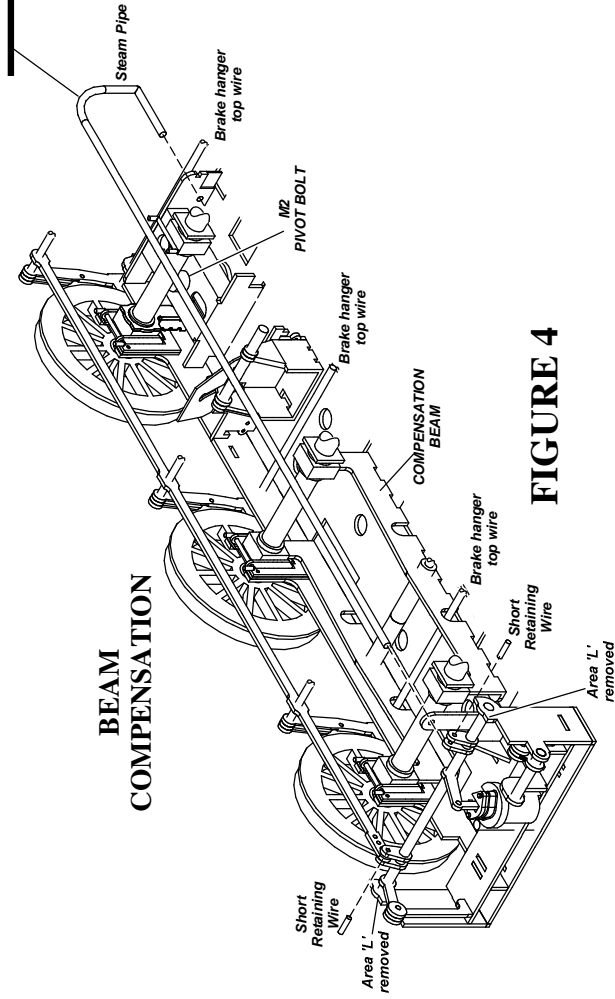


FIGURE 4

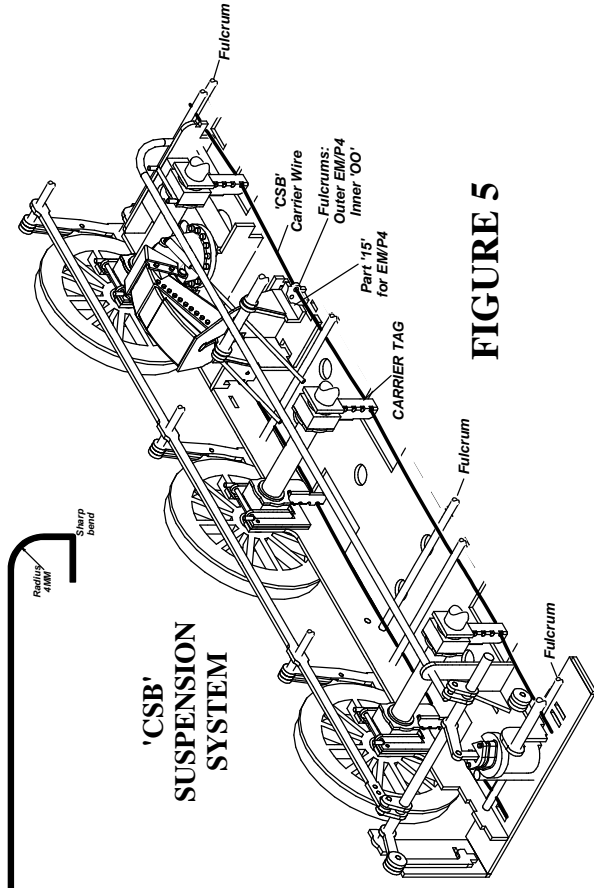


FIGURE 5

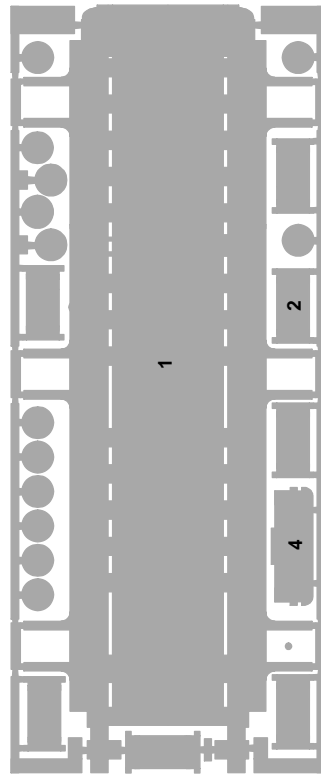
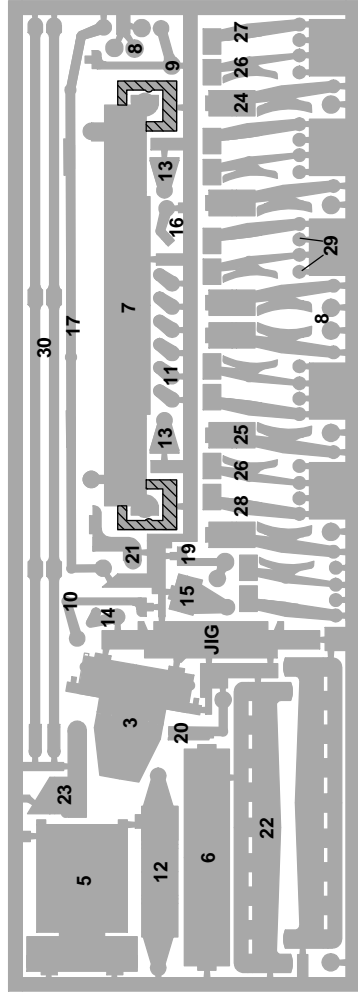


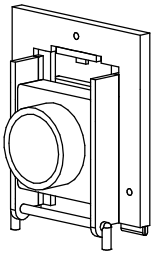
FIGURE 6



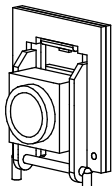
PARTS LIST

1. Chassis Frames
2. Rigid Bearing Carriers (x6)
3. Water Scoop Resting Plate
4. Chassis End
5. Pivot Box
6. Carrier Brace
7. Crossshaft Carrier
8. Weights (x4)
9. Handbrake Lever
10. Steambrake Lever
11. Actuators (x2)
12. Lifting Shaft Mount
13. Journal Details (x2)
14. Lifting Link
15. EM/P4 'CSB' Journal
16. Rod Detail
17. Water Scoop Push-rod
18. 'Water Scoop
19. Water Scoop Lever
20. OO' Dummy Rod
21. Halfshaft Journal
22. Compensation Beams (x2)
23. Steam Pipe Bracket
24. Brake Hanger Front Layer LHS (x3)
25. Brake Hanger Front Layer RHS (x3)
26. Brake Hanger Middle Layer (x3)
27. Brake Hanger Rear Layer LHS (3)
28. Brake Hanger Rear Layer RHS (3)
29. Brake Hanger Spacer Washer (x6)
30. Brake Pull-rods (x2)
31. Brake Cylinder

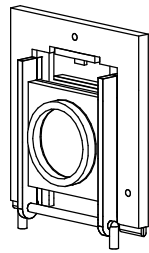
These instructions cover three types of High Level Hornblocks:



STANDARD



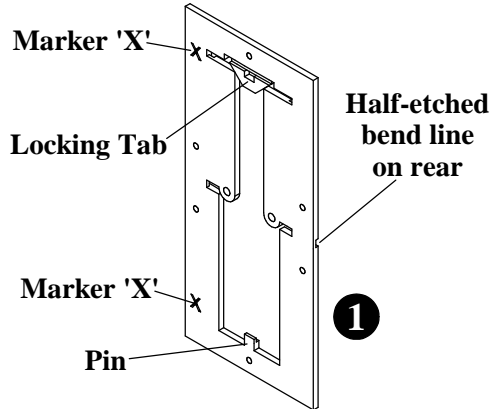
MINIBLOX



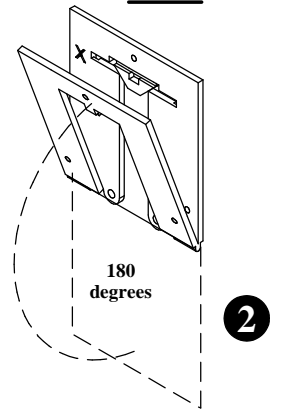
SPACESAVER

Although their size may differ, the procedure for folding the hornblock etch is the same for each type.

Fold the etch through 180 degrees, so the markers 'X' face each other. The half-etched line is on the outside of the fold.

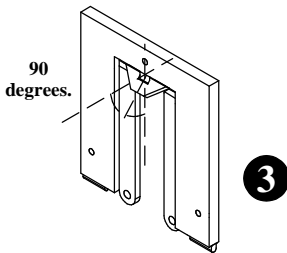


Clip out the etch and clean off any mounting tabs.

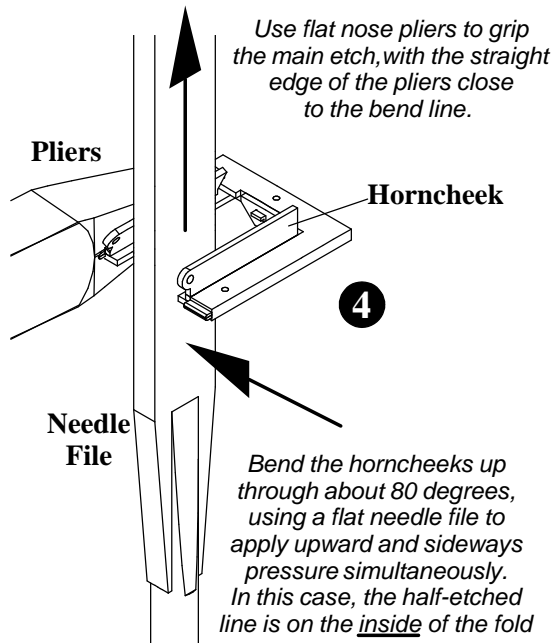


When it's folded, tap the layers between two pieces of hardwood, so they sit absolutely flat.

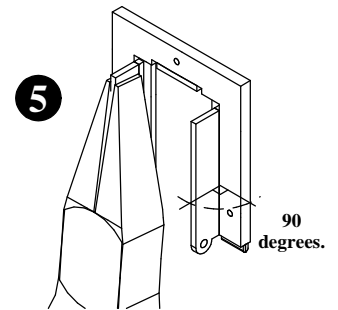
Hold the layers tightly together and fold the locking tab through 90 degrees, so it locates on the small pin.



The end of a flat, pointed needle file is a good tool for this job. The tab locks the layers together, eliminating the need for solder.



Bend the horncheeks up through about 80 degrees, using a flat needle file to apply upward and sideways pressure simultaneously. In this case, the half-etched line is on the inside of the fold



Finish off the horncheek bends so they are at 90 degrees. Check this through a magnifying glass and adjust as necessary.

For SpaceSaver 'CSB' units, follow the instructions (overleaf) at this point...

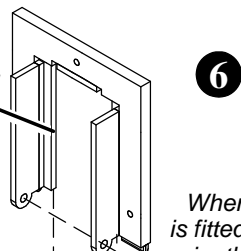
Use fine emery to clean up the bearing, remove any burrs and then try it in place - the groove on the block locates on the front layer of the etches.

If the bearing's tight in the etch, check that these edges aren't 'bottoming out' in the groove...

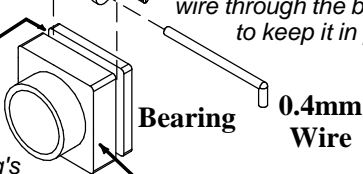
...If they are, use a file to remove the sharp 'cusp' from the edge of the etch...

... so there is clearance in this groove...

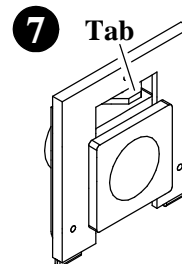
...then polish the bearing's side faces until it's a smooth, sliding fit in the etch.



When the bearing (and tag) is fitted, slot a length of 0.4mm wire through the bottom holes to keep it in place.



The completed assembly can now be soldered to the inside face of the chassis, using axle jigs. If you fit it with the bearing in place, make sure the sliding surfaces are lightly oiled, to prevent the bearing being soldered to the etch.



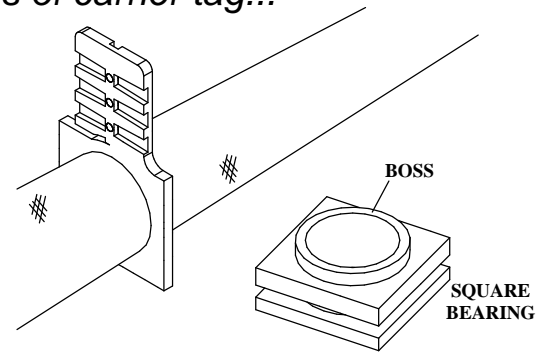
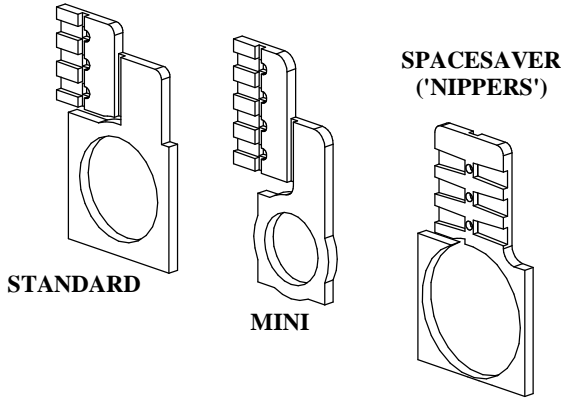
The top edge of the cut-outs on most loco chassis is 4mm above the axle centre. For 'Standard' and 'SpaceSaver' hornblocks, butt the tab up to the top of the cut-out, to set the unit at the correct height.

For MiniBlox, the top edge of the tab is 3mm above the axle centreline.

To fit Standard or MiniBlox 'CSB' Tags, turn to the instructions (overleaf) at this point...

For all types of carrier tag...

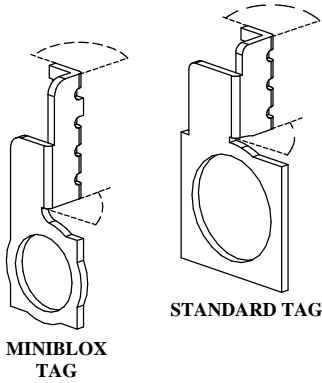
Three types of 'CSB' Carrier Tags are available to fit our hornblocks.



...open out the large hole in the tag, so it's a snug fit on the circular boss at the rear of the bearing.

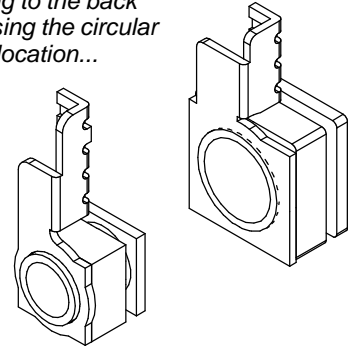
STANDARD AND MINIBLOX TAGS

Carefully fold the top tab to make a three-sided box shape.



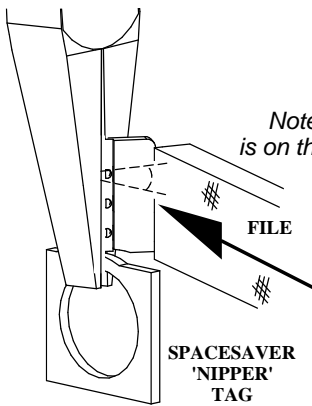
To prevent them from distorting when bending, use small, flat-nosed pliers to grip the etches near the bend lines.

Solder the tag to the back of the block, using the circular boss for location...



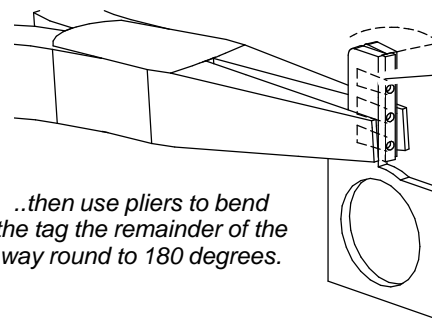
... then resume the assembly sequence at stage 7, overleaf...

SPACESAVER TAGS



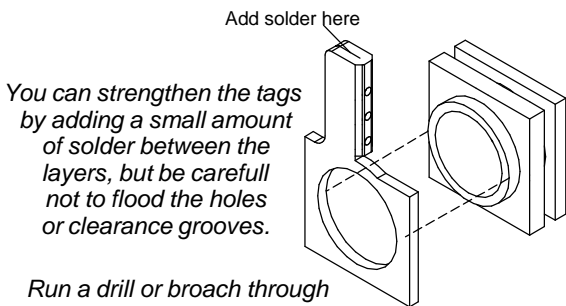
Note that the bend line is on the outside of the etch.

Grip the main etch near the bend line and use a file to push the top tag through about 90 degrees...



...then use pliers to bend the tag the remainder of the way round to 180 degrees.

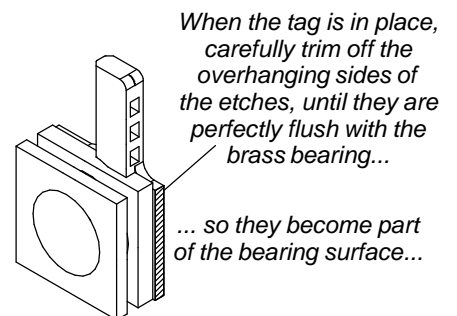
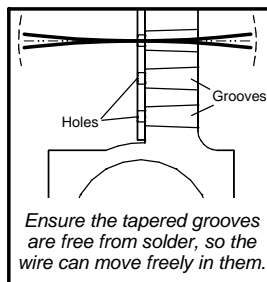
The three tapered clearance grooves should now be between the layers (on the inside).



You can strengthen the tags by adding a small amount of solder between the layers, but be careful not to flood the holes or clearance grooves.

Run a drill or broach through the holes and open them out to suit your spring wire...

...then solder the tag over the circular boss on the block, making sure it is absolutely square.



When the tag is in place, carefully trim off the overhanging sides of the etches, until they are perfectly flush with the brass bearing...

... so they become part of the bearing surface...

... then resume the assembly sequence at stage 6, overleaf...

HIGH LEVEL

DEAN TENDER CHASSIS

*Designed for rigid, compensated or
CSB systems.*

*Complete with High Level
MiniBlox.*

*Full brakegear and detail castings
are included.*

P o w e r P a c k

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