

GWR Collett Tender Chassis Kit

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

Before starting work, familiarise yourself with the parts in the fret. The Brakegear is assembled using a jig, shown shaded in Figure 10, which comes as part of the fret. It's important not to damage or cut this area when removing any of the other parts.

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 hornblock 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 lengths 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, as 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, to 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. Open out the holes in the Crossshaft Carrier (7) 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. For Bachmann RTR tenders, file these tabs flush with the top surface of the chassis; for other makes, leave them as they are until you try the chassis in place, then trim them as required.

Body Preparation

Once you have the basic chassis you can adapt the plastic underframe to suit it. First, pop out the wheelsets, then undo the screws that hold the tender body in place and separate the two main parts. On the tender body, other than any super-detailing work you may wish to do, all that is required is to remove the two small moulding lips from the ledge behind the front bufferbeam.

Turn your attention to the underframes, making sure they are completely flat on their underside. The sideframes' inner faces may need to be thinned down, depending on the gauge: for 'OO' models, you can probably leave them as they are; for EM you'll need to remove enough material to allow your new wheelsets to fit between the sides (with a bit of clearance). P4 modellers should thin the sideframes down to about 0.7mm thick. We found, this was best done (very carefully) using a large flat file that has a safe (smooth) edge.

Finally, trim off the front, leading edge of the sideframe and form a new corner, 3mm back from the position of the original. This gap will not be noticeable behind the steps.

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 detail the end of the Handbrake Lever (8) then trim the wire slightly proud at the sides. Solder the two halves of the Steambrake Lever (9 & 10) together then use another short length of the above wire to represent the pivot at the end.

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 Inner Journal Detail (13) and the Lifting Link (14) so they accept 1mm wire, then clip out the water scoop mount and bend it to shape, ready to be detailed.

Slot a 16mm length of 1mm wire through the sides of the mount and through the lifting link, then use this to locate the inner journal detail. Slide the link to the centre of the mount and solder the wire and the detail in place, so the wire is almost flush at one side and protruding from the other, as shown in Figure 4, then trim the inner end of the wire flush with rivets on the inner journal detail. 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. Note: For EM/P4 'CSB' chassis (This doesn't apply to 'OO') **do not** solder the RHS of this assembly to the plate (3) - this will allow you to snap it off later, to gain clearance for the 'CSB' wire.

For all types, open out the hole in the Outer Lifting Shaft Journal (part 15 for 'OO' or 16 for P4) to suit 1mm wire, then bend it to shape. Slot this over the protruding, outer end of the lifting shaft as you locate the tab in the side of the chassis, then solder the journal to both the chassis and the wire/shaft, before finishing off the whole shaft assembly by trimming the outer end of the wire flush with the outer journal's rivet detail.

For EM/P4 'CSB' models only, study Figures 1 and 5 and then carefully grind away the small circular RHS journal from the shaft, which will allow you to snap off the area of part 12, shown shaded in Figure 1. For extra rigidity, you may wish to brace the outer journal using a length of 0.7mm wire, as shown in the diagram.

Clip the Water Scoop Casting (17) 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 (18 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, and then through the front end of the Water Scoop Push-rod (20 or 21). Add the Halfshaft Journal (22) 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 etc.

To finish off, solder the Water Scoop Push-rod in place. This differs, depending on gauge: for 'OO' versions, use 20 which should be butted hard up to the side face of the journal (22) as shown in Figure 3.

For EM/P4 models, refer to Figures 1 and 3 and use a short length of 0.4mm wire to locate the small end of the EM/P4 Pull-rod (21) on the chassis side. Solder the rod hard up to the chassis, solder the opposite end to the scoop shaft, so the rod runs straight, then grind the location wire flush at both sides.

Finally, and for all gauges of model, remove the area (Hole 'H' in Fig. 3) from the left side of the carrier and tidy up the edge (see Fig. 4).

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 (23 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.

Brakegear

During the following sequence, it's vitally important that you don't solder anything in place until the instructions say so. Take care not to damage the assembly jig (which is also part of the fret) when removing any of the components contained within it.

Before removing any of the brake rod parts, note that there are various small components that are not easily distinguishable from one another, but, because of their precise fit, are not interchangeable. In order to avoid confusion therefore, some parts are marked with a small marker dot to assist identification.

Study Figures 6 – 9, then proceed to remove the Brake Rods, Stretchers and Brake Rod End Details (24 - 41) from the fret, identifying each one as you do so. Cut three 40mm lengths of 0.5mm diameter wire, bend about 5mm over at one end to make an L-shape, and file a point at the opposite end of the wire.

First, noting that they are handed parts, slide the Trailing Rods' Rear, Inner Details (24 & 25) onto the rear stretcher. These parts are marked with a small dot on the back surface. Push them along the Rear Stretcher (26 – this also has dot at the front) so they go beyond the small stops.

Slide the front of the Trailing Brake Rods 27 & 28 onto the Midway Stretcher (29 – this is also marked with a dot to distinguish it from the front stretcher) until they butt up to the stops and snap into their notched recesses. This may not be easy at first – they may be tight on the stretcher - but a good fit is essential for a strong and accurate job. Persevere, easing the rods along the stretcher a bit at a time. Add the Trailing Rods' Front, Outer Details (30 & 31) to the outside of the rods. These details have small marker dots, which distinguishes them from the front rods' details, which are a fractionally different size.

Make sure all parts are facing the right way, then push the back end of the trailing rods over the ends of the rear stretcher until they snap into the recesses, as above. Add the small Outer Details (32 & 33) to the outer face of the rods, sliding them into place – for 'OO' this will not be visible so you can leave them off. Do not solder anything at this stage.

A brake building jig (shaded in the Figure 10) is provided to ease assembly and ensure that the finished brake rod assembly is square, straight and dimensionally correct. Take the brake jig (which you've previously removed from the fret) and fold up the crosswire anchors 'K', as shown in Figure 9.

Push the pointed end of an L-shaped length of wire through one of the holes at the midway stretcher location in the jig. Hold the rear brakegear assembly in place as you twist the wire, sliding it along the grooves in the stretchers, and through the semi-circular locations at the bottom of the various parts. Twist the wire as you go to ease fitting and - if it's too tight, run a 0.5mm drill bit or tapered broach through the locations to open them slightly. Concentrate on getting the rod ends correctly positioned in the notches, but don't worry too much about the details as they can be put right later. As you come to the other side of the jig continue to push the wire until the outer end clears the jig's outer edge. Once you've done this, swing the rear end of the assembly down and push a wire through the rear stretcher and all the parts, checking that the small outer details (32 & 33) are still in place.

Once the parts are locked in the jig, you can line them up accurately. Push the stretchers to one side - it doesn't matter which - so they butt up against one of the inside edges of the jig. Run a straight edge along the opposite side to check alignment. Check that the brake rods are located in their notches in the stretchers, adjust as necessary then, after re-checking the alignment of the stretchers, carefully tack the ends of the rods in place using small amounts of solder. Slide all the rod details hard up to the rod ends and solder these in place, then invert the jig and solder the wires into the grooves in the stretchers, taking care not to solder anything to the sides of the jig.

Refer to Figure 7. Fold up the small details at the rear ends of the Leading Brake Rods (34 & 35) with the bend lines on the **outside**, to make a handed pair. Now assemble the rods onto the Front Stretcher (36) along with the Leading Rods' Front End Details (37 & 38) then assemble them in the jig, locating the stretcher by using a wire as previously described, but this time, as you swing the back ends of the leading rods down, clip them fully home into their locations in the midway stretcher (Fig. 8). Check the alignments and solder the parts in place, just as you did for the rear section.

To complete the brake rod assembly, you'll need to fit the Adjuster Rods (39 & 40). First, solder the Adjuster Cants (41 x2) and bend up the small details at the rear of the rods, as above, so you have a handed pair. Bend up the guide holes 'L' at the front of the jig (see Fig. 9) and then, working on a flat, heat-proof surface, slide a length of 0.5mm wire through the guide holes in the jig, and through the holes at the front end of the adjuster rods as you hook the rear ends of the rods into their locations in the leading stretcher. After making sure they are sitting fully down in the stretcher, and checking that they run parallel to the jig sides, solder them in place on the leading stretcher only - be quick with the heat so you don't disturb of any of the other parts. The brake rod assembly is now complete.

The whole assembly should now be pretty solid. Make a final check that the jig is still straight and true, then check the brakegear, carefully applying heat to any joints that might need adjustment. Once you're sure everything is straight and square, pull out the front wire (from 'L') and cut the jig in half at the front and rear, which will allow you to slide it away from the ends of the stretcher wires.

Now turn your attention to the brake hangers in Figure 1. These have small folding tabs at the tops of the front layers (parts 42 x3 & 43 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 'M' will need to be filed off.

Take one of the Brake Hanger Front Layers (42 x3 & 43 x3) and carefully make the bend at the top. Use a short length of 0.5mm wire, pushed through the middle holes, to locate the Brake Hanger Rear Layer (44 x6) onto the front, then solder them together and trim the wire flush at the both sides. Repeat this process for all the hangers, so that you have three handed pairs, and then check the top and bottom holes are free from solder.

Offer the brake rod assembly up to the underside of the chassis (the wires on the stretchers should be on the underside).

With the chassis inverted, slot a length of 0.5mm wire through the brake set-up holes (N) in the brak shaft carrier, locating the actuators and the front ends of the adjuster rods as you go – the rods sit between the inside faces of the outer pair of actuators. The inner pair of actuators will be positioned later so, for the time being, slide them to the centre of the shaft (see Fig 3).

To set the position of the actuators (which are all still loose on the shaft), move the outer pair along the shaft, so they sit up against the brake rod ends, then use a steel rule or callipers to check they are equal distance from the sides of the carrier. Once you're happy with their position, solder the outer actuators to the crossshaft, but do not solder them to the brake rods, or the wires into the actuators.

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.

Slide a length of 0.7mm wire into the hanger pivot at the leading wheel location - do not solder in place. Now swing the whole brake rod assembly into position, which will allow you to slip the bottom ends of a handed pair of brake hangers assemblies over the wires on the brake front brake stretcher, whilst also locating the tops on the wire at the hanger's top pivot. Push the hangers hard up against the frames and then, as you hold them in place, carefully solder the bottoms to the stretcher, but do not solder the top wire in place.

Do the same at the middle and trailing brake hanger locations then trim the wire at the bottom of the hangers, so it is very slightly proud at both sides. Slide out all the loose wires to remove the completed brakegear assembly.

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) and slide lengths of 0.7mm wire into the tops of the hangers – this time, these should be trimmed so they equal the distance between the insides of the plastic sideframe, which will prevent them from sliding out when the body is fitted.

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. Try the body in place to check clearances.

For a compensated model, cut an M2 bolt to length 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).

Finally, when you come to refit the brakes, offer up the hangers to their locations as you spring the front ends of the brake rods over the short actuator pins, slide lengths of 0.7mm wire in at the tops of the hangers, and fit the body.

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 ('P' 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 and offer up the chassis, slotting the bolts through the fixing holes 'P' 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 Collett Goods loco chassis, once you have the loco drawbar trimmed to the correct length (see loco instructions) locate the 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.

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E MAIL - ENQUIRIES@HIGHLEVELKITS.CO.UK

FIGURE 3

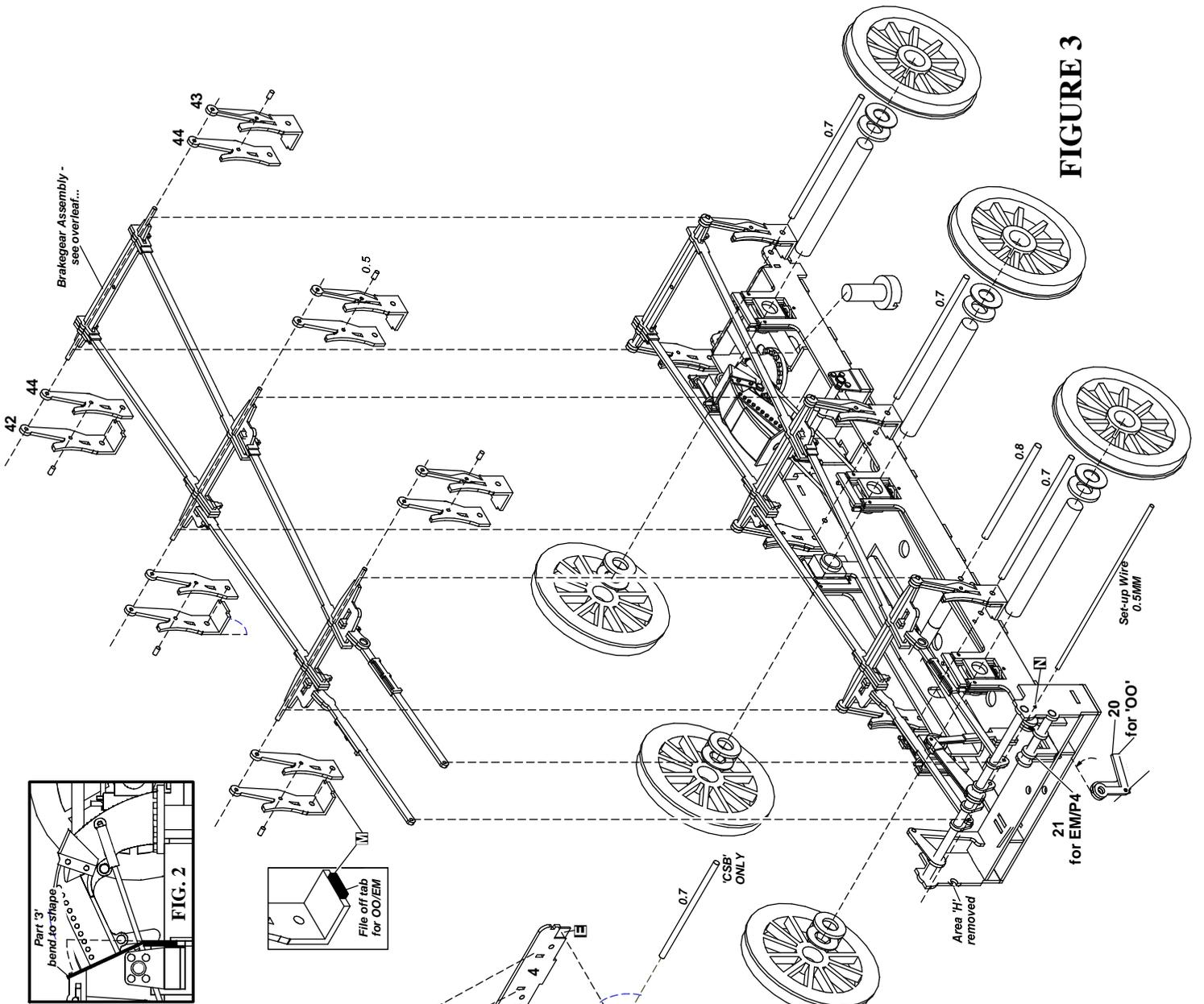
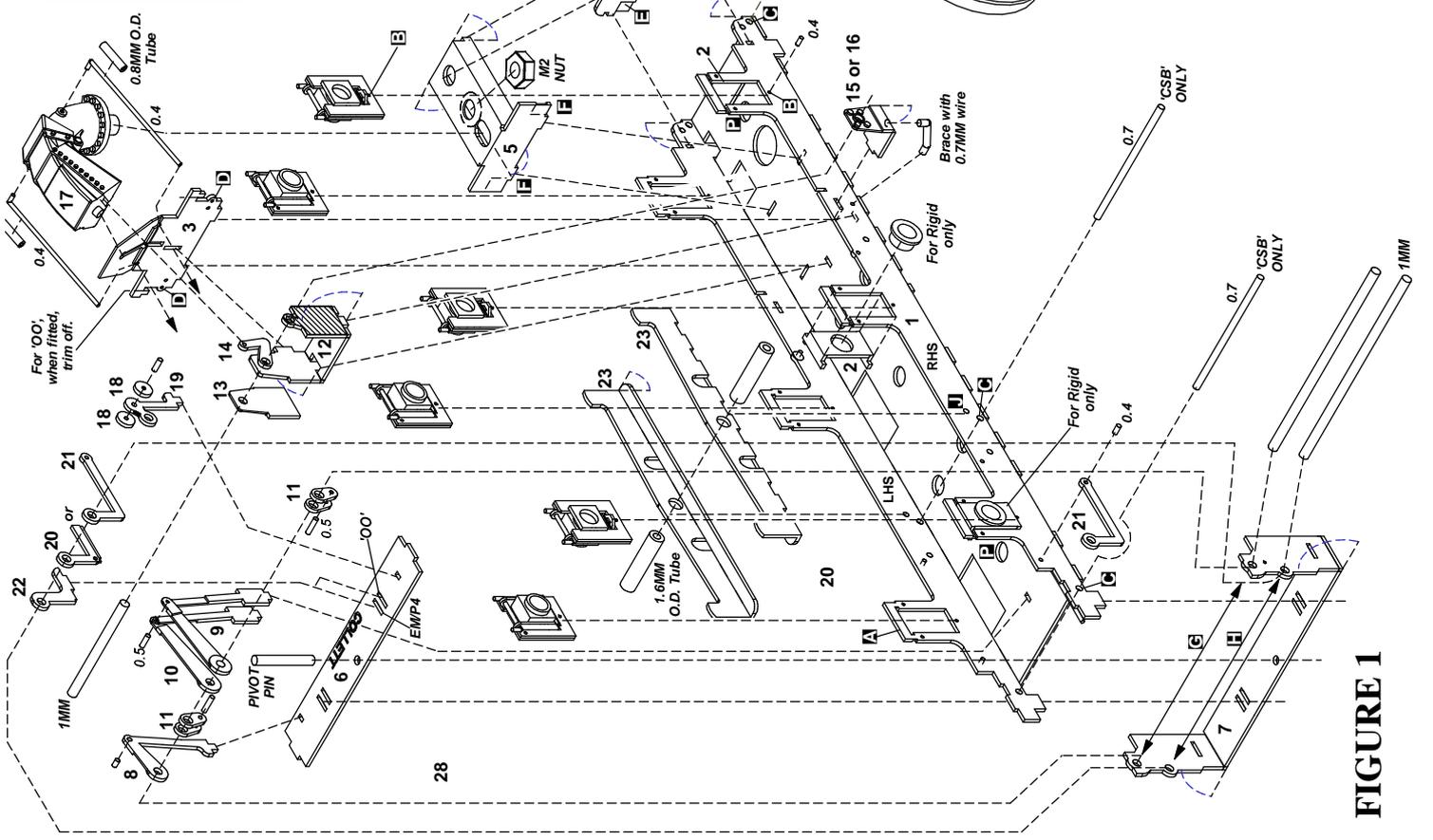


FIGURE 1



**BEAM
COMPENSATION**

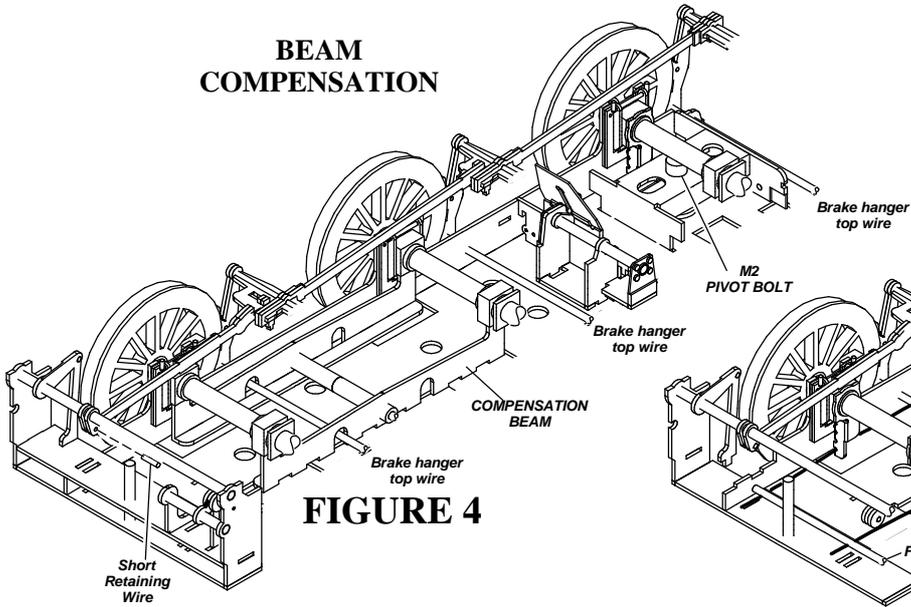


FIGURE 4

**'CSB'
SUSPENSION
SYSTEM**

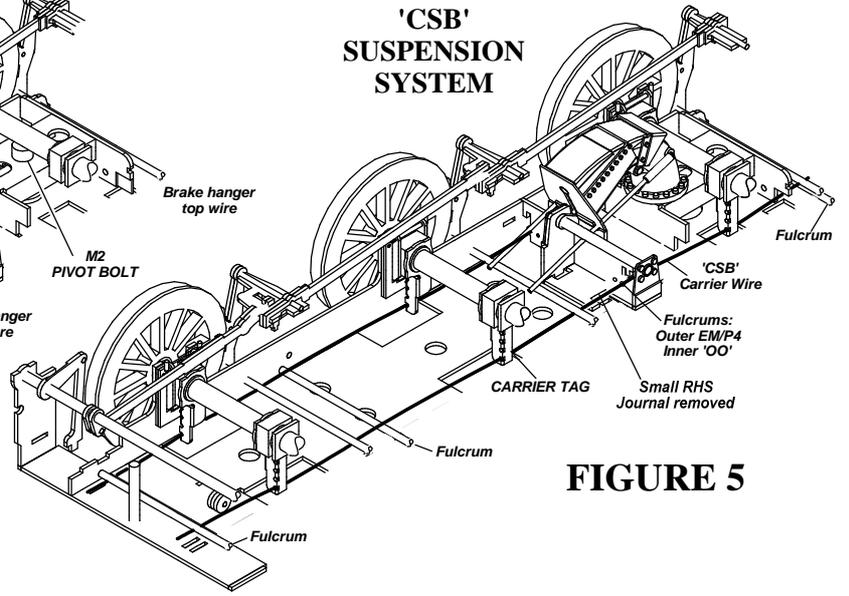


FIGURE 5

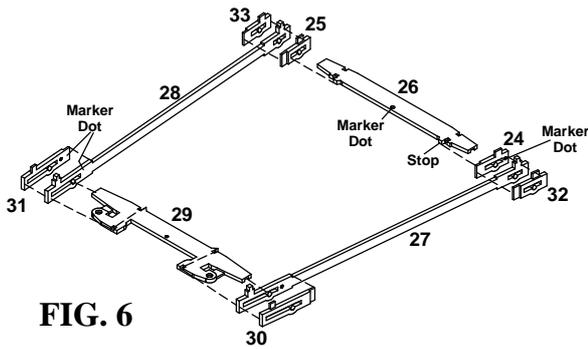


FIG. 6

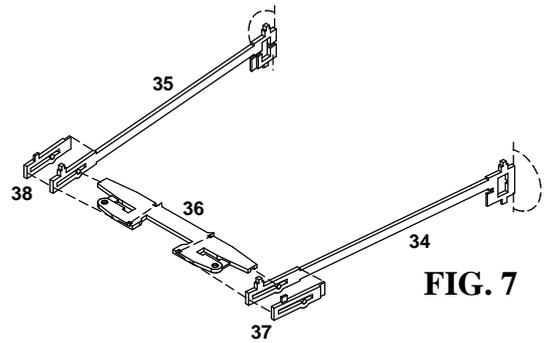


FIG. 7

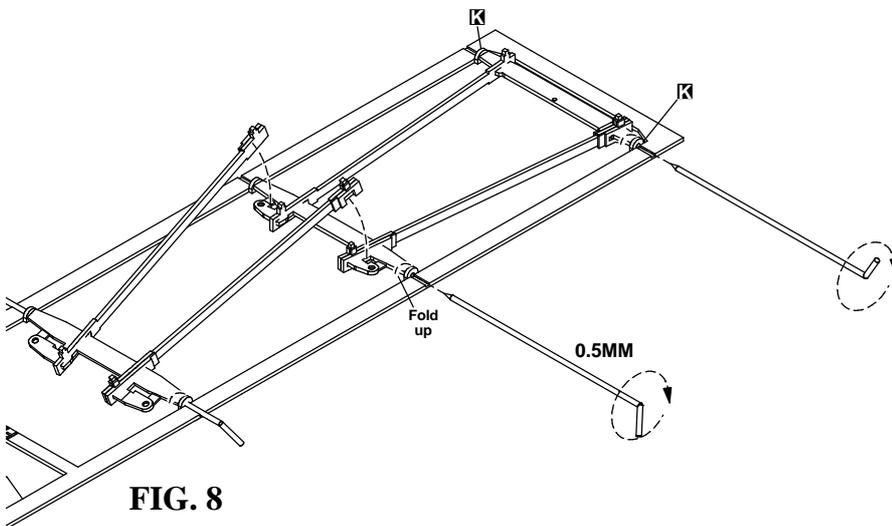


FIG. 8

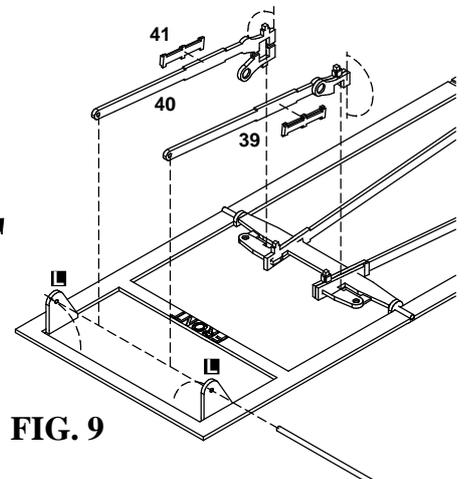


FIG. 9

COLLETT TENDER CHASSIS

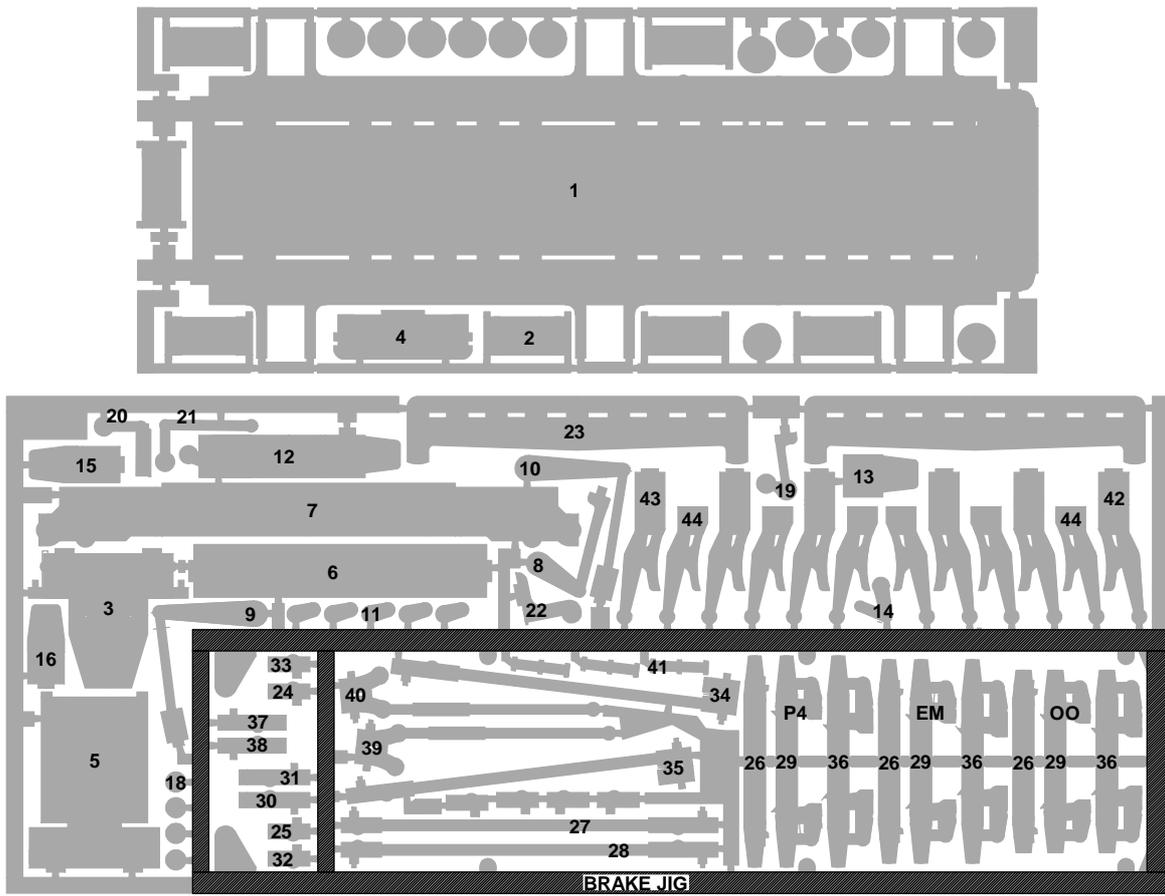
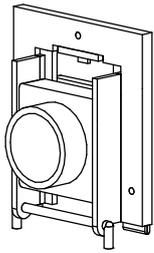


FIGURE 10

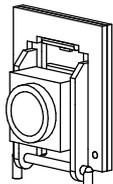
PARTS LIST

- | | |
|---|--|
| 1. Chassis Frames | 23. Compensation Beams (x2) |
| 2. Rigid Bearing Carriers (x6) | 24. Trailing Brake Rod, Rear Detail, Inner, LHS (x2) |
| 3. Water Scoop Resting Plate | 25. Trailing Brake Rod, Rear Detail, Inner, RHS (x2) |
| 4. Chassis End | 26. Rear Brake Stretcher (OO/EM/P4) |
| 5. Pivot Box | 27. Trailing Brake Rod, LHS |
| 6. Carrier Brace | 28. Trailing Brake Rod, RHS |
| 7. Crossshaft Carrier | 29. Midway Brake Stretcher (OO/EM/P4) |
| 8. Handbrake Lever | 30. Trailing Brake Rod, Front Detail, LHS |
| 9. Steambrake Lever LHS | 31. Trailing Brake Rod, Front Detail, RHS |
| 10. Steambrake Lever RHS | 32. Trailing Brake Rod, Rear Detail, Outer, LHS |
| 11. Actuators (x2) | 33. Trailing Brake Rod, Rear Detail, Outer, RHS |
| 12. Lifting Shaft Mount | 34. Leading Brake Rod, LHS |
| 13. Inner Journal Detail | 35. Leading Brake Rod, RHS |
| 14. Lifting Link | 36. Front Brake Stretcher (OO/EM/P4) |
| 15. Outer Lifting Shaft Journal – 'OO' | 37. Leading Brake Rod Detail, LHS |
| 16. Outer Lifting Shaft Journal – EM/P4 | 38. Leading Brake Rod Detail, RHS |
| 17. 'Water Scoop | 39. Adjuster Rod, LHS |
| 18. Weights | 40. Adjuster Rod, RHS |
| 19. Water Scoop Lever | 41. Adjuster Cants (x2) |
| 20. OO' Push-rod | 42. Brake Hanger Front Layer LHS (3) |
| 21. EM/P4 Push-rod | 43. Brake Hanger Front Layer RHS (3) |
| 22. Halfshaft Journal | 44. Brake Hanger Rear Layer (x6) |

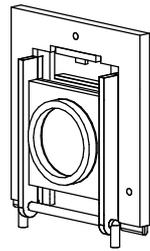
These instructions cover three types of High Level Hornblocks:



STANDARD



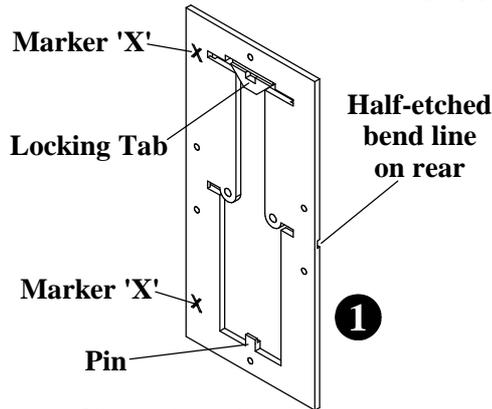
MINIBLOX



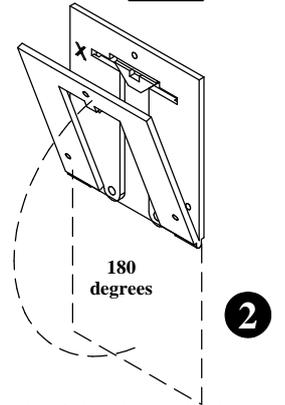
SPACESAVER

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.

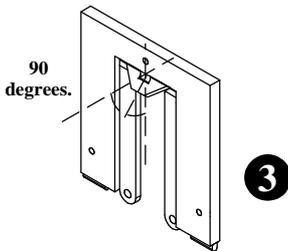


Clip out the etch and clean off any mounting tabs.

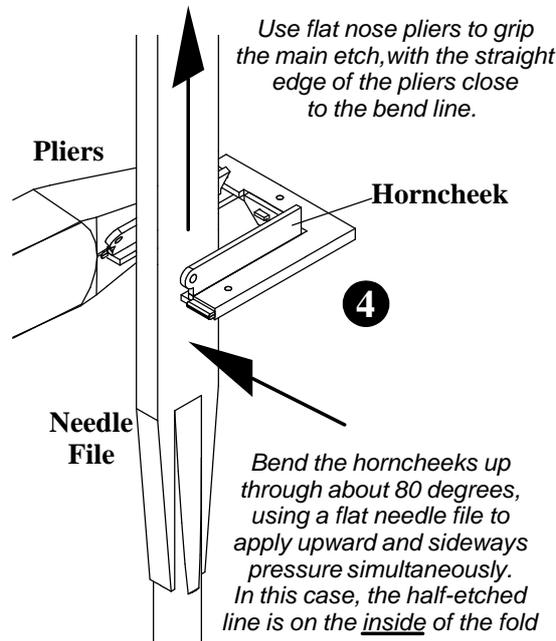


When it's folded, tap the layers between two pieces of hardwood, so they sit absolutely flat.

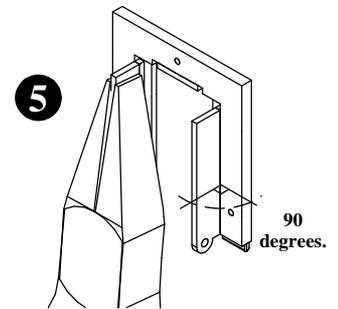
Hold the layers tightly together and fold the locking tab through 90 degrees, so it locates on the small pin.



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...

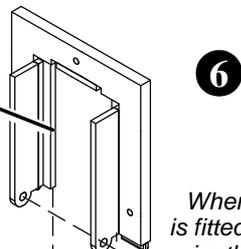
Use fine emery to clean up the bearing, remove any burrs and then try it in place - the groove on the block locates on the front layer of the etches.

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

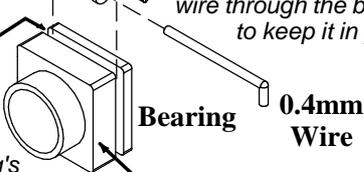
...If they are, use a file to remove the sharp 'cusp' from the edge of the etch...

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

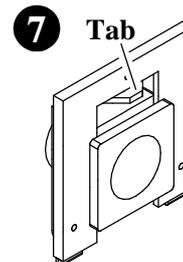
...then polish the bearing's side faces until it's a smooth, sliding fit in the etch.



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.



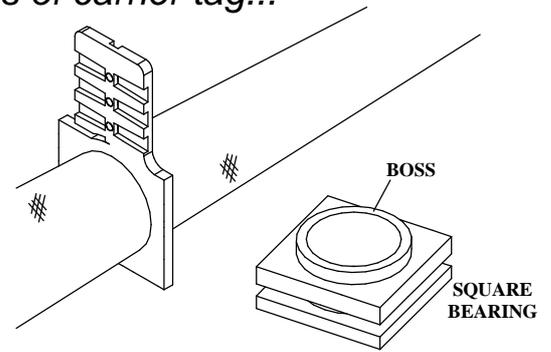
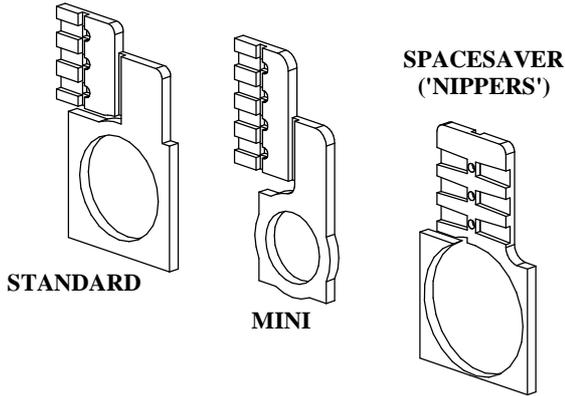
The top edge of the cut-outs on most loco chassis is 4mm above the axle centre. For 'Standard' and 'SpaceSaver' hornblocks, butt the tab up to the top of the cut-out, to set the unit at the correct height.

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...

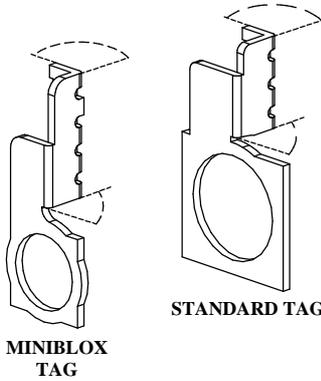
Three types of 'CSB' Carrier Tags are available to fit our hornblocks.



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

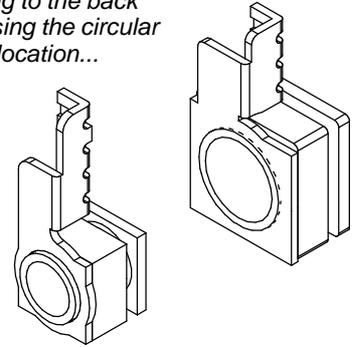
STANDARD AND MINIBLOX TAGS

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



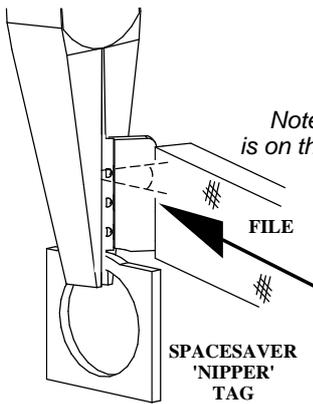
To prevent them from distorting when bending, use small, flat-nosed pliers to grip the etches near the bend lines.

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



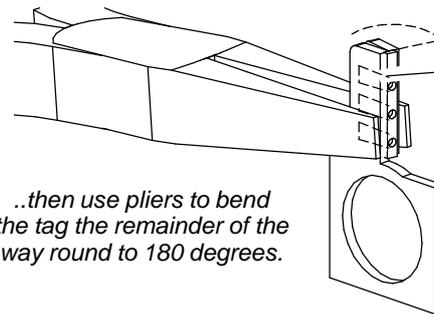
... then resume the assembly sequence at stage 7, overleaf...

SPACESAVER TAGS



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

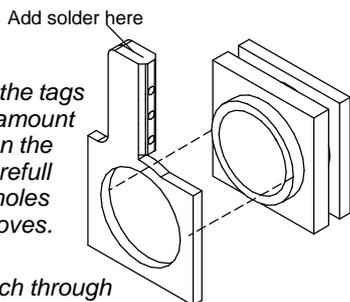
Grip the main etch near the bend line and use a file to push the top tag through about 90 degrees...



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

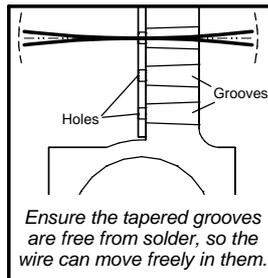
The three tapered clearance grooves should now be between the layers (on the inside).

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.

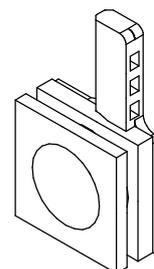


Run a drill or broach through the holes and open them out to suit your spring wire...

...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

COLLETT 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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