

Brassmasters

Scale Models

www.brassmasters.co.uk

Detailing Kit for Hornby 42xx and 72xx locos

Instructions

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1 Introduction

1.1 The detailing kit was designed as part of the Brassmasters EasiChas frames for the Hornby 42xx and 72xx locomotives. The EasiChas concept, which was devised by John Brighton, is to allow easy conversion of ready to run locos to EM or P4 gauge, which results in a fully sprung locomotive. Furthermore, the basic EasiChas conversion can be completed without the need to solder any of the main components together. It was realised that the detailing etch within these kits is just as suitable for those modellers wishing to enhance the model without converting to EM or P4.

1.2 There are a number of options in the detailing kit. These are, working from the front:

- replacement brake pull rods
- reverser lever
- brake shaft brackets
- detailed overlays for the rear frames
- improved sand box detail
- buffer beam brackets
- rear guard irons
- replacement cab back details
- bunker fender

2 General Notes

2.1 Numbers shown in square brackets [] in the instructions refer to the etch (D for the Detail etch) and part numbers, e.g., [D2] is part 2 on the Detail etch. The part number appears on the separate etch diagrams. Certain parts, e.g. bolts, wire, springs, are not numbered.

2.2 Some of the parts are small and easily damaged, so do please take care. Parts should be removed from the sheets as and when needed by use of a small scalpel etc., and the tabs and etch cusp removed with a small fine-cut file.

2.3 All folds and bends are made with the half-etched line on the inside unless otherwise stated.

2.4 On some parts it is necessary to emboss rivet / bolt heads from the reverse sides by use of a punch.

2.5 There are half etched test rivet holes on the back of the etch edging strip. Use these to get used to forming uniform rivets.

2.6 A simple method of cutting tube is to place the piece of tube on a smooth wooden board, hold a Stanley knife with a new blade at right angles to the tube where the cut is to be and then, with gentle pressure on the knife, roll the tube backwards and forwards with the knife blade until the tube parts. All the tube in this kit has been cut this way.

3 Dismantling the locomotive

3.1 Tools Required

- A selection of cross head and normal miniature screwdrivers
- Small pliers
- Small plastic bags and labels to identify parts & screws when dismantling
- Small files
- A steel rule
- Craft knife
- Plastic solvent, superglue and epoxy resin (24 hour & 5 minute)

3.2 In all cases bag and label all small parts and source of screws **as soon as removed** (they are all different) - trust us on this one!

3.3 When handling the loco body, be very careful in the area of the tank fillers and front lamp irons. It is very easy to brake off these two items.

3.4 Unscrew the front and rear screws that hold the body in place. The front screw is under the pony truck which has a hole to access it. On the 72xx the trailing truck is captive between the body and chassis so will fall out when you remove the chassis. Note these screws require a **straight bladed** screwdriver. All other screws on the loco are cross head.

3.5 To remove the keeper plate (with brakes attached), remove the remaining screws. This will release the pony truck.

3.6 Remove the glued-on sandboxes (by twisting with pliers) and sand pipes. Store these for use later. File off the pips in the chassis block behind where the sandboxes were fitted. The chassis now looks like this:

3.7 You will now have a box of bits and an invalid Hornby guarantee!

3.8 Wash your hands as you will have grease on them from stripping the chassis and the etches should be kept as clean as possible.

5 Frame overlays

5.1 Remove the rear frame overlays, [D1] and [D2] for 42xx, [D3] and [D4] for 72xx, and clean up the residual tabs with a small file.

5.2 The prototype 42xx frames had two different shapes at the rear depending on whether they had the bunker extended after building or they were built with an extended bunker. Without alteration they are suitable for the type built with an extended bunker. For the type where the bunker was extended after building, file back the rear of the frames as shown in the diagram. (If you are not sure what model you have, look at the side of the rear buffer beam. If there is a single edge to the buffer beam then it is a model of the type built with an extended bunker. If it has two edges about 2mm apart then it is the type where the bunker was extended after building).

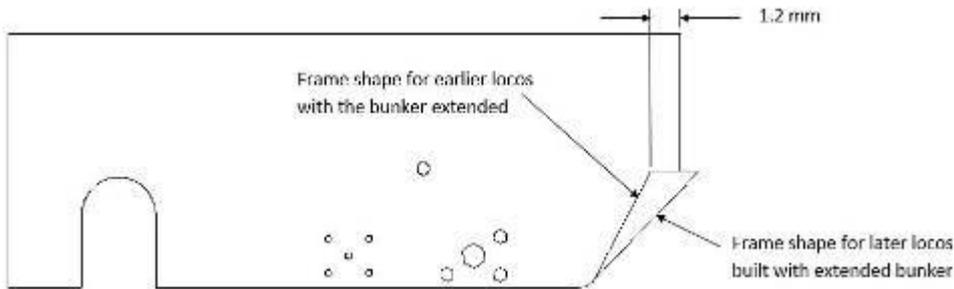
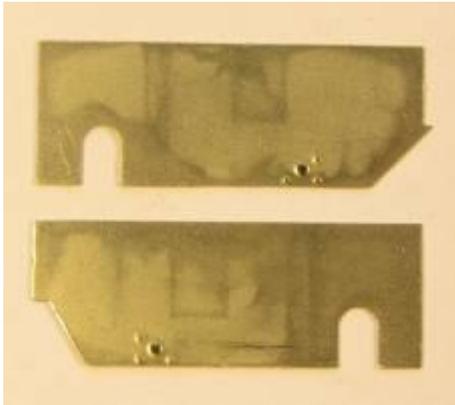
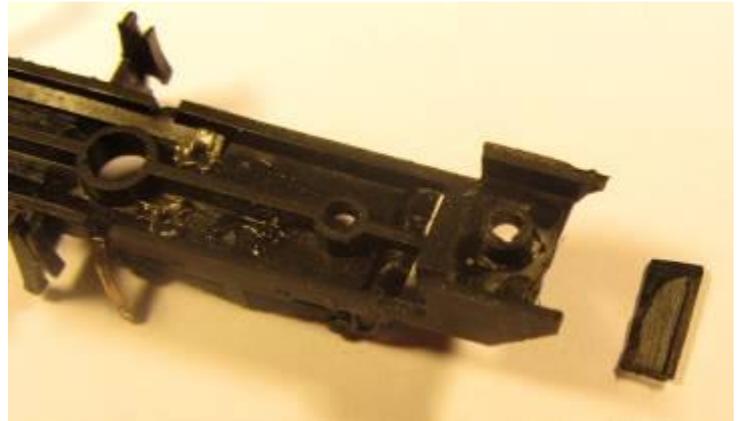


Photo showing later type at top and earlier type with cutback at the bottom



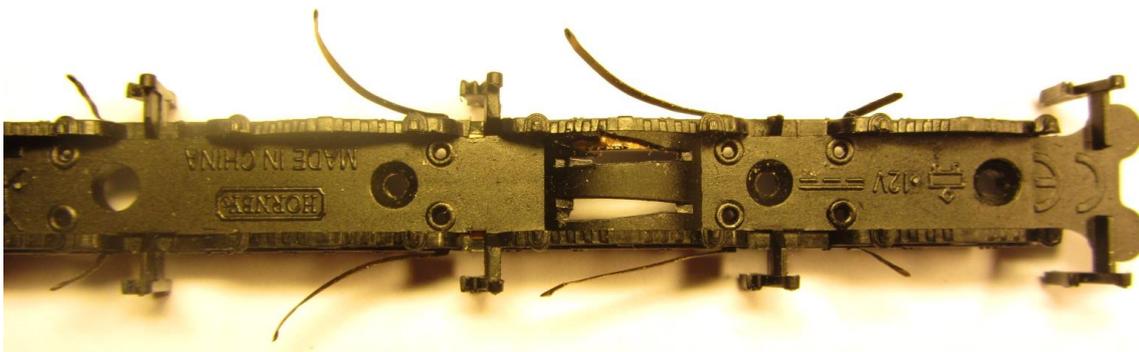
5.3 For a 42xx loco that had the bunker extended after building it is necessary to alter the back edge of the Hornby keep plate so it cannot be seen behind the overlay. The Hornby keep plate needs to be cut back as shown in diagram 2. This is best done with the keep plate removed from the loco. With the top of the keep plate uppermost remove the centre thin 45 degree back section by cutting down the inside of the left and right hand walls with a scalpel or sharp craft knife and then cut through at the base of the slope from one side to the other (see photo). Finally cut the side edges in a straight line from the top corner to the bottom corner (again see photo). Be very careful that you do not slip and cut yourself.

5.4 On both 42xx and 72xx the Hornby keep plate shows below the frame overlays. This is not a problem until after the point where the brake shaft is attached, and then probably only on the 42xx. You may want to reduce the height of the last part of the keep plate to the same height as the frame overlays although the guard irons cover this area. Place the overlays over the axle and hold in place with the overlay resting on the axle and the top edge parallel with the top edge of the Hornby chassis. Mark a line on the keep plate along the bottom edge of the overlay. Using a scalpel or shaft craft knife cut down to this line immediately behind where the brake shaft bracket is fitted, then cut horizontally along the marked line from the back. Alternatively, this can be left until after the detailing is finished, and you decide it is necessary. Be very careful that you do not slip and cut yourself.



5.5 There is one other alteration to make to the keep plate if you are fitting the etched brake pull rods. Turn the right hand slot when looking from underneath the loco from a parallel slot into a wedge shaped slot using a scalpel or sharp craft knife (see photo).

if you look at the photo carefully you will see I did the wrong one first and exposed the copper pick-up strip!



5.6 Continuing with the frame overlays, add the sandboxes (both 42xx and 72xx) and guard irons (42xx only) to the overlays as follows:

Sandboxes

5.6.1 The Hornby sandboxes are basically the correct shape but spaced the wrong distance off the frames. Carefully remove the plastic sandpipes and store for future use. File the sides of the sandboxes so they no longer taper out towards the frames. They should be 4mm wide.

5.6.2 Cut a piece of 2.0mm and 0.25mm plastic strip 8mm long and glue together. Cut approximately to the shape of the sandbox, attach to the sandbox using cyanoacrylate glue or epoxy resin (solvent?), and, when set, file to the same shape as the sandbox.

5.6.3 There are two methods of attaching the sandboxes to the frame:

Method 1

Attach the sandbox bases [D9 – left hand side, D10 – right hand side] to the frames using solder, cyanoacrylate glue or epoxy resin, using a piece of 0.5mm wire through the central hole to align them, then fit the sandboxes to the bases aligning with the bottom and non riveted edge, again using cyanoacrylate glue or epoxy resin.

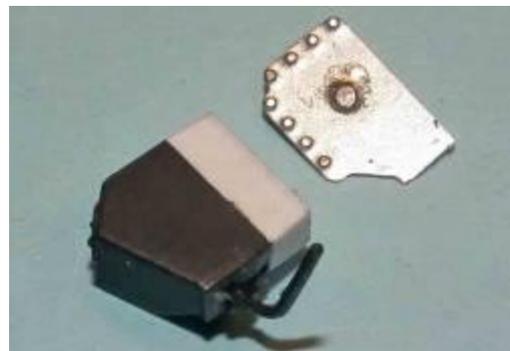
Method 2

Take the backplates [D9 – left hand side, D10 – right hand side] and solder a short piece of 0.5mm wire into the hole so it forms a locating stud. Clean up the outer (sandbox side) and the other side. Check it fits ok and flush on the frame. File the pin flush with the back of the frame. Make a hole in the back of the sandbox to clear the small piece of wire sticking out the front wire and then glue the sandbox etc. on as per method 1. This method is easier for correct alignment; you may even want to proceed through section 5.6.4 before finally gluing to the frame.

5.6.4 Either refit the original sandpipes or cut and then shape two pieces of 0.5mm wire and bend to shape to form the sandpipes. Attach to the hole in the lower edge of the sandboxes using cyanoacrylate glue or epoxy resin so that they terminate just short of the wheels

Note: this paragraph is best completed **after** all other construction work is finished because the sandpipes interfere with the removal of the wheelsets. See photo.

Photo right shows the extended sandbox fitted to 72xx (on a similar EasiChas fitted model)



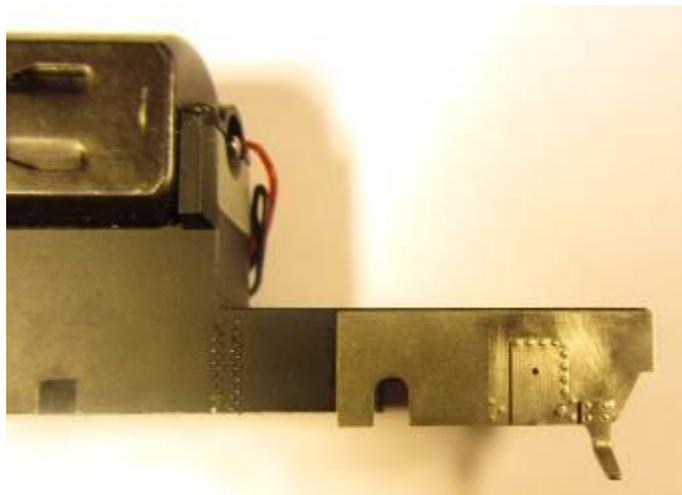
Guard irons 42xx only

5.6.5 On the 42xx glue or solder the rear guard irons [D5 and D6] to the chassis frames immediately in front of the curve up at the end of the frames and bend to shape.

Fitting frame overlays

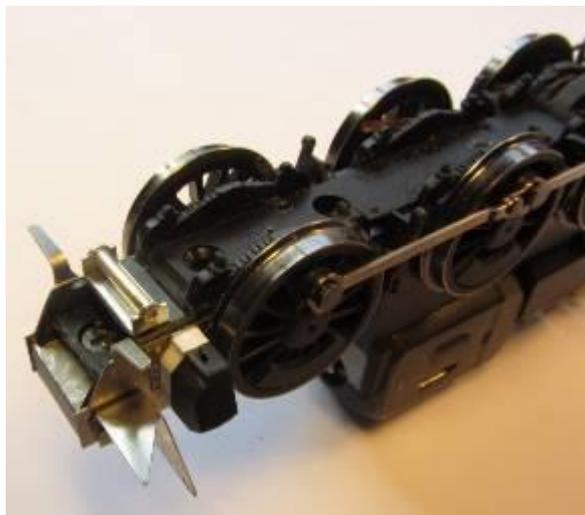
5.7 Remove the rivet detail from the Hornby keep plate as shown in diagram 2.

5.8 When frame overlays are completed, make sure they are completely flat and then attach to the Hornby frames using cyanoacrylate glue or epoxy resin. Place the overlays over the axle and hold in place with the overlay resting on the axle and the top edge parallel with the top edge of the Hornby chassis.



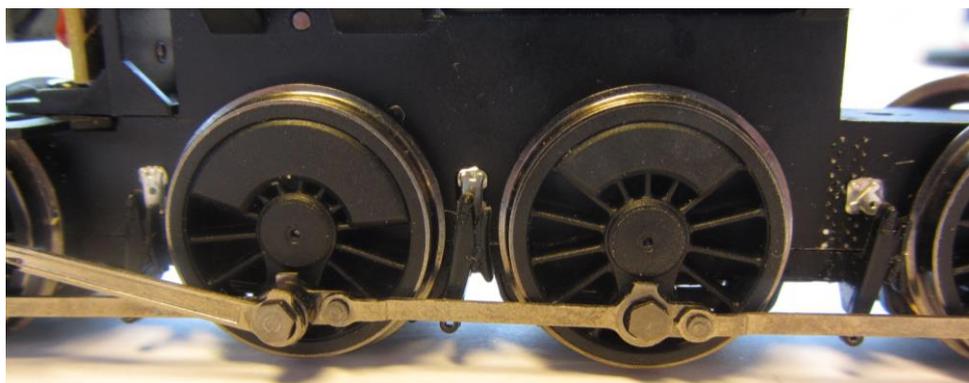
6 Brake shaft bracket

- 6.1 Bend up the ends of the brake shaft bracket [D11] at 90 degrees.
- 6.2 Cut the piece of 1.5mm brass tube to fit and solder between the ends of the brake shaft bracket.
- 6.3 Should you wish, the edges of the keep plate can be filed at an angle to represent the rest of the bracket, especially if you are removing the last part of the keep plate as per 5.4.
- 6.4 Attach the brakshaft bracket assembly using cyanoacrylate glue or epoxy resin.



7 Brake hanger brackets

- 7.1 The brake hanger brackets can be fitted to the Hornby chassis, the centre holes lining up with the top of the brake hanger.
- 7.2 Attach, using cyanoacrylate glue or epoxy resin, the brake hanger brackets to the chassis, [D12] for the leading 3 wheels, [D13] for the left hand side rear and [D14] for the right hand side rear.



8 Lower reverser lever

- 8.1 The lower reverser lever should be fitted to the right hand side of the chassis between the third and fourth wheels.
- 8.2 Curve out the lower reversing lever [D15] on the same side as the boss



- 8.3 If you have fitted the brake hanger brackets, attach the lever over the rear hole on the rear right hand brake hanger bracket.

The photo shows the reverser lever and brake hanger bracket fitted in a similar way on an EasiChas loco.

- 8.4 If you have not fitted the brake hanger brackets the lever should be attached to the chassis 10.5mm from the rear wheel centre and 3.5mm up from the bottom edge of the chassis.

9 Brake pull rods

- 9.1 The Hornby plastic brake pull rods are the wrong shape.
- 9.2 Carefully remove the brake pull rods [D16] from the etch. Cut off the rear boss where indicated on diagram 3
- 9.3 The section between each brake beam needs to be twisted through 90 degrees. To do this place the ends of two adjacent brake beams in a vice and using a pair of pliers, twist the centre section of the joining rod. Repeat for the other two sections. Finally the rear part of the rods which goes back to the brake shaft needs twisting. Careful attention needs to be paid to which direction in which this is twisted (I know, I got it wrong at first!). When finished looking from the underneath the loco towards the front the pull rods should be on the left hand side and the rear section should be twisted so the rear boss has the semi-circular face towards you. Finally, bend the pull rods up just in front of the rear brake beam.

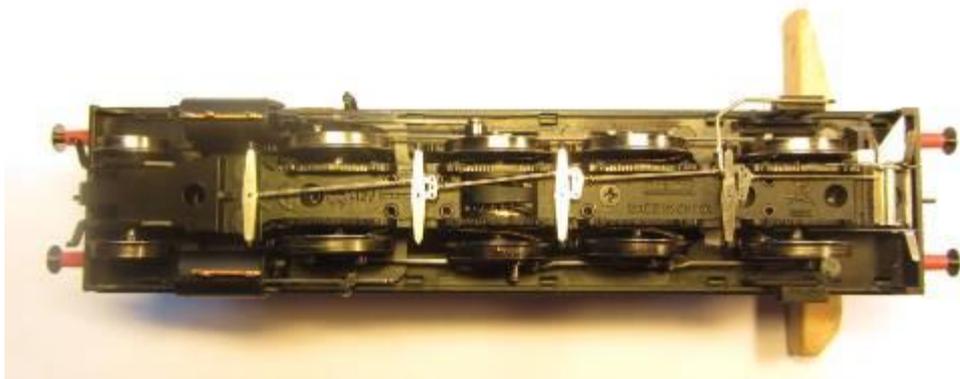
Diagram 3 is provided showing the correct shape of the pull rods after twisting and bending. If necessary, tweak the rods back into shape.

The pull rods can be further detailed if required. See 9.5

9.4 Fit the brake pull rods through the holes in the bottom of the plastic brake hangers, when the rear end of the rods should touch the underside of the keep plate. If fitting the injector pipes it will be necessary to split the brake pull rods. See 13.6.

9.5 Detailing should be done only after the brake pull rods [D16] have been twisted to shape.

9.6 Take the brake pull rods [D16] and insert a piece of 0.5mm wire through the leading hole. I found it easier for all the detailing if I drilled 0.5mm vertical holes in a piece of wood, pushed the wire into the hole and placed the brake pull rods over the wire.



9.7 Place front brake beam overlay [D17] over the wire and fix in place (this can be with solder or using cyanoacrylate glue or epoxy resin. Repeat for the second front brake beam overlay on the other face of the pull rods.

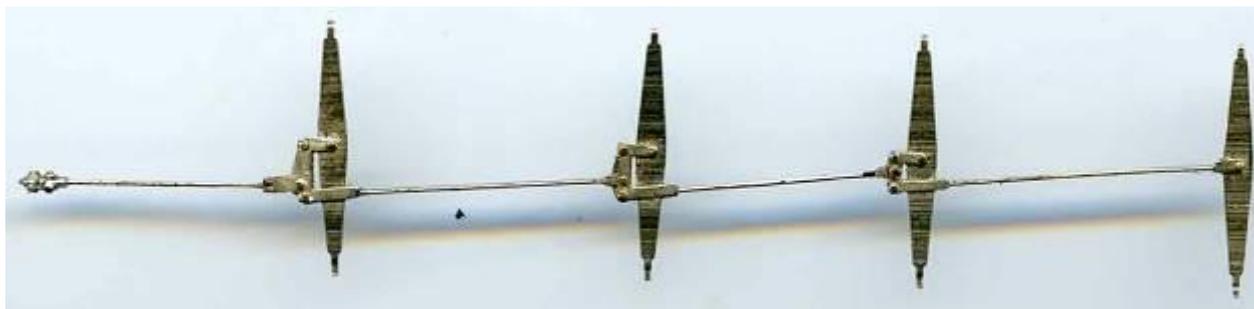
9.8 Insert 4 pieces of 0.5mm wire through the holes in the second brake beam.

9.9 Place second brake beam overlay [D18] over the wires and fix in place. Repeat for the other second brake beam overlay on the other face of the pull rods.

9.10 Repeat for the third brake beam overlay [D19] and fourth brake beam overlay [D20].

9.11 Finally insert a piece of 0.8mm wire through the rear hole of the brake pull rods.

9.12 Place the brake pull rod rear overlays [D21] to either side of the rear end of the brake pull rods and fix in place.



10 Buffer beam bracket

10.1 The buffer beam bracket can be fitted to the Hornby 72xx trailing truck but will restrict the sideways movement of the truck.

10.2 Take the buffer beam bracket left [D7] and buffer beam bracket right [D8] and push the rivets through from the back.

10.3 Using a triangular file make a groove between the two slots on each bracket on the etched side to aid bending. Also run the tip of the file along the side of the raised section which is towards the other triangular section again on the etched side to make a groove to aid folding.

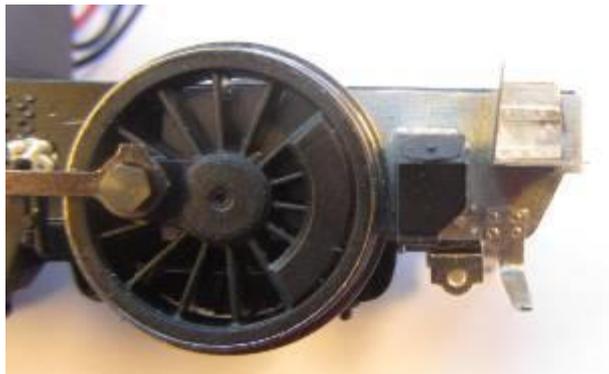


10.4 Fold the side section (the one with the two slots) up at right angles, then fold the other section up at right angles. Repeat for the other bracket.

10.5 With the chassis and body bolted together, trial fit the brackets to the loco. It may be necessary to trim the ends off the two triangular sections to clear the body/footplate retaining lug and the inside of the valance. With the brackets pressed against the bottom of the body, check that the lower triangular plate does not show below the buffer beam.

10.6 Attach the brackets to the frames using cyanoacrylate glue or epoxy resin.

Note – on the 42xx with rear frame extension and thicker buffer beam the bracket should not butt up against the inside of the Hornby buffer beam but should stand 1.2mm clear, the back edge lining up with the top corner of the sloping back.



11 Cab back

11.1 The Hornby cab back is incorrect and lacks the doors that open onto the coal bunker.

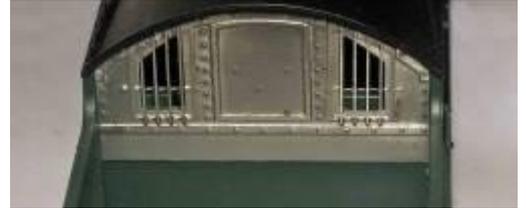
11.2 Remove the plastic coal from the bunker. This is most easily done by pushing from underneath after separating the footplate from the tanks (see 13.3.2)

11.3 Remove the plastic cab window/protection bars by pushing them out from the inside. This is done more easily by removing the cab roof. This is secured by glue over the cab side cut out. If you are lucky this can be broken by gently easing the roof upwards using finger pressure. If well glued then do not try and force it, but work with the roof still glued in place pushing out the glazing with a screwdriver.

11.4 Push through the rivets on the cab back [D22] from the back.

11.5 Fit the two cab window frames [D23 and D24] to the cab back using a little solder or glue.

11.6 The holes for the cab windows in the Hornby cab back should be opened out slightly in all directions especially downwards but be careful when filing not to damage the internal cab lockers. Glazing can be fitted, flush with the outside, if required.



Note – the photo shows the cab back fitted to a 72xx but the 42xx is exactly the same.

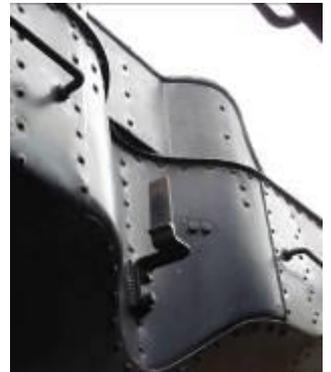
11.7 Attach the etched cab back over the Hornby cab back using cyanoacrylate glue or epoxy resin.

11.8 Trim the front edge of the plastic coal and refit if required. It is a useful support for real coal especially if lowered.

12 Fender

12.1 The Hornby body of both the 42xx and 72xx are fitted with a recessed bunker first fitted to the 42xx in 1930 and when built to the 72xx. From 1938 a fender was fitted to the top of the bunker back to allow more coal to be taken and protect the top rear lamp, although fitting was not universal – see prototype photos. Some of the Hornby bodies have a plastic representation of this whereas others don't but in all cases they are rather thick plastic.

12.2 Carefully bend the fender [D25] where there are gaps in the top edge using diagram 4 as a guide



12.3 Curve the outer ends of the fender again to match the drawing Diagram 4. Note that the profile does not simply follow the line of the lamp iron recess - see prototype photo.



12.4 Attach the fender centre bracket [D26] to the middle of the straight section so that the rivets on the fender align with those on the bracket. Repeat for the two fender side brackets [D27].

12.5 Attach the fender to the bunker top using cyanoacrylate glue or epoxy resin.

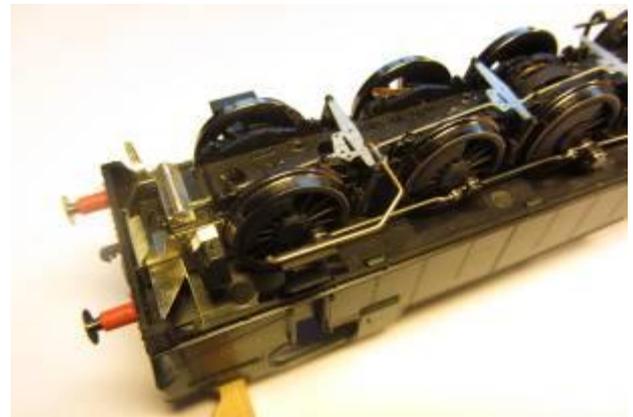
13 Injector pipes and bracket

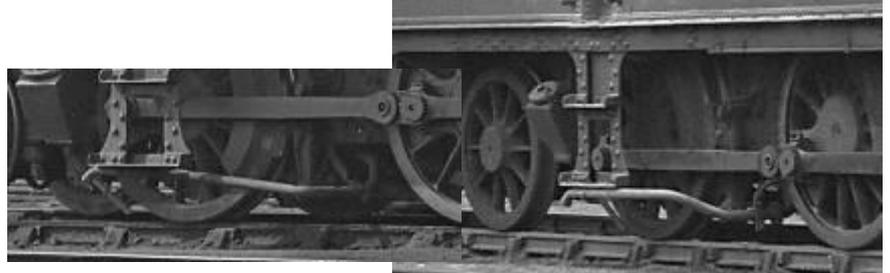
13.1 The injector pipes appear from behind the frames between the 3rd and 4th wheel each side and then run to the bottom of the steps.

13.2 With the keep plate removed, drill two 0.7mm holes immediately inboard of the rib supporting the rear brake blocks.

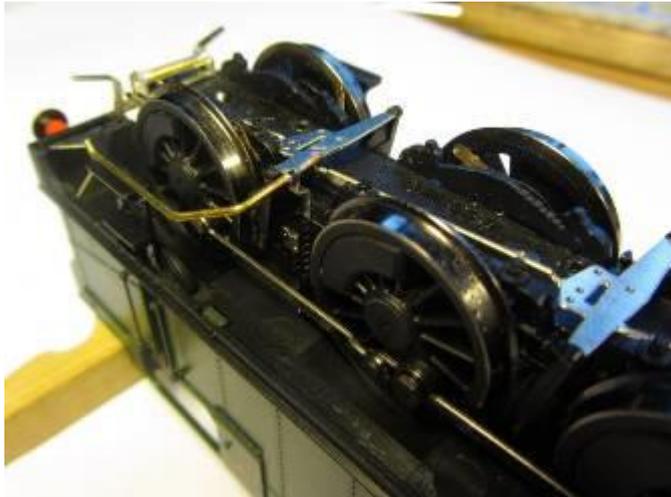
13.3 Attach two pieces of 0.7mm wire 40mm long into the holes in the keep plate.

13.4 Replace the keep plate and then bend the wire to shape so that it clears the brake cross beam and rests along the bottom edge of the footsteps (see prototype photos – one of which is a preserved loco) Note that it is cranked to clear the rod when it is at the bottom of its throw. The bend to return the pipe to the bottom of the steps can be either a bend then running horizontal (as second photo below), or a gentle slope (as third photo below) – it's back to those dated prototype photos!*





13.5 Remove the front lower 2 rivets on each side of the Hornby keep plate just ahead of the rear brake hanger. Attach the two injector pipe support brackets [D28], as seen in the preserved prototype photo, to each side of the keep plate in line with the front row of rivets (see 5.4 – the drawing of which is the opposite side to the prototype photo above!), bend to shape and solder to the injector pipes. Trim to length.



13.6 You will now find that you can no longer fit the brake pull rods as the injector pipe gets in the way. Cut the brake pull rods immediately in front of the rear brake beam and feed the rear end of the front section of the pull rod under the injector pipe (see photo). File a notch in the front edge of the rear beam and fit the rear beam in the rear brake hangers with the end of the pull rod resting on the underside of the keep plate (see photo in 13.4)

14 General improvements

14.1 Bunker, cab side and boiler hand rails

14.1.1 The initial reviews of the Hornby models complained that the smokebox door handles and bunker and other handrails were moulded on. Whereas this is true of the smokebox door handles, the bunker and other handrails are separate pieces of wire but pushed in so far as to leave no gap behind.

14.1.2 The bunker handrails are best pushed out from the inside the coal space. Remove the plastic coal from the bunker. This is most easily done by pushing from underneath after separating the footplate from the tanks (see 8.4)

14.1.3 Push out the rear and side handrails using something hard and flat.

14.1.4 The other wire handrails, the vertical ones on the side of the boiler (fitted from 194?) and the ones below the sliding shutter on the cab side, will need to be pulled out from the front.

14.1.5 Re-secure using cyanoacrylate glue or epoxy resin. The handrails should stand proud by 0.7mm. A piece of 0.7mm bent into a 'U' shape placed under the wire gives roughly the correct dimension

14.1.6 If the legs of the handrails are too short, it will be necessary to bend up some new ones. The prototype size is 13/16" but as this scales up as 0.25mm, it is probably better to use nothing less than 0.3mm. This can be made a lot simpler by us of a jig, a particularly useful one being available from Bill Bedford

14.1.7 The vertical hand rail on the boiler is the wrong length. The correct length is 11½" but 4mm length will be fine. Mount using the existing lower hole and drilling a new hole for the upper end.

14.2 Handrails fitted in handrail knobs

14.2.1 Just for reference, the vertical cab handrails are too thin. They should be 0.5mm thick. The ones on the front footplate and boiler top are the correct size.

14.3 Footplate

14.3.1 The Hornby footplate on all the examples I have seen is not straight from the front of the bunker towards the front buffer beam. Part of the reason for this is that the top edge of the motion bracket needs filing back slightly. The other reason is the base of the smokebox saddle is slightly too low and lop sided. It is possible to rectify both of these issues but it does require the removal of the footplate from the body.

14.3.2 To remove the footplate from the body it is necessary to firstly remove the two stay rods between the footplate and the smokebox at the front of the loco. Pull the rods out sideways from the smoke box and when free pull vertically out of the footplate. Put aside carefully for future use.

14.3.3 Squeeze the bottom of the side tanks near the front whilst pulling down on the footplate and it will come unclipped. Repeat further back along the tanks until the whole footplate comes away.

14.3.4 On the locos with the raised footplate over the cylinders, the footplate itself may need to be bent as well.

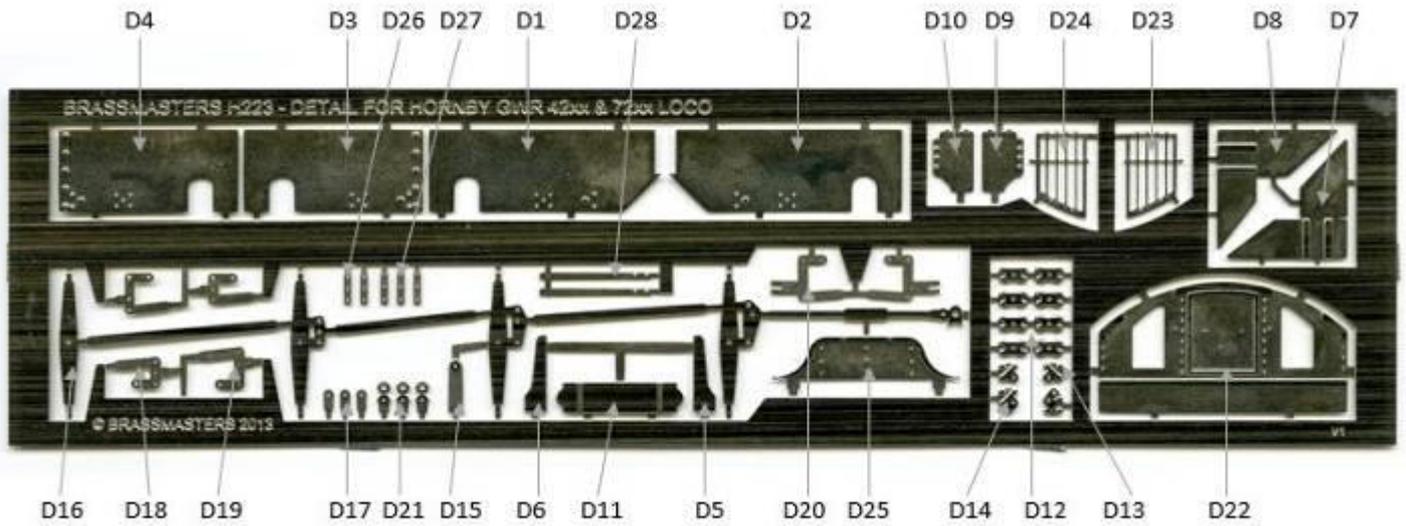
14.4 Whistles

14.4.1 If you are replacing the whistles with cast or turned brass, they should be mounted 15" (5mm) from cab front.

The completed model showing the significant improvement at the "rear end".



Detailing Etch



D1	42xx frame overlay left (00)	D15	Lower reverser lever
D2	42xx frame overlay right (00)	D16	Brake pull rods (00)
D3	72xx frame overlay left (00)	D17	Front brake beam overlay (2)
D4	72xx frame overlay right (00)	D18	Second brake beam overlay (2)
D5	Guard iron left (00)	D19	Third brake beam overlay (2)
D6	Guard iron right (00)	D20	Fourth brake beam overlay (2)
D7	Buffer beam bracket left (00)	D21	Brake pull rod rear overlay (2)
D8	Buffer beam bracket right (00)	D22	Cab back
D9	Sandbox base left	D23	Window grill left
D10	Sandbox base right	D24	Window grill right
D11	Brake shaft bracket (00)	D25	Fender
D12	brake hanger bracket front (6)	D26	Fender centre bracket
D13	brake hanger bracket rear left	D27	Fender side bracket (2)
D14	brake hanger bracket rear right	D28	Injector pipe support brackets (2)

Sundry components

0.5mm brass wire	4.0mm x 2.0mm plastic strip
0.7mm brass wire	4.0mm x 0.25mm plastic strip
1.5mm brass tube	

Diagram 3 – brake pull rods

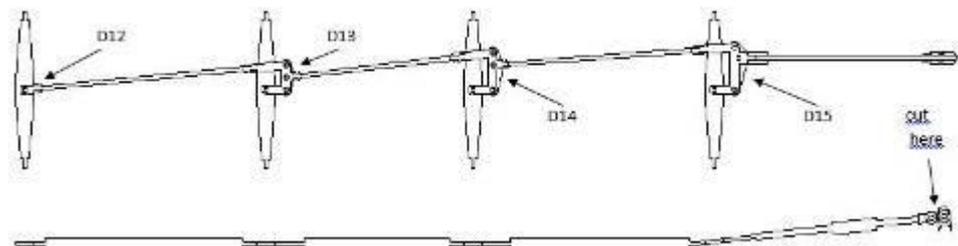


Diagram 4 – fender

