

## Hornby 8F detailing/upgrade kit

This kit provides a range of detailing components that will significantly enhance Hornby's 4mm scale 8F, particularly the latest version with chassis-mounted motor. This is a fundamentally accurate model that can readily be transformed into an excellent one. The principal areas needing attention are the front end, the running plate, the coal space and the tender axleboxes. There were many variations of detail among the 8Fs and by providing a number of alternative parts; this kit will enable you to produce an accurate portrayal of an individual locomotive. These parts can also be used with Hornby's earlier, tender-powered 8F although some adjustments may be necessary, especially relating to the tender. Our instructions describe modifications to the DCC-ready version.

These detail parts will make a big difference to the appearance of the loco. But even if you retain Hornby's 00 gauge driving wheels, the model will look a lot more realistic if you replace the pony and tender wheels with the correct Stanier bevel-rim pattern, available from Alan Gibson (ref G4839ST and G4851ST respectively).

### Prototype notes

Considering they were built by no fewer than eleven different workshops – Crewe, Vulcan Foundry, North British, Beyer Peacock, Horwich, Swindon, Darlington, Doncaster, Eastleigh, Ashford and Brighton – it's extraordinary that there were relatively few detail variations among the 8Fs. It's still easy to be caught out, however, and we list below the key variants among these locomotives. There were other minor (and – in 4mm scale at least – all but invisible) differences reflecting individual workshop practices, such as the Silvertown lubricators fitted to 8Fs built by the LNER in preference to the Wakefield type used elsewhere. Moreover, engines built with one particular set of features often acquired different characteristics during works visits. As always, the only way to verify the state of play at any given moment is to study dated photographs – and even then you should be prepared for surprises.

We have used LMS numbering throughout, except when referring to BR-period modifications and the three ex-WD engines acquired in 1957 that were never in LMS ownership.

### **Further source material on the 8Fs**

R J Essery and D Jenkinson An Illustrated History of LMS Locomotives, Volume 5 (Silver Link, 1989)

A J Powell Stanier Locomotive Classes (Ian Allan, 1991)

J W P Rowledge Heavy Goods Engines of the War Department, Volume 2 (Springmead Railway Books, 1977)

Locomotive Illustrated No 40 (Ian Allan, 1984)

British Railway Journal No 21 (1988) article on Stanier tenders

British Railway Journal No 25 (1988) article on LMS and WD 8Fs

### **Prototype notes**

**Boiler** Nos 8000-11 were built with short-firebox domeless boilers, although No 8003 quickly acquired a long-firebox boiler to create a spare for the other locomotives. This arrangement continued throughout the lives of these particular engines. All other 8Fs had an identical pattern of long-firebox, vertical throatplate boiler as per the Hornby model.

**Brakes** Nos 8000-5 originally had steam brake only. There was no vacuum exhauster on the left-hand side of the boiler. All other 8Fs had vacuum brakes, which the first six acquired in 1937-8, along with the relevant boiler fittings.

**Top feed** Some 8Fs latterly acquired the Ivatt pattern of top feed. This was almost identical to the Stanier type but had a small extra cover plate on top. Nos 48773-5, bought from the WD in 1957, were delivered to BR with large sausage-shaped top feeds which Nos 48774-5 carried until withdrawal. No 48773, however, was soon fitted with a Stanier-pattern top feed.

**Steam lance cock** This was located on the right-hand side of the smokebox, aligned midway between the handrail and the smokebox door catch. By 1960 modifications were in hand to move the fitting to a lower position on the bottom half of the smokebox – on the altered engines the feed pipe was external and led down from a steam valve

immediately below the chimney. Many engines, however, retained the mid-height position until the end of steam in 1968.

**GW vacuum ejectors** A total of 23 8Fs allocated to the Western Region had larger vacuum ejectors to create the 25in of vacuum standard on the WR (the rest of the world was happy with 21in). The engines concerned were 48402/4/10/12/15/17-20/4/30/1/4/6/44/50/9-61/70/1/5. Instead of the normal mounting beside the firebox, the equipment was mounted on the left-hand side of the boiler, behind the steam pipes, and was retained when the locomotives concerned were transferred to the LMR in the 1960s. Brassmasters produce a separate detail casting for this fitting.

**AWS** From the late 1950s onwards, many 8Fs (especially those allocated to sheds in the north of England) were fitted with AWS equipment. There was a battery box on the front of the cab on the fireman's side and a large air reservoir on the footplate just ahead of it. On the left-hand side, tucked in behind the ejector downpipe, was the small cylinder for the timing mechanism. The magnet on the front pony truck was protected by a bang plate below the front coupling.

**Buffer beams** All 8Fs were built with flush riveted buffer beams but snap-headed rivets sometimes appeared after repairs. Tender buffer beams, however, are always riveted.

**Axles** Nos 8000-165 had hollow driving axles when built. All subsequent engines had solid axles.

**Balance weights** Most 8Fs had built-up balance weights, identified by their square ends. Various odd batches had a crescent-shaped pattern cast integrally with the wheel – these encompassed Nos 8323-30/8-82/430-79/8500-9/8644-70/5-704/10-29. Some swapping around took place in later years. Locos of both types were modified in the 1950s to give a better balance of the reciprocating masses when 8Fs were used on fast freight turns. These engines were distinguished by a large star below the cabside number (although non-balanced engines were often used on class D freights and excursion traffic). In consequence there were many minor variations in the size and shape of balance weights.

**Reversing rods** Originally these were curved in shape, but from 8146 a straight pattern was preferred.

**Connecting rods** From No 8126 on, the connecting rods were made 5in shorter and the union links were 5in longer.

**Odd men out** In 1955 Nos 48309 and 48707 were temporarily fitted with steam-heat equipment (pipes on the tender only) for Royal Train duties on the Central Wales line. At around the same time No 48169 was tested in service with a set of WD-pattern driving wheels, which it retained until at least 1961.

**Tenders** All 8Fs were delivered with the standard Stanier 4000 gallon tender. Those originally fitted to Nos 8000-95 were riveted; the next 80 had welded tenders, and then the riveted pattern returned. Welded tenders resumed with No 8301; this was the type used on subsequent Crewe, Horwich, Swindon and SR-built locos but Nos 8500-59 and 8730-72, built at Darlington and Doncaster as LNER class O6, had riveted tenders with disc wheels (the only 8F tenders so fitted). Some of these disc wheelsets may subsequently have been exchanged with the spoked pattern.

All locos built originally for WD service had riveted tenders – those that passed into BR ownership were 48012/16/18/20/45/6/61/77/94 and 48246-63/86-92/4-7, plus Nos 48773-5 which only entered BR stock in 1957. These ex-WD tenders had no water scoop; all the others did.

Many engines retained their original tenders throughout but many more did not. In the final few years of steam there were some interesting non-standard variations, and some engines changed tenders several times (you can find full details, with exchange dates and tender numbers, on [www.brassmasters.co.uk](http://www.brassmasters.co.uk)). Ten 8Fs – Nos 48171/206/18/23/506/52/723/51/6/7 – acquired Stanier 3500 gallon tenders formerly paired with Jubilees (Brassmasters do a kit for this type tender; they look similar to the standard type but are shorter and chunkier). Nos 48206/308/15/415/26/37/64/549/602/72/706/27/45 had part-welded 4000 gallon tenders for varying lengths of time in the mid-1960s. From December 1958 to July 1964 No 48600 had a high-sided Fowler-pattern 3500 gallon tender.

Low-sided Fowler-pattern 3500 gallon tenders of various styles were fitted to a number of 8Fs from the late 1950s on (our website identifies the specific tender types used with these 8Fs and we produce kits for all the main variants). Most of these tenders had coal rails but a few, generally acquired from Jubilees, did not. The engines concerned are:  
48007/45/6/165/71/89/206/18/50/4/8/340/68/426/79/506/21/55/600-  
3/5/10/13/24/8/9/32/4/48/9/58/79/97/711/16/17/22/3/5/7/33/51/2/5/6/62

**Livery** The basic livery of LMS and BR 8Fs was plain black. In pre-Nationalisation days, however, there was a bewildering variety of lettering styles. For these the reader is referred to [An Illustrated History of LMS Locomotives, volume 5](#) pp 236-9. Note that, when 8Fs exchanged tenders with Jubilees, the tenders may not always have been repainted immediately.

## Etched Parts - List as Etched fret Diagram

### Cast parts

24	Axle Boxes	(6)
25	Springs	(6)
26	AWS Cylinders large and small	
27	Battery box	
28	Steam heat and vacuum pipes tender	
29	Steam injectors	
30	Safety Valves	(2)
31	Vacuum pipe loco	
32	Sandbox filler and backing plate	(2)
33	Sandbox filler and backing plate front (left and right)	
34	Sandbox filler cap (footplate)	(2)
35	Lubricators	(2)
36	Drain Cocks	(2)
37	Shroud for reversing lever - curved	
38	Shroud for reversing lever - straight	
39	Oil Boxes	(10)

### Assembly hints

For clarity, the instructions describe the modifications to the RTR model and the subsequent fitting of new parts in sequence. However, we suggest you remove all unwanted details in one operation before starting to add the replacement fittings. We assume you will be using photographs and scale drawings to confirm the location of parts, so no specific measurements have been included. Study the photographs of our pilot model to see how parts fit – these images can be viewed in greater detail and clarity on our website, [www.brassmasters.co.uk](http://www.brassmasters.co.uk)

All components in this kit can be fitted to the plastic model using a two-part epoxy resin adhesive, such as Loctite Super Steel or Araldite Rapid, with a gel-type superglue for small components. No soldering is required, although you may prefer to solder the coping strip to the tender bulkhead.

Except where noted, fold lines and dimples for forming rivets are marked on the rear of the etched parts. If you don't have a riveting tool, lay the component face down on a flat piece of lead or hard rubber and gently impress the 'rivet' with dividers or compasses. Remove parts from the etched fret by laying it face down on a smooth, hard surface (such as a sheet of perspex or hardboard) and cutting through the tabs with a sharp craft

knife or Stanley blade. Carefully file off the tabs, avoiding buckling the components. You may prefer to prime and paint them before attaching them to the model, which will make life easier if you're not planning a full repaint. Pointed tweezers are the best tool to use for handling small parts.

The castings may need a little cleaning-up to get rid of moulding flash. Emery-board nail files are fine for this, then finish off with fine wet and dry. Again, they can be painted before assembly. Use acrylic car paint (satin black or matt black) to paint the castings before attaching them to the model – just put the parts in a jam-jar lid and spray from about nine inches away. When dry, turn them over and spray any bald patches.

Railway modelling isn't as inherently dangerous as snowboarding or bungee-jumping but it still has its hazards. Be careful when handling sharp tools, follow manufacturers' safety hints regarding use of adhesives and ALWAYS wear eye protection when working with power tools. Remember too that modifying your Hornby model in any significant way will almost certainly invalidate the manufacturer's guarantee. To preserve your rights, ensure it is well run-in before adding any detail parts and sort out any mechanical or electrical gremlins.

### **Locomotive**

All the extra parts can be fitted to the loco while the body and chassis are still in one piece. If you need to fit a DCC chip, do this before adding the detail parts – this procedure is described in Hornby's instruction sheet.

The moulded balance weights are a push fit on the wheels and, if you want to replace them, can be popped off with a bit of gentle levering and replaced with prototypically accurate etched components (12). There was much minor variety in 8F balance weights but the sizes and shapes offered here are the most typical. The identical larger weights are for the second and third axles, the smaller weights for the first and fourth axles. Note that the balance weights on the second coupled axle on locos with the square-ended pattern are actually crescent shaped, but with squared-off ends! This can be represented by carefully filing off the pointed ends.

Decide which kind of balance weights are appropriate to your prototype – crescent-shaped or square-ended – and detach these from the fret. The spare small crescent weights are for locomotives where the second axle has been fitted with small weights instead of the larger crescent-shaped weight. To make the equivalent small square-ended weights, two of the large weights (12a) have a half-etch line as a cutting/filing guide for forming the smaller weights for the second axle (this modification was not common!).

You will see there is an excessive amount of ‘daylight’ above the pony truck wheels, which will be exaggerated if you are using replacement scale wheels. The front frame overlays (5 and 6) will disguise this. As etched, they are exactly to scale. To give adequate clearance for P4 wheels, we recommend you file back to the first half-etched arc on the reverse of the fret. If you are using EM or 00 finescale wheels, file the cut-outs down to the second half-etched arc. Drill holes for the mounting stubs, then fix the drain cocks (36) in position along the bottom edge of the cylinders – as they’re vulnerable to damage, they can be reinforced from behind with a fillet of epoxy resin.

We have included etched running plate overlays (1 and 2) to compensate for the lack of valances and rivet detail on the Hornby model. This is the most difficult part of the upgrading and you may wish to omit this stage. If you’re going ahead, use a sharp blade to remove the four sandbox filler plates, the small rectangular oil pots on the sideframes at the front end of the smokebox and the mechanical lubricators on the right-hand side, as well as the reversing lever and its support bracket. Cut through the feedwater pipes and the drain from the vacuum ejector at the point where they pass through the footplate. Rub down any rough edges on the footplate.

Add the rivet detail to the etched overlays – at all times being careful to avoid any distortion these delicate components – and fold up the angle at the cab end (to make life simpler you could just trim it off). Check that the moulded footplate is absolutely smooth and then offer up each overlay in turn. Check the fit, especially around the steam pipes at the front end, and trim if necessary. The overlay should protrude just a fraction from the edge of the body moulding to represent the missing valance beading. When you’re satisfied you have an exact fit – and not before – lightly coat the rear of one of the overlays with contact adhesive or epoxy, give it a couple of minutes and then ease it into

position. Check the alignments and ensure the overlay lies absolutely flat, without any gaps or kinks. When satisfied, repeat with the second overlay. Make up a new reversing lever (7 or 9) with its support bracket (8 or 10) and fit to the footplate. Fit the castings for the replacement sandbox filler plates (32-33), lubricators (35), oil pots (39) and reversing lever covers (37 or 38). The front sandbox fillers are handed and can be identified by the offset filler caps – the shorter space between the cap and the edge of the plate faces the front of the loco. The filler cap (34) for the rear sandbox is fitted as indicated in the fret diagram. Along the inside of each footplate overlay you will see three small oblong holes that have been etched through where three of the oil pots go. The other two locate just forward of the rearmost pot, butted up against the inside edge of the footplate. The exact position can be confirmed from the fret diagram, and similarly the locations of the covers for the reversing levers where they enter the footplate.

If you want to replace the plain buffer beam on your model with the riveted overlay supplied, cut off the moulded buffers, the dummy coupling hook and the steam-heat and vacuum pipes. Add the riveted front buffer beam (3) and the vacuum pipe (31) Replace the buffers if necessary – Brassmasters can supply the correct LMS-pattern sprung loco buffers – and add the small steps (13) to the buffer bodies. After adding the rivet detail, glue the AWS bang plate (21) to the bottom edge of the buffer beam. Note this plate is usually – but not always – slightly offset to the left (looking from the front of the loco) rather than being centred. Add the reinforcing rings for the front lifting points (11) to the front frames, above the running plate. Spot through the moulding with a 0.9mm drill. Finally, fit the replacement lamp irons (23) if required from the selection provided.

The remaining body detailing parts can be added in almost any order. Glue the front window frames (4) in place over the clear glazing. Remove the safety valves and replace with the cast components supplied (30). If you are modelling an AWS-fitted loco, the larger of the two cylinders (26) goes lengthways on the footplate beside the firebox, just ahead of the cab on the right-hand side. The smaller cylinder goes across the front of the cab on the left-hand side. Note the wiring conduit along the left-hand footplate valance on AWS-fitted locos. This can be represented by 0.33mm wire, with cleats from 10thou Microstrip. Add the AWS battery box (27) in front of the cab on the right-hand side.

There are two injectors (29), one for live steam and the other for exhaust steam. The larger one is the exhaust steam injector. This goes under the cab on the right-hand side, partly tucked in behind the step. It can be braced from behind with a short length of 40thou Microstrip – note that the thicker, heavier-looking end faces the tender. The live-steam injector simply glues to the back of the left-hand cab step..

## **Tender**

Hornby's spring and axlebox detail looks very insubstantial, and ideally should be replaced with the castings supplied. You can remove the moulded detail with a sharp blade, taking just a small slice off with each pass. If you are handy with a power tool you could use a miniature router to shave them off. When you have removed all the detail, file the surface smooth and fill any scars. Fit the cast springs and axleboxes (24-25) in exactly the same position as the originals.

The inside of Hornby's 'empty' tender is totally the wrong shape – the bunker sides ought to slope inwards, there should be a hollow space behind the coal doors and there is no fire-iron tunnel. To disguise its inadequacies you can either coal it up to the limits of the loading gauge or make a cosmetic modification to the front bulkhead. If opting for the latter course, take the front bulkhead overlay (14) and punch out the rivet detail around the lifting rings, then use it as a template to trace the outline of the empty space behind the coal doors. On the model, this space is solid but there is a hollow behind the moulded front bulkhead. Using a 1mm bit, carefully drill around the edges of this space and open out with a sharp blade until you have a rectangular opening, then trim the edges off as neatly as you can. Gently form the coping strip (20) into a curve and then solder or glue it to the bulkhead overlay itself. Glue the completed assembly to the rear of the moulded bulkhead and align the outside edges. Later on you can coal up the tender to leave the top part of the dummy bulkhead exposed, while the bottom is buried in coal.

Choose the plain (17) or riveted (18) angle iron strip to suit the type of tender you have and glue it in place, inside the coping on the tender rear platform. Press out the rivets on the lifting lug bases (15) and then glue them in the rear corners, butting up against the angle iron strip. The edge with three rivets goes across the tender; the four-rivet edge

goes along the tender sides. Now glue the actual lifting lugs (16) to the base plate, parallel with the tender rear.

If you have a model with the all-welded type of tender, note that the rivets on the tender rear are incorrect and shouldn't be there. They can be scraped off with a sharp scalpel and the marks cleaned up with fine wet-and-dry paper. Leave the rivets on the rear tender steps, however. Then cut away the moulded steps (but not their riveted mounting strips) on the tender rear. Drill a 0.9mm hole centrally at the foot of each mounting strip and glue the new etched steps (22) in place. Fold the rear guard irons (19) down through 90°, put a slight joggle into them and locate the component on the small lug moulded on the rear of the tender keeper plate.

Add the small steps (13) to the tops of the tender buffers and replace the tender lamp brackets with the etched versions supplied (23). Two of these should go on the tender front bulkhead, between the coal doors and the fire iron tunnel on the fireman's side – they were used for carrying spare lamps. Fit the vacuum pipe (28) to the tender buffer beam.

This completes the detailing/upgrading of your Hornby 8F and we are sure you will be impressed by the results. We would encourage you to add as much extra detail as you like – piping runs, for instance, and perhaps cabling fittings. A number of suitable components are available in the Brassmasters range but have not been included with this kit because not all modellers would wish to use them. Among these are cab handwheels (A071); flanges for 1.75" pipes (A072); flanges for pipes of various diameters (A073); cab fall plates in dimpled (A074) and chequer (A075) pattern; LMS cab doors (A076) and front and rear loco footsteps (A078).

For more information on prices and availability, visit our website at [www.brassmasters.co.uk](http://www.brassmasters.co.uk)