



The 4mm wagon and van kit

LYRD069

Lancashire & Yorkshire Railway
London Midland & Scottish Railway

Diagram 69 20T Goole Coal Wagon



From 1906 to mid-1920s
For 00, EM, P4 and S4

Features: white metal kit, white metal buffers with steel heads, etched w-irons.

Required to complete:

Solid eight spoke 12mm wagon wheels, bearings, paint, 3-link couplings, transfers.

The Prototype

These wagons were built from 1906 onwards in various batches mainly for the movement of coal from the large South Yorkshire pits to the L&YR docks at Goole for export and also for its own shipping fleet. The model represents the second batch of 36 which had steel underframes as opposed to the previous batch which were timber framed. The 10' wagon height limited the collieries they served as many screens were too low to accommodate them.

With a capacity of 20 tons, oil axle boxes and vacuum brakes they were a very efficient means of moving coal between pit and port. The vacuum brake enabled the trains to run much faster than the normal coal train, and to stop when required to do so! The L&YR used vacuum cylinders with a rubber diaphragm rather than a moving piston. To augment chamber

capacity above the diaphragm a separate vacuum reservoir was piped to the top side of the cylinder.

The wagons were in service from 1906 until the mid-1920s, many being rebuilt as 6-plank opens and used as general freight wagons after war service in Europe. Reparations imposed on Germany after WW1 included the supply of coal practically free of charge. This badly affected British coal exports, resulting in a relatively short life as built. Many of the similar Diagram 71 Goole half end door wagons lasted to Nationalisation in 1948, some being used for general merchandise traffic. The top three planks were fixed, and the end door was the lower seven planks.

References

Lancashire and Yorkshire Wagons Vol 2; Noel Coates, pp266-270

Acknowledgements

51L thanks the L&Y Society in general and David Carter in particular for their assistance in preparing this model.

Interested in the Lanky?

The Lancashire and Yorkshire Railway Society

<http://www.lyrs.org.uk>

Assembly

Please read these instructions before starting to build your model. Examine all parts and familiarise yourself with their assembly.

Remove any moulding flash and ensure all parts fit correctly. We suggest wet fine silicon carbide paper (1200 grit) to clean up flash marks. Assembly is best carried out using low melt solder or an epoxy resin such as Araldite. For small parts use superglue. To obtain the best results a combination of several techniques will be needed.

Using a corner clamp, a large piece of Blotack, or your own preferred method, fix a side and end in position at 90° to each other. Note that the end fits inside the side. Repeat for the other side and end. Fix both sides and ends together. Check that all is square using a flat surface such as a glass sheet.

Assemble the W-irons as outlined in the enclosed sheet (use the straight bridle bar). It will be appreciated that these W-irons are intended to be used either in the rocking or non-rocking mode. It is also strongly suggested that the W-irons are primed and painted matt black before final assembly into the wagon.

The solebars can now be tacked in place. The top lip of the solebar rests against the lip on the inside of the side, such that the triangular reinforcements fit neatly to the bottom of the side. (File out the centre of the reinforcements, if they are blocked with flash.) Check that the W-irons fit between the solebars, if necessary removing the solebars and filing out the back (emery boards are a good alternative to clogging your files with whitemetal!). Once satisfied, fix the solebars permanently in position.

Add the buffers to the ends. Cut and fit the piece of planked plasticard sheet to form the floor. Use Araldite or your preferred adhesive to fix it in place.

Place the W-iron units temporarily in position to determine the wagon ride height. An empty wagon should have the buffer centre line 3'6" (14mm) above rail level; the minimum height for a loaded wagon is 3'1½" (12.5mm). Plasticard packing pieces are provided to raise the body. Once the ride height is correct, fix the packing to the top of the support units, then fix them to the wagon floor at a wheelbase of 12' (48mm). Use the solebar axlebox bumpers for alignment or a jig such as that produced by Brassmasters. If the wagon is gently pushed along a flat surface it should run in a straight line. If not, one or both W-irons are out of line and should be adjusted. The wagon underframe has a round tiebar between the W-irons. This can be represented by pieces of the supplied 0.5mm wire, soldered behind the W-irons, in line with the horizontal centre line of the bridle bars (you will need to remove the wheels for this step).



Note: due to failures in production, some kits may be supplied with the vacuum cylinder and operating arm as two separate castings. If you have these, drill out the centre of the cylinder so it is a loose fit on the arm, but do not fix the two together yet.

Looking at the wagon side on, open out the hole in the left-hand vee hanger to 0.6mm. Turn the wagon round and do the same to the right-hand vee hanger; remove the left-hand vee hanger from this side. Also open out to 0.6mm the holes in the brake cylinder arm, the brake levers and the long and short brake linkages. Working from the side with the single vee hanger, thread a 5cm long piece of the supplied 0.6mm wire as a cross-shaft successively through: the vee hanger; the brake cylinder arm (trimmed if required, and with the cylinder itself

towards the centre of the wagon, resting against the inside of the solebar; the long linkage (with the shorter arm pointing both towards the closer wheelset and downwards towards the track; the short linkage (pointing towards the centre of the wagon); and the opposite side's vee hanger. Centre the cross-shaft between the vee hangers and secure it to them. Fix the brake cylinder in place, but leave the linkages loose on the cross-shaft for now.

The four brake blocks/hangers need a 0.6mm hole drilling on the centre of the block for the stretchers. Thread a length of 0.6mm wire through a brake block, through the hole in the appropriate brake linkage and through a second block. Repeat for the second pair of shoes. Fix the hangers to the floor, ensuring that the stretchers are horizontal and parallel to each other and to the ends of the wagon. If modelling in P4, they may also be secured to the inside face of the solebars. Secure the stretchers to the brake blocks and the linkages and trim them flush with the outer face of the blocks.

Now attach the brake levers. The one on the same side as the vacuum cylinder (the side with the single vee hanger) is simply threaded on the cross-shaft and attached both to this and the solebar, such that the lever guide is vertical. Trim the cross-shaft so it projects very slightly to each side, and save one of the removed pieces for the next step. Working on the side with two vee hangers, thread the spare piece of wire through the end of the brake lever, the vee hanger, and the short linkage. Fix the lever and wire in place, and trim it so it projects slightly from the lever's front face.

The cylindrical vacuum reservoir can now be fitted to the floor. It points towards the wagon ends, with its long centre line 4mm from the inside of the solebar with two vee hangers, and its short centre line in line with the centre of the vee hanger carrying the brake shoe and short linkage. If you are feeling really keen, a length of 0.5mm wire can be used to represent the pipe connecting top side of vacuum cylinder with the vacuum reservoir). Finally, add the vacuum pipes, 4mm to the right of the coupling hooks. Your chosen couplings should be added after painting.

Finishing

Clean and degrease the model, using water and meths prior to painting. For whitmetal parts use an etching primer, such as Precision Paints PS1. Paint the model according to the details below. After painting clean the model using a tissue soaked in white spirit. This is especially important if you are using dry lettering rather than waterslide or 'Methfix' transfers.

Livery

The following information is intended for guidance; when positioning transfers please consult the above photo and the references for detailed information.

Bodywork, solebars, headstocks: grey (Tamiya AS-4 Luftwaffe grey violet is a good match to L&Y grey)
Interior: bare wood, rapidly weathering to a dirty grey
Ironwork below solebar: black
Insignia: white; HMRS sheet 17 for L Y and tare numbers, HMRS sheet 19 for TO CARRY 20 TONS

It is thought unlikely that any were repainted in LMS livery before rebuilding.

Numbering

The best information we have is 31496 to 31532, but this gives 37 numbers, not 36! The actual wagon number was given by a 5"x12" cast iron plate bolted to the solebar rather than by painted numbers. In theory the LMS would have renumbered them to 161496-161532, but it is unlikely this happened before rebuilding.

A more recent version of these assembly instructions may be available on the Wizard Models website.

51L

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Wizard Models

Wizard Models stocks a wide range of components and other necessities for the modeller in 00, EM and P4.

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