

Assembly Guide for 3d printed wagon bodies

This guide covers the use of the 3d printed bodies as supplied by Adam Bastow. They all require parts that are available from the 2mm Scale association shops. Please refer to source material such as photographs and Noel Coates' books listed later in this document. Where there is a conflict of information from this document to those (hopefully there are none), then I'm wrong and those sources are correct.



General notes

The wagons are delivered still attached to the 3d print supports. It's important to remove these carefully otherwise you end up with scarring on the model where the support has been removed. I always clip supports away with a pair of Xuron or similar modelling clippers, about 10mm away from the surface. I then trim this back close to the surface and then gently rub the remaining nubs away with a fine file or emery board.

The resin used is a high-grade strength with low shrinkage and dimensional flexibility. If you find that it has warped, you can gently correct by submerging it in hot water and gently adjusting by hand.

When assembling the chassis it may be worthwhile offering the body up to the chassis periodically. Some chassis have a spacer layer to bring the solebars out a bit further - in some cases the spacer layer is not needed for these wagons. Remember to leave the headstocks off as these are printed onto the wagon already. Some fettling of the chassis or behind the headstocks or wagon side may be needed to get it to seat snugly.

It is recommended that you test fit your buffers before gluing - it is highly likely that the buffer holes will need opening out to accommodate them.

Finished wagons may be on the light side and may need extra weight adding to aid in good running. I use small lumps of lead flashing glued under the chassis between the solebars.

Generic Parts List

- Chassis etch
 - Diagrams 1, 3, 4, 12 and 15 use the LNWR 9ft WB chassis (2-320)
 - Diagrams 61 and 81/83 use the L&Y 10ft 6 in WB chassis (2-322)
 - Diagrams 62, 69, 71 and 73/76 use the L&Y 12ft WB chassis (2-323)
- Top hat bearings (2-041)
- Couplers of choice
- Buffers
 - Generally for wooden underframe wagons the 3d printed L&Y 3 bolt buffers are correct (2-191)
 - For steel underframe wagons 4 bolt buffers should be used, the OLEO 1' 8.5" buffers with 13" head look to be a suitable match (2-078)
 - The dia. 61 brake van should use round base buffers with a 13" head (2-072)
- 6mm diameter spoked wheels on 12.25mm pinpoint axles (2-010)

The Wagon Bodies

Currently I produce wagon bodies to the following Lancashire & Yorkshire Railway diagrams;

L&Y Diagram Number	Wagon	Wagon Description
1		Low goods (single plank open)
3		Covered goods
4		High sided or soal wagon with rounded ends
12		Pitch wagon with single tip end
15		Fruit wagon with falling sides
61		20T brake van (4 wheel)
62		10T covered goods
69		20T coal wagon - used for moving coal to the ports
71		20T coal wagon - improvement on the dia 69, also later used for general merchandise
73/76		10T covered goods. The same body rested on two different chassis types and employed different braking mechanisms. The 73 was on a standard wooden chassis with standard brakes, while 76 was on a steel chassis and was vacuum braked.
81/83		12T high-sided wagon with side & end doors. The same general body used two different chassis types - 81 was on a wooden underframe and the 83 was on a steel underframe.

Outline drawings, diagrams, photograph examples and a comprehensive history for most of these wagons can be found in Noel Coates books available from the Lancashire & Yorkshire Railway Society;

- Lancashire & Yorkshire Railway Wagon Diagrams
- Lancashire & Yorkshire Wagons Volume 1 & 2

Painting

For the grey on the bodywork shown in the photos I used a mixture of citadel paints (which are acrylic).

The mix consisted of:

- Ulthuan grey
- Stormvermin Fur
- White Scar
- Abaddon Black

The chassis was painted with abaddon black. In some cases, wagons that were overhauled were repainted and the banding and strapping picked out in black. Both styles would have been seen at the same time, but a particular time frame has not been pinpointed yet.

Phoenix also supply LMS freight wagon grey and an L&Y freight grey - of course both are perfectly acceptable. LNWR freight grey would probably have also passed.

These wagons took a hell of a beating and were often filthy. The grey you would have seen between batches would have been different as well so I wouldn't get bogged down in what was proper. For reference I used photographs and videos of restored L&Y wagons that are currently on the East Lancashire Railway.

Lettering

For the lettering I used the generic white alphabet as supplied by Fox Transfers in the Franklin Heavy font. The standard height of lettering on L&Y wagons during L&Y days was 18" high, which translates to 3mm. Of course, for smaller sided wagons the letter height was reduced to fit, so it wouldn't be unusual to see 12" or 6" lettering depending on the height of wagon sides. I'd go with what looks "right" when compared to reference photos.

Fox also sells a generic freight lettering pack for LMS wagons which should also be suitable.