



Class 310 4-Car Electric Multiple Unit

The Class 310 first appeared in 1965, working outer-suburban services from London Euston to Birmingham, as well as local services around the West Midlands. These were the first EMUs to be based around the Mk2 coach bodyside and had a very modern appearance. The 310s were a successful design, and saw later use on the Great Eastern and LT+S routes for Network SouthEast and Regional Railways services from Birmingham to Manchester and Liverpool.

As built, the Class 310s were not through-gangwayed, as there was no corridor between the Trailer Second and the Brake Van. When refurbished from 1987 onwards, these were fitted, along with a repaint into Network SouthEast livery.

About the Kit

This kit contains a pair of cast resin ends and vinyl bodyside overlays and is designed to convert Graham Farish Mk2 Coaches.

Requirements

4x Graham Farish Mk2 coach, pantograph and roof fittings, Cutting Saw, sharp knife, steel ruler, plasticard, pin vice, small modelling drill bits, fuse wire, glazing material, paint.

Roof Vents

If you wish to fit correct-pattern roof vents, do so before proceeding.

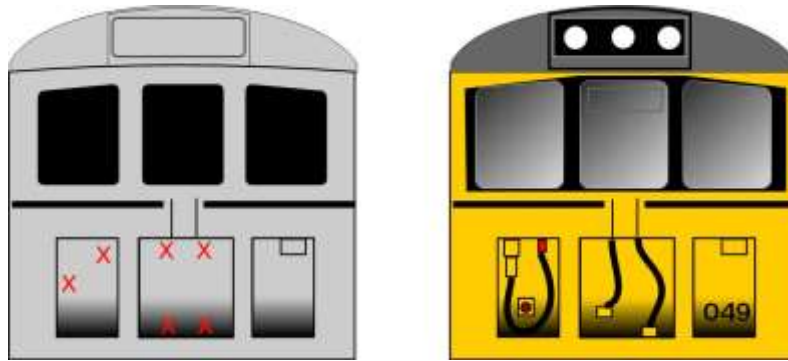
Motorising

The Graham Farish Class 150 chassis is ideal for this conversion. I would recommend fitting this to the Trailer Second or a Driving car., as the height of the chassis fouls the pantograph well. You need to cut out the floor from the donor coach first. Do this before proceeding with the stripping and main conversion.

Driving Car Instructions

Strip the coach, as per the supplementary instruction sheet.

Clean the end castings. Fit oval buffers of your choice. Using a very fine drill bit in a pin vice, drill the holes for the air-pipes as per the diagram. The air-pipes can be made from fine fuse wire and placed into the holes. Spray with primer once complete.



Re-fit the coach roof. Remove one end from each driving car using a fine saw blade, making the cut just behind the curved roof end dome – 2mm from the end.

Attach the end using super-glue or epoxy cement (Araldite) and paint as required.

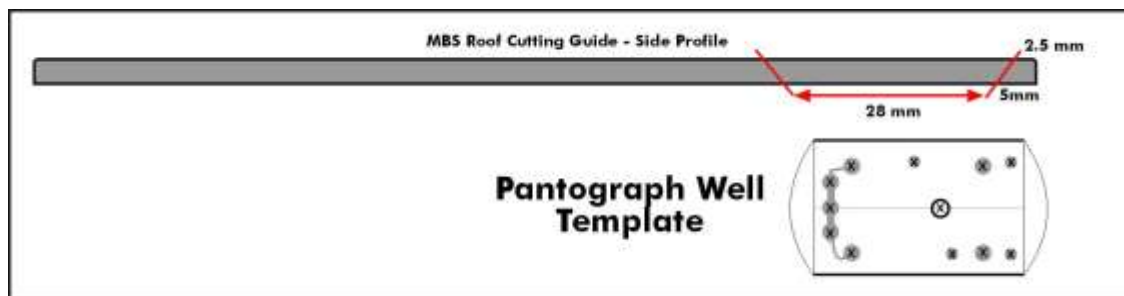
If you are modelling the Class 310 with original curved windscreens, remove the cast-in areas after the end has been glued on.

Apply the vinyls, using the separate sheet for guidance.

Re-fit coach bogies and underframe components. The Driving car with first class has very little underframe gear, and the other end has a large battery pack. Underframe components can be salvaged from the Mk2 mouldings and any spares and bits of plasticard you have handy.

Pantograph Car

Cut the roof as shown below. Using the supplied card template cut a piece of plasticard 28mm by 18mm. Drill holes in the plasticard as per the template to accommodate the pantograph and insulators.



Glue the plasticard roof well to the coach, being careful not to allow any glue to contaminate the clear sides – it is a good idea to apply masking tape to the sides to protect the glazing. Use modelling filler and wet/dry paper for the ends of the well and to get rid of any gaps. Paint BR Roof Grey when complete.

Apply pantograph, insulators, etc before vinyling.

Mk6 EMU power bogie sideframes are available from Taylor Precision Models - not exact for the 310 but as near as we can currently get in N!

http://www.tpmodels.co.uk/modern_mu.htm

Pantograph: I recommend the Dapol Stone-Faively pantograph, though the Sommerfeldt single-arm pantograph (as used on Farish electric locos) is a good substitute.

Insulators: These can be fabricated from plastic section, or a cocktail stick. If possible, try to get hold of a second hand Farish electric loco body with the roof fittings and use these instead.

Motorising

Motorising is up to you. The best chassis currently available is the Graham Farish Class 150 Sprinter, which has the correct wheelbase, easily strips down and is DCC/Sound ready.

You will need to cut the floor out from the Mk2 coach – do this BEFORE applying the vinyls but keep the roof on for strength.

Finishing

Headcodes: If modelling a unit with “Domino” headcodes, please note the 3-dot panel is applied only to the First Class end.

Windscreens – the clear windscreens can be placed over the front end for an improved appearance

The vinyls are very durable but, like any printed media, prone to scratching. A non-acrylic varnish, such as Klear or Plasticote can be used to seal the finish.

Acknowledgements

Many thanks to **Paul Hardy** for creating the cab end master and **Bob Davis** of N-Train for the 3D printing.



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Class 310 / 312 Underframe Arrangement



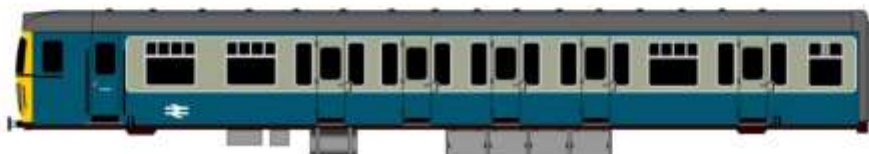
DTC - Driving Trailer Composite



MBS - Motor Brake Second



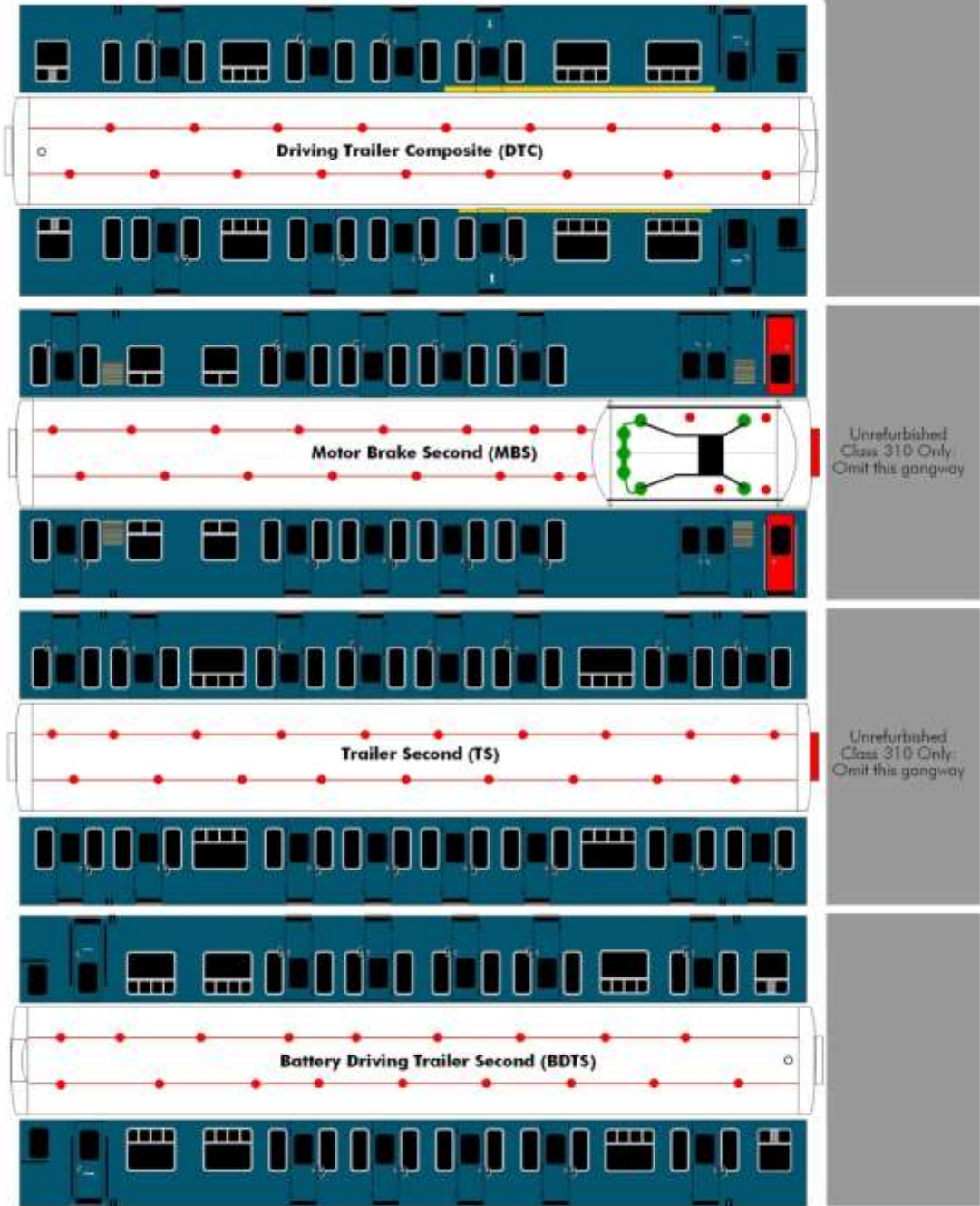
TS - Trailer Second



BDTS - Battery Driving Trailer Second



Class 310 and 312 Roof Arrangement



- Key**
- Roof Ventilator
 - Ceramic Insulator
 - Toilet Filler

 Guards' Door
Class 310 Only



Class 310 / 312: Preparing Your Mk2 Coach

Stripping the Shell

I recommend checking the age of the vehicle that you are intending to work on before proceeding, as the plastic used can react to different cleaning agents.

Original Graham Farish Stock - UK made Mk2s

Nail varnish removal wipes, available for around 99p a pack are really good at removing the finish from Poole-built coaches with care. These are mildly corrosive and can damage the plastic if left in contact for too long. Thoroughly rinse the coach shell after use.

Bachmann-built stock – anything stamped “Made in China” with tinted shell

Brasso works beautifully on the more recent Chinese made Farish coaches, though requires more elbow-grease to get a really good finish. This has a nasty habit of attacking the plastic of the earlier UK-made coaches, so be careful. Again, clean thoroughly after use.

Whatever method you use, patience is its own reward and a well-stripped shell will do wonders for the finished article.

For either shell type, Phoenix Superstrip is an excellent way of removing the finish safely.

Applying the vinyls

Carefully peel the vinyl from the backing sheet and gently apply to the bodyside, a little at a time, ensuring good alignment. The vinyls adhesive doesn't grab fully for a while, so you can peel off and replace the bodyside if you don't get it right first time. Be careful, as the vinyl can stretch, so apply the sides lightly first.

Make sure that there are no air bubbles trapped when applying the sides.

Finishing

The vinyls can be sealed with an acrylic-based varnish and can also be weathered using acrylic paints.