Assembly Instructions for Kit N°. 8895
2 Bil Electric Multiple Unit

General Instructions.

This kit will allow the construction of a basic 2 Bil Multiple Unit from the second batch. The first ten 2 Bil units were completely different, both internally and externally. If you wish to construct a more accurate model we recommend the further reading over the page.

Assembly of this kit is fairly straightforward, but does require patience and a little care to ensure the best results.
Start by identifying all of the parts, the major ones - the roof, floor, sides and ends are fairly obvious, however the others may not be.

The underframe moulding contain the truss rods, the battery boxes, dynamo, corridor connections, brake cylinder, torpedo vents, footsteps and the brake lever.
There are four of these mouldings.
You only need the truss rods and the battery boxes for this kit

The Bogies are supplied as four mouldings, these also include the V hangers (not required) and the buffer mouldings.

Carefully remove all parts from the sprue with a sharp knife as required (Children under 14 should ask an adult for help with this.) and then ensure that all parts are flat and flash free. Parts that require straightening and or flattening should be removed from the sprue first. If they still required attention, immerse (very carefully) in almost boiling water for a few minutes, removed and then leave flat to cool

Powering the Unit.

At this stage it is worth deciding how you are going to power your model, if you do indeed intend to power it.

There are a number of options for providing motive power:-

1. The self contained motor bogies previously produced by either Tri-ang (Hornby) or Lima. Whilst these are physically the largest of the options they can be hidden in the brake compartment. The downside of these is the reliability and the drying up of the supply.

2. Black Beetle motor bogie. Again these are self contained and have the benefit that they are designed to fit, mostly, under the floor. They are also available in a number of wheelbases and with varing different wheel sizes. The downside is that the supply has started to dry up due to supply problems with the motor.

3. Tenshodo Spud. Like the Black Beetle these are self contained motor units designed to fit , mostly, under the floor. The downside of these is the very limited range of wheelbases and wheel sizes due to being designed for 3.5mm (HO) scale rather than 4mm (OO, EM, S4) scale.

The two most noticable problems here are the wheelbase, the longest produced is the WB31 which is a 31mm wheelbase and the wheels which are 12mm as standard.
If you choose this option, we would recommend that you fit the motor in one of the standard (8') bogies rather than the (8'9") pickup bogie.
It is possible to remove the 12mm wheels and replace with 14mm disc by gently easing the old wheels off and then pressing new wheels onto the axles and then setting the gauge with a back to back gauge. If you are unsure how to do this please do not try - you are likely to invalidate the guarantee supplied with the motor bogie.

4. The final option is to use one of the motorised chassis units developed and supplied by Replica Railways. This also has a number of problems that would make fitting awkward.
Firstly the bogie centres are too long, secondly the bogie wheelbase is 8' 6". and thirdly you may have to cut the complete chassis to length again probably invalidating the guarantee.
However if you are willing to live with the compromise it should be the easiest to fit and use.

Fitting the Motor Bogie.

To fit the motor bogie of your choice, first cut away the marked rectangle at one end of one of the floor mouldings, either fit the mounting bracket supplied with the motor bogie, or make one from styrene sheet, adjusting it to ensure that the model sits at the correct height.

The best way to do this is to assemble one of the standard bogies and then fit to the other end of the floorpan. Now adjust the mounting bracket so that the floorpan will be level when both the standard bogie and the power bogie are sitting on the track.

Once you have sorted out the positioning, fix the bracket to the floorpan. If you are using the Tenshodo bogie you will need to fix the bracket to the floor using either a contact style adhesive or screws.

Bogie Assembly.

The Standard 8' Southern Bogies come as four identical mouldings, each of which has one bogie sideframe and one half stretcher.

Fit the bearing cups into the axlebox holes, drilling out slightly if required.
Glue together pairs of stretcher halves to form a solid stretcher for the bogie. (See diagram W) Allow to set.
Glue one sideframe in place on the stretcher unit and allow to set.
Insert wheels and then cement the sideframe in place.
Check that the wheels run true and freely and then allow to set.
Glue the 4 spring mouldings into place as per the diagram.

The 8' 9" Pickup bogies are basically the same assembly, however the spring mouldings are individual rather than in pairs with a bar between.

Body Assembly.

Take the cab sides from the cab sprue and clean up, carefully fix one cab side to the correct end of each side.
(See Diagrams U, X & Y).
Ensure that the joints are tight and that the top and bottom edges

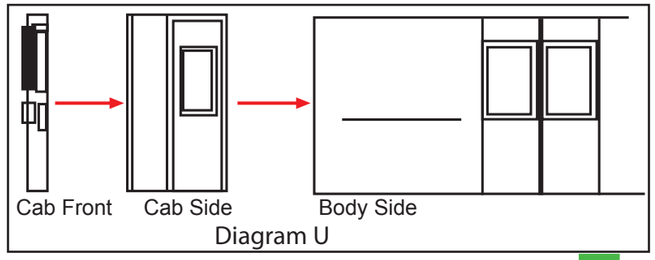

Diagram U

are level. A steel rule along the bottom edge will help to ensure that the parts are level. Allow to set.

Take the floor pans and glue the solebars in place against the location ridge. (See Diagram T).

Take the blank (inner) end mouldings and fix to one end of each floor pan so that the bottom of the buffer beam is level with the bottom edge of the solebars.
Ensure that the ends are square to the floor.

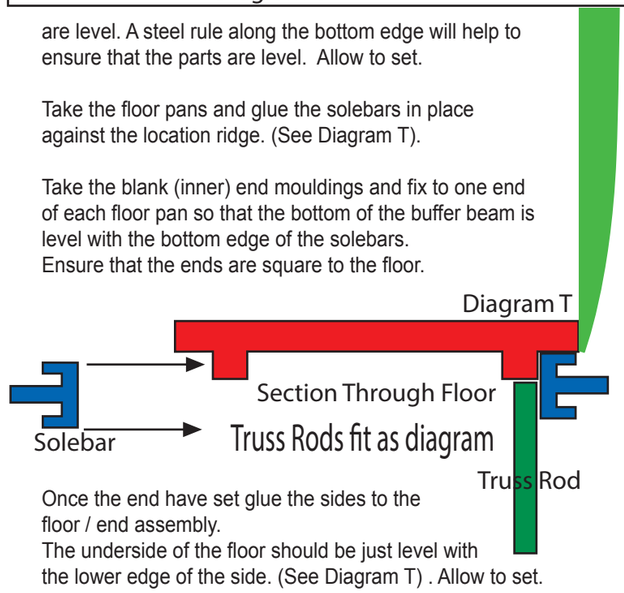

Diagram T

Once the end have set glue the sides to the floor / end assembly.
The underside of the floor should be just level with the lower edge of the side. (See Diagram T) . Allow to set.

Drivers Cab Assembly

Start by removing from the sprue the cab front and buffer beam. Clean up and remove any flash. With reference to diagram V below, fold the cab front and then glue to the buffer beam. It may be advisable to score the inside of the fold lines to ensure a clean bend.

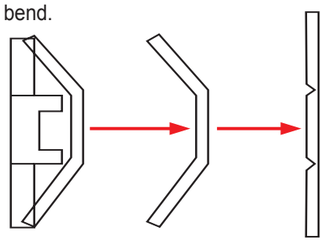
Diagram V

Carefully fit the cab fronts to the body assemblies, ensuring that the parts are square and properly aligned.

Paint the outside of the coaches. Ensure that the colour goes into the window surrounds.

Trial fit the glazing. Allowance has been made to sink the glazing into the sides thus bringing the glazing closer to scale when looked at from the outside.

If you fit the glazing now you risk putting paint on to it when you paint the interior, if you wait until the interior is painted, you may find it akward to slide the glazing into place. However you choose to fit the glazing use an adhesive specially designed for glazing such as 'Glue and Glaze' by Deluxe Materials.

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Interior.

Using the parts provided and with reference to diagrams X & Y fit the interior partitions and the seats.

It should be noted that whilst corridor partitions have been provided they are for a standard mainline coach and not specifically for the 2-Bil. You may therefore find that in order to get the corridor doors to line up with the outside doors you will have to cut and shut the partitions. Diagrams X & Y are full size and the partitions can be lined up to them and marked for cutting.

Once you have assembled the interior it can be painted - the corridor partitions were cream whilst the compartment partitions were either varnished teak or mahogany. The seats in the 3rd class compartments were either blue or green based 'Jazz' moquette and those in the first floral tapestry known as 'Saladin'. More austere seat covering were introduced under BR with Yellow/Black (Non-Smoking) and Red/Black (smoking) horizontal stripes in the second class and square pattern in the firsts.

Underframe.

The underframe parts supplied are those supplied for the standard coaches. As such they are not 100% correct for the 2-Bil, however, they will produce a basic level of detail. The only parts required from the underframe detail sprue are the truss rods and the battery boxes. These should be fitted with reference to diagrams X & Y noting that the truss rods are fitted to both sides of both coaches and the battery boxes to one side of the brake third only.

More accurate parts are available from ourselves and are marketed under the **No Nonsense Kits** name. These can be found on our website in the NNK section.

Roofs.

The roofs can now be marked up and drilled for the fittings. The position of the torpedo vents are marked on the plan views on both diagrams X & Y with '+'. and should be fitted prior to painting the roof. The guards periscopes are not included in the kit but can be sourced from the **No Nonsense Kits** range.

Once the roofs have been finished they can be glued to the the body assembly as per diagrams X & Y.

Final Assembly

Finally fit the bogies to the body assemblies.

It would probably be advantageous to open up the holes in the floors to avoid splitting the floor mouldings when you fit the screws.

Two pickup and two standard bogies are supplied -again this is incorrect but is a reasonable compromise. The pickup bogies should be fitted under the cabs with the standard bogies on the inner ends.

Bibliography:
Southern Electric Volume Two - David Brown
Pub. Capital Transport 2010 ISBN 978-185414-340-2

Southern Electric Units - Brian Golding
Pub. Noodle Books 2009 ISBN 978-606419-34-9

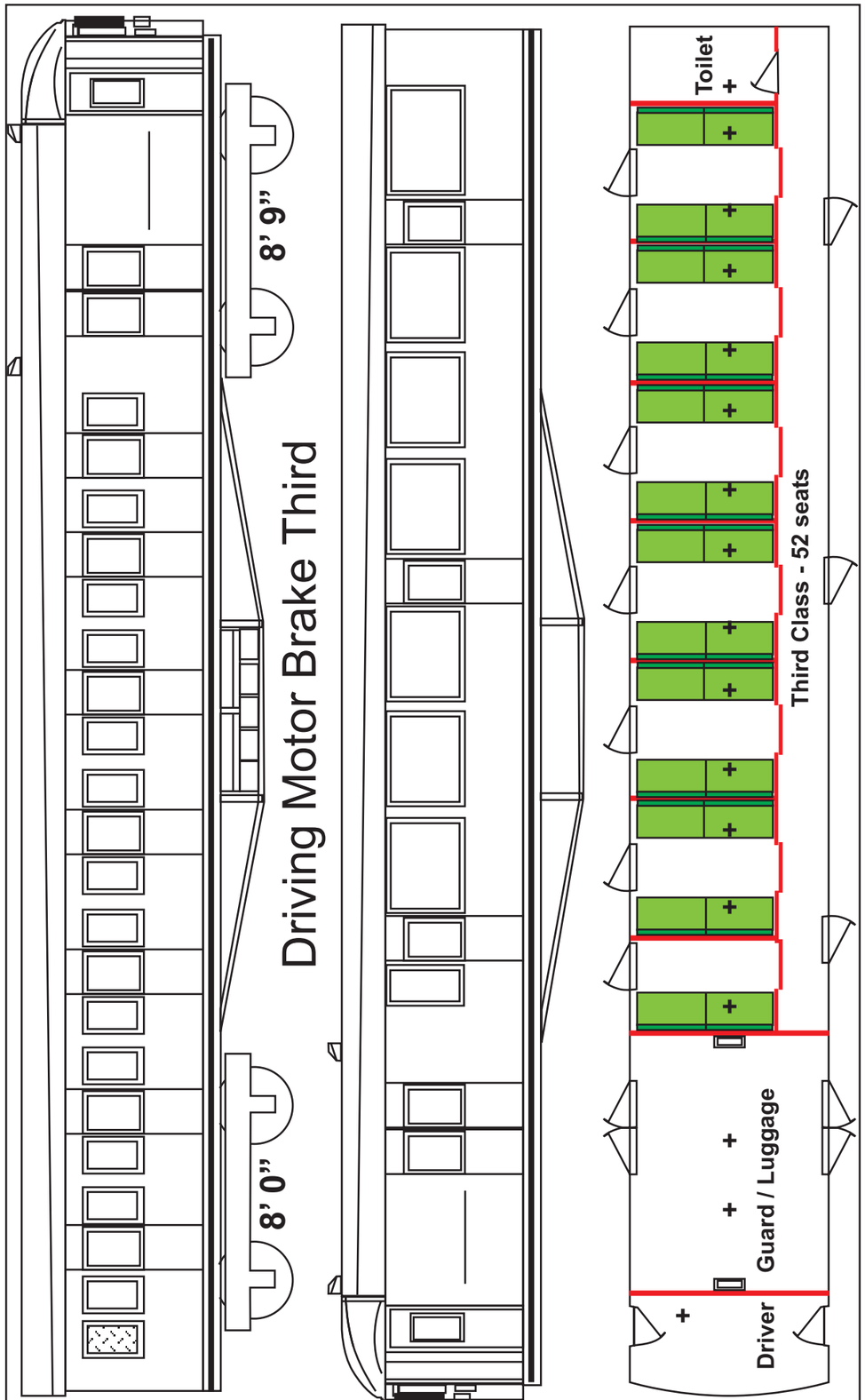
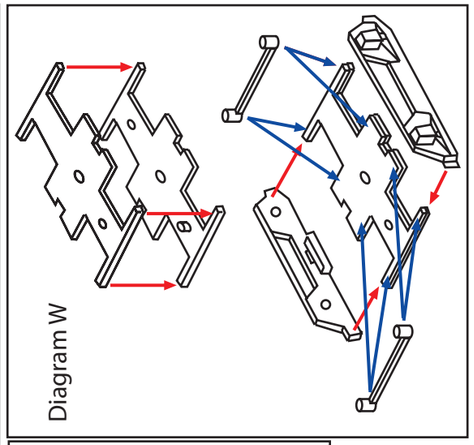
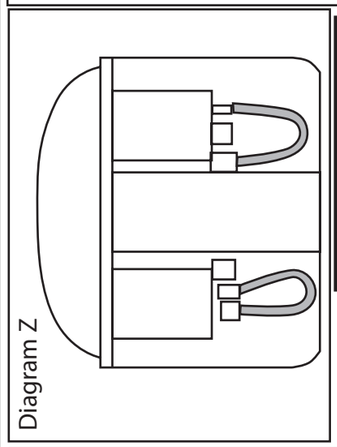
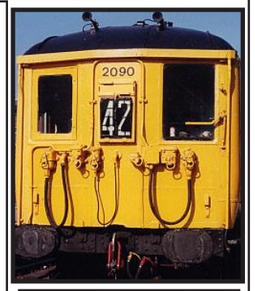


Diagram X



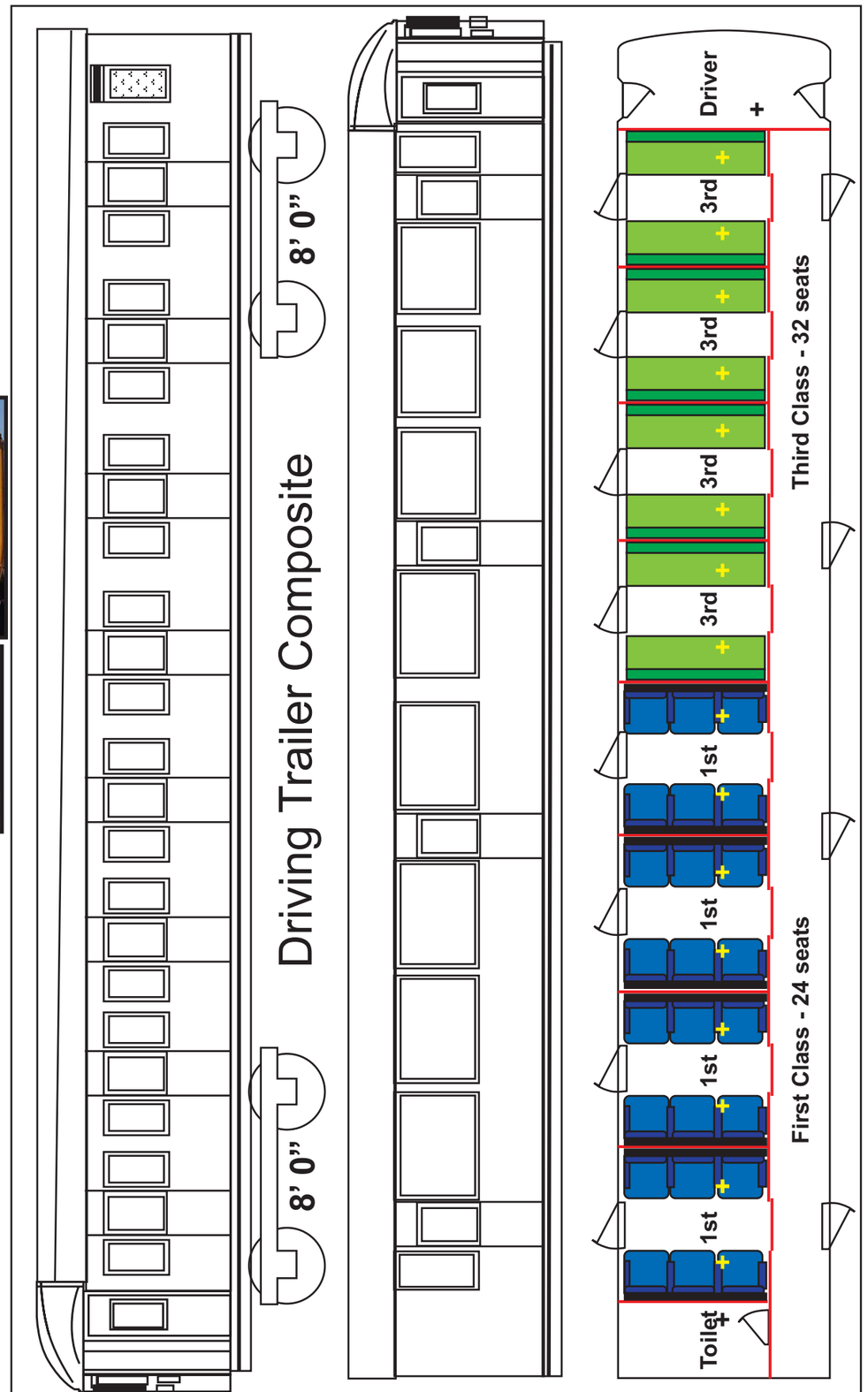




Cab Ends - Use the soft wire (supplied) to form the Multiple Unit cables. Diagram Z and Pictures.

Set and Coach N°s.
Set N°s 2011 - 2152.

Driving Motor Brake Third N°s 10577 - 10718
Driving Trailer Composite N°s 12044 - 12185 &
12854 - 12858



Truss Rod Omitted Diagram Y

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