

"EASY-BUILD" DERBY LIGHTWEIGHT CLASS 108 DMU CENTRE CAR ASSEMBLY INSTRUCTIONS.

SAFETY FIRST! CONSTRUCTING THIS KIT REQUIRES THE USE OF VOLATILE SOLVENTS, ALWAYS FOLLOW THE MANUFACTURERS INSTRUCTIONS AND ENSURE ADEQUATE VENTILATION. YOU WILL ALSO REQUIRE SHARP TOOLS AND THE EDGES OF THE ETCHED PARTS CAN BE VERY SHARP SO TAKE CARE WHEN HANDLING. WORK STEADILY AND SAFELY AT ALL TIMES.

KIT CONTENTS

1x	Floor molding	1x	Derby 108 Centre Car Etch		Styrene micro rod 1mm
1x	Roof molding		Etched Windowframes	2x	Roof fixing captive nuts
2x	Side molding (1x left, 1x right)		Molded window glazing	2x	Turned aluminium bogie mounting
2x	End molding	1x	Pewter castings pack (see castings identification photograph)	2x	Body fixing bolts 4mm dia.
2x	Bufferbeam molding	4x	Turned steel buffers	2x	Bogie fixing bolts 4mm dia.
	Seat moldings	2x	Screw-link couplings		
2x	Styrene strip (5mm wide)	2x	Corridor connections		
1x	Bogie pack (1 pair inc. wheels)		Brass wire and rod		

INTRODUCTION

In order to get the most from your kit we recommend you read these instructions in full prior to commencing construction making notes as to any assembly options, or changes to the suggested order you think would suit your method of building better. However, we suggest you do follow to the order of construction as we know it works! The general idea for the centre car is a little different from that of the driving cars. In this case we create separate units of the floor, body and roof only combining the floor and body once painting has been completed and make the roof removable. In this regard the centre car should be considered as a 'stand-alone' kit as it differs significantly in construction method to the driving cars. The images of the demo centre car use some items that differ from those in the kit, however the difference is not significant merely we didn't have the actual castings to hand at the time of construction. Some images are taken from our other products, but show what is required. More help may be found from searching through the other images on the disc.

Let's get started by inspecting the components supplied, there's no point getting involved in construction only to find a damaged part. Start with the large moulded parts (ends, floor, sides, roof and bogie stretchers) checking for severe warping and/or twisting. The floor and roof sections will have a degree of bow along their lengths due to the production process, but you should be able to flatten out the bow without any real effort. Whilst we take great care to weed out sub-standard parts prior to packing, some still slip through occasionally, so remember that any severely mis-shaped parts will be promptly replaced upon return to Easy-Build. Once you're satisfied with the contents, wash all the plastic components with a household detergent to remove oils and contaminants left from the manufacturing process. Now...

PREPARING THE SIDES

1) Check each side molding against the edge of the end moldings. Whilst we take great care to ensure the ends of the side molding are true and square, take a few moments to check that the ends will make a good joint with the sides. Also, remove a small amount of the moulded rib on the inside of each end of the side molding - about 3mm is ample. Also check all window openings for cutting burrs and remove as necessary.

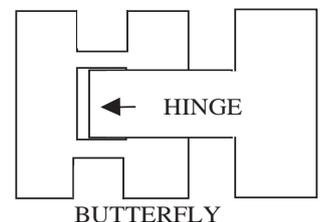
2) Drill through all the holes in the sides 0.7mm dia. for door hinges, handles and door bump-stops (see step 6 before continuing). NOTE, on the demo model the grab handle mounting holes were missing on the first door of the side with the toilet window. Mark and drill 0.7mm to match other holes already drilled.

3) Check the depth of score lines at the door positions and deepen if you prefer. Carefully remove the raised burr from the door opening scores, work steadily and re-open score marks as necessary until desired effect has been achieved.

***TIP - Use a gentle scraping action followed by fine wet-n-dry (wet is best) for these two operations. Alternatively, a small chisel can be used to shave off the burrs. Old flat needle files can be ground into chisels and are ideal for this purpose. Be careful not to dig into the surrounding surface of the sides.*

4) Now would be a good time to give the sides a rub down with fine wet & dry to really see what the job looks like. At this stage you can go over any of the previous body prep. operations quite easily until you are fully satisfied with the results. Once the door hinges are in place it is much more difficult to do so.

5) The hinges can be used with, or without the backing butterfly. Our two-car demo was produced without because that's how the prototype is fitted. Decide whether to include this detail before continuing, it's probable that most units were fitted with the later style hinges (with butterflies), but check first if possible. You will need 6 sets of hinges (2 tall and 1 short hinge per door. Parts E8 tall E8 short). Remember that the short hinge goes in the centre with a large hinge top and bottom. If fitting the hinge 'butterflies' remove an equal number from the etch, 1 for each hinge (E7). The hinge piece is pushed through a butterfly shaped backing piece then glued into the hole in the side trapping the butterfly with the hinge, see right.

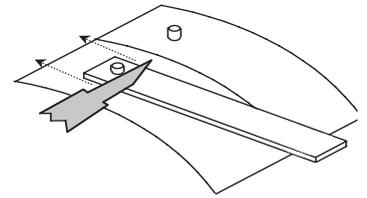


***TIP - You will find that the application nozzle on many brands of superglue will fit neatly over the hinge's spike. Once pushed through the body side push the nozzle over the protruding spike and gently squeeze a small amount of glue into the hole.*

6) Using the 1mm micro rod 'plug' the holes in the door centres and those to the left (and

right for baggage doors) of the doors to represent the door stops. Remember that when drilling the holes the size stated for the door bump-stops was 0.7mm, this enables other solutions to be considered for this detail. If you intend to use micro rod open out the holes accordingly. The stops should be trimmed so that they protrude not more than 1mm from the sides. Do not fit door handles and grab irons until after painting.

***TIP - To ensure all the bump stops are trimmed to the same length: drill a 1mm dia. hole in a piece of 1mm (40 thou) thick scrap styrene (or other sheet material). Place the scrap styrene over the bump stop so that it protrudes through the hole and gently pare back the excess with a sharp knife, followed by a fine file. Remove the styrene and, once all bump stops have been so treated, give them all a gentle rub over with fine abrasive paper to round the edges slightly.*



ETCHED WINDOW FRAMES. READ ALL THE STEPS BEFORE PROCEEDING.

The window frames do not have an etch number. There are 3 types of frame: large, small and toilet so there shouldn't be too much confusion there. It has been suggested by a customer to leave the fitting of the window frames until the basics of the construction have been completed as the central ventilator bars may get damaged whilst handling. Whilst this is a possibility our demo model was built with the frames in place without a problem, but it is certainly worth considering this option before continuing.

7) Carefully cut the window frames from the etch and file the tags smooth taking care not to file into the frame itself. Fit the toilet window vent centrally on its backing prior to frame fitment. DO NOT fold out the central ventilator opening tabs of the main windows until the window frames are fitted.

8) Check that the frames fit the openings (dry run) - the openings should be very slightly larger than the locating lip on the reverse of the window frame.

Before installing the etched window frames check the fit of the window glazing within the openings. Carefully file the edges of the glazing panels until they fit snugly, but not sloppy nor tight.

Using a slower acting superglue may be preferable when fitting the window frames as it would allow you more time to align the window frame before the glue sets.

9) Apply a small amount of superglue directly to the rear frame at the top only. Position the top of the frame into the opening and allow to set. Now, using a small piece of flat material roughly the width of the window frame, gently press the bottom into place and apply glue to the frame/window opening joint from the inside (this is most easily achieved with an old craft knife blade dipped in glue). Once the frame is secure apply more glue to the side joints as appropriate.

10) Remove any excess glue after glue has set using a glass fibre pen, or fine abrasive paper (glass fibre pen found to be best for this).

11) Once all is set and clean of excess glue fold the central ventilator tabs outward. This is best done with small pliers both at the same time in a squashing action. You may prefer to leave this until the sides have been assembled, but before painting.

ROOF PREP

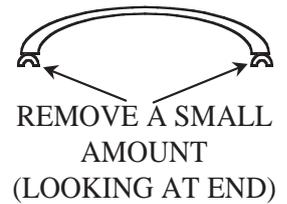
You will notice your roof has a curve due to the molding process this is useful when fitted as it ensures the roof is a tight fit in the centre of your coach.

12) Clean off any burrs of plastic then put a strip of masking tape down the centre of the roof onto

which you can mark the positions of roof vents etc. from the drawing provided (Drawing 2, p11).

13) Drill 2.8mm dia. mounting holes for the roof vents at the locations marked, a 1.3mm hole for the water filler casting and 0.7mm holes for the roof conduits if fitting (see step 15).

14) Remove a small amount of material (about 5mm in length) from the inner edge of the underside of both side locating channels at each end of each roof (see right). This allows the roof to sit down over the end molding. Do not remove the outer part of the channel as this forms the roof gutter. (See photo: Inner roof channel mod.jpg)



15) See the diagram Additional Roof Details (p11) for the layout of the conduits associated with casting C5 at the rear of the roof. Create the pipe work from 0.7mm wire (See photo: Roof conduits.jpg). Fit roof vents and conduits, but leave off the water filler at this time.

FLOOR PREP

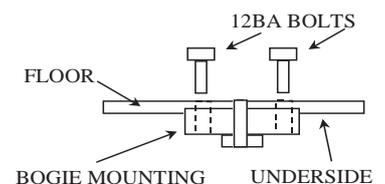
16) Check the floor molding for flatness - if it appears too distorted (some curvature is quite normal) gently bend it in the reverse direction to correct.

17) The floor moldings may need to be reduced in width to obtain the best fit inside the body - the finished size of our demo model was 58mm. To reduce shave off small amounts evenly from each side to keep the floor central to the body. You may need to repeat this operation when the body is fitted onto the floor for the first time.

18) Locate the two aluminium bogie mounting turnings and prepare them by scoring their upper surface (the spigot faces downward when in use). Treat the mounting areas likewise. Use a strong adhesive fix the two round turned bogie mounts in the holes in the floor.

***TIP - Bogies present quite a load to their mountings mainly due to the ease by which they get knocked and twisted when the model is off the tracks, it is therefore necessary to select an adhesive capable of withstanding such shocks. Two part epoxy resins are more suitable than superglues.*

18a) (Optional, but strongly recommended) To make a much stronger job of fixing the bogie pivots in place, you might consider a 'belt and braces' approach by adding a mechanical fixing to the mounting. Good results have been achieved by drilling two 1mm holes through the bogie mountings and floor (once the mounting has been fixed in place) either side of the bogie pivot bolt and tap 12BA. Now secure the bogie pivot in place by bolting down through the coach floor with short 12BA bolts (see bogie mounting diagram right).



ENDS PREP

These are our standard BR Mk1 coach ends and so have some details not required on a these units.

19) Remove all the molded on details from one end, and everything except the water filler pipe retaining details on the other (they are the two little lugs on the outside edges of the end). (See photo: End prep.jpg still requiring the emergency brake details removing!)

These operations are best achieved by shaving small amounts off with a sharp blade, followed by a fine file and finally fine abrasive paper.

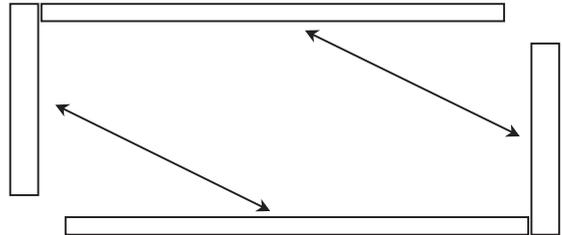
20) With a fine razor saw, cut off the molded on buffer beams level with the bottom of the ends. Use the underside of the end as a fence to guide the saw blade and finish off with a flat file to remove any burrs.

21) Give the ends a final inspection and rub over with fine abrasive paper before moving on; 800 grit should be sufficient unless you have any really deep scores to remove.

BODY ASSEMBLY

Whilst the solvents used to assemble the components evaporate very quickly the joints they produce take considerably longer to achieve maximum strength. DO NOT RUSH THESE NEXT STEPS. Leaving ample time for the joints to harden is essential and you will be rewarded for your patience by not having unsound joints later on.

22) Fix an end to each side on opposite corners to form an 'L' shape half box as shown below right.

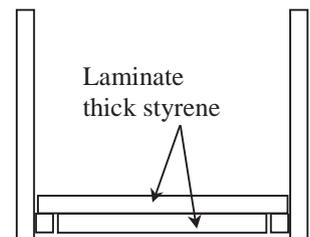


23) Assemble the two half boxes again using a flat surface to aid alignment. The box may twist a little to during this process due to the flexible nature of the materials, but do not worry unduly as the floor will bring everything back in line later. Reinforcing the joints with epoxy resin, or micro rod (not supplied) is strongly recommended.

Assuming care was taken when preparing the ends and sides your sides will be level at the bottom. Allow the ends to harden before attempting the next step.

***TIP - Working on a glass sheet will aid accurate bottom alignment of the sides and ends.*

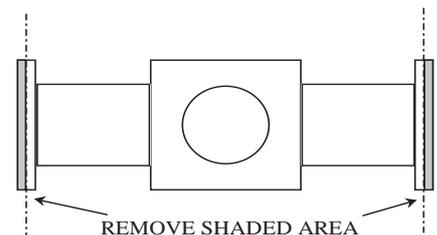
24) Since we are keeping the body 'box' separate some additional strength may be required to assist handling. Adding a laminate of thick styrene (not supplied) stretchers across the body level with the molded rib is just the job. On the demo model the stretchers 18mm wide were aligned with the doors and so aide the fitting of the internal partitions later on. However the stretchers are not essential, but extra care in handling will be required. (See photo: mid body strengthener and cab walls.jpg as fitted to our Cravens Cl.129)



LEAVE TO SET HARD AND BUILD THE BOGIES

Note that the bogie spues contain parts that are not intended for the DMU so please refer to the illustrations to identify the appropriate parts to use.

25.1) Remove two bogie frame stretcher plates from the casting sprues and cut off the ends level with the inside edge of the molded angle (see right). Clean up and square off as necessary.



25.2) Push brass bearings into the axle holes making sure they are an easy sliding fit, but not sloppy - if necessary clean hole with a 2.5mm drill. Do not fix in position as adjustments will be made later.

25.3) Using a pin, add a tiny drop of oil (NOT WD 40) into the bearing surface.

25.4) Place two axles in the bearings of one side frame and, ensuring correct orientation of bogie frame stretcher plate (reinforcing cross members down), assemble the side frame to the frame stretcher.

25.5) Once the first frame is reasonably firm, assemble second side frame onto frame stretcher in the same manner. When the side frames are secure enough to hold themselves in place, make

certain all is square and in line, minor adjustments can still be made at this stage by applying more solvent to soften the joints and adjusting as required. Note: wheels should be a loose fit in the bearings at this stage. Leave the bogie to set for at least 1 hour, 2 is better.

With the joints set hard you can now set the axle bearings:

25.6) There is less side-play evident in the DMU bogies than is found in our coach bogies. If care has been taken so far the wheel sets will require only minimal adjustment of the bearings to obtain optimal performance, If adjustment is necessary begin by inserting a thin piece of card between each wheel and the side frame to prevent lateral movement.

NOTE: Do not over-pack the wheel sets as this might cause the sides to spring when you remove the card later resulting in stiff wheel movement.

25.7) Push in the bearings from the outside until the bearings connect with the axle ends.

25.8) When satisfied that the bearings are (just) against the pinpoint ends fill the bearing hole with the 2.5mm sprue supplied, or micro-rod (not supplied) and fix with liquid solvent from the outside and leave to harden.

25.9) When set, remove spacing card and trim any excess rod flush with axle box face

25.10) Remove the bogie pivot mountings from the casting sprue and remove any flash. Test the bogie pivot bolt is an easy sliding fit in the mounting hole. If tight, open the slightly with a 3.5mm drill to ensure a smooth swivel movement.

25.11) Drop the bogie pivot mounting into its locating holes in the top of the bogie stretcher plate and, using only sufficient glue to attach the plates, fit keeper plates over pivot spindles. Ensure pivot remains free to move until the liquid solvent has evaporated.

You may prefer to use a larger piece of sheet styrene (not supplied) rather than the molded keeper plates supplied.

25.12) If desired, fit the brake shoes on the inside of the sideframe. They should be positioned just off the wheels with the circle detail on the shoe just visible below the bottom of the side frame.

25.13) Fit the bolster detail (See photo: Bogie Sprue Labelled.jpg) centrally to the inside of the sideframe by placing the square beam against the back of the sideframe and butt against the underside of the bogie stretcher.

While the basic bogie assembly sets, identify and remove the bogie channels from the etch.

25.14) Fold up the bogie channels E1.

25.15) Glue the bogie channels to the front and rear of each bogie with the bottom of the channel level with the bottom of the sideframe (superglue is recommended for this).

(See photo: Bogie end channel in place.jpg - your bogie will not have guard irons fitted)

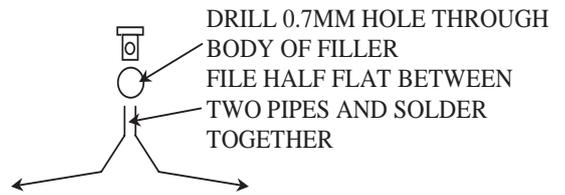
25.16) Fit the axle box covers; there are two different types of axle box covers supplied in the kit, use the slightly domed Timken covers.

BODY ASSEMBLY CONTINUED...

26) Fit the roof fixing captive nuts into the molded channel on the underside of the roof. Slightly reducing of the width of the captive nuts will make their fitment and adjustments easier, however don't overdo it as you don't want them sliding about when trying to get the bolt to go in, nor have them dropping out!

27) When the roof is in place the top of the sides will locate in the groove under the gutter. You may find the central molded channel on the underside of the roof needs trimming back to enable to roof to fit between the end moldings. Should this be necessary, a cutting burr in a motor tool is the easiest way to remove the material.

28) Form and fit the water pipes to the filler casting C9 on the roof and down to the brackets molded onto the end. Use 0.7mm brass wire for the pipes, file the ends of the two halves flat, solder together, drill a hole through the body of the filler and insert the pipe end. See photos for shape of pipe run. Cut off the pipes about 2.5mm below the retainers. Remember the roof is removable so you need to make either the casting a plug-fit into the roof (preferred), or the pipes need to be a loose fit in the pipe-retainers on the end. (See photo: End with Water Pipes.jpg).



You may prefer to leave the water pipes until the whole unit can be temporarily assembled to ensure the best possible formation of the pipe-runs. DON'T FORGET THEM!

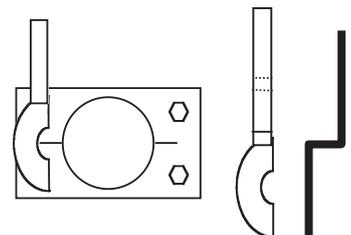
UNDERFLOOR ASSEMBLY

29) Check again the floor will fit within the sides and end moldings, it is possible that you will have to adjust the floor width to gain the best fit. Do this carefully removing the minimum amount evenly from each side to keep the floor central to the body.

30) To improve the visual appearance of the underframe, cut the two lengths of 5mm wide 0.5mm styrene to 389mm and affix to the outside face of the molded solebars. Keep the strip firmly butted against the underside of the floor lip and aligned with the ends. You may prefer to cut the strip slightly long and trim back to the floor ends once in place.

31) Remove the buffer beams from their sprues together with their associated extension collars, clean flash, etc. and check the fit of the buffer shanks into the holes. Use a 3mm drill bit to carefully open any tight holes to allow the buffers to slide easily. Use a buffer to align the buffer stock extension collar to the end of the buffer housing - affix with solvent and remove the buffer immediately. Once the joints have hardened run the 3mm drill through again to ensure the holes are clean.

32) Lamp irons (E9) are fitted to the outer edge of the buffer stocks. First remove the outer two molded bolt heads from the face of the buffer stock. (Optional) Press out the rivet heads from the rear of the lamp irons. Bend the lamp iron to form a joggle using the half etches as a guide and glue to the face of the buffer stock, see right. Superglue is recommended for this. (See photo: Lamp Irons.jpg)



33) The buffer beams should be fitted directly to the floor molding. Take care as it is quite easy to glue everything together solid! With the floor in position, initially tack the buffer beam in place then remove the floor from the body and finish off the job, reinforcing the joint as appropriate. Remember the buffer beams will be holding the train together when in operation!

You may wish to leave the buffer beam details until later as they are quite vulnerable otherwise proceed as follows:

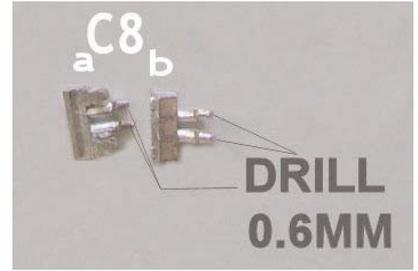
MU PLUGS

What is required to prepare the MU sockets depends on your preferences. If you want to connect the

centre car MU cables to the driving cars MU cables some method of attaching the cables is necessary, if not the castings can simply be fitted as is.

34.1) After cleaning up the castings square off the ends of the cable plugs (C8a and b) and make a pop mark in the ends with something sharp (mind those fingers!)

34.2) Drill a small hole in the castings (0.6mm) just deep enough to secure a short length of wire. Insert short pieces of wire leaving about 3mm protruding onto which the cable sleeve will be fixed.



34.3) Fit the castings to the underside of the buffer beams centrally under each buffer as follows when looking end on: C8b left, C8a right. Remember you'll be working upside down so it's easy to get the order wrong! (See photo: MU Fittings.jpg)

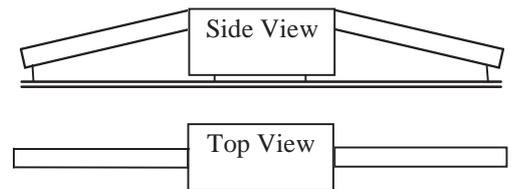
UNDERFRAME DETAILS

35) With the floor still in place mark the solebars to show where the doors are (both right and left hand edges of the openings) - remove floor.

See the diagram for the underframe layout for the dimensional positions of the various underframe components.

36) Fold the bottom of the inner frame strengtheners E5 along the half etched lines and mount the strengtheners centred in line with the doors with the folded lip facing outward.

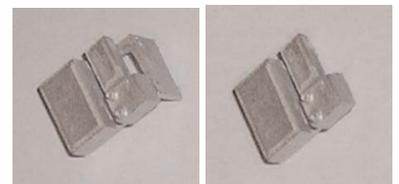
37) Gently straighten the tank fillers C10. Once the pipe is reasonably straight finish off with flat bladed pliers. Pewter is quite malleable and should not break during the straightening process, but working the material slowly will ensure success.



38) Mount the fuel tank C1 across the floor and fix the straightened fuel tank fillers from the centre line of the tank ends angled up to the edge of the solebars as shown right. (See photo: Derby 108 CTR 4.jpg)

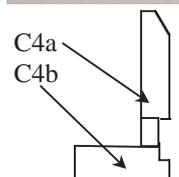
39) Assemble the large vac tank from C6a, b & c - you can't put this together wrongly! just remember to keep the mountings square to each other, or it will be difficult to attach to the floor. Drill a 0.7mm dia. hole in the centre of one end into which you will fit a pipe angled down to the underfloor when the tank has been fitted into place. Mount onto floor and add pipe from 0.7mm wire. (See photo: Derby 108 CTR 5.jpg)

40) Modify casting C3 by removing the cast on buttons on the small box and mounting base. Shown right unmodified and with base removed.

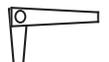


41) Mount the modified C3 with the largest cast box against the floor.

42) Electrical box C4a needs mounting onto part C4b so that the angled edge will be at the bottom when mounted on the floor. Mount C4 assembly and C7 and add conduit to the castings from 0.9mm wire. (See photo: Derby 108 CTR 3.jpg)

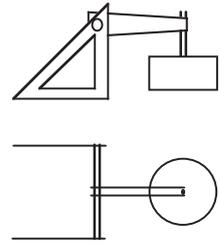


43) Fold the mounting bases of the brake hangers (E12). Assemble the brake levers (E13 & E14 (optional)) centrally onto short lengths (24mm) of brass rod. E14 can be mounted



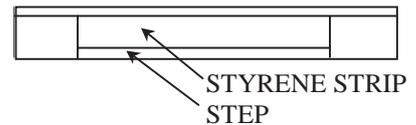
between the two E13 to create the pull rod to the bogie if required. Drill a 0.9mm dia. hole into the centre of the brake cylinders and insert a short piece of 0.9mm wire as a pull rod.

44) Mount the brake hangers either side of the molded central ribs so that the straight leg is away from the bogie. Remember to insert the brake pivot rod before fixing both hangers in place. Once the brake hangers are in place, mount the brake cylinders so that the pull rods coincide with the brake levers. See diagram right for basic idea. (see above picture references for more detail).



45) The remainder of the details can be fitted in place simply by reference to the underframe diagram and photographs on the CDROM.

46) Cut 6 off 18mm x 5mm of 1mm (40 thou) styrene as step treads. NOTE: the steps are not aligned to the bottom of the solebars, but about 1mm above the lower edge; horizontally align the steps centrally with the door. Additional strength can be gained by adding a strip of styrene to the front of the solebar in line with the step, once painted it is hardly noticeable, see right.



***TIP - The outer edges of the steps should not be left too square cut, i.e. round off the upper edges and slightly round the corners. The steps were made of wood and soon became worn.*

CREATING THE INTERIOR PARTITIONS

See Drawing 1 for layout of the interior of the car including the partitions as described in the following steps.

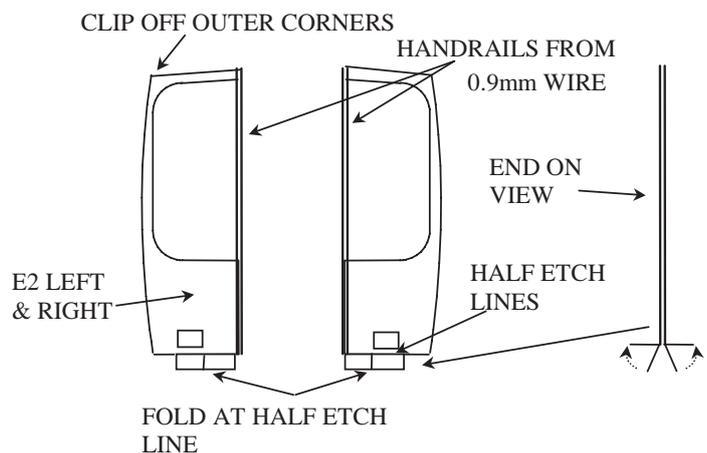
47) Remove 2 full partitions E3 from the fret and check the width of the cab partitions inside your body and trim as necessary to achieve a sensible fit. It is advisable to clip off the top outer corners to ensure they don't foul the roof molding. The partition should also be able to sit between the molded ribs at the base of the body sides.

48) Fold the bottom three sections along the half etched lines, making each fold towards the half etch. You should now have two short tabs and long central tab folded at 90o in opposite directions and have a partition that can be stood up, if not you've folded it up wrong! (See photos: Cab Partition Bottom.jpg) - these are of the original components as used on the driving cars, but show the principle of what to do.

NOTE: If you have fitted the body stretchers (step 24) you can remove the tab that goes towards the stretcher and glue the partition directly to the stretcher on that side.

49) Remove the half partitions E2 from the etch and add vertical handrails from 0.9mm dia, wire.

50) Fold the bottom of each partition 90o in opposite directions, again this will produce a partition that will stand upright. Again see note regarding removal of tabs if body stretchers have been fitted. (See photo: Seats2.jpg as fitted to the false floors in the driving cars)



51) Remove the appropriate number of

seats from the sprues and prepare them by removing the ejection pin marks (small round marks on seat back) and molding feed joints.

52) To form the seat, flex the molding until the joint between the base and seat back shows a thin white line. Apply solvent, or superglue to the joint holding together briefly to prevent the back from initially springing apart.

53) You will also require a single seat creating by cutting a twin seat in half. Re-model the seat back to make it more realistic as a single seat rather than a cut-down double seat.

54) Reduce the height of the toilet compartment (E15) by about 1mm to ensure it will not interfere with the central roof channel then fold to form an 'L' shape such that the short wall has its top angled downward to clear the underside of the roof.

FINISHING

With the main construction now complete it is time to prepare the model for painting. Whilst this consists of mainly cleaning and washing of all the parts, it also gives you another opportunity to check the security of the various fittings. Anything that cannot stand cleaning will probably not withstand long-term use, so it's better to have bits falling off now than later - refit as required!

FINAL ASSEMBLY

55) You should now have to hand a fully finished floor assembly, body 'box', bogies and roof. Before commencing assembly, very carefully scrape off any paint and varnish from the top outer edges of the floor (where the body sides will sit). Also and even more carefully scrape away paint and varnish from the underside edges of the molded rib at the bottom of the body sides. Once again, work slowly and carefully so as not to damage the finished face of the body sides.

56) Fit the floor to the body side 'box' and apply solvent to the molded rib/floor joint and reinforce as appropriate - micro-rod (not supplied) is ideal for this.

57) Paint the interior floor before commencing fitting the interior details.

NOTE: Read both steps 58.1 and 58.2 before continuing.

58.1) Install the glazing into the window openings from inside the body, remember to 'frost' the toilet window by rubbing the inside face with 800 grit abrasive paper. Fit dry and secure in place by running dilute canopy glue around the edges with a small brush. Dilute the canopy glue to the consistency of milk and add a single drop of detergent to aid the flow of the glue into crevices.

58.2) If the glazing is fitted 'as is' you will find a small gap between the ventilator bar and the glass, not terribly noticeable, but nevertheless it's there. Alternatively score each panel at 7.8mm from the top and crease away from the score - it may break in two. With either a single creased panel, or two smaller panels to hand the window can now be glazed with the panes flat against the etched frame. This is not as difficult as it may appear from the description, nor very time consuming. We have devised a simple measuring jig to make this even easier (contact Shawn at Camelford for details).

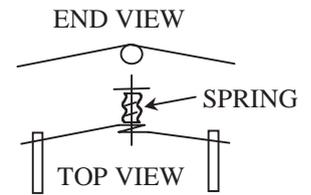
59) Fit the door windows by applying a bead undiluted canopy glue to the edges of the openings and pressing the glazing into it.

60) Following the interior layout diagram fix the various partitions at the appropriate locations remembering the half partition handrails are towards the inside of the carriage.

61) Following the interior diagram fix the seating and toilet compartment directly onto the floor.

62) Fit the roof securing it in position with the long 4mm dia. bolts.

63) Check the fit of the buffers in the stocks once again for a sliding fit, adjust as necessary. Fit the buffers into the stocks. To spring the buffers create a loop of the spring wire (supplied), pass each end of the loop through the hole in the buffer shank. Secure the spring in place by passing the coupling shank through the hole in the loop and trap with the coupling mounting spring and split pin, see right. (See photo: Buffer springing.jpg)



NOTE: The standard links used on model couplings are too short to couple these units together and still be able to negotiate model curves. You might wish to add an additional link, or replace the stock links on one unit with a longer example,

- 64) Mount the bogies (dynamo to the opposite end to the toilet) ensuring they are free to rotate.
- 65) Fit all door 'T' handles and grab handles E10.
- 66) Fix the corridor connections to the ends.
- 67) If connecting the MU connections, cut short lengths of flexible tubing and slide over the MU connector spikes. The lengths of the cables will depend on the minimum radius your model will have to negotiate - initially too long is better than too short.

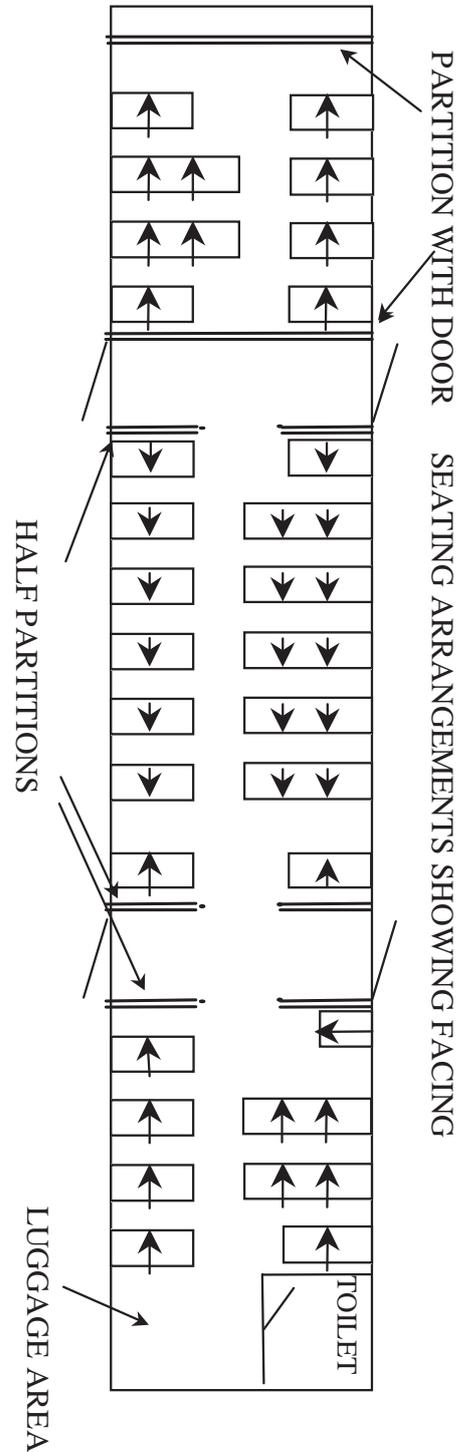
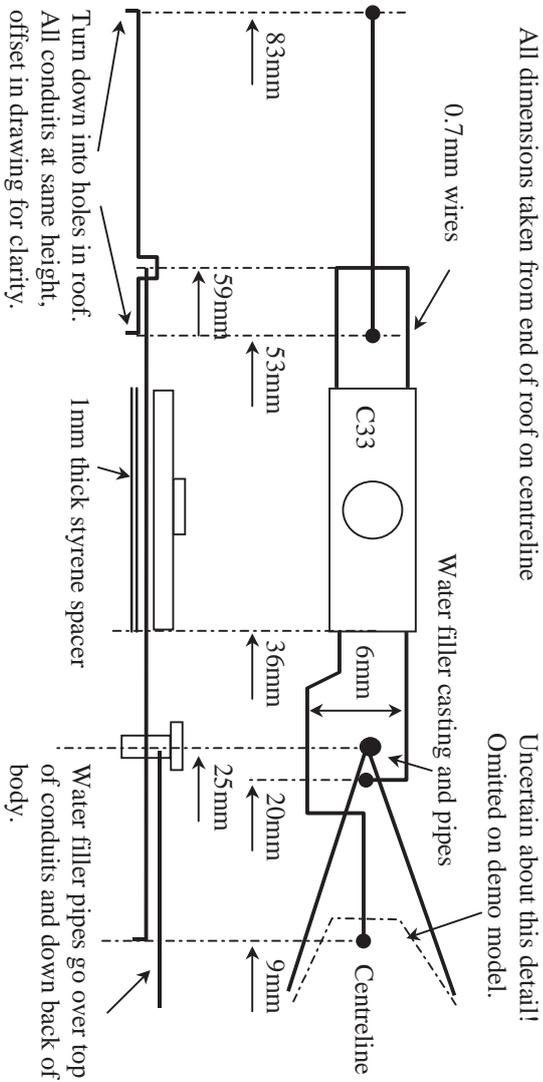
We hope you have enjoyed building this kit and welcome your comments.

SHAWN KAY SEPTEMBER 2015

NOTES

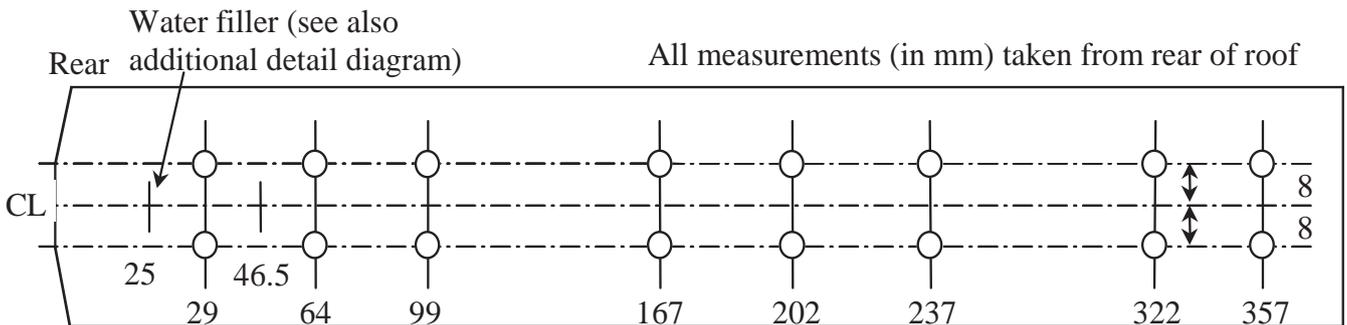
DRAWING1

ADDITIONAL ROOF DETAILS

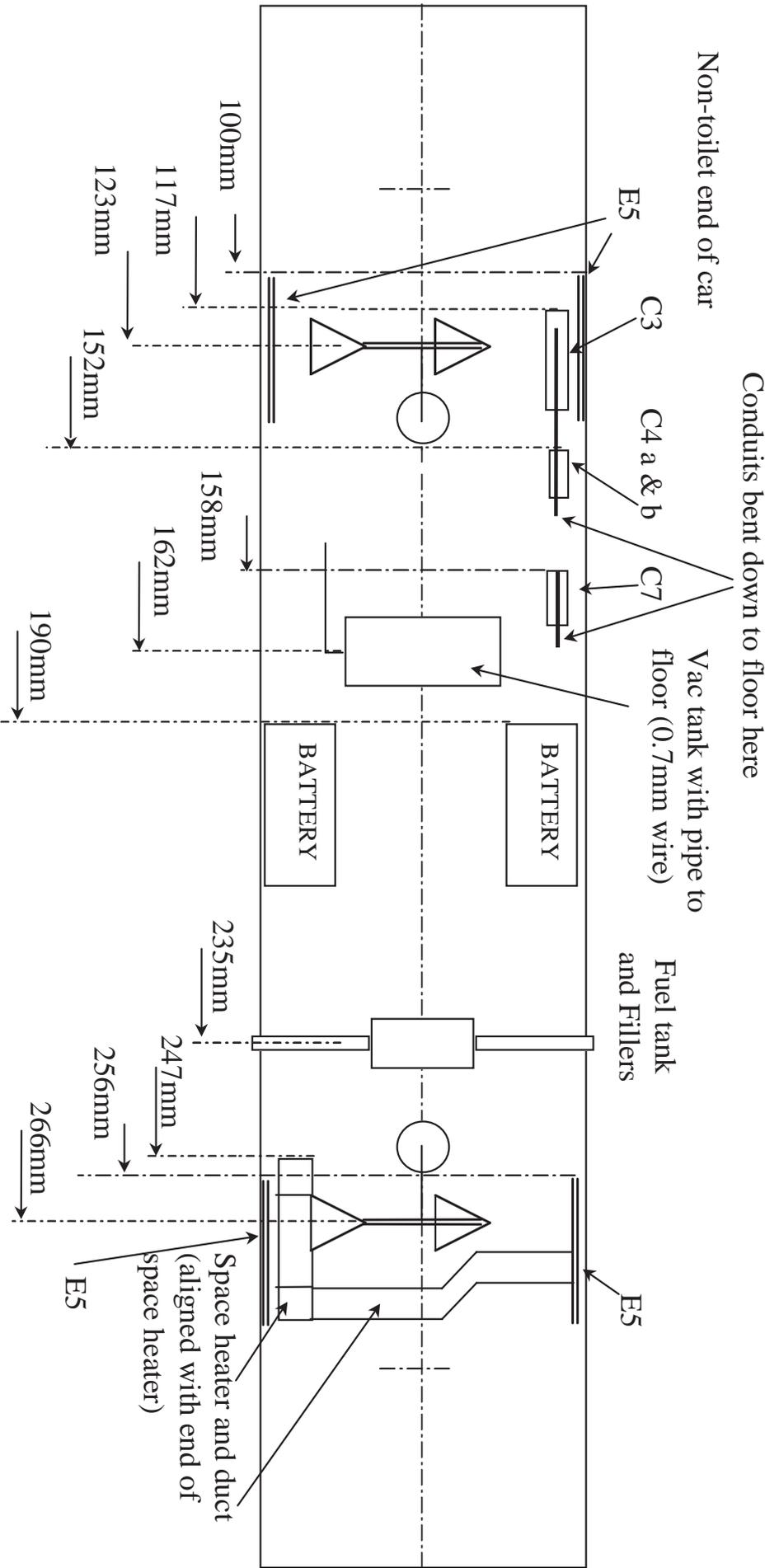


DRAWING2

Note: the diagram shows a driving trailer roof (with one square-cut end) your roof will have both ends shaped as shown here at 'Rear'.

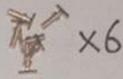
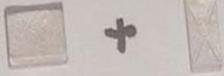


UNDERFRAME DETAILS LAYOUT



The underframe details differ significantly in layout from that found on the driving units. With the exception of the battery and electrical boxes, all other details are located on the floor centre line. This gives the under floor area a decidedly empty look when compared to the driving units. Use the molded ribs down the centre of the floor as a guide. The space heater should be pushed firmly against the molded rib then the cast duct aligned with it across the floor. Likewise the brake hangers should be affixed to the floor against the molded rib and the brake cylinder itself should sit on the centre ribs. (See various photos of both underside and side views to see more clearly what is required)

CASTINGS

 <p>C1 FUEL TANK</p>	 <p>C2 AIR DUCT</p>	 <p>DOOR 'T' HANDLES</p>
 <p>C3 ELECTRICAL BOXES</p>	 <p>C4a C4b ELECTRICAL BOX AND BASE</p>	 <p>C5 ROOF CONDUIT BOX</p>
 <p>C6 a,b,c VAC TANK</p>	 <p>C7 ELECTRICAL BOX</p>	 <p>C8a C8b MU CONNECTORS</p>
 <p>C9 WATER FILLER</p>	 <p>C10 FUEL FILLERS</p>	 <p>C11 DYNAMO</p>
 <p>C12 SPACE HEATER</p>	 <p>C13 BRAKE CYLINDERS</p>	 <p>C14 BATTERY BOXES</p>

ETCHED PARTS

Key:

- E1) BOGIE FRONT CHANNEL
- E2) SALOON PARTITIONS (left and right)
- E3) SALOON PARTITION
- E4) FALSE FLOOR SUPPORTS
- E5) INNER FRAME
- E6) OUTER FRAME STRENGTHENERS
- E7) DOOR HINGE BUTTERFLIES
- E8) HINGE PINS (short and tall)
- E9) LAMP IRONS
- E10) DOOR GRAB HANDLES
- E11) BUFFERBEAM CORNER STEPS
- E12) BRAKE PIVOT BRACKET
- E13) BRAKE LEVERS LONG
- E14) BRAKE LEVERS SHORT
- E15) TOILET COMPARTMENT
- E16) DYNAMO MOUNTING BRACKET

