Dean Coach Bogies – 8’6 & 10’

- These etches are designed to build up as Dean Coach Bogies in 8’6 and 10’ variants.
- The steps below are the suggested order of assembly. It is recommended that you read them through before commencing.
- There are a number of small parts on the etch and you will need to take particular care in separating them from the fret and assembling them.
- All bends are on the inside of the fold line.

Tools required

- Cutting mat or something similar e.g., a metal or tufnol block
- Craft knife
- Needle files - flat and rat tailed (or a broach)
- Vice and flat jawed pliers
- Soldering iron, flux, and solder
- Tweezers - stainless steel and ceramic

Other parts required

- Top hat bearings 8pcs
- 7mm wheels on 12.25mm axles 4pairs
- Brass Tube 0.4mm OD or similar
- Brass Rod 0.2mm diameter or similar
- Volute Springs (see below) 4sets

Instructions

1. Solder top hat bearings inside the side frames, then file them down to about 0.2mm proud on the outer face. You may need to open out the holes slightly with a rat-tail file or broach.
2. Solder the little square volute bases into the recesses in the side frames. There are two per side frame. You may omit these if you use the 3D printed volute springs.
3. The springs are in their own sub frame to assist with alignment when fixing them to the side frames. Place the first layer of springs over the top hat bearings and solder them to the side frames. The second layer of springs cover the top hat bearings, so make sure the back of the bearing is at least flush with the first layer of springs. Use the holes in the second sub frame to align this layer and solder in place.
4. Fold up the axlebox faces and solder to the springs.
5. The side frames may now be cut from the fret and cleaned up.
6. Fold up the side frames and the ends and solder these at the corners and along the fold lines.
7. The fret includes step boards but not all bogies had them fitted so check your prototype information. Assemble the step boards by bending up the edges of the lower layer and inserting the legs of the upper layer through the lower layer slots. Once the upper layer is fully home against the lower layer, solder the two layers together along the outer edge. Form bends in the legs at the small half etched notches and check against the profile (indicated by 'step board') on the etch.
8. Place the bogie frame on a wooden/tufnol block and offer up the step boards to the side frames. Pack the side frames or step boards so that the top of the legs engage with the slots

in the side frames, and solder the middle leg in place, then the outer legs. It helps to have ceramic tweezers to hold the outer legs in the slots while soldering these. A small soldering tip is also a good idea. It is recommended to flood the area round the outer legs with plenty of solder to get a good joint, then clean up afterwards. The distance over the outer edges of the step boards needs to be 17.75mm to 18mm. If your step boards are much more than this, you may need to squeeze them together slightly. Check the step boards are level once you have soldered them in place and squeeze them together if required.

9. Bend the inside brakes base to a right angle, insert the tabs in the slots in the bogie centre and solder in place. Do this for both sides.
10. For the outer brakes, bend the brake shoes to a right angle to the central section and locate them in the slots and against the inside edge of the bogie front end. Solder the brake shoe brackets in place. Then repeat for the other end of the bogie.
11. If your choice of couplings are to be mounted on the bogie frame, affix them now especially if they are to be soldered in place.
12. To represent the distinctive volute springs, you may:
    a. Use the Association 3D printed items – there are different types for the two wheelbase options
    b. Fabricate your own from brass tube and rod, or turn them from solid bar

    If you use the 3D printed items, a separate instruction sheet tells you how to fix them to the bogies.
13. The volute springs had parts called scrollbars extending upwards from the volute bodies. It is difficult to represent these exactly to scale, but the following will give a fair representation:
    a. Form a slight (approx. 10 degree) bend near the top of a 4mm long length of 0.4mm tube. Trim the other end of the tube so that the bend is about level with the top of the sideframe.
    b. Solder a 3mm length of 0.2mm rod into the straight (bottom) end of the tube, leaving about 1.5mm of the rod sticking out of the tube. Clean up and superglue the rod into the hole on the outside of the volute, with the top end of the assembly bent in towards the solebar.
14. Insert the wheels and check the bogie runs freely.
15. The etch includes bolsters which you can attach to the underside of your coach. You may need to add packing on these to achieve the correct ride height for the coach body. The tabs will probably need to be filed off before fitting to the underside of the coach underframe.
16. To achieve a degree of compensation with the bogies, solder the rectangular part with half etched edges on top of one of the bolsters, and solder the ring centrally on the other bolster. These will provide fore and aft and side to side compensation respectively.