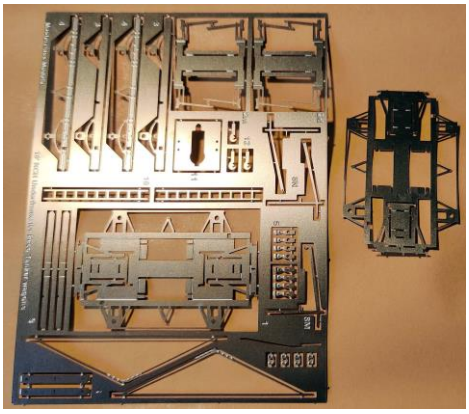
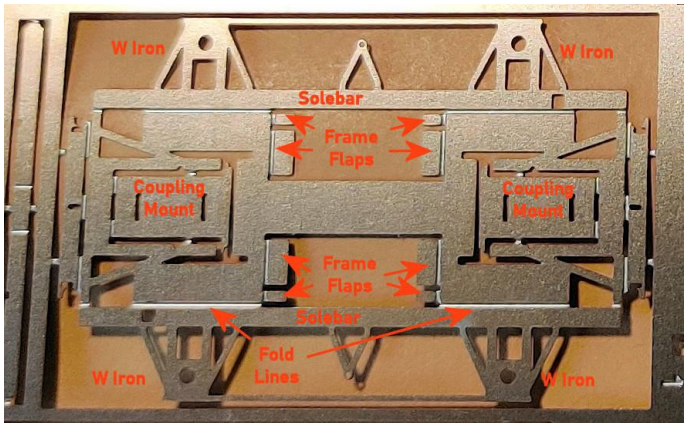
Wagon Chassis: Etched NS
RCH 10': For PECO Tank Wagons 2-384

This chassis kit is intended as a replacement chassis for the PECO tank wagons with 10ft wheelbase, such as NR-P163.
This kit consists of a complete chassis etch, plus a separate alternative chassis frame. The chassis frame on the main etch has plates covering where the wheels will be, whereas the alternative frame is more open in this area. You have a choice and should check photos of your chosen wagon before deciding. The more open chassis frame is a little more fragile, and the one with the covers may be easier to build.

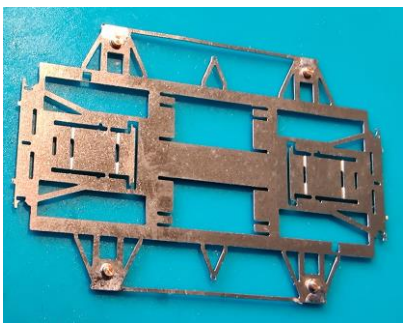


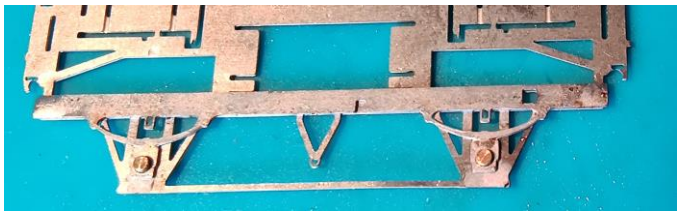
Having chosen which frame to build, cutting from the etch, if necessary, clean up the remains of any tabs with a file, and then determine which side the main fold lines are etched. This will determine which way the top hat bearings should be fitted, as there is no etched recess, unlike other chassis etches from the 2mm Scale Association. Etched fold lines will usually be on the inside of any bend or fold. It is advisable to mark what will be the underside of the chassis with a permanent marker.
The underside will have the main fold lines along the length of the solebars. The top of the frame etch only has fold lines on the coupling mounting boxes.



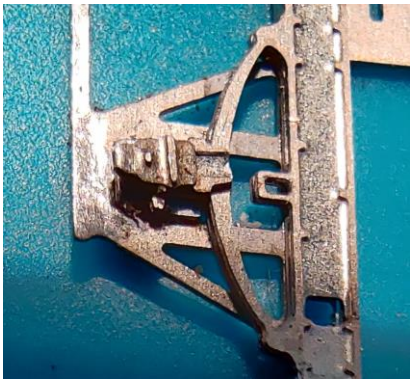
Having checked, and double checked, fit the top hat bearings from the underside of the frame, and apply a little flux and solder. It is easiest to stand a top hat bearing on a heatproof surface, and place the chassis frame over it, top side uppermost so you cannot see the permanent marker. Then flux and solder the bearing with a minimum of solder, so it runs around the bearing but not flood through to the other side. You may need to enlarge the holes slighter with a small reamer, but I did not have to with this chassis.

Remove the inner solebars (3) from the etch, and file off any remains of the tags. These need to be tinned. Apply flux all over one side, then use the soldering iron, with a small amount of solder, and 'paint' solder all over the solebar until it is covered with a smooth thin layer of solder. A large bit on the soldering iron is helpful to be able apply plenty of heat quickly. Now tin the other side of the solebar.

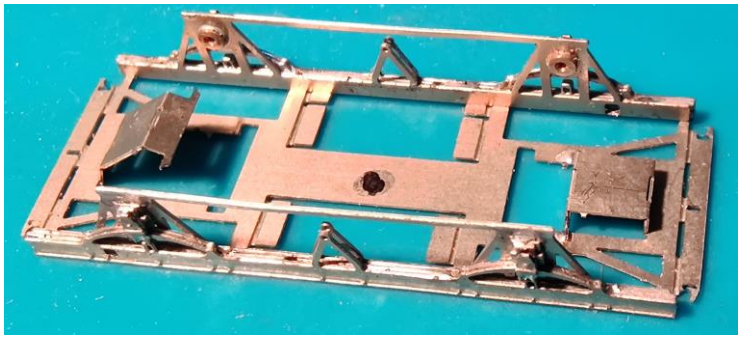




The solebar area on the chassis frame should also be tinned, again, top side only. The solebar can be laid on the frame etch, with the ends of the top hat bearing helping to locate it correctly. Ensure the square hole in the solebar is at the same end as the corresponding square hole in the frame, as the brake lever will locate through this later. The solebar is then 'sweated' to the chassis frame. This means applying the soldering iron, and carefully moving along the solebar so the solder between the solebar and the frame melts and joins. Repeat for the solebar on the other side of the chassis.

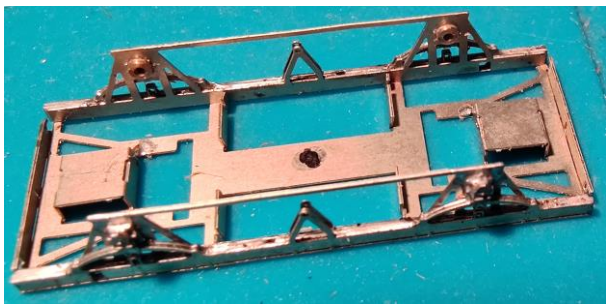


The outer solebar layers (4) have axle holes that are too small for the top hat bearings to pass through, so file the ends of the bearings down flush with the previous solebar layer. The outer solebars can be removed from the etch, tag remains filed off and then tinned as before (one side only of course). Without the positive location afforded by the top hat bearings, location of the outer solebars has to be done by eye. Start by just tack soldering each end, and only when confident it is positioned correctly, apply the soldering iron to various points along the bottom of the solebar to sweat the layers together.
The axlebox covers can be fitted next. They are small, and need to be tinned, folded, and sweated together before sweating onto the axleboxes. There are plenty of spares on the etch, as at least one will head for the carpet and disappear. If you are not confident with soldering these, they could be superglued on later. Always leave supergluing until last. If you start soldering after using superglue, toxic fumes can be produced.

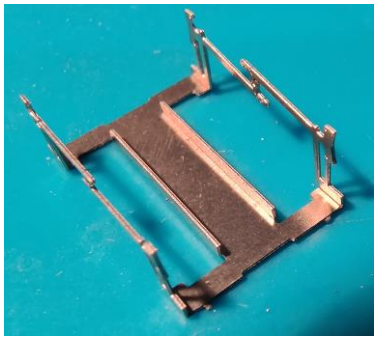


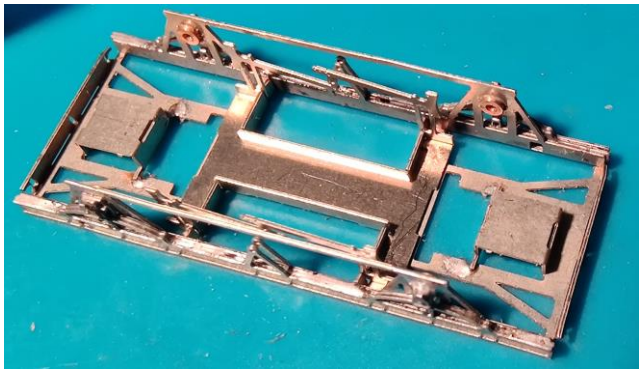
Using a small pair of pliers, start folding the side frame assemblies where they join to the chassis frame 'floor'. Do this a little at a time at each fold point along the solebar, just a few degrees at a time until 90 degrees is reached all the way along. The coupling mounting 'boxes' are part of the floor. Cut the two tabs, one each side, then fold up, again, a little at a time, until each fold is 90 degrees. The two 'ears' at the end of the box should then locate into two slots in the floor. A touch of solder will hold them in place.

Fold the buffer beam supports at the ends of the floor to 90 degrees. You can now run some solder along any fold lines to strengthen the assembly.
Fold the flaps in the floor to almost 90 degrees. This makes fitting the brake assembly simpler.



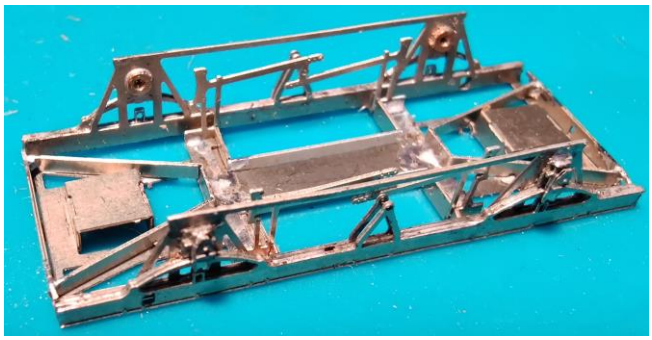
There is now another choice. Two brake assemblies are supplied on the etch. One marked 2d is intended for independent brakes on each side, while the one marked 2m is used for brakes that are connected across the wagon. It seems the etch for 2d is incorrect if the fold lines are inside the bend.
Operating the brake lever would disengage the brakes. If using etch 2d, you need to fold with the fold lines on the outside of the bend, although the brakes may end up slightly lower than intended. I used etch 2m. First fold up the inner flaps of the brake assembly to 90 degrees, then fold the brake rigging to 90 degrees.





The assembly is fitted to the floor frame. The inner tags of the brake rigging need to fit into the slots in the floor flaps. When in position, the floor flaps can be bent to their full 90 degree position. Run a little solder here and there to fix everything together.

The diagonal frames (9) can now be removed from the etch, and the tags remains removed, especially on the ends which will fit into slots in the buffer beam supports, just inboard of the holes for the buffers. Bend the fold lines to about 70 degrees, and then test fit in place. The centre will lie at the end of the brake assembly, and the ends should locate in the slots in the rear of the buffer beam support.



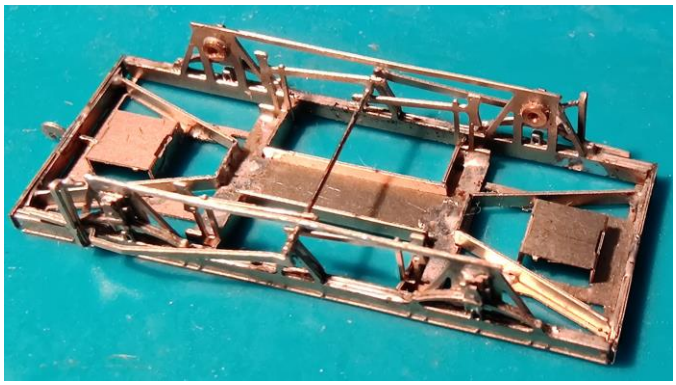
There are two slots in the diagonal frames that should clear the 'ears' of the coupling mounting box. When it is positioned correctly, tack solder the ends behind the buffer beam support.
If it still looks right, solder the centre to the end of brake assembly. If still looking OK, properly solder the ends.

The buffer beams can now be removed from the etch and tag remains removed. These are sweated to the buffer beam supports. The etched dimples at the ends of the buffer beams denote the rear of the buffer beam, which in reality would be a U shaped channel. You can use the coupling hooks (12) to help locate the buffer beams. Fit the hook plates to the hooks first if you intend to permanently fit them. I use single ended DG couplings, and the hook interferes with the fall plate of the coupling, so I fit the hook at one end only.

Use a small broach or reamer to enlarge the holes in the V hangers and brake rods to take some 0.3mm nickel silver wire. For connected brakes, a single length of wire is passed through all the holes, so that a short length sticks out each side of the overall chassis. For independent brakes, two

short lengths can be used, one on each side, or a single longer length fitted, which can be cut after fixing with solder.

If fitting independent brakes, two brake handles (8N) are required. For connected brakes, one 8N handle, and the 8M handle, with the cam at the end, are required. Small dots are etched in the brake handles to indicate the position of folds or bends. Some bend inwards, some outwards, some at small angles, some at right angles, and one completely folds back on itself. Some mental agility is required to end up with the correct shape to fit over the end of the wire, avoid the axle box and secure in the square hole in the solebar, with the ratchet bar vertical. If using the handle with the cam (8M), more mental agility is required to determine which side of the chassis it should be fitted. Once soldered to the wire and the solebar, the tab at the end of the ratchet bar can be bent and soldered to the side of the W iron.



Your choice of buffers and couplings can be fitted to complete the chassis, and it should be thoroughly washed with plenty of water, a little CIF, or similar, and a toothbrush. If any bits are dislodged, they would have fallen off later anyway, so re-solder them and clean again. Apply some small squares of masking tape to the bearing cups and spray with primer. Paint and weather, and then add the wheels (after removing the masking tape).

Remove the wheels from the PECO wagon and undo the two nuts holding the chassis to the body. The plastic 'screws' and coupling box tabs can be cut from the bottom of the tank in order to fit it to the etched chassis. Ladders and tank support bars are included on the etch if required, but I wanted to retain the PECO livery which would have been destroyed by cutting off the moulded support bars.