

RCH underframe etch instructions (2-329, 2-382, 2-383, 2-324, 2-358, 2-376)

These instructions cover the following Association RCH underframes

2-329	10'6"
2-382	10' Peco replacement
2-383	9' Peco replacement
2-324	9' including SNCF mineral wagons
2-358	17'6" LMS Underframe
2-376	15' LMS/BR Unfitted Underframe for Peco Plate Wagon

Assembly instructions

Parts required

1 x	RCH underframe etch.
4 x 2-041	Rolling stock axle bearing cups
2 x 2-209	6mm plain spoke wagon wheels (or similar according to prototype).
4 x 2-441	Ribbed wagon buffers (or similar according to prototype).
1 x 2-346	Turned brass vacuum cylinder (for fitted chassis)

0.3mm brass or nickel silver rod
solder and tools

General

Certain parts of the etch are very delicate, and therefore care is needed when cutting both them and adjacent parts out. Spares are provided of certain small or delicate items.

Although it is possible to assemble the kit using superglue, for these instructions soldered construction is assumed.

Unless otherwise indicated, fold lines for 90 degree folds are on the inside of the fold, for 180 degree lines on the outside of the fold.

Parts on the etch are numbered. An enlarged picture of the etched fret is provided for clarification. Study this and the instructions carefully before beginning assembly.

Underframe Assembly

1. Cut out the underframe etch (part 1) from the fret. If the underframe is to be used with a body kit including bufferbeams, remove the inner bufferbeams from the etch, and shorten the underframe to match the body. Determine from prototype photographs, whether axlebox tiebars are required for your model. If not, then carefully cut them away from the underframe and tidy up with a file.
2. Bearing cups may be soldered in place before or after folding the underframe into a U section, according to preference. Fold up the underframe sides into a U shape, or you may choose to leave it flat until steps 4 and 5 have been completed. Fit the wheels into the underframe and adjust for free running without excessive slop. Remove the wheels.
3. If fitting DG or similar couplings, foldup boxes are provided as mounting points. If not required, leave them flat.
4. For kits 2-358 and 2-376, optional half-etched overlays are provided to model wagons fitted with plate axleguards. If required (only some wagons had them) cut out and solder over the RCH style axleguards.
5. Cut out the inner and outer solebar etches (parts 3 and 4). If building 2-324 for an SNCF mineral wagon, use part 4S instead of 4. If cast axleboxes and springs are preferred, remove the etched ones provided.

6. The outer solebar may be provided with a V Hanger, this is only required for independent brakegear, so if building Morton brakegear remove it.
7. If modelling a wagon with wooden underframe, cut out the wooden solebar overlays (part 11) and solder in place over the outer solebars.
8. Shorten the solebars to match the underframe length if needed.
9. The outer solebar is provided with a selection of drop bars. According to the prototype selected, remove those not required, and carefully bend those remaining through 90 degrees and form into an S shape (see prototype photos).
10. On kit 2-376, triangular strengthening pieces need to be folded out 90 degrees on part 3.
11. Now fit the inner solebar overlay to the underframe, using the bearing cups as locating lugs. Cut or file off the bearing cups flush with the solebar overlay. Fit the outer solebar overlay.
12. Fold up and solder the axlebox etches (parts 5a or 5b), file off the remaining tab, and locate in place. Ensure you have them nice and square. Spares are provided in the case of mishap. Axleboxes may be provided for both split (5a) and open front (5b) types, consult your prototype for the correct ones. Some wagons ended up with a combination of both!
13. If bufferbeams are being fitted, fold up the inner bufferbeams on the underframe. Select square (part 7), angle ended (part 6) or wooden (part 10) bufferbeams as appropriate. Solder into place, ensuring they are accurately located over the buffer holes, and that the etched channel section faces inwards in the case of the steel bufferbeams. For the wooden bufferbeams, each end should first be folded into a Z shape, soldered together, and the tabs filed off, to represent the correct thickness.
14. Cut out and fold up the brake gear (part 2). The brake gear is designed for Morton brake linkage (except for 2-324). If building independent brakegear, one side of the gear should be carefully broken off and reversed. If building 2-shoe brakegear, one side should be broken off and discarded. Solder the brakegear in place on the underframe in the tabs provided.
15. Insert the wheels, and check that they do not foul the brakegear. Remove them again.
16. If building a fitted underframe, solder the vacuum cylinder in the hole provided.
17. Thread 0.3mm brass wire through the V Hangers, making sure you include the appropriate vacuum cylinder linkage (part 9) for a fitted underframe. The rod runs across the wagon for Morton brakegear. For independent brakegear, two short rods should be provided on the two sides of the underframe. Leave sufficient rod protruding to attach the brake levers later. Carefully solder the various parts in place.
18. Depending on the kit, several optional brake levers are provided.
 - For independent (double sided) brakegear you require 2 of 8N
 - For the SNCF mineral wagons, 2 of 8S
 - for Morton one 8N, one 8M,
 - and for drop link, one 8N and one 8D.

Fold up the brake levers. Small location pips are etched on the levers where bends are required. First form the main profile of the lever – guides are found on the etch to assist with this. Next fold up the brake lever ratchet into a box shape. Now solder the brake levers in place onto the rod protruding from the V hanger, and into the slots provided in the solebar. Trim off the excess brass rod. Make sure you have soldered the correct lever on the correct side. In the case of Morton or drop-link brakegear, the normal lever (8N) should go on the side where the brake rodding slopes in the opposite direction to the lever, the morton/drop-link lever where the lever and rodding slope in the same direction.