

Caledonian Railway Class 439 0-4-4 loco kit

Packing list

Instructions

Chassis etching

Coupling rod etchings

1 bag of whitemetal castings comprising:

Backhead and regulator handle

Vacuum pipes (2 in casting)

Flat top dome and round top dome

Sandbox (2 off) and air tank (2 off)

MacIntosh chimney and stovepipe chimney

Westinghouse pump and safety valves (2 in casting)

Safety valve (shrouded type) and safety valve base (for above)

Reversing lever and valve chest cover

Side tank filler (2 off) and rear tank filler

Smokebox door and sandbox lid (2 off)

LMS buffer body (4 off) and CR buffer body (4 off)

1 bag of lost wax brass castings comprising:

1 off No 6

1 off No 11

1 off No 12

1 off No 13

1 off No 15

2 off No 22

1 off Perspex frame spacer

2 off square brass frame spacer

10 off 8BA countersunk bolts (1/4)

2 off 8BA cheese head bolts (1/2)

4 off 8BA brass nuts

1 off 439

8 off brass wheel bearings

1 off long 6BA screw

2 off 6BA brass nuts

3 off coupler springs (large)

4 off 4mm shank buffers

6 off small silver springs

4 off 10BA nuts

1 off 12" 0.7mm brass wire

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Chassis

Cut out and file the pips off the two chassis sideframes (1). Note that the spring detail and the etched guidelines for hornblocks are on the outside of the frames. If you wish to spring the loco, the guidelines are the correct size for Janick Models hornblocks and these are recommended for this kit.

The rear Perspex frame spacer (2) is fitted with 4 of the 8BA screws provided. I find it is best to shorten these to approximately 5mm before fitting. The two brass frame spacers (3) fit at the centre and front and provide fixing points for the body at a later stage.

You need two pairs of 5'9" 20 spoke driving wheels (Slaters Ref: 7869CR) and two pairs of 3'1" 9 spoke bogie wheels (Slaters Ref: 7837GP).

The bearings (4) can be soldered into the frames at this stage and I suggest that you pass a 3/16" reamer through the holes to align the bearings for the axles.

The side of the ashpan (5) and the bogie stretcher frame (6) can be found amongst the body parts. Fix the ashpan sides inside the mainframes using solder and fold up the bogie stretcher frame. All fold lines are on the inside of the 90° folds. Cut out the bogie sides and fix the bogie sideframes to the stretcher with 8BA nuts and bolts. Tighten up the bolts and solder the nuts to the stretcher making sure the bolts are free to move. Solder the bearings (4) into the holes in the sideframes. The slider block (7) is a lost-wax casting and is placed in the slot in the stretcher.

You then need to make a small plate to fit over the top of the slider and solder it on to act as a keeper. The two smaller springs slip over the ends of the 8BA bolts (shorten if necessary) and the lugs on the ends of the slider (again shorten them until you get the desired amount of sideplay).

The long 6BA bolt fits through the Perspex spacer and the slider with the larger spring providing any up and down springing you may require.

Fit all the wheels and motor/gears/gearbox.

Solder the overlays to the rear parts of the coupling rods and fit to the driving wheels.

When the chassis is running to your satisfaction you can fit the brake detail: hangers (8), overlays (9) and rodding.

Body assembly

Cut out the footplate (1) and remove the steps and linking strip from the centre sections. Using two 8BA nuts and bolts fix the footplate to the chassis and solder the nuts to the upper side of the footplate. Remove the chassis and use the indexing marks underneath to attach the front buffer beam (2) and the valances (3). Note that the half etched indexing marks on the valances provide a guide for fixing the steps (4, 5 and 6) and they should be on the inside of the valance. Use the valances as a guide to fixing the rear buffer beam and then you can solder the steps in place. Note that the front step (4) has one tread and the rear step (5 and 6) has two treads.

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Next fold up the smokebox front (7) and fold in the sandbox tops. A tab locates this in place on the footplate and if you fix it now you can solder on the inside to obviate cleaning up at a later stage.

Now fit the tank front (8) and rear (9) into the slots in the footplate and solder them. Next the side tanks themselves (10) need the rivets impressing to represent the bolts that hold the cladding on. Fit the two sides into the slots in the footplate and solder them to the tank front and rear. They must fit inside the front and rear plates and may need filing lightly at each end to ensure a snug fit. Then solder the pre-formed boiler top (11) into the space between the tops of the tanks. There should be a slight radius between the boiler and tank tops which you can make with filler after you have soldered the rear boiler band in front of the cab.

Fit the crankpin splashers and tops now (12 and 13) then either solder or use a short 8BA bolt to fit the cab front to the back of the tanks. Bend up the main splasher tops (14) and fit them. They will need the inner top corners filed so that the smokebox sits down in line with the boiler.

Now take the pre-formed boiler (15) and solder the seam up. To pull it together and hold it steady while I do this I twist a couple of lengths of 15 amp fuse wire around it. You can then use a thin brass plate inside to strengthen the joint. Then place the wrappers (16 and 17) around the smokebox end and solder them all together. A blowlamp and fuse wire help here. You can now drop in the boiler and solder it in place.

Now take one of the cab sides (18) and locate and solder it in the slot in the footplate, butting up to the tank rear. Using the half-etched lines fold the bunker tank (21) and the cab rear (19). Line up the cab rear with the cab side and solder it in place. Flare the top of the bunker rear (20) and locate it inside the cab side. Solder it in and then add the bunker tank (21). You can now add the other cab side (18). The coal door (22) can be fitted in the open or closed position by inverting it. Boxes inside the cab (23 and 24) complete the main structure apart from the cab roof which is best left until the cab is detailed. There are two long strips of etching with a half-etched line on one side. These are the cab window beadings (25) and they fit inside the window aperture. The half-etched line is a location for the metal cab side and I start at one side of the cab door bending the beading as I go around the window aperture. When I am satisfied that it fits I trim off the excess with tinsnips and solder it in place.

You can now add lamp irons to the cabsides, front and rear footplates, the smokebox top and the bunker centre rear. There are two types in the kit – those with two rivets fit on the footplate and those that are straight go above footplate level. A cab detailing drawing is included with these instructions and some cab detail is provided in the kit. There is a basic backhead, a lost-wax brass regulator handle, two injectors and a brake handle that fits in the left hand rear of the cab next to the box (23). There is also a whitemetal reversing handle that fits on the left hand side front box.

The cab roof is pre-formed and you will find strip material on the fret sufficient to fabricate the angle plate around the edge. For the centre rib use a spare boiler band and the third curved strip. The boiler fittings and other castings are all shown in the drawings. However, I would strongly suggest that you use photographs of your chosen loco as a reference as there are many detail differences between locos.

The casting for the steam chest cover (26) is oversize and approximately 1/32" needs to be filed from top and bottom. The tank fillers (27) need a little filler to make them fit flush over the curve of the tank top.

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Key to drawing of cab fittings of C.R. No. 419

1. Vacuum gauge
2. Boiler pressure gauge
3. Westinghouse brake duplex pressure gauge
4. Train steam heating pressure gauge
5. Whistle push rod control
6. Whistle lever (Fittings such as this were often added by drivers – unofficially! Curiously this one operates on the fireman's side of the cab)
7. Train steam heating shut-off cock
8. Train steam heating pressure reducing valve
9. Vacuum brake main steam shut-off cock – the pipe leading to the injectors was known as the "bugle" pipe.

Vacuum brake ejector:

10. Small ejector steam key
11. Main control lever – applies brake and operates large ejector
12. Vacuum / Westinghouse brake proportional valve
13. Blower control
14. Reversing lever

Feed water injectors (right and left hand):

15. Steam stop valve
16. Water key
17. Overflow key

Water level gauges (right and left hand):

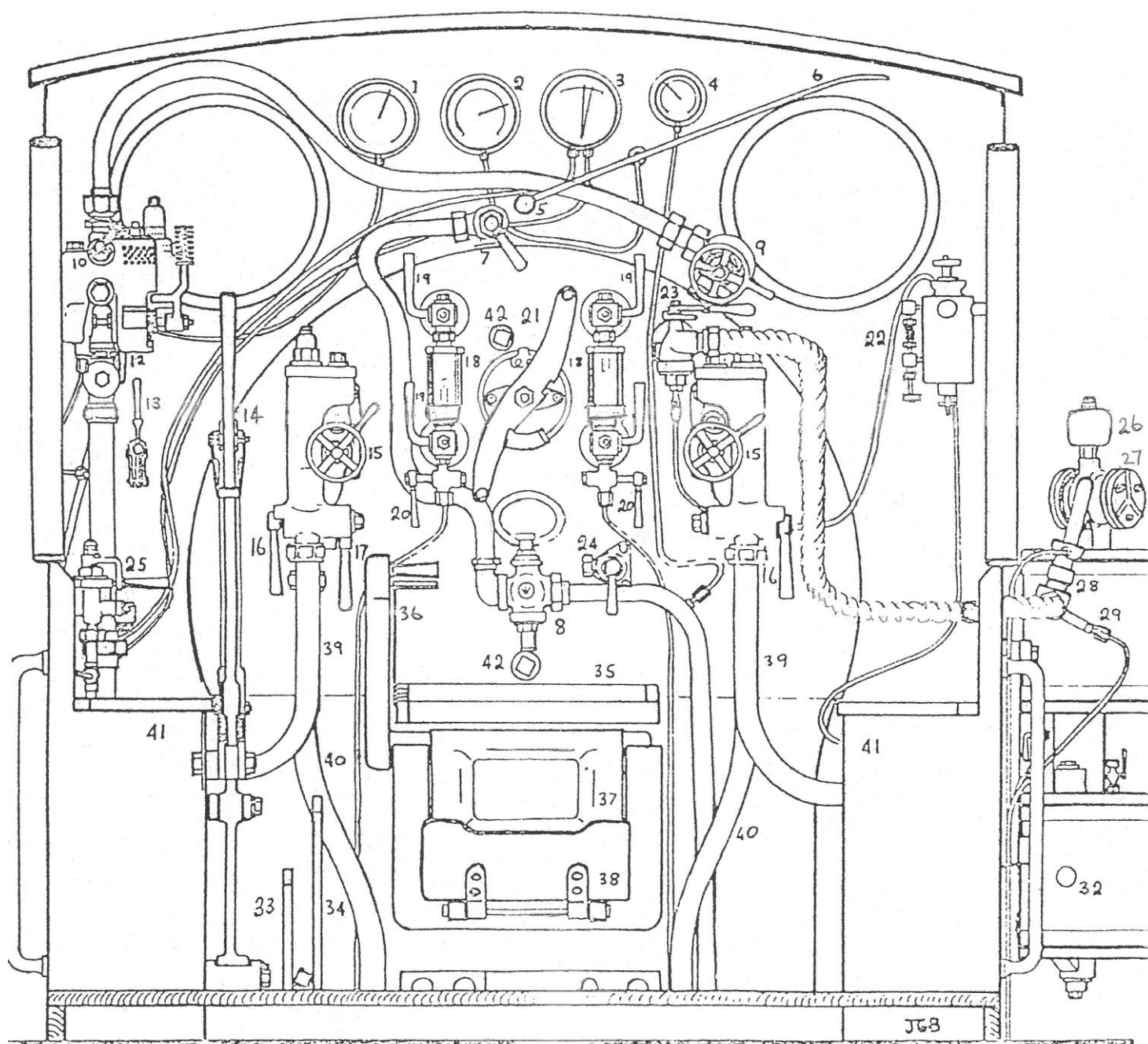
18. Gauge glass protector
19. Try cock
20. Drain cock

21. Regulator handle
22. Sight feed displacement lubricator
23. Westinghouse brake main shut-off cock
24. Rail cleaning and drying apparatus shut-off cock – This was a short-lived apparatus fitted by the L.M.S.R. It was used in conjunction with the sanders – boiler water was flashed into superheated steam which was supposed to evaporate water on the rails so improving adhesion.
25. Driver's Westinghouse control valve

Westinghouse steam driven air compressor:

26. Top head lubricator
27. Top head valve box
28. Automatic governor
29. Automatic drain cock
30. Steam cylinder
31. Air compressor
32. Air inlet to compressor
33. Front damper door control
34. Rear damper door control
35. Tray (kept clean – this could be used for warming food)
36. Firehole door balance weight
37. Firehole door
38. Firehole flap (This assisted firing but could also toast the driver's "piece" quickly.)
39. Injector water pipe
40. Injector overflow pipe
41. Toolbox
42. Boiler washout plug

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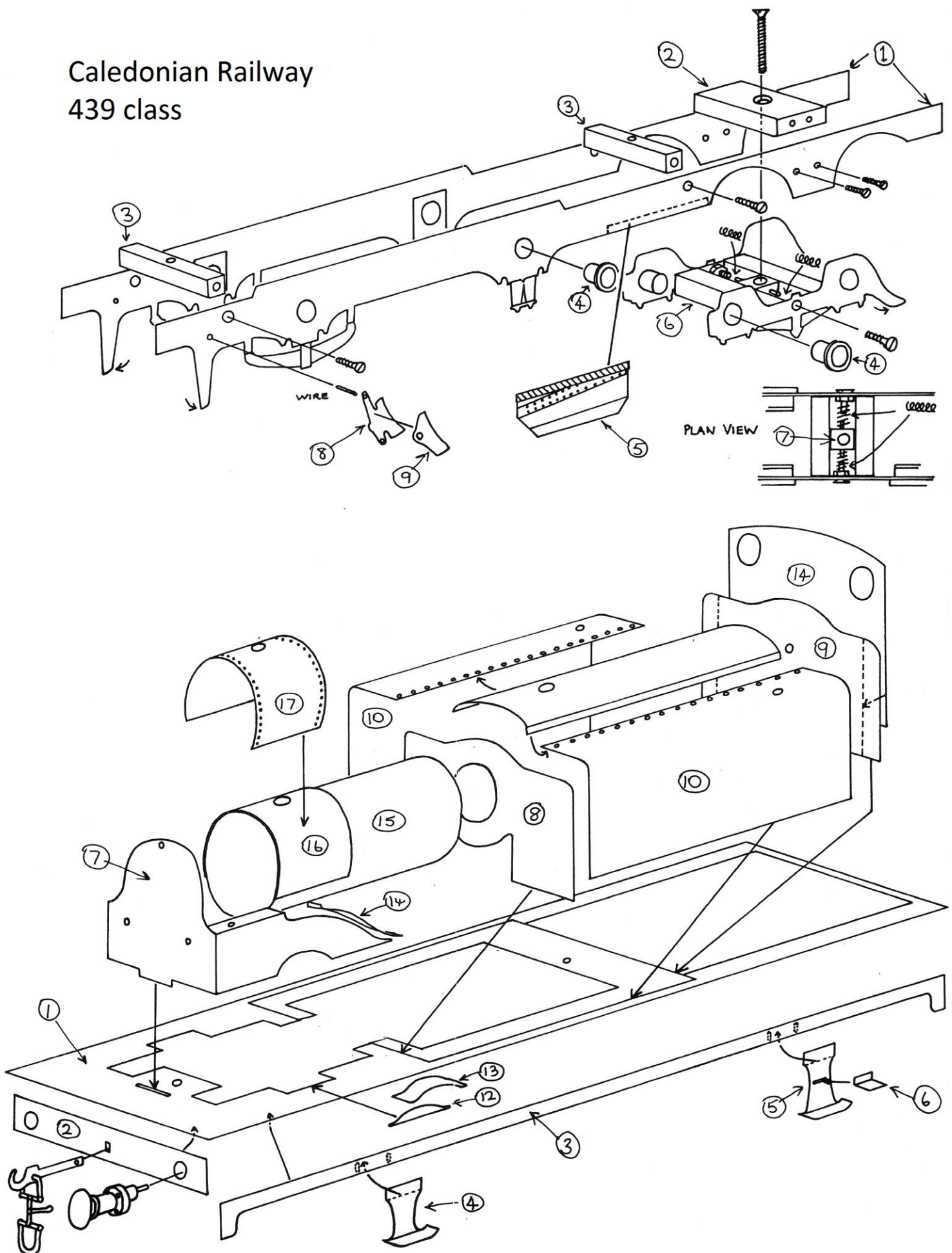


Cab fittings for Caledonian Railway 439 class

See notes on previous page.

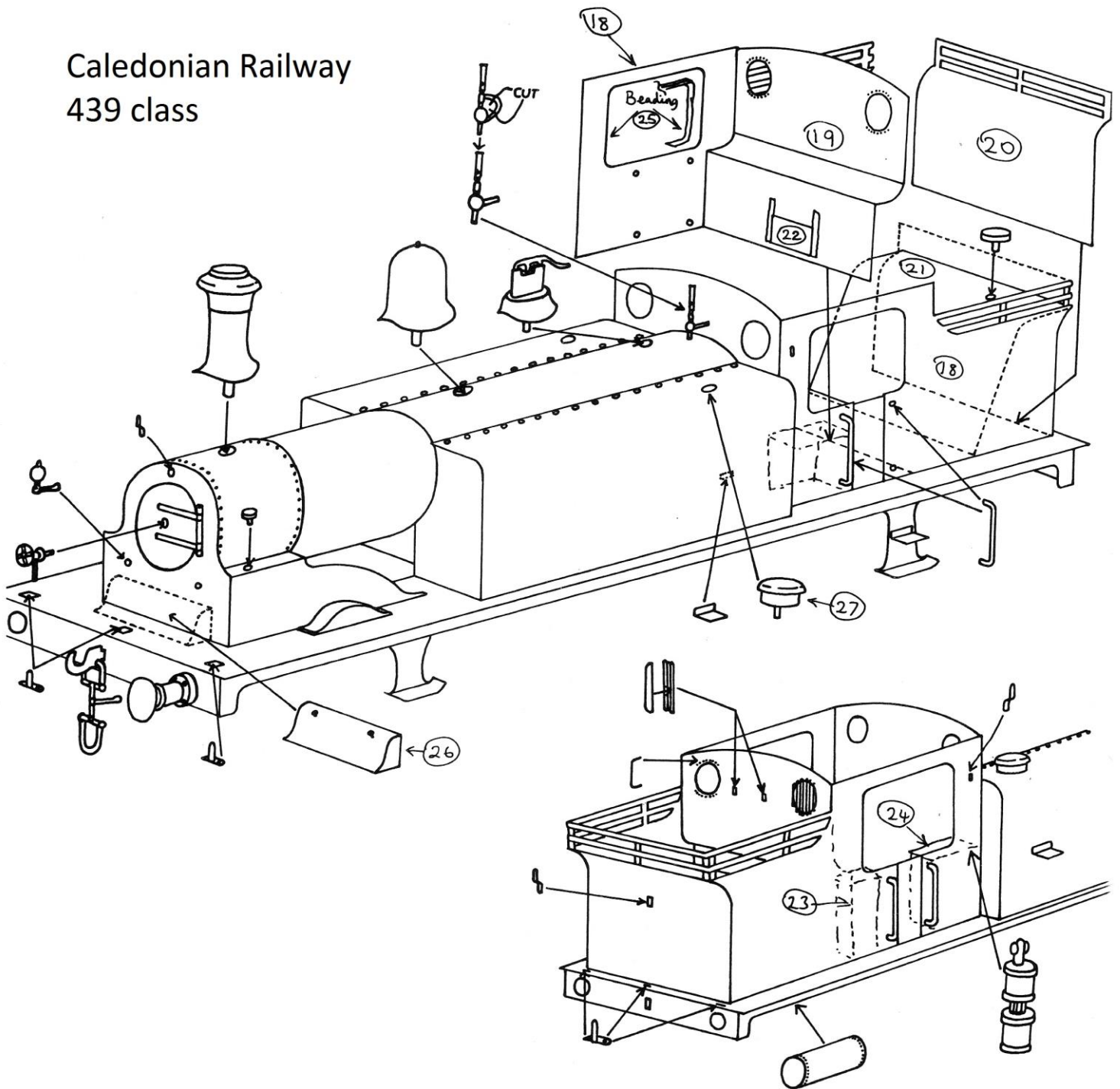
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