

D16/3 Instructions (with Decorative Running Plate).

Chassis Assembly.

Take the frames (1) and solder in the axle bushes (2), making one frame **L/H** and one **R/H**. Select the '**OO**' or '**EM**' frame spacers (3) as required solder an **8BA** nut (4) over the hole in the centre section of the main spacer for the collector tag, and another over the hole at the front of the main spacer to which the bogie link will be screwed. If fitting a **D11** motor, solder the washer for the motor fixing screw (6) over the hole in the middle of the motor mounting plate (5). Now assemble the frames, spacers, and motor mounting plate, making sure that everything is square and flat before finally soldering together. If using a **D11** motor, put an axle and the gear in the chassis, put the worm on the motor, and check that the gear meshes correctly before fixing the mounting plate. If using a Portescap motor this will not be necessary. Solder pieces of the 22g wire through the holes in the frames to form the brake gear supports (7). It may be found easier to paint the frames at this stage rather than after the wheels have been fitted.

Next fit the driving wheels, axles, gears, and crankpins to the chassis, using the four axle washers (8) to take up the sideplay in the leading and trailing wheels. Solder the pairs of coupling rod halves (9) together, place the rods on the crankpins, and check that the wheels revolve freely, and then fit the Romford crankpin washers. Put paper between the coupling rods and the washers when fixing to avoid soldering the rods to the crankpins, and then remove the paper afterwards. Screw the collector tag (10) to the main spacer using one of the **8BA** screws (11), and the two fibre washers (12). Check that the tag is not electrically live to the chassis, then form the current pickups from some of the **26g** handrail wire (13) soldered to the tag. Now take the brake hangers (14) and solder the brake blocks (15) to them, making **L/H & R/H** pairs, then solder the assembled brakes to the support wires in the chassis, making sure that the brakes do not touch the wheels. Using **22g** wire to form the tiebars (16), fit the pull rods (17), and then fit the balance weights (18) to the leading pair of coupled wheels.

Turn now to the bogie (19), and fold down the sides at right angles to the centre stretcher, then solder the two strengthening pieces (20) between the sides below each edge of the stretcher. Next fit the dummy equalising beams (21), and the axle bushes (22) to the bogie sides. Solder the bogie centre washer (23) to the underside of the bogie, and then fit the wheels to the bogie, using the axle washers (24) to take up sideplay if necessary. Now take the bogie link (25), solder the washer over the hole in the smaller end, and tap the hole **8BA**. Screw the bogie to the link leaving a small amount of play, and then shorten the screw so that it is flush with the top surface of the link. The bogie can now be screwed to the chassis using an **8BA** screw and the cast pivot (26). The drawbar (27) and drawbar pivot (28) are fixed to the chassis with the same screw used to fix the rear end of the chassis to the superstructure.

Superstructure Assembly.

Before commencing assembly the footplate (1) must be curved to match the valences (2). It is most important that this is done accurately, as inaccuracy at this stage will adversely affect the fit of other parts of the kit. Make sure before curving the footplate that the hole beside the middle splasher for the pipe from the Westinghouse pump (37) is on the right hand side of the loco. Once the footplate curves have been satisfactorily formed, and the two small rear splasher sides bent upwards, the footplate and valences can be soldered together, with the valences set in **1mm** from the edge of the footplate. The buffer beam (3), and drag beam (4) can then be soldered in place.

Solder the two step plates (5) in place behind the valences, then bend up the ends of the steps (6) and fix them into the slots in the valences and step plates. Solder **8BA** nuts (7) over the holes in the footplate to screw the chassis to. Take the main lower frame pieces (8) and solder into the slots in the footplate, then take the front lower frame pieces (9) and solder these up against the buffer beam, in line with the other frame pieces. Bend the top section of the guard irons at right angles (10), and then solder the guard irons to the buffer beam. Two types of upper frame pieces (11) are provided, for slide valve and piston valve engines. Choose which type you require, press out the rivets with a pin or scribe, and then fit the frame pieces into the slots in the footplate. Make and fit the two short handrails in the upper frame pieces. Take the front splasher sides (12) and the splasher tops (13), curve the tops to match the sides, assemble the splashers, and solder them to the footplate. Fix the sandbox filler caps (14) into the holes in the footplate ahead of the front splashers. Bend the two footplate steps (15) and fix in place beside the front splashers, then fix the mechanical lubricator (16) to the top of the frame on the **R/H** side of the loco.

Take the cab sides (17) and cab front (18) and solder them together with the front between the sides, then slot the assembly to the footplate and solder in place. Bend the ends of the cab floor support (19) at right angles, and then solder this into the cab. Bend up the end of the cab floor (20) along the fold lines (see assembly diagram), and then solder it to the floor support. Bend the cab splashers (21) along the fold lines, cut away the corners along the half etched lines, and fix the splashers into the cab. Note that by leaving the floor piece flat, not cutting away the corners from the cab splasher sides, and not shortening the backhead, the cab interior can be made without the worm and gear clearance for those who chose to use a motor other than the **D11**, for example a Portescap driving on the leading axle. Next carefully remove the cab window surrounds (22) from the fret, and fix these into the half-etched recesses round the cab windows. Make the two cab side handrails from some of the wire and handrail knobs. Curve the two rear splasher tops (23) and solder them in place.

Turn now to the boiler/firebox (24), check that the firebox sides are **17mm** apart at their base, and then solder up the seam of the boiler. Roll the smokebox inner (25), bend out the lower parts of the sides to form the smokebox saddle, and then fit this over the front of the boiler. Solder the saddle front (26) in place, and then solder the smokebox front (27) in place. Curve the riveted smokebox outer (28) to match the smokebox, and then fix it to the smokebox. Take the boiler band strips (29), and make the five boiler bands. The assembled boiler/firebox unit can now be fitted to the footplate/cab assembly. It is very important that everything is checked for squareness at this stage, and that everything is properly aligned. The boiler handrail can now be formed from the **26g** wire (30), and fitted with the handrail knobs (31). Make the ejector pipe (32) from the **20g** wire and fix it to the right hand side of the boiler, then use a piece of handrail wire to form the small pipe from the front end of the ejector, its lower end passing through the small hole in the footplate.

Take the small riveted strips (33), and fix them to the lower edges of the main lower frame pieces. Choose the cylinder cover (34) required for either the slide or piston valve engines, and then fix the cylinder cover between the frames in front of the smokebox. Fit the cast exhaust pipe cover (35) if required (these were removed in later years). Choose the type of reversing lever required (36), (the longer one is for slide valve engines) and fit the lever and bracket to the right hand side of the loco. Fix the Westinghouse pump (37) in place, also on the right-hand side of the loco, in front of the cab. The lower end of the pipe goes through the hole in the footplate, and the upper end can be fixed to the handrail. Take the smokebox door handles (38) and the upper lamp bracket (39), fit these to the smokebox door (40), and then fix the door to the front of the smokebox.

Turn back to the cab, and fit the two small steps (41) to the footplate either side of the cab. Take the backhead (42), shorten if required, fit the regulator handle (43) to it, and then fix the backhead into the cab. Curve the cab roof (44) to match the cab front, and fix it to the cab. Fit the cab side beading strips (45), bending to shape whilst fitting, and fitting the two rear cab handrails at the same time. Curve the riveted cab roof plate (46), and the roof vent (47), to match the roof, and then fix these and the two rain strips (48) in place. Now fix the boiler fittings (49 - 53) in place, followed by the front lamp brackets (54), buffers (55), and vacuum pipe (56). Form the vacuum pipe along the **L/H** valance (57) using the remainder of the **22g** wire, and fit the cast injector to the back of the valance steps below the **R/H** cab side.

Tender Assembly.

Take the chassis (1) and bend down the sides at **90°** to the centre. Solder an axle washer (2) over each axle hole then clean out the holes with a **2mm** drill. Solder **22g** wire through the three holes in each frame to form the brake gear supports (3). Fit the wheels to the chassis using axle washers to take up the sideplay, but leaving some sideplay in the centre axle. Take the brake hangers (4) and solder the brake blocks (5) to them, making three **L/H** and three **R/H**, then solder the hangers to the wire supports making sure that the brakes do not touch the wheels. Take the pull rods (6) and thread **22g** wire through these and through the holes in the lower ends of the hangers. Solder in place when assembled, and trim the ends of the wire after assembly.

Turn now to the body. Take the footplate (8), slot the frames (9) into it and fix in place. Then solder the buffer beam (10) and drag beam (11) in place. Take the sides (12), flare out the top edges over a piece of **3/16"** dia. bar and bend up the coal guards along the etched lines. Then take the back (13) and flare out the top of this in the same way. Slot the back into the footplate and fix it and the sides to the footplate, so that the sides are level with the footplate edges. Now bend three of the four lamp brackets (14) and fix into the slots in the back. Make the handrails (15) for the sides and the back. Take the coal plate (16) and bend along the fold lines as shown in the diagram, with the etched fold lines underneath, so that the slots for the fire-iron rack (32) are on the left side of the tender, then fit the bulkhead (17) into its slots. Fit the rectangular coal space sides (18) in place, then fit the assembly into the floor support (19) at right angles and fix in place. Now bend up the floor/front plate (20) along the etched line so that the brake column hole is on the left side and fit it to the floor support and coal space. Solder the two rectangular pieces (21) in the remaining gaps either side of the frontplate. Now take the side beading (22) and back beading (23), curve these to match the flare of the tender sides and back and solder them in place. Solder the coal guard beading (24) to the coal guards, and then solder the step plates (25) to the underside of the footplate. Bend up the ends of the narrow steps (26) and fit these to the step plates, then bend up the ends of the wide steps (27) and fit them into the slots in the rear end of the frames. Bend the guard irons (28) to shape and solder them to the buffer beam, and fit the buffers (29). Fit the axleboxes (30) to the frames, and then solder the **1/16"** dia. drawbar pin (31) to the footplate and drag beam. Slot the fire iron rack (32) into the top of the coal plate, and then form the two toolboxes (33). Curve the lids to fit and solder the toolboxes into their respective slots, the narrower toolbox going on the left hand side next to the fire iron rack. Fit the two cupboard doors (35) to the front of the coal space then fit the two side plates (36) into the slots in the coal space front, either side of the floor. Fit the two small beading pieces (37) to the tops of these, then thread the handrail wire through the ends of these and through the holes on the footplate to form the front handrail. Fit the brake column (38) into the hole in the floor, the tank fillers (39) into the holes in the rear of the coal plate, and fit the last lamp bracket to the centre of the top at the back.

Lastly, fit the vacuum pipe (40) to the buffer beam if modelling a vacuum fitted loco.

Parts List.

Chassis

1. Frames-2
2. Axles bushes - 4
3. Frame spacers - 3
4. 8BA nuts - 2
5. D11 motor mounting plate
6. Washer for motor screw
7. Brake gear supports, 26g wire
8. Driving wheel axle washers - 4
9. Coupling rods
10. Collector tag
11. 8BA screws - 5
13. Pick up wire, 26g
14. Brake hangers - 4

28. Smokebox outer
29. Boiler bands

15. Brake blocks -4
16. Wire for tie bars, 22 g
17. Brake pull rods - 2
18. Balance weights - 2
19. Bogie
20. Bogie centre strengtheners - 2
21. Equalising beams, non working - 2
22. Bogie axle bushes - 4
23. Bogie centre washer
24. Bogie axle washers - 4
25. Bogie link, and washer
26. Bogie pivot
27. Drawbar
28. Drawbar pivot

Superstructure

1. Footplate
2. Valences - 2
3. Buffer beam
4. Drag beam
5. Step plates - 2
6. Steps - 8
7. 8BA nuts - 2
8. Main lower frame pieces - 2
9. Front lower frame pieces - 2
10. Front guard irons - 2
11. Upper frame pieces, LH & RH
12. Front splasher sides, LH & RH
13. Front splasher tops, LH & RH
14. Sandbox fillers - 2
15. Small footplate steps - 2
16. Mechanical lubricator
17. Cabsides, LH & RH
18. Cab front
19. Cab floor support
20. Cab floor
21. Cab splashers, LH & RH
22. Cab window surrounds -4
23. Rear splasher tops - 2
24. Boiler/firebox
25. Smokebox inner
26. Smokebox saddle front
27. Smokebox front

30. Handrail wire
31. Handrail knobs - 21
32. Ejector pipe, 20g wire
33. Riveted frame pieces - 2
34. Cylinder cover, 2 types
35. Exhaust pipe cover
36. Reversing lever and bracket, 2 types
37. Westinghouse pump
38. Smokebox door handles
39. Upper lamp bracket
40. Smokebox door
41. Small cabside steps - 2
42. Backhead
43. Regulator handle
44. Cab roof
45. Cab side beading, LH & RH
46. Roof plate
47. Roof vent
48. Rain strips - 2
49. Whistle
50. Ross pops - 2
51. Dome
52. Anti-vacuum valve
53. Chimney
54. Front lamp brackets

55. Buffers -2
56. Vacuum pipe
57. Vacuum pipe along LH valance
58. Injector

Tender

1. Chassis
- 2.
3. Brake gear supports - 22g wire
4. Brake hangers - 6
5. Brake blocks - 6
6. Brake pull rods - 2
7. Tiebars - 22g wire
8. Footplate
9. Frames-2
10. Buffer beam
11. Dragbeam
12. Sides - LH and RH
13. Back
14. Lamp brackets - 4
15. Handrails
16. Coal plate
17. Bulkhead
18. Coal space sides - 2

19. Floor support
20. Floor/front plate
21. Side plates - 2
22. Side beading, LH and RH
23. Back beading
24. Coal guard beading - 2
25. Step plates - 2
26. Narrow steps - 4
27. Wide steps, 2 long, 2 medium
28. Guard Irons LH and RH
29. Buffers - 2
30. Axleboxes - 6
31. Drawbar pin
32. Fire iron rack
33. Toolboxes - LH and RH
34. Toolbox lids - LH and RH
35. Cupboard doors - LH and RH
36. Front plates - 2
37. Front plate beading - LH & RH
38. Brake column
39. Tank fillers-2
40. Vacuum pipe

P. D. K. MODELS.

HILLTOP BUNGALOW.

CARNKIE

HELSTON

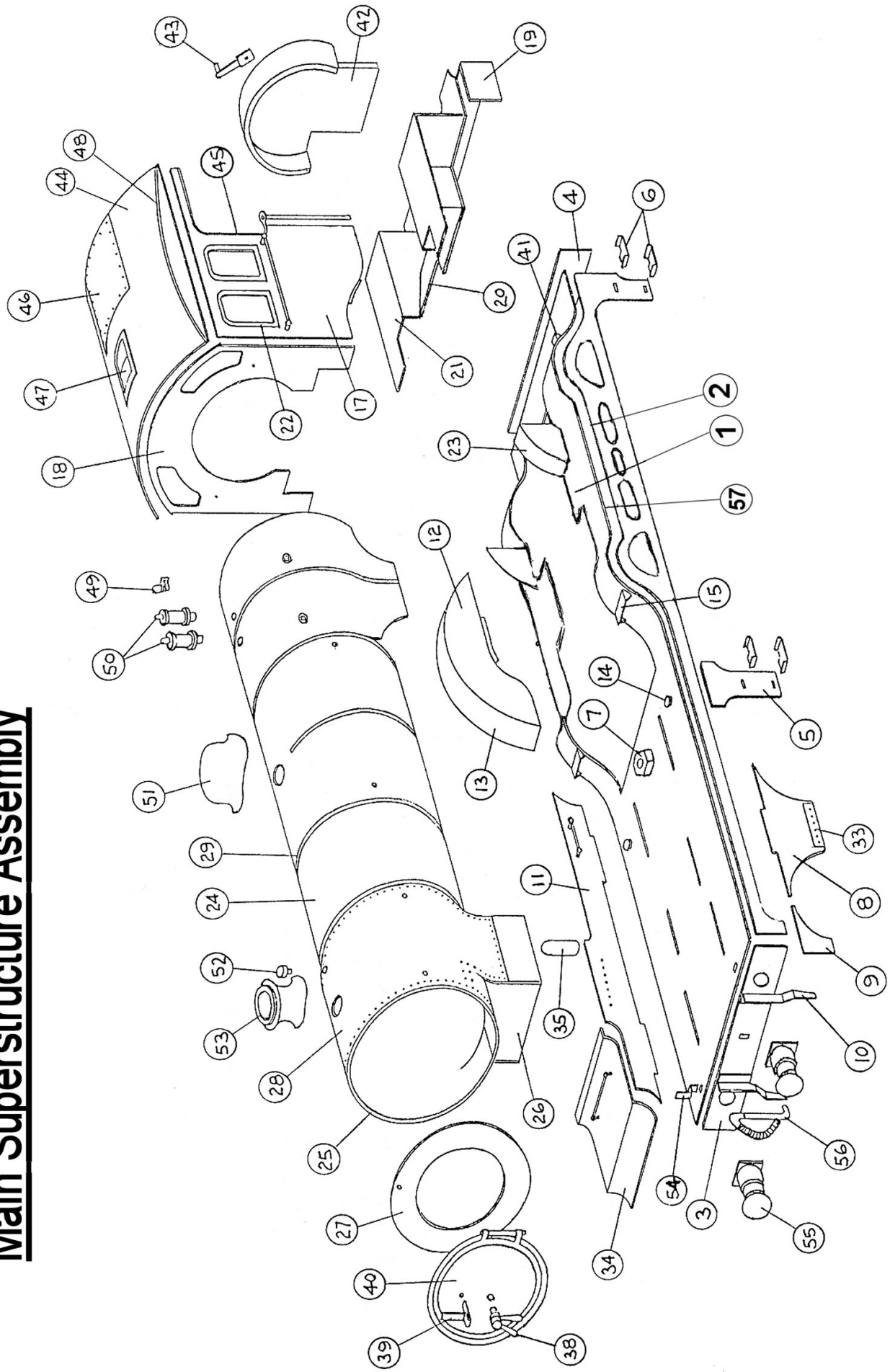
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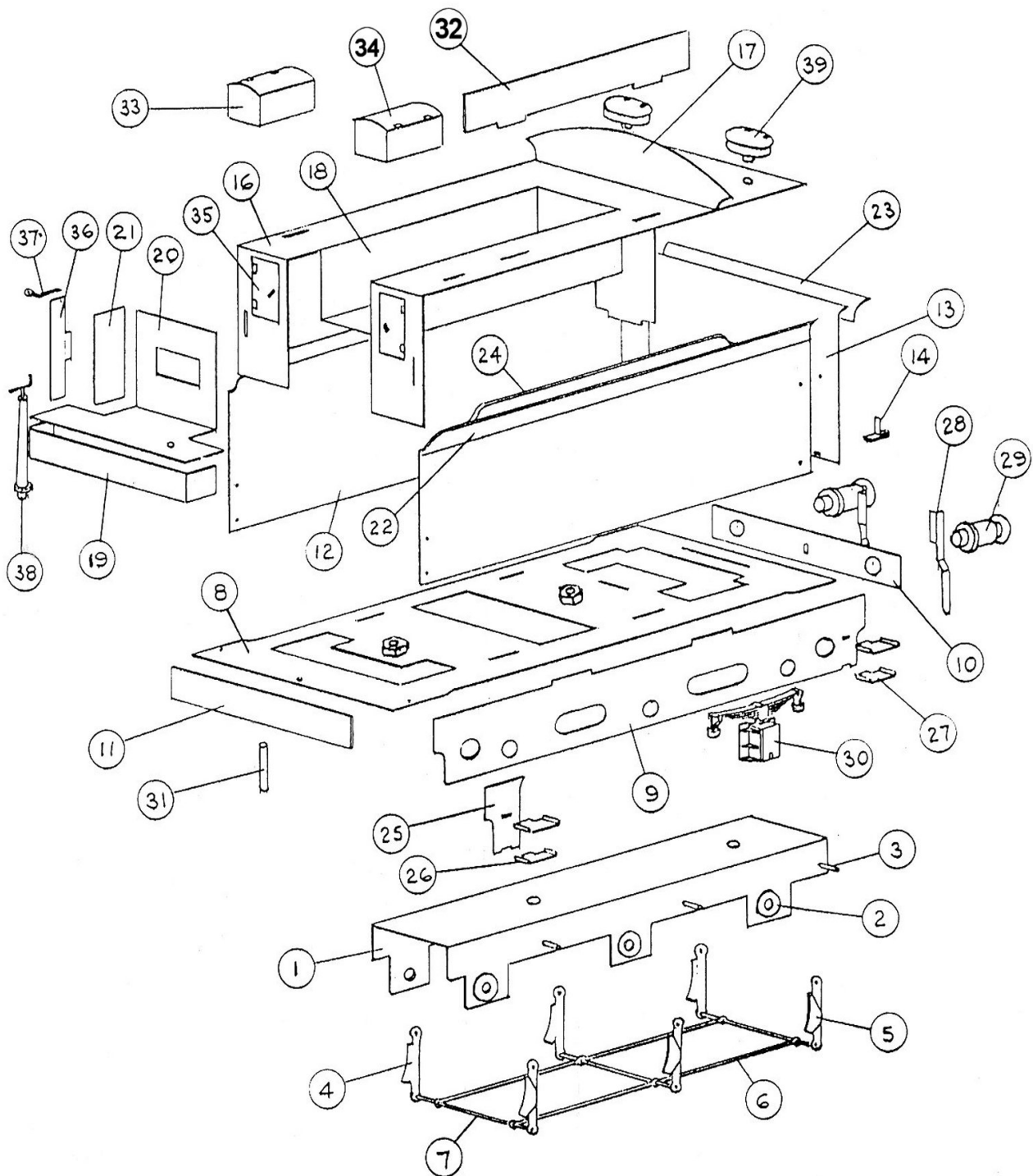
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Main Superstructure Assembly



Tender Assembly Diagram



Chassis Assembly Diagram

