

47xx 2-8-0 Instructions

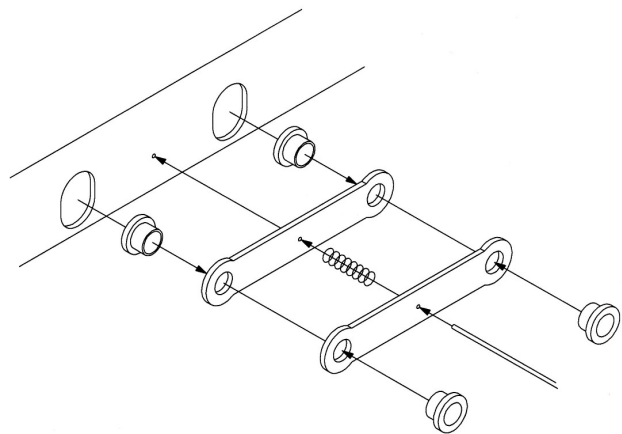
Fig. 1.

Chassis Assembly

The chassis can be built rigid or compensated so decide now which one you are going to make. If building a compensated chassis remove the sections from the axle holes.

Fold the main chassis frames (1) up and solder the rear frame spacer (2), centre spacer (3) and front spacer/pony mount (4) in place making sure everything is square. Solder a 10BA screw (21) into the hole in the pony truck mount.

Compensated Chassis - Solder the axle bearings (9) into the compensating beams (7). Fit the compensating beams by passing brass wire through the frames, through one of the beams, then one of the springs, then the next beam and finally out the other side of the chassis. Hold the beams away from the chassis side while soldering the wire in place to prevent them being soldered to the frames. Repeat for the second set of beams and then trim the excess wire flush with the chassis side. Fit the wheels so you can test the compensating mechanism and when satisfied that it works O.K. remove the wheels and put them to one side.



Rigid Chassis - Solder the axle bearings (9) into the axle holes in the chassis (1).

Take the cylinders (5) and curve the bottom of the cylinder sides (6) to match the shape of the cylinder front/rear. Fold down the front and rear and the sides and solder the cylinder sides to the cylinders. Fit the cylinders into the recess at the front of the frames.

Solder four lengths of the brass wire (10) into the holes in the chassis to form the brake mountings. Take the brake hangers (11) and the brake blocks (12) and solder the blocks to the hangers, making four **L/H** and four **R/H**. Solder the assembled brakes to the wire **2mm** from the frames. Pass more brass wire through the bottom of the brakes and then through the pull rods (13). Solder all the joints.

Solder the cylinder drain cocks (22) under the cylinders. Assemble the front pony truck (15 & 16). Solder or glue the sandboxes (19 & 20) into their holes at the rear of the chassis. Make up the sandpipes with brass wire and fit into the bottom of the sandboxes. The chassis and pony truck can now be painted, taking care not to gum up moving parts.

Fit the wheels and motor to the chassis before fitting the slidebars. If you fit the slidebars first you won't be able to fit the front wheels!

Fold up the slidebars (17) as shown and solder the two sides together. Cut the end off of the prongs that go into the cylinders. Solder together the three parts of the motion brackets (18) and solder these into the notches on the slidebars. Now remove the stretcher at the rear of the slidebars.

Coupling and Connecting Rods

With the chassis painted and the wheels fitted permanently. Fit the crank pins and assemble the coupling rods (25) as shown. Take care in this as the rods need to move freely, both for side play and compensation.

The connecting rods (26) can also be assembled and crossheads/slidebars attached to the rods with the 14BA nuts and screws. Check that the crossheads move ok in the slidebars before permanently fitting them.

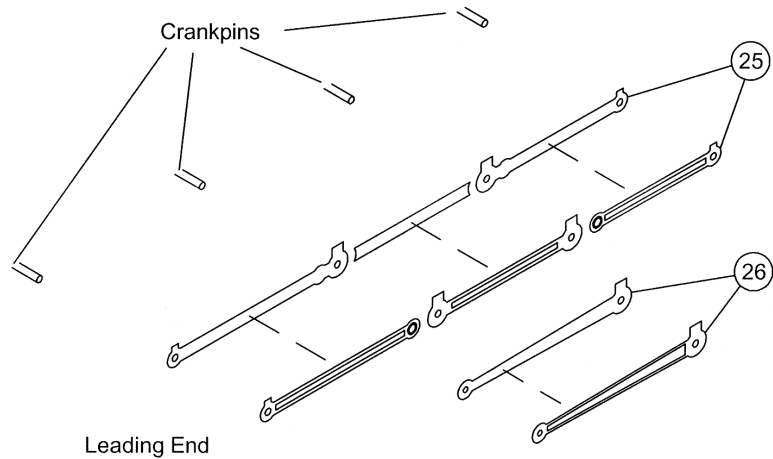


Fig. 2.

Cut out the main running plate section (1), the valances (2 & 3) [leave the frames in place], bufferbeam (4) and the rear dragbeam (6). Curve the front ends of the running plate to match the front of the valances and repeat at the rear. Form the 'S' shaped kink and check the fit of the valances under the running plate. Solder them in place starting from the rear. Solder the front bufferbeam (4) in place and then solder the bufferbeam overlay (5) on top of it. Solder the rear dragbeam into its recess in the running plate. Solder two 8BA screws (16) into the two holes in the running plate unit. Fold the splashers sides up.

Take the cab sides/front (7) and fold the sides at 90° to the front. Fit this into the slots in the running plate. Check that it sits square and solder in place. The floor support (8) is a little wide for the opening so break one end off and solder it in place. Fold the remaining part and check that it fits ok. Shorten the back piece as required. Solder the cab floor on top of the support. Solder the cab side overlays (10 & 11) to the cab sides. Form the cab beading (12 & 13) with the recess on the outside. Solder these into the cab side opening with the handrail hole to the outside.

Curve the splashers tops (15) and solder to the splashers sides from under the running plate. Solder the smokebox saddle front and rear (18) into their slots. Fold the saddle sides (17) to match the front, note that the top section needs to be curved slightly. Solder these in place.

Punch through the rivets on the back of the motion bracket overlay (22) and solder it to the bracket back (21). Solder the bracket tops (23) around the top edge. Solder the assembled bracket centrally over the front splashers.

Solder together the two parts of the reversing bar (24 & 25) and the sand operating rod (26 & 27). Solder the reversing bar into the slots in the front of the cab and running plate. Repeat with the sand operating rod.

Form the 'S' curve in the valance overlays (19 & 20). Check the fit of the overlays onto the main valances. Adjust as necessary and solder in place.

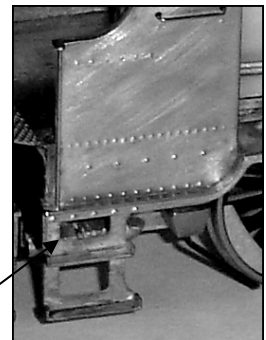
Fig. 3.

Now turn to the boiler (28). Clean off any moulding feeds or lines. Check that it fits neatly onto the body superstructure. Fit the underboiler casting (30) into the boiler. You may need to shorten this to fit a motor and gearbox. Roll the smokebox overlay (29) so that it is a slightly smaller diameter than the smokebox. This will prevent it from springing open. Hold the wrapper in position with some wire wound around it and, when happy with the alignment, run some glue into the bottom join.

Place the boiler in position, making sure that it sits centrally at the cab end. Tack it in place with some superglue. Check again that it is centred and then add more glue to hold it firmly. You can either solder or glue the boiler at the smokebox end once you have checked alignment of the bufferbeam and drag beam. If soldering you won't need too much to hold it in place. Add some epoxy resin inside the firebox to hold it permanently. Fold up the smokebox front step (31), drill a small hole at the bottom of the smokebox front and glue in place.

Remove the valance frames and file the tabs off.

Cut out the cab steps (32) and form the bottom steps on each one. Fold up the centre steps for the cab steps and solder them in their slots. Now solder all the steps in position under the cab.



Body Detailing

Drill out the holes for the whistles (33), but don't fit them until the loco is painted.

Glue the mudhole covers (34) in place.

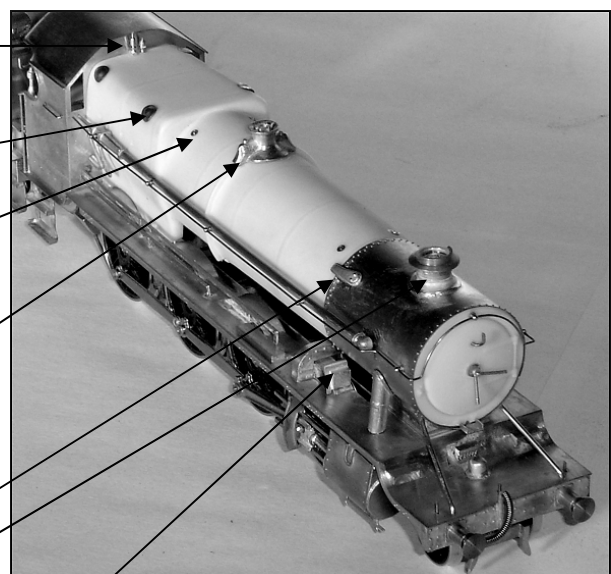
Drill out for the boiler top washout plugs (35) and glue them in position.

Drill out for the safety valve and fit either the short type (36) or tall type (37).

File away underneath the superheater cover (38) so that it fits over the boiler band, and glue in place.

Solder or glue the chimney (39) in position.

Fit the lubricators (40) to the top of the front splashers.



See Fig. 5. for position of ejector pipe ends and handrail knobs.

Use one of the 'L' shaped lamp brackets (41) or a staple [it's easier] to make the smokebox door lamp bracket.

Drill a hole for the smokebox door handle (42) and glue in place.

Glue the steam pipes (43) directly in line with the chimney

Fold and solder the running plate curve steps (44) in place.

Fit the bogie spring housing (45) in its hole and then fit the front lubricator (46) behind the spring housing.

Solder the buffer shanks (47) and the vacuum pipe (48) in place.

Drill two holes just in front of the top corners of the smokebox saddle, and then fit the front running plate support bars [Form from brass rod].

Glue the backhead (49) in place.

Glue or solder the reversing lever (50) in place.

Glue the left hand firebox casting (51) in place.

Glue the AWS warning bell (52) inside the right hand cab side.

Solder together the three parts of the reversing bar block (53) and solder in place.

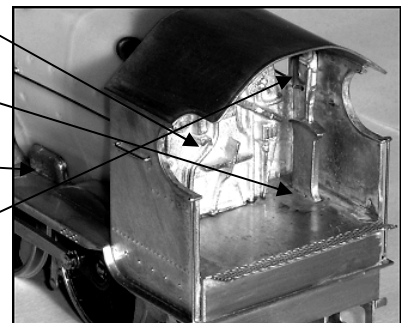
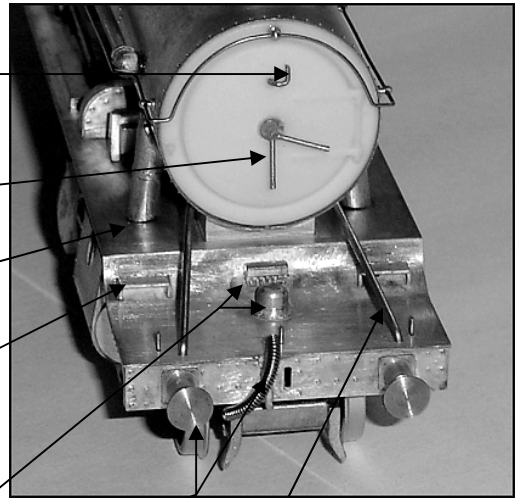


Fig. 4.

Take the tender baseplate (1) [note that the body outline on the baseplate should be on top] and solder the frames (2) into the slots. The marks for the tank support brackets go on the outside. Solder the dragbeam (3) in place at the front of the frames, repeat with the bufferbeam (4) and then solder the bufferbeam overlay (5) onto the bufferbeam. Solder side valances (6) into their recesses under the baseplate. Fold the tank support brackets (7) [use the long ones for the 47xx] and check that they fit between the frames and the valances. Adjust as necessary and solder in position. Solder two 8BA (9) screws into the baseplate.

Fold drawbar mounting (10) and solder a 10BA screw into the hole. Solder it centrally behind the dragbeam.

Remove the tank top (14) from the fret. File off the tabs, but **DO NOT** file off the tiny locating peg at the back. Before you fold the front bulkhead down, the tender sides/rear (15) have to be soldered around the edge of the tank top. You need a flat surface for this, a piece of glass is ideal. Locate the recess in the sides/rear onto the peg at the back of the tank top. With a pencil mark the starting position of the curves. Form the curves around a bar about 4mm in diameter. Check and adjust them until the sides/rear fits neatly around the tank top. Tack it in place, at intervals of about 10mm starting from the back. Make sure that the tank top stays flat. When happy that it is ok, finish soldering the joint.

Now fold the front bulkhead down and solder the bulkhead overlay onto it. The rear bulkhead (16) can be soldered into its slots along with the centre bulkheads (18 & 19) noting that the smaller one goes on the nearside. Fold the fire iron trench (20) and solder against the side and the nearside centre bulkhead. File away the protruding tags from underneath.

Take the tender body (21) and clean any mould lines from the top. Check the fit of the body on to the baseplate. Make sure it sits flat. Carve away any bumps with a sharp knife, taking care not to get too close to the edges. Position the body on the baseplate inside the half etched line and mark for four screw holes through the four holes in the corners. Drill the holes with a 1.8mm drill to a depth of 5mm. Temporarily attach the body to the baseplate with the self tapping screws (24). Opening out the holes in the baseplate will allow you to adjust the position.

Check the fit of the tender top onto the body. You will have to remove about 0.5mm from the bottom of the front bulkhead. Solder the footplate supports (23) into the recesses on the underside of the footplate (22). With the body and tender top in position tack the footplate in place on the baseplate. Remove the body and finish soldering the footplate to the baseplate. Assemble the front (25) and rear (26) steps as with the cab steps and solder them behind the valances. Other items that can be soldered in place before fitting the body permanently are the buffer shanks (27) and the vacuum pipe (28).

Solder the fire iron holder (29) to the left hand tender side.

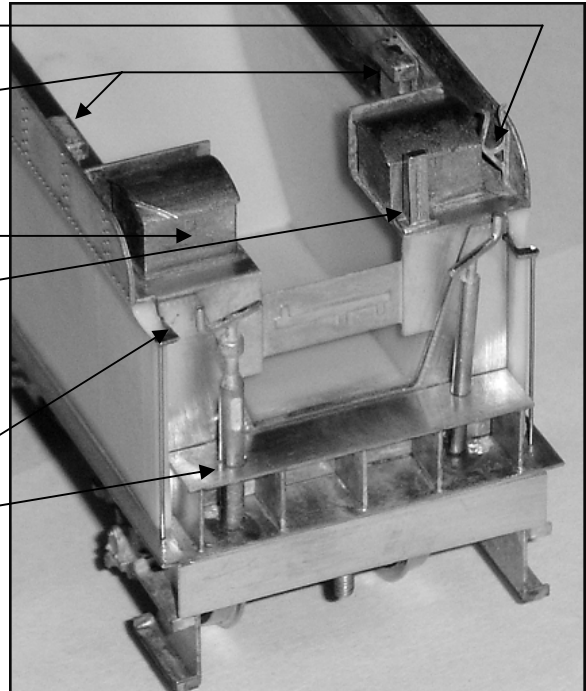
Glue the tank vents (30) in position.

Glue the toolboxes (31) in place, noting that they are left and right handed.

Glue the water gauge (32) in front of the left hand toolbox.

Drill holes for the handrail stanchions (33) and fit them in place.

Open out the holes in the footplate so that the brake and water scoop standards (34 & 35) go through them. Cut the lugs off the bottom of the standards and fit them into the holes in the footplate so that they touch the baseplate. The left hand side standard leans forward a bit.



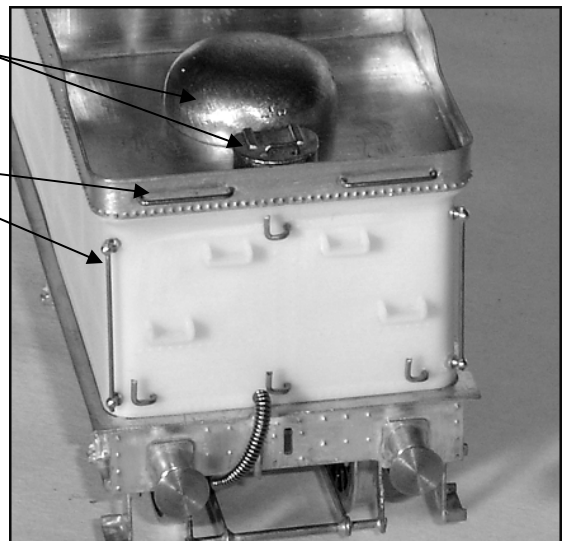
Glue water dome (36) and tank filler (37) into their holes.

Form the rear handrails from brass wire and glue in place. The corner handrails can also be fitted using handrail knobs and wire.

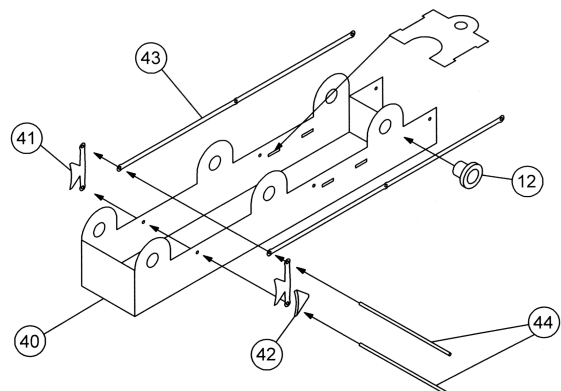
Form the lamp brackets (38) and fit in position, alternatively use staples.

Glue the axleboxes (39) in place.

Open out the holes in the wheel carrier (40) to take the **2mm** inside bearings (12) and solder all six in place. Fold the sides and ends up at **90°** (with the fold lines inside) to form a box section. Fit the water scoop mount (47) and then solder around the seams.

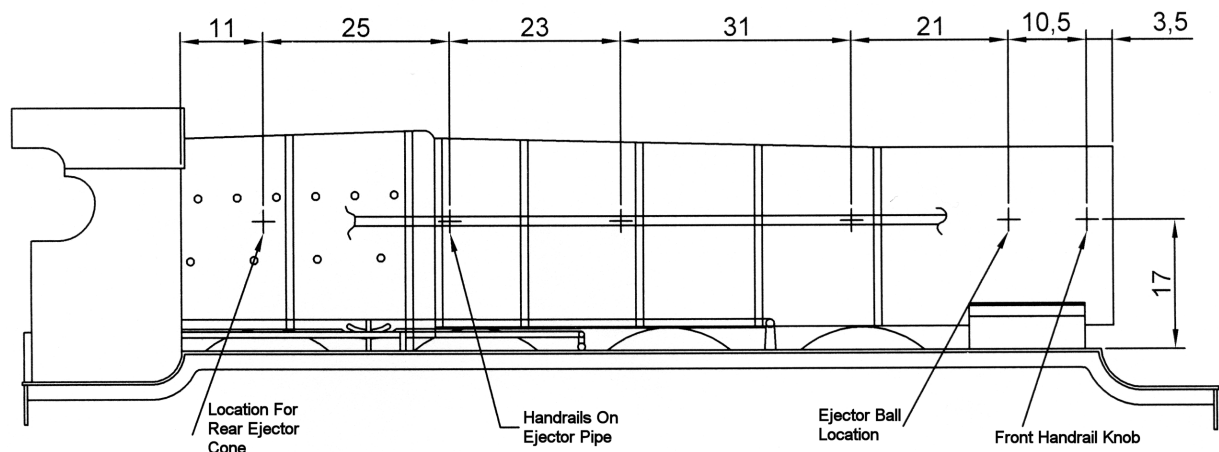


Solder three lengths (**25mm** approx) of brass wire through the holes in the sides of the carrier. Attach the brake hangers (41) and blocks (42) (detail side facing out) to the wire about **2mm** from the sides. Pass brass wire through the bottom hole in the brakes and then through the two brake rods (43) and then through the opposite brakes. Solder the wire to the brakes and then solder the rodding in line with the frames. Paint the wheel carrier before fitting the wheels.



Fit the water scoop after fitting the wheel carrier into the frames, as it will obstruct the screw. Just fit with superglue so that it can be easily removed.

Fig. 5.



Chassis Parts List

- | | | |
|--|---------------------------------|----------------------|
| 1. Main Frames. | 13. Brake Rodding. | 25. Coupling Rods. |
| 2. Rear Frame Spacer. | 14. 2mm Bearings (Pony Pivots). | 26. Connecting Rods. |
| 3. Centre Spacer. | 15. Front Pony Truck. | |
| 4. Front Spacer/Pony Truck Mount. | 16. Wheel Keeper & Guard irons. | |
| 5. Cylinders. | 17. Slidebars. | |
| 6. Cylinder Sides. | 18. Motion Brackets. | |
| 7. Compensating Beams. | 19. R/H Sandbox. | |
| 8. Cylinder End Covers. | 20. L/H Sandbox. | |
| 9. 1/8 th Chassis Bearings. | 21. 10BA Nut and Screw. | |
| 10. Brass Wire. | 22. Cylinder Drain Cocks. | |
| 11. Brake hangers. | 23. 14BA Nuts & Screws. | |
| 12. Brake Blocks. | 24. Springs. | |

Superstructure Parts List

- | | | |
|------------------------------|--------------------------------|-------------------------------|
| 1. Main Running Plate. | 27. Sand Operating Rod | 52. AWS Warning Bell. |
| 2. L/H Valance. | Overlay. | 53. Reversing Bar Block. |
| 3. R/H Valance. | 28. Boiler. | 54. Ejector Pipe (Brass Rod). |
| 4. Front Bufferbeam. | 29. Smokebox Overlay. | 55. Ejector Rear Cone. |
| 5. Front Bufferbeam Overlay. | 30. Underboiler Casting. | 56. Ejector Front Ball. |
| 6. Rear Dragbeam. | 31. Smokebox Front Step. | 57. Handrail Knobs. |
| 7. Cab Front/Sides. | 32. Cab Steps. | 58. |
| 8. Cab Floor Support. | 33. Whistles. | |
| 9. Cab Floor. | 34. Mudhole Covers. | |
| 10. L/H Cabside Overlay. | 35. Washout Plugs. | |
| 11. R/H Cabside Overlay. | 36. Short Safety Valve Bonnet. | |
| 12. L/H Cab Beading. | 37. Tall Safety Valve Bonnet. | |
| 13. R/H Cab Beading. | 38. Superheater Cover. | |
| 14. Cab Roof. | 39. Chimney. | |
| 15. Splasher Tops. | 40. Lubricators. | |
| 16. 8BA Screws & Nuts. | 41. Lamp Brackets. | |
| 17. Smokebox Saddle Sides. | 42. Smokebox Door Handle. | |
| 18. Saddle Front & Rear. | 43. Steam pipes. | |
| 19. L/H Valance Overlay. | 44. Running Plate Curve Steps. | |
| 20. R/H Valance Overlay. | 45. Bogie Spring Housing. | |
| 21. Motion Bracket Back. | 46. Front Lubricator. | |
| 22. Motion Bracket Overlay. | 47. Buffers. | |
| 23. Bracket Tops. | 48. Vacuum Pipes. | |
| 24. Reversing Bar. | 49. Backhead. | |
| 25. Reversing Bar Overlay. | 50. Reversing Lever. | |
| 26. Sand Operating Rod. | 51. L/H Firebox Casting. | |

Tender Parts List

- | | | |
|---------------------------------|-----------------------------|---------------------------|
| 1. Tender Baseplate. | 17. Front Bulkhead Overlay. | 33. Handrail Stanchions. |
| 2. Tender Frames L & R. | 18. R/H Centre Bulkhead. | 34. Brake Standard. |
| 3. Dragbeam. | 19. L/H Centre Bulkhead. | 35. Water Scoop Standard. |
| 4. Bufferbeam. | 20. Fire Iron Trench. | 36. Water Dome. |
| 5. Bufferbeam Overlay. | 21. Resin Body. | 37. Tank Filler. |
| 6. Valances. | 22. Footplate. | 38. Lamp Brackets. |
| 7. Long Tank Support Brackets. | 23. Footplate Supports. | 39. Axleboxes. |
| 8. Short Tank Support Brackets. | 24. Self Tapping Screws. | 40. Chassis. |
| 9. 8BA Screws & Nuts. | 25. Front Steps. | 41. Brake Hangers. |
| 10. Drawbar Mount. | 26. Rear Steps. | 42. Brake Blocks. |
| 11. 10BA Nut & Screw. | 27. Buffers. | 43. Brake Rodding. |
| 12. 2mm Bearings. | 28. Vacuum Pipe. | 44. Brass Wire. |
| 13. Drawbar. | 29. Fire Iron Holder. | 45. Handrail Knobs. |
| 14. Tank Top/Front Bulkhead. | 30. Tank Vents. | 46. Water Scoop. |
| 15. Sides/Rear. | 31. Toolboxes L/H & R/H. | |
| 16. Rear Bulkhead. | 32. Water Gauge. | |

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Fig. 1. Chassis Construction.

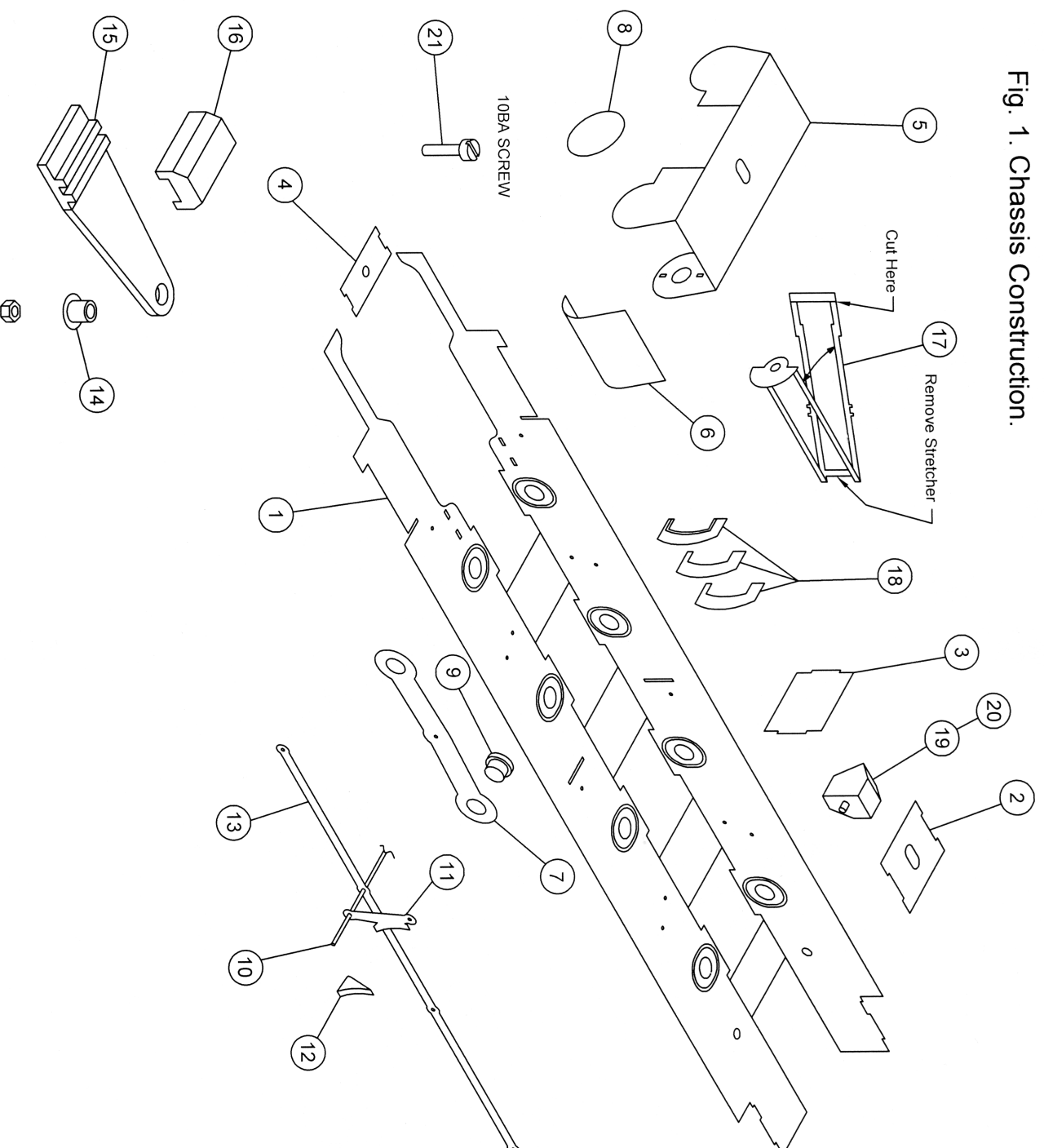


Fig. 2. Body Construction.

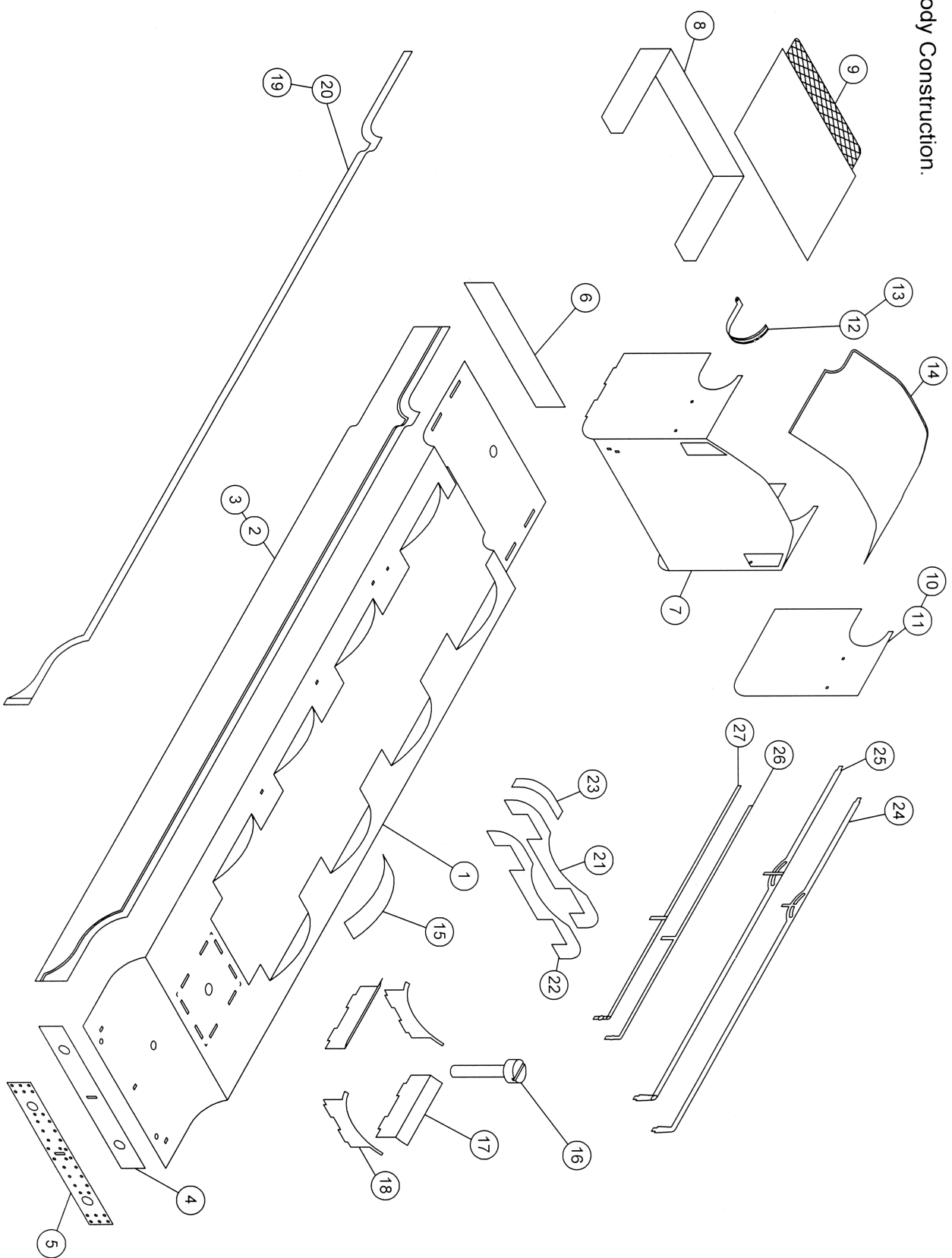


FIG. 3. BOILER PREPARATION.

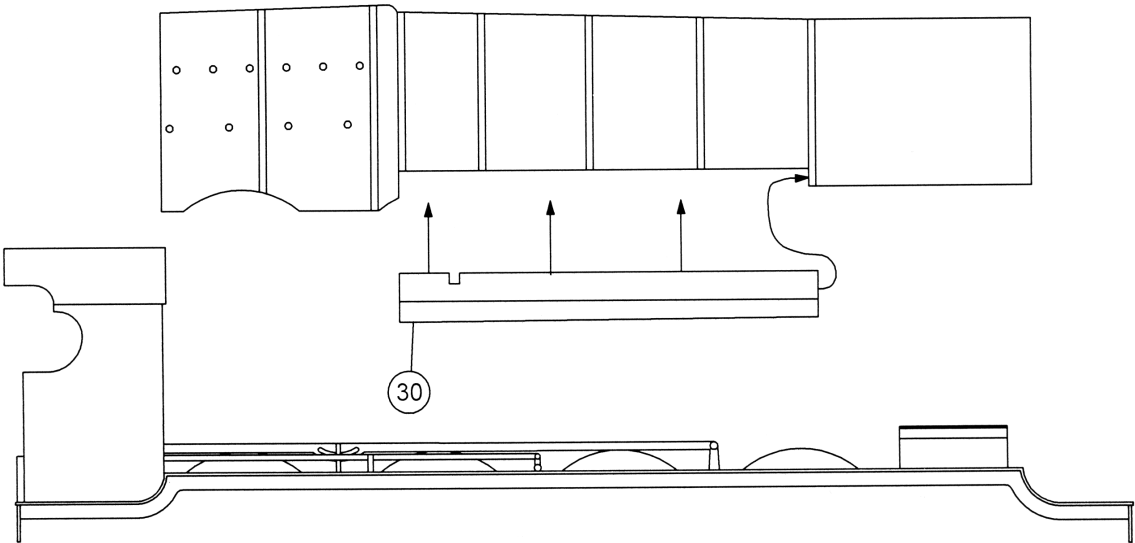
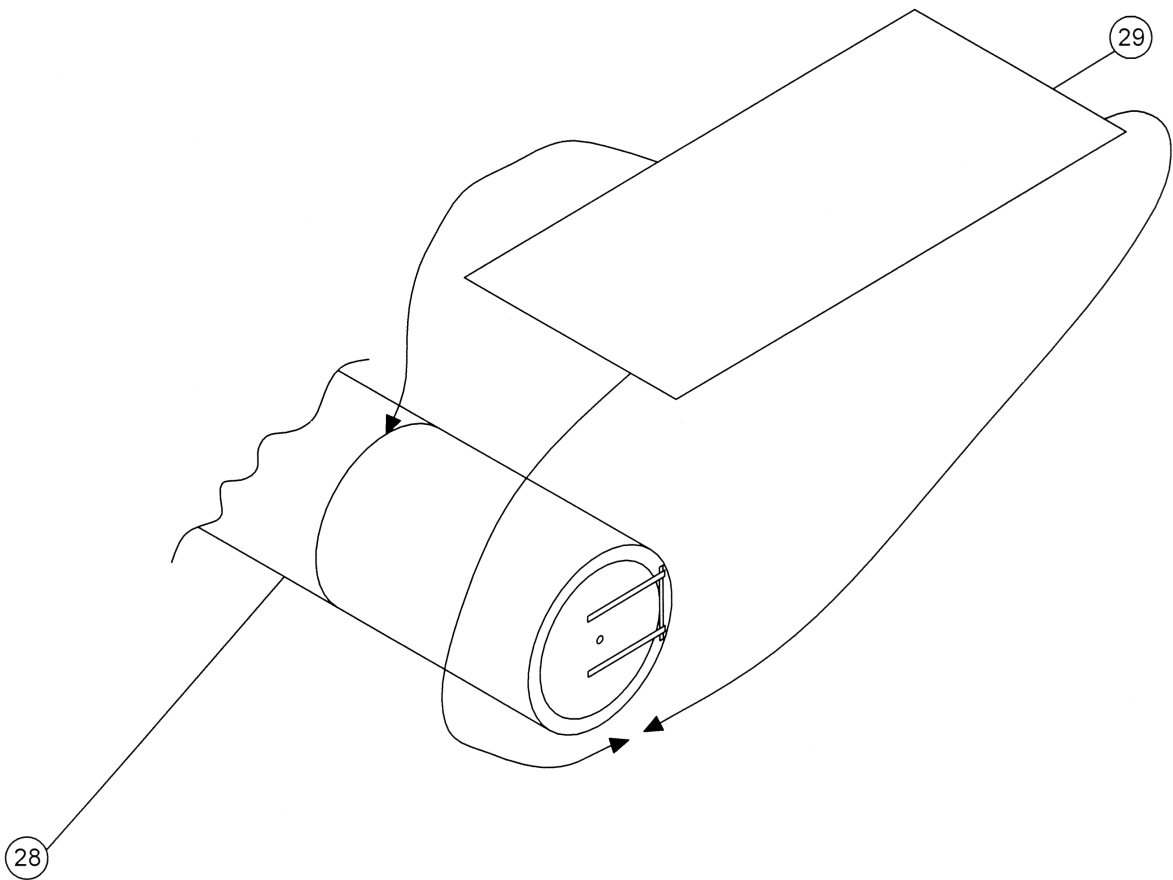


Fig. 4.Tender Body Construction

