GRESLEY P2 INSTRUCTIONS.
(COCK O' THE NORTH).

PLEASE READ THROUGH THESE INSTRUCTIONS BEFORE STARTING.

FIG. 1.

Cut out the running plate (1) and the valances (2). Do not remove the valance frames. The frame will hold the valance in shape while you are forming the running plate, and will hold everything firm while you are fitting the cab and boiler. File all the tabs off the edges.

Fold the front end of the running plate down at 90°. Form the front curve (leaving the centre section flat) using the valances as a template. When the valances fit into the front curve you can tack them into their recesses. Start from the front and go right back to the reverse curves.

When this is done solder the two parts of the bufferbeam (4 & 5) into the half etched recess at the front end.

The reverse curves can now be formed. This is quite simple compared with the front curve. First form the curves roughly to the right shape, then using a piece of dowel simply push against the running plate and force it into the concave "second" curve in the valance. This should automatically form both the curves and you can tack solder them in place. Solder along the seams to form a rigid structure. Solder the rear drag beam (3) into the recess at the rear of the running plate. Do not remove the valance frames just yet. Check that the rear drag beam and the bufferbeam line up square. Make any adjustments by twisting the running plate.

Solder an 8BA screw into the hole at the front end and two 10BA screws into the holes at the back end.

Fold the cab front (10) (fold line inside) and solder it into the four angled slots. Check the fit of the cab sides (6 & 7), and adjust so that they fit tight against the cab front. When satisfied that they fit ok solder them into their slots. File off any overlap.

Solder the cab floor support (11) in place. It sits centrally between the cab sides and 0.5mm from the back end of the running plate. Solder the floor (12) in place. Curve the rear of the cab side overlays (8 & 9) to match the profile of the floor and solder them onto the cab sides.

Curve the cab roof (13) to match the cab front profile. Hold the roof in position and tack solder it in place at the front point. Tack it at the corners and check it sits square and level. When satisfied with this solder around the seams. Check the level again and alter it if necessary. You will have file the front of the roof down to the cab front angle.

Solder the riveted roof overlay (14) to the centre rear of the roof. Solder the two separate roof shutters (16) either side of the riveted overlay, but closer to the rainstrip than the overlay (these were fitted early 1937).

Go to fig. 2, before fitting these parts. Solder the raised canopy (15) onto the roof. This needs to match the height and curve of the firebox. Solder the double roof (17) shutters onto the canopy. Note that they go the opposite way round to the single shutters. Solder the front frame extensions (10) into the recesses in the top of the running plate.

FIG. 2.

Take the pre rolled boiler (19) and the rear, centre and front formers (20, 21 & 22). Locate each of the formers into the appropriate half etched lines inside the boiler. There is a half etched notch at the top of each former, these need to be lined up with the corresponding notches inside the boiler. The boiler needs to be held firmly to ensure a tight fit to the formers. Tack them in place starting at the top and working down to the bottom. Solder around the seams when you are satisfied that all is fitting nicely.

Now take the firebox (26) and the front and rear firebox formers (27 & 28). Form the top half of the firebox over a piece of tube. The radius needs to be slightly less than that on the formers. Kink the bottom of the firebox sides in slightly at the half etched fold line. Locate the front and rear formers into their recesses, once again lining the notches up. Tack them in position starting at the top and working down to the bottom. Solder three of the short 10BA screws into the holes in the front former from the inside. Locate the lower firebox front into the slots on the front of the firebox and solder in place. With a small file form a small radius on these joints. Check the fit of the firebox onto the back of the boiler and then check the fit to the running plate/cab. The section of cab roof at the point where the firebox rises above it will need to be filed away.

The smokebox can now be formed in the same way as the firebox. The rear former fits into the recesses at the back of the smokebox. Check for a tight fit and adjust the tabs on the former as necessary. The former must be level with the edge of the smokebox, with only the boiler location tabs protruding. Fold the smokebox front to its approximate angle and check it fits ok. Adjust as necessary and then form the rear curve up. Check again that it fits ok and then solder in place. Solder three of the short 10BA screws into the holes in the rear former from the inside. Check the fit of the smokebox onto the boiler and then onto the running plate.

Join the three sections together and secure them with 10BA nuts. Be warned, this is a bit fiddly. When they are together check that it all sits ok on the running plate. Check that all remains square and level. Once satisfied solder around the seams where the three parts meet. Before fitting the assembled boiler unit to the running plate, refer to fig. 3, and mark out the positions of the boiler bands. Fit them in place and you can then solder the boiler unit in position.

FIG. 4.

Fit the backhead ‘V’ (30a) section before fitting the backhead. Glue the cab backhead (30) inside the cab.

Drill holes in the cab platforms (31 & 32) to take the reversing screw post (33) and glue them on the left and right of the cab floor.

Drill a hole to take the reversing wheel and glue the reversing screw post in place.

Fit a piece of .9mm brass rod into the hole in the post and then glue the wheel (34) in place.

Glue the cab seats (35 & 36) into their holes in the platforms. Fill the gap at the back of the canopy.

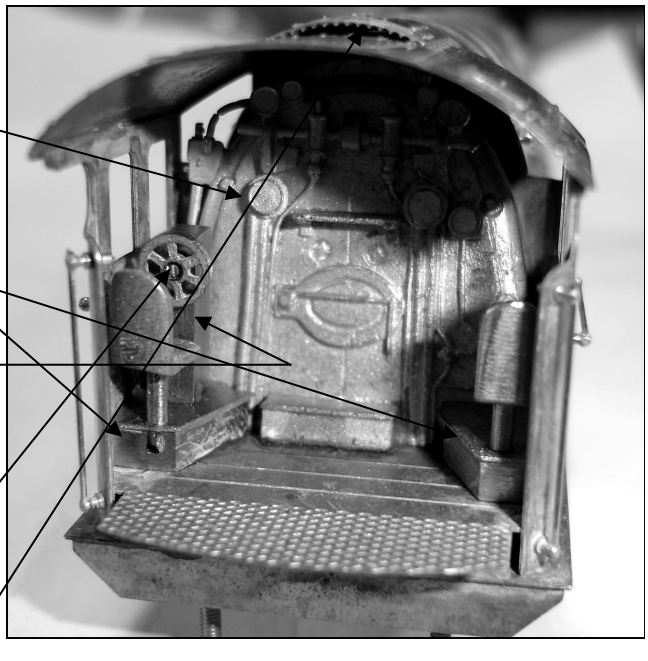
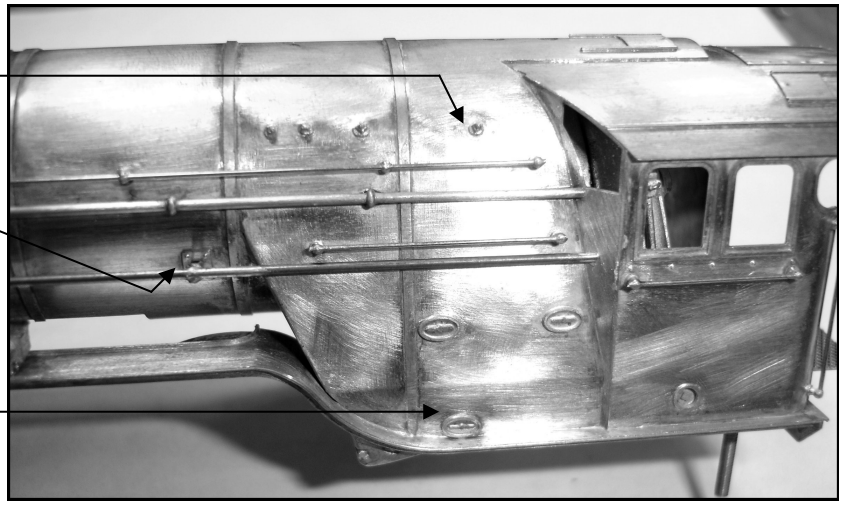


FIG. 5.

Fit the washout plugs (37) into their holes.

Solder the rectangular rivet detail parts (38) over the holes for the reversing rod stanchions (39).

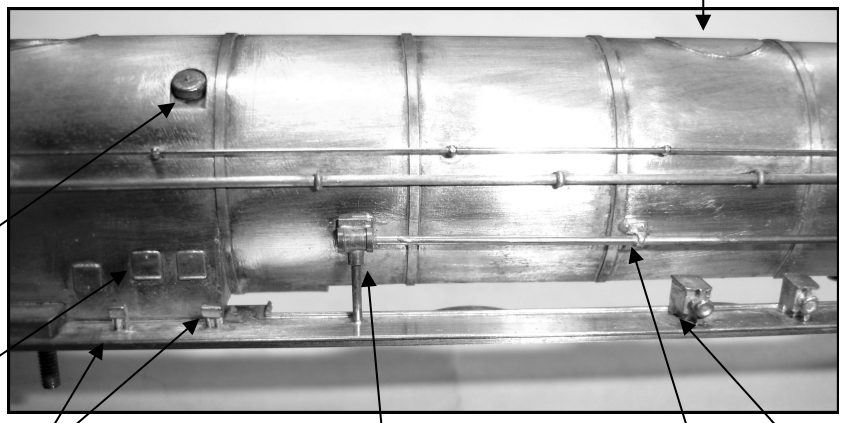
Refer to figure 3 and solder the oval washout plugs (40) in position.



Form the dome cover (41) and solder in position.

Fold the anti vacuum valve (42) mount down. If you wish form a piece of scrap brass around a 3mm bar (approx) and use it to fill the gap. Trim any excess and fit the anti vacuum valve.

Refer to figure 3 and solder in place the sandbox fillers (43).



Solder the oilboxes (44) in place (they are in the same place on the other side).

Drill out the reversing rod gearbox (45) and solder in position. Take the Stanchions (46) and pass the .70mm brass rod through them. Fit the stanchions into the square holes on the side of the boiler and check the fit of the rod into the gearbox. Check for length at the cab end. Chamfer the cab end of the rod to suit the cab angle. Check for level and solder in place.

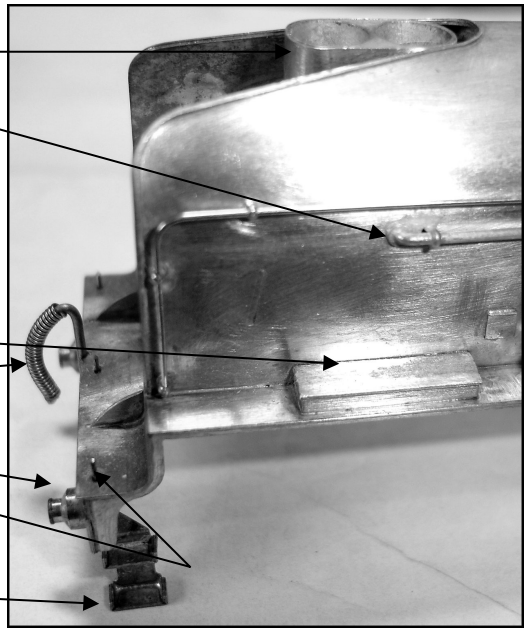
Solder the mechanical lubricators (47) in place.

Solder the chimney (48) in place.

Solder the riveted ring (49) over the main ejector pipe hole. Form the ejector pipe from the .90mm rod, check for length and chamfer the cab end as with the reversing rod. Slide the split pins along the length and crimp them tight. Fit the pipe in place.

Solder or glue the steam pipe covers (50) in place.
Solder the vacuum pipe (51) in place.
Solder the buffer shanks (52) in place.

Glue the lamp irons (53) in from underneath.
Fold the front steps (54) and solder them behind the buffers (fold lines inside).



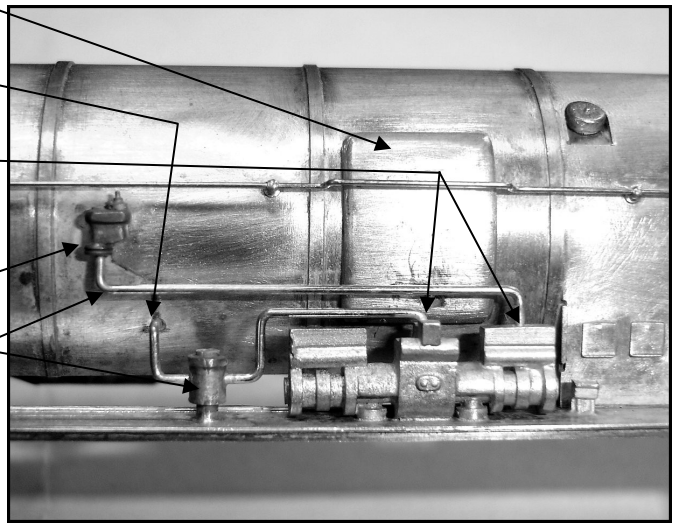
Solder boiler side casting (55) to the boiler.

Drill the hole for the pipework (see fig. 3.) and the two holes in the top of the feed water heater.

Solder the feed water heater (56) in place.

Drill out the holes in the boiler side valve (57) and the footplate valve (58). Solder them in position.

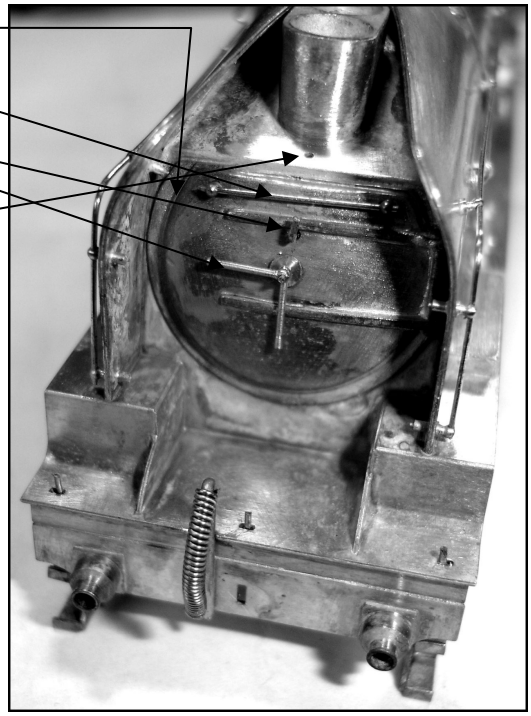
Form the pipework from .70mm rod. The pipework for the footplate valve is best done in two pieces. When formed to your satisfaction, solder it in position.



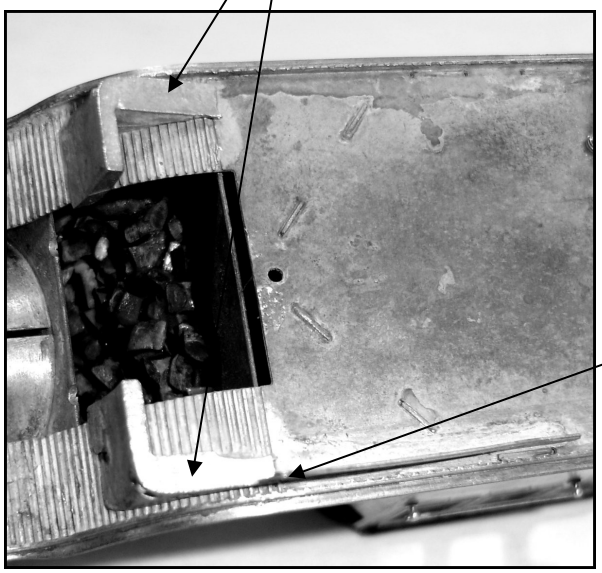
Glue or solder the smokebox door (59) in place.

Drill out the holes for the handrails, upper lamp iron and smokebox door handle (60). Fit them all in place.

Leave fitting the chime whistle (61) until the loco is painted.



Solder the lower firebox sections (62) below the running plate.



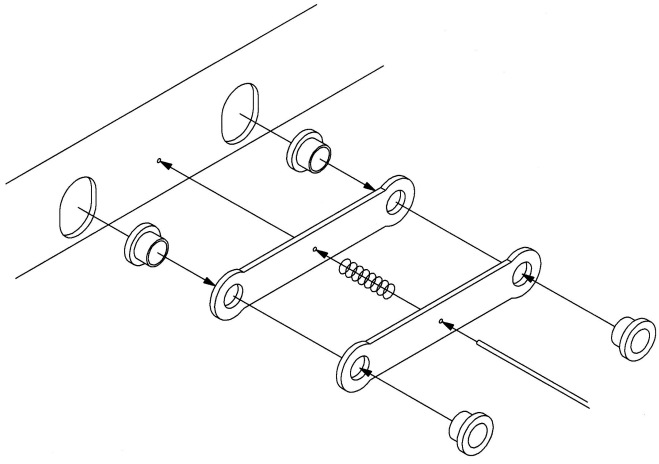
Solder the ashpan operating rod (62) below the running plate on the right hand side. It should be .5mm from the valance.

Fit all the remaining handrails, noting the step out in the right hand boiler side handrail.

FIG. 6.

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.

Cut out the mainframes (1). Also cut out the front spacer and rear spacer (2), bogie mount spacer and pony mount (3), and rear frame stretcher (6). Fold the frames up and solder spacers 2, 3, in place. Bend out the rear frames to the width of the rear frame stretcher (6) and solder the stretcher in place. Tack some solder across the back of the frame folds to give added strength.



Compensated Chassis - Remove the centre sections from the axle openings. Solder the axle bearings (7) into the compensating beams (5). 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. 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 chassis bearings (7) into the frames (you may need to file these down a bit to give wheel clearance).

Cut the main motion bracket (13) from the fret and fold as shown. Locate and solder it in the recesses in the top of the frames. Solder a 10BA screw into the drawbar mount (20) and solder it under the rear frame stretcher. Solder 10BA screws into the bogie and pony mounts (3). Solder the cab steps (18 & 19) into the slots at the back of the frames.

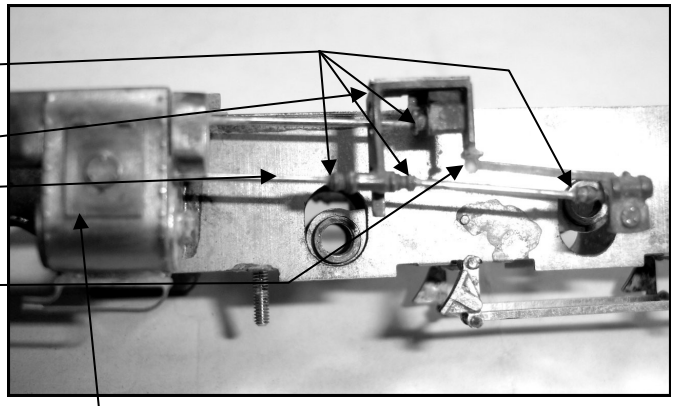
Assemble the brake hangers (14) and blocks (15) making three L/H and three R/H. Cut the brass wire (17) into suitable lengths (1½ ins approx) and solder into the holes in the bottom of the frames. The assembled brake shoes can be attached to the ends of the wire approx 2.5mm from the side of the frames. Once in place the brake rodding (16) can be attached by passing wire through the bottom of the brake hangers then the two rods and then through the hangers on the opposite side. The rodding should run just inside the line of the frames,

Fold the cylinders (8) and solder them into the frames. Shape the cylinder sides (9) and solder these to the cylinders. Fit the front cylinder covers (10). Fit 2mm bearings (26) into the rear of the cylinders and fit the rear cylinder covers (11) over them. Curve the front pony splashers (12) to match the wheel arches and solder in place. Solder the rear cylinder blocks (27) [drill a new hole in these, 1.5mm above the existing one] into the upper hole at the back of the cylinders and the front cylinder streamlining (28) to the front of the cylinders. Check that they fit inside the valances on the body.

At this point glue or solder the Cartazzi axleboxes (29) to the rear frames.

Assemble the front pony truck (23, 24 & 25) and rear pony truck (22). Fold them as shown and solder in the 2mm bearings (26).

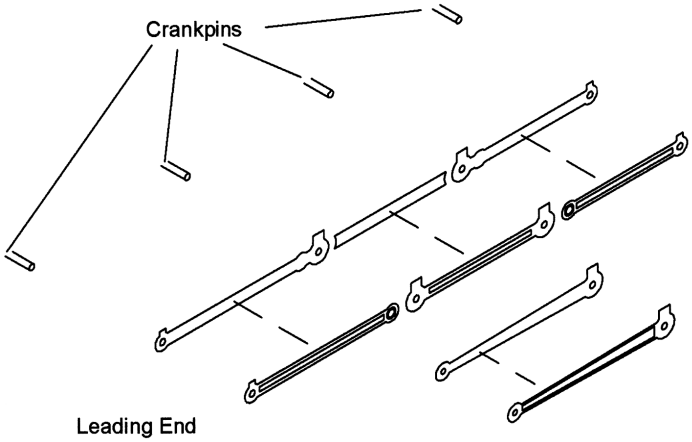
Drill out the holes in the cast motion brackets (30) and the gearboxes (31).



Solder the cast motion brackets to the main motion bracket. Cut to length some .70mm wire and solder into the holes you have drilled. The gearboxes need to be attached after the wheels are fitted. Solder them to the cast motion brackets and fit .70mm wire into the holes. Make sure they are centred over the wheel centre.

Punch through rivets on the cylinder inspection hatches (32) and solder them to the cylinders. Also solder the cylinder drain cocks (33) in place.

Sweat together the coupling rods (35) and connecting rods (36). Fit the coupling rods to the wheels (not shown) making sure that the chassis runs freely. Refer to Fig. 6. and screw the connecting rods to the crossheads using the 14BA nuts and screws provided.



The frames can now be painted. Take care not to gum up the moving parts if you have built a compensated chassis.

Fit the bogie and pony wheels and attach these units to the chassis. Using some copper clad plate and brass wire fashion pick ups to your own design.

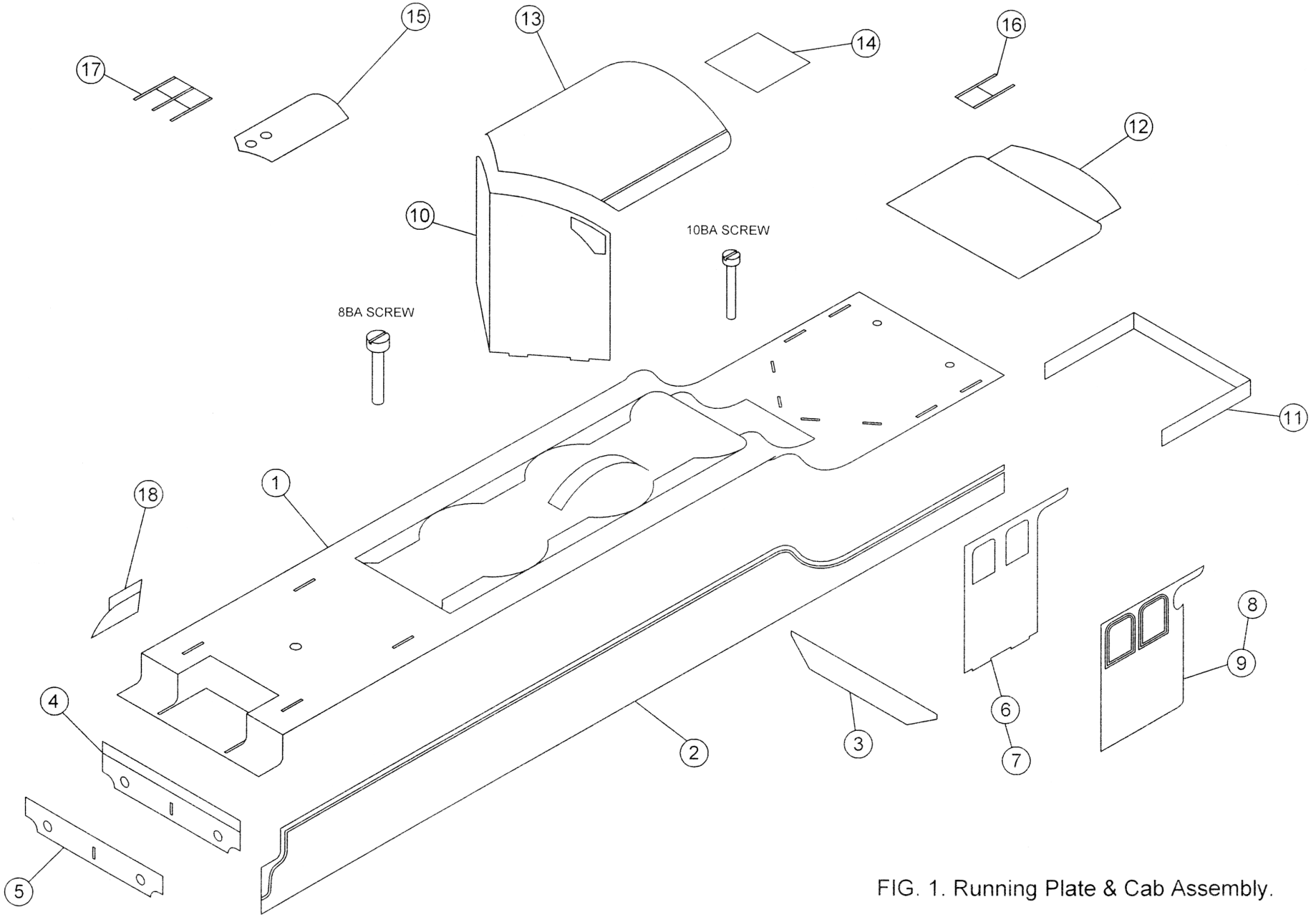


FIG. 1. Running Plate & Cab Assembly.

FIG. 2. Boiler, Smokebox & Firebox Assembly.

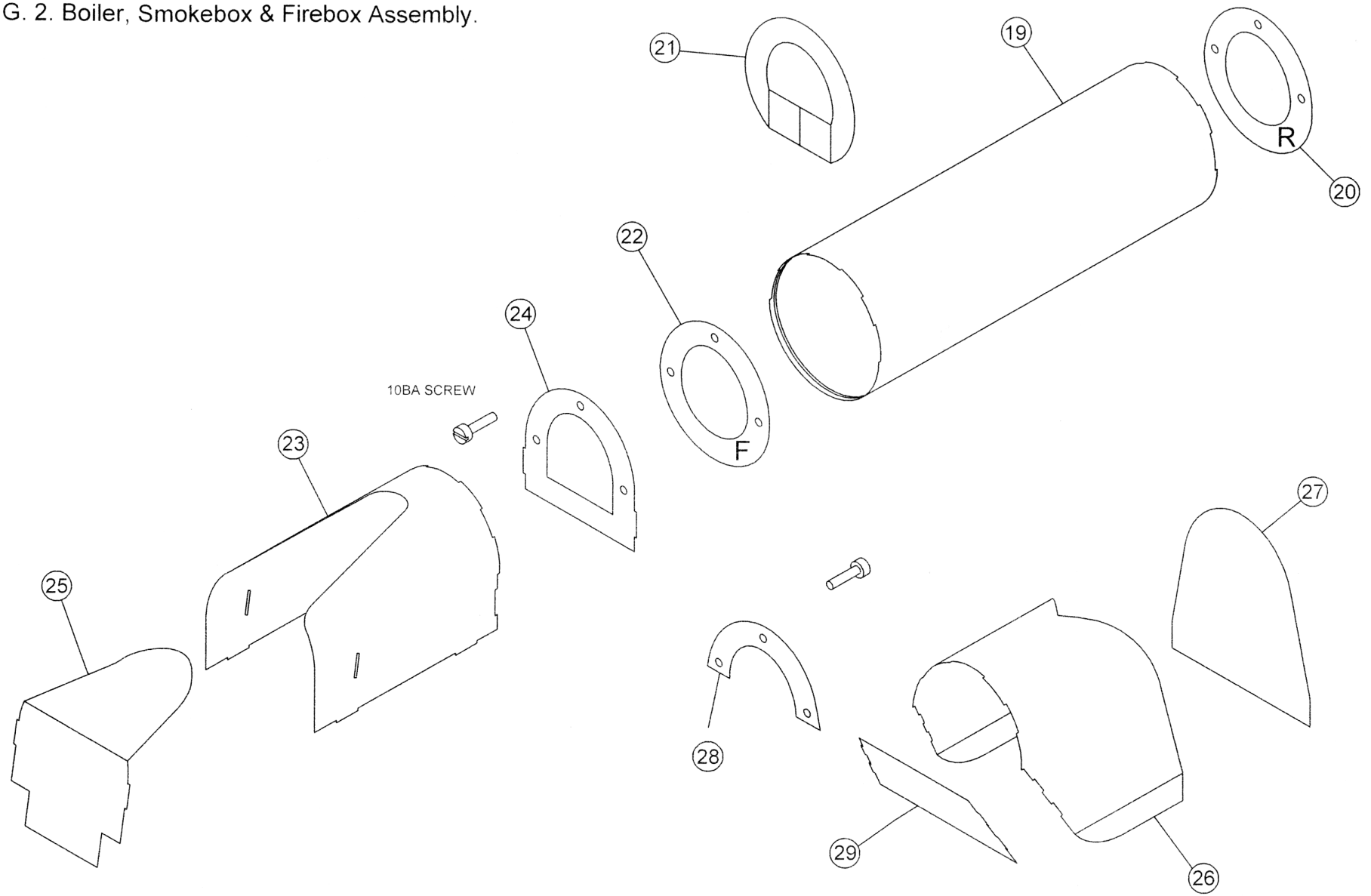


FIG. 3. General Dimensions.

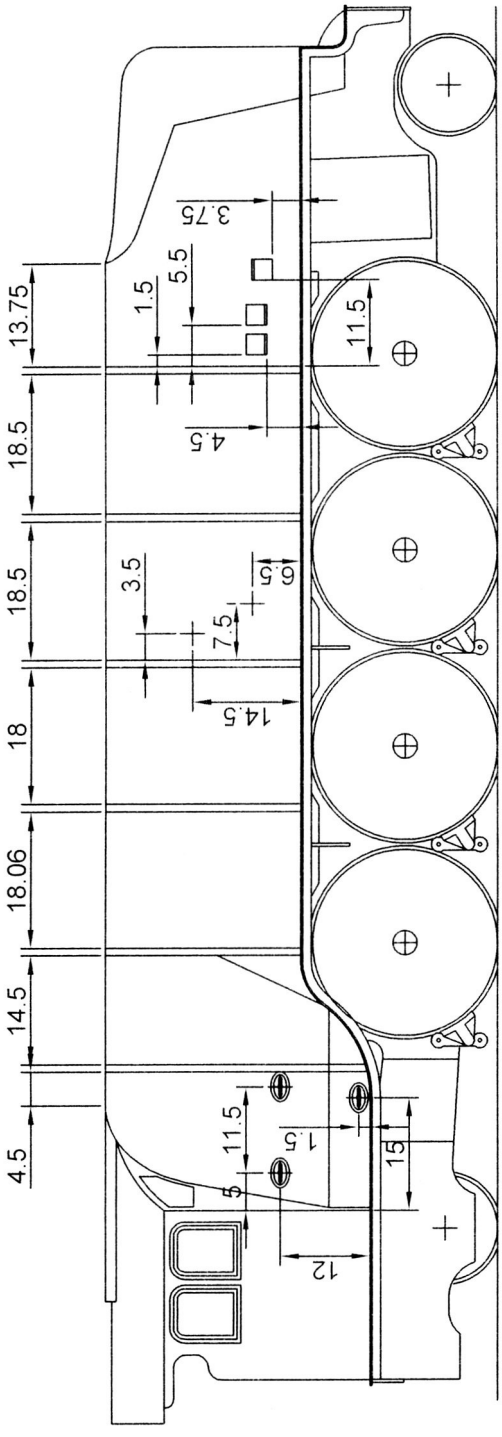
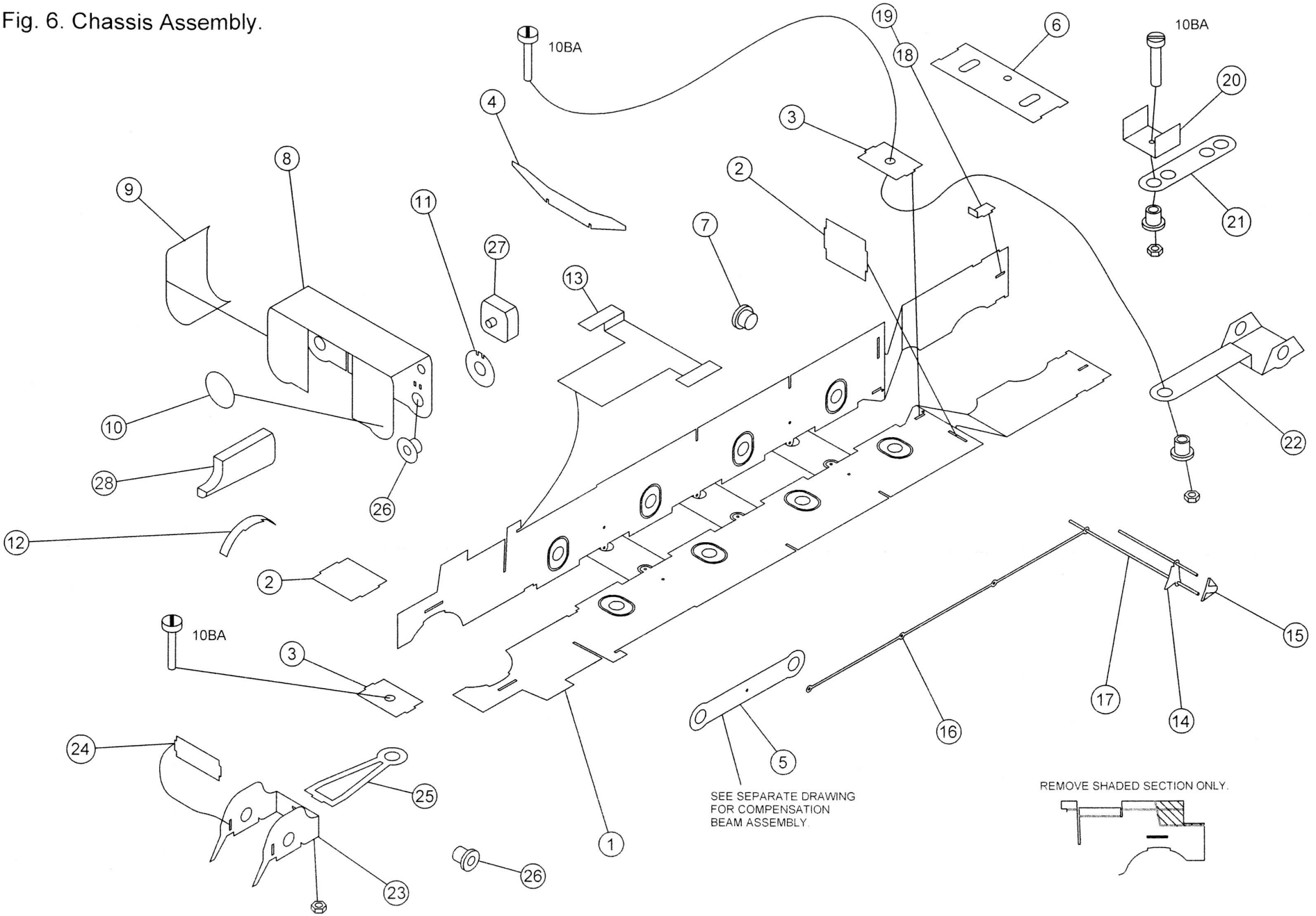
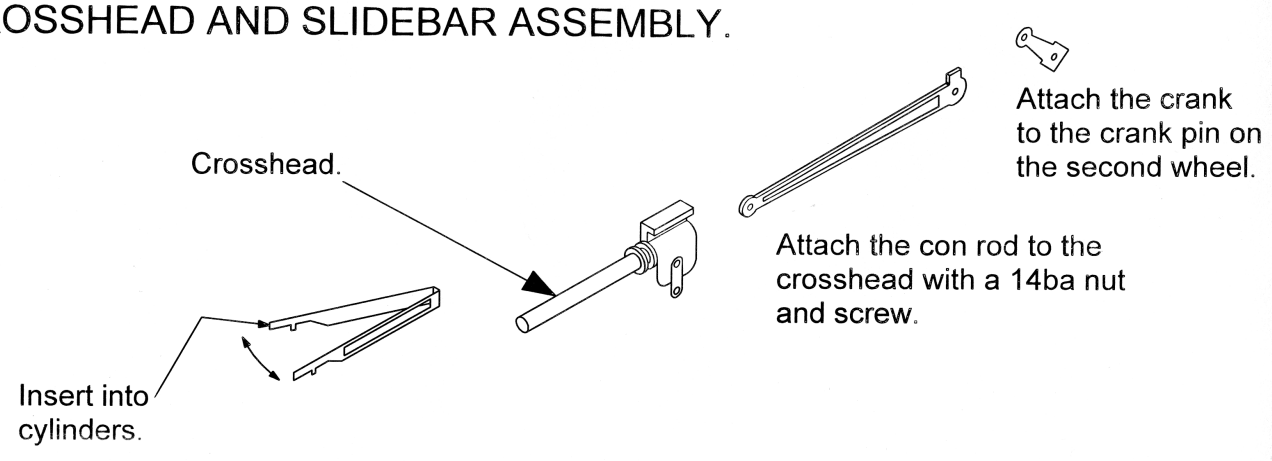


Fig. 6. Chassis Assembly.



CROSSHEAD AND SLIDEBAR ASSEMBLY.



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BODY PARTS LIST

1. Running plate.
2. Valances.
3. Dragbeam.
4. Bufferbeam.
5. Bufferbeam Overlay.
6. R/H Cab side.
7. L/H Cab side.
8. R/H Cab side overlay (two types).
9. L/H Cab side overlay (two types).
10. Cab front.
11. Cab floor support.
12. Cab floor (with Fallplate).
13. Cab roof.
14. Roof overlay.
15. Roof canopy.
16. Single cab roof shutters.
17. Double cab roof shutters.
18. Front Frame Extensions.
19. Boiler.
20. Rear Former.
21. Centre Former.
22. Front Former.
23. Smokebox.
24. Rear Smokebox Former.
25. Smokebox Front.
26. Firebox.
27. Firebox Former.
28. Upper Firebox Front Former.
29. Lower Front Firebox Former.
30. Cab backhead.
31. R/H Cab platform.
32. L/H Cab platform.
33. Reversing screw Post.
34. Reversing Wheel.
35. R/H Cab seat.
36. L/H Cab seat.
37. Cast washout plugs.
38. Rectangular Rivet Detail.
39. Reversing Rod Stanchions.
40. Oval washout plugs.
41. Dome Cover.
42. Anti Vacuum Valves.
43. Sandbox Fillers.
44. Oilboxes.
45. Reversing Rod Gearbox.
46. Reversing Rod Stanchions.
47. Mechanical Lubricators.
48. Chimney.
49. Riveted Ring.
50. Steam Pipe Covers.
51. Vacuum Pipe.
52. Spencers Double Buffers.
53. Lamp Irons.
54. Front Steps.
55. Boiler Side Casting.
56. ACFI Feed Water Heater.
57. Boiler Side Valve.
58. Footplate Valve.
59. Smokebox Door.
60. Smokebox Door Handle.
61. Chime Whistle.
62. Lower Firebox Sections.
63. Ashpan Operating Rod.
64. Ross Pop Safety Valves.
65. Handrail Knobs.
66. .45mm Brass Wire.
67. .70mm Brass Wire.
68. .90mm Brass Wire.
69. 8BA Nut and Screw.
70. 10BA Nuts and Screws.

SPLIT PINS

CHASSIS PARTS LIST

1. Main Frames.
2. Frame Spacers.
3. Pony Truck Mount.
4. Running Plate Support Brackets.
5. Compensation Beams.
6. Rear Frame Stretcher.
7. ⅛" Chassis Bearings.
8. Cylinders.
9. Cylinder Sides.
10. Front Cylinder Covers.
11. Rear Cylinder Covers.
12. Front Wheel Arch Splashers.
13. Main Motion Bracket.
14. Brake Hangers.
15. Brake Blocks.
16. Brake Pull Rods.
17. .70mm Brass Wire.
18. R/H Cab Steps.
19. L/H Cab Steps.
20. Drawbar Mount.
21. Drawbar.
22. Rear Pony Truck.
23. Front Pony Truck.
24. Pony Truck Spacer.
25. Pony Truck Arm.
26. 2mm Bearings.
27. Rear Cylinder Blocks.
28. Front Cylinder streamlining.
29. Cartazzi Axle Boxes.
30. Cast Motion Brackets.
31. Gearboxes.
32. Cylinder Inspection Hatches.
33. Cylinder Drain Cocks.
34. 10BA Nuts and Screws.
35. Coupling Rods.
36. Connecting Rods.
37. Crossheads.
38. 14BA Nuts and Screws.
39. Slidebars.

GRESLEY BEADED NON CORRIDOR TENDER

Fig. 1.

Lay the baseplate (1) on a flat surface and solder the frames (2) into the slots. Solder the bufferbeam (3) and drag beam (4) in place. Take the tour medium steps (5) and fold the edges up. Solder them into the slots in the frames. Repeat with the four large steps (6) and solder them into the recesses in the bottom of the frames. Solder two 8BA screws into the baseplate for the internal frame and a 10BA screw into the front hole for the drawbar mount.

Solder the rear frame (7) into the slots at the back of the baseplate. Solder the side frames (8 & 9 into the slots at the side of the baseplate. Fold the front bulkhead (10) with the fold lines on the inside of the tender and solder it into the slots at the front of the baseplate. Fold up the coal well (11) and solder underneath the coal plate (12). Solder this unit into the recesses on the top of the side frames. Fit the rear bulkhead (13) to the top of the coal plate.

Fig. 2.

Cut out the side overlays (14 & 15), rear overlay (16), coal chute (17), large coal space door (18), Locker doors (19 & 20), small coal space door and small angle piece (22). Solder the rear overlay in place first. Form the top curve and the front curves of the sides to match the footplate casting (35) and then solder them in place. The coal chute, coal space grill, locker doors (small one on the left), coal space door and small angle piece can now be fitted.

Fold the front footplate support (23) and solder in place. Solder the footplate (24) on top of it (straight sides only) **OR** glue the footplate casting (35) in place (curved sides only). Glue the brake and water scoop handles (25), both halves of the water dome (26), water filler (27) and rear steps (28) in place.

Fit the axleboxes (30) in place. Cut the brake shoes from the fret and solder onto the hangers (31).

Solder the 2mm bearings (29) into the internal frames (36). Fold the frames as shown with the fold lines inside. Solder brass wire through the frames. Fit the brake blocks (31) to the wire. Pass wire through the bottom of the brake blocks and solder the joints. Attach the pull rods (34) making sure that they line up with the outside frames. The tender chassis is ready to paint.

Tender Parts List

1. Tender Baseplate.
2. Tender Frames.
3. Tender Bufferbeam.
4. Tender Drag beam.
5. Medium Steps.
6. Large Steps.
7. Tender Rear Frame,
8. L/H Tender Side Frame.
9. R/H Tender Side Frame.
10. Front Bulkhead.
11. Coal Well.
12. Coal plate.
13. Rear Bulkhead.
14. L/H Side Overlay (riveted or plain).
15. R/H Side Overlay (riveted or plain).
16. Rear Overlay.
17. Coal Chute.
18. Large Coal Space Door.
19. Large Locker Door.
20. Small Locker Door.
21. Small Coal Space Door.
22. Small Angle Piece.
23. Front Footplate Support.
24. Footplate (Locos with straight sides).
25. Brake & Water Scoop Handles.
26. Water Dome,
27. Water Filler,
28. Rear Steps.
29. 2mm Bearings.
30. Tender Axleboxes.
31. Tender Brake Shoes/Hangers.
32. Group Standard Buffers.
33. Brass Wire.
34. Brake Pull Rods.
35. Footplate (Locos with curved sides).
36. Internal Frames.

Fig. 1. Main Body Construction.

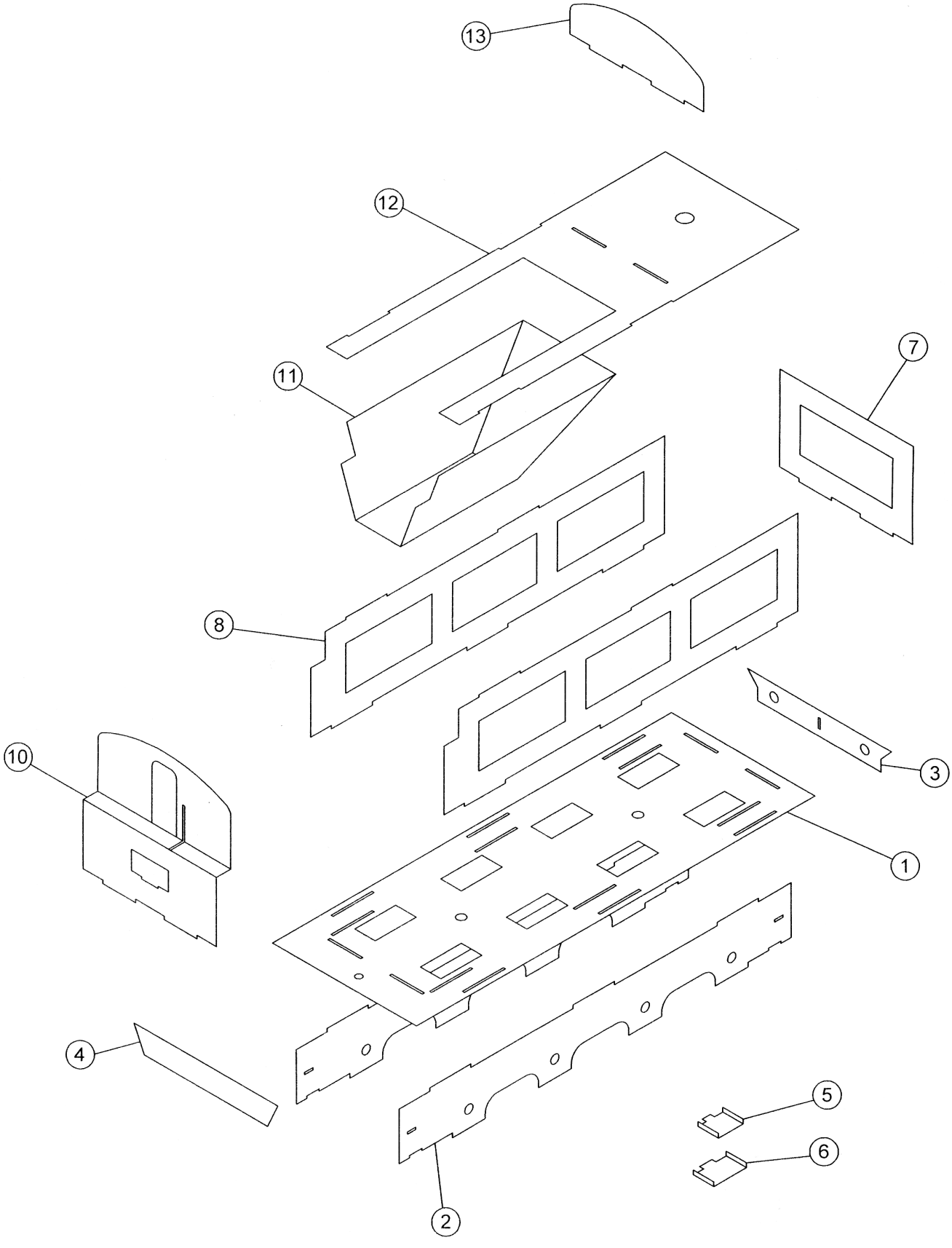

Fig. 2. Body Detailing.