Straight Frame 42/72xx Instructions

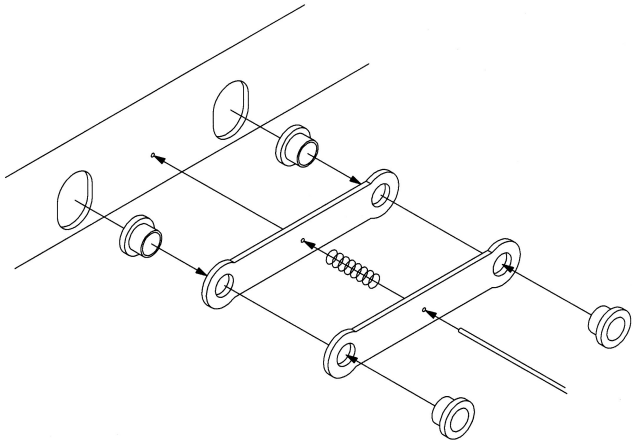
Fig. 1.

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 (8) into the hole in the pony truck mount and another into the hole in the rear stretcher from underneath.

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 to match the shape of the cylinder front/rear. Fold down the front and rear and the sides and solder around the seams. 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. Refer to the inset drawing and assemble the brake actuating rods and levers (14 & 15).

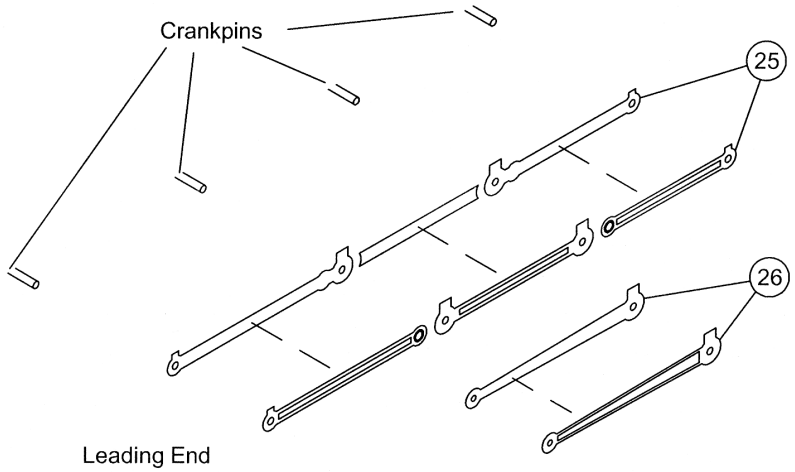
Solder the cylinder drain cocks (21) under the cylinders. Assemble the front pony truck (17 & 18) and the rear pony truck (22 & 23) **[72xx only]**. Solder or glue the sandboxes (24) into their holes at the rear of the chassis. Make up the sandpipes with brass wire and fit into the bottom of the sandboxes. The chassis and pony trucks 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 (19) 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 (20) and solder these into the notches on the slidebars. Now remove the stretcher at the rear of the slidebars.

Coupling Rods and Valve Gear

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 16BA 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] and the rear bufferbeam (6). Solder the rear bufferbeam into its recess in the running plate. Check the fit of the valances under the running plate and then solder in place starting from the rear. Take the front running plate (4) and solder it onto the front of the valances. Solder the smokebox saddle front (70) into the recesses at the back of the front running plate. Solder the front bufferbeam (5) in place. Solder two 8BA screws (16) into the two holes in the running plate unit. Fold the splasher sides up. Fold the saddle side platform supports (71) and solder alongside the saddle. Solder the platform tops (72) onto the supports.

Take the two main body sides (7 & 8), curve the front ends round a 2mm bar. Check that the front curves match the curved mark on the running plate and tack them in place. Fit the cab front (9) and rear (10) between the sides and tack in place. Tack the tank tops (13 & 14) into the recesses in the sides. Once sure everything is square solder around all the seams. Shape the bunker rear (11) to match the rear profile of the sides and solder in place. Fold down the sides of the cab floor (12) and solder into the cab.

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

Before fitting the cab roof, move to figure 3.

Fig. 3.

Cut out the side overlays (23 & 24) carefully. Clean off all the tabs and curve the front end to match the main sides. When a good fit is achieved cut out the support piece in the cab door opening very carefully. Tack the overlays in position making sure they stay flat. When satisfied that all is ok solder around the edges. Form the bunker rear overlay (27) and solder in place. Use a fine file to put a radius on the edge where the sides and rear meet. Solder the rear door (34) and rear window guards (35) in place.

Refer back to figure 2. [Fit the backhead (68) and reversing lever (69) before fitting the roof] Curve the cab roof (19) and tack in position. When satisfied that it is positioned centrally solder around the seams. Fit the front and rear strips (20), the two rainstrips (22) and the cab roof shutter (21).

Solder the front and rear bufferbeam overlays (29) in place.

Check which type of motion bracket is required for your model and follow A or B below.

A. Punch through the rivets on the back of the large bracket overlay (31) and solder it to the bracket back (30).

B. Solder together the two halves of the smaller bracket (32) and shape, and then solder the bracket tops (33) around the edge.

Low melt solder will be needed for the whitemetal parts in the following section.

Now turn to the boiler (38). Solder along the bottom seam and then solder the smokebox overlay (39) to the boiler. Take the firebox top casting (36) and the tapered boiler top (37) and clean off any mould lines. Position the firebox top, tapered boiler and front boiler/smokebox to check that they all line up correctly, make any alterations and line up again. Tack the firebox in place, check the positioning again and then tack the tapered boiler section in place. Once again check the position. Now tack the boiler/smokebox to the saddle and to the tapered boiler. When you are happy all is lined up correctly solder all three firmly in place. Solder the boiler band (44) around the boiler on the join between the parallel and tapered boiler sections. Fold up the step on the smokebox front (40). Solder this to the smokebox.

Remove the valance frames and file the tabs off. Check the fit of the valance overlays (25 & 26) and solder in position.

Cut out the front running plate steps (41), cab steps and overlays (42) and bunker side steps (43) and form the bottom steps on each one. Solder the cab step overlays to the steps. Fold up the centre steps for the cab steps and the bunker steps and solder them in their slots. Now solder all the steps in position.

Solder the rivet strips (44) around the bottom of the tanks and bunker.

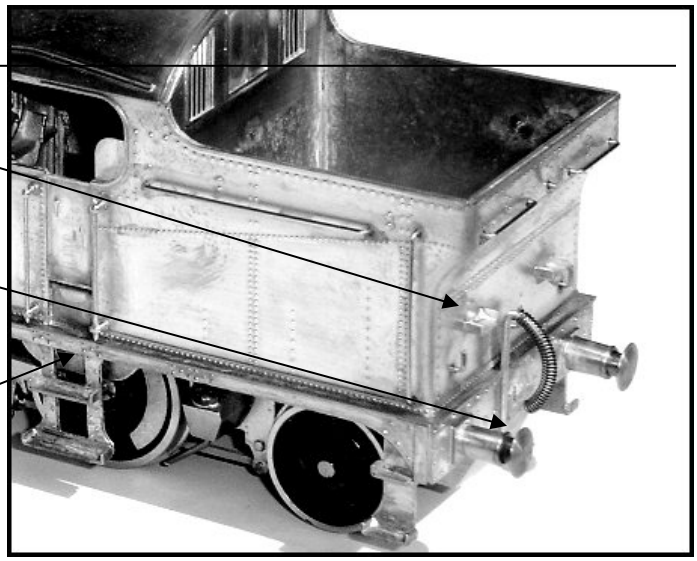
Note: The second picture on the next page shows the raised running plate version, but the placement of parts is more or less identical.

Fit the buffer shanks (45) [leave the heads until after painting].

Solder the bunker rear steps (46) into their slots.

Solder the vac pipe (47) to the bufferbeam.

Glue or solder the tank balance pipes (48) behind the cab steps.



Drill two holes for the whistles (49) and glue them in place.

Fit the tank vents (50) into their holes.

Select either the tall safety valve bonnet (51) or the short safety valve bonnet (52). Make up the pipework from copper wire.

Solder the chimney (53) in place.

Glue the oil breathers (54) and tank fillers (55) in place.

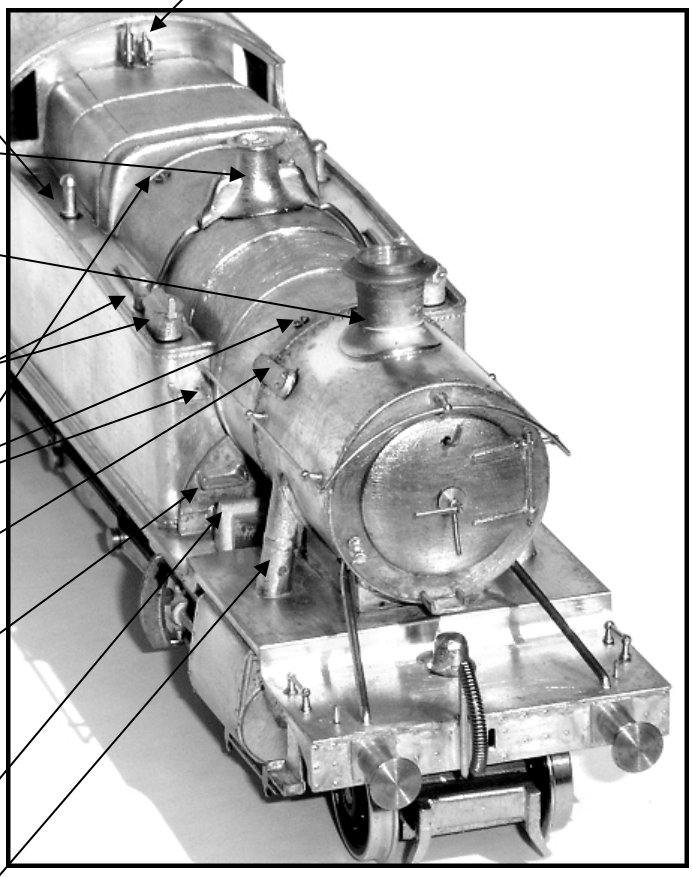
Drill the holes for the washout plugs (56) and glue in place.

Solder the tank front steps (57) into their slots.

Glue the superheater cover (58) to the Smokebox.

Solder the motion bracket steps (59) into the motion bracket.

Fit the lubricators (60) on top of the splashers.



Glue or solder the steam pipes (61) in position.

Drill a small hole and fit the lancecock (62).

Glue the bogie spring housing (63) into its hole.

Glue the smokebox door handle (64) base into the door and glue the handles to it. (The rear handle always points down).

Drill two holes in the smokebox for the front running plate support bars. Fashion the bars from some thicker brass wire and glue in position.

Check photos for the position of the mudhole covers (65) on the firebox and fit these in position. Fit all the handrails and all the lamp brackets.

Chassis Parts List

1. Main Frames.
2. Rear Frame Spacer.
3. Centre Spacer.
4. Front Spacer/Pony Truck Mount.
5. Cylinders.
6. Cylinder End Covers.
7. Compensating Beams.
8. 10BA Screws & Nuts.
9. 1/8th Chassis Bearings.
10. Brass Wire.
11. Brake hangers.
12. Brake Blocks.
13. Brake Rodding.
14. Thicker Brass Wire.
15. Brake Actuating Lever.
16. 2mm Bearings (Pony Pivots).
17. Front Pony Truck.
18. Wheel Keeper & Guard irons.
19. Slidebars.
20. Motion Brackets.
21. Cylinder Drain Cocks.
22. Rear Pony Truck. **[72xx only]**
23. Wheel Keeper. **[72xx only]**
24. Sandboxes.
25. Coupling Rods.
26. Connecting Rods.
27. 14BA Nuts & Screws.
28. Springs.

Superstructure Parts List

1. Main Running Plate.
2. L/H Valance.
3. R/H Valance.
4. Front Running Plate.
5. Front Bufferbeam.
6. Rear Bufferbeam.
7. L/H Body Side.
8. R/H Body Side.
9. Cab Front.
10. Cab Rear.
11. Bunker Rear.
12. Cab Floor.
13. L/H Tank Top.
14. R/H Tank Top.
15. Splasher Tops.
16. 8BA Screws & Nuts.
17. Smokebox Saddle Sides.
18. Smokebox Rear.
19. Cab Roof.
20. Front & Rear Detail Strips.
21. Cab Roof Shutter.
22. Rainstrips.
23. L/H Side Overlay.
24. R/H Side Overlay.
25. L/H Valance Overlay.
26. R/H Valance Overlay.
27. Bunker Rear Overlay.
28. Front Bufferbeam Overlay.
29. Rear Bufferbeam Overlay.
30. Large Motion Bracket Back.
31. Large Motion Bracket Overlay.
32. Smaller Motion Bracket & Overlay.
33. Bracket Tops.
34. Cab rear Door.
35. Rear Window Guards.
36. Firebox Top casting.
37. Boiler Top.
38. Smokebox/Boiler.
39. Smokebox Overlay.
40. Smokebox Front.
41. Front Running Plate Steps.
42. Cab Steps & Overlays.
43. Bunker Side Steps.
44. Rivet Strips.
45. Buffers.
46. Bunker Rear Steps.
47. Vacuum Pipes.
48. Tank Balance pipes.
49. Whistles.
50. Tank vents.
51. Tall Safety Valve Bonnet.
52. Short Safety Valve Bonnet.
53. Chimney.
54. Oil Breathers?
55. Tank Fillers.
56. Washout Plugs.
57. Tank Front Steps.
58. Superheater Cover.
59. Motion Bracket Steps.
60. Lubricators.
61. Steam pipes. **[Not on all straight frame locos]**.
62. Lancecock.
63. Bogie Spring Housing.
64. Smokebox Door Handle.
65. Mudhole Covers.
66. Lamp Brackets.
67. Handrail Knobs.
68. Backhead.
69. Reversing Lever.
70. Smokebox Saddle Front.
71. Saddle Side Platform Support (L & R)
72. Saddle Side Platform Top (L & R).

PDK Models.
HLLTOP BUNGALOW.
CARNKIE
HELSTON
TR13 0DZ
07732213251

Website: www.pdkmodels.co.uk
E-Mail: pdkmodels@hotmail.co.uK

Fig. 1. Chassis Construction.

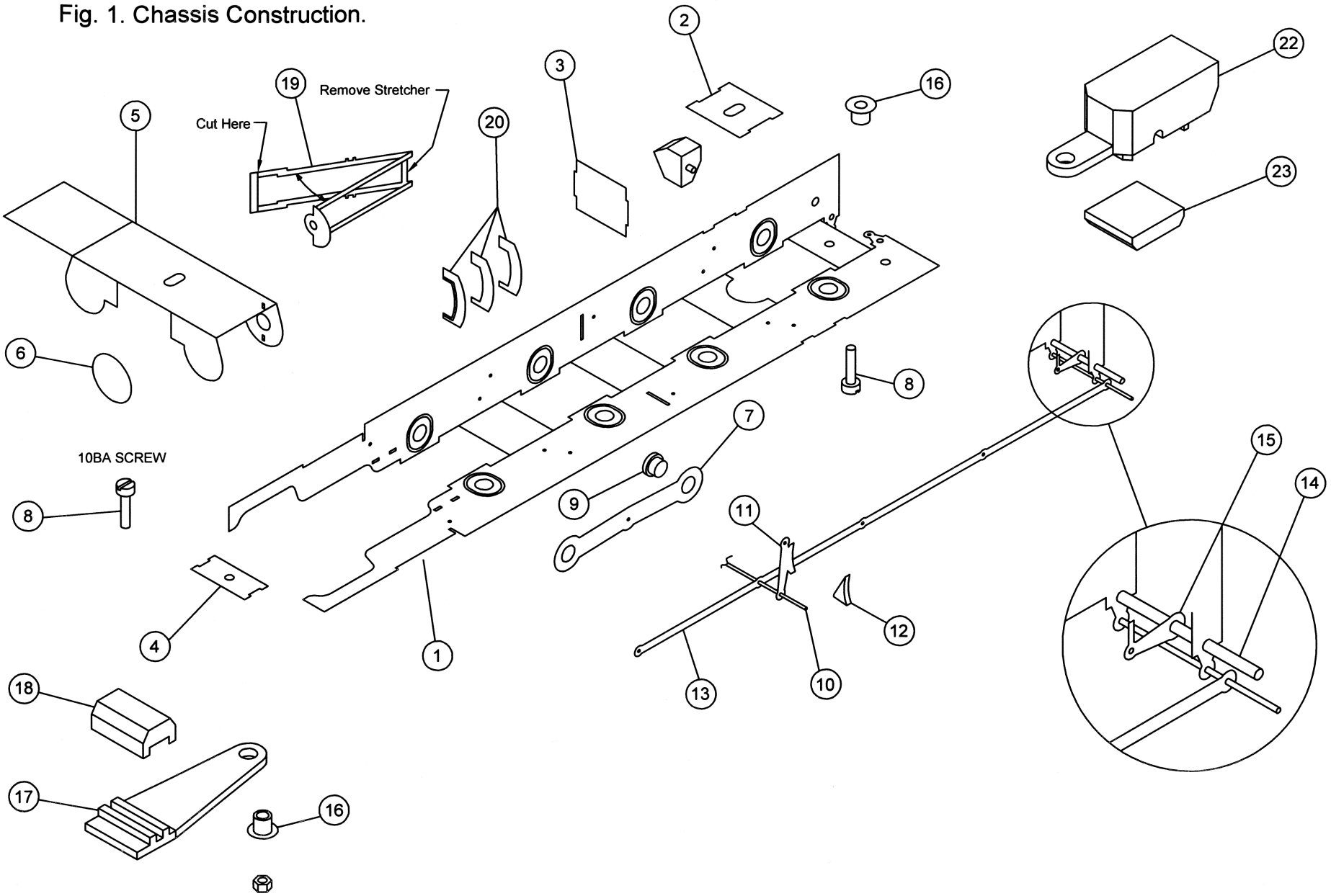


Fig. 2. Body Construction.

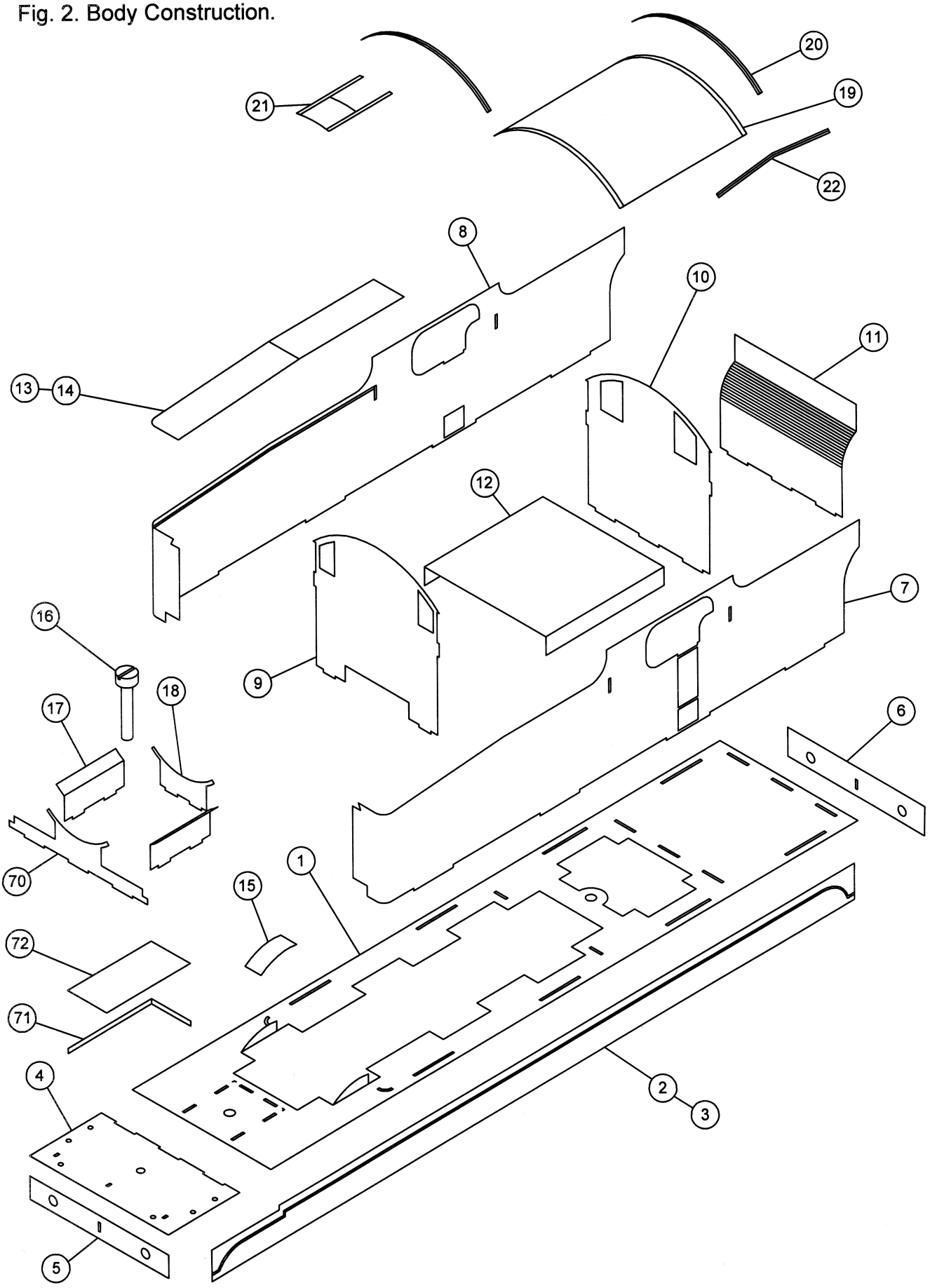


Fig. 3. Secondary Body Construction.