

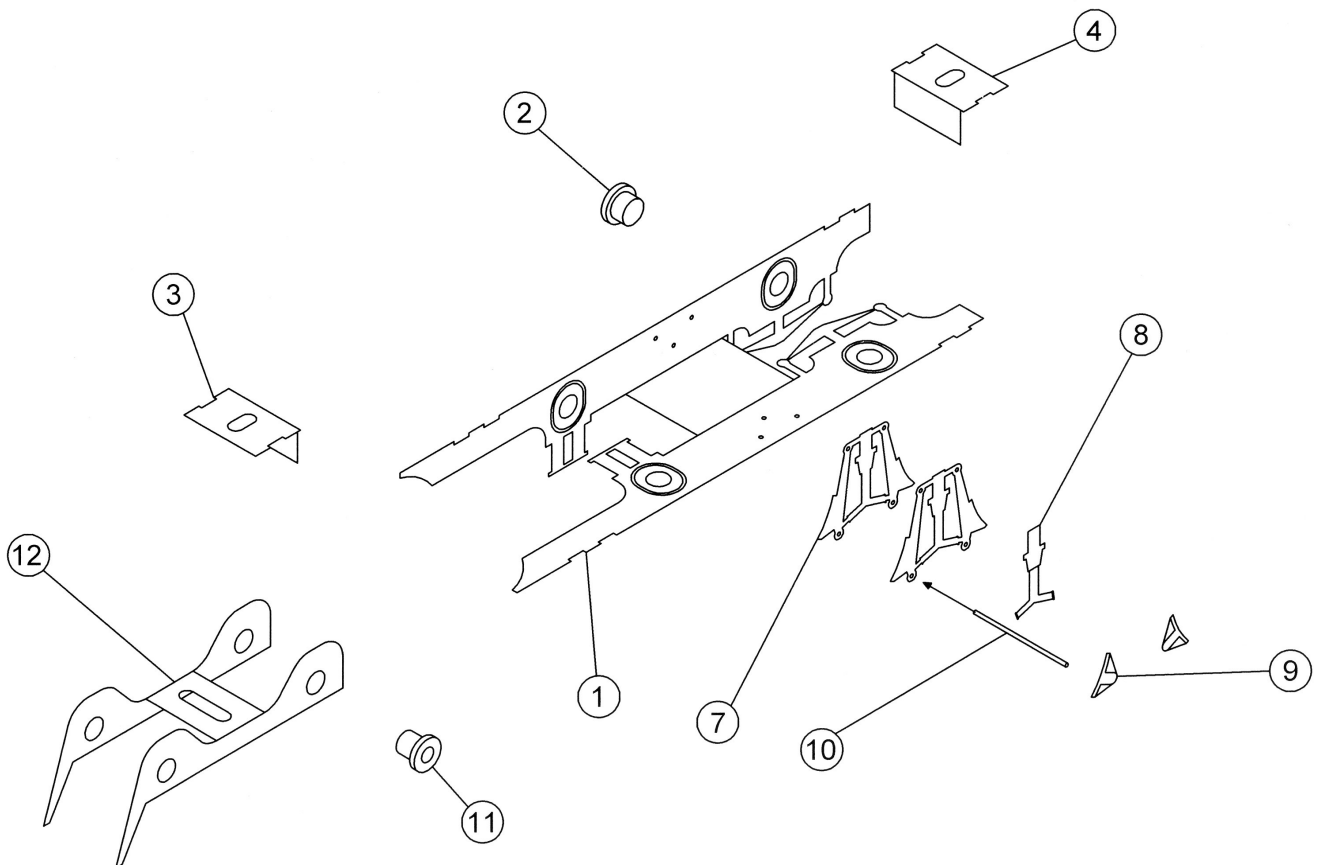
GNSR D40 4-4-0 INSTRUCTIONS

This kit makes either superheated or non-superheated versions of the D40. It is best to decide which you are going to model before starting. Try and get a picture of your prototype as well.

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 front and rear axle holes.

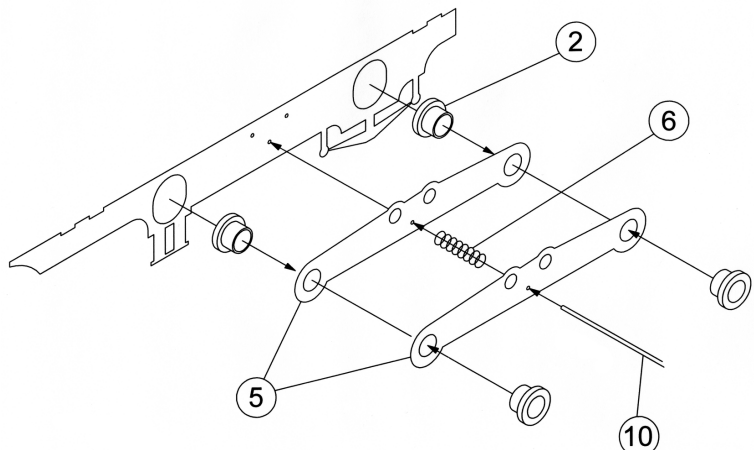
Take the frames (1) and solder the axle bearings (2) into the frames. Fold the chassis up and solder the front and rear frame spacers (3 & 4) into their recesses.



COMPENSATION

Beam compensation requires a fixed point, so that when the loco is on the track it remains level. With this chassis the fixed point is the bogie. Solder the four 2mm bearings (11) into the axle holes in the bogie (12). Turn to the compensating mechanism itself.

Solder the 1/8th axle bearings (2) into the compensating beams (5). The compensating spindle should be cut



from the brass wire (10). The beams are held apart by the compensation spring (6). It is very important that no parts of this mechanism are soldered in a fixed position other than the spindle to the mainframe. Both beams must move independently of each other. The assembly of the beams is otherwise very simple. Make sure you fit the beams so that the large hole is over the rear brake pilot hole. Fit the wheels (to the bogie and chassis) so you can test the compensating mechanism. Fit the bogie spacer (13) and then the bogie and when satisfied that all works O.K. remove the wheels and the bogie and put them to one side.

BRAKE ASSEMBLY

Solder two lengths of the brass wire (10) into the holes in the chassis to form the brake mountings (take care not to get solder on the compensation mechanism). Take the brake hangers (7) and the brake pump overlay (8) and solder the overlay onto the hangers. Solder the brake blocks (9) to the hangers as well. Solder the assembled brakes to the wire **2mm** from the frames. Pass more brass wire through the bottom of the brakes and solder the joints to stop them moving from side to side.

BODY ASSEMBLY

Take the valances (2 & 3) and fold up the bottom steps on each. Add a little solder into the fold for strength. Take the running plate (1) and fit the valances into the recesses under the running plate. Fit the buffer beam (4) into the recess at the front of the running plate and the rear drag beam (5) into the recess at the rear. Solder the small steps (6) into the slots in the step plates.

There are two alternative methods for attaching the cab sides and cab front/splashers as follows:

1. Solder the cab and splasher sides (7) into their slots. Form the reverse curves on the cab front and splasher tops (8) so that they match the sides. Try and chamfer the front edge of the splasher top so that the front merges into the running plate. Locate the cab front into the recesses at the top of the cab sides and solder in place.
2. Form the reverse curves on the cab front/splashers tops (8). Locate the cab front into the recesses at the top of each of the cab sides (7) and solder in place. Chamfer the front edge so that it merges into the running plate. Solder this unit onto the running plate.

Take the frame tops (13 or 14) [note that there are two types of frame tops, one has a shallower front curve than the other. The one with the shallow curve seems to be associated with non superheated locos]. Solder them into the slots in the running plate. Solder three **8BA** screws (27) into the holes in the running plate.

Form the cab floor support (9) and fit between the cab sides, with a 2.5mm gap between it and the rear of the running plate. Solder the cab floor (10) on top of the support. Form the interior cab splashers (11 & 12) and solder them to the cab floor.

Now turn to the boiler (17). For a non superheated model remove the front 2mm of the boiler as indicated by the half etched line. Solder the seam together. Solder the smokebox front (18) to the boiler, the tabs on the boiler fit into the slots on the smokebox front. Form the inner smokebox wrapper (19) and fit around the boiler front. Form the outer smokebox wrapper (20) so that it matches the profile of the smokebox front. Fit the boiler bands (28) now [see Fig. 2a.]. Now check the fit of the boiler into the slots in the cab front. Tack it in place and when satisfied that all is level solder both boiler and firebox firmly in place.

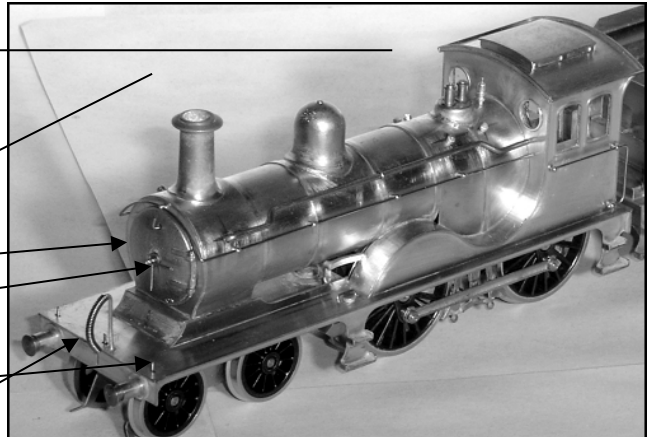
Solder the cab/splasher side overlays in place. Form the cab roof (22) and fold up the side pieces. Tack it in place. The front of the roof overhangs the cab front and the sides, when all is square solder around the seams. Solder the front and rear roof ribbing (23) in place. Solder the roof vent front, sides and rear (24 & 25) into the slots in the roof. Solder the vent top (26) in place.

Solder the safety valve base (42 or 43) in place.

Solder the chimney (33) and dome (34) in place.

Glue the smokebox door (35) into the smokebox front

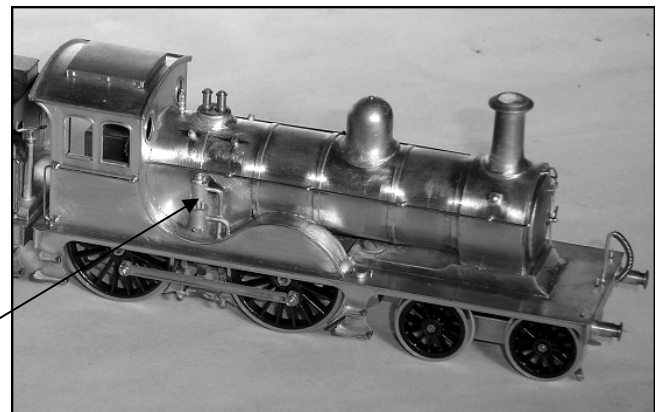
Drill out for the smokebox door handle (54) and lamp brackets (55) and fit in place.



Solder the vacuum pipe (37) in place. Solder or glue the reversing bar (41) behind the frames

Consult Fig. 2a for the positions of the washout plugs (47), snifting valve (48) and ejector pipe hole.

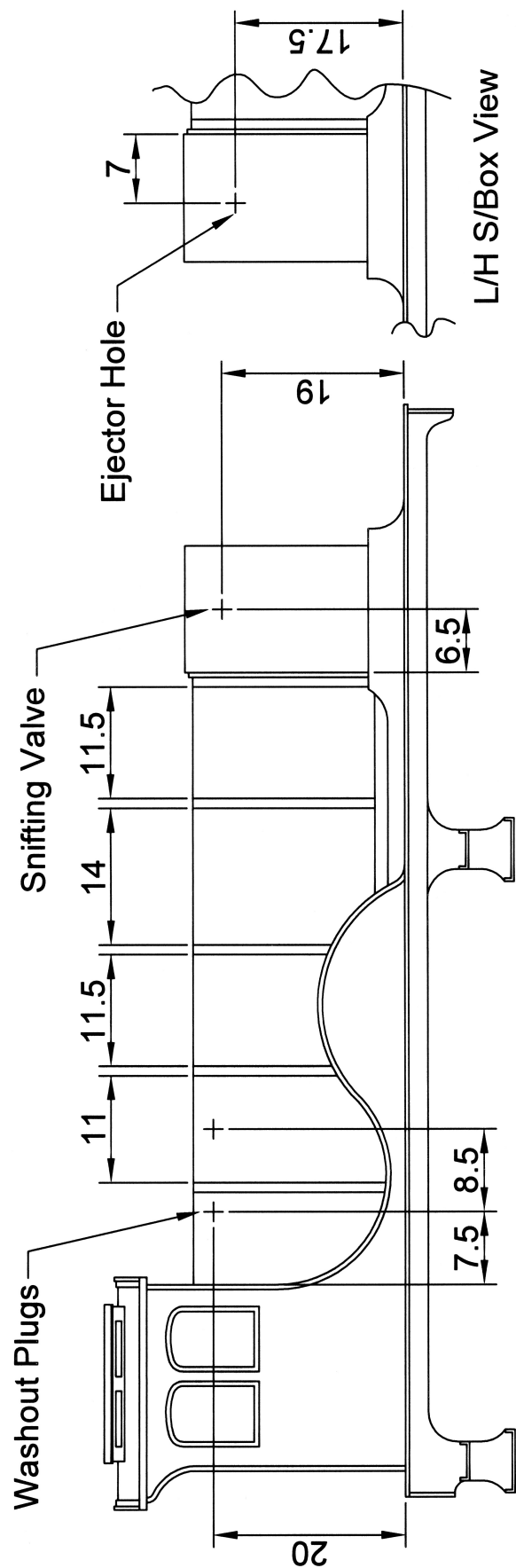
Make a suitable mounting bracket from scrap brass folded into a 'U' shape for the Westinghouse pump (46). Solder the bracket to the firebox in line with the boiler band, and then glue the Westinghouse pump onto the bracket.



Drill out the holes for the sandbox fillers (39) and for the handrails behind the fillers. Glue the fillers and handrails in place. Solder the buffer shanks (38) in place. Fit the handrails to the boiler and cab sides (the hole for the handrail knob on the smokebox sides will have to be drilled).

This exploded view diagram illustrates the assembly of a body. The components are numbered 1 through 27. The main body (1) is a large, curved structure with a central opening. It is supported by a base (2) and a side panel (3). A large, curved piece (4) is attached to the side. A long, curved piece (5) is attached to the top. A large, curved piece (6) is attached to the bottom. A large, curved piece (7) is attached to the side. A large, curved piece (8) is attached to the side. A large, curved piece (9) is attached to the side. A large, curved piece (10) is attached to the side. A large, curved piece (11) is attached to the side. A large, curved piece (12) is attached to the side. A large, curved piece (13) is attached to the side. A large, curved piece (14) is attached to the side. A large, curved piece (15) is attached to the side. A large, curved piece (16) is attached to the side. A large, curved piece (17) is attached to the side. A large, curved piece (18) is attached to the side. A large, curved piece (19) is attached to the side. A large, curved piece (20) is attached to the side. A large, curved piece (21) is attached to the side. A large, curved piece (22) is attached to the side. A large, curved piece (23) is attached to the side. A large, curved piece (24) is attached to the side. A large, curved piece (25) is attached to the side. A large, curved piece (26) is attached to the side. A large, curved piece (27) is attached to the side.

Fig. 2a. Boiler Fittings Positions.



TENDER INSTRUCTIONS

Take the chassis (34) and open up the axle holes with a 3mm drill. Bend down the sides and ends at right angles to the top, and run solder round the joints and folds, then fix the **2mm** axle bushes (35) into the holes. Solder three pieces of brass wire through the small holes to form the brake supports (39). Take the brake blocks (37), and solder them to the hangers (36), making **L/H** and **R/H** pairs. Solder the hangers to the wire supports in the chassis, then thread wire through the holes in the lower ends of the hangers and through the holes in the pull rods (38) to form the tie bars, and then solder the pull rods to the tie bars.

Turn now to the body, take the footplate (1) and solder the buffer beam (4) into the half etched groove in its underside. Solder the valances (5 & 6) into the half etched grooves, and then solder the drag beam (3) in place. Slot the frames (2) into the footplate and solder in place, and then solder an 8BA screw (14) into the two larger holes in the footplate. Cut the drawbar from the brass rod (25), approx 10mm in length, and solder into the hole behind the drag beam.

Take the sides (9 & 10) and rear (8) next and flare out the top 4mm over a piece of 1/4" dia. Bar [Note that the half etched lines go on the **OUTSIDE**]. Slot the sides and rear into the footplate and check that they meet correctly. Make any adjustments and solder in place.

Choose either the high front plate (13) or the low front plate (12) and solder in place. Next solder the internal support (11) into the slot in the footplate.

Next take the coal plate (15) and bend along the fold lines so that when it sits on the internal support its front end slots into the front plate. Make sure the rear end sits level and then solder into the tender. Slot the rear bulkhead (16) into the coal plate. Fit the toolbox mounting plate (17) into the slot in the front plate. Next curve the coping strips (20, 21 and 22) to match the flare of the sides and back, and fix them to the tender body. They will cover the half etched lines. Fold the floor support (18), solder in place and then solder the floor (19) on top of it. Fold the coal rails (23) and solder on to the top edge of the sides and rear. Fit the coal chute (24) into the recess in the front plate.

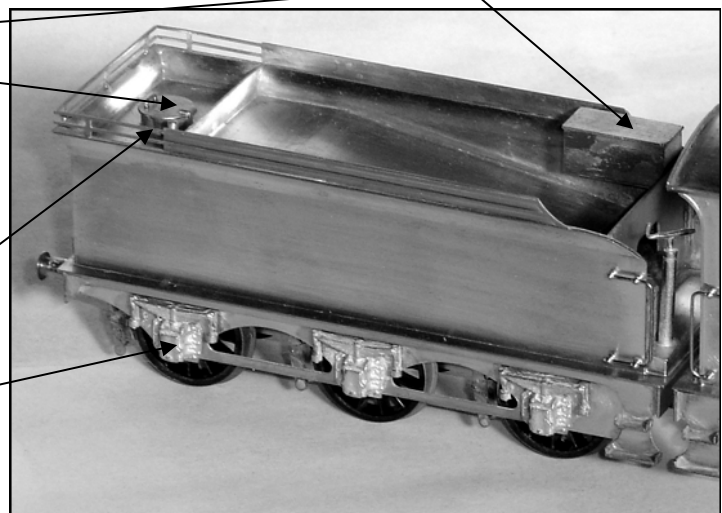
Glue the large toolbox (28) onto its mounting.

Glue the water filler (26) in place. Drill out the holes and fit a handle formed from wire.

Glue the air vent (27) next to the water filler.

Glue or solder the axleboxes (32) onto the frames.

Fit the small toolbox (29) into the corner behind where the brake column (30) fits.



CHASSIS PARTS LIST

- | | |
|-------------------------|-------------------|
| 1. Frames. | 9. Brake Blocks. |
| 2. Axle Bearings. | 10. Brass Wire. |
| 3. Front Frame Spacer. | 11. 2mm Bearings. |
| 4. Rear Frame Spacer. | 12. Bogie. |
| 5. Compensating Beams. | 13. Bogie Spacer. |
| 6. Compensation Spring. | 14. Sandboxes. |
| 7. Brake Hangers. | |
| 8. Brake Pump Overlay. | |

BODY PARTS LIST

- | | |
|---|--|
| 1. Running plate. | 33. Chimney. |
| 2. R/H Valance. | 34. Dome. |
| 3. L/H Valance. | 35. Smokebox Door. |
| 4. Buffer Beam. | 36. Cylinder Cover. |
| 5. Drag Beam. | 37. Vacuum Pipe. |
| 6. Valance Steps. | 38. Buffers. |
| 7. Cab Sides. | 39. Sandbox Fillers. |
| 8. Cab Front/Splasher Top. | 40. . |
| 9. Cab Floor Support. | 41. Reversing Bar. |
| 10. Cab Floor. | 42. Ramsbottom Safety Valve. |
| 11. R/H Cab Splasher. | 43. Safety Valve Base. |
| 12. L/H Cab Splasher. | 44. Safety Valves. |
| 13. Frame Tops (Non Superheated Locos). | 45. Whistle. |
| 14. Frame Tops (Superheated Locos). | 46. Westinghouse Pump. |
| 15. R/H Side Overlay. | 47. Washout Plugs (2 types). |
| 16. L/H Side Overlay. | 48. Snifting Valve. |
| 17. Boiler. | 49. Regulator Handle. |
| 18. Smokebox Front. | 50. Backhead. |
| 19. Inner Smokebox Wrapper. | 51. Brass Wire. |
| 20. Outer Smokebox Wrapper. | 52. Lower Frame Sections. |
| 21. Cab Spectacle Frames. | 53. Forward Lower Frame sections. |
| 22. Cab Roof. | 54. Smokebox Door Handle. |
| 23. Roof Ribbing. | 55. Lamp Brackets. |
| 24. Roof Vent Sides. | 56. Handrail Knobs. |
| 25. Roof Vent Front and Rear. | 57. . |
| 26. Roof Vent Top. | 58. Ejector Pipe (form from thicker wire). |
| 27. 8BA Screws & Nuts. | 59. Split Pins. |
| 28. Boiler Bands. | |
| 29. . | |
| 30. . | |
| 31. . | |
| 32. . | |

TENDER PARTS LIST

- | | |
|-----------------------------------|--------------------------|
| 1. Baseplate. | 22. Rear Coping Strip. |
| 2. Frames, L/H & R/H . | 23. Coal Rails. |
| 3. Drag Beam. | 24. Coal Chute. |
| 4. Buffer Beam. | 25. Brass Rod |
| 5. R/H Valance. | 26. Water Filler. |
| 6. L/H Valance. | 27. Air Vent. |
| 7. Valance Steps | 28. Large Toolbox. |
| 8. Tender Rear. | 29. Small Toolbox. |
| 9. R/H Tender Side. | 30. Brake Column. |
| 10. L/H Tender Side. | 31. Vacuum Pipe. |
| 11. Tank Top Support. | 32. Axleboxes. |
| 12. Low Front Bulkhead. | 33. Buffers. |
| 13. High Front Bulkhead. | 34. Chassis. |
| 14. 8BA Screws & Nuts. | 35. 2mm Bearings. |
| 15. Tank Top. | 36. Brake Hangers. |
| 16. Rear Bulkhead. | 37. Brake Blocks. |
| 17. Toolbox Platform. | 38. Brake Pull Rods. |
| 18. Front Footplate Support. | 39. Brass wire. |
| 19. Front Footplate. | 40. Handrail Knobs. |
| 20. R/H Side Coping Strip. | 41. |
| 21. L/H Side Coping Strip. | |

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