

General Assembly Notes SB-850 Stationary Horizontal Boiler for the Modeler by Charles Brommer and Brett Gallant

Begin by inspecting and cleaning each casting carefully. Drill all the required holes then check the fit of all mating parts prior to weathering and gluing. Drill #74 holes in the back head for the three try cocks, two gauge cocks, hand hole crab, and the smoke box door handle. Form the smoke box door handle from a piece of the .015" wire. Spot and drill a #78 hole at the top center of the firebox then drill a #78 hole in the steam gauge. Form the syphon tube from the .015" wire then CA (super glue) the gauge to the tube. Set it and all the other back head details aside.

Run a 1/16" drill through the two larger holes on the steam dome and check the fit of the steam tee and pop valve. Next run a #67 drill through the small hole and check the fit of the whistle. Spot and drill a #67 hole below the third rivet to the left of the seam on the dome as shown in the drawing and pictures. Drill two #71 holes in the boiler man hole and check the fit of the man hole crabs. CA the smoke collar to the barrel. Drill a #67 hole in the smokebox front and check the fit of the handle.

Weathering and aging the cast metal parts is quite simple. Each piece is "dunked" in a plastic container filled with a chemical blackening agent like "A-West Blacken-It". A small detail brush is used to remove any air bubbles that get trapped on the surface of the casting. Once the desired intensity is achieved the piece is removed and dried off. A beautiful and realistic aged patina of well worn metal results from rubbing the piece with a towel or your finger. The resin pieces will be weathered later. Weather all the metal parts now, prior to assembly. When CA (super glue) is used it will be necessary to remove the weathering from the contact area as it will inhibit adhesion.

CA the feet to the ash pan and fire box then CA the steam dome to the barrel. Be sure the two holes are facing in the proper direction.

The resin is painted using Floquil paint and finely powdered artists chalk. This combination producing a very realistic aged texture with lots of character. Since the resin is tinted no base color is required. Begin by making up a 50/50 mixture of Floquil Roof Brown and Rust creating a "Dark Rust" paint. Now lets turn out attention to the chalk used to create the mottled texture. The type of chalk I prefer is sold in a small box with individual compartments for each color. Use a single edge blade and scrape it along the chalk stick to create the powder. Keep the different colored chalk powders in these compartments. I use the fine art brands of pastel chalks like Grumbacher, Rembrandt, Schmincke, and Sennelier. Why do I use these brands over the hobby store brands? The reason is very simple! Quality. The pigments in the fine art brands are much more intense and powder very finely and evenly. I like the Grumbacher brand the best for rust colors as they make an excellent range of orange/red shades. I like the

Rembrandt brand for arth and wood tones. The most important thing to keep in mind is that you purchase a range of colors so you end up with several shades of orange and brown as well as white, grey, and black. Both of my favorite brands make introductory sets, or you can purchase several sticks individually. They are moderately priced but a little chalk goes a long way. One set can last for many years. Dip just the tip of a medium rounded brush into the dark rust paint then immediately into a light shade of orange powdered chalk. Now randomly blot the resulting mixture onto the firebox creating a mottled uneven layer. Do not attempt to cover the entire surface. Try this first full strength as described then remove most of the paint onto a rag before blotting randomly on the casting. Now repeat with darker chalk powders, over the same area, using less powder as the colors darken. A very small amount of Black can be applied. The key is to keep the chalk coverage light and vary the colors used. The application must be totally random to achieve a mottled looking finish. Mix a little grey (various shades) and browns in at random. Never brush, always blot! Repeat as needed to paint the entire fire box/back head/ash pan casting then the barrel casting. To see pictures of my boiler in color be sure to visit my website. Allow to dry.

Slide the exhaust tee onto the smoke box support tube (do not glue) then CA the tube to the support base. Now CA the tube to the boiler.

Mix up some two-part, five minute epoxy and glue the fire box/back head/ash pan casting to the barrel. Be sure they are lined up properly. Allow the epoxy to set before proceeding.

CA all of the back head details in place. Install the water glass as you set the gauge cocks in place. CA the man hole crabs and the smoke box handle in position. Locate the .020" brass wire, cut a 3" long piece off then make a right angle bend to form the injector steam pipe. Thread the wire through the glove valves then set the wire into the hole made in the side of the steam dome. Next cut a piece of the wire 2-3/8" long and CA one end in the check valve, the other in the injector. CA the check valve in the barrel and then adjust the length of the injector steam pipe until its end fits into the top of the injector as shown. Now CA the injector steam pipe in the steam dome and to the injector. The third fitting on the injector (detail c) is for a 1/32" supply pipe (not included) to be connected to your water supply after permanent installation. CA the pop valve, steam tee, and whistle on the dome. The steam tee should be orientated so it will line up with the mill engine steam pipe (detail a). Once the boiler has been permanently installed attach and CA the exhaust pipes and ell's in place. The long exhausr pipe connects to the exhaust tee on the mill engine (detail b). Finally install the stack and guy ring.

SB-850 Stationary Horizontal Boiler

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| 1. Barrel (resin) | 10. Hand Hole Crab | 21. Injector Delivery Pipe (.020" wire) |
| 2. Fire Box, Backhead, and Ash Pan (resin) | 11. Steam Dome | 22. Smoke Box Handle |
| 3. Foot (4) | 12. Pop Valve | 23. Smoke Collar (resin) |
| 4. Steam Gauge | 13. Whistle | 24. Smoke Stack (1/2" tube) |
| 5. Syphon Tube (.015" wire) | 14. Steam Tee | 25. Guy Ring |
| 6. Gauge Cock (2) | 15. Steam Pipe (3/32" tube) | 26. Smoke Box Support (1/8" tube) |
| 7. Water Glass (.015" wire) | 16. Ell (4) | 27. Support Base |
| 8. Gauge Guard (.015" wire) | 17. Globe Valve (2) | 28. Exhaust Tee |
| 9. Try Cock (3) | 18. Injector | 29. Short Exhaust Pipe (2) (3/32" tube) |
| | 19. Check Valve | 30. Long Exhaust Pipe (3/32" tube) |
| | 20. Injector Steam Pipe (.020" wire) | 31. Man Hole Crab (2) |



