

General Assembly Notes ME-900 100 H.P. Mill Engine for the Modeler by Charles Brommer and Brett Gallant

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|----------------------------|--------------------------------------|------------------------------------|
| 1. Base Plate | 10. Connecting Ros (2) | 19. Tee |
| 2. R.H. Trunk | 11. Flywheel (2 pcs.) | 20. Ell |
| 3. L.H. Trunk | 12. R.H. Eccentric | 21. Shut-Off Valve (2) |
| 4. R.H. Cylinder | 13. L.H. Eccentric | 22. Steam Supply Pipe (brass tube) |
| 5. L.H. Cylinder | 14. Eccentric Strap (brass wire) | 23. Governor Valve |
| 6. Gland (2) | 15. Valve Stem (2) | 24. Governor |
| 7. Crank Disc (2) | 16. Governor Drive Wheel | 25. Steam Pipe (brass tube) |
| 8. Crank Shaft (brass rod) | 17. Cylinder Drain Cock (brass wire) | 26. Lubricator |
| 9. Cross Head (2) | 18. Exhaust Pipe (brass tube) | 27. Syphon Tube (brass wire) |
| | | 28. Valve Handwheel (3) |

Begin by inspecting and cleaning each casting carefully. Check the fit of all mating parts prior to weathering and gluing. 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. A very fine grit sandpaper (220 or better) is used on any surface where normal use would prevent the aging such as the face of the flywheel, crank disc, cross head, etc... The constant motion of these would keep them shiny and prevent them from appearing old and dirty. This is quite evident in the photographs. Weather all the 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.

Paint the resin base plate with full strength Floquil Concrete and allow to dry. The weathering is achieved using finely powdered artist chalks. Use a single edge blade and scrape it along the chalk stick to create the powder. Now dip *just the tip* of a medium rounded brush into Floquil Mud then immediately into a light shade of grey powdered chalk. Now randomly blot the resulting mixture onto the casting creating a mottled uneven layer. Do not attempt to cover the entire surface. Repeat with darker chalk powders using less powder as the colors darken. 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.

Set (do not glue) both valve stems in their guides on each trunk making certain they move freely back and forth. The tiny hole should face inward. Glue both trunks to the base plate cast in the foundation or to the supplied metal base plate. Drill both cylinders #74 for the drain cocks and #70 for the valve stems then glue both cylinders squarely on their respective trunks.

Paint the spokes and inside of the flywheel halves with Floquil Reefer Grey then glue both halves together with their spokes aligned. Run the crankshaft through its bearings on the trunks, the flywheel, both eccentrics, and the governor drive wheel. Be sure each piece is in their proper position and orientation. Glue the flywheel to the crankshaft and the crankshaft to the trunk. Once these pieces are set firmly cut and glue the eccentric straps to the holes in the valve stems and eccentrics then glue the valve stems to their trunk guides. Do not glue the governor drive wheel to the crankshaft yet.

Glue the glands inside the trunks then glue the crank discs in position. Note how their pins are orientated at a 90° angle to one another. Next glue the cross heads and connecting rods.

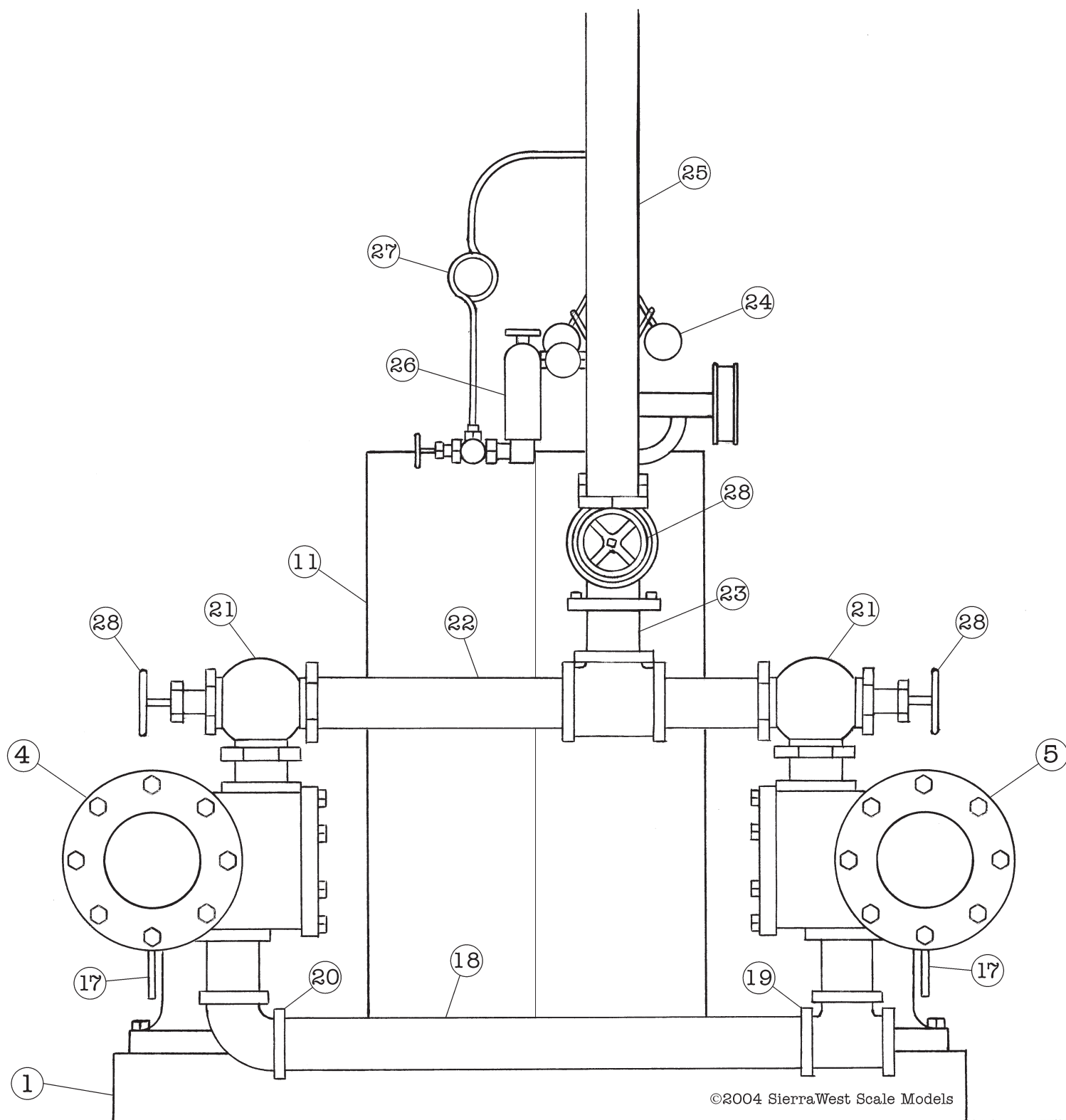
Assemble and glue the exhaust pipe, ell, and tee together and while the glue is setting, install on the underside of the cylinders. Locate the tee on the side your boiler will eventually be located.

Paint the two balls on the governor brass then glue the governor on the governor valve. Next slide the governor valve onto the steam supply pipe. Do not glue it in place yet. Glue the shut-off valves and steam supply pipe in position on top of the cylinders. Be sure to orient the governor valve/governor correctly. Once set align the governor drive wheel and the governor pulley then glue them in place. Make and install the governor belt. Belts are easily modeled using "Tyvek" plastic. Envelopes made from this material can be purchased at any office supply store. Cut the material to the appropriate width then stain brown to simulate leather with a little thinned Floquil Roof Brown. Allow to dry completely then use tiny drops of CA to bond it in place around the wheels. Be sure to locate the seam where it will be hidden best.

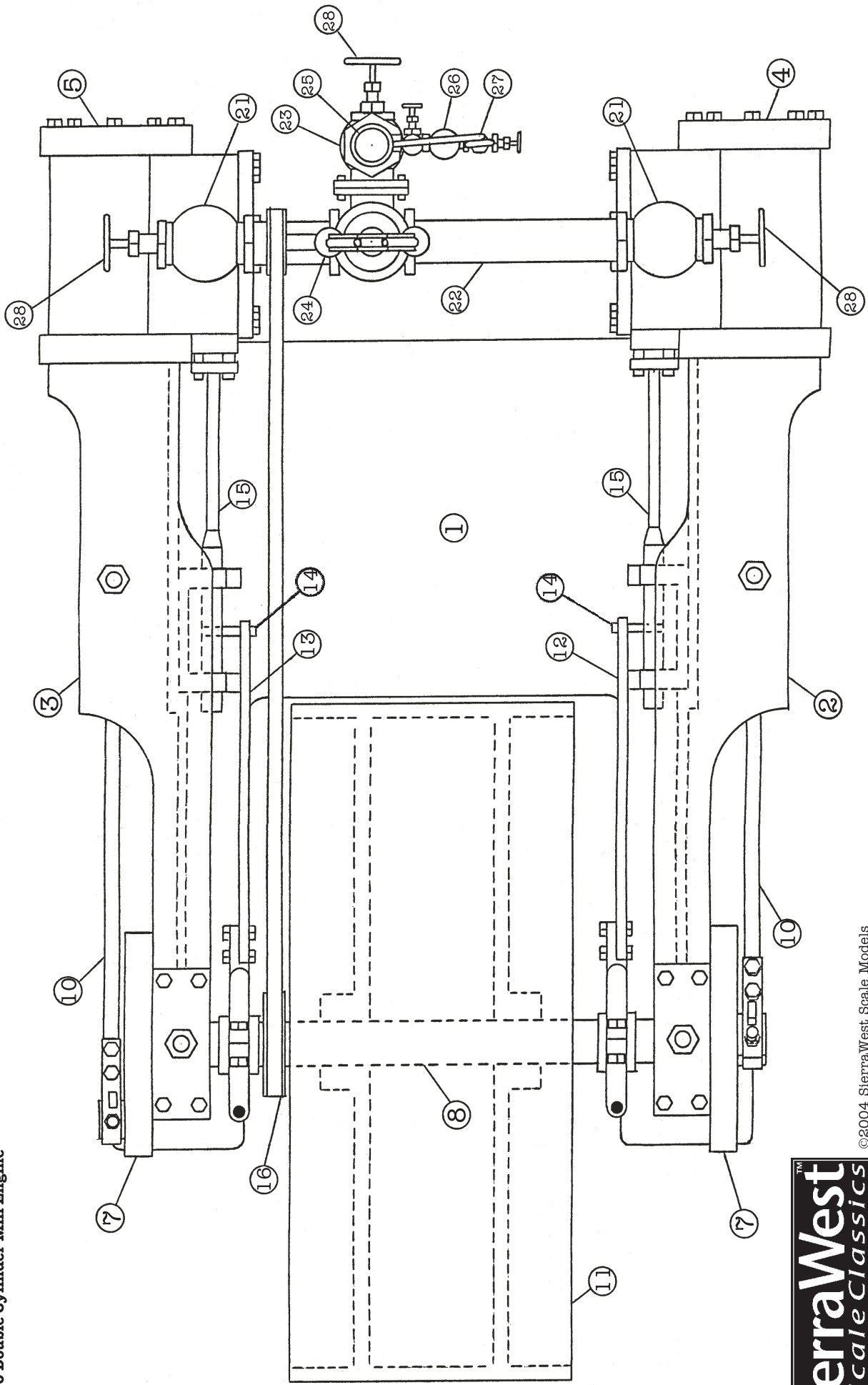
Drill holes #72 in the steam pipe for the lubricator and siphon tube. Glue the lubricator in place then bend the siphon tube and glue it in position. Once set glue the steam pipe to the governor valve. Glue the valve handwheels in place then paint them red. Finally cut tiny pieces of the included thin wire and glue them in place under the cylinder as drain cocks.

ME-900 Double Cylinder Mill Engine

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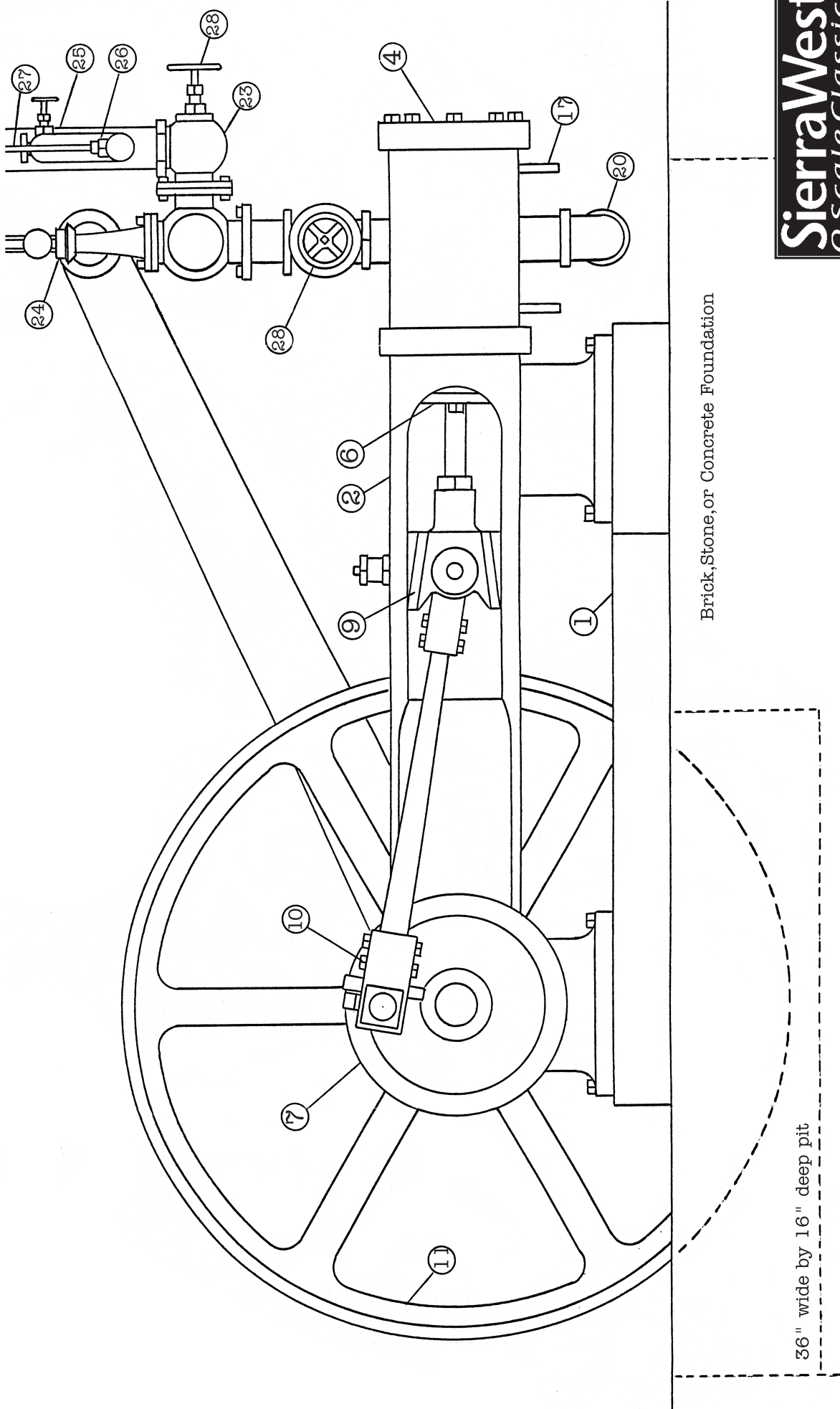
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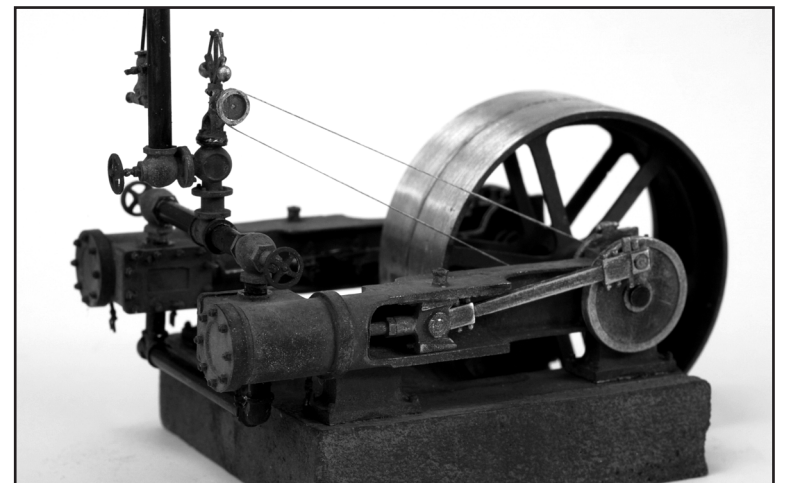
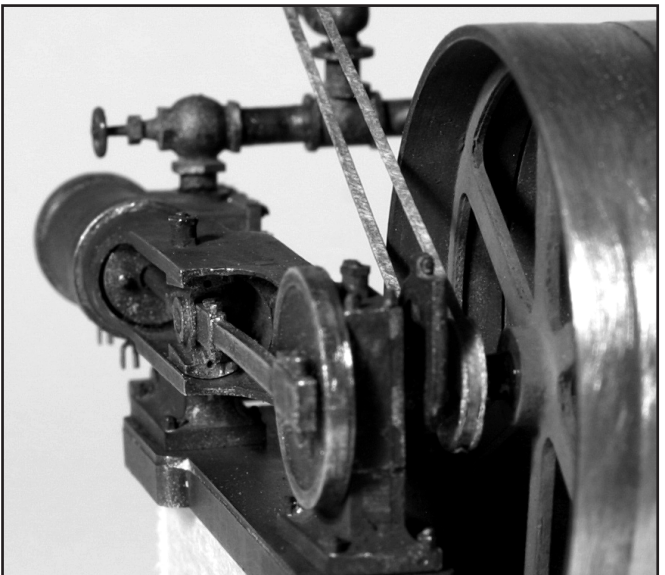
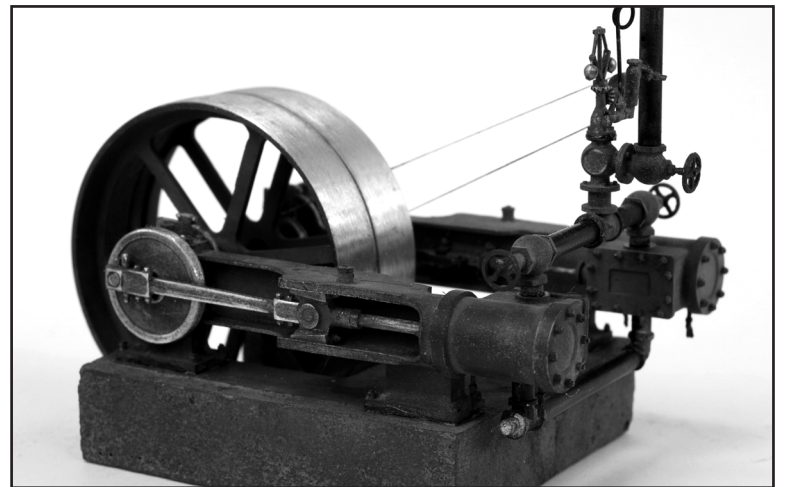
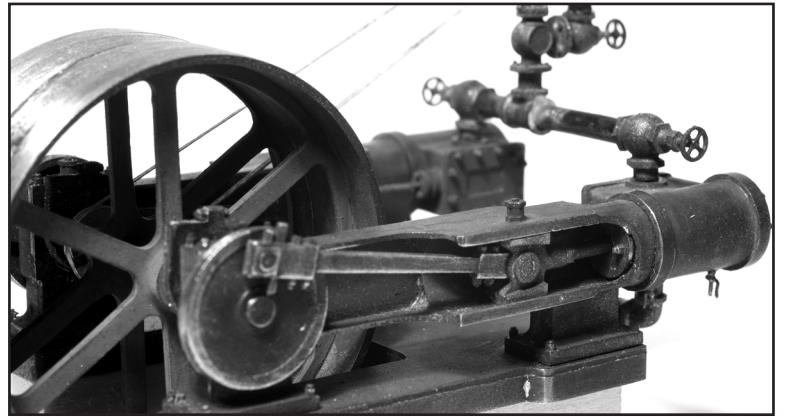
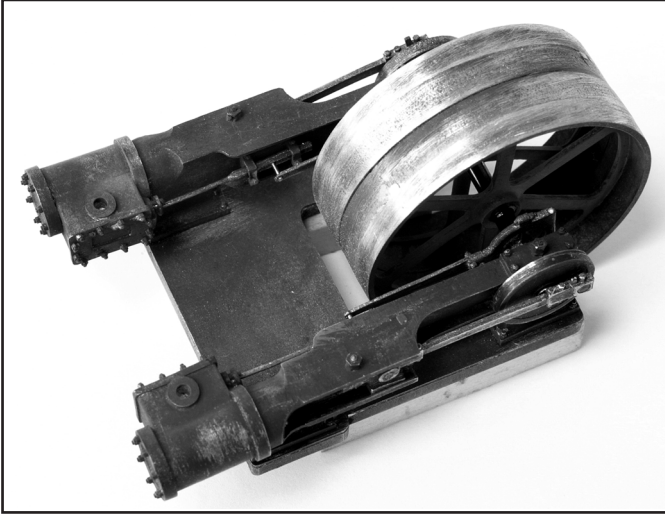
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