



HO Scale Structure Kit 933-2957

ASHLAND BLOWER ENGINE HOUSE

Thanks for purchasing this Cornerstone Series® kit. All parts are made of styrene so use only compatible glue and paints to assemble your model. Please take a few minutes to read these instructions and study the drawings before starting construction.

While ancient humans used all types of natural metals, iron (which is seldom found in a natural state) remained rare for thousands of years. Meteorites probably provided the earliest source of iron, which formed as the rock passed through the earth's atmosphere and was superheated.

At some point, humans learned that ore-bearing rocks would soften when exposed to very high levels of heat. Crude charcoal-burning hearths, often constructed on the sides of hills where airflow was accelerated, were the next development. As more air was forced into the fire, the fuel burned more completely, raising the temperature enough to produce molten iron. As early as 31 A.D. a Chinese inventor is believed to have created a water-powered device that forced air into a hearth. From this early beginning, the use of forced air to aid smelting ore became the norm.

Around 1350 A.D., the shaft furnace, with passages at the bottom to force air inside, appeared in central Europe. By the 1600s, furnaces were supplied with air by a crude form of compressor consisting of a large leather bellows driven by a waterwheel, creating the first blast furnaces. Small iron works operated with these basic ideas until the 1850s.

The industrial revolution created a huge demand for iron, but with no way to remove its natural impurities, its uses were limited as it simply wasn't strong enough for many jobs. Steel offered an answer, but was difficult to produce and very expensive as a result.

Technological advances in the late 1800s dramatically increased steel production.

Stationary steam engines provided huge amounts of power in virtually any location. And improved air compressors, known as blowing engines, were developed that could provide enormous quantities of air.

In turn, these opened the door to larger and more efficient blast furnaces, as well as the bessemer converter and the open hearth furnace, both of which used huge quantities of air to improve combustion and literally burn the impurities out of molten iron.

The blowing engines themselves were huge and required protection from the elements. Early examples were built of brick, and the structure itself was simply known as the "blower engine house." As I-beams and corrugated steel plate could often be made on site, newer structures were built of steel, although the old name remained in use.

While electric arc and basic oxygen furnaces have replaced the open hearth and bessemer converter, the blowing engine house is still an important part of a steel works. Putting the blast into a blast furnace is done using three stoves (some use four), which are huge heat storage devices, supplied with air by the

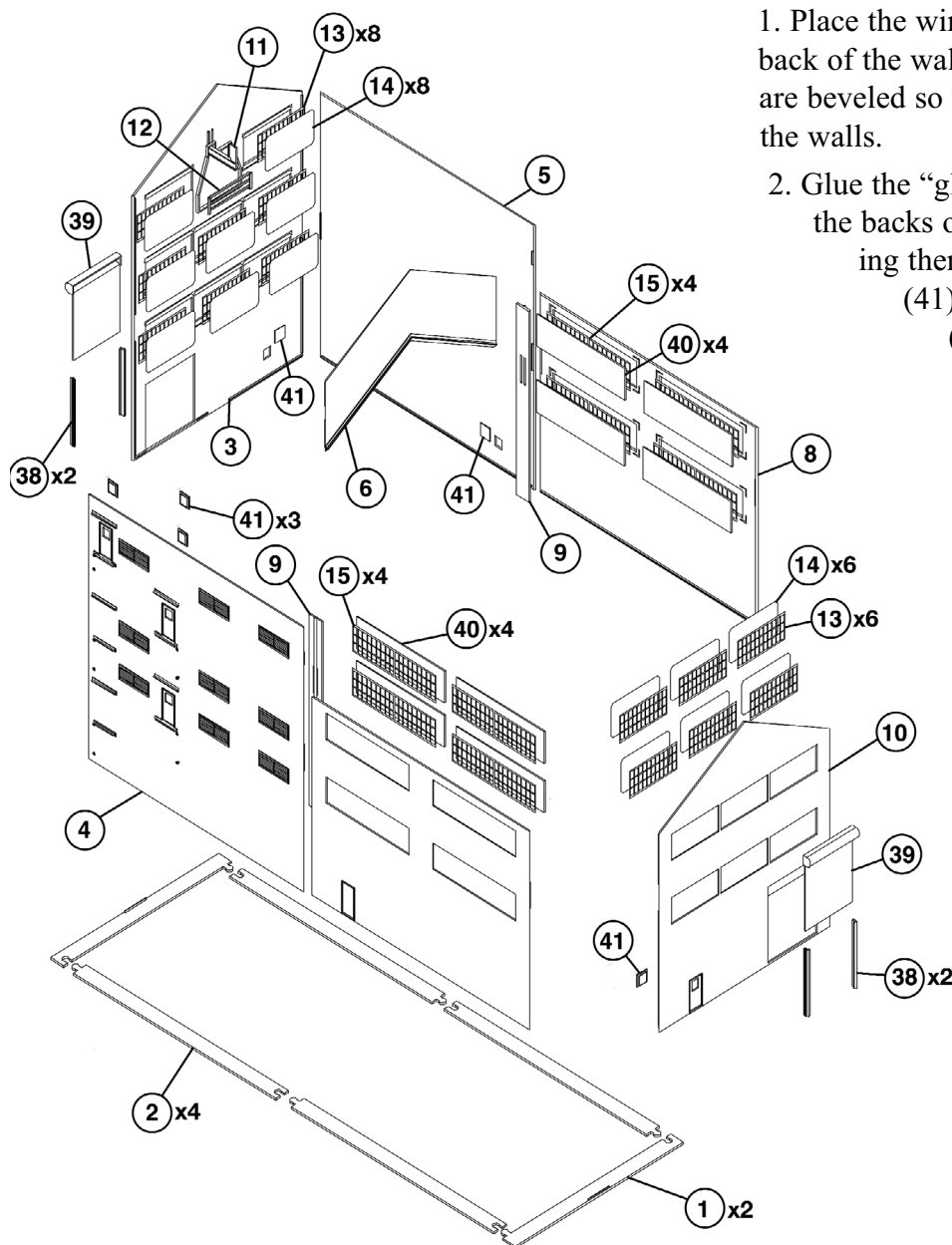
blower house. The process continuously rotates, with one stove on blast, one being heated and one on stand-by. Pressurized air is supplied to each through the cold blast main, a huge pipe running from the blower house. Once heated to 1800°F, the air is blown through the hot blast main into the furnace, where it forces the coke to burn faster creating the heat and reducing gases that melt the charge.

ON YOUR LAYOUT

Based on a prototype at Lorain, Ohio, this massive building captures the look of the real thing in a size that fits most layouts.

It's perfect alongside the Blast Furnace (#933-2973), and includes piping to connect with the cold blast main on the furnace. For custom installations, additional piping is available separately in the Blower House Piping kit (#933-2958).

For additional ideas to expand your steel modeling, look for the complete series of Ashland Iron & Steel kits including the Hulett Unloader (#933-2966), Rolling Mill (#933-2971), and Coke Oven & Quencher (#933-2972) at your participating hobby shop, see the latest Walther's HO Scale Reference Book or visit us online at walthers.com.



1. Place the windows (13, 15) into the openings in the back of the walls (3, 8, 10). Note: The window frames are beveled so that they will fit flush with the backs of the walls.

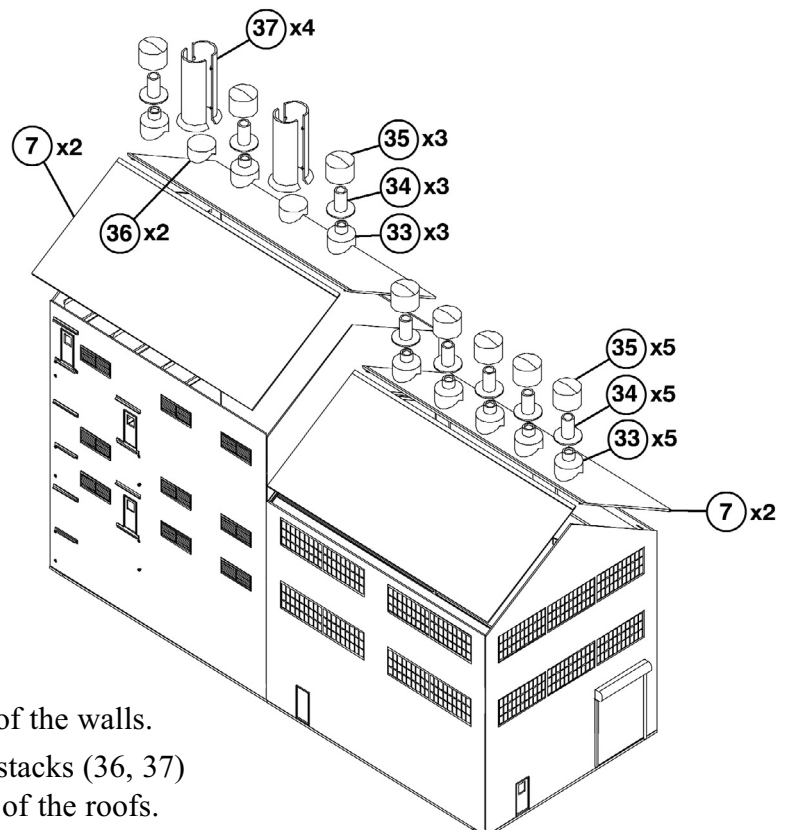
2. Glue the "glass" (14, 40), beveled side down, over the backs of the appropriate windows, thereby holding them in place. Then glue the door "glass" (41) in the openings in the backs of the walls (3, 4, 5, 10) as shown.

3. If you wish to have an opening for transferring materials up to the top level, cut out the area marked between the top two windows on wall #3. Note: Cut following the grooves on the back of the wall. Then glue the railing (12) in place from the back.

4. Glue the door tracks (38) on both sides of the doorways, track grooves facing inwards, on walls #'s 3 and 10. Then from the top, slide the door (39) down in between the tracks and glue in place. Note: You can model an open door by removing the plastic below the roll up housing. You can also model a partially opened door by cutting straight across the door at any height and removing the bottom portion.

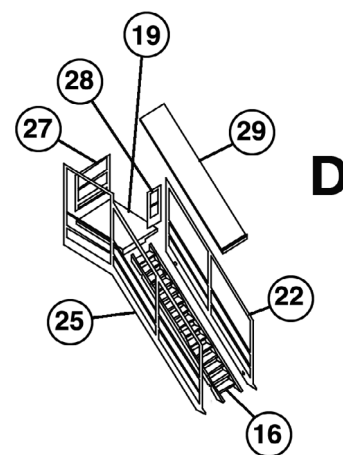
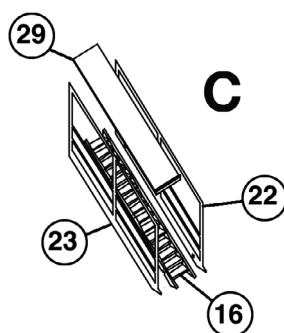
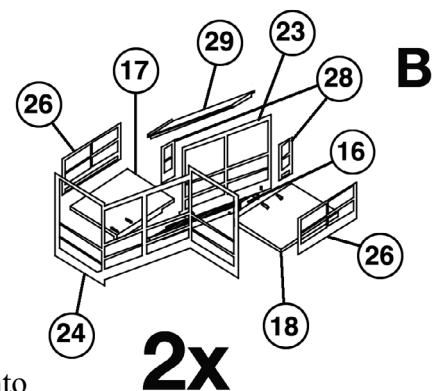
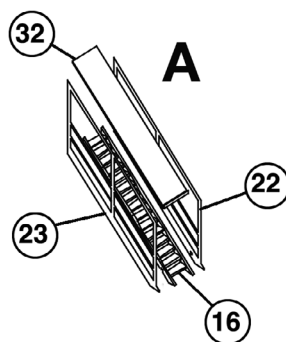
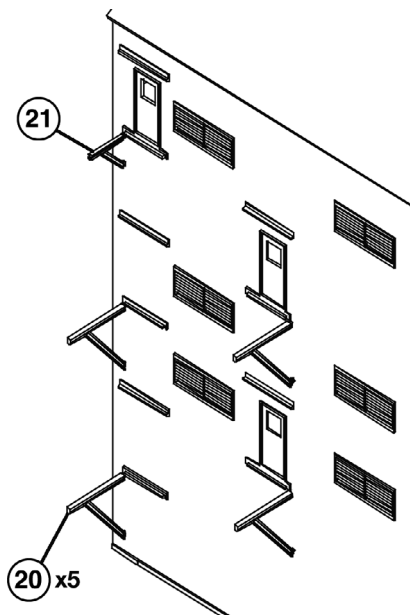
5. Using the wall joiners (9), glue the side walls (4, 5, 8) together in the arrangement illustrated.

6. Glue the base (1, 2) together. Then glue the side and end walls together, along with the base. Next glue the back top wall (6) in place. Note: If you opened the hole up in wall #3, glue the crane beam (11) into position from the backside of the wall.



7. Glue the roof halves (7) on top of the walls.

8. Glue the vents (33, 34, 35) and stacks (36, 37) together and then along the crown of the roofs.



9. Glue the large (20) and small (21) braces into the holes on the side of wall #4.

10. Glue the lower stairs **A** (16, 22, 23, 32) together and set aside.

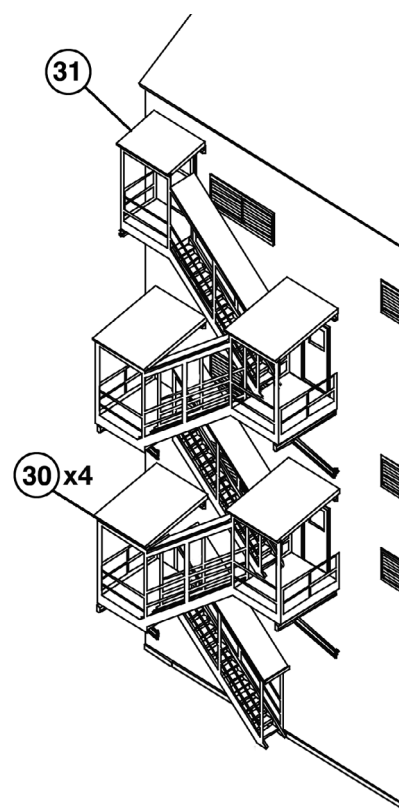
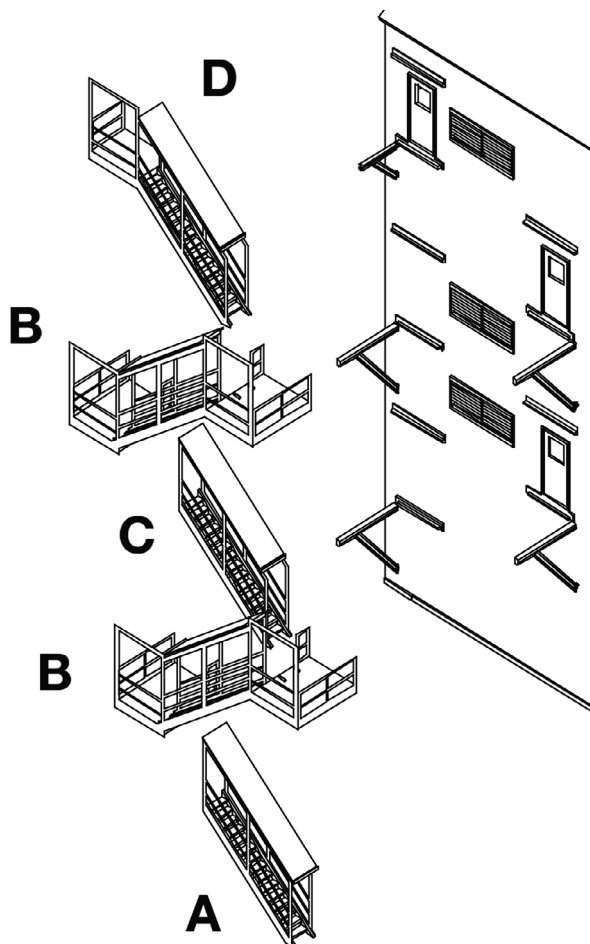
11. Glue the stairways **B** (16, 17, 18, 23, 24, 26, 28, 29) together and set aside. Note: This stairway is used twice, so two need to be constructed.

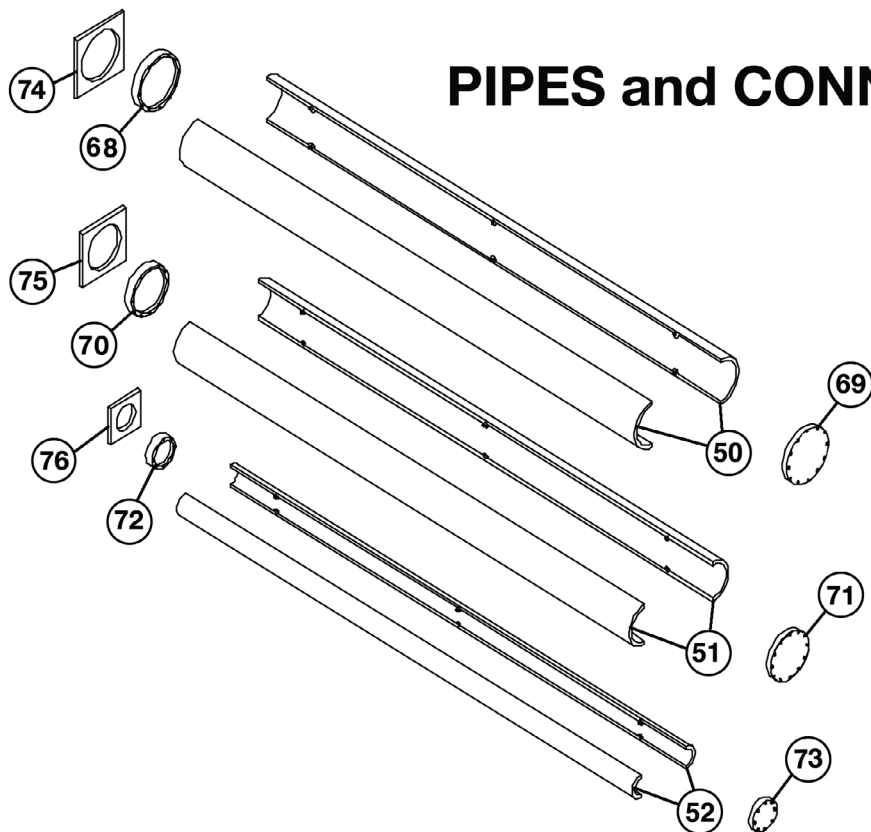
12. Glue the middle inside stairway **C** (16, 22, 23, 29) together and set aside. Note: Roof should line up with the top posts.

13. Glue the top stairway **D** (16, 19, 22, 25, 27, 28, 29) together and then glue this in place on the small bracket as well as the ledge below the top door.

14. Now proceed to glue the rest of the finished stairs to the brackets and wall ledges as shown.

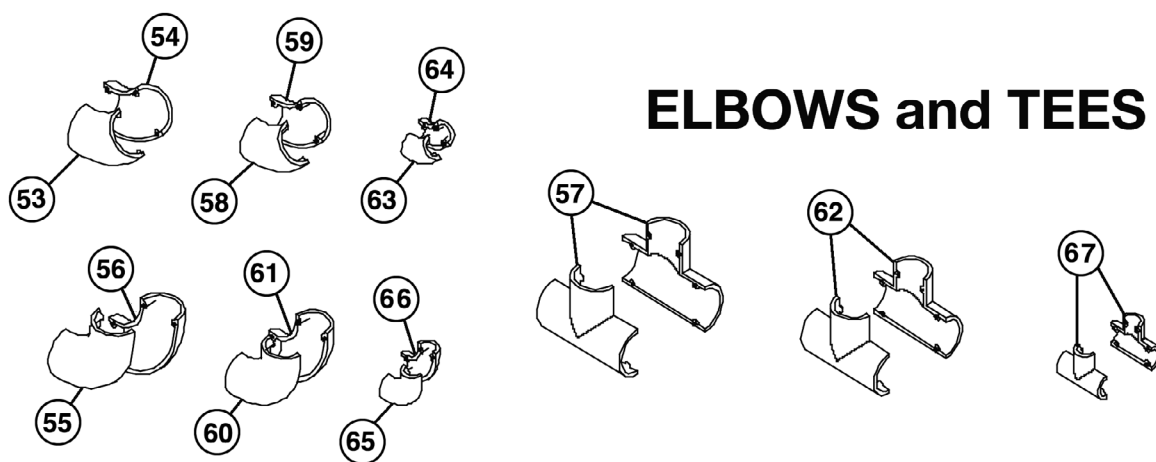
15. Glue the platform roofs (30, 31) in place. Note: The lip underneath the roofs rests on the stairway supports, not the ledges on the wall.



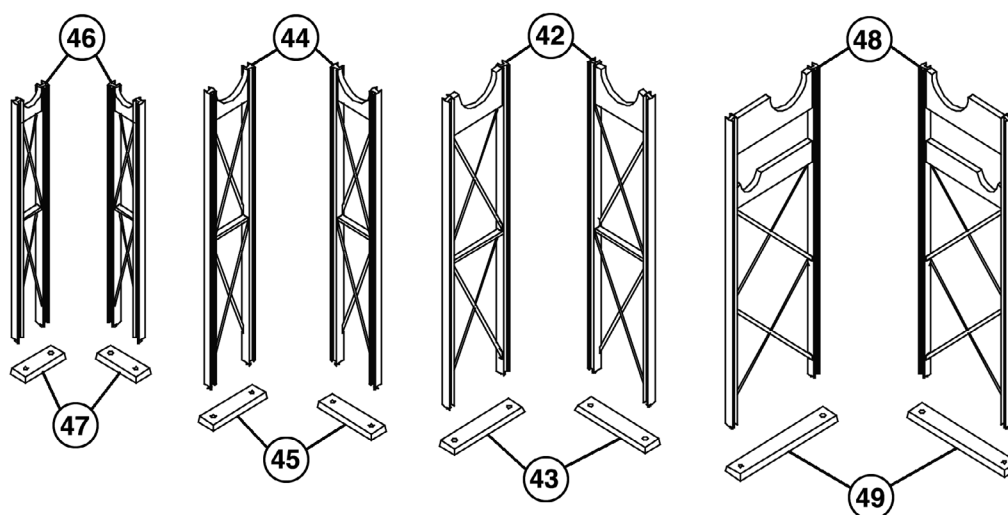


PIPES and CONNECTORS

This kit provides you with three different diameter sized pipes (50, 51, 52) along with connectors (68, 70, 72), caps (69, 71, 73), wall mountings (74, 75, 76), elbows (53/54, 55/56; 58/59, 60/61; 63/64, 65/66) and tees (57, 62, 67) to match each pipe size. There are also supports with bases (46/47, 44/45, 42/43, 48/49) that accommodate each sized pipe. You will be able to hook up the piping from the Blower House (you can attach the pipes on any wall that will fit your layout needs) to the Blast Furnace (933-2973), sold separately. If you need more piping, there is a separate piping kit (933-2958) available.



ELBOWS and TEES



SUPPORTS

DECALING

1. After cutting out the decal, dip in water for 10 seconds, remove and let stand for 1 minute. Slide decal onto surface, position and then blot off any excess water.

2. Lightly brush Micro Sol® on top. This will soften the decal, allowing it to conform to irregular surfaces.
DO NOT TOUCH DECAL while wet!

3. When decal is thoroughly dry, check for any trapped air bubbles. Prick them with the point of a small pin or hobby knife blade and apply more Micro Sol®.