



# HO Structure Kit HEAD HOUSE WITH SILO 933-2942

Thanks for purchasing this Cornerstone Series® kit. Please take a few minutes to read these instructions and study the drawings before starting construction. All parts are made of styrene, so use compatible paint and glue to finish your model. Like the prototype, your new model can be combined with other Walthers kits to model a larger grain handling facility.

Throughout the 20th century, advances in farming technology led to ever-larger grain harvests. But finding a place for all that grain — on the farm and at the local elevator — often presented problems. Ideally, grain was stored indoors to prevent spoilage, and to protect it from rats and other vermin. Although wooden bins were built, steel grain bins began appearing by the early 1900s.

By the 1960s, many elevator operators were looking for fast and affordable ways to update their facilities. And many older elevators were no longer efficient, requiring complete replacement. Early grain elevators housed all of the storage and handling machinery under one roof. But the new designs were modular, consisting of large capacity steel grain bins connected by handling systems that used motorized conveyors and gravity to move grain to any point in the operation. This allowed the facility to be customized, and made expansion and repairs much easier.

Today, operations still begin as each wagon or truck of grain arrives. A small sample is automatically taken from each inbound load and checked for moisture and contamination.

Next, the loaded vehicle moves onto a scale where it's weighed. The grain is then ready for unloading; it will likely have to be dried before going into storage, so this "wet grain" is unloaded at a lifting conveyor, known as the "wet leg." The grain is dumped into an underground pit, where a motorized screw drive known as a "u-trough conveyor" (named for the u-shaped outer housing) feeds it to an endless bucket conveyor in the leg, which lifts it to the top.

At the top, large pipes supported by guy-wires and trusses to prevent bending, lead to various bins. The operator may direct wet grain into a "surge bin," where gravity steadily feeds it into a dryer. Wet grain can also be moved to a "wet storage bin" if the incoming supply outpaces the capacity of the dryer; through a u-trough conveyor at the bottom of the bin, wet grain will eventually move back to the wet leg and into the surge bin.

Grain moves continuously through the dryer, ending its journey in a pit supplying the "dry leg." This much taller version of the wet leg performs the same functions and is topped with pipes and conveyors to feed dried grain into "dry storage bins" (at older operations, they also direct grain into elevator buildings or silos; some also have a pipe running to the wet bin so it can be used for dry storage once the local harvest is complete). Like the wet bin, u-trough conveyors at ground level move stored grain back to the dry leg, where it can then be fed to truck or rail car loading areas.

## ON YOUR LAYOUT

Since no two operations are quite alike, Walthers offers a wide range of kits and accessories that can be mixed and matched to create a custom grain operation for your railroad.

Your new model is typical of large capacity facilities that were built to increase storage capacity at many existing elevators as well as grain processing industries. Silos of this type could be found in rural areas as well as larger cities, especially those with river or ocean ports. These were constructed of poured concrete, which was easy to work with, relatively cheap, durable and most importantly, fireproof (grain dust, created during handling, is highly flammable). The structures were often painted white to reflect heat and lower the danger of spontaneous combustion.

As built, these silos were fed by lifting machinery housed in an older elevator or an attached tower. Additional machinery was

installed at the top of the silos, along with pipes for distributing grain, and covered by a head house. As older elevators were modernized, existing concrete silos and their machinery were simply connected to the new dry leg and remained in use.

A modern dry leg can be modeled using the Conveyor "Leg" (#933-2936). This can be connected to your new model, as well as the Wet/Dry Storage Bin (#933-2937; includes parts for two "steel" bins), which are often added as older facilities are updated.

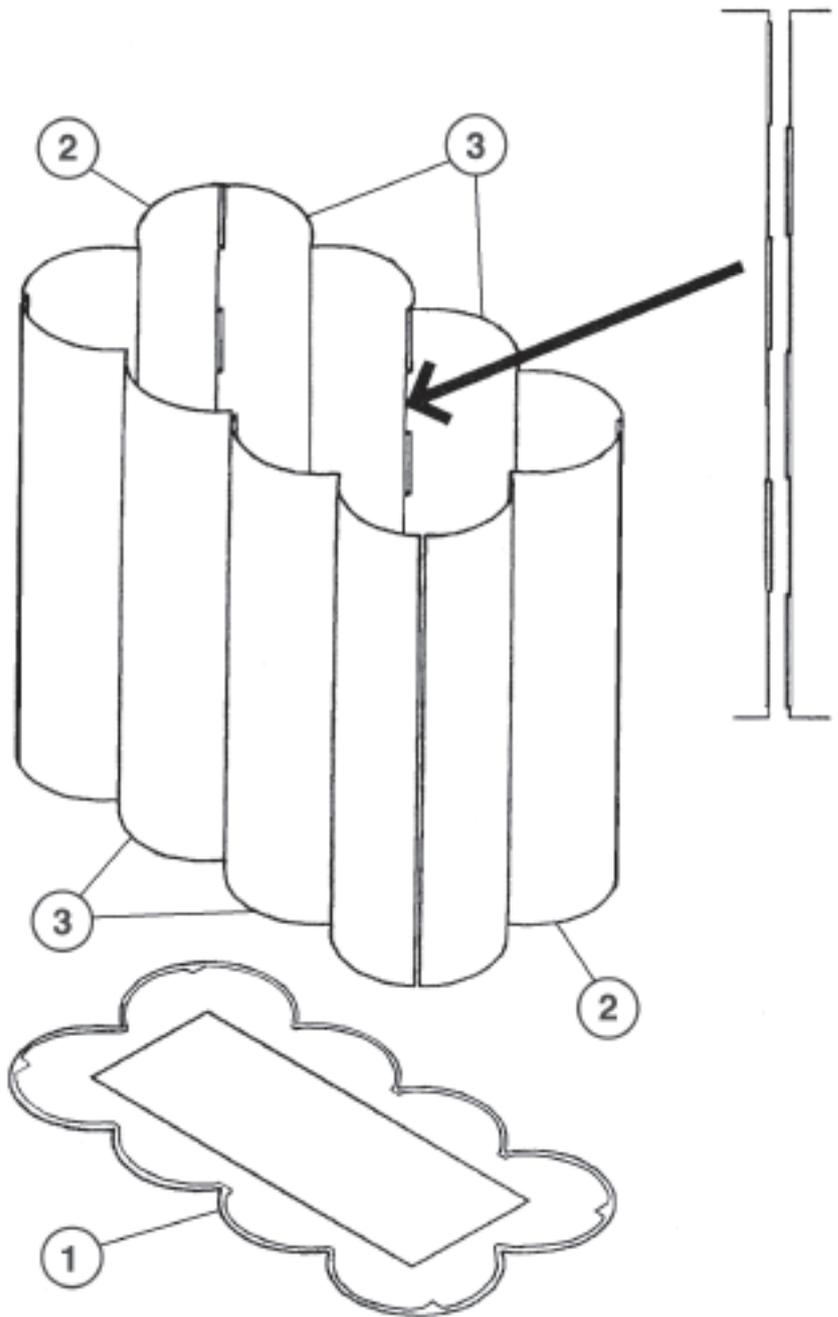
The complete wet leg can be modeled by combining a Wet/Dry Storage Bin (#933-2937), Conveyor "Leg" (#933-2936), Surge Bin (#933-2935) and Grain Dryer (#933-3128). Large operations often have two wet legs to handle incoming grain.

Photo-etched brass add-on details are available separately for your modern grain handling equipment. Included are the Conveyor Bridge & Support Tower (#933-2940), Platforms & Stairways (#933-2939) with parts for both the Leg and Storage Bin kits. The Ladders & Safety Cages (#933-2956) are suitable for many modern industries. Finally the Support Trusses for Guywires & Piping (#933-2955) that simplify adding this neat detail to the overhead pipes found throughout a typical modern installation.

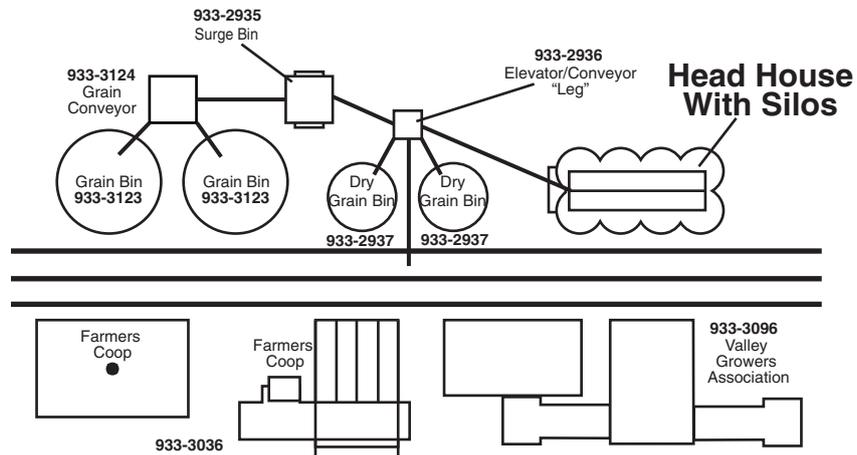
Today, both wet and dry legs can be found serving older elevators, which can be modeled with the ADM® Grain Elevator (#933-3022), Prairie Star Elevator (#933-2927), Farmer's Cooperative Wooden Elevator (#933-3036) or the Valley Grower's Association Steel Elevator (#933-3096).

For additional figures, vehicles, scenery materials and other ideas to detail your scene, ask your dealer, visit [walthers.com](http://walthers.com) or see the latest Walthers HO Scale Model Railroad Reference Book.

1. Glue the silo sides (3) to the silo ends (2). Note: The interlocking tabs on the inside help to align the parts properly.
2. Glue the silos to the base (1).



**POSSIBLE LAYOUT ARRANGEMENT UTILIZING OTHER WALTHERS STRUCTURES**

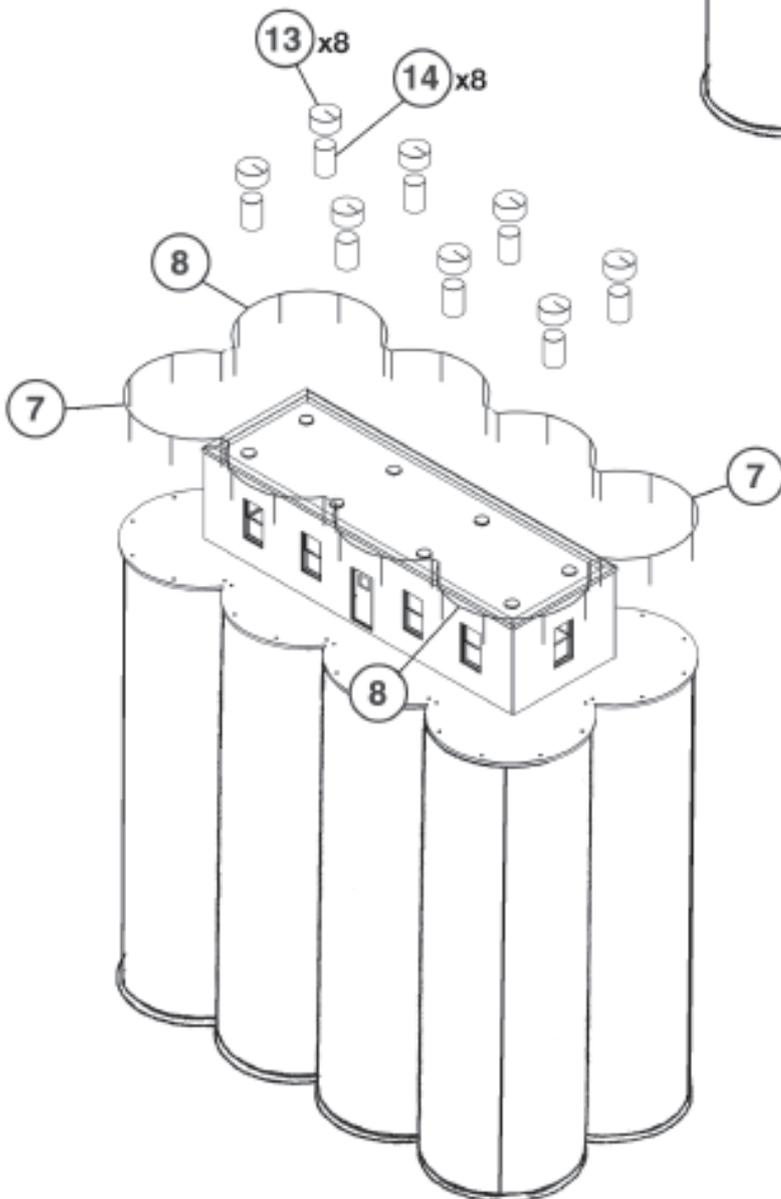
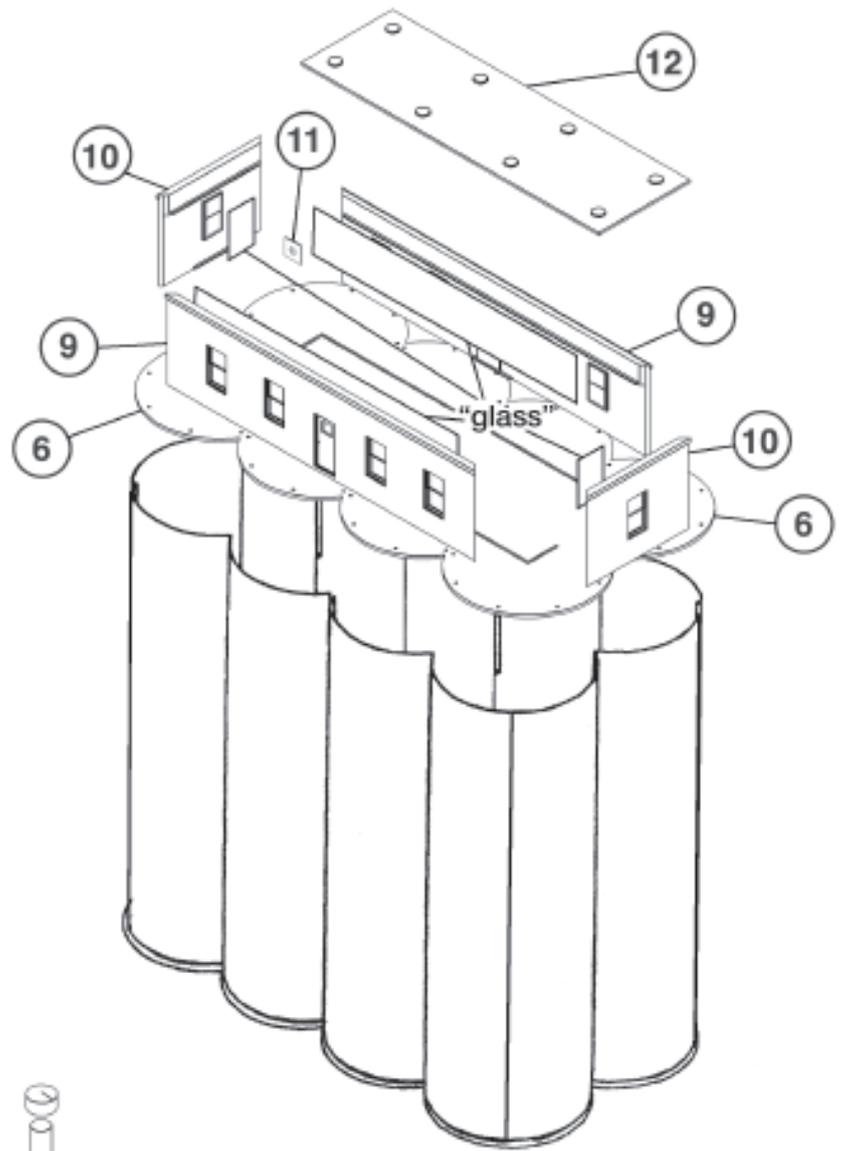


3. Glue the silo tops (6) in place.

4. Cut out “glass” windows from the sheet of acetate and glue them in place over the openings on the backs of the walls (9, 10). Note: Part #11 can be used to block out a portion of a window that will have a pipe going through. Simply glue in place instead of the “glass”.

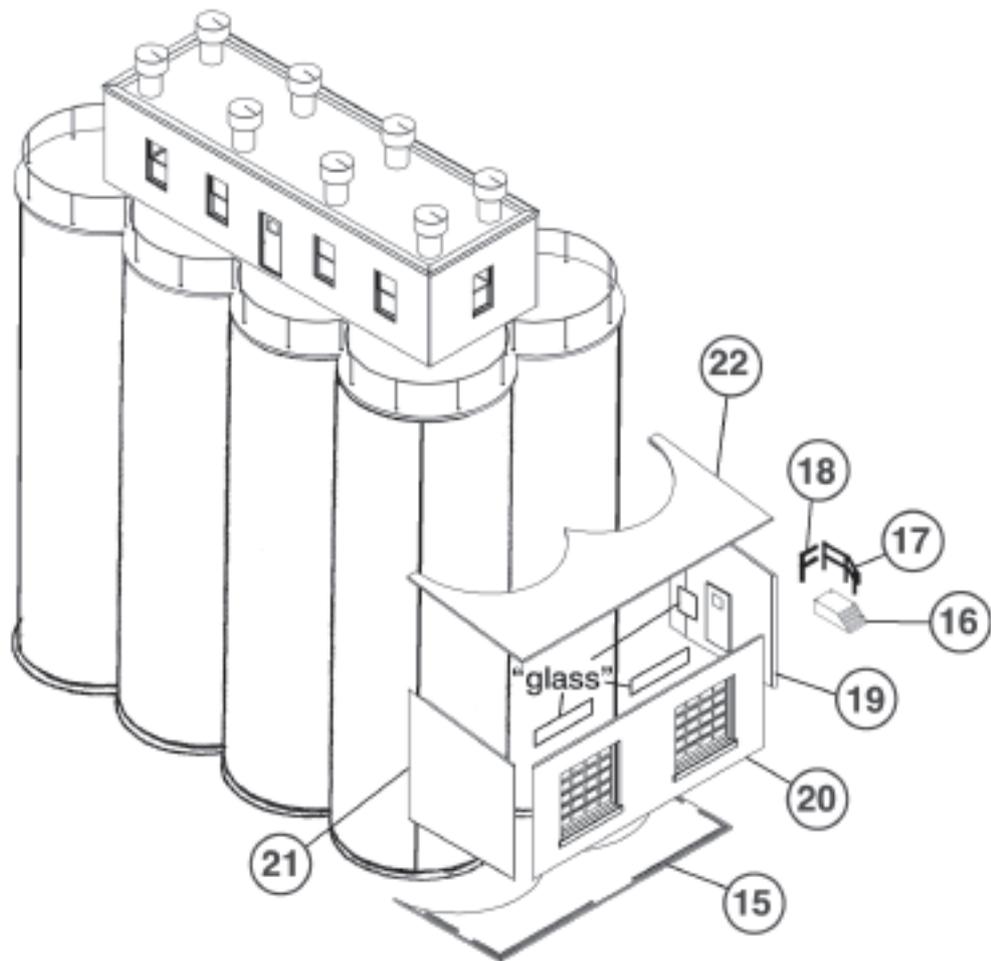
5. Glue the head house walls (9, 10) together and to the top of the silo.

6. Glue the roof (12) in place.



7. Glue the railings (7, 8) in the holes on the top of the silo.

8. Glue the vents (13, 14) together and then in place on the head house roof.



9. Glue the loading dock base (15) to the end of the silo base.

10. Cut out “glass” windows. Glue over the window openings of the truck doors on the backs of wall #20 and the personnel door on wall #19.

11. Glue the loading dock walls (19, 20, 21) together and to the base (15).

12. Glue on the loading dock roof (22).

13. Glue the railings (17, 18) to the stairs and then glue this assembly to the side of wall #19, underneath the personnel door.

### 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!