CORNERSTONE®

HO Scale Kit
SURGE BIN
933-2935

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 guywires 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.

A complete wet leg can be modeled by combining this kit with a Wet/Dry Storage Bin (#933-2937) which includes parts for two bins, Conveyor "Leg" (#933-2936) and Grain Dryer (#933-3128). Large operations often have two wet legs to handle incoming grain.

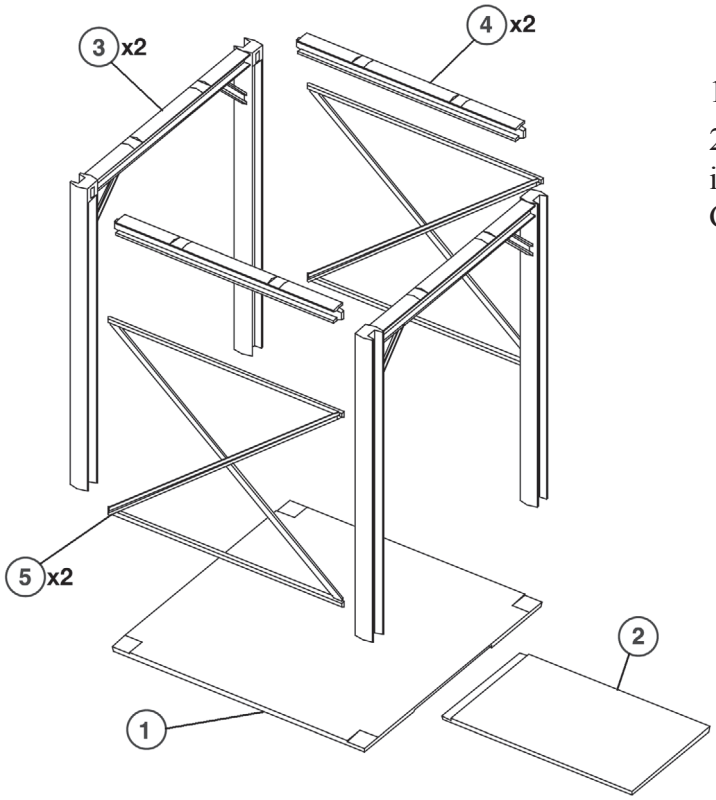
The dry leg can be modeled by using this kit with the Wet/Dry Storage Bin (#933-2937), including parts for two bins.

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

Today, both wet and dry legs can be found serving older elevators, which can be modeled with the Head House with Silos (#933-2942), 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).

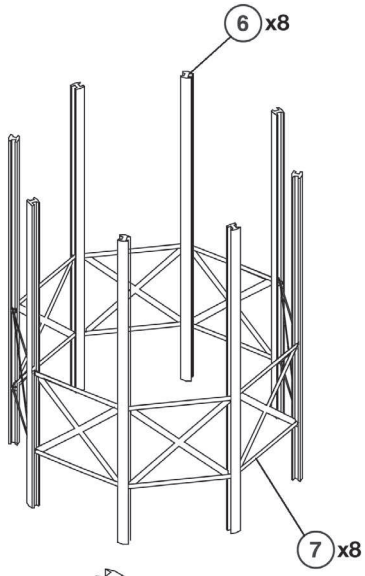
Grain is shipped long distances by rail in covered hoppers, which can be modeled using Walthers Gold Line™ PS-2 3-Bay (#932-7950 series) or PROTO 2000 PS-2 CD 4427 High Side Covered Hoppers (#920-54675 series).

For additional figures, vehicle and accessories to set the scene, see your dealer, check out the lastest Walthers HO Scale Model Railroad Reference book or visit our Web site at walthers cornerstone.com for more ideas.

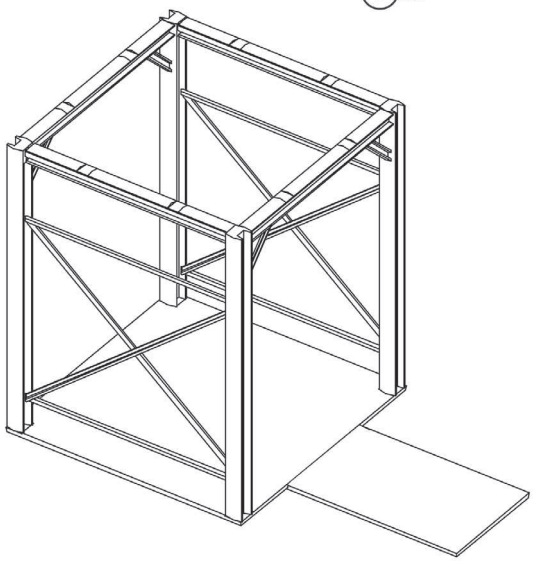


1. Glue base (1, 2) together.

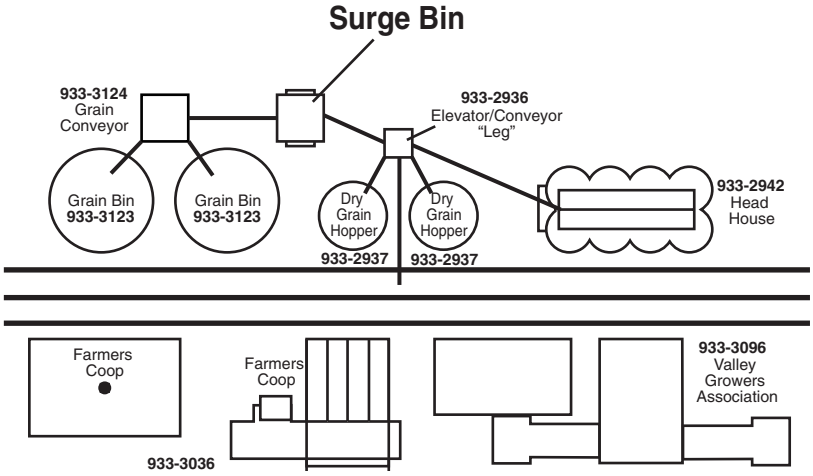
2. Glue the cross bracing (5) and I-beams (4) into the recesses in the inside of supports (3). Glue the assembly to the base.

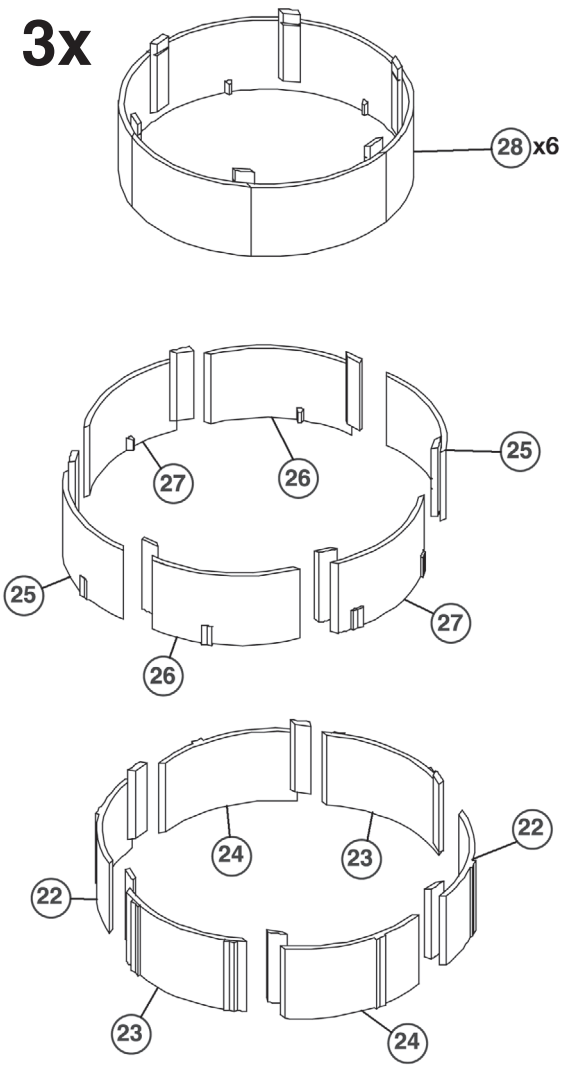


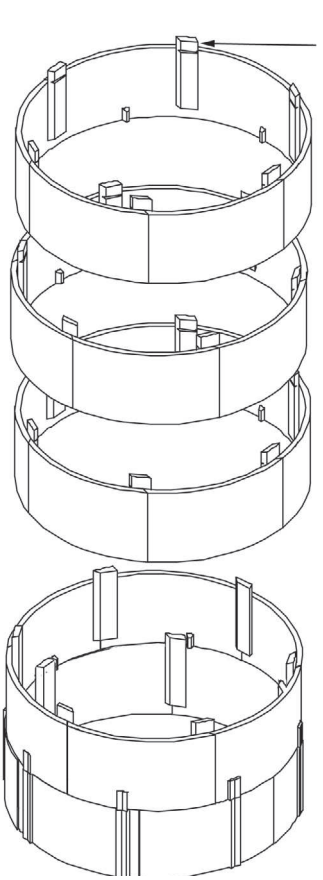
3. Glue the cross braces (7) and vertical I-beams (6) together. Note: The cross braces fit between the little tabs on the inside of the I-beams. Then glue this assembly on top of the completed lower section.



POSSIBLE LAYOUT ARRANGEMENT UTILIZING OTHER WALTHERS STRUCTURES





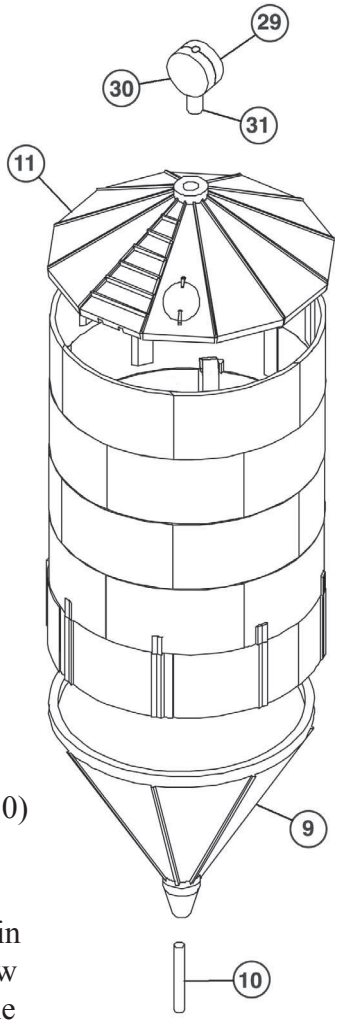


7. Glue all the rings together. Important: Make sure the raised pads on the bottom of the second ring line up with the raised pads on the bottom ring. Also notice that the vertical panel lines do not line up, they are offset compared to the panel beneath. Use the tabs on the inside to position correctly. Cut off all the tabs on the top ring.

4. Glue the bottom ring of the tank (22, 23, 24) together. Note: Use illustration as a guide to assemble the sections.

5. Glue the second ring of the tank (25, 26, 27) together. Again, note the way the pieces are assembled.

6. Glue three sets of top rings (28) together.



8. Glue the bottom (9) on. Glue the discharge pipe (10) in place.

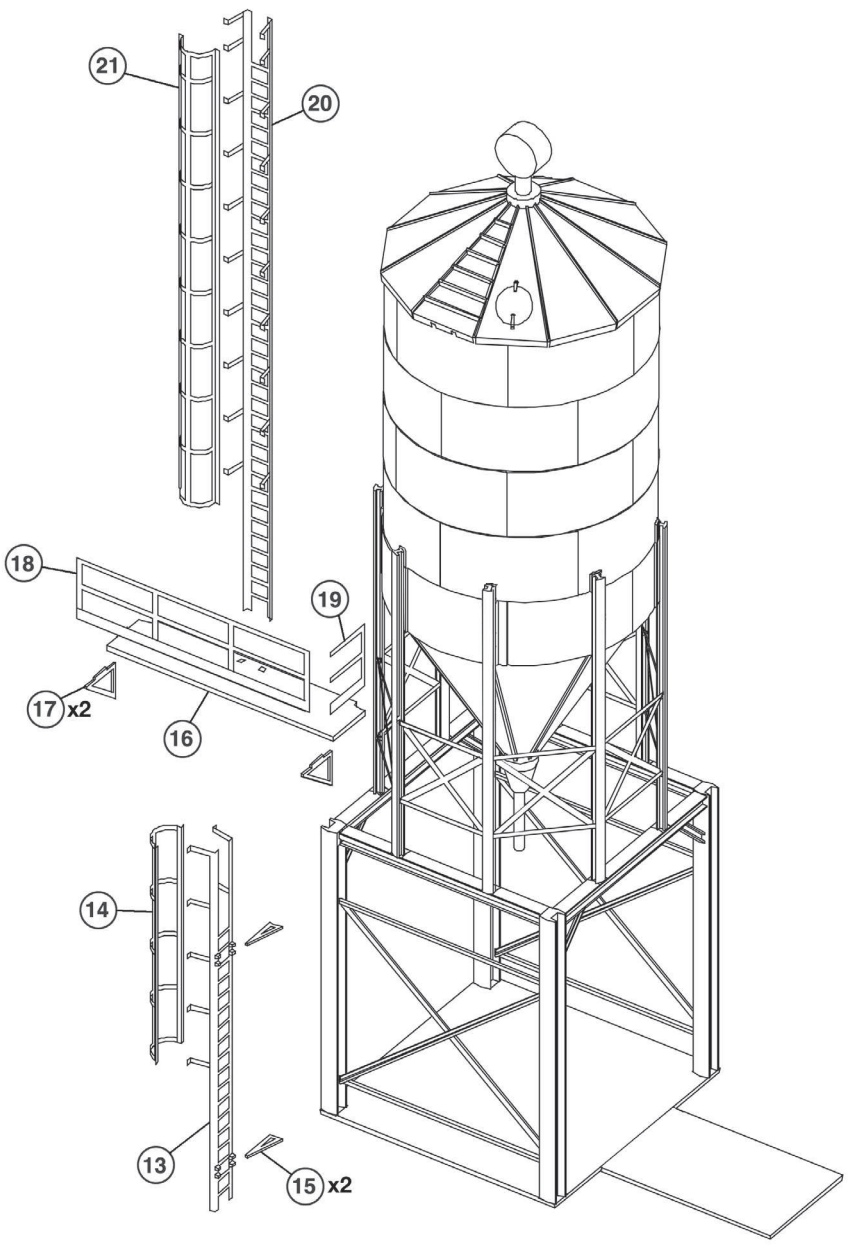
9. Glue the roof (11) in place as illustrated. Glue the two head halves (29, 30) together with the pipe (31) in the middle. Do not get glue on #31 or it will not allow head to swivel. Push, do not glue, this assembly in the hole in the top of the roof.

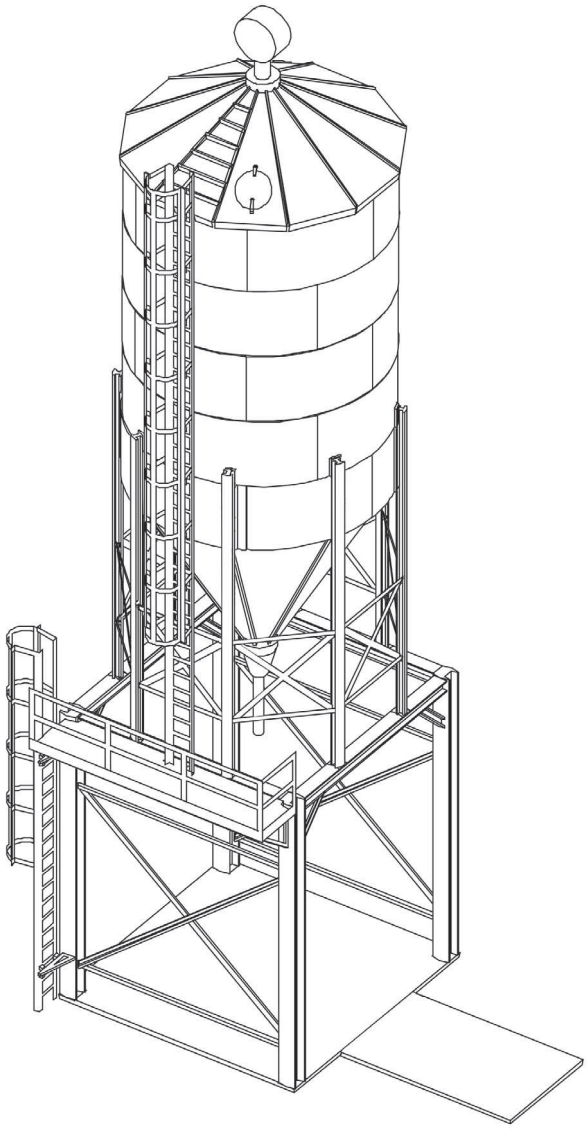
10. Glue the completed tank in between the vertical I-beams. I-beams should be flush with top of the ring pads. Note: Position tank so that top hatch and walkway are located as illustrated. This is important for proper line-up of the ladder.

11. Glue the platform (16, 17, 18, 19) together and then to the horizontal I-beam (will fit into the recess), with the braces (17) glued to the top front of the vertical I-beams.

12. Glue the long cage (21) to the long ladder (20). Then glue the bottom of the ladder into the holes in the platform and the pegs on the back of the ladder, near the top, into the holes on the bottom edge of the roof.

13. Glue the short cage (14) to the short ladder (13). Next glue the supports (15) in between the tabs on the back of the ladder. Then glue this to the end of the platform and the front of the vertical I-beams.





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 the 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®.