



HO Structure Kit VAN DYKE FARM WINDMILL

933-3198

Thanks for purchasing this Cornerstone® kit. Please read these instructions and study the drawings before starting construction. All parts are made of styrene, so use compatible glue and paint. PLEASE NOTE that this model can be built at four different heights and parts for two complete windmills are included.

For centuries, humans have harnessed wind power but it was not until the 19th century that the windmill became a familiar site on American farms and ranches. Providing an easy, reliable way to pump water from deep wells, windmills opened large areas of the country for settlement that would have otherwise been uninhabitable. While there were literally hundreds of different makes and models, all shared basic elements. Wood was preferred into the late 1870s when iron and steel became popular for their added durability, but steel mills required frequent lubrication requiring a long climb to the top which many owners came to dread; this was later solved to some extent with oil cellars and self-lubricating bearings. The power assembly consisting of the sail and gearbox was supported on a tower, usually 20' (6m) above the ground to clear any obstructions that could restrict wind flow. Sails consisted of several blades set at a slight angle, ranging in length from 6 to 16' (1.8 to 4.8m) depending on how much power was needed. As the wind blew, the sail drove the gearbox and crankshaft, raising and lowering a rod connected to the pump in the well. The power assembly was set on a ball race and equipped with a tail vane so it would turn into the wind; to prevent damage during high winds, the vane could be turned 90° to lock the gearbox. Windmills usually supplied stock tanks, fitted with a float to automatically stop and start the windmill to prevent overflowing. Affordable and reliable, windmills remained in regular use until after WWII when many were replaced by gasoline or electrically powered pumps. The tower was then put to other uses, sporting a TV antenna, a basketball backboard or security light. But in areas where installing newer systems was expensive or impractical, windmills remained in use and are still supplying water for livestock. For more ideas to detail your rural layout scenes, see your dealer, visit walthers.com or see the latest Walthers HO Model Railroad Reference Book.

1) If you plan on building a shorter model, note the location of the molded cut lines on each Tower Frame (4x 1); trim all four Frames at the same location. Tower Frames can be used as-is to build the tallest version. Glue Tower Frames together as shown. Glue Bearing (3) inside the Frames, below the second cross brace from the top.

2) Slide Platform (6) down the top of the Tower as far as it will go and glue in place at that location. Glue Sail (4) to Gearbox (2). The Tail Vane can be installed in the straight or working position, or at a 90° angle to model the locked position as shown. Choose a position and glue Tail Vane (5) to Gearbox. The completed blade assembly can be set on the platform so it's positionable or glued in place.

3) Glue Pipe Collar (2x 9) together and to mounting hole in center of Base (8). Note the four sets of indentations in the Base to fit the four possible size towers; the size of your Windmill determines which will be used. Glue the tower assembly to the Base and allow to dry.

4) Thread Rod (precut wire) through opening in Base and Collar to Bearing and glue in place; trim any excess wire from below the Base. On shorter towers, cut Ladder (7) from lower edge to fit and glue in place.



Tallest Version with Vane Extended



Shortest Version with Vane Folded

