Model 24

STAR WINDMILL

The wheel of the Model 24 STAR is scientifically designed, and the curvature of the fans and weather angle is such that the Model 24 STAR gives great efficiency in capturing wind. The wheel is securely attached to the shaft by left-hand thread in the hub, and this in turn is held by right-hand threaded castellated nut and cotter pin. Wheel bearings overhanging, placing the load of wheel directly over the outer bearing of drive shaft.

Wheel arms and braces are of angle steel, and provide a light and powerful wheel. Blades used in assembling wheel are pointed and double-angled.

Rudder stem, of angle steel, is hinged and braced in a manner which holds the rudder in horizontal position at all times. It will not, after years of use, droop.

All wheel parts are fully protected from the weather by the hot-dipped GALVANIZED finish. This coating, of pure zinc, is applied after all cutting and punching is finished, leaving no raw edges exposed, and consequently there is no opportunity for rust.

IMPORTANT

In ordering or making inquiry about a Windmill outfit the following should be carefully observed:

The size and depth of well and least depth of water in it, should always be clearly stated.

Quantity of water desired per hour.

Height water is to be elevated, and lateral distance to be conveyed.

The kind and size of windmill wanted; the height and kind of tower upon which the mill is to be erected.

Care should be taken to have mill placed at least fifteen feet above all buildings, trees or other obstructions in proximity to site of mill.

A rough sketch of the location where mill is to be erected and the conditions, sent with your inquiry or order, will be of great service in fulfilling your requirements.

Model 24, Running-in-Oil, Galvanized Steel Windmill with Gear-Box, Complete with Ball-Bearing Turntable, Tower Cup, Spider and Feeding Gear

<table>
<thead>
<tr>
<th>Size, Feet</th>
<th>Strokes, Inches</th>
<th>Gear Ratio</th>
<th>Weight, Pounds</th>
<th>Price with No Oil-Em Bearings</th>
<th>Price with Timken Tapered Roller Bearings</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6</td>
<td>3½ to 1</td>
<td>375</td>
<td>$46.50</td>
<td>$52.50</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>3½ to 1</td>
<td>387</td>
<td>$55.00</td>
<td>$62.50</td>
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<td>10</td>
<td>8</td>
<td>8 to 1</td>
<td>207</td>
<td>$60.00</td>
<td>$69.50</td>
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</tbody>
</table>

Sub Angles for attaching to wood tower, 82.00 extra.

Pump poles, splices and pull-out wire, and windmill coupler, extra.

For repairs, see pages 244 and 245.
Model 24

STAR WINDMILL

This illustration shows engine of the Model 24 STAR with hood removed. It also shows the various parts which are used in assembling the engine, and points at which bearings are needed.

The Model 24 STAR is furnished with either of two kinds of bearings—T I M K E N Tapered roller bearings, or N O - O L - E M Bearings.

Windmill-Parts.com
214 504-8234
Model 24

STAR WINDMILL

The Model 24 is a windmill is equipped with either of two kinds of bearings—TIMKEN Tapered Roller Bearings, or NO-OIL-EM Bearings. With either style of bearings, the Model 24 is a light-running and efficient windmill. Two bearings support the drive shaft and two support the crank shaft. In addition to carrying the load of drive shaft, the two bearings also care for the end thrust as developed by the wheel. The crank case of the mill is partially filled with oil. The two large gears help lubricate oil and carry it to the pinions. In addition, a small plunger displaces off from the crank case, delivering it to the top of the crosshead. The crosshead has a number of oil-carrying passages. Oil is pumped to flow down onto the guide rails, upper pitman bearings, and the pump room. Oil is also dispensed which runs down the guide rods, and directed to the outer bearing of drive shaft, which supports the wheel end of this shaft. To prevent oil following down pump rod and escaping, an umbrella-shaped casing drains the surplus oil back into the crank case. All parts of the mill within crank case are constantly flooded with oil, providing positive lubrication for bearings, gears, and pinions. Drain plug in bottom of crank case is provided, that oil supply may be renewed when occasion demands. Bumper rod, with spring, allows the mill to be thrown into the wind without severe shocks. The brake lever is operated by the upper angle of rudder stem, which engages the curved end of brake lever. This in turn supplies the brake. Ample leverage is thus secured, so that when mill is out of gear, the wheel is held rigidly. The brake lever also serves as a buffer in heavy and shifting winds. When rudder is blown out of gear this spring lever takes the shock, at the same time partially applying the brake and governing the mill.

Guaranty

We absolutely will fully guarantee each Model 24 Star Windmill against all defects in material and workmanship. It will be promptly started and shipped at that time, according to our printed specifications, with a guarantee the mill to run for six years, without further expense. We will furnish the necessary parts at our expense, at the time of installation or within the time of guarantee, to repair any damage by excessive wind, or storms being excepted.

The lower end of crank case stem is pivoted in truing spider. This is of sufficient length that there is no strain on the stem or truing spider. At lower end of stem, just below truing spider, a bolt prevents windmill from raising in tower cap. Wheel bolts are provided with lock washers to prevent nuts working off.
Place cover on crank case and fasten in place with washer and nut at top.
Model 24

STAR WINDMILL

Running in Oil

WITH TIMKEN ROLLER BEARINGS

We are still in position to furnish the well known Model 24 Star Windmill which has always enjoyed a fine acceptance from the trade. The Model 24 Star Windmill is superior in its class, having high efficiency, durability, minimum of operating attention and freedom from trouble.

To those desiring the Model 24 Star Windmill, these can be furnished in sizes and at prices as listed below.

Oil filled crankcase and automatic oiling system provide perfect lubrication which requires attention but once a year.

TIMKEN tapered roller bearings on drive shaft and crank shaft add to the efficiency of the Star Windmill.

Double set of gears and pinions and pitmans give a direct center lift that avoids all side strain and unnecessary friction.

Wheel, rudder and hood are weather proofed by a coat of zinc applied by our GALVAZINK process of dipping in molten metal after assembly.

MODEL 24. RUNNING-IN-OIL, GALVANIZED STEEL WINDMILL
Back-Geared. Complete with Ball-Bearing Turntable, Tower Cap, Spider and Reefing Gear

<table>
<thead>
<tr>
<th>Size</th>
<th>Strokes, Inches</th>
<th>Gear Ratio</th>
<th>Weight, Pounds</th>
<th>Price, with Plain Metal Bearings</th>
<th>Price, with Timken Tapered Roller Bearings</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4 ½</td>
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<td>258.00</td>
<td>320.00</td>
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Stub Angles for attaching to wood tower, 31 ½ inches long, per set 81.45; 46 ½ inches long, per set 82.00 extra. Pump pole, splices and pull-out wire, and windmill coupler, extra, see pages 42.

For repairs, see page 110.