

INSTRUCTIONS FOR OILING AND CARE OF "CHALLENGE 27" WINDMILLS

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The system used in oiling the Challenge Windmill is simple, positive and entirely automatic, and, if proper oil is used, it requires attention but once a year.

OILING SYSTEM—When the mill is in operation the oil is deposited in the small oil reservoir by the oil elevator attached to one gear. From this reservoir it is carried by the oil conveyors on guide rods to the two cross head rollers and shaft.

The two gears are constantly carrying oil to the pinions; one pinion oils the bearing and the other, which has spiral grooves, passes it over on the wheel shaft, where it is picked up by the shaft oil conveyor, carried thru the front bearing and forced back by the oil retainer into the large oil reservoir. This insures a constant flow of oil to all moving parts.

After the mill is erected fill the small oil reservoir with the Challenge Zero oil sent with mill and pour balance in large oil reservoir. This should fill the latter up to the oil line shown back of the vane hinge stem. **DO NOT FILL ABOVE THE OIL LINE.**

To get the best results this oil should be changed once a year. Just before cold weather remove the helmet, drain the old oil in a bucket or container of some kind. Wash out both the small and large oil reservoirs with kerosene and replace the drain plug. Fill both reservoirs with new oil, the large one up to the oil line.

We recommend **CHALLENGE ZERO OIL** as it does not evaporate in hot weather or thicken in cold weather. If this is not available use only a light high grade oil (125 at 100 SAE Specification). **DO NOT USE AUTOMOBILE OIL.**

Before replacing the helmet be sure and place one of the leather washers on the helmet bolt, then put on the helmet; then another leather washer and then the steel washer and nut. Draw this nut down tight. Be sure that the helmet fits over the gear case properly as it keeps the oil in and rain and dust out.

On the smaller mills use oil on the vane stem shaft. On the large size mills this shaft is fitted with a grease cup. Fill this cup with grease and turn down until the grease appears around the shaft.

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Thoroughly grease the pullout pipe and bar, the triple pump rod guide and the mast guide with axle grease.

Fill the cup on the plunger rod swivel with axle grease, and turn down until new grease appears.

Oil the ball bearing turntable by filling the grease cup and forcing the grease into this bearing.

WHEN YOU EXAMINE THIS WINDMILL

See that all bolts and nuts are tight, that the **OIL ELEVATOR ON GEAR IS DEPOSITING THE OIL IN SMALL OIL RESERVOIR** at the base of the guide rods and the cross head oilers are working properly.

After following these directions the mill should run another year without further attention.

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