



Outdoor Water Solutions, Inc. Small Backyard Windmill™

Installation Manual

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Thank you for purchasing an Outdoor Water Solutions Backyard Windmill™. We designed this traditional style windmill with the same great engineering as our full-size aeration windmills.

The following is the complete manual for the assembly of the OWS Backyard Windmill™, company contact information, and a copy of our 1-Year Workmanship and parts Warranty.

! CAUTION

1. DO NOT climb the tower. The head can turn without warning and is very dangerous. DO NOT use the tower cross members as steps, as they cannot support your weight. The recommended method to service the windmill is to lay the tower on its side.
2. DO NOT attempt to repair or service the windmill on a very windy day. It is too unpredictable and dangerous, and you could easily be injured. Even in low winds, be very careful when servicing. Be certain that the blade is securely tied before beginning any work.
3. ALWAYS teach children about the dangers of the windmill and keep them away from it.
4. Keep your distance from the windmill in thunder, strong winds, and lightning storms.

**IGNORING THESE SAFETY WARNINGS
CAN RESULT IN SERIOUS INJURY OR DEATH**

Package Contents:

Ensure that all components are included prior to beginning assembly.

Item	Quantity	Item	Quantity
Tower Cone	1	Hardware Package Contents:	
Decorative Maintenance Platform	1	L-Bracket	4
Tower Top Leg	4	Anchor Bracket	4
Tower Leg	4	Tail Fin Bracket	1
12" Cross Member	4	Nut & Bolt Package Contents:	
21½" Cross Member	4	Eye Bolt	4
15⅞" Cross Brace	8	8mm x 12mm Bolt	4
23½" Cross Brace	4	6mm x 12mm Bolt	20
27¼" Cross Brace	4	6mm x 20mm Bolt	16
Tail Arm	1	6mm Flange Nut	52
Tail Fin	1	6mm Washer	16
27" Fan with Bearing	1	6mm x 32mm Bolt	4
Push nut fastener	1	6mm x 25mm Bolt	4
Head Connection Bracket	1	Pivot Tube Washer	1
Pivot Tube	1	8mm Flange Nut	4

Figure 1:

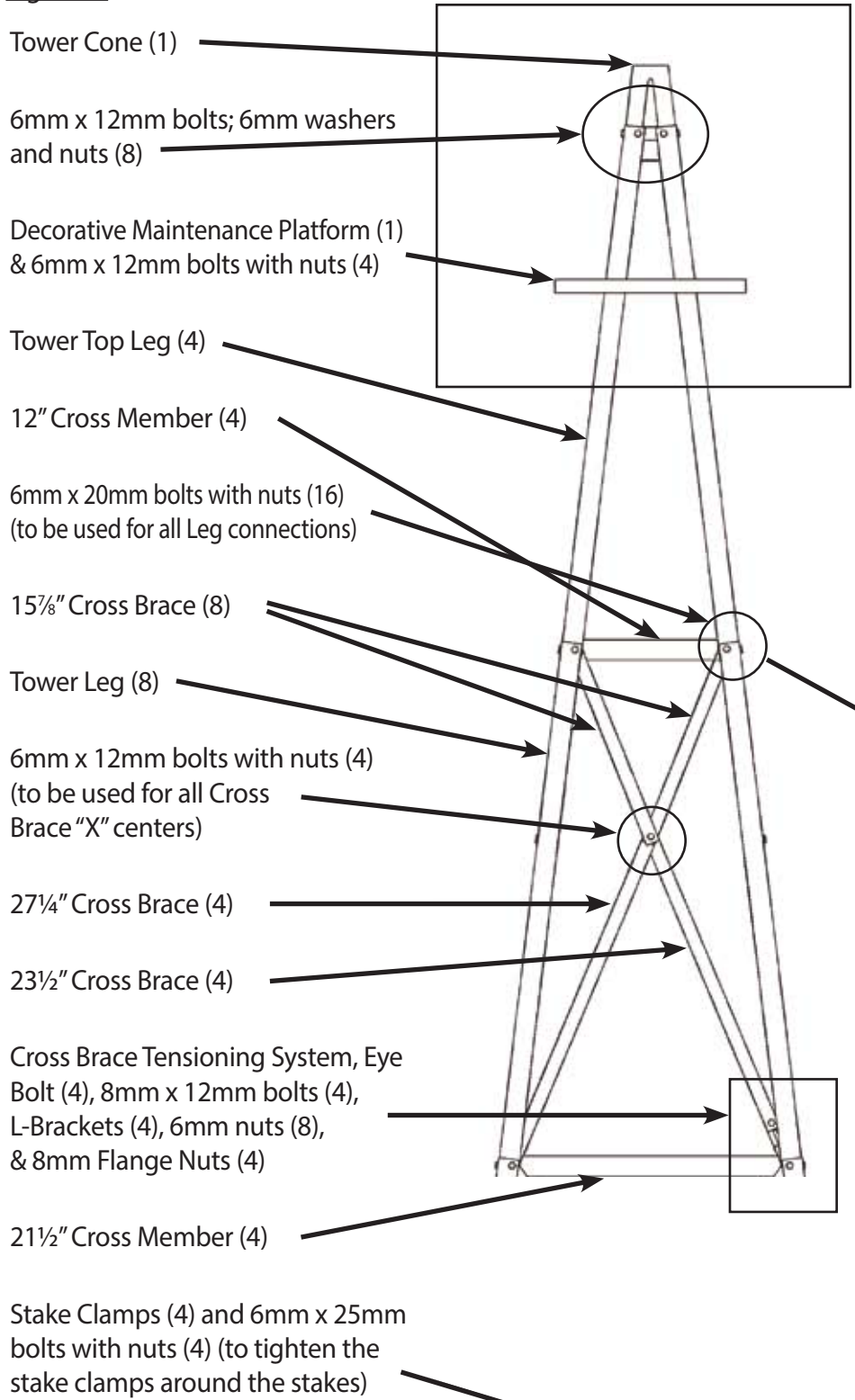
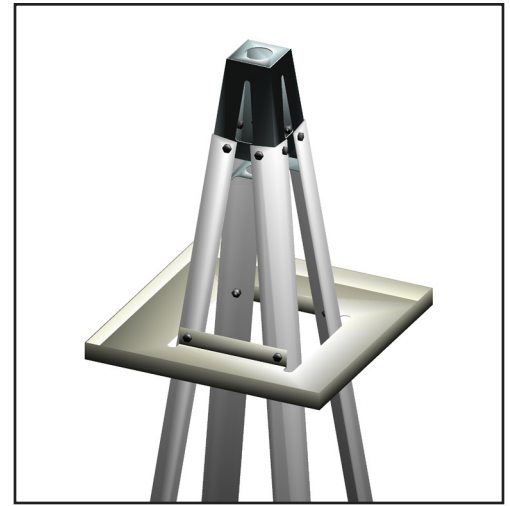
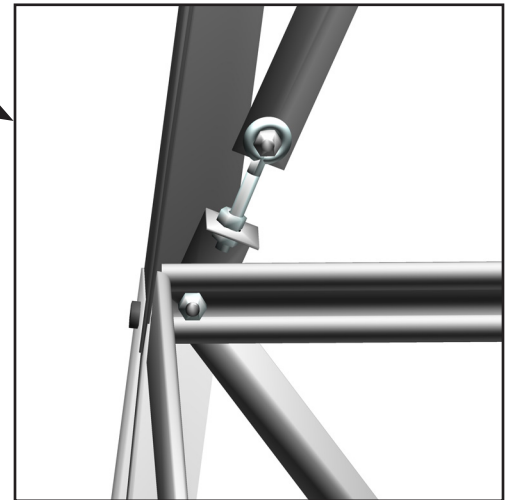


Figure 2:



Decorative Maintenance Platform Installation

Figure 3



Leg Connection, Backside View

Figure 4



Anchor Bracket Installation

TOWER SETUP INSTRUCTIONS



IMPORTANT NOTES:

- Unless directed otherwise, do not completely tighten any bolts until your tower is fully assembled.
- When connecting leg sections, always ensure that the lower leg section is behind the top leg section.
- There are two different styles of tower leg. The legs with the holes punched in one side are for the top section; these holes are used to install the decorative maintenance platform.

1. Assemble each of the cross brace support “X” sections for the bottom sections for all four sides, as shown in Figure 1. This includes the cross brace tensioning systems. The cross brace tensioning system consists of two (2) 6mm nuts, one (1) 8mm x 12mm bolts, one (1) eye bolt, one (1) 8mm flange nut, and one (1) L-bracket. The cross brace tensioning systems are to be installed on the 24” cross braces only. When installing the cross brace tensioning “L” bracket, try to position all of them at the same height on each of the eye bolts; this will simplify the squaring process later. Refer to Figure 3 for further detail on installing the cross brace tensioning systems on the 24” cross braces.
2. Begin the tower at the very top. Take the four tower top legs and fasten them to the tower cone with the eight 6mm x 12mm bolts, 6mm washers, and 6mm nuts, ensuring that the holes in the tower top legs are toward the top of the tower and are across from each other (see Figure 2). If this is not done, the entire top section will need to be taken apart and reassembled, in order to install the decorative maintenance platform. Completely tighten all of these bolts.



TIP: From this point on, it will be simplest to assemble the tower while it is laying on its side. Assemble on a soft surface (e.g., lawn, cardboard, drop cloth, etc.) to prevent scratching.

3. Install the lower section of each side using two 6mm x 20mm bolts, two legs, one middle section cross brace “X” (assembled in Step 1 above) and one 12” cross member. These parts should be attached to the top legs in the order just described, from outside to inside. One nut can then be placed onto each of the two bolts — do not completely tighten yet. Repeat this process for all four sides. Refer to Figure 1 and Figure 3 for assembly instructions.



TIP: Start with the side that is on the ground, then complete the vertical sides, then the top side. When working on the sides that are not on the ground, the 21½” cross members can be installed temporarily, using eight 6mm x 20mm bolts and nuts, to provide support and stability (see Figure 1).

4. Begin attaching the 21 1/2” cross members using the 6mm x 20mm bolts. Install the anchor brackets as part of this step. The anchor brackets should be installed first (see Figure 4), then the leg, then the 27 1/4” cross brace or the 24” cross brace with it’s attached L-bracket, then the 21 1/2” cross member.
5. Insert the 6mm x 25mm bolt through the anchor bracket (see Figure 4) but do not tighten until the tower is erected in its final position and the stakes are driven through the clamps.
6. Square up the lower section by adjusting the cross brace tensioners in the lower section. When all cross braces are tightened, turn the nut above the L-bracket so that it is tight to the L-bracket on each of the four sides.

You have now completed assembling the tower of your Backyard Ornamental Windmill.

WINDMILL HEAD INSTALLATION



IMPORTANT NOTES:

- When installing the tail arm, it is very important to ensure that one end butts up against the fan support shaft welded inside the head connection bracket and the other end is flush with the back of the tail fin bracket. If this is not done, the windmill may not track the wind properly.
- Ensure that all bolts are completely tightened throughout the head assembly.

Figure 5:

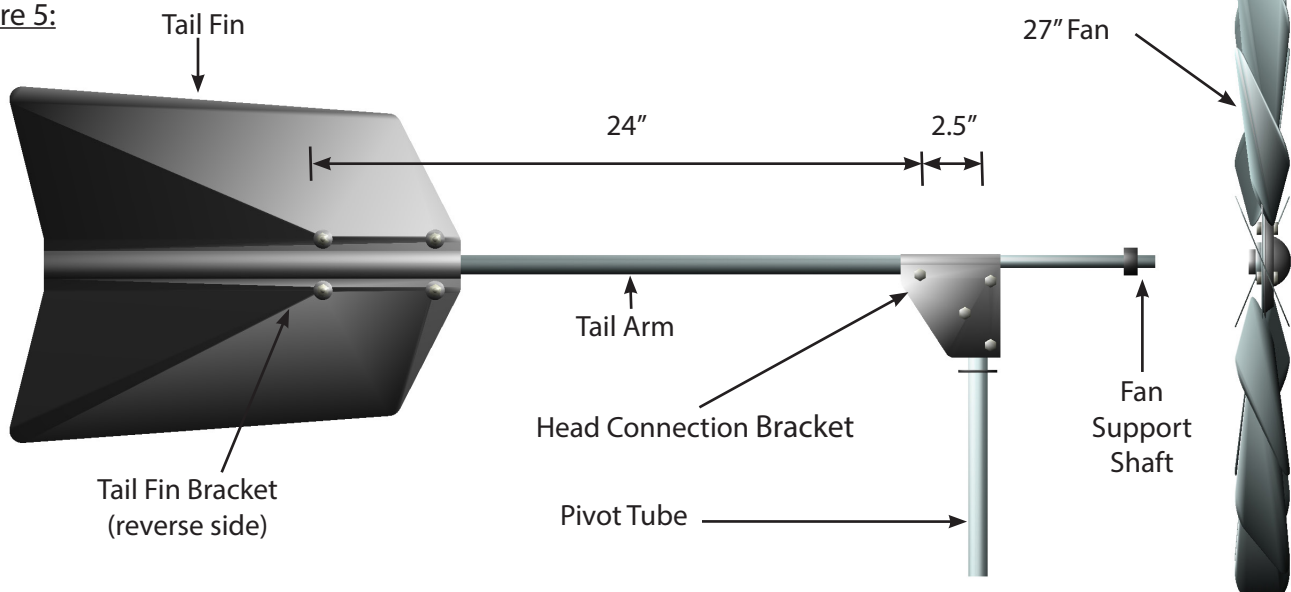
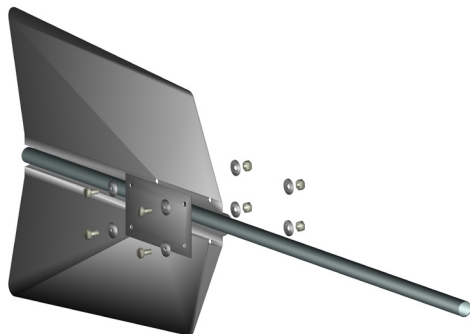


Figure 6:



1. Install the tail fin onto the tail arm with the tail fin bracket and four 6mm x 12mm bolts and nuts, and eight washers, as shown in Figure 6.



IMPORTANT: Make sure that the end of the tail arm is flush with back of the bracket.

2. Insert the other end of the tail arm into the head connection bracket, until it butts up against the welded fan support shaft. Once the tail arm is inserted completely, use one of the 6mm x 32mm bolts and nuts to clamp the tail arm into place, as shown in Figure 5. Tighten the bolt fully, to ensure that the tail arm cannot come out.



IMPORTANT: Make sure that the end of the tail arm butts up against the fan support.

Figure 10:



3. Insert the pivot tube into the head connection bracket, so that the pivot tube is between the three remaining holes in the head connection bracket, as shown in Figure 5. Insert three remaining 6mm x 32mm bolts through the holes and completely tighten the bolts.

It can be a challenge to get the two set screws adequately tightened, especially in areas prone to higher winds. Therefore we are including a pushnut fastener to help secure the windmill head to the windmill shaft. We strongly recommend using this locking fastener as well as locking in the two set screws on the bearing collar to secure the windmill head.

Figure 7:



4. Slide rear bearing nest and bearing onto shaft. Lock bearing into place exactly $5/16$ " of an inch from the end of the shaft as measured to the front of the bearing. Securely tighten the 2 set screws on the rear of the bearing. They need to really bite into the shaft to keep the windmill head secure. Using pliers to turn the allen wrench will help. See Figure 7.

5. Set the windmill head on top of the bearing and push the locking pushnut fastener down on the shaft to seat.

It needs to slide all the way down to the bearing. It might help to use a hammer and flat headed screwdriver to push the washer onto the windmill shaft. See Figure 8

Figure 8:

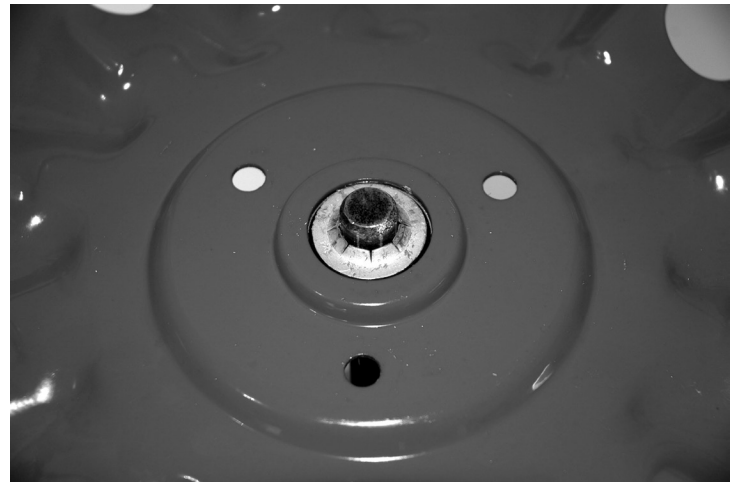
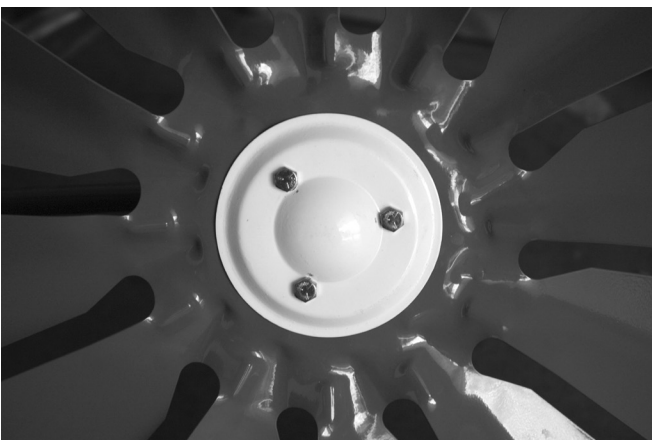


Figure 9:



6. Now install the front bearing Hub to the windmill head and the back bearing nest. Tighten the three bolts and nuts securely and your good to go. See Figure 9

7. Insert the pivot tube through the pivot tube washer, then into the plastic tower, as shown in Figure 10.

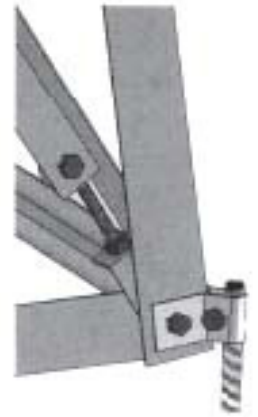
WINDMILL ANCHOR INSTALLATION



IMPORTANT NOTE:

- Outdoor Water Solutions Windmills™ will not determine soil and wind conditions for any windmill installation. Therefore, these conditions must be determined by the customer. Anchoring of the windmill tower is very important. It is the customer's responsibility to adequately anchor the tower. Outdoor Water Solutions, Inc. supplies a basic anchoring kit with each unit. However, in certain circumstances — such as light soil conditions and high-to-extreme wind areas — it may be necessary to utilize other anchoring techniques. Concrete piling, concrete pads, or screw-in anchors are some examples. The customer is responsible to anchor the windmill adequately, or consult the appropriate people to do so.
- Read through this entire procedure prior to beginning.

Figure 11



1. Choose an area in your yard (approximately 3' x 3') that is level, or close to level.
2. Stand the assembled windmill up on the location you have selected for installation.
3. Drive the stakes into the ground through the anchor brackets. Make sure to leave the stake clamps at approximately the same height, to simplify the leveling process.
4. Level the windmill as follows:
 - a. Starting with the highest leg, drive the stake until it is ¼" above the stake clamp, as shown in Figure 11. Tighten the 6mm x 25mm bolt in the stake clamp, to secure the leg to the stake.
 - b. Moving in a clockwise direction, move the stake clamp on the next leg to the top of the stake, leaving ¼" above the stake. Tighten the 6mm x 25mm bolt in the stake clamp, to secure the leg to the stake. Drive the stake into the ground until the leg is level with the last secured leg.
 - c. Repeat 'b.' above, until the tower base is level.

Congratulations! You have successfully installed Your Outdoor Water Solutions Small Backyard Windmill™

Please contact us at 1-866-471-1614 or 1-479-756-1614 to order parts or for assistance in any step along the way. We have also developed an aeration conversion kit that will convert your new Backyard Windmill™ into a functioning aeration windmill.

Keep in mind that a Backyard Windmill™ is a great gift, and is available in a variety of colors, along with our galvanized steel options.

If you are interested in more information, call today or visit us on the Web at: www.outdoorwatersolutions.com



The Outdoor Water Solutions One-Year Limited Warranty

Warranty covers all Outdoor Water Solutions Windmill™ products for a period of one year from Date of Purchase, against defects in workmanship or material. The conditions of the Warranty and the extent of the responsibilities of Outdoor Water Solutions, Inc.™ under this Warranty are as follows.

1. Outdoor Water Solutions, Inc.™ will repair or replace any part or material deemed to be defective by Outdoor Water Solutions, Inc.™ due to quality and/or workmanship, within a one-year period from the initial purchase date;
2. Product returned for Warranty must be returned to the address specified by the Manufacturer, freight prepaid, and any warranty product sent to the customer will be sent freight prepaid;
3. Warranty does not apply to product which has been subject to abuse, neglect, accident, or incorrect installation;
4. Warranty does not apply to damage resulting from severe weather factors;
* Private Insurance Coverage is recommended *
5. If parts other than genuine Outdoor Water Solutions™ parts are utilized for repair or attached to an Outdoor Water Solutions Windmill™ system, warranty coverage may be void;
6. Proof of Date of Purchase is required for warranty service. Since the customer is responsible for assembly, setup, and installation, please follow instructions carefully, to ensure the validity of warranty claims;
7. If you have any warranty concerns, please contact Outdoor Water Solutions, Inc.™ at 1-866-471-1614 or 1-479-756-1614.

Safety Precautions

1. Do Not attempt any service or repairs to the windmill with the blade turning, or in any high wind situations;
2. Ensuring that the blade assembly is secured (even in low winds) when servicing or repairing the windmill is required. (A gust of wind can suddenly cause the windmill head to turn at any time and cause a potentially dangerous situation for the person trying to do the repair);
3. Do Not allow children to play on or near the windmill;
4. Avoid being near the windmill during thunderstorms.

Return Materials Authorization

- A return materials authorization (RMA) number must be obtained prior to returning any product for a warranty concern.
- You can call the OWS warranty department at the following numbers: 1-866-471-1614 or 1-479-756-1614.
- We request that all returns be accompanied by a Return Materials Authorization (RMA) to help us track all warranty projects and to ensure that your job is handled in a timely manner and that all freight costs are covered by OWS. Unauthorized return shipments could result in return of product and freight costs not being covered.

Outdoor Water Solutions, Inc.™ recommends that, for future reference, you keep this Installation Manual, along with your proof of purchase and a photo of the windmill in a convenient location.

Date of Purchase: _____