

# W8IO – 610HD, 610HD-050, 610HD-065 Roof Mount Tower Assembly and Installation

30 August 2021

Please carefully follow these steps to properly assemble and install your 6 foot heavy duty roof mount tower.

1. Remove all items from the packages and make sure all parts are there. Refer to the parts list at the end of this manual. Model IO-610HD-065 includes the Yaesu GS-065 Thrust Bearing. Model IO-610HD does not.
2. Begin by assembling the 4 top angle brackets to the bottom of the Yaesu GS-050 or GS-065 thrust bearing, using the 4 bolts and 4 lock-washers supplied with the bearing or mast adapter. Save the other parts for future use if you wish to eventually re-purpose the thrust bearing. Tighten all bolts securely, leaving equally spaced gaps at each corner.



Figure 1

3. Assemble the cross braces together with the 5/16"-18 x 1" center bolt and lock-nut as shown in Figure 2. Assemble a right leg, a left leg, top shelf bracket, bottom shelf bracket (without rotor shelf mounting holes) and 2 cross braces together as shown in Figure 3, using 4 each of the 5/16"-18 x 1" bolts and lock-nuts. The legs should have the feet attachment holes facing the floor. Place the lock-nuts loosely on these bolts.



Figure 2



Figure 3

4. Attach the leg assembly to the top angle bracket assembly as shown below using 4 each of the 5/16"-18 x 1" bolts and lock-nuts. Hand-tighten the hardware at this time.

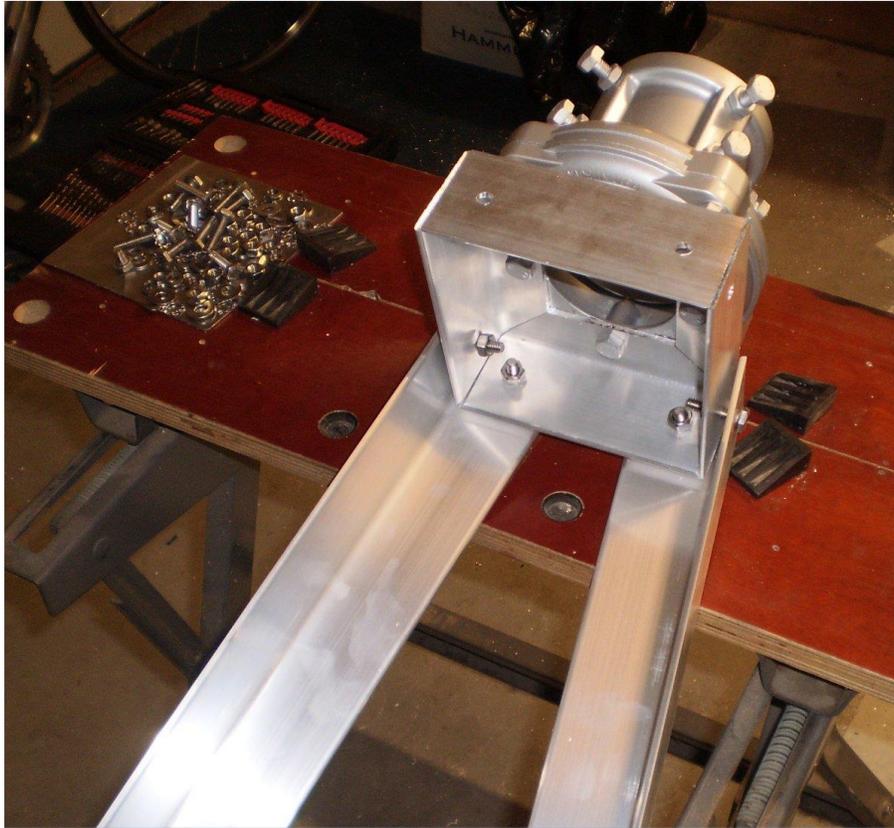


Figure 4

5. Assemble a second leg assembly identical to the one assembled in Step 3. Lay this assembly on top of the first leg assembly. The feet attachment holes should be facing up. Attach to the top assembly as shown below in Figure 5. Use 4 each 5/16"-18 x 1" bolts, lock-washers and nuts. Hand-tighten the hardware at this time.

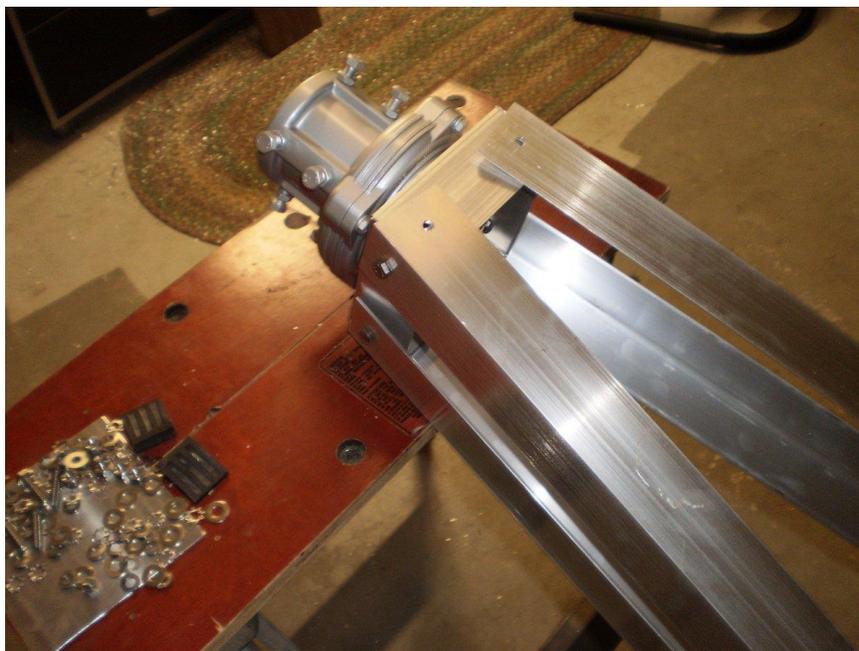


Figure 5

6. Tilt the assembled structure upright and spread the legs apart by about 27 inches (similar to unfolding a step ladder). Assemble the cross braces, upper shelf bracket and lower shelf bracket (with rotor shelf mounting holes) on each of the 2 open sides as shown below, using 5/16"-18 x 1" bolts and locknuts. Hand-tighten the hardware at this time.



Figure 6

7. Attach the 2 rotor shelves to 2 of the lower shelf brackets with 4 each 5/16"-18 x 1" bolts and locknuts as shown above in Figure 6. Verify that all rotor mounting holes are 3.31" (Yaesu) or 3.0" (Hy-Gain) apart, then tighten these bolts securely.

8. Attach a foot on each leg with 3/8"-16 x 1 1/2" bolts, locknuts and bevel washers as shown below. Hand-tighten the hardware at this time.



Figure 7

9. Make sure that the tower is on a level surface. Place a level across the top of the thrust bearing, then tighten the 8 bolts that hold the top angle brackets to the 4 legs. There will be a small gap between the legs and the top brackets even when tight. Make sure that the thrust bearing AND rotor shelves are both level in 2 orthogonal directions. Securely tighten the remainder of the hardware at this time except for the bolts that hold the feet.

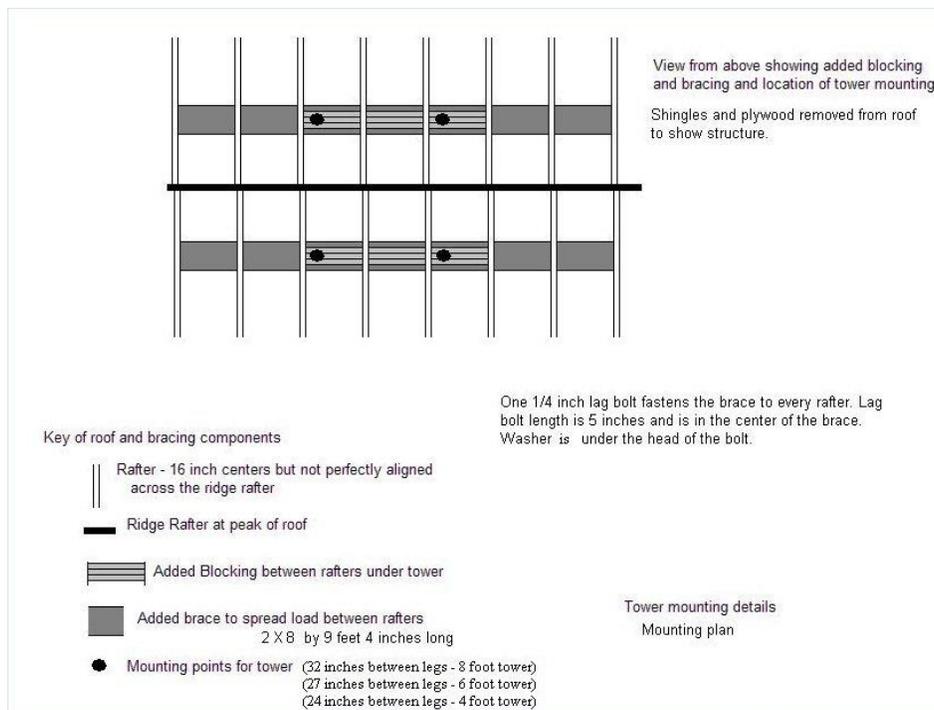
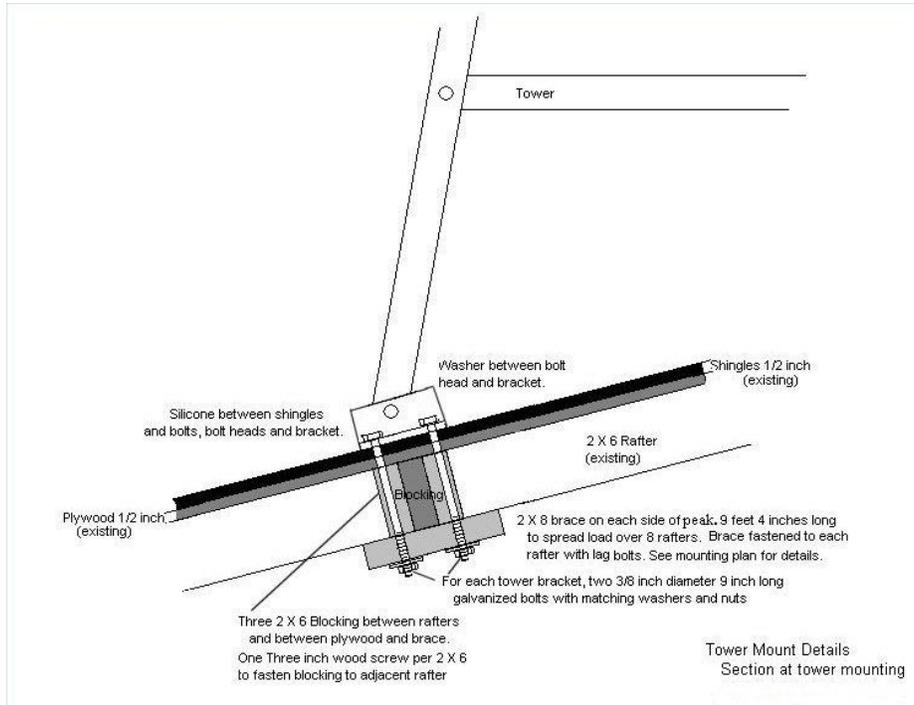


## Installation

10. Install the rotor and mast to make sure everything fits and aligns with the thrust bearing. You can decide at this time if you wish to secure the rotor onto the rotor shelf before or after placing the tower on the roof.

11. You will need to determine how you wish to attach the tower to your roof. Either lag screws or bolts may be used. Bolts are recommended. The feet mounting holes are drilled to accept 3/8" bolts. These may need to be enlarged if larger bolts are used.

12. Below you can view recommended mounting procedures for a sloped roof with asphalt shingles. Other mounting methods may be used depending on your particular roof.



IO-610HD Parts List (per tower)

|   |    |   |    |
|---|----|---|----|
| Right Leg (2" x 2" x 72")                     | 2  | Upper shelf bracket (2" x 2" x 13")           | 4  |
| Left Leg (2" x 2" x 72")                      | 2  | Lower shelf bracket drilled (2" x 2" x 17.5") | 2  |
| Top angle bracket (2" x 1.2" x 4.875")        | 4  | Lower shelf bracket (2" x 2" x 17.5")         | 2  |
| Rotor shelf – square edges (2" x 2" x 17.31") | 2  | Cross braces (2" x 21")                       | 8  |
| Tower foot – square edges (2" x 2" x 6")      | 4  | GS-065 with hardware (IO-610HD-065 only)      | 1  |
| 5/16"-18 x 1" SS bolt                         | 32 | *5/16" split lock-washer SS                   | 32 |
| 5/16"-18 nut SS                               | 32 | 3/8"-16 x 1" SS bolt                          | 4  |
| *3/8" split lock-washer SS                    | 4  | 3/8"-16 nut SS                                | 4  |
| 3/8" Bevel Washers                            | 8  |   |    |

\*NOTE: If nylon lock-nuts are used, there will be no lock-washers