

# Oversize Hub Assembly Instructions

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Instructions for 3, 4, 5, 6, 8, 10, and 12 Blade Configurations

## Component Inventory

Quantity	Component	Specs
1	3/8" Engine-side Plate	Aluminum
1	1/4" Outer Plate	Aluminum
1	Warp Drive Protractor	-
# ordered	Warp Drive Propeller	-
4 per bld	5/16" Clamping Bolts	5/16"- 24 3 <sup>1</sup> / <sub>4</sub> "
4 per bld	5/16" Nylock Nuts	-
8 per bld	5/16" Washers	-
6	Hub Plate Spacers	Aluminum
2 per bld	Prop Clamp Blocks	Composite

## Bolt Torque Values

Component	Torque (ft-lb)	Torque (in-lb)
5/16" Clamping Bolts	16	192
3/8" Mounting Bolts	30	360
1/2" Mounting Bolts	65	780

Re-torque all bolts after the first hour of operation, then every 5-10 hours as part of routine maintenance.

**Mandatory Drive Lug Check:** You must determine if the drive lugs coming off of the engine flange are too long. Place the **Engine-Side Plate** against the engine flange and then place an **Aluminum Hub Spacer** over one of the drive lugs. The **Aluminum Hub Spacer** must sit flush against the **Engine-Side Plate**, if it does not, the drive lugs are too long and must either be cut-down or replaced with shorter drive lugs.

**Aluminum Hub Spacers** have a "lug end." The "lug end" is the end with the larger diameter cutout which will accept a drive lug.

### Assembly:

- Put one 5/16" washer on each of the 5/16" clamping bolts and insert them through the 1/4" thick aluminum plate. You will also want to insert your mounting bolts through your faceplate then through the six holes in the 1/4" aluminum plate. Place the hub plate upside down on a flat surface with the bolt threads pointing up.
- Place one half of the composite Prop Clamp Blocks on each set of clamping bolts with the beveled edge to the inside.
- Set the blade collars in the Prop Clamp Blocks with the flat side up. Make sure the leading edges of the blades are all facing in the correct direction.
- Place the other half of the Prop Clamp Blocks on the top of each blade.
- Install the six Hub Plate Spacers (counterbored side up) over the mounting bolts.
- Install the remaining 3/8" thick aluminum plate making sure the bolt pattern lines up.
- Install the remaining 5/16" washers and nylock nuts.

### Mounting Your Propeller:

- Mount the propeller to the engine flange using the six mounting bolts.

**IMPORTANT:** ALL Warp Drive propellers must have a faceplate mounted on the outside of the hub. These plates are normally 1/4" or 3/8" thick aluminum and are supplied with the engine.

- Adjust the blade pitch following the protractor instructions on the other side of this page.
- Tighten the clamping bolts in 20 in-lb increments. **DO NOT** tighten the bolts in one step. Tightening too much on one side can change the blade pitch. Torque the clamping bolts evenly in a criss-cross pattern.

