

Oversize Hub Assembly Instructions

Warp Drive Incorporated
1207 Highway 18 East
Ventura, IA 50482 USA
Phone: (641) 357-6000
Fax: (641) 357-7592
USA & Canada: 1-800-833-9357
www.WarpDriveInc.com

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 ¹ / ₄ " |
| 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:

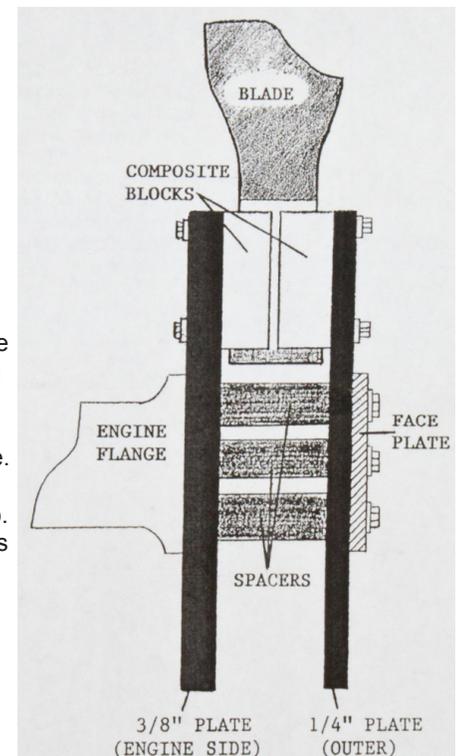
- Put one 5/16" washer on each of the 5/16" clamping bolts and insert them through the 1/4" thick aluminum plate. You will also want to insert your mounting bolts through your faceplate then through the six holes in the 1/4" aluminum plate. Place the hub plate upside down on a flat surface with the bolt 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.



Warp Drive inc.