

# Instructions for a Echo-Tech Mini Drive Unit

## WARNING

- \$ Never reach hands or other body parts in or near moving parts!**
- \$ Maintain a safe distance from any fixed or moving propeller!**
- \$ Prior to beginning any work on your project, turn off the main battery switch and/or remove the battery terminals and ignition keys!**
- \$ The unit components weigh between 5 lbs. B 40 lbs. Take necessary precautions to avoid injury when preparing to, or when installing the drive unit. Always have a co-worker nearby or assistant available to help.**

**If you have any questions or need technical assistance, contact Customer Service at 866-679-4200.**

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# Echo-Tech Mini Drive Unit

**Note: All units are shipped pre-greased. It is suggested that you apply grease to both zerk fittings every 10 - 12 hours of operation with 6 pumps in Upper Assembly and 2 pumps in Lower Assembly with Pennzoil 707L high temperature wheel bearing grease or its equivalent.**

- 1.) Inspect and clean any preservative or burrs from the output shaft and crank face of the engine.
- 2.) Install output shaft to crank using (6) M10 – 1.25 x 35 SHCS and (6) M10 lockwashers, snug bolts. Using a dial indicator on the shaft, rotate motor while tightening bolts to insure output shaft is running true. Tighten to 45' lbs.
- 3.) Back out the (2) set screws in the lower bearing. Align lower bearing that is mounted to plate to output shaft and slide housing assembly towards motor. Aligning dowels on motor to housing. A rubber mallet can be used to lightly, to help seat housing assembly to motor. Bolt housing to motor using (2) M12 – 1.75 x 40 SHCS and (2) M12 Lockwashers. Upper Mounting Holes use (3) M12 – 1.75 x 60 SHCS and (3) M12 – 1.75 Locking Flange Nuts. For thru holes use (2) M8 – 1.25 x 40 SHCS and (2) M8 Lockwashers. Mounting holes by starter, tighten bolts M12 bolts to 50' lbs. and M8 bolts to 25' lbs.
- 4.) Install provided key into output shaft. Align one of the set screws of the lower bearing directly on to the key apply loctite to the threads of the set screw and tighten both of the Allen set screws on the lower bearing.
- 5.) Remove (3) 3@ 20 x 1 SHCS and 3@ washers. Then separate the lower locking sleeve from the pulley, slide the lower pulley on to the shaft with the taper opening towards rear of the boat. Slide locking sleeve over output shaft and key be sure to just start the (3) 1/4 - 20 x 1 SHCS for now. This pulley should be on as far as possible even against the main plate as it will move away as you tighten the sleeve. Next temporarily install the belt. Note: That the upper assembly flange has an eccentric to be able to tighten the belt. You will need the short side off the eccentric down in order to install the belt over the pulley. Then rotate the upper assembly until the belt is snug and install (3) 3/8 x 16 x 1 and (3) 3/8 lockwashers. Using (3) bolts to temporarily snug the upper assembly to the plate.
- 6.) While looking at the side of the unit, align the belt from the upper pulley to the lower pulley. Once the belt is centered and aligned between the upper and lower pulleys. Slowly tighten (3) 3@ x 20 x 1 SHCS and 3@ washers into the tapered locking sleeve keeping the lower pulley aligned with the upper pulley.

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**NOTE: The lower pulley should be kept as close to the main plate as possible.**

- 7.) Remove (3) bolts temporarily holding upper assembly while holding pressure inward, use the pinned wrench provided rotate the shaft assembly clockwise to reach the proper belt tension which is snug with about a 1/8" deflection only at the belt center. Rotate the engine (2) revolutions by hand and recheck the belt tension. Repeat if needed to acquire the proper belt tension. Install all (6) 3/8" x 16 B 1 bolts and lock washers through the main plate to 35 lbs. It is recommended to use loctite on the cap screws when doing the final assembly.
- 8.) Check to make sure all the bolts are properly tightened and all tools are clear before starting your engine.
- 9.) There is 2 rear mounts and 1 center mount that needs at least 1/2" rubber cushion under them and secured properly to your engine stand. This hardware is not provided as all engine stands are built differently.
- 10.) Install your propeller according to the propeller manufacturer's instructions.