

## **LH1000**

### **BEARINGS, SERVICE & ASSEMBLY**

In order to remove the generator to access the ball bearings undo the four 7/16" (11 mm) nuts that attach the generator to the finned, aluminum base. These are located under the generator base. Next, unscrew the white plastic spinner (nose cone) from the base of the unit, located inside the guide vane assembly, at the end of the shaft in a counter-clockwise or left hand direction.

Proceed to remove the propeller by removing the 3/4 inch (19mm) brass nut and slide the propeller from the shaft. Now, the generator and shaft assembly may be pulled up, and out of the generator base and shaft housing. The best way to remove the shaft from the generator is to tighten the two nuts (one is the bronze one holding the propeller and the other is supplied) against each other on the end of the shaft. Then you can unscrew the shaft while holding the generator rotor with the 1/4" pin. Now the generator can be removed from the machine by removing the four nuts (7/16" 11mm) that are on the underside of the housing.

The upper casting is now removed by tightening the 5/8" bolt that is supplied with the machine into the center hole in the top of the machine. Make sure that the adjustment knobs are backed off enough to clear the casting when it is raised for removal. Then tighten the bolt. When the bolt contacts the shaft end it will start to raise the upper part of the generator until it is high enough so that it can be pulled off. When pulling the upper part of the generator away from the bottom do so very carefully and set it closely aside, as the wires from the bottom are still connected.

The upper bearing can now be replaced if required. The bearing is slip fit on the shaft and should come off easily. Remove the center retaining screw and washer and remove the bearing. A puller may have to be used if there is corrosion between the shaft and the bearing. The upper bearing must be removed in order to remove the rotor.

To gain access to the lower bearing, the rotor must first be removed. This is done once the top is off by using the jacking screws that are supplied with the machine. These two screws are 1/4" diameter and 2 1/2" long. Tighten these evenly and fully and then the rotor can be removed. **BE CAREFUL!!!** The rotor is made with very strong magnets and will attract any iron or steel pieces that are near it. Once the rotor is removed, the lower bearing carrier can be removed by first removing the six screws on the outer edge of the carrier. This is a slip fit in the housing and should come right out. If there is corrosion it may be necessary to press this out.

Then the three screws that hold the stainless steel may be necessary to press this out. Then the three screws that hold the stainless steel retaining plate can be removed and then the bearing can be removed. A new bearing can then be installed and the carrier replaced. We recommend a stainless steel bearing for the lower bearing. The rotor can be replaced by lowering it with the jacking screws. Once this is done, and the screws are removed from the rotor, the top can now be installed by using its one large jacking bolt. Make sure that this bolt is centered so it fits over the bearing bolt before the top is gently lowered into place. Once all this is done, make sure that the wires that go to the lower piece are pulled up so there will not be any slack that could contact the rotor.



Technique for removing rotor showing jacking screws

**PLEASE NOTE: The propeller must be installed with the *rounded* edges up. This means that the thicker edge of the blades should be on the upper side.**

### **Propeller Bearing**

To replace the propeller bearing (water lubricated cutlass type):

After removing the spinner and propeller, the guide vane and aluminum casting above it can be removed as a unit. Simply unscrew the aluminum casting from the aluminum tube and access to the bearing is possible. This is a bronze piece with a rubber liner. Once the tube is unscrewed from the casting, it should be easily removable. Note the condition of the bronze sleeve on the shaft and there should only be very small clearance between this sleeve and the rubber of the cutlass bearing. Examine the brass wear strip in the plastic guide vane assembly for wear or damage.