

With a proper installation and a little routine maintenance, your LH1000 will provide you with years of trouble-free operation.

The most important maintenance for your LH 1000 is replacing the bearings on a regular basis. You will need three #6203 ball bearings with contact seals for your replacement.

BEARINGS, SERVICE & ASSEMBLY

In order to remove the generator to access the bearings, you must first remove the wiring from the terminals on the clear, plastic terminal block in the junction box. Be sure to note their position for later re-installation. An alternative is to remove the junction box from the alternator base by removing the two bolts on the bracket. Then, undo the four Allen head bolts that attach the generator to the finned, aluminum base, using the Allen wrench supplied with the LH1000. The four bolts are located under the generator base, and thread upward into the generator. 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 $\frac{3}{4}$ 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 so you can unscrew the shaft while holding the generator rotor with the $\frac{1}{4}$ pin. *Please note: During assembly the longer bore in the shaft adapter fastens to the generator and the shorter bore goes toward the long shaft.*

The finned alternator base can be removed from the shaft housing by unscrewing it. The shaft housing tube can also be unscrewed from the guide vane base. The aluminum guide vane base is attached to the polyurethane guide vane assembly with four 1/4 620 Allen head bolts that may be removed using the provided Allen wrench and a 7/16 (11mm) wrench.

IMPORTANT Bearing maintenance is important. You should replace bearings **ONCE PER YEAR** or as soon as you notice any looseness from wear. If they are too loose, severe damage to both the rotor and the stator can result. Check the clearance often making sure you can insert two business cards (or something the same thickness) between the rotor magnets and the stator. Even if the bearings are not worn, changing them once per year will help keep the area free of corrosion and make future bearing changes easier. This machine uses three 6203 ball bearings with contact seals. Presently the bearings in the machine are a slip fit in the housing bore and Loctite 243 has been applied to the bearings before assembly in order to secure them. This adhesive and corrosion may make the bearing difficult to remove. Tapping with a block of wood should be sufficient but the use of a press may be required if the bearings are stuck in the housing.

To replace bearings:

1. Using the rotor pin to hold the shaft, unthread the runner from the generator shaft.
2. Remove rotor. To remove rotor and shaft raise the rotor as described in *output adjustment* until the magnetic attraction is low enough to separate the rotor/shaft assembly from the housing and stator.
3. Unscrew two bolts and washers that retain the bearings.
4. With the LH1000 sitting inverted, using your thumbs, push out the bearings from the housing or tap the bearings out. This may require a press in some situations.
5. Clean bearing sleeve and insert new 6203 bearings and apply Loctite 243 or equivalent. .
6. Reassemble.

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.