

Removal (if Applicable):

1. Prior to removal, by visual inspection, try to determine cause of failure of old unit.
2. Inspect installation for compliance with all applicable A.D. Notes, Service Bulletins and other service documentation.
3. Disconnect aircraft battery from circuit and insulate cables to avoid electrical shock and accidental grounding.
4. Remove old starter from engine, being careful not to further damage unit, as it is still valuable as an exchange core. Refer to engine or airframe service instructions and/or maintenance manuals.

Installation:

1. Carefully remove new unit from shipping carton and inspect for hidden damage, proper part number, and correct voltage.
2. Refer to factory approved wiring diagrams for routing, color codes and connections. *Consult the applicable service manual or instructions as required.*
3. Inspect engine mounting pad for burrs and cracks at bolt holes.
4. Clean out oil and dirt from bolt holes and mounting pad.
5. Use new O-ring on adapter-mounted starters.
6. Check ring gear for missing, damaged, or badly worn teeth where required.
7. Inspect all wire connector lugs, crimp-on type, for cut and broken strands of wire.
8. All mounting bolts should be progressively tightened to avoid binding on pins, then torqued to specification (E & X Drive: torque to 204 in-lbs).
9. Torque terminal stud to specification (E & X Drive: torque to 40 in-lbs).
10. It is advisable to replace the starter solenoid at 2000 hours engine time or sooner to insure maximum voltage and current to the starter.
11. Complete the Warranty Activation upon installation per the instructions in the warranty policy. Record the installation in the aircraft's on board papers and logs.

Starter Operation:

1. Do not apply power to starter unless installed on engine. Free run may cause internal damage.
2. The recommended cycle for starter operation is:
- 10 seconds of power (start), 20 seconds cool down (rest) for up to 20 starts then 10 minutes cool down.

Maintenance:

1. Clean corrosion from electrical terminals, check insulation, check nut torque.
2. Clean the starter drive area of oil and debris with oleum or mineral spirits every 50 hours time in service.

Troubleshooting:

1. Check battery condition.
2. Check engine ground to aircraft.
3. Check all wiring and crimped terminals for security.
4. Check voltage and amps applied at starter.
5. Check starter switch for function.
6. Check starter solenoid for proper operation.
7. If starter motor is running but not engaging engine, check starter drive security and lubrication. For adapter-mounted starters, check starter adapter for proper operation.

Caution:

1. Always refer to the airframe and engine specifications to determine the proper starter to install. Do not rely on the part number removed, as it may have been installed in error.
2. Upon completion of installation, thoroughly test for proper operation.
3. Never install an automotive unit in place of one built for aircraft use.

About Hartzell Engine Technologies LLC:

At Hartzell Engine Technologies, our quest for quality drives our business. We simply will not settle for less than the best. From the initial design to the building and testing of each unit, we take pride in our high level of craftsmanship. We confidently stand behind each component with our solid warranty honored by Hartzell Engine Technologies distributors worldwide.

Call our Hartzell Engine Technologies Customer Care Center at (877-359-5355) or visit our website at <http://www.hartzellenginetech.com> for more information about our full line of products and a distributor nearest you.

Demand quality, demand Hartzell Engine Technologies products...starters, voltage regulators, heaters, combustion heaters, tachometer generators, alternators, magnetos, and a complete line of turbochargers, valves and controllers.



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