EX14-50 INSTALLATION INSTRUCTIONS

READ AND THROUGHLY UNDERSTAND ALL OF THE INSTALLATION INSTRUCTIONS BEFORE BEGINNING INSTALLATION OF THIS KIT.

NOTE: IF AIRCRAFT DOES NOT HAVE A CIRCUIT BREAKER OR CURRENT LIMITING DEVICE IN THE GENERATOR OUTPUT WIRE AND REGULATOR INPUT TERMINAL PER AC43.13-1B, DO NOT INSTALL THIS KIT.

1. **ENSURE THAT ALL POWER IS REMOVED FROM THE EXISTING GENERATOR CIRCUIT, IF UNSURE DISCONNECT THE AIRCRAFT BATTERY!** Remove existing generator and mounting gasket, inspect mounting surface and mounting studs for any abnormalities. Correct all issues before installing EX14-50 Alternator Kit.
2. Remove drive gear assembly from old generator.
3. Inspect Gear, Sleeve, Retainer and Hub for Airworthy condition. Discard old Bushings TCM Part Number 626543 (Bushings must be replaced with new) and any worn or damaged parts or assemblies.

NOTE: IT IS THE RESPONSIBILITY OF THE INSTALLER TO THOROUGHLY INSPECT AND PROPERLY INSTALL THE GEAR ASSEMBLY. DAMAGE TO THE ALTERNATOR FROM THE INSTALLATION OF WORN, DEFECTIVE OR IMPROPERLY INSTALLED PARTS WILL VOID EX14-50 WARRANTY AND MAY CAUSE ENGINE DAMAGE.

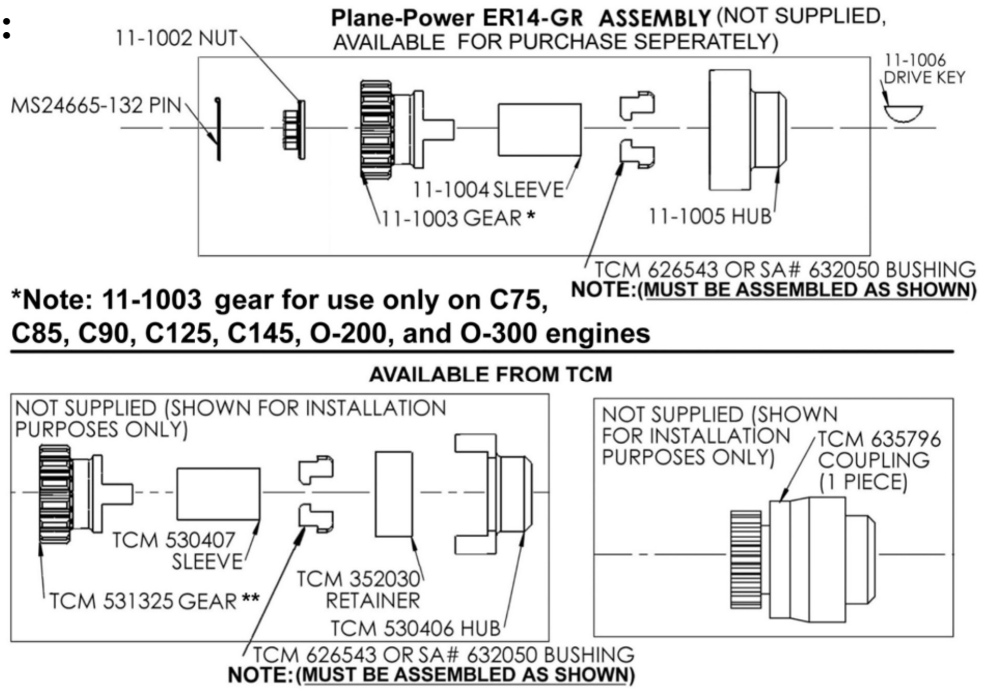
----------(Refer to Page 1 and Figure A)----------

4. **ASSEMBLE DRIVE GEAR ASSEMBLY WITH 2 NEW BUSHINGS TCM P/N 626543** on alternator shaft. Ensure Bushings and Drive Key are properly installed in shaft.
5. Torque Shaft Nut TCM P/N 530412 to Minimum torque of 180 inch Lbs. and install cotter pin #MS24665-132. If cotter pin will not pass through drilled hole in shaft slowly increase torque to align hole. **DO NOT EXCEED 220 INCH LBS.**
6. Install alternator on engine with new gasket TCM P/N 35019 or P/N649984 depending on engine model. Ensure that alternator drive gear meshes to engine gear without forcing or binding.
7. Reinstall 3 flat washers, lock washers and nuts that were removed in step 1.
8. Hand tighten nuts evenly and check that the alternator fits evenly to the engine case without any force or binding.
9. Slowly increase the torque on the 3 mounting nuts using a crosswise pattern until a torque of 200 Inch Lbs. is achieved. **Check drive gear lash by carefully moving the EX14-50 cooling fan on rotor back and forth(Typical lash .075"). If no lash is detected remove EX14-50 and correct the cause before proceeding.**
10. Install output (B+) wire and torque to 50 inch Lbs. **Ensure that the output wire is of sufficient size to carry more than 50-Amps and that it is connected to the aircraft buss through a 50-Amp circuit breaker. Refer to AC43.13-1B for acceptable methods, techniques and practices if needed.**
11. Wire the Enable/ Field plug as shown on installation drawing. **THE ENABLE WIRE MUST BE WIRED TO A 7.5-AMP MAX CIRCUIT BREAKER.** The optional Alternator Inoperative Lamp is not required for alternator operation but is recommended if the aircraft does not have an alternator or voltage monitoring system.
12. Check the security of all wiring and ensure that there is no interference with any control movement.

13. Start the engine and check for any oil leaks or abnormal sounds. Stop the engine immediately if any are noticed and correct the condition before proceeding.
14. With engine running at 1200 RPM turn on FIELD/ENABLE switch. With the use of a calibrated Volt Meter connected to the aircraft bus, check for a regulated voltage of 14.2+- .3 volts. Turn on Landing Light and observe that the voltage remains at 14.2+- .3 volts.

Complete: Log Book Entries. EX14-50 Weight = 6.8 LBS.

FIGURE A:



OPERATING INSTRUCTIONS AND EMERGENCY PROCEDURES

The EX14-50 Experimental alternator is internally regulated with over-voltage protection and can be controlled by the enable/field switch if necessary. The built in internal over-voltage protection module monitors the bus voltage through the enable line. If this module senses an over-voltage condition the 5-amp enable circuit breaker will be tripped and the alternator will be disabled. If this occurs, reset the circuit breaker. If the circuit breaker trips again, reduce electrical load and land as soon as practical.

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

Annual / 100 Hour Inspections:

1. Check regulated voltage is within limits 14.2 +- .3 Volts.

5 Year or 500-Hour Intervals:

1. Repeat: Annual / 100 Hour Inspection
2. Remove Field Brush assembly and inspect brushes for excess wear. Replace Brush assembly if brushes extend less than .250” from edge of brush holder.
3. Replace 2 Drive Coupling Bushings, TCM Part Number 626543.