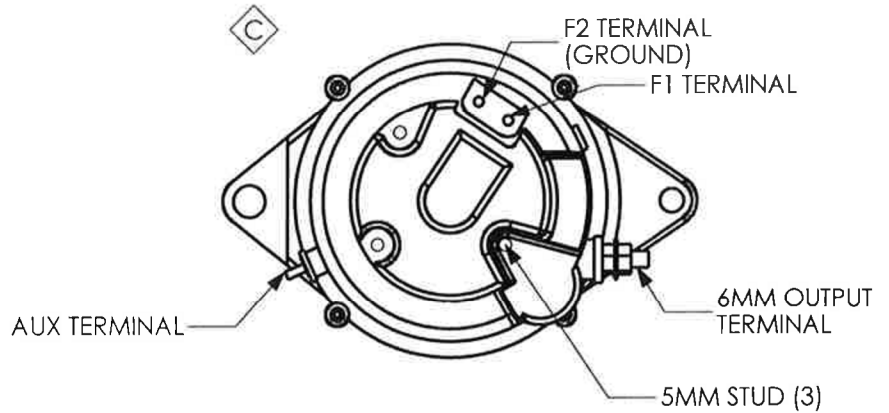
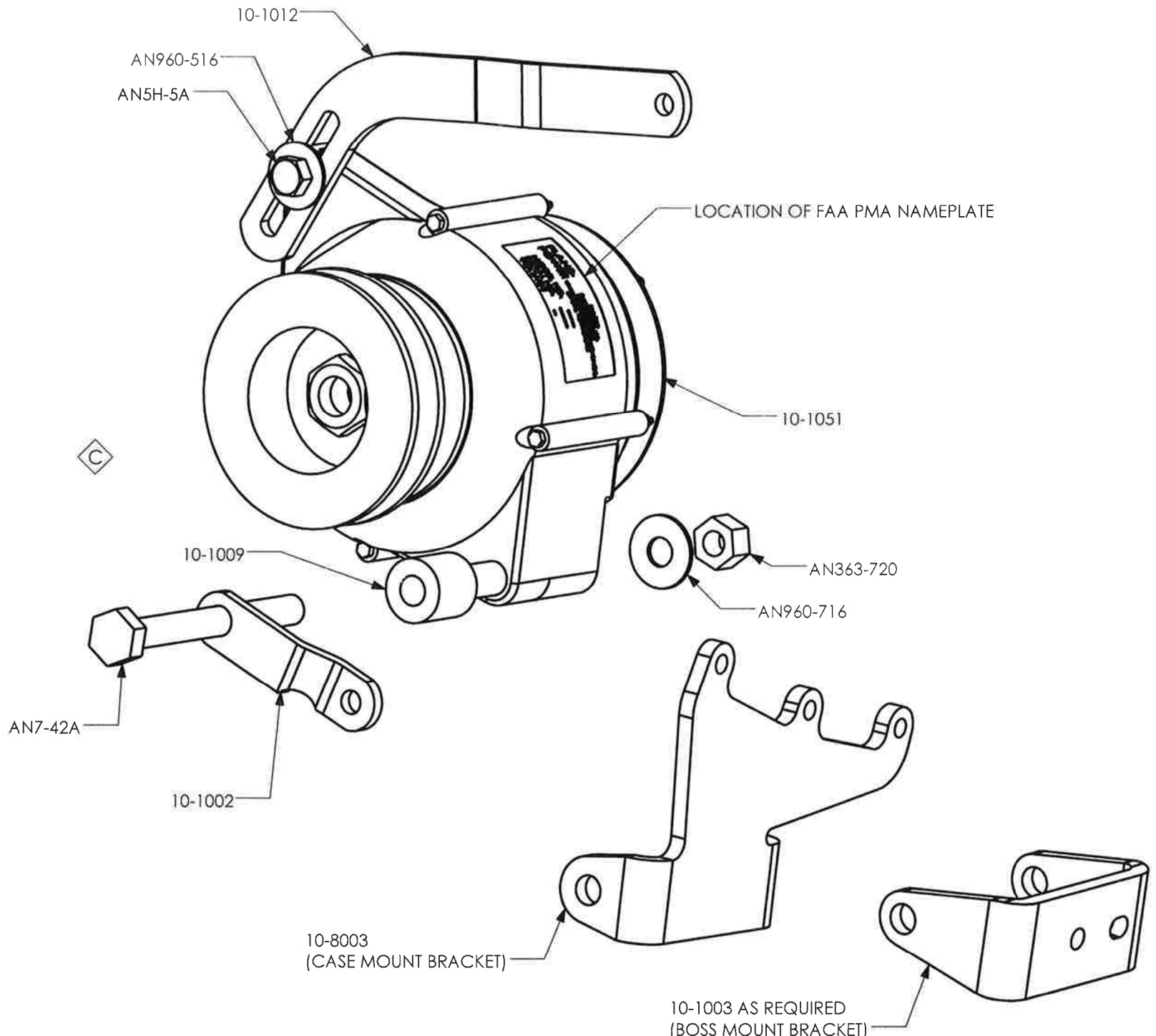


REVISIONS				
EN	REV.	DESCRIPTION	BY	DATE
1409047	B	FIRST RELEASE INTO HET DESIGN DATA	BJ	9/10/14
1409048	C	1) MOVED INSTALLATION DRAWING AND LABEL FROM PAGE 3 TO PAGE 1. 2) ADDED HET TITLEBLOCK 3) HARTZELL ENGINE TECHNOLOGIES WAS PLANE POWER, LTD. 4) ADDED 10-1031 CALLOUT TO DATA TAG. 5) MODEL NO. 10-1051 WAS SAL12-70. 6) REMOVED "PLANE POWER LDT." AND/OR REPLACED WITH "HET" WHERE APPLICABLE. 7) "PER DRAWING ON PAGE 1" WAS "PER DRAWING ON PAGE 3"	BJ	9/10/14



**Plane Power** FAA PMA  
HARTZELL ENGINE TECHNOLOGIES, LLC  
For eligibility see [www.plane-power.com/catalog](http://www.plane-power.com/catalog)

**MODEL NO. 10-1051**  
**SERIAL NO. B2-YWWSN**  
**VOLTAGE 12**

NOTES:  
1. FOR STANDARD 7.5" DIAMETER RING GEAR SUPPORT PULLEY USE PIPER V-BELT P/N 452-541 (GATES 9335XL). NOT SUPPLIED

SPECIFICATION CLASSIFICATION		
CLASSIFICATION	DIMENSION CONVENTION	NOTE NO. CONVENTION
CRITICAL	<XX.XX>	<#>
MAJOR	[XX.XX]	[#]
MINOR	XX.XX	#
REFERENCE	(XX.XX)	(#)

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES AND APPLY AFTER HEAT TREAT AND PLATING  
.X = ±.015  
.XX = ±.010      ANGLES ±1°  
.XXX = ±.005  
BREAK ALL EDGES AND MACHINE ALL INSIDE CORNER FILLETS .015 MAX.  
SURFACE FINISH  $\sqrt{125}$

THIS DRAWING CONTAINS INFORMATION THAT IS CONFIDENTIAL AND PROPRIETARY TO HARTZELL ENGINE TECHNOLOGIES. THIS DRAWING IS FURNISHED ON THE UNDERSTANDING THAT THE DRAWING AND THE INFORMATION IT CONTAINS WILL NOT BE COPIED OR DISCLOSED TO OTHERS EXCEPT WITH THE WRITTEN CONSENT OF HARTZELL ENGINE TECHNOLOGIES. WILL NOT BE USED TO THE DETRIMENT OF HARTZELL ENGINE TECHNOLOGIES, AND WILL BE RETURNED UPON REQUEST BY HARTZELL ENGINE TECHNOLOGIES.

GEOMETRIC SYMBOLS PER ANSI Y14.5

- FLATNESS
- STRAIGHTNESS
- ROUNDNESS
- ⊘ CYLINDRICITY
- PROFILE
- ⊥ PERPENDICULARITY
- ⊕ POSITION
- ◎ CONCENTRICITY
- ≡ SYMMETRY
- ∠ ANGULARITY
- ∥ PARALLELISM
- ↻ CIRCULAR RUNOUT
- ↻ TOTAL RUNOUT

SCALE NTS

DRAWN	BJ	3/26/07
CHECKED	RFB	9/11/14
ENG.	CMB	9/11/14
FINISH	N/A	
WEIGHT	N/A	
MATERIAL	SEE INDIVIDUAL PARTS	
SIZE	SH 1 OF 4	CODE ID 65PY1

**HARTZELL ENGINE TECHNOLOGIES** 2900 Selma Highway Montgomery, AL 36108

**SAL12-70 INSTALLATION INSTRUCTIONS**

DRAWING NO. 14-5001      REV. C

<b>Parts List:</b>		
<b>Qty</b>	<b>Part No.</b>	<b>Description</b>
1	10-1051	Alternator, 12 Volt, with 1/2" V-Belt Pulley.
1	10-8099	Mounting kit for Lycoming Engine.
1	R1224	Alternator Controller (Voltage Regulator) and data sheet 12-1001
1	ALP-1001	Placard, ALT FIELD (Part of Drawing 14-1012)
1	ALP-1006	Placard, ALT INOP (Part of Drawing 14-1012)
1	14-5001	Installation Instructions (This document)
1	14-1010	Alternator Inoperative Lamp (14 Volt)

**READ AND THOROUGHLY 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'S OUTPUT AND REGULATOR'S INPUT CIRCUIT THEY MUST BE INSTALLED.**

#### **Part 1, Installation of Alternator and Regulator**

1. Disconnect aircraft battery.
2. Remove Generator and voltage regulator.
3. Install Alternator per drawing on page 1. Tension the belt and torque the AN5H-5A adjusting bolts to 200 in/lb and safety wire with 0.032" diameter safety wire. Torque the AN7-42A mounting bolts to 425 in/lb.
4. **Ensure that internal jumper #1 and internal jumper #2 of the R1224 regulator are set for 12V operation** (See regulator instructions for location of jumpers).
5. If original output circuit breaker is rated at less than 70-amps and you wish to be able to utilize the increased capacity of the alternator, remove the breaker and replace with suitable breaker up to 70amp maximum size. **Ensure wire size from alternator output terminal to output circuit breaker and from output circuit breaker to bus is rated for more than the size of breaker installed per AC43.13-1B.**  
**Note: If aircraft has been equipped with an Amp Meter, ensure that it is of adequate size to handle the increased output capability before increasing the output wire and breaker.**

6. Wire the system as follows:
- a. For regulator wiring instructions view the regulator installation instructions.
  - b. Connect the GRND terminal of the regulator to the common aircraft ground.
  - c. Leave the ground jumper installed on the F2 terminal of the alternator.
  - d. Connect the existing generator output wire to the alternator's 6mm OUTPUT TERMINAL (or install a new wire in accordance with AC43.13-1B) using a MS25171-2S terminal nipple for insulation (Not Supplied). Torque to 50 in/lb.
  - e. Use the original generator field wire or install a new wire, minimum 18AWG, from the alternator F1 terminal to the FLD terminal of the regulator. Torque the alternator's F1 terminal nut to 20 in/lb.
  - f. Install, in view of the pilot, placard ALP-1001 (ALT FIELD) adjacent to the field switch for the alternator.
  - g. Ensure that the FIELD switch/breaker is connected to the aircraft positive bus.
  - h. If the aircraft has a "Generator Inoperative" indicator lamp, it may be used in this step. If the lamp is not currently installed or is not compatible use the supplied lamp P/n 14-1010 Alternator Inoperative Lamp (14 Volt) and install it in pilots clear field of view.
  - i. Install, in view of the pilot, placard ALP-1006 (ALT INOP) adjacent to the indicator for the alternator. Also run a new wire, minimum 18AWG, from the AUX terminal of the alternator to the AUX terminal of the regulator.
7. Adjust and Test the system:
- a. Set FIELD switch to OFF.
  - b. Turn on MASTER switch and start the engine. With FIELD switch in OFF position ensure that ALT INOP indicator is illuminated.
  - c. Turn on the FIELD switch. Check proper charging indication. Check ALT INOP indicator is off. Check aircraft maintenance manual for proper bus voltage (typically 14.0V  $\pm$  0.3V). Adjust the regulator to the desired bus voltage at 1200 engine RPM.
  - d. Recheck and inspect the entire installation. Complete FAA form 337, make log book entry, update aircraft equipment list, and weight and balance.

### Mounting Kit Parts List

10-8099 MOUNTING KIT COMPONENTS					
QTY	P/N	DESCRIPTION	QTY	P/N	DESCRIPTION
1	AN5H-5A	BOLT	1	10-1012	TENSION ARM
1	AN960-516	WASHER	1	10-1009	SPACER BUSHING
1	AN7-42A	BOLT	1	10-1002	STARTER STRAP
1	AN960-716	WASHER	1	10-8003	CASE MOUNT BRACKET
1	AN363-720	NUT	1	10-1003	BOSS MOUNT BRACKET

**Part 2, Preparation of FAA Form 337**

1. Installed Alternator in accordance with Supplemental Type Certificate No. SA10682SC. Updated Airplane Flight Manual with HET Airplane Flight Manual Supplement 001 (or later revision). Weight changed (compute weight and balance as necessary). Checked size of wire from Alternator output terminal to alternator circuit breaker and from Alternator circuit breaker to bus and size of Alternator circuit breaker with AC43.13-1B. (Note: use this statement as applicable. If wire and circuit breaker sizes are satisfactory, so state. If not satisfactory, state wire and/or circuit breaker size installed to conform with AC43.13-1B.)
2. Modified aircraft equipment list by removal of generator listed and adding Model SAL12-70 Alternator Kit.

Weight and Balance																
Removed generator installation:  Weight _____ Arm _____ (Refer to Aircraft Equipment List)		Installed SAL 12-70 alternator kit consisting of:														
Removed regulator installation:  Weight _____ Arm _____ (Refer to Aircraft Equipment List)		<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: right; width: 20%; font-weight: normal;">wgt.</th> </tr> </thead> <tbody> <tr> <td>(1) 10-1051 alternator</td> <td style="text-align: right;"><u>10.0lbs.</u></td> </tr> <tr> <td>(1) 10-8099 mounting kits.</td> <td style="text-align: right;"><u>1.0 lbs.</u></td> </tr> <tr> <td>(1) R1224 Voltage Regulator</td> <td style="text-align: right;"><u>0.3 lbs.</u></td> </tr> <tr> <td>(1) ALP-1001 Placard</td> <td style="text-align: right;"><u>Negligible</u></td> </tr> <tr> <td>(1) ALP-1006 Placard</td> <td style="text-align: right;"><u>Negligible</u></td> </tr> <tr> <td>(1) 14-1010 Lamp</td> <td style="text-align: right;"><u>Negligible</u></td> </tr> </tbody> </table>		wgt.	(1) 10-1051 alternator	<u>10.0lbs.</u>	(1) 10-8099 mounting kits.	<u>1.0 lbs.</u>	(1) R1224 Voltage Regulator	<u>0.3 lbs.</u>	(1) ALP-1001 Placard	<u>Negligible</u>	(1) ALP-1006 Placard	<u>Negligible</u>	(1) 14-1010 Lamp	<u>Negligible</u>
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**Part 3, Instructions for Continued Airworthiness**

PERIODIC MAINTENANCE:

1. It is recommended that the operation of the SAL12 -70 alternator be checked every 100 hour inspection or every annual inspection which ever comes first.
2. ANNUAL/100 HOUR INSPECTION:
  - a. Remove drive belt and turn alternator rotor to check condition of bearings for abnormal noise or roughness.
  - b. Each annual/100 hour inspection, the alternator and its associated wiring should be checked for secure electrical connections and physical connection to the airframe. The belt drive tension should be re-set to the aircraft manufacturer's specification.
3. 5 YEAR OR 1000 HOUR INSPECTION
  - a. Repeat the Annual/100 hour inspection.
  - b. Remove field brush assembly and inspect brushes for excess wear. Replace brush assembly if brushes extend less then 0.250 inches from edge of holder case.

AIRWORTHINESS LIMITATIONS

There are no mandatory replacement limits. There are no mandatory structural inspection intervals.

THE AIRWORTHINESS LIMITATIONS SECTION IS FAA APPROVED AND SPECIFIES MAINTENANCE REQUIRED UNDER SEC. 43.16 AND 91.403 OF THE FEDERAL AVIATION REGULATIONS UNLESS AN ALTERNATIVE PROGRAM HAS BEEN FAA APPROVED.