United States of America
Department of Transportation
Federal Aviation Administration

Supplemental Type Certificate

Number SA10682SC

This certificate issued to: Hartzell Engine Technologies LLC
2900 Selma Highway
Montgomery, AL 36108

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 3 of the Civil Air *Regulations.*

Original Product – Type Certificate Number: (See attached FAA Approved Model

Make: List (AML) for models and
Model: applicable airworthiness regulations)

Description of Type Design Change:
Installation of alternator and voltage regulator in accordance with Master Drawing List No. 14-0000, Rev. A, dated July 19, 2007, or later FAA approved revision. FAA approved Airplane Flight Manual, AFMS 001, Rev. IR, dated July 25, 2007 or AFMS 002, Rev. IR, dated July 25, 2007, or later FAA approved revision is required.

Limitations and Conditions:
The installer must determine whether this design change is compatible with previously approved modifications. If the holder agrees to permit another person to use this certificate to alter a product, the holder must give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, and revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: February 28, 2007
Date of issuance: July 25, 2007

Date reissued: 09/19/07; 11/16/07; 07/17/14
Date amended:

By direction of the Administrator

Signature for Scott A. Horn

Title
Manager, Aircraft Certification Office,
Southwest Region

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both. This certificate may be transferred or made available to third persons by licensing agreements in accordance with 14 CFR 21.47. Possession of this Supplemental Type Certificate (STC) document by persons other than the STC holder does not constitute rights to the design data nor to alter an aircraft, aircraft engine, or propeller. The STC's supporting documentation (drawings, instructions, specifications, flight manual supplements, etc.) is the property of the STC holder. An STC holder who allows a person to use the STC to alter an aircraft, aircraft engine, or propeller must provide that person with written permission acceptable to the FAA. (Ref. 14 CFR 21.120).

FAA APPROVED MODEL LIST (AML)

SA10682SC

Date of issuance: July 25, 2007

Hartzell Engine Technologies LLC
2900 Selma Highway
Montgomery, AL 36108

Item	Aircraft/Engine Make	Aircraft/Engine Model	Original Type Certificate Number	Regulation/Part
	Raytheon Aircraft Co.	35, A35, B35, C35, D35, E35, F35, G35, 35R, modified by STC conversion to O-470 or IO-470 engine.	A-777	CAR 3
	Hawker Beechcraft Corp.	Beech H35, J35, K35, M35, N35, P35, 35-33, 35-A33, 35-B33, 35-C33	3A15	CAR 3
	Alexandria Aircraft	LLC Bellanca 14-19-2, 14-19-3, 14-19-3A	1A3	CAR 3
	Cessna Aircraft Co.	180, 180A, 180B, 180C, 180D, 180E, 180F, 180G	5A6	CAR 3
	Cessna Aircraft Co.	182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H	3A13	CAR 3
	Cessna Aircraft Co.	185, 185A, 185B, 185C, 185D	3A24	CAR 3
	Cessna Aircraft Co.	210, 210A, 210-5 (205), 210-5A (205A)	3A21	CAR 3
	Cessna Aircraft Co.	206, P206	A4CE	CAR 3
	Lockheed Aircraft International	402-2	2A11	CAR 3
	Prop-Jets Inc.	Meyers 200, 200A, 200B, 200C, 200D	3A18	CAR 3
	Sierra Hotel Aero, Inc.	Navion D, E, F, G, H and Navion (L-17A), Navion A (L-17A & L-17B), B modified by STC conversion to O-470 or IO-470	A782	CAR 3
	Raytheon Aircraft Co.	Beech 23	A1CE	CAR 3
	Revo, Inc.	Colonial C1, Colonial C2, Lake LA-4, LA-4A, LA-4P	A1A3	CAR 3
	Alliance Aircraft Group, LLC	Helio H-250	1A8	CAR 3
	Aircraft Parts & Development	Intermountain (Callair) A, A-2, A-4, A-5, A-5T, A-9, A-9B	A-758	CAR 4a CAR 8
	FS 2003 corporation	Piper PA-12, PA-12S	A-780	CAR 3
	The New Piper Aircraft, Inc.	Piper PA-16, PA-16S	1A1	CAR 3
	The New Piper Aircraft, Inc.	Piper PA-18, PA-18S, PA-18 "105" (Special), PA-18S "105" (Special), PA-19S	1A2	CAR 3
	The New Piper Aircraft, Inc.	PA18A, PA-18 "125" (Army L-21A), PA-18S "125", PA-18AS "125", PA-18 "135", (Army L-21B), PA-18A "135", PA18S "135", PA18AS "135", PA-18 "150", PA-18A "150", PA-18S "150", PA-18AS "150", PA-19, (Army L-18C), (When modified with FAA approved rear mounted oil cooler.)	1A2	CAR 3
	The New Piper Aircraft, Inc.	PA-20-"115", PA-20S-"115"	1A4	CAR 3
	The New Piper Aircraft Inc.	Piper PA-20, PA-20S, PA-20-"135", PA-20S-"135" (When modified with FAA approved rear mounted oil cooler.)	1A4	CAR 3
	The New Piper Aircraft Inc.	PA-22-108	1A6	CAR 3
	The New Piper Aircraft Inc.	Piper PA-22, PA-22-135, PA-22S-135, PA-22-150, PA-22S-150, PA-22-160, PA-22S-160	1A6	CAR 3

		(When modified with FAA approved rear mounted oil cooler.)		
	The New Piper Aircraft, Inc.	Piper PA-24, PA-24-250, PA-24-260, PA-24-400	1A15	CAR 3
	Latinoamerica De Aviacion (Lavia) S.A.	Piper PA-25, PA-25-235, PA-25-260	2A8	CAR 3
	The New Piper Aircraft, Inc.	Piper PA-28-140, PA-28-150, PA-28-160, PA-28-180, PA-28-235, PA-28S-160, PA-28S-180	2A13	CAR 3
	Mooney	M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G	2A3	CAR 3
	Alliance Aircraft Group, LLC	Helio 500	A2EA	CAR 3
	KWAD Co.	Super-V	A5IN	CAR 10
	The New Piper Aircraft, Inc.	Piper PA-23, PA-23-160, PA-23-235, PA-23-250, PA-E23-250	1A10	CAR 3
	The New Piper Aircraft, Inc.	Piper PA-30	A1EA	CAR 3
	Cessna Aircraft Co.	Cessna 310, 310A, 310B, 310C, 310D, 310E, 310F, 310G, 310H, 310I, 310J, 310K	3A10	CAR 3
	Twin Commander Aircraft Corporation	500A	6A1	CAR 3
	Hawker Beechcraft Co.	Beech Baron 95-55, 95-A55, 95-B55, 95-B55A	3A16	CAR 3
	Fred Garcia	Camair 480	2A2	CAR 3
	Hawker Beechcraft Co.	Beech Travelair 95, B95, B95A, D95A, E95	3A16	CAR 3
	Twin Commander Aircraft Corporation	500, 500B, 500U	6A1	CAR 3

FAA Approved: [signature]

Scott A. Horn

Manager, Aircraft Certification Office

Southwest Region

Date: July 17, 2014

Hartzell Engine Technologies LLC

Belt Driven Aircraft Engine Alternator Conversion Parts List

MDL DRAWING 14-0000 REV. J

Created: 3/26/07 Last Revised:5/29/15

Rev	Date	By	Revisions
F	9/18/08	SJK	UPDATED DWG. 12-1001 REV. F
G	11/19/09	BRJ	Updated 14-2001 Rev C, 14-3001 Rev B, 14-4001 Rev B, 14-5001 Rev B, 14-6001 Rev C, Removed Airplane Make and Model Eligibility, 12-1010, 12-1001, Added R1224
H	9/11/14	BRJ	1)FIRST RELEASE OF DRAWINGS INTO HARTZELL DESIGN DATA. 2)UPDATED 14-2001 REV D, 14-3001 REV C, 14-4001 REV C, 14-5001 REV C, 14-6001 REV D AND ADDED 10-1031. 3) HEADING WAS "PLANE POWER LTD."
J	5/29/15	CMB	1)ADDED 10-8099-1; 2)ADDED MISSING PARTS TO BOMS; 3)CHANGED BOM OF 10-5051; 4) REMOVED LABEL AND LAMP LINES; 5)ADDED 12-1021 LINE

MDL DRAWING 14-0000 REV. J

Part No.	Rev	Date	Description	Qty	TAL24-70C	TAL12-70	TAL24-70	SAL12-70	SAL12-70C
			INSTALLATION INSTRUCTIONS		Quantity				
14-2001	D	9/08/14	**TAL24-70C Installation Instructions**		1				
14-3001	C	9/10/14	**TAL12-70 Installation Instructions**			1			
14-4001	C	9/10/14	**TAL24-70 Installation Instructions**				1		
14-5001	C	9/10/14	**SAL12-70 Installation Instructions**					1	
14-6001	D	9/10/14	**SAL12-70C Installation Instructions**						1
			MOUNTING KITS						
10-8099	H	5/13/15	**Mounting Kit**			2		1	
10-8099-1	NEW	5/29/15	**Mounting Kit**				2		
10-1012	F	10/24/14	TENSION ARM	1					
10-1009	F	10/3/14	PIVOT HOLE SPACER BUSHING	1					
10-8003	H	10/24/14	BRACKET -LYC.	1					
10-1002	G	10/3/14	STARTER STRAP	1					
10-1003	E	10/3/14	U BRACKET	1					
14-1011	NEW	4/14/15	28V ALTERNATOR INOPERATIVE LAMP	1					
10-1033	NEW	2/2/15	TERMINAL, RING	8					
AN5H-5A	-	-	BOLT	1					
AN960-516	-	-	WASHER	1					
AN7-42A	-	-	BOLT	1					
AN960-716	-	-	WASHER	1					
AN363-720	-	-	NUT	1					
10-9099	F	1/26/15	**Mounting Kit**						1
10-9099A	B	2/18/15	**Mounting Kit**		2				
10-9004A	A	9/8/14	CONTINENTAL TENSION ARM	1					
10-9005A	A	9/8/14	SPACER	3					
10-9005B	A	9/8/14	SPACER	1					
AN7-10A	-	-	BOLT	1					
MS35338-47	-	-	LOCKWASHER	2					
AN960-516	-	-	WASHER	2					
AN5H-7A	-	-	BOLT	1					
MS20074-05-12	-	-	BOLT	1					
AN7-43A	-	-	BOLT	1					
MS21045-6	-	-	NUT	1					
AN960-616	-	-	WASHER	2					
AN6-41A	-	-	BOLT	1					
MS35338-45	-	-	LOCKWASHER	1					
AN960-816L	-	-	WASHER	1					
10-1009	F	10/3/14	PIVOT HOLE SPACER BUSHING	1					
10-3012	E	10/10/14	SPACER	1					
10-9006	B	10/24/14	SUPPORT BRACKET	1					
10-3009	G	10/10/14	PIVOT HOLE REAR SPACER BUSHING	1					
10-3010	F	10/10/14	PIVOT HOLE FRONT SPACER	1					

User is responsible for verification of current revision before using this document. Document considered "reference only" if not the current revision.

10-9003	K	10/27/14	BRACKET TCM	1
AN363-624	-	-	NUT	1
14-1011	NEW	4/14/15	28V ALTERNATOR INOPERATIVE LAMP	1
10-1033	NEW	2/2/15	TERMINAL, RING	8

10-9007	-	6/10/08	**BRACKET ASSEMBLY (AS REQUIRED)**		2				
10-9007A	-	6/10/08	**BRACKET (AIR INDUCTION)**	1					
10-9007B	-	6/10/08	**BRACKET (ENGINE)**	1					
10-9007C	-	6/10/08	**BRACKET**	1					
AN3-6A	-	-	BOLT	4					
AN3-5A	-	-	BOLT	3					
AN960-10	-	-	WASHER	14					
MS21045-3	-	-	NUT	7					

ALTERNATORS

10-1050C	E	3/31/15	**Alternator Assy. 12 Volt / 3" DIA. 3/8" V-BELT Pulley**						1
10-1051	F	1/29/15	**Alternator Assembly, 12 Volt / 1/2" V-Belt Pulley**			2		1	
10-5050C	D	2/18/15	**Alternator Assy. 24 Volt / 3" DIA. 3/8" V-BELT Pulley**		2				
10-5051	C	5/26/15	**Alternator Assembly, 24 Volt / 1/2" V-Belt Pulley**				2		
10-5006	A	10/10/14	24V ALTERNATOR ASSEMBLY	1					
10-1032	NEW	2/2/15	NUT, M5X.8	1					
10-2005	F	11/3/14	1/2" V-BELT PULLEY	1					
10-1031	NEW	9/5/14	LABEL	1					
C10-221	NEW	2/2/15	SAFETY WIRE	AR					

REGULATORS

			R1224 PMA Approved Regulator		2	2	2	1	1

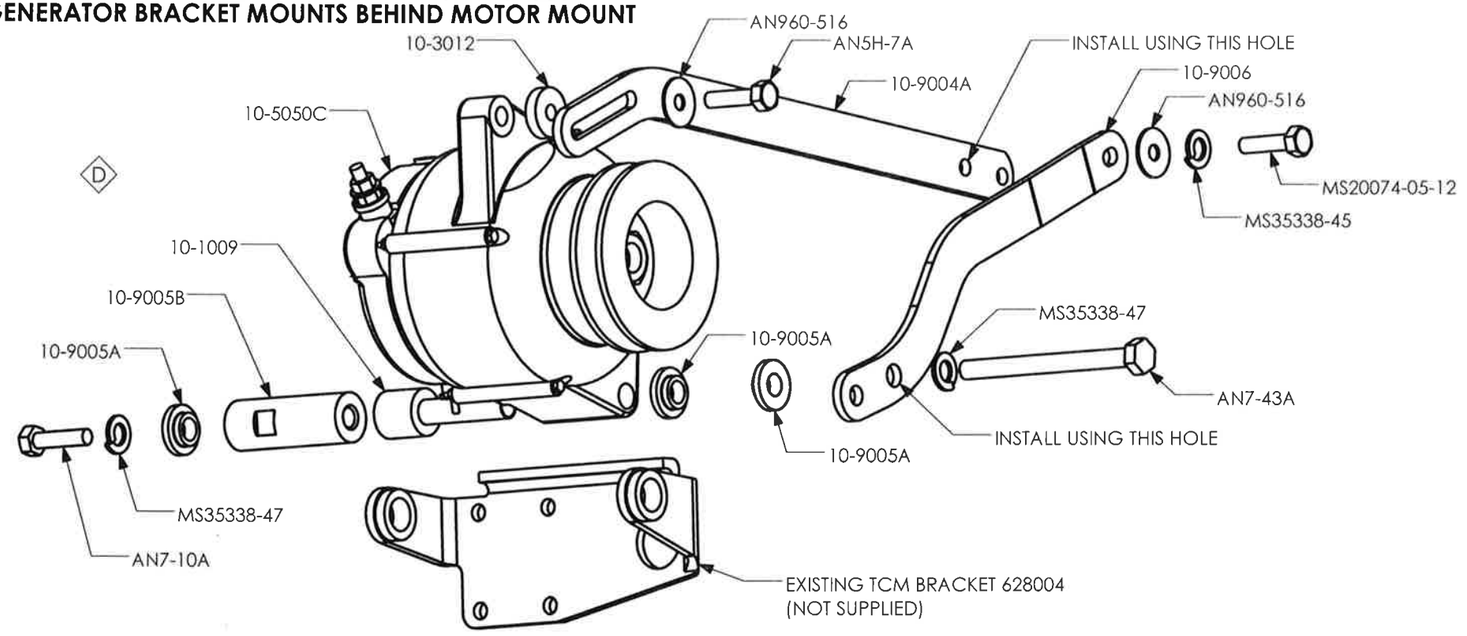
PLACARDS

14-1012	A	10/28/14	**SINGLE ENGINE PLACARDS**					1	1
14-1013	A	9/8/14	**TWIN ENGINE PLACARDS**		1	1	1		

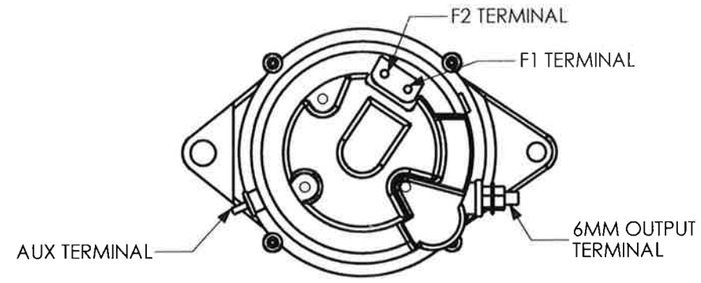
AFMS

AFMS 001	-	1/02/07	**AIRPLANE FLIGHT MANUAL SUPPLEMENT**					1	1
AFMS 002	-	1/02/07	**AIRPLANE FLIGHT MANUAL SUPPLEMENT**		1	1	1		

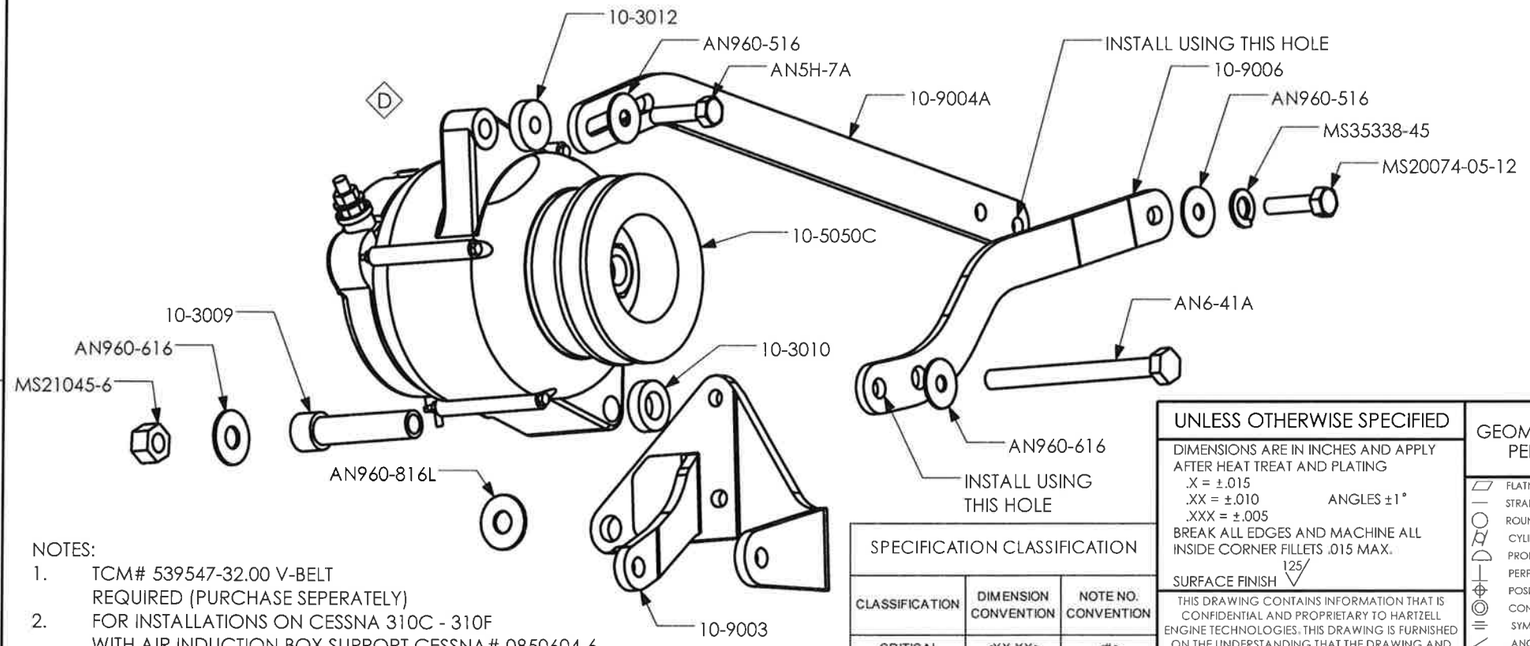
FOR INSTALLATIONS WITH TCM BRACKET 628004 (GENERATOR BRACKET MOUNTS BEHIND MOTOR MOUNT



REVISIONS				
EN	REV.	DESCRIPTION	BY	DATE
1409033	C	FIRST RELEASE INTO HET DESIGN DATA	BJ	9/8/14
1409034	D	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. 10-5050C WAS TAL24-70C. 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	9/8/14

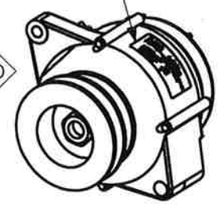


FOR INSTALLATIONS WITHOUT TCM BRACKET 628004 (GENERATOR BRACKET MOUNTS ABOVE MOTOR MOUNT

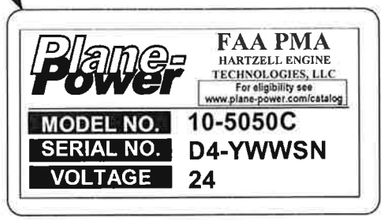


NOTES:
1. TCM# 539547-32.00 V-BELT REQUIRED (PURCHASE SEPERATELY)
2. FOR INSTALLATIONS ON CESSNA 310C - 310F WITH AIR INDUCTION BOX SUPPORT CESSNA# 0850604-6 ORDER PLANE-POWER SUPPORT KIT# 10-9007

LOCATION OF FAA PMA NAMEPLATE



10-1031



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 125

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	RFA	9/11/14
ENG.	CMG	9/11/14
FINISH	N/A	
WEIGHT	N/A	
MATERIAL	SEE INDIVIDUAL PARTS	

HARTZELL ENGINE TECHNOLOGIES
MONTGOMERY, ALABAMA USA

D
2900 Selma Highway
Montgomery, AL 36108

TAL24-70C INSTALLATION INSTRUCTIONS

SIZE	SH 1 OF 4	CODE ID	DRAWING NO.	REV.
B		65PY1	14-2001	D

Parts List:		
Qty	**Part No.**	**Description**
2	10-5050C	Alternator, 24 Volt, with 3.0" Diameter 3/8" V-Belt Pulley.
2	10-9099A	Mounting kit for Continental Engine.
2	R1224	Alternator Controller (Voltage Regulator) and data sheet 12-1001
1	ALP-1002	Placard, LEFT ALT INOP (Part of Drawing 14-1013)
1	ALP-1003	Placard, RIGHT ALT INOP (Part of Drawing 14-1013)
1	ALP-1004	Placard, LEFT ALT FIELD (Part of Drawing 14-1013)
1	ALP-1005	Placard, RIGHT ALT FIELD (Part of Drawing 14-1013)
1	14-2001	Installation Instructions (This document)
2	14-1011	Alternator Inoperative Lamp (28 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 EACH 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 Generators and voltage regulators.

3. Install Alternators per drawing on page 1. Tension the belts and torque the AN5H-7A adjusting bolts to 100 - 140 in/lb and safety wire with 0.032" diameter safety wire. Torque the AN7-43A mounting bolts to 450 - 500 in/lb or torque the AN6-41A mounting bolts to 160 - 190 in/lb.

4. **Ensure that internal jumper #1 and internal jumper #2 of each R1224 regulator are set for 28V operation** (See regulator instructions for location of jumpers).

5. If original output circuit breakers are rated at less than 70-amps and you wish to be able to utilize the increased capacity of the alternators, remove the breakers and replace with suitable breakers up to 70amp maximum size. **Ensure wire size from alternator output terminal to output circuit breakers and from output circuit breakers to bus is rated for more than the size of breakers 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 each 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 wires to each 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 each alternator F1 terminal to the FLD terminal of the corresponding regulator. Torque the alternator's F1 terminal nut to 20 in/lb.

   f. Install, in view of the pilot, placard ALP-1004 (LEFT ALT FIELD) adjacent to the field switch for the left alternator and placard ALP-1005 (RIGHT ALT FIELD) adjacent to the switch for the right alternator.

   g. Ensure that each of the FIELD breakers are connected to the aircraft positive bus.

   h. If the aircraft has "Generator Inoperative" indicator lamps, they may be used in this step. If lamps are not currently installed or are not compatible use the supplied lamps P/n 14-1011 Alternator Inoperative Lamp (28 Volt) and install them in pilots clear field of view.

   i. Install, in view of the pilot, placard ALP-1002 (LEFT ALT INOP) adjacent to the lamp for the left alternator and placard ALP-1003 (RIGHT ALT INOP) adjacent to the lamp for the right alternator. Also run a new wire, minimum 18AWG, from the AUX terminal of each alternator to the AUX terminal of the corresponding regulator.

7. Adjust and Test the system:

   a. Set both FIELD switches to OFF.
   b. Turn on MASTER switch and start the engines. Ensure that both ALT INOP indicators are illuminated.
   c. Turn on the LEFT FIELD switch. Check proper charging indication. Check left ALT INOP indicator is off. Check aircraft maintenance manual for proper bus voltage (typically 28.0V ± 0.3V). Adjust the left (Master) regulator to the desired bus voltage at 1200 engine RPM.
   d. Turn off the LEFT FIELD switch and turn on the RIGHT FIELD switch. Check proper charging indication. Check right ALT INOP indicator is off. At 1200 engine RPM Adjust the right (Slave) regulator to the same bus voltage as left alternator.
   e. Turn on the LEFT FIELD switch.
   f. Check proper charging indication. Check bus voltage.
   g. 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

10-9099A MOUNTING KIT COMPONENTS

QTY	P/N	DESCRIPTION
1	10-9003	MOUNTING BRACKET
1	10-9004A	TENSION ARM
1	10-9006	SUPPORT BRACKET
1	10-1009	SPACER
1	10-3009	SPACER
1	10-3010	SPACER
1	10-3012	SPACER

QTY	P/N	DESCRIPTION
3	10-9005A	SPACER
1	10-9005B	SPACER
1	AN6-41A	THRU BOLT
1	AN7-43A	THRU BOLT
1	AN5H-7A	BOLT
1	AN7-10A	BOLT
1	MS20074-05-12	BOLT

QTY	P/N	DESCRIPTION
2	MS35338-47	LOCK WASHER
1	MS35338-45	LOCK WASHER
2	AN960-516	WASHER
2	AN960-616	WASHER
1	AN960-816L	WASHER
1	MS21045-6	NUT

Part 2, Preparation of FAA Form 337

1. Installed Alternators in accordance with Supplemental Type Certificate No. SA10682SC. Updated Airplane Flight Manual with HET Airplane Flight Manual Supplement 002 (or later revision). Weight changed (compute weight and balance as necessary). Checked size of wire from Alternator output terminals to alternator circuit breakers and from Alternator circuit breakers to bus and size of Alternator circuit breakers 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 generators listed and adding Model TAL24-70C Alternator Kit.

Weight and Balance

Removed two generator installations:	Installed TAL24-70C alternator kit consisting of:	wgt.
Weight _____	(2) 10-5050C alternators	20.0lbs.
Arm _____	(2) 10-9099A mounting kits:	
(Refer to Aircraft Equipment List)	With TCM Bracket 628004	2.2 lbs.
Removed two regulator installations:	OR	
	With Plane-Power Bracket 10-9003	3.2 lbs.
Weight _____	(2) R1224 Voltage Regulators	0.6 lbs.
Arm _____	(1) ALP-1002 Placard	Negligible
(Refer to Aircraft Equipment List)	(1) ALP-1003 Placard	Negligible
	(1) ALP-1004 Placard	Negligible
	(1) ALP-1005 Placard	Negligible
	(2) 14-1011 Lamps	Negligible

Part 3, Instructions for Continued Airworthiness

PERIODIC MAINTENANCE:

1. It is recommended that the operation of the TAL24-70C 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.

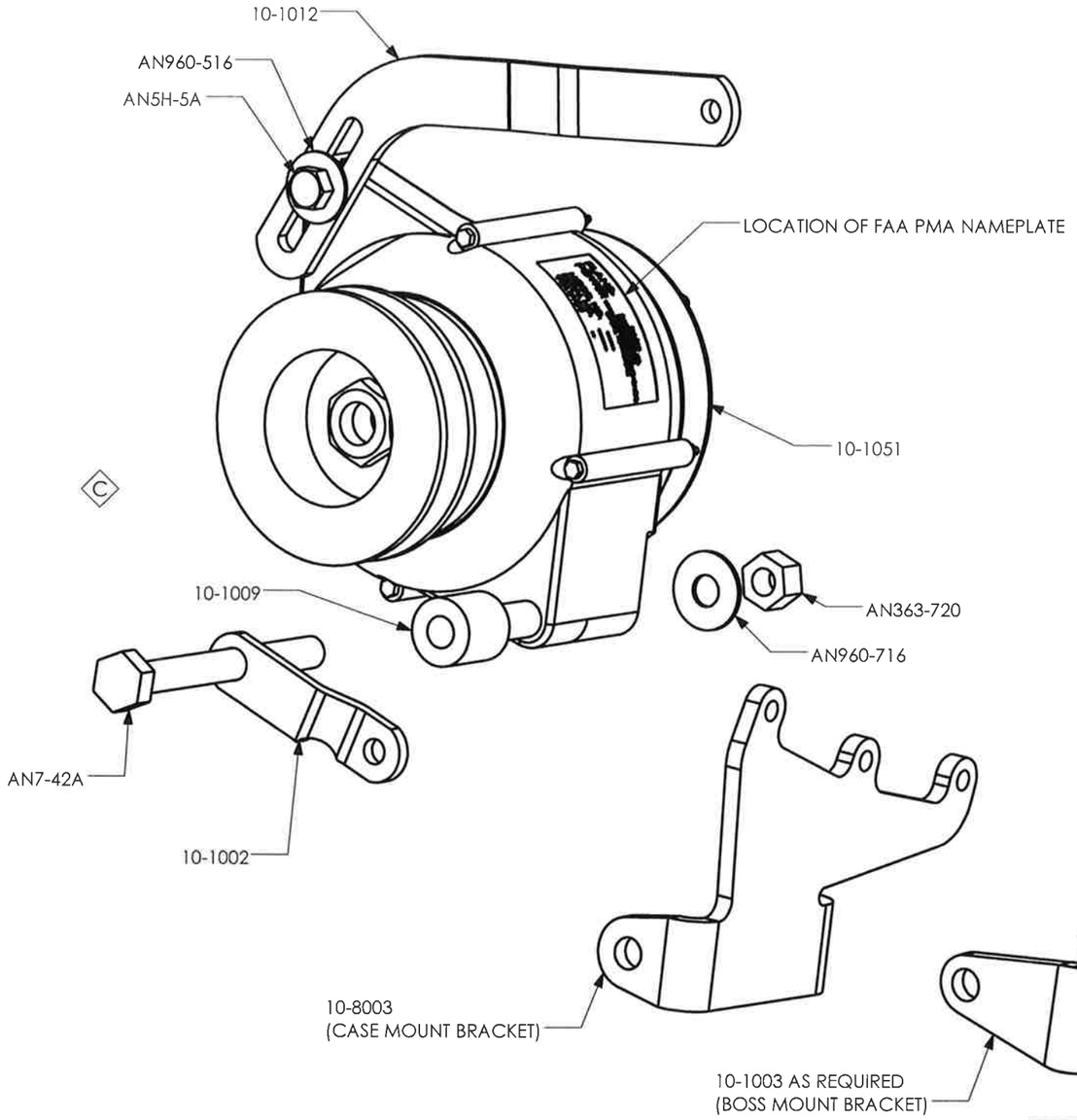
3. 5 YEAR OR 1000 HOUR INSPECTION
   a. Repeat the Annual/100 hour inspection.
   b. Remove field brush assembly and inspect brushes for excess wear. Replace brush assembly if brushes extend less then 0.250 inches from edge of holder case.

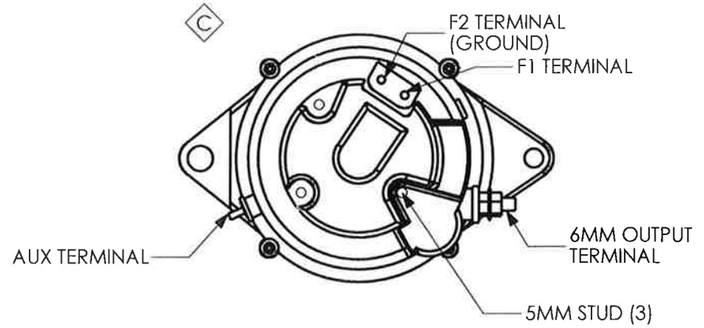
AIRWORTHINESS LIMITATIONS

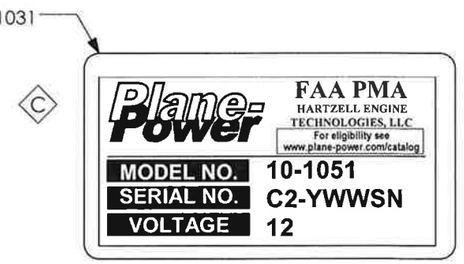
There are no mandatory replacement limits. There are no mandatory structural inspection intervals.

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.

REVISIONS				
EN	REV.	DESCRIPTION	BY	DATE
1409043	B	FIRST RELEASE INTO HET DESIGN DATA	BJ	9/10/14
1409044	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 TAL12-70. 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







NOTES:
1. NOTE: 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 125

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	RPQ	9/11/14
ENG.	CMB	9/11/14
FINISH	N/A	
WEIGHT	N/A	
MATERIAL	SEE INDIVIDUAL PARTS	

C
HARTZELL ENGINE TECHNOLOGIES
MONTGOMERY, ALABAMA USA
2900 Selma Highway
Montgomery, AL 36108

TAL12-70 INSTALLATION INSTRUCTIONS

SIZE	SH	CODE ID	DRAWING NO.	REV.
B	1 OF 4	65PY1	14-3001	C

Parts List:		
Qty	**Part No.**	**Description**
2	10-1051	Alternator, 12 Volt, with 1/2" V-Belt Pulley.
2	10-8099	Mounting kit for Lycoming Engine.
2	R1224	Alternator Controller (Voltage Regulator) and data sheet 12-1001
1	ALP-1002	Placard, LEFT ALT INOP (Part of Drawing 14-1013)
1	ALP-1003	Placard, RIGHT ALT INOP (Part of Drawing 14-1013)
1	ALP-1004	Placard, LEFT ALT FIELD (Part of Drawing 14-1013)
1	ALP-1005	Placard, RIGHT ALT FIELD (Part of Drawing 14-1013)
1	14-3001	Installation Instructions (This document)
2	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 EACH 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 Generators and voltage regulators.
3. Install Alternators per drawing on page 1. Tension the belts 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 each R1224 regulator are set for 12V operation** (See regulator instructions for location of jumpers).
5. If original output circuit breakers are rated at less than 70-amps and you wish to be able to utilize the increased capacity of the alternators, remove the breakers and replace with suitable breakers up to 70amp maximum size. **Ensure wire size from alternator output terminal to output circuit breakers and from output circuit breakers to bus is rated for more than the size of breakers 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 each 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 wires to each 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 each alternator F1 terminal to the FLD terminal of the corresponding regulator. Torque the alternator's F1 terminal nut to 20 in/lb.

   f. Install, in view of the pilot, placard ALP-1004 (LEFT ALT FIELD) adjacent to the field switch for the left alternator and placard ALP-1005 (RIGHT ALT FIELD) adjacent to the switch for the right alternator.

   g. Ensure that each of the FIELD breakers are connected to the aircraft positive bus.

   h. If the aircraft has "Generator Inoperative" indicator lamps, they may be used in this step. If lamps are not currently installed or are not compatible use the supplied lamps P/n 14-1010 Alternator Inoperative Lamp (14 Volt) and install them in pilots clear field of view.

   i. Install, in view of the pilot, placard ALP-1002 (LEFT ALT INOP) adjacent to the lamp for the left alternator and placard ALP-1003 (RIGHT ALT INOP) adjacent to the lamp for the right alternator. Also run a new wire, minimum 18AWG, from the AUX terminal of each alternator to the AUX terminal of the corresponding regulator.

7. Adjust and Test the system:

   a. Set both FIELD switches to OFF.
   b. Turn on MASTER switch and start the engines. Ensure that both ALT INOP indicators are illuminated.
   c. Turn on the LEFT FIELD switch. Check proper charging indication. Check left ALT INOP indicator is off. Check aircraft maintenance manual for proper bus voltage (typically 14.0V ± 0.3V). Adjust the left (Master) regulator to the desired bus voltage at 1200 engine RPM.
   d. Turn off the LEFT FIELD switch and turn on the RIGHT FIELD switch. Check proper charging indication. Check right ALT INOP indicator is off. At 1200 engine RPM Adjust the right (Slave) regulator to the same bus voltage as left alternator.
   e. Turn on the LEFT FIELD switch.
   f. Check proper charging indication. Check bus voltage.
   g. Recheck and inspect the entire installation. Complete FAA form 337, make log book entry, update aircraft equipment list, and weight and balance.

Alternator and Mounting Kit Installation

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 Alternators in accordance with Supplemental Type Certificate No. SA10682SC. Updated Airplane Flight Manual with HET Airplane Flight Manual Supplement 002 (or later revision). Weight changed (compute weight and balance as necessary). Checked size of wire from Alternator output terminals to alternator circuit breakers and from Alternator circuit breakers to bus and size of Alternator circuit breakers 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 generators listed and adding Model TAL12-70 Alternator Kit.

Weight and Balance

Removed two generator installations:

Weight _____
Arm _____
(Refer to Aircraft Equipment List)

Removed two regulator installations:

Weight _____
Arm _____
(Refer to Aircraft Equipment List)

Installed TAL12-70 alternator kit consisting of:

	wgt.
(2) 10-1051 alternators	20.0lbs.
(2) 10-8099 mounting kits.	2.0 lbs.
(2) R1224 Voltage Regulators	0.6 lbs.
(1) ALP-1002 Placard	Negligible
(1) ALP-1003 Placard	Negligible
(1) ALP-1004 Placard	Negligible
(1) ALP-1005 Placard	Negligible
(2) 14-1010 Lamps	Negligible

Part 3, Instructions for Continued Airworthiness

PERIODIC MAINTENANCE:

1. It is recommended that the operation of the TAL12-70 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.

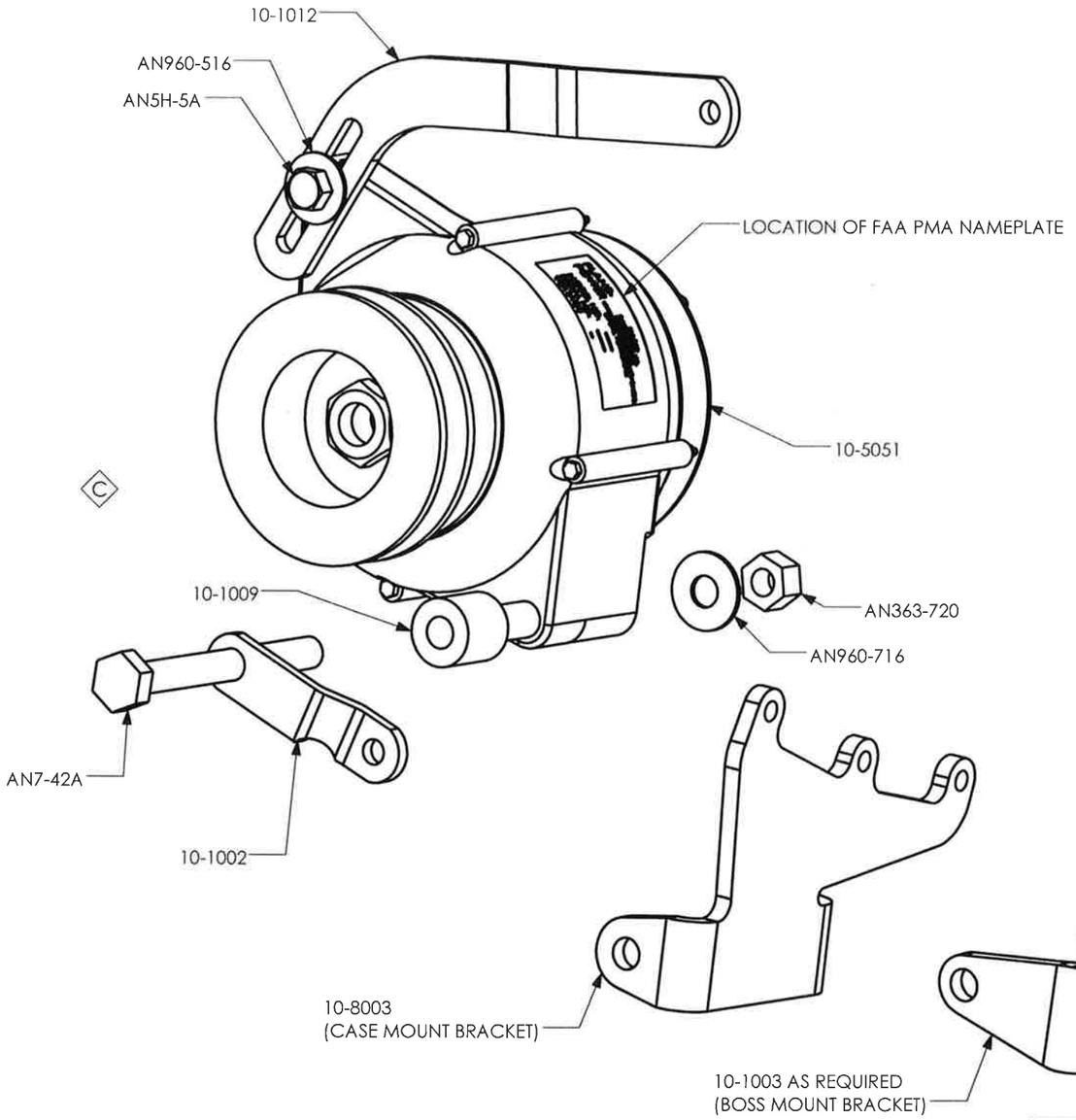
3. 5 YEAR OR 1000 HOUR INSPECTION
   a. Repeat the Annual/100 hour inspection.
   b. Remove field brush assembly and inspect brushes for excess wear. Replace brush assembly if brushes extend less then 0.250 inches from edge of holder case.

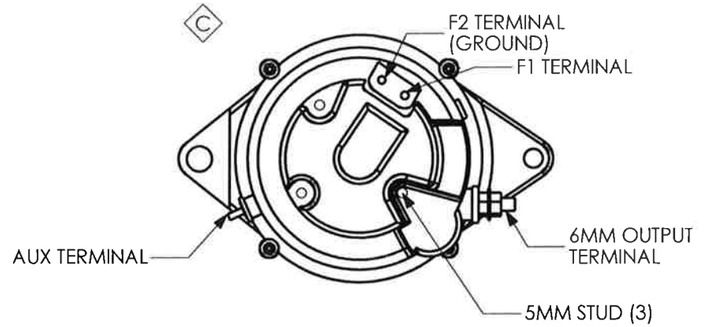
AIRWORTHINESS LIMITATIONS

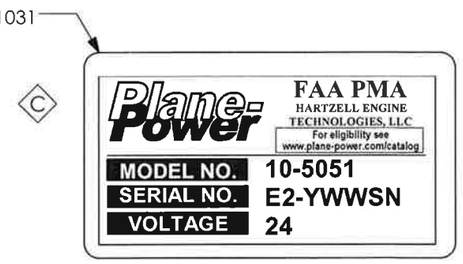
There are no mandatory replacement limits. There are no mandatory structural inspection intervals.

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.

REVISIONS				
EN	REV.	DESCRIPTION	BY	DATE
1409045	B	FIRST RELEASE INTO HET DESIGN DATA	BJ	9/10/14
1409046	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. 10-5051 WAS TAL24-70. 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







NOTES:
1. NOTE: 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 125

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	RFQ	9/11/14
ENG.	CMB	9/11/14
FINISH	N/A	
WEIGHT	N/A	
MATERIAL	SEE INDIVIDUAL PARTS	

C
HARTZELL ENGINE TECHNOLOGIES
MONTGOMERY, ALABAMA USA
2900 Selma Highway
Montgomery, AL 36108

TAL24-70 INSTALLATION INSTRUCTIONS

SIZE	SH	CODE ID	DRAWING NO.	REV.
B	1 OF 4	65PY1	14-4001	C

Parts List:		
Qty	**Part No.**	**Description**
2	10-5051	Alternator, 24 Volt, with 1/2" V-Belt Pulley.
2	10-8099	Mounting kit for Lycoming Engine.
2	R1224	Alternator Controller (Voltage Regulator) and data sheet 12-1001
1	ALP-1002	Placard, LEFT ALT INOP (Part of Drawing 14-1013)
1	ALP-1003	Placard, RIGHT ALT INOP (Part of Drawing 14-1013)
1	ALP-1004	Placard, LEFT ALT FIELD (Part of Drawing 14-1013)
1	ALP-1005	Placard, RIGHT ALT FIELD (Part of Drawing 14-1013)
1	14-4001	Installation Instructions (This document)
2	14-1011	Alternator Inoperative Lamp (28 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 EACH 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 Generators and voltage regulators.
3. Install Alternators per drawing on page 1. Tension the belts 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 each R1224 regulator are set for 28V operation** (See regulator instructions for location of jumpers).
5. If original output circuit breakers are rated at less than 70-amps and you wish to be able to utilize the increased capacity of the alternators, remove the breakers and replace with suitable breakers up to 70amp maximum size. **Ensure wire size from alternator output terminal to output circuit breakers and from output circuit breakers to bus is rated for more than the size of breakers 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 each 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 wires to each 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 each alternator F1 terminal to the FLD terminal of the corresponding regulator. Torque the alternator's F1 terminal nut to 20 in/lb.

   f. Install, in view of the pilot, placard ALP-1004 (LEFT ALT FIELD) adjacent to the field switch for the left alternator and placard ALP-1005 (RIGHT ALT FIELD) adjacent to the switch for the right alternator.

   g. Ensure that each of the FIELD breakers are connected to the aircraft positive bus.

   h. If the aircraft has "Generator Inoperative" indicator lamps, they may be used in this step. If lamps are not currently installed or are not compatible use the supplied lamps P/n 14-1011 Alternator Inoperative Lamp (28 Volt) and install them in pilots clear field of view.

   i. Install, in view of the pilot, placard ALP-1002 (LEFT ALT INOP) adjacent to the lamp for the left alternator and placard ALP-1003 (RIGHT ALT INOP) adjacent to the lamp for the right alternator. Also run a new wire, minimum 18AWG, from the AUX terminal of each alternator to the AUX terminal of the corresponding regulator.

7. Adjust and Test the system:

   a. Set both FIELD switches to OFF.
   b. Turn on MASTER switch and start the engines. Ensure that both ALT INOP indicators are illuminated.
   c. Turn on the LEFT FIELD switch. Check proper charging indication. Check left ALT INOP indicator is off. Check aircraft maintenance manual for proper bus voltage (typically 28.0V ± 0.3V). Adjust the left (Master) regulator to the desired bus voltage at 1200 engine RPM.
   d. Turn off the LEFT FIELD switch and turn on the RIGHT FIELD switch. Check proper charging indication. Check right ALT INOP indicator is off. At 1200 engine RPM Adjust the right (Slave) regulator to the same bus voltage as left alternator.
   e. Turn on the LEFT FIELD switch.
   f. Check proper charging indication. Check bus voltage.
   g. 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 Alternators in accordance with Supplemental Type Certificate No. SA10682SC. Updated Airplane Flight Manual with HET Airplane Flight Manual Supplement 002 (or later revision). Weight changed (compute weight and balance as necessary). Checked size of wire from Alternator output terminals to alternator circuit breakers and from Alternator circuit breakers to bus and size of Alternator circuit breakers 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 generators listed and adding Model TAL24-70 Alternator Kit.

Weight and Balance

Removed two generator installations:

Weight _____
Arm _____
(Refer to Aircraft Equipment List)

Removed two regulator installations:

Weight _____
Arm _____
(Refer to Aircraft Equipment List)

Installed TAL 24-70 alternator kit consisting of:

	wgt.
(2) 10-5051 alternators	20.0lbs.
(2) 10-8099 mounting kits.	2.0 lbs.
(2) R1224 Voltage Regulators	0.6 lbs.
(1) ALP-1002 Placard	Negligible
(1) ALP-1003 Placard	Negligible
(1) ALP-1004 Placard	Negligible
(1) ALP-1005 Placard	Negligible
(2) 14-1011 Lamps	Negligible

Part 3, Instructions for Continued Airworthiness

PERIODIC MAINTENANCE:

1. It is recommended that the operation of the TAL24-70 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.

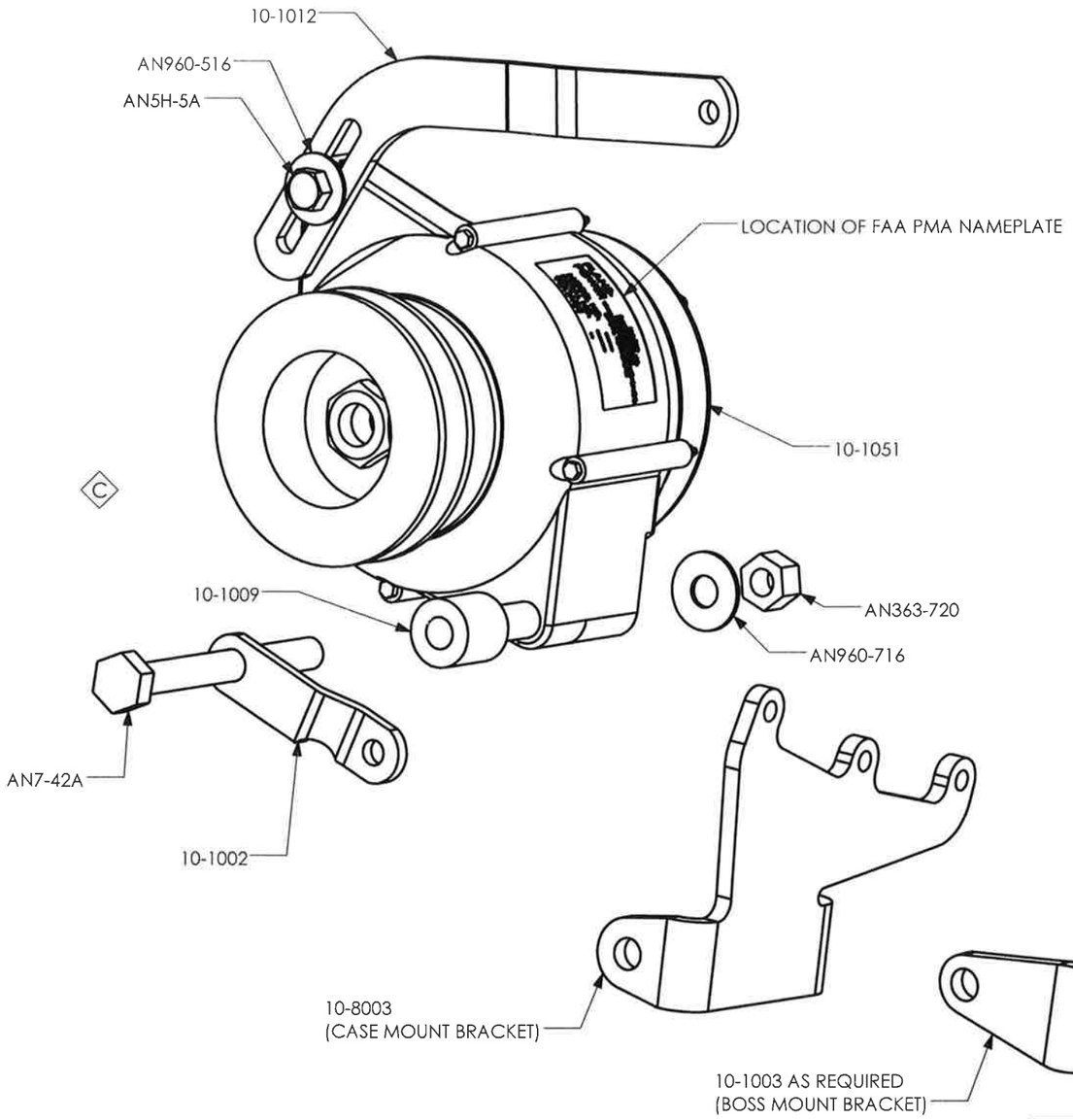
3. 5 YEAR OR 1000 HOUR INSPECTION
   a. Repeat the Annual/100 hour inspection.
   b. Remove field brush assembly and inspect brushes for excess wear. Replace brush assembly if brushes extend less then 0.250 inches from edge of holder case.

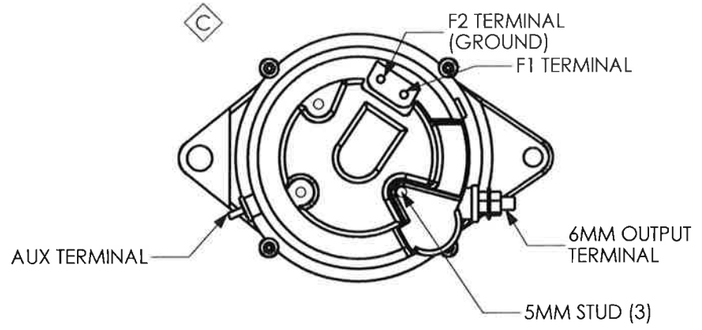
AIRWORTHINESS LIMITATIONS

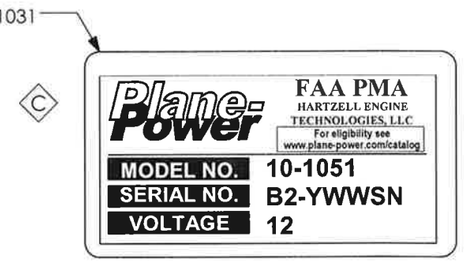
There are no mandatory replacement limits. There are no mandatory structural inspection intervals.

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.

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







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 125

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	RFQ	9/11/14
ENG.	CMB	9/11/14
FINISH	N/A	
WEIGHT	N/A	
MATERIAL SEE INDIVIDUAL PARTS		
SIZE B	SH 1 OF 4	CODE ID 65PY1

C
HARTZELL ENGINE TECHNOLOGIES
MONTGOMERY, ALABAMA USA
2900 Selma Highway
Montgomery, AL 36108

SAL12-70 INSTALLATION INSTRUCTIONS

DRAWING NO. 14-5001
REV. C

Parts List:		
Qty	**Part No.**	**Description**
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 ± 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)

Removed regulator installation:

Weight _____
Arm _____
(Refer to Aircraft Equipment List)

Installed SAL 12-70 alternator kit consisting of:

	wgt.
(1) 10-1051 alternator	10.0lbs.
(1) 10-8099 mounting kits.	1.0 lbs.
(1) R1224 Voltage Regulator	0.3 lbs.
(1) ALP-1001 Placard	Negligible
(1) ALP-1006 Placard	Negligible
(1) 14-1010 Lamp	Negligible

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.

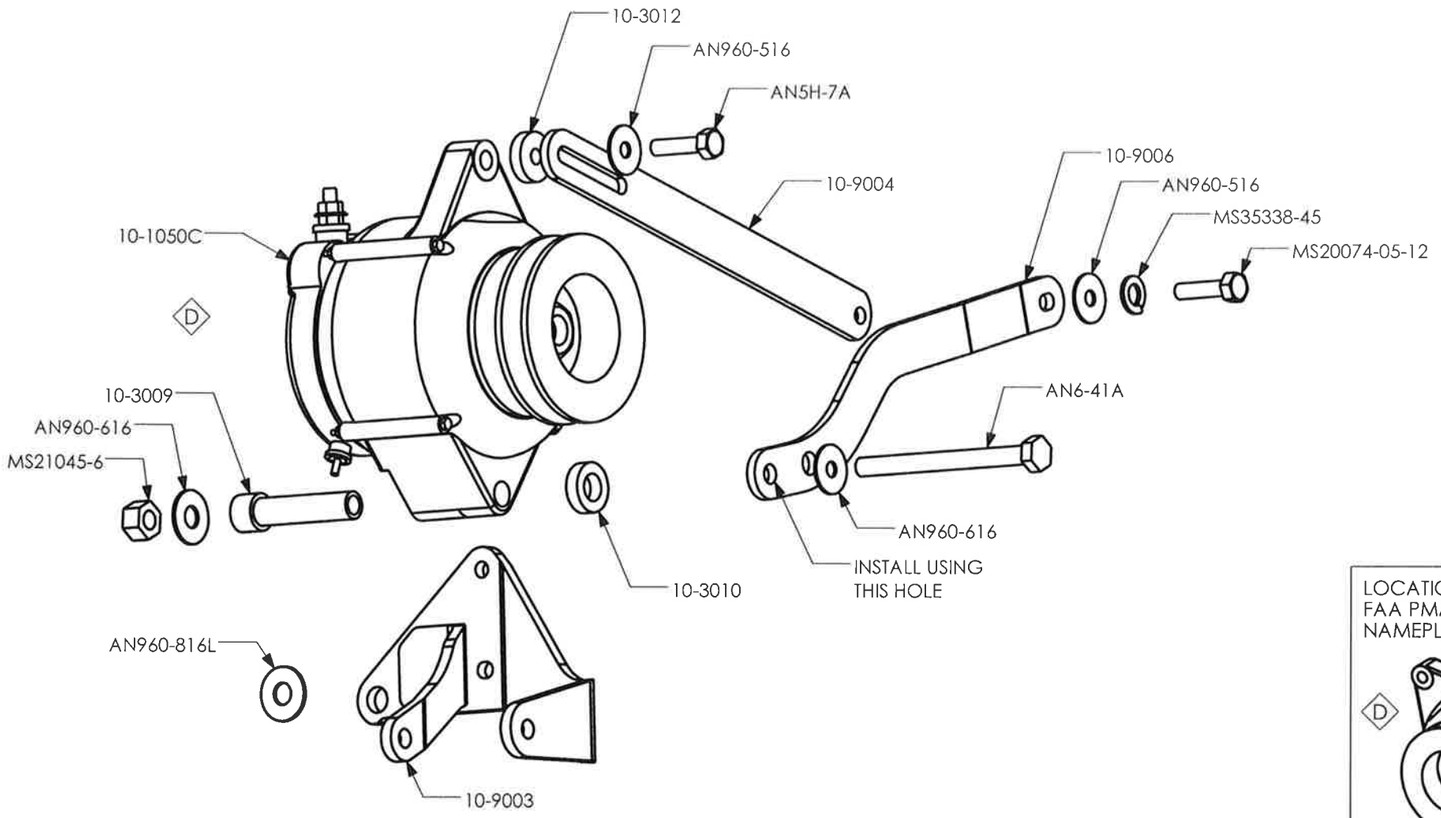
3. 5 YEAR OR 1000 HOUR INSPECTION
   a. Repeat the Annual/100 hour inspection.
   b. Remove field brush assembly and inspect brushes for excess wear. Replace brush assembly if brushes extend less then 0.250 inches from edge of holder case.

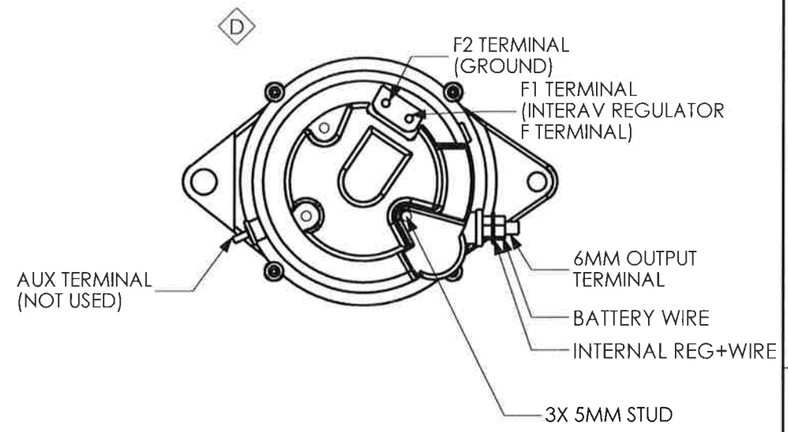
AIRWORTHINESS LIMITATIONS

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

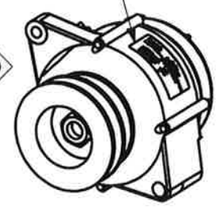
THE AIRWORTHINESS LIMITATIONS SECTION IS FAA APPROVED AND SPECIFIES MAINTENANCE REQUIRED UNDER SEC. 43.16 AND 91.403 OF THE FEDERAL AVIATION REGULATIONS UNLESS AN ALTERNATIVE PROGRAM HAS BEEN FAA APPROVED.

REVISIONS				
EN	REV.	DESCRIPTION	BY	DATE
1409049	C	FIRST RELEASE INTO HET DESIGN DATA	BJ	9/10/14
1409050	D	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. 10-1050C WAS SAL12-70C. 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





LOCATION OF FAA PMA NAMEPLATE



10-1031

D

Plane-Power
FAA PMA
HARTZELL ENGINE TECHNOLOGIES, LLC
For eligibility see www.plane-power.com/catalog
MODEL NO. 10-1050C
SERIAL NO. A2-YWWSN
VOLTAGE 12

NOTES:
1. TCM# 539547-31.19 V-BELT REQUIRED (PURCHASE SEPERATELY)

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 125

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	BJQ	9/11/14
ENG.	CMB	9/11/14
FINISH	N/A	
WEIGHT	N/A	
MATERIAL	SEE INDIVIDUAL PARTS	

HARTZELL ENGINE TECHNOLOGIES
MONTGOMERY, ALABAMA USA

D

2900 Selma Highway
Montgomery, AL 36108

SAL12-70C INSTALLATION INSTRUCTIONS

SIZE	SH 1 OF 4	CODE ID	DRAWING NO.	REV.
B		65PY1	14-6001	D

Parts List:		
Qty	**Part No.**	**Description**
1	10-1050C	Alternator, 12 Volt, with 3.0" Diameter 3/8" V-Belt Pulley.
1	10-9099	Mounting kit for Continental 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	14-6001	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-7A adjusting bolts to 100 - 140 in/lb and safety wire with 0.032" diameter safety wire. Torque the AN6-41A mounting bolts to 160 - 190 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 other end of 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 ± 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

10-9099 MOUNTING KIT COMPONENTS					
QTY	P/N	DESCRIPTION	QTY	P/N	DESCRIPTION
1	10-3009	SPACER BUSHING	1	AN960-816L	WASHER
1	10-3010	SPACER	2	AN960-616	WASHER
1	10-3012	SPACER	2	AN960-516	WASHER
1	10-9003	CONTINENTAL BRACKET	1	MS20074-05-12	BOLT
1	10-9004	TENSION ARM	1	AN5H-7A	BOLT
1	10-9006	SUPPORT BRACKET	1	AN6-41A	BOLT
1	MS35338-45	LOCK WASHER	1	MS21045-6	NUT

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 SAL12-70C Alternator Kit.

Weight and Balance

Removed generator installation:

Weight _____
Arm _____
(Refer to Aircraft Equipment List)

Removed regulator installation:

Weight _____
Arm _____
(Refer to Aircraft Equipment List)

Installed SAL 12-70C alternator kit consisting of:

	wgt.
(1) 10-1050C alternator	10.0lbs.
(1) 10-9099 mounting kit.	1.4 lbs.
(1) R1224 Voltage Regulator	0.3 lbs.
(1) ALP-1001 Placard	Negligible
(1) ALP-1006 Placard	Negligible
(1) 14-1010 Lamp	Negligible

Part 3, Instructions for Continued Airworthiness

PERIODIC MAINTENANCE:

1. It is recommended that the operation of the SAL12-70C 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.

Hartzell Engine Technologies LLC
Montgomery, AL. 36108
Document No. AFMS 001

FAA-APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
FOR
STC SA10682SC

INSTALLATION OF

Belt Driven Alternator Conversion

SAL 12-70C, SAL 12-70

For Aircraft Make & Model
Listed on Plane Power Alternator Conversion
Approved Model List (AML)

Registration No: _____

Serial No: _____

This supplement must be attached to the appropriate FAA Approved Airplane Flight Manual when the aircraft is modified in accordance with STC SA10682SC. The information contained herein supplements or supersedes the Airplane Flight Manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement, consult the Airplane Flight Manual.

FAA APPROVED

for: Steven L. Lardinois, Manager
Systems and Flight Test Branch,
ACE-117C

Chicago Aircraft Certification Office
2300 E Devon Ave,
Des Plaines, IL 60018

Original Issue Date: July 25, 2007

List of Effective Pages

Use the page to determine the current effect date for each page in this supplement. This supplement is controlled by this page.

When updating this supplement to a later FAA Approved revision level, remove the current List of Effective page and Log of Revision page and the pages to be replaced and insert the newly revised pages.

PAGE	REV	DATE	PAGE	REV	DATE
Cover	1	May 18, 2015			
ii-iii	1	May 18, 2015			
iii-iii	1	May 18, 2015			
1-1	1	May 18, 2015			
1-2	1	May 18, 2015			
1-3	1	May 18, 2015			
2-1	1	May 18, 2015			
3-1	1	May 18, 2015			
4-1	1	May 18, 2015			
5-1	1	May 18, 2015			
6-1	1	May 18, 2015			
7-1	1	May 18, 2015			
8-1	1	May 18, 2015			

FAA APPROVED
REVISED: JUL 20 2015

Log of Revisions

Rev	Description	Page	Approved by	Date
- -	Original Release	1-13	SEE COVER PAGE	7/25/2007
1	Change Name to HET all Pages. General, change Qty from 2 to 1, remove last sentence from 2nd para. Applied single alternator info to Emergency Procedures, Title, steps 2, & 3. Modify Normal Procedures para.	1 thru 13 1-3 3-1 4-1	SEE COVER PAGE	JUL 2 0 2015

FAA APPROVED
REVISED: JUL 2 0 2015

Forward

This Airplane Flight Manual Supplement (AFMS) presents changes associated with the installation of Belt Driven Alternator Conversion kits, SAL 12-70C, and SAL 12-70.

Important Notice

This supplement to the Airplane Flight Manual should be read carefully by the owner and/or operator in order to become familiar with the operation of the airplane. It contains limitations, operating procedures, performance information, and systems descriptions that are essential information for the pilot to properly operate the Make and Model aircraft that have been modified in accordance with STC SA10682SC. As specified, this supplement must accompany the basic Airplane Flight Manual and be available to the pilot at any time during flight. If a section has not been provided in this document, then refer to the basic Airplane Flight Manual.

Sections

This supplement is divided into the following sections:

Revising This AFM Supplement

Each time this supplement is revised or reissued, a new Log of Revisions page is provided along with the pages containing corresponding data or changes. In the footer of each page is shown the approval date and revision letter (when applicable). When updating this supplement to a later FAA Approved revision level, remove the Log of Revision page and the pages to be replaced and insert the new Log of Revision page and revised pages. That portion of text or an illustration, which has been revised by the addition of, or change in, information is denoted by a solid revision bar located adjacent to the area of change, and placed along the outside margin of a page. Revision bars show only information changed within latest revision.

Section 1
General

The alteration to the aircraft was performed using a kit that includes (1) alternator, (1) alternator mounting kit, (1) ALT INOP placard, (1) ALT FIELD placard, (1) regulator, (1) alternator inoperative lamp, and installation instructions to replace generator on single engine aircraft which are listed in the Approved Model List of STC SA10682SC.

The alternators and associated regulators will provide increased output at low engine RPM over that of the original generators.

Section 2
Limitations

Unchanged.

Section 3
Emergency Procedures

Battery discharging indication or ALT INOP lamp illuminated.

1. Reduce electrical load.
2. Check alternator field circuit breaker
   A. If tripped, turn off ALT FIELD switch and reset breaker.
   B. Turn on ALT FIELD switch.
   C. If breaker trips again, turn off ALT FIELD switch and land as soon as practical.
3. Check alternator output circuit breaker.
   A. If tripped turn off ALT FIELD switch and reset breaker.
   B. Turn on ALT FIELD switch.
   C. If breaker trips again, turn off ALT FIELD switch and land as soon as practical.

Section 4
Normal Procedures

After turning on MASTER switch and before starting engines, verify that the ALT INOP lamp is illuminated. After starting engines, switch the ALT FIELD switch on. Observe battery charging indication and that the ALT INOP lamp is not illuminated.

Section 5
Performance Data

Unchanged.

Section 6
Weight and Balance

There are no changes to the aircraft weight limits or center of gravity (CG) limits. See the basic Airplane Flight Manual for weight and center of gravity information.

The Equipment List / Weight and Balance Record are revised by the STC installer for installation of this Belt Driven Alternator Conversion. For current empty weight and CG, see revised weight and balance record.

Section 7
Airplane and Systems Description

The installed alternator conversion kit provides up to a maximum of 70 amps at the rated voltage, limited by current wiring and breakers.

Section 8
Handling, Service, and Maintenance

The basic AFM is unchanged. See Instructions for Continued Airworthiness provided with this installation for details on inspections and maintenance.

Hartzell Engine Technologies LLC
Montgomery, AL. 36108
Document No. AFMS 002

FAA-APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
FOR
STC SA10682SC

INSTALLATION OF

Belt Driven Alternator Conversion

TAL 12-70, TAL 24-70, TAL 24-70C

For Aircraft Make & Model
Listed on Plane Power Alternator Conversion
Approved Model List (AML)

Registration No: _____

Serial No: _____

This supplement must be attached to the appropriate FAA Approved Airplane Flight Manual when the aircraft is modified in accordance with STC SA10682SC. The information contained herein supplements or supersedes the Airplane Flight Manual only in those areas listed herein. For limitations, procedures and performance information not contained in this supplement, consult the Airplane Flight Manual.

FAA APPROVED

Steven L. Lardinois, Manager
Systems and Flight Test Branch,
ACE-117C

Chicago Aircraft Certification Office
2300 E Devon Ave,
Des Plaines, IL 60018

Original Issue Date: July 25, 2007

List of Effective Pages

Use the page to determine the current effect date for each page in this supplement. This supplement is controlled by this page.

When updating this supplement to a later FAA Approved revision level, remove the current List of Effective page and Log of Revision page and the pages to be replaced and insert the newly revised pages.

PAGE	REV	DATE	PAGE	REV	DATE
Cover	1	May 18, 2015			
ii-iii	1	May 18, 2015			
iii-iii	1	May 18, 2015			
1-1	1	May 18, 2015			
1-2	1	May 18, 2015			
1-3	1	May 18, 2015			
2-1	1	May 18, 2015			
3-1	1	May 18, 2015			
4-1	1	May 18, 2015			
5-1	1	May 18, 2015			
6-1	1	May 18, 2015			
7-1	1	May 18, 2015			
8-1	1	May 18, 2015			

FAA APPROVED
REVISED: JUL 20 2015

Log of Revisions

Rev	Description	Page	Approved by	Date
- -	Original Release	1-13	SEE COVER PAGE	7/25/2007
1	Change Name to HET all Pages. Applied twin alternator info to Emergency procedures, steps 2 & 3. Modify Normal Procedures para.	1thru13 3-1 4-1	SEE COVER PAGE	JUL 2 0 2015

FAA APPROVED
REVISED: JUL 2 0 2015

Forward

This Airplane Flight Manual Supplement (AFMS) presents changes associated with the installation of Belt Driven Alternator Conversion kits, TAL 12-70, TAL 24-70 and TAL 24-70C.

Important Notice

This supplement to the Airplane Flight Manual should be read carefully by the owner and/or operator in order to become familiar with the operation of the airplane. It contains limitations, operating procedures, performance information, and systems descriptions that are essential information for the pilot to properly operate the Make and Model aircraft that have been modified in accordance with STC SA10682SC. As specified, this supplement must accompany the basic Airplane Flight Manual and be available to the pilot at any time during flight. If a section has not been provided in this document, then refer to the basic Airplane Flight Manual.

Sections

This supplement is divided into the following sections:

Revising This AFM Supplement

Each time this supplement is revised or reissued, a new Log of Revisions page is provided along with the pages containing corresponding data or changes. In the footer of each page is shown the approval date and revision letter (when applicable). When updating this supplement to a later FAA Approved revision level, remove the Log of Revision page and the pages to be replaced and insert the new Log of Revision page and revised pages. That portion of text or an illustration, which has been revised by the addition of, or change in, information is denoted by a solid revision bar located adjacent to the area of change, and placed along the outside margin of a page. Revision bars show only information changed within latest revision.

Section 1
General

The alteration to the aircraft was performed using a kit that includes (2) alternators, (2) alternator mounting kits, (1) LEFT ALT INOP placard, (1) RIGHT ALT INOP placard, (1) LEFT ALT FIELD placard, (1) RIGHT ALT FIELD placard, (2) regulators, (2) alternator inoperative lamps, and installation instructions to replace generators on twin engine aircraft which are listed in the Approved Model List of STC SA10682SC.

The alternators and associated regulators will provide increased output at low engine RPM over that of the original generators. The installed kit balances the electrical load between the two alternators and for operation of either alternator with the other disabled or failed.

Section 2
Limitations

Unchanged.

Section 3
Emergency Procedures

Battery discharging indication or LEFT ALT INOP or RIGHT ALT INOP lamps illuminated.

1. Reduce electrical load.

2. Check left and right alternator field circuit breaker.

   A. If tripped, turn off LEFT ALT FIELD or RIGHT ALT FIELD switch and reset breaker.

   B. Turn on LEFT ALT FIELD or RIGHT ALT FIELD switch.

   C. If breaker trips again, turn off LEFT ALT FIELD or RIGHT ALT FIELD switch and land as soon as practical.

3. Check left and right alternator output circuit breaker.

   A. If tripped turn off LEFT ALT FIELD or RIGHT ALT FIELD switch and reset breaker.

   B. Turn on LEFT ALT FIELD or RIGHT ALT FIELD switch.

   C. If breaker trips again, turn off LEFT ALT FIELD or RIGHT ALT FIELD switch and land as soon as practical.

Section 4
Normal Procedures

After turning on MASTER switch and before starting engines, verify that LEFT ALT INOP and RIGHT ALT INOP lamps are illuminated. After starting engines, switch the LEFT ALT FIELD and RIGHT ALT FIELD switches on. Observe battery charging indication and that LEFT ALT INOP and RIGHT ALT INOP lamps are not illuminated.

Section 5
Performance Data

Unchanged.

Section 6
Weight and Balance

There are no changes to the aircraft weight limits or center of gravity (CG) limits. See the basic Airplane Flight Manual for weight and center of gravity information.

The Equipment List / Weight and Balance Record are revised by the STC installer for installation of this Belt Driven Alternator Conversion. For current empty weight and CG, see revised weight and balance record.

Section 7
Airplane and Systems Description

The installed alternator conversion kit provides up to a maximum of 70 amps at the rated voltage, limited by current wiring and breakers.

Section 8
Handling, Service, and Maintenance

The basic AFM is unchanged. See Instructions for Continued Airworthiness provided with this installation for details on inspections and maintenance.