PT. SMART CAKRAWALA AVIATION

WORK ORDER

Form: SCA/MTC/030

Subject : **Starter Generator Replacement due at 3046 Hours.**	No.	WO/083-SNM/XII/2021
	Date	22-Dec-2021
	A/C Reg.	PK-SNM C208-00655
Reference : MP C208B Rev. 10	Prepared By	TS
	Checked By	CI
	Approved By	TM

To : Engineer In Charge

Description :

1. Perform Starter Generator Replacement due at 3046 Hours.
2. Make an entry in Maintenance Log.
3. Return the Completed Work Order and Form to PPC.

#If any finding, please close the routine card, and transferred to inspection card.

Additional Work :

Compliance Statement	Sign & Date Company Lic. No.:	Signature
CARRIED OUT	25/12/2021 (Engineer In Charge) BUDI HARDJO	(Technical Manager)

AIRCRAFT CHECK WORK SUMMARY
(Form: SCA/MTC/051)

DATE OF ISSUED	JO/WO #	TYPE OF MAINTENANCE	DATE OF ACCOMPLISHED
22-Dec-2021	WO/083-SNM/XII/2021	Starter Generator Replacement	

A/C Type	Mfg. Serial Number	A/C Registration
C208	C208-00655	PK-SNM

AIRCRAFT DATA

Subject	Pos #	Serial Number (SN)	TTSN/TCSN
Engine	#1	PCE-PC2316	3041 : 06
	#2	-	
Propeller/Rotor	#1	190085	4307
	#2	-	
Landing Gear	NLG		
	LH MLG		
	RH MLG		

PACKAGE COVERED

No	Subject	Qty	Remark
1	Non-Routine Card	1	#001
2	Inspection Card	1	✓
3	Work Order	1	✓
4	Summary Inspection List	1	✓
5	Material and Tool List	-	
6	Escalation form	-	
7	CRS (SMI / Unscheduled Maintenance)	1	✓

INSPECTION CARD (IC) LIST (Finding during maintenance)

No	Taskcard Ref	Subject	Status		Name/ Sign & Stamp
			Open	Close	
IC-001					
IC-002					
IC-003					
IC-004					
IC-005					
IC-006					

IC-007					
IC-008					
IC-009					
IC-010					
IC-011					
IC-012					
IC-013					
IC-014					
IC-015					

Prepared by :	Checked by :	Verified by :	Approved by :
Technical Support	Chief Maintenance	Chief Inspector	Technical Manager
.....	.....	.....	.....

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SUMMARY INSPECTION ITEMS
(Form: SCA/MTC/050)

WO Ref: WO/058-SNM/II/2021

NO.	TASK CARD NO.	DESCRIPTION	DATE	EST MHR	NAME	STAMP
1	NRC-001	STARTER GENERATOR REPLACEMENT REMOVED P/N: 300SGL145Q-1 S/N: S00096	25/12/2021		Budi. H	
2	APPENDIX A26	UNSCHEDULE – STARTER GENERATOR REPLACEMENT	25/12/2021		Budi. H	

PT. SMART CAKRAWALA AVIATION

CERTIFICATE RETURN TO SERVICE

SCHEDULED MAINTENANCE INSPECTION (CRS-SMI)

A/C TYPE	: CESSNA 208	TTSN	: 3041:06
A/C REG	: PK-SNM	TCSN	: 4307:
MSN	: C208-00655	DATE	: 25/12/2021

TYPE OF INSPECTION : STARTER GENERATOR REPLACEMENT
DUE AT : 3046 HOURS
REFF : MP C208/C208B REV. 10

EXCEPTION

"NOT EXCEPTION"

AUTHORIZED PERSON

I hereby certify that this aircraft has been maintained accordance with CASR and Maintenance Program. Aircraft safe and airworthy for flight

NAME	CAT	AMEL/OTR NO	SIGN&STAMP	DATE
Budi Hartono	AIRFRAME & POWER PLANT	9506/SCA32		25/12/2021
———	EIRA	———	———	

THE NEXT DUE TYPE OF INSPECTION :

DUE AT :

Form: SCA/MTC/049

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1. CARD #	2. JO/WO #	3. ORIGINATOR	4. CARD REF	5. DATE
–	–	–	–	–
6. A/C REG/MSN	**7. A/C TYPE**	**8. TRADE**	**12. VENDOR ORDER #**	
–	–	–	–	
9. ZONE	**10. STA**	**11. MTC TYPE**		
–	–	–		

13. DESCRIPTION/DEFECT-IF FINDING OF CPCP INSPECTION, PLEASE COMPLETE SET. 20	14 PPC/ENG	15 DATE
–	–	–

16. CORRECTIVE ACTION	17 MECH	18 ENG. LIC	19 DATE
–	–	–	–
Performed at A/C TT : ..... A/C TC /LDG :			

20. CORROSION INFORMATION				
LOCATION	CAUSE OF DAMAGE	–	–	–
	☐ Environment			
	☐ Internal Leakage			
CORROSION ☐ Isolated ☐ Widespread	☐ Chemical Spill			
CORROSION LVL ☐ 1 ☐ 2 ☐ 3	☐ LAV/Galley Spill			
PROPOSED ACTION ☐ Doublers	☐ Blocked Drain			
☐ Others	☐ Wet Insulation Blanket			
.....	☐ Other			

21. If the defect is RII, Please Sign this card finally by RII Inspector	INSP	DATE
NOTICE OF INSPECTOR	–	–

22. PARTS REQUIRED

PART DESCRIPTION	PART NO	QTY	SERIAL NO		STATUS	
			ON	OFF	CLOSE	OPEN
/	/		/	/	/	/

23. TOOLS REQUIRED

DESCRIPTION	PART NO. / MODEL	NEXT CALIBRATION DATE	STATUS
/	/	/	/

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NON ROUTINE CARD
(Form: SCA/MTC/047)

1. JO/WO #	2. DATE	3. MTC TYPE	4. A/C REG/MSN
WO/083-SNM/XII/2021	**22-DEC-2021**	**REPLACEMENT COMPONENT**	**PK-SNM**
5. CARD #	6. ATA SPEC	7. TRADE	8. STA
#001	**80**		TIMIKA
9. ZONE	10. PANEL		
ENGINE			

11. DESCRIPTION

PERFORM STARTER GENERATOR REPLACEMENT
REMOVED
P/N: 300SGL145Q
S/N: S00096

REFERENCE	☒ AMM Ch. 80-10-00	☐ EMM Ch	☐ OTHER
RII (*)	☐ Y	☒ N	MHR :

12. RESULT

- PERFORMED STARTER GENERATOR REPLACEMENT
- PERFORMED ENGINE GROUND RUN FOUND SATISFACTORY.

Performed at A/C TT : 3041:06 A/C TC /LDG : 4307

MECH	ENG	INSP (*)
	32	

FINDING	☐ Y	☐ N	ACT MHR :	DATE/TIME (DD/MM/YY)
INSPECTION CARD (IC) #				25/12/2021

13. PARTS REQUIRED

DESCRIPTION	PART NO	QTY	REMARK	
			STOCK	STATUS
STARTER GENERATOR	300SGL145Q	1	1	NEW

14. TOOLS REQUIRED

DESCRIPTION	PART NO / MODEL	NEXT CALIBRATION DATE	STATUS
TORQUE WRENCH		April 2023	SERVICEABLE

1. General

A. This section gives removal and installation information for all starter/generators used on the airplane.

2. Starter/Generator Removal and Installation

A. Remove the Starter/Generator (Refer to Figure 401).

NOTE: Two mechanics are required to properly remove or install the starter/generator.

CAUTION: Make sure the starter/generator drive shaft is aligned with and concentric to the armature shaft. Slight misalignment and/or binding of the starter/generator drive can reduce the unit's service life.

(1) Remove the left and right upper cowling doors. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

(2) Remove all external power from the airplane, make sure the battery switch is in the OFF position, and disconnect the battery from the airplane electrical system.

(3) Remove the cover from the terminal block.

(4) Put an identification tag on each of the electrical leads for later identification and remove the terminal nuts.

(5) Remove the speed sensor circuit connector.

NOTE: Removal of the A/C drive unit is necessary for access to the starter generator on airplanes before 208000505 and 208B002025 that have a 200 AMP starter generator option installed.

(6) Loosen the clamp that holds the cooling air blast hose on the starter/generator and remove the hose.

NOTE: Two mechanics are required to properly remove or install the starter/generator. One mechanic is to hold the starter/generator in position to keep the mounting surfaces flush with the quick attach/detach (QAD) adapter pad. This keeps the starter/generator aligned while the other mechanic loosens and removes the V-band clamp.

CAUTION: Hold the starter/generator in place to prevent damage to the splined drive shaft before you do the following step.

(7) Loosen the V-band that holds the starter/generator to the quick attach/detach QAD adapter.

(8) Carefully remove the starter/generator from the QAD adapter pad so that the starter/generator drive spline is not put into a bind.

(9) Remove the QAD adapter as necessary.

(a) Remove the nuts that hold the QAD adapter to the engine accessory gearbox and remove the adapter.

(b) Discard the gasket.

(10) Use a cloth that is damp with MIL-PRF-680 or an equivalent solvent to clean the starter-generator splines.

(11) Use a 10X magnifying glass to examine for signs of electrical arcing damage (in the form of pitting).

NOTE: If there are signs of arching on the starter-generator drive splines, refer to Cessna SNL07-16 and P&WC S.I.L NO. Gen-PT6-024 for additional information and inspection requirements.

NOTE: If the Starter-Generator was removed for an electrical fault, refer to the Pratt and Whitney Canada PT6A Maintenance Manual 05.50.00 unscheduled inspection section- Starter-Generator Replacement.

B. Install the Starter/Generator (Refer to Figure 401).

(1) Do the following steps before you install the starter/generator. Make sure:

(a) There are no burrs or foreign objects on the starter/generator shaft.

(b) The starter/generator guide pins are clean and not bent or damaged.

(c) The mounting surfaces of the starter/generator and the QAD adapter pad are clean and do not have any burrs.

(d) The QAD adapter is fastened to the engine transfer case correctly.

(e) The QAD adapter pad guide pin holes does not have any burrs or foreign objects, and that they are in good condition.

NOTE: For a 300-Amp Starter/Generator installation, the QAD adapter must be located with the internal machined circular recesses on the top.

(2) Install the QAD adapter onto engine accessory gearbox with a new gasket, and install nuts as necessary.

(3) Install a new O-ring around the groove on the splined drive shaft.

(4) With the T-bolt unlatched, put the V-band on the starter/generator between the mounting flange and the terminal block.

NOTE: Two mechanics are required to properly remove or install the starter/generator. One mechanic is to hold the starter/generator in position to keep the mounting surfaces flush with the quick attach/detach QAD adapter pad. This keeps the starter/generator aligned while the other mechanic installs and tightens the V-band clamp.

CAUTION: The spline drive shaft must stay aligned with and concentric to the armature. If the starter/generator is allowed to be installed with the drive shaft out of position, excessive vibration and damage may develop during operation.

(5) Carefully look at the spline drive shaft and the armature shaft interface plates. If the drive shaft looks to be out of position, lightly tap on the spline drive shaft with a plastic mallet to move it to a full concentric position. Figure 401.

(6) Carefully engage the spline drive shaft with the engine spline.

CAUTION: Keep the starter/generator flush up against the adapter during installation. Do not let the unit hang loosely without the V-band being latched because to much load on the drive shaft shear section may cause damage.

(7) Make sure the dowel pins are engaged.

(8) Put the V-band over the mating flanges and latch.

(9) Tap the V-band at several places with a rubber mallet to make sure that there is correct alignment of the spline drive shaft and the armature shaft, and tighten the T-bolt nut to two-thirds the recommended torque.

NOTE: The correct torque value is stamped on the V-band.

(10) Tap the V-band repeatedly with the rubber mallet and tighten the T-bolt nut to the recommended torque.

(11) Install the cooling air blast hose with the clamp on the starter/generator.

(12) Tighten the cooling air blast hose clamp.

(13) Connect the speed sensor cable connector to the starter/generator.

(14) Install the electrical cables in the same relationship to the terminal posts as you tagged them during the removal procedure, and install the nuts.

(15) Put the cover in place over the terminal block.

(16) Reconnect the battery to the airplane electrical system.

(17) Install the left and right upper cowling doors. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

Figure 401 : Sheet 1 : Starter/Generator Installation

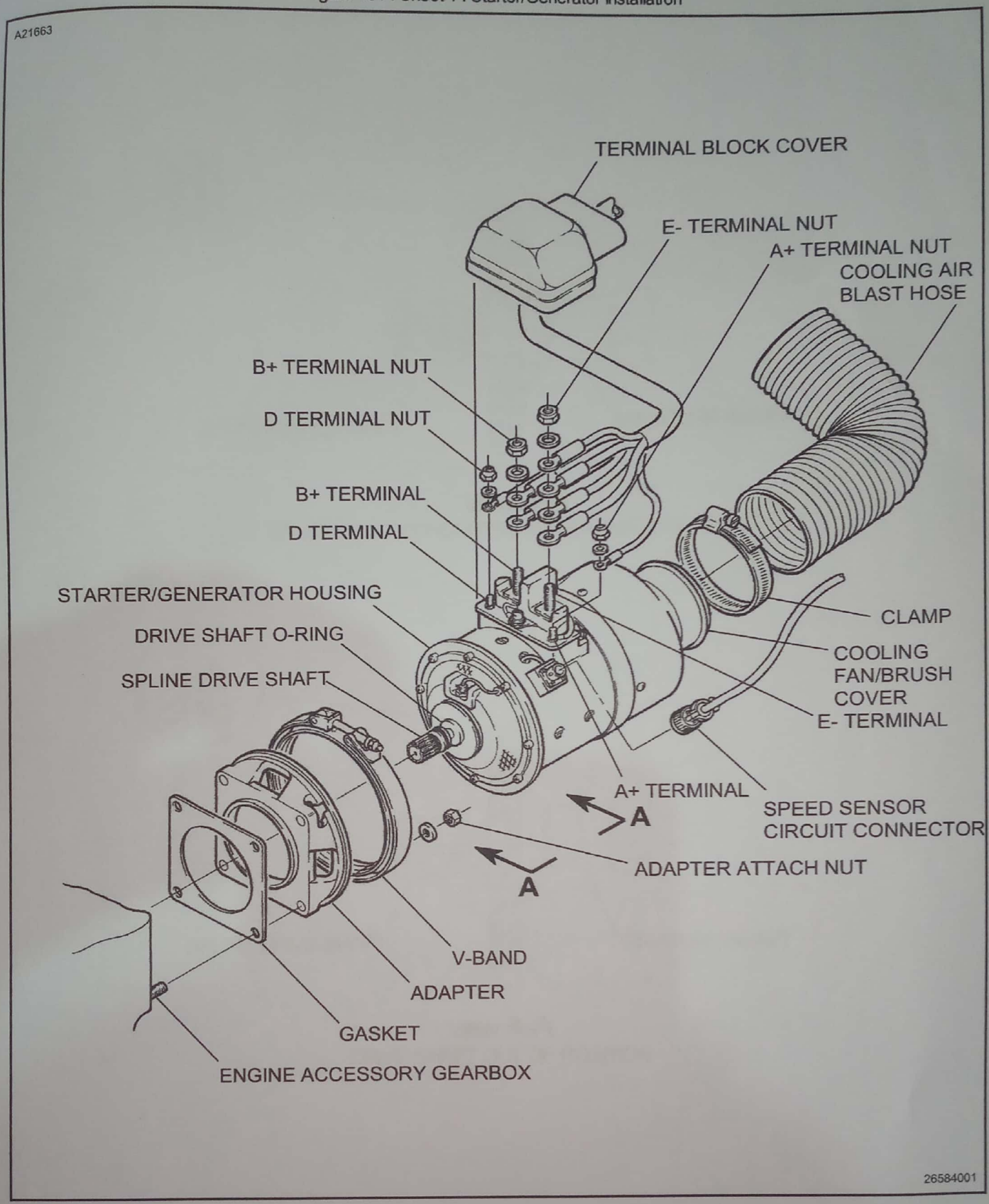
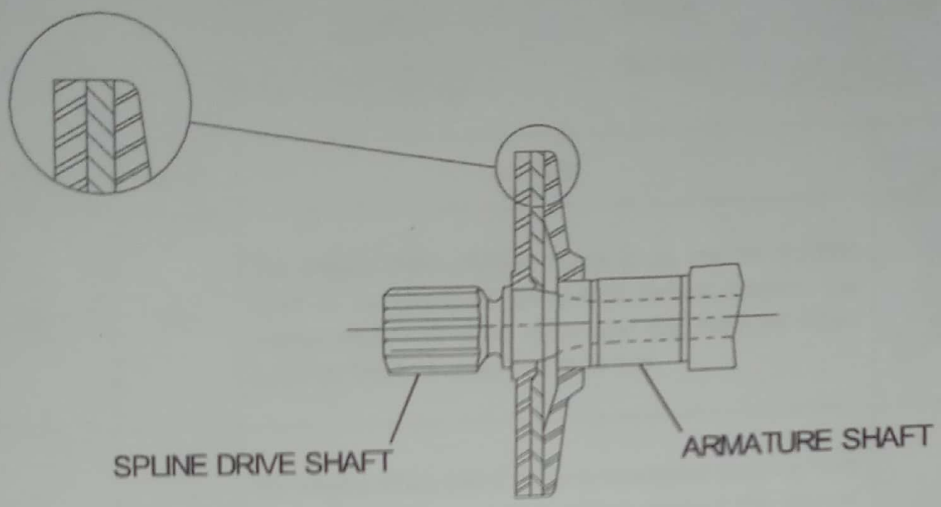
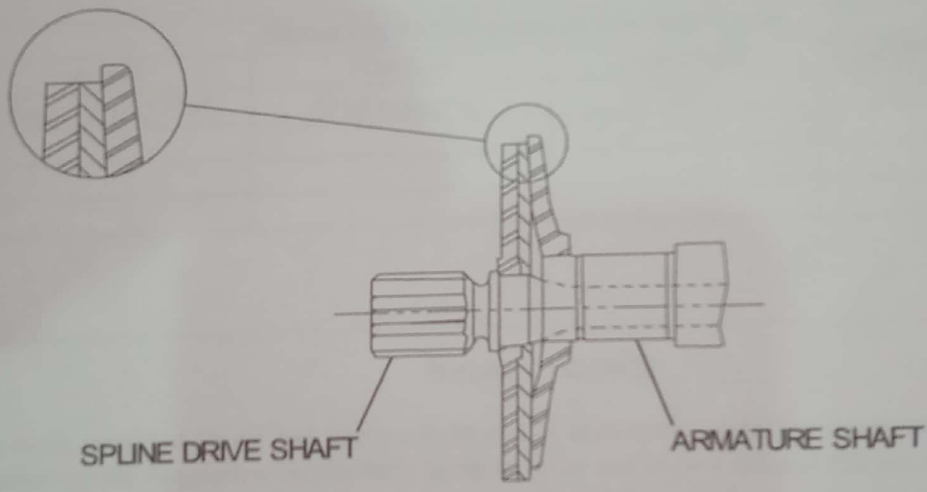


Figure 401 : Sheet 2 : Starter/Generator Installation

A68000



VIEW A-A
DRIVE SHAFT CONCENTRIC WITH ARMATURE SHAFT



VIEW A-A
DRIVE SHAFT OUT OF POSITION

Reg. Mark : PK - SNM
MSN : C208-00655
TSN / CSN : 3041:06/3307
Date : 25/12/2021
Station : TIMIKA
WO No. : WO/083-SNM/XII/2021

NO.	ZONE	TASK	SIGNATURE	
			SIGN	STAMP
01	130	For **engine PT6A-114A** if there is an engine starting fault or an electrical generation defect, inspect the starter generator drive spline and the main oil filter. Refer to EMM Chapter 72-00-00 12Y		
02	130	For **engine PT6A-140** if there is an engine starting fault or an electrical generation defect, inspect the starter generator drive spline and the main oil filter. Refer to EMM Task 05-50-00-210-824		
*** End of Starter Generator Replacement Inspection Items ***				

PERSONNEL PRTICIPATING IN THIS INSPECTION

NAME	POSITION	SIGNATURE	LICENSE NUMBER
BUDI HARTONO	ENGINEER		9506

RETURN TO SERVICE

The work recorded above has been carried out in accordance with the requirements of the Civil Aviation Safety Regulation for the time being in force and in that respect the aircraft is consider fit for Release to Service.

Name : BUDI HARTONO
Signature :
Stamp :
Place/Date : TIMIKA 25/12/2021

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Additional Work Sheet
Starter Generator Replacement

Aircraft Registration: **PK-SNM**

WO# Nr: **WO/083-SNM/XII/2021**

Parts Used Sheet

Special Tool Used

No.	Description	Due Date	Engineer
1.	TORQUE WRENCH	April 2023	

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Additional Work Sheet
Starter Generator Replacement

Aircraft Registration: **PK-SNM**

WO# Nr: **WO/083-SNM/XII/2021**

Parts Used Sheet 2

Part Used

Date	Part Nr.	Serial Nr.	Description	Quantity	Engineer
25/12/2021	300SGL 1458	S00773	STARTER GENERATOR	1	
25/12/2021	MB3248/1-113	MSN	O-RING	1	

1. Approving Competent Authority/Country:	2.	3. Form Tracking No.
EASA / GERMANY	**Authorised Release Certificate** **EASA Form 1**	6204985

4. Organisation Name	5. Work Order/Contractor/Invoice No.
Precision Aviation Group Australia, PTY, LTD 457-459 Unit 1/ Lot 5, Tufnell Rd, Banyo 4014 Brisbane Australia	6204985

6. Item	7. Description	8. Part Number	9. Quantity	10. Serial/Batch No.	11. Status/Work
1	STARTER GENERATOR	300SGL145Q	1	S00773	OVERHAULED

12. Remarks:

STARTER GENERATOR OVERHAULED AND TES[illegible]ERVICEABLE I.A.W SKURKA CMM TM109 REVISION 8

T.S.O: 0.00HRS
CUSTOMER PO#: JCPO-033/SCA/X/2021

Certifies That The Work Specified In Blocks 11/12 Was Carried Out I.A.W EASA Part 145, And With Respect To The Work, The Component Is Considered Ready For Release To Service Under EASA Part 145 Approval Number EASA.145.0709

13a. Certifies that the items listed above were manufactured in conformity to:	14a.
☐ Approved design data and in a condition for safe operation; or ☐ Non-approved design data specified in Block 12.	☑ Part.145.a.50 Release to Service ☐ Other regulation specified in Block 12 Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in block 12, was accomplished in accordance with Part-145 and in respect to that work the items are considered ready for release to service.

13b. Authorised Signature:	13c. Approval/Authorisation No.	14b. Authorised Signature:	14c. Certificate/Approval No.
.....		PAI-A002 PAG-AUST	EASA.145.0709
13d. Name (printed or typed)	**13e. Date: (dd/mmm/yyyy)**	**14d. Name (printed or typed)**	**14e. Date: (dd/mmm/yyyy)**
		JAYEDAN NAIDU	05 / Nov / 2021

User/Installer Responsibilities

It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly.
Where the user/installer works in accordance with the national regulations of an Airworthiness Authority, different from the Airworthiness Authority specified in block 1, it is essential that the user/installer ensures that his/her Airworthiness Authority accepts parts, components, assemblies from the Airworthiness Authority specified in block 1.
Statements in block 13a and 14a do not constitute installation certification. In all cases the aircraft maintenance record must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.