

SUMMARY WORK ORDER SIGNOFF SHEET							
CUSTOMER	A/C Registration	A/C MSN	Work Order No				
KIHUAT TIMBER (M) SDN. BHD.	9M-LKE	8297	E8297000059				

MI No: MSB A292 73 2851 VER-E REPLACE

MI Title: 880EH - REPLACEMENT OF COMPLETE SLEEVE

Work Description:

Following the non compliance result of the inspection per ESI/ARRIEL2D/641 Item 5.2, this ESI provides instructions for the complete sleeve replacement i.a.w. Safran Technical Instruction No. 292 73 2851 Ver. D and Safran MSB 292 73 2851 Ver. E to comply with EASA AD 2016-0004 R1.

Before the aircraft reaches 880FH, replace the complete sleeve

i.a.w.ESI/ARRIEL2D/649

Life	0:00EH	Work Card	N/A	
		Work Card Task Referen	ce N/A	

Task n°	Due at	Dup Insp	Tech Sign	Eng Sign*	Eng Stamp*	Date*	Remarks/Action Taken
Task n°: LKE0001 ARRIEL2D-PUMP AND METERING VALVE ASSY (HMU) P/N: 0292862200 S/N: 51058	880:00EH	N/A	0	16°	M845	29/123	TASK CARRIED GUT.

MI No: AS350B3-AIRCRAFT GENERAL VERIFICATION

MI Title: AIRCRAFT GENERAL VERIFICATION

Work Description:

GENERAL VERIFICATION TO BE CARRIED OUT ON AIRCRAFT OR COMPONENT AS FOLLOWS:

A) CLEAR OF ALL TOOLS, EQUIPMENT AND ANY EXTRANEOUS PARTS OR MATERIAL, AND

B) ALL ACCESS PANELS REMOVED HAVE BEEN DULY REFITTED.

Life	N/A	Work Card	N/A	
		Work Card Task Reference	N/A	

Task n°	Due at	Dup Insp	Tech Sign	Eng Sign*	Eng Stamp*	Date*	Remarks/Action Taken
Task n°: LKE0002 AS350B3 P/N: AS350B3 G/N: 8297	N/A	N/A	9	xi.	M84 E	29/11/13	TABLE CARRIED CYT.

*Certifies that the work specified, except as otherwise specified, was carried out in accordance with CAA Malaysia Requirements and in respect to that work the aircraft/aircraft component is considered ready for release to service.

CAAM Part-145 Approval number: AMO/2017/15

Issue date: 22/11/2023 09:45 AM AHM.F.099, Rev 1 Page: 3 of 3

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Work Order No.: E8297000059/ 2023 060 006

2. tem	3. Defect / Work	4. Name & Date	5. Details of rectification with reference to approved data	6. Tech.	7. CRS #
	TO CARRY OUT INDEPENDENT INSPECTION			Sign	Sign
1 -	ON INSTACLATION OF PUMP AND METERING	DARUL.			
	UNIT ASSEMBLY FOR SECURITY AND	20/11/23			1
	CORRECT INSTALLATION.] /	10
	REFER TASK NO: LEE 0001.	-	Independent Inspection performed in accordance with MOE 2.25	- /	
	RETEX PASE NO. CLEGOOOT.	_	Signature Approval Stamp Date/Time	ID No	App No
		-	1" Inspection (M84) 24/11/23 /1000	15.110	7.55110
		_	Hello	1 /	Sea Help
			2" Inspection (MS1) 241 hairs (23)] /	184 g
		_		Date	Date
				1	
	8. P/N Removed : 5292862260	_	10. P/N Installed: 0292862200	1/	24/11/23
	9. S/N Removed : 510 58 ·		11. S/N Installed : 5/058 12. Manhours :	1/	
				Sign	Sign
				-	
			\$ P08 \$	-	
			Mainte	ID No	App No
		NOT WHE!	0.1/	15 110	7,66110
		Not No			
				Date	Date
	8, P/N Removed :		10. P/N Installed :		
_	9. S/N Removed :		11. S/N Installed : 12. Manhours :]	

13. # The work recorded above has been carried out in accordance with the requirements of the * Malaysian Civil Aviation Regulations /FAA Regulations/_time being in force and in that respect the aircraft / equipment is considered fit for Release to Service.

* Delete not applicable CAAM APPROVAL NUMBER:

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Engineering Services Instruction For instructions to fill out this form, kindly refer: Form Instructions- AHM.F.CAM.017 Rev.2	ATA Chapter: 73 Engine - Type: ARRIEL 2D -
Reference(s): A. EASA AD 2016-0004 R1 B. Safran MSB 292 73 2851 Ver. E C. Safran Technical Instruction No. 292 73 2851 Ver. D	Effectivity: 9M-LKE (8297)

Description:

Following the non compliance result of the inspection per ESI/ARRIEL2D/641 Item 5.2, this ESI provides instructions for the complete sleeve replacement i.a.w. Safran Technical Instruction No. 292 73 2851 Ver. D and Safran MSB 292 73 2851 Ver. E to comply with EASA AD 2016-0004 R1.

Reason:

To prevent the loss of the LP pump drive which would lead to the illumination of the low fuel pressure warning light ("FUEL P"), and which, according to the Flight Manual, would then call for a decrease in power, ignition of the booster pump and landing as soon as possible.

Reason for Revision:

Initial Revision.

Compliance:

Once: Before the aircraft reaches 880FH, replace the complete sleeve i.a.w. Safran Technical Instruction No. 292 73 2851 Ver. D and Safran MSB 292 73 2851 Ver. E.

Affected Department(s):

Department	Task
САМО	- Planner to distribute this ESI together with Work Order Planner to update mod book.
Maintenance	To perform as per ESI.

Prepared By:

Mohamed Hasrulfariz HASHIM

Technical Service Engineer

Date: 13 JULY 2023

Verified By:

Myhammad Imran Ismail

GAM Manager

Date: 13 July 2023

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ENGINEERING SERVICES INSTRUCTION ESI/ARRIEL2D/649

A/C Reg: (9M-LKE)

A/C S/N: (8297)

1. GENERAL INSTRUCTIONS APPLICABLE FOR DISASSEMBLY (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - Disassembly para 1.)

	Work Required	Perfor	med By	Inspe	ected By - (C	CRS*)
Item		Sign	Staff No.	Sign	Auth. No.	Date
1.1	Read and ensure compliance with all the Notes, Cautions and Warnings stated in this Technica Instructions. Satisfactory Remarks:	2	545	Js.	EM84 S	55 / 11/53

2. REMOVAL OF THE LP PUMP

Preliminary operations (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - Disassembly para 2.1.)

	Work Required		Perforr	med By	Inspe	ected By - (C	RS*)
Item	m	Sign	Staff No.	Sign	Auth. No.	Date	
2.1	Remove the fuel supply pipe, refer to the helicopter Main Satisfactory Remarks:	tenance Manual.	Ja	545	Jo.	M84	સ્ત્રી મહિત્ર
2.2	Plug the pipe orifices using the relevant blanks. Satisfactory Remarks:		Z	545	76.	M84 s	25/N/33



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	Work Required	Perforr	ned By	Inspe	ected By - (C	CRS*)
Item		Sign	Staff No.	Sign	Auth. No.	Date
2.3	Remove the adjusted HP/LP pump and metering valve assembly. Refer to task 73-23-00-900-801 of the Maintenance Manual. Satisfactory Remarks:	Je	545	D	M84 S	55 \ II \ 73
2.4	Clean the outside of the adjusted HP/LP pump and metering valve assembly in accordance with the common techniques of the Maintenance Manual, task 70-01-00-940-801. Satisfactory Remarks:	Ja	545	X.	May a	22/11/23
2.5	Position protector TM2454G001 on the side coupling with the accessory gearbox, in order to protect the HP pump drive shaft. Satisfactory Remarks:	Z	545	76.	M84	22/11/23



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Remove the LP fuel pump and complete sleeve (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - Disassembly para 2.2.) (Refer Figure 501 and 502.)

CAUTION: DO NOT ROTATE THE COMPLETE SLEEVE AND THE LP PUMP SHAFT

	Work Required	Perform	med By	Inspe	ected By - (C	RS*)
Item		Sign	Staff No.	Sign	Auth. No.	Date
2.6	Remove the screw (73-23-14-01-510) and washer (73-23-14-01-470). Satisfactory Remarks:	2	545	76	M84	22/11/23
2.7	Remove the two attachment screws (73-23-14-04-100) and washers (73-23-14-04-097). Satisfactory Remarks:	Z	545	ぉ	M84 s	22/i/23
2.8	Perform visual inspection of the securing tab of the heat shield (73-23-14-01-500) to check absence of cracks or impact marks. Satisfactory Remarks:	2	545	Z	M843	22/11/13
2.9	Remove the bracket (73-23-14-04-095), perform visual inspection to check absence of cracks or impact marks. Satisfactory Remarks:	2	545	70.	M84	22/11/23



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	Work Required		Perforn	ned By	Inspe	ected By - (C	RS*)
Item			Sign	Staff No.	Sign	Auth. No.	Date
2.10	Remove the 4 screws (73-23-14-02-640). Satisfactory Unsatisfactory Remarks:		Q	545	6	EM84	22/11/23
2.11	Remove the LP fuel pump. Satisfactory Unsatisfactory Remarks:		Ja	545	6	M84	22/11/28
2.12	Use a grease pencil to mark the initial position of the mal the female splines of the complete sleeve, and in relation body. CAUTION: IDENTIFY THE ASSEMBLY DIRECTION AN COMPLETE SLEEVE IN RELATION TO THE MALE SPLINE LP PUMP BODY (THE COMPLETE SLEEVE (73-2 SIDE. Note: Ensure that the marking in relation to the selected corresponds to the selected housing (HP pump side), as Satisfactory Unsatisfactory Remarks:	to the centering dowel of the LP pump D ANGULAR POSITION OF THE LINES AND CENTERING DOWEL OF 3-14-02-610A) STAYS ON THE HP centering dowel (LP pump side) called for in Figures 1 and 2.	2	545	₹.	Mod Service Se	22/11/23



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	Work Required		Performed By		Inspected By - (CRS*)		
Item			Sign	Staff No.	Sign	Auth. No.	Date
2.13	Plug the fuel outlet of the LP pump and plug the fuel inleand dry the HP and LP internal areas with a dry and lint- Satisfactory Remarks:	t of the HP pump, empty the kerosene free cloth.	Ju	545	Xi	M843	22/11/23
2.14	Remove and scrap the O-ring seals (73-23-14-02-620 ar Satisfactory Remarks:	nd 73-23-14-02-630).	De	545	K'	M84	24 u/23



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3. Replacement of complete sleeve (i.a.w. MSB A292 73 2851 para 2.3.2.2. Item 3.)

	Work Required	Performed By		Inspected By - (CRS*)		
Item		Sign	Staff No.	Sign	Auth. No.	Date
3.1	As a result of the inspection per ESI/ARRIEL2D/641 Item 5.2 found not compliant (due to the wear is found only on the face of the HP pump shaft): A. Replace the complete sleeve before reaching 880 operating hours. B. Install a new complete sleeve: refer to the Technical Instruction No. 292 73 2851. CAUTION: DURING THE INSTALLATION OF THE HMU, THE CORRECT ASSEMBLY OF THE COMPLETE SLEEVE ASSEMBLY ON THE DRIVE SHAFT OF THE PUMP MUST BE ENSURED, PRIOR TO INSTALLATION ON THE ACCESSORY BOX. THE INCORRECT INSTALLATION OF THE COMPLETE SLEEVE CAN LEAD TO AN UNCOMMANDED IN-FLIGHT ENGINE SHUTDOWN. Satisfactory Unsatisfactory Remarks:	Hay!	AHM 559	D'	Mod S	23/11/23



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4. GENERAL INSTRUCTIONS APPLICABLE FOR ASSEMBLY (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - ASSEMBLY para 1.)

	Work Required	Perfori	med By	Inspe	ected By - (C	RS*)
Item		Sign	Staff No.	Sign	Auth. No.	Date
4.1	Reused parts must be cleaned and checked prior to reassembly. Satisfactory Remarks:	Hall	859 84M	£	M84 a	28/11/2 3
4.2	Remove the plugs and blanks before installing the parts. Satisfactory Remarks:	Haully.	559 PHIN	L.	M84	23/11/23
4.3	Lubricate all of the new O-ring seals in accordance with the common techniques of the Maintenance Manual, Task 70-01-00-940-801. Satisfactory Unsatisfactory Remarks:	Yealth	sed byw	K	M84	23/11/23
4.4	Lubricate the screws, nuts and splines in accordance with the common techniques of the Maintenance Manual, Task 70-01-00-940-801. Satisfactory Remarks:	May .	RHAN	**************************************	M84	73/11/23



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A/C S/N: (8297)

5. ASSEMBLY OF THE LP FUEL PUMP (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - ASSEMBLY para 2.) (Refer to Figures 1001 and 1002.)

	Work Required	Perform	med By	Inspe	ected By - (C	RS*)
Item		Sign	Staff No.	Sign	Auth. No.	Date
5.1	Lubricate the female splines of the complete sleeve (73-23-14-02-610A), of the HP pump shaft and of the LP pump shaft with engine oil. Satisfactory Remarks:	Frank.	AHM OSG	K	M84 s	23/11/28
5.2	Install the new complete sleeve (73-23-14-02-610A) on the HP pump shaft, taking care to observe the correct assembly direction. The HP markings of the complete sleeve must be positioned on the HP pump side and the angular markings produced during disassembly (between the complete sleeve and splines of the HP pump shaft) must be aligned. In case of replacement of the complete sleeve (73-23-14-02-610A), take care to observe the assembly direction only, the HP marking of the complete sleeve must be positioned on the HP pump side. Satisfactory Unsatisfactory Remarks:	Hall	RHW	Æ.	M84 S	23/11/43
5.3	For this replacement of the complete sleeve (73-23-14-02-610A), take care to observe the assembly direction only, the HP marking of the complete sleeve must be positioned on the HP pump side. Satisfactory Remarks:	Aoun	859 AHM	X.	(MOA)	23/n/ 2 3



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	Work Required	Perfor	med By	Inspe	ected By - (C	CRS*)
Item		Sign	Staff No.	Sign	Auth. No.	Date
5.4	Lubricate using vaseline and install the O-ring seals (73-23-14-02-620 and 73-23-14-02-630) on the body of the LP fuel pump. Satisfactory Remarks:	Heddl	259 BHM	K	MB 45	23/II/2 3
5.5	Install the LP fuel pump on the HP fuel pump, taking care to observe the initial alignment of the male splines. Satisfactory Remarks:	Haille	АНМ 559	H.	(Mes)	23/U/33
5.6	Install and torque the 4 screws (73-23-14-02-640). Refer to Task 70-41-00-940-801-A01 of the Maintenance Manual. Satisfactory Remarks:	Wally -	2Ed UHW	K.	M84 S	a3/u/a3
5.7	Position the bracket (73-23-14-04-095) using the screws (73-23-14-04-100) equipped with their washers (73-23- 14-04-097), without tightening them. Satisfactory Remarks:	Horry.	AHM 559	76.	Mada Mada Marsus	23/11/23



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	Work Required	Perform	med By	Inspected By - (CRS*)		
Item		Sign	Staff No.	Sign	Auth. No.	Date
5.8	Hold the bracket (73-23-14-04-095) against the metering valve. Satisfactory Remarks:	Hall	Athan 559	6	M845	23/i1/23
5.9	Install the washer (73-23-14-01-470) as indicated in the detail. Note: The specific washer (73-23-14-01-470) must not touch the connection radius thread of the protection plate. Satisfactory Remarks:	May 1	A#M \$59	£.	M84*	૩૩/ ૫/ચ્ય
5.10	To guarantee the required gap between the washer and the plate, position a shim between the washer and the plate when tightening the screw (73-23-14-01-510). Refer to Figure 1002, detail of "View A". Satisfactory Remarks:	Hall.	289 289	Æ.	EM84	23/11/23



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Item	Work Required	Performed By		Inspected By - (CRS*)		
		Sign	Staff No.	Sign	Auth. No.	Date
5.11	Tighten both screws (73-23-14-04-100) to a torque of 6 N.m, starting from the screw located closest to the metering valve. It is mandatory that the order in which the bracket attachment screws are tightened be adhered to per the drawing. Satisfactory Remarks:	[AcallM]	AHM SS9	X.	M843	23/11/23
5.12	Torque the screw (73-23-14-01-510) to 6 N.m. Satisfactory Unsatisfactory Remarks:	Hayll -	029 HHW	X,	Meas	23/11/23



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6. INSTALLATION OF THE HP/LP PUMP AND METERING VALVE ASSEMBLY (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - ASSEMBLY para 3.)

	Work Required	Perfor	med By	Inspe	ected By - (C	RS*)
Item		Sign	Staff No.	Sign	Auth. No.	Date
6.1	Refer to Task 73-23-00-900-801 of the Maintenance Manual. Satisfactory Remarks:	Hall!	AHM 559	£.	(Max)	23/11/23
6.2	Install the fuel supply pipe, refer to the helicopter Maintenance Manual. Satisfactory Remarks:	Anul -	AHM 559	H	M84	24/11/23

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ENGINEERING SERVICES INSTRUCTION ESI/ARRIEL2D/649

A/C Reg: (9M-LKE) A/C S/N: (8297)

7. RECONDITIONING AND CHECKS (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - TESTING para 1.)

Item	Work Required	Perfori	med By	Inspe	ected By - (C	RS*)
		Sign	Staff No.	Sign	Auth. No.	Date
7.1	Do a ground run. Refer to Task 73-23-00-900-801 of the Maintenance Manual. Satisfactory Remarks: TASK CARRED OUT FOUND SATISFACTORY. REFER TOURISM LOG	0	АНМ 560	Şi	M843	29/11/93

8. Reconditioning and checks (i.a.w. MSB A292 73 2851 para 2.3.3.)

	Work Required	Performed By		Inspected By - (CRS*)		
Item		Sign	Staff No.	Sign	Auth. No.	Date
8.1	Refer to the ARRIEL 2 D Maintenance Manual, task 71-02-13-280-801. Satisfactory Remarks: REFER 704RMEY LOG M2 03/00	A	АНМ 560	<i>></i> 6'	M84 s	\$~{\i(√3



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9. IDENTIFICATION (i.a.w. Technical Instruction No. 292 73 2851 Ver. D - TESTING para 2.)(i.a.w. MSB A292 73 2851 para 2.3.4.)

2000	Work Required		Performed By		Inspected By - (CRS*)			
Item		Sign	Staff No.	Sign	Auth. No.	Date		
9.1	If the result of the inspection is compliant: 1. On the log card of the inspected HMU, record the comment: "Inspection compliant per Mandatory SB A292 73 2851_E". 2. Notify Safran Helicopter Engines that this Mandatory SB has been applied and inform them of the results of the HMU inspection by returning the fully-completed compliance certificate (Appendix 2.1). Satisfactory Unsatisfactory Remarks:		Анм 560	A.	M843	29/11/23		