LEONARDO HELICOPTERS LEONARDO MALAYSIA SDN.BHD.	**WORK CARD**	**SERVICE ORDER NUMBER:**	90025566	**WORKCARD NUMBER:**	2022/31763/004-18
	TITLE:	EASA AD 2022-0209-E ISSUED: 12 OCTOBER 2022 (EASB 139-731 DATE: OCTOBER 11, 2022 REV. : /) - ATA 00 – FORWARD CABIN ROOF CEILING HARNESS INSPECTION **(PART I)**		**CUSTOMER:**	LEONARDO HELICOPTER ITALY (LHI)

REGISTRATION:	9M-BGH	**AIRFRAME HOURS:**	300:40	**#1 ENGINE**	**SERIAL NUMBER:**	PCE-KB1931	**#2 ENGINE**	**SERIAL NUMBER:**	PCE-KB1885	**APU**	**SERIAL NUMBER:**	N/A
SERIAL NUMBER:	31763	**LANDINGS:**	838		**HOURS:**	300:40		**HOURS:**	300:40		**HOURS:**	N/A

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
NOTE: FOR FIGURE(S), REFER TO IETP / ENGINE MANUAL / AD / SB.						
ACCOMPLISHMENT INSTRUCTIONS						
		GENERAL NOTES A) PLACE AN IDENTIFICATION TAG ON ALL COMPONENTS THAT ARE RE-USABLE, INCLUDING THE ATTACHING HARDWARE THAT HAS BEEN REMOVED TO GAIN ACCESS TO THE MODIFICATION AREA AND ADEQUATELY PROTECT THEM UNTIL THEIR LATER REUSE. B) SHAPE THE CABLES IN ORDER TO PREVENT INTERFERENCE WITH THE STRUCTURE AND THE OTHER EXISTING INSTALLATIONS, USING WHERE NECESSARY SUITABLE LACING CORDS AND PLASTIC CABLE TIEDOWN. C) LET ADHESIVE CURE AT ROOM TEMPERATURE FOR AT LEAST 24 HOURS. D) ALL LENGTHS ARE IN MM.				
1	-	IN ACCORDANCE WITH AMP DM 39-A-00-20-00-00A-120A-A, PREPARE THE HELICOPTER ON GROUND FOR A SAFE MAINTENANCE. DISCONNECT THE BATTERY, ALL ELECTRICAL POWER SOURCES AND/OR THE EXTERNAL POWER SUPPLY.	SATISFACTORY NIL FINDING	adl	adl LOS LM	31/10/22 4/11/22 LOS LM

☐ PARTS / MATERIAL USED / COMPONENT CHANGE RECORD HAVE BEEN RAISED AND ATTACHED.	☐ CALIBRATED / SPECIAL TOOLS RECORD SHEET HAVE BEEN RAISED AND ATTACHED.
* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.	

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
2	-	WITH REFERENCE TO FIGURE 1 THRU FIGURE 5 PERFORM THE INSPECTION OF THE FORWARD CABIN ROOF CEILING HARNESSES AND INSTALLATION IN THE AREA BETWEEN STA 3120 AND 3400 AS DESCRIBED IN THE FOLLOWING PROCEDURE: 2.1 WITH REFERENCE TO FIGURE 1 THRU FIGURE 5, PERFORM A VISUAL INSPECTION OF THE HARNESS INSTALLATION ON STRIPS P/N 3P5315A10531 AND 3P5315A12931 ACCORDING TO THE FOLLOWING STEPS: 2.1.1 IN ACCORDANCE WITH THE APPLICABLE STEPS OF AMP DM 39-A-24-91-01-00A-520A-A AND WITH REFERENCE TO FIGURE 1, OPEN THE CIRCUIT BREAKER PANEL ASSY WITHOUT REMOVING IT.	SATISFACTORY NIL FINDINGS	ad	L 06 LM ad	31/10/22
		2.1.2 WITH REFERENCE TO FIGURE 1, INSERT THE BORESCOPE INSIDE THE LIGHTENING HOLES SHOWED TO ACCESS THE AREA OF THE INSPECTION.	SATISFACTORY NIL FINDINGS	ad	ad L 06 LM	31/10/22
		2.1.3 PERFORM A VISUAL INSPECTION OF THE C/AS INSTALLATION.	SATISFACTORY NIL FINDINGS	ad	ad L 06 LM	31/10/22
		NOTE WHEN C/A INSTALLATION IS CORRECT, C/A ARE INSTALLED BELOW THE RH/LH STRIPS P/N 3P5315A10531 AND P/N 3P5315AA12931, AS SHOWN IN FIGURE 3.	-	-	-	-

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* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.	

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
		2.1.4 IF C/AS ARE INSTALLED ABOVE THE STRIPS P/N 3P5315A10531 AND/OR P/N 3P5315A12931 AS PER FIGURE 4 "INCORRECT INSTALLATION", GO TO STEP 3.	SATISFACTORY C/AS AS PER FIGURE 3		LC6 LM	31/10/22
		2.1.5 IF C/AS ARE INSTALLED CORRECTLY AS SHOWN IN FIGURE 3, GO TO STEP 5 AND CLOSE SB PART I APPLICATION.	SATISFACTORY C/AS AS PER FIGURE 3		LC6 LM	31/10/22
3	-	**NOTE** PERFORM STEP 3 ONLY IN CASE THE C/AS ARE INSTALLED AS PER STEP 2.1.4. IN ACCORDANCE WITH AMP DM 39-A-06-41-00-00A-010A-A AND WITH REFERENCE TO FIGURE 1 THRU 5, REMOVE ALL EXTERNAL PANELS, INTERNAL PANELS AND INTERNAL LINERS AS REQUIRED TO GAIN ACCESS TO THE AREA AFFECTED BY THE INSTALLATION AND PERFORM VISUAL INSPECTION OF THE C/AS AND OF THE TORQUE TUBE C3 AND THE STRIP INSTALLATION ADJUSTMENT AS DESCRIBED IN THE FOLLOWING PROCEDURE: 3.1 WITH REFERENCE TO FIGURE 2 AND FIGURE 3, PERFORM A VISUAL INSPECTION OF THE C/AS FIXED TO STRIPS P/N 3P5315A10531 AND 3P5315A12931 ACCORDING TO THE FOLLOWING STEPS: 3.1.1 CHECK FOR CHAFING AND/OR DAMAGE OF THE CABLE HARNESS.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A	LC6 LM	31/10/22
		3.1.2 IN CASE OF ANY FINDING, CONTACT PRODUCT SUPPORT ENGINEERING (ENGINEERING.SUPPORT.LHD@LEONARDO.COM) IN ORDER TO RECEIVE FURTHER INSTRUCTION.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A	LC6 LM	31/10/22

☐ PARTS / MATERIAL USED / COMPONENT CHANGE RECORD HAVE BEEN RAISED AND ATTACHED.

☐ CALIBRATED / SPECIAL TOOLS RECORD SHEET HAVE BEEN RAISED AND ATTACHED.

* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
		3.2 WITH REFERENCE TO FIGURE 2, PERFORM A VISUAL INSPECTION OF THE TORQUE TUBE C3 P/N 3E6711A00433. MAKE SURE THAT THERE IS NO DAMAGE ON THE TUBE. IF DAMAGE IS FOUND, CONTACT PRODUCT SUPPORT ENGINEERING (ENGINEERING.SUPPORT.LHD@LEONARDO.COM) IN ORDER TO RECEIVE FURTHER INSTRUCTION.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		3.3 WITH REFERENCE TO FIGURE 4 AND TO FIGURE 6 THRU 9 PERFORM STRIP INSTALLATION ADJUSTMENT AS DESCRIBED IN THE FOLLOWING PROCEDURE: 3.3.1 WITH REFERENCE TO FIGURE 4, REMOVE C/A FROM SUPPORTS AW001CL504B-N6 INSTALLED ON STRIPS P/N 3P5315A10531 AND/OR P/N 3P5315A12931.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		3.3.2 WITH REFERENCE TO FIGURE 6 REMOVE STRIPS P/N 3P5315A10531 AND/OR 3P5315A12931 AND PUT THEM ON A WORKBENCH. RETAIN THE FIXING HARDWARE FOR LATER USE.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		3.3.3 WITH REFERENCE TO FIGURE 7, REMOVE N° 3 SUPPORTS AW001CL504B-N6 FROM P/N 3P5315A10531 AND/OR P/N 3P5315A12931.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		NOTE PERFORM STEPS 3.3.4 ONLY IN CASE OF DAMAGE OF THE STRIP P/N 3P5315A10531 AND/OR P/N 3P5315A12931 AND IF REPLACEMENT IS NEEDED. OTHERWISE, GO TO STEP 3.3.5.	-	-	-	-

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* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.	

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
		3.3.4 WITH REFERENCE TO FIGURE 7, ASSEMBLE STRIPS P/N 3P5315A10531 AND/OR 3P5315A12931 WITH REFERENCE TO THE FOLLOWING PROCEDURE: 3.3.4.1 WITH REFERENCE TO FIGURE 8, MANUFACTURE STRIPS P/N 3P5315A10551 AND/OR 3P5315A12951 USING ALUMINIUM SHEET AL-ALY 2024.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		3.3.4.2 IN ACCORDANCE TO CSRP DM CSRP-A-51-21-06-00A-644A-D APPLY CHROMATE CONVERSION TREATMENT.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		3.3.4.3 WITH REFERENCE TO FIGURE 8 AND IN ACCORDANCE WITH CSRP DM CSRP-A-51-21-02-02A-257A-D APPLY A LAYER OF PRIMER ON STRIPS P/N 3P5315A10551 AND/OR 3P5315A12951.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		3.3.4.4 WITH REFERENCE TO FIGURE 7 INSTALL N°2 NUT PLATES P/N MS21075L3N BY MEANS OF N°4 RIVET P/N NAS1097AD3-3 OR P/N MS20426AD3-3 (AS APPLICABLE) ON STRIPS P/N 3P5315A10551 AND/OR 3P5315A12951.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22
		3.3.4.5 WITH REFERENCE TO FIGURE 7, INSTALL N° 3 NEW SUPPORTS AW001CL504B-N6 BY MEANS OF N° 3 RIVETS NAS1720H5L2A ON STRIPS P/N 3P5315A10551 AND/OR 3P5315A12951. MAKE SURE THEY ARE ORIENTED OPPOSITE WITH RESPECT TO NUT PLATES MS21075L3N.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A		31/10/22

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* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.	

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
		3.3.4.6 WITH REFERENCE TO FIGURE 7, COUNTERMARK THE OBTAINED COMPONENTS AS P/N 3P5315A10531 AND/OR 3P5315A12931.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A	adl LOG LM	31/10/22
		NOTE PERFORM STEP 3.3.5 ONLY IN CASE STEPS 3.3.4 WAS NOT PERFORMED. 3.3.5 WITH REFERENCE TO FIGURE 7, INSTALL N° 3 SUPPORTS P/N AW001CL504B-N6 BY MEANS OF N° 3 RIVETS NAS1720H5L2A ON BRACKET P/N 3P5315A10531 AND/OR 3P5315A12931. MAKE SURE THEY ARE ORIENTED OPPOSITE WITH RESPECT TO NUT PLATES MS21075L3N.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A	LOG LM adl	31/10/22
		3.3.6 WITH REFERENCE TO FIGURE 9, FIX C/AS ON STRIPS P/N 3P5315A10531 AND/OR 3P5315A12931 BY MEANS OF TIE WRAPS.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A	LOG LM adl	31/10/22
		3.3.7 WITH REFERENCE TO FIGURE 6, REINSTALL STRIPS P/N 3P5315A10531 AND/OR 3P5315A12931.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A	LOG LM adl	31/10/22
4	-	IN CASE OF FINDINGS, CONTACT PRODUCT SUPPORT ENGINEERING (ENGINEERING.SUPPORT.LHD@LEONARDO.COM) TO REPORT ABOUT THE RESULTS OF THE INSPECTIONS REQUESTED.	NOT APPLICABLE REFER 2.1.4 AND 2.1.5	N/A	LOG LM adl	31/10/22
5	-	IN ACCORDANCE WITH THE APPLICABLE STEPS OF AMP DM 39-A-24-91-01-00A-720A-A AND WITH REFERENCE TO FIGURE 1 THRU FIGURE 5, CLOSE THE CIRCUIT BREAKER PANEL ASSY.	SATISFACTORY N/L FINDINGS	adl	LOG LM adl	31/10/22

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* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
6	-	RETURN THE HELICOPTER TO FLIGHT CONFIGURATION AND **RECORD FOR COMPLIANCE WITH PART I OF THIS SERVICE BULLETIN ON THE HELICOPTER LOGBOOK.**	SATISFACTORY PERFORMED BY CAM D		L 06 LM	31/10/22
7	-	SEND THE ATTACHED COMPLIANCE FORM TO THE FOLLOWING MAIL BOX: ENGINEERING.SUPPORT.LHD@LEONARDO.COM AS AN ALTERNATIVE, GAIN ACCESS TO MY COMMUNICATIONS SECTION ON LEONARDO WEBPORTAL AND COMPILE THE "SERVICE BULLETIN APPLICATION COMMUNICATION".	SATISFACTORY SENT		L 06 LM	31/10/22
THIS COLUMN INTENTIONALLY LEFT BLANK						

☐ PARTS / MATERIAL USED / COMPONENT CHANGE RECORD HAVE BEEN RAISED AND ATTACHED.	☐ CALIBRATED / SPECIAL TOOLS RECORD SHEET HAVE BEEN RAISED AND ATTACHED.
* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.	

NO	SOURCE	TASK / REFERENCE	REMARKS	MECHANIC SIGN	* AH SIGN & STAMP	DATE
6	-	RETURN THE HELICOPTER TO FLIGHT CONFIGURATION AND **RECORD FOR COMPLIANCE WITH PART I OF THIS SERVICE BULLETIN ON THE HELICOPTER LOGBOOK.**	SATISFACTORY NIL FINDINGS	adl	adl LOG LM	31/10/22
7	-	SEND THE ATTACHED COMPLIANCE FORM TO THE FOLLOWING MAIL BOX: ENGINEERING.SUPPORT.LHD@LEONARDO.COM AS AN ALTERNATIVE, GAIN ACCESS TO MY COMMUNICATIONS SECTION ON LEONARDO WEBPORTAL AND COMPILE THE "SERVICE BULLETIN APPLICATION COMMUNICATION".	SATISFACTORY NIL FINDINGS	adl	adl LOG LM	31/10/22
THIS COLUMN INTENTIONALLY LEFT BLANK						

☐ PARTS / MATERIAL USED / COMPONENT CHANGE RECORD HAVE BEEN RAISED AND ATTACHED.	☐ CALIBRATED / SPECIAL TOOLS RECORD SHEET HAVE BEEN RAISED AND ATTACHED.
* APPROVAL HOLDER HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W MAINTENANCE MANUAL SPECIFIED IN WORKPACK INDEX LM/QA/GEN/01.	

European Union Aviation Safety Agency

Emergency Airworthiness Directive

AD No.: 2022-0209-E

Issued: 12 October 2022

Note: This Emergency Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I Part M.A.301, or Annex Vb Part ML.A.301, as applicable, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I Part M.A.303, or Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

LEONARDO S.p.A.

Type/Model designation(s):

AB139 and AW139 helicopters

Effective Date:	14 October 2022
TCDS Number(s):	EASA.R.006
Foreign AD:	Not applicable
Supersedure:	None

ATA 91 – Harness Installation – Forward Roof Area – Inspection

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Manufacturer(s):

Leonardo S.p.A. Helicopters, formerly Finmeccanica S.p.A, AgustaWestland S.p.A., Agusta S.p.A.; and AgustaWestland Philadelphia Corporation, formerly Agusta Aerospace Corporation

Applicability:

AB139 and AW139 helicopters, serial number (s/n) 31005 to 31984 inclusive (except s/n 31007, 31803, 31959, 31967, 31969, 31974, 31982 and 31983), 41001 to 41580 inclusive, and from 41801 to 41806 inclusive.

Definitions:

For the purpose of this AD, the following definitions apply:

The ASB: Leonardo Emergency Alert Service Bulletin (ASB) 139-731.

Torque Tube: Collective torque tube C3, Part Number (P/N) 3E6711A00433.

The diode: Diode A77, P/N 3G2430V00352.

Reason:

An occurrence was reported of smoke and fire ignition in the cockpit of an AW139 helicopter, leading to reduced control. The initial investigation evidence revealed signs of short circuit inside the forward cabin roof ceiling panel, due to chafing of an electrical cable against the rivets of the upper torque tube. It was determined that the chafed electrical cable was not routed in accordance with the applicable production drawings. Investigation is still ongoing to determine the root cause of the event.

This condition, if not detected and corrected, could lead to damage of electrical wiring, possibly resulting in a fire in the forward cabin roof ceiling and consequent loss of control of the helicopter.

To address this potential unsafe condition, Leonardo issued the ASB, to provide inspection instructions.

For the reasons described above, this AD requires a one-time visual inspection of the condition and routing of the electrical cables, the torque tube and the diode, all located inside the forward roof cabin ceiling, and, depending on findings, accomplishment of applicable corrective action(s).

This AD is considered to be an interim action and further AD action may follow.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Inspections:

(1) Within 10 flight hours (FH) after the effective date of this AD accomplish a borescope inspection of the cable installation inside the forward cabin roof ceiling, in accordance with the instructions of section 3 PART I of the ASB.

(2) Within 25 FH after the effective date of this AD accomplish a visual inspection for damage of the cables and the diode in the forward cabin roof ceiling in accordance with the instructions of section 3 PART II of the ASB.

Corrective Action(s):

(3) If, during the inspection as required by paragraph (1) of this AD, an incorrect installation of cables, as specified in the ASB, is detected, before next flight, accomplish a visual inspection of the forward cabin roof ceiling for chafing of the cables and damage of the torque tube in accordance with the instructions of section 3 PART I of the ASB.

(4) If, during the inspection as required by paragraph (3) of this AD, any discrepancy, as identified in the ASB, is detected, before next flight, contact Leonardo for approved corrective action(s) instructions and accomplish those instructions accordingly.

(5) If, during the inspection as required by paragraph (1) of this AD, an incorrect installation of cables, as specified in the ASB, is detected, before next flight, restore the correct installation of the cables in accordance with the instructions of section 3 PART I of the ASB.

(6) If, during the inspection as required by paragraph (2) of this AD, any cable chafing is detected, before next flight, contact Leonardo for approved corrective action(s) instructions and accomplish those instructions accordingly.

(7) If, during the inspection as required by paragraph (2) of this AD, a clearance of less than 10 mm between the cable and the diode is found, before next flight, restore the required clearance in accordance with the instructions of section 3 PART II of the ASB.

(8) If, during the inspection as required by paragraph (2) of this AD, the diode is found damaged, before next flight, contact Leonardo for approved corrective action(s) instructions and accomplish those instructions accordingly.

Reporting:

(9) If, during any inspection as required by this AD, any discrepancy is detected, as identified in the ASB, within 30 days after that inspection report the results to Leonardo.

Ref. Publications:

Leonardo ASB 139-731 original issue dated 11 October 2022.

The use of later approved revisions of the above-mentioned document is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.

2. The results of the safety assessment have indicated the need for immediate publication and notification, without the full consultation process.

3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the EU aviation safety reporting system. This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.

5. For any question concerning the technical content of the requirements in this AD, please contact: Leonardo S.p.A. Helicopters. E-mail: engineering.support.lhd@leonardocompany.com.

Leonardo S.p.A.
Via Giovanni Agusta, 520
21017 Cascina Costa di Samarate (VA) Italy
Tel.: +39 0331 229111 - Fax: +39 0331 229605/222595

AgustaWestland Products

SERVICE BULLETIN

N° 139-731

EMERGENCY ALERT

DATE: October 11, 2022

REV. : /

TITLE

ATA 00 – FORWARD CABIN ROOF CEILING HARNESS INSPECTION

REVISION LOG

First Issue.

An appropriate entry should be made in the aircraft log book upon accomplishment.
If ownership of aircraft has changed, please, forward to new owner.

1. PLANNING INFORMATION

A. EFFECTIVITY

All AB/AW139 from S/N 31005 to S/N 31984 (except S/N 31007, S/N 31803, S/N 31959, S/N 31967, S/N 31969, S/N 31974, S/N 31982 and S/N 31983), from S/N 41001 to S/N 41580 and from S/N 41801 to S/N 41806.

B. COMPLIANCE

Part I:

Within and not later than ten (10) FH from the issue date of this Service Bulletin.

Part II:

Within and not later than twenty-five (25) FH from the issue date of this Service Bulletin.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to prescribe one-off inspections of the Forward Cabin Roof Ceiling Harnesses and their installation in the area between STA 3120 and 3900 to identify potential chafing conditions.

E. DESCRIPTION

Part I of this Service Bulletin is developed to prescribe a one-off inspection of the Forward Cabin Roof Ceiling Harnesses installation in the area between STA 3120 and 3400 to verify the proper installation of the C/As in the area.

Part II of this Service Bulletin is developed to prescribe a one-off inspection of the harness installation in the area between STA 3400 and 3900 where the diode A77 is located.

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LH certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to

obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin, the following MMH are deemed necessary:

Part I: approximately two (2) MMH;

Part II: approximately ten (10) MMH;

MMH are based on hands-on time and can change with helicopter configuration, personnel and facilities available.

H. WEIGHT AND BALANCE

N.A.

I. REFERENCES

1) PUBLICATIONS

Following Data Modules refer to AMP:

DATA MODULE		DESCRIPTION	PART
DM01	39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	I, II
DM02	39-A-24-91-01-00A-520A-A	Circuit breaker panel - Remove procedure	I
DM03	39-A-24-91-01-00A-720A-A	Circuit breaker panel - Install procedure	I

Following Data Modules refer to CSRP:

DATA MODULE		DESCRIPTION	PART
DM04	CSRP-A-51-21-02-02A-257A-D	Waterborne chromate free primer (AWMS28-002) - Paint and apply marking	I
DM05	CSRP-A-51-21-06-00A-644A-D	Chromate conversion treatments of aluminum alloys – Chromate	I

2) ACRONYMS & ABBREVIATIONS

AMP	Aircraft Maintenance Publication
AR	As Required
ATA	Air Transport Association
AMDI	Aircraft Material Data Information
C/A	Cable Assy
CSRP	Common Structural Repair Publication
DM	Data Module

DOA	Design Organization Approval
EASA	European Aviation Safety Agency
FH	Flying Hours
ITEP	Illustrated Tool and Equipment Publication
IPD	Illustrated Part Data
LH	Leonardo Helicopter
MMH	Maintenance Man Hours
N.A.	Not Applicable
P/N	Part Number

3) ANNEX

N.A.

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**3P5315A12931**		**STRIP ASSY**	**REF**	.	**(1)**	-
2	AW001CL504B-N6		Support	3	..	(1)	-
3	MS21075L3N	MS21075L3	Nut plate	2	..	(1)	-
4	NAS1097AD3-3		Rivet	0.1 kg	..	(1)	-
5	NAS1720H5L2A		Rivet	3	..	(1)	-
6	**3P5315A10531**		**STRIP ASSY**	**REF**	.	**(1)**	-
7	AW001CL504B-N6		Support	3	..	(1)	-
8	MS21075L3N	MS21075L3	Nut plate	2	..	(1)	-
9	MS20426AD3-3		Rivet	0.1 kg	..	(1)	-
10	NAS1720H5L2A		Rivet	3	..	(1)	-

PART II

N.A.

2) CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LH CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
11	Commercial	Aluminium Sheet AL-ALY 2024, AMS-QQ-A-250/5, thickness 0.81 mm	AR	(2) (3)	I

Refer also to AMDI for the consumable materials required to comply with the AMP DM referenced in the accomplishment instructions.

3) LOGISTIC MATRIX

N.A.

NOTES

(1) The quantity of items to be ordered depends on the results of the inspection.

(2) Item to be procured as local supply.

(3) As alternative it is possible to use material AMS-QQ-A-250/4 and thickness 1.02 mm.

B. SPECIAL TOOLS

The following special tools, or equivalent, are necessary to accomplish this Service Bulletin:

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
12	Comercial	Borescope	1		I

Refer also to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

C. INDUSTRY SUPPORT INFORMATION

As reported in Part I step 4 and Part II step 3, only if Product Support Engineering confirms the replacements, please Issue relevant MMIR form to your Warranty Administration Dpt.

Please note that "Product Support Engineering's approvals" is mandatory to evaluate your request, otherwise MMIR could be rejected.

Owners/Operators who comply with the instructions of this Service Bulletin no later than the applicable date in the "Compliance" section will be eligible to receive required materials on free of charge basis, except for Consumable Materials and Special Tools.

NOTE: Customers who fail to comply with the instructions in this Service Bulletin before the compliance date are not eligible for the aforementioned special policy.

Please Issue relevant MMIR form to your Warranty Administration Dpt.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.

b) Shape the cables in order to prevent interference with the structure and the other existing installations, using where necessary suitable lacing cords and plastic cable tiedown.

c) Let adhesive cure at room temperature for at least 24 hours.

d) All lengths are in mm.

PART I

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. With reference to Figure 1 thru Figure 5 perform the inspection of the Forward Cabin Roof Ceiling Harnesses and installation in the area between STA 3120 and 3400 as described in the following procedure:
   - 2.1 With reference to Figure 1 thru Figure 5, perform a visual inspection of the harness installation on strips P/N 3P5315A10531 and 3P5315A12931 according to the following steps:
     - 2.1.1 In accordance with the applicable steps of AMP DM 39-A-24-91-01-00A-520A-A and with reference to Figure 1, open the circuit breaker panel assy without removing it.
     - 2.1.2 With reference to Figure 1, insert the borescope inside the lightening holes showed to access the area of the inspection.
     - 2.1.3 Perform a visual inspection of the C/As installation.

NOTE

When C/A installation is correct, C/A are installed below the RH/LH strips P/N 3P5315A10531 and P/N 3P5315AA12931, as shown in Figure 3.

2.1.4 If C/As are installed above the strips P/N 3P5315A10531 and/or P/N 3P5315A12931 as per Figure 4 "Incorrect Installation", go to step 3.

2.1.5 If C/As are installed correctly as shown in Figure 3, go to step 5 and close SB Part I application.

NOTE

Perform step 3 only in case the C/As are installed as per step 2.1.4.

3. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1 thru 5, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform visual inspection of the C/As and of the Torque Tube C3 and the strip installation adjustment as described in the following procedure:

3.1 With reference to Figure 2 and Figure 3, perform a visual inspection of the C/As fixed to strips P/N 3P5315A10531 and 3P5315A12931 according to the following steps:

3.1.1 Check for chafing and/or damage of the cable harness.

3.1.2 In case of any finding, contact Product Support Engineering (engineering.support.lhd@leonardo.com) in order to receive further instruction.

3.2 With reference to Figure 2, perform a visual inspection of the Torque Tube C3 P/N 3E6711A00433. Make sure that there is no damage on the tube. If damage is found, contact Product Support Engineering (engineering.support.lhd@leonardo.com) in order to receive further instruction.

3.3 With reference to Figure 4 and to Figure 6 thru 9 perform strip installation adjustment as described in the following procedure:

3.3.1 With reference to Figure 4, remove C/A from supports AW001CL504B-N6 installed on strips P/N 3P5315A10531 and/or P/N 3P5315A12931.

3.3.2 With reference to Figure 6 remove strips P/N 3P5315A10531 and/or 3P5315A12931 and put them on a workbench. Retain the fixing hardware for later use.

3.3.3 With reference to Figure 7, remove n° 3 supports AW001CL504B-N6 from P/N 3P5315A10531 and/or P/N 3P5315A12931.

NOTE

Perform Steps 3.3.4 ONLY in case of damage of the strip P/N 3P5315A10531 and/or P/N 3P5315A12931 and if replacement is needed. Otherwise, go to step 3.3.5.

3.3.4 With reference to Figure 7, assemble strips P/N 3P5315A10531 and/or 3P5315A12931 with reference to the following procedure:

3.3.4.1 With reference to Figure 8, manufacture strips P/N 3P5315A10551 and/or 3P5315A12951 using Aluminium Sheet AL-ALY 2024.

3.3.4.2 In accordance to CSRP DM CSRP-A-51-21-06-00A-644A-D apply Chromate Conversion Treatment.

3.3.4.3 With reference to Figure 8 and in accordance with CSRP DM CSRP-A-51-21-02-02A-257A-D apply a layer of primer on strips P/N 3P5315A10551 and/or 3P5315A12951.

3.3.4.4 With reference to Figure 7 install n°2 nut plates P/N MS21075L3N by means of n°4 rivet P/N NAS1097AD3-3 or P/N MS20426AD3-3 (as applicable) on strips P/N 3P5315A10551 and/or 3P5315A12951.

3.3.4.5 With Reference to Figure 7, install n° 3 new supports AW001CL504B-N6 by means of n° 3 rivets NAS1720H5L2A on strips P/N 3P5315A10551 and/or 3P5315A12951. Make sure they are oriented opposite with respect to nut plates MS21075L3N.

3.3.4.6 With reference to Figure 7, countermark the obtained components as P/N 3P5315A10531 and/or 3P5315A12931.

NOTE

Perform Step 3.3.5 ONLY in case Steps 3.3.4 was not performed.

3.3.5 With Reference to Figure 7, install n° 3 supports P/N AW001CL504B-N6 by means of n° 3 rivets NAS1720H5L2A on bracket P/N 3P5315A10531 and/or 3P5315A12931. Make sure they are oriented opposite with respect to nut plates MS21075L3N.

3.3.6 With reference to Figure 9, fix C/As on strips P/N 3P5315A10531 and/or 3P5315A12931 by means of tie wraps.

3.3.7 With Reference to Figure 6, reinstall strips P/N 3P5315A10531 and/or 3P5315A12931.

4. In case of findings, contact Product Support Engineering (engineering.support.lhd@leonardo.com) to report about the results of the inspections requested.
5. In accordance with the applicable steps of AMP DM 39-A-24-91-01-00A-720A-A and with reference to Figure 1 thru Figure 5, close the circuit breaker panel assy.
6. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
7. Send the attached compliance form to the following mail box:

   engineering.support.lhd@leonardo.com

   As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".

PART II

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 5, Figure 10 and Figure 11, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform the diode A77 harness installation inspection in the area between STA 3400 and 3900 as described in the following procedure:
   - 2.1 With reference to Figure 5, Figure 10 and Figure 11, perform a visual inspection of the C/As installation next to the Diode A77 P/N 3G2430V00352 according to the following steps:
     - 2.1.1 With reference to Figure 10, check for chafing or damage on the cable harness in the area showed.
     - 2.1.2 In case of any finding, contact Product Support Engineering (engineering.support.lhd@leonardo.com) in order to receive further instruction.
     - 2.1.3 With reference to Figure 10 and Figure 11, ensure that clearance of at least 10.0 mm exists in the area inside the red circle shown in Figure 11, between the cable harness and Diode A77 P/N 3G2430V00352.

       NOTE

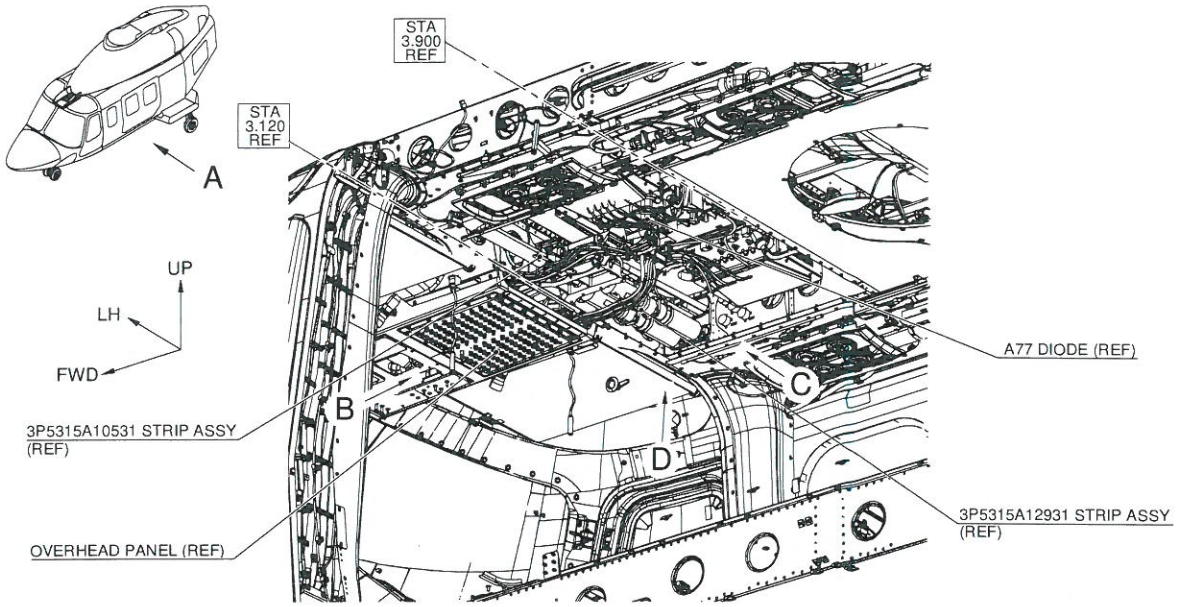
       In case of any doubt and/or need to support, contact Product Support Engineering (engineering.support.lhd@leonardo.com) in order to receive further instruction.

     - 2.1.4 If necessary, in accordance with Figure 10 and Figure 11, re-route the cable harnesses (using if needed also lacing cord to fix the cables with each other) in order to respect the clearance of at least 10.0 mm from the diode or any other surrounding structure or component.
   - 2.2 With reference to Figure 10 and 11, perform a visual inspection of the Diode A77. Make sure that no damage is present on the component.
   - 2.3 In case of any finding, contact Product Support Engineering (engineering.support.lhd@leonardo.com) in order to receive further instruction.
3. In case of findings, contact Product Support Engineering (engineering.support.lhd@leonardo.com) to report about the results of the inspections requested.

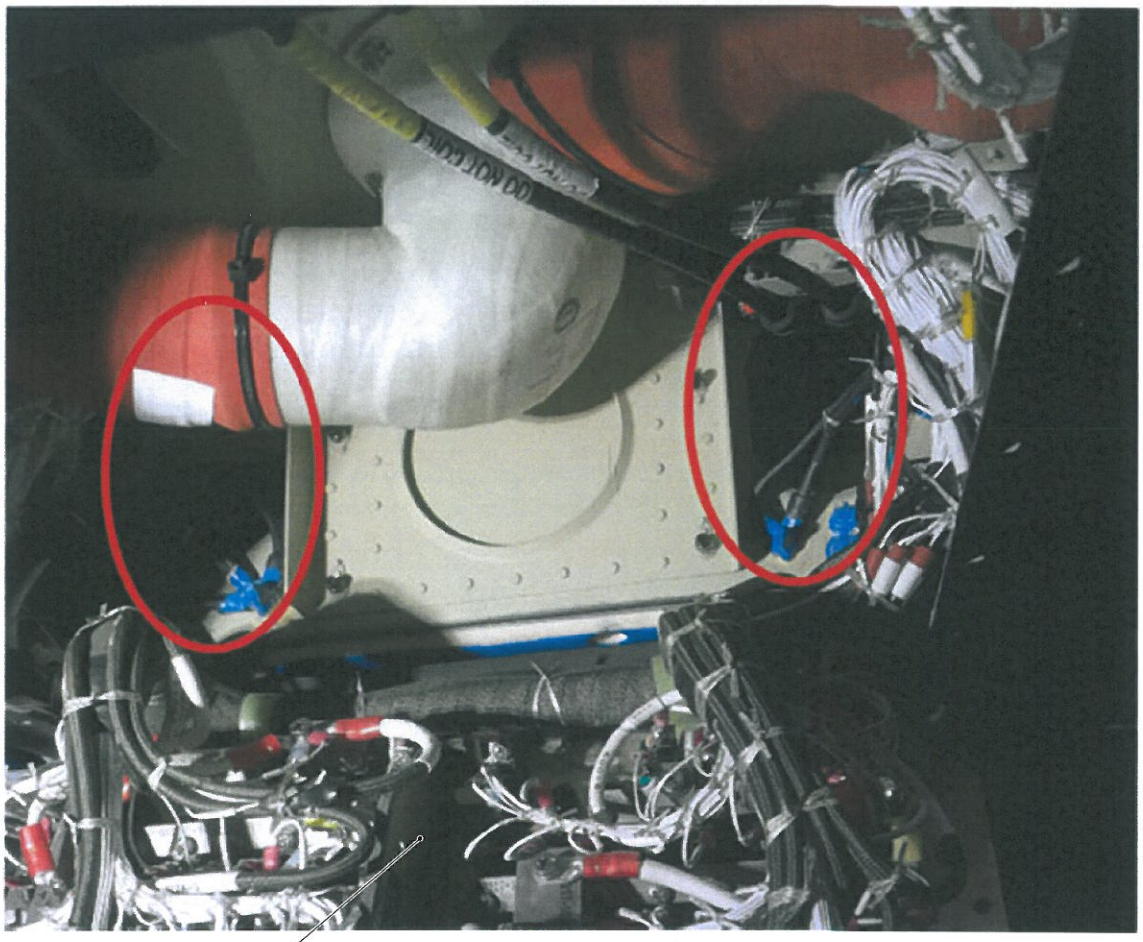
4. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
5. Send the attached compliance form to the following mail box:

   engineering.support.lhd@leonardo.com

   As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".



VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



VIEW B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 1

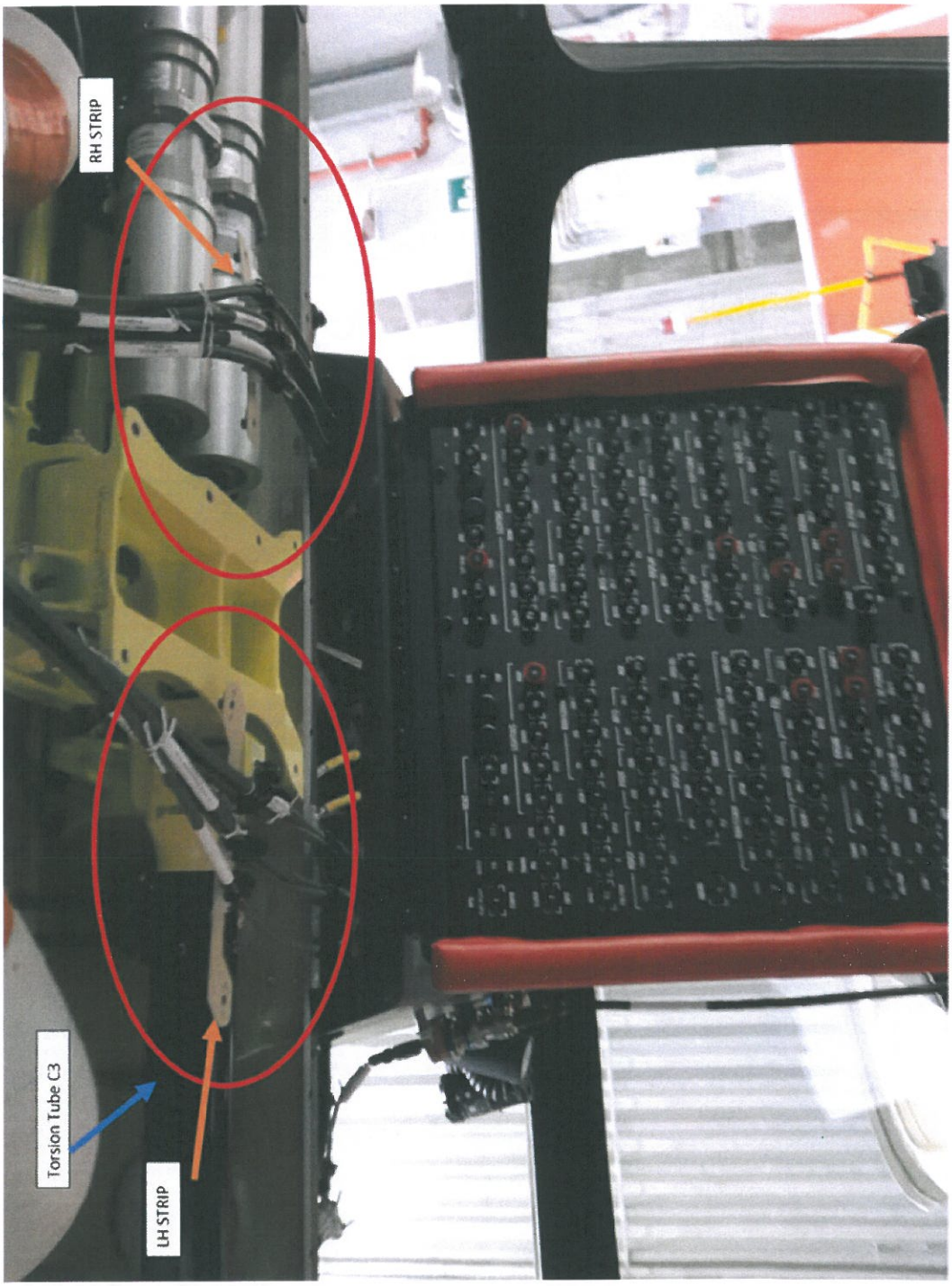

RH STRIP
Torsion Tube C3
LH STRIP
VIEW C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 2

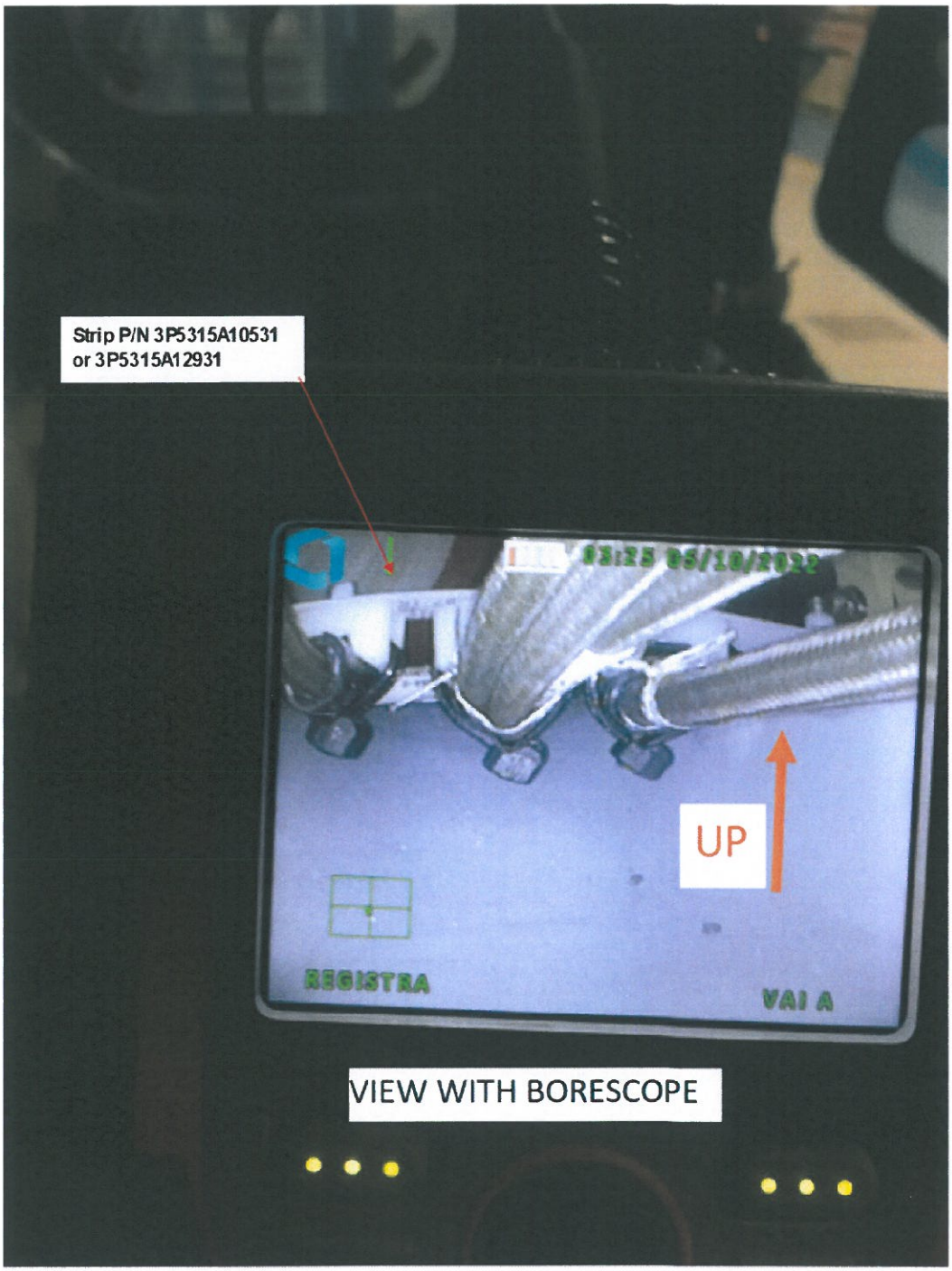

Strip P/N 3P5315A10531
or 3P5315A12931
03:25 05/10/2022
UP
REGISTRA
VAI A
VIEW WITH BORESCOPE

Figure 3

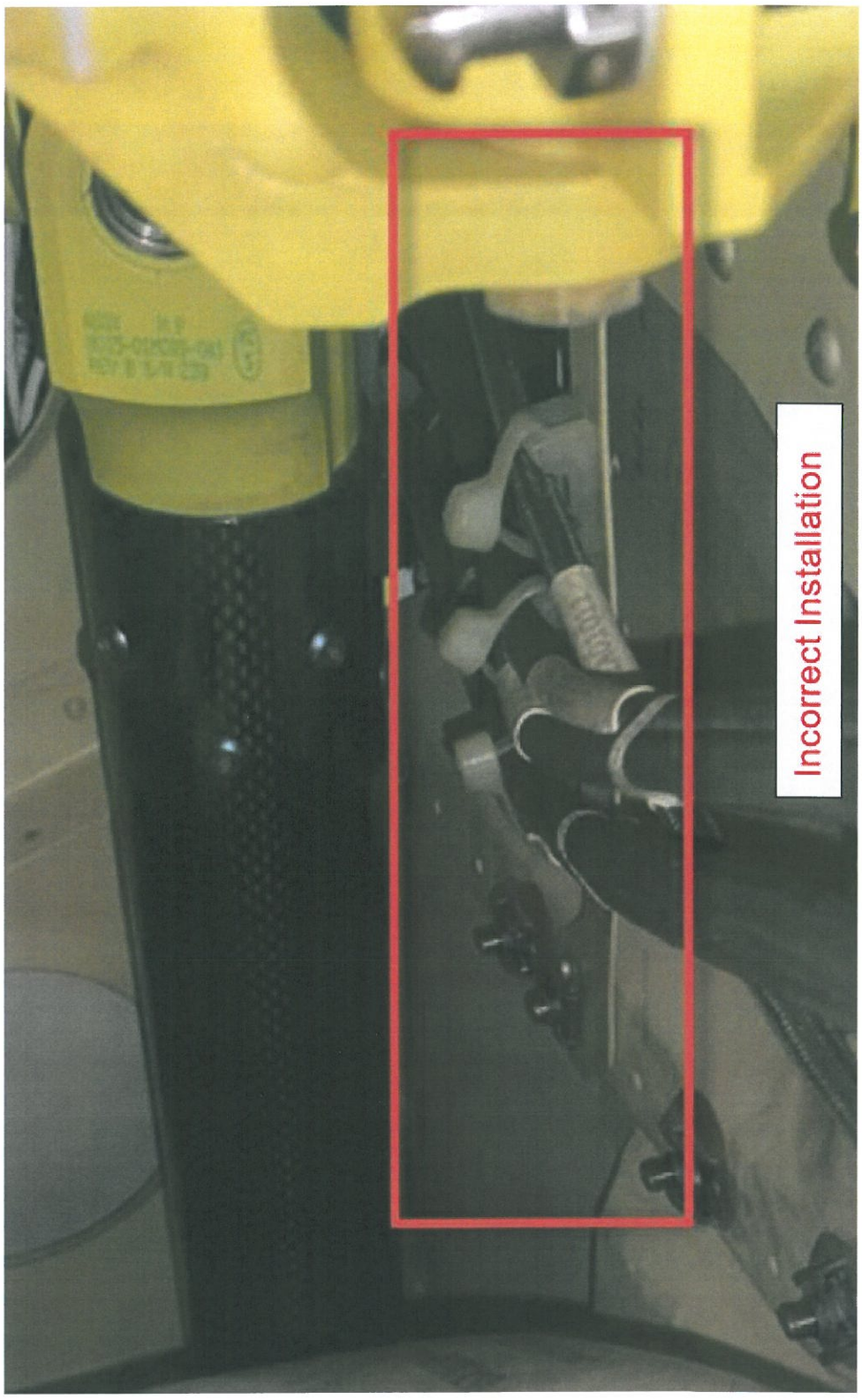


Figure 4

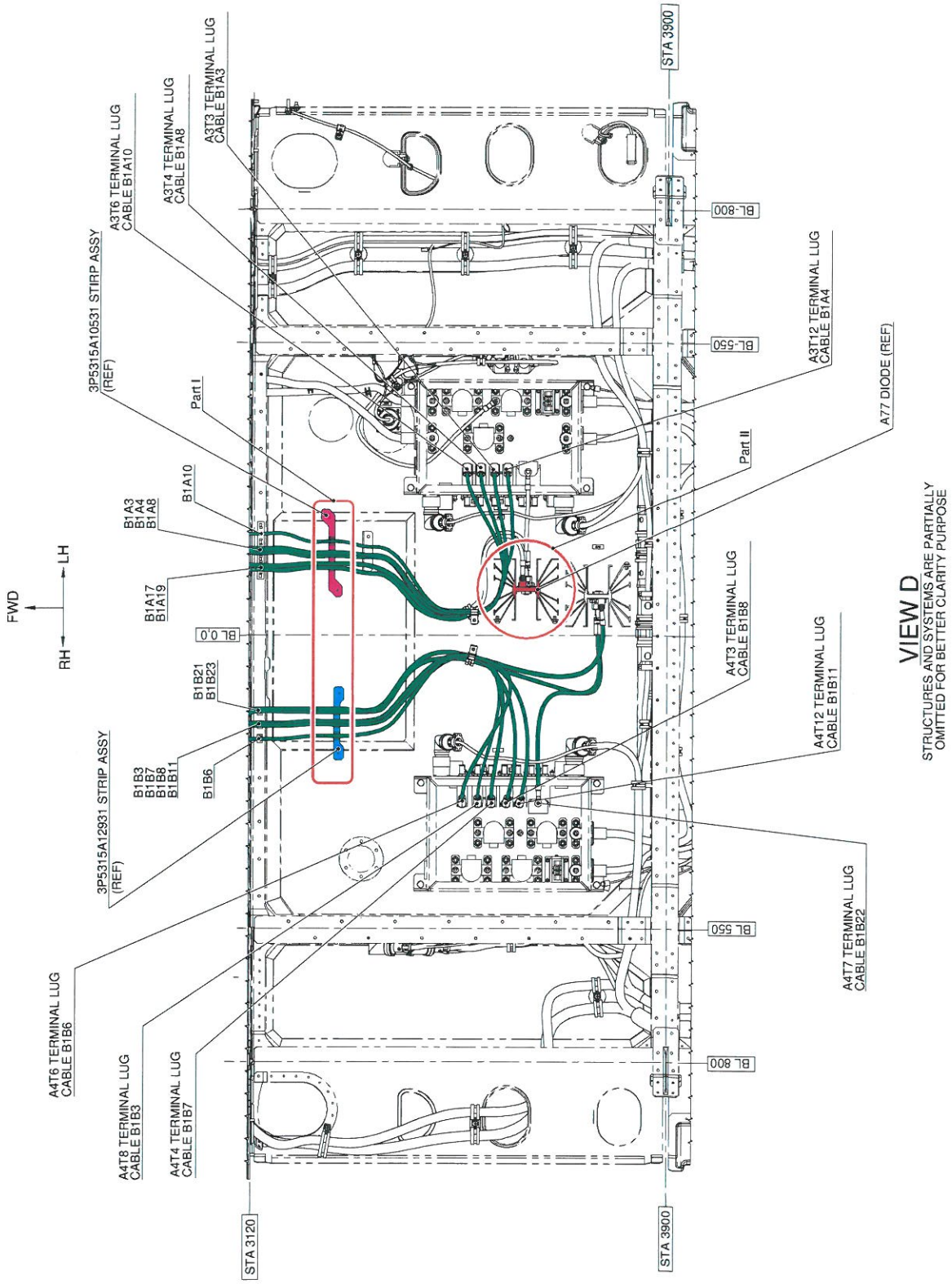

STA 3900
BL 800
BL 550
BL 0.0
A3T3 TERMINAL LUG CABLE B1A3
A3T4 TERMINAL LUG CABLE B1A8
A3T6 TERMINAL LUG CABLE B1A10
3P5315A10531 STRIP ASSY (REF)
Part I
B1A10
B1A3 B1A4 B1A8
B1A17 B1A19
B1B21 B1B23
B1B3 B1B7 B1B8 B1B11
B1B6
3P5315A12931 STRIP ASSY (REF)
A4T6 TERMINAL LUG CABLE B1B6
A4T8 TERMINAL LUG CABLE B1B3
A4T4 TERMINAL LUG CABLE B1B7
STA 3120
STA 3900
A3T12 TERMINAL LUG CABLE B1A4
A77 DIODE (REF)
Part II
A4T3 TERMINAL LUG CABLE B1B8
A4T12 TERMINAL LUG CABLE B1B11
A4T7 TERMINAL LUG CABLE B1B22
FWD
LH
RH
VIEW D
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 5

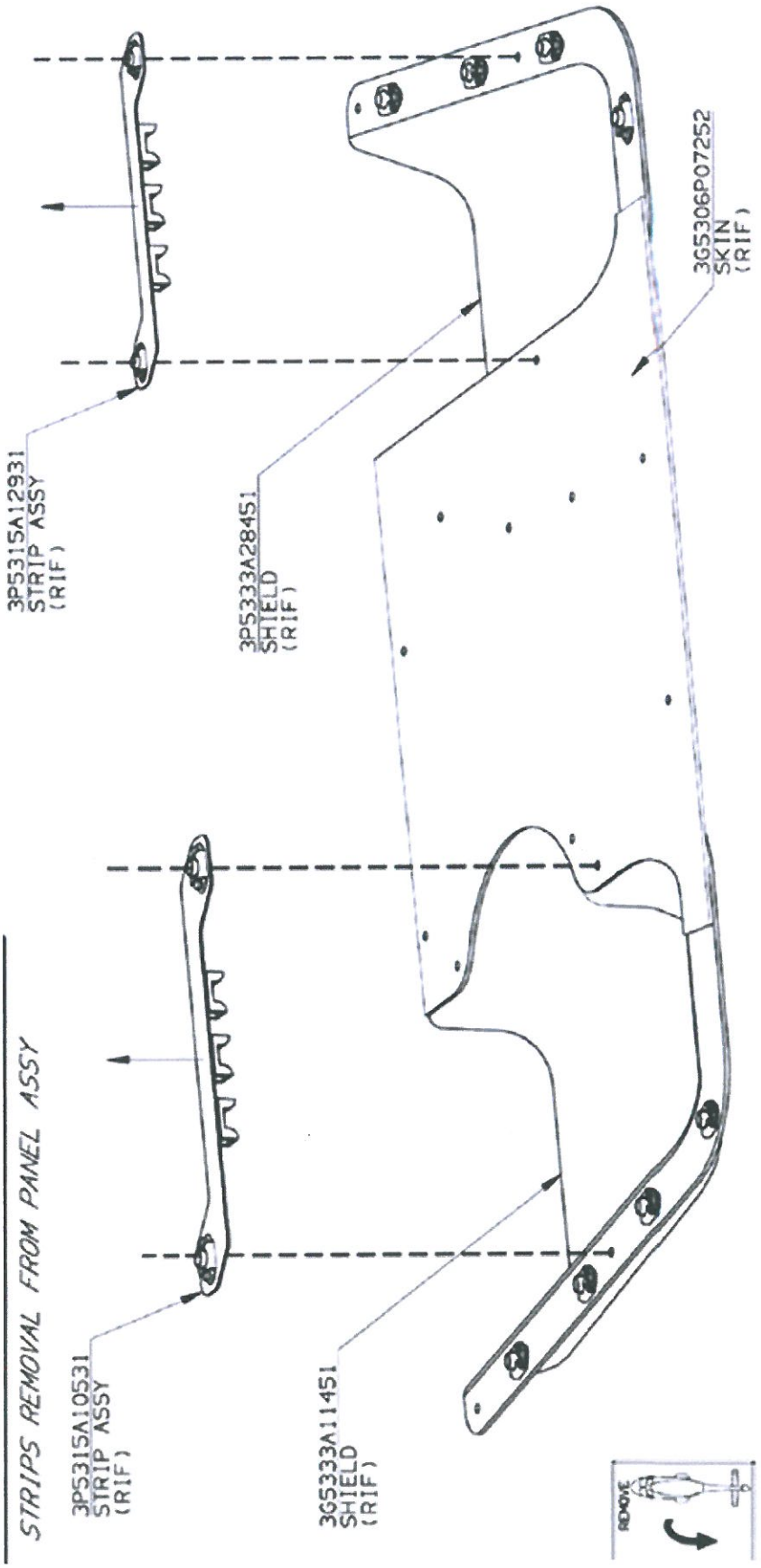
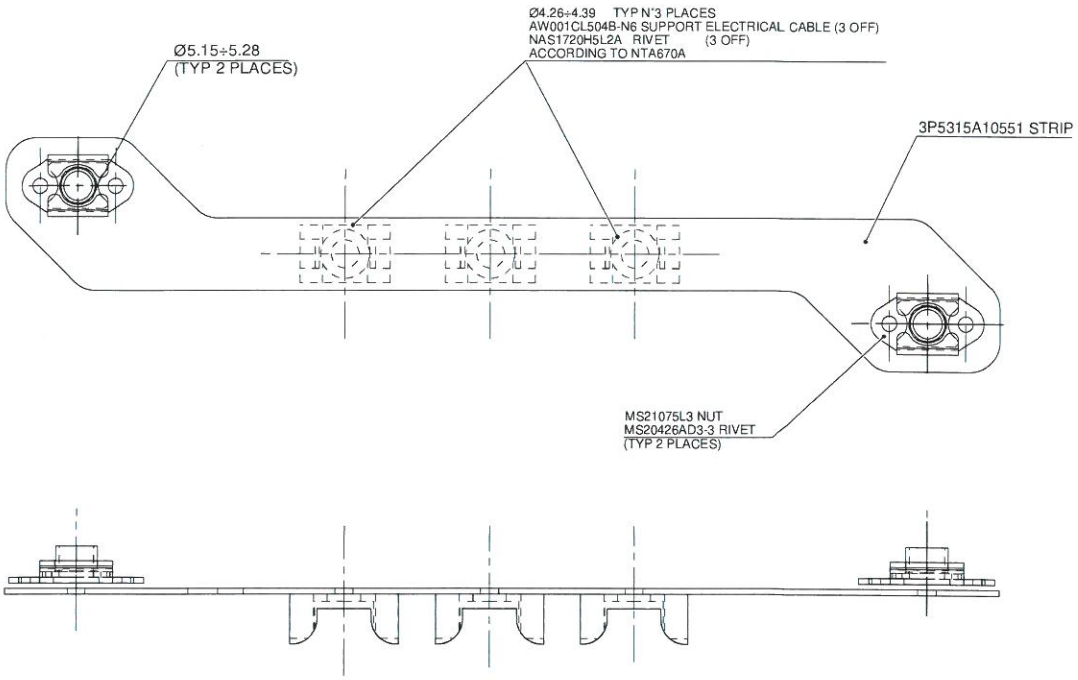

3P5315A12931
STRIP ASSY
(RIF)
3P5333A28451
SHIELD
(RIF)
3G5306P07252
SKIN
(RIF)
STRIPS REMOVAL FROM PANEL ASSY
3P5315A10531
STRIP ASSY
(RIF)
3G5333A11451
SHIELD
(RIF)
REMOVE

Figure 6

3P5315A10531 STRIP ASSY



3P5315A12931 STRIP ASSY

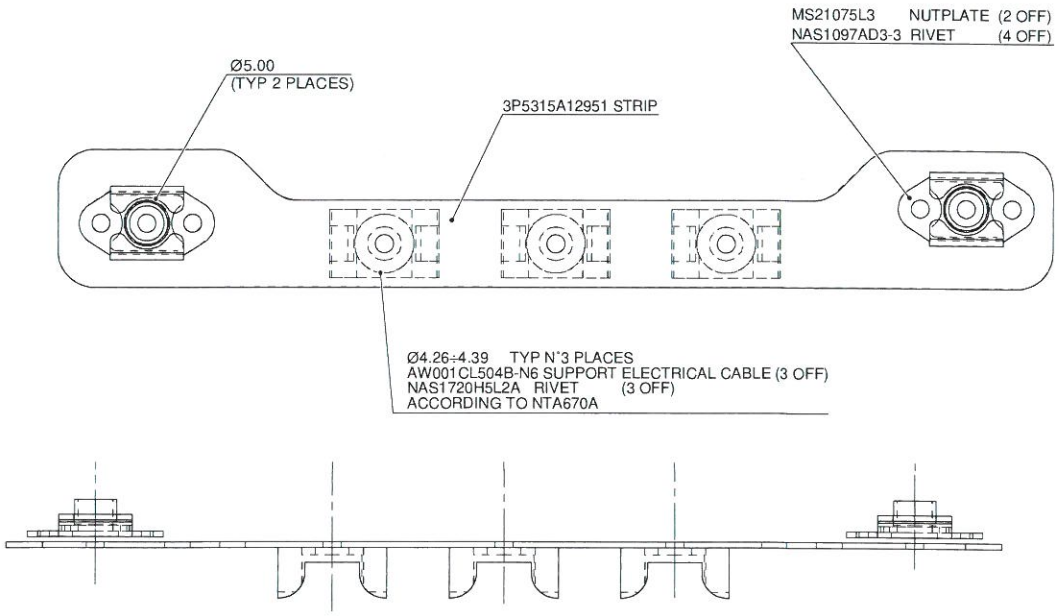
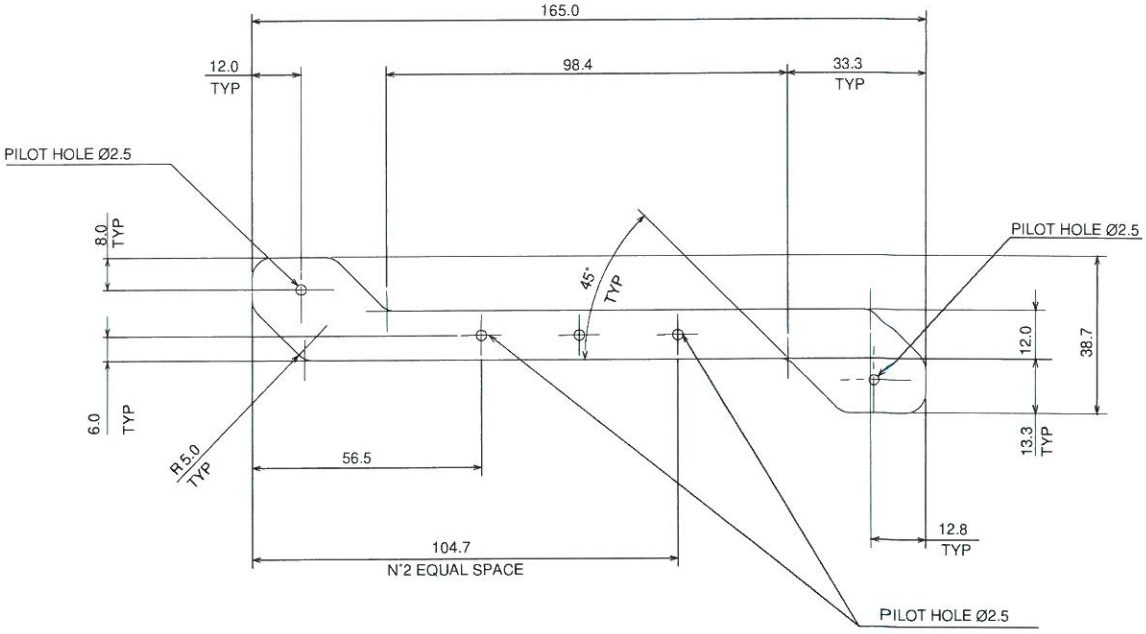


Figure 7

3P5315A10551 STRIP

MATERIAL AL-ALY 2024 T3
AMS-QQ-A-250/5, TH 0.81



3P5315A12951 STRIP

MATERIAL AL-ALY 2024 T3
AMS-QQ-A-250/5, TH 0.81

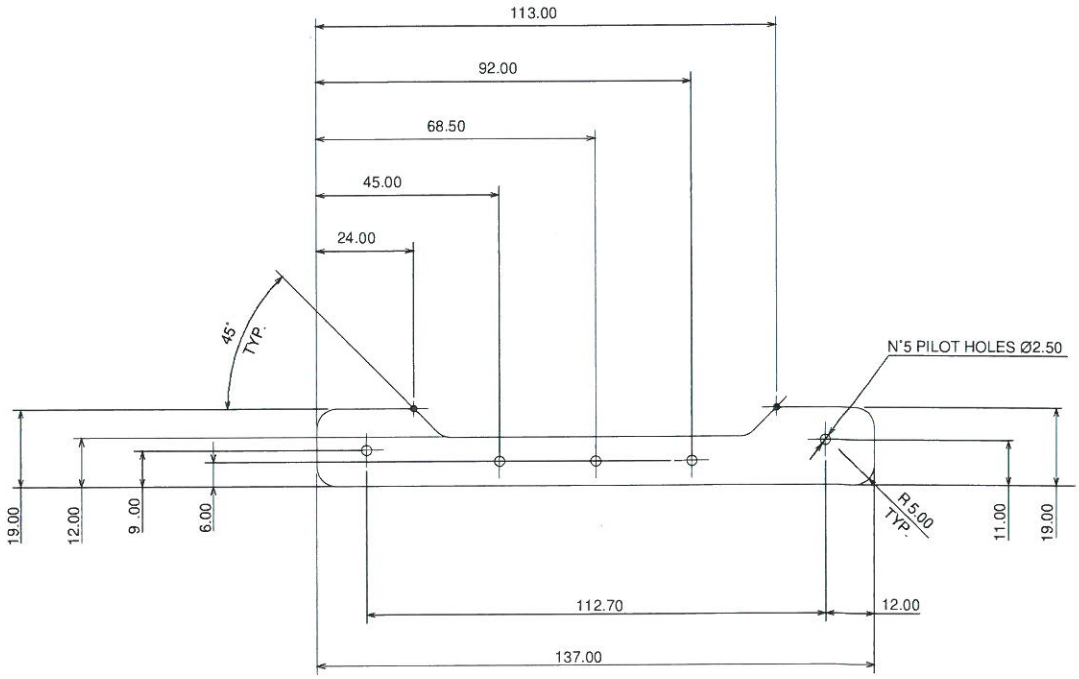


Figure 8

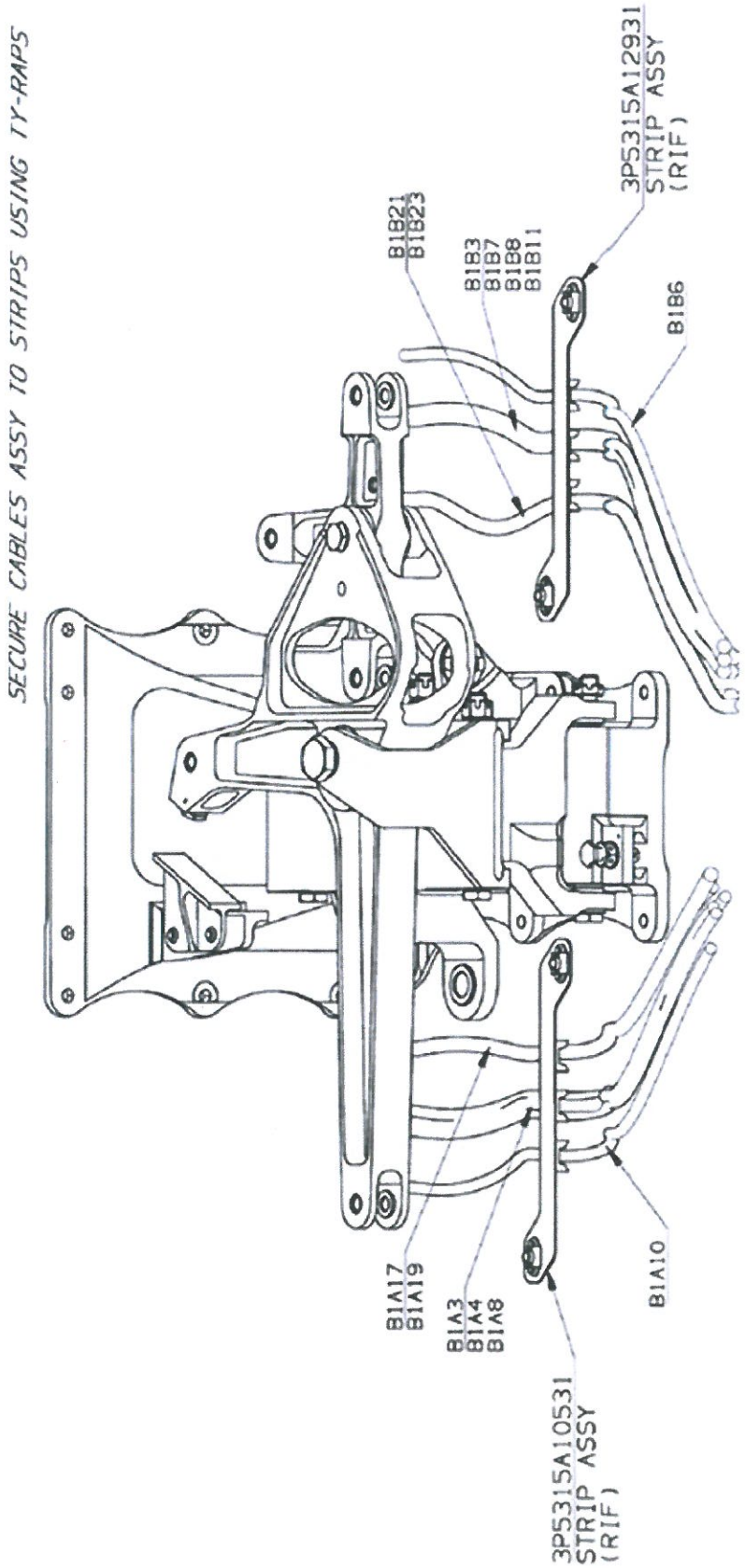

SECURE CABLES ASSY TO STRIPS USING TY-RAPS
3P5315A12931
STRIP ASSY
(RIF)
B1B21
B1B23
B1B3
B1B7
B1B8
B1B11
B1B6
B1A17
B1A19
B1A3
B1A4
B1A8
B1A10
3P5315A10531
STRIP ASSY
(RIF)

Figure 9

Figure 10

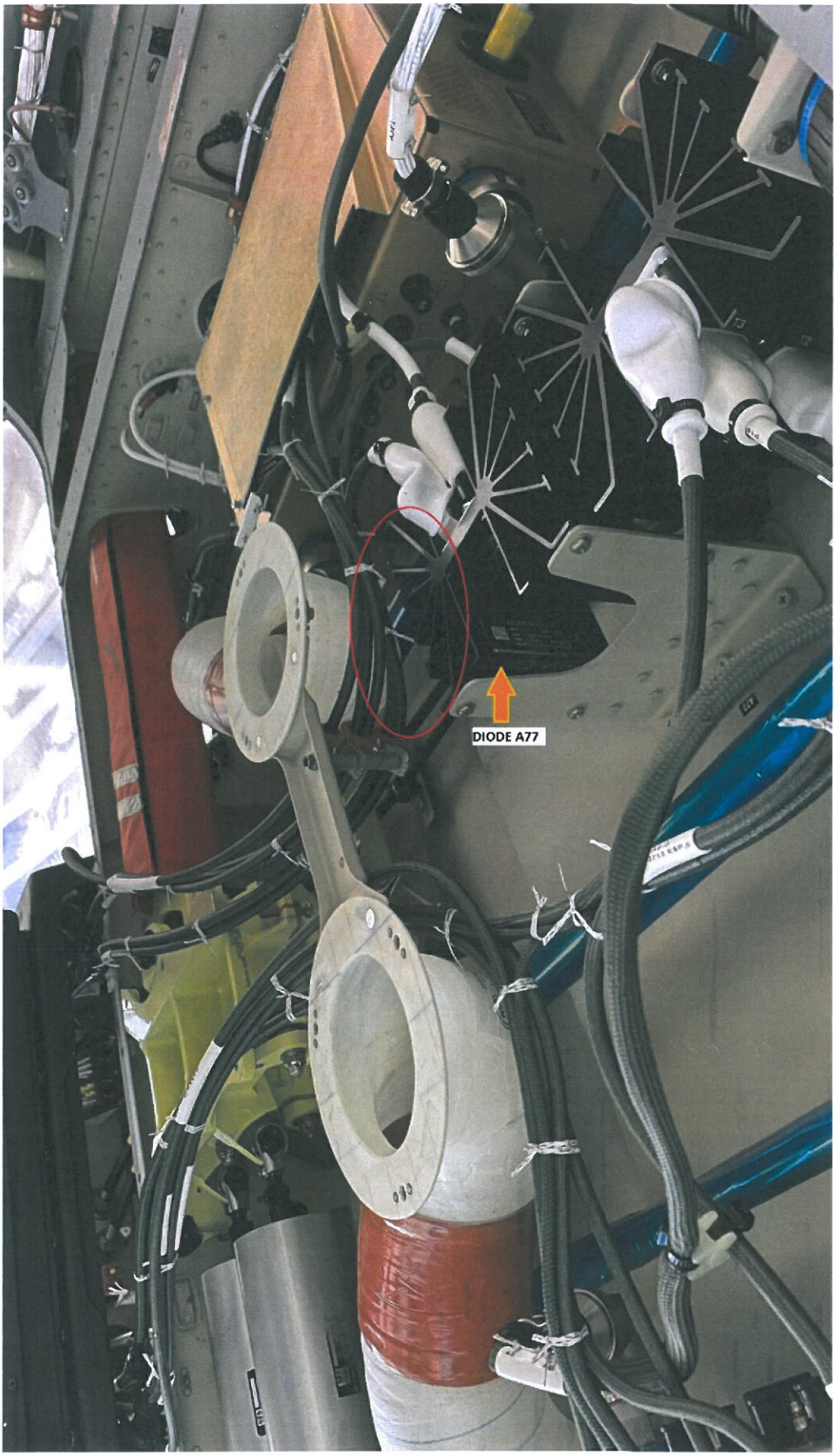


Figure 11

LEONARDO
HELICOPTERS

AgustaWestland Products

Please send to the following address:	SERVICE BULLETIN COMPLIANCE FORM	Date: 31/10/22
LEONARDO S.p.A. **CUSTOMER SUPPORT & SERVICES - ITALY** **PRODUCT SUPPORT ENGINEERING & LICENSES DEPT.** Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988	Number: EASB 139-731 Revision: N/A (11/10/22)	

Customer Name and Address:	Telephone:
GALAXY AEROSPACE (M) SDN BHD SUITE 11-14, MRO CENTRE MALAYSIA INTERNATIONAL AEROSPACE CENTRE SULTAN ABDUL AZIZ SHAH AIRPORT 47200 SUBANG, SELANGOR DARUL EHSAN MALAYSIA.	Fax: B.T. Compliance Date: 31/10/22

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.
AW139	31763	838	300:40	N/A

LOG LM

Remarks:

EASB 139-731 PART 1 REV: 1 (11/10/22) HAS BEEN CARRIED OUT SATISFACTORILY.

LOG LM

Information:

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.