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AgustaWestland Products

SERVICE BULLETIN

N° 189-241

DATE: February 2, 2023

REV. : /

TITLE

ATA 00 – INSTALLATION OF KIT 15000 FEET SERVICE CEILING

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

All AW189 helicopters equipped with CT7-2E1 engines and PT module P/N 5130T70G03 or later and not equipped with engine and APU IBF kit P/N 8G7160F00211.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

Avionic Flight Software Release Phase 5 or later is required to perform the Kit 15000 feet service ceiling installation.

D. REASON

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the installation of “Kit 15000 feet service ceiling” P/N 8G0000F00511.

E. DESCRIPTION

This Service Bulletin provides all the necessary instructions on how to extend the service ceiling of the AW189 helicopter to 15000 feet. A change to the CT7-2E1 engines has been applied by introducing a new Stage 3 Nozzle (S3N). The new Stage 3 Nozzle module provides an improved rotor droop performance mainly during recovery from low power descent/autorotation. The new S3N modules have to be installed on both engines.

In addition, the electrical wiring relative to the TCAS II kit shall be modified to adapt to the new altitude limitation.

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 LHD 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 forty-five (45) MMH are deemed necessary.

MMH are based on hands-on time and can change with 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	89-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	-
DM02	89-A-06-41-00-00A-010A-A	Access doors and panels - Remove procedure.	-
DM03	89-A-20-10-03-00A-010A-A	Wire / cable crimping - General data	-
DM04	89-A-20-10-06-04A-720A-A	Sleeve marker - Install procedure	-
DM05	89-B-34-44-05-00A-752A-A	External compensation unit – Data loading	-

2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
APU	Auxiliary Power Unit
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
FH	Flight Hours
FIPS	Full Ice Protection System
IBF	Inlet Barrier Filter
IPS	Ice Protection System
ITEP	Illustrated tool and equipment publication
LHD	Leonardo Helicopters

LIPS	Limited Ice Protection System
MMH	Maintenance Man Hours
PT	Power Turbine
S3N	Stage 3 Nozzle
TCAS	Traffic Alert and Collision Avoidance System
TSS	Traffic Surveillance System

3) ANNEX

N.A.

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

Software to be updated only for helicopters equipped with TCAS/XPDR transceiver TSS-4100 P/N 822-2132-001:

TSS-4100 configuration file P/N 8G3450AO0002.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**8G0000F00511**		**KIT 15000 FEET SERVICE CEILING**	**REF**	**.**		
2	8G1130L00453		VNE placard illuminated IPS (NVG)	1	..	(1)	-
3	8G1130L00552		VNE placard illuminated (NVG)	1	..	(2)	189-241L2
4	**8G3450A16811**		**TCAS II TTR-4100 15000FT OPTIONAL**	**REF**	**..**	**(3)**	
5	**8G9A21A25301**		**TCAS II TTR-4100 15000FT C/A (A1A253)**	**REF**	**...**		
6	A596A10		In-line Junction (TB1007)	1	....		189-241L1
7	A523A-A02		Electrical Contact	5	....		189-241L1
8	030-2259-000		Electrical Contact	4	....		189-241L1
9	A556A-T22		Electrical Wire	2.5m	....		189-241L1
10	M39029/56-351		Electrical Contact	1	....		189-241L1
11	**8G3450A18411**		**TSS-4100 15000FT OPTIONAL**	**REF**	**..**	**(4)**	
12	8G3450AO0002		TSS Configuration File	1	...		-
13	**8G3110P00811**		**VNE PLACARD RETROMOD**	**REF**	**.**	**(2)**	
14	8G3110A05051		Plate	1	..		189-241L2
15	8G3110A05151		Washer	1	..		189-241L2
16	A407A08C1P		Anchor Nut	4	..		189-241L2
17	MS35206-230		Screw	2	..		189-241L2
18	MS35214-29		Screw	2	..		189-241L2
19	NAS1149CN816R		Washer	2	..		189-241L2

2) CONSUMABLES

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

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
20	199-05-002, Type I, Class 2 Code No. 900000581 (MMM-A-132 Type 2 Class 2)	Adhesive EA9309.3NA (C021)	AR	(5)	
21	EN6049-006	Nomex sleeve	AR	(5)	
22	A236A	Edging	AR	(5)	
23	A578A02-9	Marker sleeve	AR	(5)	

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

3) LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
189-241L1	1	(3)	-
189-241L2	1	(2)	-
8G1130L00453	1	(1)	-
8G3450AO0002	1	(4)	-

NOTE

(1) Applicable only to helicopters equipped with Kit FIPS P/N 8G3000F0011x or Kit FIPS P/N 8G3000F0031x or Kit LIPS P/N 8G3000F0021x (if not already applied within the kit) and **not** already equipped with Avionic Software Phase 8 or later.

(2) Applicable only to helicopters **not** equipped with Kit FIPS P/N 8G3000F0011x or Kit FIPS P/N 8G3000F0031x or Kit LIPS P/N 8G3000F0021x and **not** already equipped with Avionic Software Phase 8 or later.

(3) Applicable only to helicopters equipped with Kit TCAS II TTR-4100 P/N 8G3450F00411 or P/N 8G3450F00111.

(4) Applicable only to helicopters equipped with TCAS/XPDR transceiver TSS-4100 P/N 822-2132-001.

(5) Item to be procured as local supply.

B. SPECIAL TOOLS

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

C. INDUSTRY SUPPORT INFORMATION

Customization.

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.

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

d) Exposed thread surface and nut must be protect using a layer of tectyl according to MIL-C-16173 grade I.

e) All lengths are in mm.

1. In accordance with AMP DM 89-A-00-20-00-00A-120A-A, prepare the helicopter on ground for safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 89-A-06-41-00-00A-010A-A open access panel 481A, 461A, 463A and with reference to Figure 1, gain access to the engines area.
3. With reference to Figure 1, verify on the PT module nameplates that both engines are equipped with PT module P/N 5130T70G03 or later. The presence of the adequate P/N of the PT Module and S3N can be verified also in the engine log book.
4. If one or both the above mentioned conditions are not satisfied, contact AW189 Customer Support Engineering (engineering.support.lhd@leonardo.com). If both conditions are satisfied proceed with step 5.

NOTE

Perform the following steps 5 and 6 only if helicopter is equipped with Kit FIPS P/N 8G3000F0011x or Kit FIPS P/N 8G3000F0031x or Kit LIPS P/N 8G3000F0021x and not already equipped with Avionic flight software phase 8 or later; otherwise skip to step 7.

5. With reference to Figure 2, gain access to the cockpit area and remove the existing VNE placard. Retain existing hardware for later reuse.

6. With reference to Figure 2, install the VNE placard P/N 8G1130L00453 by means of previously removed hardware. Skip to step 8.

NOTE

Perform the following step 7 only if helicopter is not equipped with Kit FIPS P/N 8G3000F0011x or Kit FIPS P/N 8G3000F0031x or Kit LIPS P/N 8G3000F0021x and it is not already equipped with Avionic flight software phase 8 or later.

7. With reference to Figure 3, gain access to the cockpit area and perform the VNE placard retromod P/N 8G3110P00811 as described in the following procedure:
   - 7.1 With reference to Figure 3 View C, remove the existing placard. Discard the existing hardware.
   - 7.2 With reference to Figure 3 View C, remove the cockpit logo P/N 8G1130A01331. Retain existing hardware for later reuse.
   - 7.3 With reference to Figure 3 View C, remove plate P/N 4F3110A07351. Discard the existing hardware.
   - 7.4 With reference to Figure 3 View D and section E-E, install n°4 nut plates P/N A407A08C1P by means of EA9309.3NA adhesive on the plate P/N 8G3110A05051.
   - 7.5 With reference to Figure 3 View C, install washer P/N 8G3110A05151 and plate P/N 8G3110A05051 by means of n°2 screws P/N MS35206-230 and n°2 washers P/N NAS1149CN816R.
   - 7.6 With reference to Figure 3 View C, install VNE placard P/N 8G1130L00552 by means of n°2 screws P/N MS35214-29.
   - 7.7 With reference to Figure 3 View C, re-install the cockpit logo P/N 8G1130A01331. Use existing hardware.

NOTE

Perform the following step 8 if helicopter is equipped with Kit TCAS II P/N 8G3450F00411 or P/N 8G3450F00111, except S/N 49023.

8. In accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figure 4 and Figure 5 wiring diagram, gain access to the area affected by the installation and perform the “TCAS II TTR-4100 15000FT optional” P/N 8G3450A16811 as described in the following procedure:

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N EN6049-006 where cable assemblies chafing or contact with structure may occur.

8.1 With reference to Figure 5 wiring diagram, remove the electrical connection between wires ID 422, 421, 420, 423 and splice SP1337. Remove and discard the splice SP1337.

8.2 With reference to Figure 4 and Figure 5 wiring diagram, cut n°1 wire P/N A556A-T22 of adequate length and lay down between in-line junction TB1007 and connector A99P1E following the existing route as shown.

8.3 In accordance with AMP DM 89-A-20-10-06-04A-720A-A and with reference to Figure 5 wiring diagram, mark wire as ID 808 by means of marker sleeve P/N A578A02-9.

8.4 In accordance with AMP DM 89-A-20-10-03-00A-010A-A and with reference to Figure 5 wiring diagram, crimp on wires n°5 electrical contact P/N A523A-A02 (TB1007 side) and n°1 electrical contact P/N 030-2259-000 (A99P1E side) by means of proper crimping tool.

8.5 With reference to Figure 5 wiring diagram, perform the electrical connection between in-line junction TB1007, connector J101 and connector A99P1E.

8.6 Perform a pin-to-pin continuity check of all the electrical connections made.

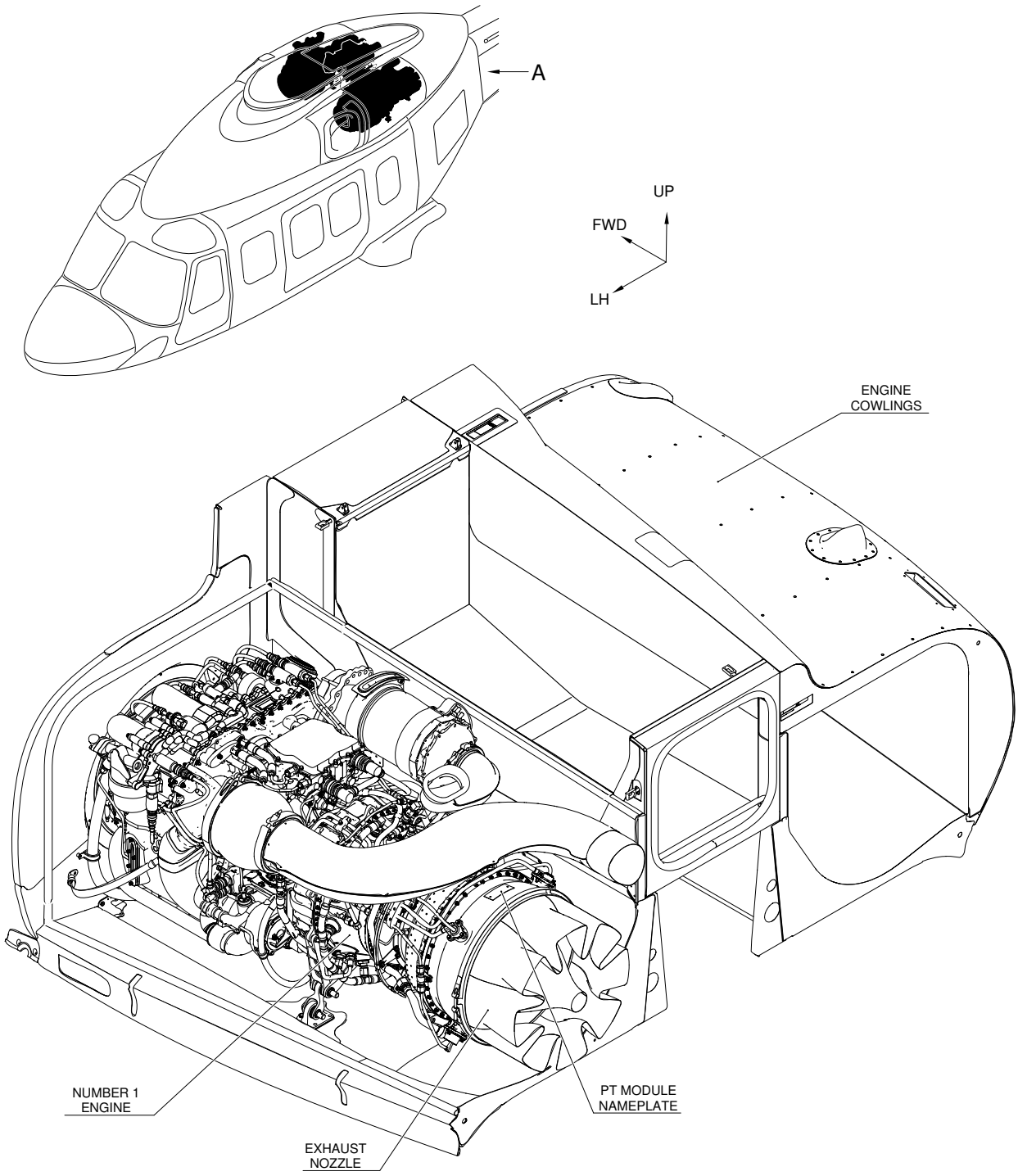
NOTE

Perform the following step 9 only if helicopter is equipped with TCAS/XPDR transceiver TSS-4100 P/N 822-2132-001.

9. In accordance with applicable steps of AMP DM 89-B-34-44-05-00A-752A-A, perform the upload of the TSS configuration file P/N 8G3450AO0002.
10. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
11. Send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardo.com

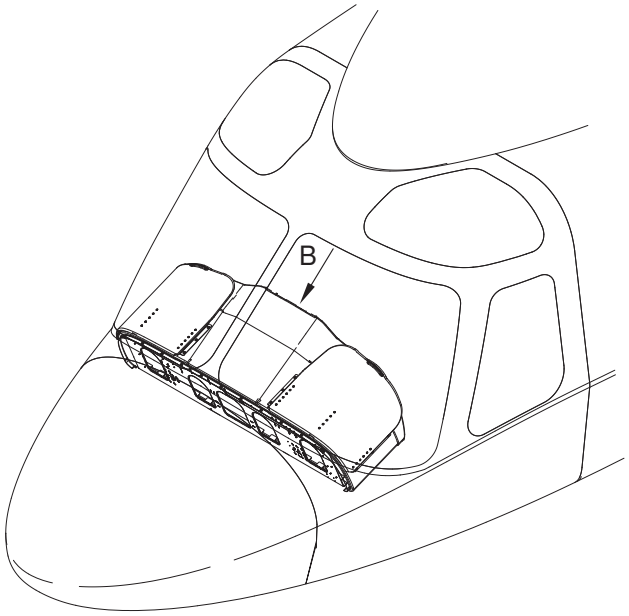
    As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

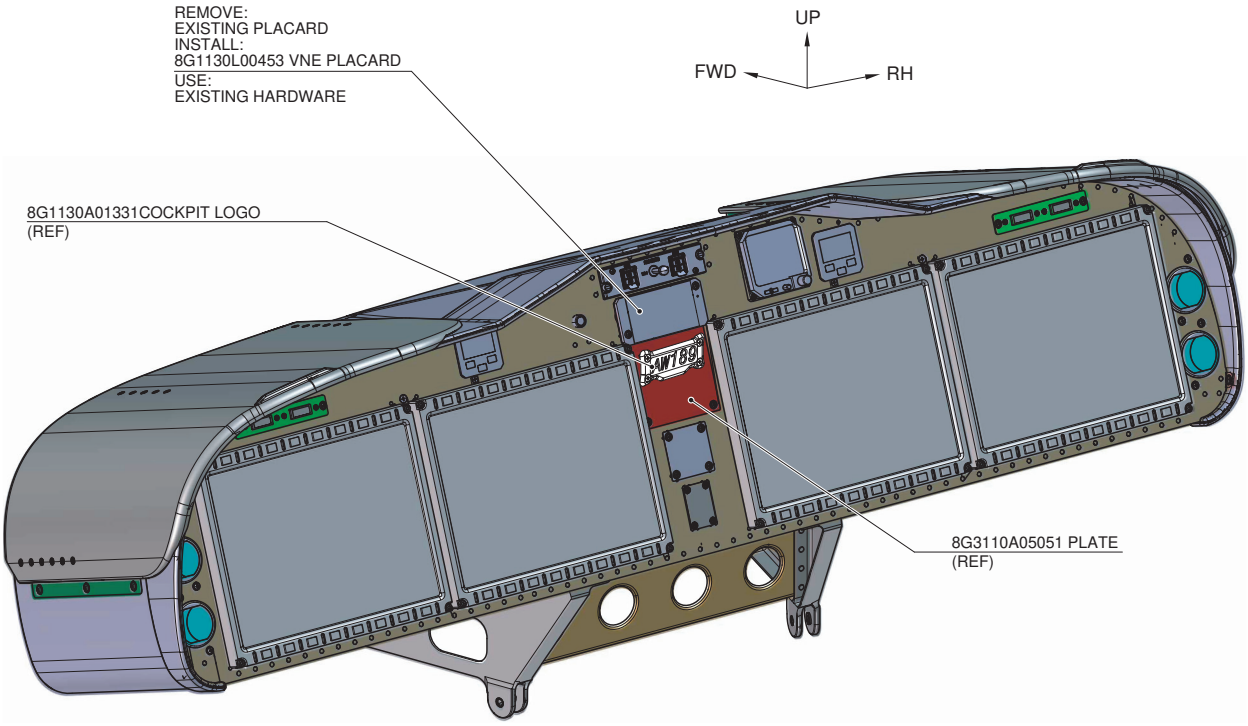


VIEW A

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 1





VIEW B

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 2

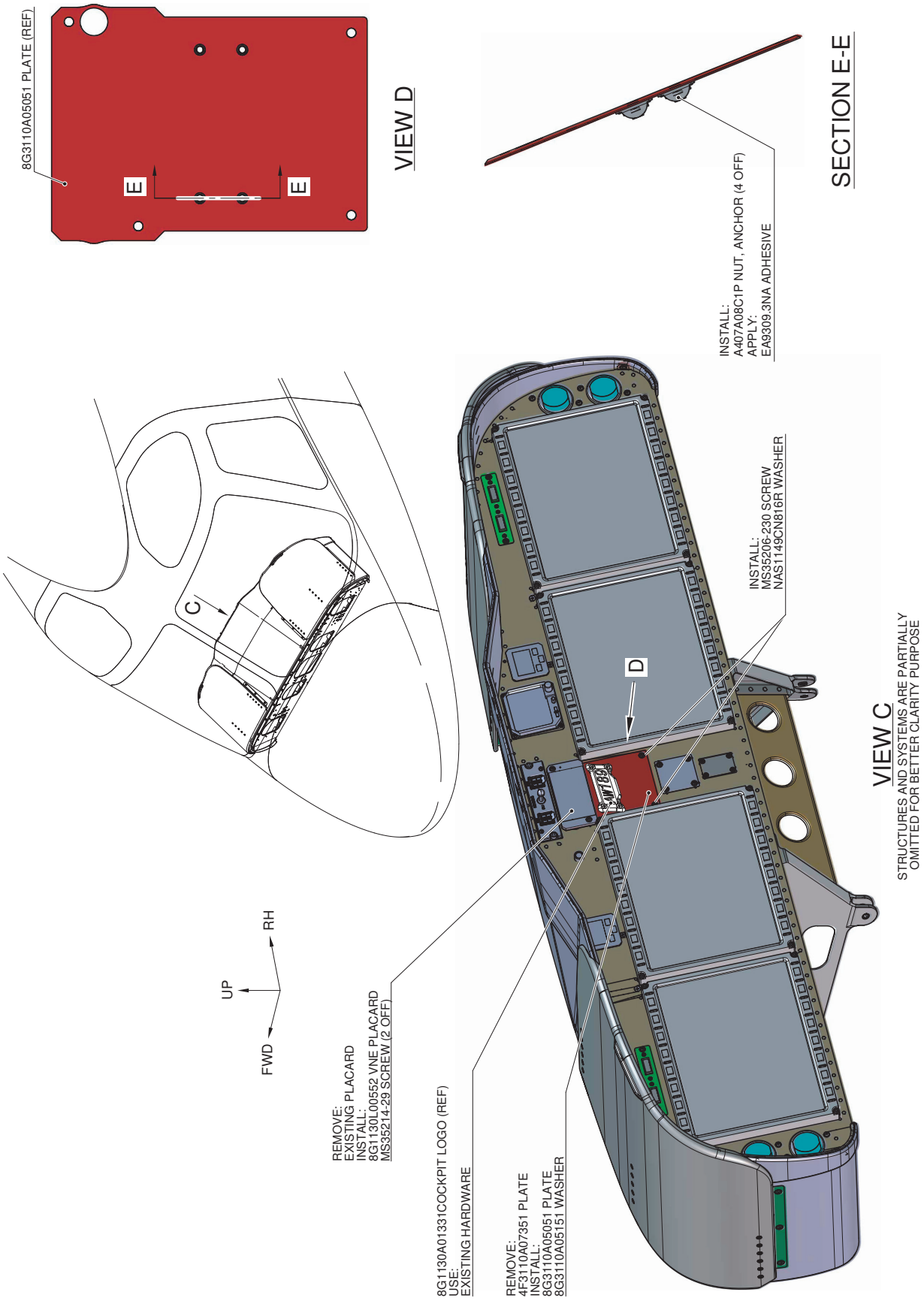

8G3110A05051 PLATE (REF)
E
E
VIEW D
SECTION E-E
INSTALL:
A407A08C1P NUT, ANCHOR (4 OFF)
APPLY:
EA9309.3NA ADHESIVE
C
INSTALL:
MS35206-230 SCREW
NAS1149CN816R WASHER
D
VIEW C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
UP
RH
FWD
REMOVE:
EXISTING PLACARD
INSTALL:
8G1130L00552 VNE PLACARD
MS35214-29 SCREW (2 OFF)
8G1130A01331COCKPIT LOGO (REF)
USE:
EXISTING HARDWARE
REMOVE:
4F3110A07351 PLATE
INSTALL:
8G3110A05051 PLATE
8G3110A05151 WASHER

Figure 3

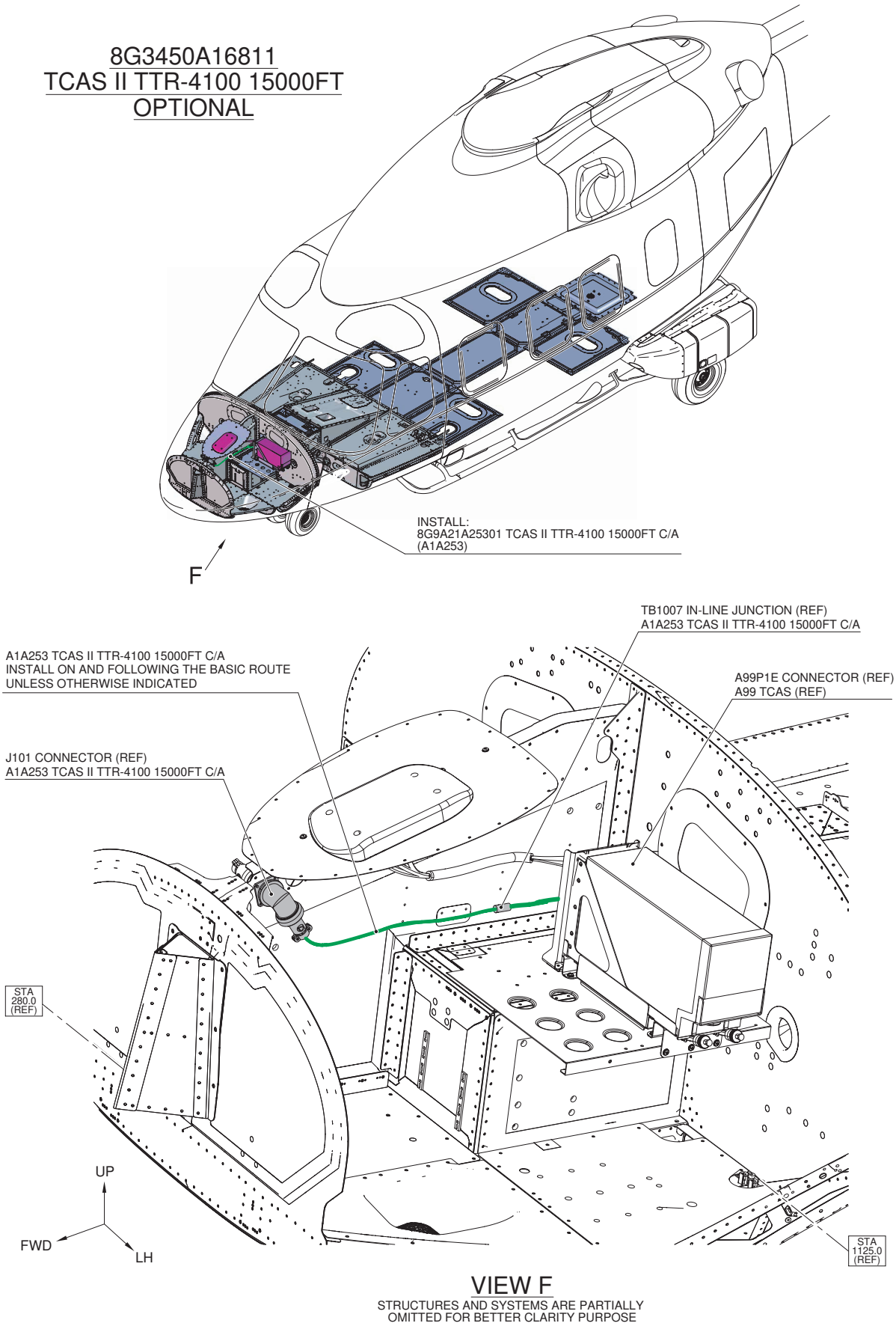
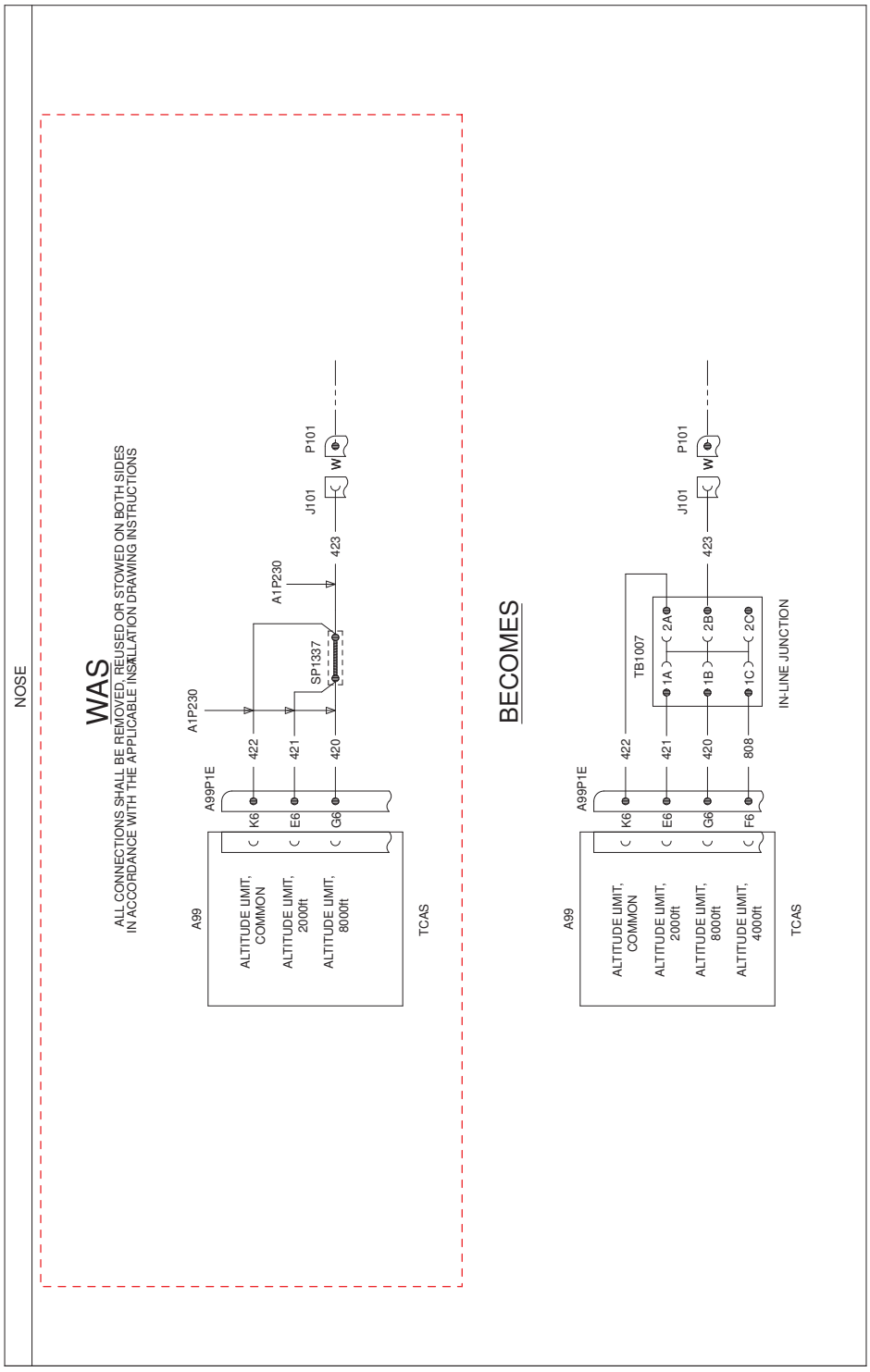

8G3450A16811
TCAS II TTR-4100 15000FT
OPTIONAL
INSTALL:
8G9A21A25301 TCAS II TTR-4100 15000FT C/A
(A1A253)
F
TB1007 IN-LINE JUNCTION (REF)
A1A253 TCAS II TTR-4100 15000FT C/A
A1A253 TCAS II TTR-4100 15000FT C/A
INSTALL ON AND FOLLOWING THE BASIC ROUTE
UNLESS OTHERWISE INDICATED
A99P1E CONNECTOR (REF)
A99 TCAS (REF)
J101 CONNECTOR (REF)
A1A253 TCAS II TTR-4100 15000FT C/A
STA
280.0
(REF)
UP
FWD
LH
STA
1125.0
(REF)
VIEW F
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 4

8G3450W02101

WIRING DIAGRAM TCAS II TTR-4100 15000FT OPTIONAL



FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A1A253 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556A 22 UNLESS SPECIFIED

Figure 5

LEONARDO
HELICOPTERS

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Please send to the following address: **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	**SERVICE BULLETIN COMPLIANCE FORM**	Date:
	Number:	
	Revision:	

Customer Name and Address:	Telephone:
	Fax:
	B.T. Compliance Date:

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.

Remarks:

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.