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° 189-377

DATE: April 28, 2023

REV. : /

TITLE

ATA 31 - NR1 AZIMUTH CONNECTIONS RETROMOD

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

All AW189 helicopters (S/N 49078, S/N 49092, S/N 89015 and S/N 92008 excluded).

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the “NR1 azimuth connections retromod” P/N 8G3130P01111.

E. DESCRIPTION

Leonardo Helicopters received a report about an occasional problem with the NR1 tachometer, part of the Monitoring and Diagnostic System (MDS), that is installed on the MGB collector gear. This sensor experienced a periodic ‘dip’ in the signal at once per revolution of the collector gear.

In case this problem is present, it is possible to derive NR2 sensor signal towards VDAM1 in accordance to “NR1 azimuth connections retromod” P/N 8G3130P01111 which allows connection to both AMMCs of NR2 signal.

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 sixteen (16) 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 - General data	-
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	-

2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMMC	Aircraft & Mission Management Computer
AMP	Aircraft Maintenance Publication
AR	As Required
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
FWD	Forward
IPD	Illustrated Part Data
ITEP	Illustrated tool and equipment publication
LH	Left Hand
LHD	Leonardo Helicopters Division
MGB	Main Gear Box
MDS	Monitoring and Diagnostic System
MMH	Maintenance Man Hours
N.A.	Not Applicable
NR	Number

P/N	Part Number
RH	Right Hand
SB	Service Bulletin
S/N	Serial Number
VDAM	Vibration Data Acquisition Module

3) ANNEX

N.A.

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**8G3130P01111**		**NR1 AZIMUTH CONNECTIONS RETROMOD**	**REF**	**.**		
2	A561A-T2-24		Wire	6m	..		189-377L1
3	A583A2418C		Cap	2	..		189-377L1
4	M81824/1-1		Splice	2	..		189-377L1
5	M39029/58-360		Electrical contact	2	..		189-377L1

Refer also to IPD for the spares materials required to comply with the AMP DMs referenced in the accomplishment instructions.

2) CONSUMABLES

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

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
6	A236A01AB	Edging	AR	(1)(2)	-
7	EN6049-003-25-5	Tubing	AR	(1)(2)	-
8	EN6049-006-25-5	Tubing	AR	(1)(2)	-

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
189-377L1	1	-	-

NOTE

(1) Item to be procured as local supply.

(2) Indicated P/N refer to a specific size. The last digits can be different based on the actual required installation.

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

Product enhancement.

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) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.

d) 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 a 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 and with reference to Figures 1 and 2, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the retromod and perform the “NR1 azimuth connections retromod” P/N 8G3130P01111 as described in the following procedure:

   2.1 With reference to Figure 1 and Figure 2 wiring diagram, disconnect the wire ID 3130-466 from pin 6 and 7 of the AMMC 1 connector A1P3. Stow by means of n°2 caps P/N A583A2418C.

NOTE

Splice SP1482 and SP1484 area can be accessed from the cockpit side, under the instrument panel, or from the nose avionic bay side through the bulkhead.

   2.2 With reference to Figure 2 wiring diagram, cut n°1 wire P/N A561A-T2-24 of adequate length and lay down between AMMC 1 connector A1P3 and existing splices SP1482 and SP1484 following the existing route.

   2.3 In accordance with AMP DM 89-A-20-10-03-00A-010A-A and with reference to Figure 2 wiring diagram, crimp n°2 electrical contacts P/N M39029/58-360 (AMMC1 connector A1P3 side) by means of proper crimping tool.

2.4 In accordance with AMP DM 89-A-20-10-06-04A-720A-A and with reference to Figure 2 wiring diagram, mark wire as 3130-004 by means of marker sleeve.

2.5 With reference to Figure 2 wiring diagram, remove n°2 existing splices SP1482 and SP1484.

2.6 With reference to Figure 1 and Figure 2 wiring diagram, perform the electrical connections of wire ID 3130-004 between pin 6 and 7 of AMMC 1 connector A1P3, the splice SP10111 (P/N M81824/1-1) and the splice SP10112 (P/N M81824/1-1).

3. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, reinstall all external panels, internal panels and internal liners previously removed.
4. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
5. Gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

   As an alternative, send the attached compliance form to the following mail box:

   engineering.support.lhd@leonardo.com

   and (for North, Central and South America) also to:

   AWPC.Engineering.Support@leonardocompany.us

8G3130P01111
NR1 AZIMUTH
CONNECTIONS RETROMOD

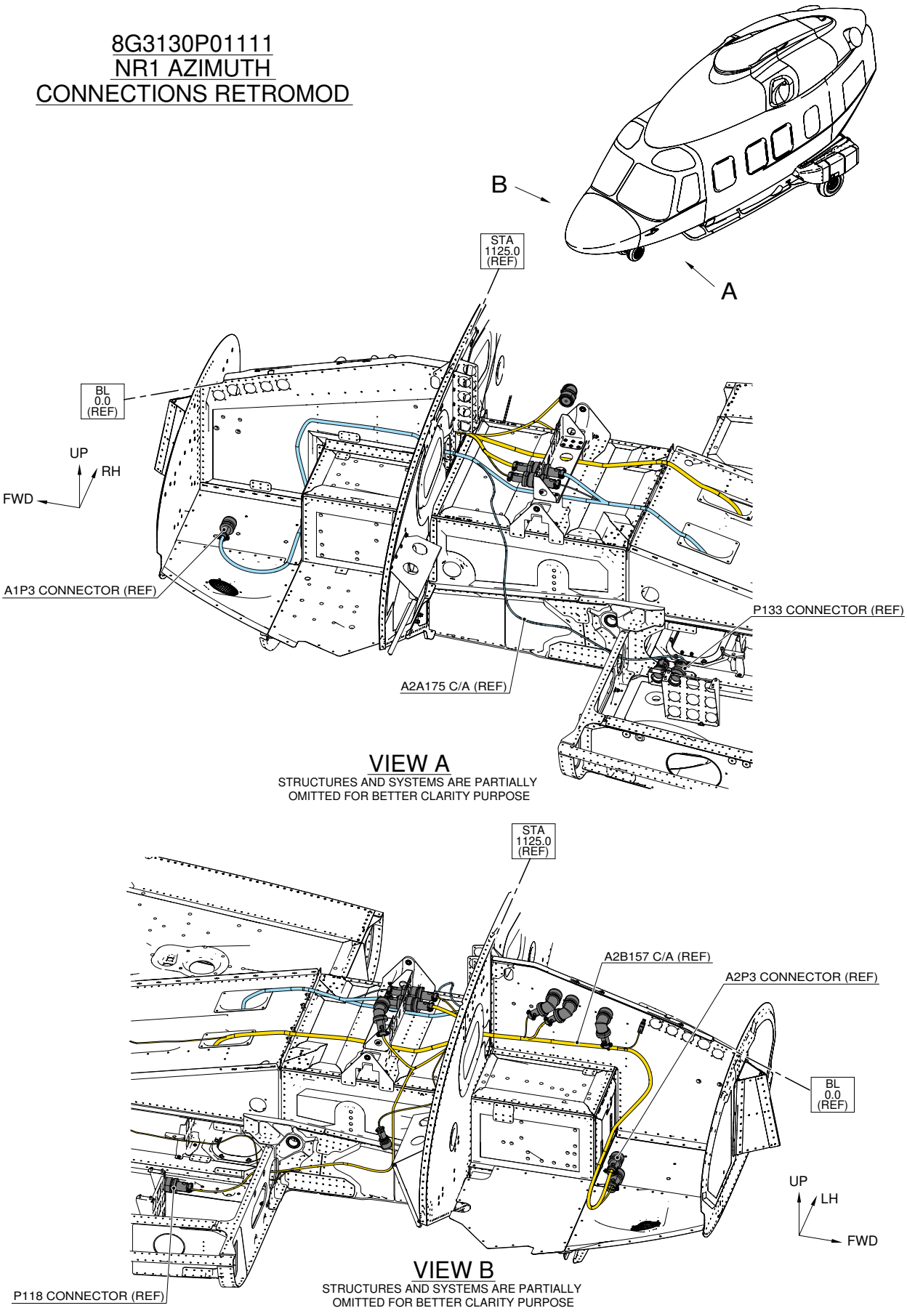
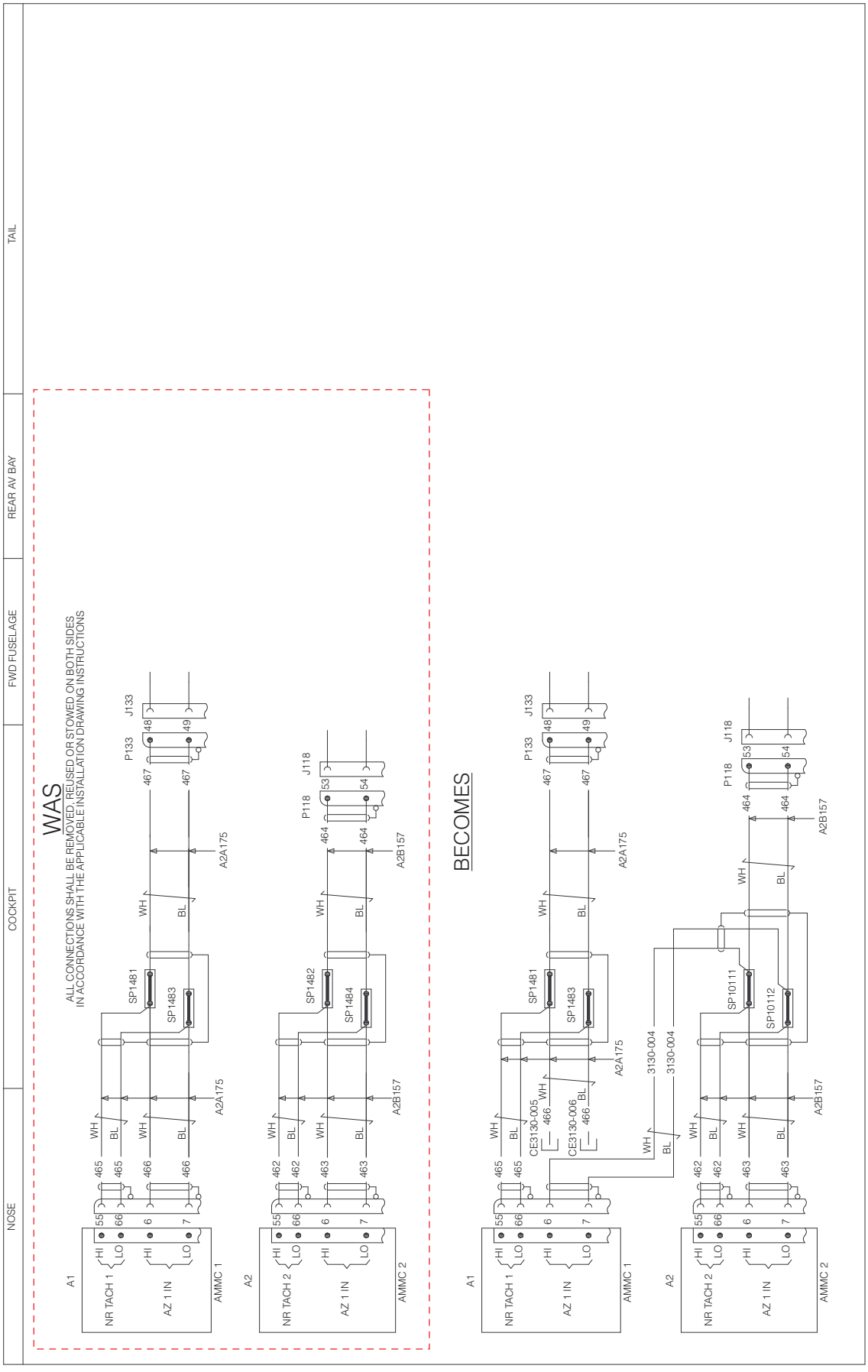


Figure 1



3G4630W00411
WIRING DIAGRAM NR1 AZIMUTH CONNECTIONS RETROMOD

Figure 2

LEONARDO
HELICOPTERS

AgustaWestland Products

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.