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AgustaWestland Products

# SERVICE BULLETIN

# OPTIONAL

N° 139-568

**DATE:** November 9, 2023 **REV.:** /

# TITLE

ATA 24 – CB PANEL RETROMOD

# **REVISION LOG**

First Issue



## 1. PLANNING INFORMATION

### A. EFFECTIVITY

AW139 helicopters S/N 31250 and S/N 31267.

## **B. COMPLIANCE**

At Customer's option.

## **C. CONCURRENT REQUIREMENTS**

N.A.

## D. REASON

This Service Bulletin is issued in order to provide the necessary instructions on how to perform the installation of CB panel retro mod P/N 3G2460P01018.

LH issued this SB for the following reason:

Helicopter Reliability/Maintainability	
Product Improvement	
Obsolescence	
Customization	$\checkmark$
Product/Capability Enhancement	

### **E. DESCRIPTION**

This Service Bulletin introduces a retro mod of the CB panel.

The retro modification consists of:

- n°2 structural provisions to install n°4 anchor nuts;
- the installation of n°2 mounting tracks;
- the installation of n°1 electrical support, n°3 relays and n°3 decals;
- the removal of wires of existing cable assemblies;
- the modification of C/A E1C298.

## 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 one hundred sixteen (116) MMH are deemed necessary.

MMH are based on hands-on time and can change with helicopter configuration, personnel and facilities available. MMH are not comprehensive of the overall hours necessary to get access to work areas and to remove all the equipment that interferes with the application of the prescribed instructions.

## **H. WEIGHT AND BALANCE**

WEIGHT (kg)	0	.5
	ARM (mm)	ARM (mm)
LONGITUDINAL BALANCE	2340.0	2340.0
LATERAL BALANCE	-50.0	-50.0

### I. REFERENCES

#### 1) PUBLICATIONS

Following Data Modules refer to AMP:

DATA	MODULE	DESCRIPTION	<u>PART</u>
DM01	39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance	-
DM02	39-A-06-41-00-00A-010A-A	Access doors and panels – General data.	-
DM03	39-A-24-91-01-00A-520A-A	Circuit breaker panel - Remove procedure	-
DM04	39-A-24-91-01-00A-720A-A	Circuit breaker panel - Install procedure	-
DM05	39-A-11-00-01-00A-720A-A	Decal - Install procedure	-
DM06	39-A-20-10-23-00A-010A-A	Connectors sealing – General data	-



Following Data Modules refer to CSPP:

<u>DATA I</u>	MODULE D	<b>ESCRIPTION</b>	PART
DM07	CSPP-A-20-10-13-00A-622A-DE	ectrical contacts – Crimp.	-
DM08	CSPP-A-20-10-01-00A-691A-DE	lectrical wires and cables –	-
	N	larking.	

## 2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
AR	As Required
AUX	Auxiliary
СВ	Circuit Breaker
CSPP	Common Standard Practices Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
IPD	Illustrated Parts Data
ITEP	Illustrated Tool and Equipment Publicaton
LHD	Leonardo Spa Helicopters
MMH	Maintenance Man Hours
N.A.	Not Applicable
O/H	Overhead

- P/N Part Number
- S/N Serial Number
- TB Terminal Board

### 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	3G2460P01018		CB PANEL RETRO MOD	REF .		
2	3G5310A52211		STRUCTURAL PROVISION AUX CB PLN	REF		
3	MS21069L08		Nut plate	2		139-568L1
4	MS20426AD3-7		Rivet	0.1 kg		139-568L1
5	3G5311A38111		AUX O/H PANEL STRUCTURAL PROVISION	REF		
6	MS21069L08		Nut plate	2		139-568L1
7	MS20426AD3-7		Rivet	0.1 kg		139-568L1
8	AW001CL509-N6		Support	1		139-568L1
9	ED300K211		Decal	1		139-568L1
10	ED300K365		Decal	1		139-568L1
11	ED300K366		Decal	1		139-568L1
12	M12883/53-001		Mounting track	2		139-568L1
13	M220E4N003	M220-E4N003	Relay	3		139-568L1
14	MS24693-S50		Screw	4		139-568L1
15	A647A01		Relay	1		139-568L1
16	ED300K195		Decal	1		139-568L1
17	MS25036-149		Terminal lug	7		139-568L1
18	M81824/1-1		Splice	1		139-568L1
19	M81824/1-2		Splice	9	•	139-568L1
20	M39029/56-351		Electrical contact	21		139-568L1
21	M39029/101-553		Electrical contact	10		139-568L1
22	M12883/52-002		Socket	3		139-568L1
23	A647A02		Socket	1		139-568L1
24	AW001YD03		Diode assembly	3		139-568L1
25	A523A-B02		Electrical contact	13	-	139-568L1
26	A523A-A03		Electrical contact	2		139-568L1
27	A523A-A02		Electrical contact	7		139-568L1
28	M39029/1-102		Electrical contact	1		139-568L1
29	M39029/58-363		Electrical contact	1		139-568L1
30	A583A2/18C	A583A2610\/	Protective cap	2		139-5681 1
	AJ0JA24100	A000A2010W	i iotootivo oup	-	•	100 00001

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
32	EN6049-006-05-5	Tubing braided	AR	(1)	-

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
139-568L1	1	-	-

#### NOTES

(1) Item to be procured as local supply.

#### **B. SPECIAL TOOLS**

N.A.

#### SPECIAL TOOLS NOTES

N.A.

### **C. INDUSTRY SUPPORT INFORMATION**

Customization.

LEONA

## 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 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) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.
- d) After drilling, remove all swarf and sharp edges.
  Apply on bare metal a light film of primer unless the hole is used for ground connection.
- e) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.
- f) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.
- g) 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.
- In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 8, gain access to the area affected by the installation and perform CB panel retro mod P/N 3G2460P01018 as described in the following procedure:
  - 2.1 In accordance to the applicable steps of AMP DM 39-A-24-91-01-00A-520A-A, open the O/H panel.
  - 2.2 With reference to Figure 4, perform structural provision AUX CB panel P/N 3G5310A52211 as described in the following procedure:
    - 2.2.1 With reference to Figure 4 View A, countermark and drill n°2 rivet holes thru the crossbeam assy P/N 3G5321A00632.



- 2.2.2 With reference to Figure 4 View A and Section B-B, install n°2 nut plates P/N MS21069L08 on the crossbeam assy P/N 3G5321A00632 by means of n°4 rivets P/N MS20426AD3-7.
- 2.2.3 With reference to Figure 4 Detail C, prepare the surface indicated for a good electrical bonding on both side of the crossbeam assy P/N 3G5321A00632.
- 2.3 With reference to Figure 5, perform AUX O/H panel structural provision P/N 3G5311A38111 as described in the following procedure:
  - 2.3.1 With reference to Figure 5 Section A-A and Section C-C, countermark and drill n°2 rivet holes thru the crossbeam assy P/N 3G5321A00632.
  - 2.3.2 With reference to Figure 5 Section A-A and Section C-C, install n°2 nut plates P/N MS21069L08 on the crossbeam assy P/N 3G5321A00632 by means of n°4 rivets P/N MS20426AD3-7.
  - 2.3.3 With reference to Figure 5 Section B-B, prepare the surface indicated for a good electrical bonding on both side of the crossbeam assy P/N 3G5321A00632.
- 2.4 With reference to Figure 2 Detail F, install the mounting track P/N M12883/53-001 on the crossbeam assy P/N 3G5321A00632 by means of n°2 screws P/N MS24693-S50.
- 2.5 With reference to Figure 2 Detail F, install the socket P/N M12883/52-002 (K211P1) and the relay P/N M220E4N003 (K211) on the mounting track P/N M12883/53-001.
- 2.6 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 2 Detail F, install the decal P/N ED300K211 on the relay K211.
- 2.7 With reference to Figure 2 Detail E, install the mounting track P/N M12883/53-001 on the crossbeam assy P/N 3G5321A00632 by means of n°2 screws P/N MS24693-S50.
- 2.8 With reference to Figure 2 Detail E, install the socket P/N M12883/52-002 (K366P1) and the relay P/N M220E4N003 (K366) on the mounting track P/N M12883/53-001.
- 2.9 With reference to Figure 2 Detail E, install the socket P/N M12883/52-002 (K365P1) and the relay P/N M220E4N003 (K365) on the mounting track P/N M12883/53-001.
- 2.10 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 2 Detail K, install the decal P/N ED300K365 on the relay K365 and the decal P/N ED300K366 on the relay K366.

- 2.11 With reference to Figure 1 View A, install the socket P/N A647A02, the relay (K195) P/N A647A01 and the decal P/N ED300K195.
- 2.12 With reference to Figure 3 Section C-C, install the support P/N AW001CL509-N6 on STA 2754.0, BL -151.0, WL 2554.0.
- 2.13 With reference to Figure 6 wiring diagram (WAS), perform the removal of some wires of C/A E1C298, C/A E1C203, C/A E1C216 and C/A E1C220 as described in the following procedure:
  - 2.13.1 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 338-22 of C/A E1C220 between pin 2 of circuit breaker CB147 and pin "j" of connector PL1J6.
  - 2.13.2 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 925-20 of C/A E1C298 between pin 2 of circuit breaker CB4 and pin "y" of connector PL1J9.
  - 2.13.3 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 124-20 of C/A E1C216 from pin "A3" of socket K63P1.
  - 2.13.4 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 126-20 of C/A E1C216 between pin "X2" of socket K63P1 and pin "m" of connector PL1J3.
  - 2.13.5 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 802-20 of C/A E1C298 between pin 2 of circuit breaker CB172 and pin "C" of connector PL1J500.
  - 2.13.6 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 607-20 of C/A E1C298 between pin 2 of circuit breaker CB201 and pin "S" of connector PL1J500.
  - 2.13.7 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 804-22N of C/A E1C298 between pin "N" of terminal board TB505 and pin "D" of connector PL1J500.
  - 2.13.8 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 160-20 of C/A E1C203 between pin 2 of circuit breaker CB5 and pin "b" of connector PL1J500.
  - 2.13.9 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 4-20 of C/A E1C203 between pin "h" of connector PL1J500 and pin "CC" of connector PL1J10.
  - 2.13.10 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 613-20 of C/A E1C298 between pin "T" of connector PL1J500 and pin "R" of connector PL1J10.



- 2.13.11 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 5-20N of C/A E1C203 between pin "S" of terminal board TB502 and pin "DD" of connector PL1J10.
- 2.13.12 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 617-20N of C/A E1C298 between pin "P" of terminal board TB502 and pin "P" of connector PL1J10.
- 2.13.13 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 123-20 of C/A E1C216 between pin "A2" of socket K63P1.
- 2.13.14 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 125-20 of C/A E1C216 between pin "X1" of socket K63P1 and splice SP507.
- 2.13.15 With reference to Figure 6 wiring diagram (WAS), remove the wire marked as 920-20 between pin "n" of connector PL1J3 and pin "2" of circuit breaker CB57.
- 2.14 With reference to Figures 1 thru 3 and Figures 7 and 8, assemble the CB panel retromod C/A P/N 3G9E01C29806 (E1C298) as described in the following procedure:
  - 2.14.1 With reference to Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K63P1 and a new splice P/N M81824/1-2 (SP507).
  - 2.14.2 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 125-20 by means of marker sleeves.
  - 2.14.3 With reference to Figure 8 wiring diagram, perform electrical connection between wires marked as 122-20 and 125-20 by means of splice SP507.
  - 2.14.4 With reference to Figure 1 View A and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between splice SP568 and circuit breaker CB147.
  - 2.14.5 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 terminal lug P/N MS25036-149 (CB147 side) by means of proper crimping tool.
  - 2.14.6 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1023-20 by means of marker sleeves.
  - 2.14.7 With reference to Figure 1 View A and Figure 8 wiring diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay down between splice SP568 and socket K195P1.



- 2.14.8 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wires n°2 electrical contacts P/N A523A-B02 (K195P1 side) by means of proper crimping tool.
- 2.14.9 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wires as 1024-20 and 1025-20 by means of marker sleeves.
- 2.14.10 With reference to Figure 8 wiring diagram, perform electrical connection between wires marked as 1023-20, 1024-20 and 1025-20 by means of splice P/N M81824/1-2 (SP568).
- 2.14.11 With reference to Figure 1 View A and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between circuit breaker CB4 and socket K195P1.
- 2.14.12 In accordance with AMP CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 terminal lug P/N MS25036-149 (CB4 side) and n°1 electrical contact P/N A523A-B02 (K195P1 side) by means of proper crimping tool.
- 2.14.13 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1021-20 by means of marker sleeves.
- 2.14.14 With reference to Figure 1 View A, Figure 3 Section C-C and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K195P1 and connector PL1J9.
- 2.14.15 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J9 side) and n°1 electrical contact P/N A523A-B02 (K195P1 side) by means of proper crimping tool.
- 2.14.16 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1022-20 by means of marker sleeves.
- 2.14.17 With reference to Figure 1 View A, Figure 3 Section B-B and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K195P1 and connector PL1J6.
- 2.14.18 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J6 side) and n°1 electrical contact P/N A523A-B02 (K195P1 side) by means of proper crimping tool.



- 2.14.19 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1026-20 by means of marker sleeves.
- 2.14.20 With reference to Figure 1 View A and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K195P1 and splice SP569.
- 2.14.21 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-B02 (K195P1 side) by means of proper crimping tool.
- 2.14.22 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1027-20 by means of marker sleeves.
- 2.14.23 With reference to Figure 1 View A and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K63P1 and splice SP569.
- 2.14.24 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-B02 (K63P1 side) by means of proper crimping tool.
- 2.14.25 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1028-20 by means of marker sleeves.
- 2.14.26 With reference to Figure 1 View A, Figure 3 Section C-C and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J3 and splice SP569.
- 2.14.27 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J3 side) by means of proper crimping tool.
- 2.14.28 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1029-20 by means of marker sleeves.
- 2.14.29 With reference to Figure 1 View A and Figures 7 and 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between diode assembly CR508 and splice SP569.
- 2.14.30 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figures 7 and 8 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A02 (CR508 side) by means of proper crimping tool.



- 2.14.31 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figures 7 and 8 wiring diagram, mark wire as 837-20 by means of marker sleeves.
- 2.14.32 With reference to Figures 7 and 8 wiring diagram, perform electrical connection between wires marked as 1029-20, 1028-20, 1027-20 and 837-20 by means of splice P/N M81824/1-2 (SP569).
- 2.14.33 With reference to Figure 1 View A and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between circuit breaker CB57 and splice SP591.
- 2.14.34 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 terminal lug P/N MS25036-149 (CB57 side) by means of proper crimping tool.
- 2.14.35 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1030-20 by means of marker sleeves.

#### <u>NOTE</u>

If pin "DD" of PL1J3 is already connected to CB241, remove the wire P/N P380A22-G and install a locking ring P/N AW001YC01RED on the CB241.

- 2.14.36 With reference to Figure 1 View A, Figure 3 Section C-C and Figure 8 wiring diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay down between connector PL1J3 and splice SP591.
- 2.14.37 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wires n°2 electrical contacts P/N M39029/56-351 (PL1J3 side) by means of proper crimping tool.
- 2.14.38 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wires as 1031-20 and 1032-20 by means of marker sleeves.
- 2.14.39 With reference to Figure 8 wiring diagram, perform electrical connection between wires marked as 1030-20, 1031-20 and 1032-20 by means of splice P/N M81824/1-2 (SP591).

#### <u>NOTE</u>

If pin "EE" of circuit breaker CB5 is already used by wire 171-22, remove it.

- 2.14.40 With reference to Figure 1 View A, Figure 3 Section B-B and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J6 and circuit breaker CB5.
- 2.14.41 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°1 terminal lug P/N MS25036-149 (CB5 side) and n°1 electrical contact P/N M39029/56-351 (PL1J6 side) by means of proper crimping tool.
- 2.14.42 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1050-20 by means of marker sleeves.
- 2.14.43 With reference to Figure 3 Section B-B and Figure 8 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J6 and connector PL1J500.
- 2.14.44 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 8 wiring diagram, crimp on wire n°2 electrical contacts P/N M39029/56-351 (one PL1J500 side and one PL1J6 side) by means of proper crimping tool.
- 2.14.45 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 8 wiring diagram, mark wire as 1041-20 by means of marker sleeves.
- 2.14.46 With reference to Figure 1 View A, Figure 2 Detail F and Figure 7 wiring diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay down between socket K211P1 and connector PL1J500.
- 2.14.47 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wires n°2 electrical contacts P/N A523A-B02 (K211P1 side) and n°2 electrical contacts P/N M39029/56-351 (PL1J500 side) by means of proper crimping tool.
- 2.14.48 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wires as 834-20 and 835-20 by means of marker sleeves.
- 2.14.49 With reference to Figure 1 View A, Figure 2 Detail F and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K211P1 and diode assembly CR508.
- 2.14.50 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-B02 (K211P1 side) and n°1 electrical contact P/N A523A-A02 (CR508 side) by means of proper crimping tool.



- 2.14.51 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 836-20 by means of marker sleeves.
- 2.14.52 With reference to Figure 7 wiring diagram, perform electrical connection between wire marked as 837-20 and 836-20 by means of diode assembly P/N AW001YD03 (CR508).
- 2.14.53 With reference to Figure 1 View A, Figure 2 Detail F and Figure 7 wiring diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay down between socket K211P1 and splice SP579.
- 2.14.54 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wires n°2 electrical contacts P/N A523A-B02 (K211P1 side) by means of proper crimping tool.
- 2.14.55 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wires as 832-20 and 833-20 by means of marker sleeves.
- 2.14.56 With reference to Figure 1 View A, Figure 2 Detail D and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between circuit breaker CB172 and splice SP579.
- 2.14.57 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 terminal lug P/N MS25036-149 (CB172 side) by means of proper crimping tool.
- 2.14.58 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 831-20 by means of marker sleeves.
- 2.14.59 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 831-20, 832-20 and 833-20 by means of splice P/N M81824/1-2 (SP579).
- 2.14.60 With reference to Figure 2 Detail F, Figure 3 Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between terminal board TB505 and socket K211P1.
- 2.14.61 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A02 (TB505 side) and n°1 electrical contact P/N A523A-B02 (K211P1 side) by means of proper crimping tool.



- 2.14.62 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 735-20N by means of marker sleeves.
- 2.14.63 With reference to Figure 1 View A, Figure 2 Detail D and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between circuit breaker CB201 and splice SP5003.
- 2.14.64 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 terminal lug P/N MS25036-149 (CB201 side) by means of proper crimping tool.
- 2.14.65 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 851-20 by means of marker sleeves.
- 2.14.66 With reference to Figure 1 View A and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J500 and splice SP5003.
- 2.14.67 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J500 side) by means of proper crimping tool.
- 2.14.68 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 852-20 by means of marker sleeves.
- 2.14.69 With reference to Figure 1 View A and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between diode assembly CR512 and splice SP5003.
- 2.14.70 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A02 (CR512 side) by means of proper crimping tool.
- 2.14.71 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 869-20 by means of marker sleeves.
- 2.14.72 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 851-20, 852-20 and 869-20 by means of splice P/N M81824/1-2 (SP5003).
- 2.14.73 With reference to Figure 1 View A and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between diode assembly CR512 and splice SP5008.



- 2.14.74 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A02 (CR512 side) by means of proper crimping tool.
- 2.14.75 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 868-20 by means of marker sleeves.
- 2.14.76 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 869-20 and 868-20 by means of diode assembly P/N AW001YD03 (CR512).
- 2.14.77 With reference to Figure 1 View A, Figure 3 Section B-B and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J6 and splice SP5008.
- 2.14.78 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J6 side) by means of proper crimping tool.
- 2.14.79 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 870-20 by means of marker sleeves.
- 2.14.80 With reference to Figure 1 View A and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between diode assembly CR511 and splice SP5008.
- 2.14.81 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A02 (CR511 side) by means of proper crimping tool.
- 2.14.82 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 867-20 by means of marker sleeves.
- 2.14.83 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 868-20, 867-20 and 870-20 by means of splice P/N M81824/1-2 (SP5008).
- 2.14.84 With reference to Figure 1 View A and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between diode assembly CR511 and circuit breaker CB6.
- 2.14.85 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A02 (CR511 side) and n°1 terminal lug P/N MS25036-149 (CB6 side) by means of proper crimping tool.



- 2.14.86 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 866-20 by means of marker sleeves.
- 2.14.87 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 866-20 and 867-20 by means of diode assembly P/N AW001YD03 (CR511).
- 2.14.88 With reference to Figure 1 View A, Figure 2 Detail E and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J500 and socket K365P1.
- 2.14.89 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J500 side) and n°1 electrical contact P/N M39029/101-553 (K365P1) by means of proper crimping tool.
- 2.14.90 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 853-20 by means of marker sleeves.
- 2.14.91 With reference to Figure 1 View A, Figure 2 Detail E and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J500 and socket K366P1.
- 2.14.92 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J500 side) and n°1 electrical contact P/N M39029/101-553 (K366P1 side) by means of proper crimping tool.
- 2.14.93 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 861-20 by means of marker sleeves.

#### **NOTE**

If necessary, the route of wires used for the connection of splices SP544, SP545 and SP5009 can be modified to exit from the upper side of relay in order to ease the installation.

2.14.94 With reference to Figure 2 Detail E, Figure 3 Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K366P1 and splice SP544.



- 2.14.95 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/101-553 (K366P1 side) by means of proper crimping tool.
- 2.14.96 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 860-20 by means of marker sleeves.
- 2.14.97 With reference to Figure 2 Detail E, Figure 3 Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K365P1 and splice SP544.
- 2.14.98 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/101-553 (K365P1 side) by means of proper crimping tool.
- 2.14.99 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 856-20 by means of marker sleeves.
- 2.14.100 With reference to Figure 3 Section B-B and Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J6 and splice SP544.
- 2.14.101 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J6 side) by means of proper crimping tool.
- 2.14.102 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 859-20 by means of marker sleeves.
- 2.14.103 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 856-20, 859-20 and 860-20 by means of splice P/N M81824/1-2 (SP544).

#### **NOTE**

# If pin "a" of connector PL1J6 is already used by wire 272-22, remove it.

- 2.14.104 With reference to Figure 2 Detail E, Figure 3 Section B-B and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J6 and socket K366P1.
- 2.14.105 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact

P/N M39029/56-351 (PL1J6 side) and n°1 electrical contact P/N M39029/101-553 (K366P1 side) by means of proper crimping tool.

- 2.14.106 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 862-20 by means of marker sleeves.
- 2.14.107 With reference to Figure 2 Detail E, Figure 3 Section B-B and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J10 and socket K366P1.
- 2.14.108 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J10 side) and n°1 electrical contact P/N M39029/101-553 (K366P1 side) by means of proper crimping tool.
- 2.14.109 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 863-20 by means of marker sleeves.
- 2.14.110 With reference to Figure 3 Section B-B and Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J10 and splice SP545.
- 2.14.111 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J10 side) by means of proper crimping tool.
- 2.14.112 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 864-20 by means of marker sleeves.
- 2.14.113 With reference to Figure 2 Detail E, Figure 3 Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K366P1 and splice SP545.
- 2.14.114 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/101-553 (K366P1 side) by means of proper crimping tool.
- 2.14.115 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 865-20 by means of marker sleeves.
- 2.14.116 With reference to Figure 1 View A, Figure 3 Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between terminal board TB502 and splice SP545.

- 2.14.117 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A03 (TB502 side) by means of proper crimping tool.
- 2.14.118 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 730-20N by means of marker sleeves.
- 2.14.119 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 864-20, 865-20 and 730-20N by means of splice P/N M81824/1-1 (SP545).
- 2.14.120 With reference to Figure 3 Section B-B and Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between connector PL1J10 and splice SP5009.
- 2.14.121 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/56-351 (PL1J10 side) by means of proper crimping tool.
- 2.14.122 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 858-20 by means of marker sleeves.
- 2.14.123 With reference to Figure 2 Detail E, Figure 3 Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between socket K365P1 and splice SP5009.
- 2.14.124 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N M39029/101-553 (K365P1 side) by means of proper crimping tool.
- 2.14.125 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 857-20 by means of marker sleeves.
- 2.14.126 With reference to Figure 3 Section C-C and Figure 7 wiring diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between terminal board TB505 and splice SP5009.
- 2.14.127 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wire n°1 electrical contact P/N A523A-A03 (TB505 side) by means of proper crimping tool.
- 2.14.128 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wire as 725-20N by means of marker sleeves.



- 2.14.129 With reference to Figure 7 wiring diagram, perform electrical connection between wires marked as 858-20, 857-20 and 725-20N by means of splice P/N M81824/1-2 (SP5009).
- 2.14.130 With reference to Figure 2 Detail E, Figure 3 Section B-B and Figure 7 wiring diagram, cut n°2 wires P/N A556A-T20 of adequate length and lay down between connector PL1J10 and socket K365P1.
- 2.14.131 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 7 wiring diagram, crimp on wires n°2 electrical contacts P/N M39029/56-351 (PL1J10 side) and n°2 electrical contacts P/N M39029/101-553 (K365P1 side) by means of proper crimping tool.
- 2.14.132 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 7 wiring diagram, mark wires as 854-20 and 855-20 by means of marker sleeves.
- 2.14.133 In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and Figures 7 and 8 wiring diagram, mark the cable assembly so obtained as E1C298 by means of marker sleeves.

#### <u>NOTE</u>

Install the tubing braided P/N EN6049-006-05-5 where protection against chafing and prevention of contact with structure may occur, but the tubing protection is not substitute for good routing practice.

- 2.15 With reference to Figures 1 thru 3, secure the C/A E1C298 by means of existing hardware and lacing cords.
- 2.16 With reference to Figures 1 thru 3 and Figures 7 and 8 wiring diagram, perform the electrical connection of C/A E1C298 to connector PL1J500, to relay K211, to terminal board TB505, to circuit breaker CB172, to circuit breaker CB201, to circuit breaker CB6, to connector PL1J6, to connector PL1J10, to relay K365, to relay K366, to terminal board TB502, to circuit breaker CB5, to circuit breaker CB57, to circuit breaker CB4, to circuit breaker CB147, to connector PL1J3, to connector PL1J9, to relay K195 and to relay K63.
- 2.17 Perform a pin-to-pin continuity check of all the electrical connections made.
- With reference to Figure 9 Wiring Diagram WAS, remove the electrical wires marked as "904-20N" and "905-20" respectively between TB505/PL1J500 and between PL1P500/S202.
- 4. With reference to Figure 9 Wiring Diagram, cut n°1 wire P/N A556A-T20 of adequate length and lay down between steering lights S202 and connector PL1P6.



- In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 9 Wiring Diagram, perform electrical connections to steering lights S202 and connector PL1P6.
- 6. In accordance with CSPP DM CSPP-A-20-10-01-00A-691A-D and with reference to Figure 9 Wiring Diagram, mark wire as "905-20" by means of marker sleeves.
- 7. Perform a pin-to-pin continuity check of all the electrical connections made.
- 8. In accordance to the applicable steps of AMP DM 39-A-24-91-01-00A-720A-A, close and install the O/H panel.
- 9. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
- 10. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
- 11. 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









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Figure 6



3G2460W08517 WIRING DIAGRAM CB PANEL RETROMOD



3G2460W08517 WIRING DIAGRAM CB PANEL RETROMOD

> all cables are in loom e1c298 unless specified all cables are of Type A556A-T20 UNLESS Specified







Figure 9



WIRING DIAGRAM AUXILIARY CB PANEL

ALL CABLES ARE IN LOOM E1C237 UNLESS SPECIFIED ALL CABLES ARE OF TYPE A556AT 20 UNLESS SPECIFIED



S.B. N°139-568 OPTIONAL DATE: November 9, 2023 REVISION: /





Please send to the following address:		SERVICE BULLETIN COMPLIANCE FORM Date:				
CUSTOMER SUPPORT & SE	ERVICES - ITALY	Number:				
PRODUCT SUPPORT ENGINEE	RING & LICENSES DEPT.					
21017 Cascina Costa di Samara Tel.: +39 0331 225036 Fax: +39	ate (VA) - ITALY 0331 225988	Revision:				
Customer Name and Addre	ess:			Telephone:		
				Fax:		
				B.T. Compli	ance Date:	
Helicopter Model	S/N		Total N	umber	Total Hours	T.S.O.
Remarks:						
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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.