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

OPTIONAL

N° 139-721

DATE: April 15, 2024

REV. : /

TITLE

ATA 24 – DUAL USB CHARGER INSTALLATION

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 dual USB charger electrical installation P/N 3G2460A03711.

Leonardo Helicopters (LH) issued this SB for the following reason:

Helicopter Reliability/Maintainability	
Product Improvement	
Obsolescence	
Customization	✓
Product/Capability Enhancement	

E. DESCRIPTION

The dual USB charger is composed of a LH and a RH USB charger installed on LH and RH side of the cockpit, adjacent the instruments panel.

The dual USB charger electrical installation P/N 3G2460A03711 consists of the dual USB charger structural provision P/N 3G5311A17812 and the electrical connections in the helicopter nose and cockpit.

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 Leonardo Helicopters (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, approximately forty-four (44) 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)	0.27	
	ARM (mm)	**MOMENT (kg·mm)**
LONGITUDINAL BALANCE	1291	353.7
LATERAL BALANCE	52	14.3

I. REFERENCES

I.1 PUBLICATIONS

Following Data Modules refer to AMP:

DATA MODULE		**DESCRIPTION**	**PART**
DM01	39-A-00-20-00-00A-120A-A	Helicopter safety – Pre-operation (make helicopter safe for maintenance)	-
DM02	39-A-06-41-00-00A-010A-A	Access doors and panels – General data	-
DM03	39-A-11-00-01-00A-720A-A	Decal – Install procedure	-
DM04	39-A-24-93-01-00A-921A-K	Integrally lighted panel – Replacement (remove and install a new item)	-

I.2 ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
AR	As Required
AUX	Auxiliary
C/A	Cable Assy
C/B	Circuit Breaker
DM	Data Module
DOA	Design Organization Approval
EASA	European Union Aviation Safety Agency
IPD	Illustrated Parts Data Publication
ITEP	Illustrated Tools and Equipment Publication
LH	Left Hand
MMH	Maintenance Man Hours
N.A.	Not Applicable
NVG	Night Vision Goggle
NVIS	Night Vision Imaging System
P/N	Part Number
RH	Right Hand
SB	Service Bulletin
S/N	Serial Number

I.3 ANNEX

Annex A DUAL USB CHARGER ELECTRICAL INSTALLATION P/N 3G2460A03711 ACCEPTANCE TEST PROCEDURE

J. PUBLICATIONS AFFECTED

Aircraft Maintenance Publication (AMP)

Illustrated Parts Data Publication (IPD)

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

A.1 PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**3G2460A03711**		**DUAL USB CHARGER ELECTRICAL INSTALLATION**	**REF**	**.**		**-**
2	**3G5311A17812**		**DUAL USB CHARGER STRUCTURAL PROVISION**	**REF**	**..**		**-**
3	3G2460A03631		USB socket charger assy	2	..		139-721L1
4	3G5317A49951		Retention plate	2	..		139-721L1
5	3G9A01A57701		Dual USB charger C/A (A1A577)	1	..		139-721L1
6	3G9A01B52801		Dual USB charger C/A (A1B528)	1	..		139-721L1
7	3G9B01B85601		Dual USB charger C/A (B1B856)	1	..		139-721L1
8	AW001CL001-N6		Support	5	..		139-721L1
9	MS21043-04		Nut	8	..		139-721L1
10	NAS1149DN416J		Washer	8	..		139-721L1
11	3G2490L06152		Illuminated NVIS panel C/B mission (NVG)	1	.		139-721L1
12	MS3320-5		Breaker	1	.		139-721L1
13	ED300CB529		Decal	1	.		139-721L1
14	A556A-T20		Wire	3 m	.		139-721L1
15	MS25036-149		Terminal lug	1	.		139-721L1
16	M39029/56-351		Electrical contact	1	.		139-721L1

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

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
17	MMM-A-132, Type 2, Class II 199-05-002, Type I, Class 2	Adhesive EA9309.3NA (C021)	AR	(1)	-
18	EN6049-006-XX-5	Tubing	AR	(1) (2)	-
19	A236AXXAB	Edging	AR	(3)	-

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

A.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
139-721L1	1		-

NOTES

(1) Item to be procured as local supply.

(2) The XX digits can vary depending on the actual helicopter configuration.

(3) Item to be ordered in qty. 1.2 m or multiples. The XX digits (01, 02, 03 or 04) of P/N A236AXXAB can be different based on the actual helicopter configuration.

B. SPECIAL TOOLS

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

Refer also to Annex A for the special tools required to comply with this Service Bulletin.

SPECIAL TOOLS NOTES

N.A.

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

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

h) 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.
2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1, gain access to the area affected by the installation and perform the dual USB charger structural provision P/N 3G5311A17812 as described in the following procedure:
   2.1 Perform the indicated cut-out on LH fairing P/N 3G5320A08332.
   2.2 Repeat step 2.1 on RH fairing P/N 3G5320A08232.
3. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 2 thru 6, gain access to the area affected by the installation and perform the dual USB

charger electrical installation P/N 3G2460A03711 as described in the following procedure:

3.1 With reference to Figure 5 View C and View D, at positions n°1-2-3-4 and 5, install n°5 supports P/N AW001CL001-N6 by means of adhesive EA9309.3NA (C021).

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.

Secure the cables by means of previously installed fixing hardware and existing hardware. If necessary, replace existing clamps with suitable clamps.

3.2 With reference to Figures 2 thru 6, lay down the following cable assemblies following the existing route unless otherwise indicated on the figures:

- Dual USB charger C/A (A1A577) P/N 3G9A01A57701;
- Dual USB charger C/A (A1B528) P/N 3G9A01B52801;
- Dual USB charger C/A (B1B856) P/N 3G9B01B85601.

3.3 With reference to Figures 2 thru 5 and Figure 7 wiring diagram, perform the electrical connections of C/A A1A577 between USB charger copilot connector A527J1, sectioning connector J103, terminal board connector TB121P1 and splice SP10177.

NOTE

To perform the electrical connection between sectioning connector P103 and splice SP10179, if the indicated position is NOT available, it is allowed to use pin 64 of the sectioning connector P103.

To perform the electrical connection between sectioning connector P106 and splice SP10179, if the indicated position is NOT available, it is allowed to use pin 13 of the sectioning connector P106.

3.4 With reference to Figures 2 thru 6 and Figure 7 wiring diagram, perform the electrical connections of C/A A1B528 between USB charger copilot connector A526J1, sectioning connectors P103 and P106, terminal board connector TB126P1 and splices SP10178 and SP10179.

3.5 With reference to Figures 2 thru 6 and Figure 7 wiring diagram, perform the electrical connections of C/A B1B856 between sectioning connectors J106 and

PL1P6.

3.6 With reference to Figure 5 View C and View D, install n°2 USB socket charger assemblies P/N 3G2460A03631.

3.7 With reference to Figure 5 View C and View D, install n°2 retention plates P/N 3G5317A49951 by means of n°8 nuts P/N MS21043-04 and n°8 washers P/N NAS1149DN416J on the USB socket charger assemblies P/N 3G2460A03631.

3.8 With reference to Figure 5 View C and Figure 7 wiring diagram, connect sectioning connector A527J1 with sectioning connector A527P1.

3.9 With reference to Figure 5 View D and Figure 7 wiring diagram, connect sectioning connector A526J1 with sectioning connector A526P1.

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

4. Modify the utility C/B panel RH, as described in the following procedure:

4.1 With reference to AMP DM 39-A-24-93-01-00A-921A-K, remove from the utility C/B panel RH the existing NVIS panel C/B mission (NVG) and install the new illuminated NVIS panel C/B mission (NVG) P/N 3G2490L06152.

4.2 Install the circuit breaker P/N MS3320-5 where indicated on the new illuminated NVIS panel C/B mission (NVG) P/N 3G2490L06152.

4.3 In accordance with AMP DM 39-A-11-00-01-00A-720A-A, install n°1 decal P/N ED300CB529 in an area adjacent to the previously installed circuit breaker.

4.4 Perform electrical connection between PL1J6 pin H and circuit breaker CB529 pin 2 by means of wire P/N A556A-T20. Use n°1 terminal lug P/N MS25036-149 for pin 2 of CB529 and n°1 electrical contact P/N M39029/56-351 for pin H of PL1J6.

5. Perform electrical connection between circuit breaker CB529 and 28V DC MAIN BUS 2 W22D.

6. In accordance with Annex A, perform the functional test of the dual USB charger electrical installation P/N 3G2460A03711.

7. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).

8. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.

9. Gain access to My Communications section on Leonardo Customer Portal and compile the “Service - Technical Bulletin Application”.
   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

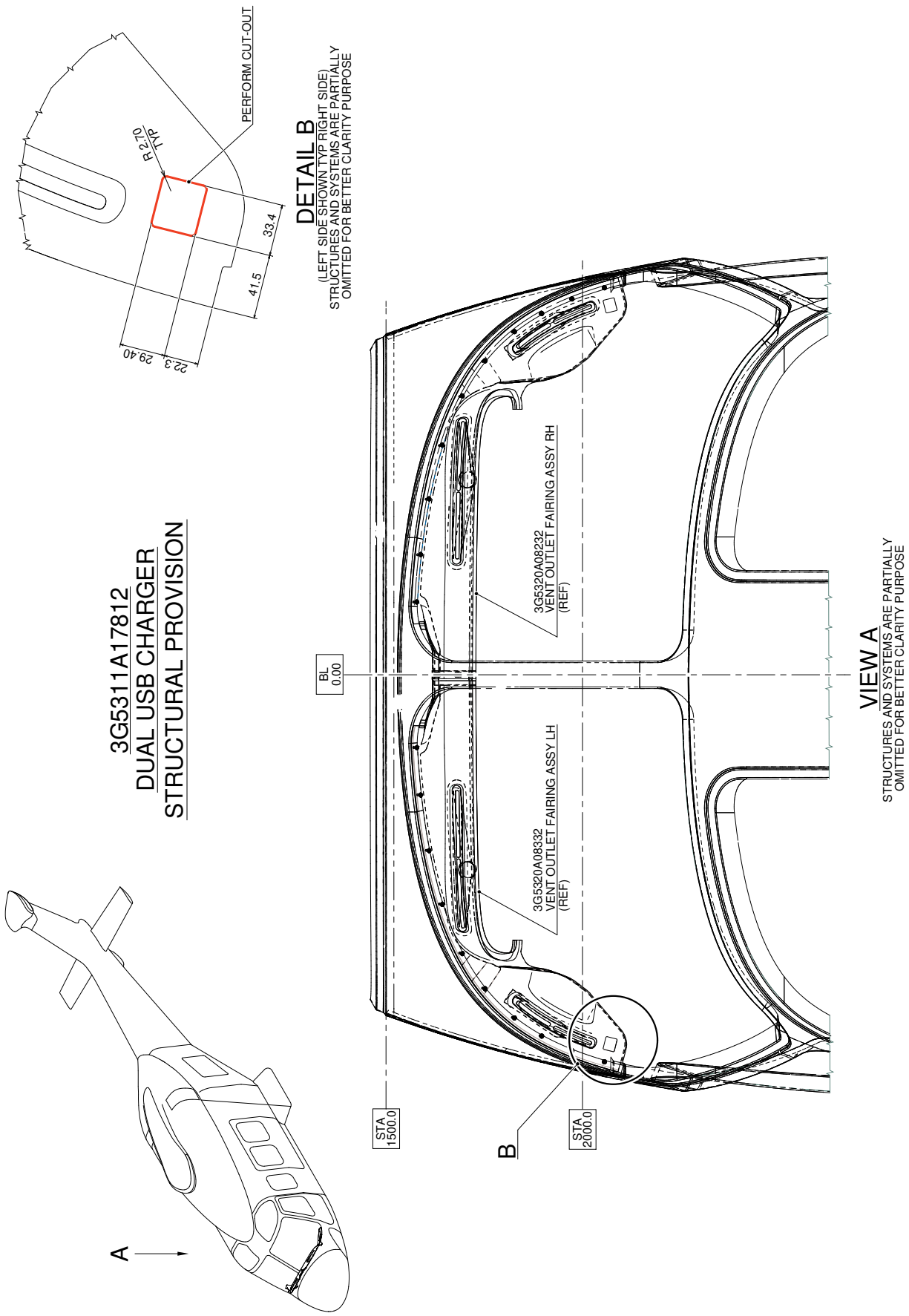

3G5311A17812
DUAL USB CHARGER
STRUCTURAL PROVISION
DETAIL B
(LEFT SIDE SHOWN TYP RIGHT SIDE)
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
PERFORM CUT-OUT
R 2.70
TYP
33.4
41.5
29.40
22.3
VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
3G5320A08232
VENT OUTLET FAIRING ASSY RH
(REF)
3G5320A08332
VENT OUTLET FAIRING ASSY LH
(REF)
BL
0.00
STA
1500.0
STA
2000.0
A
B

Figure 1

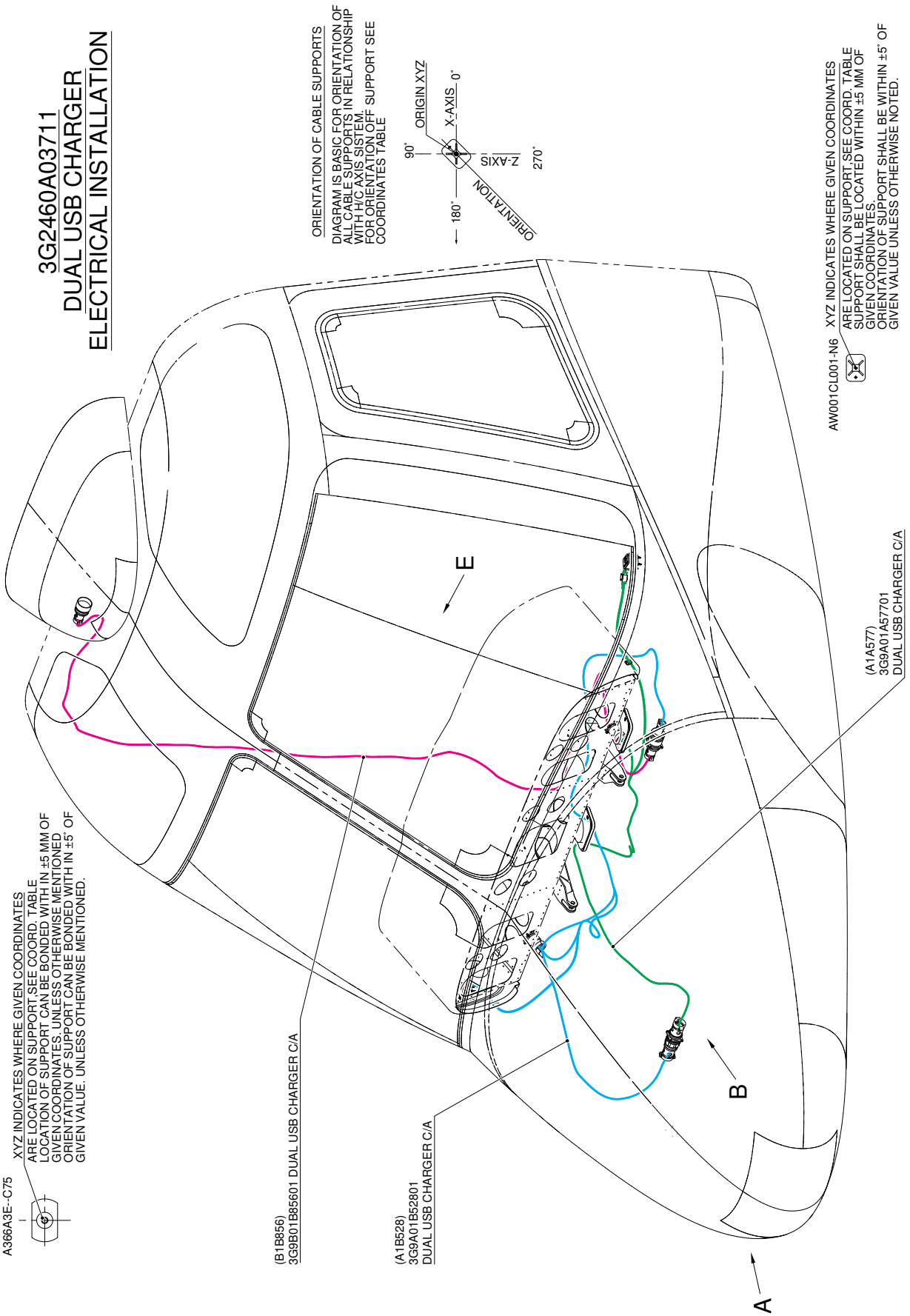

3G2460A03711
DUAL USB CHARGER
ELECTRICAL INSTALLATION
ORIENTATION OF CABLE SUPPORTS
DIAGRAM IS BASIC FOR ORIENTATION OF ALL CABLE SUPPORTS IN RELATIONSHIP WITH H/C AXIS SISTEM. FOR ORIENTATION OFF SUPPORT SEE COORDINATES TABLE
ORIGIN XYZ
X-AXIS 0°
Z-AXIS
90°
180°
270°
ORIENTATION
AW001CL001-N6
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT.SEE COORD. TABLE SUPPORT SHALL BE LOCATED WITHIN ±5 MM OF GIVEN COORDINATES.
ORIENTATION OF SUPPORT SHALL BE WITHIN ±5° OF GIVEN VALUE UNLESS OTHERWISE NOTED.
A366A3E-C75
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT.SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
(B1B856)
3G9B01B85601 DUAL USB CHARGER C/A
(A1B528)
3G9A01B52801
DUAL USB CHARGER C/A
(A1A577)
3G9A01A57701
DUAL USB CHARGER C/A
A
B
E

Figure 2

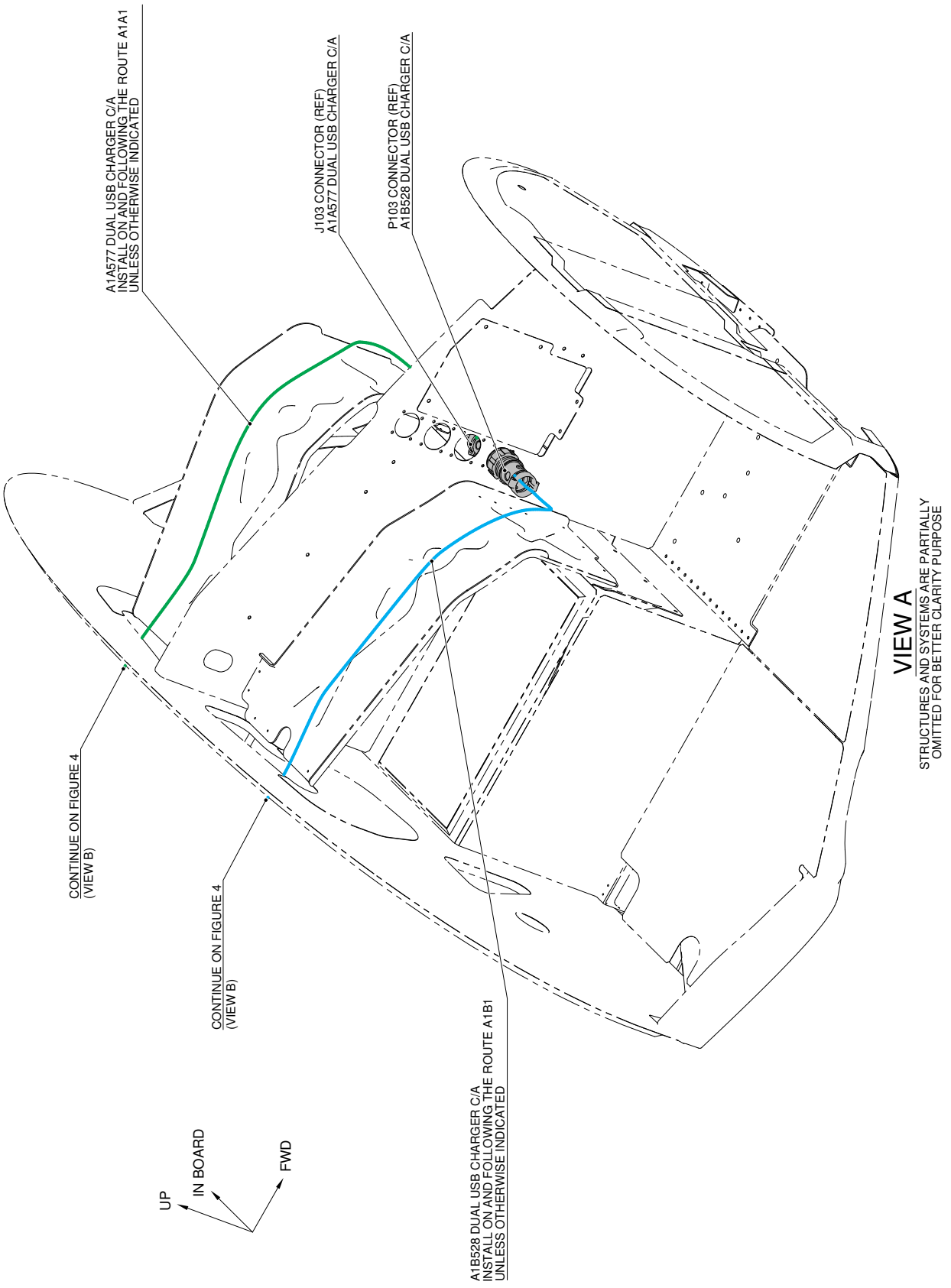

A1A577 DUAL USB CHARGER C/A
INSTALL ON AND FOLLOWING THE ROUTE A1A1
UNLESS OTHERWISE INDICATED
J103 CONNECTOR (REF)
A1A577 DUAL USB CHARGER C/A
P103 CONNECTOR (REF)
A1B528 DUAL USB CHARGER C/A
CONTINUE ON FIGURE 4
(VIEW B)
CONTINUE ON FIGURE 4
(VIEW B)
A1B528 DUAL USB CHARGER C/A
INSTALL ON AND FOLLOWING THE ROUTE A1B1
UNLESS OTHERWISE INDICATED
UP
IN BOARD
FWD
VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 3

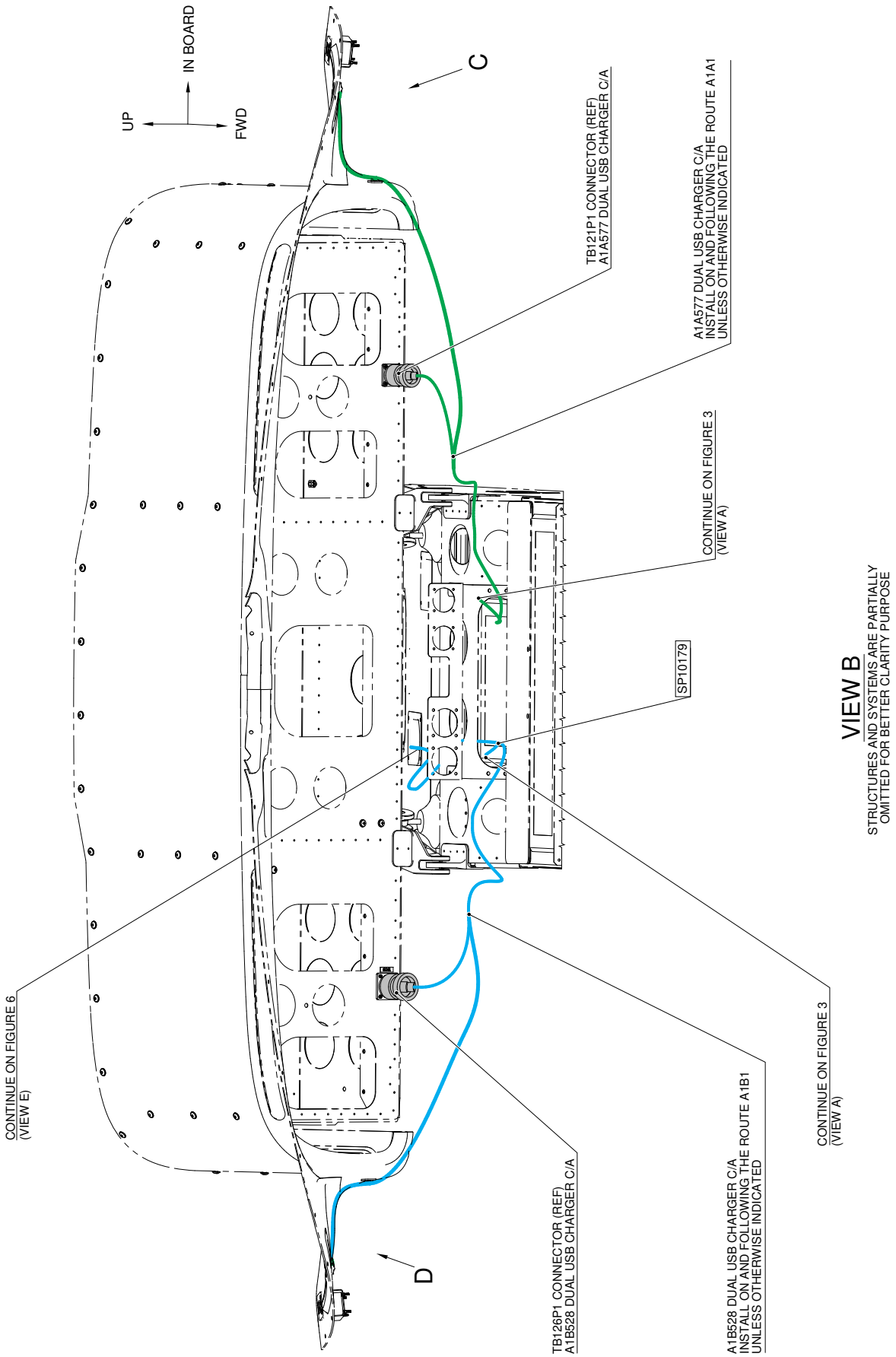
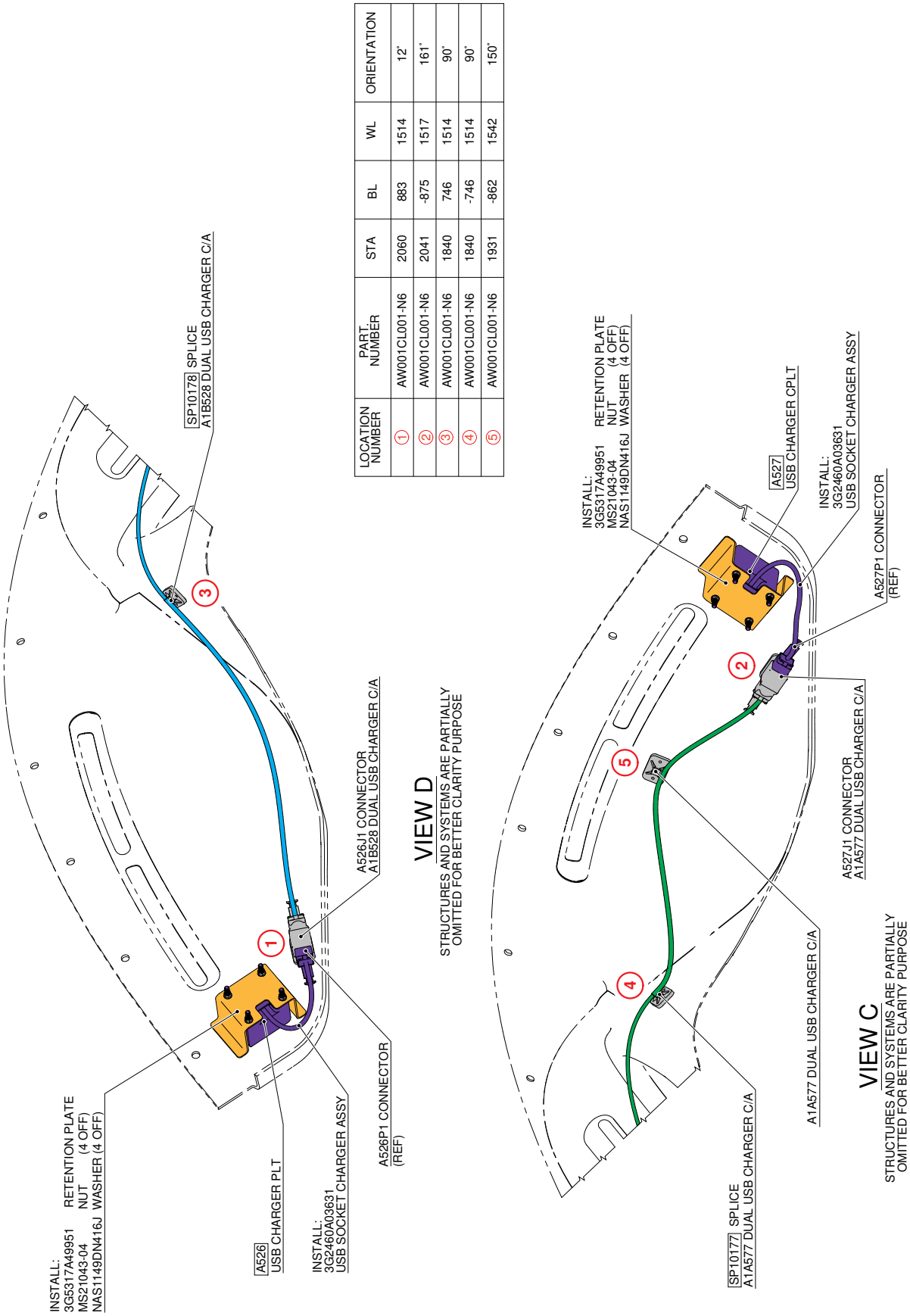
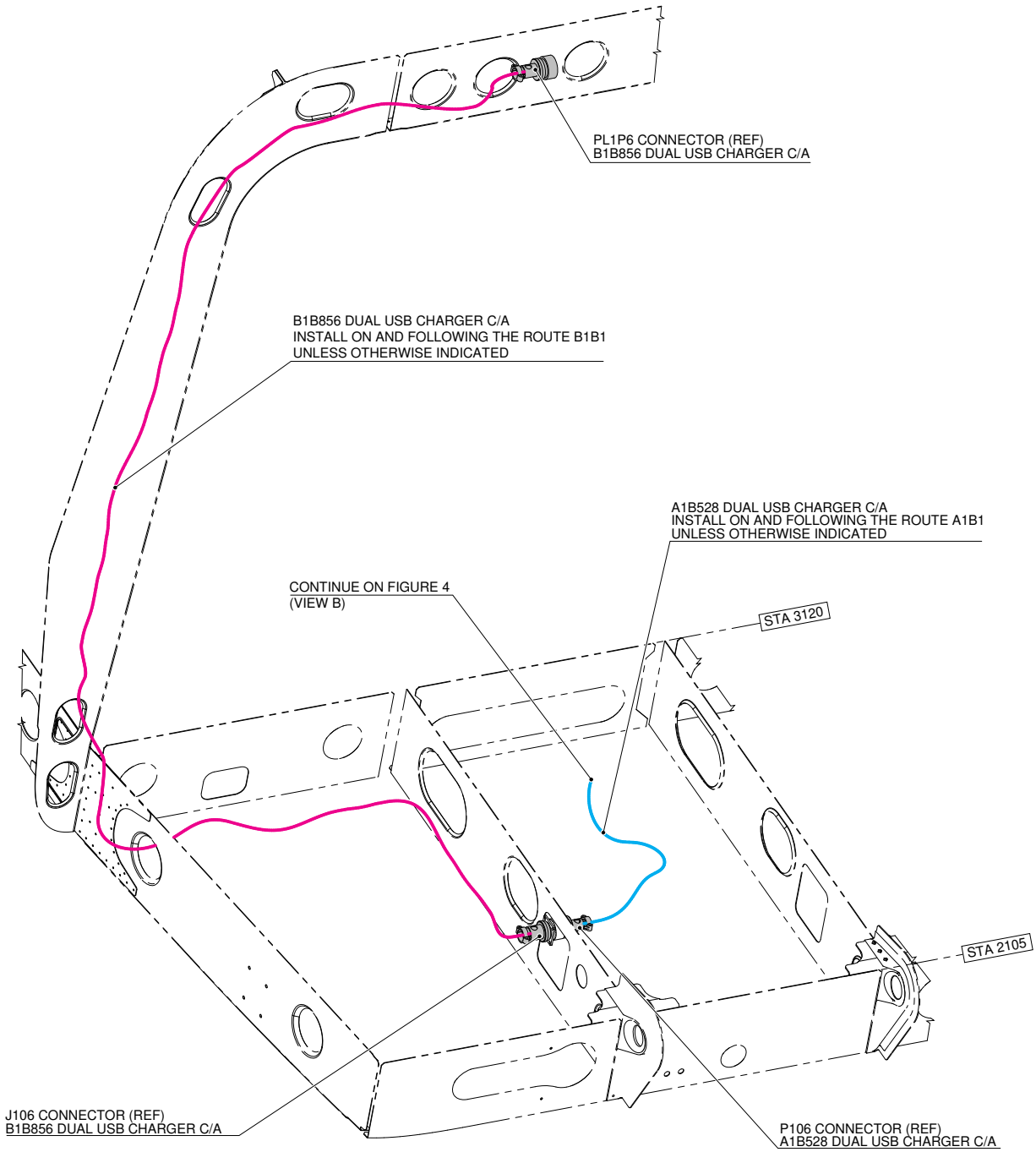

UP
IN BOARD
FWD
C
D
TB121P1 CONNECTOR (REF)
A1A577 DUAL USB CHARGER C/A
A1A577 DUAL USB CHARGER C/A
INSTALL ON AND FOLLOWING THE ROUTE A1A1
UNLESS OTHERWISE INDICATED
CONTINUE ON FIGURE 3
(VIEW A)
SP10179
VIEW B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
CONTINUE ON FIGURE 6
(VIEW E)
TB126P1 CONNECTOR (REF)
A1B528 DUAL USB CHARGER C/A
A1B528 DUAL USB CHARGER C/A
INSTALL ON AND FOLLOWING THE ROUTE A1B1
UNLESS OTHERWISE INDICATED
CONTINUE ON FIGURE 3
(VIEW A)

Figure 4



LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
①	AW001CL001-N6	2060	883	1514	12°
②	AW001CL001-N6	2041	-875	1517	161°
③	AW001CL001-N6	1840	746	1514	90°
④	AW001CL001-N6	1840	-746	1514	90°
⑤	AW001CL001-N6	1931	-862	1542	150°

Figure 5



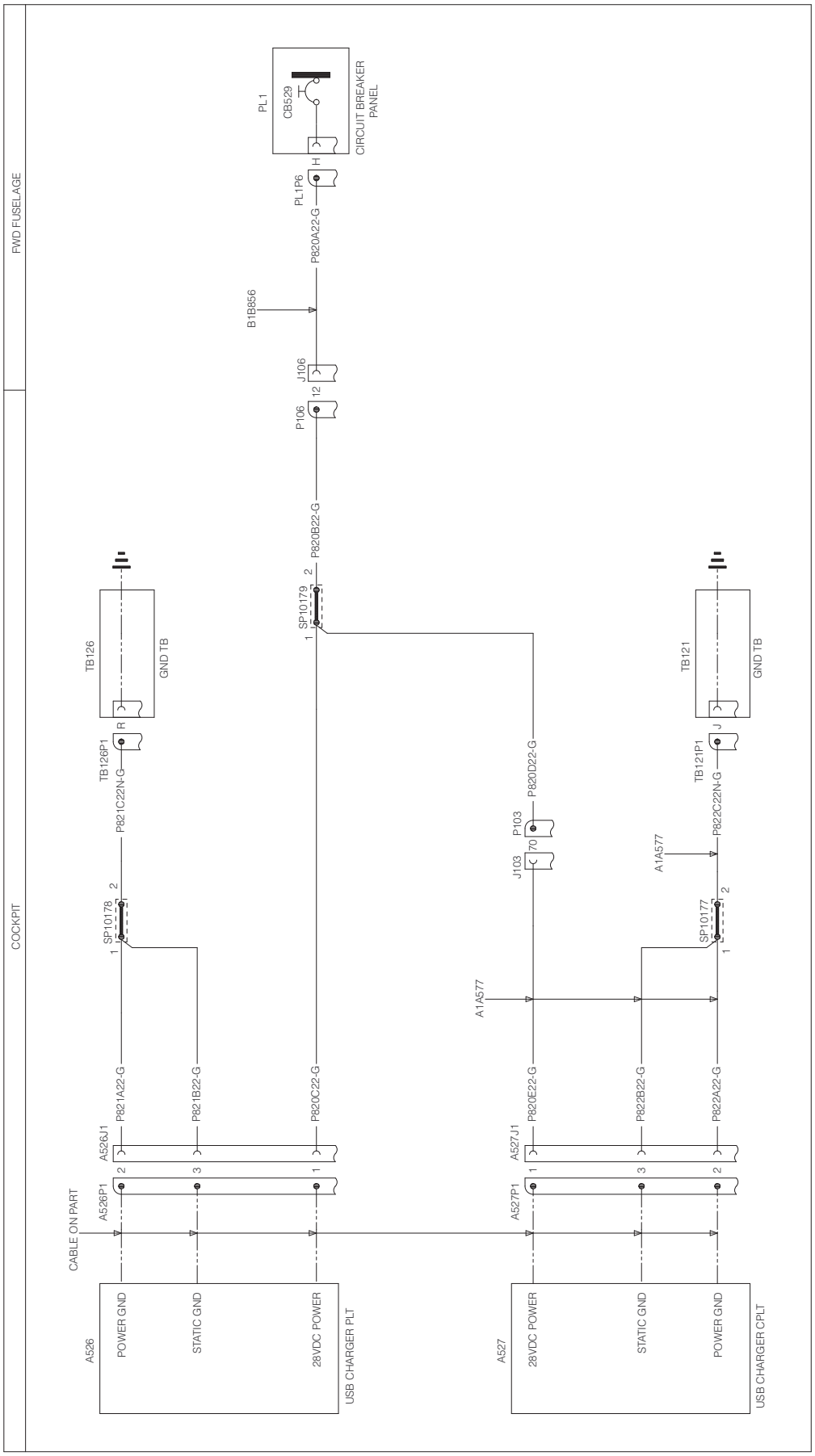
VIEW E

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 6

3G2460W07211

WIRING DIAGRAM DUAL USB CHARGER



FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A1B528 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED

Figure 7

ANNEX A

DUAL USB CHARGER ELECTRICAL INSTALLATION

P/N 3G2460A03711

ACCEPTANCE TEST PROCEDURE

1.1 TEST PREREQUISITES AND SAFETY PROVISION

1.	Visually verify the proper installation of all the components. Check the correct mechanical installation and fixing; Check the Electrical wires installation; Check that all the connectors are properly plugged and fastened. Use the Figures 1 thru 7 as reference documents.	☐
2.	Verify that the Primus Epic S/W 4.8 or following release is installed.	☐
3.	During the test with helicopter electrically powered, the “IGN #1/2” and “START #1/2” breakers shall be pulled out.	☐

1.2 TEST EQUIPMENT

DC External Power Bench (28 VDC).

DC Voltmeter (range 0-32 VDC).

NOTE: INSTRUMENT PRECISION +/- 2% MIN.

1.3 ELECTRICAL SETTINGS

1.	Verify that all the Electrical Power Distribution System Circuit Breakers are pushed in.	☐
2.	Verify that all the Avionic Devices Circuit Breakers are pushed in.	☐
3.	The helicopter external power port shall be connected to the External Power Bench set to 28 VDC output. Power up the External Power Bench before starting with the test procedure.	☐

1.4 SYSTEM TEST PROCEDURE

1.	Pull out CB529 circuit breaker.	☐
2.	Disconnect A526J1 and A527J1 connectors.	☐
3.	Push in the CB529 circuit breaker.	☐
4.	Verify the grounding of the pin: A526J1-2,3 and A527J1-2,3.	☐
5.	Verify the 28VDC signal between the pins A526J1 Pin 1(+) and A526J1 Pin 2(-).	☐
6.	Verify the 28VDC signal between the pins A527J1 Pin 1(+) and A527J1 Pin 2(-).	☐
7.	Pull out CB529 circuit breaker.	☐

8.	Reconnect A526J1 and A527J1 connectors.	☐
9.	Push in the CB529 circuit breaker.	☐
10.	Verify the Grounding of the output pins Pin 4(-) of USB A526 and A527 connectors.	☐
11.	Verify the 5 VDC signal between the output pins[1] A526 Pin 1(+) and A526 Pin 4(-).	☐
12.	Verify the 2 VDC signal between the output pins A526 Pin 2(+) and A526 Pin 4(-).	☐
13.	Verify the 2.7 VDC signal between the output pins A526 Pin 3(+) and A526 Pin 4(-).	☐
14.	Verify the 5 VDC signal between the output pins A527 Pin 1(+) and A527 Pin 4(-).	☐
15.	Verify the 2 VDC signal between the output pins A527 Pin 2(+) and A527 Pin 4(-).	☐
16.	Verify the 2.7 VDC signal between the output pins A527 Pin 3(+) and A527 Pin 4(-).	☐

[1] For output pins, refer to the Figure 1.

Figure 1 – USB Utility Sockets pin out

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.