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° 189-307

DATE: March 21, 2024

REV. : /

TITLE

ATA 23 - KIT RADIO U/VHF INSTALLATION

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

Part I

All AW189 helicopters S/N 49054 and from S/N 49064 to S/N 49067.

Part II

All AW189 helicopters S/N 49054, from S/N 49064 to S/N 49067 and from S/N 49073 to S/N 49075.

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 installation of the kit “radio V/UHF AM/FM TRA 6036” P/N 8G2310F01511.
LH issued this SB for the following reason:

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

E. DESCRIPTION

The radio TRA 6036 is a multi-band radio system designed to operate in a frequency range from aeronautical VHF band to UHF band.

Part I of this Service Bulletin gives information on how to perform the V/UHF AM/FM 6036 complete provision P/N 8G2310A04811 which consists in the structural provision P/N 8G5310A37411, the cable assy installation P/N 8G2310A11711 and the support installation P/N 8G2310A17311.

Part II of this Service Bulletin gives information on how to perform the V/UHF AM/FM TRA 6036 equipment installation P/N 8G2310A11811.

F. APPROVAL

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 the following MMH are deemed necessary.

Part I: approximately one hundred and forty (140);

Part II: approximately twenty (20).

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

PART I

WEIGHT (kg)	7,9	
	ARM (mm)	**MOMENT (kg·mm)**
LONGITUDINAL BALANCE	6049	47935
LATERAL BALANCE	112	891

PART II

WEIGHT (kg)	22,3	
	ARM (mm)	**MOMENT (kg·mm)**
LONGITUDINAL BALANCE	6587	147157
LATERAL BALANCE	23	516

I. REFERENCES

I.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	I, II
DM02	89-A-06-41-00-00A-010A-A	Access doors and panels general data	I, II
DM03	89-A-11-00-01-00A-720A-A	Decal install procedure	I, II
DM04	89-A-11-00-01-00A-520A-A	Decal remove procedure	I, II

DATA MODULE		DESCRIPTION	PART
DM05	89-A-24-81-00-05A-752A-A	SSEPMS - Personality modules (PMs) – Data loading	II
DM06	89-A-46-21-00-00A-750A-A	Aircraft mission management system load software procedure	II
DM07	89-A-46-31-00-00A-750B-A	Cockpit display system load software procedure	II

Following Data Modules refer to CSPP:

DATA MODULE		DESCRIPTION	PART
DM08	CSPP-A-20-10-13-00A-622A-D	Electrical contacts - Crimp	I
DM09	CSPP-A-20-10-12-02A-920A-D	Bonded studs replacement	I

I.2 ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMMC	Aircraft Mission Management Computer
AMP	Aircraft Maintenance Publication
AR	As Required
ATA	Air Transport Association
ATP	Acceptance Test Procedure
C/A	Cable Assy
CB	Circuit Breaker
CDS	Cockpit Display System
CSPP	Common Standard Practices Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
ECDU	Electrical Control and Display Unit
GPS	Global Positioning System
IPD	Illustrated Parts Data
ITEP	Illustrated Tool and Equipment Publication
LH	Leonardo Helicopters
MMH	Maintenance Man Hours
N.A.	Not Applicable
P/N	Part Number
S/N	Serial Number
SB	Service Bulletin
TRA	Tail Rotor Actuator
UHF	Ultra High Frequency
VHF	Very High Frequency

I.3 ANNEX

Annex A AW189 TRA6036 Dual Radio ATP

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

Software to be updated:

AMMC option file P/N 8G4620AOXXXX;

CDS option file P/N 8G4630AOXXXX;

ECDU configuration file P/N 8G4620AC0XXX.

Option File P/N is depending upon helicopter configuration that can be different from the one reported in relevant helicopter “Commessa di Vendita”. Customer must contact Product Support Engineering (engineering.support.lhd@leonardo.com) to request the correct Option File at least three months in advance from the scheduled embodiment of this Service Bulletin.

SW DESCRIPTION	**S/N HELICOPTER** **P/N SW INSTALLED** **(COMPILED BY CUSTOMER)**	 **P/N SW TO BE ORDERED** **(COMPILED BY LEONARDO COMPANY)**
FCS LOADABLE SW		
AFDX CONFIG SWITCH		
AMMC DMG SW (if installed)		
AMMC OPSW		
AMMC OPTION FILE		
AMMC VAM SW		
CDS OPTION FILE		
DISPLAY UNIT SW		
DIMMER CONFIG FILE		
ECDU OP SW		
REPU CONFIG TABLE		
ICS SETTING FILE		

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

A.1 PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**8G2310F01511**		**KIT V/UHF AM/FM TRA 6036**	**REF**	**.**		-
2	**8G2310A04811**		**V/UHF AM/FM 6036 COMPLETE PROVISION**	**REF**	**..**		-
3	**8G5310A37411**		**V/UHF AM/FM TRA 6036 STR PROVS**	**REF**	**...**		-
4	8G2310A04951		Closure dishing	1	....		189-307L1
5	8G2310A06231		Blanking plate assy	1	....		189-307L1
6	8G2310A08051	8G2310A08051A	Ground plane	1	....		189-307L1
7	8G1152A00251		RH rear hydraulic label	1	....		189-307L1
8	8G5315A38051		Pedestal bracket electrical connector	1	....		189-307L1
9	A423A3C8		Nut plate	1	....		189-307L1
10	NAS1832-06-3		Insert	2	....		189-307L1
11	NAS1836-08-08		Insert	1	....		189-307L1
12	NAS1836-08-12		Insert	2	....		189-307L1
13	NAS1836-3-12		Insert	2	....		189-307L1
14	NAS1836-3-14		Insert	10	....		189-307L1
15	NAS1836-4-15		Insert	12	....		189-307L1
16	NAS1097AD3-5A		Rivet	0.1 kg	....		189-307L1
17	MS27039-4-06		Screw	8	....		189-307L1
18	A428A3C06		Screw	2	....		189-307L1
19	A428A3C08		Screw	4	....		189-307L1
20	A297A04TW01		Rivet blind	20	....		189-307L1
21	NAS1720C5L2P		Rivet	1	....		189-307L1
22	NAS1802-08-5		Screw	1	....		189-307L1
23	NAS1802-08-7		Screw	2	....		189-307L1
24	AW002FB-R		Receptacle	6	....		189-307L1
25	AW003TY0525A		Washer flat	2	....		189-307L1
26	A259A04-06		Setscrew	4	....		189-307L1
27	A407A3C2P		Nut plate	4	....		189-307L1
28	MS27039-1-05		Screw	2	....		189-307L1
29	MS27039-1-06		Screw	4	....		189-307L1
30	NAS1149D0332J		Washer	2	....		189-307L1
31	NAS1149D0332K		Washer	4	....		189-307L1
32	NAS1149D0416J		Washer	8	....		189-307L1
33	NAS1149DN816J		Washer	2	....		189-307L1
34	NAS1149DN832J		Washer	3	....		189-307L1
35	NAS1836-3-15		Insert	6	....		189-307L1
36	999-7000-07-104		Terminal	1	....		189-307L1
37	A601A09B0150	A601A9B15	Bonding cable assy	2	....		189-307L1
38	AS44445D150D		Cord assembly	1	....		189-307L1
39	A601A2B18		Bonding cable assy	1	....		189-307L1
40	8G2310A13151		Closure	1	....		189-307L1
41	8G2310A13251		Closure	1	....		189-307L1
42	8G2310A16031		Bracket assembly	1	....		189-307L1
43	8G2310A16231		Access cover assembly	1	....		189-307L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
44	8G2310A16451	8G2310A16451A	Bonding strip	1	....		189-307L1
45	8G2310A14151		Closure	1	....		189-307L1
46	8G2310A14051		Closure	1	....		189-307L1
47	8G2310A13951		Bracket	1	....		189-307L1
48	8G2310A13751		Bracket dummy connector	2	....		189-307L1
49	8G2310A13651		Pad	2	....		189-307L1
50	8G2310A13551		Pad	1	....		189-307L1
51	**8G2310A11711**		**V/UHF AM/FM TRA 6036 CABLE ASSY INSTL**	**REF**	**...**		-
52	8G9A22A39401	8G2310A11711A1R	V/UHF AM/FM TRA 6036 C/A (A2A394)	1	....		189-307L1
53	8G9A21A45401		V/UHF AM/FM TRA 6036 C/A (A1A454)	1	....		189-307L1
54	8G9A22B30901	8G2310A11711A2R	V/UHF AM/FM TRA 6036 C/A (A2B309)	1	....		189-307L1
55	8G9A21B42701		V/UHF AM/FM TRA 6036 C/A (A1B427)	1	....		189-307L1
56	8G9B21B51101	8G2310A11711A9R	V/UHF AM/FM TRA 6036 C/A (B1B511)	1	....		189-307L1
57	8G9B22B26801		V/UHF AM/FM TRA 6036 C/A (B2B268)	1	....		189-307L1
58	8G9B23B12701		V/UHF AM/FM TRA 6036 C/A (B3B127)	1	....		189-307L1
59	8G9B22A29901	8G2310A11711A14R	V/UHF AM/FM TRA 6036 C/A (B2A299)	1	....		189-307L1
60	8G9B23A10701		V/UHF AM/FM TRA 6036 C/A (B3A107)	1	....		189-307L1
61	8G9B22B26901	8G2310A11711A8R	V/UHF AM/FM TRA 6036 C/A (B2B269)	1	....		189-307L1
62	8G9B21B52201		V/UHF AM/FM TRA 6036 C/A (B1B522)	1	....		189-307L1
63	8G9C21A35001	8G2310A11711A15R	V/UHF AM/FM TRA 6036 C/A (C1A350)	1	....		189-307L1
64	8G9C22A20001		V/UHF AM/FM TRA 6036 C/A (C2A200)	1	....		189-307L1
65	8G9C21A34901		V/UHF AM/FM TRA 6036 C/A (C1A349)	1	....		189-307L1
66	8G9C21B31301	8G2310A11711A16R	V/UHF AM/FM TRA 6036 C/A (C1B313)	1	....		189-307L1
67	8G9C21B31201		V/UHF AM/FM TRA 6036 C/A (C1B312)	1	....		189-307L1
68	8G9C22B16701		V/UHF AM/FM TRA 6036 C/A (C2B167)	1	....		189-307L1
69	8G9C22B16801		V/UHF AM/FM TRA 6036 C/A (C2B168)	1	....		189-307L1
70	8G9B21A49301	8G9B21A49301A2R	V/UHF AM/FM TRA 6036 C/A (B1A493)	1	....		189-307L1
71	8G9B23A10801	8G9B23A10801A1R	V/UHF AM/FM TRA 6036 C/A (B3A108)	1	....		189-307L1
72	8G9B22A30401	8G9B22A30401A1R	V/UHF AM/FM TRA 6036 C/A (B2A304)	1	....		189-307L1
73	ED300J3004		Decal	2	....		189-307L1
74	ED300J2107		Decal	2	....		189-307L1
75	NAS1190E3P6AK		Screw	3	....		189-307L1
76	NAS1190E3P7AK		Screw	1	....		189-307L1
77	MS35489-52		Grommet rubber	1	....		189-307L1
78	MS21042-02		Nut	4	....		189-307L1
79	AW001CL002A-X1		Support	1	....		189-307L1
80	AW001CL001-N6		Support	21	....		189-307L1
81	A366A3E10C		Stud	2	....		189-307L1
82	NAS1802-04-7		Screw	4	....		189-307L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
83	NAS1802-04-8		Screw	8	....		189-307L1
84	NAS1802-06-5		Screw	2	....		189-307L1
85	A388A3E06C		Standoff	2	....		189-307L1
86	A388A3E10C		Standoff	2	....		189-307L1
87	A388A3E18C75		Standoff	1	....		189-307L1
88	NAS620-2		Washer	8	....		189-307L1
89	AW001CL005A01-X1		Support	2	....		189-307L1
90	AW001CL006AT01-X1		Support	1	....		189-307L1
91	ED300J257		Decal	2	....		189-307L1
92	NAS620-4L		Washer	4	....		189-307L1
93	NAS1190E3P19AK		Screw	1	....		189-307L1
94	AW001CB03H		Clamp	5	....		189-307L1
95	AW001CB04H		Clamp	4	....		189-307L1
96	AW001CB06H		Clamp	5	....		189-307L1
97	A631A03B		Spacers for cable bundles	1	....		189-307L1
98	A366A3E08C		Stud	1	....		189-307L1
99	A366A3E08C75		Stud	1	....		189-307L1
100	A388A3E12C75		Stud	1	....		189-307L1
101	M85049/95-12A-A		Connector mounting device	1	....		189-307L1
102	M85049/95-20A-A		Connector mounting device	1	....		189-307L1
103	M85049/95-22A-A		Connector mounting device	1	....		189-307L1
104	MS21043-3		Nut	4	....		189-307L1
105	NAS1149D0332J		Washer	10	....		189-307L1
106	NAS1149DN416J		Washer	8	....		189-307L1
107	NAS1149DN616J		Washer	6	....		189-307L1
108	NAS1190E3P5AK		Screw	1	....		189-307L1
109	MS35206-204		Screw	4	....		189-307L1
110	ED300J277		Decal	2	....		189-307L1
111	NAS43DD3-44N		Spacer	1	....		189-307L1
112	A631A01B		Spacer	4	....		189-307L1
113	B800ACN1		Cover	2	....		189-307L1
114	ED300GSFILLGUN		Decal	1	....		189-307L1
115	618953002		Conductive dust cap	2	....		189-307L1
116	A366A3E16C		Stud	1	....		189-307L1
117	A631A02A		Spacers	1	....		189-307L1
118	AW002FT102		Grommet rubber	2	....		189-307L1
119	ED300J224		Decal	2	....		189-307L1
120	ED300TB308		Decal	1	....		189-307L1
121	M85049/95-25A-A		Connector mounting device flange	1	....		189-307L1
122	MS21042L06		Nut	36	....		189-307L1
123	NAS1149DN632J		Washer	36	....		189-307L1
124	NAS1801-06-10		Screw	36	....		189-307L1
125	NAS1802-06-7		Screw	4	....		189-307L1
126	NAS43DD3-25N		Spacer	1	....		189-307L1
127	M39029/56-351		Electrical contact	38	....		189-307L1
128	M39029/58-360		Electrical contact	11	....		189-307L1
129	M39029/58-363		Electrical contact	38	....		189-307L1
130	M39029/56-352		Electrical contact	1	....		189-307L1
131	M39029/56-348		Electrical contact	21	....		189-307L1
132	M39029/5-115		Electrical contact	12	....		189-307L1
133	M39029/58-364		Electrical contact	4	....		189-307L1
134	A523A-A05		Electrical contact	15	....		189-307L1
135	M39029/5-115		Electrical contact	12	....		189-307L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
136	618200		Electrical contact	67	....		189-307L1
137	**8G2310A17311**		**V/UHF SUPPORT INSTL**	**REF**	**...**		-
138	**8G2310A17711**		**V/UHF REMOVABLE PARTS**	**REF**	**....**		-
139	**8G2310A03431**		**SUPPORT ASSY**	**REF**	**.....**		-
140	**8G2310A04031**		**SUPPORT BONDED ASSY**	**REF**	**.....**		-
141	8G2310A03551		Bonding foil	1	.....	(1)	189-307L1
142	AW001GH000B1		Conductive gasket	1	.....	(1)	189-307L1
143	A298A04TW02		Rivet blind titanium	1	.....	(1)	189-307L1
144	A407A3C2P		Nut plate	6	.....	(1)	189-307L1
145	999-7000-07-104		Terminal	1	.....	(1)	189-307L1
146	8G2310A03951		Bonding strap	4	.....	(1)	189-307L1
147	8G2310A06231		Blanking plate assy	1	.....	(1)	189-307L1
148	A428A3C06		Screw	10	.....	(1)	189-307L1
149	A428A3C08		Screw	6	.....	(1)	189-307L1
150	**8G2310A17411**		**V/UHF SUPPORT STRUCT PROVS**	**REF**	**....**		**-**
151	NAS1832C3-3		Insert	10	.....	(1)	189-307L1
152	NAS1720H5L3A		Rivet	2	.....	(1)	189-307L1
153	A297A05TW04		Rivet blind	2	.....	(1)	189-307L1
154	8G2310A13051	8G2310A13051A	Bonding strap	1	.....	(1)	189-307L1
155	**8G2310P00811**		**MNL V/UHF AM/FM TRA 6036 RETROMOD**	**REF**	**...**		**-**
156	A583A2418C		Stowage cap	2	….		189-307L1

PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
157	**8G2310F01511**		**KIT V/UHF AM/FM TRA 6036**	**REF**	**.**		**-**
158	**8G2310A11811**		**V/UHF AM/FM TRA 6036 EQUIPMENT INSTL**	**REF**	**..**		**-**
159	62139782AA		Mounting tray (model MTR6030D01)	2	...		189-307L2
160	12-190-160		V/UHF tunable antenna	2	...		189-307L2
161	67149850AA		Transceiver TRA6036	2	...		189-307L2
162	NAS1802-08-7		Screw	2	...		189-307L2
163	NAS1802-3-12		Screw	2	...		189-307L2
164	NAS1802-3-13		Screw	10	...		189-307L2
165	NAS1802-3-8		Screw	8	...		189-307L2
166	NAS1802-4-7		Screw	12	...		189-307L2
167	ED300E202		Decal	1	...		189-307L2
168	ED300E203		Decal	1	...		189-307L2
169	AW003TY0525A		Washer	2	...		189-307L2
170	55-06-VUHF1		Decal	2	...		189-307L2
171	55-06-VUHF2		Decal	2	...		189-307L2
172	NAS1149D0316J		Washer	20	...		189-307L2
173	NAS1149D0332J		Washer	8	...		189-307L2
174	NAS1149D0416J		Washer	12	...		189-307L2
175	NAS1149DN816J		Washer	2	...		189-307L2
176	NAS623-3-2		Screw	8	...		189-307L2
177	ED300A357		Decal	1	...		189-307L2
178	ED300A355		Decal	1	...		189-307L2
179	ED300A356		Decal	1	...		189-307L2
180	ED300A354		Decal	1	...		189-307L2
181	AW001GH026A		Conductive gasket	2	...		189-307L2
182	A601A09B0150	A601A9B15	Bonding cable assy	2	...		189-307L2

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
183	7-163PIN161-0215		LCU	2	...		189-307L2
184	100-604076-202		GPS type CMA-6024 HQ	2	...		189-307L2
185	8G4620AOXXXX		AMMC Option File	1	.	(2) (3) (4)	-
186	8G4630AOXXXX		CDS Option File	1	.	(2) (3) (4)	-
187	8G4620AC0XXX		ECDU Configuration File	1	.	(2) (3) (4)	-

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

Refer also to Annex A for the spares materials required to comply with this Service Bulletin.

A.2 CONSUMABLES

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

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
188	AWMS05-001, Type I, Class C, Grade 1 Code n°999999999000009854 or 999999999000009231	Sealing compound MC-780, Class C-2 (C465)	AR	(5)	I
189	AWMS05-001, Type I, Class B, Grade 2 Code n°999999999000005965	Sealing compound MC-780, Class B-1 (C465)	AR	(5)	I
190	AWMS05-001, Type I, Class B, Grade 1 Code n°999999999000015245	Sealing compound MC-780, Class B-2 (C465)	AR	(5)	I
191	Code n°999999999000017301	Corrosion inhibitor ARDROX AV 40 (C551)	AR	(5)	I
192	MIL-PRF-16173 Grade 1 & 2 Code n°999999999000008482	Corrosion inhibitor Rust Guard (C661)	AR	(5)	I
193	AWMS28-002 Type I Class I Code n°999999999000011095	Primer Aerowave 2003 (C204)	AR	(5)	I
194	MMM-A-132, Type 2, Class II Code n°900000581	Adhesive EA9309.3NA AERO (C021)	AR	(5)	I
195	199-05-002 Type 2, Class II Code n°900000579	Adhesive EA934NA (C054)	AR	(5)	I
196	Code n°999999999000005462	Sealant Thixoflex Gray TG8498-50 (C347)	AR	(5)	I
197	RMTL423419 Code n°999999999000008841	Conductive adhesive PR1764 Class B2 (C240)	AR	(5)	I
198	EN6049-00X-XX-5	Nomex	AR	(5) (6)	I
199	Commercial	Tape 900004953	AR	(5)	I
200	BM110P0009 Code n°999999999000017311	Jointing compound	AR	(5)	I
201	MIL-PRF-16173E, Grade 1 Code n°999999999000000191	Corrosion inhibitor Tectyl 891D (C002)	AR	(5)	I
202	MIL-C-81309 Type III Code n°501725208 or 900005006	Ardrox 3205 (C396)	AR	(5)	I
203	MIL-PRF-16173, Class I, Grade 4 Code n°999999999000000190	Preventive compound Tectyl 846	AR	(5)	I
204	DTD 900AA/4488A Code n°900001846	Corrosion preventive compound JC5A (C001)	AR	(5)	I
205	MS20995C20	Safety wire (C013)	AR	(5)	I, II

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

Refer also to Annex A for the consumable materials required to comply with this Service Bulletin.

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
189-307L1	1		Part I
8G4620AC0XXX	1	(2) (3) (4)	
189-307L2	1		Part II
8G4620AOXXXX	1	(2) (3) (4)	
8G4630AOXXXX	1	(2) (3) (4)	

NOTES

(1) Item to be ordered only if kit P/N 8G9900F00111 is not installed on the helicopter.

(2) Option File and Configuration File P/Ns is depending upon helicopter configuration that can be different from the one reported in relevant helicopter "Commessa di Vendita" Customers must contact Product Support Engineering (engineering.support.lhd@leonardo.com) to request the correct Option File at least three months in advance from the scheduled application of this Service Bulletin.

(3) This software will not be supplied; as specified by Information Letter AW189-19- 019, it will be available for download, along with relevant certification document, in "My Software" sub-section of Leonardo Customer Portal website https://customerportal.leonardocompany.com.

(4) Refer to software accomplishment summary paragraph.

(5) Item to procured as local supply.

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

B. SPECIAL TOOLS

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

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
206	8G5310A37411A005A	Drilling template	1	-	I
207	8G5310A37411A005B	Drilling template	1	-	I
208	8G5310A37411A005C	Drilling template	1	-	I
209	8G5310A37411A005D	Drilling template	1	-	I
210	8G5310A37411A005E	Drilling template	1	-	I
211	8G5310A37411A005F	Drilling template	1	-	I
212	8G5310A37411A005G	Drilling template	1	-	I
213	8G5310A37411A005H	Drilling template	1	-	I
214	8G5310A37411A005I	Drilling template	1	-	I
215	8G5310A16411A005M	Drilling template	1	-	I

Refer also to ITEP for the special tools required to comply with the AMP DM 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) All lengths are in mm.

PART I

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 thru 19, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform the complete provision P/N 8G2310A04811 as described in the following procedure:

NOTE

Unless otherwise specified and except for electrical bonding areas, for external areas in low/medium indirect/direct exposure zones, perform the installation of structural brackets and vendor components as follows:

- Apply a layer of sealing compound MC-780, Class C-2 (C465) on all faying surfaces.
- Wet assemble fixing fasteners using sealing compound MC-780, Class C-2 (C465) applied under the head and on the shank of fasteners. (Not applicable to fasteners installed on click bonds).
- Apply a fillet of sealing compound MC-780, Class B-2 (C465) all around the mating surfaces boundary.

NOTE

Unless otherwise specified and except for electrical bonding areas, for internal areas in low/medium indirect/direct exposure zones, perform the installation of riveted structural parts and riveted vendor components as follows:

- Apply a layer of sealing compound MC-780, Class C-2 (C465) on all faying surfaces.
- Wet assemble fixing fasteners using sealing compound MC-780, Class C-2 (C465).

NOTE

Unless otherwise specified and except for electrical bonding areas, for internal areas in low/medium indirect/direct exposure zones, perform the installation of bolted structural parts and bolted vendor components as follow:

- Apply a layer of jointing compound BM110P0009 on all faying surfaces.
- Wet assemble fixing fasteners using jointing compound BM110P0009 applied under the

head and on the shank of fasteners.
(Not applicable to fasteners installed on click bonds).

NOTE

Unless otherwise specified and except for electrical bonding areas, for external areas in low/medium indirect/direct exposure zones, protect all removable fasteners that are not fully coated with polyurethane paint, using corrosion inhibitor Tectyl 891D (C002). (Not applicable to vendor parts).

NOTE

When placing tool P/N 8G5310A37411A005I it may be necessary to temporarily remove the existing rivet on the frame. In this case, after having removed the tool, reinstall rivet P/N A298A04TW03.

2.1 With reference to Figures 1 thru 9, perform the structural provision P/N 8G5310A37411 as described in the following procedure:

2.1.1 With reference to Figure 1, remove the panel P/N 8G5315A20931, the panel P/N 8G5315A02532 and the panel P/N 8G5315A02232. Retain hardware for later reuse.

2.1.2 With reference to Figure 7 View E, if present, remove the bracket P/N 8G5315A31231 from the rear lower panel P/N 8G5340A24331.

2.1.3 With reference to Figure 3 View C, drill n°1 hole Ø 34.93 ÷ 35.18 thru the upper RH longeron P/N 8G5340A10751 according to dimensions shown.

2.1.4 With reference to Figure 2 View A (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005H on the RH centre frame P/N 8G5340A10151 and countermark n°18 hole positions and the cut-out profile.

2.1.5 With reference to Figure 2 View A, drill n°6 holes Ø 12.45 ÷ 12.95 and n°12 rivet holes thru the RH centre frame P/N 8G5340A10151.

2.1.6 With reference to Figure 2 View A, perform the cut-out thru the RH centre frame P/N 8G5340A10151.

2.1.7 With reference to Figure 2 View A, install n°6 receptacles P/N AW002FB-R on the RH centre frame P/N 8G5340A10151 by means of n°12 rivets P/N NAS1097AD3-5A.

2.1.8 With reference to Figure 2 View B (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005I on the structure, countermark n°1 insert hole position and the profile of bonding strip P/N 8G2310A16451.

2.1.9 In accordance with AMP DM DM0389-A-11-00-01-00A-520A-A and with reference to Figure 3 View B, remove the RH rear hydraulic label P/N 8G1152A00251 from the structure.

2.1.10 With reference to Figure 3 View B, remove the protective layer from the marked structure and prepare the surface to assure a good ground contact.

2.1.11 With reference to Figure 3 View B, drill the insert hole Ø 11.48 ÷ 11.61 thru the structure.

2.1.12 With reference to Figure 3 View B, install the insert P/N NAS1836-08-08 on the structure by means of adhesive EA934NA (C054).

2.1.13 With reference to Figure 3 View B, temporarily locate the bonding strip P/N 8G2310A16451 on the structure and countermark the insert hole position on the bonding strip P/N 8G2310A16451.

2.1.14 With reference to Figure 3 View B, drill the hole Ø 5.326 ÷ 5.446 thru the bonding strip P/N 8G2310A16451.

2.1.15 With reference to Figure 3 View B, install the bonding strip P/N 8G2310A16451 on the structure by means of adhesive EA 9309.3NA Aero (C021). On the indicated area only, bond the strip by means of conductive adhesive PR1764 Class B2 (C240). Seal around the entire perimeter by means of sealant MC-780 Class B-2 (C465) and apply two coats of primer Aerowave 2003 (C204) on the surface.

NOTE

Before positioning the drilling template, remove n°5 standoffs, n°2 bond points and the CPA GPS splitter in the affected area. Reinstall them once the drilling template has been removed.

2.1.16 With reference to Figure 4 View D, temporarily locate the drilling template P/N 8G5310A37411A005G on the structure and countermark n°2 insert hole positions.

2.1.17 With reference to Figure 4 View D, drill n°2 insert holes Ø 14.25 ÷ 14.38 thru the structure. Remove the protective layer from the structure according to dimensions shown.

2.1.18 With reference to Figure 4 View D, install n°2 inserts P/N NAS1832-06-3 on the structure by means of adhesive EA934NA (C054).

NOTE

Perform the following steps from 2.1.19 thru 2.1.38 on a workbench.

2.1.19 With reference to Figure 4 PANEL 8G5315A20931 (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005C on the panel P/N 8G5315A20931 and countermark n°4 insert hole positions.

2.1.20 With reference to Figure 4 PANEL 8G5315A20931 (WITH TOOL), drill n°4 insert holes Ø 11.48 ÷ 11.61 thru the panel P/N 8G5315A20931.

2.1.21 With reference to Figure 4 PANEL 8G5315A20931 (WITH TOOL), install n°4 inserts P/N NAS1836-3-15 on the panel P/N 8G5315A20931 by means of adhesive EA934NA (C054). Prepare the surface to assure a good ground contact.

2.1.22 With reference to Figure 5 PANEL 8G5315A02532 (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005A on the panel P/N 8G5315A02532 and countermark n°11 insert hole positions.

2.1.23 With reference to Figure 5 PANEL 8G5315A02532 (WITH TOOL), drill n°6 insert holes Ø 12.67 ÷ 12.80 and n°5 insert holes Ø 11.48 ÷ 11.61 thru the panel P/N 8G5315A02532.

2.1.24 With reference to Figure 5 PANEL 8G5315A02532 (WITH TOOL), install n°6 inserts P/N NAS1836-4-15, n°4 inserts P/N NAS1836-3-14 and n°1 insert P/N NAS1836-08-12 on the panel P/N 8G5315A02532 by means of adhesive EA934NA (C054). Prepare the surface to assure a good ground contact.

NOTE

Perform the following steps from 2.1.25 thru 2.1.27 only if Part II is not intended to be embodied immediately after Part I.

2.1.25 With reference to Figure 5 PANEL 8G5315A02532, install the backet dummy connector P/N 8G2310A13751 and the bonding cable assy P/N A601A09B0150 on the panel P/N 8G5315A02532 by means of n°4 washers P/N NAS1149D0416J, n°4 screws P/N MS27039-4-06, n°1 washer P/N NAS1149DN816J, n°1 washer P/N AW003TY0525A and n°1 screw P/N NAS1802-08-7.

2.1.26 With reference to Figure 5 PANEL 8G5315A02532, install n°4 setscrew P/N A259A04-06 on the panel P/N 8G5315A02532.

2.1.27 With reference to Figure 5 PANEL 8G5315A02532, perform the bonding test between point TP9 and point TP10. The maximum value must not exceed 2.5 mmΩ.

2.1.28 With reference to Figure 6 PANEL 8G5315A02232, install the pad P/N 8G2310A13551 and n°2 pad P/N 8G2310A13651 on the panel P/N 8G5315A02232 by means of adhesive EA9309.3NA AERO (C021).

2.1.29 With reference to Figure 6 PANEL 8G5315A02232 (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005B on the panel P/N 8G5315A02232 and countermark n°11 insert hole positions.

2.1.30 With reference to Figure 6 PANEL 8G5315A02232 (WITH TOOL), drill n°6 insert holes Ø 12.67 ÷ 12.80 and n°5 insert holes Ø 11.48 ÷ 11.61 thru the panel P/N 8G5315A02232.

2.1.31 With reference to Figure 6 PANEL 8G5315A02232 (WITH TOOL), install n°6 inserts P/N NAS1836-4-15, n°4 inserts P/N NAS1836-3-14 and n°1 insert P/N NAS1836-08-12 on the panel P/N 8G5315A02232 by means of adhesive EA934NA (C054). Prepare the surface to assure a good ground contact.

NOTE

Perform the following steps from 2.1.32 thru 2.1.34 only if Part II is not intended to be embodied immediately after Part I.

2.1.32 With reference to Figure 6 PANEL 8G5315A02232, install the backet dummy connector P/N 8G2310A13751 and the bonding cable assy P/N A601A09B0150 on the panel P/N 8G5315A02232 by means of n°4 washers P/N NAS1149D0416J, n°4 screws P/N MS27039-4-06, n°1 washer P/N NAS1149DN816J, n°1 washer P/N AW003TY0525A and n°1 screw P/N NAS1802-08-7.

2.1.33 With reference to Figure 6 PANEL 8G5315A02232, install n°2 setscrew P/N A259A04-06 on the panel P/N 8G5315A02532.

2.1.34 With reference to Figure 6 PANEL 8G5315A02232, perform the bonding test between point TP7 and point TP8. The maximum value must not exceed 2.5 mmΩ.

2.1.35 With reference to Figure 7 View A, drill rivet hole on the bracket assembly P/N 8G2310A16031 according to dimensions shown.

2.1.36 With reference to Figure 7 View A, install the bonding cable assy P/N A601A2B18 on the bracket assembly P/N 8G2310A16031 by means of rivet P/N NAS1720C5L2P.

2.1.37 With reference to Figure 7 View E, drill n°2 rivet holes on the pedestal bracket electrical connector P/N 8G5315A38051 according to dimensions shown.

2.1.38 With reference to Figure 7 View E, install the nut plate P/N A423A3C8 on the pedestal bracket electrical connector P/N 8G5315A38051 by means of n°2 rivets P/N A297A04TW01.

2.1.39 With reference to Figure 7 View K, temporarily locate the drilling template tool P/N 8G5310A16411A005M on the rear lower panel P/N 8G5340A24331 in accordance with existing holes and countermark n°2 insert hole positions.

2.1.40 With reference to Figure 7 View K, drill n°2 insert holes Ø 11.48 ÷ 11.61 thru the rear lower panel P/N 8G5340A24331.

2.1.41 With reference to Figure 7 View K, install n°2 inserts P/N NAS1836-3-14 on the rear lower panel P/N 8G5340A24331 by means of adhesive EA934NA (C054).

2.1.42 With reference to Figure 7 View E, install the bracket electrical connector P/N 8G5315A38051 on the rear lower panel P/N 8G5340A24331 by means of n°4 washers P/N NAS1149D0332K and n°4 screws P/N MS27039-1-06. Prepare the surface to assure a good ground contact.

2.1.43 With reference to Figure 7 View E, perform the bonding test between point TP1 and point TP2. The maximum value must not exceed 2.5 mmΩ.

2.1.44 With reference to Figure 7 View A, install the bracket assembly P/N 8G2310A16031 on the RH centre frame P/N 8G5340A10151 by means of adhesive EA9309.3NA AERO (C021).

2.1.45

NOTE

For S/N 49054 only, washer P/N NAS1149DN949J, or an equivalent washer manufactured onsite, can be used instead of washer P/N NAS1149DN832J.

2.1.46 With reference to Figure 7 View A, install the bonding cable assy P/N A601A2B18 on the bonding strip P/N 8G2310A16451 by means of n°2 washers P/N NAS1149DN832J and the screw P/N NAS1802-08-5.

2.1.47 With reference to Figure 3 View B, perform the bonding test between point TP3 and point TP4, and point TP5 and point TP6. The maximum value must not exceed 2.5 mmΩ.

2.1.48 With reference to Figure 8 View F (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005E on the structure and countermark n°2 hole positions and the cut-out profile.

2.1.49 With reference to Figure 8 View F (WITH TOOL), drill n°2 insert holes Ø 11.48 ÷ 11.61 thru the structure. Remove the protective layer from the marked structure and prepare the surface to assure a good ground contact.

2.1.50 With reference to Figure 8 View F (WITH TOOL), install n°2 inserts P/N NAS1836-3-12 on the structure by means of adhesive EA934NA (C054).

2.1.51 With reference to Figure 8 View F, perform the cut-out of the green area of the structure according to dimensions shown.

2.1.52 With reference to Figure 8 View F, perform the cut-out of the blue area of the structure according to dimensions shown. Remove the honeycomb up to the panel surface.

2.1.53 With reference to Figure 8 View F, perform the cut-out of the red area of the structure according to dimensions shown. Fill the opened cells of the honeycomb with the filler K2 fiber bubbles at 30% with the adhesive EA9309.3NA AERO (C021).

2.1.54 With reference to Figure 8 View F, install the closure dishing P/N 8G2310A04951 on the structure by means of adhesive EA9309.3NA AERO (C021).

2.1.55 With reference to Figure 9 View G (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005D on the fuselage and countermark n°6 hole positions.

2.1.56 With reference to Figure 9 View G (WITH TOOL), drill n°2 blind holes Ø 11.48 ÷ 11.61 and n°4 holes Ø 6.20 ÷ 6.35 thru the fuselage. Remove

the protective layer from the marked structure and prepare the surface to assure a good ground contact.

2.1.57 With reference to Figure 9 View G, install n°2 inserts P/N NAS1836-3-15 on the fuselage by means of adhesive EA934NA (C054).

2.1.58 With reference to Figure 8 View F, install n°4 nut plates P/N A407A3C2P on the closure dishing P/N 8G2310A04951 by means of adhesive EA9309.3NA AERO (C021).

2.1.59 With reference to Figure 8 View F, drill the rivet hole on the closure dishing P/N 8G2310A04951 according to dimensions shown. The maximum depth allowed is 10 mm.

2.1.60 With reference to Figure 8 View F, install the terminal P/N 999-7000-07-104 by means rivet P/N A297A04TW01.

2.1.61 With reference to Figure 2 View A (WITH TOOL) and Figure 9 View A (WITH COVER), install the cord assembly P/N AS44445D150D on the access cover assembly P/N 8G2310A16231 and on the bracket assembly P/N 8G2310A16031.

NOTE

Perform the following steps 2.1.62 and 2.1.63 only if Part II is not intended to be embodied immediately after Part I.

2.1.62 With reference to Figure 9 View g, install the blanking plate assy P/N 8G2310A04151 by means of n°4 screws P/N A428A3C08 and n°2 screws P/N A428A3C06. Apply adhesive EA934NA (C054).

2.1.63 With reference to Figure 9 View G, install the access cover assembly P/N 8G2310A16231 on the structure.

2.1.64 With reference to Figure 8 View F, install the bracket P/N 8G2310A13951 on the structure by means of n°2 washers P/N NAS1149D0332J and n°2 screws P/N MS27039-1-05.

2.1.65 With reference to Figure 1, reinstall the panel P/N 8G5315A20931, the panel P/N 8G5315A02532 and the panel P/N 8G5315A02232 on the structure by means of existing hardware prev.

2.1.66 In accordance with AMP DM DM0389-A-11-00-01-00A-720A-A and with reference to Figure 3 View B, apply the RH rear hydraulic label P/N 8G1152A00251 on the structure.

2.1.67 With reference to Figure 8 View H, remove the two existing indicated rivets from the fuselage.

2.1.68 With reference to Figure 8 View H, temporarily locate the ground plane P/N 8G2310A08051 on the fuselage and countermark n°31 hole positions on the ground plane P/N 8G2310A08051.

NOTE

Perform the following steps 2.1.69 and 2.1.70 on a workbench.

2.1.69 With reference to Figure 8 View H, drill n°31 rivet holes previously countermarked thru the ground plane P/N 8G2310A08051.

2.1.70 With reference to Figure 8 View H, drill n°17 rivet holes thru the ground plane P/N 8G2310A08051 according to dimensions shown.

2.1.71 With reference to Figure 8 View H, temporarily locate the ground plane P/N 8G2310A08051 on the fuselage and countermark n°17 hole positions on the fuselage.

2.1.72 With reference to Figure 8 View H, drill n°17 rivet holes thru the fuselage. Maximum depth of holes 10 mm.

2.1.73 With reference to Figure 8 View H, install the ground plane P/N 8G2310A08051 on the fuselage by means of n°17 rivets P/N A297A04TW01. Apply adhesive EA9309.3NA AERO (C021).

2.1.74 With reference to Figure 8 View H (WITH TOOL), temporarily locate the drilling template P/N 8G5310A37411A005F on the ground plane P/N 8G2310A08051 and countermark n°2 hole positions.

2.1.75 With reference to Figure 8 View H (WITH TOOL), drill n°1 hole Ø 55.87 and n°1 hole Ø 39.97 thru the ground plane P/N 8G2310A08051 and the fuselage. Fill the opened cells of the honeycomb with the filler K2 fiber bubbles at 30% with the adhesive EA9309.3NA AERO (C021).

2.1.76 With reference to Figure 8 View H, install the closures P/N 8G2310A13151, P/N 8G2310A14151, P/N 8G2310A14051 and P/N 8G2310A13251 on the ground plane P/N 8G2310A08051 by means of adhesive EA9309.3NA AERO (C021).

NOTE

Perform the following step only if kit defensive aid suite P/N 8G9900F00111 is not installed on the helicopter.

2.2 With reference to Figures 10 and 11, perform the “V/UHF support installation” P/N 8G2310A17311 as described in the following procedure:

NOTE

Unless otherwise specified and except for electrical bonding areas, in hight level exposure zones, perform the installation of structural brackets and vendor components as follows:

- Apply a layer of sealing compound MC-780, Class C-2 (C465) on all faying surfaces.
- Wet assemble fixing fasteners using sealing compound MC-780, Class C-2 (C465) applied under the head and on the shank of fasteners. (Not applicable to fasteners installed on click bonds).
- Apply a fillet of sealing compound MC-780, Class B-2 (C465) all around the mating surfaces boundary.

NOTE

Unless otherwise specified, in all level direct exposure zones and medium level indirect exposure zones, protect all removable fasteners that are not fully coated with polyurethane paint, by means of corrosion inhibitor Tectyl 891D (C002). (Not applicable to vendor parts).

2.2.1 With reference to Figures 10 and 11, perform the “V/UHF removable parts” P/N 8G2310A17711 as described in the following procedure:

NOTE

Do not perform the following step if kit defensive aid suite P/N 8G9900F00111 is not installed on the helicopter.

2.2.1.1 With reference to Figure 11, perform on the workbench the installation of support assy P/N 8G2310A03431 from step 2.2.1.2 thru step 2.2.1.8.

2.2.1.2 With reference to Figures 11 View K, install n°6 nut plates P/N A407A3C2P on the support P/N 8G2310A04031 by means of adhesive EA9309.3NA AERO (C021).

2.2.1.3 With reference to Figures 11 View H, install the bonding foil P/N 8G2310A03551 on the support bonded assy

P/N 8G2310A04031 by means of conductive adhesive PR1764 Class B2 (C240).

2.2.1.4 With reference to Figures 11 View H, install n°4 bonding straps P/N 8G2310A03951 on the support bonded assy P/N 8G2310A04031 by means of conductive adhesive PR1764 Class B2 (C240).

NOTE

The conductive gasket must not be torn or damaged and must have the metal mesh suspended within the gel layer of the gasket, without exposure of the metal mesh outside of the gel layer, and without areas of the gel layer missing.

The conductive gasket must also remain tacky on both sides to ensure a good seal between the components when installation is complete.

Do not over tighten installation fasteners, causing excessive compression of the gasket and rippling effect on the fairing.

2.2.1.5 Prior to application of conductive gasket P/N AW001GH000B1, perform the following steps:

- Degrease the surfaces by means of solvents for cold cleaning and cloths.
- Remove the glass cloth layer, the adhesive layer and the resin on the surfaces of the fuselage by means of the 220-grit garnet in order to expose the copper foil.
- Remove paint, dust, oil, grease, fingerprints and other contamination prior to installation.
- Remove the protective release film on both sides of the gasket. Leave the release film in place until ready to install.
- Remove the gasket from the protective packaging, taking care not to fold or bend it.
- Carefully trim the perimeter of the gasket if needed and use a tool to carefully create the interfacing fastener holes required within the gasket.

2.2.1.6 With reference to Figures 11 View K, install the conductive gasket P/N AW001GH000B1 on the support bonded assy P/N 8G2310A04031.

2.2.1.7 With reference to Figures 11 View K, install the terminal P/N 999-7000-07-104 on the support P/N 8G2310A04031 by means of rivet P/N A298A04TW02.

NOTE

Perform the following step only if Part II is not intended to be embodied immediately after Part I.

NOTE

Do not perform the following step if kit defensive aid suite P/N 8G9900F00111 is not installed on the helicopter.

2.2.1.8 With reference to Figures 11 View H, install the blanking plate assy P/N 8G2310A06231 on the support assy P/N 8G2310A03431 by means of n°6 screws P/N A428A3C08.

NOTE

Do not perform the following step if kit defensive aid suite P/N 8G9900F00111 is not installed on the helicopter.

2.2.2 With reference to Figure 11, perform the “V/UHF support struct provs” P/N 8G2310A17411 as described in the following procedure:

2.2.2.1 With reference to Figure 11 View H, temporarily locate the support assy P/N 8G2310A03431 on the ground plane P/N 8G2310A08051 and countermark n°10 insert holes positions.

2.2.2.2 With reference to Figure 11 View H, drill n°10 insert holes Ø14.25÷14.38 thru the ground plane P/N 8G2310A08051.

2.2.2.3 With reference to Figure 11 View H, install n°10 inserts P/N NAS1832C3-3 on the ground plane P/N 8G2310A08051 by means of adhesive EA934NA (C054).

2.2.2.4 With reference to Figure 11 View H, temporarily locate the bonding strap P/N 8G2310A13051 on the ground plane P/N 8G2310A08051 and on the fuselage and countermark n°4 rivet holes positions on the bonding strap P/N 8G2310A13051.

2.2.2.5 With reference to Figure 11 View H, drill n°4 rivet holes thru the bonding strap P/N 8G2310A13051.

2.2.2.6 With reference to Figure 11 View H, remove n°4 rivet from the fuselage.

2.2.2.7 With reference to Figure 11 View H, install the bonding strap P/N 8G2310A13051 on the ground plane P/N 8G2310A08051 and on the fuselage by means of n°2 rivets P/N NAS1720H5L3A and n°2 rivets P/N A297A05TW04.

2.2.3 With reference to Figure 11 View H, install the support assy P/N 8G2310A03431 on the ground plane P/N 8G2310A08051 by means of n°10 screws P/N A428A3C06. Achieve a consistent squeeze out of the conductive gasket around the perimeter of a maximum of 3mm.

NOTE

Apply Ardrox 3205 (C396) on connectors, dummy connectors, back-shells or on any metallic accessory.

NOTE

Unless otherwise specified, in all level direct exposure zones and medium level indirect exposure zones, protect all removable fasteners that are not fully coated with polyurethane paint, by means of corrosion inhibitor Tectyl 891D (C002). (Not applicable to vendor parts).

NOTE

Do not perform the following step if kit defensive aid suite P/N 8G9900F00111 is not installed on the helicopter.

2.3 Perform the “V/UHF AM/FM TRA 6036 cable assy installation” P/N 8G2310A11711 as described in the following procedure:

2.3.1 In accordance with CSPP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 13 View B, install n°2 studs P/N A366A3E10C and n°1 stud P/N A366A3E16C on the structure by means of the adhesive CB200-40 (C356).

2.3.2 With reference to Figure 13 View B, install the spacer P/N A631A01B between the cables.

2.3.3 In accordance with CSPP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 14 View C, install the stud P/N A388A3E06C on the panel P/N 8G5315A20931 by means of the adhesive CB200-40 (C356).

2.3.4 In accordance with CSPP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 14 View D, install the stud P/N A388A3E06C, the

stud P/N A388A3E12C75 and n°2 supports P/N AW001CL001-N6 on the structure by means of the adhesive CB200-40 (C356).

2.3.5 In accordance with CSPP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 14 View D, install n°2 supports P/N AW001CL005A01-X1 on the structure by means of the adhesive CB200-40 (C356).

2.3.6 In accordance with CSPP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 15 View E, install n°2 studs P/N A388A3E10C on the structure by means of the adhesive CB200-40 (C356).

2.3.7 In accordance with CSPP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 15 View E, install the stud P/N A388A3E18C75 on the structure by means of the adhesive CB200-40 (C356).

2.3.8 In accordance with AMP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 15 View F, install the stud P/N A366A3E08C75 on the bracket electrical connector P/N 8G5315A38051 by means of the adhesive CB200-40 (C356).

2.3.9 In accordance with CSPP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 15 View E, install the support P/N AW001CL002A-X1 and n°4 supports P/N AW001CL001-N6 on the panel P/N 8G5315A02232 by means of the adhesive CB200-40 (C356).

2.3.10 In accordance with AMP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 15 View E, install n°4 supports P/N AW001CL001-N6 on the structure by means of the adhesive CB200-40 (C356).

2.3.11 In accordance with AMP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 14 View C, install n°2 supports P/N AW001CL001-N6 on the panel P/N 8G5315A20931 by means of the adhesive CB200-40 (C356).

2.3.12 In accordance with AMP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 13 View B, install n°3 supports P/N AW001CL001-N6 on the panel P/N 8G5315A02532 by means of the adhesive CB200-40 (C356).

2.3.13 In accordance with AMP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 16 View G, install n°4 supports P/N AW001CL001-N6 on the structure by means of the adhesive CB200-40 (C356).

2.3.14 In accordance with AMP DM CSPP-A-20-10-12-02A-920A-D and with reference to Figure 16 View G, install the support P/N AW001CL006AT01-X1 on the structure by means of the adhesive CB200-40 (C356).

2.3.15 With reference to Figure 15 View E, install the spacer P/N A631A03B, n°2 spacers P/N A631A01B and n°1 grommet rubber P/N AW002FT102 between the cables.

2.3.16 With reference to Figure 14 View D, install the spacer P/N A631A01B between the cables.

NOTE

Use the edging P/N A236A and P/N NASM21266 on edges which are liable to cause damage to cable assemblies or where abrasion may occur.

NOTE

Install the tubing braided P/N EN6049-003 and P/N EN6049-006 where protection against chafing and prevention of contact with structure may occur, but the tubing protection is not substitute for good routing practice.

2.3.17 With reference to Figure 12 thru Figure 19, lay down the following cable assemblies on the existing routes unless otherwise indicated on the figures:

- 8G9A22A39401 V/UHF AM/FM TRA 6036 C/A (A2A394)
- 8G9A22B30901 V/UHF AM/FM TRA 6036 C/A (A2B309)
- 8G9B21B51101 V/UHF AM/FM TRA 6036 C/A (B1B511)
- 8G9B22A29901 V/UHF AM/FM TRA 6036 C/A (B2A299)
- 8G9B22B26901 V/UHF AM/FM TRA 6036 C/A (B2B269)
- 8G9B23A10701 V/UHF AM/FM TRA 6036 C/A (B3A107)
- 8G9B23B12701 V/UHF AM/FM TRA 6036 C/A (B3B127)
- 8G9C21A35001 V/UHF AM/FM TRA 6036 C/A (C1A350)
- 8G9C21B31301 V/UHF AM/FM TRA 6036 C/A (C1B313)
- 8G9B21A49301 V/UHF AM/FM TRA 6036 C/A (B1A493)
- 8G9B21B52201 V/UHF AM/FM TRA 6036 C/A (B1B522)
- 8G9B22B26801 V/UHF AM/FM TRA 6036 C/A (B2B268)
- 8G9C21A34901 V/UHF AM/FM TRA 6036 C/A (C1A349)
- 8G9C21B31201 V/UHF AM/FM TRA 6036 C/A (C1B312)

- 8G9C22A20001 V/UHF AM/FM TRA 6036 C/A (C2A200)
- 8G9C22B16701 V/UHF AM/FM TRA 6036 C/A (C2B167)
- 8G9C22B16801 V/UHF AM/FM TRA 6036 C/A (C2B168)
- 8G9A21B42701 V/UHF AM/FM TRA 6036 C/A (A1B427)
- 8G9A21A45401 V/UHF AM/FM TRA 6036 C/A (A1A454)
- 8G9B23A10801 V/UHF AM/FM TRA 6036 C/A (B3A108)
- 8G9B22A30401 V/UHF AM/FM TRA 6036 C/A (B2A304)

2.3.18 With reference to Figure 13 thru Figure 19, secure the cable assemblies lay down at the previous step by means of existing hardware and lacing cords.

2.3.19 With reference to Figure 13 View B, install n°3 clamps P/N AW001CB06H and n°2 clamps P/N AW001CB03H on the C/A C1B312 and on the C/A C2B167 by means of n°3 washers P/N NAS1149D0332J, n°3 nuts P/N MS21043-3 and n°1 spacer P/N NAS43DD3-25N.

2.3.20 With reference to Figure 13 View A, install the connector mounting device flange P/N M85049/95-25A-A on the structure by means of n°4 washers P/N NAS1149DN616J and n°4 screw P/N NAS1802-06-7.

2.3.21 With reference to Figure 14 View C, install the clamp P/N AW001CB03H on the C/A B3B127 by means of the washer P/N NAS1149D0332J and the screw P/N NAS1190E3P5AK.

2.3.22 With reference to Figure 15 View E, install the clamp P/N AW001CB03H on the C/A C1A349 by means of washer P/N NAS1149D0332J and screw P/N NAS1190E3P7AK.

2.3.23 With reference to Figure 15 View F, install the clamp P/N AW001CB03H on the C/A B3A107 by means of washer P/N NAS1149D0332J and nut P/N MS21043-3.

2.3.24 With reference to Figure 15 View F, install the spacer P/N A631A02A and the grommet rubber P/N AW002FT102 between the cables.

2.3.25 With reference to Figure 15 View E, install n°2 clamps P/N AW001CB06H on the C/A C2A200 by means of n°2 washers P/N NAS1149D0332J and n°2 screws P/N NAS1190E3P6AK.

2.3.26 With reference to Figure 14 View D, install the n°4 clamps P/N AW001CB04H on the C/A B3A107 by means of n°1 spacer P/N NAS43DD3-44N n°2 washer P/N NAS1149D0332J, n°1 screw P/N NAS1190E3P19AK and n°1 screw P/N NAS1190E3P6AK.

2.3.27 With reference to Figure 16 View G, install the grommet P/N MS35489-52 on the C/A C2B167.

2.3.28 With reference to Figure 14 View D, install the connector J257 on the bracket P/N 8G2310A13951 by means of connector mounting device P/N M85049/95-12A-A, n°4 washers P/N NAS620-4L and n°4 screws P/N NAS1802-04-7.

2.3.29 With reference to Figure 14 View D, install the connector J277 on the bracket P/N 8G2310A13951 by means of n°8 washers P/N NAS620-2, n°4 screws P/N MS35206-204 and n°4 nuts P/N MS21042-02.

2.3.30 With reference to Figure 15 View F, install the connector J2107 on the bracket P/N 8G5315A38051 by means of connector mounting device P/N M85049/95-22A-A, n°4 washers P/N NAS1149DN416J and n°4 screws P/N NAS1802-04-8.

2.3.31 With reference to Figure 15 View F, install the connector J3004 on the bracket P/N 8G5315A38051 by means of connector mounting device P/N M85049/95-20A-A, n°4 washers P/N NAS1149DN416J and n°4 screws P/N NAS1802-04-8.

2.3.32 With reference to Figure 16 View H, install the module TB308 on the structure by means of n°2 washers P/N NAS1149DN616J and n°2 screws P/N NAS1802-06-5.

2.3.33 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 16 View H, apply the decal P/N ED300TB308 on the structure near the module TB308.

2.3.34 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 23 Wiring Diagram, perform the electrical connections between the connector Q3PA7 and the splice SP397.

2.3.35 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A, Figure 15 View E, and Figure 23 Wiring Diagram, perform the electrical connections between the connector TB307 and the connector A357P2.

2.3.36 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A and View B, Figure 15 View E, and Figure 23 Wiring Diagram, perform the electrical connections between the module TB357 and the connectors A357P2 and A355X1B.

2.3.37 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, Figure 18 View looking up and Figure 24

Wiring Diagram, perform the electrical connections between the connector J116 and the connector J224.

2.3.38 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, and Figure 24 Wiring Diagram, perform the electrical connections between the connector Q2PB7 and the connector P116.

2.3.39 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A, Figure 14 View C, Figure 15 View E and Figure 24 Wiring Diagram, perform the electrical connections between the module TB304 and the connectors A356P2 and A354X1B.

2.3.40 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View B, Figure 15 View F and Figures 25 and 26 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector A355X1A and the connectors P211, J3004 and TB383P1.

2.3.41 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, Figure 18 View looking up and Figures 25 and 26 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector J127 and the connector J215.

2.3.42 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View j, and Figures 25 and 26 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector P127 and the connector TB115P1.

2.3.43 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A and View B, and Figures 25 and 26 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector P215 and the connector A355X1A.

2.3.44 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A and View B, and Figures 25 and 26 Wiring Diagram Wiring Diagram, perform the electrical connections between the module TB301 and the connector A355X1A.

2.3.45 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, Figure 19 View M, and Figures 25 and 26 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector P125 and the module TB167-1.

2.3.46 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 16 View G, and Figures 25 and 26 Wiring Diagram

Wiring Diagram, perform the electrical connections between the module GSFILLGUN and the connector J368.

2.3.47 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, and Figures 25 and 26 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector J125 and the connector J211.

2.3.48 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, Figure 19 View L, and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector P105 and the connector P110.

2.3.49 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 19 View M, and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector J105 and the module TB167-2.

2.3.50 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector J110 and the connector J206.

2.3.51 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector TB118P1 and the connector P106.

2.3.52 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A, Figure 15 View E, Figure 16 View G, and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector A354X1A and the connectors P206, J370 and TB386P1.

2.3.53 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 16 View G, and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the module GSFILLGUN and the connector J370.

2.3.54 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 17 View J, and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the connector J106 and the connector J204.

2.3.55 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 15 View E, Figures 27 and 28 Wiring Diagram Wiring

Diagram, perform the electrical connections between the connector P204 and the connector A354X1A.

2.3.56 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A, Figure 15 View E and Figures 27 and 28 Wiring Diagram Wiring Diagram, perform the electrical connections between the module TB312 and the connector A354X1A.

2.3.57 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View B, Figure 15 View F and Figure 29 Wiring Diagram, perform the electrical connections between the connector A355X1A and the connector J2107.

2.3.58 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 15 View E and View F, and Figure 29 Wiring Diagram, perform the electrical connections between the connector A354X1A and the connector P2107.

2.3.59 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A, Figure 15 View E and Figure 30 Wiring Diagram, perform the electrical connections between the module TB351 and the connector A357P1.

2.3.60 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 14 View D, and Figure 30 Wiring Diagram, perform the electrical connections between the connector J211 and the connector J257.

2.3.61 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View B, Figure 15 View E and Figure 30 Wiring Diagram, perform the electrical connections between the connector A355X1A and the connector A357P1.

2.3.62 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 15 View E, and Figure 30 Wiring Diagram, perform the electrical connections between the connector P211 and the connector A357P3.

2.3.63 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A, Figure 14 View C and Figure 31 Wiring Diagram, perform the electrical connections between the connector P216 and the connector A356P3.

2.3.64 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 13 View A, Figure 14 View C and Figure 31 Wiring

Diagram, perform the electrical connections between the module TB312 and the connector A356P1.

2.3.65 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 18 View looking up, Figure 19 View K and Figure 31 Wiring Diagram, perform the electrical connections between the connector J216 and the connector E202P2.

2.3.66 In accordance with CSPP DM CSPP-A-20-10-13-00A-622A-D and with reference to Figure 14 View C, Figure 15 View E and Figure 31 Wiring Diagram, perform the electrical connections between the connector A354X1A and the connector A356P1.

2.3.67 With reference to Figure 13 View A and View B, Figure 17 View J, Figure 18 View looking up and Figure 24 Wiring Diagram, perform the electrical connection of connector J224 of cable assy B1B511 to connector P224 of cable assy C1B312.

2.3.68 With reference to Figures 15 View F and Figure 25 Wiring Diagram, perform the electrical connection of connector J3004 of cable assy C2A200 to connector P3004 of cable assy C2B167.

2.3.69 With reference to Figures 15 View F and Figure 29 Wiring Diagram, perform the electrical connection of connector J2107 of cable assy C2A200 to connector P2107 of cable assy C2B167.

2.3.70 With reference to Figures 14 View D and Figure 27 Wiring Diagram, perform the electrical connection of connector P257 of cable assy B2A304 to connector J257 of cable assy B2A299.

2.3.71 With reference to Figures 14 View D and Figure 32 Wiring Diagram, perform the electrical connection of connector P277 of cable assy B3A108 to connector J277 of cable assy B3A107.

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

NOTE

Secure the electrical connectors by means of safety wire (C013).

NOTE

Perform the following steps from 2.3.73 thru 2.3.75 only if Part II of this Service Bulletin is not intended to be performed consequently to Part I.

2.3.73 With reference to Figure 13 View B, Figure 14 View C and Figure 15 View E, protect and stow the connectors A56P3, A179P3, A354P1, A355P1, A356P1, A356P2, A356P3, A357P1, A357P2 and A357P3 by means of protective caps, tie strap P/N 900004953 and nomex.

2.3.74 With reference to Figure 13 View B and Figure 15 View E, connect the connectors A354X1A, A354X1B, A355X1A and A355X1B to respective bracket dummy connectors P/N 8G2310A13751 by means of n°36 screws P/N NAS1801-06-10, n°36 washers P/N NAS1149DN632J and n°36 nuts P/N MS21042L06. Protect by means of n°2 conductive dust caps P/N 618953002.

2.3.75 With reference to Figure 14 View D and Figure 19 View K, connect the connectors E202P1, E202P2, E203P1 and E203P2 on the respective blanking plate P/N 8G2310A06231.

2.3.76 With reference to Figure 16 View G, protect the connector J368 and J370 by means of n°2 covers P/N B800ACN1.

2.3.77 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 13 View A, apply n°2 decals P/N ED300J224 near the connector P224.

2.3.78 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 15 View F, apply n°2 decals P/N ED300J2107 on the bracket electrical connector P/N 8G5315A38051.

2.3.79 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 15 View F, apply n°2 decals P/N ED300J3004 near the connector J3004.

2.3.80 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 14 View D, apply n°2 decals P/N ED300J257 on the bracket P/N 8G2310A13951.

2.3.81 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 14 View D, apply n°2 decals P/N ED300J277 on the 8G2310A13951.

2.3.82 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 16 View G, apply the decal P/N ED300GSFILLGUN on the structure near the bonding strip P/N 8G2310A16451.

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

5. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
6. 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

PART II

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.

NOTE

Remove locally the protection finish to assure the correct electrical grounding.

NOTE

Unless otherwise specified on equipment or LRU tray, apply corrosion preventive compound Tectyl 846 around the boundary of the coupling surfaces (bond area) and on installation hardware.

NOTE

Unless otherwise specified apply fillet sealing compound MC-780, Class B-2 (C465).

NOTE

Wet assemble fixing fasteners using corrosion preventive compound JC5A (C001) applied under the head and on the shank of fasteners.

NOTE

Secure the electrical connectors by means of safety wire (C013).

2. In accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figures 20 thru 22, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform the “V/UHF AM/FM TRA 6036 equipment installation” P/N 8G2310A11811 as described in the following procedure:

NOTE

Perform following steps 2.1 and 2.3, only if Part I of this SB has NOT been performed immediately before to Part II.

2.1 With reference to Figure 21 View A and View B, free the connectors A56P3, A179P3, A354P1, A355P1, A356P1, A356P2, A356P3, A357P1, A357P2 and A357P3 from its stowage.

2.2 With reference to Figure 22 View C and View D, remove n°2 blanking plates P/N 8G2310A06231 from the fuselage.

2.3 With reference to Figure 21 View A and View B, remove n°2 bracket dummy connector P/N 8G2310A13751.

2.4 With reference to Figure 21 View B, install the mounting tray P/N 62139782AA on the panel P/N 8G5315A02232 by means of n°6 washers P/N NAS1149D0416J and n°6 screws P/N NAS1802-4-7.

2.5 With reference to Figure 21 View B, install the bonding cable assy P/N A601A09B0150 on the mounting tray P/N 62139782AA by means of existing hardware.

2.6 With reference to Figure 21 View B, fix the bonding cable assy P/N A601A09B0150 on the panel P/N 8G5315A02232 by means of washer P/N AW003TY0525A, washer P/N NAS1149DN816J and screw P/N NAS1802-08-7.

2.7 With reference to Figure 21 View B, connect the connectors A355X1A and A355X1B on the mounting tray P/N 62139782AA.

2.8 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 21 View B, apply the decal P/N ED300A355 on the panel P/N 8G5315A02232 near the transceiver P/N 67149850AA.

2.9 With reference to Figure 21 View A, install the mounting tray P/N 62139782AA on the panel P/N 8G5315A02532 by means of n°6 washers P/N NAS1149D0416J and n°6 screws P/N NAS1802-4-7.

2.10 With reference to Figure 21 View A, install the bonding cable assy P/N A601A09B0150 on the mounting tray P/N 62139782AA by means of existing hardware.

2.11 With reference to Figure 21 View A, fix the bonding cable assy P/N A601A09B0150 on the panel P/N 8G5315A02532 by means of washer P/N AW003TY0525A, washer P/N NAS1149DN816J and screw P/N NAS1802-08-7.

2.12 With reference to Figure 21 View A, connect the connectors A354X1A and A354X1B to the mounting trays P/N 62139782AA.

2.13 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 21 View A, apply the decal P/N ED300A354 on the panel P/N 8G5315A02532 near the transceiver P/N 67149850AA.

2.14 With reference to Figure 21 View A and View B, instal n°2 transceivers P/N 67149850AA on the mounting trays P/N 62139782AA by means of n°2 hold-down knobs. Connect the connectors A354P1 and A355P1 to the transceivers P/N 67149850AA.

2.15 With reference to Figure 21 View A and View B, install n°2 LCUs P/N 7-163PIN161-0215 on the panels P/N 8G2310A13751 and P/N8G5315A02532 by means of n°8 washers P/N NAS1149D0316J and n°8

screws P/N NAS1802-3-8. Connect the connectors A356P1, A356P2, A356P3, A357P1, A357P2 and A357P3 to the LCUs P/N 7-163PIN161-0215.

2.16 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 21 View B, apply the decal P/N ED300A357 on the panel P/N 8G2310A13751 near the LCU P/N 7-163PIN161-0215.

2.17 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 21 View A, apply the decal P/N ED300A356 on the panel P/N 8G5315A02532 near the LCUs P/N 7-163PIN161-0215.

2.18 With reference to Figure 22 View D, install the conductive gasket P/N AW001GH026A and the V/UHF tuneable antenna P/N 12-190-160 on the fuselage by means of n°6 washers P/N NAS1149D0316J, n°4 screws P/N NAS1802-3-13 and n°2 screws P/N NAS1802-3-12. Connect the connectors E203P1 and E203P2 to the V/UHF tuneable antenna P/N 12-190-160.

2.19 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 22 View D, apply the decal P/N ED300E203 on the structure near the V/UHF tuneable antenna P/N 12-190-160.

2.20 With reference to Figure 22 View C, install the conductive gasket P/N AW001GH026A and the V/UHF tuneable antenna P/N 12-190-160 on the support assy P/N 8G2310A03431 by means of n°6 washers P/N NAS1149D0316J and n°6 screws P/N NAS1802-3-13. Connect the connectors E202P1 and E202P2 to the V/UHF tuneable antenna P/N 12-190-160.

2.21 In accordance with AMP DM 89-A-11-00-01-00A-720A-A and with reference to Figure 22 View C, apply the decal P/N ED300E202 on the fuselage under the V/UHF tuneable antenna P/N 12-190-160.

2.22 With reference to Figure 21 View A and View B, instal n°2 GPS P/N 100-604076-202 under the panels P/N 8G5315A20931 and P/N 8G5315A02032 by means of n°8 washers P/N 8G5315A02032J and n°8 screws P/N NAS623-3-2. Connect the connectors A56P3 and A179P3 to the GPS P/N 100-604076-202.

2.23 In accordance with AMP DM 89-A-11-00-01-00A-720A-A apply n°2 decals P/N 55-06-VUHF1 and n°2 decals P/N 55-06-VUHF2 on the control panel.

3. In accordance with the applicable steps of AMP DM, perform the upload of the ECDU operational software P/N 8GXXXXACXXXX.
4. In accordance with applicable steps of the AMP DM 89-A-46-21-00-00A-750A-A install relevant AMMC option file.
5. In accordance with applicable steps of the AMP DM 89-A-46-31-00-00A-750B-A install relevant CDS option file.

6. In accordance with Annex A, test the installation by performing the TRA6036 dual radio Acceptance Test Procedure.
7. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, reinstall all external panels, internal panels and internal liners previously removed.
8. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
9. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
10. 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

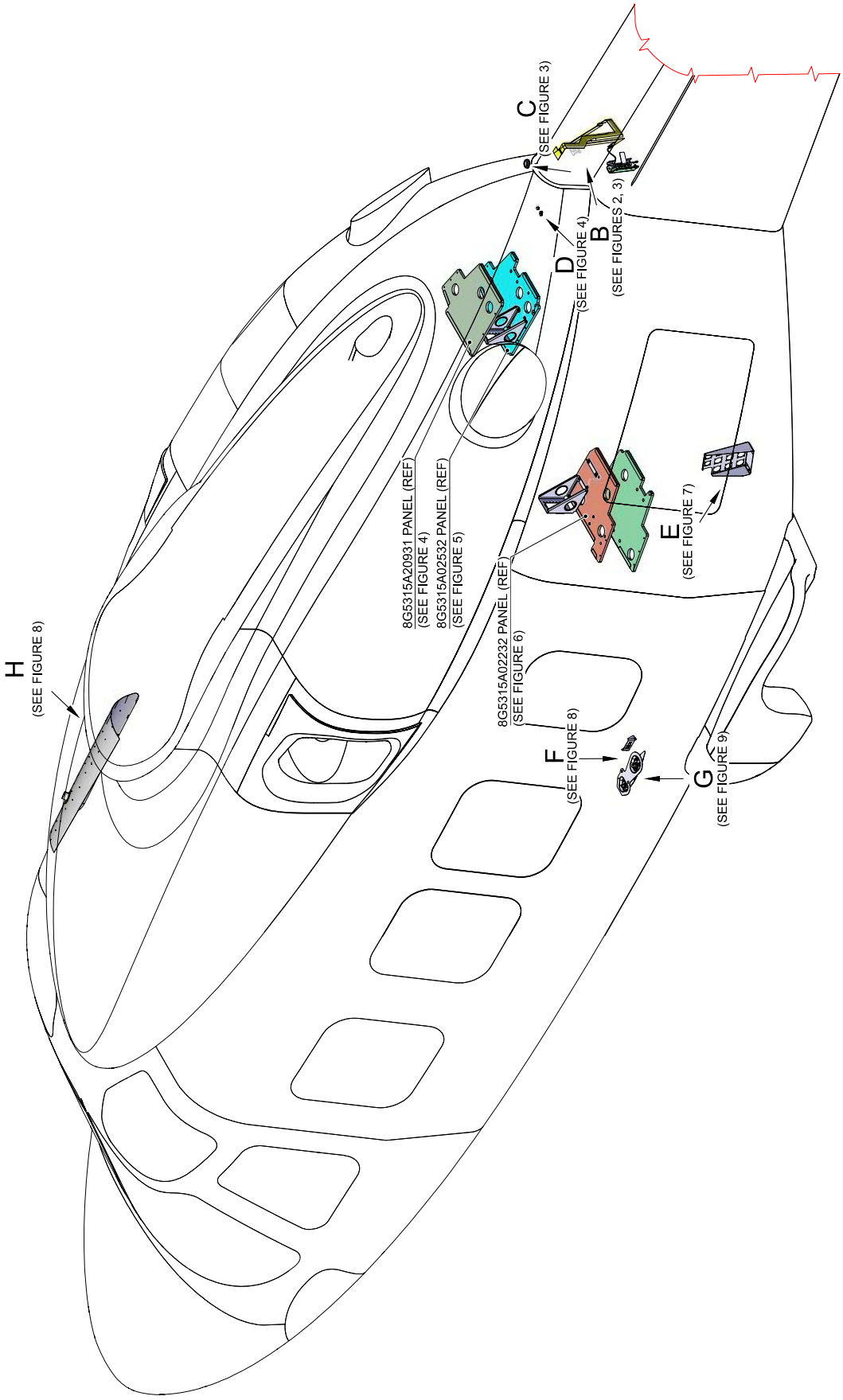
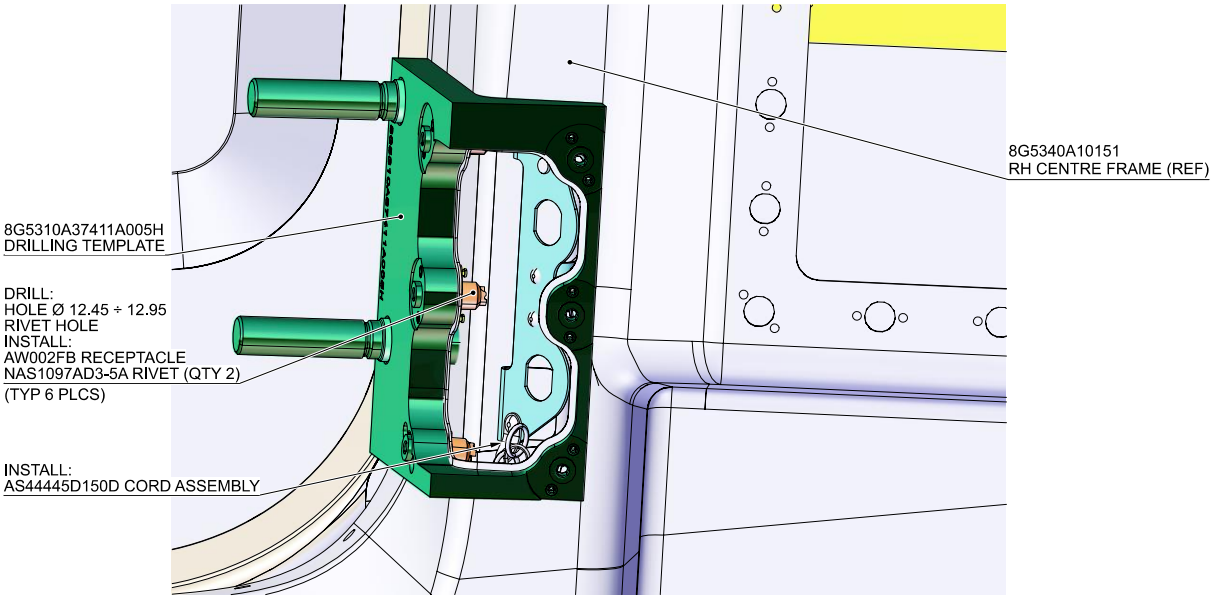
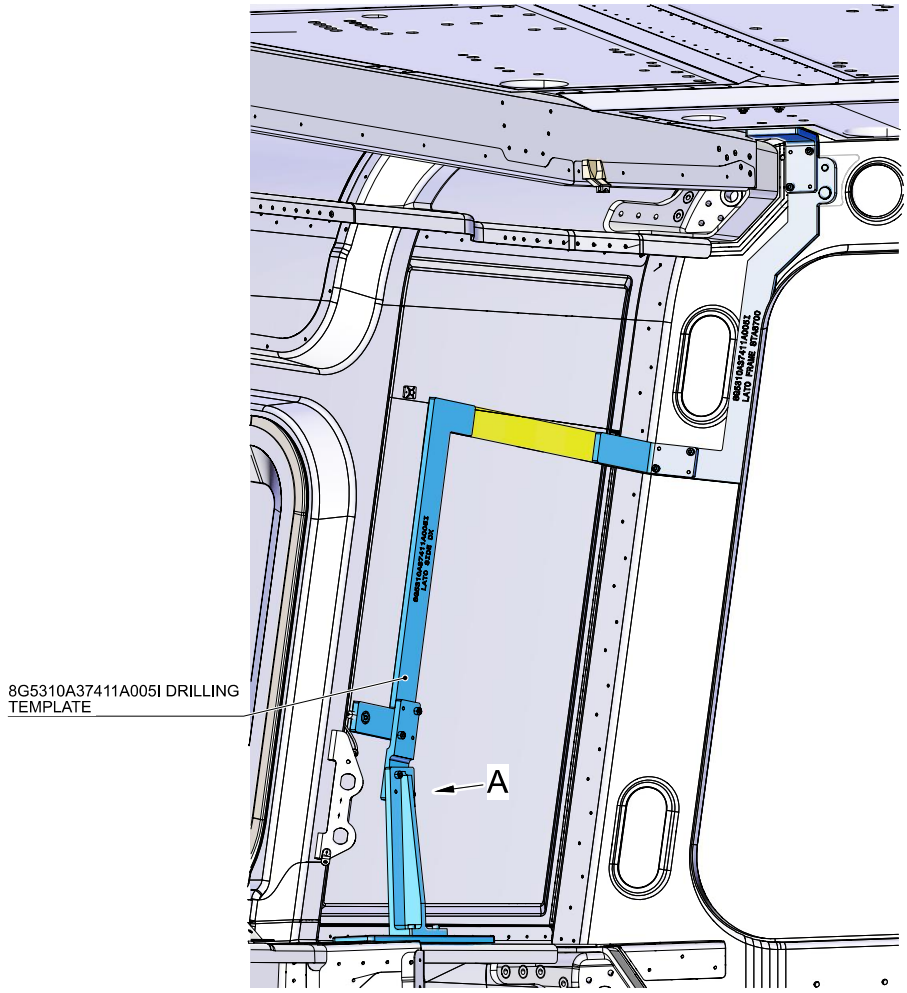

C
(SEE FIGURE 3)
B
(SEE FIGURES 2, 3)
D
(SEE FIGURE 4)
E
(SEE FIGURE 7)
8G5315A20931 PANEL (REF)
(SEE FIGURE 4)
8G5315A02532 PANEL (REF)
(SEE FIGURE 5)
8G5315A02232 PANEL (REF)
(SEE FIGURE 6)
F
(SEE FIGURE 8)
G
(SEE FIGURE 9)
H
(SEE FIGURE 8)

Figure 1



VIEW A (WITH TOOL)

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



VIEW B (WITH TOOL)

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

Figure 2

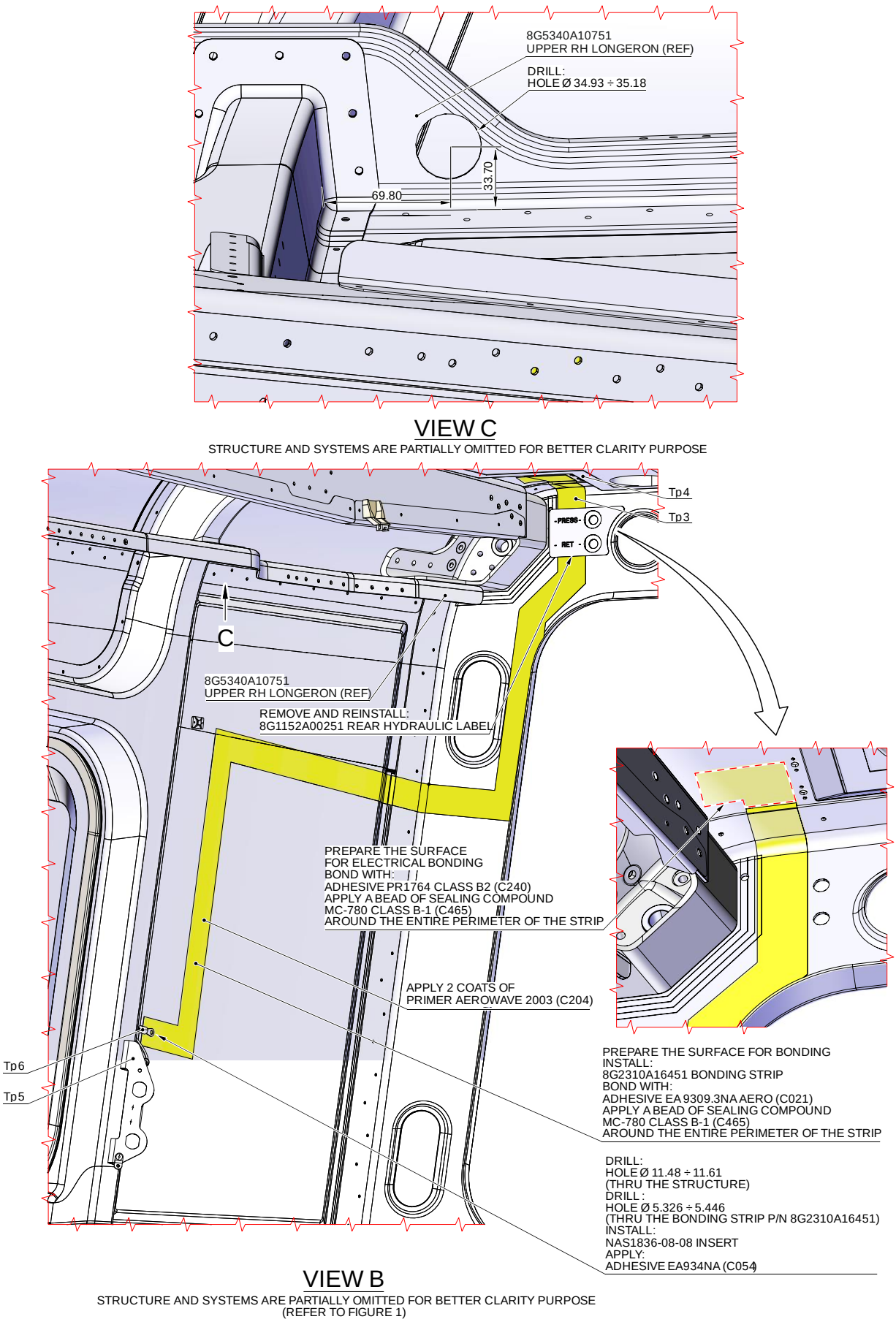
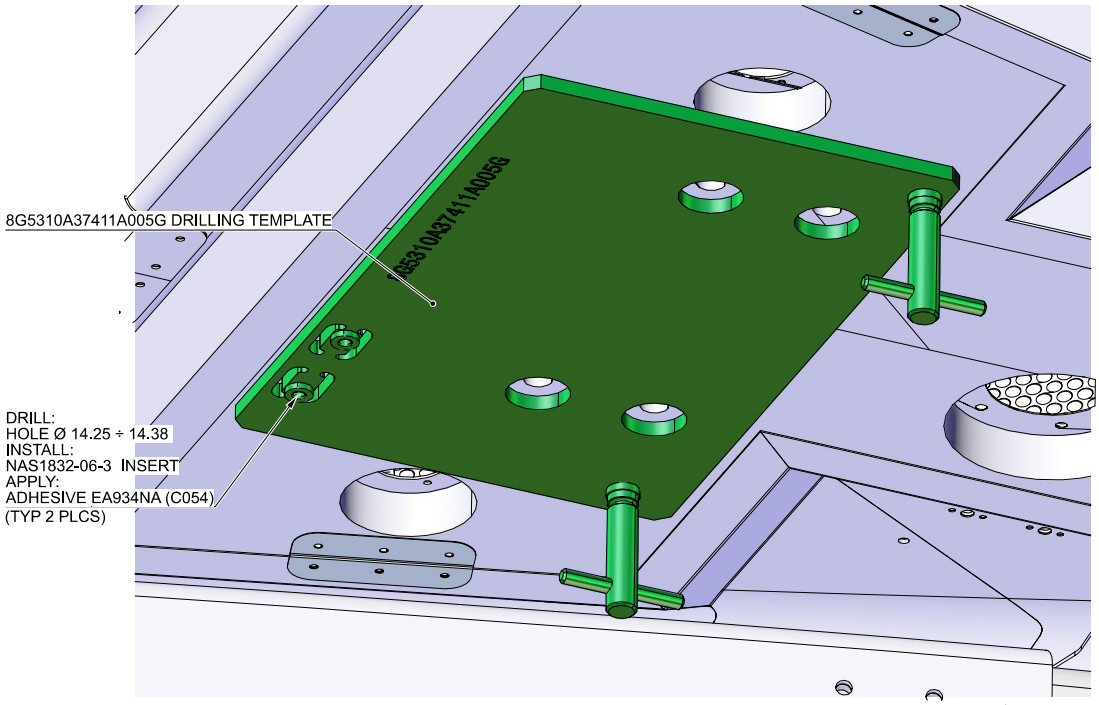
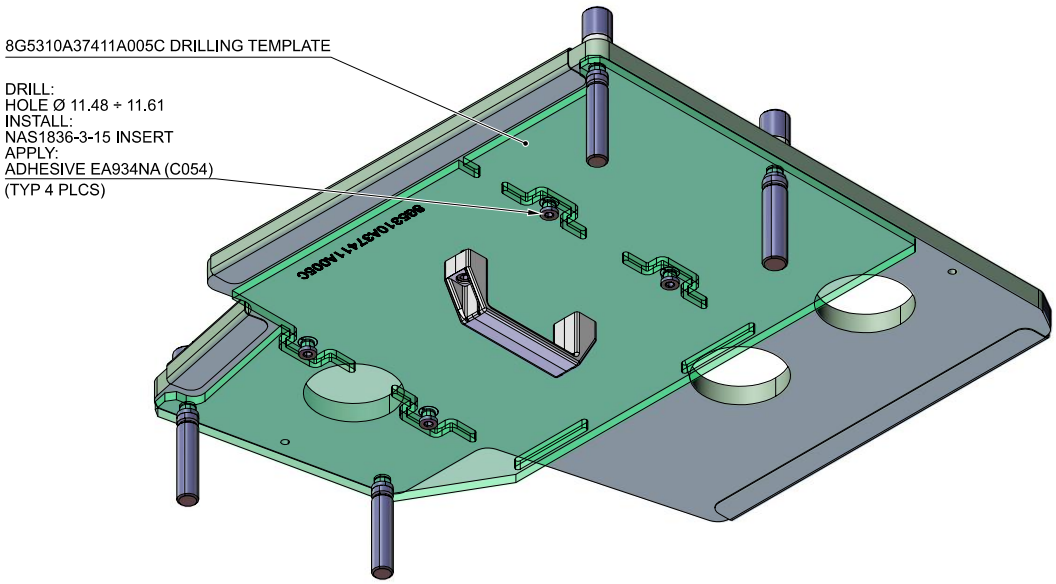

8G5340A10751
UPPER RH LONGERON (REF)
DRILL:
HOLE Ø 34.93 ÷ 35.18
33.70
69.80
VIEW C
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
Tp4
Tp3
-PRESS-
- RET -
C
8G5340A10751
UPPER RH LONGERON (REF)
REMOVE AND REINSTALL:
8G1152A00251 REAR HYDRAULIC LABEL
PREPARE THE SURFACE
FOR ELECTRICAL BONDING
BOND WITH:
ADHESIVE PR1764 CLASS B2 (C240)
APPLY A BEAD OF SEALING COMPOUND
MC-780 CLASS B-1 (C465)
AROUND THE ENTIRE PERIMETER OF THE STRIP
APPLY 2 COATS OF
PRIMER AEROWAVE 2003 (C204)
Tp6
Tp5
PREPARE THE SURFACE FOR BONDING
INSTALL:
8G2310A16451 BONDING STRIP
BOND WITH:
ADHESIVE EA 9309.3NA AERO (C021)
APPLY A BEAD OF SEALING COMPOUND
MC-780 CLASS B-1 (C465)
AROUND THE ENTIRE PERIMETER OF THE STRIP
DRILL:
HOLE Ø 11.48 ÷ 11.61
(THRU THE STRUCTURE)
DRILL :
HOLE Ø 5.326 ÷ 5.446
(THRU THE BONDING STRIP P/N 8G2310A16451)
INSTALL:
NAS1836-08-08 INSERT
APPLY:
ADHESIVE EA934NA (C054)
VIEW B
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

Figure 3



VIEW D

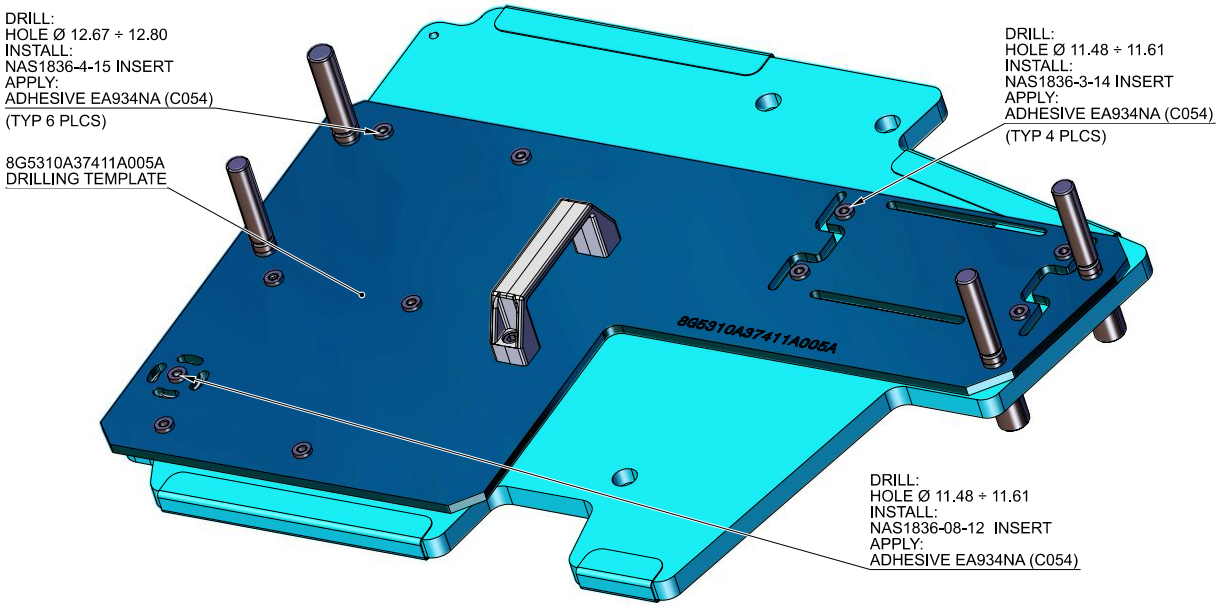
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)



PANEL 8G5315A20931 (WITH TOOL)

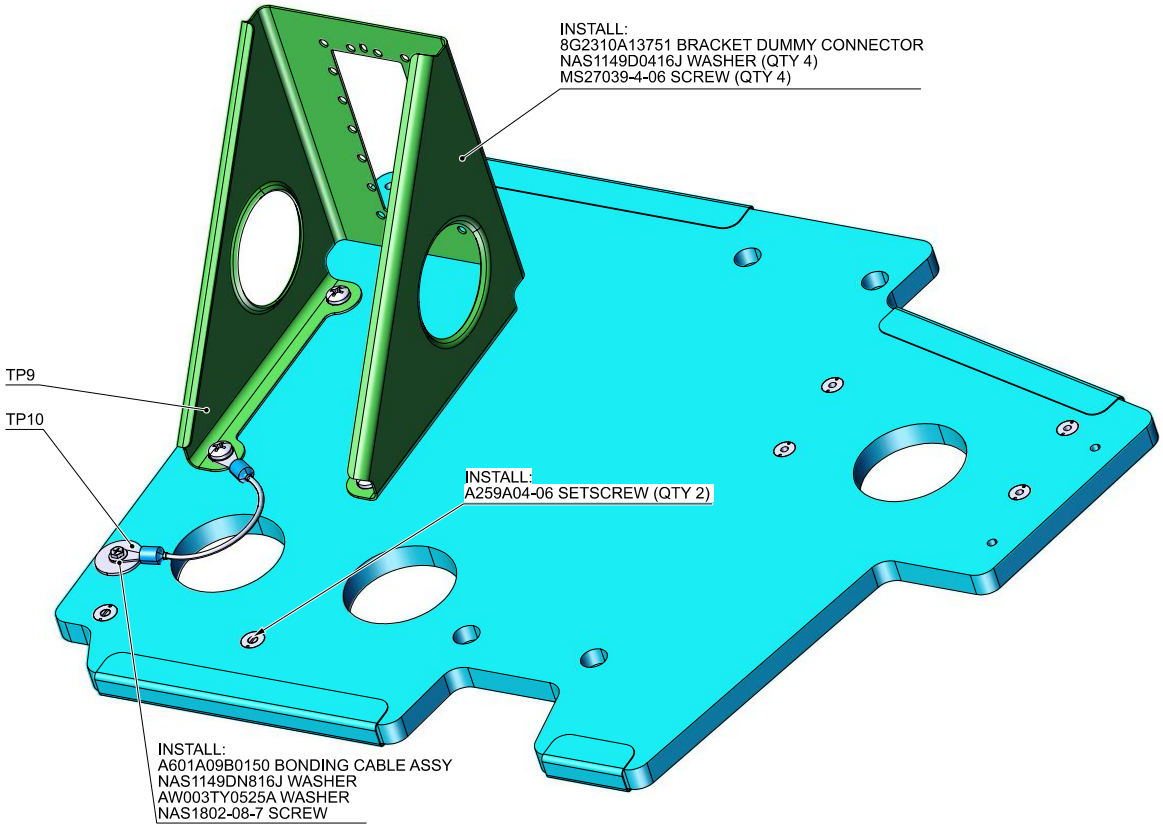
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

Figure 4



PANEL 8G5315A02532 (WITH TOOL)

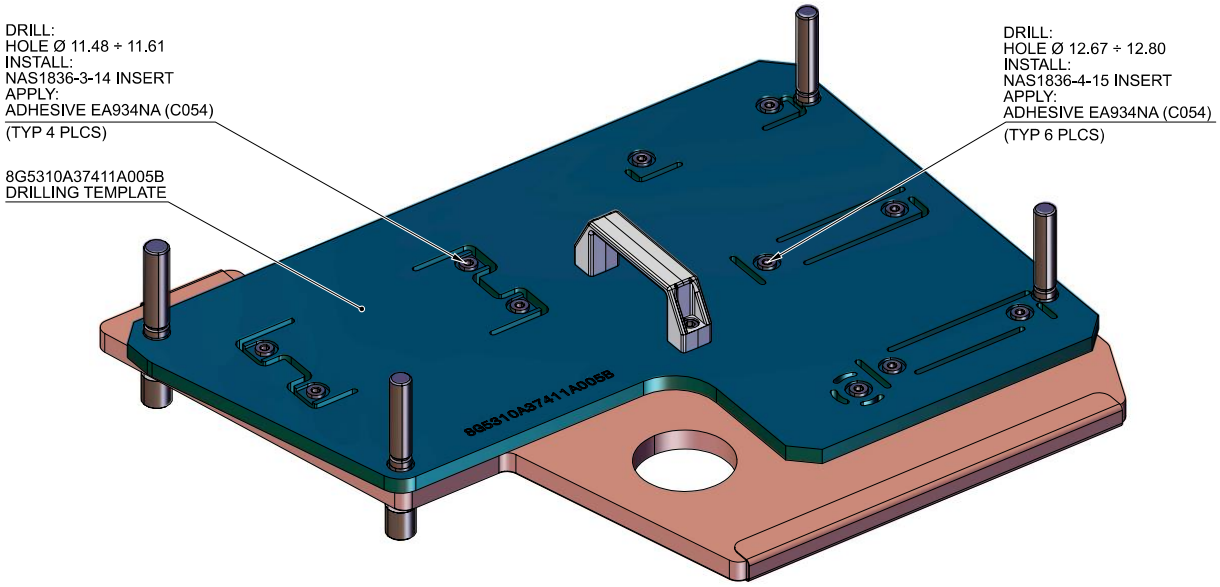
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)



PANEL 8G5315A02232

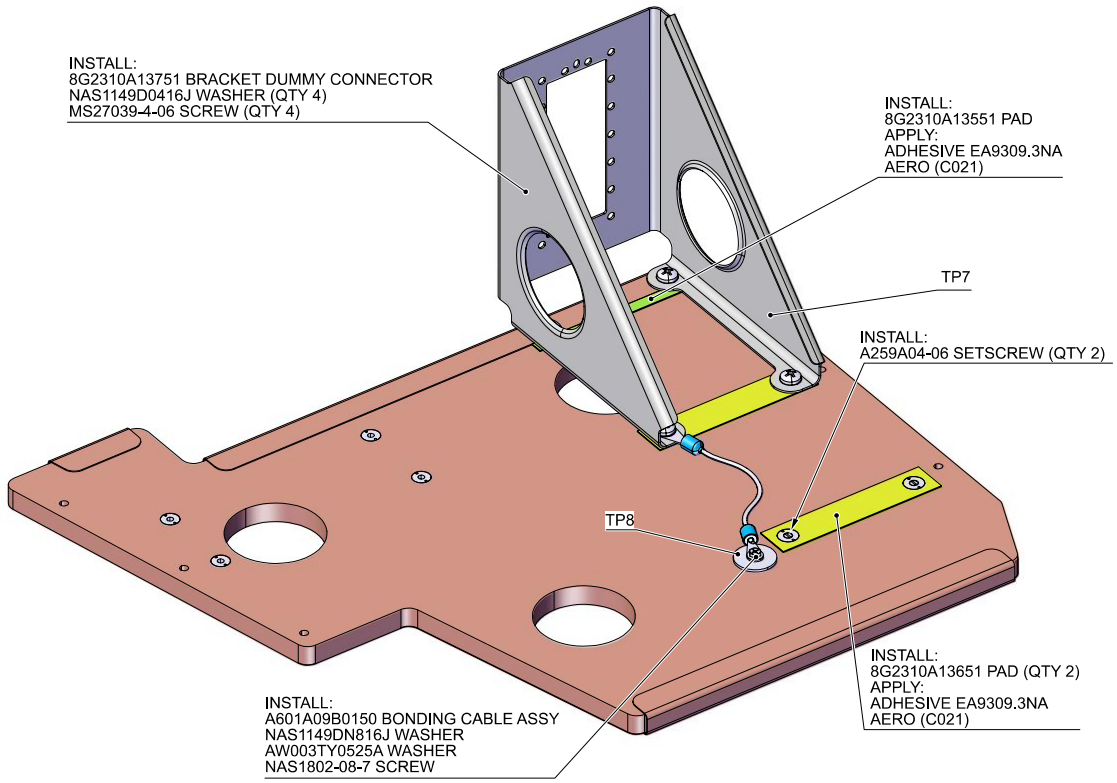
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

Figure 5



PANEL 8G5315A02232 (WITH TOOL)

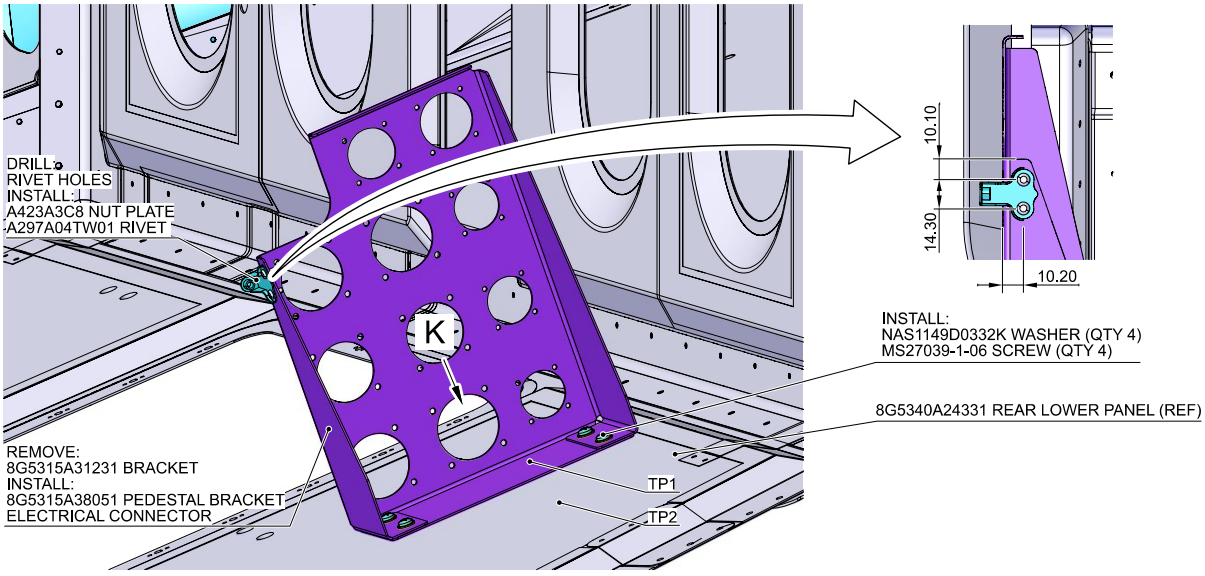
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)



PANEL 8G5315A02232

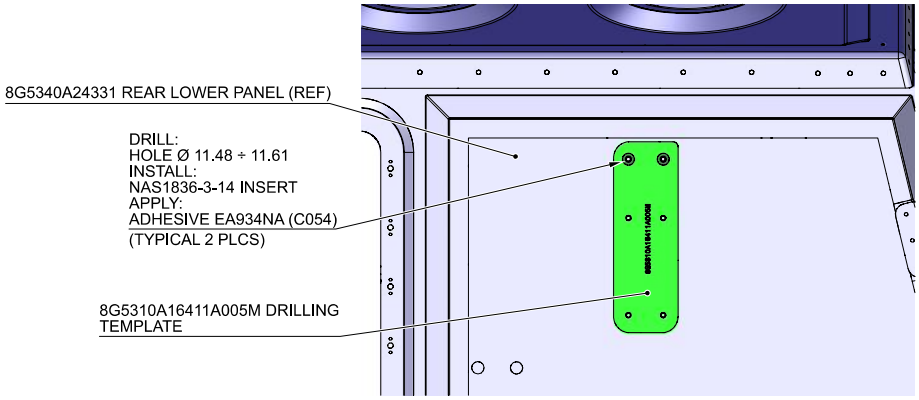
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

Figure 6

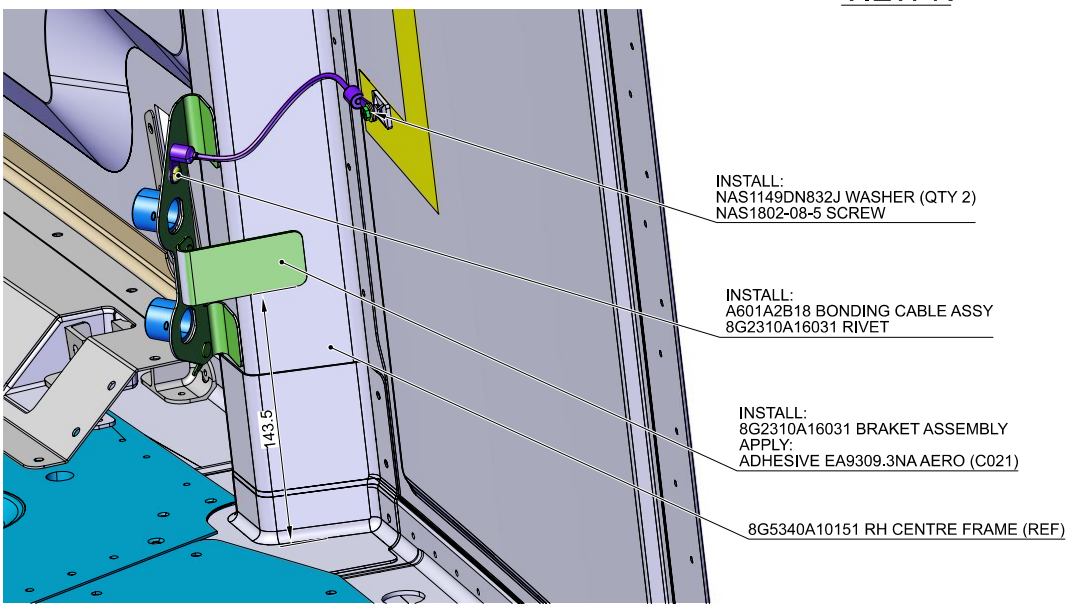


VIEW E

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)



VIEW K



VIEW A

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 2)

Figure 7

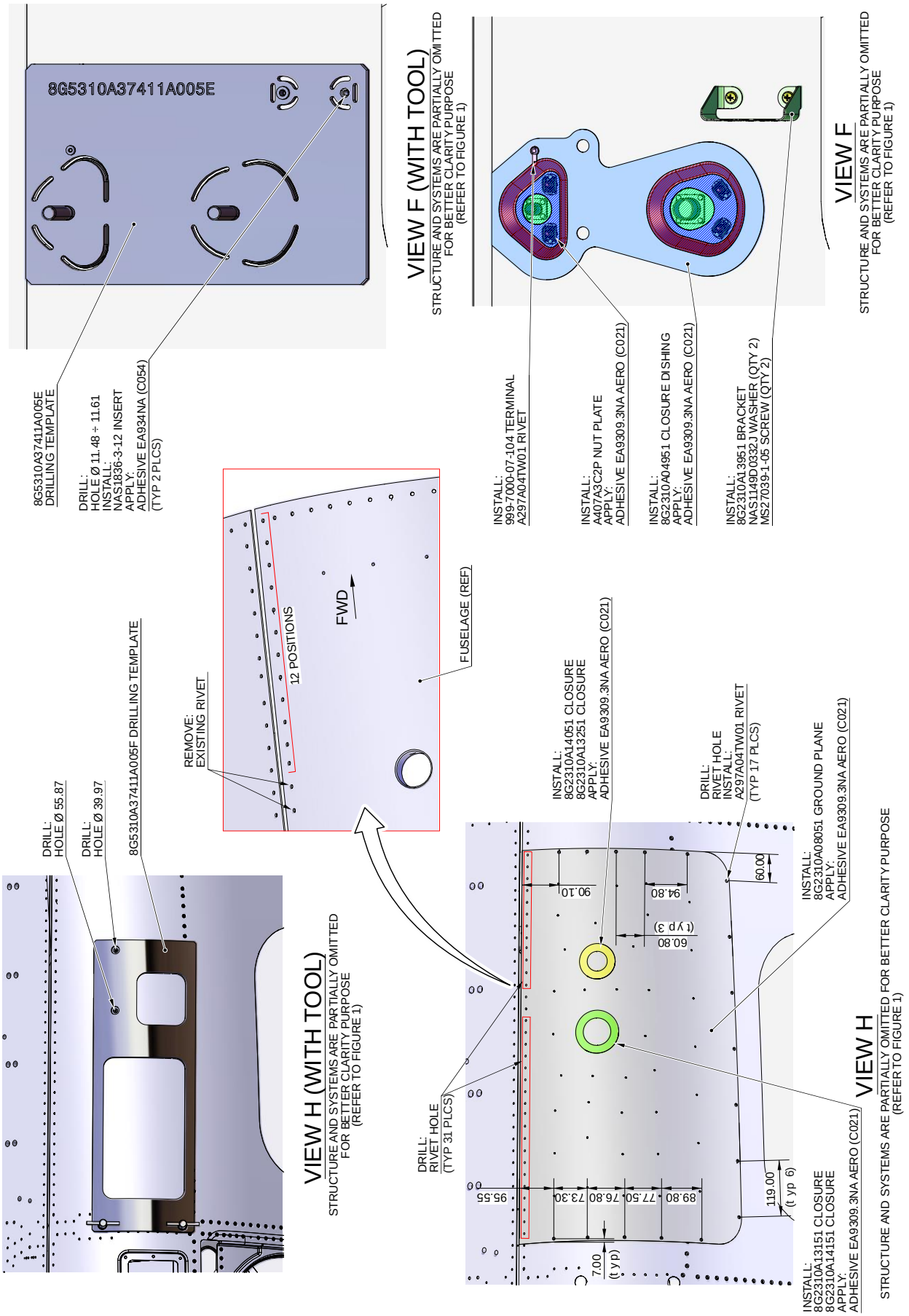
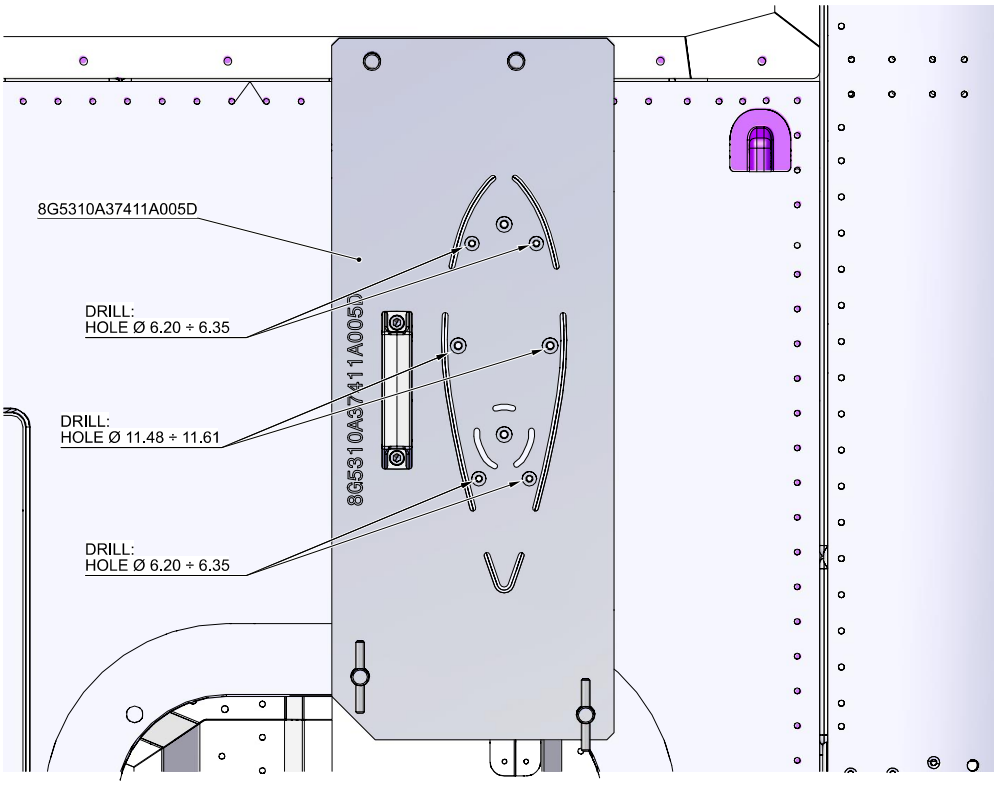
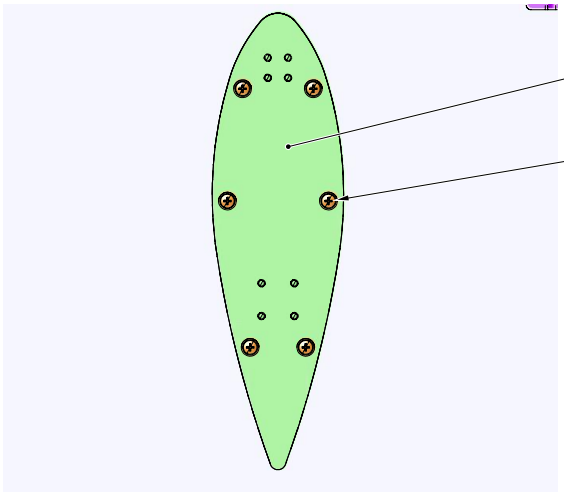

8G5310A37411A005E
8G5310A37411A005E
DRILLING TEMPLATE
DRILL:
HOLE Ø 11.48 ÷ 11.61
INSTALL:
NAS1836-3-12 INSERT
APPLY:
ADHESIVE EA934NA (C054)
(TYP 2 PLCS)
VIEW F (WITH TOOL)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)
INSTALL:
999-7000-07-104 TERMINAL
A297A04TW01 RIVET
INSTALL:
A407A3C2P NUT PLATE
APPLY:
ADHESIVE EA9309.3NA AERO (C021)
INSTALL:
8G2310A04951 CLOSURE DISHING
APPLY:
ADHESIVE EA9309.3NA AERO (C021)
INSTALL:
8G2310A13951 BRACKET
NAS1149D0332J WASHER (QTY 2)
MS27039-1-05 SCREW (QTY 2)
VIEW F
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)
REMOVE:
EXISTING RIVET
12 POSITIONS
FWD
FUSELAGE (REF)
DRILL:
HOLE Ø 55.87
DRILL:
HOLE Ø 39.97
8G5310A37411A005F DRILLING TEMPLATE
VIEW H (WITH TOOL)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)
INSTALL:
8G2310A14051 CLOSURE
8G2310A13251 CLOSURE
APPLY:
ADHESIVE EA9309.3NA AERO (C021)
DRILL:
RIVET HOLE
INSTALL:
A297A04TW01 RIVET
(TYP 17 PLCS)
INSTALL:
8G2310A08051 GROUND PLANE
APPLY:
ADHESIVE EA9309.3NA AERO (C021)
DRILL:
RIVET HOLE
(TYP 31 PLCS)
90.10
94.80
60.80
(typ 3)
60.00
95.55
89.80
77.50
76.80
73.30
119.00
(typ 6)
7.00
(typ)
INSTALL:
8G2310A13151 CLOSURE
8G2310A14151 CLOSURE
APPLY:
ADHESIVE EA9309.3NA AERO (C021)
VIEW H
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

Figure 8



VIEW G (WITH TOOL)

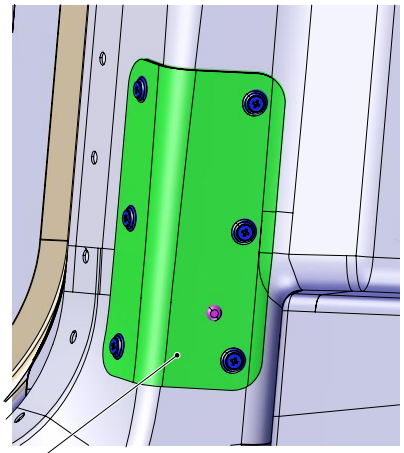
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)



INSTALL:
8G2310A04151 BLANKING PLATE ASSY
A428A3C06 SCREW (QTY 2)
A428A3C08 SCREW (QTY 4)
APPLY:
ADHESIVE EA934NA (C054)

INSTALL:
NAS1836-3-15 INSERT (QTY 2)
APPLY:
ADHESIVE EA934NA (C054)
(TYP 2 PLCS)

VIEW G
(REFER TO FIGURE 1)



AS44445D150D CORD ASSEMBLY (REF)
INSTALL:
8G2310A16231 ACCES COVER ASSEMBLY

VIEW A (WITH COVER)
(REFER TO FIGURE 2)

Figure 9

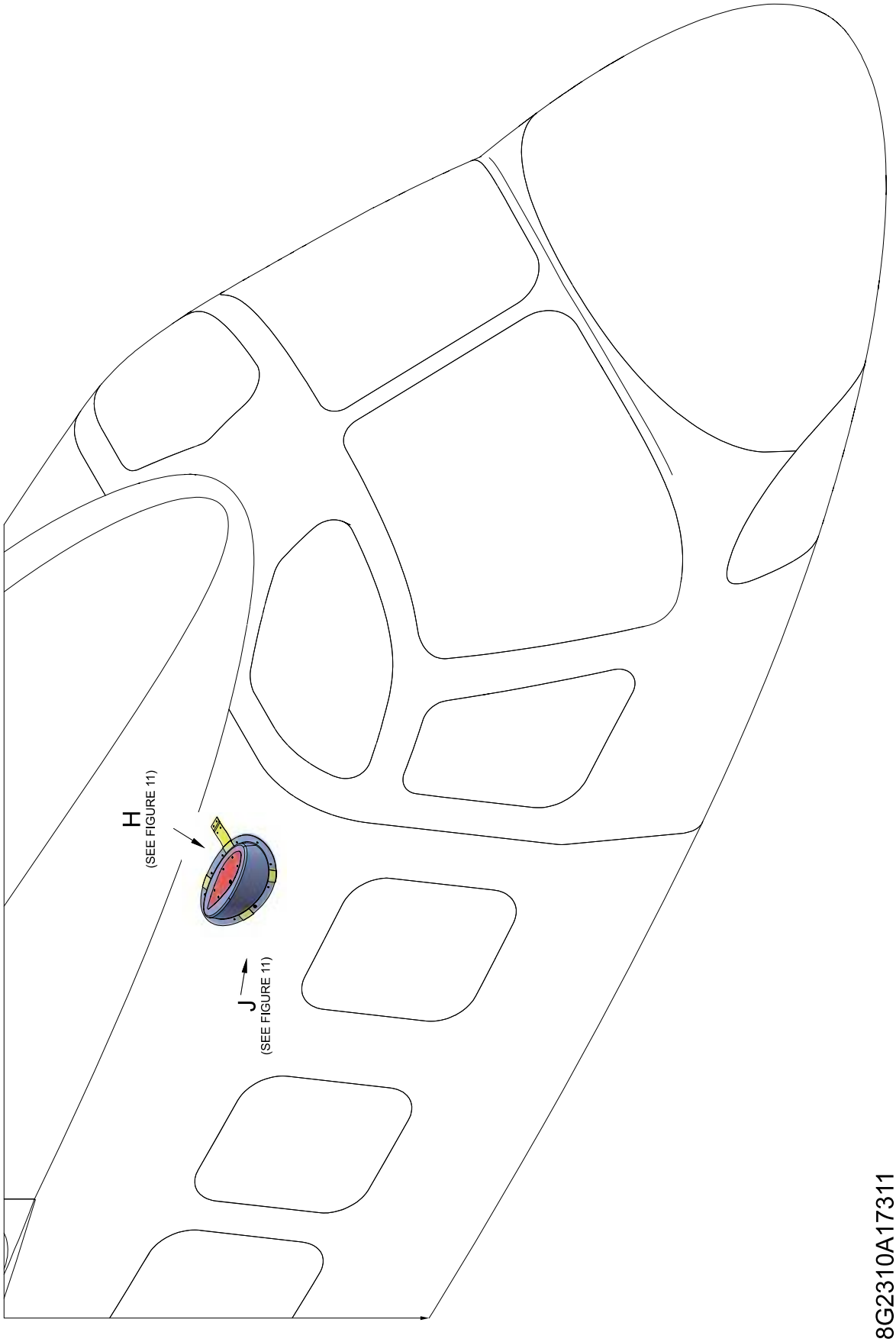
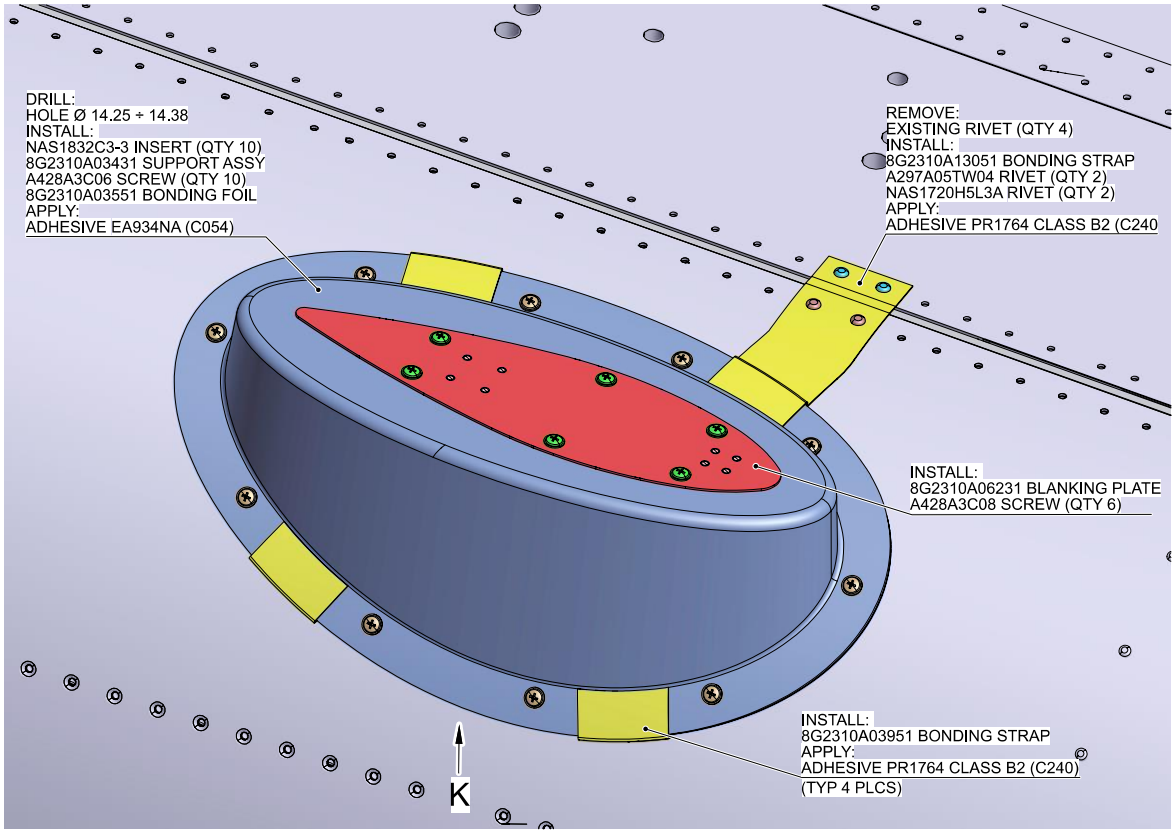
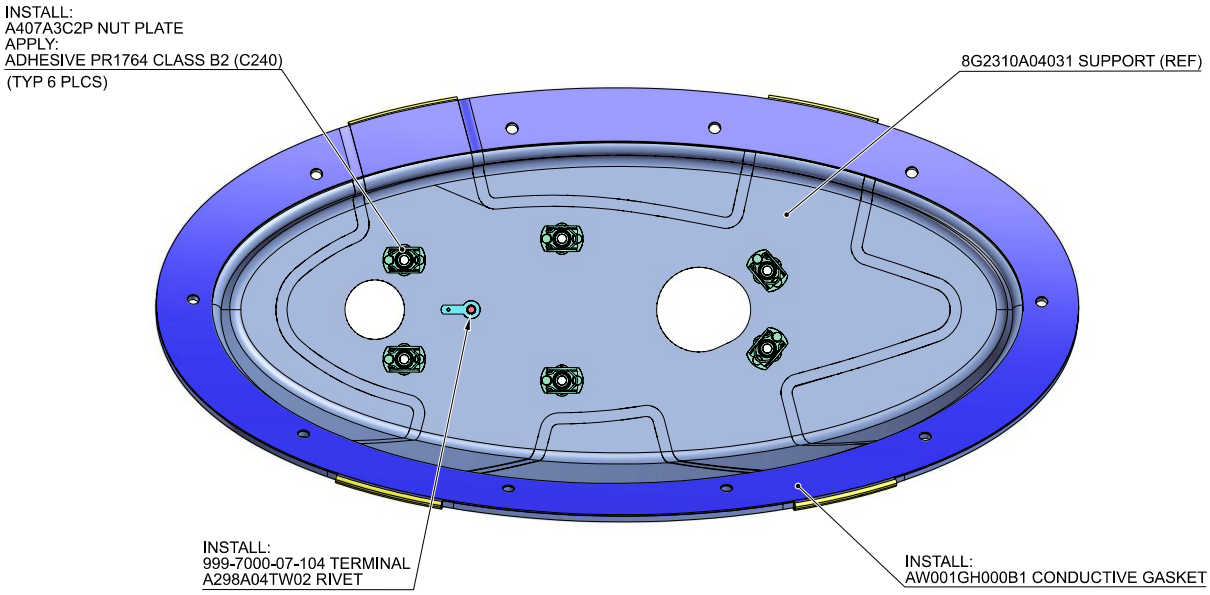

H
(SEE FIGURE 11)
J
(SEE FIGURE 11)
8G2310A17311
V/UHF SUPPORT INSTALLATION

Figure 10



VIEW H

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 10)



VIEW K

Figure 11

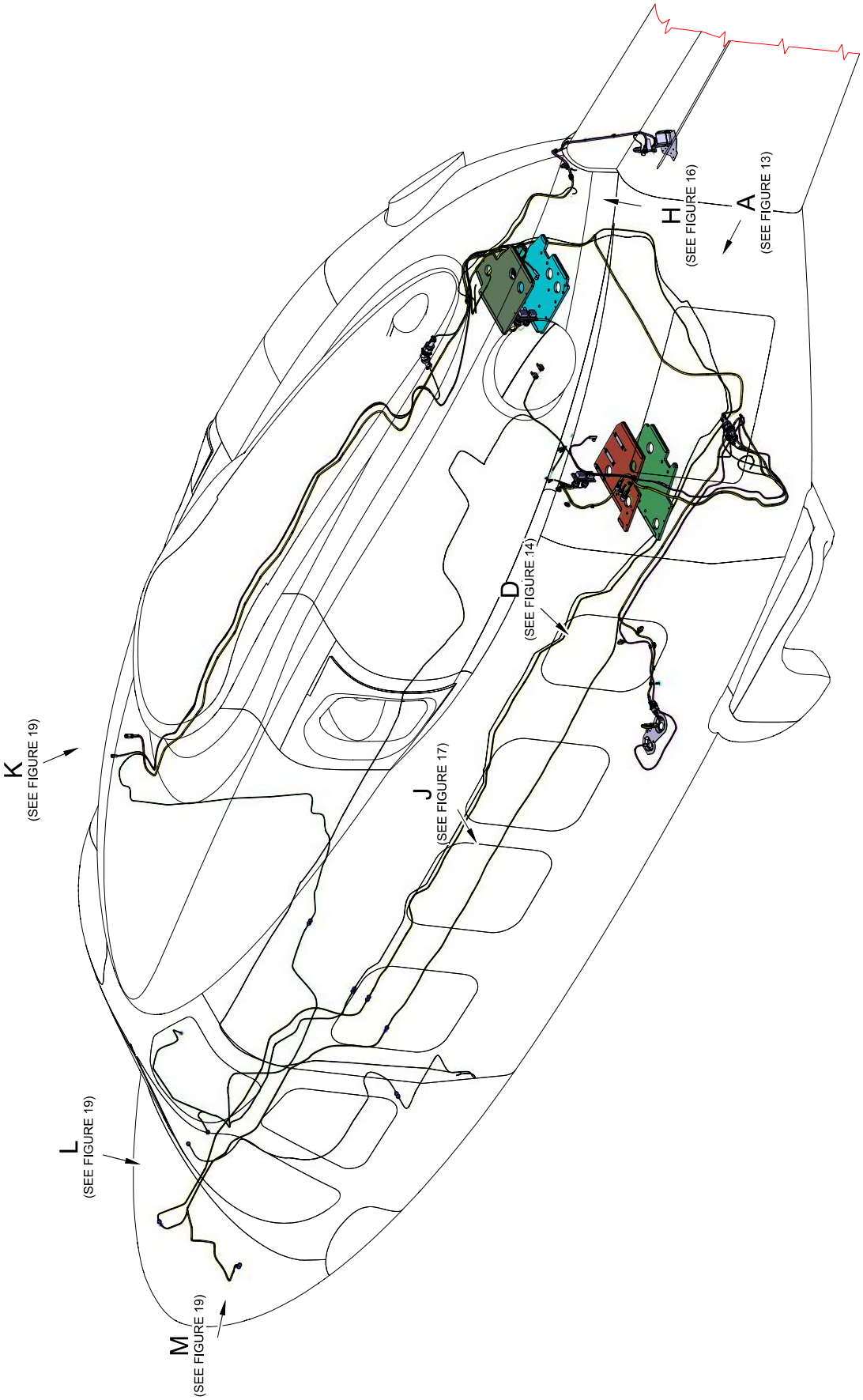
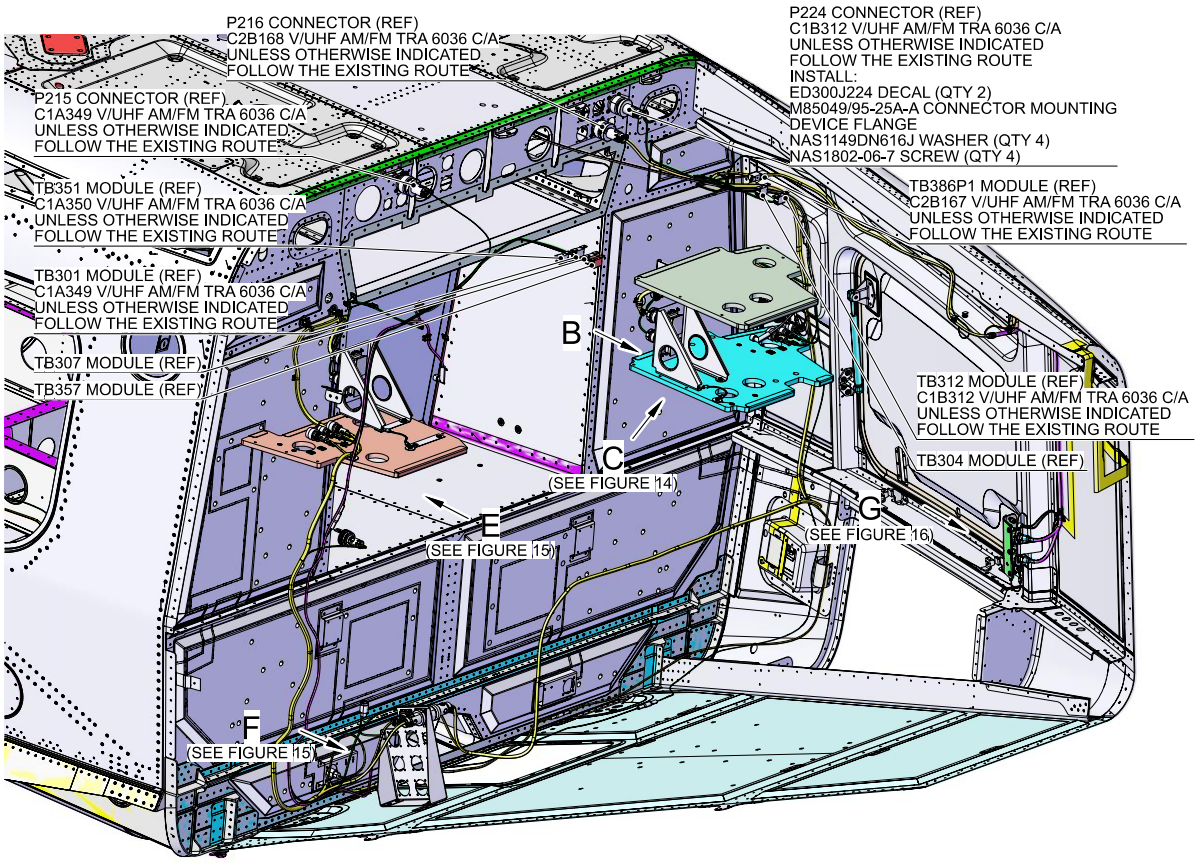
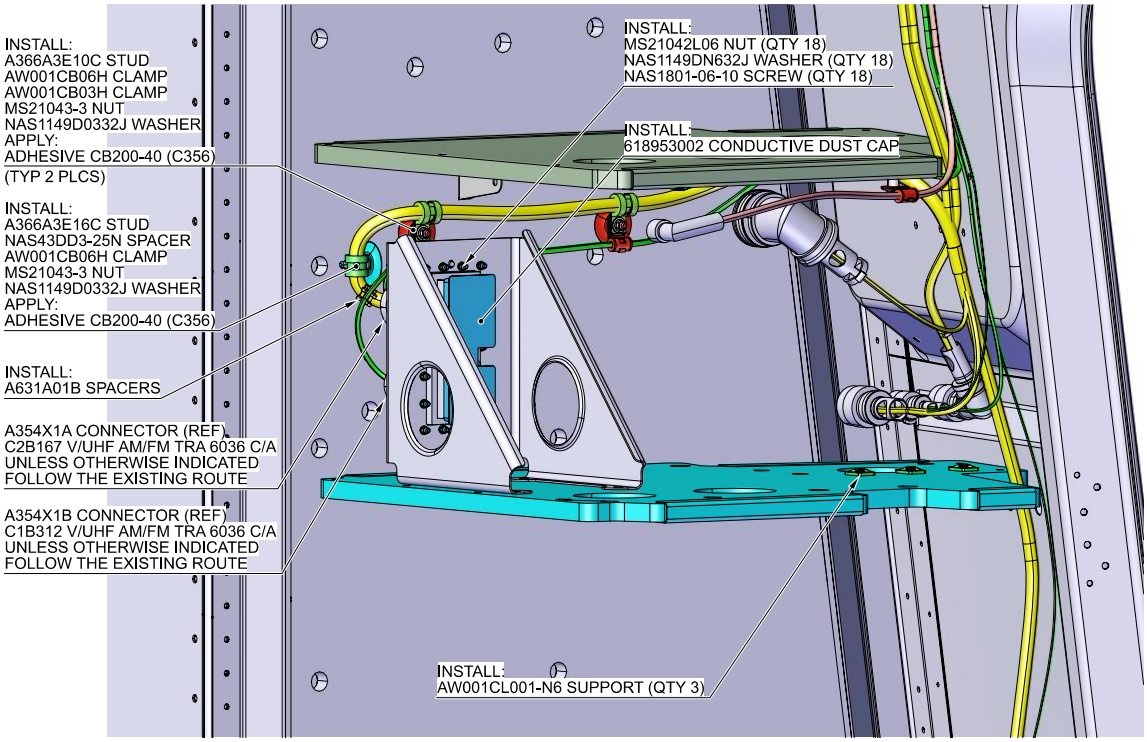

8G2310A11711
V/UHF AM/FM TRA 6036 CABLE ASSY INSTALLATION
H
(SEE FIGURE 16)
A
(SEE FIGURE 13)
D
(SEE FIGURE 14)
J
(SEE FIGURE 17)
K
(SEE FIGURE 19)
L
(SEE FIGURE 19)
M
(SEE FIGURE 19)

Figure 12



VIEW A

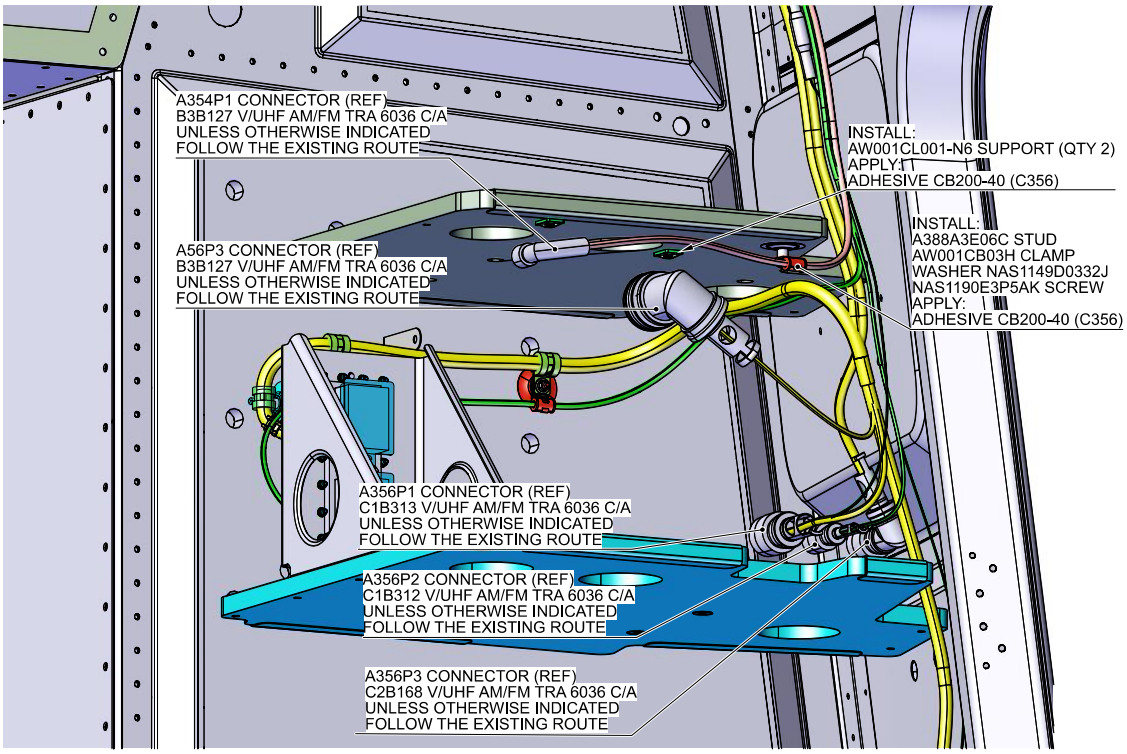
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE X)



VIEW B

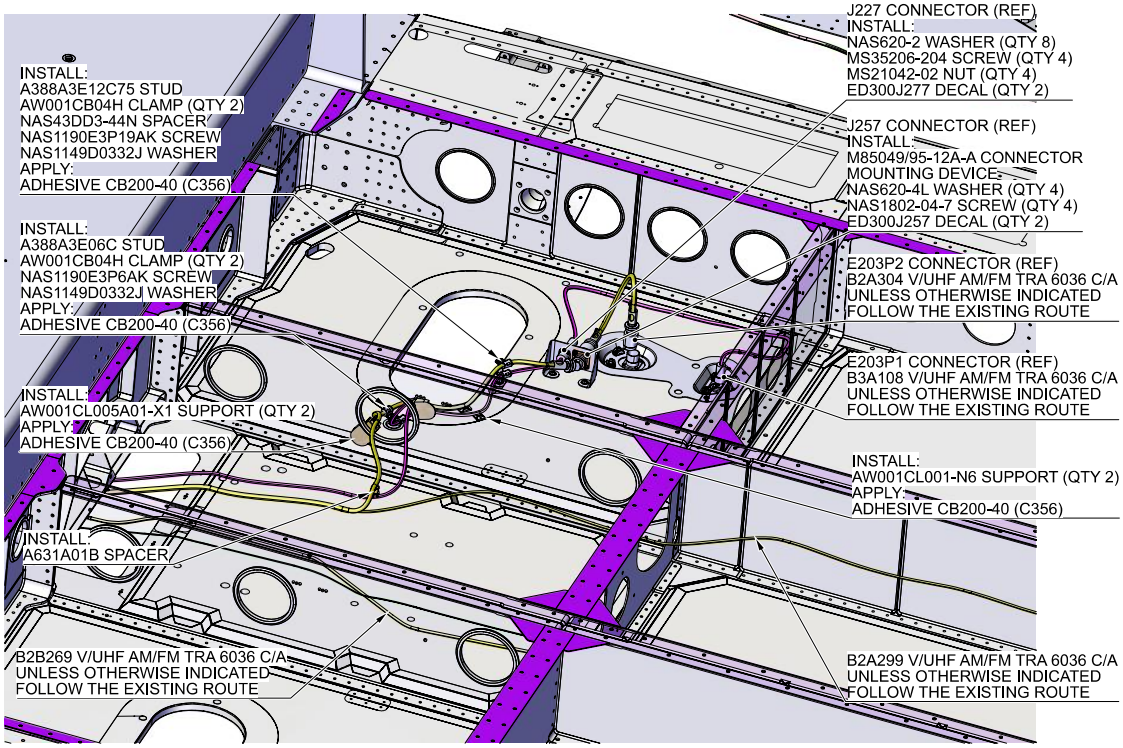
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 13



VIEW C

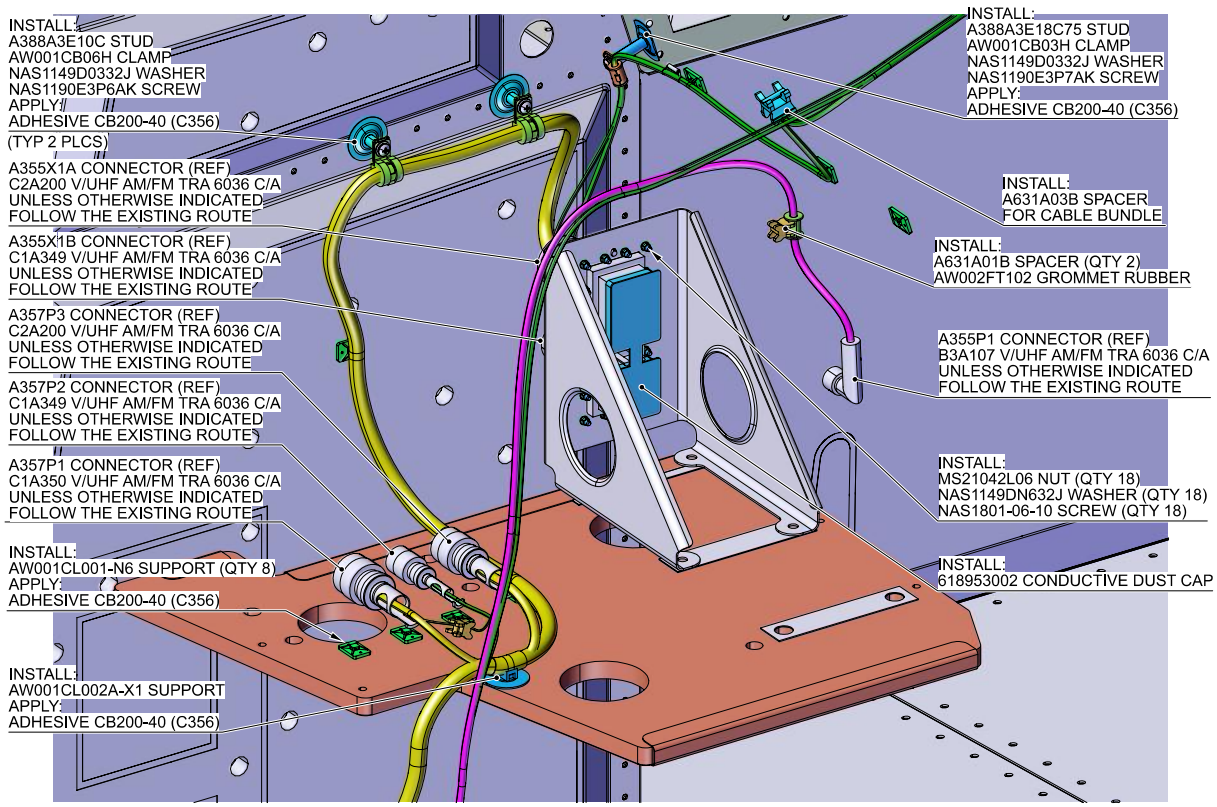
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 13)



VIEW D

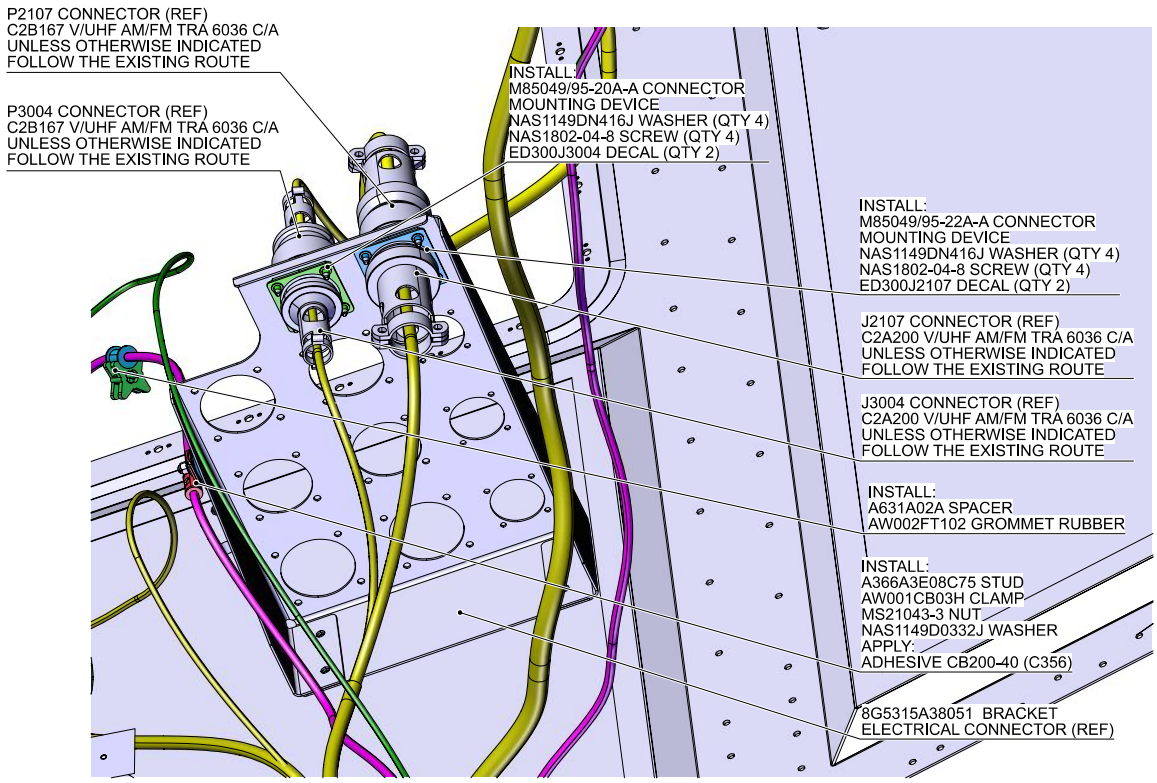
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 12)

Figure 14



VIEW E

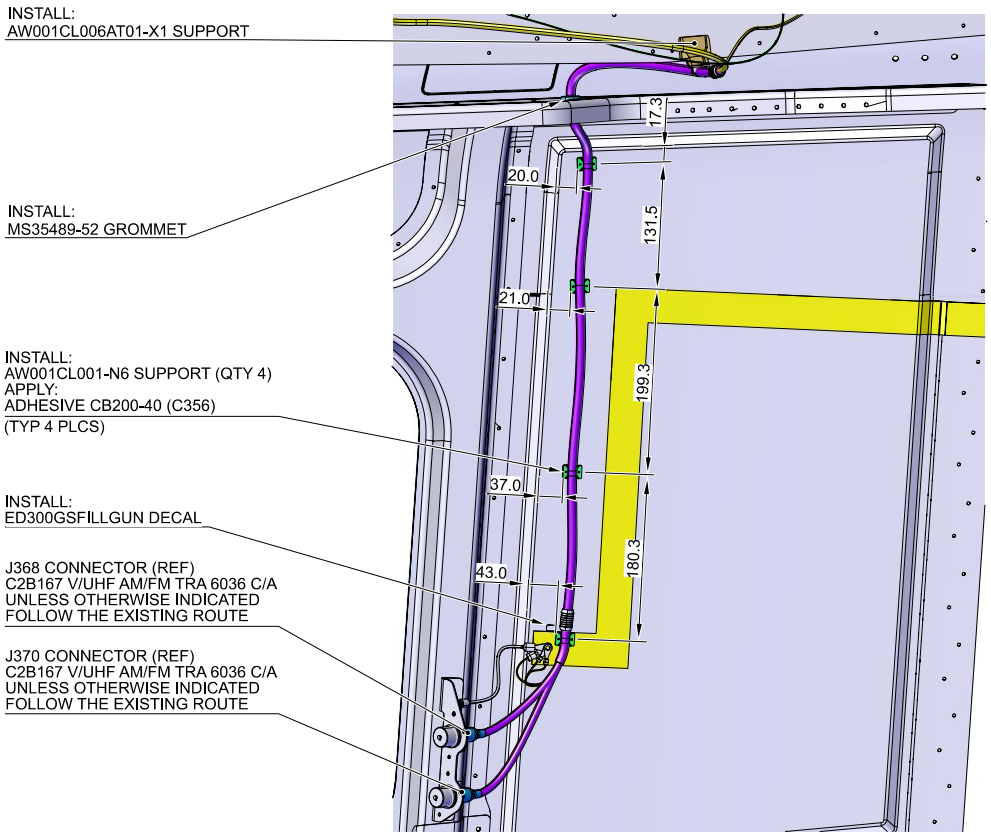
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 13)



VIEW F

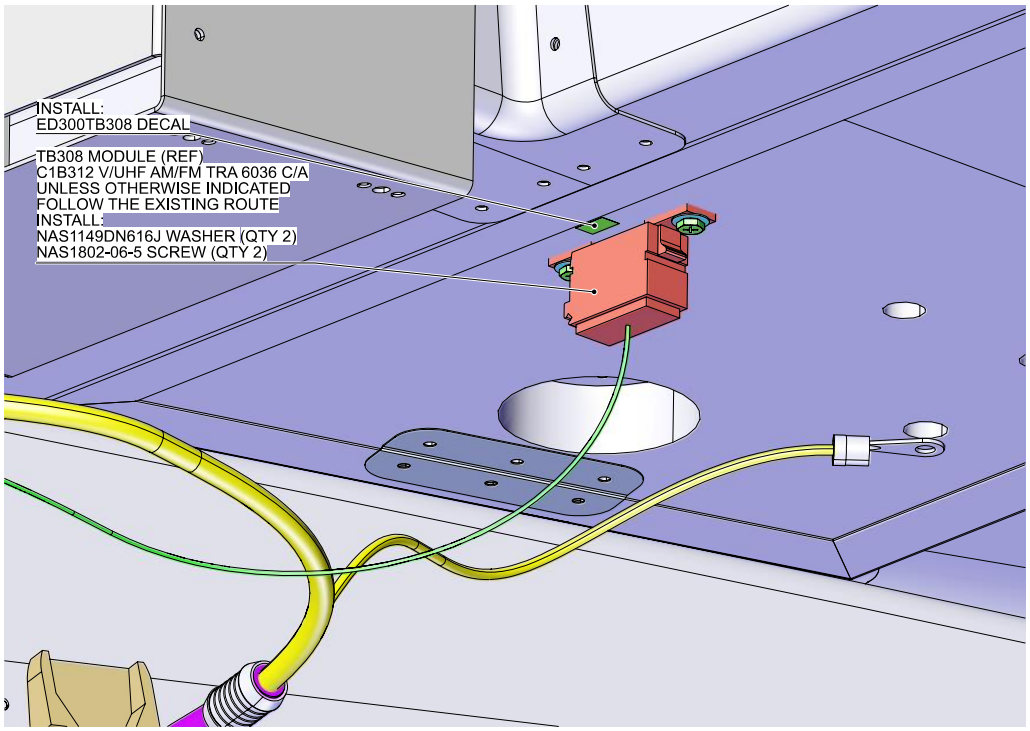
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 13)

Figure 15



VIEW G

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 13)



VIEW H

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 12)

Figure 16

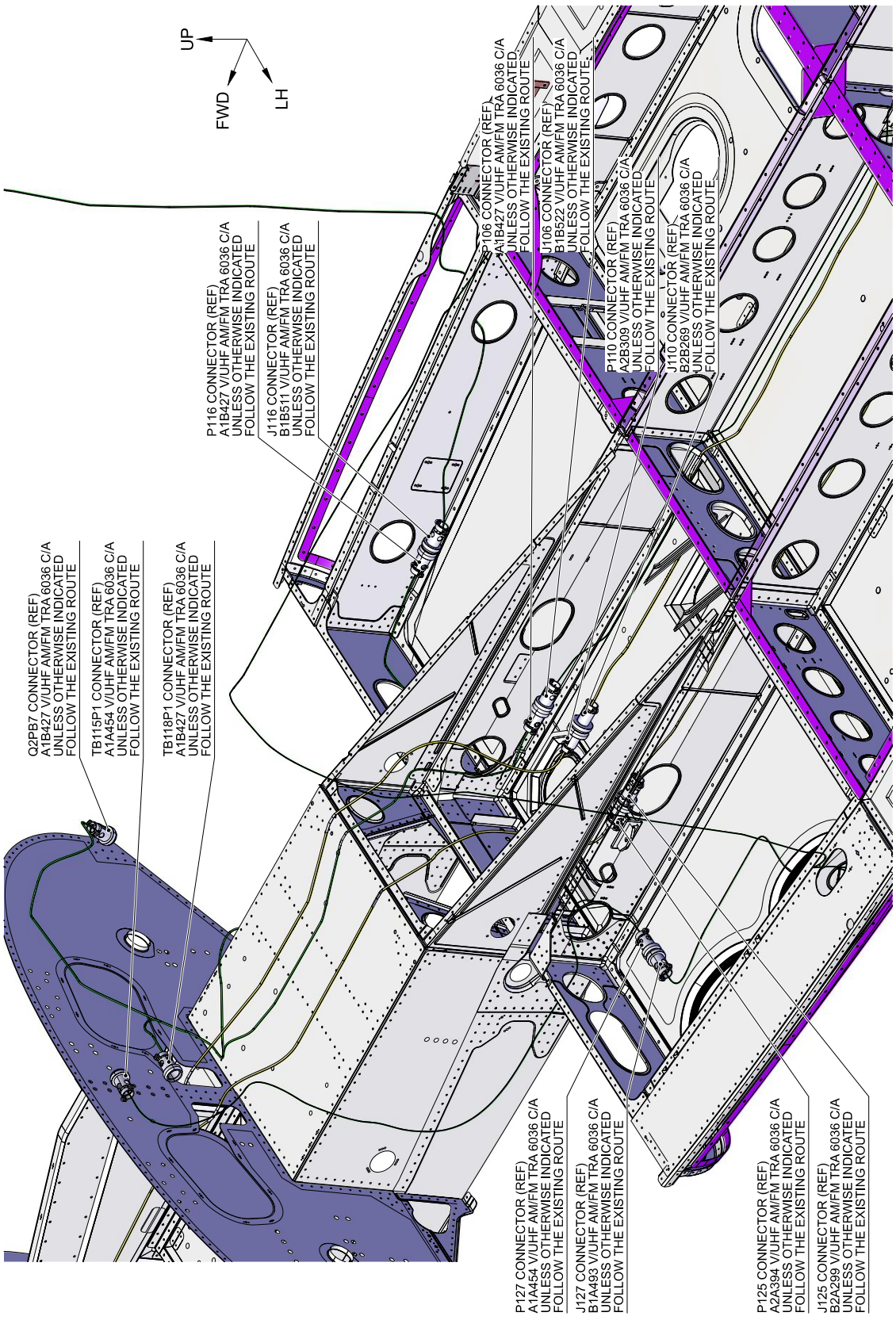

UP
FWD
LH
Q2PB7 CONNECTOR (REF)
A1B427 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
TB115P1 CONNECTOR (REF)
A1A454 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
TB118P1 CONNECTOR (REF)
A1B427 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
P116 CONNECTOR (REF)
A1B427 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
J116 CONNECTOR (REF)
B1B511 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
P106 CONNECTOR (REF)
A1B427 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
J106 CONNECTOR (REF)
B1B522 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
P110 CONNECTOR (REF)
A2B309 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
J110 CONNECTOR (REF)
B2B269 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
P127 CONNECTOR (REF)
A1A454 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
J127 CONNECTOR (REF)
B1A493 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
P125 CONNECTOR (REF)
A2A394 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
J125 CONNECTOR (REF)
B2A299 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
VIEW J
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 12)

Figure 17

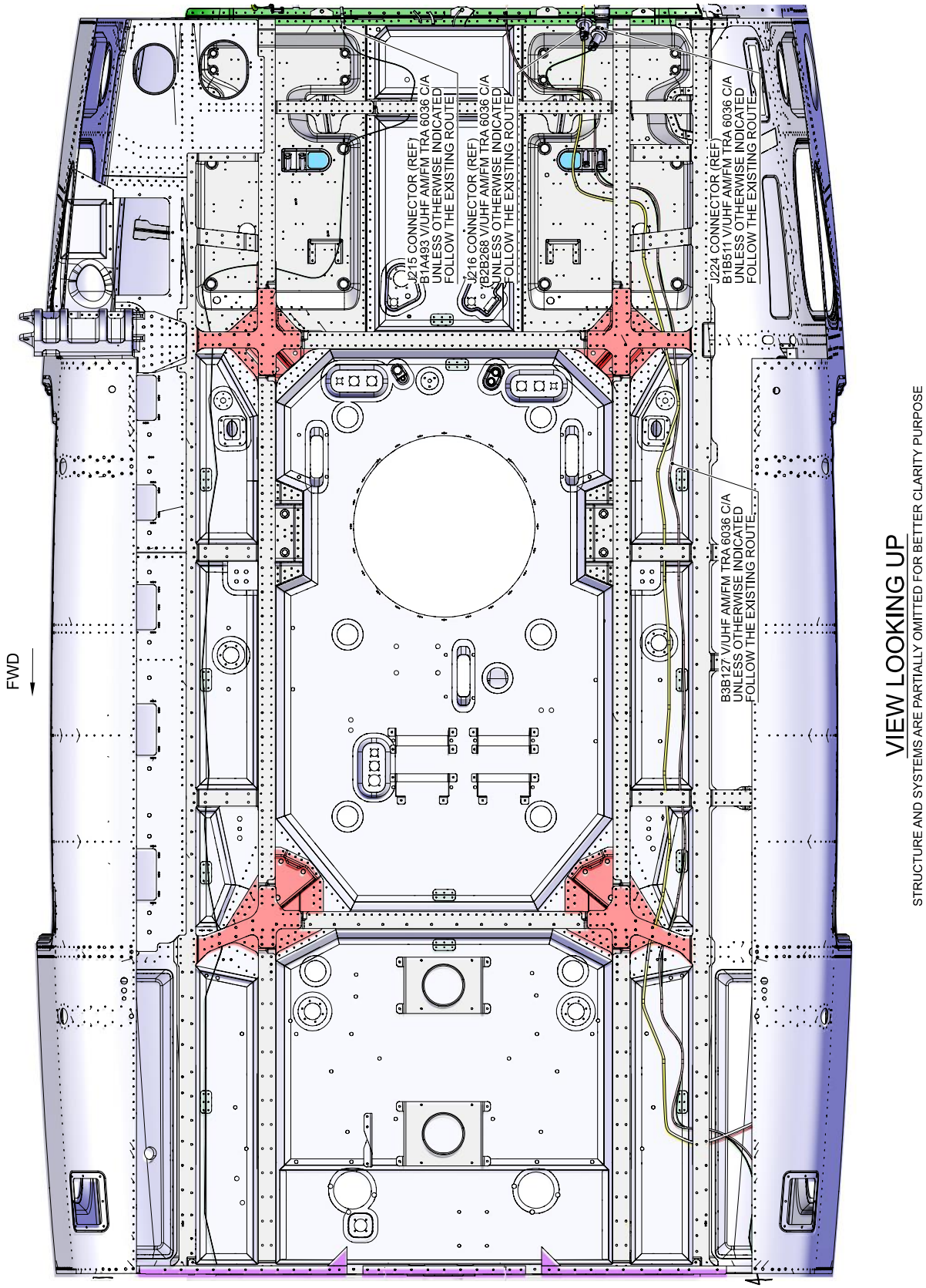
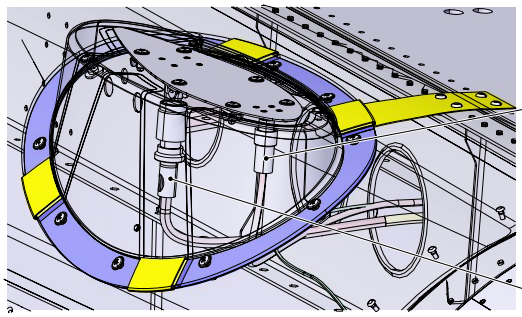

J215 CONNECTOR (REF)
B1A493 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
J216 CONNECTOR (REF)
B2B268 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
J224 CONNECTOR (REF)
B1B511 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
B3B127 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE
FWD
VIEW LOOKING UP
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 18



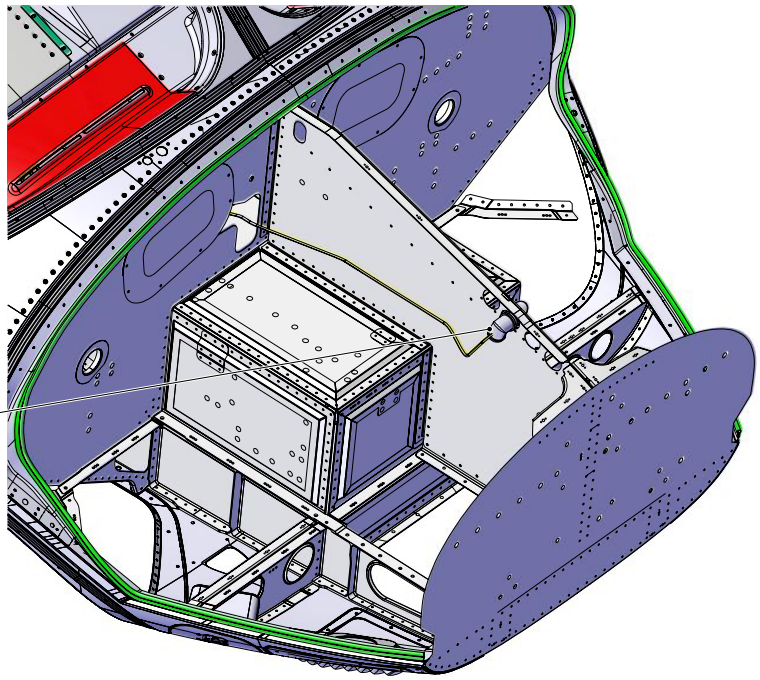
E202P1 CONNECTOR (REF)
B3B127 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE

FWD

E202P2 CONNECTOR (REF)
B2B268 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE

VIEW K

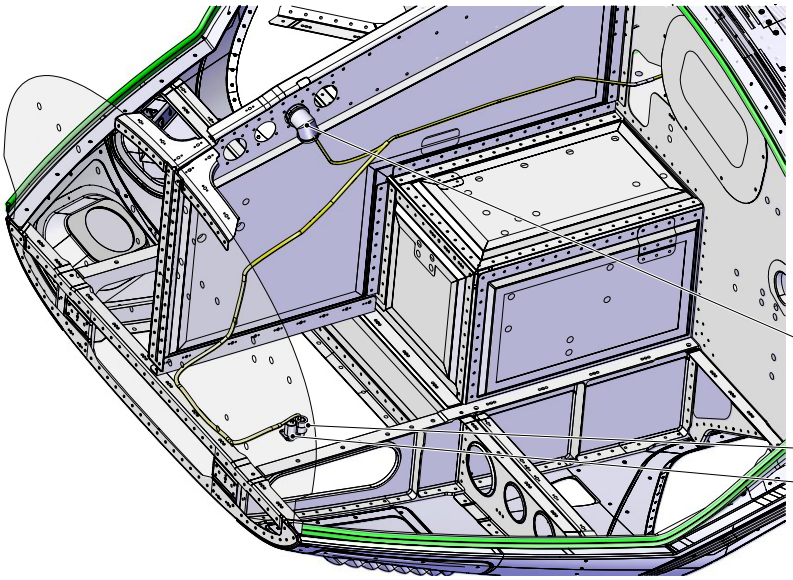
STRUCTURE AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 12)



P105 CONNECTOR (REF)
A2B309 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE

VIEW L

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 12)



J105 CONNECTOR (REF)
A2A394 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE

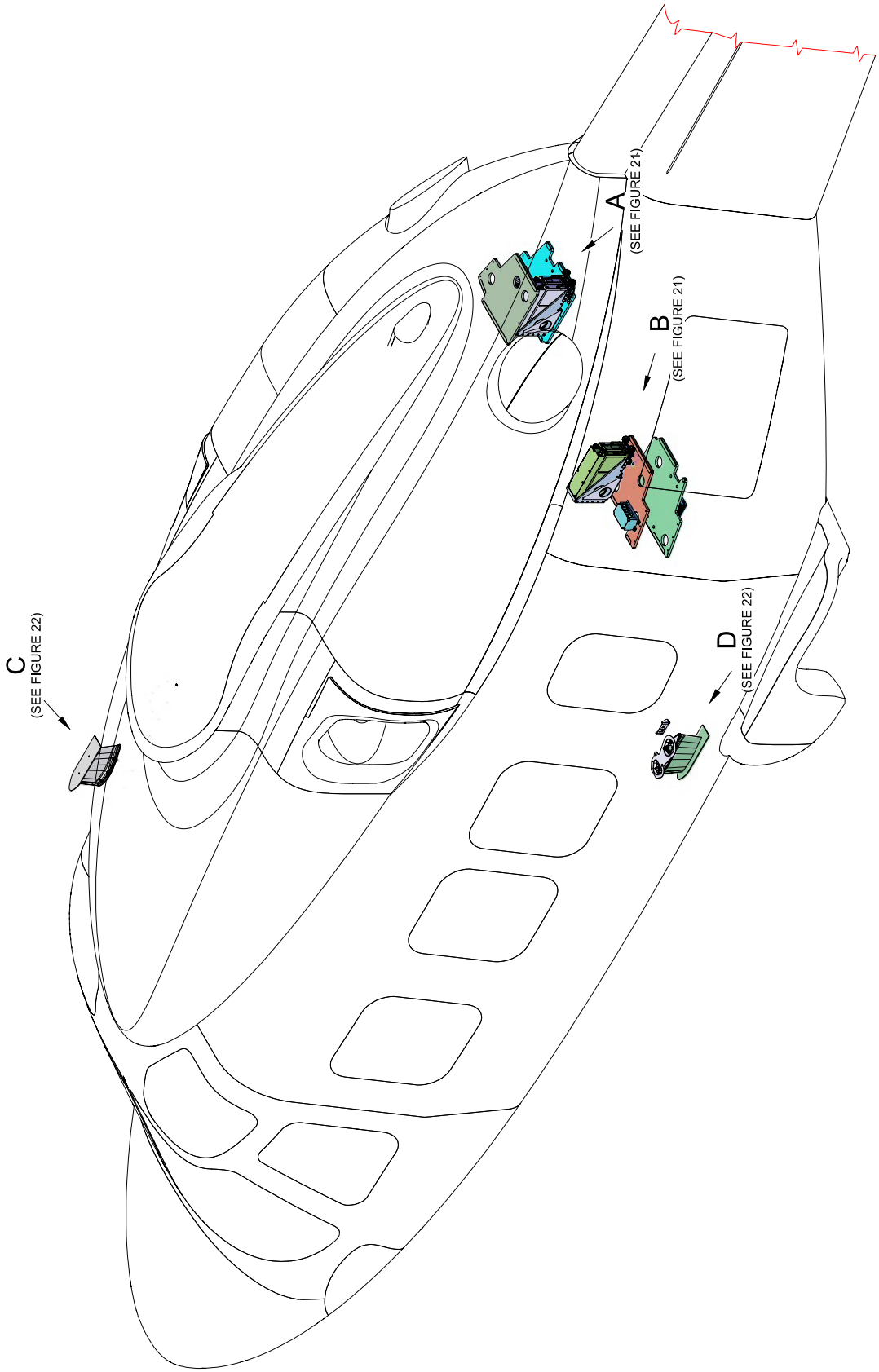
TB167-1 MODULE (REF)
A2A394 V/UHF AM/FM TRA 6036 C/A
UNLESS OTHERWISE INDICATED
FOLLOW THE EXISTING ROUTE

TB167-2 MODULE (REF)

VIEW M

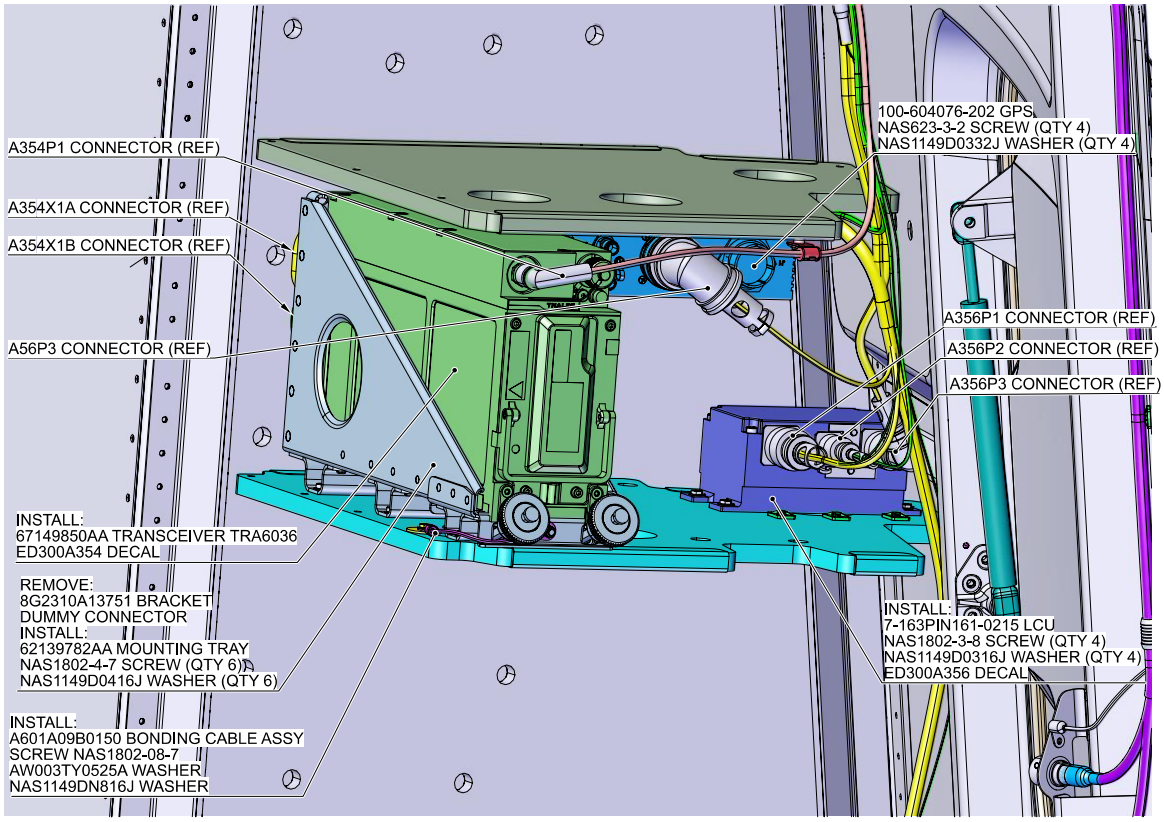
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 12)

Figure 19



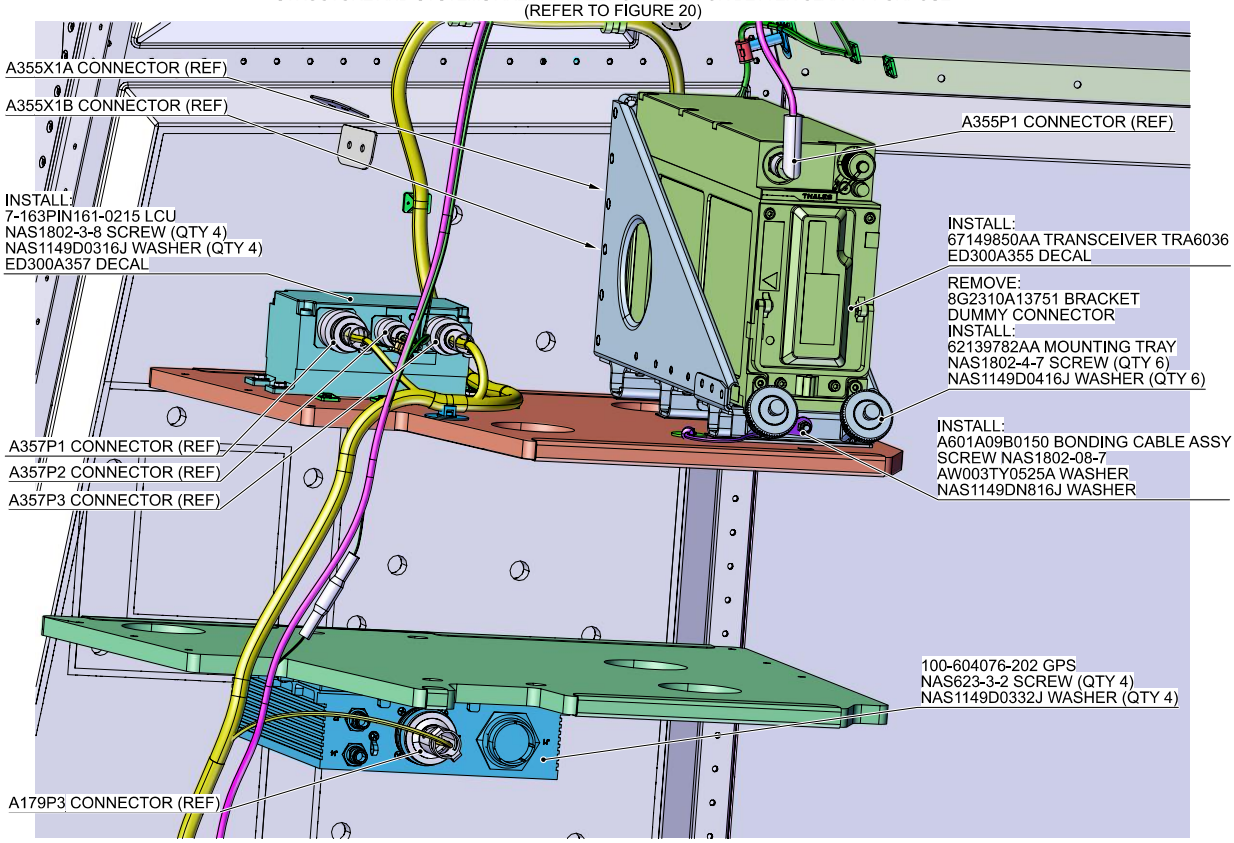
8G2310A11811
V/UHF AM/FM TRA 6036 EQUIPMENT INSTALLATION

Figure 20



VIEW A

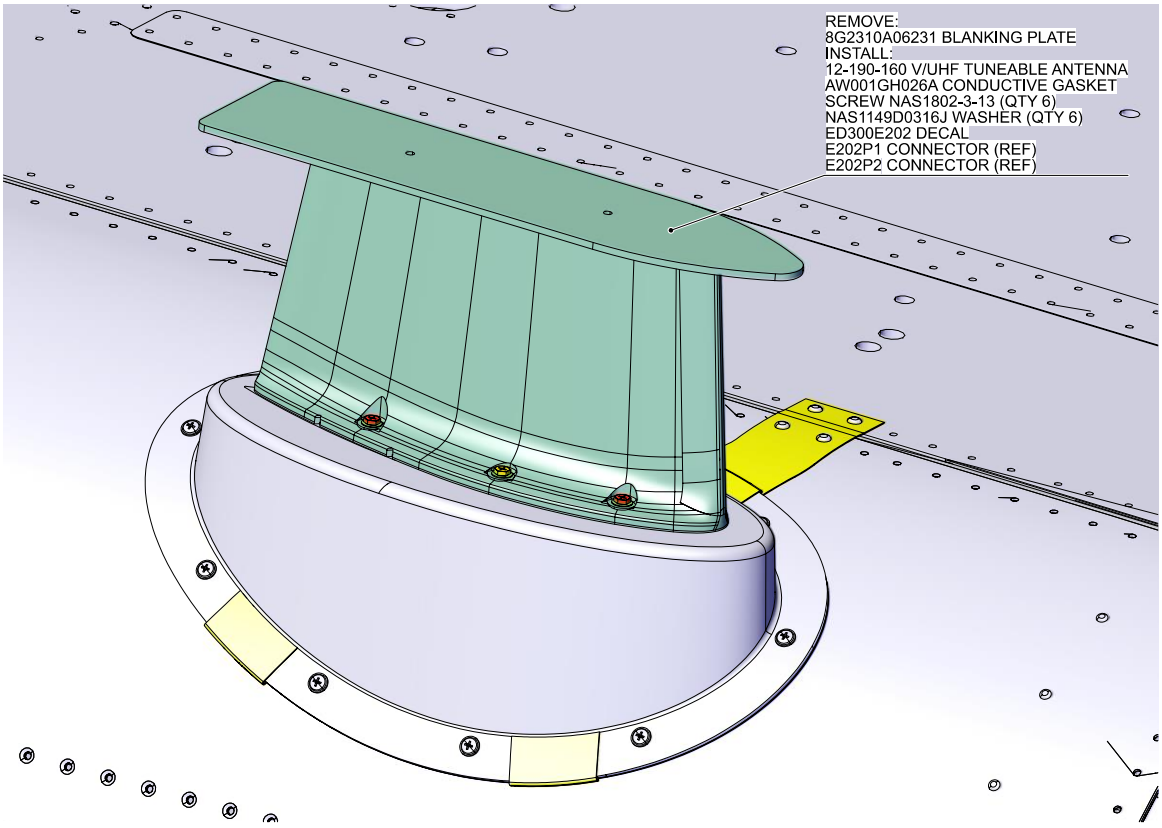
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 20)



VIEW B

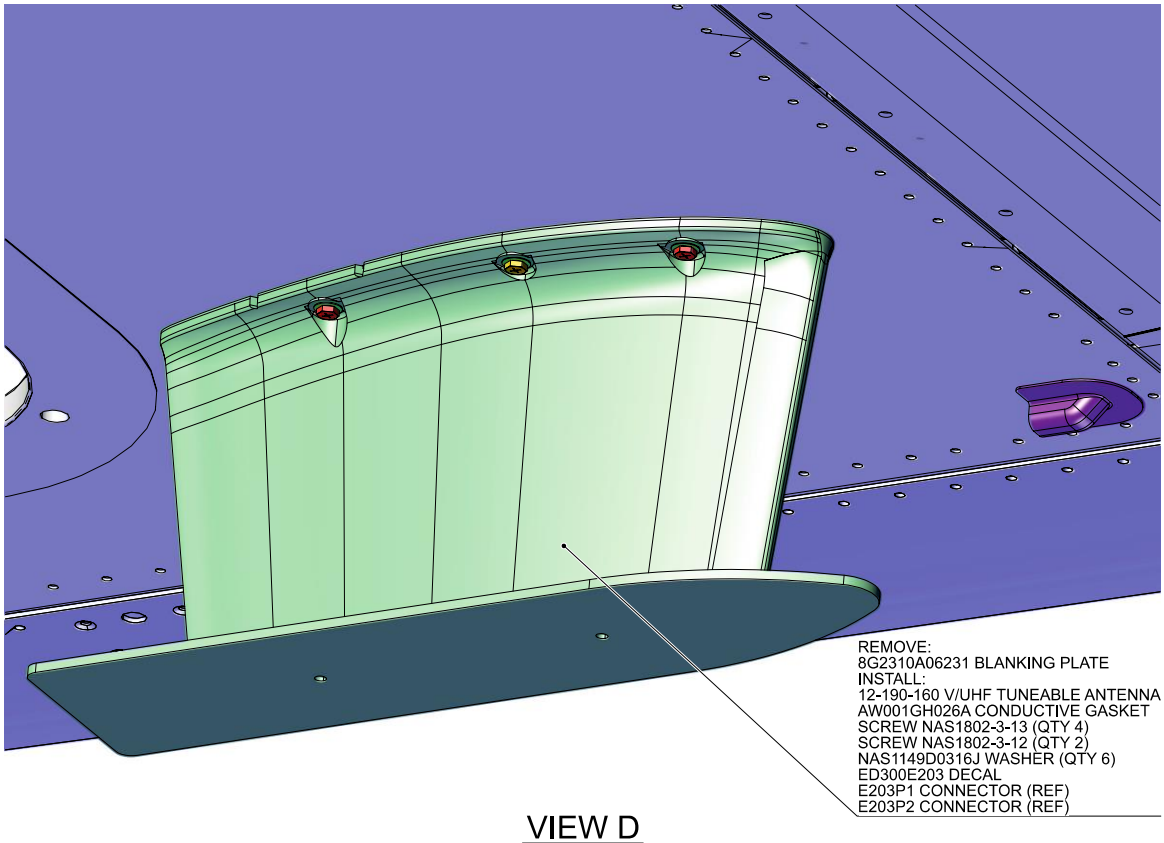
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 20)

Figure 21



VIEW C

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 20)



VIEW D

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 20)

Figure 22

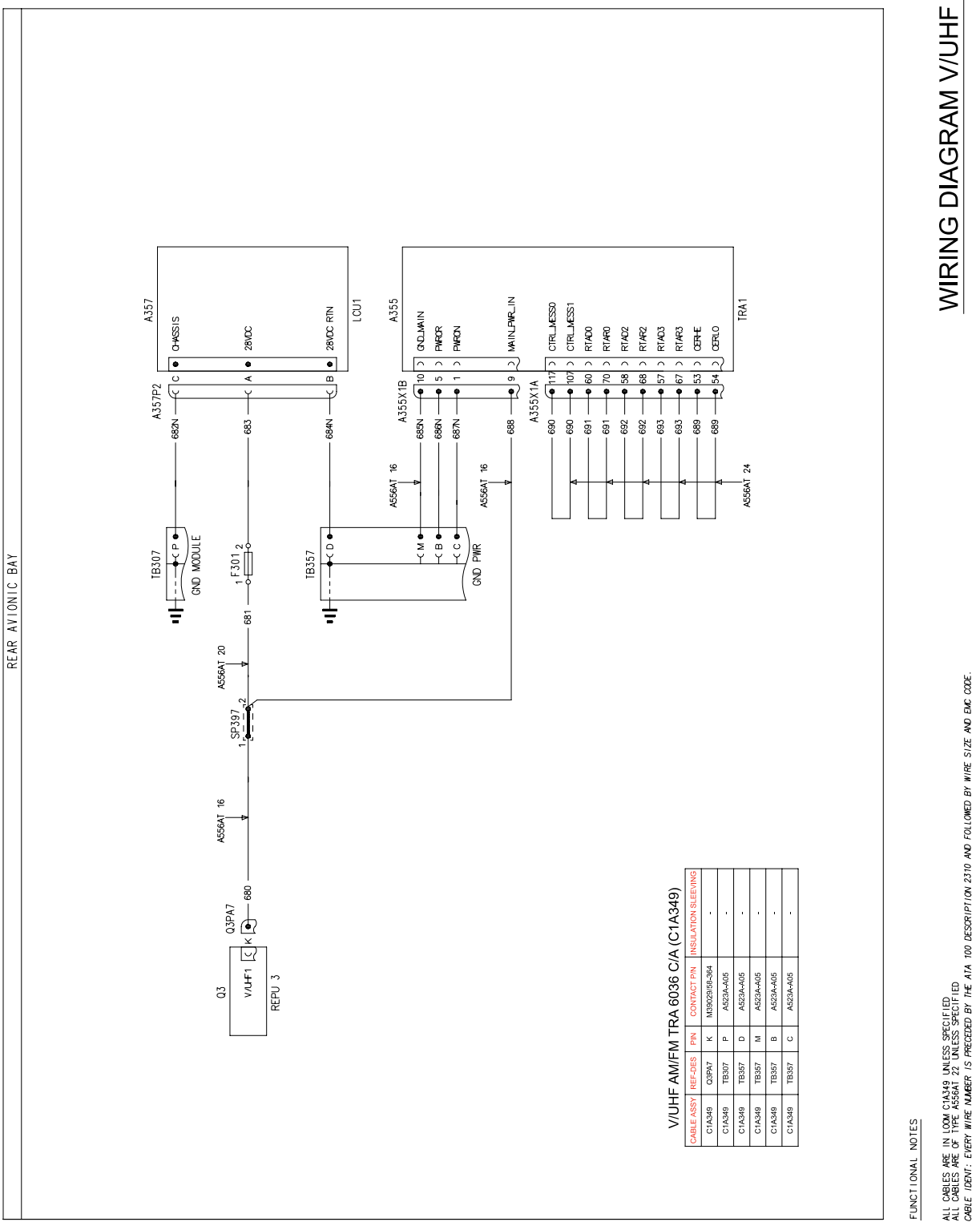

8G2310W01701
WIRING DIAGRAM V/UHF AM/FM TRA 6036
SHEET 1
REAR AVIONIC BAY
A357
CHASSIS
28VDC
28VDC RTN
LCU1
A357P2
A355
GNDMAIN
PWRDR
PWRDN
MAINPWR_IN
TRA1
CTRL_MESS0
CTRL_MESS1
RTAD0
RTAR0
RTAD2
RTAR2
RTAD3
RTAR3
CERHE
CERLO
A355X1B
A355X1A
TB307
GND MODULE
1 F301 2
TB357
GND PWR
SP397
Q3
V/UHF1
REPU 3
Q3PA7
A556AT 16
A556AT 20
A556AT 24
680
681
682N
683
684N
685N
686N
687N
688
689
690
691
692
693
V/UHF AM/FM TRA 6036 C/A (C1A349)
CABLE ASSY
REF-DES
PIN
CONTACT P/N
INSULATION SLEEVING
C1A349 Q3PA7 K M39029/58-364 -
C1A349 TB307 P A523A-A05 -
C1A349 TB357 D A523A-A05 -
C1A349 TB357 M A523A-A05 -
C1A349 TB357 B A523A-A05 -
C1A349 TB357 C A523A-A05 -
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C1A349 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 23

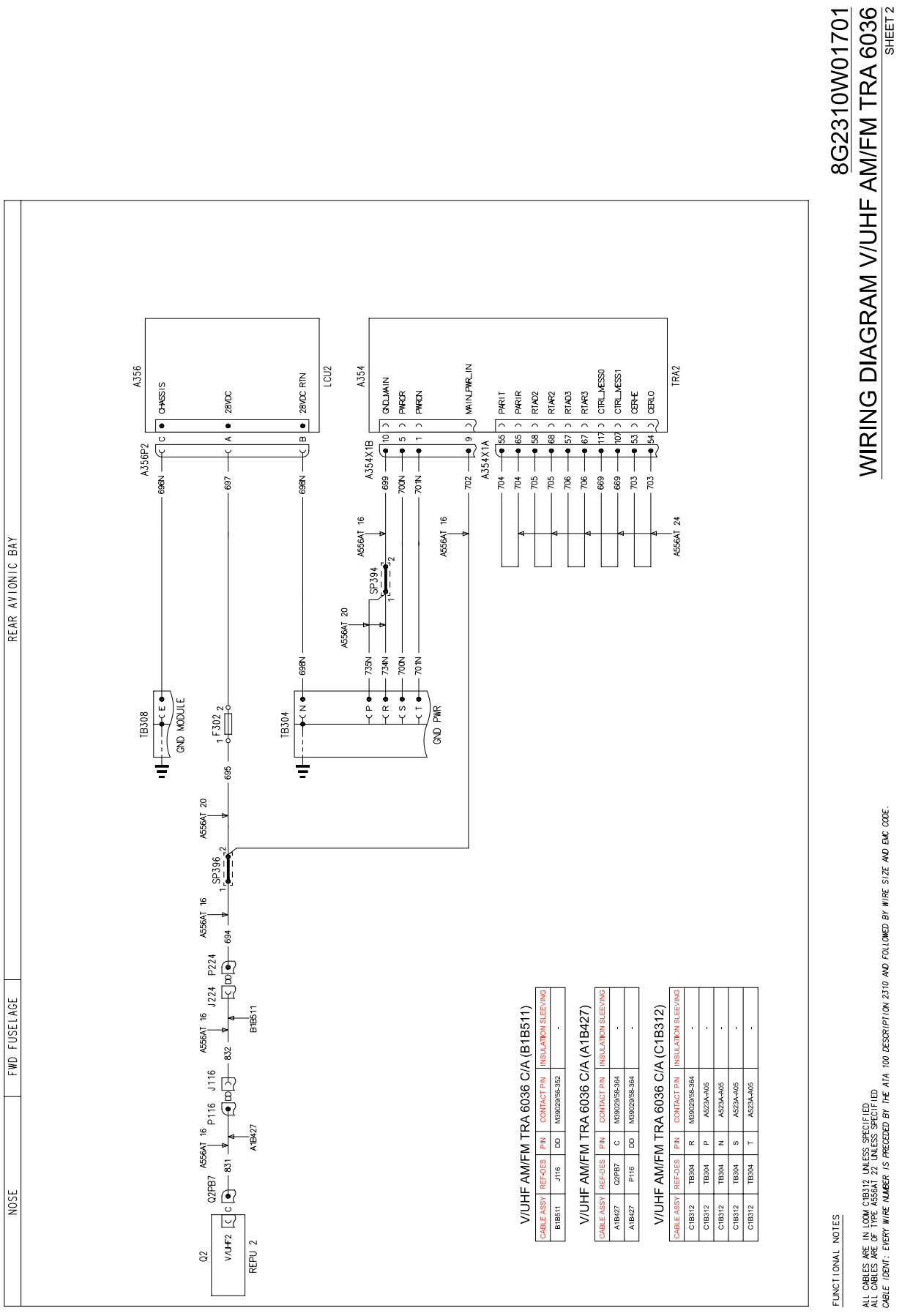

8G2310W01701
WIRING DIAGRAM V/UHF AM/FM TRA 6036
SHEET 2
NOSE
FWD FUSELAGE
REAR AVIONIC BAY
A356
CHASSIS
28VDC
28VDC RTN
LCU2
A356P2
698N
697
698N
TB308
GND MODULE
F302
695
TB304
GND PWR
A556AT 20
SP396
A556AT 16
694
P224
J224
A556AT 16
832
J116
P116
831
Q2PB7
A1B427
B1B511
Q2
V/UHF2
REPU 2
A354
A354X1B
GNDJMAIN
PWRGR
PWRGN
MAIN_PWR_IN
699
700N
701N
702
A354X1A
A556AT 16
A556AT 20
SP394
735N
734N
700N
701N
A556AT 16
A556AT 24
TRA2
PARIT
PARIR
RTAD2
RTAR2
RTAD3
RTAR3
CTRL_MESS0
CTRL_MESS1
CERHE
CERLO
704
705
706
669
703
V/UHF AM/FM TRA 6036 C/A (B1B511)
CABLE ASSY | REF-DES | PIN | CONTACT P/N | INSULATION SLEEVING
B1B511 | J116 | DD | M39029/56-352 | -
V/UHF AM/FM TRA 6036 C/A (A1B427)
CABLE ASSY | REF-DES | PIN | CONTACT P/N | INSULATION SLEEVING
A1B427 | Q2PB7 | C | M39029/56-364 | -
A1B427 | P116 | DD | M39029/56-364 | -
V/UHF AM/FM TRA 6036 C/A (C1B312)
CABLE ASSY | REF-DES | PIN | CONTACT P/N | INSULATION SLEEVING
C1B312 | TB304 | R | M39029/56-364 | -
C1B312 | TB304 | P | A523A-A05 | -
C1B312 | TB304 | N | A523A-A05 | -
C1B312 | TB304 | S | A523A-A05 | -
C1B312 | TB304 | T | A523A-A05 | -
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C1B312 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED
CABLE IDENT.: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 24

8G2310W01701

WIRING DIAGRAM V/UHF AM/FM TRA 6036

SHEET 3

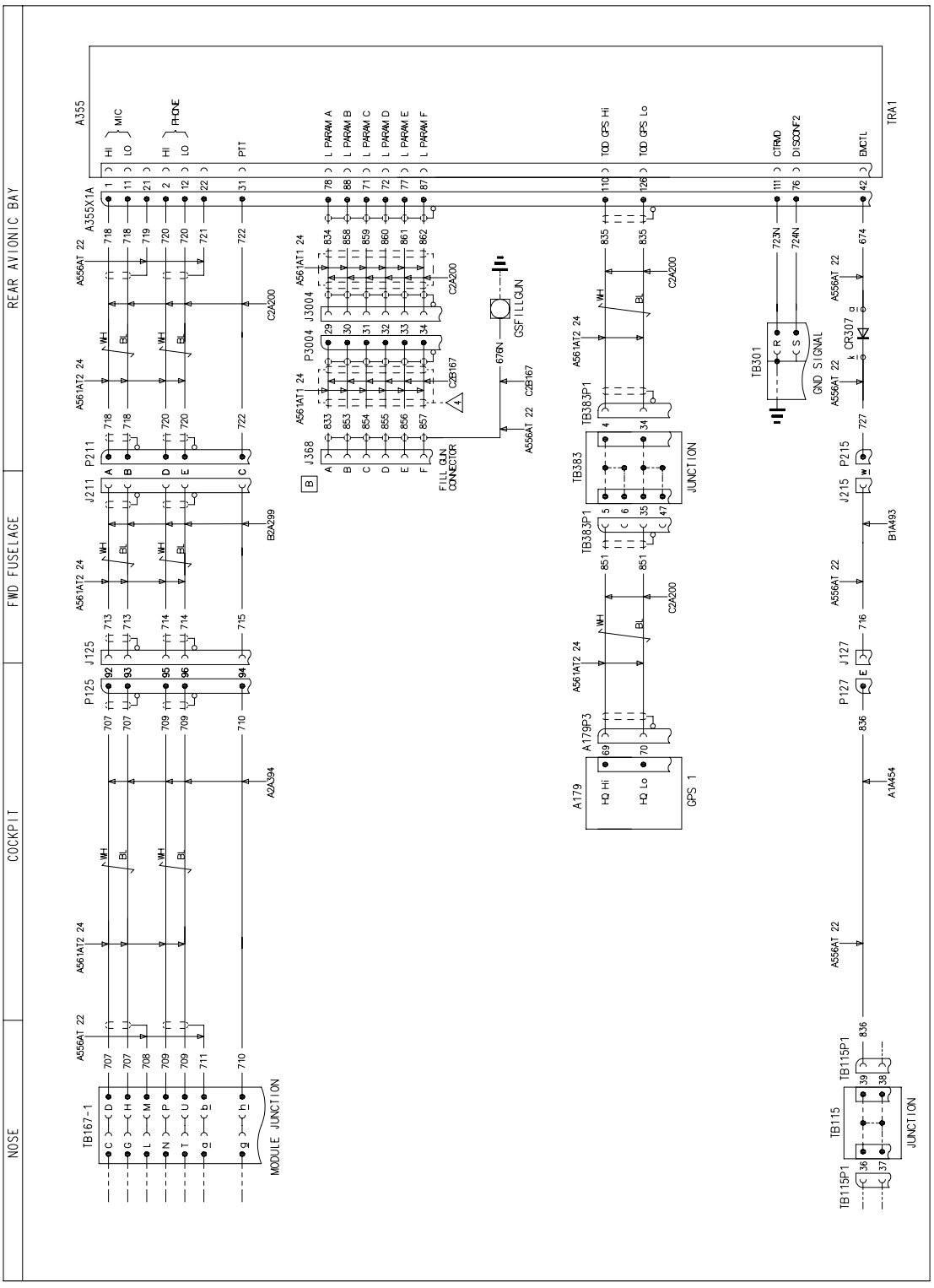


Figure 25

V/UHF AM/FM TRA 6036 C/A (C2A200)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C2A200	A355X1A	21	618200	-
C2A200	A355X1A	°	-	-
C2A200	A355X1A	22	618200	-
C2A200	A355X1A	°	-	-
C2A200	A355X1A	78	-	-
C2A200	A355X1A	88	-	-
C2A200	A355X1A	71	-	-
C2A200	A355X1A	72	-	-
C2A200	A355X1A	77	-	-
C2A200	A355X1A	87	-	-
C2A200	A355X1A	1	618200	M23053/8-004-C
C2A200	A355X1A	11	618200	M23053/8-004-C
C2A200	A355X1A	2	618200	M23053/8-004-C
C2A200	A355X1A	12	618200	M23053/8-004-C
C2A200	A355X1A	31	618200	-
C2A200	A355X1A	110	618200	-
C2A200	A355X1A	126	618200	-
C2A200	P211	A	M39029/58-363	-
C2A200	P211	B	M39029/58-363	-
C2A200	P211	D	M39029/58-363	-
C2A200	P211	E	M39029/58-363	-
C2A200	P211	C	M39029/58-363	-
C2A200	TB383P1	4	M39029/56-348	-
C2A200	TB383P1	34	M39029/56-348	-
C2A200	TB383P1	5	M39029/56-348	-
C2A200	TB383P1	35	M39029/56-348	-

V/UHF AM/FM TRA 6036 C/A (B1A493)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
B1A493	J127	E	M39029/56-351	-
B1A493	J215	w	M39029/56-351	-

V/UHF AM/FM TRA 6036 C/A (A1A454)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
A1A454	P127	E	M39029/58-363	-
A1A454	TB115P1	39	M39029/56-348	-

V/UHF AM/FM TRA 6036 C/A (C1A349)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C1A349	P215	w	M39029/58-363	-
C1A349	TB301	R	A523A-A05	-
C1A349	TB301	S	A523A-A05	-

V/UHF AM/FM TRA 6036 C/A (A2A394)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
A2A394	P125	92	M39029/58-360	-
A2A394	P125	93	M39029/58-360	-
A2A394	P125	94	M39029/58-360	-
A2A394	P125	95	M39029/58-360	-
A2A394	P125	96	M39029/58-360	-
A2A394	TB167/1	D	A523A-A01	M23053/8-004-C
A2A394	TB167/1	H	A523A-A01	M23053/8-004-C
A2A394	TB167/1	P	A523A-A01	M23053/8-004-C
A2A394	TB167/1	U	A523A-A01	M23053/8-004-C
A2A394	TB167/1	M	A523A-A01	-
A2A394	TB167/1	°		-
A2A394	TB167/1	h	A523A-A01	-
A2A394	TB167/1	b	A523A-A01	-
A2A394	TB167/1	°		-

V/UHF AM/FM TRA 6036 C/A (C2B167)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C2B167	GSFILLGUN	*	-	-

V/UHF AM/FM TRA 6036 C/A (B2A299)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
B2A299	J125	92	M39029/56-348	-
B2A299	J125	93	M39029/56-348	-
B2A299	J125	94	M39029/56-348	-
B2A299	J125	95	M39029/56-348	-
B2A299	J125	96	M39029/56-348	-
B2A299	J211	A	M39029/56-351	-
B2A299	J211	B	M39029/56-351	-
B2A299	J211	D	M39029/56-351	-
B2A299	J211	E	M39029/56-351	-
B2A299	J211	C	M39029/56-351	-

Figure 26

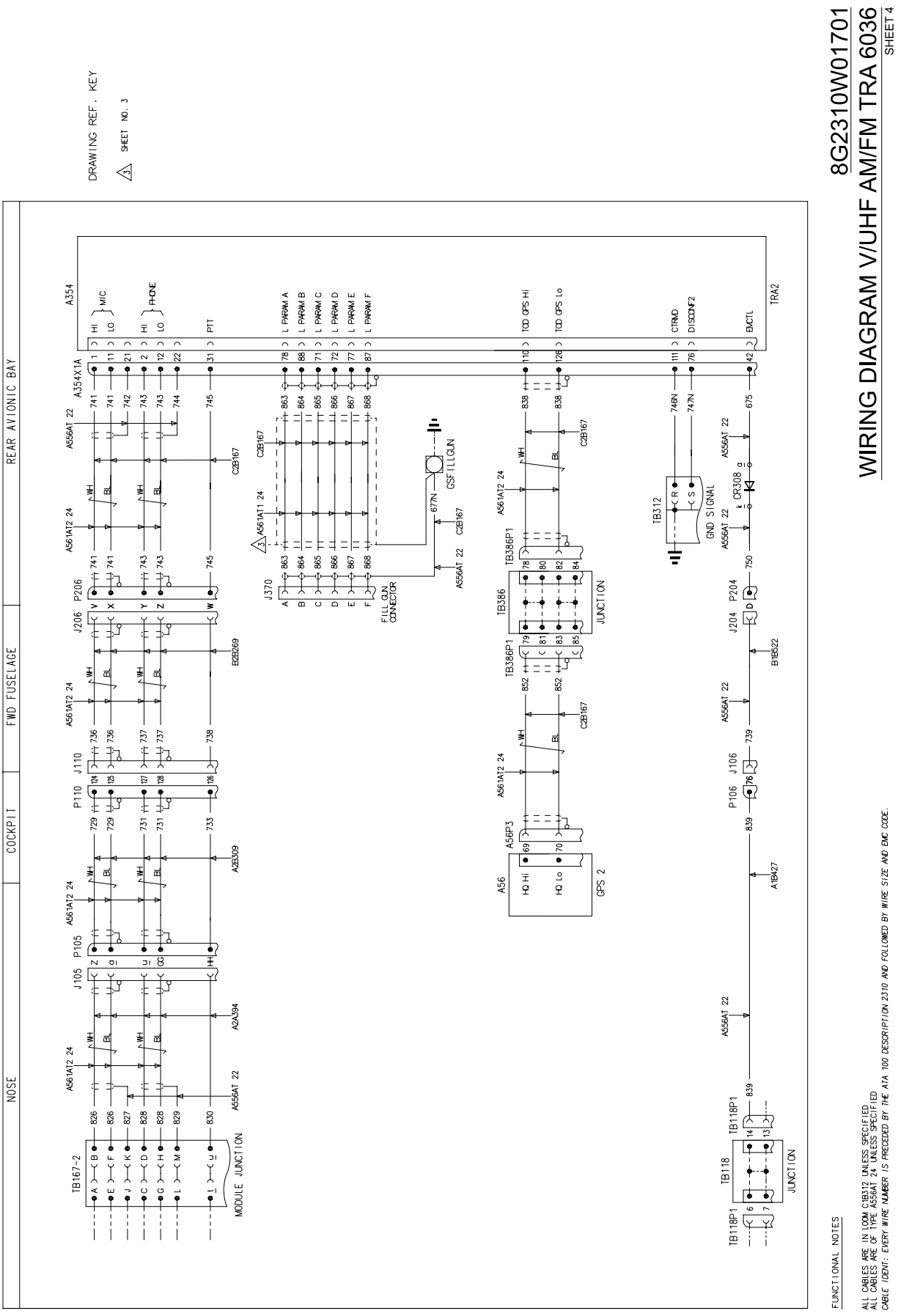

8G2310W01701
WIRING DIAGRAM V/UHF AM/FM TRA 6036
SHEET 4
DRAWING REF. KEY
3 SHEET NO. 3
NOSE
COCKPIT
FWD FUSELAGE
REAR AVIONIC BAY
MODULE JUNCTION
JUNCTION
GPS 2
GND SIGNAL
FILL GUN CONNECTOR
GSFILLGUN
TRA2
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C1B312 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 24 UNLESS SPECIFIED
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 27

V/UHF AM/FM TRA 6036 C/A (A2B309)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
A2B309	P105	HH	M39029/58-363	-
A2B309	P105	Z	M39029/58-363	-
A2B309	P105	a	M39029/58-363	-
A2B309	P105	u	M39029/58-363	-
A2B309	P105	GG	M39029/58-363	-
A2B309	P110	124	M39029/58-360	-
A2B309	P110	125	M39029/58-360	-
A2B309	P110	126	M39029/58-360	-
A2B309	P110	127	M39029/58-360	-
A2B309	P110	128	M39029/58-360	-

V/UHF AM/FM TRA 6036 C/A (A2A394)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
A2A394	J105	Z	M39029/56-351	-
A2A394	J105	a	M39029/56-351	-
A2A394	J105	u	M39029/56-351	-
A2A394	J105	GG	M39029/56-351	-
A2A394	J105	HH	M39029/56-351	-
A2A394	TB167/2	B		M23053/8-004-C
A2A394	TB167/2	F		M23053/8-004-C
A2A394	TB167/2	D		M23053/8-004-C
A2A394	TB167/2	H		M23053/8-004-C
A2A394	TB167/2	K		-
A2A394	TB167/2	°		-
A2A394	TB167/2	M		-
A2A394	TB167/2	°		-
A2A394	TB167/2	u		-

V/UHF AM/FM TRA 6036 C/A (B2B269)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
B2B269	J110	124	M39029/56-348	-
B2B269	J110	125	M39029/56-348	-
B2B269	J110	126	M39029/56-348	-
B2B269	J110	127	M39029/56-348	-
B2B269	J110	128	M39029/56-348	-
B2B269	J206	V	M39029/56-351	-
B2B269	J206	X	M39029/56-351	-
B2B269	J206	Y	M39029/56-351	-
B2B269	J206	Z	M39029/56-351	-
B2B269	J206	W	M39029/56-351	-

V/UHF AM/FM TRA 6036 C/A (A1B427)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
A1B427	TB118P1	14	M39029/56-348	-
A1B427	P106	76	M39029/58-360	-

V/UHF AM/FM TRA 6036 C/A (C2B167)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C2B167	A354X1A	21	618200	-
C2B167	A354X1A	°	-	-
C2B167	A354X1A	22	618200	-
C2B167	A354X1A	°	-	-
C2B167	A354X1A	78	618200	-
C2B167	A354X1A	88	618200	-
C2B167	A354X1A	71	618200	-
C2B167	A354X1A	72	618200	-
C2B167	A354X1A	77	618200	-
C2B167	A354X1A	87	618200	-
C2B167	A354X1A	1	618200	M23053/8-004-C
C2B167	A354X1A	11	618200	M23053/8-004-C
C2B167	A354X1A	2	618200	M23053/8-004-C
C2B167	A354X1A	12	618200	M23053/8-004-C
C2B167	A354X1A	31	618200	-
C2B167	A354X1A	110	618200	M23053/8-004-C
C2B167	A354X1A	126	618200	M23053/8-004-C
C2B167	GSFILLGUN	°	-	-
C2B167	P206	V	M39029/58-363	-
C2B167	P206	X	M39029/58-363	-
C2B167	P206	Y	M39029/58-363	-
C2B167	P206	Z	M39029/58-363	-
C2B167	P206	W	M39029/58-363	-
C2B167	TB386P1	78	M39029/56-348	-
C2B167	TB386P1	82	M39029/56-348	-
C2B167	TB386P1	79	M39029/56-348	-
C2B167	TB386P1	83	M39029/56-348	-

V/UHF AM/FM TRA 6036 C/A (B1B522)

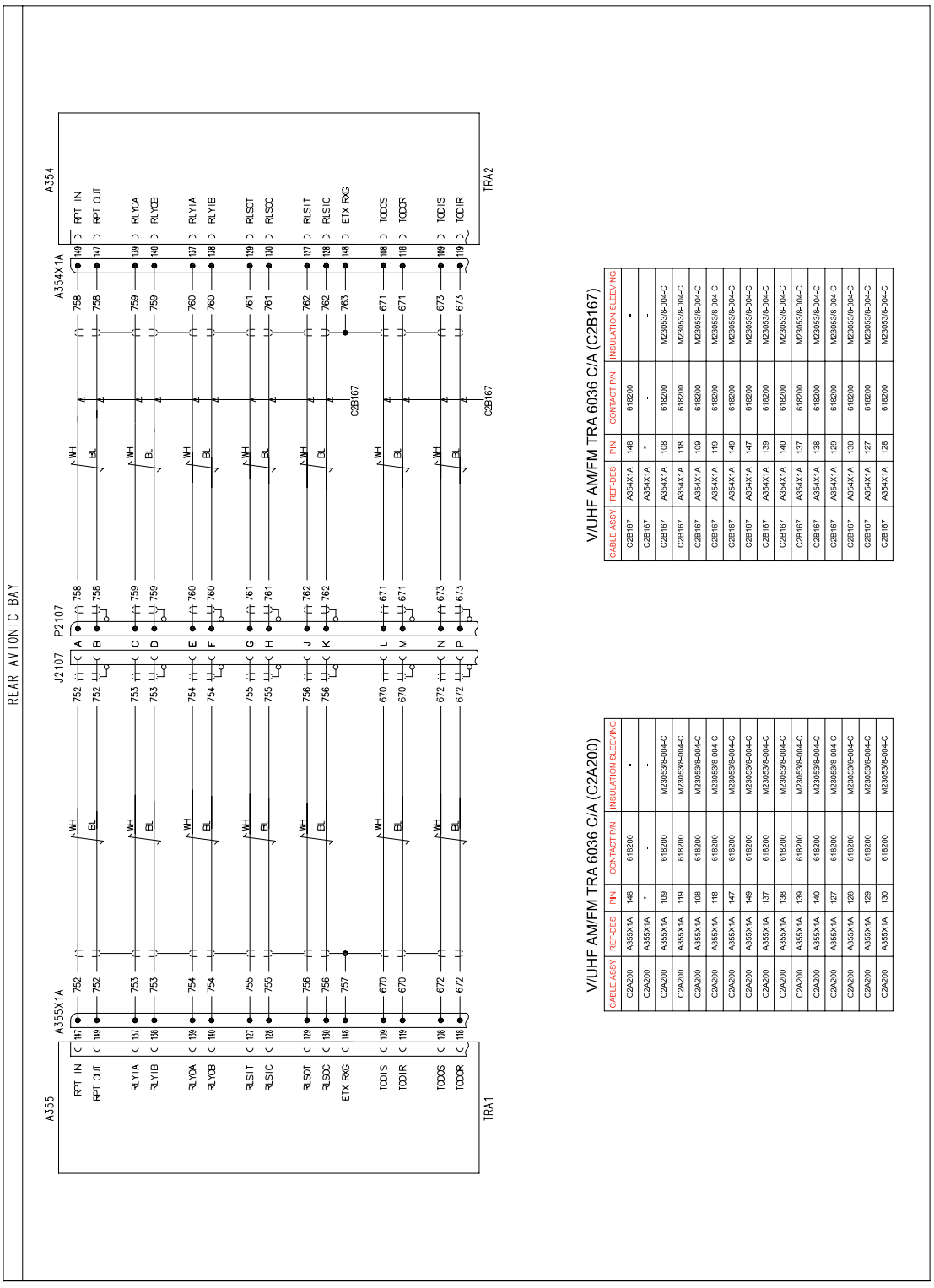
CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
B1B522	J106	76	M39029/56-348	-
B1B522	J204	D	M39029/56-351	-

V/UHF AM/FM TRA 6036 C/A (C1B312)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C1B312	P204	D	M39029/58-363	-
C1B312	TB312	R	A523A-A05	-
C1B312	TB312	S	A523A-A05	-

8G2310W01701
WIRING DIAGRAM V/UHF AM/FM TRA 6036
SHEET 4

Figure 28



CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C2A200	A355X1A	148	618200	-
C2A200	A355X1A	°	-	-
C2A200	A355X1A	109	618200	M23053/8-004-C
C2A200	A355X1A	119	618200	M23053/8-004-C
C2A200	A355X1A	108	618200	M23053/8-004-C
C2A200	A355X1A	118	618200	M23053/8-004-C
C2A200	A355X1A	147	618200	M23053/8-004-C
C2A200	A355X1A	149	618200	M23053/8-004-C
C2A200	A355X1A	137	618200	M23053/8-004-C
C2A200	A355X1A	138	618200	M23053/8-004-C
C2A200	A355X1A	139	618200	M23053/8-004-C
C2A200	A355X1A	140	618200	M23053/8-004-C
C2A200	A355X1A	127	618200	M23053/8-004-C
C2A200	A355X1A	128	618200	M23053/8-004-C
C2A200	A355X1A	129	618200	M23053/8-004-C
C2A200	A355X1A	130	618200	M23053/8-004-C

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C2B167	A354X1A	148	618200	-
C2B167	A354X1A	°	-	-
C2B167	A354X1A	108	618200	M23053/8-004-C
C2B167	A354X1A	118	618200	M23053/8-004-C
C2B167	A354X1A	109	618200	M23053/8-004-C
C2B167	A354X1A	119	618200	M23053/8-004-C
C2B167	A354X1A	149	618200	M23053/8-004-C
C2B167	A354X1A	147	618200	M23053/8-004-C
C2B167	A354X1A	139	618200	M23053/8-004-C
C2B167	A354X1A	140	618200	M23053/8-004-C
C2B167	A354X1A	137	618200	M23053/8-004-C
C2B167	A354X1A	138	618200	M23053/8-004-C
C2B167	A354X1A	129	618200	M23053/8-004-C
C2B167	A354X1A	130	618200	M23053/8-004-C
C2B167	A354X1A	127	618200	M23053/8-004-C
C2B167	A354X1A	128	618200	M23053/8-004-C

Figure 29

8G2310W01701

WIRING DIAGRAM V/UHF AM/FM TRA 6036

SHEET 6

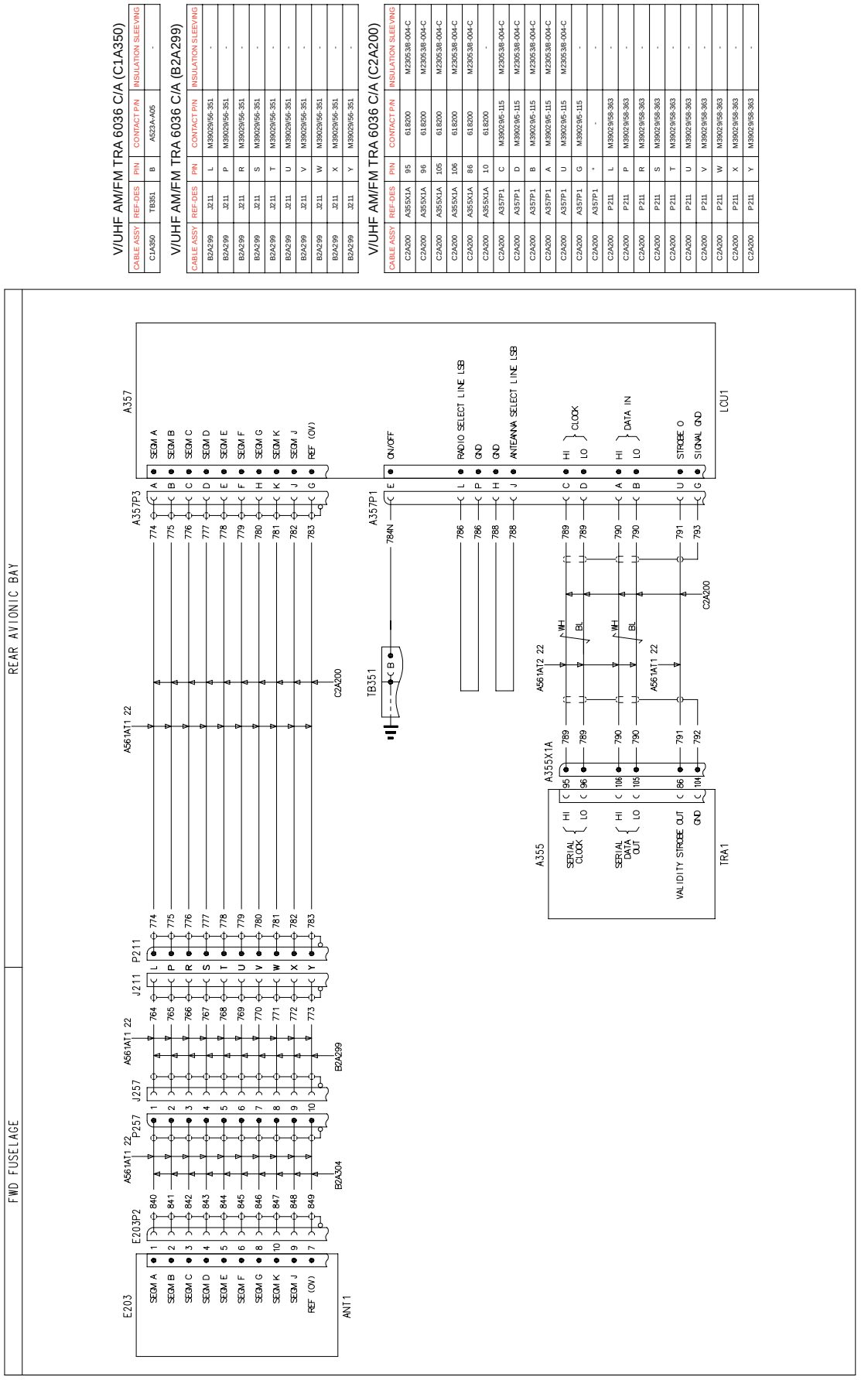
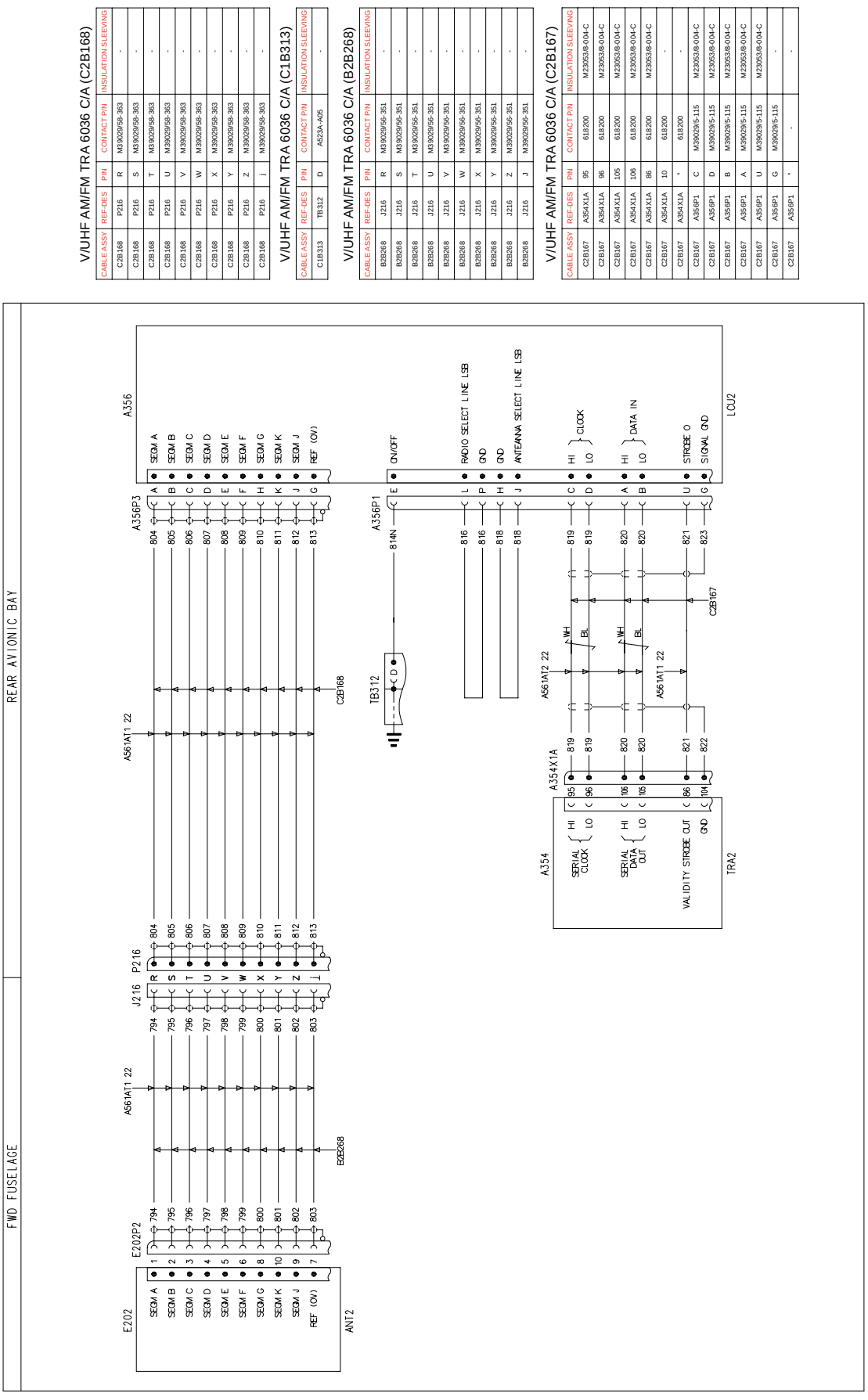


Figure 30

8G2310W01701
SHEET 7

WIRING DIAGRAM V/UHF AM/FM TRA 6036



V/UHF AM/FM TRA 6036 C/A (C2B168)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C2B168	P216	R	M39029/58-363	-
C2B168	P216	S	M39029/58-363	-
C2B168	P216	T	M39029/58-363	-
C2B168	P216	U	M39029/58-363	-
C2B168	P216	V	M39029/58-363	-
C2B168	P216	W	M39029/58-363	-
C2B168	P216	X	M39029/58-363	-
C2B168	P216	Y	M39029/58-363	-
C2B168	P216	Z	M39029/58-363	-
C2B168	P216	j	M39029/58-363	-

V/UHF AM/FM TRA 6036 C/A (C1B313)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C1B313	TB312	D	AS23A-A05	-

V/UHF AM/FM TRA 6036 C/A (B2B268)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
B2B268	J216	R	M39029/56-351	-
B2B268	J216	S	M39029/56-351	-
B2B268	J216	T	M39029/56-351	-
B2B268	J216	U	M39029/56-351	-
B2B268	J216	V	M39029/56-351	-
B2B268	J216	W	M39029/56-351	-
B2B268	J216	X	M39029/56-351	-
B2B268	J216	Y	M39029/56-351	-
B2B268	J216	Z	M39029/56-351	-
B2B268	J216	J	M39029/56-351	-

V/UHF AM/FM TRA 6036 C/A (C2B167)

CABLE ASSY	REF-DES	PIN	CONTACT P/N	INSULATION SLEEVING
C2B167	A354X1A	95	618200	M23053/8-004-C
C2B167	A354X1A	96	618200	M23053/8-004-C
C2B167	A354X1A	105	618200	M23053/8-004-C
C2B167	A354X1A	106	618200	M23053/8-004-C
C2B167	A354X1A	86	618200	M23053/8-004-C
C2B167	A354X1A	10	618200	-
C2B167	A354X1A	*	618200	-
C2B167	A356P1	C	M39029/5-115	M23053/8-004-C
C2B167	A356P1	D	M39029/5-115	M23053/8-004-C
C2B167	A356P1	B	M39029/5-115	M23053/8-004-C
C2B167	A356P1	A	M39029/5-115	M23053/8-004-C
C2B167	A356P1	U	M39029/5-115	M23053/8-004-C
C2B167	A356P1	G	M39029/5-115	-
C2B167	A356P1	*	-	-

FUNCTIONAL NOTES

ALL CABLES ARE IN LOOM C1B313 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 31

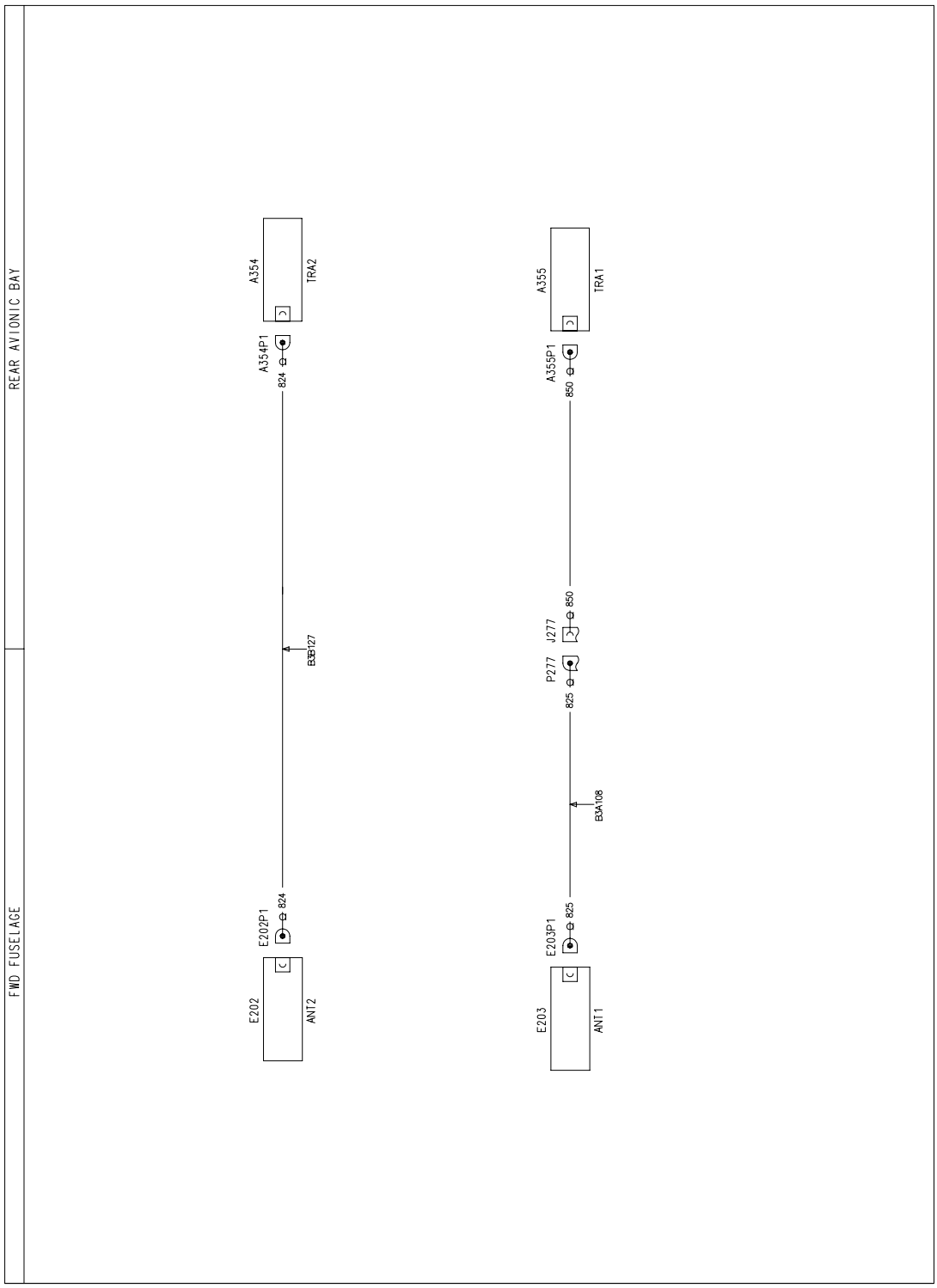

8G2310W01701
WIRING DIAGRAM V/UHF AM/FM TRA 6036
SHEET 8
FWD FUSELAGE
REAR AVIONIC BAY
E202
ANT2
E202P1
824
B3A127
A354P1
A354
TRA2
E203
ANT1
E203P1
825
B3A108
P277
J277
825
850
A355P1
850
A355
TRA1
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM B3A107 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17/128-RG400 UNLESS SPECIFIED
CABLE IDENT: EVERY WIRE NUMBER IS PRECEDED BY THE ATA 100 DESCRIPTION 2310 AND FOLLOWED BY WIRE SIZE AND EMC CODE.

Figure 32

ANNEX A

AW189 TRA6036 DUAL RADIO ATP

1 PRELIMINARY TESTS

1.1 SAFETY PROVISIONS

- When required, for continuity testing a low voltage tester may be used.
- When it is required testing at pins and sockets of plug and receptacles connectors, contact is to be made by means of the correct mating socket or pin.
- No electrical Power Supply applied to the aircraft before starting with the Test Procedure.
- The ATP is to be performed with External Power.

Under no circumstances must be used any other form of probe.
Do not handle and operate plug/receptacle connectors with voltage presence.

1.2 EXPERIMENTAL EQUIPMENTS

- DC external Power (28VDC 3KW Min);
- DC Voltmeter Tester for troubleshooting operations;
- Conductor Pins and Wire Extensions for troubleshooting operation;
- 1 Audio headsets for ICS system (David Clark or equivalent high impedance headset);
- Wattmeter RF BIRD Mod. 4381 or equivalent;
- RF connector adapter set (various BNC, TNC, N, 50 Ω dummy load);
- Low voltage continuity tester (Bond Meter (AOIP OM 16 or equivalent);
- Radio Ground station (100 MHz – 480 MHz).

1.3 TEST PREREQUISITES

The following requirements shall be fulfilled prior to proceeding with the test procedures described within this document:

CAUTION: ***Do not handle plug/receptacle connectors while voltage is on.***

	TEST DESCRIPTION	PASS/FAIL
1.	The electrical wiring harness installation has been successfully tested by DIT-MCO checking the correct electrical voltage, end-points continuity (pin-to-pin) and proper insulation resistance.	
2.	The following system shall be operative: EPGDS, AMMS, ECDU, GPS and ICS communication system.	
3.	Verify in the MCDU Options page (Menu/Maintenance/Option) that the “COM3” and “COM 4” are installed and equal to “TRA6036”.	
4.	Verify on all ACP in cabin and in cockpit that are present the following decal: • **VUHF1** (P/N 55-06-VUHF1) on the position COM 3;	

	• **VUHF2** (P/N 55-06- VUHF2) on the position COM 4. Only for reference see the figures below.	
5.	Before all the test procedures verify that the External Power Bench is operative and set to the appropriate Voltage (28 VDC);	
6.	**During test with helicopter , both ENG 1 & 2 selector installed on ENG CNTR PNL called "ENG MODE" are in OFF position;**	

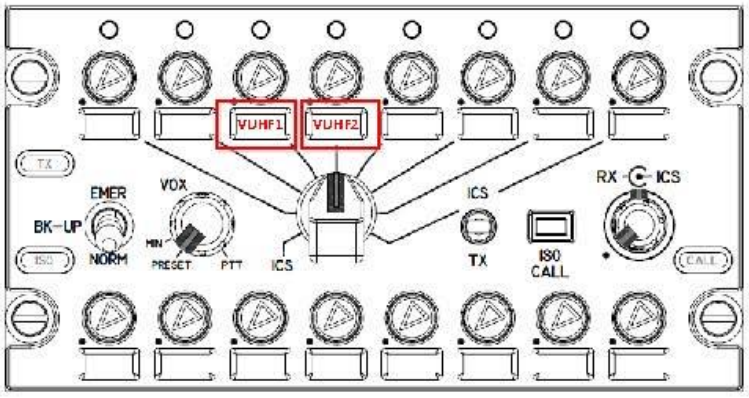


Figure 1 – ICS decals on ACP53 (only for reference)

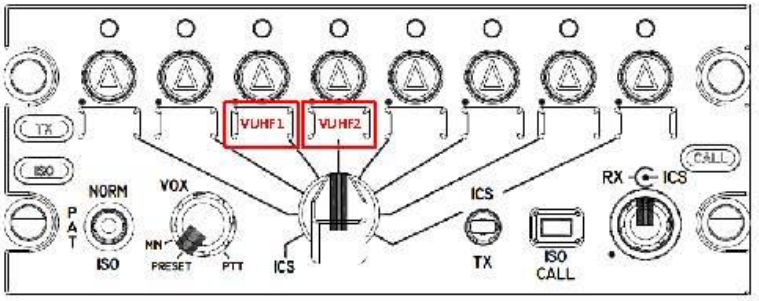


Figure 2 - ICS decals on ACP51 (only for reference)

1.3.1 TEST PREREQUISITES CRYPTO SYSTEM (if installed 8G2310F01611)

	TEST DESCRIPTION	PASS/FAIL
7.	The electrical wiring harness installation has been successfully tested by DIT-MCO checking the correct electrical voltage, end-points continuity (pin-to-pin) and proper insulation resistance.	
8.	The §2.6 and § 2.11 shall be successfully completed.	
9.	Remove the insulating strip from the key backup battery compartment followed the following procedures. With screwdriver, remove the screws on the cover battery. Remove the cover and unseat the battery, than remove the insulating strip, seat the battery in its holder, respecting the orientation of the batter poles. Replace the cover and relative screw. This strip isolates the battery terminals to prevent the battery itself from being discharged when parent equipment is stored or unused.	
10.	Write on the label the installation date.	
11.	On each CM117E front panel remove the cover from the CIK connector, align the red dot of CIK with red dot of CIK connector and plug the relative CIK onto the connector, without rotate the CIK.	
12.	Before all the test procedures verify that the External Power Bench is operative and set to the appropriate Voltage (28 VDC);	
13.	**During test with helicopter , both ENG 1 & 2 selector installed on ENG CNTR PNL called "ENG MODE" are in OFF position;**	

1.4 ELECTRICAL POWER CONTROL CB

Power on the helicopter through DC External Power.

Verify in the breakers page on the ECDU if the following CBs indicated in the Table 1-1 are unlocked. The user shall enable for the first time the V/UHF1 and V/UHF2 system by pressing "MNTN" bezel on ECDU at the ECDU start-up to enter in Maintenance Mode. The user shall follow the procedure described into 189G4620U001 manual.

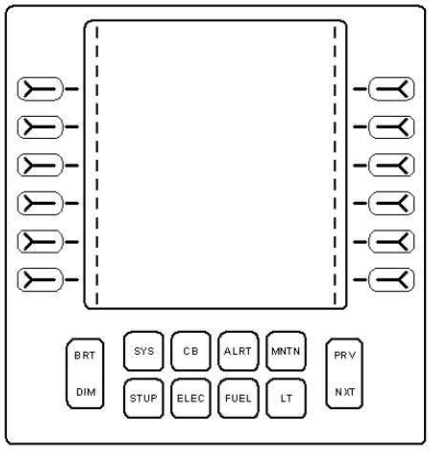


Figure 3 - ECDU Layout and bezels

Once enabled the Radio Thales Systems the user shall to perform/verify the following starting setting.

CB Label	Breaker # (*)	ECDU page	POSITION	CHECK
V/UHF PWR	ECDU	ECDU/SYSTEM CB/COMM	OFF	
V/UHF 2 PWR	ECDU	ECDU/SYSTEM CB/COMM	OFF	

Table 1-1 – Radio Thales system Circuit breakers

1.5 ELECTRICAL POWER CONTROL CB CRYPTO SYSTEM (if installed 8G2310F01611)

Verify in the breakers page on the ECDU if the following CBs indicated in the Table 1-2 are unlocked. The user shall enable for the first time the CRYPTO system by pressing "MNTN" bezel on ECDU at the ECDU start-up to enter in Maintenance Mode. The user shall follow the procedure described into 189G4620U001 manual.

Once enabled the Radio Thales Systems the user shall to perform/verify the following starting setting.

CB Label	Breaker # (*)	ECDU page	POSITION	CHECK
CRYPTO	ECDU	ECDU/SYSTEM CB/COMM	OFF	

Table 1-2 – Crypto system Circuit breakers

2 FUNCTIONAL TESTS

2.1 INSTALLATION AND POWER SUPPLY CHECKS

THE FOLLOWING CHECK CAN BE AVOIDED ONLY IF THE AIRCRAFT HARNESS HAS BEEN TESTED WITH DITMCO.

2.1.1 VUHF1 POWER SUPPLY CHECK

Select "ON" the electrical generation system by the DC external power.

Step	Test Description	Check	Pass/Fail
1	On ECDU/SYSTEM CB/COMM, set OUT the "V/UHF PWR" CB.	Check on ECDU that the CB "V/UHF PWR " is OUT.	
2	Disconnect A355X1A, A355X1B connectors from TRA1 transceiver. Disconnect A357P1 and A357P2 connectors from LCU of radio TRA1.		

3	Switch on the TRA1 system via ECDU/ SYSTEM CB /COMM/ V/UHF PWR CB setting to IN.	- Check if led on the V/UHF PWR CB on ECDU is IN;
		- Check with a voltmeter the 28 VDC signal on following pins of A355X1B (XCVR) connector:
		  - PIN 9 (+);
		- Check with a voltmeter the GND signal on following pins of A355X1B connector:
		  - PIN 1 (-);
		  - PIN 5 (-);
		  - PIN 10 (-);
		- Check with a voltmeter the 28 VDC signal on following pins of A357P2 (LCU1) connector:
		  - PIN A (+);
		- Check with a voltmeter the GND signal on following pins of A357P2 connector:
		  - PIN B (-);
		  - PIN C (-);	

4	Set OUT the TRA1 system via ECDU/ SYSTEM CB /COMM/ V/UHF PWR CB.	Check on ECDU that the CB "V/UHF PWR" is OUT.	

5	Verify the ground signal.	- Check with a voltmeter the GND signal on pins 111, 76 of A355X1A connector; - Check with a voltmeter the GND signal on pins E of A357P1 connector;	
6	Verify the continuity between pins of transceiver TRA1 (A355X1A).	- Check the continuity between the pins 53 and 54 of A355X1A; - Check the continuity between the pins 57 and 67 of A355X1A; - Check the continuity between the pins 58 and 68 of A355X1A; - Check the continuity between the pins 60 and 70 of A355X1A; - Check the continuity between the pins 117 and 107 of A355X1A;	
7	Verify the continuity between transceiver TRA1 (A355X1A) and FILL GUN connector of TRA1 (J368).	Check the continuity between the following pins: - A355X1A pin 71 to J368 pin C; - A355X1A pin 72 to J368 pin D; - A355X1A pin 77 to J368 pin E; - A355X1A pin 78 to J368 pin A; - A355X1A pin 87 to J368 pin F; - A355X1A pin 88 to J368 pin B;	
8	Verify the continuity between pins of Logic converter unit LCU1.	- Check the continuity between the pins L and P of A357P1; - Check the continuity between the pins H and J of A357P1.	
9	Reconnect A355X1A, A355X1B connectors to TRA1 transceiver. Reconnect A357P1 and A357P2 connector from LCU1.		

2.1.2 VUHF2 POWER SUPPLY CHECK

Step	Test Description	Check	Pass/Fail
10	On ECDU/ SYSTEM CB /COMM, set OUT the "V/UHF 2 PWR" CB.	Check on ECDU that the CB "V/UHF 2 PWR" is OUT.	
11	Disconnect A354X1A, A354X1B connectors from TRA2 transceiver. Disconnect A356P1 and A356P2 connectors from LCU2 of radio TRA2.		

12	Switch on the TRA2 system via ECDU/ SYSTEM CB /COMM/ V/UHF 2 PWR CB setting to IN.	- Check if led on the V/UHF 2 PWR CB on ECDU is IN;
		- Check with a voltmeter the 28 VDC signal on following pins of A354X1B (XCVR) connector:
		  - PIN 9 (+);
		- Check with a voltmeter the GND signal on following pins of A354X1B connector:
		  - PIN 1 (-);
		  - PIN 5 (-);
		  - PIN 10 (-);
		- Check with a voltmeter the 28 VDC signal on following pins of A356P2 (LCU2) connector:
		  - PIN A (+);
		- Check with a voltmeter the GND signal on following pins of A356P2 connector:
		  - PIN B (-);
		  - PIN C (-);	

13	Set OUT the TRA2 system via ECDU/ SYSTEM CB /COMM/ V/UHF 2 PWR CB.	Check on ECDU that the CB "V/UHF 2 PWR" is OUT.	
14	Verify the ground signal.	- Check with a voltmeter the GND signal on pins 111, 76 of A354X1A connector; - Check with a voltmeter the GND signal on pins E of A356P1 connector;	

15	Verify the continuity between pins of transceiver TRA2 (A354X1A).	- Check the continuity between the pins 53 and 54 of A354X1A; - Check the continuity between the pins 55 and 65 of A354X1A; - Check the continuity between the pins 57 and 67 of A354X1A; - Check the continuity between the pins 58 and 68 of A354X1A; - Check the continuity between the pins 117 and 107 of A354X1A;	
16	Verify the continuity between transceiver TRA2 (A354X1A) and FILL GUN connector of TRA2 (J370).	Check the continuity between the following pins: - A354X1A pin 71 to J370 pin C; - A354X1A pin 72 to J370 pin D; - A354X1A pin 77 to J370 pin E; - A354X1A pin 78 to J370 pin A; - A354X1A pin 87 to J370 pin F; - A354X1A pin 88 to J370 pin B;	
17	Verify the continuity between pins of Logic converter unit LCU2.	- Check the continuity between the pins L and P of A356P1; - Check the continuity between the pins H and J of A356P1.	
18	Reconnect A354X1A, A354X1B connectors to TRA2 transceiver. Reconnect A356P1 and A356P2 connector from LCU2.		

2.1.3 RELAY MODE CHECK

Step	Test Description	Check	Pass/Fail
19	On ECDU/ SYSTEM CB /COMM, set OUT the "V/UHF PWR" CB.	Check on ECDU that the CB "V/UHF PWR" is OUT.	
20	On ECDU/ SYSTEM CB /COMM, set OUT the "V/UHF 2 PWR" CB.	Check on ECDU that the CB "V/UHF 2 PWR" is OUT.	
21	Disconnect A355X1A connector from TRA1 transceiver. Disconnect A354X1A connector from TRA2 transceiver.		
22	Verify the continuity between pins of transceivers TRA1 and TRA2.	Check the continuity between the following pins: - A354X1A pin 127 to A355X1A pin 129; - A354X1A pin 128 to A355X1A pin 130; - A354X1A pin 129 to A355X1A pin 127; - A354X1A pin 130 to A355X1A pin 128; - A354X1A pin 137 to A355X1A pin 139; - A354X1A pin 138 to A355X1A pin 140; - A354X1A pin 139 to A355X1A pin 137; - A354X1A pin 140 to A355X1A pin 138; - A354X1A pin 149 to A355X1A pin 147; - A354X1A pin 147 to A355X1A pin 149; - A354X1A pin 109 to A355X1A pin 108; - A354X1A pin 119 to A355X1A pin 118; - A354X1A pin 108 to A355X1A pin 109; - A354X1A pin 118 to A355X1A pin 119;	
23	Reconnect A355X1A connector to TRA1 transceiver. Reconnect A354X1A connector to TRA2 transceiver.		

2.1.4 CP117E CONTROL PANEL POWER SUPPLY CHECK (if installed 8G2310F01611)

Step	Test Description	Check	Pass/Fail
1	On ECDU/ SYSTEM CB /COMM, set OUT the "CRYPTO" CB.	Check on ECDU that the CB "CRYPTO" is OUT.	
2	Disconnect PL110P4 connector from CP117E.		

3	Switch on the CRYPTO system via ECDU/ SYSTEM CB /COMM/ CRYPTO CB setting to IN.	- Check if led on the CRYPTO CB on ECDU is IN;
		- Check with a voltmeter the 28 VDC signal on following pins of PL110P4 connector:
		  - PIN L (+);
		- Check with a voltmeter the GND signal on following pins of PL110P4 connector:
		  - PIN K (-);
		  - PIN J (Chassis);
		  - PIN W (-);
		  - PIN b (-)	

4	Set OUT the CRYPTO system via ECDU/ SYSTEM CB /COMM/ CRYPTO CB.	Check on ECDU that the CB "CRYPTO" is OUT.	
5	Reconnect PL110P4 connector to CP117E transceiver.		

2.1.5 CM117E POWER SUPPLY CHECK (if installed 8G2310F01611)

Step	Test Description	Check	Pass/Fail
6	On ECDU/ SYSTEM CB /COMM, set OUT the "CRYPTO" CB.	Check on ECDU that the CB "CRYPTO" is OUT.	
7	Disconnect A368P1 connector from CM117E – TRA1. Disconnect A370P1 connector from CM117E – TRA2. Disconnect PL110P4 connector from CP117E.		
8	Insert a GND signal on pin R of PL110P4 to switch the relay K342 (can use a jumper from pin K to pin R of PL110P4).		

9	Switch on the CRYPTO system via ECDU/ SYSTEM CB /COMM/ CRYPTO CB setting to IN.	- Check if led on the CRYPTO CB on ECDU is IN;
		- Check with a voltmeter the 28 VDC signal on PIN L (+) of A368P1 connector;
		- Check with a voltmeter the GND signal on following pins of A368P1 connector:
		  - PIN J (Chassis);
		  - PIN K (-);	

10	Set OUT the CRYPTO system via ECDU/ SYSTEM CB /COMM/ CRYPTO CB.	- Check on ECDU that the CB "CRYPTO" is OUT.	
11	Remove the GND signal from pin R pin R of PL110P4 (remove the jumper).		
12	Insert a GND signal on pin P of PL110P4 to switch the relay K344 (can use a jumper from pin K to pin P of PL110P4).		

13	Switch on the CRYPTO system via ECDU/ SYSTEM CB /COMM/ CRYPTO CB setting to IN.	- Check with a voltmeter the 28 VDC signal on PIN L (+) of A370P1 connector;
		- Check with a voltmeter the GND signal on following pins of A368P1 connector:
		  - PIN J (Chassis);
		  - PIN K (-);	

14	Set OUT the CRYPTO system via ECDU/ SYSTEM CB /COMM/ CRYPTO CB.	Check on ECDU that the CB "CRYPTO" is OUT.	
15	Remove the GND signal on pin P of PL110P4 (remove the Jumper) .		
16	Reconnect A368P1 connector to CM117E – TRA1. Reconnect A370P1 connector to CM117E – TRA2. Reconnect PL110P4 connector to CP117E.		

2.2 BONDING TEST

Step	OPERATIONS	CHECK
1.	Electrical power OFF the helicopter.	
2.	Disconnect the HC external grounding cable.	
3.	Disconnect the connector of the LRUs under test.	
4.	Measure the ohmic value between the LRU connector and the local structure and record the measured value in the following table. Refer to procedure NTA662A as guideline.	

2.2.1 RADIO THALES BONDING UNITS

LRU	Ref. Des.	Limit value (mΩ)	Measurement	Note
Radio Thales 1 (TRA1)	**A355**	**10**		The transceivers are installed on the relative mounting tray
Radio Thales 2 (TRA2)	**A354**	**10**		
Logic converter Unit 1 (LCU1)	**A357**	**10**		
Logic converter Unit 2 (LCU2)	**A356**	**10**		
Antenna 1 (ANT1)	**E203**	**5**		
Antenna 2 (ANT2)	**E202**	**5**		

2.2.2 CRYPTO SYSTEM BONDING UNITS (if installed 8G2310F01611)

LRU	Ref. Des.	Limit value (mΩ)	Measurement	Note
CP117E	**PL110**	**10**		Install in interseat console
CM117E – TRA1	**A368**	**10**		Install in rear avionic bay
CM117E – TRA2	**A370**	**10**		

2.3 VUHF1 TUNING CHECK

Step	Test Description	Check	Pass/Fail
1	Be sure that MCDU1 is connected to AMMC1 and MCDU2 to AMMC2.		
2	Set the AMMC MASTER to AMMC2.		
3	Ensure that the V/UHF PWR CB on ECDU is set to OFF;	Check, on CPLT MCDU, the VUHF1 STATUS is FAIL.	
4	On the pilot MCDU press the TUNE function key.	Check that the VUHF2 active frequency is amber dashed.	
5	Set to ON the V/UHF PWR CB on ECDU;	VUHF1 powers up and the active frequency becomes active (green); Verify that VUHF1 STATUS = ON;	
6	Press the MENU function key and and start the VUHF1 TEST on dedicate page.	On MCDU1 verify VUHF1 STATUS = "TEST" when the test is in progress. Verify that near the string TEST, after a few seconds, the "PASS" message appear and the VUHF1 STATUS = ON; NOTE: with AMMC SW PH8 the VUHF1 TEST result is different to "PASS" green colour and the radio STATUS = "DEGRADED".	
7	On the pilot MCDU press the TUNE function key. Ensure that VUHF1 is set to Plain voice "PLAIN V" mode. Insert 123.750 as active frequency.	Verify that VHF1 ACT FREQ = 123.750. Verify on CPLT MCDU that the frequency insert is synchronized	
8	Insert the following frequencies out of the range for Active and Stby: - 102 MHz - 490 MHz - 17 MHz	"INVALID ENTRY" message displayed on the scratchpad; VUHF1 ACT or STBY frequency do not change.	
9	Digit 122.500 on the MCDU and press the VUHF1 STBY FREQ line select key.	Verify that VUHF1 STBY FREQ = 122.500. Verify on CPLT MCDU that the frequency insert is synchronized.	

10	Swap the VUHF1 ACT and STBY FREQ;	Verify that VUHF1 STBY FREQ swaps to VUHF1 ACT FREQ; Verify on CPLT MCDU that swap is synchronized.	
11	Set to OFF the VUHF1 CB on ECDU	Check that the VUHF1 parameters, except the STBY FREQ, go in amber dashes.	
12	Set the AMMC1 to MASTER and repeat the test steps from 3 to 11 in the above table.	Verify that same results are obtained with AMMC1 Master.	
13	Repeat the test steps from 3 to 11 in the above table with AMMC1 powered OFF and AMMC2 powered ON.	Verify that same results are obtained with AMMC2.	
14	Repeat the test steps from 3 to 11 in the above table with AMMC2 powered OFF and AMMC1 powered ON.	Verify that same results are obtained with AMMC1.	
15	Power on both the AMMCs.		

2.4 VUHF1 RF COAX LINE ATTENUATION TEST

Step	Test Description	Check	Pass/Fail
1	Disconnect connector E203P1 from Antenna1 unit and connect at it the Precision Short equipment.		
2	Disconnect connect A355P1 from VUHF1 transceiver and connect the cable to the Network Analyser.	Execute the Attenuation measure in the working frequency range 108 MHz to 399.975 MHz (Note the displayed Attenuation max value in the following table from marker to peek and marker to valley).	
3	Disconnect the Precision Short equipment from the Antenna unit E203P1 connector.		
4	Disconnect the A355P1 connector from Network Analyser.		
5	Reconnect the E203P1 to Antenna switch unit and A355P1 connector to VUHF1 transceiver.		

Attenuation limits VUHF1 ANTENNA		
	Limit Values	Result
Line Attenuation	**3 dB**	

2.5 VUHF1 TRANSMITTER POWER TEST

Ensure that no metallic objects are present in the area around the VUHF1 antenna. Be sure that transmitter output is always properly terminated when transmitting.
The follow frequencies are free and not necessary a crypto keys or authorization of authority.

Band/Modulation	*Modulation*	*Range [MHz]*
VHF voice (Only receiving)	AM	108.000 to 117.975 MHz
VHF ATC	AM	118.000 to 136.9917 MHz
VHF voice	AM/FM	137.0000 to 173.975 MHz
VHF Maritime voice	FM	156.0000 to 173.975 MHz
UHF military voice (FF)	FM/AM	225.000 to 399.975 MHz
UHF military ciphered voice (SVFF and SVFH)	FM/AM	225.000 to 399.975 MHz

***Table 2-1 – VUHF1* FREQUENCY RANGE**

Step	Test Description	Check	Pass/Fail
1	Ensure that Circuit Breakers "V/UHF PWR" is set to OFF.		
2	Disconnect the Transceiver RF cable (A355P1) and insert directional RF POWER meter inline between transceiver and antenna (position the wattmeter as close to the RT as possible with the wattmeter element pointing in the direction of the antenna for Direct Power and the wattmeter element pointing toward the RT for Reflected Power).		
3	Set to IN the V/UHF PWR CB.	Verify that the system switches ON and the POWER UP TEST is successfully completed.	
4	Enter in VUHF1 PRESET PAGEs.	Check or set as follow: - VUHF1 MODE = "PLAIN VOICE"; - VUHF1 TX POWER = "HIGH"; - EMER= "OFF"; - RELAY = "OFF".	
5	Select the relevant COM on ICS Panel (decal VUHF1).		

6	Set the right frequency (see Table 2-2), then press transceiver PTT and perform a transmission. During the transmit power test, ensure that the Transmit Power Level Control is always set in HIGH level.	Take the measurements and note in the Table 2-2, Direct and Reflected Power (read on the Wattmeter).	
7	Calculate the VSWR, using the formula reported following.	Check if the VSWR values are in the limit **≤2**.	
8	When measurements are done, power OFF the system and reconnect all related connectors.		

FREQUENCY (MHz)	DIR POWER				REF POWER		VSWR		PASS/FAIL	
	AM Min	FM Min	AM	FM	AM	FM	AM	FM	AM	FM
118.150	13W	17W								
126.150										
136.900										
138.150										
138.150										
156.150										
173.150										
228.750										
228.750										
300.150										
300.150										
399.150										
399.150										

Table 2-2 – VUHF1 POWER TEST

$$VSWR = \frac{1+\sqrt{\left(\frac{PR}{PI}\right)}}{1-\sqrt{\left(\frac{PR}{PI}\right)}}$$

PR= Reflected Power measurement; *PI = DIRECT POWER measurement*

2.6 VUHF1 COMMUNICATION TEST

Note: if installed V/UHF RADIO EXTERNAL CRYPTO CM117E (P/N 8G2310F01611) remove the CM117E – TRA1 device and substitute it with stowage assy (P/N **8G2310A18531**) and execute the following steps.

Step	Test Description	Check	Pass/Fail
1	Ensure all control and Transmit push buttons on all Audio Control Panel installed in cockpit and cabin are deselected (relevant led turned off). Connect the headset to the Pilot headphone jack. On Pilot's Audio panel, turn transmit rotary knob to VUHF1 and pull-up the VUHF1 audio receive push-rotary knob and set it to a middle range.		
2	Ensure that V/UHF PWR CB on ECDU is ON and VUHF1 STATUS = ON.		
3	Ensure that VUHF1 is set to Plain voice "PLAIN V" mode.		
4	Enter one of these frequency 130 MHz or 250 MHz as active frequency.	Verify on the face of the LCU (A357), both led are ON (green colour).	
5	Change the active frequency, ensure that it is different from 130 MHz or 250 MHz.	Verify on the face of the LCU (A357), that bottom led (output bit) is ON (green colour), but the upper led (input bit) is power off. 	
6	Enter in frequency set and insert the authorized local ground station frequency (see Table 2-3).		
7	On cyclic control lever press the Com PTT switch (switch pressed to the second latch) or press the PTT foot switch.	Verify that the transmission annunciator (TX) is displayed in the Pilot's Audio Panel display as long as the PTT switch is pressed.	

8	Verify satisfactory transmission and reception of audio signal and record the value in Table 2-3. Use the following intelligibility rating scale: **Scale** / **Intelligibility** 1/5 Unreadable 2/5 Readable now and then 3/5 Readable with difficulty 4/5 Readable 5/5 Perfectly readable	Is considerable acceptable the intelligibility rating from 3/5 to 5/5.	
9	Repeat the previous step for all frequency indicated in the table.	Record the value of TX and RX in the Table 2-3.	

NOTE: The follow frequencies are free and not necessary a crypto keys or authorization of authority.

STATION	FREQ.	MOD.	TX	RX
Ground station	112.150 Only receiving	AM		
	118.150	AM		
	122.150	AM		
	136.750	AM		
	138.150	AM		
	138.150	FM		
	156.100	FM		
	173.500	FM		
	228.750	AM		
	228.750	FM		
	300.500	AM		
	300.500	FM		
	399.700	AM		
	399.700	FM		

Table 2-3 – VUHF1 Communication Test Frequencies

2.7 VUHF1 TOD TEST

Step	Test Description	Check	Pass/Fail
1	Ensure that VUHF1 is set to Plain voice "PLAIN V" mode.		
2	Open V/UHF1 TOD RX/TX page from V/UHF setting page 2/2 and select RX SYS TIME.	Verify on the page the following state: TOD STATUS is "TOD OK" - TOD QLTY is "HIGH" or "MEDIUM" or "LOW".	

2.7.1 VHF1 TOD VIA GPS

NOTE: the both radio Thales need the «Have quick» information from GPS-6024 model (installed GPS unit P/N 100-604076-202). It means that «Have quick Data Output» signal will be connected from both Radio Thales to GPS1 and GPS2.

Step	Test Description	Check	Pass/Fail
3	Ensure that GPS1 is operative. For a good reception of the GPS signal it's recommended to place the helicopter outside the hangar in a proper parking area far from buildings or any obstructions.		
4	Open V/UHF1 TOD RX/TX page from V/UHF setting page 2/2 and select RX VIA GPS.	Verify on the page the following state: - TOD STATUS is "TOD OK" - TOD QLTY is "HIGH" or "MEDIUM" or "LOW".	

2.8 VUHF2 TUNING CHECK

Step	Test Description	Check	Pass/Fail
1	Be sure that MCDU1 is connected to AMMC1 and MCDU2 to AMMC2.		
2	Set the AMMC MASTER to AMMC2.		
3	Ensure that the V/UHF 2 PWR CB on ECDU is set to OFF.	Check, on CPLT MCDU, the VUHF2 STATUS is FAIL.	
4	On the pilot MCDU press the TUNE function key.	Check that the VUHF2 active frequency is amber dashed.	
5	Set to ON the V/UHF 2 PWR CB on ECDU; Check the VUHF2 STATUS on CPLT MCDU;	VUHF2 powers up and the active frequency becomes active (green); Verify that VUHF2 STATUS = ON;	
6	Press the MENU function key and start the VUHF2 TEST on dedicate page.	On MCDU1 verify VUHF2 STATUS = "TEST" when the test is in progress. Verify that near the string TEST, after a few seconds, the "PASS" message appear and the VHF2 STATUS = ON; NOTE: with AMMC SW PH8 the VUHF1 TEST result is different to "PASS" green colour and the radio STATUS = "DEGRADED".	
7	On the pilot MCDU press the TUNE function key. Ensure that VUHF2 is set to Plain voice "PLAIN V" mode. Insert 123.750 as active frequency.	Verify that VHF2 ACT FREQ = 123.750. Verify on CPLT MCDU that the frequency insert is synchronized	
8	Insert the following frequencies out of the range for Active and Stby: - 102 MHz - 490 MHz - 17 MHz	"INVALID ENTRY" message displayed on the scratchpad; VHF2 ACT or STBY frequency do not change.	
9	Digit 122.500 on the MCDU and press the VUHF2 STBY FREQ line select key.	Verify that VUHF2 STBY FREQ = 122.500. Verify on CPLT MCDU that the frequency insert is synchronized.	

10	Swap the VUHF2 ACT and STBY FREQ;	Verify that VUHF2 STBY FREQ swaps to VUHF2 ACT FREQ; Verify on CPLT MCDU that swap is synchronized.	
11	Set to OFF the VUHF2 CB on ECDU	Check that the VUHF2 parameters, except the STBY FREQ, go in amber dashes.	
12	Set the AMMC1 to MASTER and repeat the test steps from 3 to 11 in the above table.	Verify that same results are obtained with AMMC1 Master.	
13	Repeat the test steps from 3 to 11 in the above table with AMMC1 powered OFF and AMMC2 powered ON.	Verify that same results are obtained with AMMC2.	
14	Repeat the test steps from 3 to 11 in the above table with AMMC2 powered OFF and AMMC1 powered ON.	Verify that same results are obtained with AMMC1.	
15	Power on both the AMMCs.		

2.9 VUHF2 RF COAX LINE ATTENUATION TEST

Step	Test Description	Check	Pass/Fail
1	Disconnect connector E202P1 from Antenna1 unit and connect at it the Precision Short equipment.		
2	Disconnect connect A354P1 from VUHF2 transceiver and connect the cable to the Network Analyser.	Execute the Attenuation measure in the working frequency range 108 MHz to 399.975 MHz (Note the displayed Attenuation max value in the following table from marker to peek and marker to valley).	
3	Disconnect the Precision Short equipment from the Antenna unit E202P1 connector.		
4	Disconnect the A354P1 connector from Network Analyser.		
5	Reconnect the E202P1 to Antenna switch unit and A354P1 connector to VUHF2 transceiver.		

Attenuation limits VUHF2 ANTENNA		
	Limit Values	Result
Line Attenuation	**3 dB**	

2.10 VUHF2 TRANSMITTER POWER TEST

Ensure that no metallic objects are present in the area around the VHF2 antenna. Be sure that transmitter output is always properly terminated when transmitting.

The follow frequencies are free and not necessary a crypto keys or authorization of authority.

Band/Modulation	*Modulation*	*Range [MHz]*
VHF voice (Only receiving)	AM	108.000 to 117.975 MHz
VHF ATC	AM	118.000 to 136.9917 MHz
VHF voice	AM/FM	137.0000 to 173.975 MHz
VHF Maritime voice	FM	156.0000 to 173.975 MHz
UHF military voice (FF)	FM/AM	225.000 to 399.975 MHz
UHF military ciphered voice (SVFF and SVFH)	FM/AM	225.000 to 399.975 MHz

Step	Test Description	Check	Pass/Fail
1	Ensure that Circuit Breakers "V/UHF 2 PWR" is set to OFF.		
2	Disconnect the Transceiver RF cable (A354P1) and insert directional RF POWER meter inline between transceiver and antenna (position the wattmeter as close to the RT as possible with the wattmeter element pointing in the direction of the antenna for Direct Power and the wattmeter element pointing toward the RT for Reflected Power).		
3	Set to IN the V/UHF 2 PWR CB.	Verify that the system switches ON and the POWER UP TEST is successfully completed.	
4	Enter in VUHF2 PRESET PAGEs.	Check or set as follow: - VUHF2 MODE = "PLAIN VOICE"; - VUHF2 TX POWER = "HIGH"; - EMER= "OFF"; - RELAY = "OFF".	
5	Select the relevant COM on ICS Panel (decal VUHF2).		

6	Set the right frequency (see Table 2-2), then press transceiver PTT and perform a transmission. During the transmit power test, ensure that the Transmit Power Level Control is always set in HIGH level.	Take the measurements and note in the Table 2-4, Direct and Reflected Power (read on the Wattmeter).	
7	Calculate the VSWR, using the formula reported following.	Check if the VSWR values are in the limit **≤2**.	
8	When measurements are done, power OFF the system and reconnect all related connectors.		

FREQUENCY (MHz)	DIR POWER				REF POWER		VSWR		PASS/FAIL	
	AM Min	FM Min	AM	FM	AM	FM	AM	FM	AM	FM
118.150	13W	17W								
126.150										
136.900										
138.150										
138.150										
156.150										
173.150										
228.750										
228.750										
300.150										
300.150										
399.150										
399.150										

Table 2-4 – VUHF2 POWER TEST

$$VSWR = \frac{1+\sqrt{\left(\frac{PR}{PI}\right)}}{1-\sqrt{\left(\frac{PR}{PI}\right)}}$$

PR= Reflected Power measurement; PI = DIRECT POWER measurement

2.11 VUHF2 COMMUNICATION TEST

Note: if installed V/UHF RADIO EXTERNAL CRYPTO CM117E (P/N 8G2310F01611) remove the CM117E – TRA2 device and substitute it with stowage assy (P/N **8G2310A18531**) and execute the following steps.

Step	Test Description	Check	Pass/Fail
1	Ensure all control and Transmit push buttons on all Audio Control Panel installed in cockpit and cabin are deselected (relevant led turned off). Connect the headset to the Pilot headphone jack. On Pilot's Audio panel, turn transmit rotary knob to VUHF2 and pull-up the VUHF2 audio receive push-rotary knob and set it to a middle range.		
2	Ensure that V/UHF 2 PWR CB on ECDU is ON and VUHF2 STATUS = ON.		
3	Ensure that VUHF2 is set to Plain voice "PLAIN V" mode.		
4	Enter one of these frequency or 130 MHz or 250 MHz as active frequency.	Verify on the face of the LCU2 (A356), both led are ON (green colour).	
5	Change the active frequency, ensure that it is different from 130 MHz or 250 MHz.	Verify on the face of the LCU (A356), that bottom led (output bit) is ON (green colour), but the upper led (input bit) is power off. 	
6	Enter in frequency set and insert the authorized local ground station frequency (see Table 2-5).		
7	On cyclic control lever press the Com PTT switch (switch pressed to the second latch) or press the PTT foot switch.	Verify that the transmission annunciator (TX) is displayed in the Pilot's Audio Panel display as long as the PTT switch is pressed.	

8	Verify satisfactory transmission and reception of audio signal and record the value in Table 2-5. Use the following intelligibility rating scale: **Scale** / **Intelligibility** 1/5 Unreadable 2/5 Readable now and then 3/5 Readable with difficulty 4/5 Readable 5/5 Perfectly readable	Is considerable acceptable the intelligibility rating from 3/5 to 5/5.	
9	Repeat the previous step for all frequency indicated in the table.	Record the value of TX and RX in the Table 2-5.	

NOTE: The follow frequencies are free and not necessary a crypto keys or authorization of authority.

STATION	FREQ.	MOD.	TX	RX
Ground station	112.150 Only receiving	AM		
	118.150	AM		
	122.150	AM		
	136.750	AM		
	138.150	AM		
	138.150	FM		
	156.000	FM		
	173.500	FM		
	228.750	AM		
	228.750	FM		
	300.500	AM		
	300.500	FM		
	399.700	AM		
	399.700	FM		

Table 2-5 – VUHF2 Communication Test Frequencies

2.12 VUHF2 TOD TEST

Step	Test Description	Check	Pass/Fail
1	Ensure that VUHF2 is set to Plain voice "PLAIN V" mode.		
2	Open V/UHF2 TOD RX/TX page from V/UHF setting page 2/2 and select RX SYS TIME.	Verify on the page the following state:TOD STATUS is "TOD OK" - TOD QLTY is "HIGH" or "MEDIUM" or "LOW".	

2.12.1 VHF2 TOD VIA GPS

NOTE: the both radio Thales need the «Have quick» information from GPS-6024 model (installed GPS unit P/N 100-604076-202). It means that «Have quick Data Output» signal will be connected from both Radio Thales to GPS1 and GPS2.

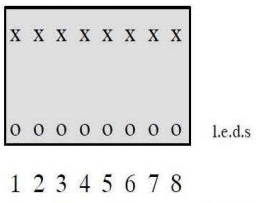
Step	Test Description	Check	Pass/Fail
3	Ensure that GPS2 is operative. For a good reception of the GPS signal it's recommended to place the helicopter outside the hangar in a proper parking area far from buildings or any obstructions.		
4	Open V/UHF2 TOD RX/TX page from V/UHF setting page 2/2 and select RX VIA GPS.	Verify on the page the following state: TOD STATUS is "TOD OK" - TOD QLTY is "HIGH" or "MEDIUM" or "LOW".	

2.13 CRYPTO PANEL CHECK (if installed 8G2310F01611)

Step	Test Description	Check	Pass/Fail
1	Switch ON the CP117E PWR switch.	Check that the Control panel will run the internal diagnostics (ORT), and tests on leds and display. On completing its power-up self tests sequence, verify that appear the star-up message "CP117E".	
2	On front panel of CP117E, set: - PRG SEL rotary switch to 0; - MODE rotary switch to PT.		

3	Set CP position with TARGET knob on front control panel. Select with arrow the "MODE CONFIG" menu and go to "RCU BITRATE".	Ensure, on display, that is selected "RCU 38400". Press ENT to confirm and check that appear "SAVE IN PROGRESS" message on display.	
4	Return to home menu.		
5	On front panel of CM117E-VUHF1, set: - PRESET rotary switch to MAN; - OPER rotary switch to PT1;		
6	Switch ON the CM117E-TRA1 PWR switch. At first time CM117E power up, appear on the CM117 display "ENT Dis. CIK". Press ◄ (LEFT) to confirm the CIK.	Verify that appear message "CIK DETECTED INITIALIZING CIK" and that "CIK INITIALIZED".	
7	Go to the MENU pressing ENTER button.	Check that in upper line on the display appear "*MENU*".	
8	With arrow navigate the Menu (Figure 5) and select "REMOTE" submenu pressing ENTER push button and ensure that "Remote CP117E" is selected.	Verify that an * to the right will display for each selected parameter.	
9	Exit from Remote submenu selecting RETURN.		
10	Go to the EQUIP ID submenu and ensure that ID =1. Using the ENT button to increase the ID number.	Press the ◄ (LEFT) to confirm the selection and then press ENT. Verify that appear SAVE message.	
11	Go to the "B.I.T.E" submenu and select the "fullBITE". Press ENT to start the Built-In Test Equipment.	Verify that the BITE procedure successfully completed (it takes at least 30 second): appear final message "B.I.T.E. Success" at the end.	
12	Return to the menu.		

13	Enter in the Menu, using the keyboard pushbuttons set the following parameters in the HW USER MENU (see Figure 6): - Voice IN to DC 600 Ohm; - Voice OUT to DC 600 Ohm; - Balanced (is mutually exclusive to unbalcance); - Audio level to 6 dB; - Voice INt (is mutually exclusive to Voice Ext); - TX sense to Mark +; - RX sense to Mark +; - J2 pin E-CD not selected.		
14	Enter in the Menu end using the keyboard pushbuttons set the following parameters in the HW RADIO MENU (see Figure 7): - Hw 600 Ohm; - Sidetone not selected; - VOL Guard to 256; - VOL Plain to 160; - J1-G to Ct-Pt; - BCTS GND selected; - BB/DP selected; - CK ext OFF.		
15	Enter in the Menu end using the keyboard pushbuttons set the following parameters in the OPERATIONAL MODE MENU (see Figure 8): - Wide mode to Half Dx; - Voice to 16 KHz; - Autosense deselected; - Diphase Selected - Phasing to 240; - +800 ms deselected; - SIDEint ON; - WB-EM deselected.		
16	Enter in the PRESET Menu end using the keyboard pushbuttons go to Preset “SAVE MAN” and press enter.	Verify after few second that appears “DONE” message on display.	

17	Enter in the Traffic Menu and press enter.	Verify after few second appears “wait” message and than PLAIN RX on display.	
18	On CM117-VUHF1 front panel using the rotary switch, set RCU (pull).	Verify that CM117E TRA1 is restarted and appears message “CM117E 115 mode” on the display.	
19	From CP117E (interseat console) select the TARGET 1.	Check that CP117 control the CM117 TRA1: on the CP117 display, verify that first LED is green and the first status character is “P” (Plain mode). x: Status character  The number on the screen printing identifies the crypto unit	
20	From CP117E select CP with Target rotary switch. With arrow select “MODE CONF” and press ENT. Then turn the TARGET rotary switch to select the first CM (TARGET1).		
21	With ◄ (LEFT) push button, go in to the menu (Figure 9).	Verify that are selected “LOGIC 1”.	
22	Select EQUIP REMOTE.	After few second, during the check between two units, verify appear NO KEYS message on CP display.	
23	Ensure that PWR switch on CM117E TRA2 (**A370**), on the front panel, is set to ON.		
24	Switch ON the CM117E-TRA2 PWR switch. At first time CM117E power up, appear on the CM117 display “ENT Dis. CIK”. Press ◄ (LEFT) to confirm the CIK.	Verify that appear message “CIK DETECTED INITIALIZING CIK” and that “CIK INITIALIZED”.	
25	From CP TARGET switch, select the second CM (CM117E – VUHF2). Repeat the test point from 7 to 19, using ID equipment 2.	Verify that same results are obtained on CM117E-VUHF2.	

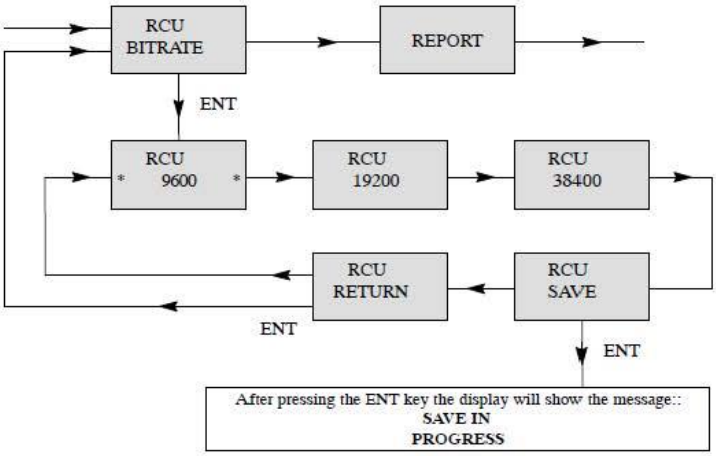


Figure 4 – RCU BITRATE on CP

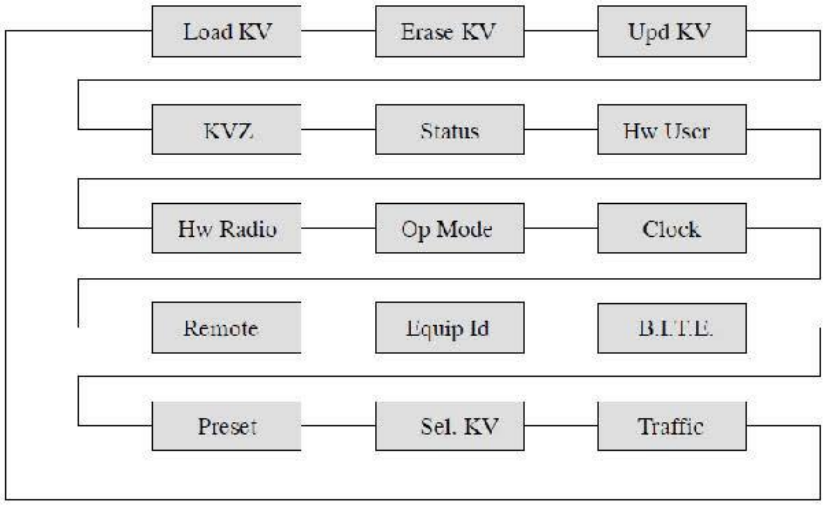


Figure 5 – CM117E MAIN Menu

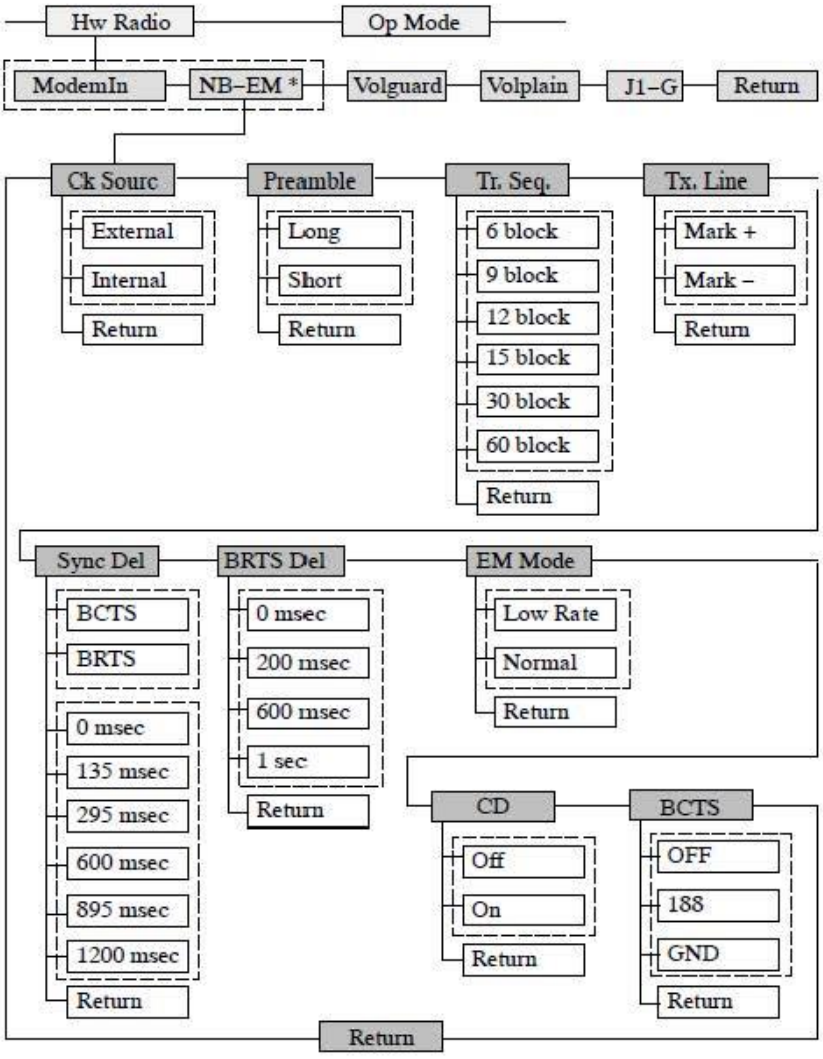


Figure 6 - CMHW USER NARROW BAND MENU (for reference only)

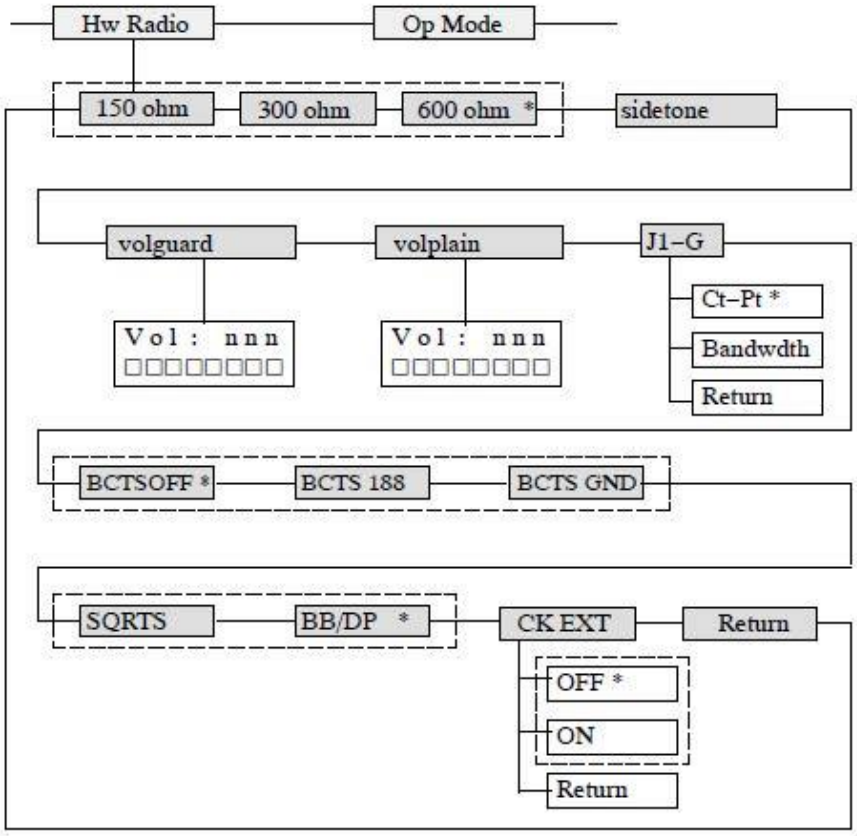


Figure 7 - CMHW RADIO MENU (for reference only)

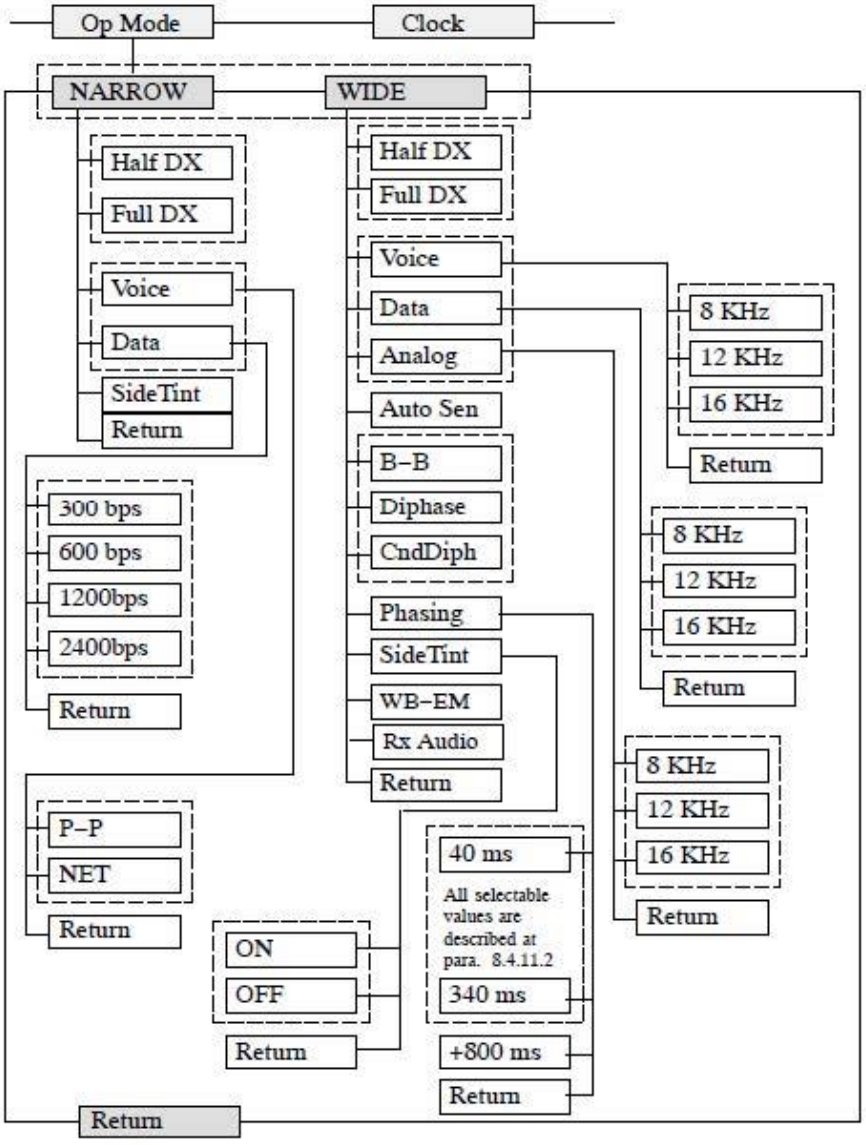


Figure 8 – CM OPERATION MODE MENU (for reference only)

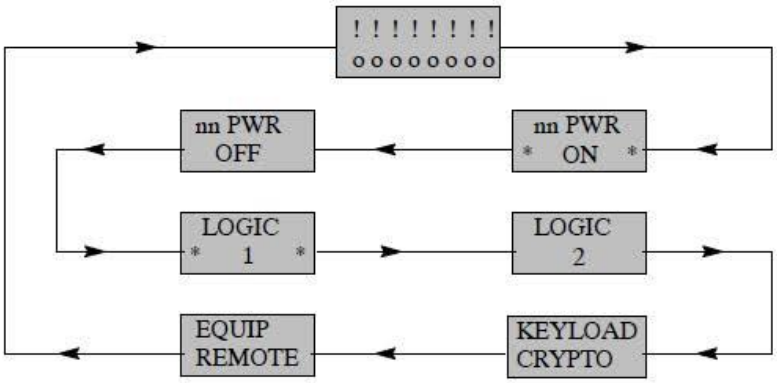


Figure 9 - MODE CONF Menu Target on CP position

2.14 CRYPTO DIMMING PANEL CHECK (if installed 8G2310F01611)

Note (*): the step marked with * shall be skipped if KIT NVG not installed.

Step	Test Description	Check	Pass/Fail
1	Switch ON the CP117E PWR switch.	Check that the Control panel will run the internal diagnostics (ORT), and tests display. On completing its power-up self tests sequence, verify that appear the star-up message "CP117E".	
2	On lighting control panel in cockpit, set the Mode switch on DAY.	Check that the display is illuminated at maximum and brightness of bezel is power off.	
3	On lighting control panel in cockpit, set the Mode switch on NIGHT.	Check that the display is illuminated but decreasing brightness (night mode level) and brightness of the bezel change accordingly.	
4	From ECDU Internal Light Page, adjust the console brightness at minimum level in order to change the bezels brightness level. Then return to suitable level.	Check that the brightness of the bezel change accordingly.	
5 (*)	On lighting control panel in cockpit, set the Mode switch on NVG.	Check that the display is illuminated but decreasing brightness (NVG filter enabled) and brightness of the bezel change accordingly.	
6 (*)	From ECDU Internal Light Page, adjust the console brightness at minimum level in order to change the bezels brightness level. Then return to suitable level.	Check that the brightness of the bezel change accordingly.	
7	On lighting control panel in cockpit, set the Mode switch on NIGHT.	Verify that the color of display not changed, but the brightness of the bezel change accordingly.	
8	On lighting control panel in cockpit, set the Mode switch on DAY.	Check that the display is illuminated at maximum.	

2.15 VUHF1 & CRYPTO COMMUNICATION TEST (if installed 8G2310F01611)

Step	Test Description	Check	Pass/Fail
1	Ensure all control and Transmit push buttons on all Audio Control Panel installed in cockpit and cabin are deselected (relevant led turned off). Connect the headset to the Pilot headphone jack. On Pilot's Audio panel, turn transmit rotary knob to VUHF1 and pull-up the VUHF1 audio receive push-rotary knob and set it to a middle range.		
2	Ensure that V/UHF PWR CB on ECDU is ON and VUHF1 STATUS = ON.		
3	Ensure that VUHF1 is set to Plain voice "PLAIN V" mode.		
4	Ensure that PWR switch on CM117E VUHF1 (**A368**), on the front panel, is set to ON. Switch ON the CP117E PWR switch.	Ensure that CM117E is powered ON and operative.	
5	Ensure that PT position with MODE knob is selected on CP117E.		
6	On MDCU VUHF1 page, enter in frequency set and insert the authorized local ground station frequency (see Table 2-6).		
7	On cyclic control lever press the Com PTT switch (switch pressed to the second latch) or press the PTT foot switch.	Verify that the transmission annunciator (TX) is displayed in the Pilot's Audio Panel display as long as the PTT switch is pressed.	

8	Verify satisfactory transmission and reception of audio signal and record the value in Table 2-6. Use the following intelligibility rating scale: **Scale** / **Intelligibility** 1/5 Unreadable 2/5 Readable now and then 3/5 Readable with difficulty 4/5 Readable 5/5 Perfectly readable	Is considerable acceptable the intelligibility rating from 3/5 to 5/5.	
9	Repeat the previous step for all frequency indicated in the table.	Record the value of TX and RX in the Table 2-6.	

NOTE: The follow frequencies are free and not necessary a crypto keys or authorization of authority.

STATION	FREQ.	MOD.	TX	RX
Ground station	118.150	AM		
	122.150	AM		
	136.750	AM		
	138.150	AM		
	138.150	FM		
	156.100	FM		
	173.500	FM		
	228.750	AM		
	228.750	FM		
	300.500	AM		
	300.500	FM		
	399.700	AM		
	399.700	FM		

Table 2-6 – CM117E VUHF1 Communication Test Frequencies

2.16 VUHF2 & CRYPTO COMMUNICATION TEST (if installed 8G2310F01611)

Step	Test Description	Check	Pass/Fail
1	Ensure all control and Transmit push buttons on all Audio Control Panel installed in cockpit and cabin are deselected (relevant led turned off). Connect the headset to the Pilot headphone jack. On Pilot's Audio panel, turn transmit rotary knob to VUHF2 and pull-up the VUHF2 audio receive push-rotary knob and set it to a middle range.		
2	Ensure that V/UHF2 PWR CB on ECDU is ON and VUHF2 STATUS = ON.		
3	Ensure that VUHF2 is set to Plain voice "PLAIN V" mode.		
4	Ensure that PWR switch on CM117E VUHF2 (**A370**), on the front panel, is set to ON. Switch ON the CP117E PWR switch.	Ensure that CM117E-VUHF2 is powered ON and operative.	
5	Ensure that PT position with MODE knob is selected on CP117E.		
6	On MDCU VUHF2 page, enter in frequency set and insert the authorized local ground station frequency (see Table 2-7).		
7	On cyclic control lever press the Com PTT switch (switch pressed to the second latch) or press the PTT foot switch.	Verify that the transmission annunciator (TX) is displayed in the Pilot's Audio Panel display as long as the PTT switch is pressed.	

8	Verify satisfactory transmission and reception of audio signal and record the value in Table 2-7. Use the following intelligibility rating scale: **Scale** / **Intelligibility** 1/5 Unreadable 2/5 Readable now and then 3/5 Readable with difficulty 4/5 Readable 5/5 Perfectly readable	Is considerable acceptable the intelligibility rating from 3/5 to 5/5.	
9	Repeat the previous step for all frequency indicated in the table.	Record the value of TX and RX in the Table 2-7.	

NOTE: The follow frequencies are free and not necessary a crypto keys or authorization of authority.

STATION	FREQ.	MOD.	TX	RX
Ground station	118.150	AM		
	122.150	AM		
	136.750	AM		
	138.150	AM		
	138.150	FM		
	156.100	FM		
	173.500	FM		
	228.750	AM		
	228.750	FM		
	300.500	AM		
	300.500	FM		
	399.700	AM		
	399.700	FM		

Table 2-7 – CM117E VUHF2 Communication Test Frequencies

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.