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AgustaWestland Products

SERVICE BULLETIN

OPTIONAL

N° 139-639

DATE: December 23, 2020

REV. : A - August 1, 2023

TITLE

ATA 53 – UPPER DECK PANEL REINFORCEMENT

REVISION LOG

Revision A is developed in order to:

- Integrate an additional and alternative structural modification (upper deck panel retromod for PCM RH P/N 3G5333P00912) only for the RH side area.
- Integrate an additional and alternative hydraulic modification (upper deck hydraulic variant P/N 3G2900P00611) only for the RH side area.
- Clarify the application of the service bulletin in case of already existing structural repairs.
- Update the P/N 3G5333P00812 and the P/N 3G5333P00912 to the latest revision issue.

Revision bars identify changes.

1. PLANNING INFORMATION

A. EFFECTIVITY

All AW139 helicopters from S/N 31400 to S/N 31699, from S/N 41300 to S/N 41499, from S/N 31700 to S/N 31944 except S/N 31896, 31920, 31921, 31922, 31924, 31942 and from S/N 41501 to S/N 41578, equipped with one of the following kits:

- P/N 3G2150F00511 “kit Air Conditioning”
- P/N 3G2150F00512 “kit Air Conditioning”
- P/N 4G2150F00611 “kit A/C provision dual zone cabin control panel”
- P/N 4G2150F00511 “kit ECS installation accessory mode”
- P/N 4G6320F00212 “kit MGB accessory drive”
- P/N 4G6320F00213 “kit MGB accessory drive”.
- 4G2150F00711 KIT ECS AGB ENVIRO
- 4G2150F00911 KIT ECS AGB ENVIRO DUAL-ZONE

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued to provide instructions to reinforce the upper deck panel in specific areas.

LH issued this SB for the following reason:

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

E. DESCRIPTION

Leonardo has developed retro-mod P/N 3G5333P00812 and retro-mod P/N 3G5333P00912 with the purpose of strengthening the upper deck panel.

The retromod P/N 3G5333P00812 is composed of reinforcements to be installed under the PCM N°1 and N°2 and under the ECS condenser pack (PCM N°2 side only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration).

The retromod P/N 3G5333P00912 is applicable as an alternative to the installation on the PCM N°2 side of the retromod P/N 3G5333P00812, only if MGB accessory drive P/N 4G6320F00212/213 is in configuration. This retromod consists of reinforcement to be installed under the PCM N°2.

Furthermore, the following groups of pipes are introduced to replace the previous ones:

- Upper deck hydraulic system retromod P/N 3G2900P00311 (PCM N°2 side only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration).
- Upper deck hydraulic variant P/N 3G2900P00611 (only if MGB accessory drive P/N 4G6320F00212/213 is in configuration).

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin one hundred and seventy-seven (177) MMH are deemed necessary.

MMH are based on hands-on time and can change with personnel and facilities available.

H. WEIGHT AND BALANCE

WEIGHT (kg)		1.0
	ARM (mm)	**MOMENT (kgmm)**
LONGITUDINAL BALANCE	4424	4424

LATERAL BALANCE	-12	-12

I. REFERENCES

I.1 PUBLICATIONS

Following Data Modules refer to AMP:

DATA MODULE		DESCRIPTION	PART
DM01	39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)	-
DM02	39-A-06-41-00-00A-010A-A	Access doors and panels - General data	-
DM03	39-A-11-00-01-00A-720A-A	Decal – Install procedure	-
DM04	39-A-21-90-00-00A-320A-K	Integrated environmental control system (ECS) - Operation test	-
DM05	39-A-29-11-01-00A-520A-A	Number 1 power control module - Remove procedure	-
DM06	39-A-29-12-01-00A-520A-A	Number 2 power control module - Remove procedure	-
DM07	39-D-21-90-03-00A-520A-K	Condenser assembly - Remove procedure	-
DM08	39-E-21-90-03-00A-520A-K	Condenser assembly - Remove procedure	-
DM09	39-F-21-90-07-00A-520A-K	Condenser assembly - Remove procedure	-
DM10	39-A-29-21-01-00A-520A-A	Electric pump - Remove procedure	-
DM11	39-A-20-40-01-00A-66AA-A	Tubes - Repair procedure	-
DM12	39-A-29-21-01-00A-720A-A	Electric pump - Install procedure	-
DM13	39-D-21-90-03-00A-720A-K	Condenser assembly - Install procedure	-
DM14	39-E-21-90-03-00A-720A-K	Condenser assembly - Install procedure	-
DM15	39-F-21-90-07-00A-720A-K	Condenser assembly - Install procedure	-
DM16	39-A-20-00-00-00A-711A-A	Threaded fasteners - Tighten procedure	-
DM17	39-A-29-11-01-00A-720A-A	Number 1 power control module - Install procedure	-
DM18	39-A-29-12-01-00A-720A-A	Number 2 power control module - Install procedure	-

Following Data Modules refer to CSRP:

DATA MODULE		DESCRIPTION	PART
DM19	CSRP-A-51-22-01-00A-258A-D	Preparation of metallic bonding surfaces - Other procedure to clean	-
DM20	CSRP-A-51-21-01-02A-257A-D	Polyurethane paint (MIL-PRF-85285) - Paint and apply marking	-
DM21	CSRP-A-51-42-00-00A-720A-D	Potted Inserts - Install procedure	-

I.2 ACRONYMS & ABBREVIATIONS

AGB Accessory Gear Box

AMDI Aircraft Material Data Information

AMP Aircraft Maintenance Publication

CSRP Common Structural Repair Publication

DM Data Module

DOA Design Organization Approval

ECS Environmental Control System

EASA European Aviation Safety Agency

IPD Illustrated Parts Data Publication

ITEP Illustrated Tools and Equipment Publication

LHD Leonardo Helicopters Division

MGB Main Gear Box

MMH Maintenance-Man-Hours

PCM Power Control Module

VCS Vapor Cycle System

I.3 ANNEX

Annex A - Bonding Acceptance Test Procedure

J. PUBLICATIONS AFFECTED

AW139 Aircraft Maintenance Publication (AMP)

AW139 Illustrated Parts Data Publication (IPD)

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

A.1 PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**3G5333P00812**		**UPPER DECK PANEL RETRO-MOD**	**REF**	**.**		**-**
2	3G5333A12952		Omega shape doubler	1	..		139-639L1 139-639L2
3	3G5333A13051	3G5333A13051M01	L shape doubler	1	..		139-639L1 139-639L2
4	3G5333A13152		C-shape doubler PMC LH	1	..		139-639L1 139-639L2
5	3G5333A13252		C-shape doubler PMC RH	1	..	(1)	139-639L1
6	3G5333A13351		Bonding layer	2	..	(1)	139-639L1
7	3G5333A13451		Bonding layer	1	..		139-639L1 139-639L2
8	3G5333A13551		Bonding layer	1	..		139-639L1 139-639L2
9	NAS1832C3-4		Insert	1	..	(1)	139-639L1
10	NAS9301B-4-01		Rivet	14	..	(1)	139-639L1
11	NAS9301B-4-01		Rivet	11	..	(5)	139-639L2
12	NAS9301B-4-02		Rivet	96	..	(1)(3)	139-639L1
13	NAS9301B-4-02		Rivet	67	..	(5)	139-639L2
14	**3G2900P00311**		**HYDRAULIC SYSTEM UPPER DECK RETROMOD**	**REF**	**.**		**-**
15	10781-4-22CR		Clamp	4	..		139-639L1 139-639L2
16	3G2910A30031		Pipe assy	1	..		139-639L1 139-639L2
17	3G2910A30131		Pipe assy	1	..		139-639L1 139-639L2
18	3G2910A30231		Pipe assy	1	..	(1)	139-639L1
19	3G2910A30331		Pipe assy	1	..	(1)	139-639L1
20	3G2920A30451		Special spacer	1	..		139-639L1 139-639L2
21	3G2920A30551		Special spacer	3	..		139-639L1 139-639L2
22	3G2920A30651		Special spacer	1	..	(1)	139-639L1
23	3G2920A30751		Special spacer	2	..		139-639L1 139-639L2
24	3G2920A30831		Pipe assy (aux system I pressure)	1	..		139-639L1 139-639L2
25	3G2920A30931		Pipe assy (aux system I return)	1	..		139-639L1 139-639L2
26	3G2920A31031		Pipe assy (aux system II pressure)	1	..	(1)	139-639L1
27	3G2920A31131		Pipe assy (aux system II return)	1	..	(1)	139-639L1
28	3G2970A07031		Pipe assy (drain)	1	..		139-639L1 139-639L2
29	3G2970A07131		Pipe assy (drain)	1	..		139-639L1 139-639L2
30	3G2970A07331		Pipe assy (drain)	1	..	(1)	139-639L1
31	AS21919WCH04		Clamp	3	..		139-639L1 139-639L2
32	AW003PB04C		Straight permanent fitting	2	..		139-639L1 139-639L2

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
33	AW003PB06C	A263A06	Straight permanent fitting	5	..	(1)(3)	139-639L1
34	AW003PB06C	A263A06	Straight permanent fitting	2	..	(5)	139-639L2
35	AW004PB04C	A272A04	Tee permanent fitting	1	..		139-639L1 139-639L2
36	MS21043-3		Nut	1	..		139-639L1 139-639L2
37	NAS1149C0332R		Washer	1	..		139-639L1 139-639L2
38	NAS1802-3-18		Screw	1	..		139-639L1 139-639L2
39	NAS1802-4-10		Screw	7	..		139-639L1 139-639L2
40	NAS1802-4-14		Screw	1	..		139-639L1 139-639L2
41	NAS43DD3-116N		Spacer	1	..		139-639L1 139-639L2
42	NAS43DD3-17N		Spacer	1	..	(1)	139-639L1
43	NAS43DD3-24N		Spacer	1	..	(1)	139-639L1
44	NAS43DD3-43N		Spacer	1	..		139-639L1 139-639L2
45	NAS43DD3-4N		Spacer	1	..		139-639L1 139-639L2
46	NAS43DD3-57N		Spacer	1	..	(1)	139-639L1
47	**3G5333P00912**		**UPPER DECK PANEL RETRO-MOD FOR PCM RH**	**REF**	**.**	(5)	**-**
48	3G5333A13254		C-shape doubler PCM RH	1	..		139-639L2
49	AN4C5A		Bolt	1	..		139-639L2
50	AW007TE-40-209		Insert	1	..		139-639L2
51	AW007TE-40-217		Insert	2	..		139-639L2
52	MS20426AD3-5		Rivet	0.1 kg	..		139-639L2
53	MS21075L4N		Anchor nut	1	..		139-639L2
54	NAS1149C0416R		Washer	1	..		139-639L2
55	NAS9301B-4-02		Rivet	15	..		139-639L2
56	NAS9302B-4-02		Rivet	1	..		139-639L2
57	**3G2900P00611**		**UPPER DECK HYD VARIANT (ACCESSORY MODE)**	**REF**	**.**	(5)	**-**
58	3G2910A19131		Pipe assy (system II pressure)	1	..		139-639L2
59	3G2910A19231		Pipe assy (system II return)	1	..		139-639L2
60	3G2910A30631		Pipe assy (system II return)	1	..		139-639L2
61	3G2910A30731		Pipe assy (system II pressure)	1	..		139-639L2
62	3G2920A17631		Pipe assy (pump suction system II)	1	..		139-639L2
63	3G2920A17731		Pipe assy (pressure aux system II)	1	..		139-639L2
64	3G2920A17831		Pipe assy (pump case drain system II)	1	..		139-639L2
65	3G2920A30451		Special spacer	1	..		139-639L2
66	3G2920A30651		Special spacer	1	..		139-639L2
67	3G2920A31631		Pipe assy (pressure aux system II)	1	..		139-639L2
68	3G2920A31731		Pipe assy (return aux system II)	1	..		139-639L2
69	3G2970A06331		Pipe assy (seal drain)	1	..		139-639L2
70	3G2970A07731		Pipe assy (drain)	1	..		139-639L2
71	3G3070A10531		Liner assy	1	..		139-639L2
72	3G6352A13632		Loom assy	1	..		139-639L2

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
73	3G6370A05431		Pipe assy	1	..		139-639L2
74	3G6370A05531		Pipe assy	1	..		139-639L2
75	A366A3E12C		Stud	1	..		139-639L2
76	A366A3E12C75		Stud	2	..		139-639L2
77	A385AD3D00D0466X		Hose assy nonmetallic	1	..		139-639L2
78	AN3-14A		Bolt	1	..		139-639L2
79	AN3-17A		Bolt	1	..		139-639L2
80	AN3-4A		Bolt	3	..		139-639L2
81	AN3C6A		Bolt	3	..		139-639L2
82	MS21043L3	MS21043-3	Nut	2	..		139-639L2
83	MS21919WCH4	AS21919WCH04	Clamp	2	..		139-639L2
84	MS27039-1-08		Screw	1	..		139-639L2
85	NAS1149D0332J		Washer	2	..		139-639L2
86	NAS1149C0332R		Washer	1	..		139-639L2
87	NAS43DD3-12N		Spacer	2	..		139-639L2
88	NAS43DD3-20N		Spacer	1	..		139-639L2
89	NAS43DD3-25N		Spacer	1	..		139-639L2
90	NAS43DD3-92N		Spacer	1	..		139-639L2
91	**3G2150P01511**		**ECS UPPER DECK RETROMOD**	**REF**	**.**		**-**
92	NAS1149C0332R		Washer	8	..		139-639L1 139-639L2

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
93	AWMS05-001 Type I, Class A/B, Grade 2	Sealant MC-780 Class A/B (C465)	AR	(6)	-
94	199-05-002 Type I, Class 2	Adhesive Hysol EA9309 NA (C231) or EA9309.3NA	AR	(6)	-
95	199-05-002 Type II, Class 2	Adhesive EA 934NA Aero (C397)	AR	(6)	-
96	AWMS05-001 Type I, Class C, Grade 1	Sealant MC-780 Class C	AR	(6)	-
97	199-05-152, Type II	Sealant RTV106 (C142)	AR	(6)	-
98	AS1072-06SIL-FG	Firesleeve	AR	(6)	-
99	ASTM-D-5363	Loctite 222	AR	(6)	-
100	Commercial	Methyl Alcohol	AR	(6)	-
101	P-C-451	Abrasive paper 320 grit (C017)	AR	(6)	-
102	Commercial	Abrasive pad (C015)	AR	(6)	-
103	TT-N-95, Type II	Aliphatic naphtha (C059)	AR	(6)	-
104	CCC-C-440 Class II	Cheesecloth (C916)	AR	(6)	-
105	Commercial	Masking tape (C595)	AR	(6)	-
106	WHPS083, Class B1, Type P	Sealing compound PR-2200	AR	(6) (7)	-
107	AMS 3266 Class B	Sealant PR1764C2 (C170)	AR	(6) (7)	-
108	Commercial	Sealant Thixoflex Gray TG8498-50 (C347)	AR	(6) (8)	-
109	Commercial	Sealing compound PR1428-B2 (C904)	AR	(6) (8)	-
110	MIL-PRF-85285, Type I, Class H	Paint, blue polyurethane gloss (C138)	AR	(6)	-
111	Commercial	Ardrox AV40 BM110P0007	AR	(6)	-
112	BM110P0004 MIL-PRF-16173, Class I, Grade 1	Corrosion inhibitor Tectyl 891D	AR	(6) (9)	-
113	BM110P0004 MIL-PRF-16173, Class II, Grade 1	Corrosion inhibitor Tectyl 502C	AR	(6) (9)	-
114	MIL-A-46106 199-05-152, Type III	Sealant RTV 730 (C125).	AR	(6)	-

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
115	MIL-C-5541	Alodine 1000 (C406)	AR	(6)	-
116	Commercial	CB200-40 (C356)	AR	(6)	-

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

A.3 LOGISTIC MATRIX

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

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
139-639L1	1	(1)	-
139-639L2	1	(5)	-

NOTES

(1) Item to be ordered only if MGB accessory drive P/N 4G6320F00212/213 is **NOT** in configuration.

(2) Item to be ordered in quantity 11 if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

(3) Item to be ordered in quantity 67 if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

(4) Item to be ordered in quantity 2 if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

(5) Item to be ordered only if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

(6) Item to be procured as local supply.

(7) Sealant PR1764C2 (C170) may be used as alternative to Sealing compound PR-2200.

(8) Sealing compound PR1428-B2 (C904) may be used as alternative to Sealant Thixoflex Gray TG8498-50 (C347).

(9) Corrosion inhibitor Tectyl 502C may be used as alternative to Corrosion inhibitor Tectyl 891D.

B. SPECIAL TOOLS

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

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
117	Ducter type D 201	Milliohmeter	1	(B1)	-

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

SPECIAL TOOLS NOTE

(B1) The milliohmeter must be equipped with

- duplex probes with rounded contact points (min 0,8mm radius)
- single probes with rounded contact points (min 0,8mm radius), to be used where limited access prevents the use of duplex probes.

C. INDUSTRY SUPPORT INFORMATION

Product improvement.

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) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.
c) 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.
d) Protect properly all those equipment not removed from area affected by the modification during installation procedure.
e) Let the adhesive cure at room temperature for at least 24 hours, unless otherwise specified.
f) In the event of ovalized holes it is possible to use oversize rivets.
g) All lengths are in mm.

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A remove the access panel 473AL to get access to the PCM n°1 P/N 3G2900V00652 (if in configuration), the PCM n°2 P/N 3G2900V00652 and the VCS condenser pack P/N 3G2150V10256 (or alternative P/N).
3. In accordance with AMP DM 39-A-29-11-01-00A-520A-A and with reference to Figure 2, Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse the PCM n°1 P/N 3G2900V00652 and n°4 washers P/N NAS1149C0463R. Remove and discard n°4 bolts P/N AN4C4A.

NOTE

Perform the following step only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

4. In accordance with AMP DM 39-A-29-12-01-00A-520A-A and with reference to Figure 2,

Figure 8 upper deck iso view (WAS) and Figure 9 View A and View C, remove and retain for later reuse the PCM n°2 P/N 3G2900V00652 and n°4 washers P/N NAS1149C0463R. Remove and discard n°3 bolts P/N AN4C4A and the bolt P/N AN4C6A.

NOTE

Perform the following step only if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

5. In accordance with AMP DM 39-A-29-12-01-00A-520A-A and with reference to Figure 20 PCM system 2 & tail rotor shut-off valve installation, remove and retain for later reuse the PCM n°2 P/N 3G2900V00652, n°4 washers P/N NAS1149C0463R, n°3 bolts P/N AN4C4A and n°1 bolt P/N AN4C6A.

WARNING

TWO OPERATORS ARE REQUIRED TO REMOVE THE VCS CONDENSER PACK.

6. With reference Figure 14 and Figure 15 remove and retain for later reuse the VCS condenser pack P/N 3G2150V10256 (or alternative P/N) from the upper deck assy P/N 3P5333A00134, n°2 screws P/N NAS6703-7, n°2 screws P/N NAS6703-4 and n°4 screws P/N NAS6703-5. Remove and discard n°8 washers P/N NAS1149C0363R.
   Refer also to the applicable steps of the relevant AMP DM:
   - 39-D-21-90-03-00A-520A-K (P/N 3G2150F00511 or P/N 3G2150F00512);
   - 39-E-21-90-03-00A-520A-K (P/N 4G2150F00611);
   - 39-F-21-90-07-00A-520A-K (P/N 4G2150F00511).
7. With reference to Figure 8 upper deck iso view (WAS), remove and discard the spacer P/N NAS43DD3-112N and remove and retain for later reuse the clamp P/N AS21919WCH04, the bolt P/N AN3C22A and the washer P/N NAS1149C0332R fixing the electric motor pipes.
8. In accordance with AMP DM 39-A-29-21-01-00A-520A-A and with reference to Figure 8 upper deck iso view (WAS), remove and retain the electric motor driven pump P/N 3G2920V00131, n°4 bolts P/N AN4C6A and n°4 washers P/N NAS1149C0432R from the bracket assy P/N 3G2900A02831.
9. With reference to Figure 8 upper deck iso view (WAS), remove and retain for later reuse the bracket assy P/N 3G2900A02831, the electrical bonding cable P/N A610A3B20, n°3 bolts P/N AN3C3A, the bolt P/N AN3C4A and n°4 washers P/N NAS1149C0332R from the upper deck assy P/N 3P5333A00134.

NOTE

Perform the following steps from 10 thru 13 only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

10. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View A, remove and discard the pipe assy (drain) P/N 3G2970A01231, the pipe assy (system II pressure) P/N 3G2910A01531, the pipe assy (system II return) P/N 3G2910A01931 and the clamp block P/N A288A002A. Remove and retain for later reuse the bolt P/N AN3C13A and the washer P/N NAS1149C0332R.
11. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View A, remove and retain for later reuse the clamp block P/N A295A3002A (or n°1 special block P/N 8G2920A01251 and n°2 special cushions P/N 8G2920L00151), the bolt P/N AN3C16A, the bolt P/N AN3C17A, the clamp P/N AS21919WCH04 and n°2 washers P/N NAS1149C0332R.
12. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View A, remove and discard the spacer P/N NAS43DD3-21N. Remove and retain for later reuse the clamp P/N AS21919WCH04, the washer P/N NAS1149C0332R and the nut P/N MS21043-3 from the click bond P/N A366A3E14C75.
13. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View A, remove and discard the spacer P/N NAS43DD3-13N. Remove and retain for later reuse the clamp P/N AS21919WCH08, the washer P/N NAS1149C0332R and the nut P/N MS21043-3 from the click bond P/N A366A3E12C.

NOTE

Perform steps 14 thru 17 only if the rotor brake lines installation variant P/N 3G6352A16011 is in configuration. Otherwise skip to step 18.

14. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse the bracket P/N 3G2920A12251, n°3 bolts P/N AN3C3A and n°3 washers P/N NAS1149C0332R.
15. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse n°2 clamps P/N AS21919WCH04, n°2 clamps P/N AS21919WCH06, the clamp block P/N A295A3004A, the spacer P/N NAS43DD3-40N, n°2 washers P/N NAS1149C0332R, the bolt P/N AN3C21A and the bolt P/N AN3C14A.
16. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse the clamp P/N AS21919WCH04, n°2 clamps AS21919WCH06, the clamp block P/N A295A3004A, the spacer P/N NAS43DD3-40N, the bolt P/N AN3C21A,

the bolt P/N AN3C14A and n°2 washers P/N NAS1149C0332R.

17. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse n°2 clamps P/N AS21919WCH04, the clamp block P/N A295A3004A, the spacer P/N NAS43DD3-44N, the bolt P/N AN3C21A, the bolt P/N AN3C13A and n°2 washers P/N NAS1149C0332R.

NOTE

Perform steps 18 thru 21 only if rotor brake lines installation variant P/N 3G6306P01911 is in configuration.

18. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse the bracket P/N 3G2920A12251, n°3 bolts P/N AN3C3A and n°3 washers P/N NAS1149C0332R.
19. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse the clamp P/N AS21919WCH04, n°2 clamps P/N AS21919WCH06, the clamp block P/N A295A3004A, the spacer P/N NAS43DD3-40N, the bolt P/N AN3C21A, the bolt P/N AN3C14A and n°2 washers P/N NAS1149C0332R.
20. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse the clamp P/N AS21919WCH04, the clamp block P/N A295A3004A, the spacer P/N NAS43DD3-44N, the bolt P/N AN3C21A, the bolt P/N AN3C13A and n°2 washers P/N NAS1149C0332R.
21. With reference to Figure 8 upper deck iso view (WAS) and Figure 9 View B, remove and retain for later reuse the clamp P/N AS21919WCH04, the bolt P/N AN3-4A and the washer P/N NAS1149C0332R.
22. With reference to Figure 8 upper deck iso view (WAS) and Figure 10 Detail D, remove and discard the clamp block P/N A288A002A and the bolt P/N AN3C13A. Remove and retain for later reuse the washer P/N NAS1149C0332R.

CAUTION

Protect the open ends of the pipes from any introduction of dirt due to rework in the area.

CAUTION

Do not use marking pens with chloride or graphite on titanium tubes. They can cause damage to the material.

NOTE

In the steps that require the shortening of the pipes, keep a margin with respect to the lengths indicated in the figure and refine during installation.

23. In accordance with applicable steps of AMP DM 39-A-20-40-01-00A-66AA-A and with reference to Figure 8 upper deck iso view (WAS) and Figure 10 Detail D, remove a portion of the pipe assy (system I return) P/N 3G2910A01431 and a portion of the pipe assy (system I pressure) P/N 3G2910A01331 in accordance with the dimensioning shown.

NOTE

Remove fire protection sleeve P/N AS1072-06SIL-FG and clamps P/N 10781-4-22CR before the pipe assy (aux system I pressure) P/N 3G2920A12931 and pipe assy (aux system II pressure) P/N 3G2920A04731 cutting.

24. In accordance with applicable steps of AMP DM 39-A-20-40-01-00A-66AA-A and with reference to Figure 8 upper deck iso view (WAS) and Figure 10 Detail E, remove a portion of the pipe assy (aux system I return) P/N 3G2920A13031, a portion of the pipe assy (aux system I pressure) P/N 3G2920A12931 and a portion of the loom assy P/N 3G2970A00731 in accordance with the dimensioning shown.

NOTE

Perform the following step only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

25. With reference to Figure 8 upper deck iso view (WAS) and Figure 10 Detail F, remove a portion of the pipe assy (aux system II return) P/N 3G2920A04831 and a portion of the pipe assy (aux system II pressure) P/N 3G2920A04731 in accordance with the dimensioning shown.

NOTE

Perform the following steps from 26 thru 45 only if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

26. With reference to Figure 20 View B, remove and retain for later reuse the tail rotor shut-off valve P/N 3G2910V00231 and the existing fasteners from the upper deck assy P/N 3P5333A00134.
27. With reference to Figure 22 Auxiliary lines installation, remove and retain for later reuse the special block P/N 8G2920A012551, the special cushion P/N 8G2920L001511, the bolt P/N AN3-16A, the bolt P/N AN3-17A and the washer P/N NAS1149C0332R.

28. With reference to Figure 22 View U, remove and retain for later reuse the clamp P/N MS21919WCH8, the washer P/N NAS1149C0332R and the nut P/N MS21042L3.
29. With reference to Figure 22 View U, remove and retain for later reuse the clamp and the fasteners. Remove and discard the spacer P/N NAS43DD3-21N.
30. With reference to Figure 22 Auxiliary lines installation, remove and retain for later reuse the nut P/N AN924-4D, the nut P/N AN924-12D, the nut P/N AN924-8D, the washer P/N NAS1149C0763R, the washer P/N NAS1149C2190R and the washer P/N NAS1149C1290R.
31. With reference to Figure 22 Auxiliary lines installation, remove the pipe assy (pressure aux system II) P/N 3G2920A04531, the pipe assy (suction system II) P/N 3G2920A04431 and the pipe assy (case drain system II) P/N 3G2920A04632.
32. With reference to Figure 22 Auxiliary lines installation, remove and retain for later reuse the bracket P/N 3G2920A12253 and the existing fasteners, except for bolts P/N AN3C5A.
33. With reference to Figure 23 Utility lines installation, remove and retain for later reuse the clamp block P/N A288A003A, the bolt P/N AN3-13A and the washer P/N NAS1149C0332R.
34. With reference to Figure 23 Utility lines installation, remove the pipe assy (pressure aux system II) P/N 3G2920A04731 and the pipe assy (return aux system II) P/N 3G2920A04831.
35. With reference to Figure 24 Hydraulic lines installation, remove and retain for later reuse n°2 clamps P/N MS21919WCH4.
36. With reference to Figure 24 Detail V, remove and retain for later reuse the clamp P/N MS21919WCH5 and the washer P/N NAS1149C0332R. Remove and discard the bolt P/N N3-16A and the spacer P/N NAS43DD3-88N.
37. With reference to Figure 22 Hydraulic lines installation, remove the flexible hose P/N A385AD3D00D0490X and the pipe assy P/N 3G2970A04631.
38. With reference to Figure 22 Rotor brake lines installation, remove the the loom assy P/N 3G6352A12231.
39. With reference to Figure 25 View M, remove and retain for later reuse the clamp block P/N A288A002A and the washer P/N NAS1149C0332R. Remove and discard the bolt P/N AN3-13A.
40. With reference to Figure 25 Flight control lines installation, remove the pipe assy (system II return) P/N 3G2910A01931, the pipe assy (system II pressure) P/N 3G2910A01531, the pipe assy (system II pressure) P/N 3G2910A01631 and the pipe assy (system II return) P/N 3G2910A01831.
41. With reference to Figure 27 View S, remove and retain for later reuse the clamp MS21919WCH4. Remove and discard the stud P/N A366A3E12C and the existing

hardware.

42. With reference to Figure 27 View T, remove the cap P/N MS21914-4J, the bolts P/N AN3-3A, the washers P/N NAS1149C0332R, the nut P/N AN924-4D, the washer P/N NAS1149C0763R, and the bracket P/N 3G6370A03251.
43. With reference to Figure 26 View A, remove the pipe assy (drain) P/N 3G2970A01231.
44. With reference to Figure 27 View S, remove the loom assy (transmission drain) P/N 3G6370A04831 and the pipe assy (transmission drain) P/N 3G6370A04931.
45. With reference to Figure 20 Barrier installation, remove the liner assy RH P/N 3G3070A10231 from the upper deck assy P/N 3P5333A00134.

NOTE

With reference to Figure 3, if there is already a structural repair in the affected area, please contact the PSE for information on how to:

- Remove the existing repair.
- Install the new doubler/shim by recovering the holes already present from the old repair.
- Manufacture and install the “dummy doubler(s)” of the shape needed to cover the area difference between the existing repair and the new installation.

NOTE

In case of previous repairs, when applying the retro-mod P/N 3G5333P00812, use the existing holes as much as possible to avoid further drilling on the structure, and plug the unused holes with protruded head rivets. It's also possible to create dummy doubles (Mat. 2024 T3 aluminum) to cover the repair areas not covered by the doublers of the retro-mod P/N 3G5333P00812.

46. With reference to Figures 1 thru 7, perform upper deck panel retro-mod P/N 3G5333P00812 as described in the following procedure:

NOTE

Remove washers P/N NAS1149C0416R if installed to avoid collisions with doubler P/N 3G5333A13152.

46.1 With reference to Figure 3 View B, Figure 4 Detail D and View H, temporarily locate the C-shape doubler PCM LH P/N 3G5333A13152, countermark the edges and the holes on the upper deck assy P/N 3P5333A00134 in accordance to the reference points and the dimensioning shown.

NOTE

Perform the following step only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

NOTE

Remove washers P/N NAS1149C0416R if installed to avoid collisions with doubler P/N 3G5333A13152.

46.2 With reference to Figure 3 View B and Figure 4 Detail E temporarily locate the C-shape doubler PCM RH P/N 3G5333A13252, countermark the edges and the holes on the upper deck assy P/N 3P5333A00134 in accordance to the reference points and the dimensioning shown.

46.3 With reference to Figure 3 View B, Figure 5 Detail F and View J, temporarily locate the L-shape doubler P/N 3G5333A13051, countermark the edges and the holes on the upper deck assy P/N 3P5333A00134 in accordance to the reference points and the dimensioning shown.

46.4 With reference to Figure 3 View B and Figure 6 Detail G, temporarily locate the Omega-shape doubler P/N 3G5333A12952, countermark the edges and the holes on the upper deck assy P/N 3P5333A00134 in accordance to the reference points and the dimensioning shown.

46.5 With reference to Figure 3 View B, Figure 4 Detail D and View H, drill n°32 rivet holes on the upper deck assy P/N 3P5333A00134 in accordance with the C-shape doubler PCM LH P/N 3G5333A13152.

NOTE

Perform the following step only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

46.6 With reference to Figure 3 View B and Figure 4 Detail E, drill n°32 rivet holes on the upper deck assy P/N 3P5333A00134 in accordance with the C-shape doubler PCM RH P/N 3G5333A13252.

46.7 With reference to Figure 3 View B, Figure 5 Detail F and View J, drill n°24 holes on the upper deck assy P/N 3P5333A00134 in accordance with the L-shape doubler P/N 3G5333A13051.

46.8 With reference to Figure 3 View B and Figure 6 Detail G, drill n°22 holes on the upper deck assy P/N 3P5333A00134 in accordance with the Omega-shape doubler P/N 3G5333A12952.

46.9 With reference to Figure 3 View B, install the C-shape doubler PCM LH P/N 3G5333A13152 on the upper deck assy P/N 3P5333A00134 by means of Adhesive 199-05-002 Type I, Class 2.

NOTE

Wet assemble fixing fasteners by means of Sealant AWMS05-001 Type I, Class C, Grade 1 applied under the head and on the shank of fasteners.

46.10 With reference to Figure 3 View B, Figure 4 Detail D and View H, fix the C-shape doubler PCM LH P/N 3G5333A13152 on the upper deck assy P/N 3P5333A00134 by means of n°28 rivets P/N NAS9301B-4-02.

46.11 With reference to Figure 7 View C, seal the C-shape doubler PCM LH P/N 3G5333A13152 all around by means of sealant Thixoflex gray TG8498-50.

46.12 With reference to Figure 3 View B, Figure 4 Detail D and View H, prepare the surface of the upper deck assy P/N 3P5333A00134 for the installation of the bonding layer P/N 3G5333A13551. Abrade the indicated area by means of 320 grit abrasive paper (C017) or finer or abrasive pad (C015) and swab degrease by means of aliphatic naphtha (C059) and clean cloth (C011).

NOTE

Sealant PR1764 Class B2 (C240) may be used as alternative to Sealing compound PR-2200.

46.13 With reference to Figure 3 View B, Figure 4 Detail D and View H, install the bonding layer P/N 3G5333A13551 on the upper deck assy P/N 3P5333A00134 and C-shape doubler PCM LH P/N 3G5333A13152 by means of Sealing compound PR-2200.

46.14 With reference to Figure 3 View B, Figure 4 Detail D and View H, fix the bonding layer P/N 3G5333A13551 on the upper deck assy P/N 3P5333A00134 and C-shape doubler PCM LH P/N 3G5333A13152 by means of n°4 rivets P/N NAS9301B-4-01.

46.15 With reference to Figure 3 View B, fill the indicated parts of the C-shape doubler PCM LH P/N 3G5333A13152 and the bonding layer P/N 3G5333A13551 with AWMS05-001 Type I, Class B, Grade 2 Sealant (C465).

NOTE

Perform the following steps from 46.16 thru 46.22 only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

46.16 With reference to Figure 3 View B, install the C-shape doubler PCM RH P/N 3G5333A13252 on the upper deck assy P/N 3P5333A00134 by means of Adhesive 199-05-002 Type I, Class 2.

NOTE

Wet assemble fixing fasteners by means of Sealant AWMS05-001 Type I, Class C, Grade 1 applied under the head and on the shank of fasteners.

46.17 With reference to Figure 3 View B and Figure 4 Detail E, fix the C-shape doubler P/N 3G5333A13252 on the upper deck assy P/N 3P5333A00134 by means of n°26 rivets P/N NAS9301B-4-02.

46.18 With reference to Figure 7 View C, seal the C-shape doubler PCM RH P/N 3G5333A13252 all around by means of sealant Thixoflex gray TG8498-50.

46.19 With reference to Figure 3 View B and Figure 4 Detail E, prepare the surface of the upper deck assy P/N 3P5333A00134 for the installation of the bonding layer P/N 3G5333A13351. Abrade the indicated area by means of 320 grit abrasive paper (C017) or finer or abrasive pad (C015) and swab degrease by means of aliphatic naphtha (C059) and clean cloth (C011).

NOTE

Sealant PR1764 Class B2 (C240) may be used as alternative to Sealing compound PR-2200.

46.20 With reference to Figure 3 View B and Figure 4 Detail E, install the bonding layer P/N 3G5333A13351 on the upper deck assy P/N 3P5333A00134 and C-shape doubler PCM RH P/N 3G5333A13252 by means of Sealing compound PR-2200.

46.21 With reference to Figure 3 View B and Figure 4 Detail E, fix the bonding layer P/N 3G5333A13351 on the upper deck assy P/N 3P5333A00134 and C-shape doubler PCM RH P/N 3G5333A13252 by means of n°3 rivets P/N NAS9301B-4-01 and n°3 rivets P/N NAS9301B-4-02.

46.22 With reference to Figure 3 View B, fill the indicated parts of the C-shape doubler PCM RH P/N 3G5333A13252 and the bonding layer P/N 3G5333A13351 with AWMS05-001 Type I, Class B, Grade 2 Sealant (C465).

46.23 With reference to Figure 3 View B, install the L-shape doubler P/N 3G5333A13051 on the upper deck assy P/N 3P5333A00134 by means of Adhesive 199-05-002 Type I, Class 2.

NOTE

Wet assemble fixing fasteners by means of Sealant AWMS05-001 Type I, Class C, Grade 1 applied under the head and on the shank of fasteners.

46.24 With reference to Figure 3 View B, Figure 5 Detail F and View J, fix the L-shape doubler P/N 3G5333A13051 on the upper deck assy P/N 3P5333A00134 by

means of n°20 rivets P/N NAS9301B-4-02.

46.25 With reference to Figure 7 View C, seal the L-shape doubler P/N 3G5333A13051 all around by means of sealant Thixoflex gray TG8498-50.

46.26 With reference to Figure 3 View B, Figure 5 Detail F and View J, prepare the surface of the upper deck assy P/N 3P5333A00134 for the installation of the bonding layer P/N 3G5333A13451. Abrade the indicated area by means of 320 grit abrasive paper (C017) or finer or abrasive pad (C015) and swab degrease by means of aliphatic naphtha (C059) and clean cloth (C011).

NOTE

Sealant PR1764 Class B2 (C240) may be used as alternative to Sealing compound PR-2200.

46.27 With reference to Figure 3 View B, Figure 5 Detail F and View J, install the bonding layer P/N 3G5333A13451 on the upper deck assy P/N 3P5333A00134 and L-shape doubler P/N 3G5333A13051 by means of Sealing compound PR-2200.

46.28 With reference to Figure 3 View B, Figure 5 Detail F and View J, fix the bonding layer P/N 3G5333A13451 on the upper deck assy P/N 3P5333A00134 and L-shape doubler P/N 3G5333A13051 by means of n°4 rivets P/N NAS9301B-4-01.

46.29 With reference to Figure 3 View B, fill the indicated parts of the bonding layer P/N 3G5333A13451 with AWMS05-001 Type I, Class B, Grade 2 Sealant (C465).

46.30 With reference to Figure 3 View B, install the Omega-shape doubler P/N 3G5333A12952 on the upper deck assy P/N 3P5333A00134 by means of Adhesive 199-05-002 Type I, Class 2.

NOTE

Wet assemble fixing fasteners by means of Sealant AWMS05-001 Type I, Class C, Grade 1 applied under the head and on the shank of fasteners.

46.31 With reference to Figure 3 View B and Figure 6 Detail G, fix the Omega-shape doubler P/N 3G5333A12952 on the upper deck assy P/N 3P5333A00134 by means of n°16 rivets P/N NAS9301B-4-02.

46.32 With reference to Figure 7 View C, seal the Omega-shape doubler P/N 3G5333A12952 all around by means of sealant Thixoflex gray TG8498-50.

46.33 With reference to Figure 3 View B and Figure 6 Detail G, prepare the surface of the upper deck assy P/N 3P5333A00134 for the installation of the bonding layer P/N 3G5333A13351. Abrade the indicated area by means of 320 grit abrasive paper (C017) or finer or abrasive pad (C015) and swab degrease by means of aliphatic naphtha (C059) and clean cloth (C011).

NOTE

Sealant PR1764 Class B2 (C240) may be used as alternative to Sealing compound PR-2200.

46.34 With reference to Figure 3 View B and Figure 6 Detail G, install the bonding layer P/N 3G5333A13351 on the upper deck assy P/N 3P5333A00134 and Omega-shape doubler P/N 3G5333A12952 by means of Sealing compound PR-2200.

46.35 With reference to Figure 3 View B and Figure 6 Detail G, fix the bonding layer P/N 3G5333A13351 on the upper deck assy P/N 3P5333A00134 and Omega-shape doubler P/N 3G5333A12952 by means of n°3 rivets P/N NAS9301B-4-01 and n°3 rivets P/N NAS9301B-4-02.

46.36 With reference to Figure 3 View B, fill the indicated parts of the Omega-shape doubler P/N 3G5333A12952 and the bonding layer P/N 3G5333A13351 with AWMS05-001 Type I, Class B, Grade 2 Sealant (C465).

NOTE

Perform the following steps 46.37 and 46.38 only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

46.37 In accordance to CSRP DM CSRP-A-51-42-00-00A-720A-D and with reference to Figure 3 View B, drill an insert hole Ø14.25÷14.37 on the upper deck assy P/N 3P5333A00134 and install the insert P/N NAS1832C3-4 by means of Adhesive EA 934NA Aero (C397).

46.38 With reference to Figure 3 View B, fill the empty insert hole on the upper deck assy P/N 3P5333A00134 with Adhesive EA 934NA Aero (C397).

46.39 With reference to Figure 3 View B, protect all removable fasteners that are not fully coated with polyurethane paint, using the corrosion inhibitor Tectyl 891D.

46.40 In accordance with CSRP DM CSRP-A-51-21-01-02A-257A-D and with reference to Figure 3 View B and Figure 7 View C, apply polyurethane coating MIL-PRF-85285, Type I, Class H on the indicated area.

NOTE

Perform the following step 47 only if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

NOTE

With reference to Figures 16 and 17, if there is already a structural repair in the affected area, please contact the PSE for information on how to:

- Remove the existing repair.

- Install the new doubler/shim by recovering the holes already present from the old repair.
- Manufacture and install the “dummy doubler(s)” of the shape needed to cover the area difference between the existing repair and the new installation.

47. With reference to Figures 16 thru 17, perform upper deck panel retromod for PCM RH P/N 3G5333P00912 as described in the following procedure:

NOTE

Protect all removable fasteners that are not fully coated with polyurethane paint using the corrosion inhibitor Tectyl 891D.

47.1 With reference to Figure 16 View A (WAS) and Figure 18 Detail B (WAS), remove the bonding layer P/N 3G5333A13351 from the upper deck assy P/N 3P5333A00134.

47.2 With reference to Figure 16 View A (WAS) and Figure 18 Detail B (WAS), remove the C-shape doubler PCM RH P/N 3G5333A13252 the bolt P/N AN4C5A and the washer P/N NAS1149C0416R from the upper deck assy P/N 3P5333A00134.

NOTE

Hole position according to upper deck hydraulic variant (accessory drive) P/N 3G2906P01311.

47.3 With reference to Figure 17 View A (BECOMES) and Section C-C, enlarge n°1 pilot hole up to Ø5.16÷5.28 thru the C-shape doubler PCM RH P/N 3G5333A13254.

NOTE

Holes positions according to upper deck hydraulic variant (accessory drive) P/N 3G2906P01311.

47.4 With reference to Figure 17 View A (BECOMES), Section D-D and Section E-E, enlarge n°3 pilot hole up to Ø5.16÷5.28 thru the C-shape doubler PCM RH P/N 3G5333A13254.

47.5 With reference to Figure 17 View A (BECOMES) and Figure 18 Detail B (BECOMES), temporarily locate the C-shape doubler PCM RH P/N 3G5333A13254 on the upper deck assy P/N 3P5333A00134 and countermark n°4 holes positions on the upper deck assy P/N 3P5333A00134.

47.6 With reference to Figure 17 View A (BECOMES) and Section C-C, drill n°1 hole Ø25.0 thru the upper deck assy P/N 3P5333A00134. Seal all around by means of

adhesive Hysol EA9309 NA (C231).

47.7 With reference to Figure 17 View A (BECOMES) and Section C-C, install the anchor nut P/N MS21075L4N on the upper deck assy P/N 3P5333A00134 by means of n°2 rivets P/N MS20426AD3-5.

47.8 With reference to Figure 17 View A (BECOMES) and Section D-D, drill n°1 insert hole Ø9.50÷9.60 thru the upper deck assy P/N 3P5333A00134.

47.9 With reference to Figure 17 View A (BECOMES) and Section D-D, install the insert P/N AW007TE-40-209 on the upper deck assy P/N 3P5333A00134 by means of adhesive EA 934NA Aero (C397).

47.10 With reference to Figure 17 View A (BECOMES) and Section E-E, drill n°2 insert holes Ø9.50÷9.60 thru the upper deck assy P/N 3P5333A00134.

47.11 With reference to Figure 17 View A (BECOMES) and Section E-E, install n°2 inserts P/N AW007TE-40-217 on the upper deck assy P/N 3P5333A00134 by means of adhesive EA 934NA Aero (C397).

47.12 With reference to Figure 18 Detail B (BECOMES), drill n°16 rivet holes thru the C-shape doubler PCM RH P/N 3G5333A13254 in accordance with the dimensions shown.

47.13 With reference to Figure 18 Detail B (BECOMES), install the C-shape doubler PCM RH P/N 3G5333A13254 on the upper deck assy P/N 3P5333A00134 by means of n°12 rivets P/N NAS9301B-4-02 and n°1 rivet P/N NAS9302B-4-02 in accordance with dimensions shown. Interpose adhesive Hysol EA9309 NA (C231) between C-shape doubler PCM RH P/N 3G5333A13254 and upper deck assy P/N 3P5333A00134.

47.14 With reference to Figure 18 Detail B (BECOMES), seal C-shape doubler PCM RH P/N 3G5333A13254 all around by means of sealant Thixoflex gray TG8498-50.

47.15 With reference to Figure 18 Detail B (BECOMES), prepare the surface of the upper deck assy P/N 3P5333A00134 for the installation of the bonding layer P/N 3G5333A13551. Abrade the indicated area by means of 320 grit abrasive paper (C017) or finer or abrasive pad (C015) and swab degrease by means of aliphatic naphtha (C059) and clean cloth (C011).

47.16 With reference to Figure 18 Detail B (BECOMES), reinstall the bonding layer P/N 3G5333A13351 on the C-shape doubler PCM RH P/N 3G5333A13254 and upper deck assy P/N 3P5333A00134 by means of n°3 rivets P/N NAS9301B-4-01 and n°3 rivets P/N NAS9301B-4-02 in accordance with dimensions shown. Interpose sealing compound PR-2200 and fill all around by means sealant MC-780 Class B (C465).

47.17 With reference to Figure 18 Detail B (BECOMES), install the bolt P/N AN4C5A and

the washer P/N NAS1149C0416R on the upper deck assy P/N 3P5333A00134.

47.18 In accordance with CSRP DM CSRP-A-51-21-01-02A-257A-D and with reference to Figure 18 Detail B (BECOMES), apply blue polyurethane gloss (C138) on the indicated area.

NOTE

Hydraulic fitting torque tighten:

- Size-04: 15.27÷16.40 Nm torque dry;
- Size-06: 24.31÷27.70Nm torque dry.

NOTE

Make sure that the new pipe to be installed is clean.

NOTE

Make sure that the swaging using the gauge and pipe mark to assess the correct fitting installation.

48. With reference to Figures 8 thru 12, perform hydraulic system upper deck retromod P/N 3G2900P00311 as described in the following procedure:

NOTE

Perform the following steps from 48.1 thru 48.7 only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

48.1 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View G, install the pipe assy (drain) P/N 3G2970A07331.

48.2 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View G, install the pipe assy (system II pressure) P/N 3G2910A30231.

48.3 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View G, install the pipe assy (system II return) P/N 3G2910A30331.

48.4 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View G, install the clamp P/N AS21919WCH04 and the spacer P/N NAS43DD3-57N on the pipe assy (system II pressure) P/N 3G2910A30231 and the pipe assy (system II return) P/N 3G2910A30331 by means of the bolt P/N AN3C13A and the washer P/N NAS1149C0332R previously removed.

48.5 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View G, install the special spacer P/N 3G2920A30651, the clamp block P/N A295A3002A (or n°1 special block P/N 8G2920A01251 and n°2 special cushions P/N 8G2920L00151) and the clamp P/N AS21919WCH04 previously removed by means of the bolt P/N AN3C16A, bolt P/N AN3C17A and n° 2 washers P/N NAS1149C0332R previously removed.

48.6 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View G, install the spacer P/N NAS43DD3-24N, the clamp P/N AS21919WCH04 previously removed, on the click bond P/N A366A3E14C75 by means of the nut P/N MS21043-3 and the washer P/N NAS1149C0332R previously removed.

48.7 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View G, install the spacer P/N NAS43DD3-17N, the clamp P/N AS21919WCH08 previously removed, on the click bond P/N A366A3E12C by means of the nut P/N MS21043-3 and the washer P/N NAS1149C0332R previously removed.

WARNING

BE CAREFUL WHEN YOU DO THE SWAGE OPERATION. DURING THE SWAGE, YOU MUST APPLY A VERY HIGH PRESSURE. IF YOU USE THE SWAGE TOOL INCORRECTLY, THIS CAN CAUSE INJURY TO PERSONS OR DAMAGE TO THE EQUIPMENT. ONLY APPROVED PERSONS ARE PERMITTED TO USE IT.

48.8 In accordance with applicable steps of AMP DM 39-A-20-40-01-00A-66AA-A and with reference to Figure 11 upper deck iso view (BECOMES) and Figure 13 Detail K, install the pipe assy (system I pressure) P/N 3G2910A30031 by means of the straight permanent fitting P/N AW003PB04C.

48.9 In accordance with applicable steps of AMP DM 39-A-20-40-01-00A-66AA-A and with reference to Figure 11 upper deck iso view (BECOMES) and Figure 13 Detail K, install the pipe assy (system I return) P/N 3G2910A30131 by means of the straight permanent fitting P/N AW003PB04C.

48.10 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 13 Detail K and View P, install n° 2 clamps P/N AS21919WCH04, the spacer P/N NAS43DD3-43N on the pipe assy (system I return) P/N 3G2910A30031 and the pipe assy (system I pressure) P/N 3G2910A30131 by means of the bolt P/N NAS1802-3-18, the nut P/N MS21043-3 and n° 2 washers P/N NAS1149C0332R previously removed.

NOTE

In accordance with the pipe assy (aux system I pressure) P/N 3G2920A30831 and the pipe assy (aux system II pressure) P/N 3G2920A31031:

- Fire protection sleeve P/N AS1072-06SIL-FG shall be installed on pipe before swaging the fitting.
- After swaging the fitting, stretch the fire protection sleeve and attach its end upon the pipe end fittings by means of Sealant 199-05-152, Type II and clamps P/N 10781-4-22CR.

48.11 In accordance with applicable steps of AMP DM 39-A-20-40-01-00A-66AA-A and with reference to Figure 11 upper deck iso view (BECOMES) and Figure 13 Detail L, install the pipe assy (aux system I return) P/N 3G2920A30931 by means of the straight permanent fitting P/N AW003PB06C.

48.12 In accordance with applicable steps of AMP DM 39-A-20-40-01-00A-66AA-A and with reference to Figure 11 upper deck iso view (BECOMES) and Figure 13 Detail L, install the pipe assy (aux system I pressure) P/N 3G2920A30831 by means of n°2 straight permanent fitting P/N AW003PB06C.

48.13 In accordance with applicable steps of AMP DM 39-A-20-40-01-00A-66AA-A and with reference to Figure 11 upper deck iso view (BECOMES) and Figure 13 Detail L, install the pipe assy (drain) P/N 3G2970A07031 and the pipe assy (drain) P/N 3G2970A07131 by means of the tee permanent fitting P/N AW004PB04C.

NOTE

Perform the following step only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

48.14 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 13 Detail M, install the pipe assy (aux system II pressure) P/N 3G2920A31031 and the pipe assy (aux system II return) P/N 3G2920A31131 by means of n° 2 straight permanent fittings P/N AW003PB06C.

NOTE

Perform steps 48.15 thru 48.18 only if rotor brake lines installation variant P/N 3G6352A16011 is in configuration. Otherwise skip to step 48.19.

48.15 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the special spacer P/N 3G2920A30451, the bracket P/N 3G2920A12251 previously removed by means of n° 3 bolts P/N AN3C3A and

n° 3 washers P/N NAS1149C0332R previously removed.

48.16 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the special spacer P/N 3G2920A30551, n° 2 clamps P/N AS21919WCH04, n° 2 clamps P/N AS21919WCH06, the clamp block P/N A295A3004A and the spacer P/N NAS43DD3-40N previously removed by means of the bolt P/N AN3C21A, the bolt P/N AN3C14A and n° 2 washers P/N NAS1149C0332R previously removed.

48.17 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the special spacer P/N 3G2920A30551, the clamp P/N AS21919WCH04, n° 2 clamps P/N AS21919WCH06, the clamp block P/N A295A3004A and the spacer P/N NAS43DD3-40N previously removed by means of the bolt P/N AN3C21A, the bolt P/N AN3C13A and n° 2 washers P/N NAS1149C0332R previously removed.

48.18 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the special spacer P/N 3G2920A30551, clamp P/N AS21919WCH04, the clamp block P/N A295A3004A and the spacer P/N NAS43DD3-44N previously removed by means of the bolt P/N AN3C21A, the bolt P/N AN3C13A and n° 2 washers P/N NAS1149C0332R.

NOTE

Perform steps 48.19 thru 48.22 only if rotor brake lines installation variant P/N 3G6306P01911 is in configuration.

48.19 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the special spacer P/N 3G2920A30451, the bracket P/N 3G2920A12251 previously removed by means of n° 3 bolts P/N AN3C3A and n° 3 washers P/N NAS1149C0332R previously removed.

48.20 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the special spacer P/N 3G2920A30551, the clamp P/N AS21919WCH04, n° 2 clamps P/N AS21919WCH06, the clamp block P/N A295A3004A and the spacer P/N NAS43DD3-40N previously removed by means of the bolt P/N AN3C21A, the bolt P/N AN3C14A and n° 2 washers P/N NAS1149C0332R previously removed.

48.21 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the special spacer P/N 3G2920A30551, the clamp P/N AS21919WCH04, the clamp block P/N A295A3004A and the spacer P/N NAS43DD3-44N previously removed by means of the bolt P/N AN3C21A, the

bolt P/N AN3C13A and n° 2 washers P/N NAS1149C0332R previously removed.

48.22 With reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the spacer P/N NAS43DD3-4N, the clamp P/N AS21919WCH04 previously removed by means of the bolt P/N AN3-4A and the washer P/N NAS1149C0332R.

NOTE

Wet assemble fixing fastener using Sealant AWMS05-001 Type I, Class C, Grade 1 applied under the head and on the shank of fastener.

48.23 With reference to Figure 11 upper deck iso view (BECOMES) and View R, install n° 2 special spacers P/N 3G2920A30751 and the bracket assy P/N 3G2900A02831, n°3 bolts P/N AN3C3A, and n°3 washers P/N NAS1149C0332R previously removed from the upper deck assy P/N 3P5333A00134.

48.24 In accordance with AMP DM 39-A-29-21-01-00A-720A-A and with reference to Figure 11 upper deck iso view (BECOMES), install the electric motor driven pump P/N 3G2920V00131 by means of n°4 bolts P/N AN4C6A and n°4 washers P/N NAS1149C0432R previously removed from the bracket assy P/N 3G2900A02831.

48.25 In accordance with CSRP DM CSRP-A-51-22-01-00A-258A-D and with reference to Figure 11 upper deck iso view (BECOMES) and View R, prepare the indicated areas on the bracket assy P/N 3G2900A02831 for electrical bonding by means of masking tape (C595), abrade by means of 320 grit abrasive paper (C017) or finer or abrasive pad (C015) and swab degrease by means of aliphatic naphtha (C059), methyl alcohol and cheesecloth (C916).

NOTE

Wet assemble fixing fastener using Sealant AWMS05-001 Type I, Class C, Grade 1 applied under the head and on the shank of fastener.

48.26 With reference to Figure 11 upper deck iso view (BECOMES) and View R, fix the electrical bonding cable P/N A610A3B20 to the bracket assy P/N 3G2900A02831 by means of the bolt P/N AN3C4A and the washer P/N NAS1149C0332R.

48.27 With reference to Figure 11 upper deck iso view (BECOMES), View R and Section S-S, seal the external perimeter of both bracket supports by means of Sealant AWMS05-001 Type I, Class B, Grade 2.

48.28 With reference to Figure 11 upper deck iso view (BECOMES), install the new

spacer P/N NAS43DD3-116N and install the clamp P/N AS21919WCH04, the bolt P/N AN3C22A and the washer P/N NAS1149C0332R previously removed to fixing the electric motor pipes.

48.29 With reference to Figures 11 thru 13, protect all removable fasteners that are not fully coated with polyurethane paint using the corrosion inhibitor Tectyl 891D.

48.30 With reference to Figure 11 View R, protect the removable fasteners exposed surfaces (that are not sealant over coated) using the Ardrox AV40 BM110P0007.

NOTE

Perform the following step 49 only if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

NOTE

Hydraulic fitting torque tighten:

- Size-04: 15.27÷16.40 Nm torque dry;
- Size-06: 24.31÷27.70Nm torque dry;
- Size-08: 53.10÷57.62Nm torque dry;
- Size-12: 96.61÷106.77Nm torque dry.

NOTE

Do not use any type of lubricant on bolts, screws or any type of threaded fastener.

49. With reference to Figures 19 thru 27, perform upper deck hydraulic variant retromod P/N 3G2900P00611 as described in the following procedure:

49.1 With reference to Figure 20 Barrier installation, install the liner assy RH P/N 3G3070A10531 on the upper deck assy P/N 3P5333A00134 by means of sealant RTV 730 (C125).

49.2 With reference to Figure 20 Section E-E, seal the liner assy RH P/N 3G3070A10531 by means of sealant MC-780 Class B (C465).

NOTE

To assure the correct electrical bonding remove locally the protective finish on the zone of contact with the washer P/N A008B0525A. After cleaning apply Alodine 1000 (C406).

49.3 With reference to Figure 20 View B, install the tail rotor shut-off valve P/N 3G2910V00231 previously removed on the upper deck assy P/N 3P5333A00134 by means of existing fasteners previously removed.

49.4 With reference to Figure 23 Utility lines installation, install the pipe assy (return aux

system II) P/N 3G2920A31731 and the pipe assy (pressure aux system II) P/N 3G2920A31631 by means of existing fasteners previously removed. Apply sealant MC-780 Class A (C465).

49.5 With reference to Figure 23 Utility lines installation, install the clamp block P/N A288A003A previously removed on the pipe assy P/N 3G2920A31731 and the pipe assy P/N 3G2920A31631 by means of the bolt P/N AN3-13A and the washer P/N NAS1149C0332R previously removed.

49.6 With reference to Figure 22 Auxiliary lines installation, install the special spacer P/N 3G2920A30651 and the bracket P/N 3G2920A12253 previously removed on the pipe assy P/N 3G2920A17731, the pipe assy P/N 3G2920A17631 and the pipe assy P/N 3G2920A17831 by means n°3 bolts P/N AN3C6A and the existing fasteners previously removed.

49.7 With reference to Figure 22 Auxiliary lines installation, install the pipe assy (pressure aux system II) P/N 3G2920A17731 by means of washer P/N NAS1149C1290R and nut P/N AN924-8D previously removed.

49.8 With reference to Figure 22 Auxiliary lines installation, install the pipe assy (suction system II) P/N 3G2920A17631 by means of washer P/N NAS1149C2190R and nut P/N AN924-12D previously removed.

49.9 With reference to Figure 22 Auxiliary lines installation, install the pipe assy (case drain system II) P/N 3G2920A17831 by means of washer P/N NAS1149C0763R and nut P/N AN924-4D previously removed.

49.10 With reference to Figure 22 Auxiliary lines installation, install the special spacer P/N 3G2920A30451, the special block P/N 8G2920A012551 and the special cushion P/N 8G2920L001511 previously removed on the pipe assy P/N 3G2920A17731, the pipe assy P/N 3G2920A17631 and the pipe assy P/N 3G2920A17831 by means of the bolt P/N AN3-16A, the bolt P/N AN3-17A and the washer P/N NAS1149C0332R previously removed.

49.11 With reference to Figure 22 View U, install the stud P/N A366A3E12C on the upper deck assy P/N 3P5333A00134 by means of adhesive CB200-40 (C356) in accordance with the position shown.

49.12 With reference to Figure 22 View U, install the spacer P/N NAS43DD3-20N and the clamp P/N MS21919WCH8 previously removed on the pipe assy P/N 3G2920A17731 by means of washer P/N NAS1149C0332R and nut P/N MS21042L3 previously removed.

49.13 With reference to Figure 22 View U, install the spacer P/N NAS43DD3-25N and the clamp previously removed by means of the existing fasteners.

49.14 With reference to Figure 24 Hydraulic drain lines installation, install the flexible

hose (drain) P/N A385AD3D00D0466X by means of existing fasteners. Apply sealant MC-780 Class A (C465).

49.15 In accordance with DM 39-A-11-00-01-00A-720A-A and with reference to Figure 24 Hydraulic drain lines installation, install the decal P/N 999-2701-01-7, the decal P/N 999-2701-01-22, the decal P/N 999-2701-01-40 and the decal P/N 999-2701-01-119 on the flexible hose P/N A385AD3D00D0466X.

49.16 With reference to Figure 24 Hydraulic drain lines installation and Detail V, install the pipe assy (seal drain) P/N 3G2970A06331 by means of existing fasteners. Apply sealant MC-780 Class A (C465).

49.17 With reference to Figure 24 Hydraulic drain lines installation, install n°2 clamps P/N MS21919WCH4 previously removed on the pipe assy P/N 3G2970A06331 by means of existing fasteners.

49.18 With reference to Figure 24 Hydraulic drain lines installation and Detail V, install the clamp P/N MS21919WCH5 previously removed and the spacer P/N NAS43DD3-92N by means of washer P/N NAS1149C0332R previously removed and bolt P/N AN3-17A.

49.19 With reference to Figure 24 Rotor brake lines installation, install the loom assy (rotor brake) P/N 3G6352A13632 by means of existing fasteners.

49.20 With reference to Figure 25 Flight control lines installation and Detail L, install the pipe assy (return system II) P/N 3G2910A30631 and the pipe assy (pressure system II) P/N 3G2910A30731.

49.21 With reference to Figure 25 Flight control lines installation and View M, install the clamp block P/N A288A002A previously removed on the pipe assy P/N 3G2910A30631 and the pipe assy P/N 3G2910A30731 by means of washer P/N NAS1149C0332R previously removed and bolt P/N AN3-14A.

49.22 With reference to Figure 25 Flight control lines installation and Detail L, install the pipe assy (pressure system II) P/N 3G2910A19131 and the pipe assy (return system II) P/N 3G2910A19231 by means of existing fasteners. Apply sealant MC-780 Class A (C465).

49.23 With reference to Figure 25 View N, install n°2 studs P/N A366A3E12C75 on the upper deck assy P/N 3P5333A00134 by means of adhesive CB200-40 (C356) in accordance with the position shown.

49.24 With reference to Figure 25 View N, install n°2 spacers P/N NAS43DD3-12N and n°2 clamps P/N MS21919WCH4 on the pipe assy P/N 3G2910A19131 and the pipe assy P/N 3G2910A19231 by means of n°2 washers P/N NAS1149D0332J and n°2 nuts P/N MS21043L3.

49.25 With reference to Figure 26 View A and Detail R, install the pipe assy (drain)

P/N 3G2970A07731.

49.26 With reference to Figure 27 View S, install the pipe assy (transmission drain) P/N 3G6370A05431 and the pipe assy (transmission drain) P/N 3G6370A05531 by means of existing fasteners.

49.27 With reference to Figure 27 View S, install the clamp P/N MS21919WCH4 previously removed on the support by means of washer P/N NAS1149C0332R and screw P/N MS27039-1-08.

50. With reference to Figure 14 and Figure 15 perform ECS upper deck retromod P/N 3G2150P01511 as described in the following procedure:

50.1 In accordance with CSRP DM CSRP-A-51-22-01-00A-258A-D and with reference to Figure 15 View A and Detail B, prepare the indicated areas for electrical bonding on the L-shape doubler P/N 3G5333A13051 and Omega shape doubler P/N 3G5333A12952 by means of masking tape (C595), abrade by means of 320 grit abrasive paper (C017) or finer or abrasive pad (C015) and swab degrease by means of aliphatic naphtha (C059), methyl alcohol and cheesecloth (C916).

WARNING

TWO OPERATORS ARE REQUIRED FOR THE INSTALLATION OF THE VCS CONDENSER PACK.

CAUTION

It is prohibited to use any form of lubricant on any type of threaded fastener.

NOTE

Apply Sealant PR1764 between the upper-deck and the VCS condenser support and spread the squeezed-out sealant along the support external perimeter in order to create a sealant fillet.

50.2 With reference to Figure 14 and Figure 15 View A, install the VCS condenser pack P/N 3G2150V10256 (or alternative P/N), on the upper deck assy P/N 3P5333A00134, by means of n°2 screws P/N NAS6703-7, n°2 screws P/N NAS6703-4 and n°4 screws P/N NAS6703-5 previously removed and n°8 washers P/N NAS1149C0332R. Refer also to the applicable steps of the relevant AMP DM:

- 39-D-21-90-03-00A-720A-K (P/N 3G2150F00511 or P/N 3G2150F00512);
- 39-E-21-90-03-00A-720A-K (P/N 4G2150F00611);
- 39-F-21-90-07-00A-720A-K (P/N 4G2150F00511).

50.3 In accordance with AMP DM 39-A-20-00-00-00A-711A-A and with reference to

Figure 15 View A, apply Loctite 222 ASTM-D-5363 on the n°2 screws P/N NAS6703-7, n°2 screws P/N NAS6703-4 and n°4 screws P/N NAS6703-5. Torque tighten to 2.3÷2.8 Nm.

51. In accordance with AMP DM 39-A-29-11-01-00A-720A-A and with reference to Figure 11 upper deck iso view (BECOMES) and Figure 12 View H, install the PCM n°1 P/N 3G2900V00652 on the upper deck assy P/N 3P5333A00134 by means of n°4 bolts P/N NAS1802-4-10 and n°4 washers P/N NAS1149C0463R previously removed. Torque tighten the bolts P/N NAS1802-4-10 to 8 Nm.

NOTE

Perform the following step only if MGB accessory drive P/N 4G6320F00212/213 is NOT in configuration.

52. In accordance with AMP DM 39-A-29-12-01-00A-720A-A and with reference to Figure 11 upper deck iso view (BECOMES), Figure 12 View G and View J, install the PCM n°2 P/N 3G2900V00652 on the upper deck assy P/N 3P5333A00134 by means of n°3 bolts P/N NAS1802-4-10, the bolt P/N NAS1802-4-14 and n°4 washers P/N NAS1149C0463R previously removed. Torque tighten the bolts P/N NAS1802-4-10 and the bolt P/N NAS1802-4-14 to 8 Nm.

NOTE

Perform the following steps 53 and 54 only if MGB accessory drive P/N 4G6320F00212/213 is in configuration.

53. In accordance with AMP DM 39-A-29-12-01-00A-720A-A and with reference to Figure 20 P.C.M. system 2 and tail rotor shut-off valve installation, install the PCM n°2 P/N 3G2900V00652 on the upper deck assy P/N 3P5333A00134 by means of n°3 bolts P/N AN4C4A, the bolt P/N AN4C6A and n°4 washers P/N NAS1149C0463R previously removed. Torque tighten the bolts P/N NAS1802-4-10 and the bolt P/N NAS1802-4-14 to 8 Nm.
54. With reference to Figure 21 Section J-J and Section K-K, seal the external perimeter of the PCM supports using Sealant MC-780 Class B (C465) and protect the bonding surface.
55. With reference to Figure 14 and in accordance with Annex A “bonding Acceptance Test Procedure” check the measurement of electrical bonding of the VCS condenser pack and hydraulic flight controls system.
56. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1 install the access panel 473AL.
57. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).

58. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
59. 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

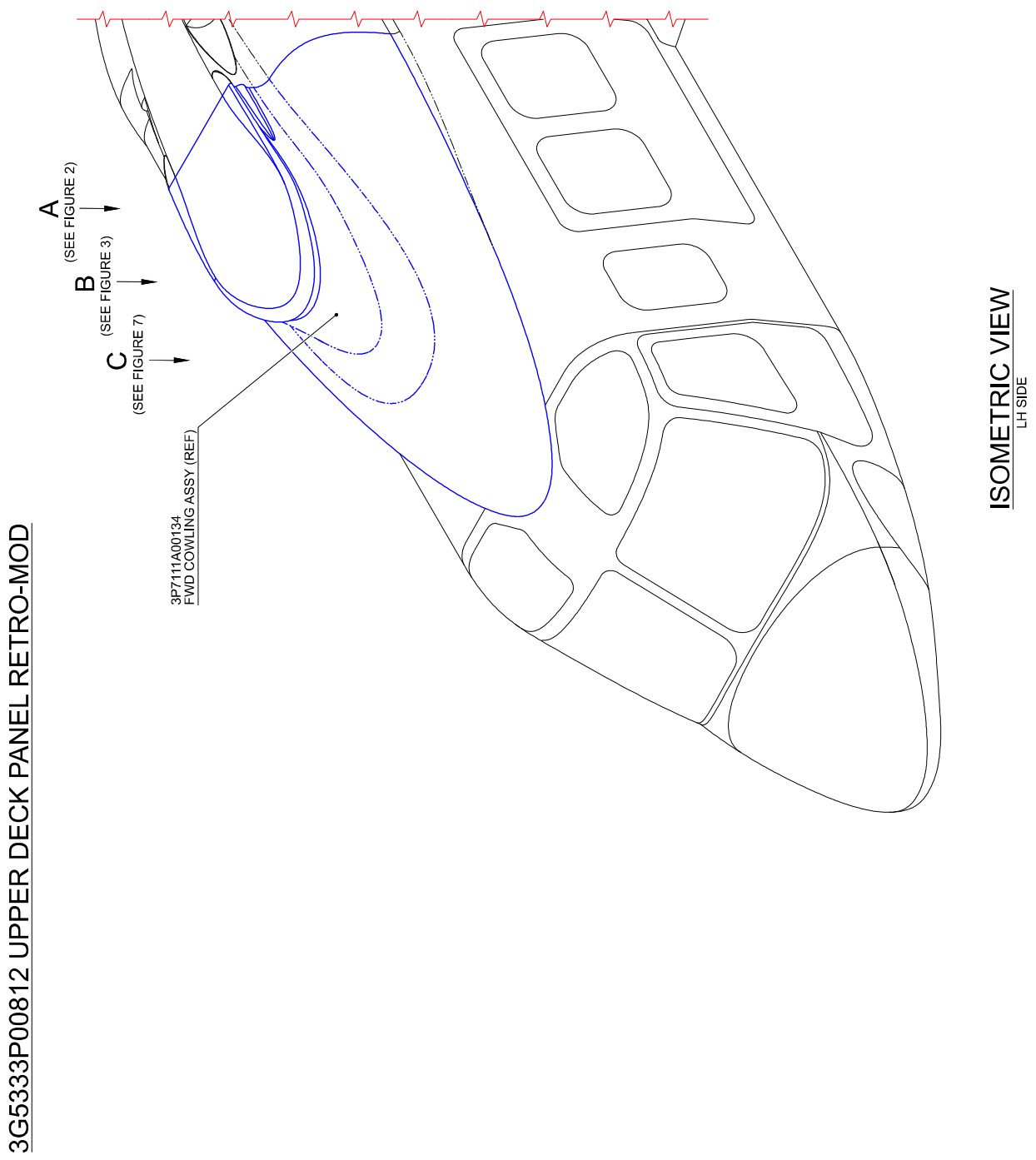

3G5333P00812 UPPER DECK PANEL RETRO-MOD
A
(SEE FIGURE 2)
B
(SEE FIGURE 3)
C
(SEE FIGURE 7)
3P7111A00134
FWD COWLING ASSY (REF)
ISOMETRIC VIEW
LH SIDE

Figure 1

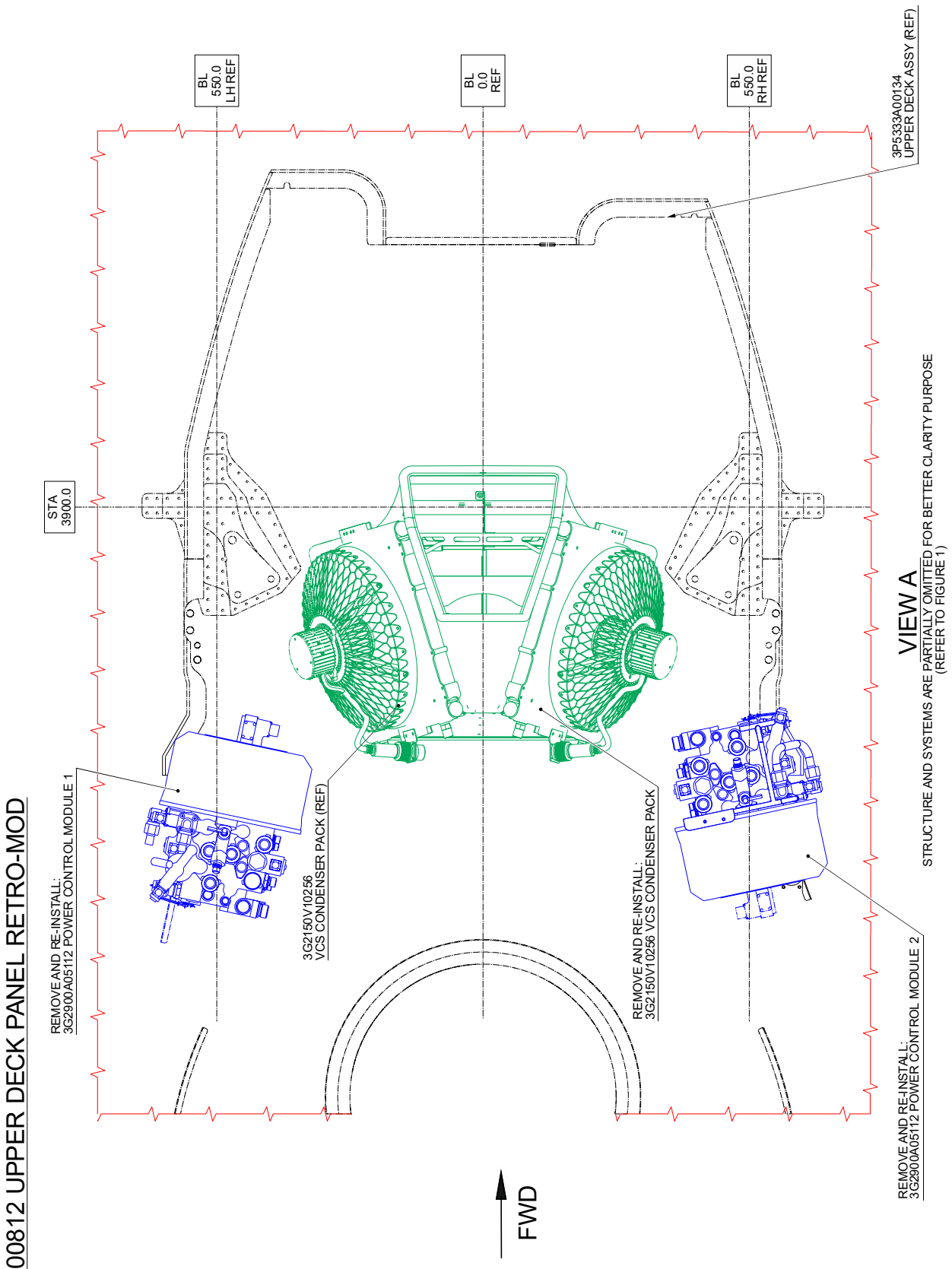

3G5333P00812 UPPER DECK PANEL RETRO-MOD
BL 550.0 LH REF
BL 0.0 REF
BL 550.0 RH REF
STA 3900.0
3P5333A00134
UPPER DECK ASSY (REF)
VIEW A
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)
REMOVE AND RE-INSTALL:
3G2900A05112 POWER CONTROL MODULE 1
3G2150V10256
VCS CONDENSER PACK (REF)
REMOVE AND RE-INSTALL:
3G2150V10256 VCS CONDENSER PACK
REMOVE AND RE-INSTALL:
3G2900A05112 POWER CONTROL MODULE 2
FWD

Figure 2

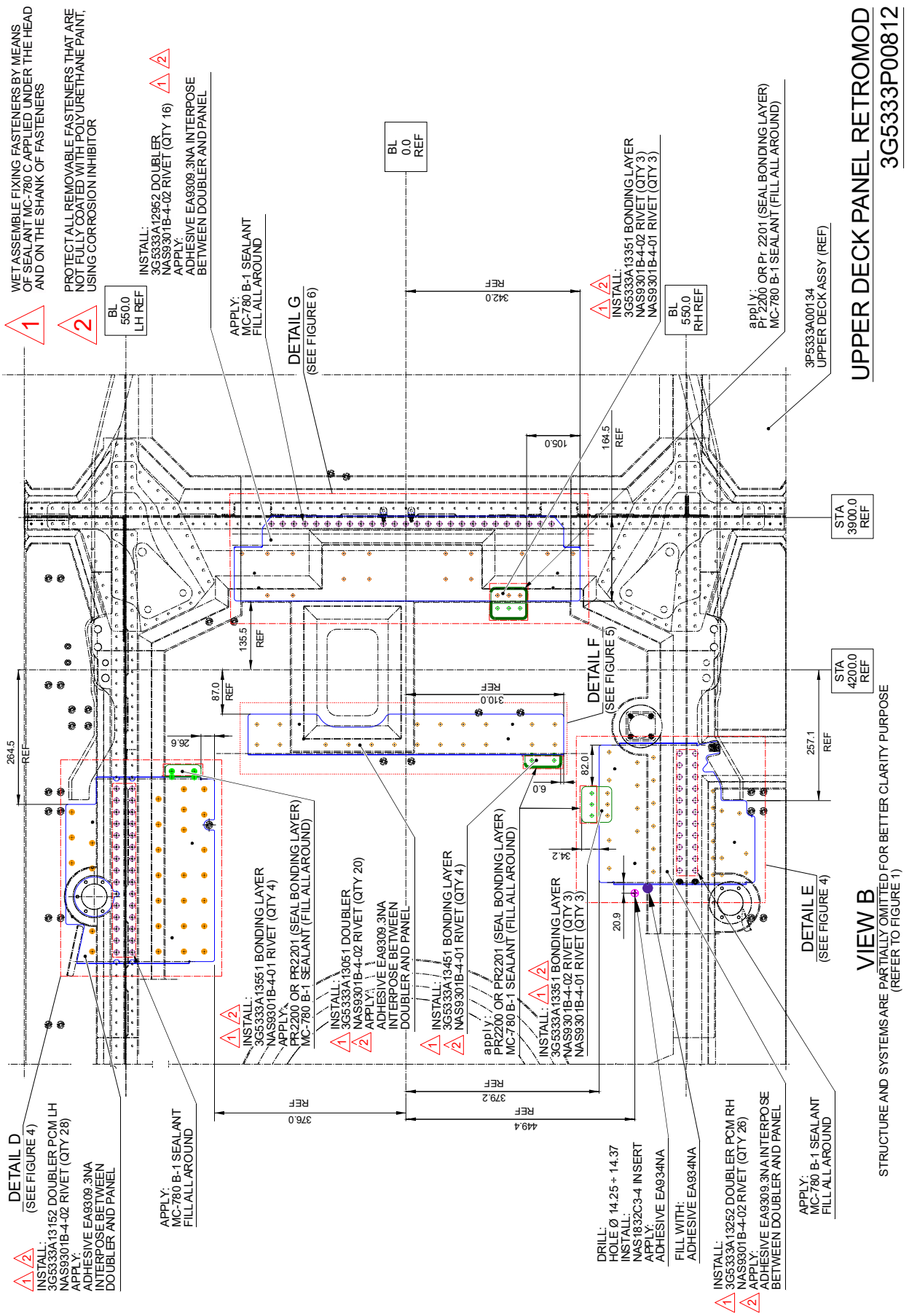
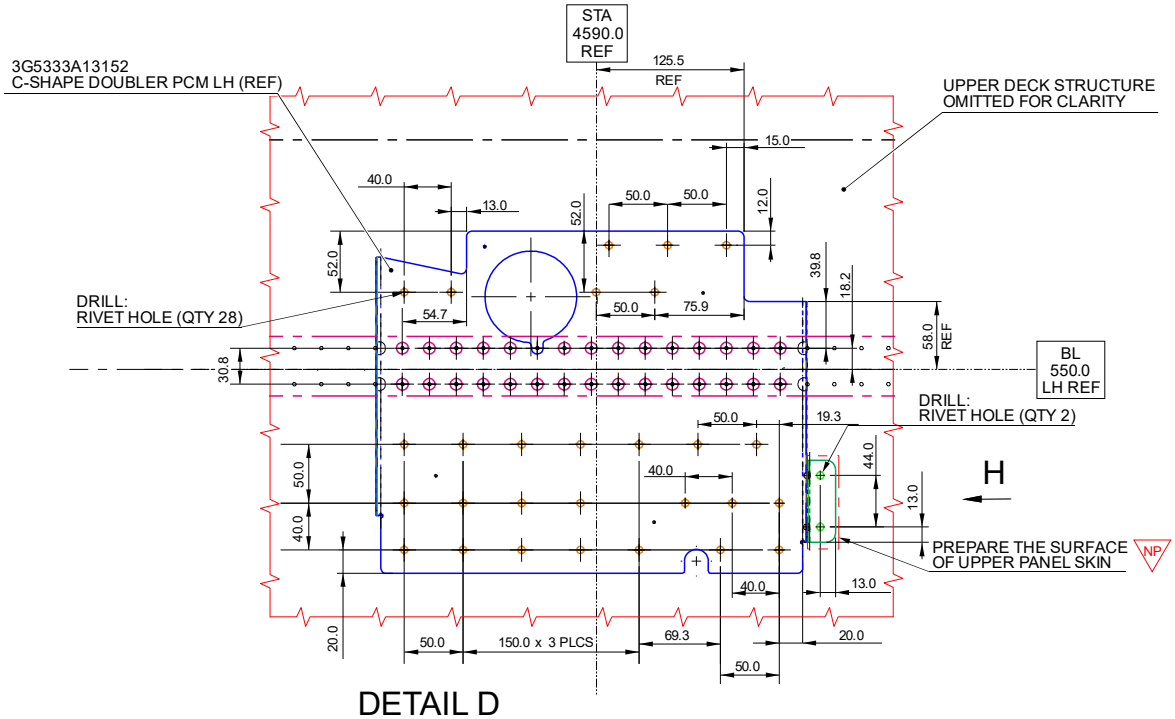
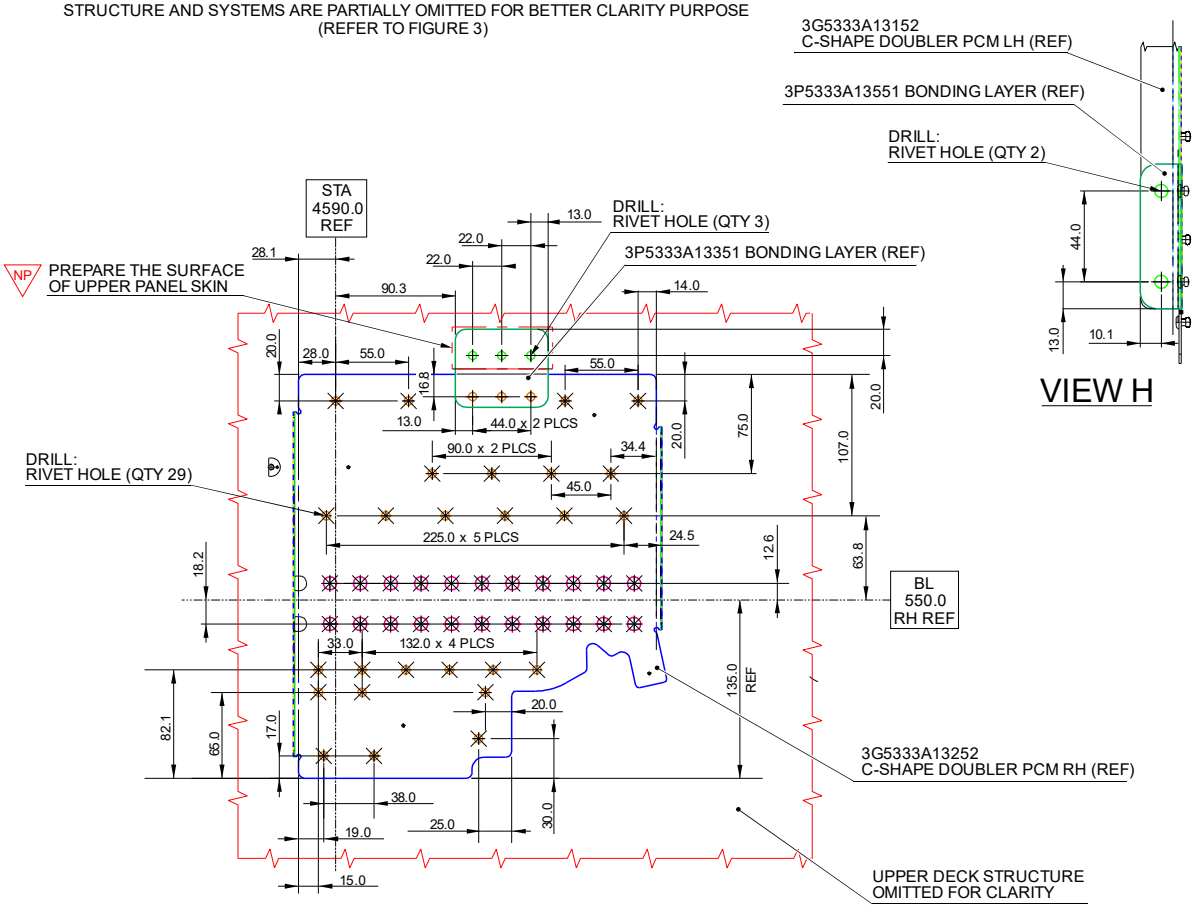

UPPER DECK PANEL RETROMOD
3G5333P00812
VIEW B
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)
1 WET ASSEMBLE FIXING FASTENERS BY MEANS OF SEALANT MC-780 C APPLIED UNDER THE HEAD AND ON THE SHANK OF FASTENERS
2 PROTECT ALL REMOVABLE FASTENERS THAT ARE NOT FULLY COATED WITH POLYURETHANE PAINT, USING CORROSION INHIBITOR
BL 550.0 LH REF
BL 0.0 REF
BL 550.0 RH REF
STA 3900.0 REF
STA 4200.0 REF
INSTALL: 3G5333A12952 DOUBLER NAS9301B-4-02 RIVET (QTY 16)
APPLY: ADHESIVE EA9309.3NA INTERPOSE BETWEEN DOUBLER AND PANEL
APPLY: MC-780 B-1 SEALANT FILL ALL AROUND
DETAIL G (SEE FIGURE 6)
INSTALL: 3G5333A13351 BONDING LAYER NAS9301B-4-02 RIVET (QTY 3) NAS9301B-4-01 RIVET (QTY 3)
apply: Pr 2200 OR Pr 2201 (SEAL BONDING LAYER) MC-780 B-1 SEALANT (FILL ALL AROUND)
3P5333A00134 UPPER DECK ASSY (REF)
DETAIL F (SEE FIGURE 5)
DETAIL D (SEE FIGURE 4)
INSTALL: 3G5333A13152 DOUBLER PCM LH NAS9301B-4-02 RIVET (QTY 28)
APPLY: ADHESIVE EA9309.3NA INTERPOSE BETWEEN DOUBLER AND PANEL
APPLY: MC-780 B-1 SEALANT FILL ALL AROUND
INSTALL: 3G5333A13551 BONDING LAYER NAS9301B-4-01 RIVET (QTY 4)
APPLY: PR2200 OR PR2201 (SEAL BONDING LAYER) MC-780 B-1 SEALANT (FILL ALL AROUND)
INSTALL: 3G5333A13051 DOUBLER NAS9301B-4-02 RIVET (QTY 20)
APPLY: ADHESIVE EA9309.3NA INTERPOSE BETWEEN DOUBLER AND PANEL
INSTALL: 3G5333A13451 BONDING LAYER NAS9301B-4-01 RIVET (QTY 4)
apply: PR2200 OR PR2201 (SEAL BONDING LAYER) MC-780 B-1 SEALANT (FILL ALL AROUND)
INSTALL: 3G5333A13351 BONDING LAYER NAS9301B-4-02 RIVET (QTY 3) NAS9301B-4-01 RIVET (QTY 3)
DRILL: HOLE Ø 14.25 ÷ 14.37
INSTALL: NAS1832C3-4 INSERT
APPLY: ADHESIVE EA934NA
FILL WITH: ADHESIVE EA934NA
INSTALL: 3G5333A13252 DOUBLER PCM RH NAS9301B-4-02 RIVET (QTY 26)
APPLY: ADHESIVE EA9309.3NA INTERPOSE BETWEEN DOUBLER AND PANEL
APPLY: MC-780 B-1 SEALANT FILL ALL AROUND
DETAIL E (SEE FIGURE 4)
264.5 REF
135.5 REF
87.0 REF
310.0 REF
342.0 REF
379.2 REF
376.0 REF
449.4 REF
105.0
164.5 REF
257.1 REF
82.01
34.2
20.9
6.0
26.6

Figure 3



DETAIL D

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 3)

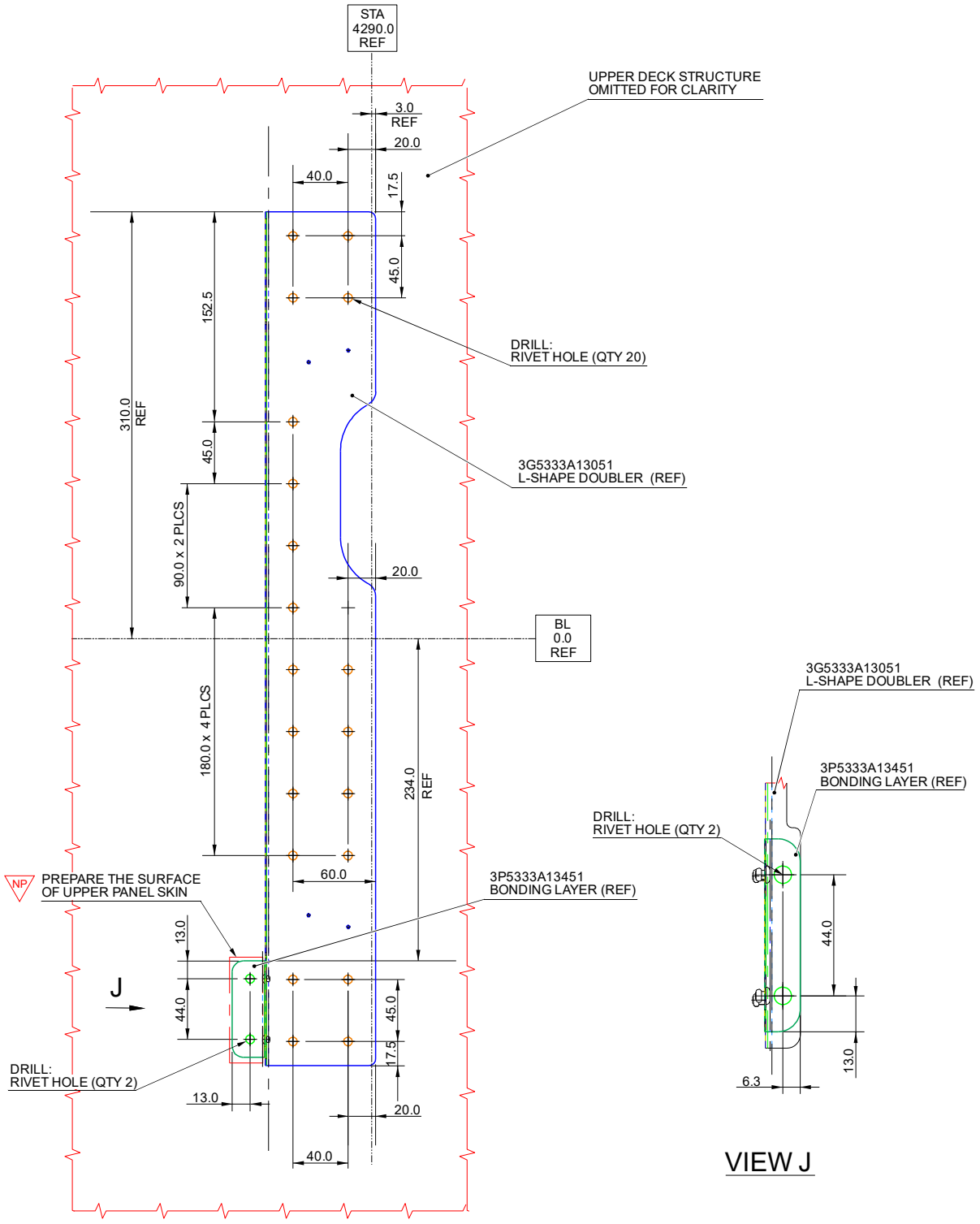


DETAIL E

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 3)

UPPER DECK PANEL RETROMOD
3G5333P00812

Figure 4

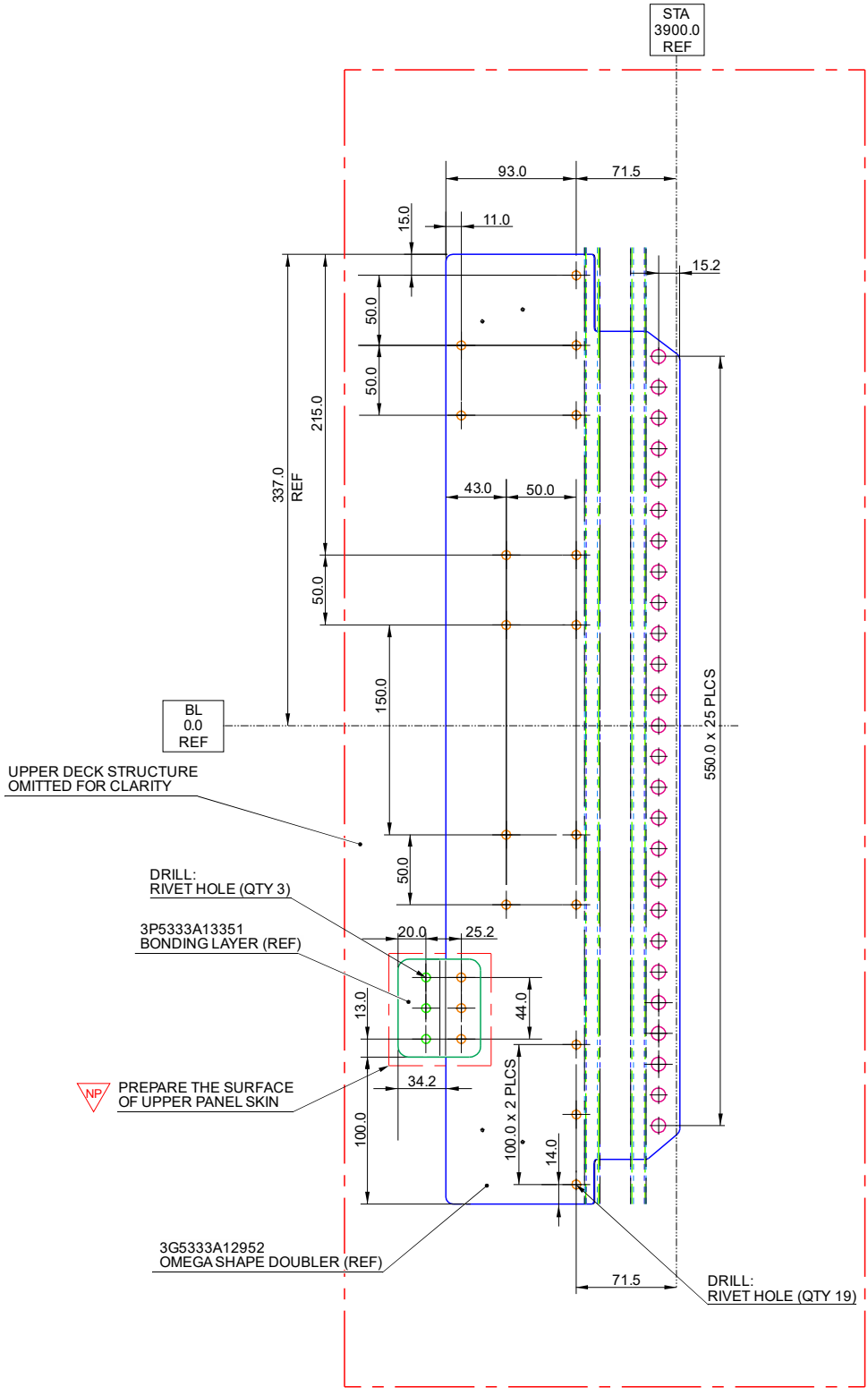


DETAIL F

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 3)

UPPER DECK PANEL RETROMOD
3G5333P00812

Figure 5



DETAIL G

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 3)

UPPER DECK PANEL RETROMOD
3G5333P00812

Figure 6

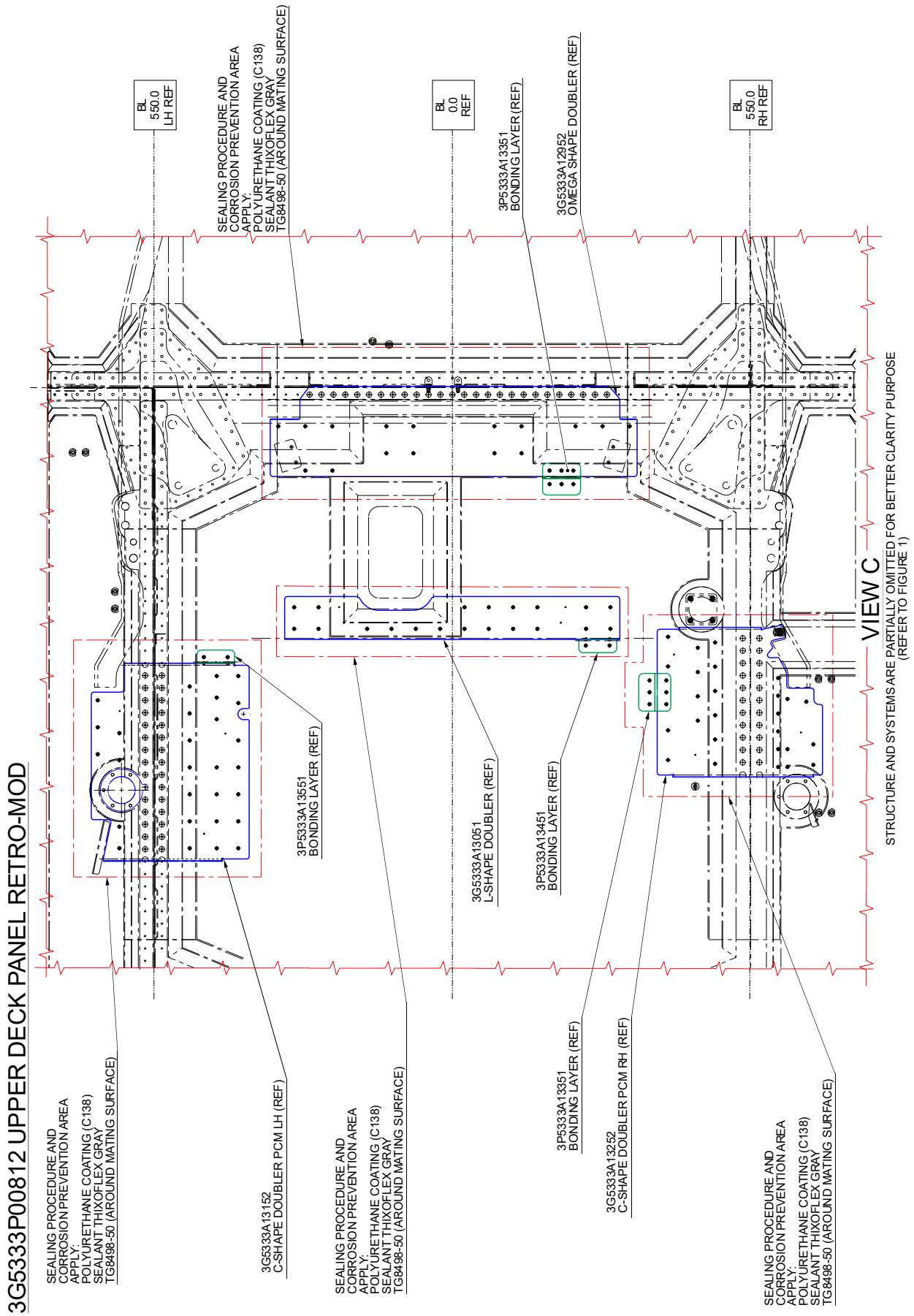

3G5333P00812 UPPER DECK PANEL RETRO-MOD
BL 550.0 LH REF
BL 0.0 REF
BL 550.0 RH REF
SEALING PROCEDURE AND CORROSION PREVENTION AREA APPLY: POLYURETHANE COATING (C138) SEALANT THIXOFLEX GRAY TG8498-50 (AROUND MATING SURFACE)
3P5333A13351 BONDING LAYER (REF)
3G5333A12952 OMEGA SHAPE DOUBLER (REF)
3P5333A13551 BONDING LAYER (REF)
3G5333A13051 L-SHAPE DOUBLER (REF)
3P5333A13451 BONDING LAYER (REF)
3G5333A13152 C-SHAPE DOUBLER PCM LH (REF)
3P5333A13351 BONDING LAYER (REF)
3G5333A13252 C-SHAPE DOUBLER PCM RH (REF)
VIEW C
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

Figure 7

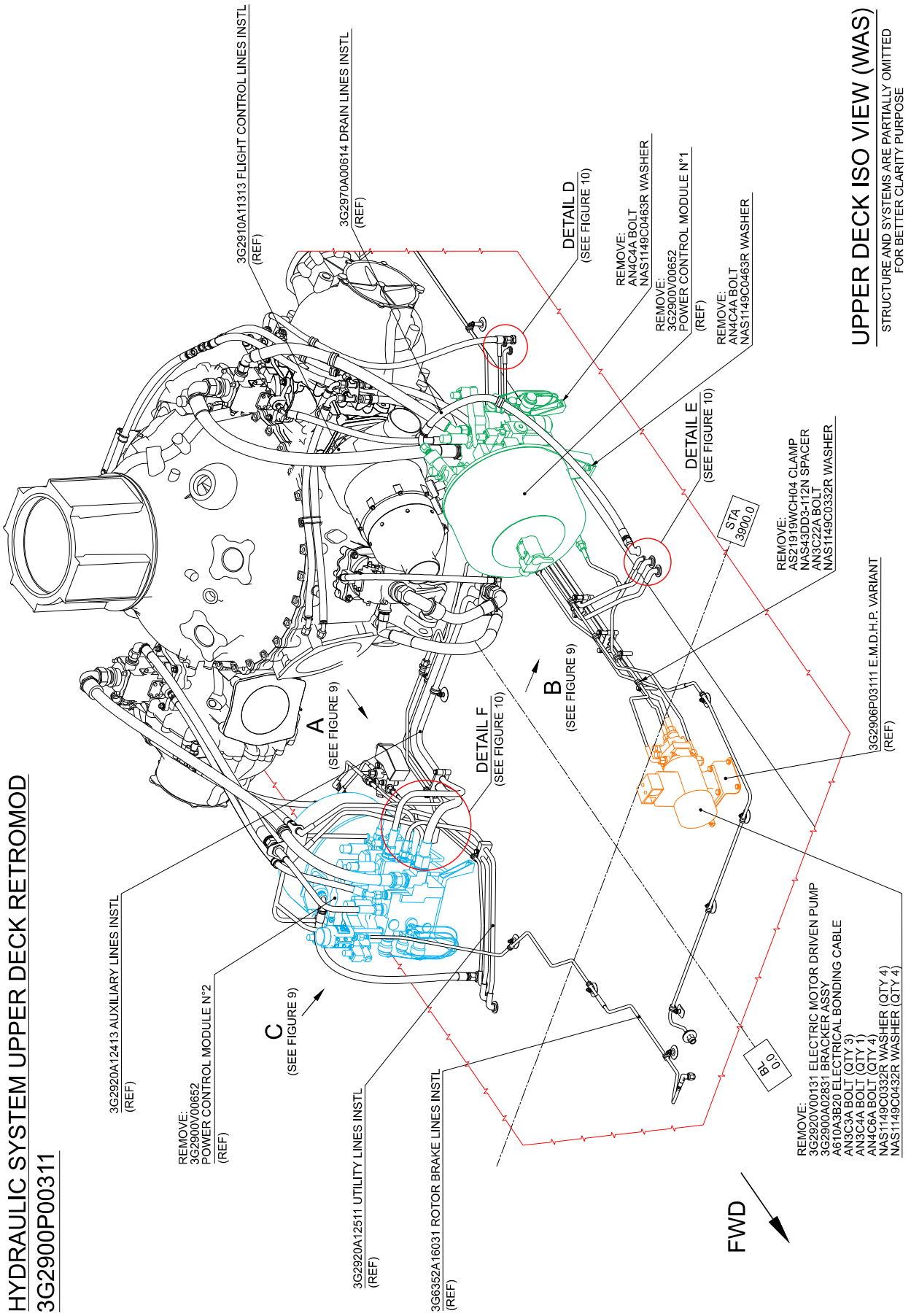
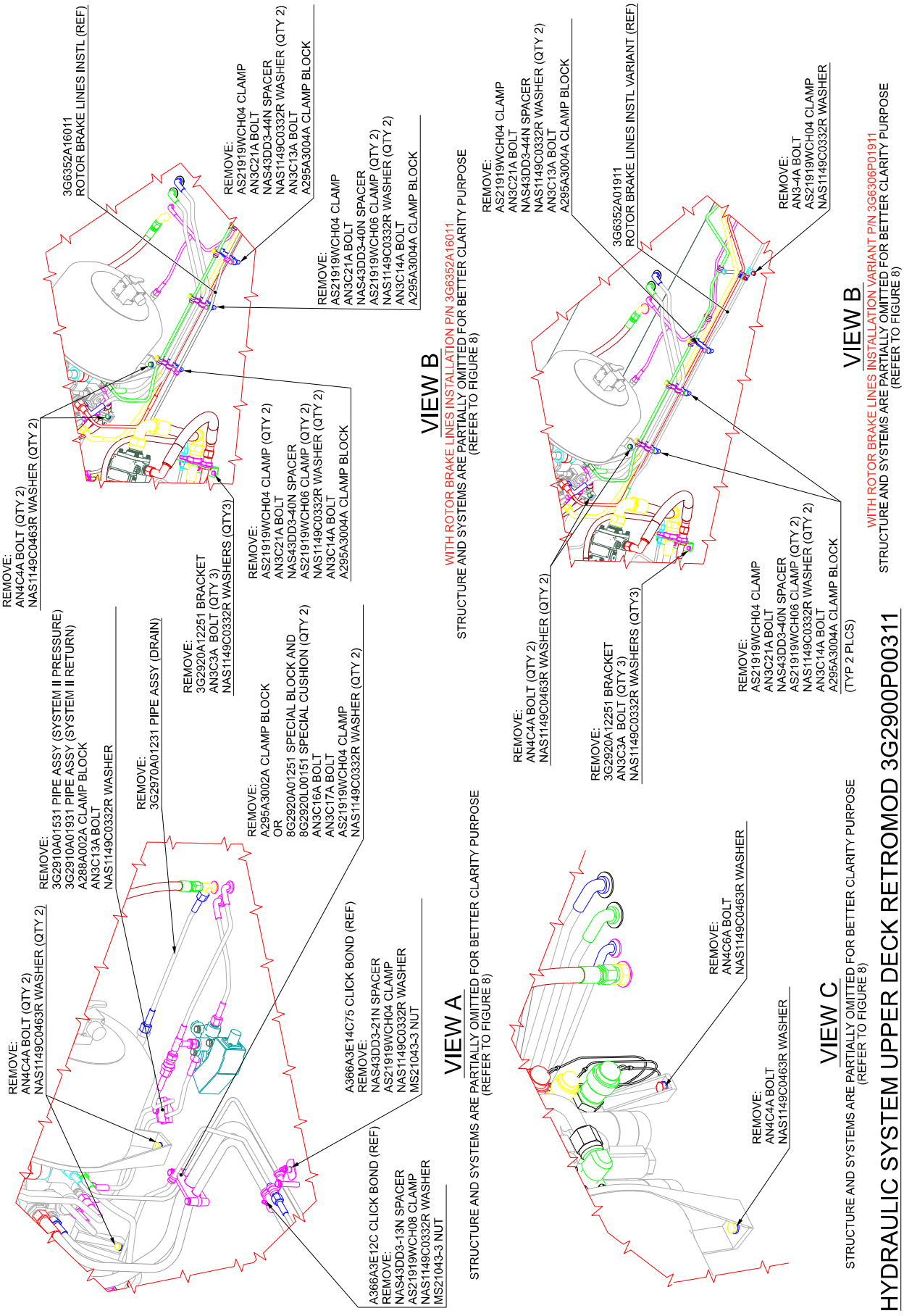

HYDRAULIC SYSTEM UPPER DECK RETROMOD
3G2900P00311
UPPER DECK ISO VIEW (WAS)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
3G2910A11313 FLIGHT CONTROL LINES INSTL (REF)
3G2970A00614 DRAIN LINES INSTL (REF)
DETAIL D (SEE FIGURE 10)
REMOVE: AN4C4A BOLT NAS1149C0463R WASHER
REMOVE: 3G2900V00652 POWER CONTROL MODULE N°1 (REF)
REMOVE: AN4C4A BOLT NAS1149C0463R WASHER
DETAIL E (SEE FIGURE 10)
REMOVE: AS21919WCH04 CLAMP NAS43DD3-112N SPACER AN3C22A BOLT NAS1149C0332R WASHER
3G2906P03111 E.M.D.H.P. VARIANT (REF)
STA 3900.0
BL 0.0
A (SEE FIGURE 9)
B (SEE FIGURE 9)
C (SEE FIGURE 9)
DETAIL F (SEE FIGURE 10)
3G2920A12413 AUXILIARY LINES INSTL (REF)
REMOVE: 3G2900V00652 POWER CONTROL MODULE N°2 (REF)
3G2920A12511 UTILITY LINES INSTL (REF)
3G6352A16031 ROTOR BRAKE LINES INSTL (REF)
REMOVE: 3G2920V00131 ELECTRIC MOTOR DRIVEN PUMP 3G2900A02831 BRACKER ASSY A610A3B20 ELECTRICAL BONDING CABLE AN3C3A BOLT (QTY 3) AN3C4A BOLT (QTY 1) AN4C6A BOLT (QTY 4) NAS1149C0332R WASHER (QTY 4) NAS1149C0432R WASHER (QTY 4)
FWD

Figure 8


HYDRAULIC SYSTEM UPPER DECK RETROMOD 3G2900P00311
VIEW A
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 8)
VIEW B
WITH ROTOR BRAKE LINES INSTALLATION P/N 3G6352A16011
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 8)
VIEW C
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 8)
VIEW B
WITH ROTOR BRAKE LINES INSTALLATION VARIANT P/N 3G6306P01911
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 8)
REMOVE:
AN4C4A BOLT (QTY 2)
NAS1149C0463R WASHER (QTY 2)
REMOVE:
3G2910A01531 PIPE ASSY (SYSTEM II PRESSURE)
3G2910A01931 PIPE ASSY (SYSTEM II RETURN)
A288A002A CLAMP BLOCK
AN3C13A BOLT
NAS1149C0332R WASHER
REMOVE:
3G2970A01231 PIPE ASSY (DRAIN)
REMOVE:
3G2920A12251 BRACKET
AN3C3A BOLT (QTY 3)
NAS1149C0332R WASHERS (QTY3)
REMOVE:
A295A3002A CLAMP BLOCK
OR
8G2920A01251 SPECIAL BLOCK AND
8G2920L00151 SPECIAL CUSHION (QTY 2)
AN3C16A BOLT
AN3C17A BOLT
AS21919WCH04 CLAMP
NAS1149C0332R WASHER (QTY 2)
A366A3E14C75 CLICK BOND (REF)
REMOVE:
NAS43DD3-21N SPACER
AS21919WCH04 CLAMP
NAS1149C0332R WASHER
MS21043-3 NUT
A366A3E12C CLICK BOND (REF)
REMOVE:
NAS43DD3-13N SPACER
AS21919WCH08 CLAMP
NAS1149C0332R WASHER
MS21043-3 NUT
3G6352A16011
ROTOR BRAKE LINES INSTL (REF)
REMOVE:
AS21919WCH04 CLAMP
AN3C21A BOLT
NAS43DD3-44N SPACER
NAS1149C0332R WASHER (QTY 2)
AN3C13A BOLT
A295A3004A CLAMP BLOCK
REMOVE:
AS21919WCH04 CLAMP
AN3C21A BOLT
NAS43DD3-40N SPACER
AS21919WCH06 CLAMP (QTY 2)
NAS1149C0332R WASHER (QTY 2)
AN3C14A BOLT
A295A3004A CLAMP BLOCK
REMOVE:
AS21919WCH04 CLAMP
AN3C21A BOLT
NAS43DD3-44N SPACER
NAS1149C0332R WASHER (QTY 2)
AN3C13A BOLT
A295A3004A CLAMP BLOCK
3G6352A01911
ROTOR BRAKE LINES INSTL VARIANT (REF)
REMOVE:
AN4C4A BOLT (QTY 2)
NAS1149C0463R WASHER (QTY 2)
REMOVE:
3G2920A12251 BRACKET
AN3C3A BOLT (QTY 3)
NAS1149C0332R WASHERS (QTY3)
REMOVE:
AS21919WCH04 CLAMP
AN3C21A BOLT
NAS43DD3-40N SPACER
AS21919WCH06 CLAMP (QTY 2)
NAS1149C0332R WASHER (QTY 2)
AN3C14A BOLT
A295A3004A CLAMP BLOCK
(TYP 2 PLCS)
REMOVE:
AN3-4A BOLT
AS21919WCH04 CLAMP
NAS1149C0332R WASHER
REMOVE:
AN4C6A BOLT
NAS1149C0463R WASHER
REMOVE:
AN4C4A BOLT
NAS1149C0463R WASHER

zz

Figure 9

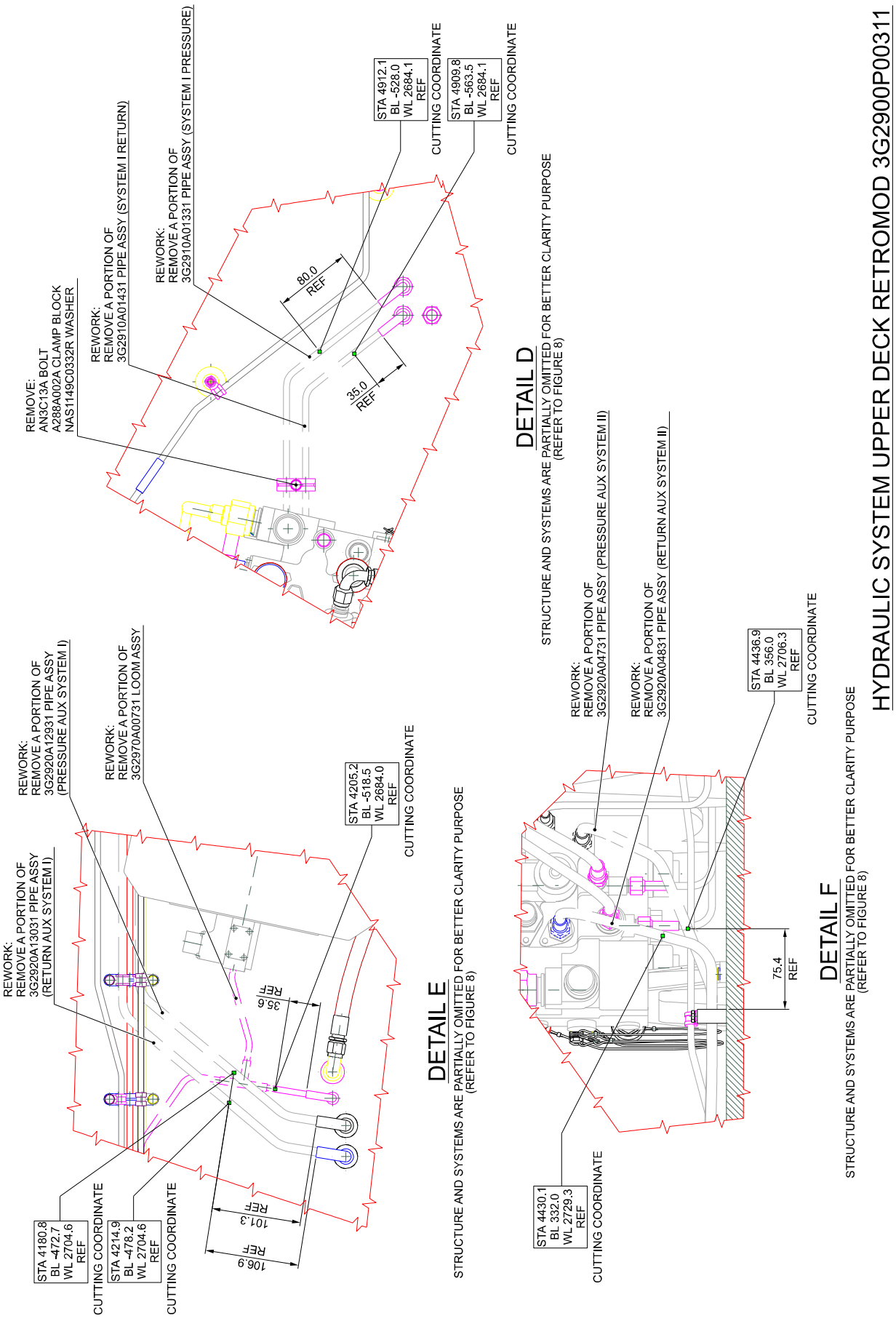

HYDRAULIC SYSTEM UPPER DECK RETROMOD 3G2900P00311
DETAIL D
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 8)
REWORK:
REMOVE A PORTION OF
3G2910A01431 PIPE ASSY (SYSTEM I RETURN)
REWORK:
REMOVE A PORTION OF
3G2910A01331 PIPE ASSY (SYSTEM I PRESSURE)
REMOVE:
AN3C13A BOLT
A288A002A CLAMP BLOCK
NAS1149C0332R WASHER
STA 4912.1
BL -528.0
WL 2684.1
REF
CUTTING COORDINATE
STA 4909.8
BL -563.5
WL 2684.1
REF
CUTTING COORDINATE
80.0
REF
35.0
REF
DETAIL E
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 8)
REWORK:
REMOVE A PORTION OF
3G2920A12931 PIPE ASSY
(PRESSURE AUX SYSTEM I)
REWORK:
REMOVE A PORTION OF
3G2970A00731 LOOM ASSY
REWORK:
REMOVE A PORTION OF
3G2920A13031 PIPE ASSY
(RETURN AUX SYSTEM I)
STA 4205.2
BL -518.5
WL 2684.0
REF
CUTTING COORDINATE
35.6
REF
101.3
REF
106.9
REF
STA 4180.8
BL -472.7
WL 2704.6
REF
CUTTING COORDINATE
STA 4214.9
BL -478.2
WL 2704.6
REF
CUTTING COORDINATE
DETAIL F
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 8)
REWORK:
REMOVE A PORTION OF
3G2920A04731 PIPE ASSY (PRESSURE AUX SYSTEM II)
REWORK:
REMOVE A PORTION OF
3G2920A04831 PIPE ASSY (RETURN AUX SYSTEM II)
STA 4436.9
BL 356.0
WL 2706.3
REF
CUTTING COORDINATE
75.4
REF
STA 4430.1
BL 332.0
WL 2729.3
REF
CUTTING COORDINATE

Figure 10

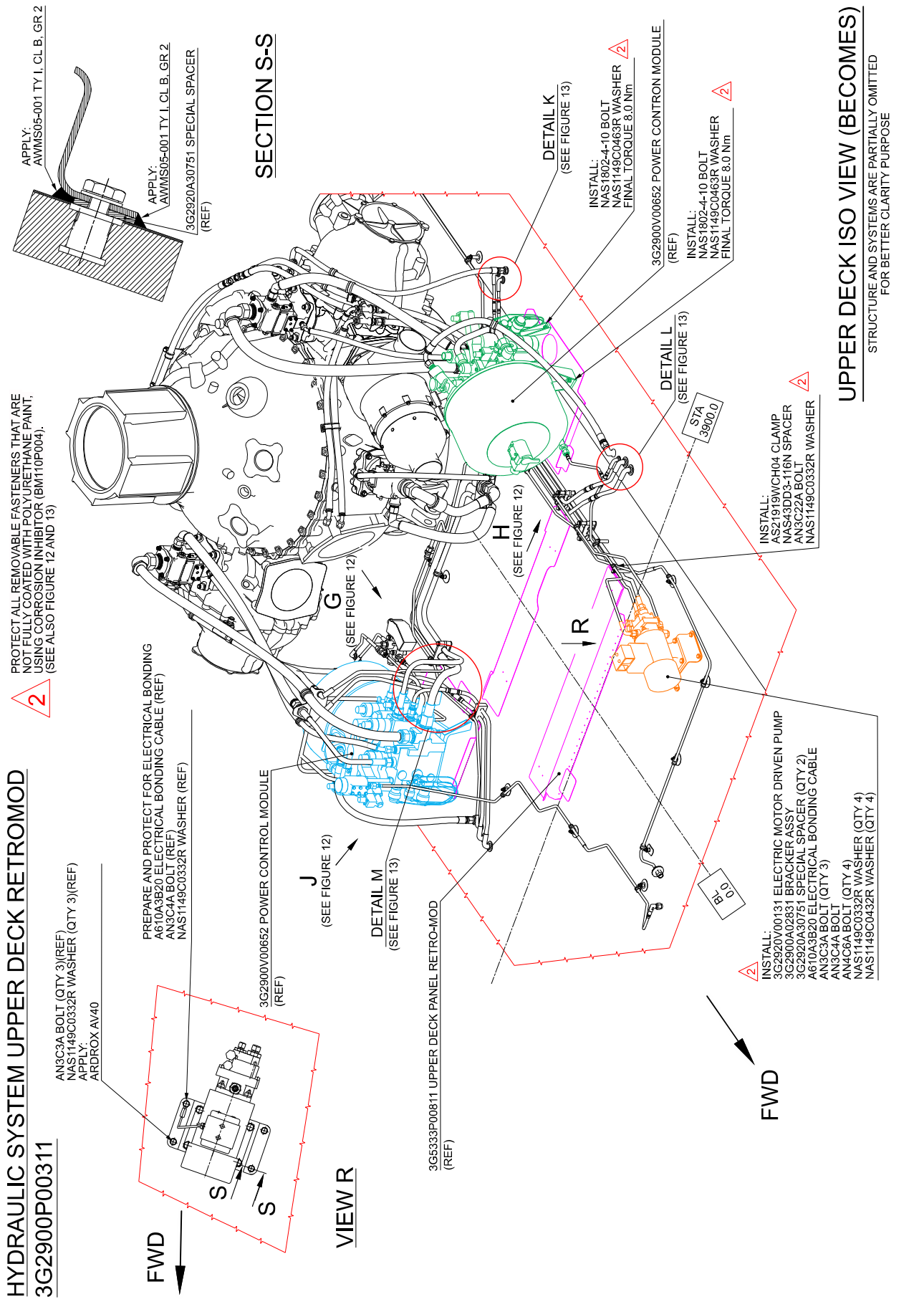

HYDRAULIC SYSTEM UPPER DECK RETROMOD
3G2900P00311
PROTECT ALL REMOVABLE FASTENERS THAT ARE NOT FULLY COATED WITH POLYURETHANE PAINT, USING CORROSION INHIBITOR (BM110P004). (SEE ALSO FIGURE 12 AND 13)
2
AN3C3A BOLT (QTY 3)(REF)
NAS1149C0332R WASHER (QTY 3)(REF)
APPLY:
ARDROX AV40
PREPARE AND PROTECT FOR ELECTRICAL BONDING
A610A3B20 ELECTRICAL BONDING CABLE (REF)
AN3C4A BOLT (REF)
NAS1149C0332R WASHER (REF)
3G2900V00652 POWER CONTROL MODULE
(REF)
J
(SEE FIGURE 12)
DETAIL M
(SEE FIGURE 13)
3G5333P00811 UPPER DECK PANEL RETRO-MOD
(REF)
VIEW R
FWD
S
S
APPLY:
AWMS05-001 TY I, CL B, GR 2
APPLY:
AWMS05-001 TY I, CL B, GR 2
3G2920A30751 SPECIAL SPACER
(REF)
SECTION S-S
G
(SEE FIGURE 12)
H
(SEE FIGURE 12)
R
DETAIL K
(SEE FIGURE 13)
INSTALL:
NAS1802-4-10 BOLT
NAS1149C0463R WASHER
FINAL TORQUE 8.0 Nm
2
3G2900V00652 POWER CONTRON MODULE
(REF)
INSTALL:
NAS1802-4-10 BOLT
NAS1149C0463R WASHER
FINAL TORQUE 8.0 Nm
2
DETAIL L
(SEE FIGURE 13)
STA 3900.0
BL 0.0
2
INSTALL:
AS21919WCH04 CLAMP
NAS43DD3-116N SPACER
AN3C22A BOLT
NAS1149C0332R WASHER
2
INSTALL:
3G2920V00131 ELECTRIC MOTOR DRIVEN PUMP
3G2900A02831 BRACKER ASSY
3G2920A30751 SPECIAL SPACER (QTY 2)
A610A3B20 ELECTRICAL BONDING CABLE
AN3C3A BOLT (QTY 3)
AN3C4A BOLT (QTY 4)
AN4C6A BOLT (QTY 4)
NAS1149C0332R WASHER (QTY 4)
NAS1149C0432R WASHER (QTY 4)
FWD
UPPER DECK ISO VIEW (BECOMES)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 11

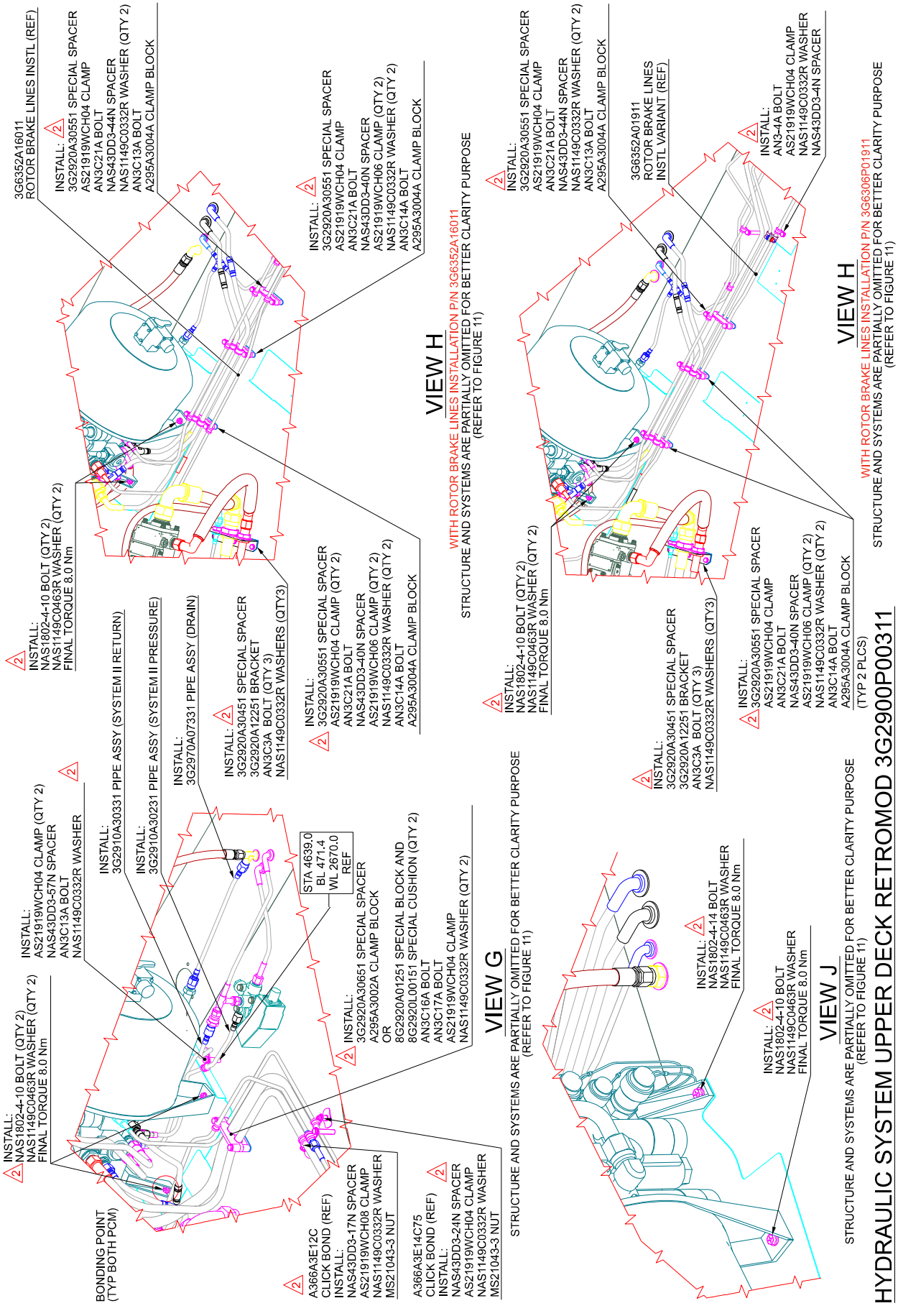

HYDRAULIC SYSTEM UPPER DECK RETROMOD 3G2900P00311
VIEW G
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)
VIEW H
WITH ROTOR BRAKE LINES INSTALLATION P/N 3G6352A16011
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)
VIEW J
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)
VIEW H
WITH ROTOR BRAKE LINES INSTALLATION P/N 3G6306P01911
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)
3G6352A16011
ROTOR BRAKE LINES INSTL (REF)
3G6352A01911
ROTOR BRAKE LINES
INSTL VARIANT (REF)
BONDING POINT
(TYP BOTH PCM)
STA 4639.0
BL 471.4
WL 2670.0
REF
(TYP 2 PLCS)

Figure 12

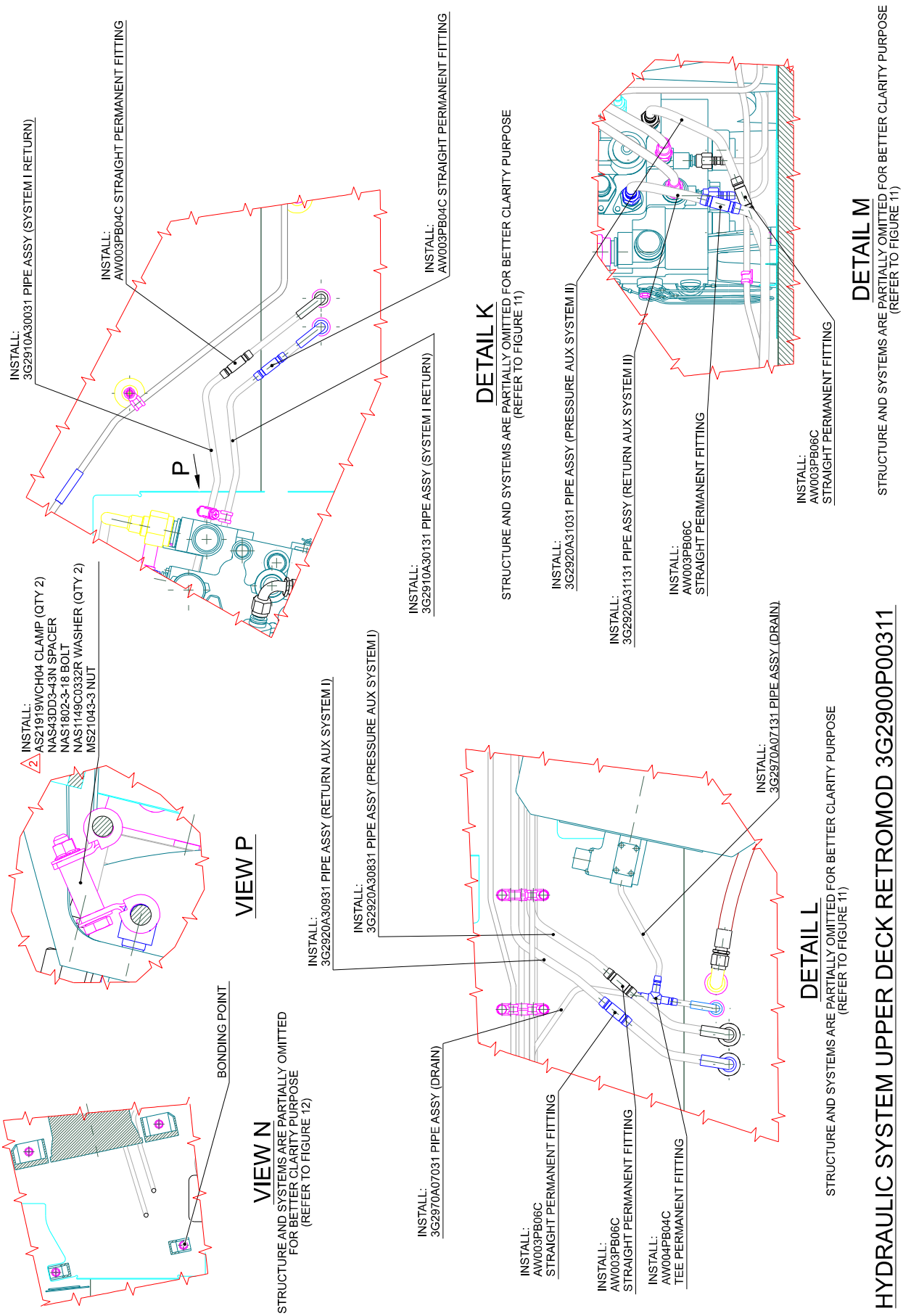

HYDRAULIC SYSTEM UPPER DECK RETROMOD 3G2900P00311
INSTALL:
3G2910A30031 PIPE ASSY (SYSTEM I RETURN)
INSTALL:
AW003PB04C STRAIGHT PERMANENT FITTING
INSTALL:
AW003PB04C STRAIGHT PERMANENT FITTING
INSTALL:
3G2910A30131 PIPE ASSY (SYSTEM I RETURN)
P
2
INSTALL:
AS21919WCH04 CLAMP (QTY 2)
NAS43DD3-43N SPACER
NAS1802-3-18 BOLT
NAS1149C0332R WASHER (QTY 2)
MS21043-3 NUT
VIEW P
BONDING POINT
VIEW N
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 12)
INSTALL:
3G2920A30931 PIPE ASSY (RETURN AUX SYSTEM I)
INSTALL:
3G2920A30831 PIPE ASSY (PRESSURE AUX SYSTEM I)
INSTALL:
3G2970A07031 PIPE ASSY (DRAIN)
INSTALL:
AW003PB06C
STRAIGHT PERMANENT FITTING
INSTALL:
AW003PB06C
STRAIGHT PERMANENT FITTING
INSTALL:
AW004PB04C
TEE PERMANENT FITTING
DETAIL K
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)
INSTALL:
3G2920A31031 PIPE ASSY (PRESSURE AUX SYSTEM II)
INSTALL:
3G2920A31131 PIPE ASSY (RETURN AUX SYSTEM II)
INSTALL:
AW003PB06C
STRAIGHT PERMANENT FITTING
INSTALL:
AW003PB06C
STRAIGHT PERMANENT FITTING
DETAIL L
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)
INSTALL:
3G2970A07131 PIPE ASSY (DRAIN)
DETAIL M
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 11)

Figure 13

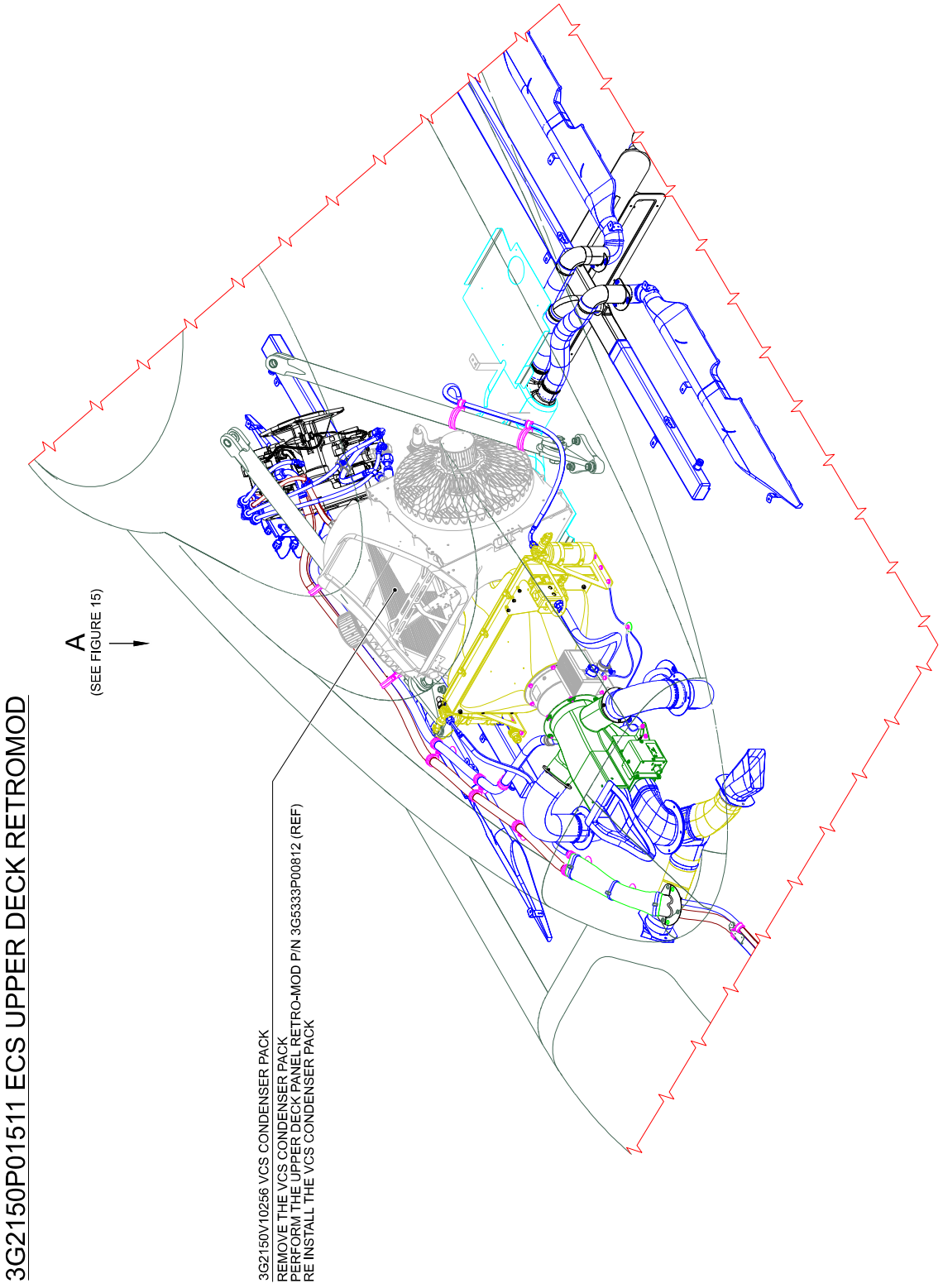
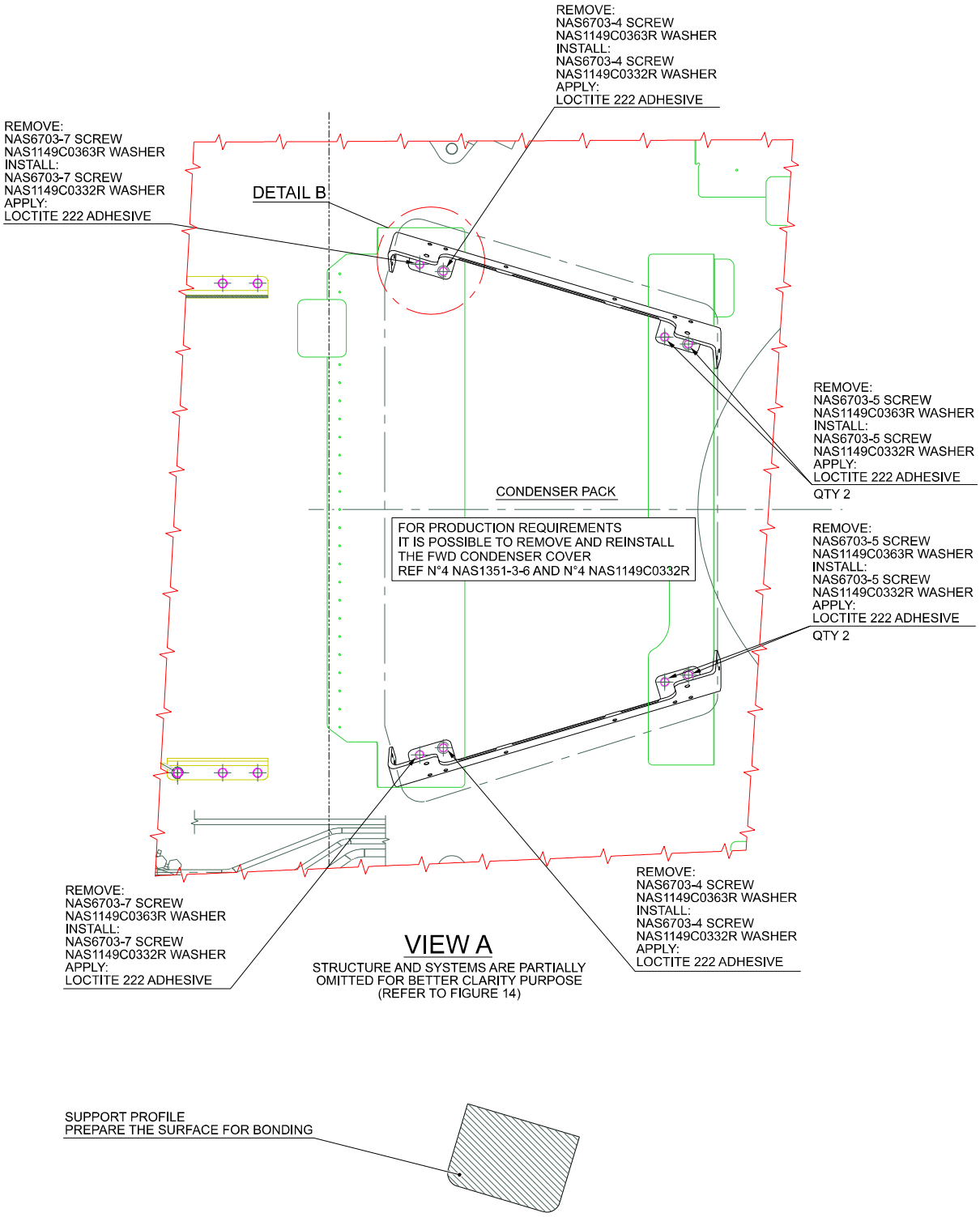

3G2150P01511 ECS UPPER DECK RETROMOD
A
(SEE FIGURE 15)
3G2150V10256 VCS CONDENSER PACK
REMOVE THE VCS CONDENSER PACK
PERFORM THE UPPER DECK PANEL RETRO-MOD P/N 3G5333P00812 (REF)
RE INSTALL THE VCS CONDENSER PACK
ISOMETRIC VIEW
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 14



3G2150P01511 ECS UPPER DECK RETROMOD

Figure 15

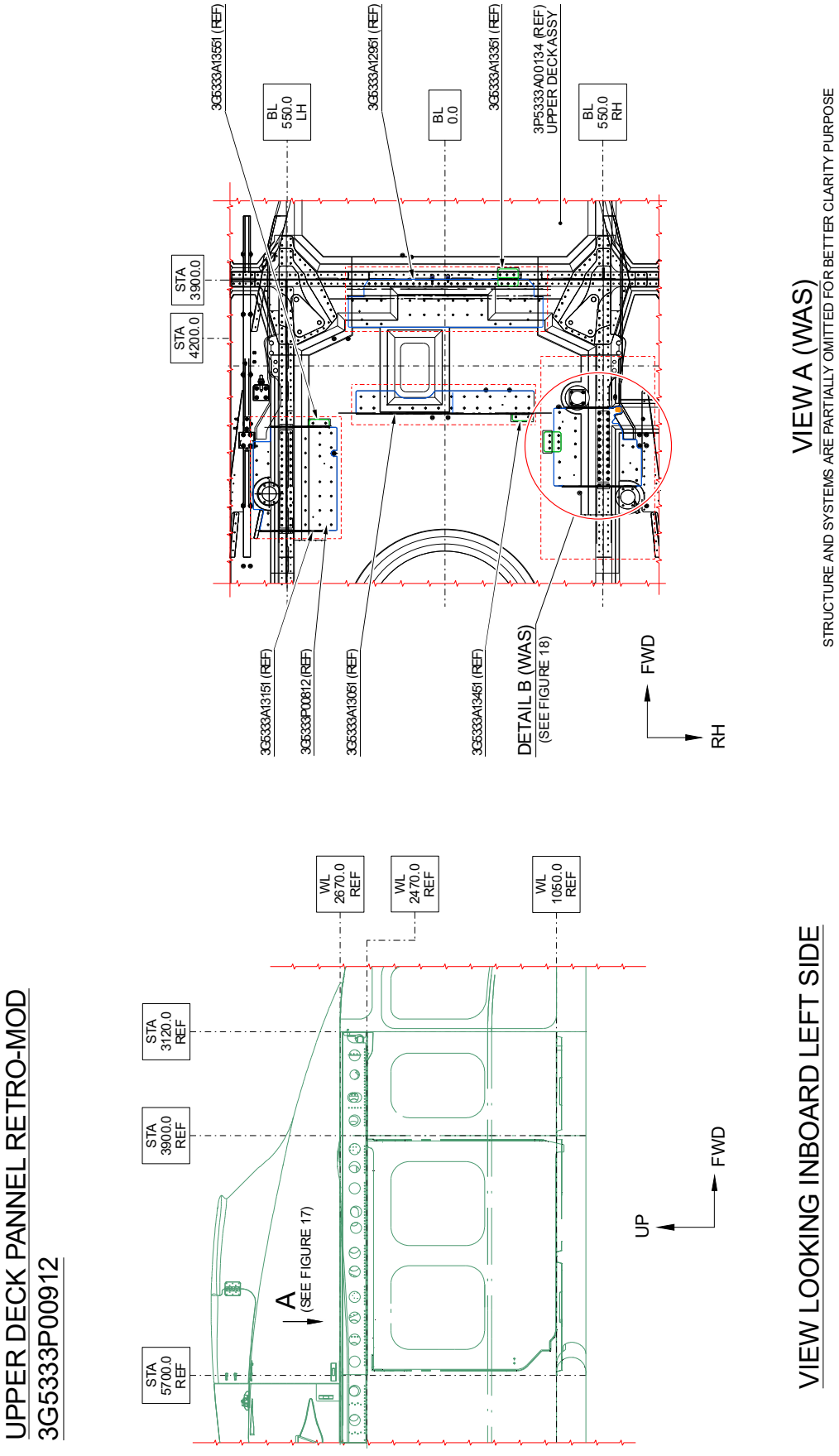

UPPER DECK PANNEL RETRO-MOD
3G5333P00912
VIEW LOOKING INBOARD LEFT SIDE
STA 5700.0 REF
STA 3900.0 REF
STA 3120.0 REF
WL 2670.0 REF
WL 2470.0 REF
WL 1050.0 REF
A
(SEE FIGURE 17)
UP
FWD
VIEW A (WAS)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
STA 4200.0
STA 3900.0
BL 550.0 LH
BL 0.0
BL 550.0 RH
3G5333A13351 (REF)
3G5333A12951 (REF)
3G5333A13351 (REF)
3P5333A00134 (REF)
UPPER DECK ASSY
3G5333A13151 (REF)
3G5333P00812 (REF)
3G5333A13051 (REF)
3G5333A13451 (REF)
DETAIL B (WAS)
(SEE FIGURE 18)
FWD
RH

Figure 16

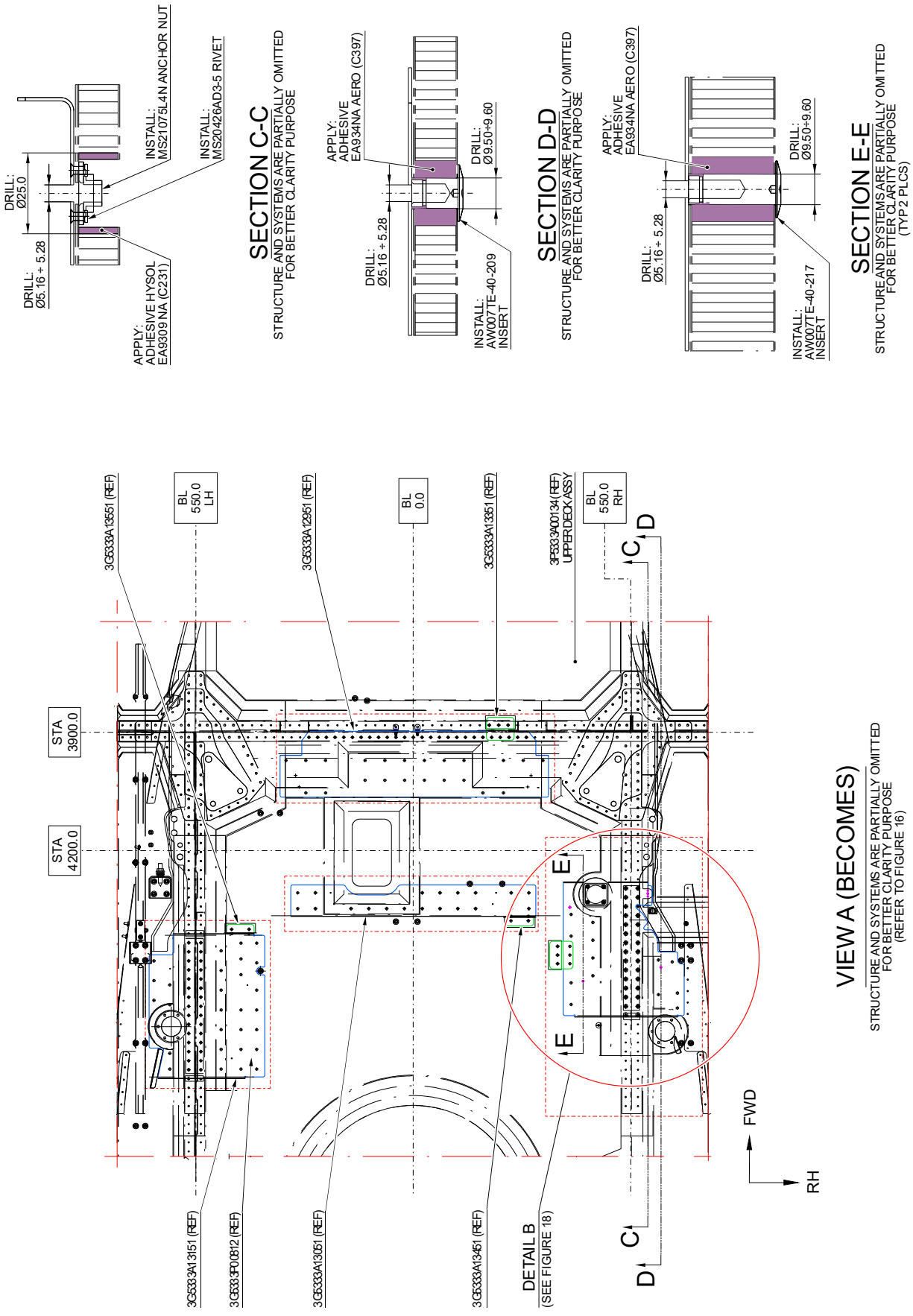

SECTION C-C
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
DRILL: Ø25.0
DRILL: Ø5.16 ÷ 5.28
INSTALL: MS21075L4N ANCHOR NUT
INSTALL: MS20426AD3-5 RIVET
APPLY: ADHESIVE HYSOL EA9309 NA (C231)
SECTION D-D
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
APPLY: ADHESIVE EA934NA AERO (C397)
DRILL: Ø5.16 ÷ 5.28
DRILL: Ø9.50÷9.60
INSTALL: AW007TE-40-209 INSERT
SECTION E-E
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE (TYP 2 PLCS)
APPLY: ADHESIVE EA934NA AERO (C397)
DRILL: Ø5.16 ÷ 5.28
DRILL: Ø9.50÷9.60
INSTALL: AW007TE-40-217 INSERT
VIEW A (BECOMES)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE (REFER TO FIGURE 16)
STA 3900.0
STA 4200.0
BL 550.0 LH
BL 0.0
BL 550.0 RH
3G6333A13551 (REF)
3G6333A12951 (REF)
3G6333A13351 (REF)
3F6333A00134 (REF) UPPERDECK ASSY
3G6333A13151 (REF)
3G6333F00812 (REF)
3G6333A13051 (REF)
3G6333A13451 (REF)
DETAIL B (SEE FIGURE 18)
C
D
E
FWD
RH

Figure 17

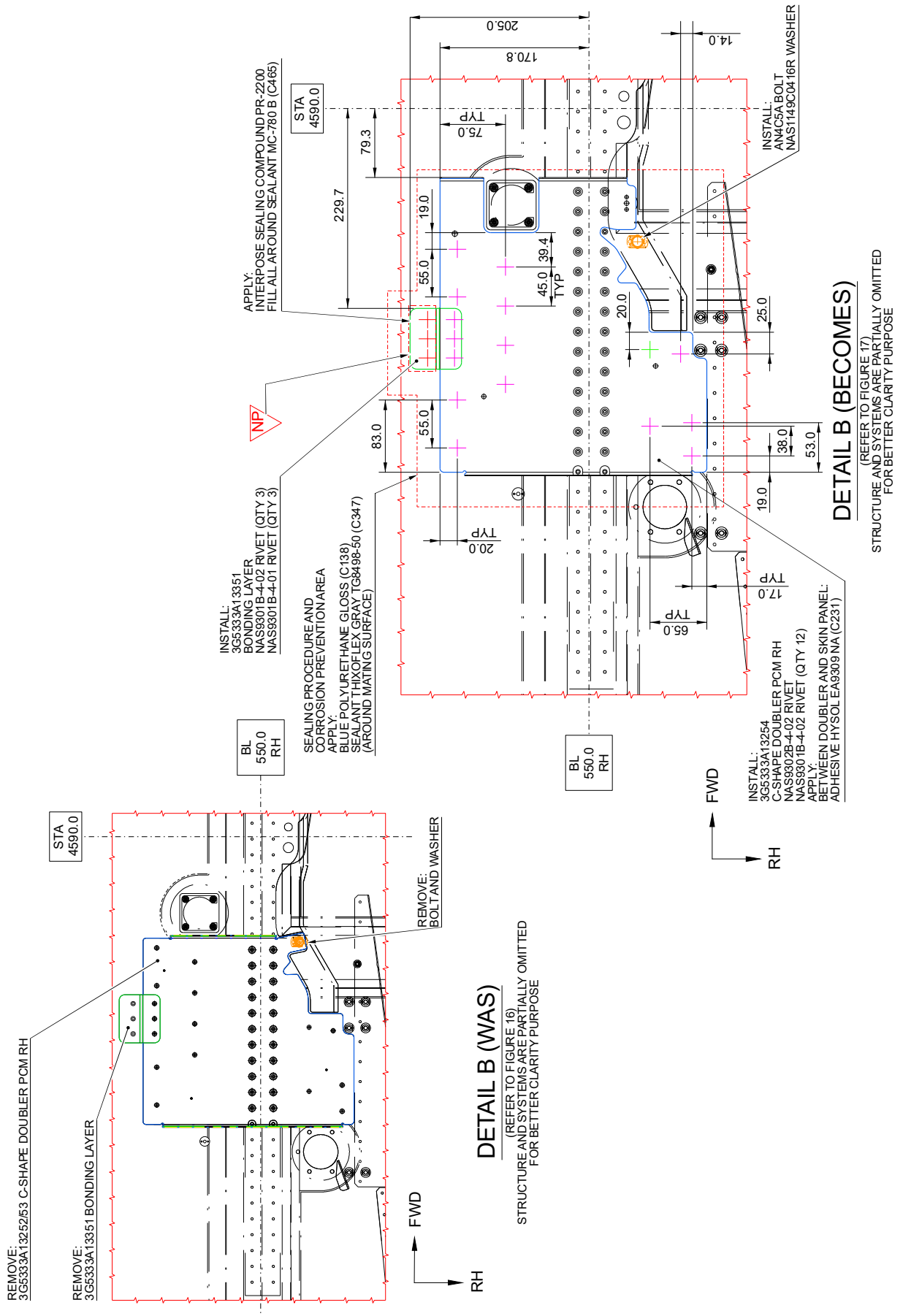

DETAIL B (WAS)
(REFER TO FIGURE 16)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
REMOVE:
3G5333A13252/53 C-SHAPE DOUBLER PCM RH
REMOVE:
3G5333A13351 BONDING LAYER
REMOVE:
BOLT AND WASHER
STA
4590.0
BL
550.0
RH
FWD
RH
DETAIL B (BECOMES)
(REFER TO FIGURE 17)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED
FOR BETTER CLARITY PURPOSE
INSTALL:
3G5333A13351
BONDING LAYER
NAS9301B4-02 RIVET (QTY 3)
NAS9301B4-01 RIVET (QTY 3)
APPLY:
INTERPOSE SEALING COMPOUND PR-2200
FILL ALL AROUND SEALANT MC-780 B (C465)
SEALING PROCEDURE AND
CORROSION PREVENTION AREA
APPLY:
BLUE POLYURETHANE GLOSS (C138)
SEALANT THIXOFLEX GRAY TG8498-50 (C347)
(AROUND MATING SURFACE)
INSTALL:
AN4C5A BOLT
NAS1149C0416R WASHER
INSTALL:
3G5333A13254
C-SHAPE DOUBLER PCM RH
NAS9302B-4-02 RIVET
NAS9301B-4-02 RIVET (QTY 12)
APPLY:
BETWEEN DOUBLER AND SKIN PANEL:
ADHESIVE HYSOL EA9309 NA (C231)
NP
205.0
170.8
14.0
79.3
229.7
75.0 TYP
19.0
55.0
39.4
45.0 TYP
20.0
25.0
83.0
55.0
38.0
53.0
19.0
20.0 TYP
17.0 TYP
65.0 TYP

Figure 18

UPPER DECK HYDRAULIC VARIANT (ACCESSORY MODE)
3G2900P00611

Figure 19

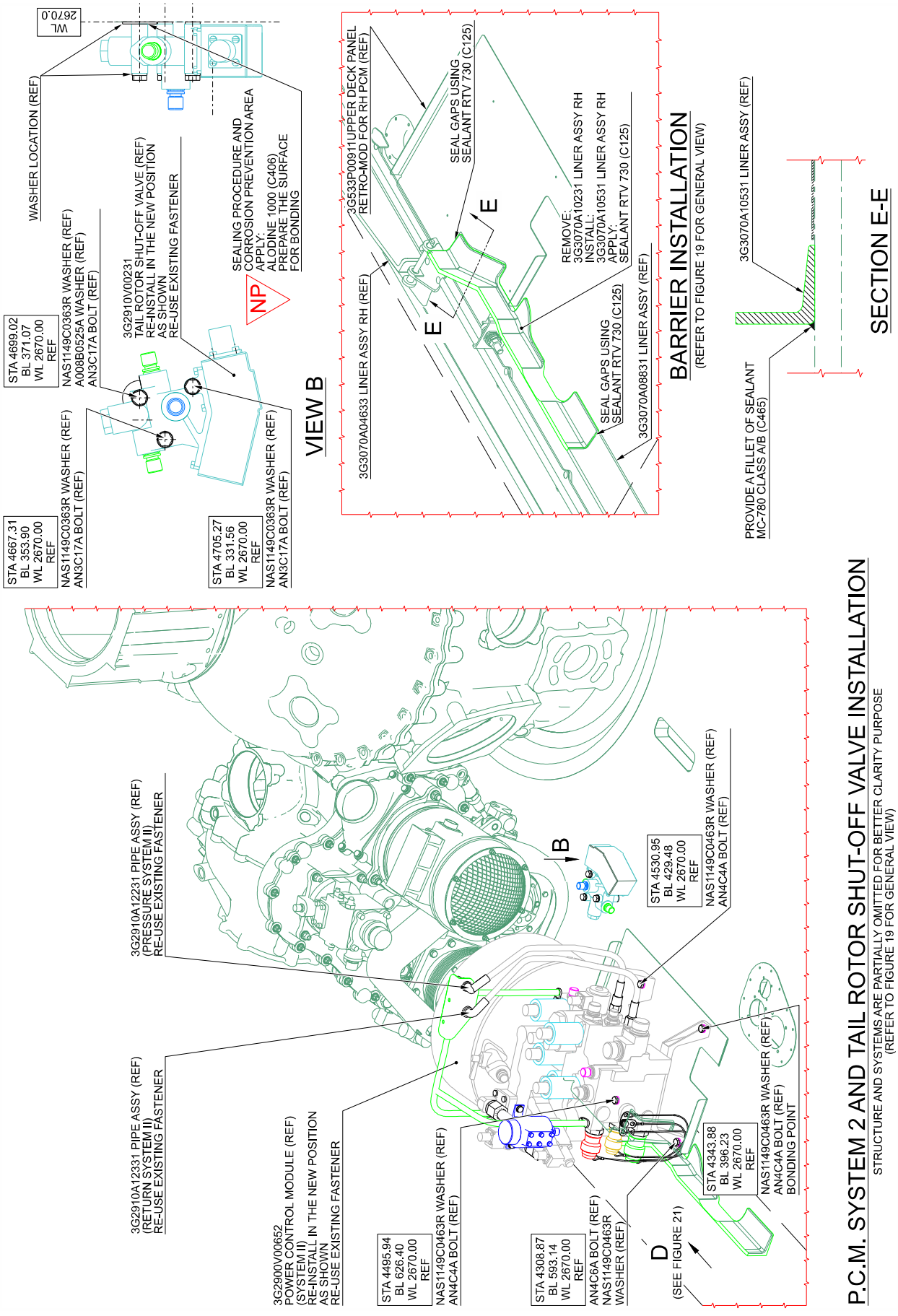

P.C.M. SYSTEM 2 AND TAIL ROTOR SHUT-OFF VALVE INSTALLATION
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)
3G2910A12231 PIPE ASSY (REF)
(PRESSURE SYSTEM II)
RE-USE EXISTING FASTENER
3G2910A12331 PIPE ASSY (REF)
(RETURN SYSTEM II)
RE-USE EXISTING FASTENER
3G2900V00652
POWER CONTROL MODULE (REF)
(SYSTEM II)
RE-INSTALL IN THE NEW POSITION
AS SHOWN
RE-USE EXISTING FASTENER
NAS1149C0463R WASHER (REF)
AN4C4A BOLT (REF)
AN4C6A BOLT (REF)
NAS1149C0463R
WASHER (REF)
STA 4495.94
BL 626.40
WL 2670.00
REF
STA 4308.87
BL 593.14
WL 2670.00
REF
STA 4530.95
BL 429.48
WL 2670.00
REF
NAS1149C0463R WASHER (REF)
AN4C4A BOLT (REF)
STA 4343.88
BL 396.23
WL 2670.00
REF
NAS1149C0463R WASHER (REF)
AN4C4A BOLT (REF)
BONDING POINT
D
(SEE FIGURE 21)
B
VIEW B
WASHER LOCATION (REF)
WL 2670.0
STA 4699.02
BL 371.07
WL 2670.00
REF
NAS1149C0363R WASHER (REF)
A008B0525A WASHER (REF)
AN3C17A BOLT (REF)
3G2910V00231
TAIL ROTOR SHUT-OFF VALVE (REF)
RE-INSTALL IN THE NEW POSITION
AS SHOWN
RE-USE EXISTING FASTENER
SEALING PROCEDURE AND
CORROSION PREVENTION AREA
APPLY:
ALODINE 1000 (C406)
PREPARE THE SURFACE
FOR BONDING
NP
STA 4667.31
BL 353.90
WL 2670.00
REF
NAS1149C0363R WASHER (REF)
AN3C17A BOLT (REF)
STA 4705.27
BL 331.56
WL 2670.00
REF
NAS1149C0363R WASHER (REF)
AN3C17A BOLT (REF)
3G533P00911UPPER DECK PANEL
RETRO-MOD FOR RH PCM (REF)
3G3070A04633 LINER ASSY RH (REF)
SEAL GAPS USING
SEALANT RTV 730 (C125)
E
E
REMOVE:
3G3070A10231 LINER ASSY RH
INSTALL:
3G3070A10531 LINER ASSY RH
APPLY:
SEALANT RTV 730 (C125)
SEAL GAPS USING
SEALANT RTV 730 (C125)
3G3070A09831 LINER ASSY (REF)
BARRIER INSTALLATION
(REFER TO FIGURE 19 FOR GENERAL VIEW)
3G3070A10531 LINER ASSY (REF)
PROVIDE A FILLET OF SEALANT
MC-780 CLASS A/B (C465)
SECTION E-E

Figure 20

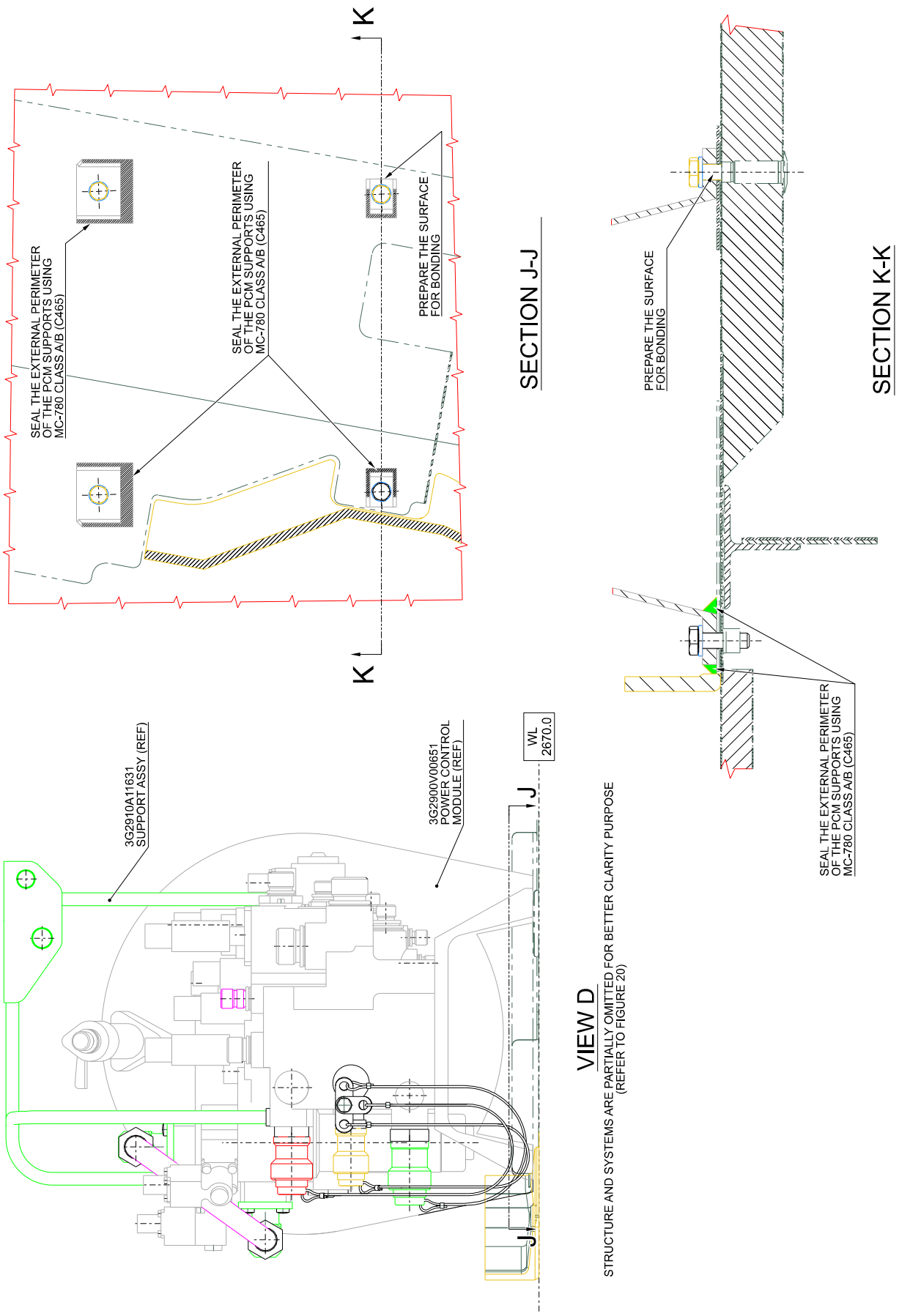

K
K
SEAL THE EXTERNAL PERIMETER OF THE PCM SUPPORTS USING MC-780 CLASS A/B (C465)
SEAL THE EXTERNAL PERIMETER OF THE PCM SUPPORTS USING MC-780 CLASS A/B (C465)
PREPARE THE SURFACE FOR BONDING
SECTION J-J
PREPARE THE SURFACE FOR BONDING
SECTION K-K
SEAL THE EXTERNAL PERIMETER OF THE PCM SUPPORTS USING MC-780 CLASS A/B (C465)
3G2910A11631 SUPPORT ASSY (REF)
3G2900V00651 POWER CONTROL MODULE (REF)
WL 2670.0
J
J
VIEW D
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 20)

Figure 21

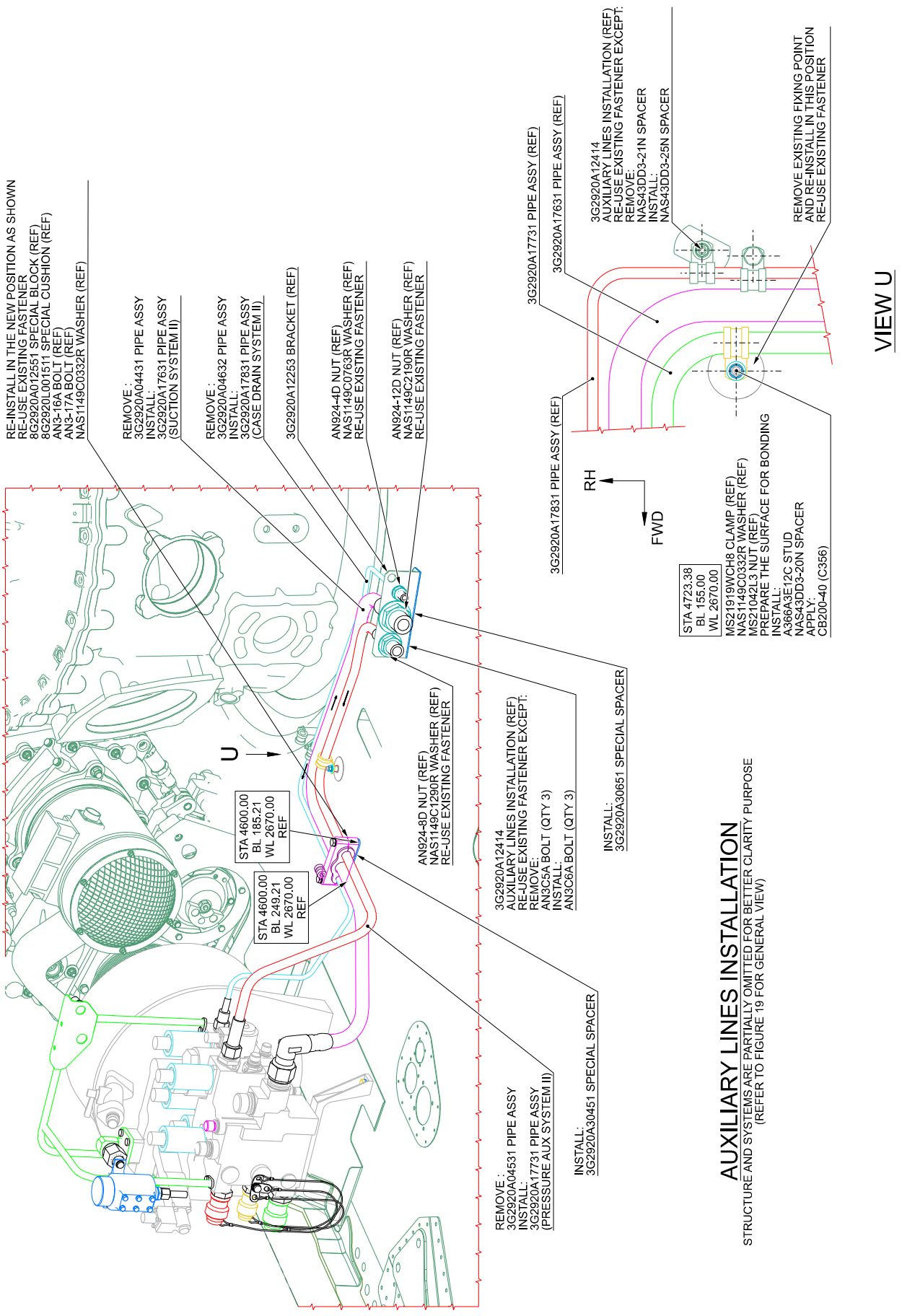

AUXILIARY LINES INSTALLATION
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)
RE-INSTALL IN THE NEW POSITION AS SHOWN
RE-USE EXISTING FASTENER
8G2920A012551 SPECIAL BLOCK (REF)
8G2920L001511 SPECIAL CUSHION (REF)
AN3-16A BOLT (REF)
AN3-17A BOLT (REF)
NAS1149C0332R WASHER (REF)
REMOVE :
3G2920A04431 PIPE ASSY
INSTALL:
3G2920A17631 PIPE ASSY
(SUCTION SYSTEM II)
REMOVE :
3G2920A04632 PIPE ASSY
INSTALL:
3G2920A17831 PIPE ASSY
(CASE DRAIN SYSTEM II)
3G2920A12253 BRACKET (REF)
AN924-4D NUT (REF)
NAS1149C0763R WASHER (REF)
RE-USE EXISTING FASTENER
AN924-12D NUT (REF)
NAS1149C2190R WASHER (REF)
RE-USE EXISTING FASTENER
U
STA 4600.00
BL 185.21
WL 2670.00
REF
STA 4600.00
BL 249.21
WL 2670.00
REF
AN924-8D NUT (REF)
NAS1149C1290R WASHER (REF)
RE-USE EXISTING FASTENER
3G2920A12414
AUXILIARY LINES INSTALLATION (REF)
RE-USE EXISTING FASTENER EXCEPT:
REMOVE:
AN3C5A BOLT (QTY 3)
INSTALL:
AN3C6A BOLT (QTY 3)
INSTALL :
3G2920A30651 SPECIAL SPACER
REMOVE :
3G2920A04531 PIPE ASSY
INSTALL:
3G2920A17731 PIPE ASSY
(PRESSURE AUX SYSTEM II)
INSTALL:
3G2920A30451 SPECIAL SPACER
3G2920A17731 PIPE ASSY (REF)
3G2920A17631 PIPE ASSY (REF)
3G2920A12414
AUXILIARY LINES INSTALLATION (REF)
RE-USE EXISTING FASTENER EXCEPT:
REMOVE:
NAS43DD3-21N SPACER
INSTALL:
NAS43DD3-25N SPACER
REMOVE EXISTING FIXING POINT
AND RE-INSTALL IN THIS POSITION
RE-USE EXISTING FASTENER
3G2920A17831 PIPE ASSY (REF)
RH
FWD
STA 4723.38
BL 155.00
WL 2670.00
MS21919WCH8 CLAMP (REF)
NAS1149C0332R WASHER (REF)
MS21042L3 NUT (REF)
PREPARE THE SURFACE FOR BONDING
INSTALL:
A366A3E12C STUD
NAS43DD3-20N SPACER
APPLY:
CB200-40 (C356)
VIEW U

Figure 22

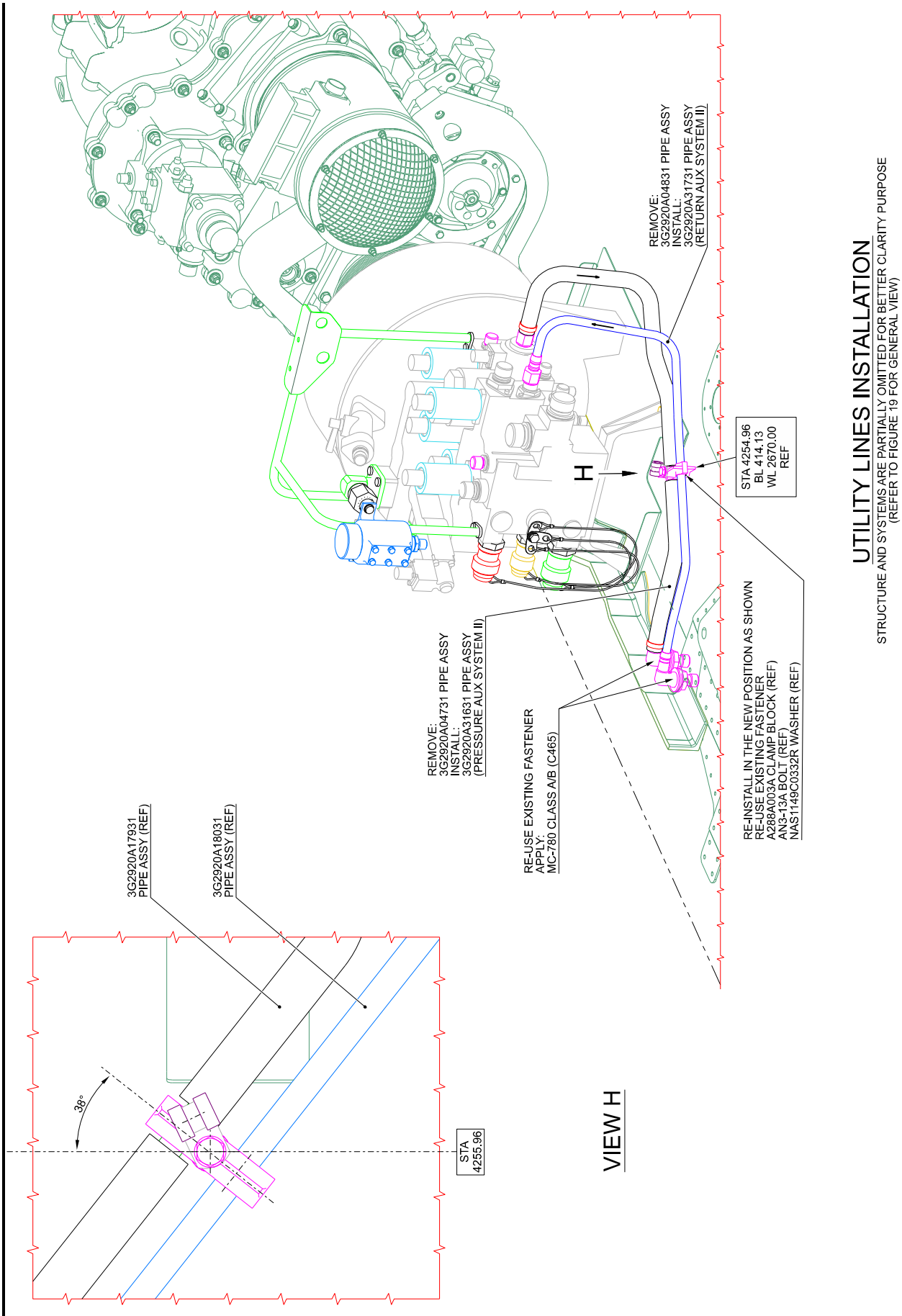
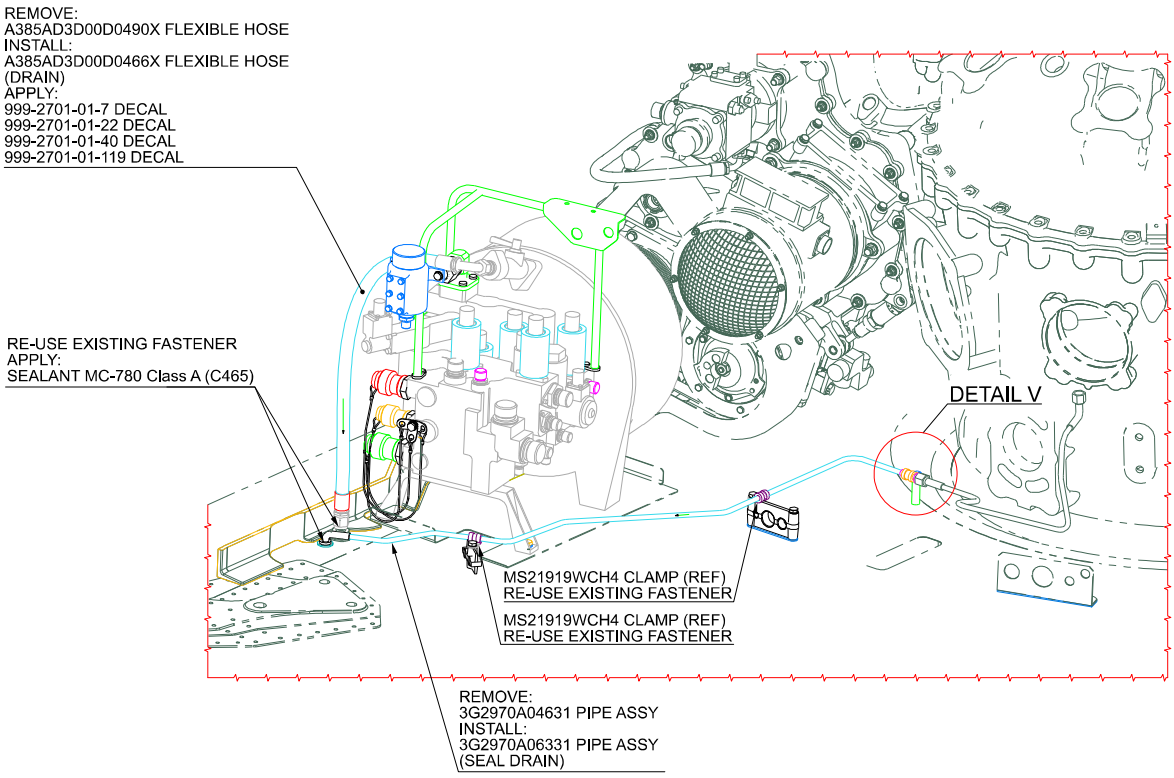
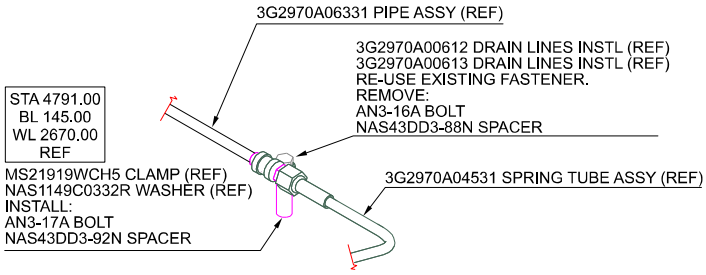

UTILITY LINES INSTALLATION
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)
REMOVE:
3G2920A04831 PIPE ASSY
INSTALL:
3G2920A31731 PIPE ASSY
(RETURN AUX SYSTEM II)
STA 4254.96
BL 414.13
WL 2670.00
REF
H
REMOVE:
3G2920A04731 PIPE ASSY
INSTALL:
3G2920A31631 PIPE ASSY
(PRESSURE AUX SYSTEM II)
RE-USE EXISTING FASTENER
APPLY:
MC-780 CLASS A/B (C465)
RE-INSTALL IN THE NEW POSITION AS SHOWN
RE-USE EXISTING FASTENER
A288A003A CLAMP BLOCK (REF)
AN3-13A BOLT (REF)
NAS1149C0332R WASHER (REF)
3G2920A17931
PIPE ASSY (REF)
3G2920A18031
PIPE ASSY (REF)
38°
STA
4255.96
VIEW H

Figure 23

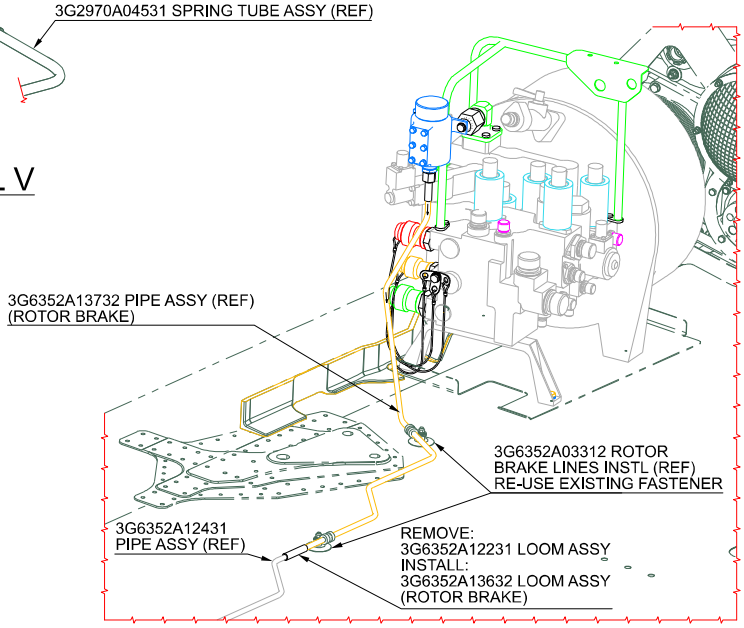


HYDRAULIC DRAIN LINES INSTALLATION

STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)



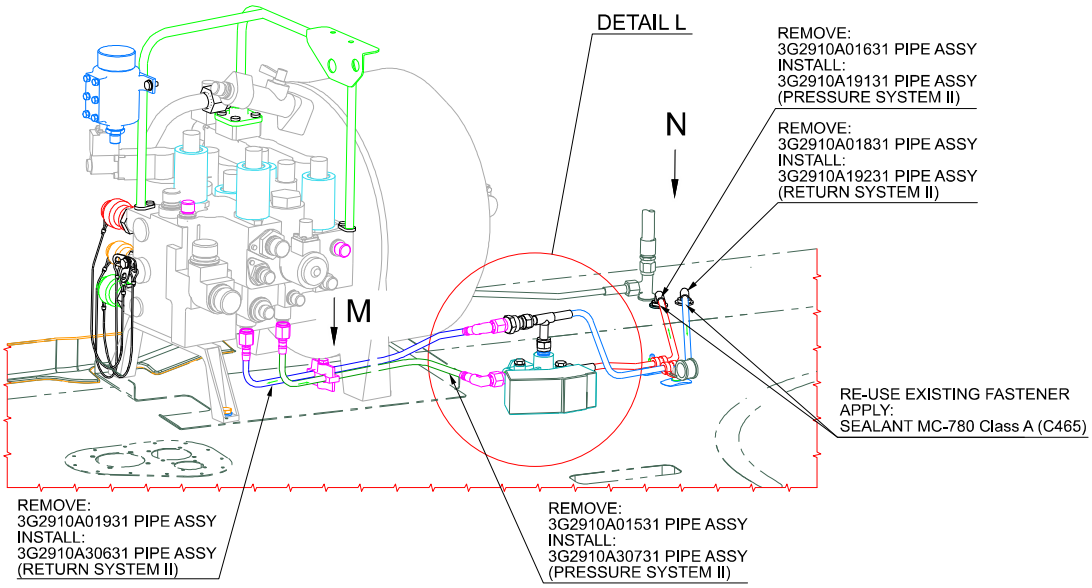
DETAIL V



ROTOR BRAKE LINES INSTALLATION

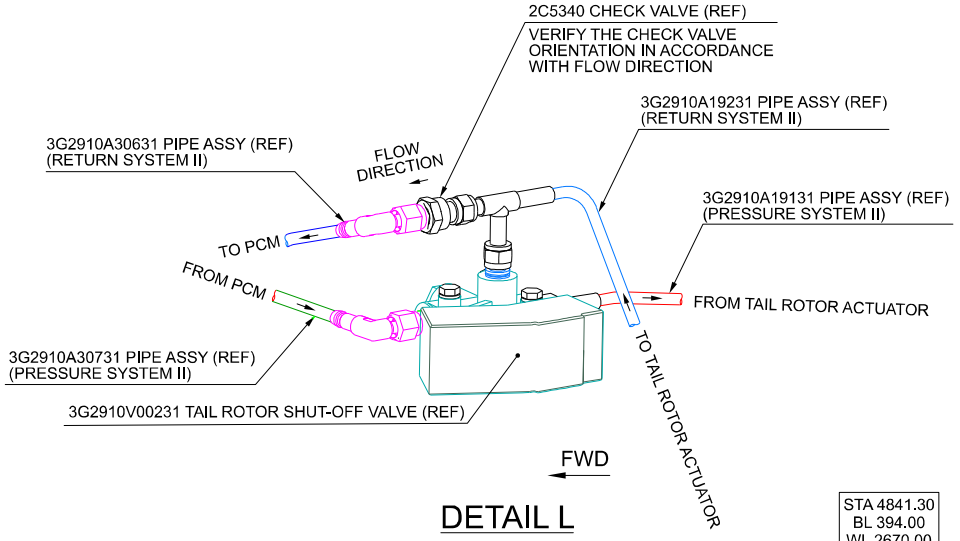
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)

Figure 24

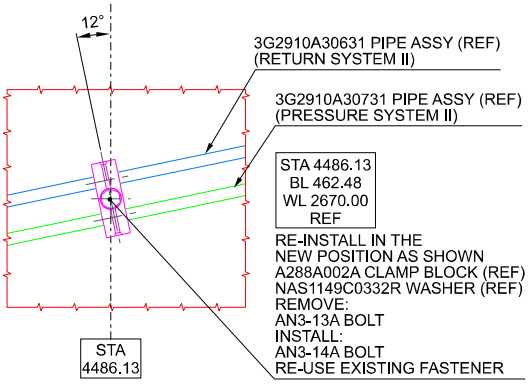


FLIGHT CONTROL LINES INSTALLATION

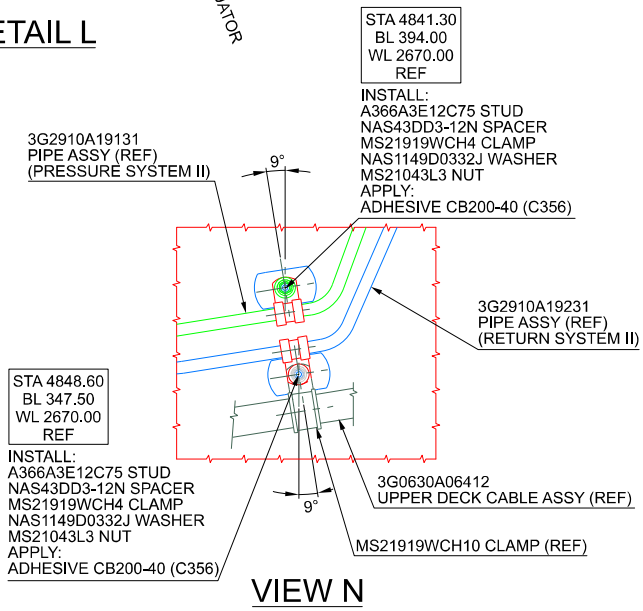
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)



DETAIL L



VIEW M



VIEW N

Figure 25

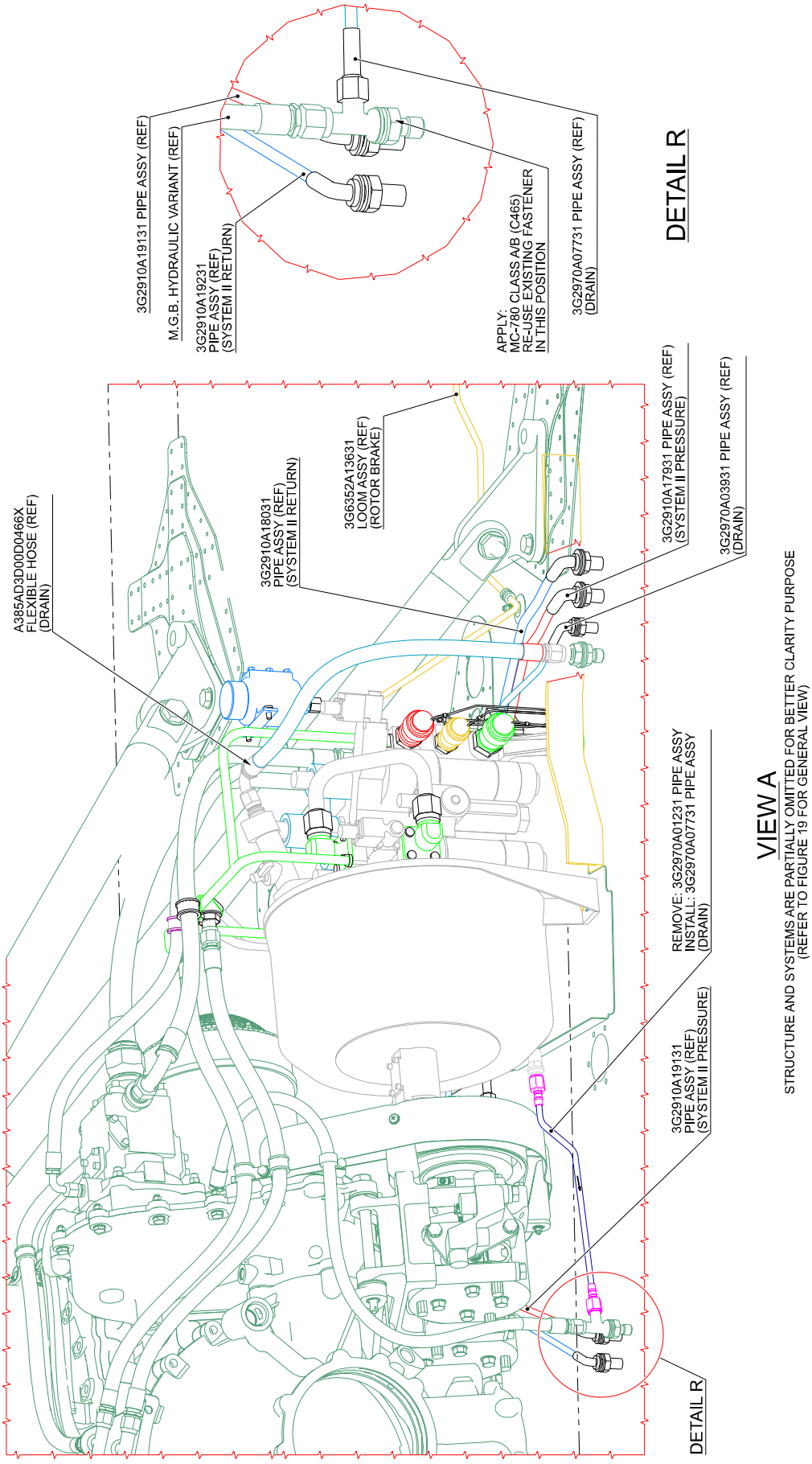

3G2910A19131 PIPE ASSY (REF)
M.G.B. HYDRAULIC VARIANT (REF)
3G2910A19231
PIPE ASSY (REF)
(SYSTEM II RETURN)
APPLY:
MC-780 CLASS A/B (C465)
RE-USE EXISTING FASTENER
IN THIS POSITION
3G2970A07731 PIPE ASSY (REF)
(DRAIN)
DETAIL R
A385AD3D00D0466X
FLEXIBLE HOSE (REF)
(DRAIN)
3G2910A18031
PIPE ASSY (REF)
(SYSTEM II RETURN)
3G6352A13631
LOOM ASSY (REF)
(ROTOR BRAKE)
3G2910A17931 PIPE ASSY (REF)
(SYSTEM II PRESSURE)
3G2970A03931 PIPE ASSY (REF)
(DRAIN)
REMOVE: 3G2970A01231 PIPE ASSY
INSTALL: 3G2970A07731 PIPE ASSY
(DRAIN)
3G2910A19131
PIPE ASSY (REF)
(SYSTEM II PRESSURE)
DETAIL R
VIEW A
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)

Figure 26

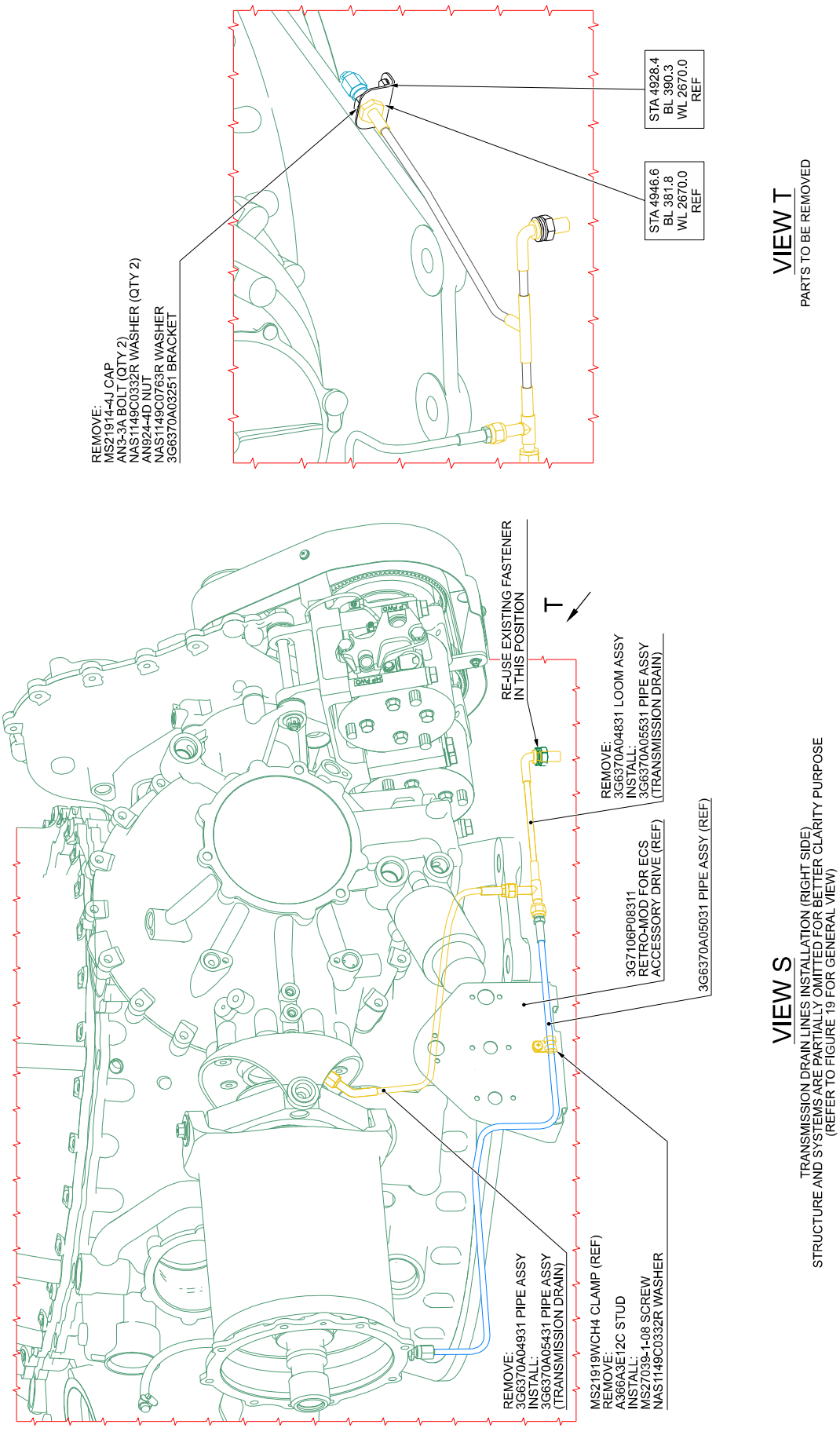

REMOVE:
MS21914-4J CAP
AN3-3A BOLT (QTY 2)
NAS1149C0332R WASHER (QTY 2)
AN924-4D NUT
NAS1149C0763R WASHER
3G6370A03251 BRACKET
STA 4928.4
BL 390.3
WL 2670.0
REF
STA 4946.6
BL 381.8
WL 2670.0
REF
VIEW T
PARTS TO BE REMOVED
RE-USE EXISTING FASTENER
IN THIS POSITION
T
REMOVE:
3G6370A04831 LOOM ASSY
INSTALL:
3G6370A05531 PIPE ASSY
(TRANSMISSION DRAIN)
3G7106P08311
RETRO-MOD FOR ECS
ACCESSORY DRIVE (REF)
3G6370A05031 PIPE ASSY (REF)
REMOVE:
3G6370A04931 PIPE ASSY
INSTALL:
3G6370A05431 PIPE ASSY
(TRANSMISSION DRAIN)
MS21919WCH4 CLAMP (REF)
REMOVE:
A366A3E12C STUD
INSTALL:
MS27039-1-08 SCREW
NAS1149C0332R WASHER
VIEW S
TRANSMISSION DRAIN LINES INSTALLATION (RIGHT SIDE)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 19 FOR GENERAL VIEW)

Figure 27

ANNEX A

BONDING ACCEPTANCE TEST PROCEDURE

1 TEST METHODOLOGY

This paragraph presents the key points of the methodology of measurement of electrical bonding, also described in Agusta standards NTA662A and NTA664A.

The relevant parts of these standards are reproduced in the following instructions. For further details, refer to the standards themselves.

The resistance of the bonding paths of all equipment shall be measured and verified on rotorcraft as defined below.

1.1 PRE-TEST REQUIREMENTS

Before commencing any test, the following actions shall be carried out:

- The battery shall be disconnected.
- All circuit breakers shall be tripped.
- All switches shall be in the OFF position or in the condition associated with the rotorcraft being parked.
- All systems containing Electro Explosive Devices (EED), e.g. Fire Extinguishing, shall be made inoperative by installing shipping shunt devices.
- All connectors shall be disconnected from the equipment under test.

Note : *Reconnect the equipment as required, after satisfactory completion of the test.*

1.2 TEST EQUIPMENT REQUIRED

The test meter shall be a DUCTER TYPE D 201, or other suitable equivalent milliohmeter, with calibration validity verified.

The test meter shall be equipped with the following test probes:

- Duplex probes with rounded contact points (min 0,8mm radius) are recommended.
- Single probes with rounded contact points (min 0,8mm radius) may be used where limited access prevents the use of duplex probes.

1.3 RESISTANCE LIMITS

The applicable resistance limits shall be as indicated in this document.

1.4 TEST METHODS

1.4.1 General

Set the correct ohm scale.

The bonding measurement shall be carried out by connecting the ohmmeter probes to the measurement test points.

Align the probes so that the “P” (Potential) contacts are within the current path.

Where possible, the measurement shall be carried out on the clean metallic surfaces in order to avoid damaging the surface finish of the item under test.

If a measurement has to be carried out on a finished metallic surface, it is permitted to perforate the finish by light contact pressure of the probe ends to ensure good electrical contact while limiting damage.

Note : *Sharp probes must not be used on critical metallic parts of the rotorcraft, to avoid surface damage. Test carefully with round-ended probes when necessary.*

Note : *All damage must be reported to the relevant ATIM group*.

1.4.2 Fabricated and Sheet Components

If a bonding measurement has to be carried out with measurement points on fabricated and sheet components, the following points shall be considered:

- If sharp probes are used near attachment points, possible damage may be caused to a high stress area.
- Measurements taken at metal joints may cause deformation if pressure is required to penetrate the protective treatment.
- When possible the probes shall be positioned at least 25mm apart and applied at the midpoint between fastening points, as shown in Figure 2(A).
- If the measurements could damage the metallic surfaces, the special round-ended probes shall be used.

The following list identifies applications where round-ended probes shall be used:

1. **Between lift frames and beams:**

   The probes shall be positioned at least 15mm from the central flange and at the midpoint between the holes, as shown in Figure 1 B).

2. **Rib frames, beams and intercostals:**

   The probes shall be positioned at the midpoint between the flanges and holes, as shown in Figure 1 C).

3. **Extrusion, under floor bulkhead:**

   The probes shall be positioned on the flange at a distance less than 25mm from each hole, as shown in Figure 2 A).

4. **Seat rail:**

   The probes shall be positioned on the flange at a distance less than 25mm from each hole, as shown in Figure 2 B).

1.4.3 **LRU Equipment**

Measurements on LRU equipment shall be carried out between the equipment case and a point on the local structure where the equipment is installed.

“Local structure” means a clean metal surface close to the equipment under test, taking care to avoid structural joints between the test points, as shown in Figure 3.

1.4.4 **Metallic pipes**

- For Hydraulic System, measurements on assembled pipeline shall be carried out between two bulkheads crossing. Probes shall be positioned on the pipe fitting. Do not touch the tube surface with the probes (Fig. 4).

1.5 **PRESENTATION OF RESULTS**

The results sheets in tables of paragraphs 1.6 and 1.7 shall be completed for each rotorcraft set.

The measured resistance values shall be reported in the results tables, in accordance with the dedicated IP document (Istruzione di Produzione) or SMC document (Scheda di Montaggio e Controllo).

The measured resistance shall be compared with the acceptance criteria for each equipment in the results tables. The PASS or FAIL column shall be checked accordingly.

When equipment is grounded through a bonding strap, this shall be indicated in the test result tables.

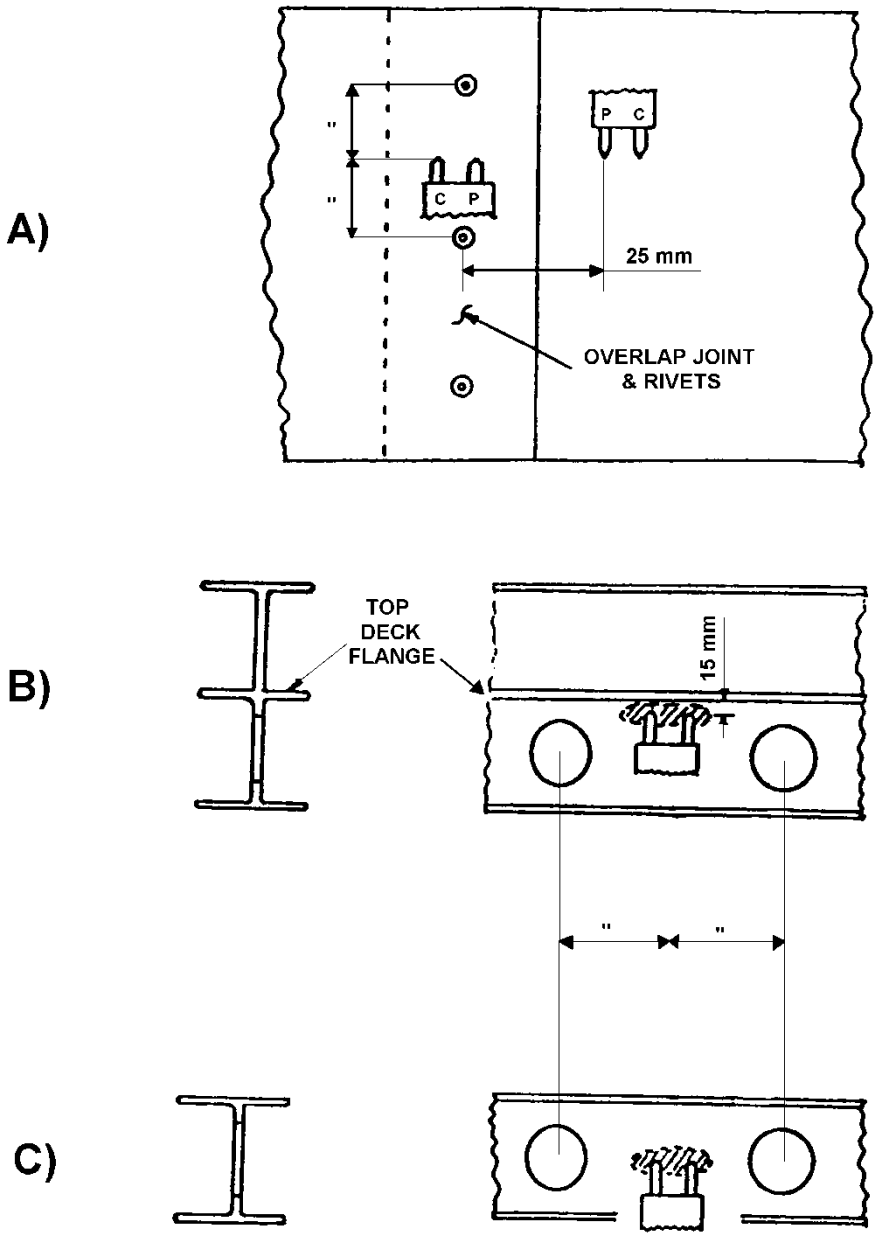


FIGURE 1 - Fabricated and sheet components

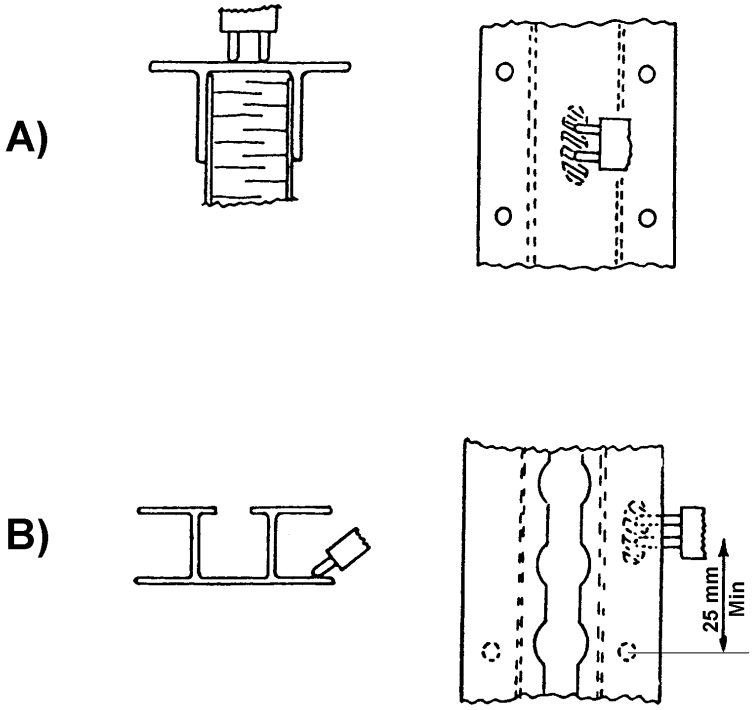


FIGURE 2 - Fabricated and sheet components

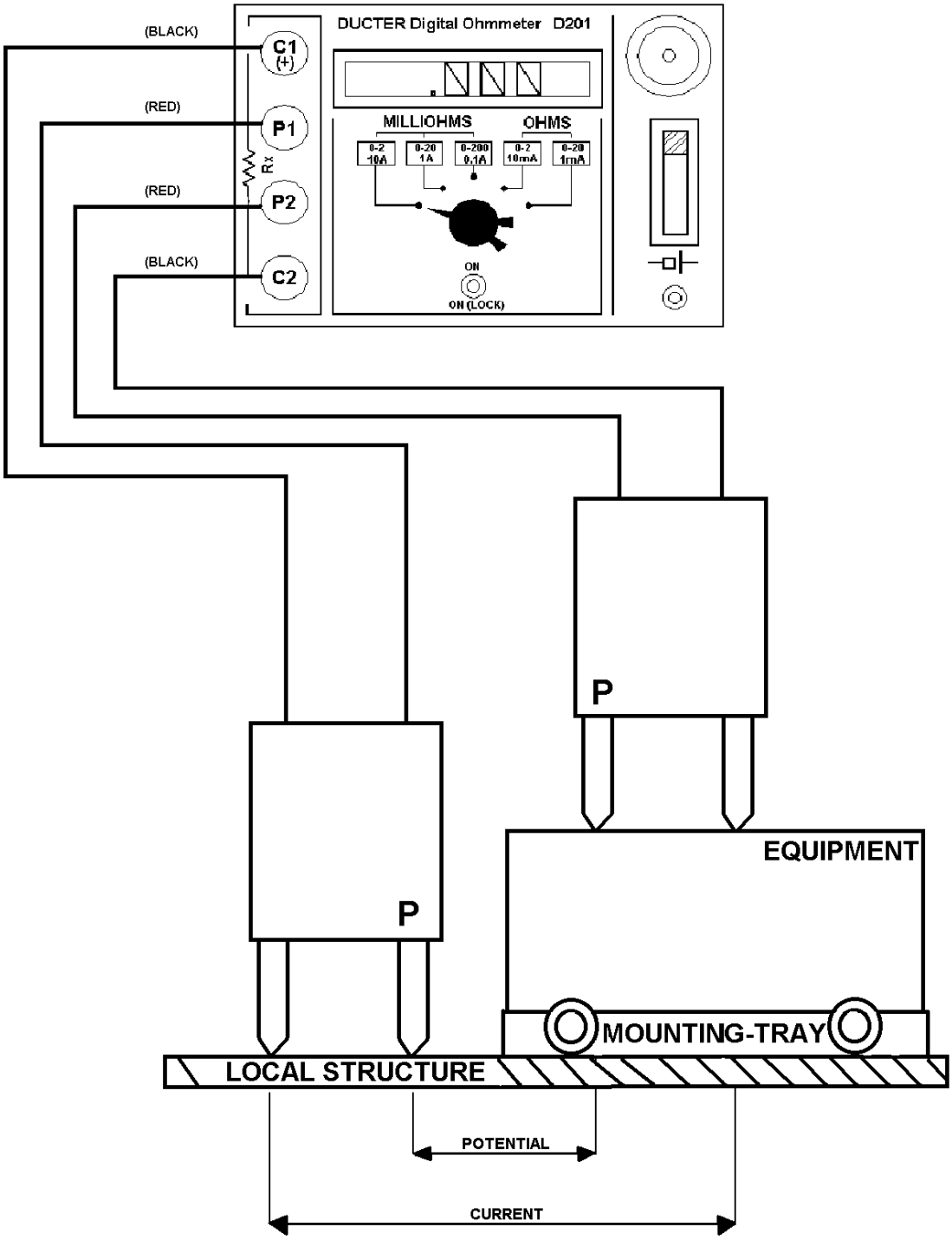


FIGURE 3 - Fabricated and sheet components

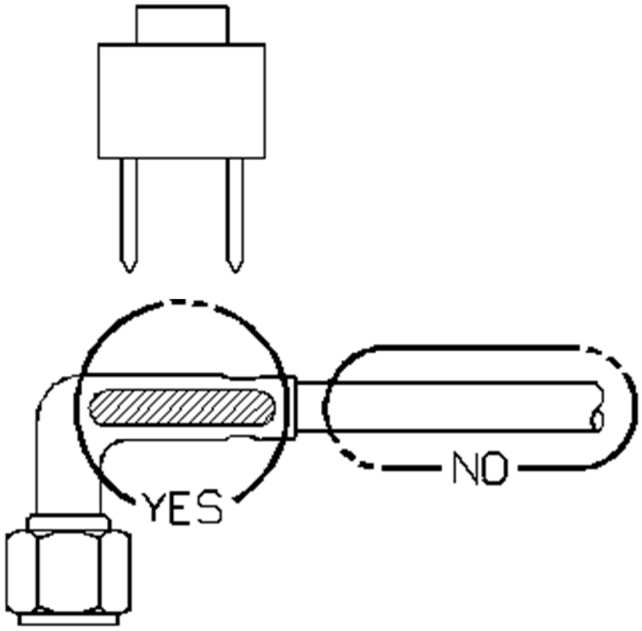


FIGURE 4 - Probe position for hydraulic system

1.6 Environmental Control System (Enviro) Bonding Verification

AW139 – Acceptance Test Report (ATR) data sheet for Environmental Control System Bonding Verification **N° …….. Issue……. Date …… A/C S/N ……**									
Measure N°	**DESCRIPTION**	**Probe A P/N description**	**Probe B P/N description**	**Figure**	**BONDING STRAP**	**ACCEPTANCE CRITERIA (mΩ)**	**MEASURED RESISTANCE (mΩ)**	**PASS**	**FAIL**
17	CONDENSER FAN 1	FAN RING 3G2150V10253/5/6/7/8	LOCAL STRUCTURE	9 ECS		< 20			
18	CONDENSER FAN 2	FAN RING 3G2150V10253/5/6/7/8	LOCAL STRUCTURE	9 ECS		< 20			

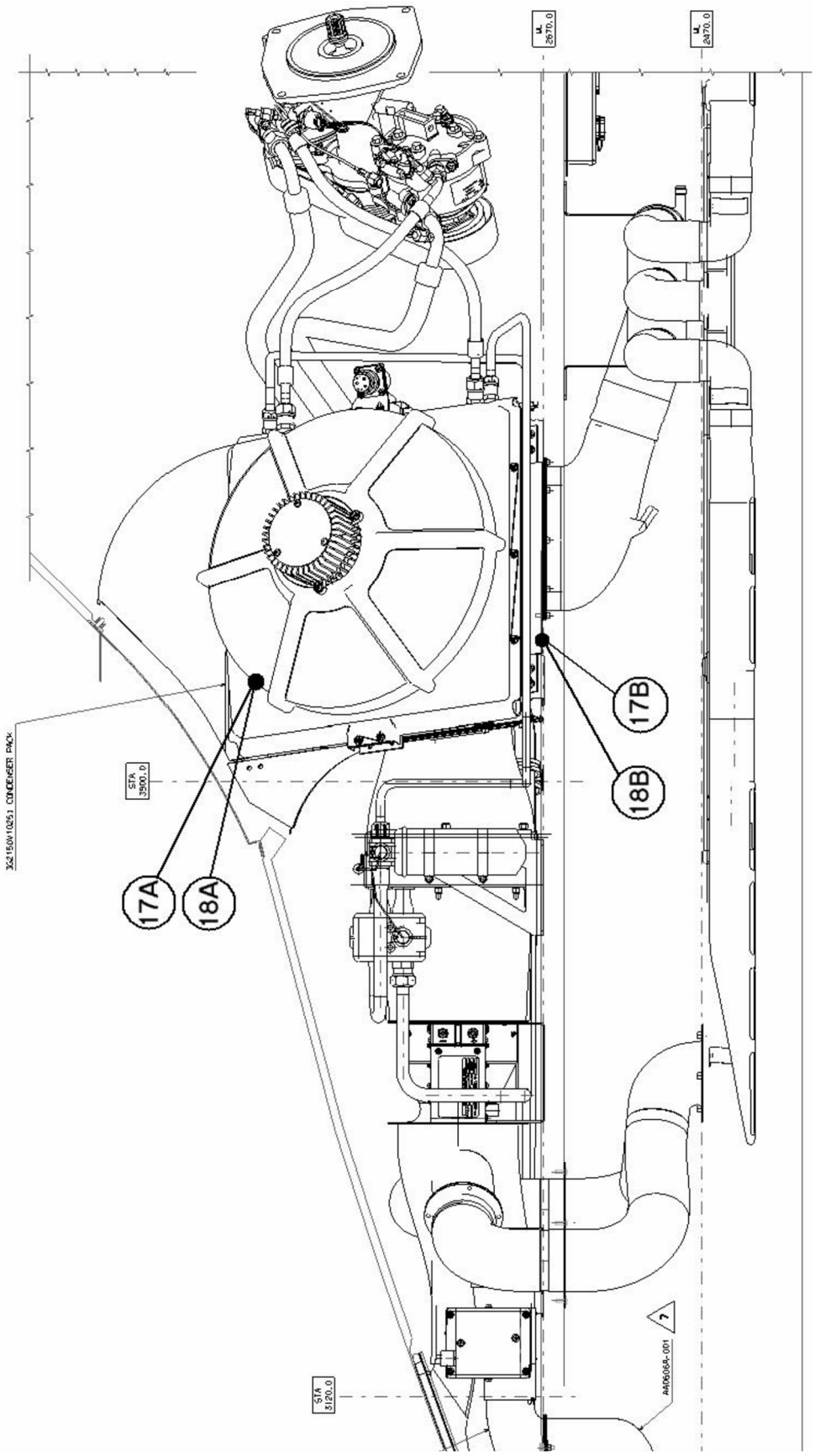


FIGURE - 9 ECS (applicable to left side and right side too)

1.7 Hydraulic Flight Controls Bonding Verification

AW139 – Acceptance Test Report (ATR) data sheet for Hydraulic Flight Controls Bonding Verification

N° …….. Issue……. Date …… A/C S/N ……

Measure N°	DESCRIPTION	Probe A P/N description	Probe B P/N description	Figure	BONDING STRAP	ACCEPTANCE CRITERIA (mΩ)	MEASURED RESISTANCE (mΩ)	PASS	FAIL
1	POWER CONTROL MODULE Nr.1	PCM Nr.1 3G2900V00651	ANTITORQUE BEAM	1HYD		< 10			
2	POWER CONTROL MODULE Nr.2	PCM Nr.2 3G2900V00651	ANTITORQUE BEAM	1HYD		< 10			
3	TAIL SHUT OFF VALVE	TAIL SHUT-OFF VALVE 3G2910V00231	ANTITORQUE BEAM	1HYD		< 10			
4	ELECTRICAL PUMP	ELECTRICAL PUMP 3G2920V00131	ANTITORQUE BEAM	1HYD		< 10			
16	CIRCUIT 1 UTILITY PRESSURE LINE 1	PIPE FROM UPPER DECK BULKHEAD CROSSING TO LGCV	FRAME STA 3900	6HYD		< 1000			
17	CIRCUIT 1 UTILITY RETURN LINE 1	PIPE FROM UPPER DECK BULKHEAD CROSSING TO LGCV	FRAME STA 3900	6HYD		< 1000			
18	CIRCUIT 2 UTILITY PRESSURE LINE 1	PIPE FROM UPPER DECK BULKHEAD CROSSING TO LGCV	FRAME STA 3900	6HYD		< 1000			
19	CIRCUIT 2 UTILITY RETURN LINE 1	PIPE FROM UPPER DECK BULKHEAD CROSSING TO LGCV	FRAME STA 3900	6HYD		< 1000			

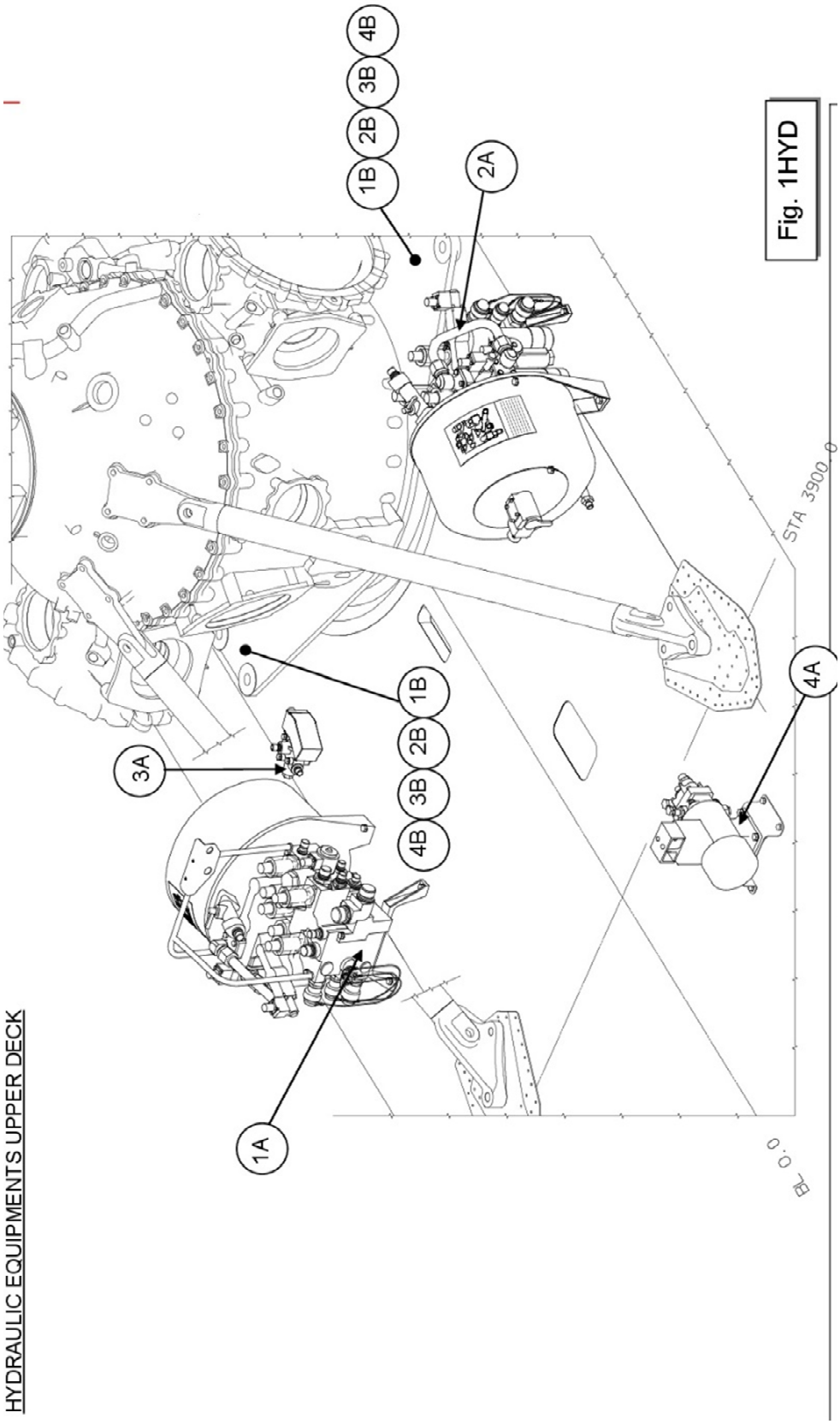


Fig. 1HYD
HYDRAULIC EQUIPMENTS UPPER DECK
4B
3B
2B
1B
2A
1B
2B
3B
4B
3A
4A
1A
STA 3900.0
BL 0.0

FIGURE - 1HYD

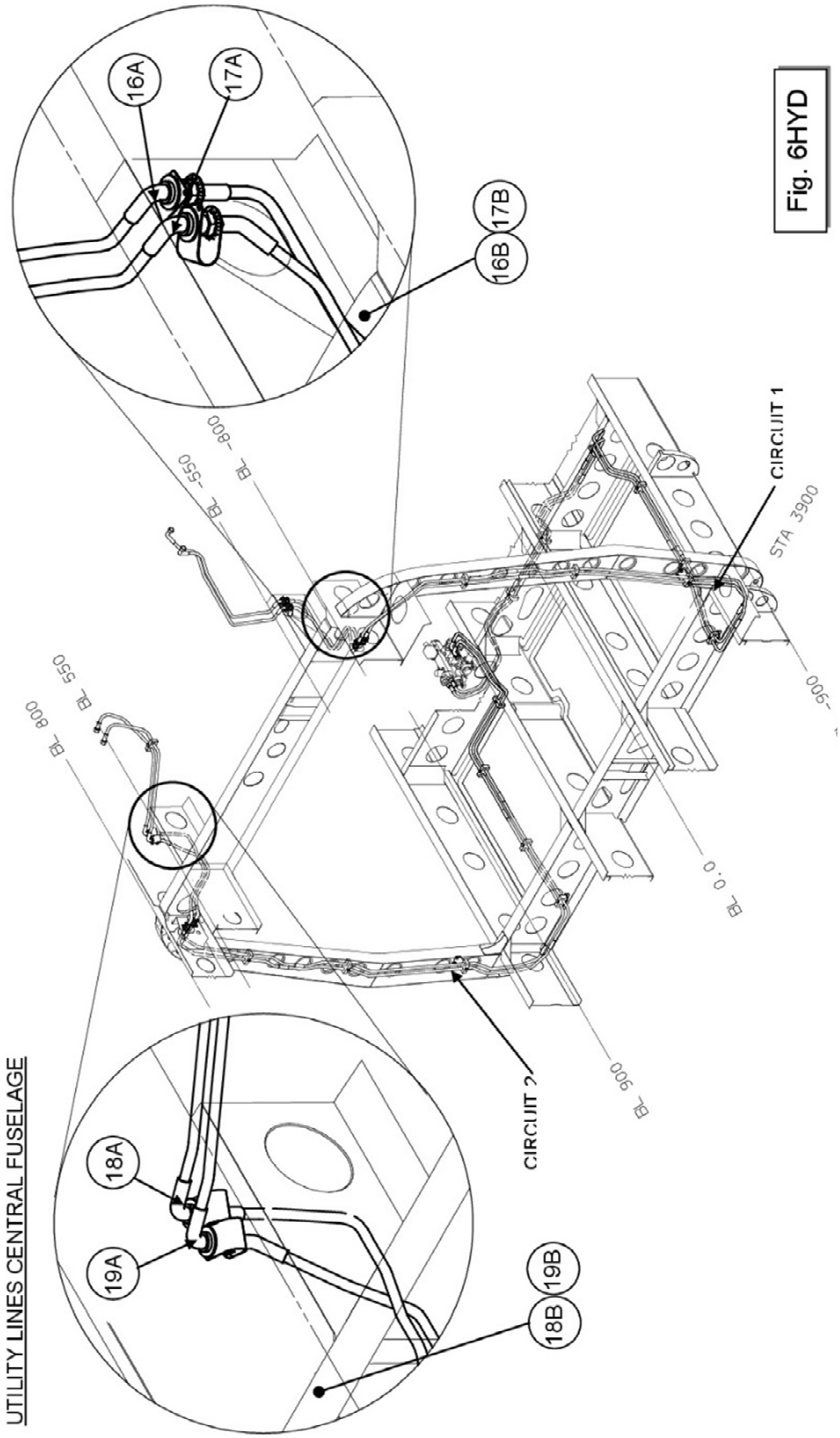


Fig. 6HYD
16A
17A
16B
17B
BL 800
BL 550
CIRCUIT 1
STA 3900
BL 900
BL 0.0
BL 550
BL 800
CIRCUIT 2
BL 900
18A
19A
18B
19B
UTILITY LINES CENTRAL FUSELAGE

FIGURE - 6HYD

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Please send to the following address: **LEONARDO S.p.A.** **CUSTOMER SUPPORT & SERVICES - ITALY** **PRODUCT SUPPORT ENGINEERING & LICENSES DEPT.** Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988	**SERVICE BULLETIN COMPLIANCE FORM**	Date:
	Number:	
	Revision:	

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

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

Remarks:

Information:

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