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AgustaWestland Products

SERVICE BULLETIN

N° 139-455

DATE: April 27, 2017

REV. : A - June 3, 2021

TITLE

ATA 53 - TRANSMISSION DECK AND MGB REINFORCEMENT FITTINGS REPLACEMENT

REVISION LOG

Helicopters that have complied with previous issue of this Service Bulletin do not need any additional action.

Revision A is issued to:

- Add an alternative procedure to Part III (described in Annexes D and E) to replace the existing anti-torque beam structural fittings with a new serviceable one P/N 3P5333A12253;
- Insert Productive P/N 3P5333A12253M01 as an alternative to P/N 3P5333A12253;
- Update the Service Bulletin to the latest standards.

An appropriate entry should be made in the aircraft log book upon accomplishment.
If ownership of aircraft has changed, please, forward to new owner.

1. PLANNING INFORMATION

A. EFFECTIVITY

Part I

All AB/AW139 helicopters from S/N 31005 (except S/N 31007) to S/N 31157 and from S/N 41001 to S/N 41023.

All AW139 helicopters from S/N 31201 to S/N 31398 and from S/N 41201 to S/N 41293 (except S/N 41237).

Part II

All AB/AW139 helicopters (except S/N 31001 thru S/N 31011 and S/N 41237).

Part III

All AB/AW139 helicopters (except S/N 31007).

Part IV

All AB/AW139 helicopters (except S/N 31001 through S/N 31011 and S/N 41237).

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to provide all necessary instructions on how to perform the replacement of the Upper deck P/N 3P5333A01432, the MGB FWD structural fittings, the MGB anti-torque beam structural fittings, and the FWD & AFT MGB structural plates.

E. DESCRIPTION

This Service Bulletin is composed of 4 parts:

Part I provides all necessary instructions on how to replace the upper deck panel assembly with a new serviceable one P/N 3P5333A01432.

Part II provides all necessary instructions to replace the existing LH and/or RH MGB FWD structural fittings, with news serviceable ones, LH P/N 3P5333A11952 and RH P/N 3P5333A12052, in case of damaged components.

Part III provides all necessary instructions to replace the existing anti-torque beam structural fittings with a new serviceable one P/N 3P5333A12253, in case of damaged components.

Rev. A of this Service Bulletin introduces an alternative procedure to replace the the existing anti-torque beam structural fittings, as described in Annexes D and E.

Part IV provides all necessary instructions to replace any or all of the existing MGB mount plates alone, in case of damaged components.

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 the following Maintenance-Man-Hours (MMH) are deemed necessary:

Part I

approximately three hundred and twenty (320) MMH;

Part II

approximately one hundred and twenty (120) MMH (LH+RH);

Part III:

approximately eighty (80) MMH (LH+RH);

Part IV:

approximately fifty (50) MMH (all plates).

Maintenance-Man-Hours are based on hands-on time and can change with personnel and facilities available

H. WEIGHT AND BALANCE

N.A.

I. REFERENCES

1) PUBLICATIONS

Following Data Modules refer to AMP

DATA MODULE		DESCRIPTION	PART
DM01	39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	All
DM02	39-A-71-11-07-00A-520A-A	Forward sliding fairing - Remove procedure	I
DM03	39-A-63-20-00-00A-520A-A	Main gearbox group Remove procedure	I
DM04	39-A-63-32-01-00A-520A-A	Forward left fitting Remove procedure	I
DM05	39-A-63-32-02-00A-520A-A	Aft left fitting Remove procedure	I
DM06	39-A-63-32-03-00A-520A-A	Forward right fitting Remove procedure	I
DM07	39-A-63-32-04-00A-520A-A	Aft right fitting Remove procedure	I
DM08	39-A-12-12-10-00A-228A-A	Number 1 PCM Drain other liquids	I
DM09	39-A-29-11-01-00A-520A-A	Number 1 PCM Remove procedure	I
DM10	39-A-12-12-09-00A-228A-A	Number 2 PCM Drain other liquids	I
DM11	39-A-29-12-01-00A-520A-A	Number 2 PCM Remove procedure	I
DM12	39-A-29-12-04-00A-520A-A	Tail shutoff valve Remove procedure	I
DM13	39-A-29-21-01-00A-520A-A	Electric pump Remove procedure	I
DM14	39-A-29-21-04-00A-520A-A	Pulsation dampener Remove procedure	I
DM15	39-A-12-12-12-00A-228A-K	Integrated ECS Drain other liquids	I
DM16	39-A-21-90-25-00A-520A-K	High pressure switch MT19 Remove procedure	I
DM17	39-A-21-90-17-00A-520A-K	Number 1 fluid reservoir and filter Remove procedure	I
DM18	39-A-21-90-13-00A-520A-K	High pressure switch MT20 Remove procedure	I
DM19	39-A-21-90-18-00A-520A-K	Number 2 fluid reservoir and filter Remove procedure	I

DATA MODULE		DESCRIPTION	PART
DM20	39-A-21-90-19-00A-520A-K	Number 1 cabin fan Remove procedure	I
DM21	39-A-21-90-20-00A-520A-K	Number 2 cabin fan Remove procedure	I
DM22	39-A-21-90-23-00A-520A-K	Cabin flapper valve Remove procedure	I
DM23	39-A-21-90-24-00A-520A-K	Temperature switch S94 Remove procedure	I
DM24	39-A-21-90-21-00A-520A-K	Cabin evaporator assembly Remove procedure	I
DM25	39-A-21-90-22-00A-520A-K	Compressor (compressor pack) Remove procedure	I
DM26	39-A-21-90-04-00A-520A-K	Resistor group Remove procedure	I
DM27	39-A-21-90-27-00A-520A-K	Condenser assembly Remove procedure	I
DM28	39-A-67-13-09-00A-520A-A	Bellcrank M7-M8 Remove procedure	I
DM29	39-A-67-13-14-00A-520A-A	Bellcrank M5-M6 Remove procedure	I
DM30	39-A-67-13-06-00A-520A-A	Bellcrank M2-M3 Remove procedure	I
DM31	39-A-67-13-04-00A-520A-A	Bellcrank M1-M2 Remove procedure	I
DM32	39-A-63-11-01-00A-520A-A	Number 1 torque tube Remove procedure	I
DM33	39-A-63-12-01-00A-520A-A	Number 2 torque tube Remove procedure	I
DM34	39-A-71-11-00-030-941A-A	Forward cowling instl	I
DM35	39-A-53-10-00-00A-31AF-A	Forward section - MGB fitting reinforcements Detailed inspection	I
DM36	39-A-53-10-00-00A-31AB-A	Forward section - Anti-torque beam attachment structure Detailed inspection	I
DM37	39-A-53-10-00-00A-31AG-A	Forward section - MGB antitorque beam reinforcements Detailed inspection	I
DM38	39-A-63-12-01-00A-720A-A	Number 2 torque tube Install procedure	I
DM39	39-A-63-11-01-00A-720A-A	Number 1 torque tube Install procedure	I

DATA MODULE		DESCRIPTION	PART
DM40	39-A-67-13-04-00A-720A-A	Bellcrank M1-M2 Install procedure	I
DM41	39-A-67-13-06-00A-720A-A	Bellcrank M2-M3 Install procedure	I
DM42	39-A-67-13-14-00A-720A-A	Bellcrank M5-M6 Install procedure	I
DM43	39-A-67-13-09-00A-720A-A	Bellcrank M7-M8 Install procedure	I
DM44	39-A-21-90-27-00A-720A-K	Condenser assembly Install procedure	I
DM45	39-A-21-90-04-00A-720A-K	Resistor group Install procedure	I
DM46	39-A-21-90-22-00A-720A-K	Compressor (compressor pack) Install procedure	I
DM47	39-A-21-90-21-00A-720A-K	Cabin evaporator assembly Install procedure	I
DM48	39-A-21-90-24-00A-720A-K	Temperature switch S94 Install procedure	I
DM49	39-A-21-90-23-00A-720A-K	Cabin flapper valve Install procedure	I
DM50	39-A-21-90-20-00A-720A-K	Number 2 cabin fan Install procedure	I
DM51	39-A-21-90-19-00A-720A-K	Number 1 cabin fan Install procedure	I
DM52	39-A-21-90-18-00A-720A-K	Number 2 fluid reservoir and filter Install procedure	I
DM53	39-A-21-90-13-00A-720A-K	High pressure switch MT20 Install procedure	I
DM54	39-A-21-90-17-00A-720A-K	Number 1 fluid reservoir and filter Install procedure	I
DM55	39-A-21-90-25-00A-720A-K	High pressure switch MT19 Install procedure	I
DM56	39-A-12-11-11-00A-218A-K	Integrated ECS Fill with other liquid	I
DM57	39-A-29-21-04-00A-720A-A	Tail shutoff valve Install procedure	I
DM58	39-A-29-21-01-00A-720A-A	Electric pump Install procedure	I
DM59	39-A-29-12-04-00A-720A-A	Tail shutoff valve Install procedure	I
DM60	39-A-29-12-01-00A-720A-A	Number 2 PCM Install procedure	I

DATA MODULE		DESCRIPTION	PART
DM61	39-A-12-11-09-00A-218A-A	Integrated ECS Fill with other liquid	I
DM62	39-A-29-11-01-00A-720A-A	Number 1 PCM Install procedure	I
DM63	39-A-12-11-08-00A-218A-A	Number 1 PCM Fill with other liquid	I
DM64	39-A-63-32-04-00A-720A-A	Aft right fitting Install procedure	I
DM65	39-A-63-32-03-00A-720A-A	Forward right fitting Install procedure	I
DM66	39-A-63-32-02-00A-720A-A	Aft left fitting Install procedure	I
DM67	39-A-63-32-01-00A-720A-A	Forward left fitting Install procedure	I
DM68	39-A-63-20-00-00A-720A-A	Main gearbox group Install procedure	I
DM69	39-A-71-11-07-00A-720A-A	Forward sliding fairing Install procedure	I

Following Data Module refers to ASRP

DATA MODULE		DESCRIPTION	PART
DM70	39-A-51-42-01-00A-720A-A	Potted blind - type inserts Install procedure	I

2) ACRONYMS & ABBREVIATIONS

AMP	Maintenance Publication
ASRP	Structural Repair Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
ECS	Environmental Control System
FH	Flight Hours
FWD	Forward
IETP	Interactive Electronic Technical Publication
IPD	Illustrated Parts Data Publication
LH	Left Hand
LHD	Leonardo Helicopters
LS	Local Supply
MGB	Main GearBox
MMH	Maintenance Man-Hours
N.A.	Not Applicable

P/N	Part Number
PCM	Power Control Module
RH	Right Hand
S/N	Serial Number
SB	Service Bulletin

3) ANNEX

Annex A	Installation and use of 3A5330G00131 tool for upper deck replacement
Annex B	Forward firewall (LH & RH) and side profiles removal
Annex C	Upper plate planarity procedure
Annex D	LH Main Gear Box Anti-torque Beam Fitting – Replacement
Annex E	RH Main Gear Box Anti-torque Beam Fitting – Replacement

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

PART I

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	3P5333A01432	3P5333A01432A1	Upper forward panel	1	.		-
2	3P5333A35751		Washer	8	.		-
3	999-5000-30-106	AW007TE-30-106	Insert	4	.		-
4	999-5000-40-216	AW007TE-40-216	Insert	16	.		-
5	NAS1149C0416R		Washer	8	.		-
6	NAS1832-08-3		Insert	8	.		-
7	NAS1832C3-3M		Insert	6	.		-
8	NAS1832C3-4M		Insert	147	.		-
9	NAS1832C4-4M		Self-locking insert	8	.		-
10	NAS1832C4-6M		insert	8	.		-
11	HL20PB-6-4		Hi-lok	34	.		-
12	HL20PB-6-5		Hi-lok	78	.		-
13	HL20PB-6-6		Hi-lok	68	.		-
14	HL20PB-6-7		Hi-lok	16	.		-
15	HL20PB-6-8		Hi-lok	26	.		-
16	HL20PB-6-9		Hi-lok	12	.		-
17	HL20PB-6-10		Hi-lok	2	.		-
18	HL20PB-6-12		Hi-lok	8	.		-
19	HL20PB-6-14		Hi-lok	2	.		-
20	HL20PB-5-3		Hi-lok	2	.		-
21	HL20PB-5-4		Hi-lok	36	.		-
22	HL20PB-5-5		Hi-lok	18	.		-
23	HL20PB-5-6		Hi-lok	22	.		-
24	HL86PB-5	HL86PB5	Collar	78	.		-
25	HL86PB-6	HL86PB6	Collar	194	.		-
26	HL75-6AW		Collar	52	.		-
27	AGS4719-405	NAS1720H4L1A	Rivet	30	.		-
28	AGS4719-407	NAS1720H4L2A	Rivet	64	.		-
29	AGS4719-409	NAS1720H4L3A	Rivet	6	.		-
30	AGS4719-411	NAS1720H4L4A	Rivet	16	.		-
31	AGS4720-407	NAS1721H4L2A	Rivet	4	.		-
32	AS46789-405	NAS1720C4L1P	Rivet	8	.		-
33	AS46789-407	NAS1720C4L2P	Rivet	308	.		-
34	AS46789-409	NAS1720C4L3P	Rivet	2	.		-
35	AS46789-512	NAS1720C5L4P	Rivet	4	.		-
36	AS46791-407	NAS1721C4L2P	Rivet	2	.		-
37	AS46791-409	NAS1721C4L3P	Rivet	2	.		-
38	MS20426AD5-6		Rivet	0.1 kg	.		-
39	MS20426AD5-7		Rivet	0.1 kg	.		-
40	MS20470AD5-6		Rivet	0.2 kg	.		-
41	MS20470AD5-7		Rivet	0.1 kg	.		-
42	MS20470AD5-9		Rivet	0.1 kg	.		-
43	MS20615-3M4R		Rivet	2	.		-
44	MS20615-4M3		Rivet	0.1 kg	.		-
45	MS20615-4M4		Rivet	0.1 kg	.		-

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
46	MS20615-4M4R		Rivet	2	.		-
47	MS20427M4-4		Rivet	0.1 kg	.		-
48	MS20426AD4-5		Rivet	0.1 kg	.		-
49	MS20426AD4-5-5		Rivet	12	.		-
50	MS20470AD4-5		Rivet	0.3 kg	.		-
51	MS20470AD4-5-5		Rivet	0.6 kg	.		-
52	MS20470AD4-6-5		Rivet	0.1 kg	.		-
53	MS20470AD4-7		Rivet	0.1 kg	.		-
54	MS20470AD5-7		Rivet	0.1 kg	.		-
55	MS20470AD5-6-5		Rivet	2	.		-
56	MS20470AD5-7-5		Rivet	0.1 kg	.		-
57	NAS1097AD4-5-5		Rivet	36	.		-
58	AS46789-512	NAS1720C5L4P	Rivet	2	.		-
59	HL20PB-5-5		Hi-lok	14	.		-
60	HL86PB-5	HL86PB5	Collar	14	.		-

PART II

NOTE

The item list indicated is for all possible damages of the MGB fittings and upper plates and could vary on condition.

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
61	3P5333A11952	3P5333A11952A3 or 3P5333A11952M01	MGB forward reinforcement	1	.		-
62	3P5333A12052	3P5333A12052A3 or 3P5333A12052M01	MGB forward reinforcement	1	.		-
63	3P5333A12352	3P5333A12352A2 or 3P5333A12352M01	FWD left upper plate	1	.		-
64	3P5333A12452	3P5333A12452A1 or 3P5333A12352A2 or 3P5333A12452M01	FWD right upper plate	1	.		-
65	HL20PB-6-4		Hi-lok	26	.		-
66	HL20PB-6-5		Hi-lok	50	.		-
67	HL20PB-6-6		Hi-lok	18	.		-
68	HL20PB-6-9		Hi-lok	4	.		-
69	HL20PB-6-10		Hi-lok	2	.		-
70	HL20PB-6-12		Hi-lok	8	.		-
71	HL20PB-6-14		Hi-lok	2	.		-
72	HL86PB-6	HL86PB6	Collar	110	.		-
73	HL20PB-5-4		Hi-lok	78	.		-
74	HL20PB-5-6		Hi-lok	30	.		-
75	HL86PB-5	HL86PB5	Collar	108	.		-
76	MS20426AD5-6		Rivet	0.1 kg	.		-
77	MS20470AD5-6		Rivet	0.2 kg	.		-
78	MS20470AD5-9		Rivet	0.1 kg	.		-
79	MS20426AD4-5		Rivet	0.1 kg	.		-
80	MS20426AD4-5-5		Rivet	12	.		-
81	MS20470AD4-5		Rivet	0.3 kg	.		-
82	MS20470AD4-5-5		Rivet	0.6 kg	.		-
83	MS20470AD4-6-5		Rivet	0.1 kg	.		-
84	MS20470AD4-7		Rivet	0.1 kg	.		-
85	MS20470AD5-7		Rivet	0.1 kg	.		-
86	MS20470AD5-6-5		Rivet	2	.		-

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
87	MS20470AD5-7-5		Rivet	0.1 kg	.		-
88	NAS1097AD4-5-5		Rivet	36	.		-
89	AS46789-512	NAS1720C5L4P	Rivet	2	.		-
90	HL20PB-5-5		Hi-lok	14	.		-
91	HL86PB-5	HL86PB5	Collar	14	.		-

PART III

NOTE

Refer to materials recalled in Annexes D and E if intentioned to perform the alternative procedure to Part III described in those annexes.

NOTE

The item list indicated is for all possible damages of the MGB fittings and upper plates and could vary on condition.

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
92	3P5333A12253	3P5333A12253A3 or 3P5333A12253M01	MGB middle reinforcement	2	.		-
93	NAS1836-3-10		Insert	4	.		-
94	HL20PB-5-4		Hi-lok	82	.		-
95	HL20PB-5-5		Hi-lok	18	.		-
96	HL20PB-5-6		Hi-lok	38	.		-
97	HL86-5	HL86PB5	Collar	138	.		-
98	HL64PB-6-5		Hi-lok	4	.	(2)	-
99	HL20PB-6-5		Hi-lok	4	.	(2)	-
100	HL87-6		Collar	4	.	(2)	-
101	HL93-6		Collar	4	.	(2)	-
102	AN3-7A		Bolt	2	.		-
103	MS20426AD4-5		Rivet	0.1 kg	.		-
104	MS20426AD4-5-5		Rivet	12	.		-
105	MS20470AD4-5		Rivet	0.3 kg	.		-
106	MS20470AD4-5-5		Rivet	0.6 kg	.		-
107	MS20470AD4-6-5		Rivet	0.1 kg	.		-
108	MS20470AD4-7		Rivet	0.1 kg	.		-
109	MS20470AD5-7		Rivet	0.1 kg	.		-
110	MS20470AD5-6-5		Rivet	2	.		-
111	MS20470AD5-7-5		Rivet	0.1 kg	.		-
112	NAS1097AD4-5-5		Rivet	36	.		-
113	AS46789-512	NAS1720C5L4P	Rivet	2	.		-
114	HL20PB-5-5		Hi-lok	14	.		-
115	HL86PB-5	HL86PB5	Collar	14	.		-

PART IV

NOTE

The item list indicated is for all possible damages of the MGB fittings and upper plates and could vary on condition.

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
116	3P5333A12352	3P5333A12352A2 or 3P5333A12452M01	FWD left upper plate	1	.		-
117	3P5333A12452	3P5333A12452A1 or 3P5333A12452A2 or 3P5333A12452M01	FWD right upper plate	1	.		-
118	3P5333A12952	3P5333A12952A1 or 3P5333A12952A2 or 3P5333A12952M01	AFT LEFT upper plate	1	.		-
119	3P5333A13052	3P5333A13052A1 or 3P5333A13052A2 or 3P5333A13052M01	AFT RIGHT upper plate	1	.		-
120	HL20PB-6-4		Hi-lok	34	.		-
121	HL20PB-6-5		Hi-lok	74	.		-
122	HL20PB-6-6		Hi-lok	68	.		-
123	HL20PB-6-7		Hi-lok	16	.		-
124	HL20PB-6-8		Hi-lok	26	.		-
125	HL20PB-6-9		Hi-lok	12	.		-
126	HL20PB-6-10		Hi-lok	2	.		-
127	HL20PB-6-12		Hi-lok	8	.		-
128	HL20PB-6-14		Hi-lok	2	.		-
129	HL86PB-6	HL86PB6	Collar	190	.		-
130	HL75-6AW		Collar	52	.		-
131	AS46789-405	NAS1720C4L1P	Rivet	2	.		-
132	AS46791-407	NAS1721C4L2P	Rivet	2	.		-
133	AS46791-409	NAS1721C4L3P	Rivet	2	.		-
134	MS20426AD5-6		Rivet	0.1 kg	.		-
135	MS20426AD5-7		Rivet	0.1 kg	.		-
136	MS20470AD5-6		Rivet	0.2 kg	.		-
137	MS20470AD5-7		Rivet	0.1 kg	.		-
138	MS20470AD5-9		Rivet	0.1 kg	.		-
139	MS20615-3M4R		Rivet	2	.		-
140	MS20615-4M3		Rivet	0.1 kg	.		-
141	MS20615-4M4		Rivet	0.1 kg	.		-
142	MS20615-4M4R		Rivet	2	.		-

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

2) CONSUMABLES

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

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
143	MMM-A-132, Type I, Class 3 199-05-002 Type II, Class 2 Code No. 900004603	Adhesive EA934NA (C054)	AR	(3)	I
144	Commercial 199-05-002 Type II, Class 3	Adhesive EA956NA (C193)	AR	(3)	I

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
	Code No. 900005009				
145	MMM-A-132, Type II, Class 2 199-05-002 Type I, Class 2 Code No. 900000581	Adhesive EA9309.3NA (C021)	AR	(3)	I
146	Commercial 199-50-002 Type I Code No. 900001557	Resin Araldit LY5138-2	AR	(3)	I
147	Commercial 199-50-002 Type II Code No. 900001558	Hardener XB5173	AR	(3)	I
148	AMS-C-9084 type VIIIB Class 1 Code No. 900005846	Glass fiber	AR	(3)	I
149	AMS-C-9084 type 3 classe 2 Code No. 900005845	Glass fiber	AR	(3)	I
150	MIL-S-8802, Type II, class B2 Code No. 900001586	Sealing Compound (Pro-seal 890) (C153)	AR	(3)	II, III, IV
151	Commercial	Silica flour (ALT Grade 2429 CP03 Glass Micro-spheres)	AR	(3)	III
152	MIL-C-81706, Class 1A, form II	Alodine 1200 (C237)	AR	(3)	II, III, IV

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

3) LOGISTIC MATRIX

N.A.

NOTES

(1) The bill of material indicated is for all possible damages of the MGB fittings and upper plates and will vary on condition.

(2) These items can be supplied to correct a possible misalignment on four holes as per Figure 5.

(3) Item to be procured as a local supply.

B. SPECIAL TOOLS

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

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
153	3A5330G00131	Positioning and drilling tool kit	1		I, II, III
154	3A5330G00159	Locking pin 5/8''	1	(B1)	IV
155	3A5330G00160	Locking pin 1/2''	4	(B1)	IV
156	RMGE-DS-06-2010-LH	Platform, LH	1		All
157	RMGE-DS-06-2010-RH	(GG-01-00)	1		All
158	3G5305G00332	Platform, RH	1		All
159	Commercial	(GG-02-00)	1	(B2)	All
160	Commercial	Sling, fwd sliding cowling lifting	1	(B2)	II

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

SPECIAL TOOLS NOTES

(B1) This item is part of the 3A5330G00131 tool kit.

(B2) Item to be procured as a local supply.

C. INDUSTRY SUPPORT INFORMATION

Configuration change.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.

b) Shape the cables in order to prevent interference with the structure and the other existing installations, using where necessary suitable lacing cords.

c) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.

d) After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.

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

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

g) Before rivet (or hi-lok) installation in places where fasteners were just removed, in accordance with the procedures reported on ASRP check hole diameter and if necessary install oversized rivets (or hi-lok).

h) The grip of the rivet and the hi-lok reported in the SB are as per design. If necessary install rivets or hi-lok with different grips.

i) Use aliphatic nafta to degrease. Cleaned surfaces shall be allowed to air dry for at least 30 minutes before bonding.

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

k) All lengths are in mm.

l) Accomplishment instructions relating to optional kit are to be performed according to helicopter's configuration.

PART I

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 and with reference to Figures 1 thru 12, gain access to the area affected by the installation.
3. In accordance with AMP DM 39-A-71-11-07-00A-520A-A, remove the forward sliding fairing.
4. In accordance with AMP DM 39-A-63-20-00-00A-520A-A, remove the main gearbox.
5. In accordance with AMP DM 39-A-63-32-01-00A-520A-A, remove the LH forward MGB fitting.
6. In accordance with AMP DM 39-A-63-32-02-00A-520A-A, remove the LH aft MGB fitting.
7. In accordance with AMP DM 39-A-63-32-03-00A-520A-A, remove the RH forward MGB fitting.
8. In accordance with AMP DM 39-A-63-32-04-00A-520A-A, remove the RH aft MGB fitting.
9. In accordance with AMP DM 39-A-12-12-10-00A-228A-A, drain the number 1 power control module.
10. In accordance with AMP DM 39-A-29-11-01-00A-520A-A, remove the number 1 power control module.
11. In accordance with AMP DM 39-A-12-12-09-00A-228A-A, drain the number 2 power control module.
12. In accordance with AMP DM 39-A-29-12-01-00A-520A-A, remove the number 2 power control module.
13. In accordance with AMP DM 39-A-29-12-04-00A-520A-A, remove the tail shutoff valve.
14. In accordance with AMP DM 39-A-29-21-01-00A-520A-A, remove the electric pump.
15. In accordance with AMP DM 39-A-29-21-04-00A-520A-A, remove the pulsation dampener.
16. In accordance with AMP DM 39-A-12-12-12-00A-228A-K, drain the ECS system.
17. In accordance with AMP DM 39-A-21-90-25-00A-520A-K, remove the high pressure switch MT19.
18. In accordance with AMP DM 39-A-21-90-17-00A-520A-K, remove the number 1 fluid reservoir and filter.
19. In accordance with AMP DM 39-A-21-90-13-00A-520A-K, remove the high pressure

switch MT20.

20. In accordance with AMP DM 39-A-21-90-18-00A-520A-K, remove the number 2 fluid reservoir and filter.
21. In accordance with AMP DM 39-A-21-90-19-00A-520A-K, remove the number 1 cabin fan.
22. In accordance with AMP DM 39-A-21-90-20-00A-520A-K, remove the number 2 cabin fan.
23. In accordance with AMP DM 39-A-21-90-23-00A-520A-K, remove the cabin flapper valve.
24. In accordance with AMP DM 39-A-21-90-24-00A-520A-K, remove the temperature switch S94.
25. In accordance with AMP DM 39-A-21-90-21-00A-520A-K, remove the cabin evaporator assembly.
26. In accordance with AMP DM 39-A-21-90-22-00A-520A-K, remove the compressor pack.
27. In accordance with AMP DM 39-A-21-90-04-00A-520A-K, remove the resistor group.
28. In accordance with AMP DM 39-A-21-90-27-00A-520A-K, remove the condenser assembly.
29. In accordance with AMP DM 39-A-67-13-09-00A-520A-A, remove the M7-M8 bellcrank.
30. In accordance with AMP DM 39-A-67-13-14-00A-520A-A, remove the M5-M6 bellcrank.
31. In accordance with AMP DM 39-A-67-13-06-00A-520A-A, remove the M2-M3 bellcrank.
32. In accordance with AMP DM 39-A-67-13-04-00A-520A-A, remove the M1-M2 bellcrank.
33. In accordance with AMP DM 39-A-63-11-01-00A-520A-A, remove the number 1 torque tube.
34. In accordance with AMP DM 39-A-63-12-01-00A-520A-A, remove the number 2 torque tube.

CAUTION

If necessary temporarily remove fire loop clamps to prevent damage.

NOTE

The removal of fasteners holding bracket that interferes with firewall assembly is allowed.

35. Remove the left front firewall assembly at STA 5760 (P/N 3P7119A00331 or 3P7119A00332) and right front firewall assembly at STA 5760 (P/N 3P7119A00431 or 3P7119A00432) by removing the existing fasteners in accordance with Annex B step 1.

NOTE

Following step is necessary to ensure the alignment of the 6 MGB fittings. Any slight adjustments needed to the alignment, must be recorded to guarantee positions on the new deck.

36. With reference to IPD 39-A-71-11-00-030-941A-A, remove the cowling rails P/N 3P7110A12351. Keep it for later re-use.
37. Remove the remaining profiles and framings on the transmission deck in accordance with Annex B step 2.
38. In accordance with Annex A step 1 and with reference to Figure A2 and A3, install the positioning and drilling tool MGB upper deck fittings P/N 3A5330G00131 on the upper deck and pin all positions. Keep the tool locked in place during the first steps of fastener removal of the deck.

CAUTION

The removal at the same time of upper deck panel and lower panel P/N 3P5333A01831 is NOT allowed.

NOTE

Before the removal of the lower panel P/N 3P5333A01831, all harnesses, hydraulic lines or equipment fastened to the top side must be unclamped or unfastened.

39. With reference to Figure 2, remove the lower panel P/N 3P5333A01831 from the ceiling of the cabin. Keep it for later re-use.
40. With reference to Figure 3, remove all rivets keeping the deck fastened to the aircraft, surrounding the upper plates and the anti-torque beam structural fittings.

CAUTION

Do not remove any fasteners securing the upper plates, and MGB structural fittings at this time.

NOTE

Prior to fastener removal of the upper plates and MGB structural fittings, temporarily fasten the deck in the locations of the rivets removed using clecos.

41. Remove the tool from the deck keeping the legs fastened to the central beam by means of a hoist and sling, removing only the locking pins securing the tool to the structure.

CAUTION

The alignment tool needs to stay locked into the positions found with Annex A step 1, for later re-use. DO NOT BREAK TORQUE on any fasteners of the tool while it is off the aircraft structure.

42. With reference to Figure 11 view Z, remove n°12 rivets P/N MS20470AD5-6, n°2 rivets P/N MS20426AD5-6, n°6 rivets P/N MS20470AD5-9, n°25 hi-lok P/N HL20PB-6-5, n°2 hi-lok P/N HL20PB-6-9, n°1 hi-lok P/N HL20PB-6-10, n°13 hi-lok P/N HL20PB-6-4, n°9 hi-lok P/N HL20PB-6-6, n°1 hi-lok P/N HL20PB-6-14, n°4 hi-lok P/N HL20PB-6-12 and n°55 collars P/N HL86PB-6.

NOTE

Remove the layer of sealant present on the faying surface of the right upper plate. Soften the sealant with mild heat and remove the upper plate with a scraper.

CAUTION

Be careful not to damage the skin underneath.

43. With reference to Figure 11, remove the right upper plate P/N 3P5333A12452 from the aircraft.
44. If the plate needs to be replaced due to damage, such as corrosion, do not discard the plate at this time. The replacement of this plate will be in accordance with Part IV of this SB. Thoroughly clean the surface of excess sealant or other contaminants around the n°3 bolt hole locations to allow an accurate depth measurement for Part IV of the SB.
45. Repeat steps 42 thru 44 for the FWD Left upper plate P/N 3P5333A12352.
46. With reference to Figure 12 view AB, remove n°13 rivets P/N MS20470AD5-7, n°9 rivets P/N MS20470AD5-6, n°5 hi-loks P/N HL20PB-6-6, n°4 hi-loks P/N HL20PB-6-7, n°13 hi-loks P/N HL20PB-6-8, n°4 hi-loks P/N HL20PB-6-9, n°12 hi-loks P/N HL20PB-6-5, n°4 hi-loks P/N HL20PB-6-7, n°20 hi-loks P/N HL20PB-6-6, n°4 hi-loks P/N HL20PB-6-4 and respective n°22 collars P/N HL75-6AW and n°44 collars P/N HL86PB-6.
47. With reference to Figure 12 view AB, remove the indicated hi-loks to prevent interference during subsequent counter-drilling operations.

NOTE

Remove the layer of sealant present on the faying surface of the right upper plate. Soften the sealant with mild heat and remove the upper plate with a scraper.

CAUTION

Be careful not to damage the skin underneath.

48. With reference to Figures 4 and 12, remove the AFT left upper plate P/N 3P5333A12952 from the aircraft.
49. If the plate needs to be replaced due to damage, such as corrosion, do not discard the plate at this time. The replacement of this plate will be in accordance with Part IV of this SB. Thoroughly clean the surface of excess sealant or other contaminants around the n°4 bolt hole locations to allow an accurate depth measurement for Part IV of the SB.
50. Repeat steps 46 thru 49 for AFT right upper plate P/N 3P5333A13052.
51. With reference to Figure 4, remove the upper forward panel P/N 3P5333A01431, with the following procedure.
    51.1 The upper sheet skins, LH P/N 3P5330A13551 and RH P/N 3P5330A13651, will need to be de-riveted, as needed, to get access to the upper deck skin overlap.

NOTE

The complete removal of one of upper sheet skins, either LH or RH, to allow easier removal and installation of the upper deck and avoid damage to the upper sheet skins, is allowed.

    51.2 With temporary fasteners still in place as described in step 40, loosen the sealant from all faying surfaces, using scrapper and heat.
    51.3 Remove clecos and continue to break faying surfaces free, until there is some movement of the upper deck.
    51.4 As soon as significant movement is present, re-install the ceiling panel P/N 3P5333A01831 by means of clecos.
    51.5 Carefully remove the upper deck off the aircraft.

CAUTION

The removal at the same time of upper deck panel and lower panel P/N 3P5333A01831 is NOT allowed.

52. Clean off all residual sealant from all the faying surfaces, so that the areas can be inspected for damage.
53. Any nicks or scratches on the longerons or top faces of the structural fittings, must be cleaned to the bare metal surrounding the damage, to get an accurate assessment of

damage.

NOTE

Nicks and scratches within 10% of the material thickness can be blended out. Immediately report any damages beyond these damage criteria to Leonardo Helicopters.

54. In accordance with AMP DM 39-A-53-10-00-00A-31AF-A, preform a detailed inspection of the 4 main gearbox reinforcement fittings.
55. In accordance with AMP DM 39-A-53-10-00-00A-31AB-A and AMP DM 39-A-53-10-00-00A-31AG-A, preform a detailed inspection of the 2 main gearbox anti-torque beam reinforcements.
56. With reference to Figure 13, the new deck must be fit to the aircraft, and the 6 MGB fitting hole locations must be marked with the following procedure:
    - 56.1 Create a plexiglass template on the aircraft, of one of the anti-torque beam fittings, making sure to trace out the shape and bore locations, while picking up fastener points.
    - 56.2 Check that this template fits the fitting on the opposite side fitting as well.
    - 56.3 Place this template on the new deck and find the center of the two bore cutout locations and mark those locations on the deck.
    - 56.4 Drill Ø25.4 holes at all 4 locations.
    - 56.5 Place the new deck on the aircraft, and ensure that the central bores are fully visible in the 4 hole locations created.
    - 56.6 Use the marker bushing P/N 3A5330G00169 and pin it in place at one of the 4 anti-torque beam bore locations, using locking pins P/N 3A5330G00159.
    - 56.7 Trace the perimeter of the bushing to the deck to mark the cutout to the deck skin needed in this location.
    - 56.8 Repeat steps 56.6 - 56.7 for the other 3 anti-torque beam bore locations.
    - 56.9 Remove the deck off the aircraft and cutout the 4 x 63.5 holes for the anti-torque beam locations.
    - 56.10 Place the deck back on the aircraft and make sure that the deck is sitting properly on the structural longerons, now that the anti-torque beam bosses are cut out.
    - 56.11 Position the 4 upper plates removed and cleaned previously, onto the clean new deck and counter-drill a couple holes for these plates through the new deck
    - 56.12 Temporarily fasten the upper plates with clecos to the new deck.
    - 56.13 Hoist the positioning and drilling tool MGB upper deck fittings P/N 3A5330G00131, onto the aircraft.

56.14 Lock the tool into place at the 4 anti-torque beam bosses by means of locking pins P/N 3A5330G00159 and barrel nuts P/N 3A5330G00161, and at the LH and RH AFT most hole positions available on the engine deck by means of locking pins P/N 3A5330G00160.

56.15 The remaining 12 hole locations of the tool are to be marked on the new deck, using reamer bushing 3A5330G00163-1 for the 12.74 holes and reamer bushing 3A5330G00162-2 for the 15.91 hole.

56.16 Remove the tool, upper plates and the new deck off the aircraft structure and complete drilling of marked holes to Ø12.73÷12.74 and Ø15.90÷15.91 as required.

57. Place the new deck back on the aircraft, temporarily fasten the 4 upper plates.

58. In accordance with Annex A step 1, locate the positioning and drilling tool P/N 3A5330G00131 and pin it at all structural mounts and anti-torque beam mounts.

CAUTION

Be careful not to damage the holes on the structural reinforcement underneath the deck.

59. With reference to Figure 3, Figure 11 view Z and Figure 12, counter drill all accessible fastener holes in accordance with the existing holes on the structural reinforcements and longerons underneath the deck.

60. Remove the new deck, with holes drilled out, off the aircraft and bring it to a sheet metal shop for rework.

61. With reference to Figure 7 thru 9, rework P/N 3P5333A01432 as described in the following procedure:

NOTE

The use of a sheet of Plexiglass (Mylar or Lexan) to transfer the locations of all holes not present on the new upper deck panel is allowed. Any unused inserts or cut outs on the existing deck do not need to be transferred to the new deck.

CAUTION

Be careful not to damage the external skin (ref. step 61.1).

61.1 With reference to Figure 7 detail G and section Q-Q and with reference to position of previously removed upper deck panel, perform the cut out on the upper deck panel P/N 3P5333A01432 through internal skin and honeycomb core without damaging external skin.

61.2 With reference to Figure 7 Section Q-Q, apply adhesive EA934NA to fill the cut-

out edge.

61.3 With reference to Figure 7 Section Q-Q, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.4 With reference to Figure 7 Section Q-Q, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.5 With reference to Figure 7 detail G and section Q-Q, drill hole Ø 50 and n°6 holes Ø5.23÷5.35.

CAUTION

Be careful not to damage the external skin (ref. step 61.6).

61.6 With reference to Figure 7 section J-J and with reference to position on previously removed upper deck panel, perform indicated cut out on the upper deck panel P/N 3P5333A01432 thru skin and honeycomb core without removing external skin.

61.7 With reference to Figure 7 section J-J, apply adhesive EA934NA to fill the cut-out edge.

61.8 With reference to Figure 7 section J-J, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.9 With reference to Figure 7 section J-J, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.10 With reference to Figure 7 section J-J, drill hole Ø50, n°6 holes Ø5.23÷5.35.

61.11 With reference to Figure 6 view E and Figure 7 section J-J, drill n°2 holes Ø 33.20÷33.46 and n°8 holes Ø3.12÷3.38.

CAUTION

Be careful not to damage the external skin (ref. step 61.12).

61.12 With reference to Figure 9 section U-U and section V-V and with reference to position on previously removed upper deck panel, perform the indicated cut out on the upper deck panel P/N 3P5333A01432 thru skin and honeycomb core without removing external skin.

61.13 With reference to Figure 9 section U-U and section V-V, apply adhesive EA934NA to fill the cut-out edge.

61.14 With reference to Figure 9 section U-U and section V-V, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.15 With reference to Figure 9 section U-U and section V-V, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.16 With reference to Figure 8, drill n°8 holes Ø5.

CAUTION

Be careful not to damage the external skin (ref. step 61.17).

61.17 With reference to Figure 7 section H-H and with reference to position on previously removed upper deck panel, perform the indicated cut out on the upper deck panel P/N 3P5333A01432 thru skin and honeycomb core without removing external skin.

61.18 With reference to Figure 7 section H-H, apply adhesive EA934NA to fill the cut-out edge.

61.19 With reference to Figure 7 section H-H, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.20 With reference to Figure 7 section H-H, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.21 With reference to Figure 7 section H-H, drill hole Ø52.25÷52.51.

61.22 With reference to Figure 6, drill n°4 holes Ø4.62÷4.88.

CAUTION

Be careful not to damage the external skin (ref. step 61.23).

61.23 With reference to Figure 6 with reference to position on previously removed upper deck pane l, perform the cut out on the upper deck panel P/N 3P5333A01432 through internal skin and honeycomb core without removing external skin.

61.24 With reference to Figure 6, apply adhesive EA934NA to fill the cut-out edge.

61.25 With reference to Figure 6, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.26 With reference to Figure 6, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.27 With reference to Figure 6, drill n°2 holes Ø30.96÷31.22, n°4 holes Ø3.12÷3.38, n°2 holes Ø42.47÷42.73 and n°4 holes Ø3.87÷4.13.

CAUTION

Be careful not to damage the external skin (ref. step 61.28).

61.28 With reference to Figure 7 detail K and detail F and with reference to positions on previously removed upper deck, perform the indicated cut out on the upper deck panel P/N 3P5333A01432 through internal skin and honeycomb core without removing external skin.

61.29 With reference to Figure 7 detail K and detail F, apply adhesive EA934NA to fill the cut-out edge.

61.30 With reference to Figure 7 detail K and detail F, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.31 With reference to Figure 7 detail K and detail F, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.32 With reference to Figure 7 detail K and detail F, drill n°2 holes Ø50 and n°10 holes Ø5.23÷5.35.

61.33 With reference to Figure 6 and Figure 9 section N-N and with reference to positions on previously removed upper deck, perform the indicated cut-out on the upper deck panel P/N 3P5333A01432 through internal skin, honeycomb core and external skin.

61.34 With reference to Figure 6 and Figure 9 section N-N, apply adhesive EA934NA to fill the cut-out edge.

61.35 With reference to Figure 6 and Figure 9 section N-N, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of

XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.36 With reference to Figure 6 and Figure 9 section N-N, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.37 With reference to Figure 6, Figure 8 and Figure 9 section X-X and with reference to positions on previously removed upper deck, perform the indicated cut-out on the upper deck panel P/N 3P5333A01432 through internal skin, honeycomb core and external skin.

61.38 With reference to Figures 6, 8 and Figure 9 section X-X, apply adhesive EA934NA to fill the cut-out edge.

61.39 With reference to Figure 6, Figure 8 and Figure 9 section X-X, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.40 With reference to Figure 6, Figure 8 and Figure 9 section X-X, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

CAUTION

Be careful not to damage the external skin (ref. step 61.41).

61.41 With reference to Figure 6 and Figure 7 detail M and section L-L and with reference to position on previously removed upper deck, perform the indicated cut-out on the upper deck panel P/N 3P5333A01432 through internal skin, honeycomb core without removing external skin.

61.42 With reference to Figure 6 and Figure 7 detail M and section L-L, apply adhesive EA934NA to fill the cut-out edge.

61.43 With reference to Figure 6 and Figure 7 detail M and section L-L, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.44 With reference to Figure 6 and Figure 7 detail M and section L-L, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.45 With reference to Figure 6 and Figure 7 detail M and section L-L, drill hole Ø12.8 and n°3 holes Ø5.2.

CAUTION

Be careful not to damage the external skin (ref. step 61.46).

61.46 With reference to Figure 8 near STA5700 and with reference to position on previously removed upper deck, perform the indicated cut-out on the upper deck panel P/N 3P5333A01432 through internal skin, honeycomb core without removing external skin.

61.47 With reference to Figure 8 near STA5700, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate to the Araldit LY5138-2 resin + XB5173 hardener.

61.48 With reference to Figure 8 near STA5700, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.49 With reference to Figure 8 near STA5700, drill n°2 holes Ø42.47÷42.73 and n°8 holes Ø3.87÷4.13.

CAUTION

Be careful not to damage the external skin (ref. step 61.50).

61.50 With reference to Figure 8 near STA5700, and with reference to position on previously removed upper deck, perform the indicated cut-out on the upper deck panel P/N 3P5333A01432 through internal skin, honeycomb core without removing external skin.

61.51 With reference to Figure 8 near STA5700, prepare a compound mixing n°100 parts by weight of Araldit LY5138-2 resin and n°23 parts by weight of XB5173 hardener.

NOTE

EA956NA or EA9309.3NA can be used as an alternate
to the Araldit LY5138-2 resin + XB5173 hardener.

61.52 With reference to Figure 8 near STA5700, apply n°2 layers of fiberglass soaked with the previously prepared compound; let adhesive cure.

61.53 With reference to Figure 8 near STA5700, drill n°2 holes Ø42.47÷42.73, n°8 holes Ø3.87÷4.13, hole Ø16.66÷16.82 and n°4 holes Ø3.12÷3.38.

61.54 With reference to Figure 8, drill n°12 insert holes Ø9.50÷9.60 in the indicated locations.

61.55 In accordance with ASRP DM 39-A-51-42-01-00A-720A-A and with reference to Figure 6, Figure 8 and the Table of Figure 10, install n°4 inserts P/N 999-5000-40-216, n°4 inserts P/N 999-5000-40-208 and n°4 inserts P/N 999-5000-30-106 by means of EA934NA adhesive.

61.56 With reference to Figure 6, Figure 8 and Table of Figure 10, drill n°161 insert holes Ø14.25÷14.38 in the indicated locations.

61.57 In accordance with ASRP DM 39-A-51-42-01-00A-720A-A and with reference to Figure 6, Figure 8 and Table of Figure 10, install n°147 inserts P/N NAS1832C3-4M, n°6 inserts P/N NAS1832C3-3M and n°8 inserts P/N NAS1832-08-3 by means of EA934NA adhesive.

61.58 With reference to Figure 6, Figure 8 and Table of Figure 10, drill n°8 insert holes Ø17.42÷17.55 in the indicated locations.

61.59 In accordance with ASRP DM 39-A-51-42-01-00A-720A-A and with reference to Figure 6, Figure 8 and Table of Figure 10, install n°8 inserts P/N NAS1832C4-6M.

61.60 With reference to Figure 8 near BL 550 RH side and LH side, drill n°6 thru holes Ø11.42÷11.93 and n°2 holes Ø 11.25÷11.76.

61.61 With reference to Figure 8 near BL 550 RH side and LH side, drill n°8 thru holes Ø11.25÷11.76.

62. With reference to Figure 5, temporarily locate the previously reworked upper forward panel P/N 3P5333A01432.

63. With reference to Figure 3, Figure 11 view Z and Figure 12, install all accessible rivets, hi-loks and collars in correspondence of previously drilled holes on the upper deck structural reinforcements, longerons and upper plates.

CAUTION

The removal at the same time of upper deck panel and
lower panel P/N 3P5333A01831 is NOT allowed.

64. With reference to Figure 2, remove the ceiling panel P/N 3P5333A01831.

65. Get access from bottom and install the remaining rivets, hi-loks and respective collars.
66. Remove the positioning and drilling tool.
67. With reference to Figure 3, Figures 11 view Z and 12, install all the remaining rivets.
68. Install the left front firewall assembly at STA 5760 P/N 3P7119A00331 and right front firewall assembly at STA 5760 P/N 3P7119A00431 by means of rivets P/N MS20615-4M3 and P/N MS20427M4-4.
69. In accordance with AMP DM 39-A-63-12-01-00A-720A-A install the number 2 torque tube.
70. In accordance with AMP DM 39-A-63-11-01-00A-720A-A install the number 1 torque tube.
71. In accordance with AMP DM 39-A-67-13-04-00A-720A-A install the M1-M2 bellcrank.
72. In accordance with AMP DM 39-A-67-13-06-00A-720A-A install the M2-M3 bellcrank.
73. In accordance with AMP DM 39-A-67-13-14-00A-720A-A install the M5-M6 bellcrank.
74. In accordance with AMP DM 39-A-67-13-09-00A-720A-A install the M7-M8 bellcrank.
75. In accordance with AMP DM 39-A-21-90-27-00A-720A-K install the condenser assembly.
76. In accordance with AMP DM 39-A-21-90-04-00A-720A-K install the resistor group.
77. In accordance with AMP DM 39-A-21-90-22-00A-720A-K install the compressor pack.
78. In accordance with AMP DM 39-A-21-90-21-00A-720A-K install the cabin elevator assembly.
79. In accordance with AMP DM 39-A-21-90-24-00A-720A-K install the temperature switch S94.
80. In accordance with AMP DM 39-A-21-90-23-00A-720A-K install the cabin flapper valve.
81. In accordance with AMP DM 39-A-21-90-20-00A-720A-K install the number 2 cabin fan.
82. In accordance with AMP DM 39-A-21-90-19-00A-720A-K install the number 1 cabin fan.
83. In accordance with AMP DM 39-A-21-90-18-00A-720A-K install the number 2 fluid reservoir and filter.
84. In accordance with AMP DM 39-A-21-90-13-00A-720A-K install the high pressure switch MT20.
85. In accordance with AMP DM 39-A-21-90-17-00A-720A-K install the number 1 fluid reservoir and filter.
86. In accordance with AMP DM 39-A-21-90-25-00A-720A-K install the high pressure switch MT19.
87. In accordance with AMP DM 39-A-12-11-11-00A-218A-K, fill the ECS system.
88. In accordance with AMP DM 39-A-29-21-04-00A-720A-A, install the pulsation dampener.
89. In accordance with AMP DM 39-A-29-21-01-00A-720A-A install the electric pump.
90. In accordance with AMP DM 39-A-29-12-04-00A-720A-A install the tail shutoff valve.
91. In accordance with AMP DM 39-A-29-12-01-00A-720A-A install the number 2 power control module.
92. In accordance with AMP DM 39-A-12-11-09-00A-218A-A fill with fluid the number 2 power

control module.

93. In accordance with AMP DM 39-A-29-11-01-00A-720A-A install the number 1 power control module.
94. In accordance with AMP DM 39-A-12-11-08-00A-218A-A fill with fluid the number 1 power control module.
95. In accordance with AMP DM 39-A-63-32-04-00A-720A-A install the RH aft MGB fitting.
96. In accordance with AMP DM 39-A-63-32-03-00A-720A-A install the RH forward MGB fitting.
97. In accordance with AMP DM 39-A-63-32-02-00A-720A-A install the LH aft MGB fitting.
98. In accordance with AMP DM 39-A-63-32-01-00A-720A-A install the LH forward MGB fitting.
99. In accordance with AMP DM 39-A-63-20-00-00A-720A-A install the main gearbox.
100. In accordance with AMP DM 39-A-71-11-07-00A-720A-A install the forward sliding fairing.
101. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
102. Send the attached compliance form to the following mail box:

engineering.support.lhd@leonardocompany.com

As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

PART II

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 and with reference to Figures 1 thru 12, gain access to the area affected by the installation.

NOTE

If the offset arm 3A5330G00155 is available, PCMs do not need to be removed

3. In accordance with Part I steps 3 thru 34, remove items necessary to get to the affected area of the FWD MGB fittings and anti-torque beam bosses (between STA 3725 to STA 5500).

NOTE

Before the removal of the lower panel P/N 3P5333A01831, all harnesses, hydraulic lines or equipment fastened to the top side must be unclamped or unfastened. This should be removed for ease of work but the removal is not required.

4. With reference to Figure 2, remove the lower panel P/N 3P5333A01831 from the ceiling of the cabin by removing all rivets and hi-loks. Keep it for later re-use.
5. For replacement of the LH and/or RH MGB reinforcement only (P/Ns 3P5333A11952 and 3P5333A12052), skip to step 11.
6. With reference to Figure 11 view Z, remove n°12 rivets P/N MS20470AD5-6, n°2 rivets P/N MS20426AD5-6, n°6 rivets P/N MS20470AD5-9, n°25 hi-lok P/N HL20PB-6-5, n°2 hi-lok P/N HL20PB-6-9, n°1 hi-lok P/N HL20PB-6-10, n°13 hi-lok P/N HL20PB-6-4, n°9 hi-lok P/N HL20PB-6-6, n°1 hi-lok P/N HL20PB-6-14, n°4 hi-lok P/N HL20PB-6-12 and n°55 collars P/N HL86PB-6.

NOTE

Remove the layer of sealant present on the faying surface of the right upper plate. Soften the sealant with mild heat and remove the upper plate with a scraper.

CAUTION

Be careful not to damage the skin underneath.

7. With reference to Figure 11, remove the right upper plate P/N 3P5333A12452 from the aircraft.

8. If the plate needs to be replaced due to damage, such as corrosion, do not discard the plate at this time.
9. Complete steps 1 through 5 of Annex C with replacement plate P/N 3P5333A12452A1, to mill the pad of the upper plates, prior to the installation of the plates.
10. Repeat steps 6 thru 9 for the FWD Left upper plate P/N 3P5333A12352, if needed then skip to step 12.

NOTE

Do step 11 for MGB FWD reinforcement replacements only, do not remove the all of the upper plate fasteners. Only fasteners AFT of STA 3900 and Inboard of BL 550, need to be removed.

11. With reference to Figure 11 view Z, remove n°6 rivets P/N MS20470AD5-9, n°5 hi-lok P/N HL20PB-6-5, n°2 hi-lok P/N HL20PB-6-9, n°1 hi-lok P/N HL20PB-6-10, n°2 hi-lok P/N HL20PB-6-6, n°1 hi-lok P/N HL20PB-6-14, n°4 hi-lok P/N HL20PB-6-12 and n°15 collars P/N HL86PB-6.

NOTE

Make sure to remove any harnesses, hydraulic lines or equipment that interferes with removal and installation of MGB FWD reinforcements.

12. With reference to Figure 11, remove n°17 hi-loks and their collars that attach the side of the MGB FWD reinforcement P/N 3P5333A12052 with the internal connector P/N 3P5333A11851 on the forward side of longeron P/N 3P5333A00331.
13. With reference to Figure 11, remove n°37 hi-loks and their collars that attach the side of the MGB FWD reinforcement P/N 3P5333A12052 with the external connector P/N 3P5333A11651 on the outboard side of longeron P/N 3P5333A01231.
14. With reference to Figure 11, remove the MGB FWD reinforcement P/N 3P5333A12052 and clean structural surfaces of any sealant and other contaminants.
15. With reference to Figure 11, temporarily install the removed MGB FWD P/N 3P5333A12052 to the aircraft and countermark the outline on the structure by means of a marker.
16. Remove the MGB FWD reinforcement P/N 3P5333A12052 from the aircraft.
17. Align and counterdrill the replacement fitting P/N 3P5333A12052, in accordance with Annex A step 2.
18. With reference to Figure 11, counterdrill the remaining holes on the upper, lower forward and RH side structure and remove the MGB FWD reinforcement.
19. Ensure all holes in both the right upper plate P/N 3P5333A12452 and the MGB FWD

reinforcement P/N 3P5333A12052 and fully drilled and aligned.

20. Apply Proseal 890 onto the mating surfaces of the MGB FWD reinforcement and, if being replaced, the right upper plate.
21. With reference to Figure 11, install the new MGB FWD RH reinforcement P/N 3P5333A12052 by means of n°6 rivets P/N MS20470AD5-9, n°5 hi-lock P/N HL20PB-6-5, n°2 hi-lock P/N HL20PB-6-9, n°1 hi-lock P/N HL20PB-6-10, n°2 hi-lok P/N HL20PB-6-6, n°4 hi-lock P/N HL20PB-6-12, n°1 hi-lock P/N HL20PB-6-14, n°15 collar P/N HL86PB-6, n°39 hi-lock P/N HL20PB-5-4, n°15 hi-lock P/N HL20PB-5-6, n°54 collars P/N HL86PB-5 and n°6 rivets P/N MS20470AD5-9.
22. If the right upper plate P/N 3P5333A12452 is being replaced, with reference to Figure 11, install the remaining fasteners n°12 rivets P/N MS20470AD5-6, n°2 rivets P/N MS20426AD5-6, n°20 hi-lok P/N HL20PB-6-5, n°13 hi-lok P/N HL20PB-6-4, n°7 hi-lok P/N HL20PB-6-6, and n°40 collars P/N HL86PB-6.
23. In accordance with Annex A step 3, drill and ream out to final size the strut bolt holes on the installed MGB FWD RH reinforcement P/N 3P5333A12052.
24. Repeat steps 11 thru 23 for MGB FWD LH reinforcement P/N 3P5333A11952 and LH upper plate 3P5333A12352.
25. With reference to Figure 2, re-install the lower panel P/N 3P5333A01831 on the ceiling of the cabin.
26. In accordance with Part I steps 68 thru 100, install items previously removed to get to the affected areas.
27. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
28. Send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardocompany.com

    As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

PART III

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 and with reference to Figures 1 thru 12, gain access to the area affected by the installation.
3. In accordance with Part I steps 3 thru 34, remove items necessary to get to the affected area of the anti-torque beam landing area (between STA 4955 to STA 5245).

NOTE

As an alternative to steps 4 thru 7, it is possible to perform the equivalent procedure described in Annex D and Annex E, relative to LH and RH fitting replacement.

4. Inserts will need to be installed onto the deck for the planarity rigging procedure, on the side of the MGB middle reinforcement being replaced, in accordance with the following procedure and Figure A4:
   - 4.1 Install the central beam assembly P/N 3A5330G00132 by means of locking pins P/N 3A5330G00159 (ITEM 3) and barrel nuts P/N 3A5330G00161 (ITEM 5).
   - 4.2 Using the “thumbprint” holes located in the outboard pocket on the central beam 3A5330G00132, drill Ø 3.2 holes onto the deck using a guide.
   - 4.3 Remove the pins and barrel nuts installed in step 4.1 and remove the central beam assembly off the aircraft.
   - 4.4 Install NAS1836-3-10 inserts onto the deck, in the piloted locations, in accordance with ASRP DM 39-A-51-42-01-00A-720A-A. The holes will have to be enlarged to Ø 11.51 and the inserts will be bonded by means of EA934NA adhesive.
   - 4.5 Let the inserts fully cure in place before continuing to the next step.
   - 4.6 Repeat for the opposite side if needed.
5. With reference to Figure A4, clean the paint and primer in the area around the inserts, to provide a clean, flat surface for measurements and shimming.

NOTE

The steps here are critical to ensure fitting alignment. The tool will later be used for alignment of the deck and additional structural support when the deck is off aircraft.

6. With reference to Figures 4 and 5, perform the MGB middle reinforcements P/N 3P5333A12253 replacement as described in the following procedure:
   - 6.1 In accordance with Annex A step 4, perform the planarity rigging of the positioning and drilling tool P/N 3A5330G00131.

NOTE

Removal of any lines that interfere with the fitting removal and installation is allowed. Also, remove the sump assembly under the MGB (P/N 3G3070A06331) for ease of access.

6.2 With reference to Figure 4, remove the Aft LH celling panel P/N 3P5330A00731 or Aft RH celling panel P/N 3P5330A00831 by removing its screws and washers. Retain the hardware for later reinstallation.

6.3 With reference to Figures 4 and 5, remove the MGB middle reinforcement removing n°9 hi-loks P/N HL20PB-5-5, n°19 hi-loks P/N HL20PB-5-6, n°41 P/N HL20PB-5-4 and n°69 collars P/N HL86PB-5.

NOTE

It is permitted to use a heat gun, applying a light amount of heat to soften the sealant.

6.4 With a non-metallic scrapper remove the existing sealant from the upper mating surface of the reinforcement and clean the work area of debris and contaminant.

6.5 In accordance with Annex A step 5 and with reference to Figure 4, temporarily install the new MGB middle reinforcement P/N 3P5333A12253 to confirm its alignment.

6.6 Remove the locking pins securing the central beam assembly P/N 3A5330G00132 and the AN3-7A bolts holding the shim in place, and remove the beam and shim from the aircraft.

6.7 With reference to Figure 5, drill any of the remaining holes on the MGB middle reinforcement P/N 3P5333A12253.

6.8 With reference to Figure 5, install the MGB middle reinforcement P/N 3P5333A12253A3 by means of n°9 hi-loks P/N HL20PB-5-5, n°19 hi-loks P/N HL20PB-5-6, n°41 P/N HL20PB-5-4 and n°69 collars P/N HL86PB-5.

6.9 In accordance with Annex A step 6 perform the reaming operation and final conformity check.

7. Repeat steps 6.1 thru 7 for the opposite side fitting, if that also needs to be replaced.
8. Clean off the boss surfaces of any debris and apply a protective coating of Alodine 1200, to the faces of any bosses that were touched.
9. Cover the face area of the fitting and hi-loks on the upper deck with Pro-seal 890 to prevent water ingress.
10. Cover the inserts previously installed in step 4 with Proseal 890 to prevent water ingress.
11. In accordance with Part I steps 68 thru 100, install items previously removed to get to the

affected areas.

12. Return the helicopter to flight configuration and record for compliance with Part III of this Service Bulletin on the helicopter logbook.
13. Send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardocompany.com

    As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

PART IV

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 and with reference to Figures 1 thru 12, gain access to the area affected by the installation.
3. If the plates needing replacement have already been removed in accordance with Part I of this SB, skip to step 6.
4. In accordance with Part I steps 3 thru 34, remove items necessary to get to the affected area of the 4 MGB upper plates (between STA 3725 to STA 5900).
5. For any plates needing replacement, remove them in accordance with the following steps:

   5.1 With reference to Figure 11 view Z, remove n°12 rivets P/N MS20470AD5-6, n°2 rivets P/N MS20426AD5-6, n°6 rivets P/N MS20470AD5-9, n°25 hi-lok P/N HL20PB-6-5, n°2 hi-lok P/N HL20PB-6-9, n°1 hi-lok P/N HL20PB-6-10, n°13 hi-lok P/N HL20PB-6-4, n°9 hi-lok P/N HL20PB-6-6, n°1 hi-lok P/N HL20PB-6-14, n°4 hi-lok P/N HL20PB-6-12 and n°55 collars P/N HL86PB-6.

NOTE

Remove the layer of sealant present on the faying surface of the right upper plate. Soften the sealant with mild heat and remove the upper plate with a scraper.

CAUTION

Be careful not to damage the skin underneath.

   5.2 With reference to Figure 11, remove the right upper plate P/N 3P5333A12452 from the aircraft.

   5.3 Repeat steps 5.1 thru 5.2 for the FWD Left upper plate P/N 3P5333A12352.

   5.4 For the AFT plates only, remove the left front firewall assembly P/N 3P7119A00331 and right front firewall assembly P/N 3P7119A00431 at STA 5760, as needed, by removing the existing rivets in accordance with Annex B step 1.

   5.5 With reference to Figure 12 view AB, remove n°13 rivets P/N MS20470AD5-7, n°9 rivets P/N MS20470AD5-6, n°5 hi-loks P/N HL20PB-6-6, n°4 hi-loks P/N HL20PB-6-7, n°13 hi-loks P/N HL20PB-6-8, n°4 hi-loks P/N HL20PB-6-9, n°12 hi-loks P/N HL20PB-6-5, n°4 hi-loks P/N HL20PB-6-7, n°20 hi-loks P/N HL20PB-6-6, n°4 hi-loks P/N HL20PB-6-4 and respective n°22 collars P/N HL75-6AW and n°44 collars P/N HL86PB-6.

   5.6 With reference to Figure 12 view AB, remove the indicated hi-loks to prevent

interference during subsequent counter-drilling operations.

NOTE

Remove the layer of sealant present on the faying surface of the right upper plate. Soften the sealant with mild heat and remove the upper plate with a scraper.

CAUTION

Be careful not to damage the skin underneath.

5.7 With reference to Figures 4 and 12, remove the AFT left upper plate P/N 3P5333A12952 from the aircraft.

5.8 Repeat steps 5.5 thru 5.7 for AFT right upper plate P/N 3P5333A13052.

6. Complete steps 1 through 5 of Annex C, to mill the pad of the upper plates, prior to the installation of the plates.
7. Using locking pins 3A5330G00159 and 3A5330G00160, lock in a plate to be installed, onto the deck structure. Ensure that the plates fit properly.
8. Remove the locking pins and wet the faying surface of the upper plate to be installed, with seleant (Proseal 890).
9. While wet, permanently fasten the associated upper plate with reference to the removals descirbe in step 5, Figure 11 View Z and Figure 12.
10. Ensure the flatness tolerance of the newly installed plate by completing step 6 of Annex C.
11. Repeat steps 6 through 10 for any other plates needing installation.
12. In accordance with Part I steps 68 thru 100, install items previously removed to get to the affected areas.
13. Return the helicopter to flight configuration and record for compliance with Part IV of this Service Bulletin on the helicopter logbook.
14. Send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardocompany.com

    As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

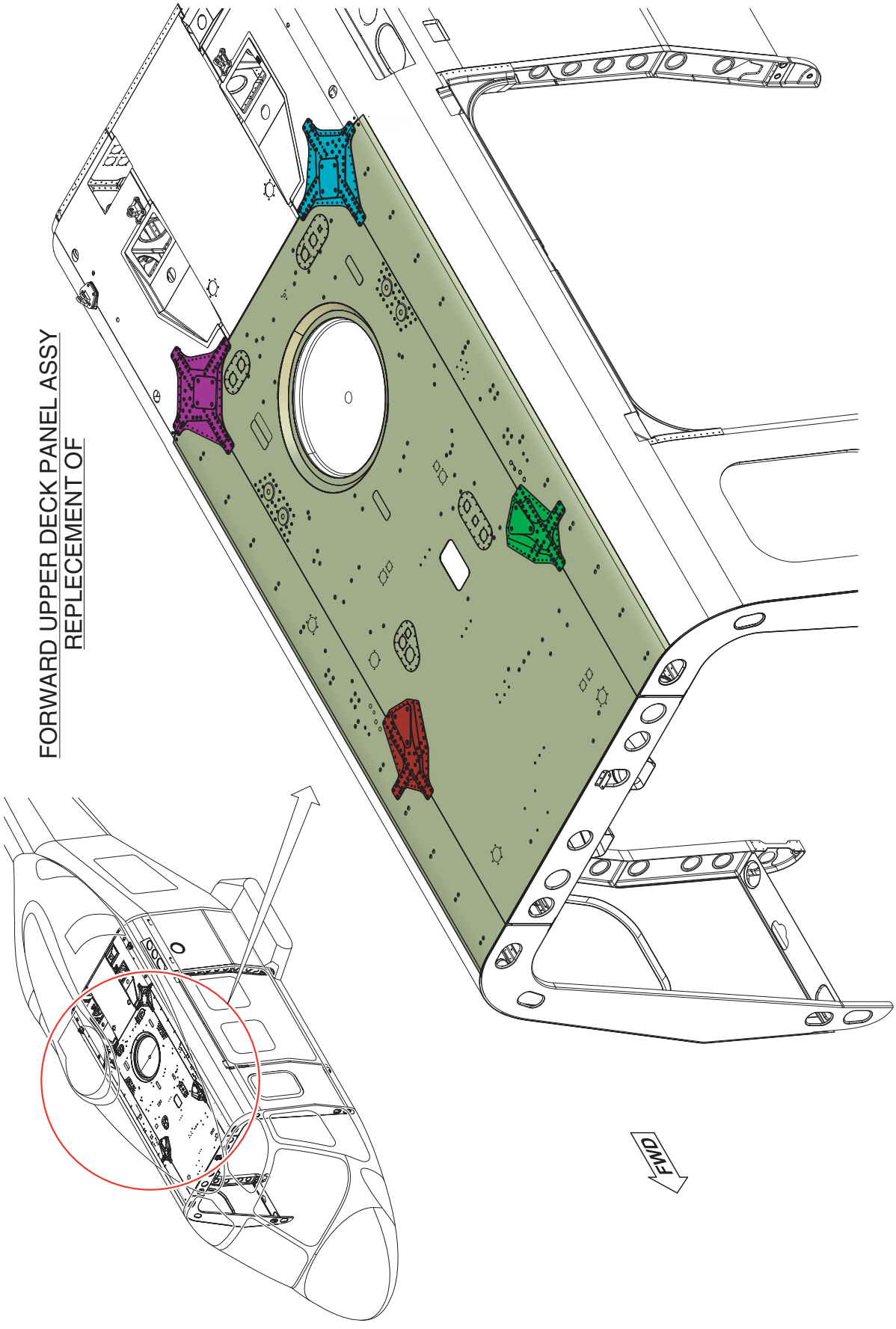
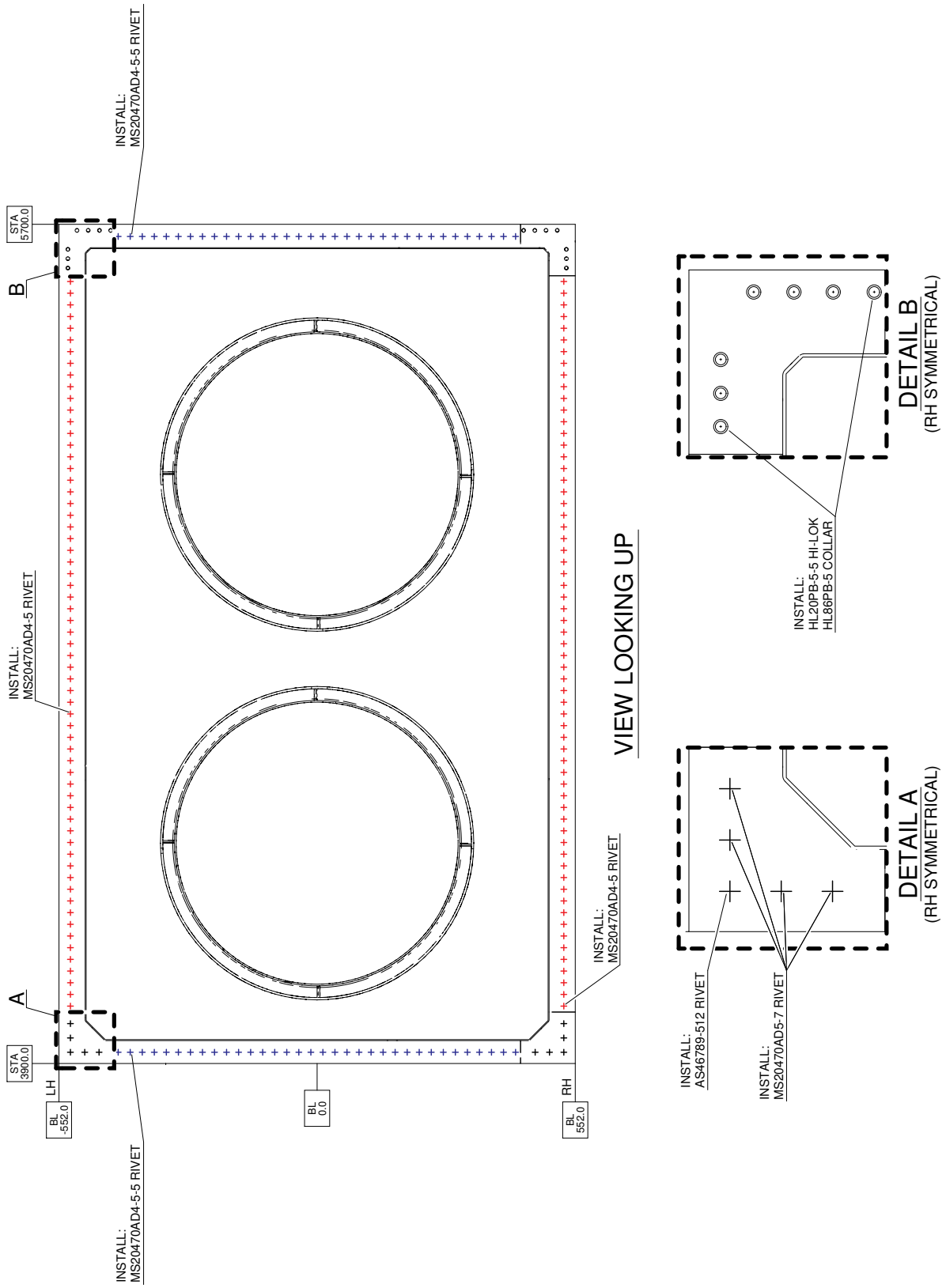


Figure 1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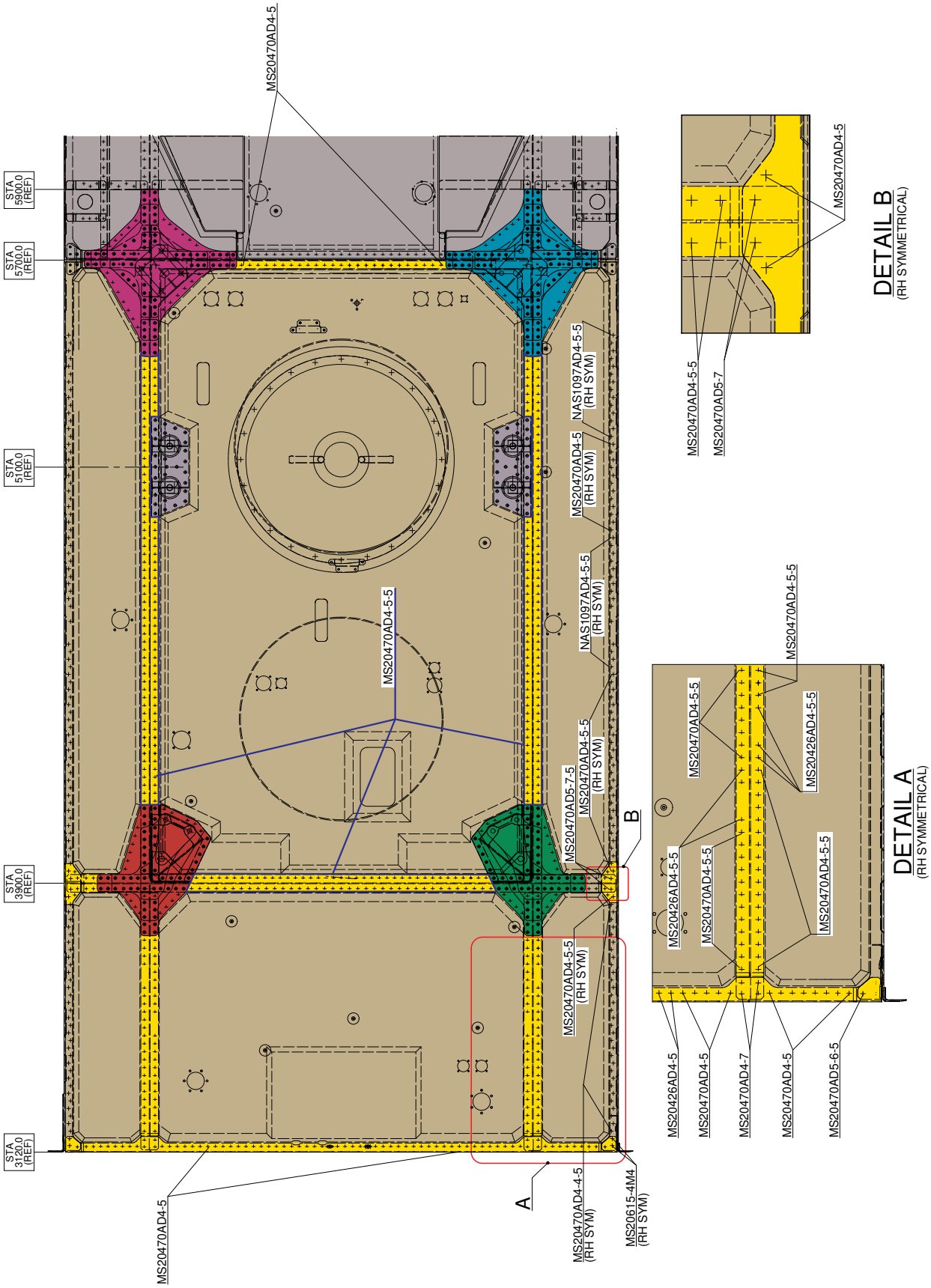
STA
5700.0
B
INSTALL:
MS20470AD4-5 RIVET
A
STA
3900.0
LH
BL
-552.0
INSTALL:
MS20470AD4-5-5 RIVET
BL
0.0
RH
BL
552.0
INSTALL:
MS20470AD4-5 RIVET
VIEW LOOKING UP
INSTALL:
HL20PB-5-5 HI-LOK
HL86PB-5 COLLAR
DETAIL B
(RH SYMMETRICAL)
INSTALL:
AS46789-512 RIVET
INSTALL:
MS20470AD5-7 RIVET
DETAIL A
(RH SYMMETRICAL)

Figure 2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STA 5100.0 (REF)
STA 3900.0 (REF)
STA 3120.0 (REF)
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NAS1097AD4-5-5 (RH SYM)
MS20470AD4-5 (RH SYM)
NAS1097AD4-5-5 (RH SYM)
MS20470AD4-5
MS20470AD5-7-5 (RH SYM)
MS20470AD4-5-5 (RH SYM)
MS20470AD4-4-5 (RH SYM)
MS20615-4M4 (RH SYM)
MS20470AD4-5
A
B
DETAIL B
(RH SYMMETRICAL)
MS20470AD4-5
MS20470AD4-5-5
MS20470AD5-7
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(RH SYMMETRICAL)
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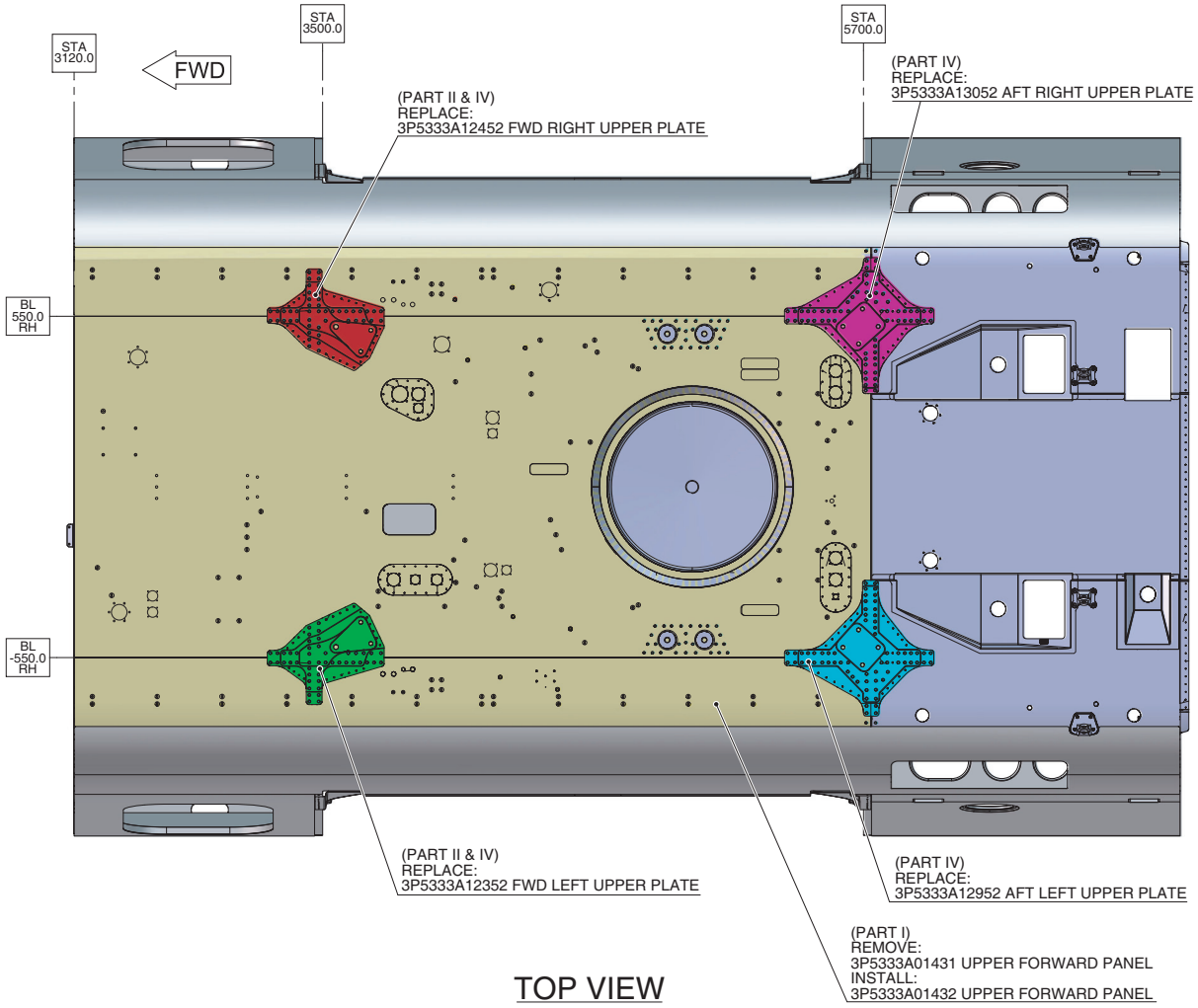
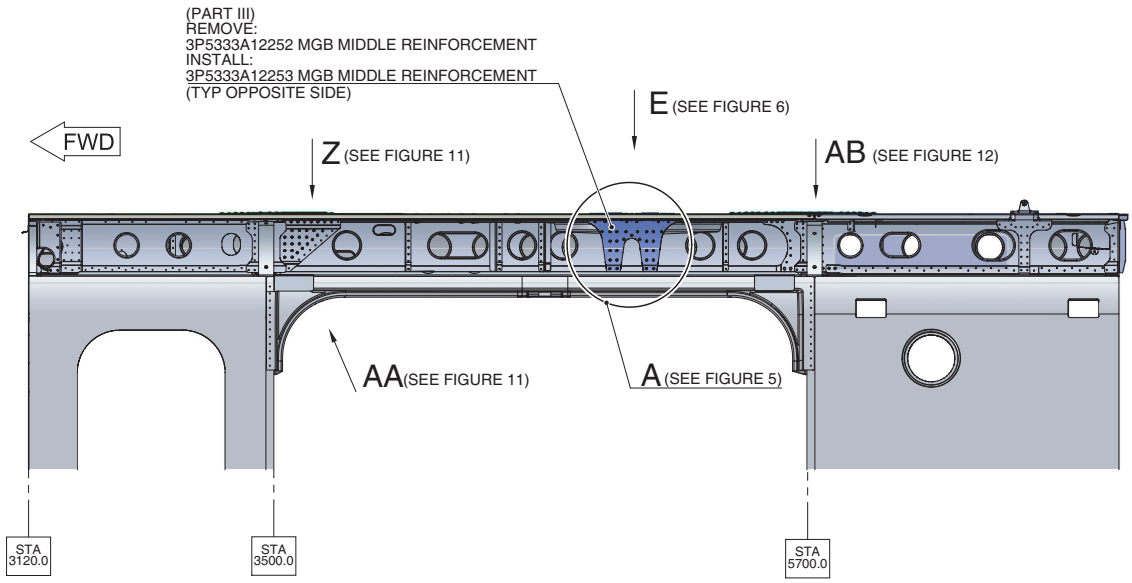
MS20470AD4-5
MS20470AD5-6-5

Figure 3

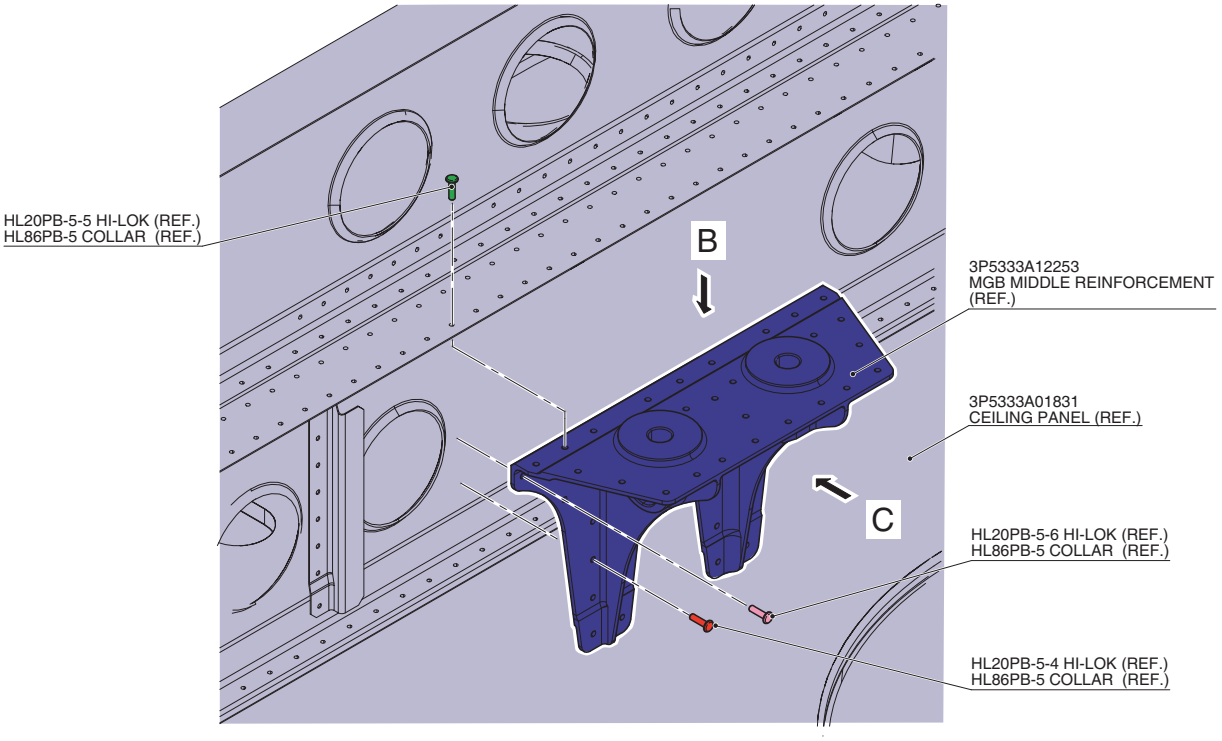


TOP VIEW

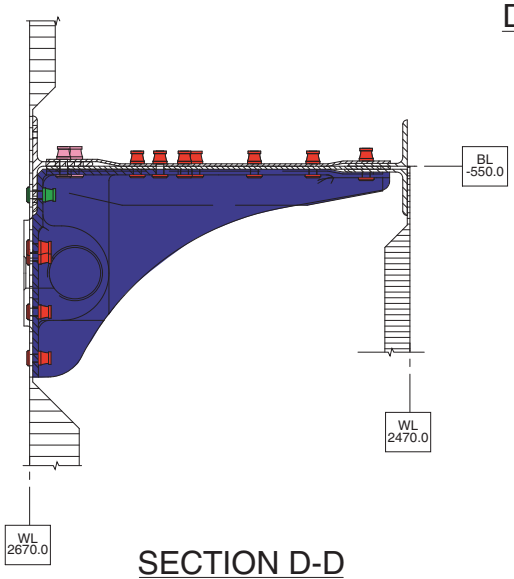


LEFT SIDE VIEW

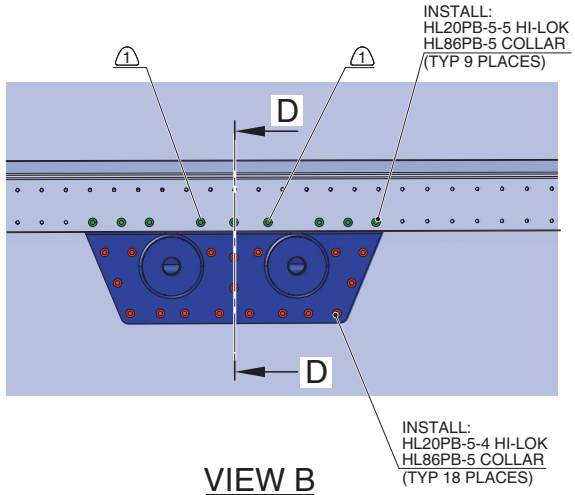
Figure 4



DETAL A



SECTION D-D
(RH SIDE SYMMETRICAL)

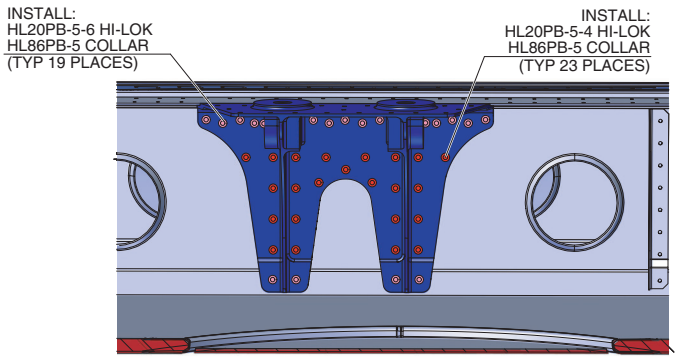


VIEW B

NOTE:

(1) HOLE MISALIGNMENT WILL OCCURE DUE TO DIFFERENCES IN HOLE LOCATION BETWEEN THE REMOVED FITTING (P/N 3P5333A12251 OR 3P5333A12252) AND THE NEW FITTING (P/N 3P5333A12253).
TO CORRECT THIS, THE FOLLOWING OVERSIZED FASTENERS ARE ALLOWED, AS LONG AS EDGE DISTANCE IS MAINTAINED:

HI-LOK	COLLAR P/N
HL64PB-6-5	HL87-6
HL220PB-6-5	HL93-6



VIEW C

Figure 5

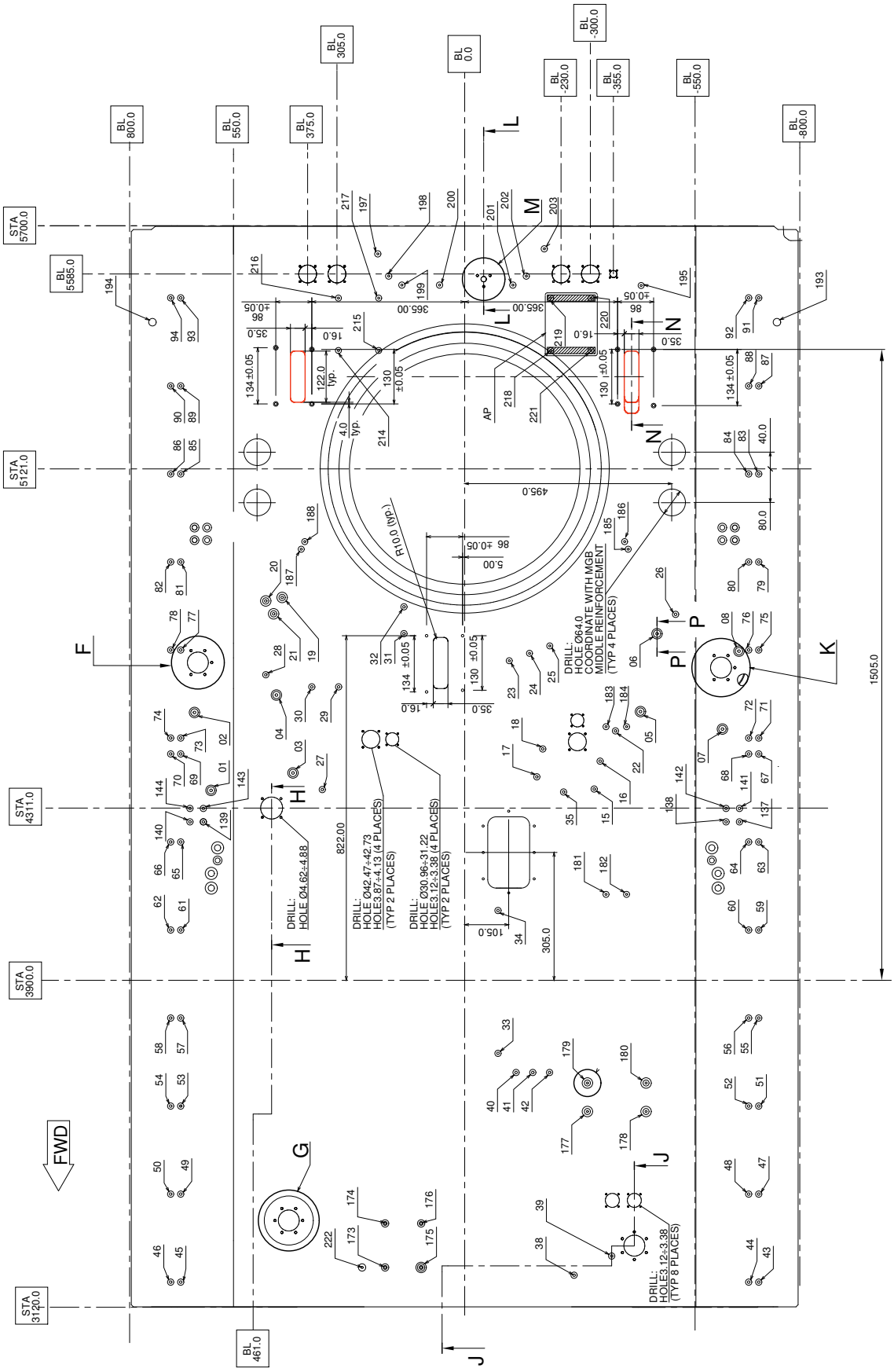

BL 800.0
BL 550.0
BL 375.0
BL 305.0
BL 0.0
BL -230.0
BL -300.0
BL -355.0
BL -550.0
BL -800.0
STA 5700.0
STA 5121.0
STA 4311.0
STA 3900.0
STA 3120.0
BL 5585.0
BL 461.0
FWD
VIEW E
1505.0
822.00
495.0
365.00
305.0
105.0
DRILL:
HOLE Ø42.47÷42.73
HOLE3.87÷4.13 (4 PLACES)
(TYP 2 PLACES)
DRILL:
HOLE Ø30.96÷31.22
HOLE3.12÷3.38 (4 PLACES)
(TYP 2 PLACES)
DRILL:
HOLE Ø64.0
COORDINATE WITH MGB
MIDDLE REINFORCEMENT
(TYP 4 PLACES)
DRILL:
HOLE Ø4.62÷4.88
DRILL:
HOLE3.12÷3.38
(TYP 8 PLACES)

Figure 6

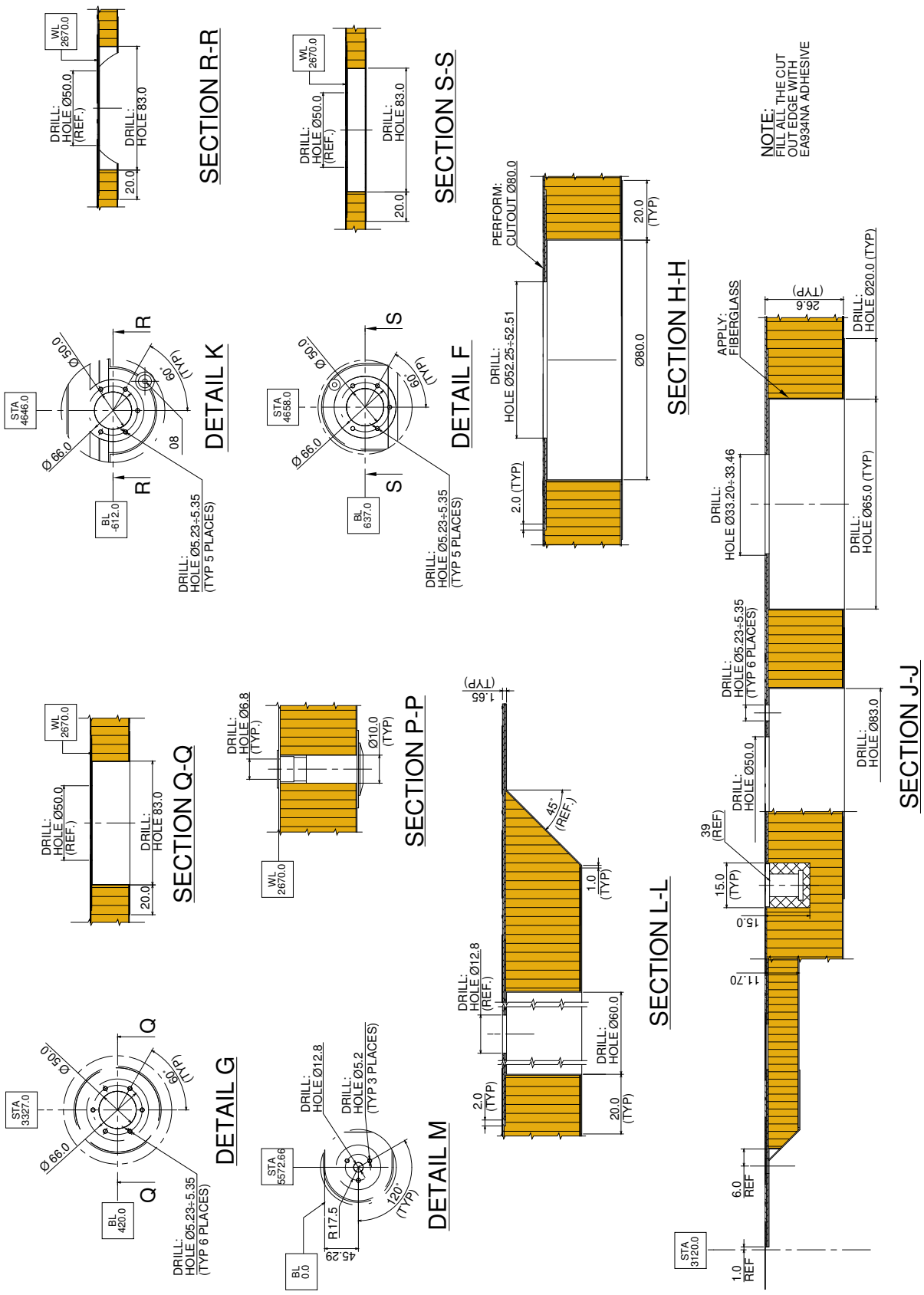

SECTION R-R
SECTION S-S
SECTION H-H
DETAIL K
DETAIL F
SECTION Q-Q
SECTION P-P
SECTION L-L
SECTION J-J
DETAIL G
DETAIL M
NOTE:
FILL ALL THE CUT OUT EDGE WITH EA934NA ADHESIVE

Figure 7

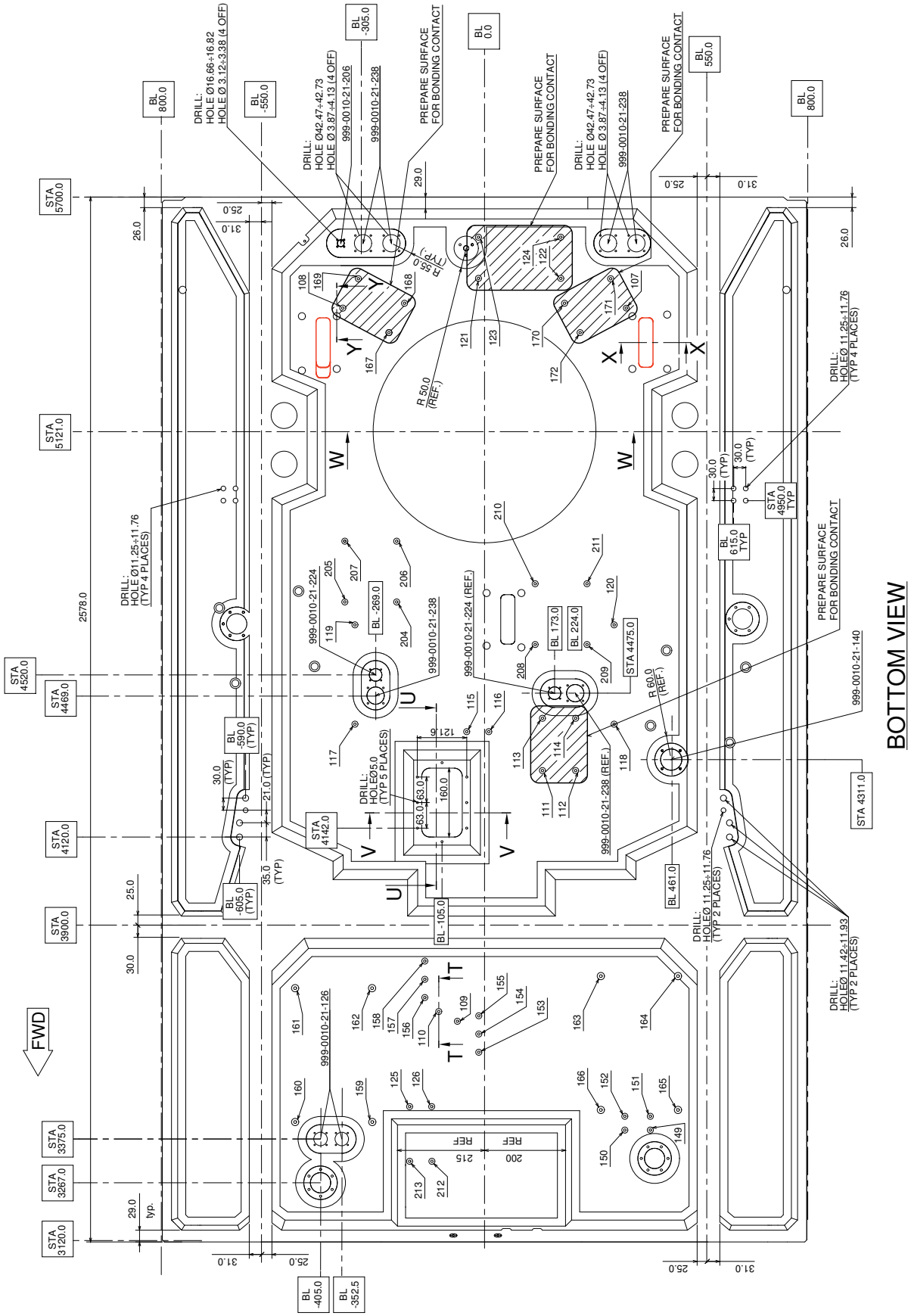

BOTTOM VIEW
FWD
DRILL: HOLE Ø16.66÷16.82 HOLE Ø 3.12÷3.38 (4 OFF)
DRILL: HOLE Ø42.47÷42.73 HOLE Ø 3.87÷4.13 (4 OFF)
999-0010-21-206
999-0010-21-238
PREPARE SURFACE FOR BONDING CONTACT
DRILL: HOLE Ø11.25÷11.76 (TYP 4 PLACES)
DRILL: HOLE Ø11.25÷11.76 (TYP 2 PLACES)
DRILL: HOLE Ø11.42÷11.93 (TYP 2 PLACES)
999-0010-21-140
999-0010-21-224
999-0010-21-224 (REF.)
999-0010-21-238 (REF.)
999-0010-21-126
DRILL: HOLE Ø5.0 (TYP 5 PLACES)
R 50.0 (REF.)
R 60.0 (REF.)
BL 800.0
BL -550.0
BL -305.0
BL 0.0
BL 550.0
BL 800.0
STA 5700.0
STA 5121.0
STA 4520.0
STA 4469.0
STA 4120.0
STA 3900.0
STA 3375.0
STA 3267.0
STA 3120.0
STA 4950.0 TYP
STA 4142.0
STA 4475.0
STA 4311.0
BL 615.0 TYP
BL -590.0 (TYP)
BL -605.0 (TYP)
BL -105.0
BL 461.0
BL -405.0
BL -352.5
BL - 269.0
BL 173.0
BL 224.0
2578.0
30.0 (TYP)
21.0 (TYP)
35.0 (TYP)
25.0
30.0
29.0 typ.
26.0
31.0
25.0
121.6
160.0
163.0
REF
200
215
REF

Figure 8

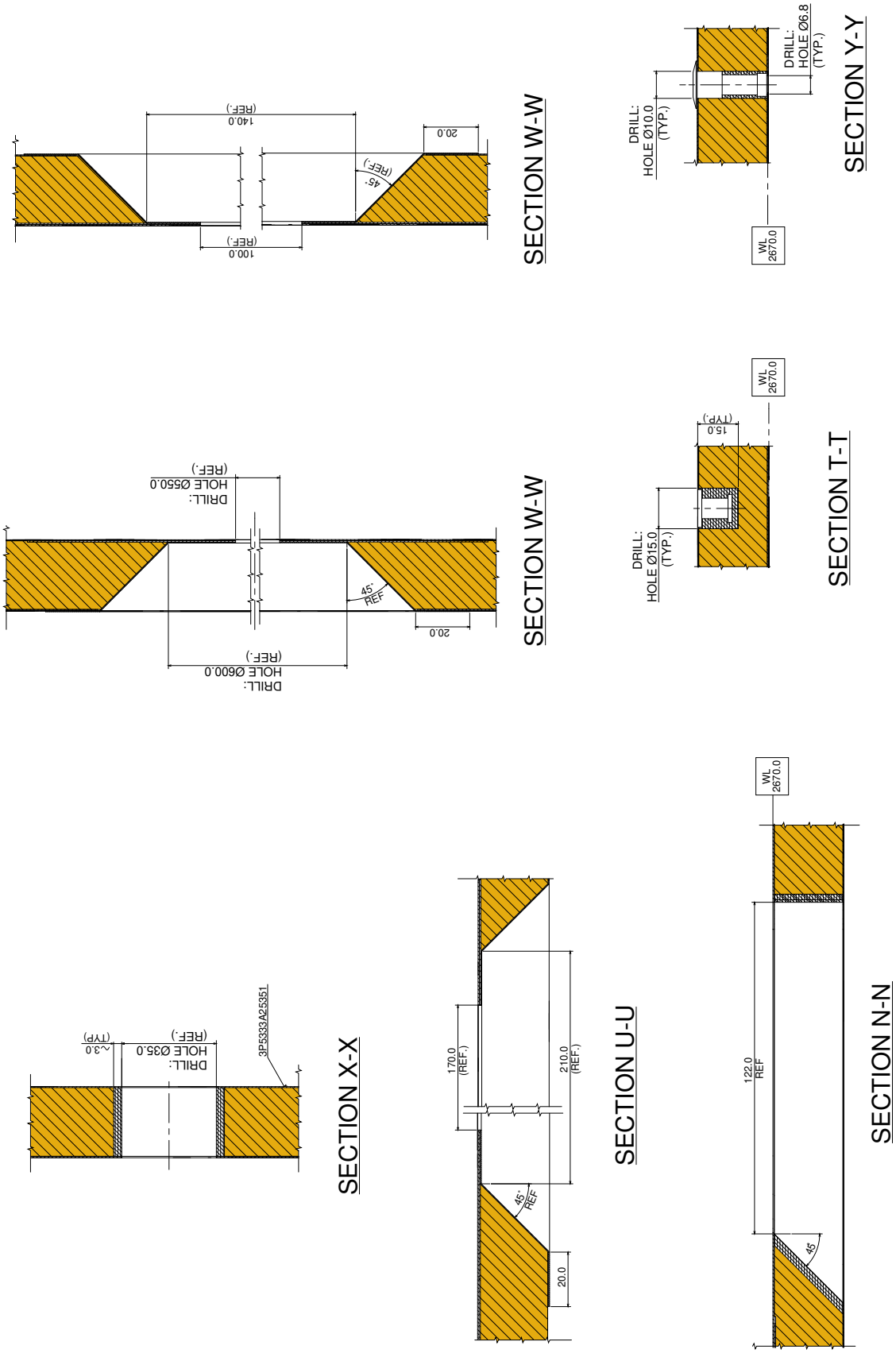

SECTION W-W
140.0 (REF.)
20.0
45° (REF.)
100.0 (REF.)
SECTION Y-Y
DRILL: HOLE Ø10.0 (TYP.)
DRILL: HOLE Ø6.8 (TYP.)
WL 2670.0
SECTION W-W
DRILL: HOLE Ø550.0 (REF.)
45° REF
20.0
DRILL: HOLE Ø600.0 (REF.)
SECTION T-T
WL 2670.0
15.0 (TYP.)
DRILL: HOLE Ø15.0 (TYP.)
SECTION X-X
3P5333A25351
DRILL: HOLE Ø35.0 (REF.)
3.0 (TYP.)
SECTION U-U
170.0 (REF.)
210.0 (REF.)
45° REF
20.0
SECTION N-N
WL 2670.0
122.0 REF
45°

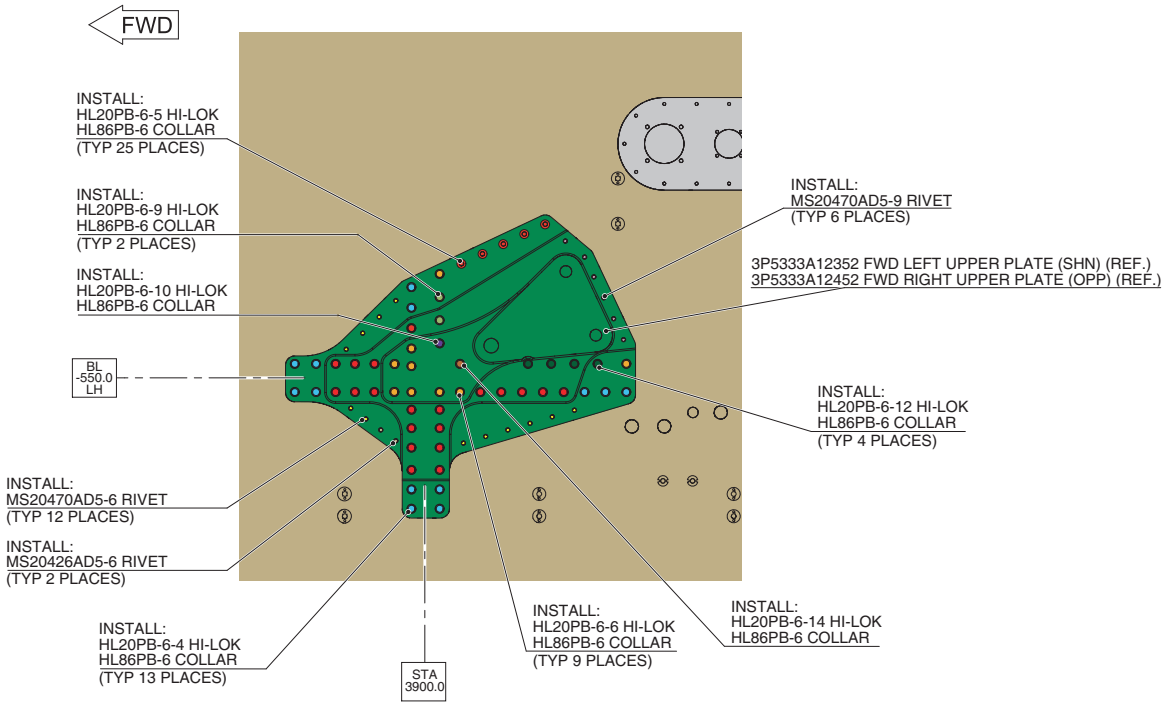
Figure 9

LOCATION NUMBER	PART NUMBER	STA	BL
01	999-5000-40-208	4353.10	605.65
02	999-5000-40-208	4538.94	645.16
03	999-5000-40-216	4394.68	410.02
04	999-5000-40-216	4580.53	449.53
05	999-5000-40-216	4540.97	-419.68
06	999-5000-40-216	4726.82	-459.19
07	999-5000-40-208	4499.39	-615.31
08	999-5000-40-208	4685.24	-654.82
15	NAS1832C3-4M	4356.31	-309.14
16	NAS1832C3-4M	4422.82	-323.28
17	NAS1832C3-4M	4385.41	-172.20
18	NAS1832C3-4M	4451.93	-186.34
19	NAS1832C3-4M	4813.32	435.87
20	NAS1832C3-4M	4805.00	475.00
21	NAS1832C3-4M	4774.24	456.19
22	NAS1832C3-4M	4495.00	-360.00
23	NAS1832C3-4M	4662.39	-106.36
24	NAS1832C3-4M	4680.07	-154.73
25	NAS1832C3-4M	4697.75	-203.10
26	NAS1832C3-4M	4773.00	-503.50
27	NAS1832C3-4M	4355.00	340.00
28	NAS1832C3-4M	4628.96	474.89
29	NAS1832C3-4M	4600.00	301.00
30	NAS1832C3-4M	4600.00	365.00
31	NAS1832C3-4M	4727.00	145.00
32	NAS1832C3-4M	4791.00	145.00
33	NAS1832C3-4M	3725.75	-79.51
34	NAS1832C3-4M	4066.53	-79.51
35	NAS1832C3-4M	4349.22	-236.07
38	NAS1832C3-4M	3196.50	-261.10
39	NAS1832C3-4M	3242.20	-350.90
40	NAS1832C3-4M	3680.10	-122.60
41	NAS1832C3-4M	3680.10	-162.60
42	NAS1832C3-4M	3680.10	-202.60
43	NAS1832C3-4M	3180.00	-702.00
44	NAS1832C3-4M	3180.00	-678.00
45	NAS1832C3-4M	3180.00	678.00
46	NAS1832C3-4M	3180.00	702.00
47	NAS1832C3-4M	3390.00	-702.00
48	NAS1832C3-4M	3390.00	-678.00
49	NAS1832C3-4M	3390.00	678.00
50	NAS1832C3-4M	3390.00	702.00
51	NAS1832C3-4M	3600.00	-702.00
52	NAS1832C3-4M	3600.00	-678.00
53	NAS1832C3-4M	3600.00	678.00
54	NAS1832C3-4M	3600.00	702.00
55	NAS1832C3-4M	3810.00	-702.00
56	NAS1832C3-4M	3810.00	-678.00
57	NAS1832C3-4M	3810.00	678.00
58	NAS1832C3-4M	3810.00	702.00
59	NAS1832C3-4M	4020.00	-702.00
60	NAS1832C3-4M	4020.00	-678.00
61	NAS1832C3-4M	4020.00	678.00
62	NAS1832C3-4M	4020.00	702.00
63	NAS1832C3-4M	4230.00	-702.00
64	NAS1832C3-4M	4230.00	-678.00
65	NAS1832C3-4M	4230.00	678.00
66	NAS1832C3-4M	4230.00	702.00
67	NAS1832C3-4M	4440.00	-702.00
68	NAS1832C3-4M	4440.00	-678.00
69	NAS1832C3-4M	4440.00	678.00
70	NAS1832C3-4M	4440.00	702.00
71	NAS1832C3-4M	4478.00	-702.00
72	NAS1832C3-4M	4478.00	-678.00
73	NAS1832C3-4M	4478.00	678.00
74	NAS1832C3-4M	4478.00	702.00
75	NAS1832C3-4M	4688.00	-702.00
76	NAS1832C3-4M	4688.00	-678.00

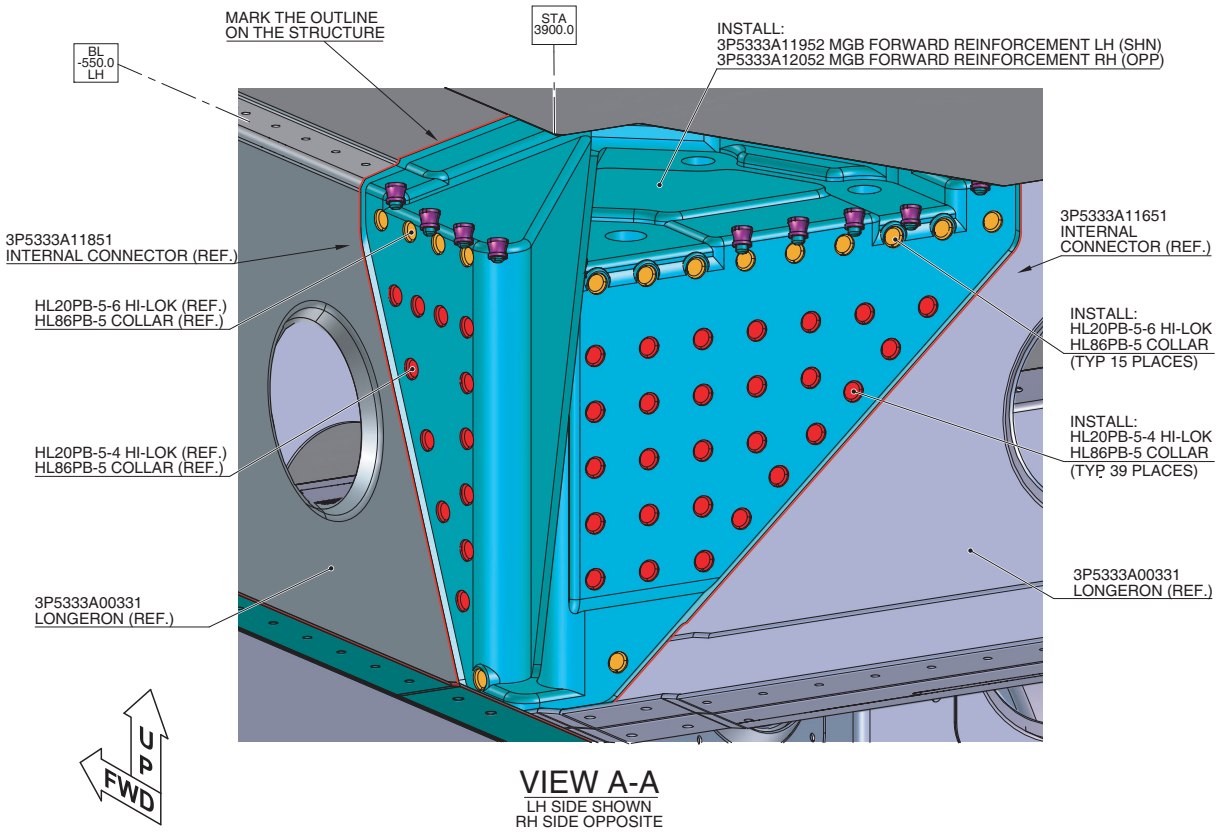
LOCATION NUMBER	PART NUMBER	STA	BL
77	NAS1832C3-4M	4688.00	678.00
78	NAS1832C3-4M	4688.00	702.00
79	NAS1832C3-4M	4898.00	-702.00
80	NAS1832C3-4M	4898.00	-678.00
81	NAS1832C3-4M	4898.00	678.00
82	NAS1832C3-4M	4898.00	702.00
83	NAS1832C3-4M	5108.00	-702.00
84	NAS1832C3-4M	5108.00	-678.00
85	NAS1832C3-4M	5108.00	678.00
86	NAS1832C3-4M	5108.00	702.00
87	NAS1832C3-4M	5318.00	-702.00
88	NAS1832C3-4M	5318.00	-678.00
89	NAS1832C3-4M	5318.00	678.00
90	NAS1832C3-4M	5318.00	702.00
91	NAS1832C3-4M	5528.00	-702.00
92	NAS1832C3-4M	5528.00	-678.00
93	NAS1832C3-4M	5528.00	678.00
94	NAS1832C3-4M	5528.00	702.00
107	NAS1832C3-4M	5425.00	350.00
108	NAS1832C3-4M	5425.00	-350.00
109	NAS1832C3-4M	3665.50	-37.90
110	NAS1832C3-4M	3689.50	-113.00
111	NAS1832C3-3M	4284.00	143.00
112	NAS1832C3-3M	4284.00	225.00
113	NAS1832C3-3M	4413.00	143.00
114	NAS1832C3-3M	4413.00	225.00
115	NAS1832C3-4M	4380.00	-44.00
116	NAS1832C3-4M	4380.00	10.50
117	NAS1832C3-4M	4398.50	-320.00
118	NAS1832C3-4M	4398.50	320.00
119	NAS1832C3-4M	4643.50	-320.00
120	NAS1832C3-4M	4643.50	320.00
121	NAS1832C3-4M	5498.40	-15.00
122	NAS1832C3-4M	5498.40	188.30
123	NAS1832C3-4M	5600.00	-15.00
124	NAS1832C3-4M	5600.00	188.30
125	NAS1832C3-4M	3455.00	-185.00
126	NAS1832C3-4M	3455.00	-130.50
137	NAS1832C3-4M	4278.00	-656.00
138	NAS1832C3-4M	4278.00	-624.00
139	NAS1832C3-4M	4278.00	624.00
140	NAS1832C3-4M	4278.00	656.00
141	NAS1832C3-4M	4310.00	-656.00
142	NAS1832C3-4M	4310.00	-624.00
143	NAS1832C3-4M	4310.00	624.00
144	NAS1832C3-4M	4310.00	656.00
149	NAS1832C3-4M	3397.00	409.40
150	NAS1832C3-4M	3397.00	346.40
151	NAS1832C3-4M	3431.00	409.40
152	NAS1832C3-4M	3431.00	346.40

LOCATION NUMBER	PART NUMBER	STA	BL
153	NAS1832C3-4M	3589.00	-14.20
154	NAS1832C3-4M	3634.00	-14.20
155	NAS1832C3-4M	3679.00	-14.20
156	NAS1832C3-4M	3724.00	-147.50
157	NAS1832C3-4M	3769.00	-147.50
158	NAS1832C3-4M	3814.00	-147.50
159	NAS1832C4-6M	3416.90	-277.20
160	NAS1832C4-6M	3416.90	-467.70
161	NAS1832C4-6M	3747.10	-467.70
162	NAS1832C4-6M	3747.10	-277.70
163	NAS1832C4-6M	3777.00	287.20
164	NAS1832C4-6M	3777.00	477.70
165	NAS1832C4-6M	3446.80	477.70
166	NAS1832C4-6M	3446.80	287.20
167	NAS1832C3-4M	5364.50	-236.00
168	NAS1832C3-4M	5437.00	-197.60
169	NAS1832C3-4M	5497.50	-311.50
170	NAS1832C3-4M	5437.00	197.60
171	NAS1832C3-4M	5497.50	311.50
172	NAS1832C3-4M	5364.50	236.00
173	999-5000-30-106	3215.00	190.00
174	999-5000-30-106	3320.00	190.00
175	999-5000-30-106	3215.00	104.00
176	999-5000-30-106	3320.00	104.00
177	NAS1832C3-4M	3587.00	-293.00
178	NAS1832C3-4M	3587.00	-433.00
179	NAS1832C3-4M	3655.00	-293.00
180	NAS1832C3-4M	3655.00	-433.00
181	NAS1832C3-4M	4105.00	-337.40
182	NAS1832C3-4M	4105.00	-386.40
183	NAS1832C3-4M	4505.00	-337.40
184	NAS1832C3-4M	4505.00	-386.40
185	NAS1832C3-4M	4928.40	-390.30
186	NAS1832C3-4M	4946.50	-381.80
187	NAS1832C3-4M	4928.40	390.30
188	NAS1832C3-4M	4946.50	381.80
195	NAS1832C3-4M	5557.50	-421.26
197	NAS1832C3-4M	5633.00	207.50
198	NAS1832C3-4M	5580.00	181.50
199	NAS1832C3-4M	5558.50	150.00
200	NAS1832C3-4M	5558.50	60.00
201	NAS1832C3-4M	5558.50	-115.00
202	NAS1832C3-4M	5580.00	-147.00
203	NAS1832C3-4M	5645.00	-190.00
204	NAS1832-08-3	4700.00	-217.00
205	NAS1832-08-3	4700.00	-345.00
206	NAS1832-08-3	4850.00	-217.00
207	NAS1832-08-3	4850.00	-345.00
208	NAS1832-08-3	4595.00	125.00
209	NAS1832-08-3	4595.00	253.00
210	NAS1832-08-3	4745.00	125.00
211	NAS1832-08-3	4745.00	253.00
212	NAS1832C3-3M	3320.00	-130.00
213	NAS1832C3-3M	3320.00	-185.00
214	NAS1832C3-4M	5402.50	301.50
215	NAS1832C3-4M	5402.50	205.35
216	NAS1832C3-4M	5527.00	301.50
217	NAS1832C3-4M	5527.00	205.35
218	NAS1832C3-4M	5402.50	-205.35
219	NAS1832C3-4M	5527.00	-205.35
220	NAS1832C3-4M	5527.00	-301.50
221	NAS1832C3-4M	5402.50	-301.50
222	NAS1832C3-4M	3215.00	245.00

Figure 10

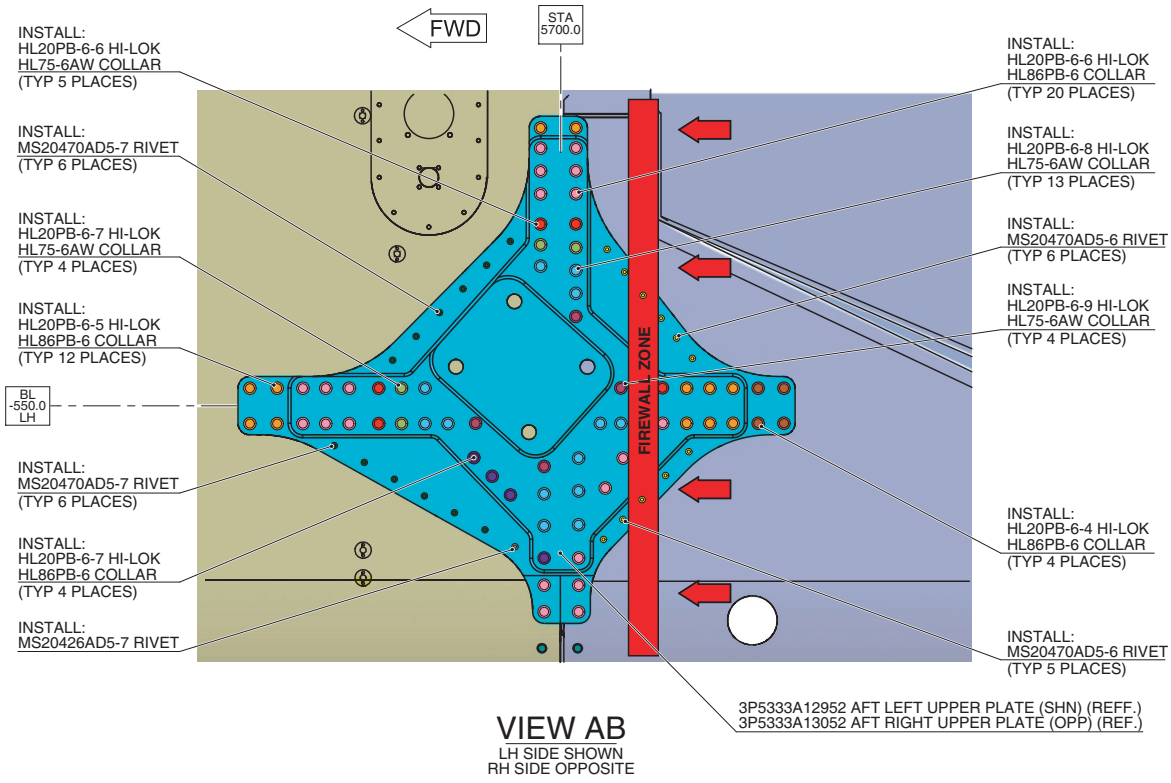


VIEW Z
LH SIDE SHOWN
RH SIDE OPPOSITE

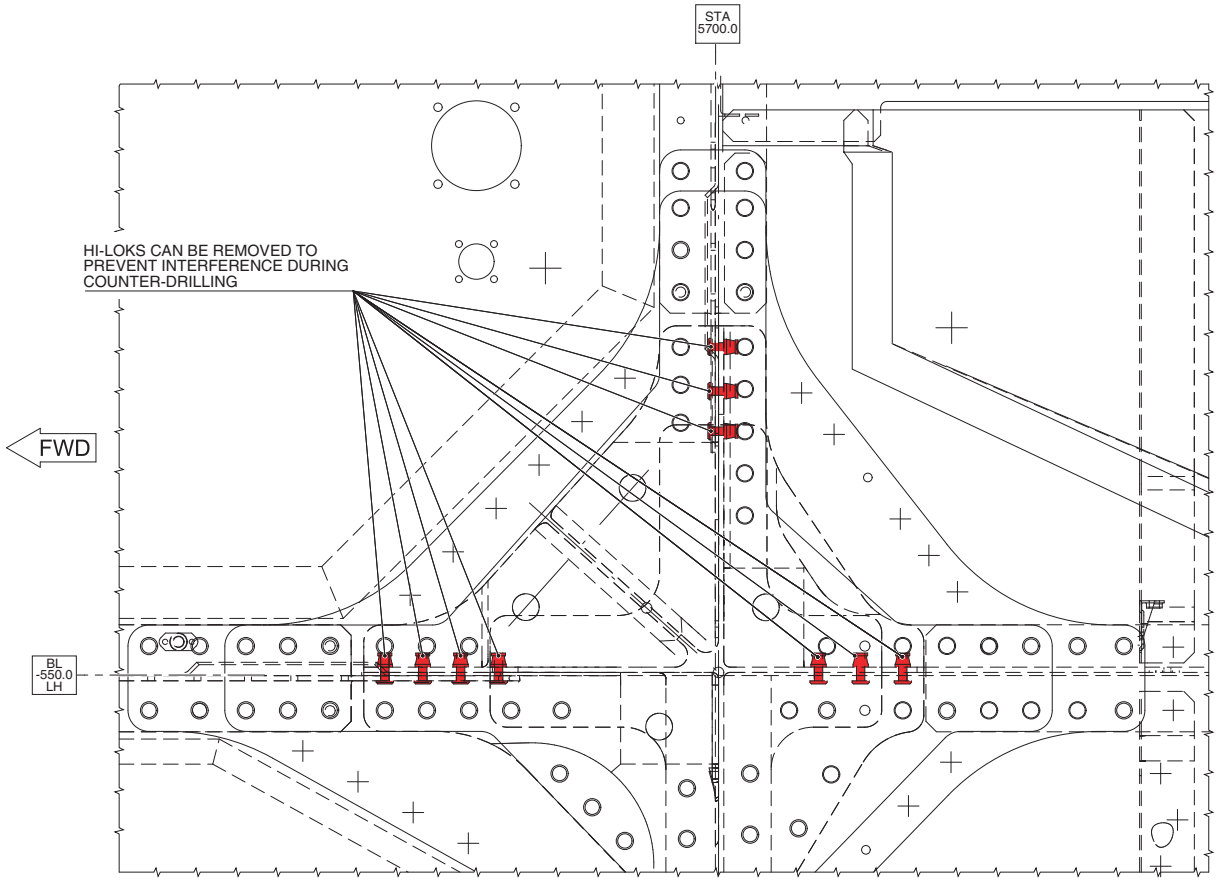


VIEW A-A
LH SIDE SHOWN
RH SIDE OPPOSITE

Figure 11

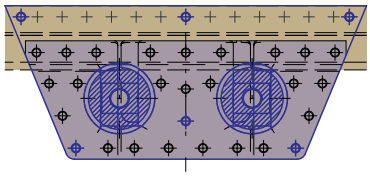


VIEW AB
LH SIDE SHOWN
RH SIDE OPPOSITE

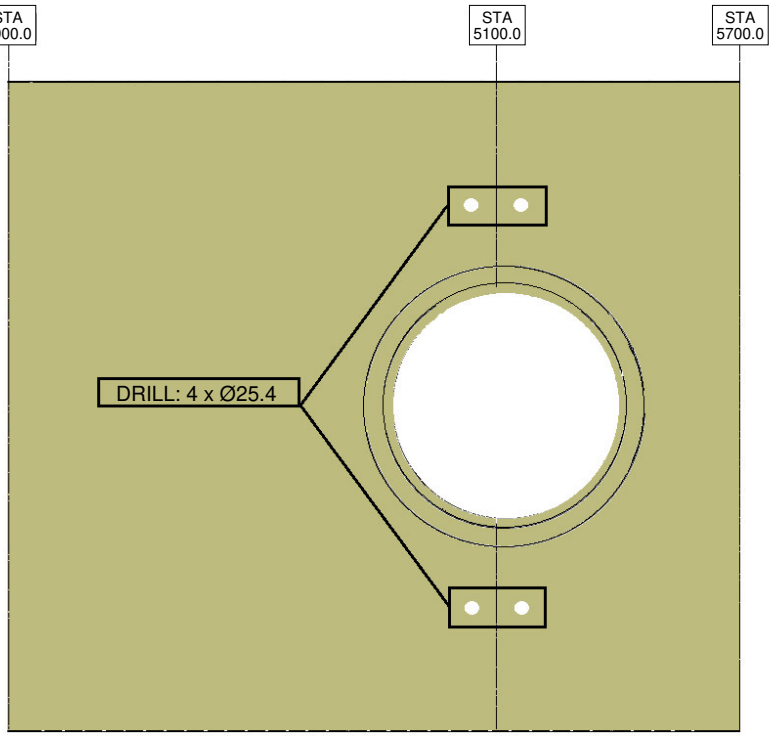


VIEW AB
LH SIDE SHOWN
RH SIDE OPPOSITE

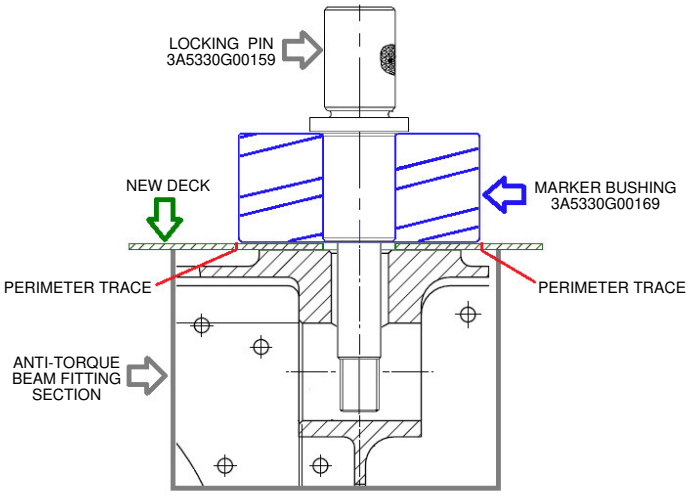
Figure 12



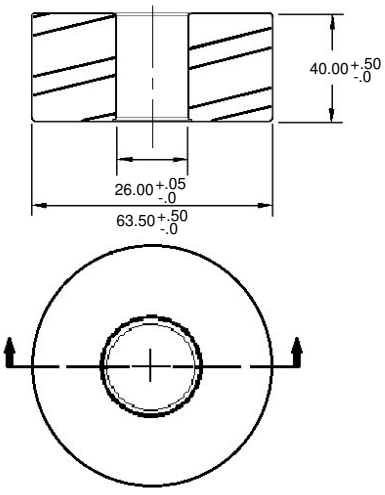
PLEXIGLASS
TEMPLATE



NEW DECK (CLEAN)



INSTALLATION VIEW



NOTE: MARKER BUSHING CAN BE LOCALLY FABRICATED USING A STANDARD ALUMINIUM ALLOY. THIS BUSHING IS ONLY USED FOR MARKING A POSITION.

MARKER BUSHING
GENERAL SPECIFICATIONS

Figure 13

ANNEX A

INSTALLATION AND USE OF
3A5330G00131 TOOL
FOR UPPER DECK REPLACEMENT

NOTE

The following procedure describes the use of the positioning and drilling tool for the replacement of the upper deck and for the replacement of n°2 FWD reinforcements, n°2 MGB middle reinforcements and n°4 upper plates.

Required Tooling for Part I (Step 1)

Description	*Part Number*	*Quantity*
Positioning And Drilling Tool Kit (Full)	3A5330G00131	1

Required Tooling for Part II (Steps 2 and 3)

Description	*Part Number*	*Quantity*
Central Beam Assy	3A5330G00132	1
FWD Pad Assy	3A5330G00133	1
Forward Arm (Offset)	3A5330G00155	1*
Forward Arm	3A5330G00154	*ALT
Alignment Pin 1/2''	3A5330G00157	2
Alignment Pin 3/8''	3A5330G00158	2
Locking Pins 5/8''	3A5330G00159	5
Locking Pins 1/2''	3A5330G00160	2
Barrel Nuts	3A5330G00161	4
Reamer Set 5/8''	3A5330G00162-SET	1
Reamer Set 1/2''	3A5330G00163-SET	1
Reamer Set 5/8'' (Bushing)	3A5330G00164-SET	1
Reamer Set 1/2'' (Bushing)	3A5330G00165-SET	1
Locking Pin 5/8'' (Undersize)	3A5330G00166	1
Locking Pin 1/2'' (Undersize)	3A5330G00167	2
Jam Nut	AN316-9	1
Jam Nut	AN316-7	2
Jam Nut	AN316-8	1
Jam Nut	AN316-6	2
Bolt – Hex Head	AN8-14A	6

Bolt – Hex Head	AN6-14A	2

Required Tooling for Part III (Steps 4, 5 & 6)

Description	*Part Number*	*Quantity*
Central Beam Assy	3A5330G00132	1
Locking Pins 5/8''	3A5330G00159	4
Barrel Nuts	3A5330G00161	4
Reamer Set 5/8''	3A5330G00162-SET	1
Reamer Set 5/8'' (Bushing)	3A5330G00164-SET	1
Locking Pin 5/8'' (Undersize)	3A5330G00166	2
Barrel Nuts (Undersize)	3A5330G00168	2
Bolt – Hex Head	AN3-7A	2

GENERAL NOTES

a) Use washers under the head of all bolts used to keep the various pieces of the tooling fixture locked together.

b) Use a washer stack up on the jam nut side of the AFT MGB fitting locking pins, to ensure that the fixture is properly locked to the aircraft structure.

1 INSTALLATION OF POSITIONING AND DRILLING TOOL

NOTE

Move or remove any upper deck hydraulic lines that interfere with the installation of the tool. These lines will need to be re-installed at the end of this procedure.

CAUTION

The nuts must be tightened manually acting only on locking pin (ITEMS 3 and 4), so no extra stress is added to the tool. Use a suitable wrench to lock the nut.

1.1 With reference to Figures A1 and A2, install the positioning and drilling tool P/N 3A5330G00131 on the aircraft in accordance with the following process:

1.1.1 Install the central beam assembly P/N 3A5330G00132 by means of locking pins P/N 3A5330G00159 (ITEM 3) and barrel nuts P/N 3A5330G00161 (ITEM 5).

1.1.2 Temporarily pin AFT Pads P/N 3A5330G00153 by means of locking pins P/N 3A5330G00160 (ITEM 4).

1.1.3 Using alignment pins P/N 3A5330G00157 (ITEM 1), temporarily pin the RH and LH AFT arms P/N 3A5330G00156 to the central beam assembly P/N 3A5330G00132.

1.1.4 Link the AFT Pads P/N 3A5330G00153 to AFT arms P/N 3A5330G00156 by means of alignment pins 3A5330G00158 (ITEM 2), to complete the plane between the anti-torque beam and AFT fitting area.

1.1.5 Temporarily pin FWD Pads P/N 3A5330G00152 by means of two locking pins P/N 3A5330G00160 (ITEM 4) and one locking pin P/N 3A5330G00159 (ITEM 3).

1.1.6 Using alignment pins P/N 3A5330G00157 (ITEM 1), temporarily pin the RH and LH FWD arms P/N 3A5330G00154 to the central beam assembly P/N 3A5330G00132.

1.1.7 Link the FWD Pads P/N 3A5330G00152 to FWD arms P/N 3A5330G00154 by means of alignment pins 3A5330G00158 (ITEM 2), to complete the plane between the anti-torque beam and FWD fitting area.

1.1.8 Lock all the remaining pins with jam nuts P/N AN316-7 and P/N AN316-9 and fasten AN8-14A bolts to the central beam and AN6-14A bolts to the FWD and AFT pads.

1.2 If the tool is not able to be fixed or the tool is not in contact with all the bosses, perform the following procedure:

1.2.1 Loose the bolts that connect the four arms of the tool with the central beam assy.

1.2.2 Remove one or more align pins in the arm of the tool in correspondence of central beam assy and pins the tool in all locations.

1.2.3 Tighten all the bolts previously loosen.

1.2.4 Measure the misalignment from neutral position and contact Leonardo Helicopters.

2 MGB FORWARD REINFORCEMENT ALIGNMENT PROCEDURE

2.1 Install the central beam assembly P/N 3A5330G00151 by means of locking pins P/N 3A5330G00159 (ITEM 3) and barrel nuts P/N 3A5330G00161 (ITEM 5).

2.2 Install the FWD ARM P/N 3A5330G00154 or FWD ARM (OFFSET) P/N 3G5330G00155 onto to the central beam assembly P/N 3A5330G00132 using alignment pins P/N 3A5330G00157 (ITEM 1).

2.3 Link the FWD Pad P/N 3A5330G00152 to FWD arm P/N 3A5330G00154 or FWD ARM (OFFSET) P/N 3G5330G00155, by means of alignment pins 3A5330G00158 (ITEM 2), leaving the pad unpinned.

2.4 If a new upper plate is to be replaced, make sure to place it under the pad area prior to locking the MGB FWD reinforcement in step 2.5. The plate must be locked in with the tool and the MGB FWD reinforcement to ensure all holes drilled are aligned.

2.5 Draw up the replacement FWD MGB reinforcement to the ceiling structure in the position of the marked footprint and lock it into the FWD Pad P/N 3A5330G00152 by means of two undersized locking pins P/N 3A5330G00167 (ITEM 9) and jam nuts AN316-6, and one other undersized locking pin P/N 3A5330G00166 (ITEM 8) and jam nut AN316-8.

2.6 With the reinforcement and upper plate locked securely to the tool and deck, countermark and drill as many accessible holes possible into the new reinforcement and upper plate.

2.7 Temporarily cleco the fitting in place to accessible holes on deck, and connectors on the longerons.

2.8 Removing the locking pins and jam nuts installed in step 3.4.

2.9 Remove the FWD pad P/N 3A5330G00152 and FWD arm P/N 3A5330G00154 or FWD ARM (OFFSET) P/N 3G5330G00155 off of the central beam and deck.

2.10 If needed, finish countermarking and drilling holes on the replacement upper plate, locking it into the deck structure by means of two undersized locking pins P/N 3A5330G00167 (ITEM 9) and jam nuts AN316-6, and one other undersized locking pin P/N 3A5330G00166 (ITEM 8) and jam nut AN316-8.

3 MGB FORWARD REINFORCEMENT REAMING PROCEDURE

3.1 Install the central beam assembly P/N 3A5330G00132 by means of locking pins P/N 3A5330G00159 (ITEM 3) and barrel nuts P/N 3A5330G00161 (ITEM 5).

3.2 Install the FWD ARM P/N 3A5330G00154 or FWD ARM (OFFSET) P/N 3G5330G00155 onto to the central beam assembly P/N 3A5330G00132 using alignment pins P/N 3A5330G00157 (ITEM 1).

3.3 Link the FWD Pad P/N 3A5330G00152 to FWD ARM (OFFSET) P/N 3G5330G00155, by means of alignment pins 3A5330G00158 (ITEM 2), leaving the pad unpinned.

3.4 With reference to Figure A3 Detail B, the boss holes in the new reinforcement must be reamed to final dimensions as described in the following procedure:

3.4.1 Lock the FWD Pad P/N 3A5330G00152 into HOLE 2 and HOLE 3 by means of two undersized locking pins P/N 3A5330G00167 (ITEM 9) and jam nuts AN316-6.

3.4.2 Using the reamer guide kit P/N 3A5330A00162, insert the first of the reamer guide set bushing P/N 3A5330G00162-5 into HOLE 1 of the FWD MGB reinforcement.

3.4.3 Using reamer, ream the hole to Ø14.50÷14.51.

3.4.4 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00162-4.

3.4.5 Using reamer, ream the hole to Ø15.00÷15.01.

3.4.6 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00162-3.

3.4.7 Using reamer, ream the hole to Ø15.50÷15.51.

3.4.8 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00162-2.

3.4.9 Using reamer, ream the hole to Ø15.90÷15.91.

3.4.10 Remove the reamer guide P/N 3A5330G00162-2.

3.4.11 Make sure to thoroughly deburr and clean holes. Also clear the work area of any contaminants.

3.4.12 Lock the FWD Pad P/N 3A5330G00152 into HOLE 1 and HOLE 3 by means undersized locking pin P/N 3A5330G00167 (ITEM 9) with jam nut A316-6, and full size locking 3A5330G00159 (ITEM 3) with jam nut AN316-9.

3.4.13 Using the reamer guide kit P/N 3A5330G00163, insert the first of the reamer guide set bushing P/N 3A5330G00163-5 into HOLE 2 of the FWD MGB reinforcement.

3.4.14 Using reamer, ream the hole to Ø11.00÷11.01.

3.4.15 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00163-4.

3.4.16 Using reamer, ream the hole to Ø11.50÷11.51.

3.4.17 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00163-3.

3.4.18 Using reamer, ream the hole to Ø12.00÷12.01.

3.4.19 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00163-2.

3.4.20 Using reamer, ream the hole to Ø12.50÷12.51.

3.4.21 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00163-1.

3.4.22 Using reamer, ream the hole to Ø12.73÷12.74.

3.4.23 Move the smaller guide bushing size P/N 3A5330G00163 into the HOLE 3 of AFT bushing of the FWD MGB reinforcement.

3.4.24 Lock the FWD Pad P/N 3A5330G00152 into HOLE 1 and HOLE 2 by means undersized locking pin P/N 3A5330G00167 (ITEM 9) with jam nut A316-6, and full size locking 3A5330G00159 (ITEM 3) with jam nut AN316-9.

3.4.25 Repeat steps 3.4.13 thru 3.4.22 for HOLE 3.

3.5 Remove the positioning and drilling tool from the aircraft.

4 MAIN GEAR BOX ANTI-TORQUE BEAM FITTINGS PLANARITY RIGGING PROCEDURE

4.1 Pin the central beam assembly P/N 3A5330G00132 by means of locking pins P/N 3A5330G00159 (ITEM 3). Do not install the barrel nuts P/N 3A5330G00161 (ITEM 5) at this time.

4.2 Check that the tool is making contacting at least 3 of the anti-torque beam bosses by removing one locking pin off of the tool at a time and visually inspecting contact with the structure from the sump cutout.

4.3 Using a digital lever, place it on top of the tool and record the inclination angle. Check measurements both laterally and longitudinally. Be sure to record the inclination angle, regardless of the helicopter being level.

4.4 With reference to Figure A4, perform the planarity rigging as described in the following procedure:

4.4.1 Measure and record the distance between the bottom of the tool and the cleaned area of the upper deck on the forward and aft sides using filler gauges.

4.4.2 Using maximum 3.0 thick peelable aluminium metal shims, fill the gap between the alignment tool and the deck structure closest to the fitting being replaced, using the measurement found in the previous step as a guide. Layers of aluminium tape can be used to build up the shim in areas where a greater thickness is needed.

NOTE

When locking the peelable shim into place with the AN3-7A bolts, it is allowed to NAS1149 washers to ensure a proper thread engagement.

4.4.3 Temporarily install AN3-7A bolts through the tool and shim, into the inserts installed on the deck.

CAUTION

Be careful to fill the gap and measure the shim thickness because the compensation shim will be reused to install the new fitting at the same level of the existing one.
Make sure no gaps exceed 0.05 between the shim and tool, and the shim and deck. Use a filler gauge of .002" (.051mm) for checking the gaps. Check that the tool is still sitting on at least 3 bosses by using the same filler gauge and checking the gaps from the tools bushing holes (with locking pins removed).

4.5 Remove the AN3-7A bolts securing the shim and set the compensation shim aside for later reuse.

4.6 Remove the locking pins securing the central beam assembly P/N 3A5330G00132, and remove this tool from the aircraft.

4.7 Perform the removal of MGB middle reinforcement as described in Part III of this SB.

5 MAIN GEAR BOX ANTI-TORQUE BEAM FITTINGS ALIGNMENT PROCEDURE

5.1 Temporarily install the new fitting to check its conformity, as described in the following procedure:

5.1.1 Remove protective coating on the top surface of the bosses using 320 grit sand paper (or finer), or scotch-brite.

5.1.2 Pin the central beam assembly P/N 3A5330G00132 by means of locking pins P/N 3A5330G00159 (ITEM 3) and barrel nuts P/N 3A5330G00161 (ITEM 5) on the opposite side of the removed middle reinforcement.

5.1.3 Place the shim created in step 4 between tool and deck to fill the gap. Install AN3-7A bolts through the tool and shim, into the inserts installed on the deck.

NOTE

The tool must stay locked with this shim gap to ensure the planarity of the fittings. It is allowed to NAS1149 washers to ensure a proper thread engagement.

5.1.4 Suck the new fitting up to the structure on the open side, inserting the barrel nuts P/N 3A5330G00161 (ITEM 5) into the fitting barrels, by means of undersized locking pins 3A5330G00166 (ITEM 8) and undersized barrel nuts P/N 3A5330G00168 (ITEM 10), fasten the fitting between the alignment tool and the aircraft structure.

5.1.5 Install temporarily fasteners on the lateral face of the fitting, to keep the lateral face tight to the longeron.

5.1.6 Ensure that with the new fitting sucked up with the tool is still sitting on bosses of the existing fitting and the compensation shim. This will ensure that the plane has not changed and that the bosses of the new fitting are sitting at the correct height.

NOTE

Hole misalignment can occur due to differences in hole location between the removed fitting and the new fitting. To correct this, oversized fasteners are allowed, as long as edge distance is maintained.

5.1.7 Using the filler gauges, measure the gap between the top face of the fitting and the bottom side of the upper deck skin. If the gap exceed 0.70 notify Leonardo helicopter, otherwise continue to next step.

5.2 With reference to Figure 5, counter drill the accessible holes on the top face of the fitting and install temporary fixing fasteners.

5.3 With reference to Figure 5 counter drill any accessible holes on the lateral face of the fitting and install temporary fixing fasteners.

5.4 If the gap found in step 5.1 is equal to or less than 0.15 install the new fitting as described in the following procedure. Otherwise skip to step 5.5.

5.4.1 Temporarily remove the new fitting from the central beam assembly and remove temporary fasteners securing it to the aircraft structure.

5.4.2 Apply a thin layer of sealant Prosal 890 to the mating surface of the fitting with the upper deck.

5.4.3 While wet, lock the fitting in place and then fasten the fitting by means of undersized locking pins 3A5330G00166 (ITEM 8) and barrel nuts P/N 3A5330G00161 (ITEM 5).

5.4.4 Re-install temporary fasteners to secure the fitting to the longeron and deck.

5.4.5 Remove central beam assembly P/N 3A5330G00132 once the fitting has enough fasteners installed to be secure, and perform the remaining holes that were inaccessible with the tool in place.

5.4.6 Touch up any needed surfaces with primer. Skip to 6.1.

5.5 If the gap found in step 5.1 is greater than 0.15 and less than 0.70 install the new fitting as described in the following procedure:

5.5.1 Temporarily remove the new fitting from the central beam assembly and remove temporary fasteners securing it to the aircraft structure.

5.5.2 Prepare liquid shim using adhesive (quale) and mixing it with one of the following fillers with the given ratios (% by weight):
- Silica Flour / adhesive (100/100)
- Grade 2429 CP03 glass micro-spheres (from Potters / Ballottini) / adhesive (65/35).

5.5.3 Apply the liquid shim prepared to the mating surface of the fitting with the upper deck.

5.5.4 While wet, lock the fitting in place and then fasten the fitting by means of undersized locking pins 3A5330G00166 (ITEM 8) and barrel nuts P/N 3A5330G00161 (ITEM 5).

5.5.5 Re-install temporary fasteners to secure the fitting to the longeron and deck.

5.5.6 Remove central beam assembly P/N 3A5330G00132 once the fitting has enough fasteners installed to be secure, and perform the remaining holes that were inaccessible with the tool in place.

5.5.7 Touch up any needed surfaces with primer.

6 MAIN GEAR BOX ANTI-TORQUE BEAM FITTINGS REAMING PROCEDURE

6.1 The boss holes in the new fitting must be reamed to final dimensions as described in the following procedure:

6.1.1 Pin the central beam assembly P/N 3A5330G00132 by means of locking pins P/N 3A5330G00159 (ITEM 3) and barrel nuts P/N 3A5330G00161 (ITEM 5) on the existing fitting side, and

6.1.2 Insert the first of the reamer guide set bushing P/N 3A5330G00162-5 in the central beam assembly, in the location of the FWD hole of the replacement fitting. Lock in the AFT position of the replacement fitting by means of

undersized locking pin 3A5330G00166 (ITEM 8) and barrel nut P/N 3A5330G00161 (ITEM 5).

NOTE

During reaming sequence, make sure to catch and clean up all metal shaving during each step ream, to prevent FOD.

6.1.3 Place a reamer stop at the bottom of the barrel of open FWD boss and secure it with tape.

NOTE

The reamer stop is an item placed in the barrel to prevent the reamer from damaging the barrel structure. It is recommended to use bar stock aluminium to create a half cylinder piece, with diameter 26.2mm, and length 34.0mm.

6.1.4 Using reamer, ream the hole to Ø14.50÷14.51.

6.1.5 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00162-4.

6.1.6 Using reamer, ream the hole to Ø15.00÷15.01.

6.1.7 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00162-3.

6.1.8 Using reamer, ream the hole to Ø15.50÷15.51.

6.1.9 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00162-2.

6.1.10 Using reamer, ream the hole to Ø15.90÷15.91.

6.1.11 Remove this reamer guide from the tool and insert reamer guide P/N 3A5330G00162-1.

6.1.12 Using reamer, ream the hole to Ø15.93÷15.94.

6.1.13 Remove reamer stop from the barrel, deburr the newly reamed hole and clean the barrel.

6.1.14 By means of locking pin P/N 3A5330G00159 (ITEM 3) and barrel nut P/N 3A5330G00161 (ITEM 5), lock in the FWD boss position.

6.1.15 Remove the undersized locking pin barrel nut from the AFT position, and install the reamer stop at the bottom of the barrel and secure it with tape. Insert the first of the reamer guide set bushing P/N 3A5330G00162-5 into the AFT boss position.

6.1.16 Repeat steps 6.1.3 to 6.1.13 for the AFT boss position if required.

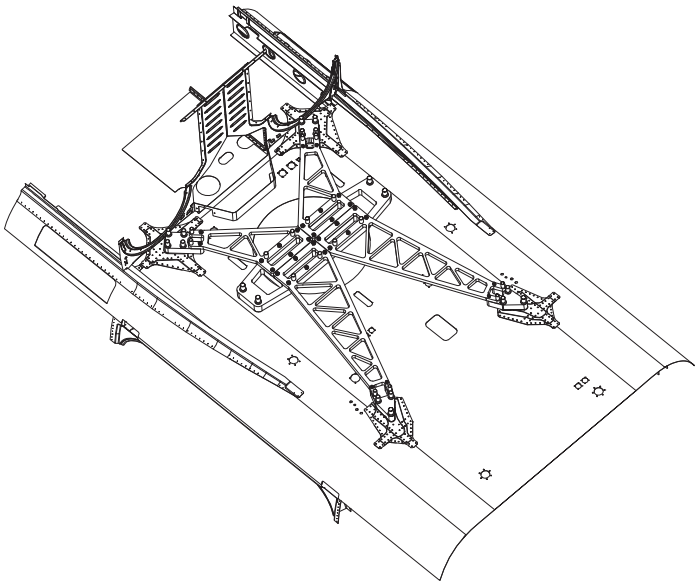
6.2 In accordance with Part III of this SB, perform the MGB middle reinforcement installation.

6.3 Perform a final conformity check as described in the following procedure:

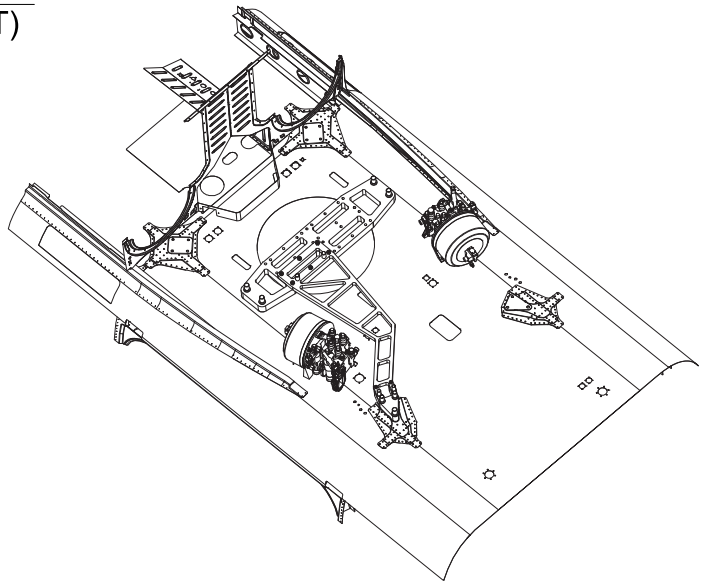
6.3.1 Pin the central beam assembly P/N 3A5330G00132 by means of locking pins P/N 3A5330G00159 (ITEM 3) in all locations. Do not install the barrel nuts P/N 3A5330G00161 (ITEM 5) at this time.

6.3.2 Check that the tool sits on all bosses within a 0.05 tolerance.

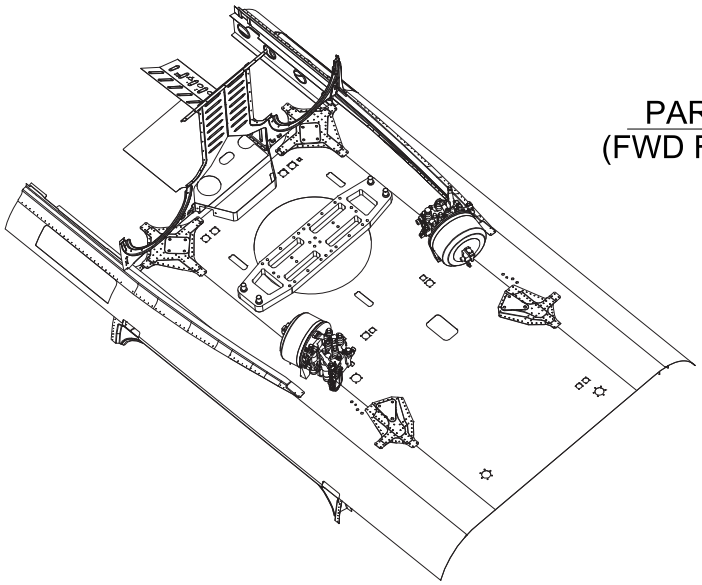
6.4 Using a digital level, place it on top of the tool and record the inclination angle. Perform these measurements both laterally and longitudinally. Notify Leonardo helicopters if the values previously recorded have changed.



PART I CONFIGURATION
(DECK REPLACEMENT)



PART II CONFIGURATION
(FWD FITTING REPLACEMENT)



PART III CONFIGURATION
(ANTI-TORQUE FITTING REPLACEMENT)

Figure A1

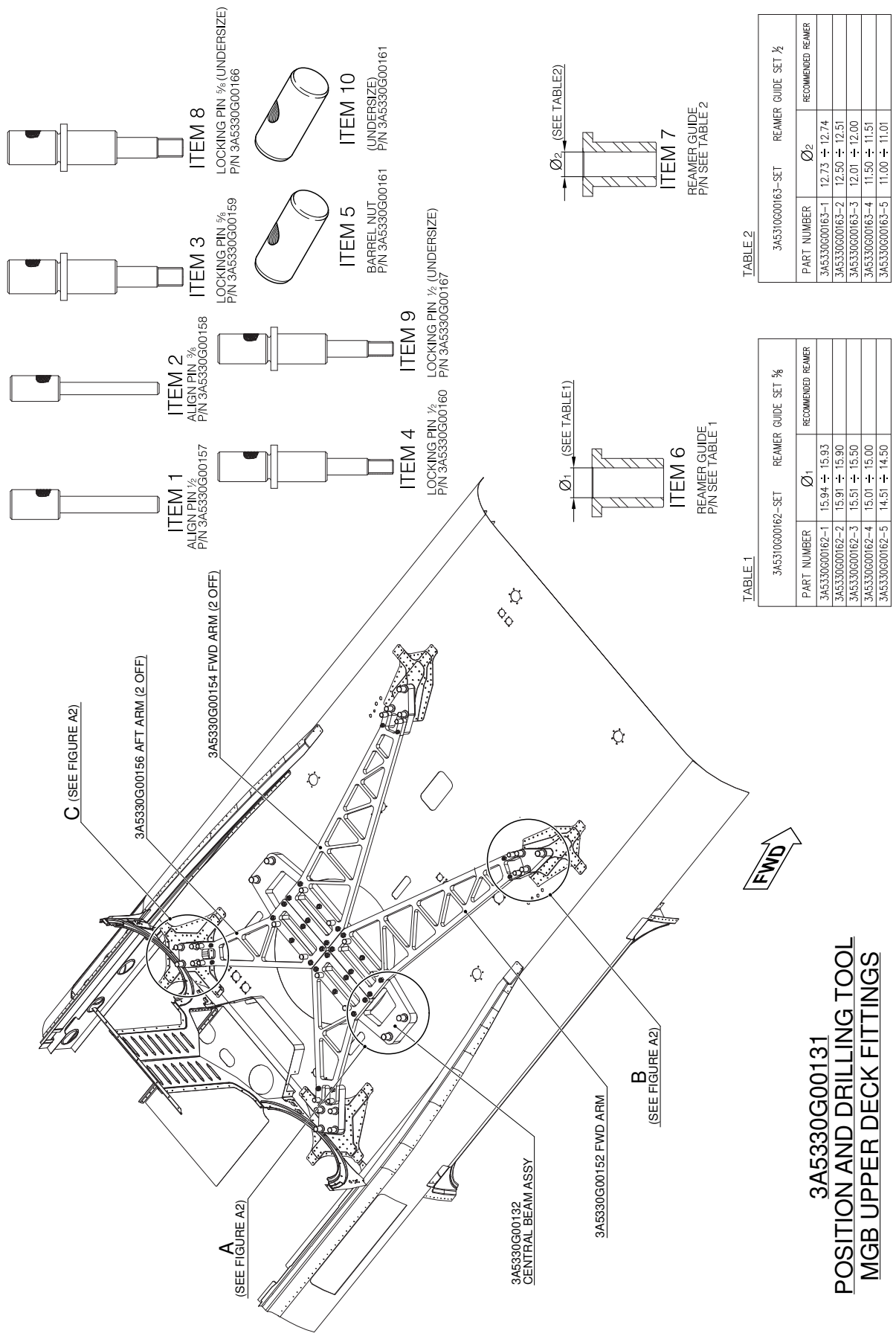

ITEM 1
ALIGN PIN ½
P/N 3A5330G00157
ITEM 2
ALIGN PIN ⅜
P/N 3A5330G00158
ITEM 3
LOCKING PIN ⅝
P/N 3A5330G00159
ITEM 8
LOCKING PIN ⅝ (UNDERSIZE)
P/N 3A5330G00166
ITEM 4
LOCKING PIN ½
P/N 3A5330G00160
ITEM 9
LOCKING PIN ½ (UNDERSIZE)
P/N 3A5330G00167
ITEM 5
BARREL NUT
P/N 3A5330G00161
ITEM 10
(UNDERSIZE)
P/N 3A5330G00161
Ø1 (SEE TABLE1)
ITEM 6
REAMER GUIDE
P/N SEE TABLE 1
Ø2 (SEE TABLE2)
ITEM 7
REAMER GUIDE
P/N SEE TABLE 2
TABLE 1
3A5310G00162-SET REAMER GUIDE SET ⅝
PART NUMBER | Ø1 | RECOMMENDED REAMER
3A5330G00162-1 | 15.94 ÷ 15.93
3A5330G00162-2 | 15.91 ÷ 15.90
3A5330G00162-3 | 15.51 ÷ 15.50
3A5330G00162-4 | 15.01 ÷ 15.00
3A5330G00162-5 | 14.51 ÷ 14.50
TABLE 2
3A5310G00163-SET REAMER GUIDE SET ½
PART NUMBER | Ø2 | RECOMMENDED REAMER
3A5330G00163-1 | 12.73 ÷ 12.74
3A5330G00163-2 | 12.50 ÷ 12.51
3A5330G00163-3 | 12.01 ÷ 12.00
3A5330G00163-4 | 11.50 ÷ 11.51
3A5330G00163-5 | 11.00 ÷ 11.01
C (SEE FIGURE A2)
3A5330G00156 AFT ARM (2 OFF)
3A5330G00154 FWD ARM (2 OFF)
A (SEE FIGURE A2)
3A5330G00132 CENTRAL BEAM ASSY
3A5330G00152 FWD ARM
B (SEE FIGURE A2)
FWD
3A5330G00131
POSITION AND DRILLING TOOL
MGB UPPER DECK FITTINGS

Figure A2

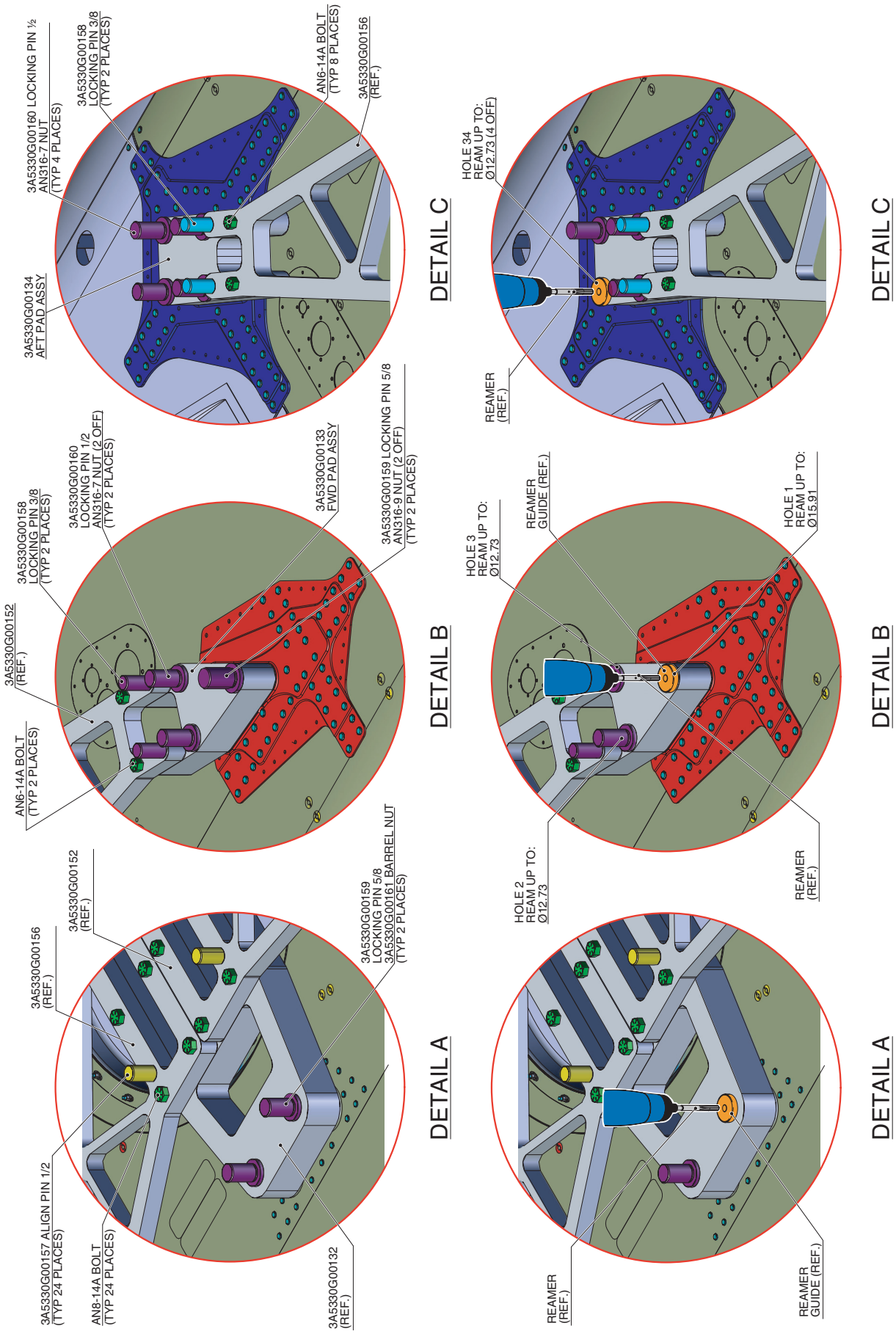

3A5330G00160 LOCKING PIN ½
AN316-7 NUT
(TYP 4 PLACES)
3A5330G00158
LOCKING PIN 3/8
(TYP 2 PLACES)
AN6-14A BOLT
(TYP 8 PLACES)
3A5330G00156
(REF.)
3A5330G00134
AFT PAD ASSY
DETAIL C
HOLE 34
REAM UP TO:
Ø12.73 (4 OFF)
REAMER
(REF.)
DETAIL C
3A5330G00158
LOCKING PIN 3/8
(TYP 2 PLACES)
3A5330G00160
LOCKING PIN 1/2
AN316-7 NUT (2 OFF)
(TYP 2 PLACES)
3A5330G00133
FWD PAD ASSY
3A5330G00159 LOCKING PIN 5/8
AN316-9 NUT (2 OFF)
(TYP 2 PLACES)
3A5330G00152
(REF.)
AN6-14A BOLT
(TYP 2 PLACES)
DETAIL B
HOLE 3
REAM UP TO:
Ø12.73
REAMER
GUIDE (REF.)
HOLE 1
REAM UP TO:
Ø15.91
HOLE 2
REAM UP TO:
Ø12.73
REAMER
(REF.)
DETAIL B
3A5330G00156
(REF.)
3A5330G00152
(REF.)
3A5330G00159
LOCKING PIN 5/8
3A5330G00161 BARREL NUT
(TYP 2 PLACES)
3A5330G00157 ALIGN PIN 1/2
(TYP 24 PLACES)
AN8-14A BOLT
(TYP 24 PLACES)
3A5330G00132
(REF.)
DETAIL A
REAMER
(REF.)
REAMER
GUIDE (REF.)
DETAIL A

Figure A3

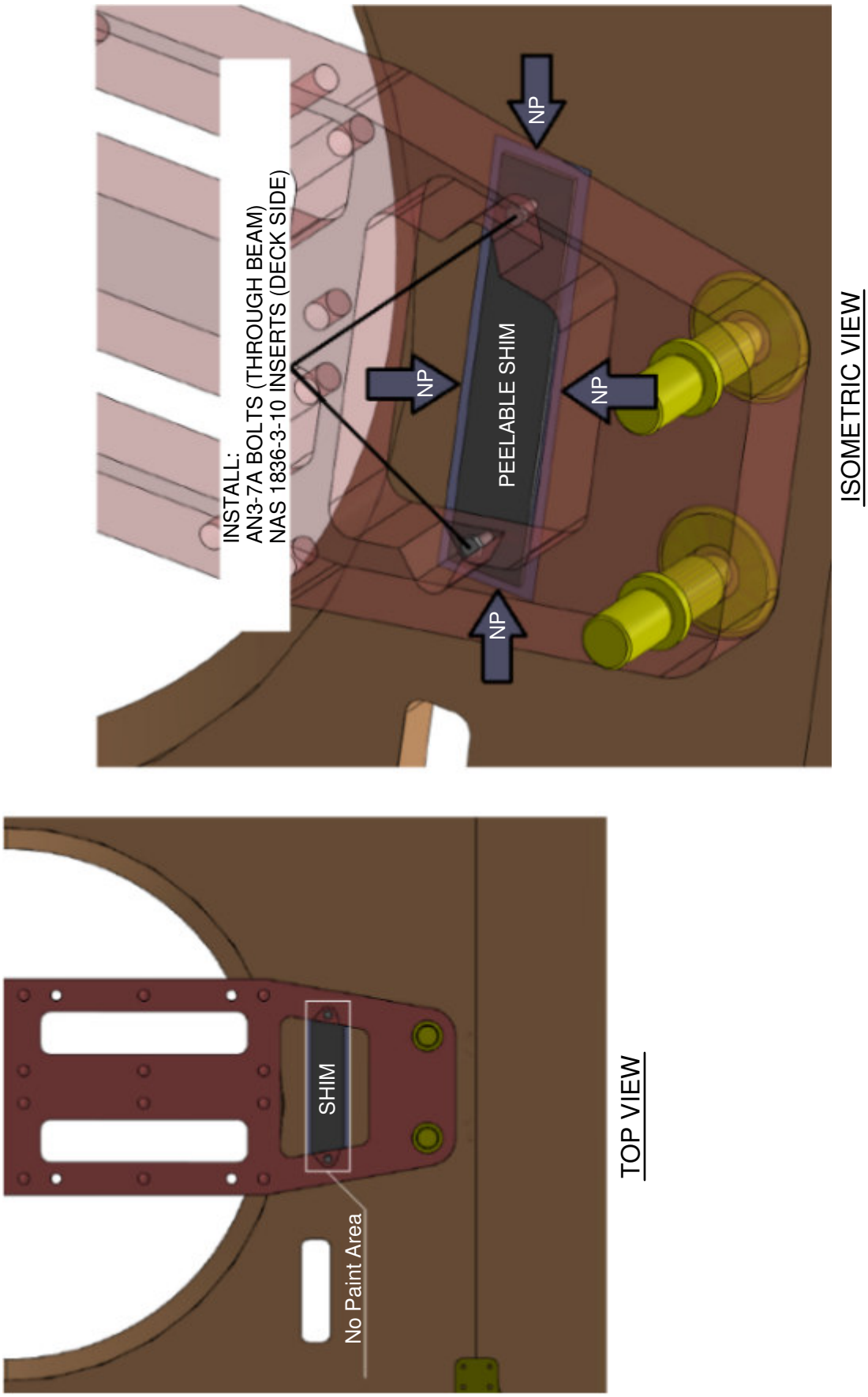

INSTALL:
AN3-7A BOLTS (THROUGH BEAM)
NAS 1836-3-10 INSERTS (DECK SIDE)
NP
NP
PEELABLE SHIM
NP
NP
ISOMETRIC VIEW
SHIM
No Paint Area
TOP VIEW

Figure A4

ANNEX B

FORWARD FIREWALL (LH & RH) AND SIDE PROFILES REMOVAL

NOTE

Step 1 of the following procedure describes the proper removal of the left front firewall assembly at STA 5760 (P/N 3P7119A00331 or 3P7119A00332) and the right front firewall assembly at STA 5760 (3P7119A00431 or 3P7119A00432).

Step 2 of the following procedure describes the proper removal of the LH profiles P/N 3P7110A15151 and P/N 3P7110A15351, the RH profiles P/N 3P7110A15251 and P/N 3P7110A15451, the LH cowling framing P/N 3P7110A13151, and the RH cowling framing P/N 3P7110A13251.

1 REMOVAL OF FRONT FIREWALL ASSEMBLIES

CAUTION

Prior to any removal of the firewalls, make sure to temporarily move (or remove) fire loop clamps, as needed, to prevent damage during the removals.

1.1 With reference to Figure B1 and Figure B2 sections AB-AB and AC-AC, starting from the outboard most aft side of the firewalls, remove fasteners from forward screens P/N 3P7110A32951 and P/N 3P7110A33051. Remove these screens from the aircraft and set them aside for later re-installation.

1.2 With reference to Figure B1 and Figure B2 sections AB-AB and AC-AC, remove fasteners holding stoppers P/N 3P7110A22151 and P/N 3P7110A22251. You will need to remove rivets and one hi-lok. Remove these stoppers from the aircraft and set them aside for later re-installation.

1.3 With reference to Figure B1 and Figure B2 section AB-AB and view AD, remove fasteners holding forward angles P/N 3P7110A17551 and P/N 3P7110A17651. Remove these angles from the aircraft and set them aside for later re-installation.

1.4 With reference to Figure B1 "4th Removal Step," remove the remaining fasteners on the lower bracket going inboard from the removed sheet metal in steps 1.1 – 1.3.

1.5 With reference to Figure B1 "Final Removal Step," remove the remaining fasteners holding the forward firewalls in place with brackets going from bottom to top at BL 0.

1.6 Temporarily remove the left front firewall assembly (P/N 3P7119A00331 or P/N 3P7119A00332) and the right front firewall assembly (P/N 3P7119A00431 or P/N 3P7119A00432) from the aircraft and set them aside.

1.7 After completion of SB Part I or Part IV, reinstall the firewalls with reference to Figures B1 and B2.

2 REMOVAL OF THE FWD COWLING FRAMING AND SIDE PROFILES

2.1 With reference to Figure B3 and Figure B4 view A, remove fasteners from the forward LH and RH framings (P/N 3P7110A13151 and P/N 3P7110A13251). Remove these framings from the aircraft and set them aside for later re-installation.

2.2 With reference to Figure B3 and Figure B4 view B and sections C-C, D-D and E-E, remove fasteners from the profiles and framings in the following sequence:

2.2.1 Remove all the fasteners joining LH and RH framing (P/N 3P7110A10152 and P/N 3P7110A10252) with the profiles.

2.2.2 Remove these framing from the aircraft and set them aside for later re-installation.

2.2.3 Removal all the fasteners joining the LH and RH profiles (P/N 3P7110A15151 and P/N 3P7100A15251) to the aircraft structure and profiles.

NOTE

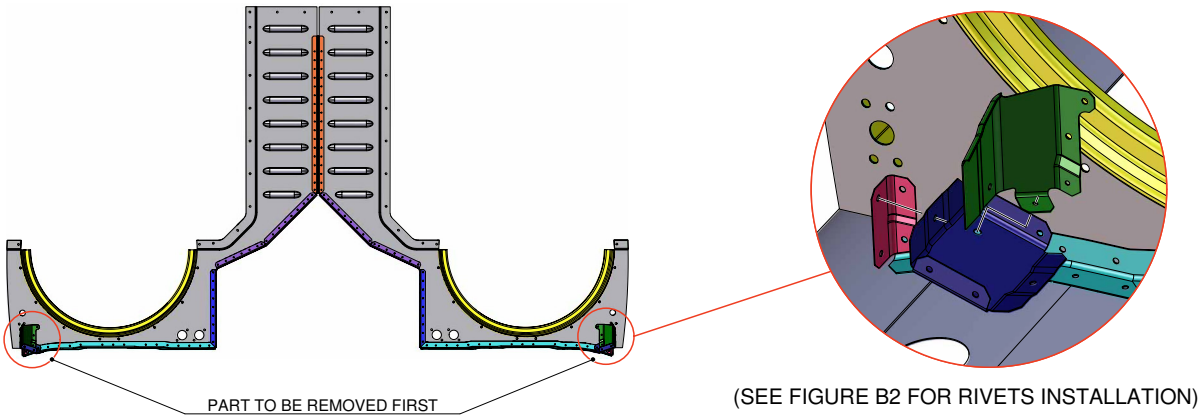
These profiles span from STA 4500 to STA 8380.
Temporary removal of rear framings 3P7110A16151 and 3P7110A16251 is permitted.

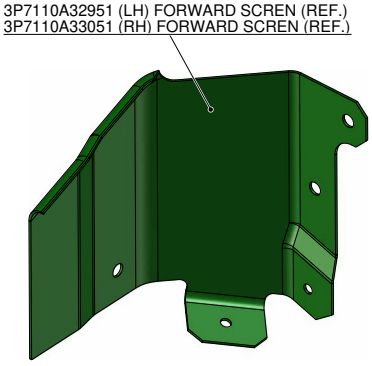
2.2.4 Remove these profiles from the aircraft and set them aside for later re-installation.

2.2.5 Remove the fasteners of the remaining LH and RH profiles on the transmission deck (P/N 3P7110A15351 and P/N 3P7100A15451).

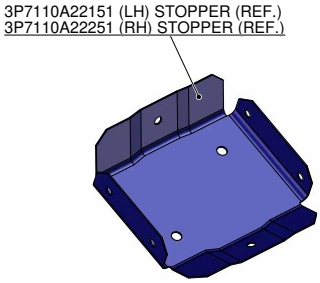
2.2.6 Remove these profiles from the aircraft and set them aside for later re-installation.

2.3 After completion of SB Part I, reinstall the profiles and framings with reference to Figures B3 and B4.

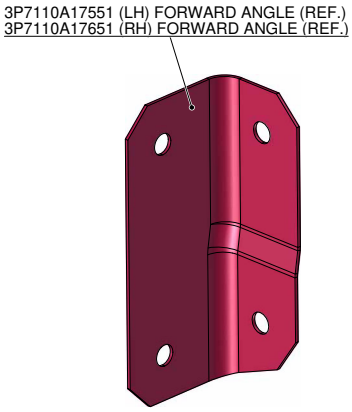




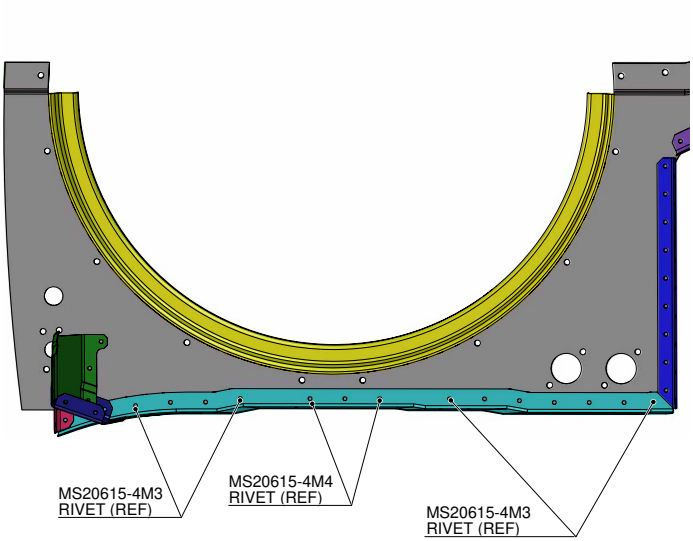
1st REMOVAL STEP



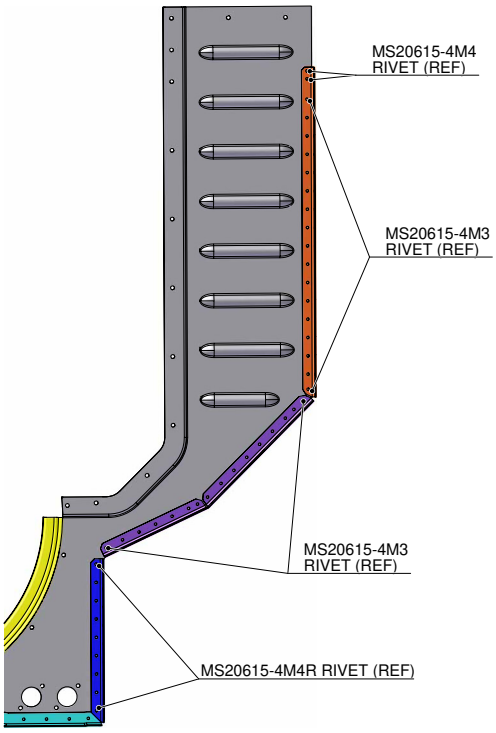
2st REMOVAL STEP



3st REMOVAL STEP



4th REMOVAL STEP



FINAL REMOVAL STEP

Figure B1

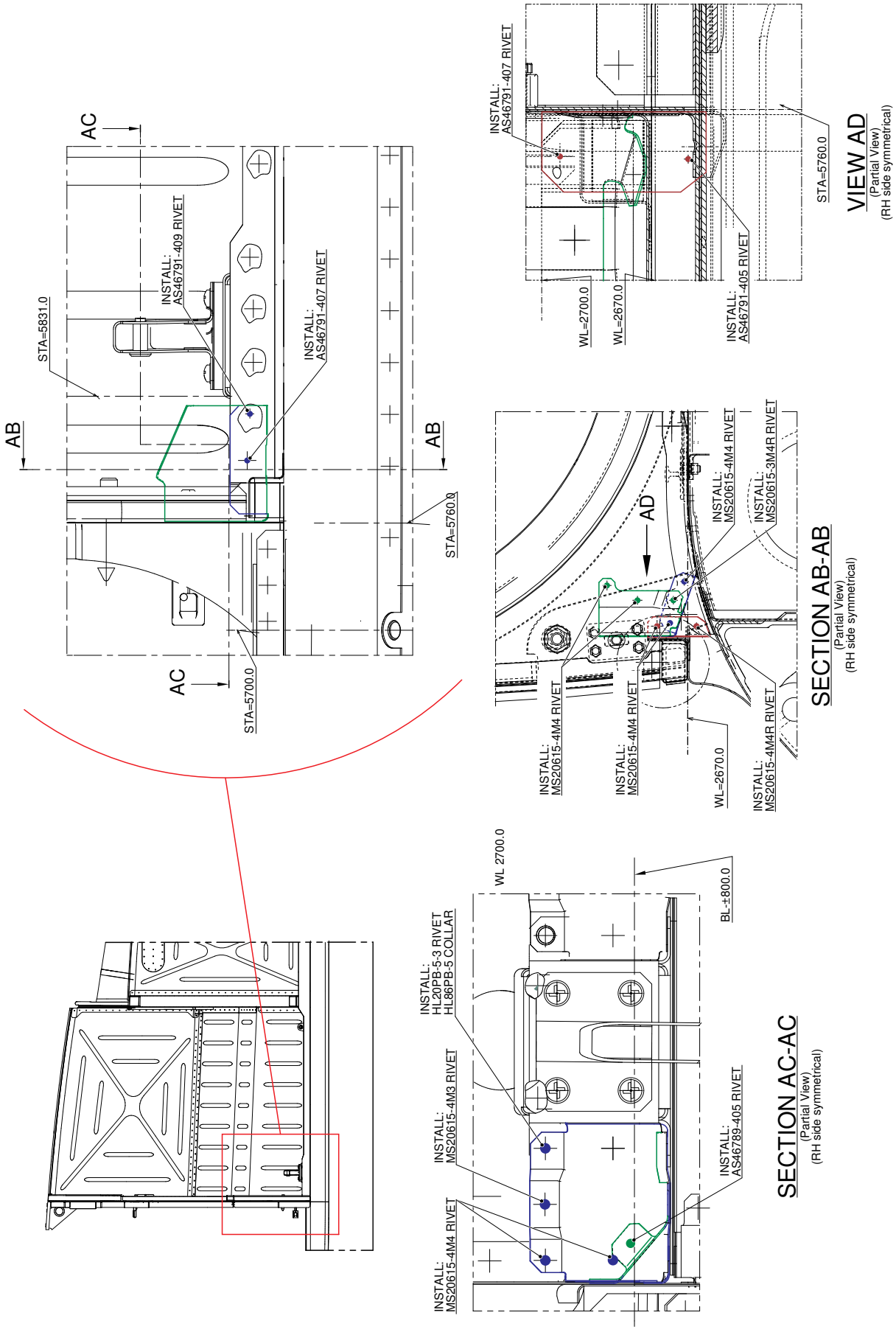

AC
AB
AB
AC
STA=5831.0
INSTALL:
AS46791-409 RIVET
INSTALL:
AS46791-407 RIVET
STA=5760.0
STA=5700.0
INSTALL:
AS46791-407 RIVET
WL=2700.0
WL=2670.0
INSTALL:
AS46791-405 RIVET
STA=5760.0
VIEW AD
(Partial View)
(RH side symmetrical)
AD
INSTALL:
MS20615-4M4 RIVET
INSTALL:
MS20615-3M4R RIVET
INSTALL:
MS20615-4M4 RIVET
INSTALL:
MS20615-4M4 RIVET
WL=2670.0
INSTALL:
MS20615-4M4R RIVET
SECTION AB-AB
(Partial View)
(RH side symmetrical)
WL 2700.0
BL-±800.0
INSTALL:
HL20PB-5-3 RIVET
HL86PB-5 COLLAR
INSTALL:
MS20615-4M3 RIVET
INSTALL:
MS20615-4M4 RIVET
INSTALL:
AS46789-405 RIVET
SECTION AC-AC
(Partial View)
(RH side symmetrical)

Figure B2

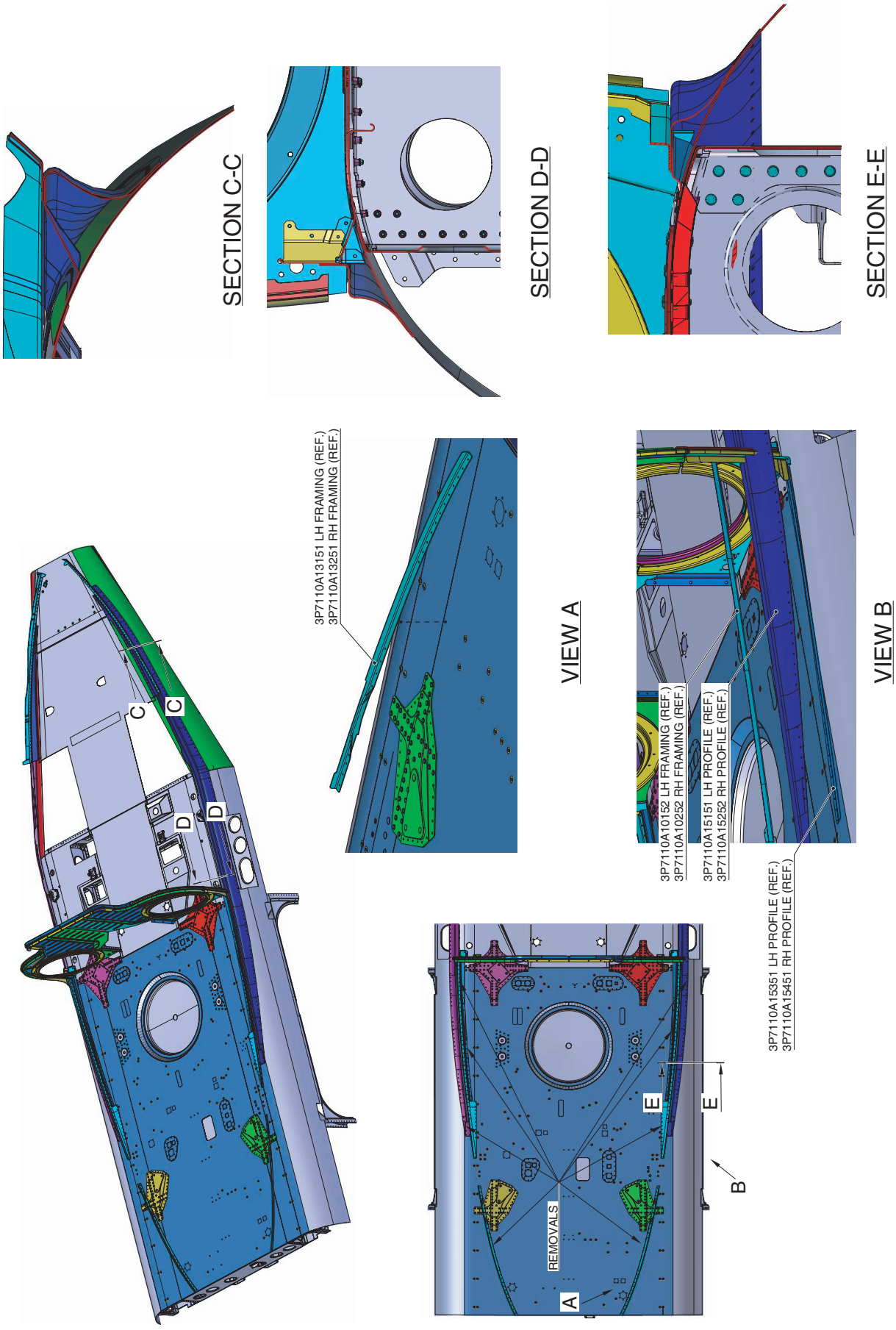

SECTION C-C
SECTION D-D
SECTION E-E
VIEW A
VIEW B
3P7110A13151 LH FRAMING (REF.)
3P7110A13251 RH FRAMING (REF.)
3P7110A10152 LH FRAMING (REF.)
3P7110A10252 RH FRAMING (REF.)
3P7110A15151 LH PROFILE (REF.)
3P7110A15252 RH PROFILE (REF.)
3P7110A15351 LH PROFILE (REF.)
3P7110A15451 RH PROFILE (REF.)
REMOVALS
A
B
C
D
E

Figure B3

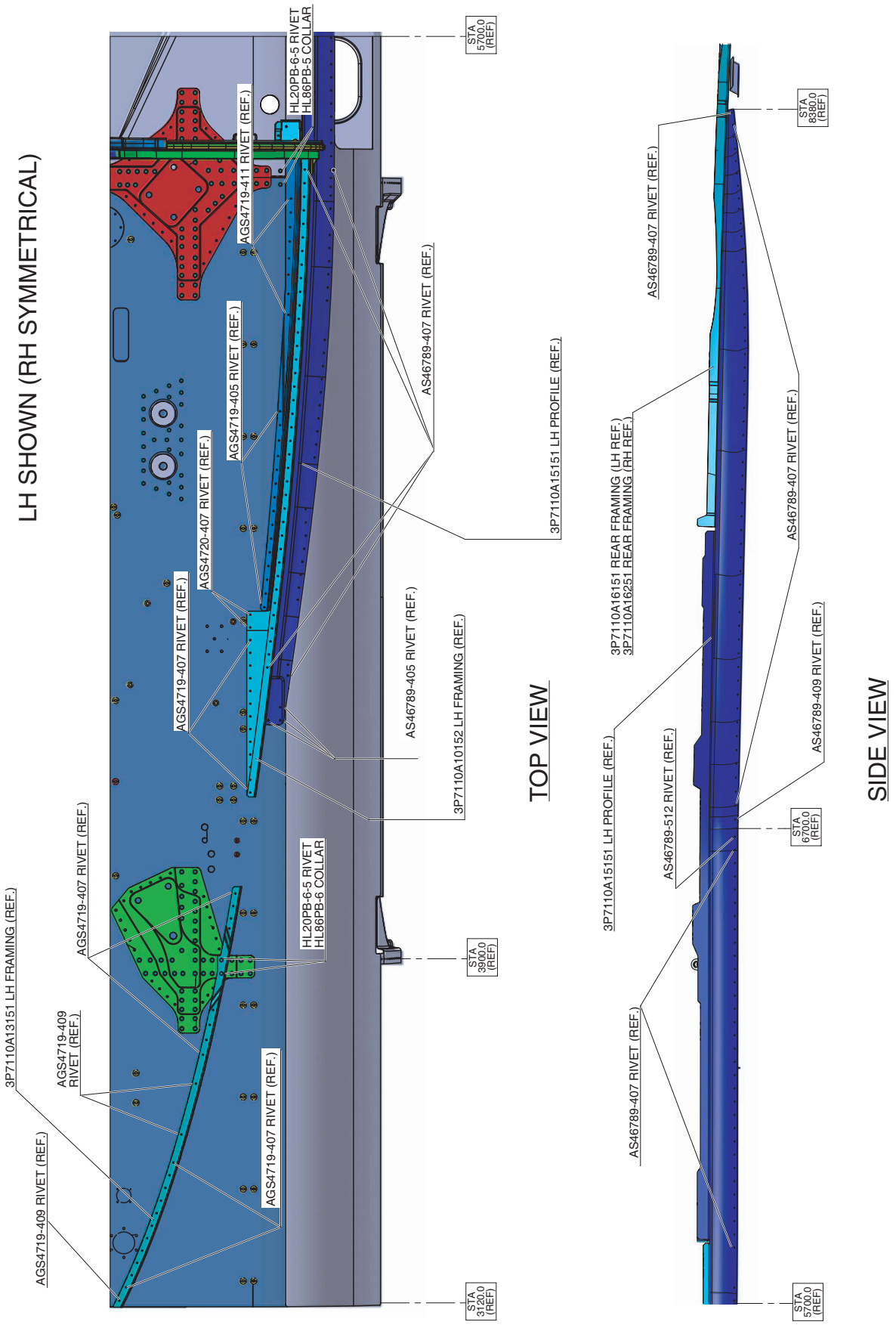

LH SHOWN (RH SYMMETRICAL)
TOP VIEW
SIDE VIEW
3P7110A13151 LH FRAMING (REF.)
AGS4719-409 RIVET (REF.)
AGS4719-409 RIVET (REF.)
AGS4719-407 RIVET (REF.)
AGS4719-407 RIVET (REF.)
HL20PB-6-5 RIVET
HL86PB-6 COLLAR
STA 3120.0 (REF)
STA 3900.0 (REF)
3P7110A10152 LH FRAMING (REF.)
AS46789-405 RIVET (REF.)
AGS4719-407 RIVET (REF.)
AGS4720-407 RIVET (REF.)
AGS4719-405 RIVET (REF.)
AGS4719-411 RIVET (REF.)
HL20PB-6-5 RIVET
HL86PB-5 COLLAR
STA 5700.0 (REF)
AS46789-407 RIVET (REF.)
3P7110A15151 LH PROFILE (REF.)
3P7110A15151 LH PROFILE (REF.)
AS46789-407 RIVET (REF.)
AS46789-512 RIVET (REF.)
3P7110A16151 REAR FRAMING (LH REF.)
3P7110A16251 REAR FRAMING (RH REF.)
AS46789-407 RIVET (REF.)
AS46789-409 RIVET (REF.)
AS46789-407 RIVET (REF.)
STA 6700.0 (REF)
STA 8380.0 (REF)
STA 5700.0 (REF)

Figure B4

ANNEX C

UPPER PLATE PLANARITY PROCEDURE

NOTE

The following describes the steps needed for ensuring the correct flatness and planarity of any of the upper plate replacements (P/Ns 3P533312352, 3P533312452, 3P5333A12952, 3P5333A13052).

1. Thoroughly clean the surface of excess sealant or other contaminants around the bolt hole locations (n°3 for the FWD plates n°4 for the AFT Plates) and the strut fitting pad area.
2. Place the old plate on a flat surface and make sure the extruded pad area specifically, is flat on this surface.
3. Using a depth micrometer, measure the pad thickness at all bolt hole locations and find the average of this dimension. Record this average, naming in YPAD.
4. Mill the replacement upper plate to dimension YPAD + 0.25. (Example: if YPAD = 6.05, then the plate must be milled to 6.05 +0.25 = 6.30).

NOTE

The new upper plate will have some extra thickness and must be milled to a dimension within close tolerance of the original plate thickness. An extra thickness of 0.25 is given to the pad to allow for material removed during the flatness procedure in step 6.

5. Install this milled replacement plate onto the upper deck structure, in accordance with applicable steps of this SB (Part II or Part IV).
6. After installation of the plate, ensure the flatness tolerance and planarity as follows:

NOTE

When measuring the gap to ensure a tolerance of 0.05 in the following steps, be sure to carefully check the gaps around the entire circumference of the bolt hole locations. This can be done by inserting the filler gauges into the bolt holes and checking the interior circumference.

6.1 For the FWD upper plates 3P5333A12352 and 3P5333A12452, place the associated MGB strut fitting P/N 3G6330L00132 on the FWD upper plate.

6.2 Check the gap between the strut fitting P/N 3G6330L00132 and FWD upper plate by means of feeler gauges.

6.3 If the gap found in step 6.2 is more than 0.25 contact Leonardo helicopter otherwise skip to step 6.4.

6.4 As needed, sand down the plate to account for gaps using a circular sander. Start

with the 220 grid sand paper and only if necessary, to remove more material, use the 150 grit sand paper. Sand until the finish will become uniform and ensure the strut fitting sits flush with the upper plate pad.

6.5 Check that there is no more than a 0.05 gap.

6.6 Apply Alodine to protect the sanded surfaces of the upper plate.

6.7 For the AFT upper plates 3P5333A12952 and 3P5333A13052, place the associated MGB strut fitting P/N 3G6330L00232 on the AFT upper plate.

6.8 Check the gap between AFT strut fitting P/N 3G6330L00232 and AFT upper plate by means of feeler gauges.

6.9 In the gap found in step 6.8 is more than 0.25 contact Leonardo helicopter otherwise skip to step 6.10.

6.10 As needed, sand down the plate to account for gaps using a circular sander. Start with the 220 grid sand paper and only if necessary, to remove more material, use the 150 grit sand paper. Sand until the finish will become uniform and ensure the strut fitting sits flush with the upper plate pad.

6.11 Check that there is no more than a 0.05 gap.

6.12 Apply Alodine to protect the sanded surfaces of the upper plate.

ANNEX D

LH MAIN GEAR BOX ANTI-TORQUE BEAM FITTING - REPLACEMENT

LH Main Gear Box Anti-torque Beam Fitting - Replacement

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2. Figure 2 – Reaming Set
3. Figure 3 – External Work Area
4. Figure 4 - Fastener Hole Installation on Alignment Tool
5. Figure 5 – Deck Inserts and Clean Area
6. Figure 6 – Creating a Compensation Shim
7. Figure 7 – Internal Work Area
8. Figure 8 – MGB Middle Reinforcement Removal and Install
9. Figure 9 – Fitting Structural Gap

References

Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety – Make the helicopter safe for maintenance
39-A-00-50-00-00A-074A-D	Material data – List of hazardous materials
39-A-63-20-00-00A-520A-A	Main gearbox group – Remove procedures
39-A-63-20-00-00A-720A-A	Main gearbox group – Install procedures
39-A-67-13-11-00A-520A-A	Control rod M5 – Remove procedures
39-A-67-13-11-00A-720A-A	Control rod M5 – Install procedures
39-A-51-42-01-00A-720A-A	Potted blind – type inserts – Install procedures
39-A-08-21-00-00A-000A-A	Helicopter – Level procedure - General

Preliminary requirements

Required conditions

Table 2 Required conditions

Condition	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The main gearbox group must be removed	39-A-63-20-00-00A-520A-A
The M5 control rod must be removed	39-A-67-13-11-00A-520A-A
The helicopter must be level (*)	39-A-08-21-00-00A-000A-A

(*) This condition is recommended, but not required

Support equipment

Table 3 Support equipment

Nomenclature	Identification No.	Qty
1. Platform, left (or equivalent)	GG-01-00	1
2. Platform, right (or equivalent)	GG-02-00	1
3. Anti-torque Plate Tool & Bushing Set	3G6330A00532A005A	1
4. Locking Pin (Ref. Figure 1)	Local Supply	2
5. Pin Bushing (Ref. Figure 1)	Local Supply	2
6. Temporary Barrel Nut (Ref. Figure 1)	Local Supply	2
7. Reamer Guide (Ref. Figure 2) (Note 1)	Local Supply	1
8. Reamer Guide (Ref. Figure 2) (Note 2)	Local Supply	1
9. Reamer Guide (Ref. Figure 2) (Note 3)	Local Supply	1
10. Reamer stop (Ref. Figure 2)	Local Supply	1
11. Reamer (Note 4)	Local Supply	1
12. Reamer (Note 5)	Local Supply	1
13. Reamer (Note 6)	Local Supply	1
14, Digital Level (inclinometer)	Local Supply	1
15. Filler Gauge Set	Local Supply	1
16. Non-metallic Scrapper	Local Supply	1
17. Aluminium Shim (Peelable)	Local Supply	AR

Note 1: Reamer Guide Internal Diameter 14.68 mm (.578 inch)
Note 2: Reamer Guide Internal Diameter 15.06 mm (.593 inch)
Note 3: Reamer Guide Internal Diameter 15.47 mm (.609 inch)
Note 4: Reamer Nominal Diameter 14.68 mm (37/64 inch)
Note 5: Reamer Nominal Diameter 15.06 mm (19/32 inch)
Note 6: Reamer Nominal Diameter 15.47 mm (39/64 inch)

Supplies

Table 4 Supplies

Nomenclature	Identification No.	Qty
1. Sealing Compound (EA 934 NA)	C021	AR
2. Sealing Compound (Pro-seal 890 or equivalent)	C153	AR
3. Primer	C042	AR
4. Alodine 1200	C237	AR
5. Tape, metallic	C221	AR
6. Sealing Compound (EA 9309.3 NA)	C231	AR
7. Silica flour (ALT Grade 2429 CP03 Glass Micro-spheres)	NA	AR

Spares

Table 5 Spares

Nomenclature	Identification No.	Qty
1. MGB Middle Reinforcement	3P5333A12253 or 3P5333A12253A3 or 3P5333A12253M01	1
2. Insert	NAS1836-3-11	2
3. Bolt	AN3-11A	2
4. Hi-lok	HL20PB-5-4	42
5. Hi-lok	HL20PB-5-5	9
6. Hi-lok	HL20PB-5-6	19
7. Hi-lok	HL64PB-6-5	2
8. Hi-lok	HL220PB-6-5 or HL20PB-6-5	2
9. Collar	HL86PB-5 or HL86PB5	70
10. Collar	HL87-6	2
11. Collar	HL93-6	2

Safety conditions

WARNING

The materials that follow are dangerous. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for these materials:

– EA 934 NA (Supply Ref. 1)

– Pro-seal 890 (Supply Ref. 2)

– Epoxy Primer (Supply Ref. 3)

– Alodine 1200 (Supply Ref. 4)

– EA 9309.3NA (Supply Ref. 6)

Refer to 39-A-00-50-00-00A-074A-D.

Procedure

1. If not already supplied with tool (Support Equipment Ref.3), fabricate the alignment set shown in (Fig.1) and the reaming set shown in (Fig.2).

2. Put the Platform (Support Equipment Ref.1) adjacent to the left side of the fuselage.

3. Put the Platform (Support Equipment Ref.2) adjacent to the right side of the fuselage

4. Get access to the external work area shown in (Fig. 3).

5. Using the alignment and reaming tool (Support Equipment Ref.3) and the final size pins and bushings that come with the kit, ensure that the tool pins fully in all 4 locations.

NOTE:

Move or remove any upper deck lines that interfere with the installation of the tool. These lines will need to be re-installed at the end of this procedure. Also, remove the sump assembly under the MGB (P/N 3G3070A06331) for ease of access.

6. If the tool is not able to be pinned fully or the tool is not contacting at least 3 bosses, notify the manufacturer, otherwise continue to step 7.

NOTE:

How the tool sits can be checked visually by removing one pin on the tool at a time and visually inspecting from the sump cutout.

7. Using a digital level (Support Equipment Ref.14), place it on top of the tool and record the inclination angle. Do this both laterally and longitudinally. Be sure to record the inclination angle, regardless of the helicopter being level.

8. If supplementary fastening holes are not already drilled on the tool, locate and mark two hole locations that are equidistance and sit above a centralized location of the honeycomb on the deck. Reference (Fig. 4).

9. Temporarily remove the tool off the aircraft and drill Ø7.94mm (10/32 inch) holes on the tool.

10. Re-install the tool on the deck, and fully pin it down. Drill Ø3.2mm (1/8 inch) pilot holes onto the deck using a guide and the fastening holes on the tool. Remove the tool from the aircraft when complete.

11. Install inserts (Spare Ref.2) onto the deck, in the piloted locations, in accordance with data module ASRP 39-A-51-42-01-00A-720A-A. The holes will have to be enlarged to Ø11.51mm (29/64 inch) and the inserts will be bonded with adhesive (Supply Ref.1).

12. Let the inserts fully cure in place before continuing to step 13.

13. Clean the area around where the inserts with installed of paint and primer, to provide a flat surface for measurements and shimming as shown in (Fig. 5).

14. Re-install the alignment and reaming tool onto the bosses, only pinning the RH side down and perform planarity rigging as follows:

    14.1 Measure and record the distance between the bottom of the tool and the cleaned area of the upper deck on the forward and AFT using filler gauges (Support Equipment Ref.15).

    14.2 Using peelable aluminum metal shims (Supply Ref. 17), fill the gap between the alignment tool and the deck structure closest to the fitting being replaced as shown in (Fig. 6), using the measurements found in 14.1 as a guide. Layers of aluminum tape (Supply Ref.5) can be used to build up the shim in areas where a greater thickness is needed.

14.3 Temporarily install bolts (Spare Ref.3) through the tool, into the inserts installed on the deck. Make sure to only torque the bolts snuggly, so that no extra stress is added to the tool.

NOTE:

The compensation shim will be reused to install the new fitting at the same level of the existing fitting, so it's important to accurately fill the gap and measure the shim thickness. This must be done, but making sure no gaps between the shim and tool, and the shim and deck, exceed 0.05mm as given in Figure 6. A filler gauge of .002" (.051mm) should be used for checking the gaps. Also, check that the tool is still sitting on the 3 bosses, by using the same filler gauge and checking the gaps from the tools bushing holes (with locking pins and bushings removed).

15. Temporarily remove the alignment tool off the aircraft and get access to the internal work area shown in (Fig. 7) as follows:

    15.1 Remove all interiors that prevent access to this area.

    15.2 Remove the Aft LH ceiling panel P/N 3P5330A00731 by removing its screws and washers. Retain this hardware for reinstallation later.

    15.3 Move or remove any lines that interfere with the fitting removal and installation.

16. Remove the existing MGB Middle reinforcement fitting as follows:

    16.1 Remove all hi-loks fastening the reinforcement to the structure as shown in (Fig. 8).

    16.2 With a non-metallic scrapper (Support Equipment Ref.16) remove the existing sealant from the upper mating surface of the reinforcement.

NOTE:

It is permitted to use a heat gun, applying a light amount of heat to soften the sealant.

    16.3 Carefully remove the fitting off the structure and clean the work area of debris and contaminant.

17. Temporarily install the new fitting (Spare Ref.1) to check its conformity, as follows:

    17.1 Remove primer to the top surface of the bosses using 320 grit sand paper (or finer), or scotch-brite.

    17.2 Using the alignment and reaming tool (Support Equipment Ref.3), place it on the aircraft with the final size bushings on the RH side and the pin bushings (Support Equipment Ref.5) on the LH side.

    17.3 Pin the RH side down with the final size pins included with the tool kit.

    17.4 Install bolts (Spare Ref.3) through the tool, into the inserts installed on the deck, with the shim (Supply Ref. 17) created in step 14, filling the gap.

NOTE:

The tool must stay locked with this shim gap to ensure the planarity of the fittings.

    17.5 Suck the new fitting up to the structure on the LH side, inserting the temporary barrel nuts (Support Equipment Ref.6) into the fitting barrels, and using the locking pin (Support Equipment Ref.4) to fasten the fitting between the alignment tool and the aircraft structure.

    17.6 Install temporary fasteners (clecos) on the lateral face of the fitting, to keep the lateral face tight to the longeron.

    17.7 Ensure that with the new fitting sucked up with the tool, that the tool is still sitting on bosses of the existing fitting and the compensation shim. This will ensure that the plane has not changed and that the bosses of the new fitting are sitting at the correct height.

17.8 Check to see if there are any pilot hole misalignments that would prevent installation.

NOTE:

If you are replacing fitting P/N 3P5333A12251 or 3P5333A12252, there will be approximately a 2.0 mm misalignment for two of the holes on the top face of the fitting. These two holes are on the outboard most hi-lok line, approximately 30.0 mm FWD and AFT of the centerline (the old fitting has a distance of 32.0 mm). This misalignment is allowable, because the holes can be enlarged to fit oversized fastener (HL64 or HL220) and it will not cause any edge distance issues. Refer to Figure 8.

17.9 Using filler gauges (Support Equipment Ref.15), measure the gap between the top face of the fitting, and the bottom side of the upper deck skin as shown in in (Fig. 9). If this gap exceeds 0.70mm (.028 inch) notify the manufacturer, otherwise continue to step 18.

18. Counter drill any accessible holes on the top face of the fitting, and install temporary fasteners (clecos).

19. Counter drill all holes on the lateral face of the fitting and install temporary fasteners (clecos).

20. Remove the tool from the aircraft and drill the remaining pilot holes to final size (cleco as needed).

21. Deburr all holes as needed.

22. If the gap found in step 17.9 is equal to or less than 0.15mm (.006 inch) Install the new fitting (Spare Ref.1) as follows. Otherwise, skip to step 23.

22.1 Apply a thin layer of sealant (Supply Ref.2) to the mating surface of the fitting with the upper deck.

22.2 While wet, lock the fitting in place by repeating steps 17.2 to 17.6 and then fasten the fitting with all the necessary fasteners (Spare Ref.4,5,6,7,8,9,10,11), as given in (Fig. 8).

22.3 Remove the alignment tool once the fitting has enough fasteners installed to be secure, and do the remaining hi-loks that were inaccessible with the tool in place.

22.4 Touch up any needed surfaces with primer (Supply Ref.3). Skip to step 24

23. If the gap found in step 17.5 is greater than 0.15mm (.006 inch) and less than 0.70mm (.028 inch) install the new fitting (Spare Ref.1) as follows:

23.1 Prepare liquid shim using adhesive (Supply Ref.6) and mixing it one of the following fillers (Supply Ref.7) with the given ratios (% by weight):

- Silica Flour / adhesive (100/100)
- Grade 2429 CP03 glass micro-spheres (from Potters-Ballottini) / adhesive (65/35)

23.2 Apply the liquid shim prepared in step 23.1 to the mating surface of the fitting with the upper deck.

23.3 While wet, lock the fitting in place with the alignment tool and fasten the fitting with all the necessary fasteners (Spare Ref.4,5,6,7,8,9,10,11), as given in (Fig. 8).

23.4 Remove the alignment tool once the fitting has enough fasteners installed to be secure, and do the remaining hi-loks that were inaccessible with the tool in place.

23.5 Apply a bead of sealant (Supply Ref.2) around the entire seam perimeter of the mating surface of the fitting with the upper deck to prevent water ingress.

23.6 Touch up any needed surfaces with primer (Supply Ref.3).

24 The boss holes in the new fitting must be reamed to final dimension as follows:

24.1 Place the alignment and reaming tool (Support Equipment Ref.3) on the aircraft structural bosses, with the final size bushings on the RH side and the pin bushings (Support Equipment Ref.5) on the LH side.

24.2 Lock the alignment and reaming tool down with the final size pins on the RH side and one locking pin (Support Equipment Ref.4) and temporary barrel nut (Support Equipment Ref.6) in the AFT LH position.

NOTE:

During reaming sequence, make sure to catch and clean up all metal shaving during each step ream, to prevent FOD.

24.3 Place the reamer stop (Support Equipment Ref.10) at the bottom of the barrel of open FWD boss and secure it with tape. Insert the reamer guide (Support Equipment Ref.7) into the open guide of the tool.

24.4 Using reamer (Support Equipment Ref.11), ream the hole to Ø14.68 mm (37/64 inch).

24.5 Remove reamer guide (Support Equipment Ref.7) from the tool and insert reamer guide (Support Equipment Ref.8).

24.6 Using reamer (Support Equipment Ref.12), ream the hole to Ø15.06 mm (19/32 inch).

24.7 Remove reamer guide (Support Equipment Ref.8) from the tool and insert reamer guide (Support Equipment Ref.9).

24.8 Using reamer (Support Equipment Ref.13), ream the hole to Ø15.47 mm (39/64 inch).

24.9 Remove reamer guide (Support Equipment Ref.9) from the tool and insert the final size reamer guide (15.88 mm inner diameter) already included with the alignment and reaming tool.

24.10 Using the final reamer already supplied with the tool kit, ream the hole to Ø15.88 mm.

24.11 Remove reamer stop from the barrel, deburr the newly reamed hole and clean the barrel.

24.12 Using a final size pin and the final reamer guide, lock the tool down to the FWD boss hole.

24.13 Remove the underszied locking pin, bushing and temporary barrel nut from the LH AFT position, and install the reamer stop (Support Equipment Ref.10) at the bottom of the barrel and secure it with tape. Insert the reamer guide (Support Equipment Ref.7) into the open guide of the tool.

24.14 Repeat steps 24.4 to 24.11 for the LH AFT boss position.

25 Do a final conformity check as follows:

25.1 Using the alignment and reaming tool (Support Equipment Ref.3) and the final size pins that come with the kit, ensure that the tool pins fully in all 4 locations.

25.2 Check that the tool sits on all 4 bosses within a 0.05mm tolerance.

25.3 Using a digital level (Support Equipment Ref.14), place it on top of the tool and record the inclination angle. Do this both laterally and longitudinally. Notify the manufacturer if the values recorded in step 7 have changed.

26 Clean off the boss surfaces of any debris and apply protective coating (Supply Ref.4) to the faces of any bosses that were touched.

27 Cover the face area of the fitting and hi-loks on the upper deck side with sealant (Supply Ref.2) to prevent water ingress.

28 Cover the inserts previously installed in step 11 with sealant (Supply Ref.2) to prevent water ingress.

Requirements after job completion

1 Remove all the tools and the other items from the work area.
2 Make sure that the work area is clean and free of foreign object debris.
3 Install the M5 control rod in accordance with DM 39-A-67-13-11-00A-720A-A
4 Install the LH ceiling panel 3P5330A00731.
5 Install any items previously removed for access.
6 Refinish the cleaned area on the upper deck with primer and paint
7 Install the main gearbox group in accordance with DM 39-A-63-20-00-00A-520A-A.

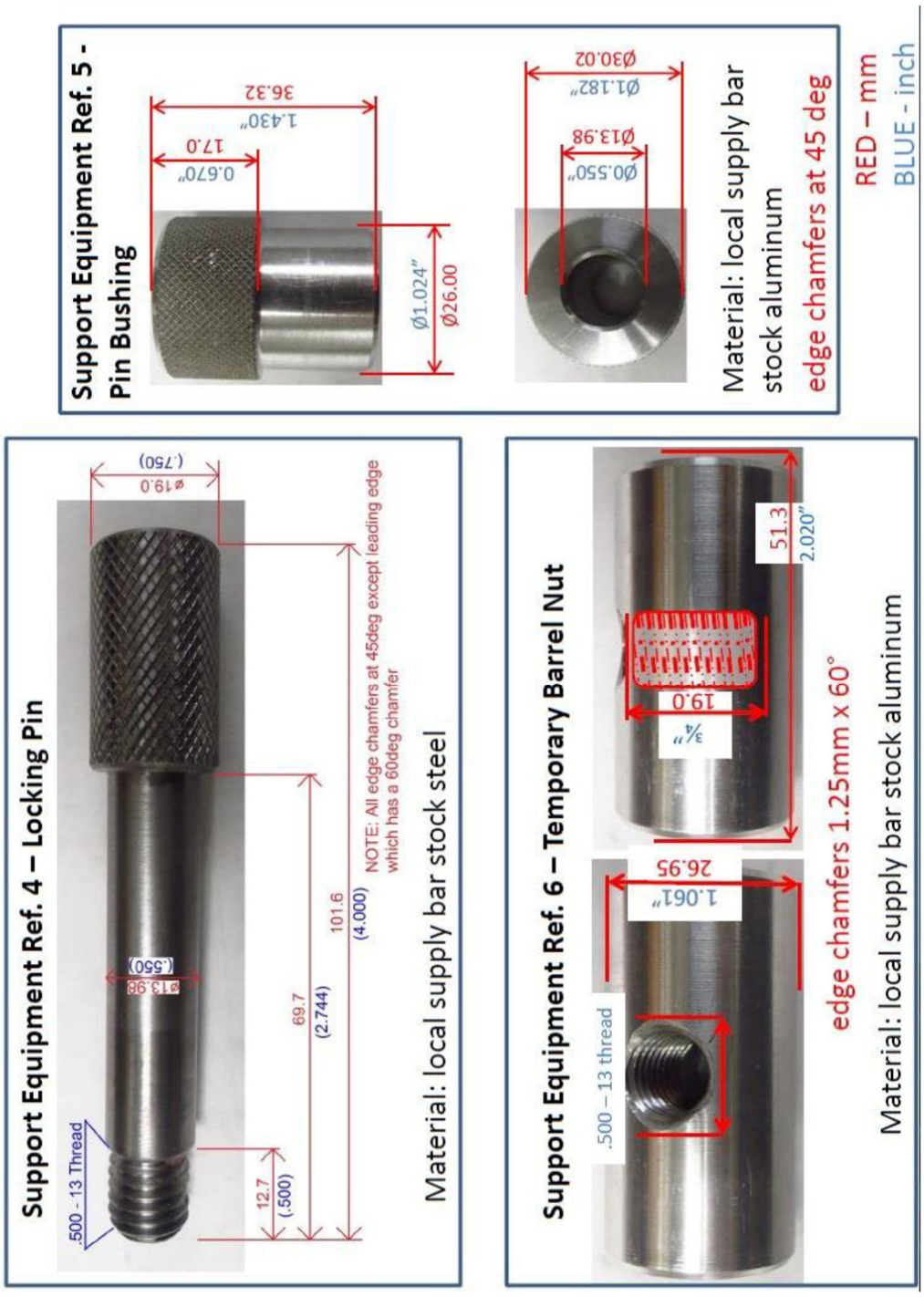


Figure 1 – Alignment Set

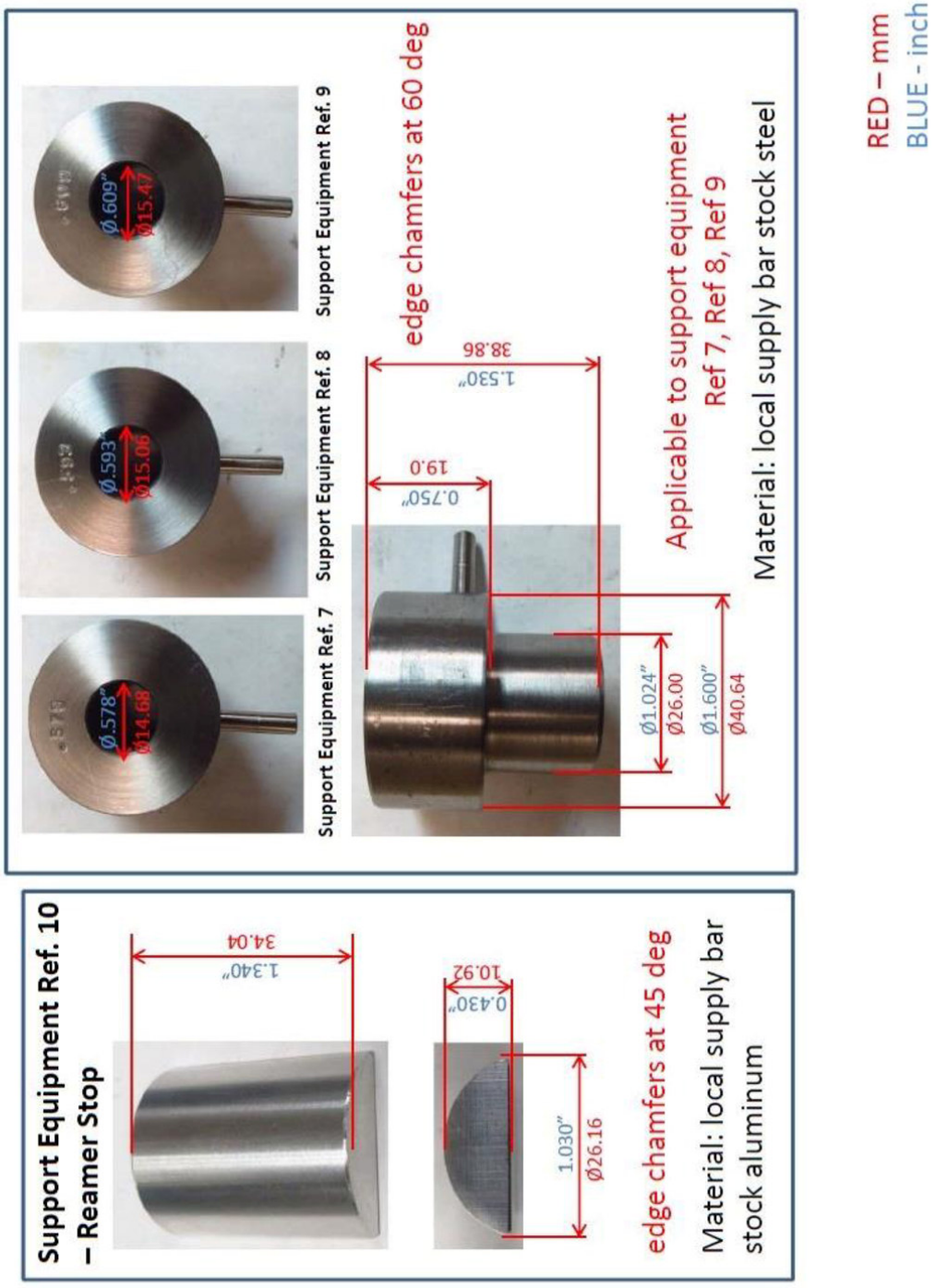
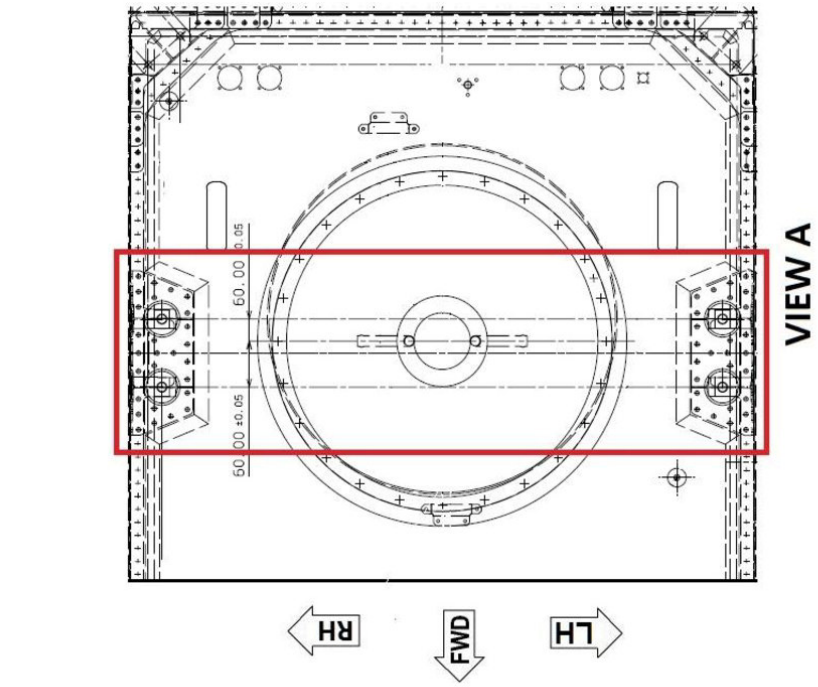


Figure 2 – Reaming Set



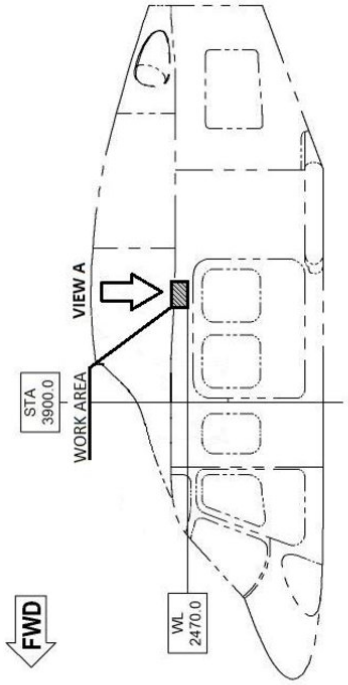


Figure 3 – External Work Area

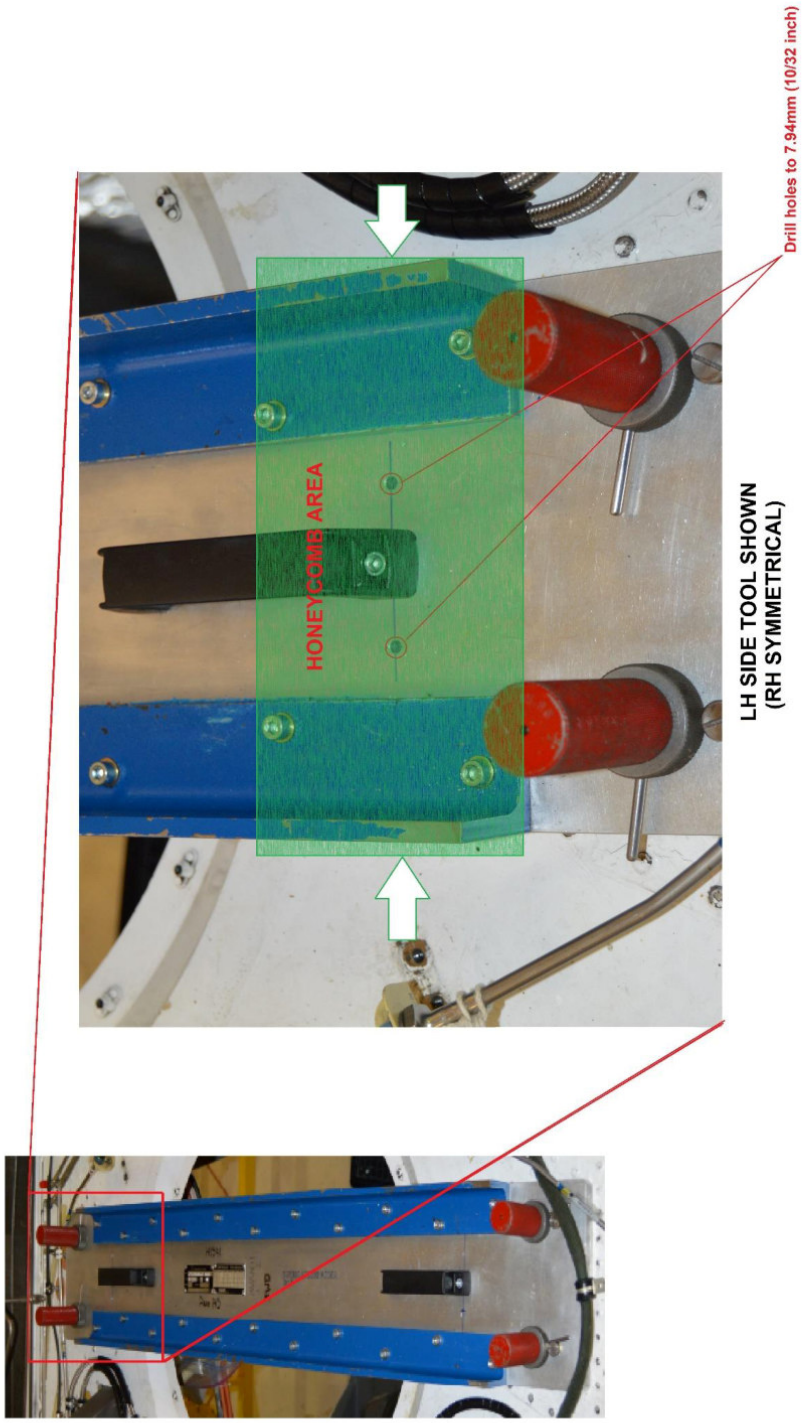


Figure 4 – Fastener Hole Installation on Alignment Tool

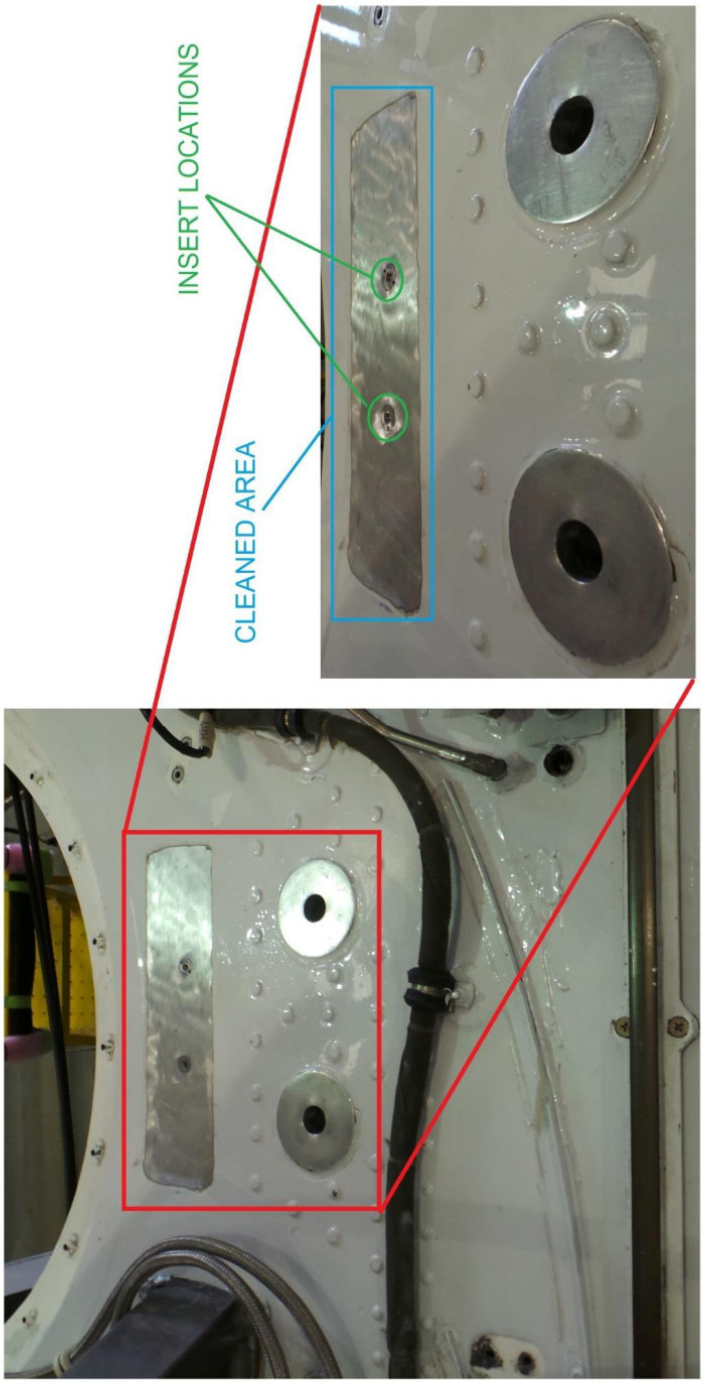


Figure 5 – Deck Inserts and Clean Area

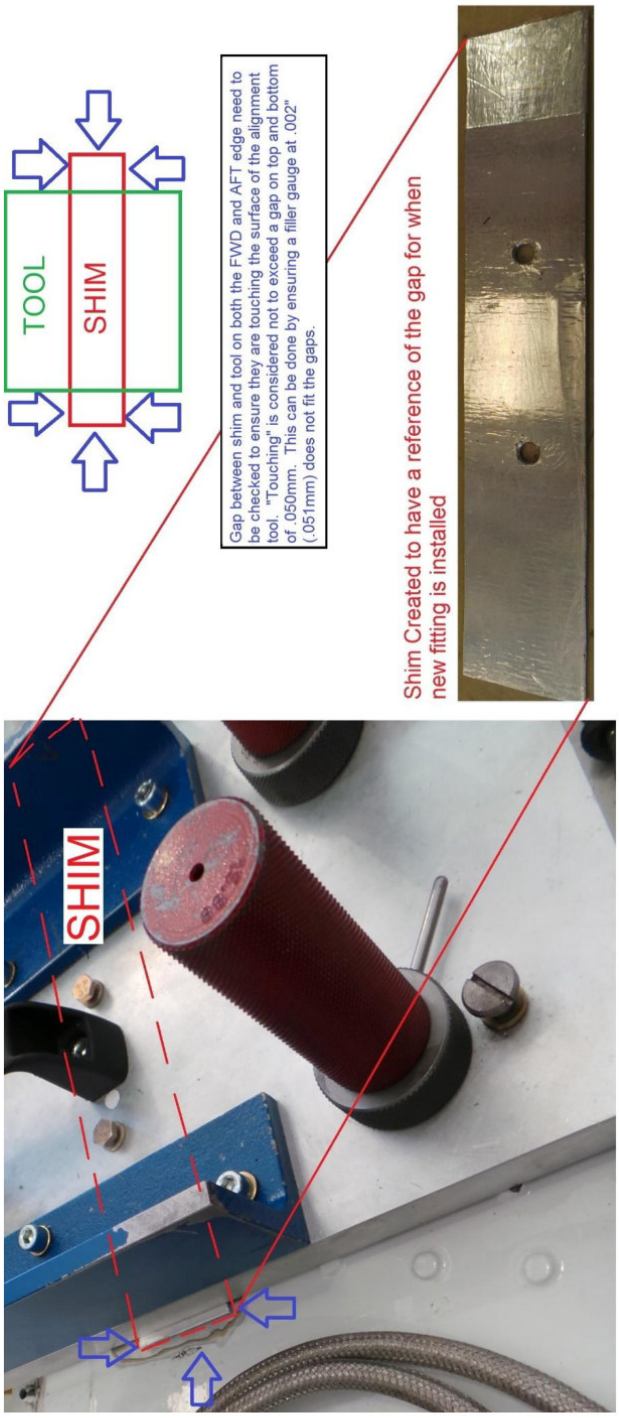


Figure 6 – Creating a Compensation Shim

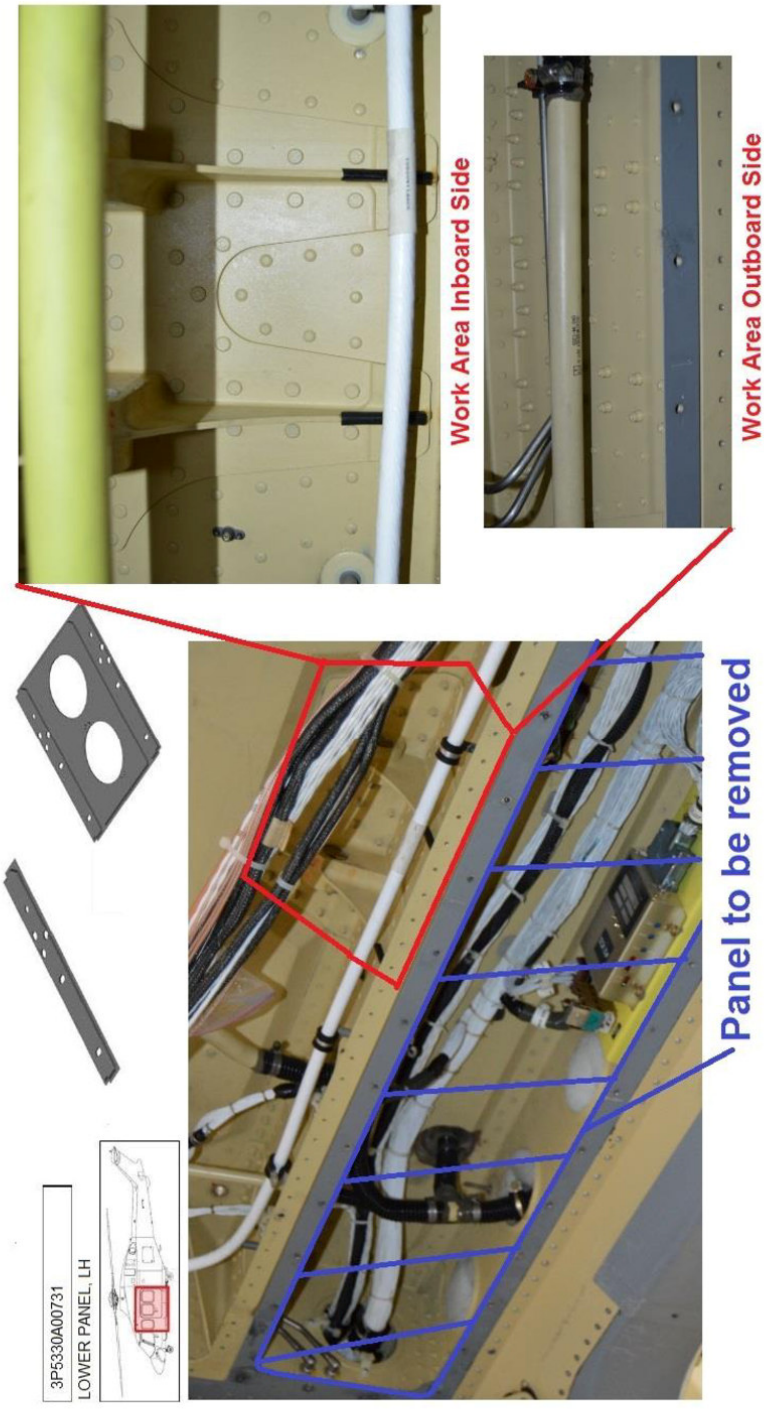


Figure 7 – Internal Work Area

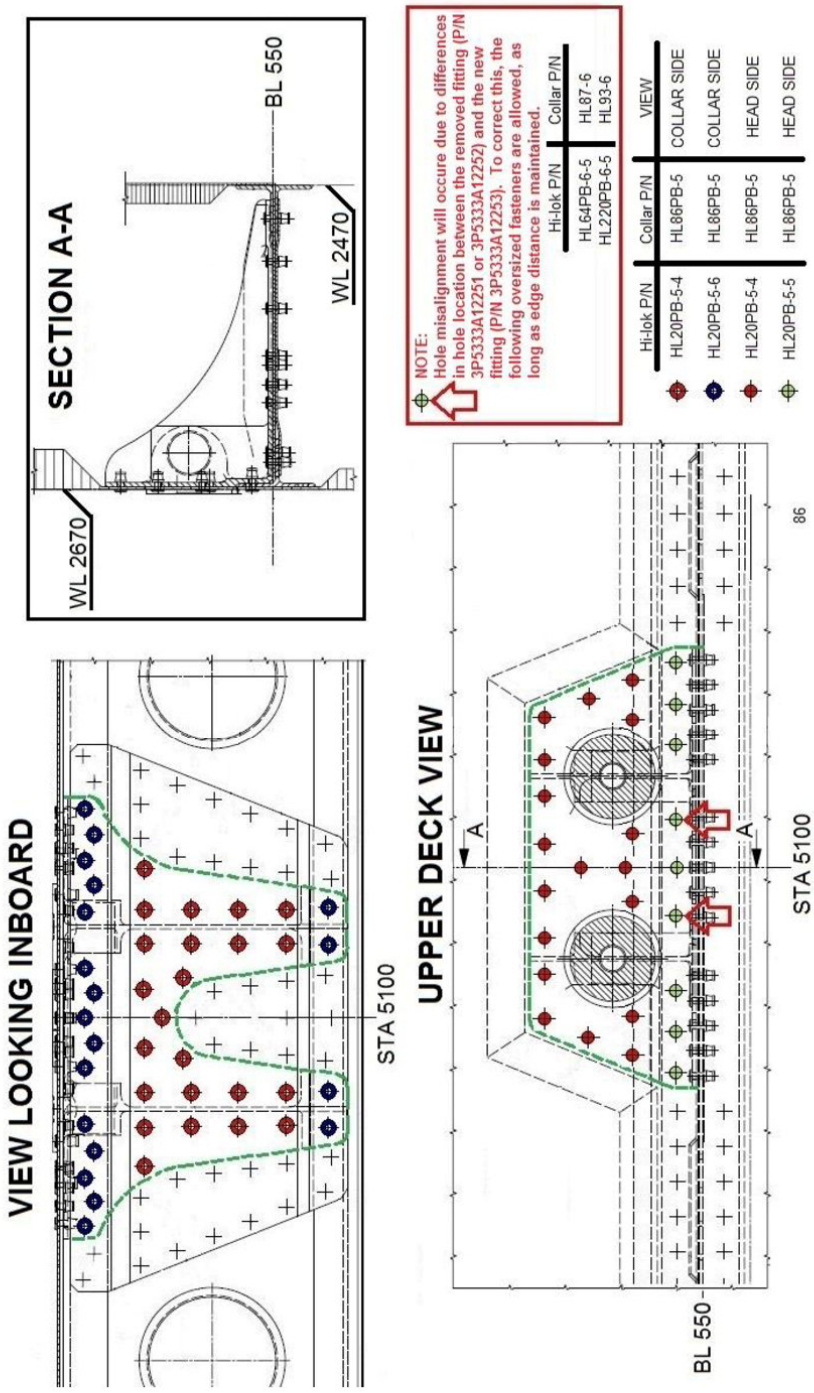


Figure 8 – MGB Middle Reinforcement Removal and Install
NOTE: LH Side Shown RH Side Symmetrical

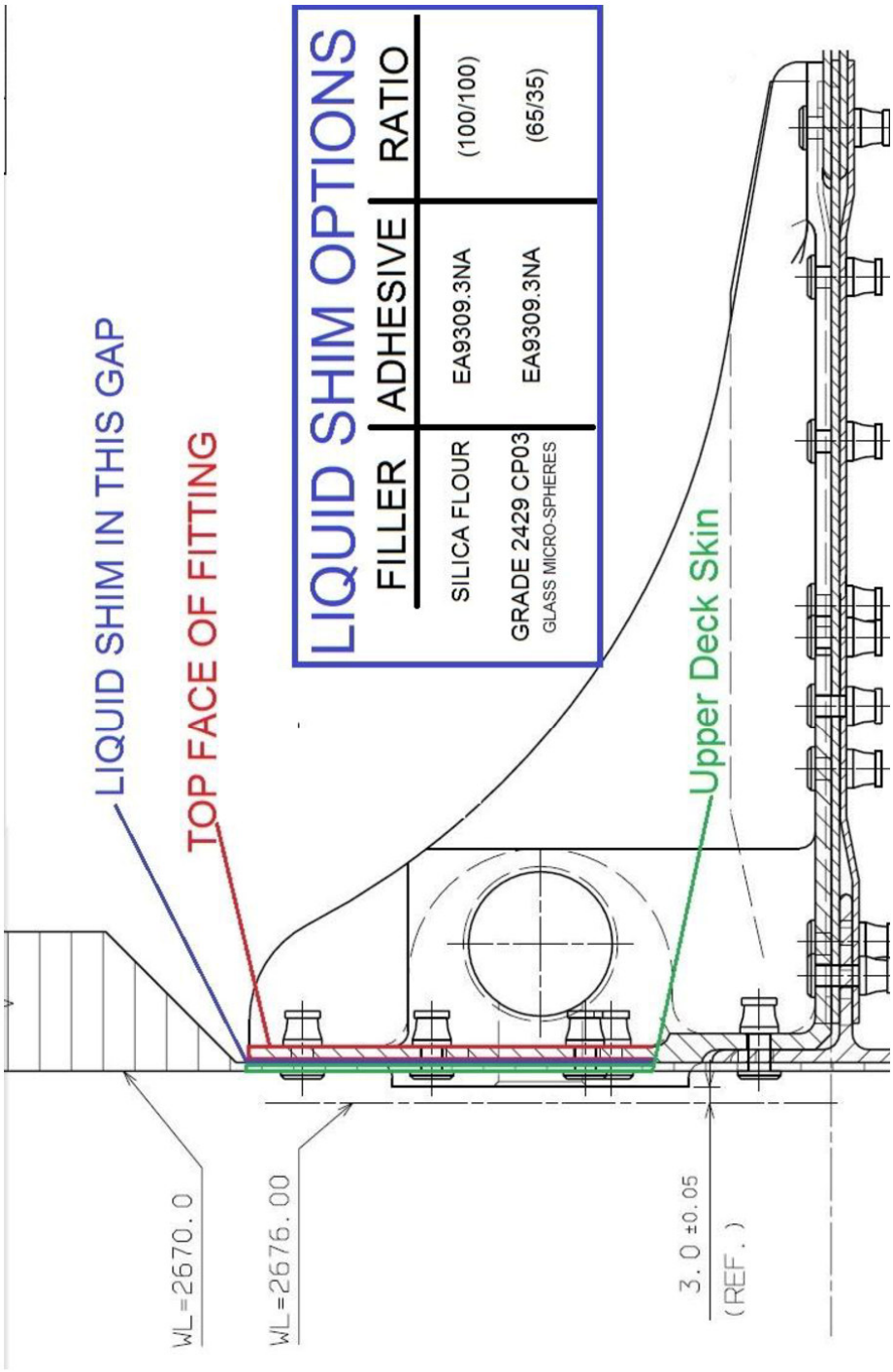


Figure 9 – Fitting Structural Gap

ANNEX E

RH MAIN GEAR BOX ANTI-TORQUE BEAM FITTING - REPLACEMENT

RH Main Gear Box Anti-torque Beam Fitting - Replacement

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4. Figure 4 – Fastener Hole Installation on Alignment Tool
5. Figure 5 – Deck Inserts and Clean Area
6. Figure 6 – Creating a Compensation Shim
7. Figure 7 – Internal Work Area
8. Figure 8 – MGB Middle Reinforcement Removal and Install
9. Figure 9 – Fitting Structural Gap

References

Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety – Make the helicopter safe for maintenance
39-A-00-50-00-00A-074A-D	Material data – List of hazardous materials
39-A-63-20-00-00A-520A-A	Main gearbox group – Remove procedures
39-A-63-20-00-00A-720A-A	Main gearbox group – Install procedures
39-A-67-13-03-00A-520A-A	Control rod M2 – Remove procedures
39-A-67-13-03-00A-720A-A	Control rod M2 – Install procedures
39-A-51-42-01-00A-720A-A	Potted blind – type inserts – Install procedures
39-A-08-21-00-00A-000A-A	Helicopter – Level procedure – General

Preliminary requirements

Required conditions

Table 2 Required conditions

Condition	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The main gearbox group must be removed	39-A-63-20-00-00A-520A-A
The M2 control rod must be removed	39-A-67-13-03-00A-520A-A
The helicopter must be level (*)	39-A-08-21-00-00A-000A-A

(*)This condition is recommended, but not required

Support equipment

Table 3 Support equipment

Nomenclature	Identification No.	Qty
1. Platform, left (or equivalent)	GG-01-00	1
2. Platform, right (or equivalent)	GG-02-00	1
3. Anti-torque Plate Tool & Bushing Set	3G6330A00532A005A	1
4. Locking Pin (Ref. Figure 1)	Local Supply	2
5. Pin Bushing (Ref. Figure 1)	Local Supply	2
6. Temporary Barrel Nut (Ref. Figure 1)	Local Supply	2
7. Reamer Guide (Ref. Figure 2) (Note 1)	Local Supply	1
8. Reamer Guide (Ref. Figure 2) (Note 2)	Local Supply	1
9. Reamer Guide (Ref. Figure 2) (Note 3)	Local Supply	1
10. Reamer stop (Ref. Figure 2)	Local Supply	1
11. Reamer (Note 4)	Local Supply	1
12. Reamer (Note 5)	Local Supply	1
13. Reamer (Note 6)	Local Supply	1
14, Digital Level (inclinometer)	Local Supply	1
15. Filler Gauge Set	Local Supply	1
16. Non-metallic Scrapper	Local Supply	1
17. Aluminium Shim (Peelable)	Local Supply	AR

Note 1: Reamer Guide Internal Diameter 14.68 mm (.578 inch)
Note 2: Reamer Guide Internal Diameter 15.06 mm (.593 inch)
Note 3: Reamer Guide Internal Diameter 15.47 mm (.609 inch)
Note 4: Reamer Nominal Diameter 14.68 mm (37/64 inch)
Note 5: Reamer Nominal Diameter 15.06 mm (19/32 inch)
Note 6: Reamer Nominal Diameter 15.47 mm (39/64 inch)

Supplies

Table 4 Supplies

Nomenclature	Identification No.	Qty
1. Sealing Compound (EA 934 NA)	C021	AR
2. Sealing Compound (Pro-seal 890 or equivalent)	C153	AR
3. Primer	C042	AR
4. Alodine 1200	C237	AR
5. Tape, metallic	C221	AR
6. Sealing Compound (EA 9309.3 NA)	C231	AR
7. Silica flour (ALT Grade 2429 CP03 Glass Micro-spheres)	NA	AR

Spares

Table 5 Spares

Nomenclature	Identification No.	Qty
1. MGB Middle Reinforcement	3P5333A12253 or 3P5333A12253A3 or 3P5333A12253M01	1
2. Insert	NAS1836-3-11	2
3. Bolt	AN3-11A	2
4. Hi-lok	HL20PB-5-4	42
5. Hi-lok	HL20PB-5-5	9
6. Hi-lok	HL20PB-5-6	19
7. Hi-lok	HL64PB-6-5	2
8. Hi-lok	HL220PB-6-5 or HL20PB-6-5	2
9. Collar	HL86PB-5 or HL86PB5	70
10. Collar	HL87-6	2
11. Collar	HL93-6	2

Safety conditions

WARNING

The materials that follow are dangerous. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for these materials:

– EA 934 NA (Supply Ref. 1)

– Pro-seal 890 (Supply Ref. 2)

– Epoxy Primer (Supply Ref. 3)

– Alodine 1200 (Supply Ref. 4)

– EA 9309.3NA (Supply Ref. 6)

Refer to 39-A-00-50-00-00A-074A-D.

Procedure

1. If not already supplied with tool (Support Equipment Ref.3), fabricate the alignment set shown in (Fig.1) and the reaming set shown in (Fig.2).

2. Put the Platform (Support Equipment Ref.1) adjacent to the left side of the fuselage.

3. Put the Platform (Support Equipment Ref.2) adjacent to the right side of the fuselage

4. Get access to the external work area shown in (Fig. 3).

5. Using the alignment and reaming tool (Support Equipment Ref.3) and the final size pins and bushings that come with the kit, ensure that the tool pins fully in all 4 locations.

NOTE:

Move or remove any upper deck lines that interfere with the installation of the tool. These lines will need to be re-installed at the end of this procedure. Also, remove the sump assembly under the MGB (P/N 3G3070A06331) for ease of access.

6. If the tool is not able to be pinned fully or the tool is not contacting at least 3 bosses, notify the manufacturer, otherwise continue to step 7.

NOTE:

How the tool sits can be checked visually by removing one pin on the tool at a time and visually inspecting from the sump cutout.

7. Using a digital level (Support Equipment Ref.14), place it on top of the tool and record the inclination angle. Do this both laterally and longitudinally. Be sure to record the inclination angle, regardless of the helicopter being level.

8. If supplementary fastening holes are not already drilled on the tool, locate and mark two hole locations that are equidistance and sit above a centralized location of the honeycomb on the deck. Reference (Fig. 4).

9. Temporarily remove the tool off the aircraft and drill Ø7.94mm (10/32 inch) holes on the tool.

10. Re-install the tool on the deck, and fully pin it down. Drill Ø3.2mm (1/8 inch) pilot holes onto the deck using a guide and the fastening holes on the tool. Remove the tool from the aircraft when complete.

11. Install inserts (Spare Ref.2) onto the deck, in the piloted locations, in accordance with data module ASRP 39-A-51-42-01-00A-720A-A. The holes will have to be enlarged to Ø11.51mm (29/64 inch) and the inserts will be bonded with adhesive (Supply Ref.1).

12. Let the inserts fully cure in place before continuing to step 13.

13. Clean the area around where the inserts with installed of paint and primer, to provide a flat surface for measurements and shimming as shown in (Fig. 5).

14. Re-install the alignment and reaming tool onto the bosses, only pinning the RH side down and perform planarity rigging as follows:

14.1 Measure and record the distance between the bottom of the tool and the cleaned area of the upper deck on the forward and AFT using filler gauges (Support Equipment Ref.15).

14.2 Using peelable aluminum metal shims (Supply Ref. 17), fill the gap between the alignment tool and the deck structure closest to the fitting being replaced as shown in (Fig. 6), using the measurements found in 14.1 as a guide. Layers of aluminum tape (Supply Ref.5) can be used to build up the shim in areas where a greater thickness is needed.

14.3 Temporarily install bolts (Spare Ref.3) through the tool, into the inserts installed on the deck. Make sure to only torque the bolts snuggly, so that no extra stress is added to the tool.

NOTE:

The compensation shim will be reused to install the new fitting at the same level of the existing fitting, so it's important to accurately fill the gap and measure the shim thickness. This must be done, but making sure no gaps between the shim and tool, and the shim and deck, exceed 0.05mm as given in Figure 6. A filler gauge of .002" (.051mm) should be used for checking the gaps. Also, check that the tool is still sitting on the 3 bosses, by using the same filler gauge and checking the gaps from the tools bushing holes (with locking pins and bushings removed).

15. Temporarily remove the alignment tool off the aircraft and get access to the internal work area shown in (Fig. 7) as follows:

15.1 Remove all interiors that prevent access to this area.

15.2 Remove the Aft RH ceiling panel P/N 3P5330A00831 by removing its screws and washers. Retain this hardware for reinstallation later.

15.3 Move or remove any lines that interfere with the fitting removal and installation.

16. Remove the existing MGB Middle reinforcement fitting as follows:

16.1 Remove all hi-loks fastening the reinforcement to the structure as shown in (Fig. 8).

16.2 With a non-metallic scrapper (Support Equipment Ref.16) remove the existing sealant from the upper mating surface of the reinforcement.

NOTE:

It is permitted to use a heat gun, applying a light amount of heat to soften the sealant.

16.3 Carefully remove the fitting off the structure and clean the work area of debris and contaminant.

17. Temporarily install the new fitting (Spare Ref.1) to check its conformity, as follows:

17.1 Remove primer to the top surface of the bosses using 320 grit sand paper (or finer), or scotch-brite.

17.2 Using the alignment and reaming tool (Support Equipment Ref.3), place it on the aircraft with the final size bushings on the LH side and the pin bushings (Support Equipment Ref.5) on the RH side.

17.3 Pin the LH side down with the final size pins included with the tool kit.

17.4 Install bolts (Spare Ref.3) through the tool, into the inserts installed on the deck, with the shim (Supply Ref. 17) created in step 14, filling the gap.

NOTE:

The tool must stay locked with this shim gap to ensure the planarity of the fittings.

17.5 Suck the new fitting up to the structure on the RH side, inserting the temporary barrel nuts (Support Equipment Ref.6) into the fitting barrels, and using the locking pin (Support Equipment Ref.4) to fasten the fitting between the alignment tool and the aircraft structure.

17.6 Install temporary fasteners (clecos) on the lateral face of the fitting, to keep the lateral face tight to the longeron.

17.7 Ensure that with the new fitting sucked up with the tool that the tool is still sitting on bosses of the existing fitting and the compensation shim. This will ensure that the plane has not changed and that the bosses of the new fitting are sitting at the correct height.

17.8 Check to see if there are any pilot hole misalignments that would prevent installation.

NOTE:

If you are replacing fitting P/N 3P5333A12251 or 3P5333A12252, there will be approximately a 2.0 mm misalignment for two of the holes on the top face of the fitting. These two holes are on the outboard most hi-lok line, approximately 30.0 mm FWD and AFT of the centerline (the old fitting has a distance of 32.0 mm). This misalignment is allowable, because the holes can be enlarged to fit oversized fastener (HL64 or HL220) and it will not cause any edge distance issues. Refer to Figure 8.

17.9 Using filler gauges (Support Equipment Ref.15), measure the gap between the top face of the fitting, and the bottom side of the upper deck skin as shown in in (Fig. 9). If this gap exceeds 0.70mm (.028 inch) notify the manufacturer, otherwise continue to step 18.

18. Counter drill any accessible holes on the top face of the fitting, and install temporary fasteners (clecos).

19. Counter drill all holes on the lateral face of the fitting and install temporary fasteners (clecos).

20. Remove the tool from the aircraft and drill the remaining pilot holes to final size (cleco as needed).

21. Deburr all holes as needed.

22. If the gap found in step 17.9 is equal to or less than 0.15mm (.006 inch) Install the new fitting (Spare Ref.1) as follows. Otherwise, skip to step 23.

22.1 Apply a thin layer of sealant (Supply Ref.2) to the mating surface of the fitting with the upper deck.

22.2 While wet, lock the fitting in place by repeating steps 17.2 to 17.6 and then fasten the fitting with all the necessary fasteners (Spare Ref.4,5,6,7,8,9,10,11), as given in (Fig. 8).

22.3 Remove the alignment tool once the fitting has enough fasteners installed to be secure, and do the remaining hi-loks that were inaccessible with the tool in place.

22.4 Touch up any needed surfaces with primer (Supply Ref.3). Skip to step 24

23. If the gap found in step 17.5 is greater than 0.15mm (.006 inch) and less than 0.70mm (.028 inch) install the new fitting (Spare Ref.1) as follows:

23.1 Prepare liquid shim using adhesive (Supply Ref.6) and mixing it one of the following fillers (Supply Ref.7) with the given ratios (% by weight):

- Silica Flour / adhesive (100/100)
- Grade 2429 CP03 glass micro-spheres (from Potters-Ballottini) / adhesive (65/35)

23.2 Apply the liquid shim prepared in step 23.1 to the mating surface of the fitting with the upper deck.

23.3 While wet, lock the fitting in place with the alignment tool and fasten the fitting with all the necessary fasteners (Spare Ref.4,5,6,7,8,9,10,11), as given in (Fig. 8).

23.4 Remove the alignment tool once the fitting has enough fasteners installed to be secure, and do the remaining hi-loks that were inaccessible with the tool in place.

23.5 Apply a bead of sealant (Supply Ref.2) around the entire seam perimeter of the mating surface of the fitting with the upper deck to prevent water ingress.

23.6 Touch up any needed surfaces with primer (Supply Ref.3).

24. The boss holes in the new fitting must be reamed to final dimension as follows:

24.1 Place the alignment and reaming tool (Support Equipment Ref.3) on the aircraft structural bosses, with the final size bushings on the LH side and the pin bushings (Support Equipment Ref.5) on the RH side.

24.2 Lock the alignment and reaming tool down with the final size pins on the LH side and one locking pin (Support Equipment Ref.4) and temporary barrel nut (Support Equipment Ref.6) in the AFT RH position.

NOTE:

During reaming sequence, make sure to catch and clean up all metal shaving during each step ream, to prevent FOD.

24.3 Place the reamer stop (Support Equipment Ref.10) at the bottom of the barrel of open FWD boss and secure it with tape. Insert the reamer guide (Support Equipment Ref.7) into the open guide of the tool.

24.4 Using reamer (Support Equipment Ref.11), ream the hole to Ø14.68 mm (37/64 inch).

24.5 Remove reamer guide (Support Equipment Ref.7) from the tool and insert reamer guide (Support Equipment Ref.8).

24.6 Using reamer (Support Equipment Ref.12), ream the hole to Ø15.06 mm (19/32 inch).

24.7 Remove reamer guide (Support Equipment Ref.8) from the tool and insert reamer guide (Support Equipment Ref.9).

24.8 Using reamer (Support Equipment Ref.13), ream the hole to Ø15.47 mm (39/64 inch).

24.9 Remove reamer guide (Support Equipment Ref.9) from the tool and insert the final size reamer guide (15.88 mm inner diameter) already included with the alignment and reaming tool.

24.10 Using the final reamer already supplied with the tool kit, ream the hole to Ø15.88 mm.

24.11 Remove reamer stop from the barrel, deburr the newly reamed hole and clean the barrel.

24.12 Using a final size pin and the final reamer guide, lock the tool down to the FWD boss hole.

24.13 Remove the underszied locking pin, bushing and temporary barrel nut from the RH AFT position, and install the reamer stop (Support Equipment Ref.10) at the bottom of the barrel and secure it with tape. Insert the reamer guide (Support Equipment Ref.7) into the open guide of the tool.

24.14 Repeat steps 24.4 to 24.11 for the RH AFT boss position.

25. Do a final conformity check as follows:

25.1 Using the alignment and reaming tool (Support Equipment Ref.3) and the final size pins that come with the kit, ensure that the tool pins fully in all 4 locations.

25.2 Check that the tool sits on all 4 bosses within a 0.05mm tolerance.

25.3 Using a digital level (Support Equipment Ref.14), place it on top of the tool and record the inclination angle. Do this both laterally and longitudinally. Notify the manufacturer if the values recorded in step 7 have changed.

26. Clean off the boss surfaces of any debris and apply protective coating (Supply Ref.4) to the faces of any bosses that were touched.

27. Cover the face area of the fitting and hi-loks on the upper deck side with sealant (Supply Ref.2) to prevent water ingress.

28. Cover the inserts previously installed in step 11 with sealant (Supply Ref.2) to prevent water ingress.

Requirements after job completion

1. Remove all the tools and the other items from the work area.
2. Make sure that the work area is clean and free of foreign object debris.
3. Install the M2 control rod in accordance with DM 39-A-67-13-03-00A-720A-A.
4. Install the RH ceiling panel 3P5330A00831.
5. Install any items previously removed for access.
6. Refinish the cleaned area on the upper deck with primer and paint.
7. Install the main gearbox group in accordance with DM 39-A-63-20-00-00A-520A-A.

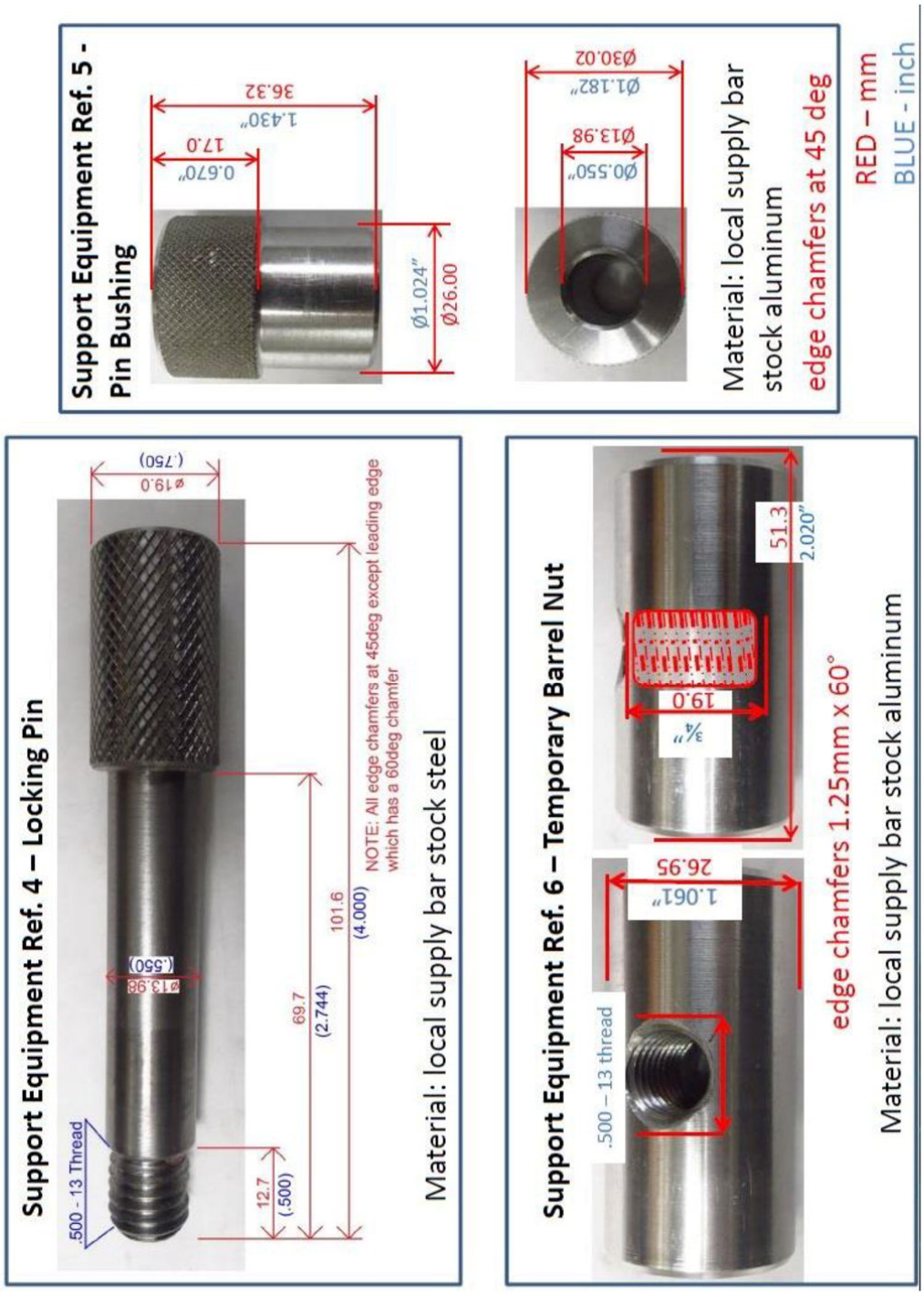


Figure 1 – Alignment Set

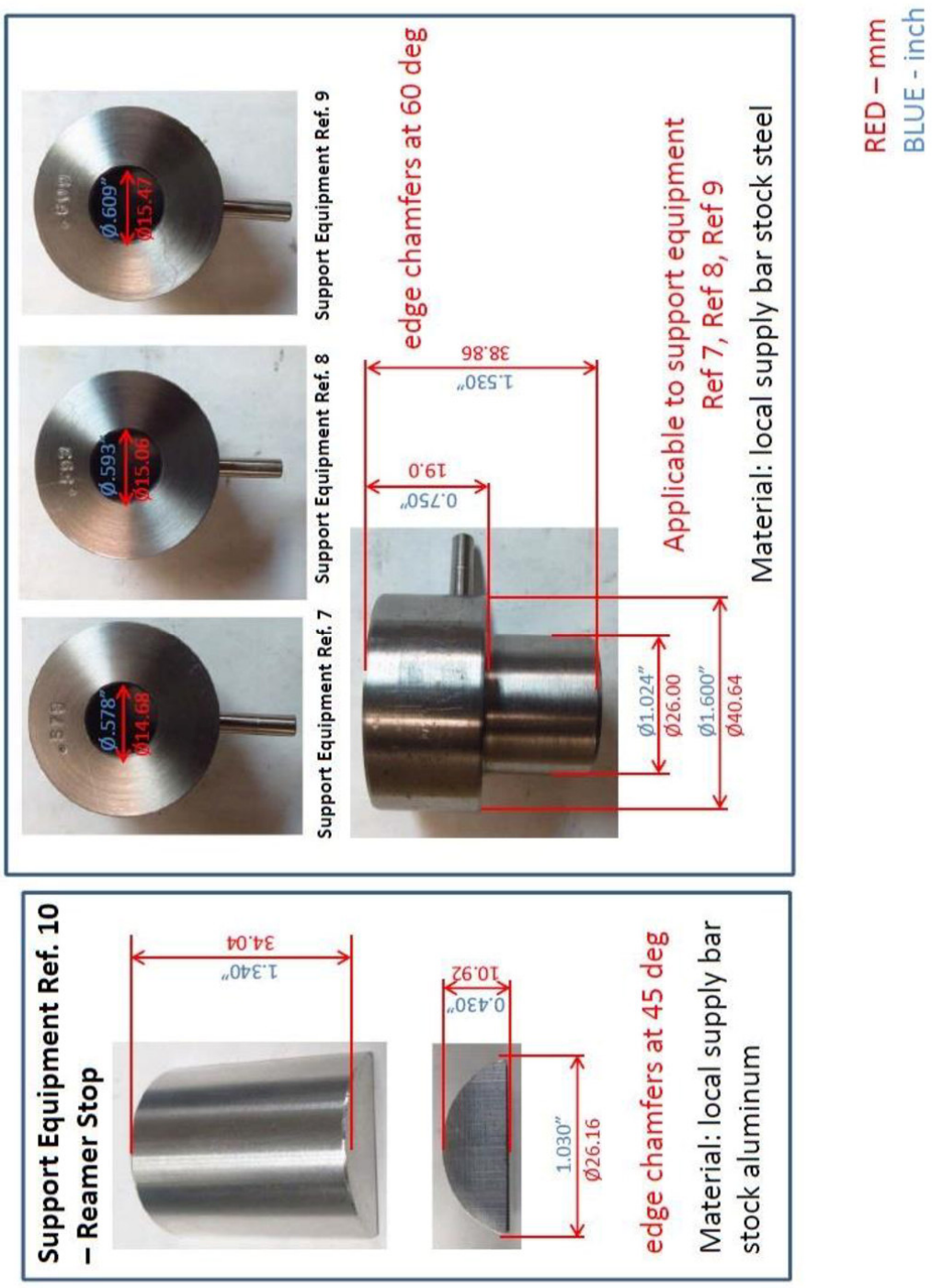


Figure 2 – Reaming Set

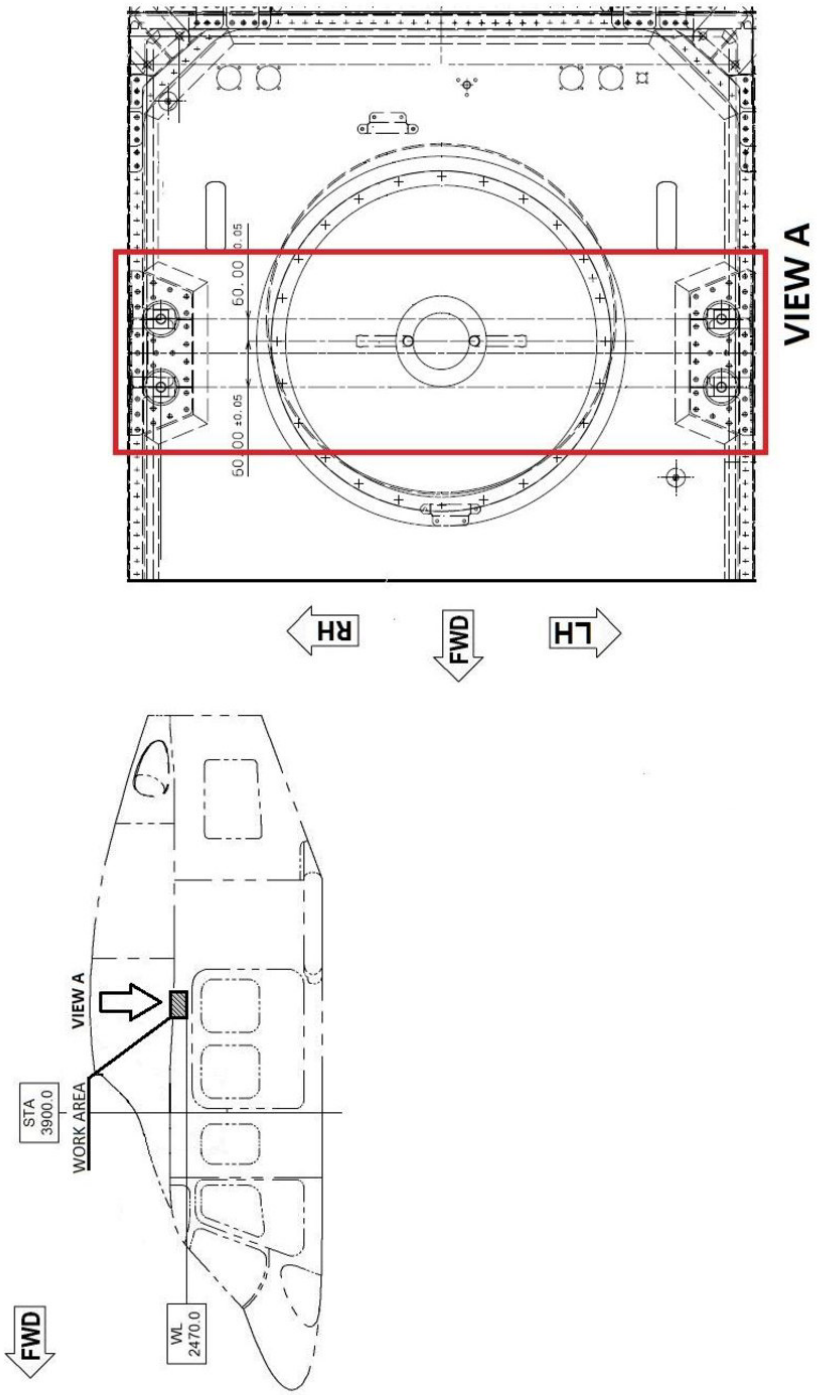


Figure 3 – External Work Area

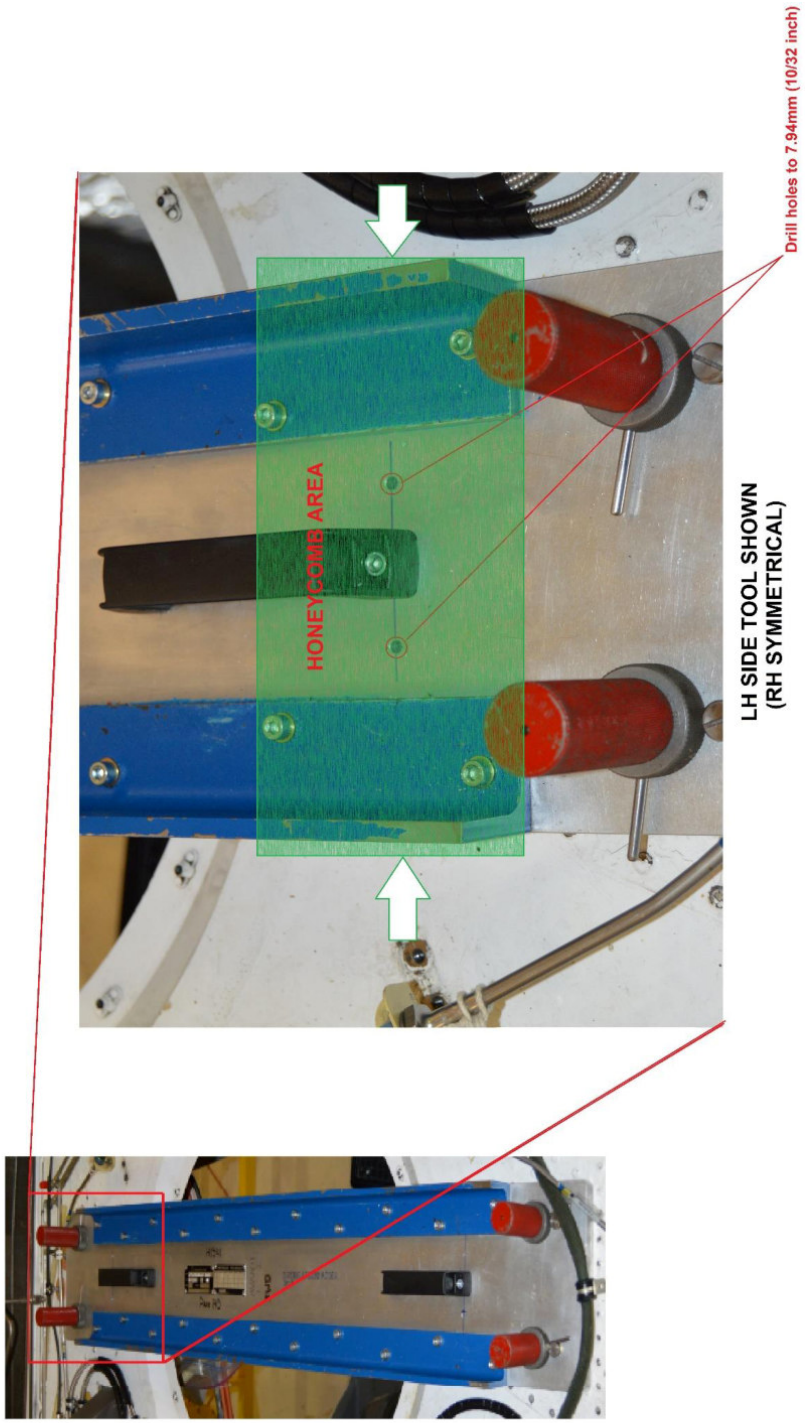
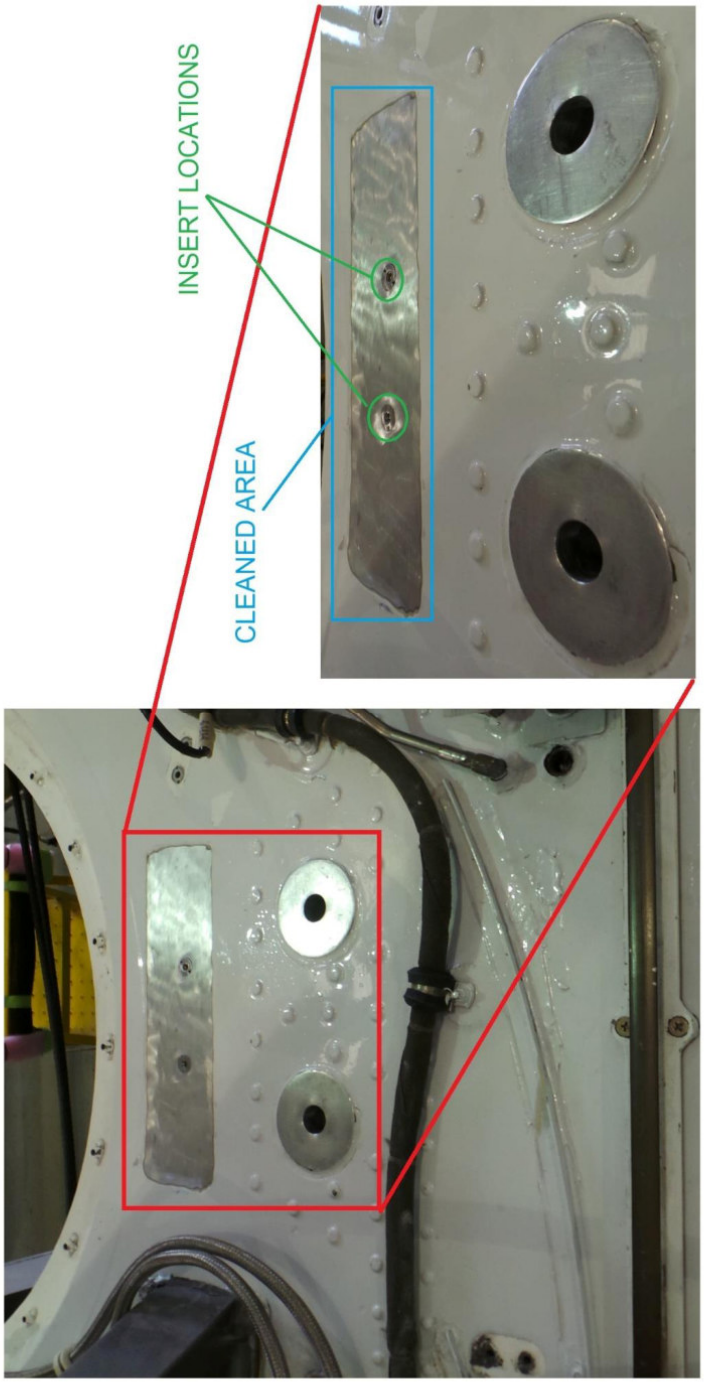


Figure 4 – Fastener Hole Installation on Alignment Tool



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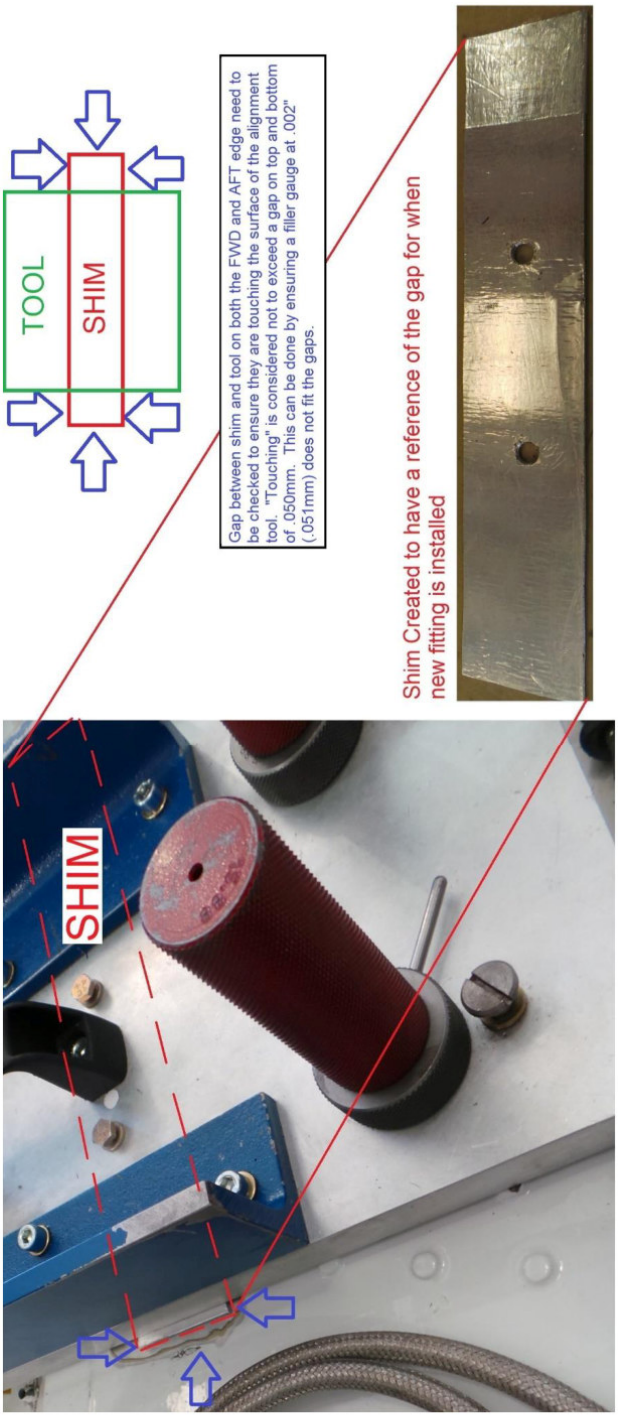

Figure 6 – Creating a Compensation Shim

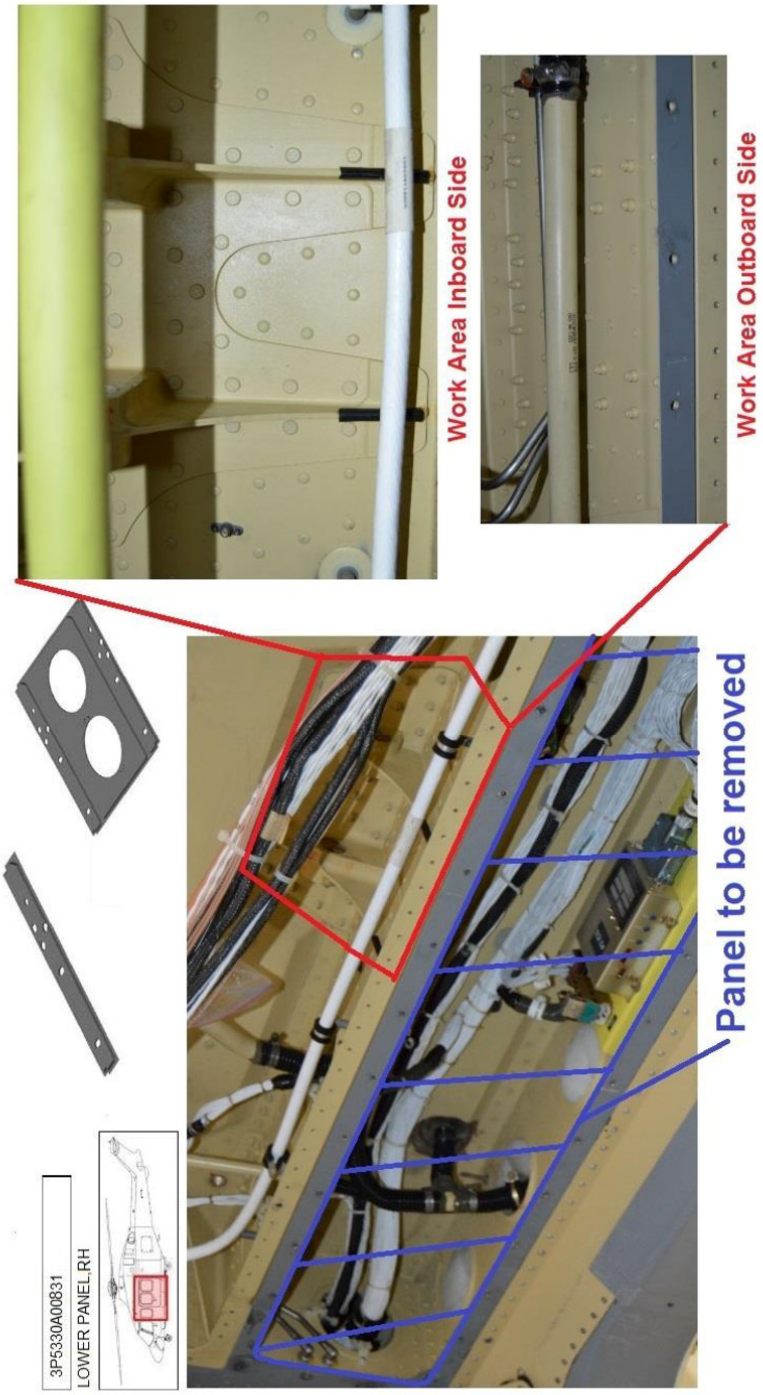

Figure 7 – Internal Work Area

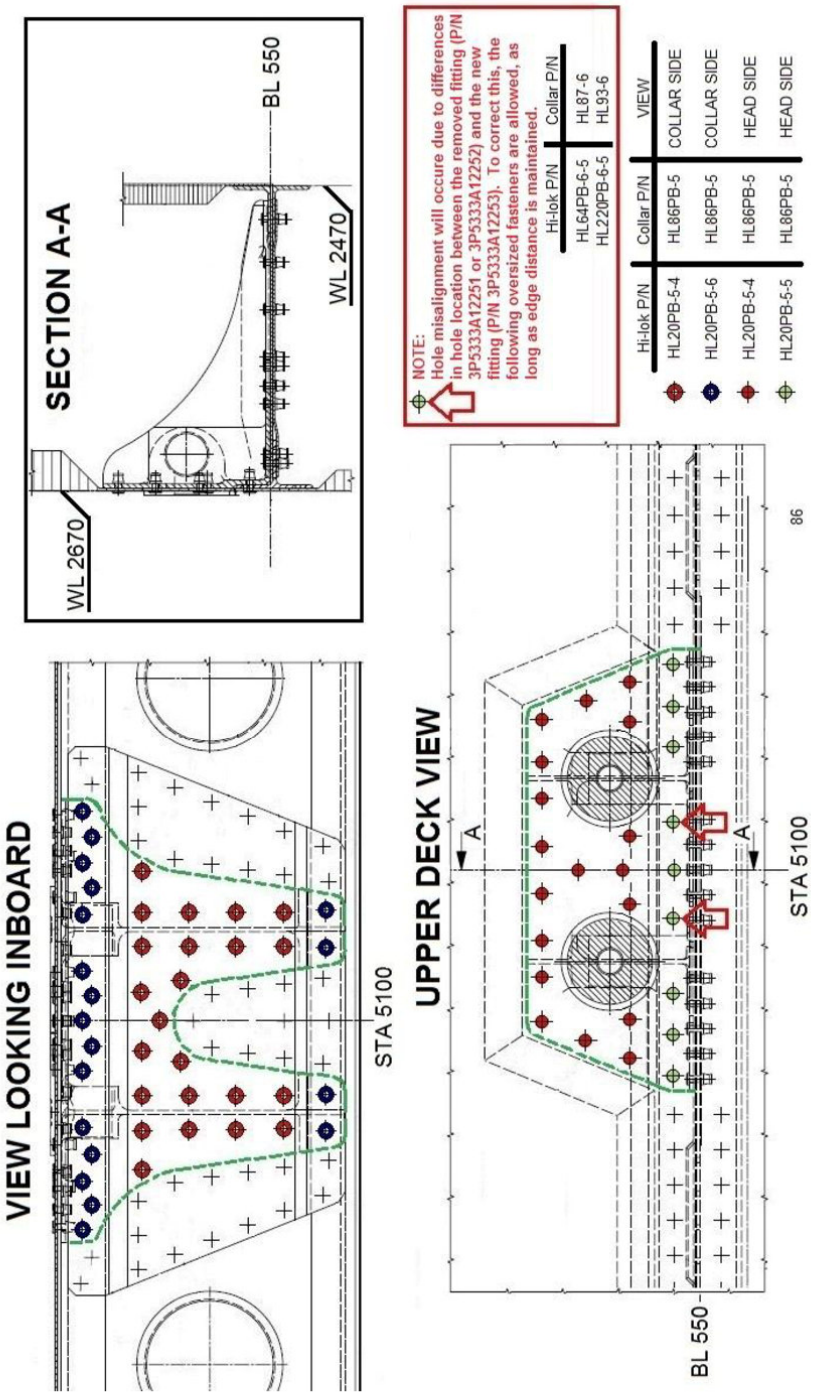

Figure 8 – MGB Middle Reinforcement Removal and Install
NOTE: LH Side Shown RH Side Symmetrical

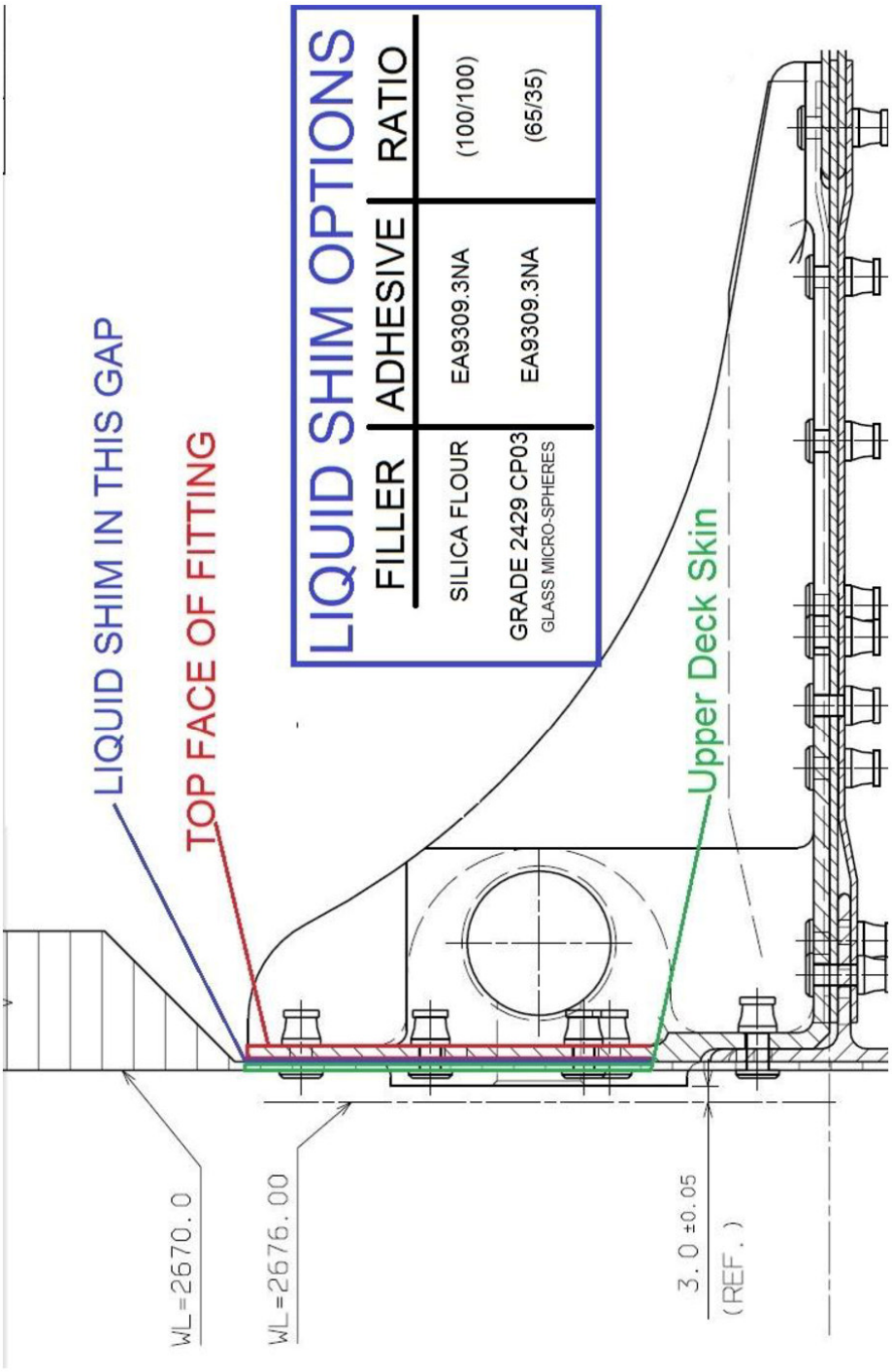

Figure 9 – Fitting Structural Gap

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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:

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.