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AgustaWestland Products

SERVICE BULLETIN

N° 139-636

DATE: May 11, 2021

REV. : /

TITLE

ATA 78 - REAR FIREWALL MODULE ASSY RETROMOD INSTALLATION

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

AW139 helicopters equipped with rear firewalls module assy P/N 3G7810A02033, P/N 3G7810A02034 or P/N 3G7810A02035.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to provide the necessary instruction to perform the installation of rear firewalls module assy retromod P/N 3G7810P02411.

E. DESCRIPTION

In order to reinforce some zones of the rear firewall module assy, Leonardo Helicopter Division has developed this Service Bulletin to install the rear firewalls module assy retromod P/N 3G7810P02411.

The retromod consists of:

- a modification of the LH and RH internal brackets and LH and RH esternal bracket installation adding some plates to improve the strength of the zone;
- a modification of the engine control tunnel assy installation, which will be now installed through rivets.

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 twenty (20) MMH are deemed necessary.

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

H. WEIGHT AND BALANCE

WEIGHT (Kg)	0.111	
	ARM (mm)	**MOMENT (Kgmm)**
LONGITUDINAL BALANCE	7798	865.58
LATERAL BALANCE	0	0

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	-
DM02	39-A-06-41-00-00A-010A-A	Access doors and panels - General data	-

Following Data Modules refer to CSRP:

DATA MODULE		**DESCRIPTION**	**PART**
DM03	CSRP-A-51-71-00-00A-028A-D	Rivet pattern discrepancies – General	-

2) ACRONYMS & ABBREVIATIONS

AMP	Aircraft Maintenance Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
LH	Leonardo Helicopters
MMH	Maintenance Man Hours

3) ANNEX

N.A.

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**3G7810P02411**		**REAR FIREWALLS MODULE ASSY RETROMOD**	**REF**	**.**		
2	3G7810A08431		Engine control tunnel assy	1	..		139-636L1
3	3G7810A19831		Plate assy	2	..	(1)	139-636L1
4	3G7810A19931		Plate assy	2	..	(2)	139-636L1
5	3G7810A20051		External bracket LH	1	..		139-636L1
6	3G7810A20251		Internal bracket LH	1	..		139-636L1
7	3G7810A20351		Internal bracket RH	1	..		139-636L1
8	3G7810A20451		External bracket RH	1	..		139-636L1
9	MS20615-4M3R		Rivet	4	..		139-636L1
10	MS20615-4M4R		Rivet	26	..		139-636L1

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
11	AMS3374	Sealant Proseal 700 (C032)	AR	(1)	

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

3) LOGISTIC MATRIX

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

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
139-636L1	1		-

NOTE

(1) This item can be obtained from the following raw materials in order to make it fit with the structure:

P/N	DESCRIPTION	MATERIAL	DIMENSION/Q.TY
3G7810A19851	Plate	AMS 501 ALLOY 321, thk 0.88	70x190 mm
MS21069L3K	Nut	-	1
NAS1200-3-4	Rivet	-	2

(2) This item can be obtained from the following raw materials in order to make it fit with

the structure:

P/N	DESCRIPTION	MATERIAL	DIMENSION/Q.TY
3G7810A19951	Plate	AMS 501 ALLOY 321, thk 0.88	70x190 mm
MS21069L3K	Nut	-	1
NAS1200-3-4	Rivet	-	2

(3) Item to procured as local supply.

B. SPECIAL TOOLS

N.A.

C. INDUSTRY SUPPORT INFORMATION

Product Enhancement.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

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

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

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

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

e) All lengths are in mm.

f) If a crack is found in one of the installation areas, contact the PSE at the following mail box: engineering.support.lhd@leonardocompany.com.

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, remove the access panels 480AL and 480AR.
3. With reference to Figures 1 thru 3, perform the rear firewalls module assy retromod installation P/N 3G7810P02411 as described in the following procedure:
   - 3.1 With reference to Figure 1 Top View and View A, remove the existing rivets from the external bracket LH P/N 3G7810A04052.
   - 3.2 With reference to Figure 1 Top View and View B, remove the existing rivets from the internal bracket LH P/N 3G7810A03552.
   - 3.3 With reference to Figure 1 Top View and Section C-C, perform the indicated cutout on the external bracket LH P/N 3G7810A04052.
   - 3.4 With reference to Figure 1 Top View and Section D-D, perform the indicated cutout on the internal bracket LH P/N 3G7810A03552.
   - 3.5 With reference to Figure 1 Top View and Section E-E, remove and retain for later use the n°2 anchor nuts from the pipe ring LH P/N 3G7810A03951.

NOTE

For the following steps, apply sealing Proseal 700 in the modified areas that follow:

- Onto the edges of connected parts
- Onto the rivetted joints on engine compartment side
- Onto the screw joints on engine compartment side
- In the open corners of closed profiles being the result of connecting parts.

NOTE

If a repair is already present in the zone indicated in Figure 2 View F and no cracks are present, it is allowed not to install the external bracket LH P/N 3G7810A20051.

NOTE

If P/N 3G7810A19831 doesn't fit with the structure due to the presence of a repair, it is possible to fabricate the plate from raw materials in order to make it fits with the repaired structure (refer to Figure 4). Dimensions in the figure are for reference, it is possible to adjust these dimensions to be compliant with standard practices contained in DM CSRP-A-51-71-00-00A-028A-D.

3.6 With reference to Figure 2 Top View, View F, Section J-J and Section L-L, install the external bracket LH P/N 3G7810A20051 and the plate assy P/N 3G7810A19831 on the external bracket LH P/N 3G7810A04052 and on the pipe ring LH P/N 3G7810A03951 by means of n°5 rivets P/N MS20615-4M4R, n°2 rivets P/N MS20615-4M3R and one of the anchor nut previously removed.

NOTE

If a repair is already present in the zone indicated in Figure 2 View G and no cracks are present, it is allowed not to install the internal bracket LH P/N 3G7810A20251.

NOTE

If P/N 3G7810A19931 doesn't fit with the structure due to the presence of a repair, it is possible to fabricate the plate from raw materials in order to make it fits with the repaired structure (refer to Figure 5). Dimensions in the figure are for reference, it is possible to adjust these dimensions to be compliant with standard practices contained in DM CSRP-A-51-71-00-00A-028A-D.

3.7 With reference to Figure 2 Top View, View G, Section K-K and Section L-L, install the internal bracket LH P/N 3G7810A20251 and the plate assy P/N 3G7810A19931 on the internal bracket LH P/N 3G7810A03552 and on the pipe ring LH P/N 3G7810A03951 by means of n°5 rivets P/N MS20615-4M4R, n°2 rivets P/N MS20615-4M3R and one of the anchor nut previously removed.

NOTE

If a repair is already present in the zones indicated in Figure 2 View F and View G and no cracks are present, it is allowed not to install the internal bracket RH P/N 3G7810A20351 and the external bracket RH P/N 3G7810A20451.

NOTE

If P/N 3G7810A19831 and P/N 3G7810A19931 doesn't fit with the structure due to the presence of a repair, it is possible to fabricate the plate from raw materials in order to make it fits with the repaired structure (refer to Figures 4 and 5). Dimensions in the figure are for reference, it is possible to adjust these dimensions to be compliant with standard practices contained in DM CSRP-A-51-71-00-00A-028A-D.

3.8 Repeat steps 3.6 and 3.7 to install the external bracket RH P/N 3G7810A20451, the internal bracket RH P/N 3G7810A20351, the plate assy P/N 3G7810A19831 and the plate assy P/N 3G7810A19931 on the external bracket RH P/N 3G7810A05252, on the internal bracket RH P/N 3G7810A04752 and on the pipe ring RH P/N 3G7810A05151.

NOTE

If repair structures are present in the zone indicated in Figure 3 Detail H, they cover at least ¾ of the entire engine control tunnel assy frame and no cracks are present, it is allowed not to install the new engine control tunnel assy P/N 3G7810A08431. If repair structure cover less than ¾ of the entire engine control tunnel assy frame, contact the Product Support Engineering (engineering.support.lhd@leonardocompany.com) to receive instructions.

3.9 With reference to Figure 3 Detail H, perform the indicated cutout on the existing engine control tunnel assy P/N 3G7810A08431.

3.10 With reference to Figure 3 Detail H, temporarily locate a new engine control tunnel assy P/N 3G7810A08431 on the remaining frames of the existing one.

3.11 With reference to Figure 3 Detail H, countermark and drill the rivets holes in the same position of weld joints.

3.12 With reference to Figure 3 Detail H and Section M-M, install the new engine control tunnel assy P/N 3G7810A08431 by means the of required rivets P/N MS20615-4M4R.

4. With reference to Figure 1, remark the reworked rear firewalls module assy as P/N 3G7810P02411.
5. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, install the access panels 480AL and 480AR.
6. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
7. 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”.

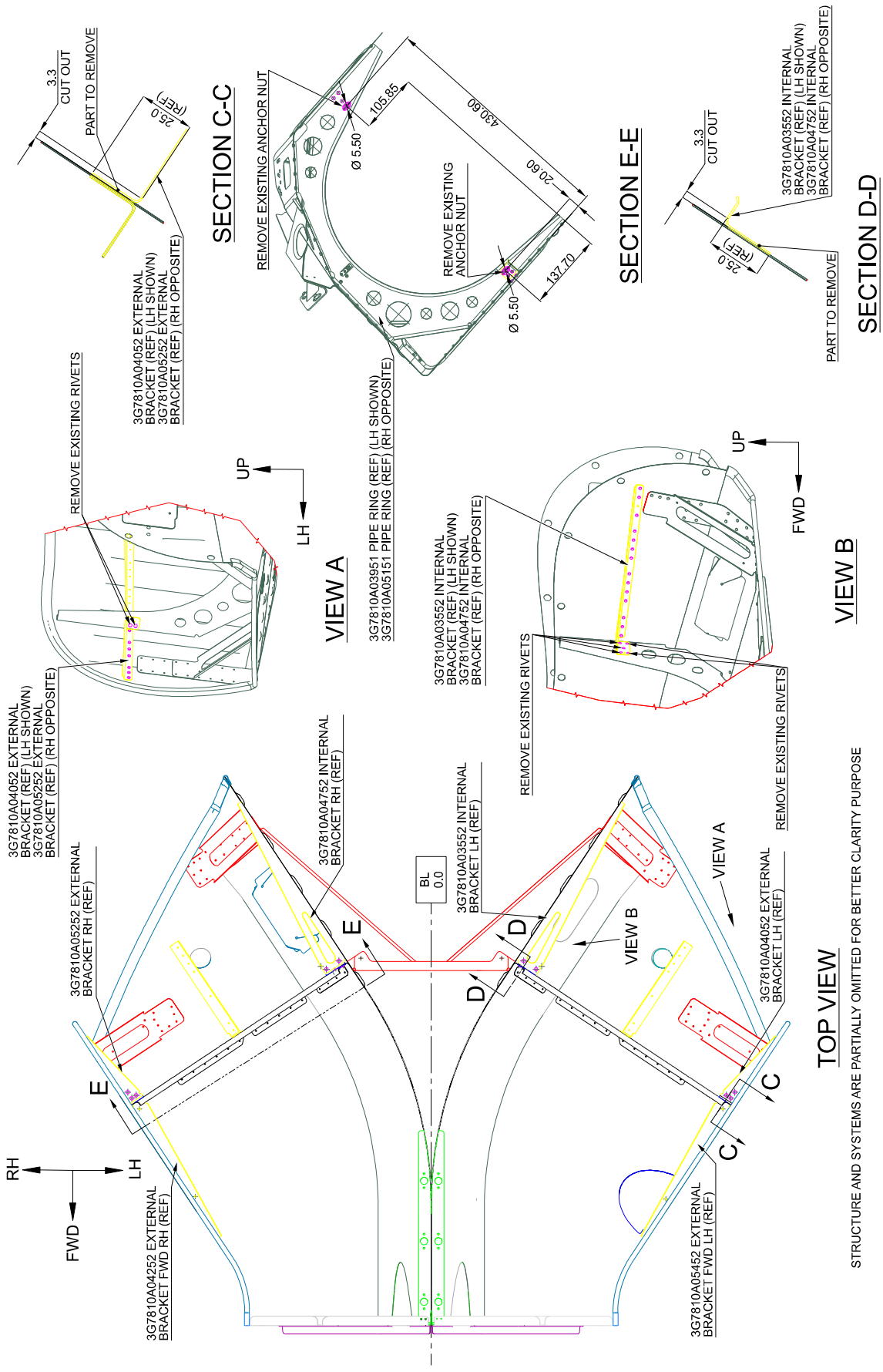

SECTION C-C
SECTION E-E
SECTION D-D
VIEW A
VIEW B
TOP VIEW
REMOVE EXISTING ANCHOR NUT
REMOVE EXISTING RIVETS
REMOVE EXISTING ANCHOR NUT
PART TO REMOVE
CUT OUT
3,3
25,0 (REF)
105,85
430,60
20,60
137,70
Ø 5,50
Ø 5,50
UP
LH
FWD
RH
BL 0,0
3G7810A04052 EXTERNAL BRACKET (REF) (LH SHOWN) 3G7810A05252 EXTERNAL BRACKET (REF) (RH OPPOSITE)
3G7810A03951 PIPE RING (REF) (LH SHOWN) 3G7810A05151 PIPE RING (REF) (RH OPPOSITE)
3G7810A03552 INTERNAL BRACKET (REF) (LH SHOWN) 3G7810A04752 INTERNAL BRACKET (REF) (RH OPPOSITE)
3G7810A05252 EXTERNAL BRACKET RH (REF)
3G7810A04752 INTERNAL BRACKET RH (REF)
3G7810A03552 INTERNAL BRACKET LH (REF)
3G7810A04052 EXTERNAL BRACKET LH (REF)
3G7810A04252 EXTERNAL BRACKET FWD RH (REF)
3G7810A05452 EXTERNAL BRACKET FWD LH (REF)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 1

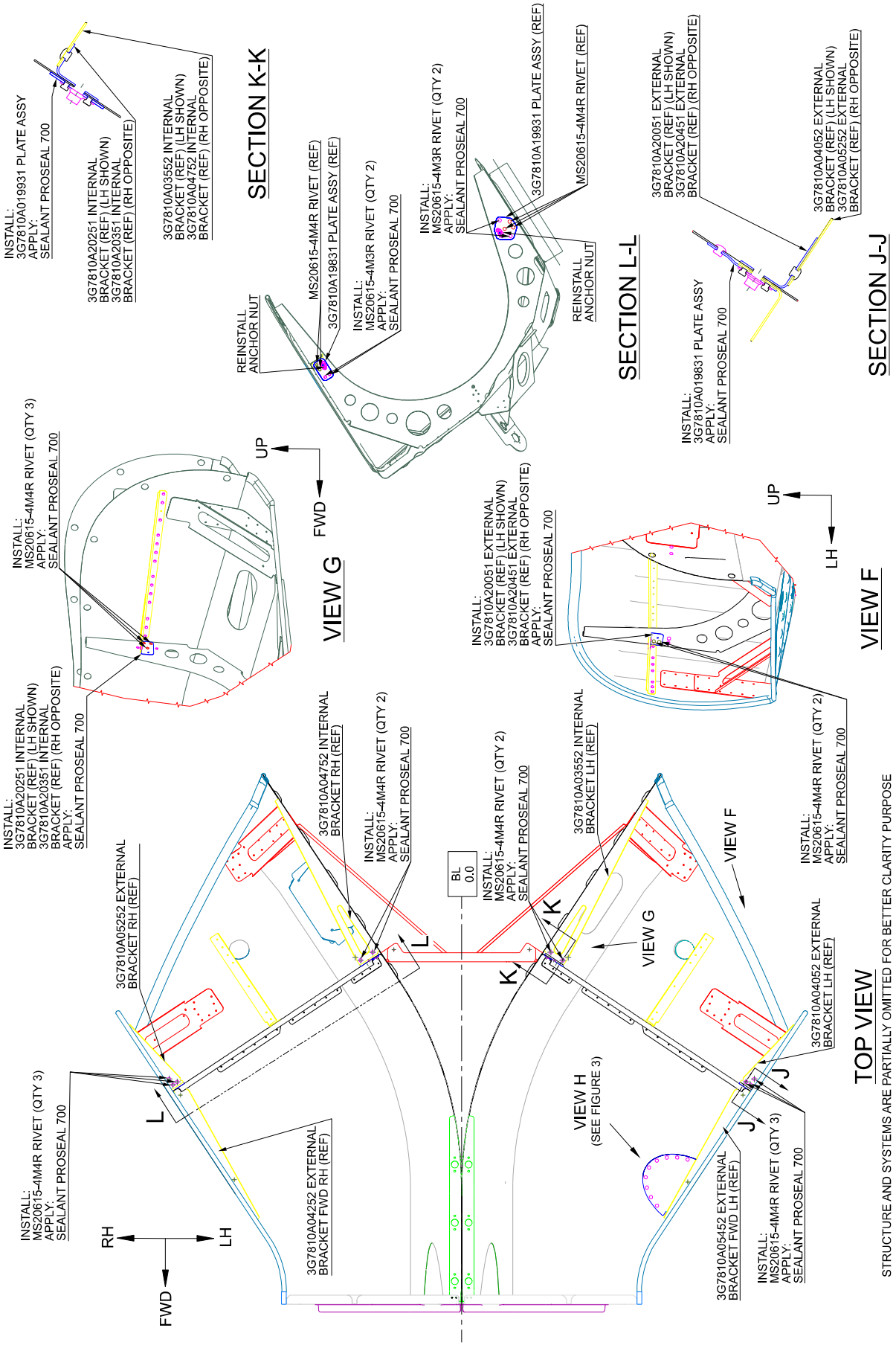

TOP VIEW
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
SECTION K-K
SECTION L-L
SECTION J-J
VIEW G
VIEW F
VIEW H
(SEE FIGURE 3)
FWD
RH
LH
UP
BL 0.0
INSTALL: 3G7810A019931 PLATE ASSY
APPLY: SEALANT PROSEAL 700
3G7810A20251 INTERNAL BRACKET (REF) (LH SHOWN) 3G7810A20351 INTERNAL BRACKET (REF) (RH OPPOSITE)
3G7810A03552 INTERNAL BRACKET (REF) (LH SHOWN) 3G7810A04752 INTERNAL BRACKET (REF) (RH OPPOSITE)
REINSTALL ANCHOR NUT
MS20615-4M4R RIVET (REF)
3G7810A19931 PLATE ASSY (REF)
INSTALL: MS20615-4M3R RIVET (QTY 2)
APPLY: SEALANT PROSEAL 700
INSTALL: MS20615-4M3R RIVET (QTY 2)
APPLY: SEALANT PROSEAL 700
3G7810A20051 EXTERNAL BRACKET (REF) (LH SHOWN) 3G7810A20451 EXTERNAL BRACKET (REF) (RH OPPOSITE)
3G7810A04052 EXTERNAL BRACKET (REF) (LH SHOWN) 3G7810A05252 EXTERNAL BRACKET (REF) (RH OPPOSITE)
INSTALL: 3G7810A019831 PLATE ASSY
APPLY: SEALANT PROSEAL 700
INSTALL: MS20615-4M4R RIVET (QTY 3)
APPLY: SEALANT PROSEAL 700
INSTALL: 3G7810A20251 INTERNAL BRACKET (REF) (LH SHOWN) 3G7810A20351 INTERNAL BRACKET (REF) (RH OPPOSITE)
APPLY: SEALANT PROSEAL 700
3G7810A05252 EXTERNAL BRACKET RH (REF)
3G7810A04752 INTERNAL BRACKET RH (REF)
INSTALL: MS20615-4M4R RIVET (QTY 2)
APPLY: SEALANT PROSEAL 700
INSTALL: MS20615-4M4R RIVET (QTY 2)
APPLY: SEALANT PROSEAL 700
3G7810A03552 INTERNAL BRACKET LH (REF)
INSTALL: 3G7810A20051 EXTERNAL BRACKET (REF) (LH SHOWN) 3G7810A20451 EXTERNAL BRACKET (REF) (RH OPPOSITE)
APPLY: SEALANT PROSEAL 700
INSTALL: MS20615-4M4R RIVET (QTY 2)
APPLY: SEALANT PROSEAL 700
3G7810A04252 EXTERNAL BRACKET FWD RH (REF)
3G7810A04052 EXTERNAL BRACKET LH (REF)
3G7810A05452 EXTERNAL BRACKET FWD LH (REF)
INSTALL: MS20615-4M4R RIVET (QTY 3)
APPLY: SEALANT PROSEAL 700
L
K
J

Figure 2

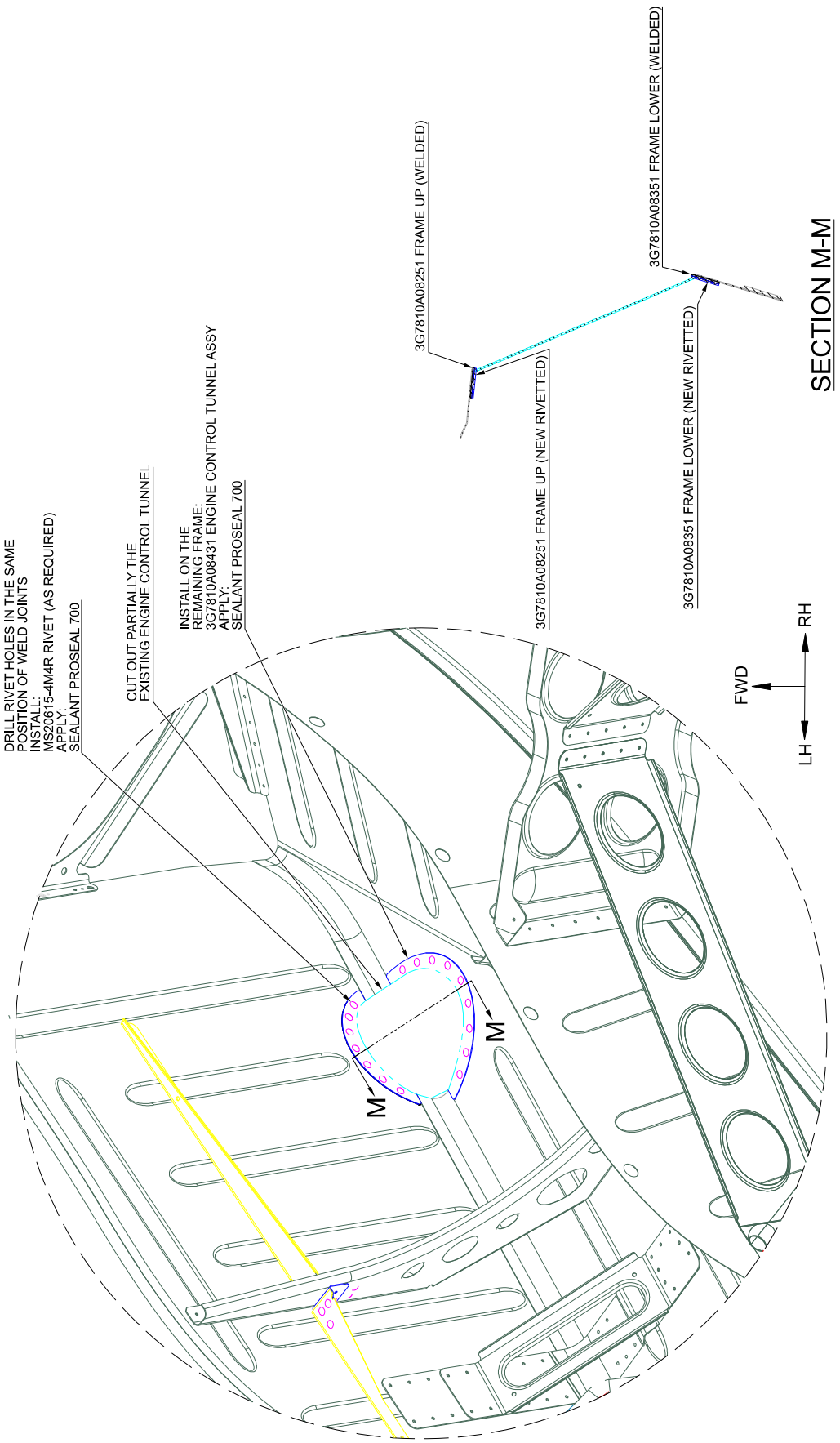
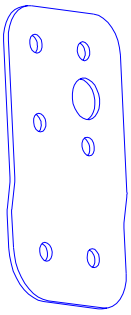
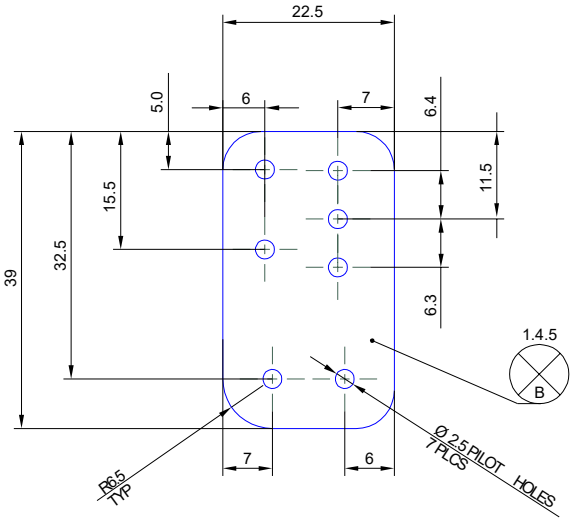

DRILL RIVET HOLES IN THE SAME POSITION OF WELD JOINTS
INSTALL:
MS20615-4M4R RIVET (AS REQUIRED)
APPLY:
SEALANT PROSEAL 700
CUT OUT PARTIALLY THE EXISTING ENGINE CONTROL TUNNEL
INSTALL ON THE REMAINING FRAME:
3G7810A08431 ENGINE CONTROL TUNNEL ASSY
APPLY:
SEALANT PROSEAL 700
3G7810A08251 FRAME UP (NEW RIVETTED)
3G7810A08351 FRAME LOWER (NEW RIVETTED)
3G7810A08251 FRAME UP (WELDED)
3G7810A08351 FRAME LOWER (WELDED)
SECTION M-M
M
M
FWD
RH
LH
DETAIL H
(REFER TO FIGURE 2)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

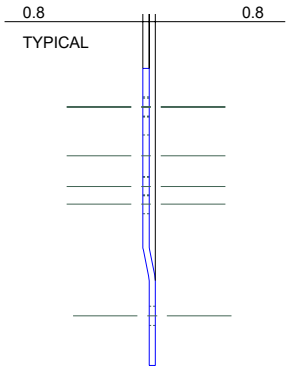
Figure 3



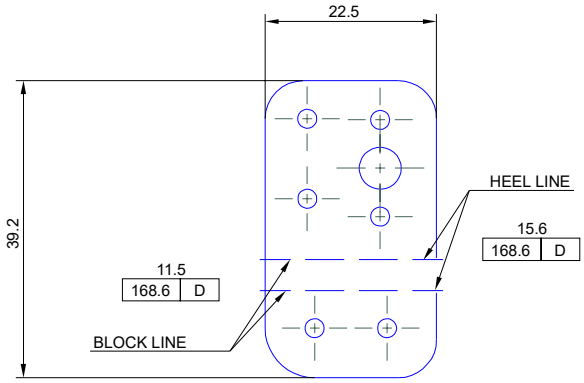
ISOMETRIC VIEW



TOP VIEW

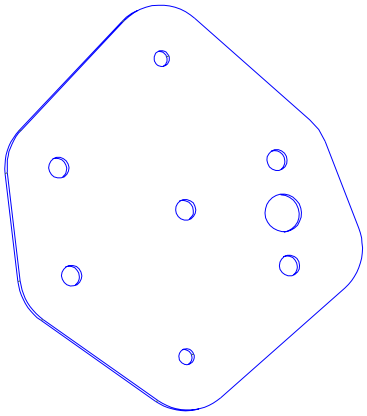


SIDE VIEW

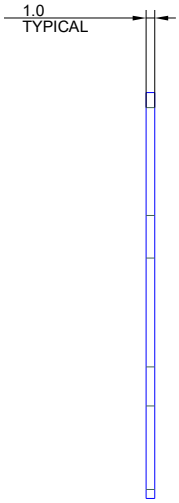


FLAT PATTERN

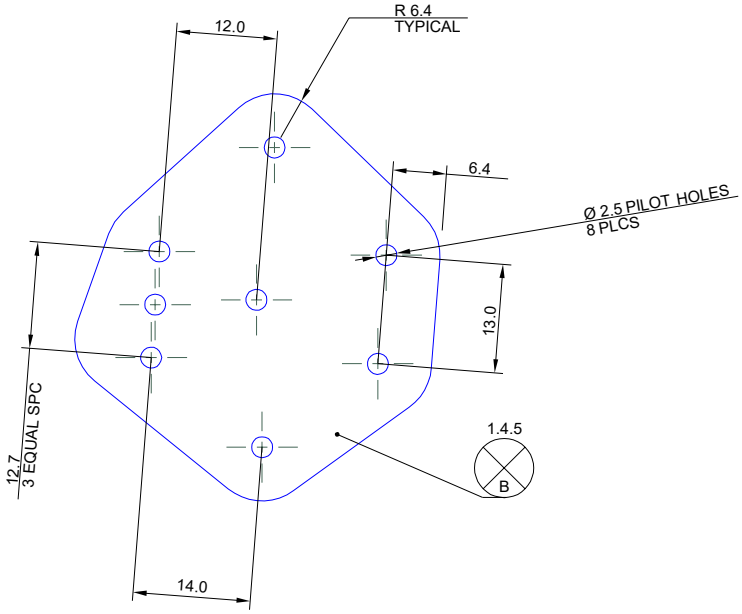
Figure 4



ISOMETRIC VIEW



SIDE VIEW



TOP VIEW

Figure 5

LEONARDO
HELICOPTERS

AgustaWestland Products

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

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

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

Remarks:

Information:

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