



WORKSHEET

LEONARDO MALAYSIA SDN. BHD.

SERVICE ORDER : 9 0 0 2 5 5 6 6 WORKSHEET NUMBER : 2022/31763/007-14

AIRCRAFT REGISTRATION : 9M-BGH		AIRCRAFT SERIAL NUMBER : 31763		AIRFRAME HOURS : 300:40		LANDINGS : 838	
#1 ENGINE SERIAL NO.: PCE-KB1931	#1 ENGINE HOURS : 300:40	#2 ENGINE SERIAL NO.: PCE-KB1885	#2 ENGINE HOURS : 300:40	APU SERIAL NO.: N/A		APU HOURS : N/A	
CRITICAL MAINTENANCE TASK REQUIREMENT				YES	NO	RAISED BY : SYAQIRA	RAISED DATE : 17-11-2022


DESCRIPTION / WORK TO BE CARRIED OUT	CORRECTIVE ACTION TAKEN
EASA AD NO.: 2021-0054 ISSUED: 25 FEBRUARY 2021 (ASB139-648 DATE: AUGUST 10, 2020 REV. : A - FEBRUARY 15, 2021 (PART I, II AND III)) AND (ASB 139-662 DATE: FEBRUARY 15, 2021 REV. : /) ATA 25 - LIFERAFT RESERVOIR INSPECTION AND REPLACEMENT TO BE CARRIED OUT I.A.W EASA AD AND ASB ATTACHED.	NOT APPLICABLE DUE TO AIRCRAFT IS NOT FITTED WITH EFS.
MECHANIC SIGN	N/A

MAINTENANCE ACTIVITIES ABOVE ARE PERFORMED IN ACCORDANCE WITH: (CIRCLE THE SELECTED MODEL WHERE APPLICABLE)	
AIRCRAFT MAINTENANCE MANUAL	AW189 AW169 AW139 A119 A109S AW109SP IETP N/A ISSUE: N/A UPDATED: N/A
ENGINE MAINTENANCE MANUAL	GE CT7-2E PW210A PT6C-67C PT6B-37A PW206C/PW207C MM REV./ISSUE NO. N/A DATED: N/A
APU MAINTENANCE MANUAL	DT13-01_eAPU60-MLE 342 ISSUE NO.: N/A DATED: N/A
OTHER APPROVED MAINTENANCE DATA	EASA AD NO.: 2021-0054 ISSUED: 25 FEBRUARY 2021

INDEPENDENT INSPECTION / RE-INSPECTION I.A.W MOE 2.23	
DESCRIPTION OF CRITICAL MAINTENANCE TASK REQUIREMENT AREA :	

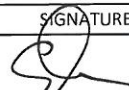

AUTHORISATION HOLDER			
NAME	STAMP	SIGNATURE	DATE

INDEPENDENT INSPECTOR			
NAME	STAMP	SIGNATURE	DATE

PARTS / MATERIAL USED / COMPONENT CHANGE RECORD (IF APPLICABLE)						
DESCRIPTION	PART NO.	REMOVED		INSTALLED		RELEASE DOCUMENT
		SERIAL NO.	TSN/TSO	SERIAL NO.	TSN/TSO	
<div style="display: flex; justify-content: center; gap: 20px;"> <div>N/A</div>  </div>						

ADDITIONAL PARTS / MATERIAL USED / COMPONENT CHANGE RECORD HAVE BEEN RAISED AND ATTACHED.
 CALIBRATED / SPECIAL TOOLS RECORD SHEET HAVE BEEN RAISED AND ATTACHED.

* CERTIFYING STAFF HAVE VERIFIED THAT ALL TOOLS, EQUIPMENT AND OTHER EXTRANEIOUS PART OF MATERIALS ARE CLEARED AND ALL TASKS OR INSPECTIONS HAVE BEEN CARRIED OUT TO THE REQUIRED STANDARD. TASK HAS BEEN PERFORMED I.A.W. MAINTENANCE MANUAL SPECIFIED ABOVE.

CERTIFICATE OF RELEASE TO SERVICE				
* CERTIFYING STAFF NAME	SIGNATURE	STAMP	LOCATION	DATE
S. ELUED			SZB	22/12/2022

CAAM (MALAYSIA) AMO/2016/40 - CERTIFIES THAT THE WORK SPECIFIED, EXCEPT AS OTHERWISE SPECIFIED, WAS CARRIED OUT IN ACCORDANCE WITH CAA MALAYSIA REQUIREMENTS AND IN RESPECT TO THAT WORK THE AIRCRAFT / AIRCRAFT COMPONENT IS CONSIDERED READY FOR RELEASE TO SERVICE.



Airworthiness Directive

AD No.: 2021-0054

Issued: 25 February 2021

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name: LEONARDO S.p.A.
Type/Model designation(s): AB139 and AW139 helicopters

Effective Date: 04 March 2021

TCDS Number(s): EASA.R.006

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2020-0185 dated 19 August 2020.

ATA 25 – Equipment / Furnishings – Life Raft Reservoir and Actuator Cable – Replacement / Inspection

Manufacturer(s):

Leonardo S.p.A. Helicopters, formerly Finmeccanica S.p.A, AgustaWestland S.p.A., Agusta S.p.A.; and AgustaWestland Philadelphia Corporation, formerly Agusta Aerospace Corporation

Applicability:

AB139 and AW139 helicopters, all serial numbers (s/n), if equipped with emergency flotation kit, having Part Number (P/N) 4G9560F00111 (15 passengers) or P/N 4G9560F00211 (18 passengers).

Definitions:

For the purpose of this AD, the following definitions apply:

Affected reservoir: Right-hand (RH) and left-hand (LH) life raft reservoirs, having P/N 3G2560V01951 or P/N 3G2560V01251, and having an s/n as listed in Table 1 of the applicable ASB, except those that are marked with an 'R' placed after its s/n.

Serviceable reservoir: A life raft reservoir which is not an affected reservoir, as defined in this AD.

The applicable ASB: Leonardo Alert Service Bulletin (ASB) 139-648 and ASB 139-662, as applicable to affected reservoir s/n.



Groups: Group 1 helicopters are those that have an affected reservoir installed. Group 2 helicopters are those that do not have an affected reservoir installed.

Reason:

An occurrence was reported of inadvertent activation and deployment of the emergency life raft while the helicopter was in flight. Following the deployment, the life raft separated from the helicopter and was lost at sea. Investigation is on-going to determine the cause of this event.

This condition, if not detected and corrected, may lead to further unintended activation and deployment of the emergency life raft in flight and separation with possible impact on the rotors, resulting in reduced control of the helicopter.

To address this unsafe condition, Leonardo issued ASB 139-648 (original issue), providing replacement instructions for certain affected reservoirs and a one-time inspection for all other reservoirs to verify that the life raft actuator cable and the valve pull rod are correctly installed. Consequently, EASA issued AD 2020-0185 to require, for some helicopters, replacement of affected reservoirs and, for other helicopters, inspections of the valve pull rod and the actuator cable of the life raft and, depending on findings, accomplishment of the applicable corrective action(s). That AD also prohibited (re)installation of an affected reservoir on any helicopter.

After that AD was issued, it was determined that more s/n life raft reservoirs are potentially affected by the same issue. To address that, Leonardo issued ASB 139-662 to specify this other batch of affected reservoirs, and to provide additional replacement and inspection instructions to complement certain actions of the initial Leonardo ASB 139-648, also applicable to the new batch. In addition, it was confirmed that some affected reservoirs could become serviceable after a check by the parts manufacturer. These reservoirs are re-identified and marked with an 'R'.

For the reasons described above, this AD retains the requirements of EASA AD 2020-0185, which is superseded, and expands the batch of affected reservoirs to include those identified in Leonardo ASB 139-662.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Replacement:

- (1) For Group 1 helicopters: Within the compliance time specified in Table 1 of this AD, as applicable, replace each affected reservoir, as defined in this AD, with a serviceable reservoir in accordance with the instructions of the applicable ASB.

Table 1 – Affected Reservoir Replacement

Affected Reservoir	Compliance Time
s/n as listed in Table 1 of ASB 139-648 (any revision)	Within 25 flight hours (FH) after 26 August 2020 [the effective date of EASA AD 2020-0185]
s/n as listed in Table 1 of ASB 139-662	Within 25 FH after the effective date of this AD



Inspection:

- (2) After replacement of the affected reservoir as required by paragraph (1) of this AD, within 5 FH after the serviceable reservoir exceeds 50 FH since its installation, inspect the valve pull rod of each serviceable reservoir, as defined in this AD, in accordance with the instructions of Part II of ASB 139-648 .
- (3) For Group 2 helicopters: Within 25 FH after 26 August 2020 [the effective date of EASA AD 2020-0185] or within 5 FH after a serviceable reservoir exceeds 50 FH since new (first installation on a helicopter), whichever occurs later, inspect the valve pull rod of each serviceable reservoir, as defined in this AD, in accordance with the instructions of Part II of ASB 139-648.
- (4) For Group 1 and Group 2 helicopters: Within the compliance time as specified in Table 2 of this AD, as applicable, inspect the life raft actuator cable of each serviceable reservoir, as defined in this AD, in accordance with the instructions of the applicable ASB.

Table 2 – Life Raft Actuator Cable Inspection

Group	Compliance Time
1	Before next flight after replacement of the affected reservoir as required by paragraph (1) of this AD
2	Within 25 FH after 26 August 2020 [the effective date of EASA AD 2020-0185]

Corrective Action(s):

- (5) If, during the inspection as required by paragraph (2) or (3) of this AD, as applicable, any discrepancy is detected, before next flight, replace the affected reservoir with a serviceable reservoir in accordance with the instructions of Part II of ASB 139-648.
- (6) If, during the inspection as required by paragraph (4) of this AD, any discrepancy is detected as specified in the applicable ASB, before next flight, adjust the cable rigging in accordance with the instructions of the applicable ASB.

Part Installation:

- (7) Do not install an affected reservoir on any helicopter, as required by paragraph (7.1) or (7.2) of this AD, as applicable.
- (7.1) For Group 1 helicopters: After the replacement as required by paragraph (1) of this AD.
- (7.2) For Group 2 helicopters: From the effective date of this AD.
- (8) For Group 2 helicopters: From the effective date of this AD, installation on a helicopter of a serviceable reservoir, as defined in this AD, is allowed, provided that, concurrent with its installation, the life raft actuator cable of that reservoir is inspected in accordance with the instructions of the applicable ASB and, depending on findings, the cable rigging is adjusted in accordance with the instructions of the applicable ASB.



Ref. Publications:

Leonardo S.p.A. Helicopters ASB 139-648 original issue dated 10 August 2020, or Revision A dated 15 February 2021.

Leonardo S.p.A. Helicopters ASB 139-662 original issue dated 15 February 2021.

The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the [EU aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
5. For any question concerning the technical content of the requirements in this AD, please contact: Leonardo S.p.A. Helicopters. E-mail: cse.aw139.AW@leonardocompany.com.



SERVICE BULLETIN

N° 139-648

ALERT

DATE: August 10, 2020

REV. : A - February 15, 2021

TITLE

ATA 25 – LIFERAFT RESERVOIR INSPECTION AND REPLACEMENT

REVISION LOG

The Revision A of this Service Bulletin supersedes the first issue dated August 10, 2020. Helicopters that have complied with previous issue of this Service Bulletin do not need any additional action.

Revision A is issued in order to provide further clarifications on the life raft reservoirs S/N affected by this SB (refer to the Effectivity section).

Revision bars identify changes.

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

NOTE

LH/RH liferaft reservoirs are NOT affected by Part I of this SB if the S/N marked on the external identification label (or recorded on the component Log Card) is followed by the suffix "R" (e.g. "VT098855R" or "VI026547R"), even if they have a S/N listed in Table 1 below.

All liferaft reservoirs S/N listed in Table 1 and followed by the suffix "R" are also affected by Part II and Part III.

Part I:

LH/RH liferaft reservoirs listed in Table 1, installed on AW139 helicopters or kept in stock.

P/N	S/N	Description
3G2560V01251	VT098855, VT098888, VT106705, VT108649, VT113304, VT113311, VT113313, VT113317, VT113735, VT114524, VT115880, VT117146, VT118688, VT118955, VT119904, VT126158, VT143258, VT152697, VT154330, VT162132, VT169279	LH liferaft reservoir
3G2560V01951	VI026547, VT037511, VT037569, VT066175, VT104133, VT106695, VT108652, VT111164, VT113323, VT113325, VT113326, VT113328, VT114485, VT118643, VT123350, VT126156, VT142275, VT154331, VT157588, VT158618, VT158847, VT158848, VT161457	RH liferaft reservoir

Table 1

Part II:

LH/RH liferaft reservoirs P/N 3G2560V01251/ 3G2560V01951 (part of 15pax/18pax emergency flotation kit P/N 4G9560F00111/ 4G9560F00211) with S/N not listed in Table 1.

Part III:

LH/RH liferaft reservoirs P/N 3G2560V01251/ 3G2560V01951 (part of 15pax/18pax emergency flotation kit P/N 4G9560F00111/ 4G9560F00211) with S/N not listed in Table 1.

B. COMPLIANCE

Part I:

- Within twenty-five (25) FH from the first issue date of this Service Bulletin, for LH/RH reservoirs installed on the helicopter at the time of the first issue date of this Service Bulletin.
- Before the next installation on AW139 helicopter but not later than one (1) month, from the first issue date of this Service Bulletin, for LH/RH reservoirs kept in stock.

Part II:

- Within twenty-five (25) FH from the first issue date of this Service Bulletin or when they reach fifty (50) FH since new or since first installation after replacement on a helicopter, whichever comes later, for parts installed on the helicopter at the time of the first issue date of this Service Bulletin.

Part III:

- Within twenty-five (25) from the first issue date of this Service Bulletin, for parts installed on the helicopter at the time of the first issue date of this Service Bulletin.
- Immediately after installation on the helicopter, for LH/RH reservoir installed as replacement part.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued to prescribe one-off inspections of LH and RH liferaft reservoir installation and the replacement of few specific reservoir serial numbers.

E. DESCRIPTION

Following an inadvertent life raft deployment event on an in-service AW139 helicopter, Leonardo Helicopters Division has precautionary developed this Service Bulletin to verify the correct installation of the LH and RH life rafts inflation system.

Part I of this Service Bulletin prescribes the removal from the helicopter of some life raft reservoir S/Ns.

Moreover, Part II and Part III provide instructions for a one-off inspection of the valve pull rod and of the life raft actuator cable, to make sure that they are correctly installed on the whole AW139 fleet equipped with 15pax/18pax emergency flotation kit P/N 4G9560F00111/ 4G9560F00211.

In case of findings, the cable rigging and/or the replacement of the life raft reservoir are required.

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 MMH are deemed necessary:

Part I: approximately one (1) MMH;

Part II: approximately one (1) MMH;

Part III: approximately one (1) MMH.

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

H. WEIGHT AND BALANCE

N.A.

I. REFERENCES

1) PUBLICATIONS

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance	I, II, III
DM02 39-A-06-41-00-00A-010A-A	Access doors and panels - General Data	II, III
DM03 39-E-25-62-01-00A-520A-K	Left bottle assembly - Remove procedure	I, II
DM04 39-E-25-62-01-00A-720A-K	Left bottle assembly - Install procedure	I, II
DM05 39-E-25-62-02-00A-520A-K	Right bottle assembly - Remove procedure	I, II

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM06 39-E-25-62-02-00A-720A-K	Right bottle assembly - Install procedure	I, II

2) ACRONYMS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
DM	Data Module
FH	Flight Hours
FOC	Free Of Charge
ITEP	Illustrated Tool and Equipment Publication
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
RA	Return Authorization

3) ANNEX

N.A.

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	3G2560V01251		LH liferaft reservoir	1	.	(1) (2) (3)	-
2	3G2560V01951		RH liferaft reservoir	1	.	(1) (2) (3)	-

2) CONSUMABLES

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

3) LOGISTIC MATRIX

N.A.

NOTE

- (1) Item to be supplied in exchange for one of the S/N listed in Table 1 of "EFFECTIVITY" paragraph.
- (2) Refer to "INDUSTRY SUPPORT INFORMATION" paragraph for details to request the parts.
- (3) The component documentation may refer to Document No MPP-234 Revision N/C (AW139 Liferaft Reservoir Assembly Rework) as an approved procedure for marking the reservoir S/N with the suffix "R".

B. SPECIAL TOOLS

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
3	601.2382	Diffuser cap	REF	(B1)	II

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

SPECIAL TOOLS NOTE

- (B1) Item to be provided by the supplier along with the serviceable RH/LH liferaft reservoir. Refer to "INDUSTRY SUPPORT INFORMATION" paragraph for details.

C. INDUSTRY SUPPORT INFORMATION

To receive replacement component and tool in support of this Service Bulletin, the Customer should e-mail a free of charge purchase order to support@dartaero.com. The purchase order should be made to DART Aerospace and make reference to Service Bulletin 139-648, with instructions on the location where the replacement has to be shipped. DART will issue an RA for the component being replaced and would require that the return component be shipped to DART within five (5) business days of receiving the replacement. The return address will be indicated on the RA with shipping instructions. Shipping costs will be FOC for customers. If the component is not returned, there will be a charge for the replacement component that has been shipped.

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) All lengths are in mm.

PART I

NOTE

Steps 1 thru 5 are applicable to LH/RH life raft reservoirs installed on the helicopter.

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. Remove the affected LH/RH life raft reservoir P/N 3G2560V01251/3G2560V01951 from the helicopter, in accordance with the relevant AMP DM:
 - 39-E-25-62-01-00A-520A-K - Left bottle assembly - Remove procedure;
 - 39-E-25-62-02-00A-520A-K - Right bottle assembly - Remove procedure.

NOTE

While applying step 3, do not connect the life-raft inflation hose P/N 3G2560L00131 to the bottle assembly, as it must be disconnected for the application of step 4.

3. Install a serviceable LH/RH life raft reservoir P/N 3G2560V01251/3G2560V01951 to replace the part removed at previous step 2, in accordance with the relevant AMP DM:
 - 39-E-25-62-01-00A-720A-K - Left bottle assembly - Install procedure;
 - 39-E-25-62-02-00A-720A-K - Right bottle assembly - Install procedure.
4. Perform the life raft actuator cable inspection in accordance with Part III of this Service Bulletin.
5. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
6. Send the affected LH/RH liferaft reservoir to the supplier; for details Refer to "INDUSTRY SUPPORT INFORMATION" paragraph.

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".

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, if required. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1, gain access to the affected area.
3. With reference to Figure 1 Detail B, disconnect the flex hose P/N 3G2560L00131 from the bottle valve.
4. With reference to Figure 2 Detail A, install the diffuser cap P/N 601.2382.
5. With reference to Figures 1 and 2, perform the valve pull rod inspection as described in the following procedure:
 - 5.1 With reference to Figure 1 Detail B and Figure 2 Detail B, perform the measurement of the actuation cable between the face of the pull rod and the back of the valve cap and compare it with the maximum allowed of 68.5 mm (see measure A).

NOTE

Perform following steps 5.2 thru 5.4 only if the measurement value exceeds the allowed limit.
Otherwise skip to step 6.

- 5.2 Remove the affected LH/RH life raft reservoir P/N 3G2560V01251/3G2560V01951 from the helicopter, in accordance with the relevant AMP DM:
 - 39-E-25-62-01-00A-520A-K - Left bottle assembly - Remove procedure;
 - 39-E-25-62-02-00A-520A-K - Right bottle assembly - Remove procedure.
- 5.3 Send the affected LH/RH liferaft reservoir to the supplier to adjust/replace the valve assy; for details refer to "INDUSTRY SUPPORT INFORMATION" paragraph.
- 5.4 Install a serviceable LH/RH life raft reservoir P/N 3G2560V01251/3G2560V01951 on the helicopter, in accordance with the relevant AMP DM:
 - 39-E-25-62-01-00A-720A-K - Left bottle assembly - Install procedure;
 - 39-E-25-62-02-00A-720A-K - Right bottle assembly - Install procedure.

NOTE

Do not perform steps 6 and 7 at this time if it is required to perform also the life raft actuator cable inspection, in accordance with Part III.

6. With reference to Figure 2 Detail A remove the diffuser cap P/N 601.2382 from the bottle valve.
7. With reference to Figure 1 Detail B, connect the flex hose P/N 3G2560L00131 to the bottle

- valve. Tighten the nut of the hose to the standard torque value.
8. Repeat steps 2 thru 7 for the other side, if required.
 9. Return the helicopter to flight configuration, if required, and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
 10. 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

NOTE

Steps 1 and 2 are not applicable if Part III is performed at the same time of 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, if required. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1, gain access to the affected area.

NOTE

Following steps 3 and 4 are not applicable if the inspection is performed on a newly installed liferaft reservoir or the diffuser cap has been already installed, complying with Part II.

3. With reference to Figure 1 Detail B, disconnect the flex hose P/N 3G2560L00131 from the bottle valve.
4. With reference to Figure 2 Detail A, install the diffuser cap P/N 601.2382.
5. With reference to Figure 1, perform the life raft actuator cable inspection as described in the following procedure:
 - 5.1 With reference to Figure 1 View A and Detail C, with the junction box actuation arm in its rest position (90° with respect to the helicopter longitudinal axis), verify the presence of a $5.0^{+0.0}_{-2.0}$ mm clearance between the sphere at the end of the cable and the activation system in accordance with the measurement range shown (see measure B).
 - 5.2 If the measurement value exceeds the allowed limit, perform the life raft activation cable adjustment in accordance with Annex A.
6. With reference to Figure 2 Detail A, remove the diffuser cap P/N 601.2382 from the valve.
7. With reference to Figure 1 Detail B, connect the flex hose P/N 3G2560L00131 to the bottle valve. Tighten the nut of the hose to the standard torque value.
8. Repeat steps 2 thru 7 for the other side, if required.
9. Return the helicopter to flight configuration, and record for compliance with Part III of this Service Bulletin on the helicopter logbook.
10. 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".

LIFERAFT ACTUATOR CABLE INSPECTION

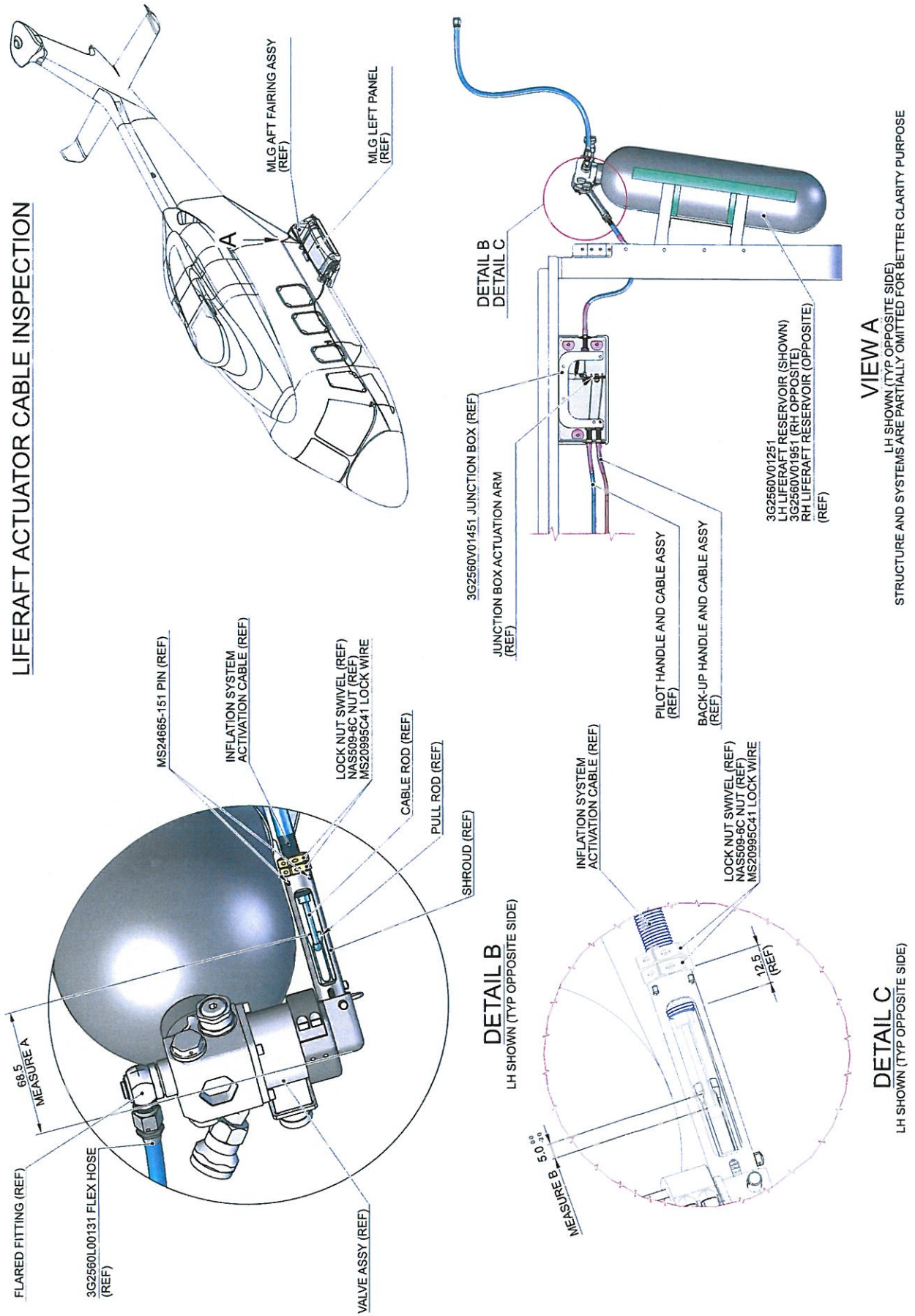
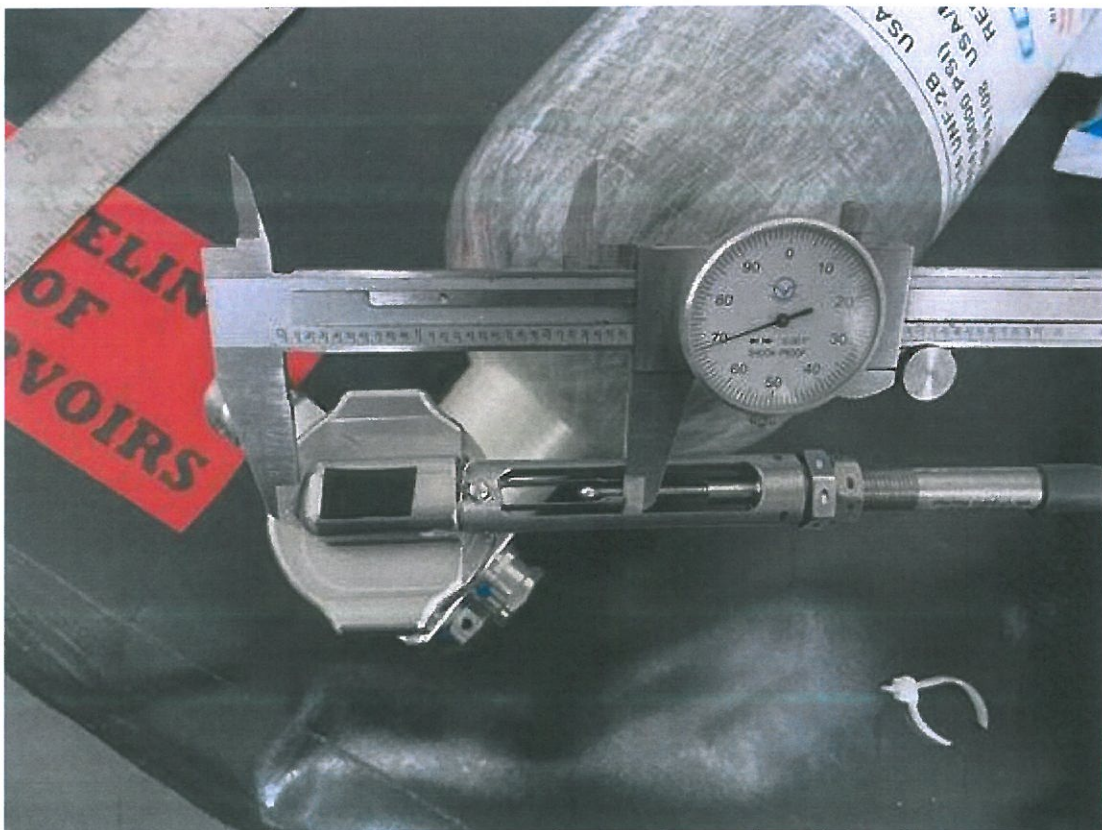


Figure 1



DETAIL A



DETAIL B

Figure 2

ANNEX A

LIFERAFT ACTIVATION CABLE ADJUSTMENT

In order to obtain a clearance of 5 mm $\pm 0/-2$ between the spherical end of the cable and the Pull Rod adjust the cable length acting on the lock nuts at the end of the activation cable zone (**Figure A1**).

If this first adjustment reveals to be not sufficient, act also on the locking nuts in the Junction Box zone (**Figure A2**) and then make small corrections acting on the locking nuts at the end of the activation cable.

1 END OF ACTIVATION CABLE ZONE LOCK NUTS

- 1.1 Unscrew the 9/16" tightening nut.
- 1.2 Adjust the cable length acting on the 5/8" regulation nut.
 - TO INCREASE THE GAP: unscrew the regulation nut;
 - TO DECREASE THE GAP: screw the regulation nut.
- 1.3 Screw the 9/16" tightening nut in order to block the regulation nut.

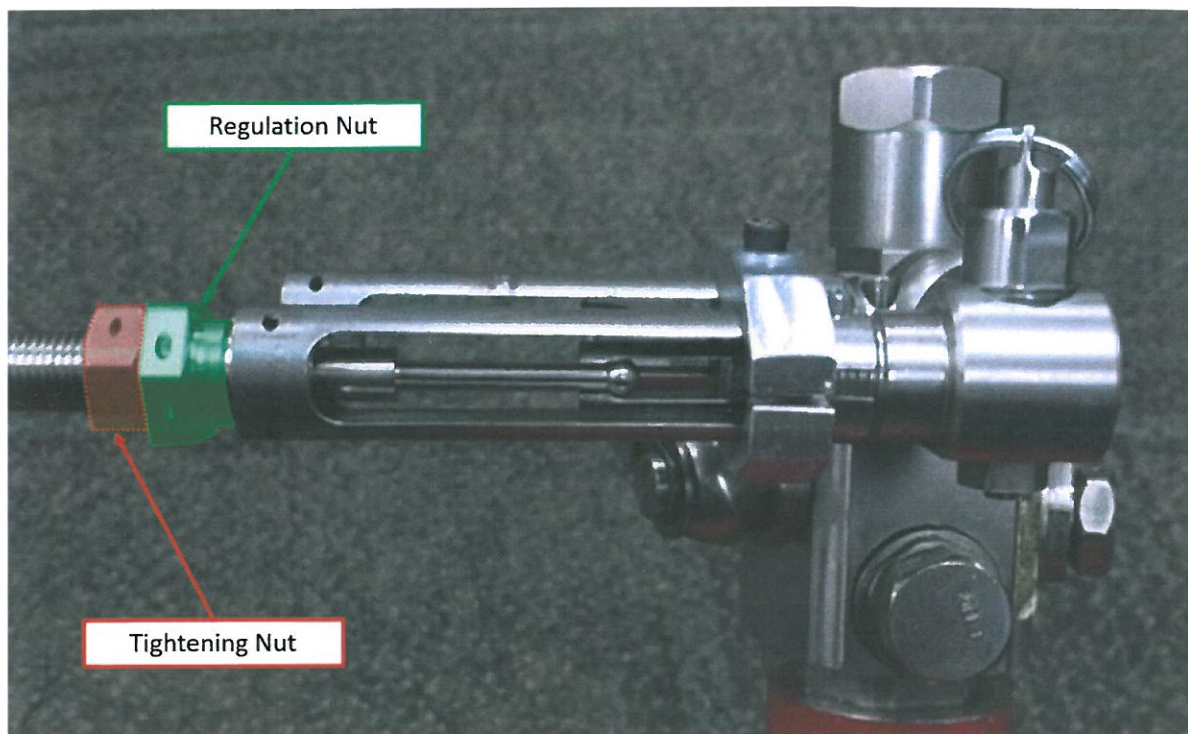


Figure A1 – Activation cable zone

2 JUNCTION BOX ZONE LOCK NUTS

Both lock nuts are 9/16".

2.1 Remove safety-wire from the nuts.

2.2 Adjust the gap as follows:

➤ TO INCREASE THE GAP:

- Unscrew External Nut;
- Screw Internal Nut.

➤ TO DECREASE THE GAP:

- Unscrew Internal Nut;
- Screw External Nut.

2.3 Once the correct gap is achieved, make sure that both the internal and the external nuts are in contact with the structure and tightened at the standard torque value.

2.4 Safety the external nut and the internal nut with stainless steel (302/304) medium strong safety wire.

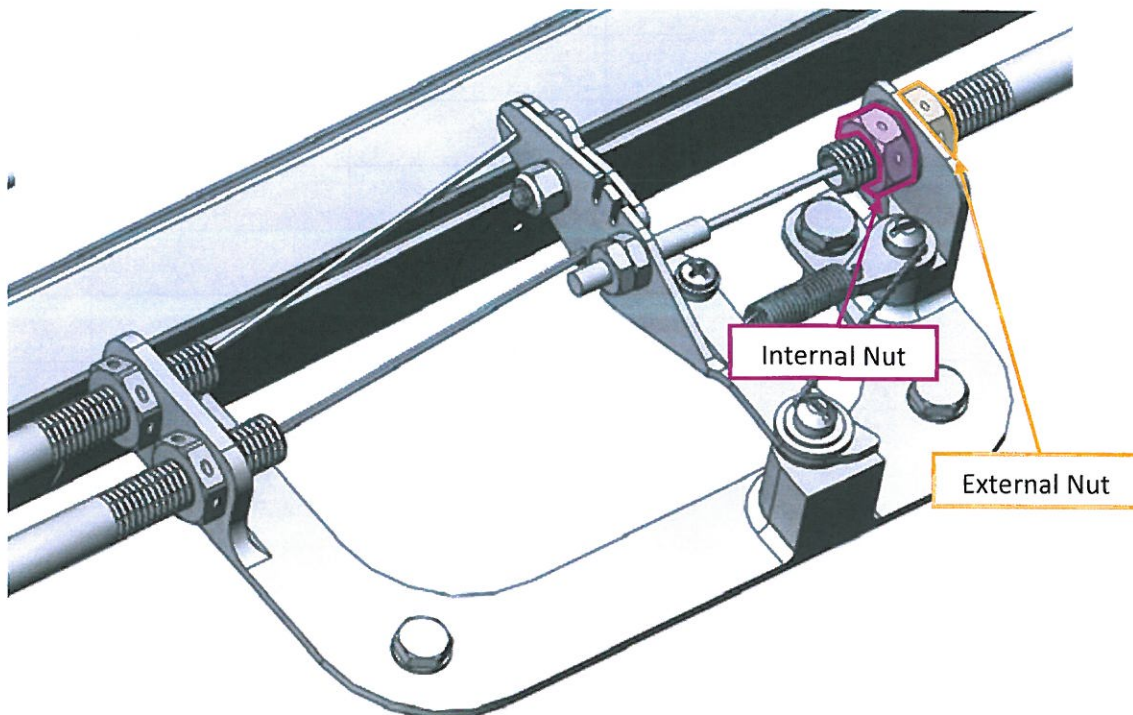


Figure A2 – Junction box zone

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.

SERVICE BULLETIN**N° 139-662****ALERT****DATE:** February 15, 2021**REV. :** /

TITLE**ATA 25 – LIFERAFT RESERVOIR INSPECTION AND REPLACEMENT****REVISION LOG**

First Issue

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

NOTE

LH/RH liferaft reservoirs are NOT affected by this SB if the S/N marked on the external identification label (or recorded on the component Log Card) is followed by the suffix "R" (e.g. "16001R" or "VI013774R"), even if they have a S/N listed in Table 1 below.

LH/RH liferaft reservoirs listed in Table 1, installed on AW139 helicopters or kept in stock.

P/N	S/N		Description
3G2560V01251	16001	VT088125	LH liferaft reservoir
	17001	VT104016	
	17003	VT109161	
	17004	VT111340	
	17006	VT113319	
	17007	VT114523	
	V000944	VT116284	
	VI013604	VT126152	
	VI014434	VT143324	
	VI016721	VT152698	
	VT040868	VT159615	
	VT043176	VT163283	
	VT064931	VT163286	
3G2560V01951	17001	VT081019	RH liferaft reservoir
	17002	VT093598	
	17004	VT106684	
	17008	VT110607	
	17009	VT113327	
	VI013774	VT114386	
	VI013778	VT116606	
	VT037135	VT135061	
	VT043023	VT141984	
	VT043054	VT165010	
	VT064929		

Table 1

B. COMPLIANCE

- ✓ Within twenty-five (25) FH from the issue of this Service Bulletin for LH/RH reservoirs installed on the helicopter.
- ✓ Before the next installation on AW139 helicopter but not later than one (1) month, after the issue date of this Service Bulletin, for LH/RH reservoirs kept in stock.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued to prescribe the replacement of few specific reservoir serial numbers.

E. DESCRIPTION

Following an inadvertent life raft deployment event on an in-service AW139 helicopter, Leonardo Helicopters Division has precautionary developed this Service Bulletin to prescribe the replacement of some life raft reservoir S/Ns.

Moreover, this SB provides instructions for a one-off inspection of the life raft actuator cable to ensure a proper installation of the LH/RH liferaft reservoirs on the helicopter.

In case of findings, the cable rigging of the life raft reservoir is required.

NOTE

Reservoirs installed with this SB do not have to comply with Part III of SB 139-648 Rev.A.

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 approximately two (2) MMH are deemed necessary. MMH are based on hands-on time and can change with personnel and facilities available.

H. WEIGHT AND BALANCE

N.A.

I. REFERENCES

1) PUBLICATIONS

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance	-
DM02 39-E-25-62-01-00A-520A-K	Left bottle assembly - Remove procedure	-
DM03 39-E-25-62-01-00A-720A-K	Left bottle assembly - Install procedure	-
DM04 39-E-25-62-02-00A-520A-K	Right bottle assembly - Remove procedure	-
DM05 39-E-25-62-02-00A-720A-K	Right bottle assembly - Install procedure	-

2) ACRONYMS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
DM	Data Module
FH	Flight Hours
FOC	Free Of Charge
ITEP	Illustrated Tool and Equipment Publication
LH	Left Hand
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
RA	Return Authorization
RH	Right Hand

3) ANNEX

Annex A - Liferaft activation cable adjustment

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	3G2560V01251		LH liferaft reservoir	1	.	(1) (2) (3)	-
2	3G2560V01951		RH liferaft reservoir	1	.	(1) (2) (3)	-

2) CONSUMABLES

Refer 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) Item to be supplied in exchange for one of the S/N listed in Table 1 of "EFFECTIVITY" paragraph.
- (2) Refer to "INDUSTRY SUPPORT INFORMATION" paragraph for details to request the parts.
- (3) The component documentation may refer to Document No MPP-234 Revision N/C (AW139 Liferaft Reservoir Assembly Rework) as an approved procedure for marking the reservoir S/N with the suffix "R".

B. SPECIAL TOOLS

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
3	601.2382	Diffuser cap	REF	(B1)	-

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

SPECIAL TOOLS NOTE

- (B1) This item will be provided by the supplier along with the serviceable RH/LH liferaft reservoir.

C. INDUSTRY SUPPORT INFORMATION

To receive replacement component and tool in support of this Service Bulletin, the Customer should e-mail a free of charge purchase order to support@dartaero.com. The purchase order should be made to DART Aerospace and make reference to Service Bulletin 139-662, with instructions on the location where the replacement has to be shipped. DART will issue an RA for the component being replaced and would require that the return component be shipped to DART within five (5) business days of receiving the replacement. The return address will be indicated on the RA with shipping instructions. Shipping costs will be FOC for customers. If the component is not returned, there will be a charge for the replacement component that has been shipped.

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) All lengths are in mm.

NOTE

Steps 1 thru 5 are applicable to LH/RH life raft reservoirs installed on the helicopter.

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. Remove the affected LH/RH life raft reservoir P/N 3G2560V01251/3G2560V01951 from the helicopter, in accordance with the relevant AMP DM:
 - 39-E-25-62-01-00A-520A-K - Left bottle assembly - Remove procedure;
 - 39-E-25-62-02-00A-520A-K - Right bottle assembly - Remove procedure.

NOTE

While applying step 3, do not connect the life-raft inflation hose P/N 3G2560L00131 to the bottle assembly, as it must be disconnected for the application of step 4.

3. Install a serviceable LH/RH life raft reservoir P/N 3G2560V01251/3G2560V01951 to replace the part removed at previous step 2, in accordance with the relevant AMP DM:
 - 39-E-25-62-01-00A-720A-K - Left bottle assembly - Install procedure;
 - 39-E-25-62-02-00A-720A-K - Right bottle assembly - Install procedure.
4. Perform the life raft actuator cable inspection in accordance with the following procedure:
 - 4.1 With reference to Figure 1 Detail B, disconnect the flex hose P/N 3G2560L00131 from the bottle valve.
 - 4.2 With reference to Figure 2, install the diffuser cap P/N 601.2382.
 - 4.3 With reference to Figure 1, perform the life raft actuator cable inspection as described in the following procedure:

- 4.3.1 With reference to Figure 1 View A and Detail C, with the junction box actuation arm in its rest position (90° with respect to the helicopter longitudinal axis), verify the presence of a $5.0^{+0.0}_{-2.0}$ mm clearance between the sphere at the end of the cable and the activation system in accordance with the measurement range shown (see measure B).
- 4.3.2 If the measurement value exceeds the allowed limit, perform the life raft activation cable adjustment in accordance with Annex A.
- 4.4 With reference to Figure 2, remove the diffuser cap P/N 601.2382 from the valve.
- 4.5 With reference to Figure 1 Detail B, connect the flex hose P/N 3G2560L00131 to the bottle valve. Tighten the nut of the hose to the standard torque value.
- 4.6 Repeat steps 4.1 thru 4.5 for the other side, if required.
5. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
6. Send the affected LH/RH liferaft reservoir to the supplier; for details refer to "INDUSTRY SUPPORT INFORMATION" paragraph.
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".

LIFERAFT ACTUATOR CABLE INSPECTION

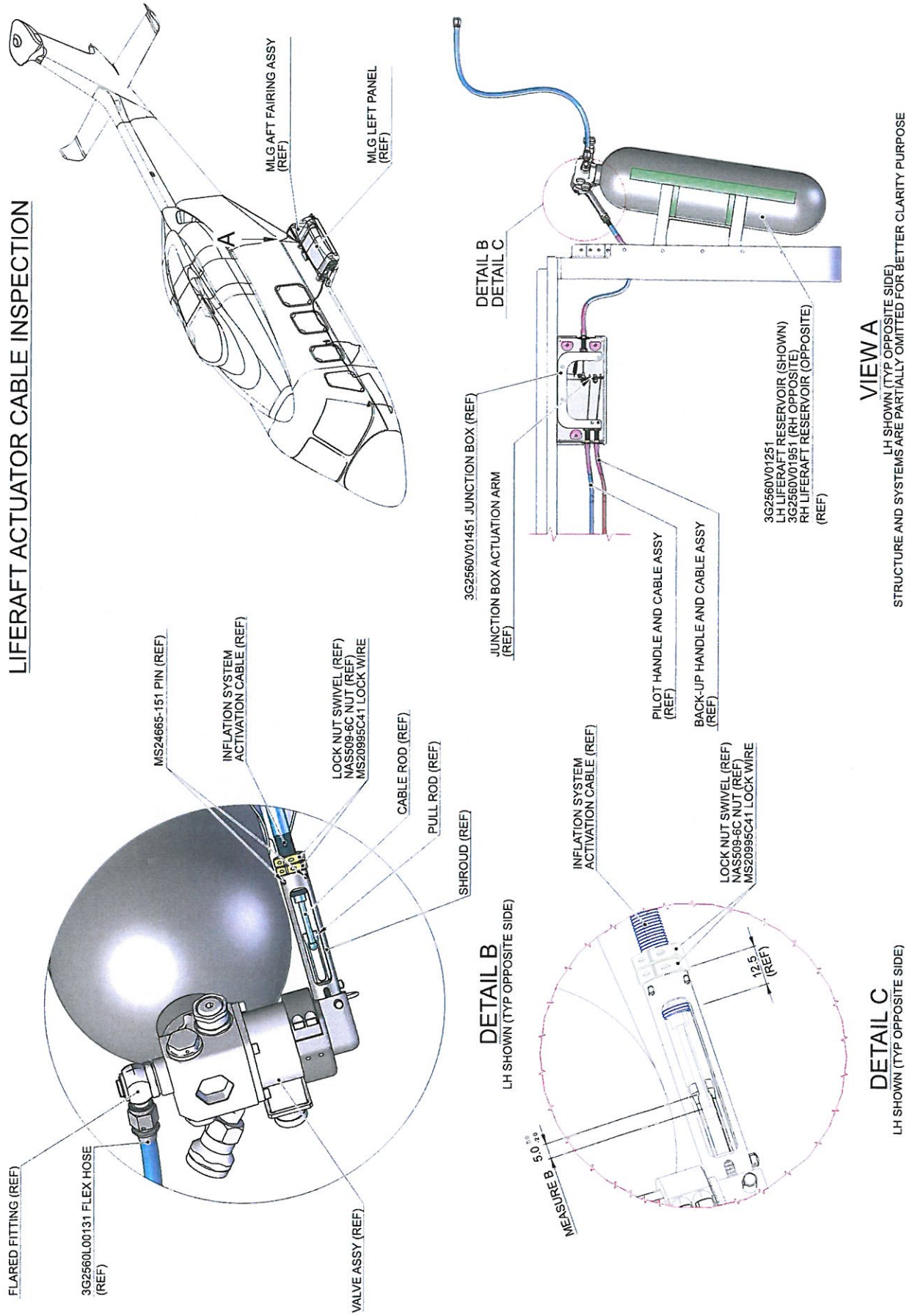


Figure 1



Figure 2

ANNEX A

LIFERAFT ACTIVATION CABLE ADJUSTMENT

In order to obtain a clearance of 5 mm $\pm 0/-2$ between the spherical end of the cable and the Pull Rod adjust the cable length acting on the lock nuts at the end of the activation cable zone (**Figure A1**).

If this first adjustment reveals to be not sufficient, act also on the locking nuts in the Junction Box zone (**Figure A2**) and then make small corrections acting on the locking nuts at the end of the activation cable.

1 END OF ACTIVATION CABLE ZONE LOCK NUTS

- 1.1 Unscrew the 9/16" tightening nut.
- 1.2 Adjust the cable length acting on the 5/8" regulation nut.
 - TO INCREASE THE GAP: unscrew the regulation nut;
 - TO DECREASE THE GAP: screw the regulation nut.
- 1.3 Screw the 9/16" tightening nut in order to block the regulation nut.

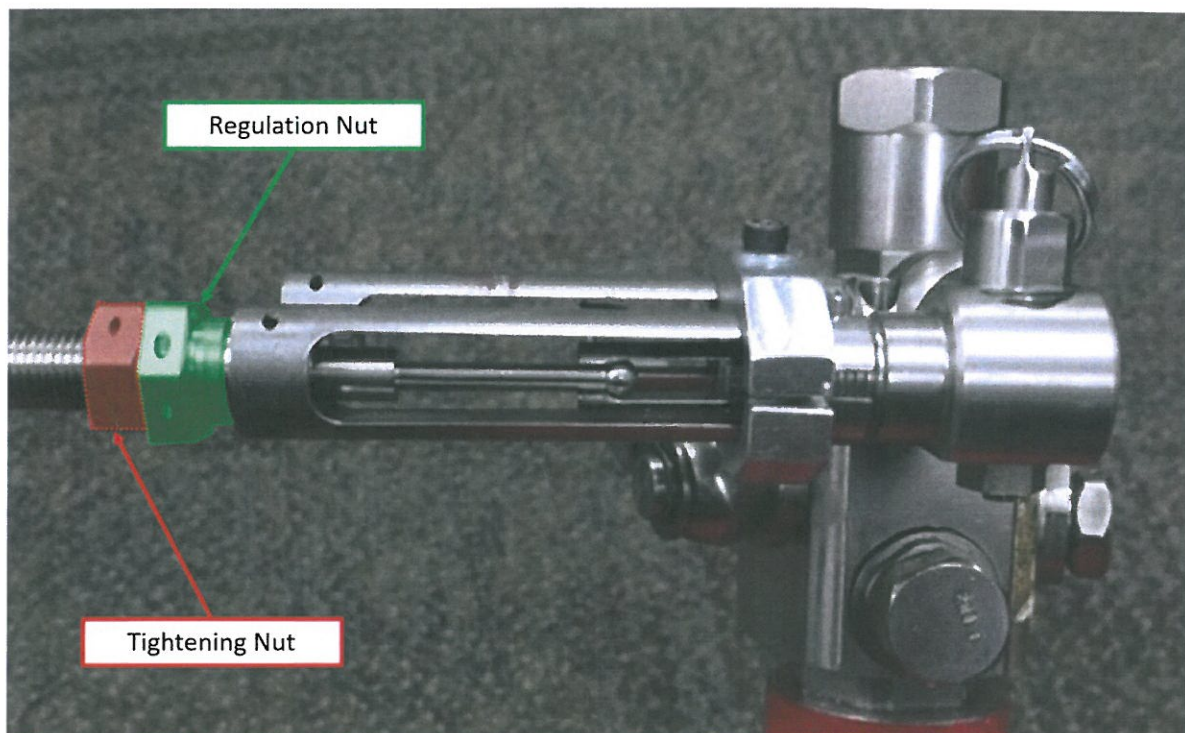


Figure A1 – Activation cable zone

2 JUNCTION BOX ZONE LOCK NUTS

Both lock nuts are 9/16".

- 2.1 Remove safety-wire from the nuts.
- 2.2 Adjust the gap as follows:
 - TO INCREASE THE GAP:
 - Unscrew External Nut;
 - Screw Internal Nut.
 - TO DECREASE THE GAP:
 - Unscrew Internal Nut;
 - Screw External Nut.
- 2.3 Once the correct gap is achieved, make sure that both the internal and the external nuts are in contact with the structure and tightened at the standard torque value.
- 2.4 Safety the external nut and the internal nut with stainless steel (302/304) medium strong safety wire.

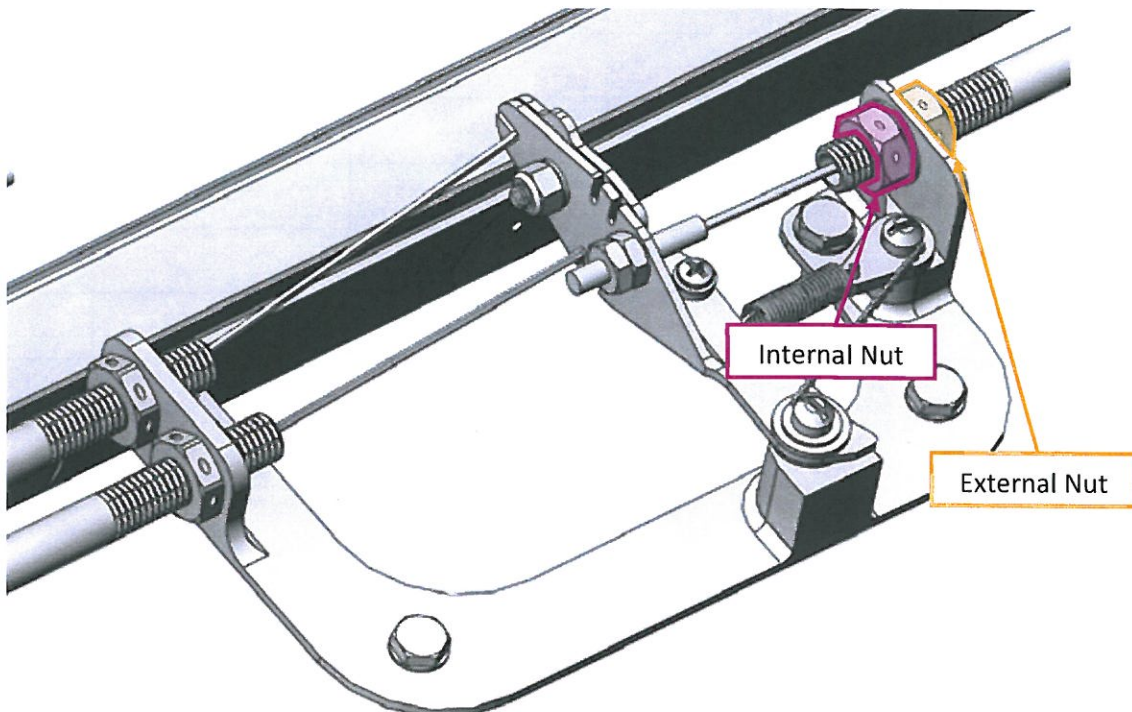


Figure A2 – Junction box zone

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