
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

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<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

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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

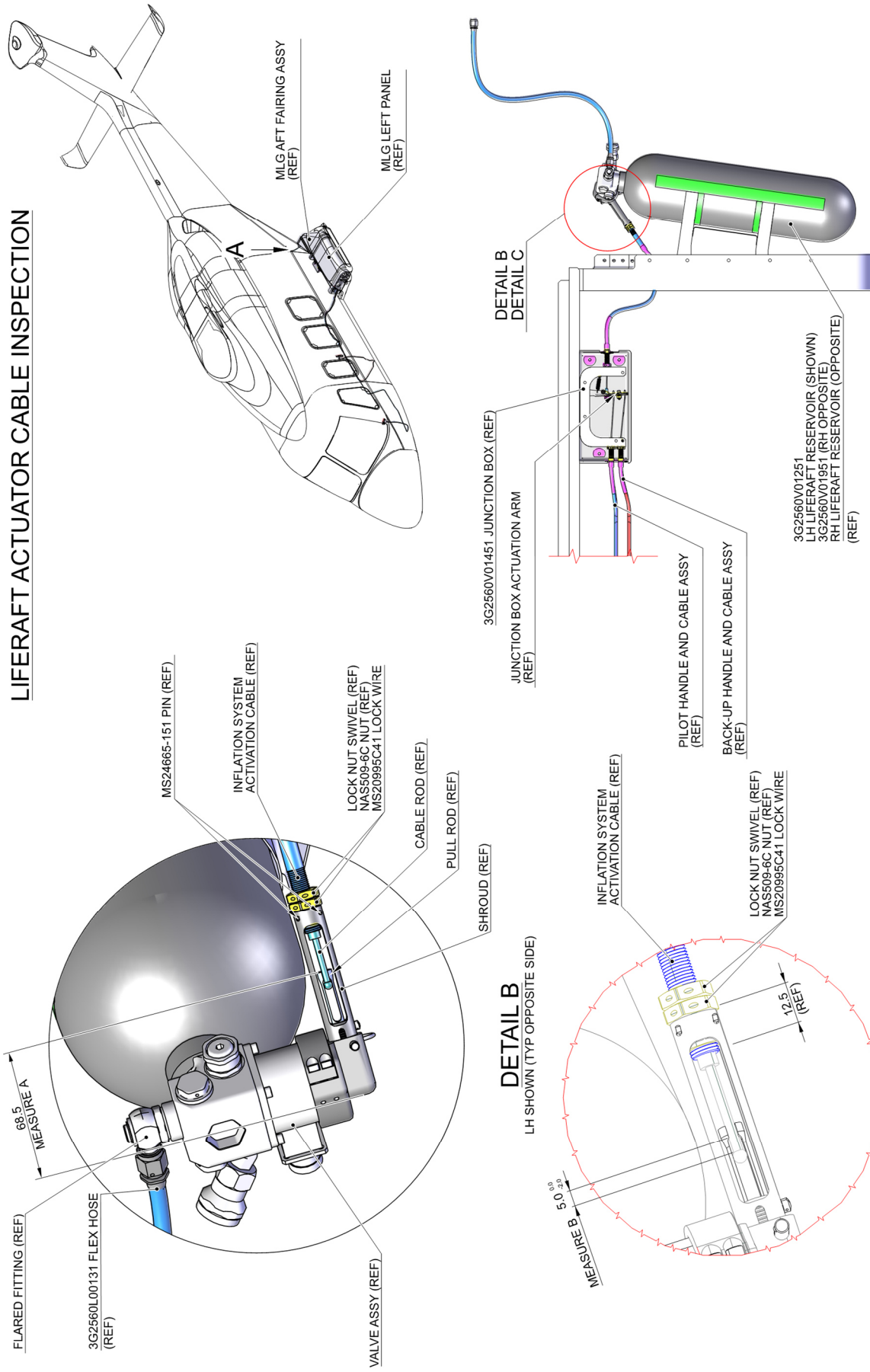


Figure 1



DETAIL A



DETAIL B

Figure 2

ANNEX A

LIFERAFT ACTIVATION CABLE ADJUSTMENT

In order to obtain a clearance of 5 mm ± 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.

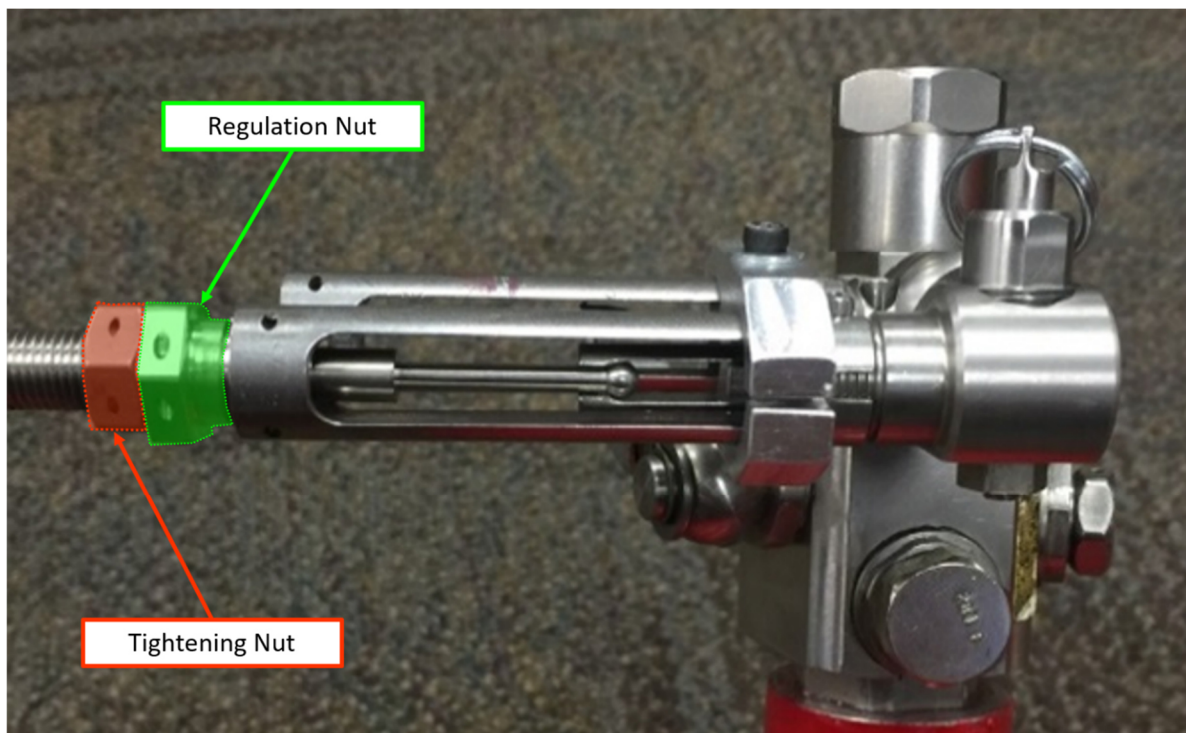


Figure A1 – Activation cable zone

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.

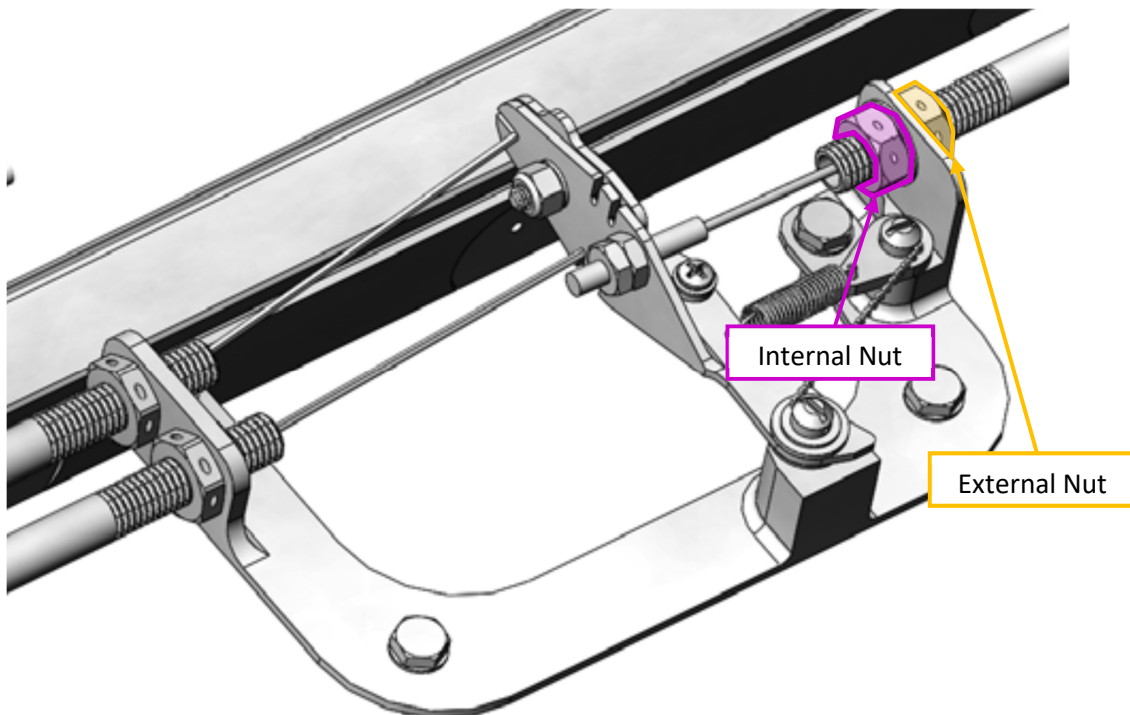


Figure A2 – Junction box zone

