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AgustaWestland Products

SERVICE BULLETIN

# RECOMMENDED

**N° 189-382**

**DATE:** October 18, 2023

**REV.:** /

## TITLE

**ATA 71 - FUEL AND D1 DRAINAGE LINES INSPECTION**

## REVISION LOG

First Issue

# 1. PLANNING INFORMATION

## A. EFFECTIVITY

All AW189 helicopters S/N 49007 thru S/N 49060 (S/N's 49024, 49036, 49040 and 49041 excluded), S/N 89001 thru S/N 89012 (S/N's 89005 and 89006 excluded) and S/N 92001 thru S/N 92010.

## B. COMPLIANCE

**NOTE**

The compliance time is subject to the same tolerances as per AMPI Chap. 05 DM 89-A-05-11-00-00A-028E-P Inspection/task interval tolerances – General.

**Part I**

Within and not later than one hundred (100) flight hours or three (3) months whichever occurs first after the issue of this Service Bulletin and every two-hundred (200) flight hours thereafter until compliance with Part II of this SB.

**Part II**

Within the first scheduled four (4) years inspection after the issue of this Service Bulletin.

LH recommends the implementation of this SB in accordance with the indicated compliance time, with related tolerances as applicable. It is Operator's responsibility to properly plan and execute the SB application i.a.w. LH recommendations. The Operator remains liable for any deviation.

## C. CONCURRENT REQUIREMENTS

N.A.

## D. REASON

Leonardo Helicopters received a report of marginal clearance between the "engine D1 drain LH" P/N 4F7170A04431 and the fuel pipe assy (return line) P/N 8G2820A03234 or P/N 8G2820A03233. In case of contact, wear on the pipes could occur resulting, in the worst case scenario, in a fuel leakage in a drained area.

As such, in order to prevent longer unscheduled maintenance activities, Leonardo Helicopters issued this Service Bulletin in order to perform a periodic inspection of the area to identify possible contact and wear to the affected components. Part I gives instructions on how to execute the inspection and, in case of wear exceeding the

acceptable limits, prescribes the replacement of the fuel pipe in accordance with Part II procedures.

As final solution to this problem, Part II of the SB gives instructions to remove the D1 drainage. This section of the engine drainage is not anymore installed in new built helicopters. In this Part it is also required to repair all the fuel line pipes damaged.

LH issued this SB for the following reason:

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

## E. DESCRIPTION

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the visual inspection of the engine D1 drainage and the fuel pipe (return line) in the fuel compartment area. In case of damage, it is required to replace the affected section of the fuel pipe.

Moreover, the SB gives instructions to remove the engine D1 drainage at first 4 years scheduled inspection.

## 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 two (2);

Part II: approximately forty (40);

MMH are based on hands-on time and can change with helicopter configuration, personnel and facilities available. MMH are not comprehensive of the overall hours necessary to get access to work areas and to remove all the equipment that interferes with the application of the prescribed instructions.

## H. WEIGHT AND BALANCE

N.A.

## I. REFERENCES

### I.1 PUBLICATIONS

Following Data Modules refer to AMP:

| DATA MODULE | | DESCRIPTION | PART |
|---|---|---|---|
| DM01 | 89-A-00-20-00-00A-120A-A | Helicopter on ground for a safe maintenance. | All |
| DM02 | 89-A-06-41-00-00A-010A-A | Access door panel remove procedure. | All |

Following Data Module refers to AMPI:

| DATA MODULE | | DESCRIPTION | PART |
|---|---|---|---|
| DM03 | 89-A-05-11-00-00A-028E-P | Inspection/task interval tolerances - General | - |

Following Data Module refers to CSPP:

| DATA MODULE | | DESCRIPTION | PART |
|---|---|---|---|
| DM04 | CSPP-A-20-20-02-00A-663A-D | Tubes - Standard repair procedure | All |

### I.2 ACRONYMS & ABBREVIATIONS

| | |
|---|---|
| AMDI | Aircraft Material Data Information |
| AMP | Aircraft Maintenance Publication |
| AMPI | Air vehicle Maintenance Planning Information |
| AR | As Required |
| DM | Data Module |
| DOA | Design Organization Approval |
| EASA | European Aviation Safety Agency |
| FWD | Forward |
| IPD | Illustrated Part Data |

| | |
|---|---|
| ITEP | Illustrated tool and equipment publication |
| LH | Left Hand |
| MMH | Maintenance Man Hours |
| N.A. | Not Applicable |
| P/N | Part Number |
| RH | Right Hand |
| SB | Service Bulletin |
| S/N | Serial Number |

### I.3 ANNEX

N.A.

## J. PUBLICATIONS AFFECTED

AW189 Illustrated Parts Data (IPD)

## K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

# 2. MATERIAL INFORMATION

## A. REQUIRED MATERIALS

### A.1 PARTS

**PART I**

| # | P/N | ALTERNATIVE P/N | DESCRIPTION | Q.TY | LVL | NOTE | LOG P/N |
|---|---|---|---|---|---|---|---|
| **1** | **8G7170P00311** | | **ENGINE DRAIN D1 RETROMOD REMOVAL** | **REF** | **.** | | |
| 2 | AS5168D04 | | Plug | AR | .. | (1)(2) | - |

**PART II**

| # | P/N | ALTERNATIVE P/N | DESCRIPTION | Q.TY | LVL | NOTE | LOG P/N |
|---|---|---|---|---|---|---|---|
| **3** | **8G7170P00311** | | **ENGINE DRAIN D1 RETROMOD REMOVAL** | **REF** | **.** | | |
| 4 | AS5168D04 | | Plug | AR | .. | (2)(3) | - |
| 5 | 8G2820A03253 | | Pipe | AR | . | (1) | - |

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

### A.2 CONSUMABLES

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

### A.3 LOGISTIC MATRIX

N.A.

**NOTES**

(1) Item to be supplied depending on the result of the inspection described.

(2) Item to be procured as local supply.

(3) Item required only if not already installed in Part I.

## B. SPECIAL TOOLS

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

| # | P/N | DESCRIPTION | Q.TY | NOTE | PART |
|---|---|---|---|---|---|
| 6 | Commercial | Borescope | 1 | (B1) | I |

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

**SPECIAL TOOLS NOTES**

(B1) The borescope should have measurement features.

## C. INDUSTRY SUPPORT INFORMATION

Owners/Operators who comply with the instructions of this Service Bulletin no later than the applicable date in the “Compliance” section will be eligible to receive REQUIRED MATERIALS on free of charge basis, except for Consumable Materials and Special Tools.

Customers who fail to comply with the instructions in this Service Bulletin before the compliance date are not eligible for the aforementioned special policy.

Please Issue relevant MMIR form to your Warranty Administration Dpt., Including Inspection Report Form complete of notes and pictures, after the inspection required on “PART I” and “PART II”, claims without the aforementioned report will be rejected.

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

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

d) All lengths are in mm.

**PART I**

1. In accordance with AMP DM 89-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 89-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 3, remove access panel 191A and gain access to the area affected by the inspection.

**NOTE**

Use a borescope with measurement feature to comply with this procedure.

3. With reference to Figure 1 and Figure 2 View B, using a borescope and a bright light source, visually inspect the whole zone of intersection between the “D1 drain pipe assy upper LH” P/N 4F7170A04431 and the fuel pipe assy P/N 8G2820A03234 or P/N 8G2820A03233, for evidence of chafing. In case of no findings, skip to Step 6. Otherwise, perform the following Step.
4. In case of damage on “D1 drain pipe assy upper LH” P/N 4F7170A04431 only, no action is required. Proceed to Step 6.
5. In case of damage on fuel pipe assy P/N 8G2820A03234 or P/N 8G2820A03233, perform the following procedure:
   5.1 Measure the depth of the damage found. Use the borescope with measurement feature. Take a picture of the damaged pipe and fill the report in Figure 4. Send pictures and report to Leonardo Helicopters at the following mail box: engineering.support.lhd@leonardo.com.

**NOTE**

If necessary, in accordance with AMP DM 89-A-06-41-00-00A-010A-A, it is possible to get access to the work area also from the LH rear avionic bay.

5.2 If the damage depth is less than 0.4 mm, in accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 3, remove all external panels, internal panels and internal liners as required to gain access to the "D1 drain pipe assy upper LH" P/N 4F7170A04431 and proceed as follows:

5.2.1 With reference to Figure 2 View C, remove the clamp P/N AS21919WCH04 from the "D1 drain pipe assy upper LH" P/N 4F7170A04431.

5.2.2 With reference to Figure 1 thru 3, remove the "D1 drain pipe assy upper LH" P/N 4F7170A04431 and the ring tube connector P/N NAS595-4E.

5.2.3 With reference to Figure 3 View E, install the plug P/N AS5168D04. Then skip to Step 6.

5.3 If the damage depth is more than 0.4 mm perform Part II of this SB.

6. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.

7. Gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".

As an alternative, send the attached compliance form to the following mail box:

engineering.support.lhd@leonardo.com

and (for North, Central and South America) also to:

AWPC.Engineering.Support@leonardocompany.us

**PART II**

1. In accordance with AMP DM 89-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.

**NOTE**

If necessary, in accordance with AMP DM 89-A-06-41-00-00A-010A-A, it is possible to get access to the work area also from the LH rear avionic bay.

2. In accordance with AMP DM 89-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 3, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation.
3. If not already removed, perform the engine drain D1 retromod removal P/N 8G7170P00311 as described in the following procedure:
   - 3.1 With reference to Figure 2 View C, remove the clamp P/N AS21919WCH04 from the D1 drain pipe assy upper LH P/N 4F7170A04431.
   - 3.2 With reference to Figures 1 thru 3, remove the “D1 drain pipe assy upper LH” P/N 4F7170A04431 and the ring tube connector P/N NAS595-4E.
   - 3.3 With reference to Figure 3 View E, install the plug P/N AS5168D04.
4. If the fuel pipe P/N 8G2820A03234 or P/N 8G2820A03233 has already found damaged while performing Part I of this SB, skip to Step 5, otherwise perform the following inspection procedure:
   - 4.1 With reference to Figure 1, using a bright light source, visually inspect the fuel pipe assy for evidence of damage.
   - 4.2 In case of findings, take a picture of the damaged pipe and fill the report in Figure 4. Send pictures and report to Leonardo Helicopters at the following mail box: engineering.support.lhd@leonardo.com. Then perform Step 5.
   - 4.3 In case of no findings, skip to Step 6.
5. In accordance with CSPP DM CSPP-A-20-20-02-00A-663A-D, repair the fuel pipe with spare P/N 8G2820A03253.
6. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.

7. Gain access to My Communications section on Leonardo WebPortal and compile the "Service Bulletin Application Communication".

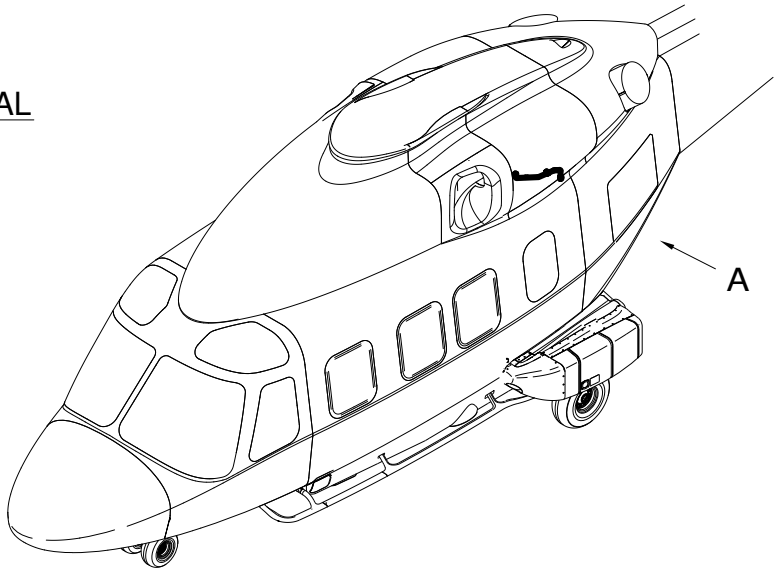
   As an alternative, send the attached compliance form to the following mail box:

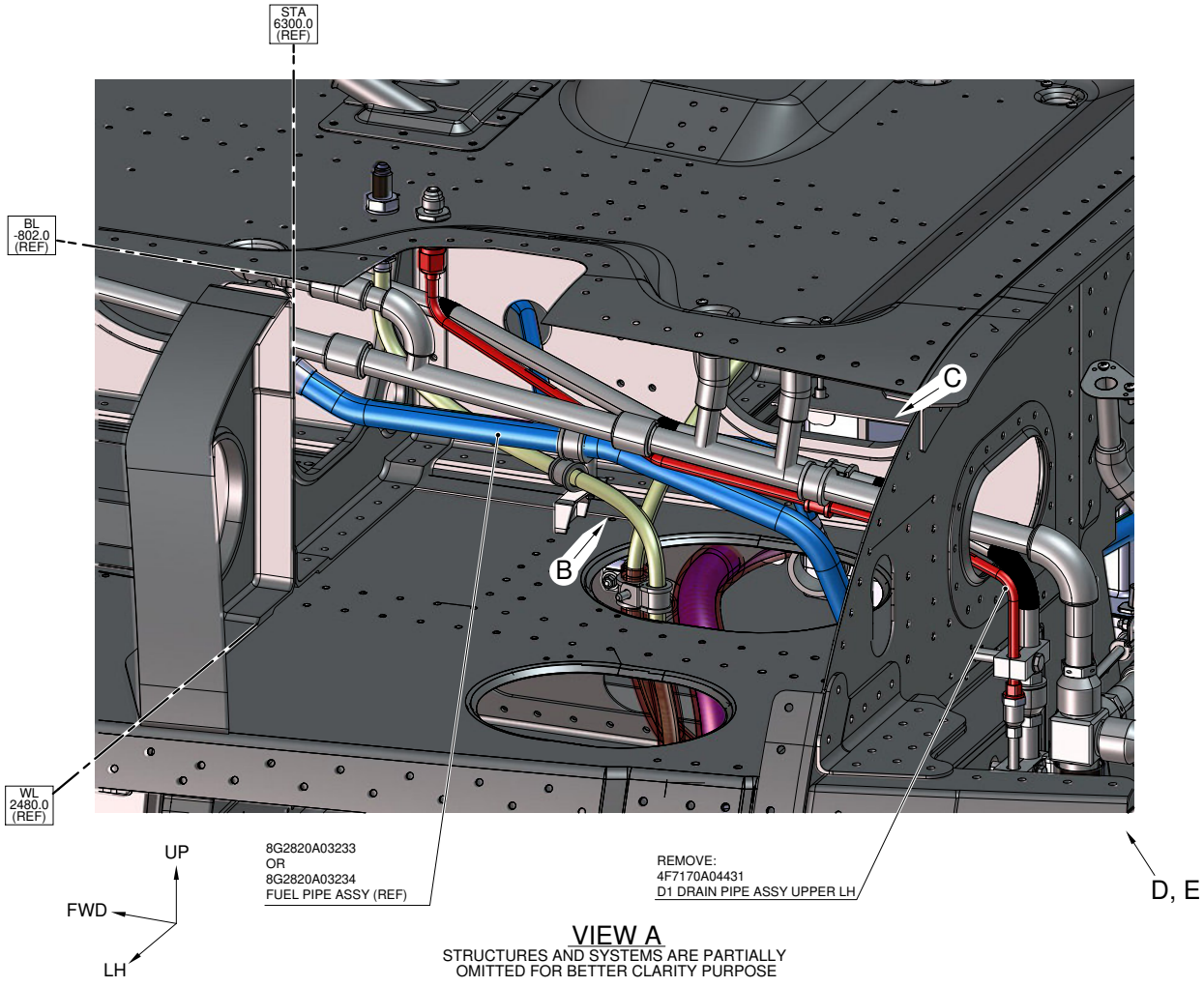
   engineering.support.lhd@leonardo.com

   and (for North, Central and South America) also to:

   AWPC.Engineering.Support@leonardocompany.us

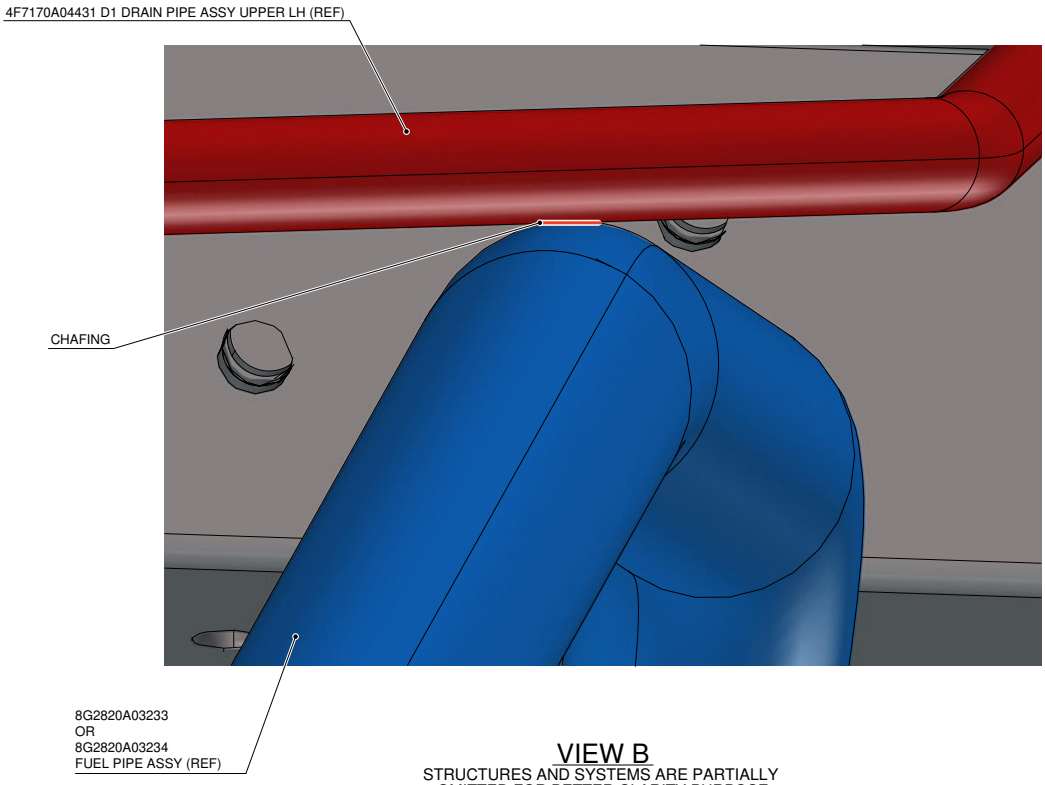
8G7170P00311
ENGINE DRAIN D1
RETROMOD REMOVAL



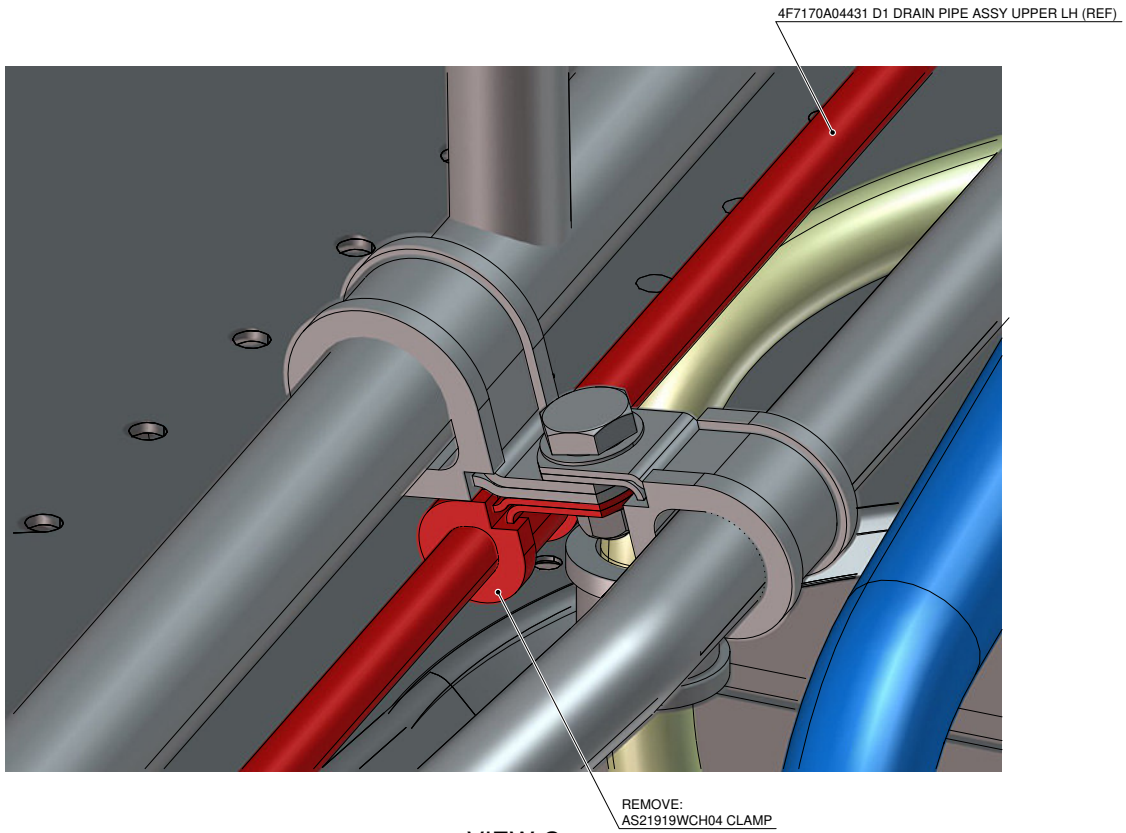




VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 1**

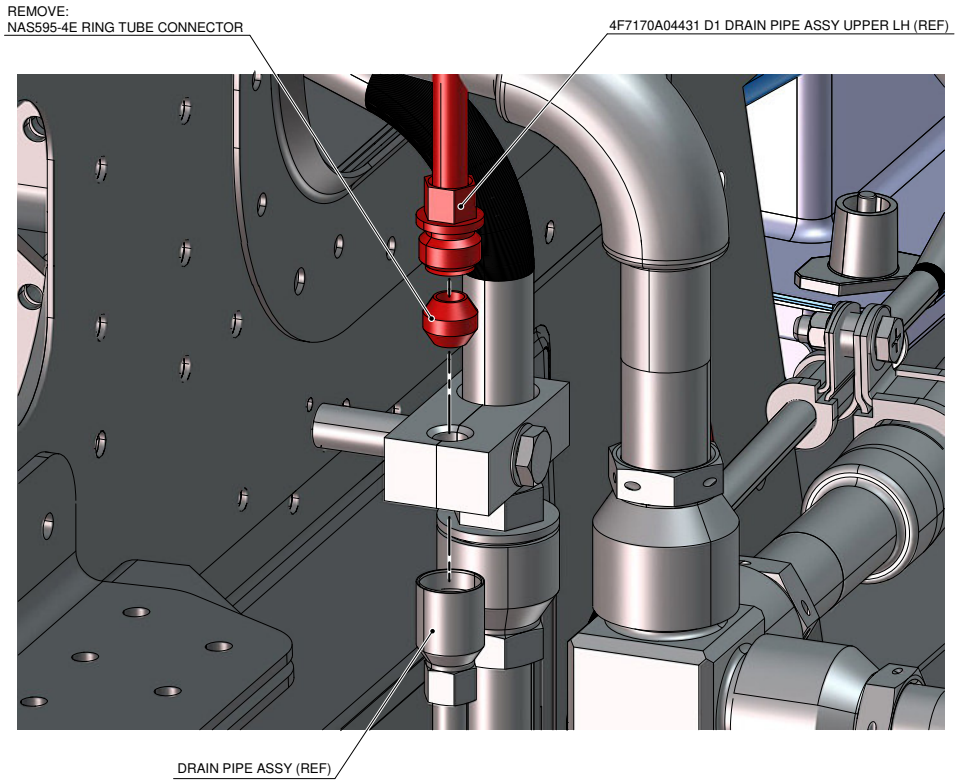



VIEW B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

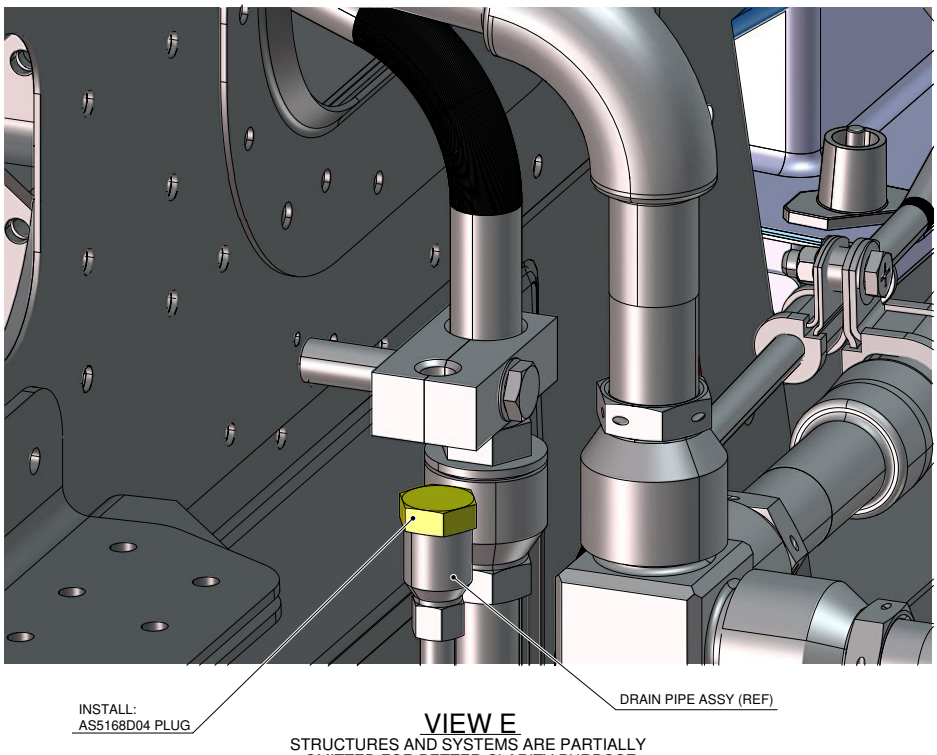



VIEW C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 2**




VIEW D
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE




VIEW E
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 3**

| SB 189-382 – Inspection Report | | |
|---|---|---|
| **Date** | | |
| **Helicopter S/N** | | |
| **Flight Hours** | | |
| **Customer** | | |
| **PROCEDURE STEP FAILED** | | |
| **Damage depth (mm)** | | **Materials required** |
| | | |
| Step 5.2 (Part I)<br>Fuel Pipe assy<br>(Damage depth <= 0.4 mm) | ☐ | Plug P/N AS5168D04 |
| Step 5.3 (Part I) or Step 4.2 (Part II)<br>Fuel Pipe assy<br>(Damage depth > 0.4 mm) | ☐ | Plug P/N AS5168D04<br>Pipe P/N 8G2820A03253 |
| Step 4.2 (Part II)<br>Fuel Pipe assy<br>(Damage depth <= 0.4 mm) | ☐ | Plug P/N AS5168D04<br>Pipe P/N 8G2820A03253 |
| **Notes:** | | |

**Figure 4**

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| Please send to the following address:<br><br>**LEONARDO S.p.A.**<br>**CUSTOMER SUPPORT & SERVICES - ITALY**<br><br>**PRODUCT SUPPORT ENGINEERING & LICENSES DEPT.**<br>Via Giovanni Agusta, 520<br>21017 Cascina Costa di Samarate (VA) - ITALY<br>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.