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SERVICE BULLETIN

N° **109EP-185**

**ALERT**

DATE: September 30, 2024

REV. : /

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**TITLE**

**ATA 26 – ENGINE FIRE EXTINGUISHER BOTTLES ELECTRICAL CONNECTIONS  
INSPECTION**

**REVISION LOG**

First Issue

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

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## **1. PLANNING INFORMATION**

### **A. EFFECTIVITY**

All A109E helicopters.

### **B. COMPLIANCE**

Within and not later than 50 flight hours or 3 months whichever occurs first after the issue of this Service Bulletin.

### **C. CONCURRENT REQUIREMENTS**

N.A.

### **D. REASON**

Leonardo Helicopters issued this Service Bulletin following an occurrence reporting an improper installation of the MTR cables and the bonding braids connected to the fire extinguisher bottles.

This Service Bulletin provides instructions on how to inspect the fire extinguisher bottles wirings installation and restore the proper configuration, if needed.

### **E. DESCRIPTION**

This Service Bulletin provides the instructions to perform a one-off inspection of both LH and RH engine fire extinguisher bottles to make sure that the MTR cables and the bonding braids are properly connected to the cartridge of the bypass valve and single outlet valve of the bottles. In case of improper installations, the Service Bulletin prescribes to restore the correct installation according to design.

### **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 Local Aviation Authority.

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 Leonardo Helicopters 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 one (1) MMH are deemed necessary (ONLY for the inspection procedure).

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 Paragraphs refer to MM:

<u>SECTION/PARAGRAPH</u>	<u>DESCRIPTION</u>	<u>PART</u>
PAR01 00-20-1	Helicopter Safety	-
PAR02 06-40-1	Access Panels and Doors	-
PAR03 26-21-8	Number 1/Number 2 Bottles - Removal/Installation	-

Following Paragraphs refer to WDM:

<u>SECTION/PARAGRAPH</u>	<u>DESCRIPTION</u>	<u>PART</u>
PAR04 2-1	Equipment List - General Information	-

### I.2 ACRONYMS & ABBREVIATIONS

AR	As Required
BP	Bypass
DOA	Design Organization Approval
EASA	European Union Aviation Safety Agency
IPC	Illustrated Parts Catalog
LH	Left Hand
MM	Maintenance Manual
MMH	Maintenance Man Hours
MTR	Motor

N.A. Not Applicable  
P/N Part Number  
PTUM Pictorial Tools Usage Manual  
RH Right Hand  
SB Service Bulletin  
S/N Serial Number  
SO Single Outlet  
WDM Wiring Diagram Manual

**I.3 ANNEX**

N.A.

**J. PUBLICATIONS AFFECTED**

A109E Maintenance Manual

**K. SOFTWARE ACCOMPLISHMENT SUMMARY**

N.A.

## **2. MATERIAL INFORMATION**

### **A. REQUIRED MATERIALS**

#### **A.1 PARTS**

N.A.

#### **A.2 CONSUMABLES**

N.A.

#### **A.3 LOGISTIC MATRIX**

N.A.

#### **NOTES**

N.A.

### **B. SPECIAL TOOLS**

Refer to PTUM for the special tools required to comply with the MM Paragraphs referenced in the accomplishment instructions.

#### **SPECIAL TOOLS NOTES**

N.A.

### **C. INDUSTRY SUPPORT INFORMATION**

N.A.

### **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) Please refer to "LH fire extinguisher bottle" as "Number 1 fire extinguisher bottle" and refer to "RH fire extinguisher bottle" as "Number 2 fire extinguisher bottle".
1. In accordance with MM Paragraph 00-20-1, 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 MM Paragraph 06-40-1 and with reference to Figure 1, remove the external panel P20A to gain access to the area affected by the inspection.

#### **WARNING**

THE MTR CABLE MUST BE CONNECTED TO THE CONNECTOR ON THE HEAD OF THE CARTRIDGE (POSITIVE TERMINAL OF THE CARTRIDGE, RED CIRCLE IN FIGURE 1).

THE BONDING BRAID MUST BE CONNECTED TO THE CONNECTOR ON THE SIDE OF THE CARTRIDGE (NEGATIVE TERMINAL OF THE CARTRIDGE, BLUE CIRCLE IN FIGURE 1).

3. In accordance with the following procedure and with reference to Figure 1 thru Figure 3, verify that the MTR cables and the bonding braids are correctly installed on the cartridges of the fire extinguisher bottles both on LH and RH side:
  - 3.1 With reference to Figure 1, make sure that the bonding braids are connected in the proper positions on the LH fire extinguisher bottle.

**NOTE**

The MTR1 cable must be connected to the connector on the head of the cartridge on the Bypass Valve.

The MTR2 cable must be connected to the connector on the head of the cartridge on the Single Outlet Valve.

- 3.2 With reference to WDM Paragraph 2-1 and Figure 3, make sure that the MTR1 and MTR2 cables are connected in the proper positions on the LH fire extinguisher bottle.
- 3.3 With reference to Figure 1, make sure that the bonding braids are connected in the proper positions on the RH fire extinguisher bottle.

**NOTE**

The MTR1 cable must be connected to the connector on the head of the cartridge on the Single Outlet Valve.

The MTR2 cable must be connected to the connector on the head of the cartridge on the Bypass Valve.

- 3.4 With reference to WDM Paragraph 2-1 and Figure 2, make sure that the MTR1 and MTR2 cables are connected in the proper positions on the RH fire extinguisher bottle.

**WARNING**

THE MTR CABLE MUST BE CONNECTED TO THE CONNECTOR ON THE HEAD OF THE CARTRIDGE (POSITIVE TERMINAL OF THE CARTRIDGE, RED CIRCLE IN FIGURE 1).

THE BONDING BRAID MUST BE CONNECTED TO THE CONNECTOR ON THE SIDE OF THE CARTRIDGE (NEGATIVE TERMINAL OF THE CARTRIDGE, BLUE CIRCLE IN FIGURE 1).

- 4. In case any improper installation was identified while performing step 3, restore the proper connections in accordance with the following procedure:
  - 4.1 In case of any finding was detected on LH side (while performing steps 3.1 and 3.2):
    - 4.1.1 In accordance with the applicable steps of MM Paragraph 26-21-8 (for LH side), disconnect the affected bonding braid(s) and MTR cable(s) from the cartridge(s).

**NOTE**

The MTR1 cable must be connected to the connector on the head of the cartridge on the Bypass Valve.

The MTR2 cable must be connected to the connector on the head of the cartridge on the Single Outlet Valve.

- 4.1.2 In accordance with the applicable steps of MM Paragraph 26-21-8 (for LH side) and with reference to Figure 1 View A and Figure 3, reinstall the bonding braid(s) and the MTR cable(s) in the correct position on the cartridge(s).
- 4.2 In case of any finding was detected on RH side (while performing steps 3.3 and 3.4):
- 4.2.1 In accordance with the applicable steps of MM Paragraph 26-21-8 (for RH side), disconnect the affected bonding braid(s) and the MTR cable(s) from the cartridge(s).

**NOTE**

The MTR1 cable must be connected to the connector on the head of the cartridge on the Single Outlet Valve.

The MTR2 cable must be connected to the connector on the head of the cartridge on the Bypass Valve.

- 4.2.2 In accordance with the applicable steps of MM Paragraph 26-21-8 (for RH side) and with reference to Figure 1 View A and Figure 2, reinstall the bonding braid(s) and the MTR cable(s) in the correct position on the cartridge(s).

**NOTE**

“XXXXX” in the subject line below is the helicopter S/N.

5. Compile the Inspection Report Form in Figure 4 and send it with Subject line “SB 109EP-185 – S/N XXXXX Inspection Report Form” to the following mail box:

[engineering.support.lhd@leonardo.com](mailto:engineering.support.lhd@leonardo.com)

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

[AWPC.Engineering.Support@leonardocompany.us](mailto:AWPC.Engineering.Support@leonardocompany.us).

6. In accordance with MM Paragraph 06-40-1, re-install the external panel P20A previously removed.
7. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.



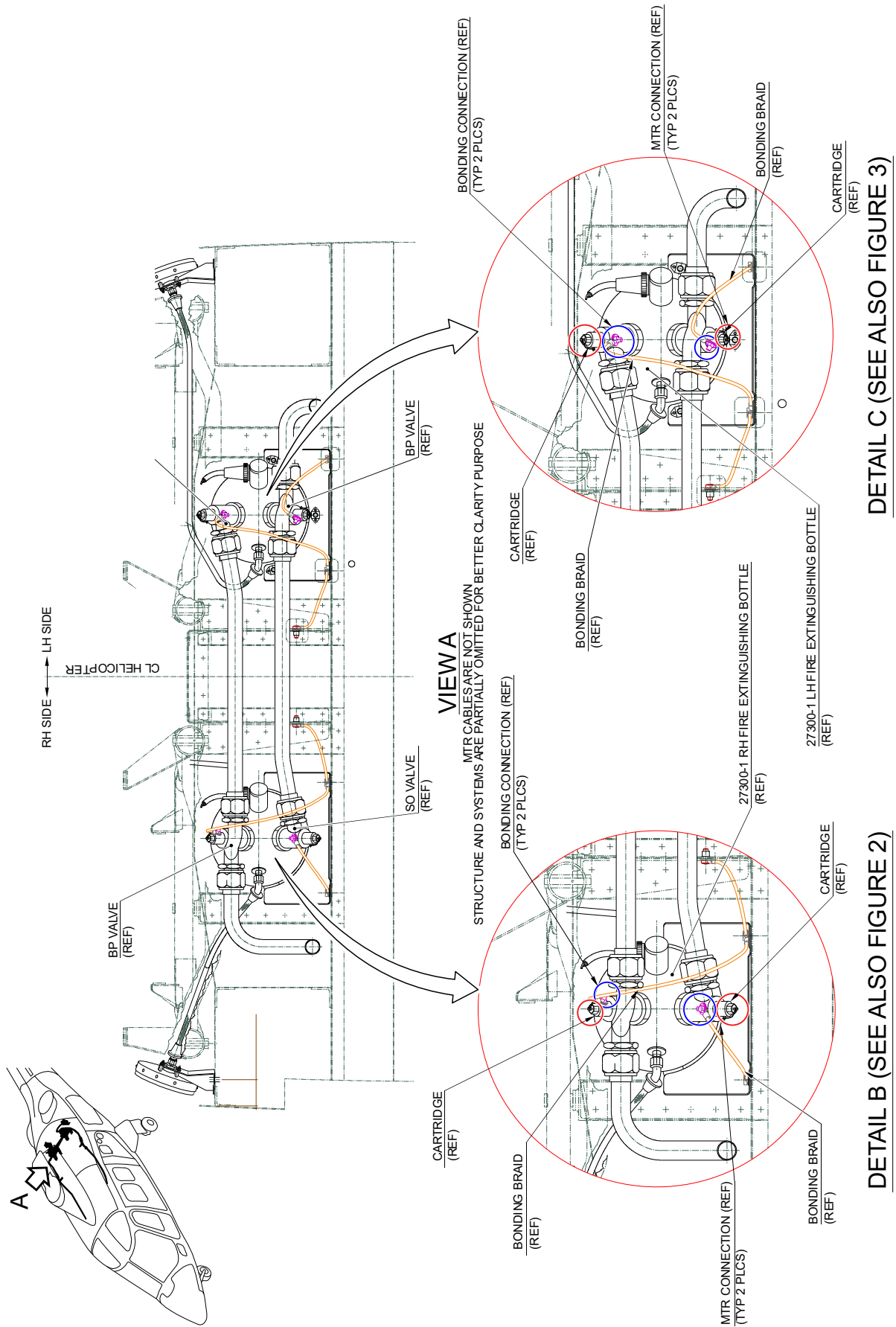
8. Gain access to My Communications section on [Leonardo Customer Portal](#) and compile the "Service - Technical Bulletin Application".

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

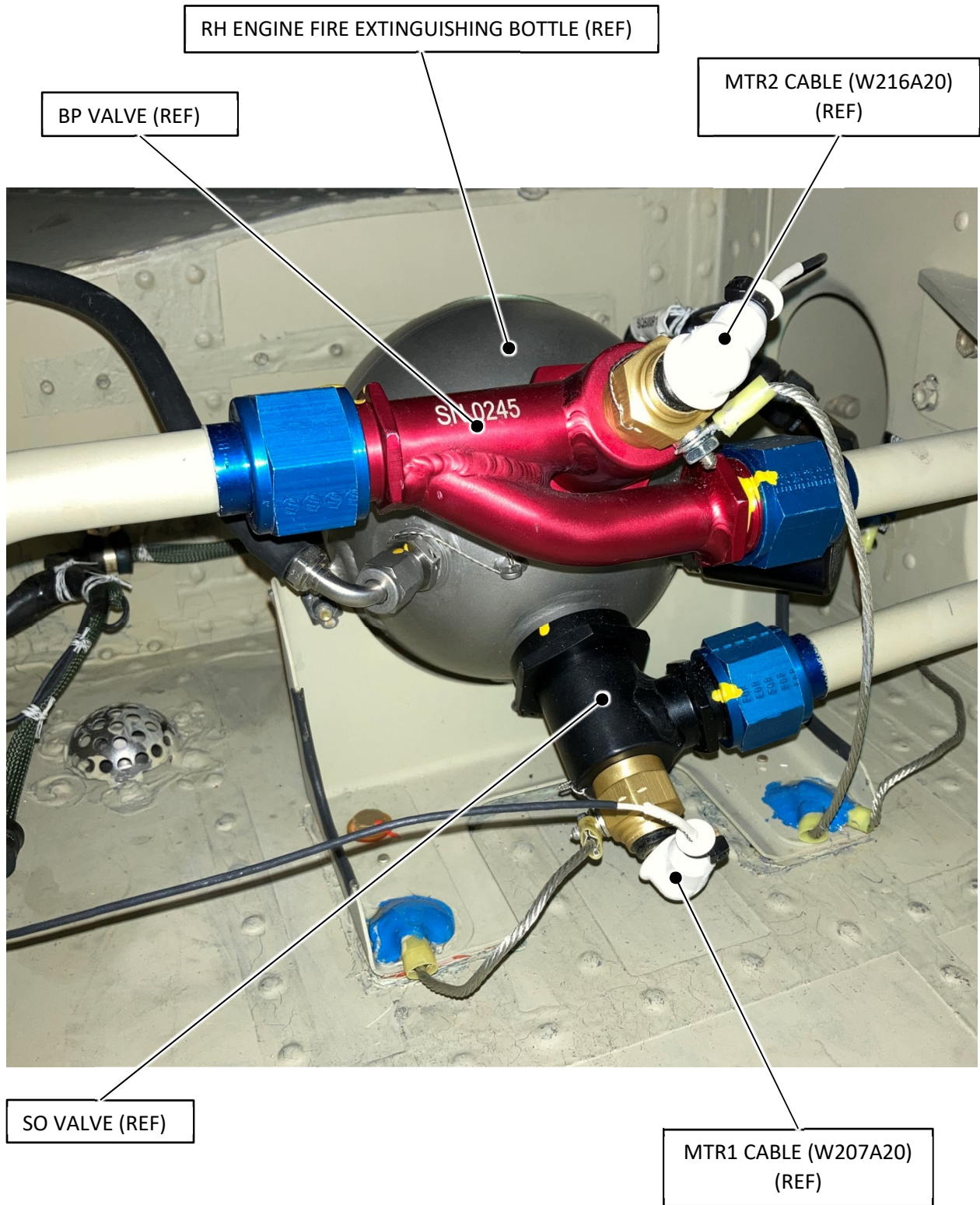
[engineering.support.lhd@leonardo.com](mailto:engineering.support.lhd@leonardo.com)

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

[AWPC.Engineering.Support@leonardocompany.us](mailto:AWPC.Engineering.Support@leonardocompany.us)



**Figure 1**

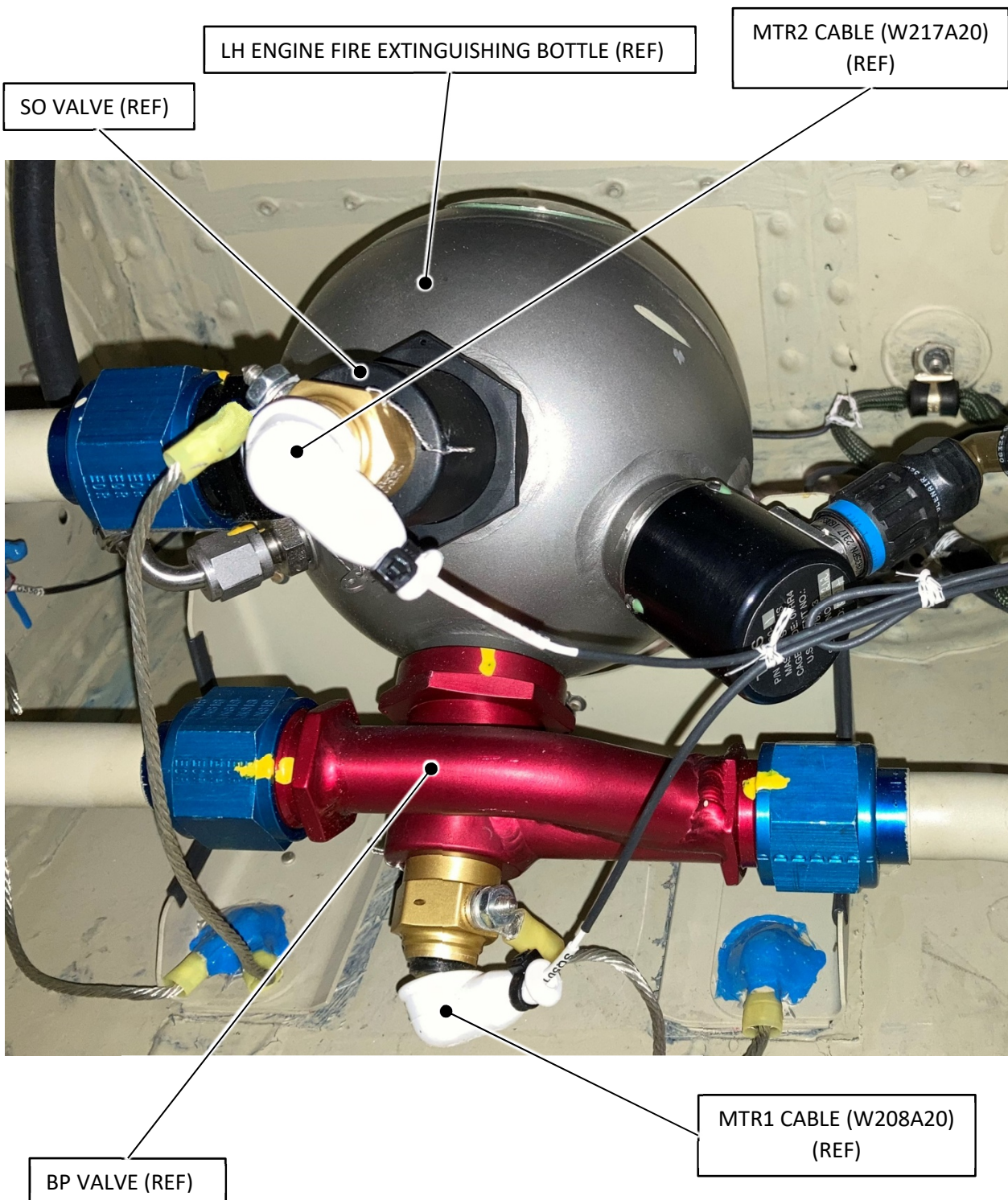


DETAIL B

**FOR REFERENCE ONLY**

**Figure 2**





DETAIL C

**FOR REFERENCE ONLY**

**Figure 3**

S.B. N°109EP-185 ALERT  
DATE: September 30, 2024  
REVISION: /

<b>SB 109EP-185 Rev. / – INSPECTION REPORT FORM</b>		
<b>DATE</b>		
<b>HELICOPTER</b>	S/N	
<b>CUSTOMER</b>		
<b>LH ENGINE FIRE EXTINGUISHER BOTTLE ELECTRICAL CONNECTIONS</b>	MTR1 CABLE AND BONDING BRAID INSTALLATION	MTR2 CABLE AND BONDING BRAID INSTALLATION
	<input type="checkbox"/> CORRECT <input type="checkbox"/> NOT CORRECT	<input type="checkbox"/> CORRECT <input type="checkbox"/> NOT CORRECT
<b>RH ENGINE FIRE EXTINGUISHER BOTTLE ELECTRICAL CONNECTIONS</b>	MTR1 CABLE AND BONDING BRAID INSTALLATION	MTR2 CABLE AND BONDING BRAID INSTALLATION
	<input type="checkbox"/> CORRECT <input type="checkbox"/> NOT CORRECT	<input type="checkbox"/> CORRECT <input type="checkbox"/> NOT CORRECT
<b>NOTE:</b>		

**Figure 4**

