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**SERVICE BULLETIN**

**N° 189-329**

**DATE:** May 30, 2023

**REV. :** /

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**TITLE**

**ATA 62 – MAIN ROTOR BLADE IMPROVEMENT**

**REVISION LOG**

First Issue

# **1. PLANNING INFORMATION**

## **A. EFFECTIVITY**

### **NOTE**

There are different serialization types for MR blades, common to standard and heated blades.

All MR blades serialized as follows are affected by this SB:

- S/N YYYYXXX: where Y are an alphabetic code and X are progressive numbers (e.g. BAT1234).
- S/N VXXX, where X are progressive numbers (e.g. V123)
- S/N XXX, only progressive numbers (e.g. 123).

These serialization types are superseded and not used for new MR blades.

The current MR blades serialization is in the form:

- S/N AWXXX or S/N AWXXXX, where X are progressive numbers (e.g. AW123).

MR blades with current serialization are affected by this SB only if progressive numbers are smaller than the ones reported in the effectivity paragraph.

- All MR blade assemblies P/N 4F6210A00132 and P/N 8G6210A01931 up to S/N AW218 included;
- All heated MR blade assemblies P/N 8G6210A00131 and P/N 8G6210A00132 up to S/N AW13 included.

## **B. COMPLIANCE**

At first shop visit.

## **C. CONCURRENT REQUIREMENTS**

This SB supersedes the SB 189-215.

## **D. REASON**

This Service Bulletin is issued in order to provide the necessary instruction on how to apply the repair drawing P/N 8G6210R00231 to the main rotor blade assy P/N 4F6210A00132 or P/N 8G6210A00131 or P/N 8G6210A00132 or P/N 8G6210A01931.

## **E. DESCRIPTION**

Leonardo Helicopters has developed this Service Bulletin in order to improve the main rotor blade assy P/N 4F6210A00132 or P/N 8G6210A00131 or P/N 8G6210A00132 or P/N 8G6210A01931 surface finish by removing the nickel paint from the leading edge area.

This modification will be applied by means of repair drawing P/N 8G6210R00231 that gives instruction on how to remove the nickel paint from the erosion shields, butt straps and lightning strip.

The presence of the nickel paint in the leading edge area has been identified as the root cause of frequent in service reports of premature peeling of the top coat, with a severity that depends on the operating environment.

The solution of the problem has been identified in the removal of the nickel paint from the leading edge area subject to the paint deterioration. The nickel paint will remain along the boundary of the weight pot cover at tip and along the skins trailing edge at tip. The electrical continuity among the metallic parts where required is guaranteed by the use of a steel mesh embedded in the bond line of the butt straps, lightning strip and swept tip.

For MR blades still not compliant with SB189-215, this SB introduces also the installation of the new swept tip erosion shield P/N 8G6210L00151.

## **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 one hundred (100) 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

Following Data Modules refer to AMP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 89-A-62-11-01-00A-31AA-B	Main rotor blade - Detailed inspection	-

Following Data Modules refer to CSPP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM02 CSPP-A-60-30-02-01A-913A-DB	Bonded components (Tap test) - General maintenance procedure	-

Following Data Modules refer to CR&OP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM03 89-A-62-11-01-00A-257A-C	Main rotor blade – Paint and apply marking	-
DM04 89-A-62-11-01-00A-365A-C	Main rotor blade - Continuity check	-
DM05 89-A-62-11-01-01A-921A-C	Trim tab (main rotor blade) – Replacement (remove and install a new item)	-

### 2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
AR	As Required
CR&OP	Component Repair and Overhaul Publication
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
IPD	Illustrated Part Data

ITEP	Illustrated tool and equipment publication
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
MR	Main Rotor
N.A.	Not Applicable
P/N	Part Number
SB	Service Bulletin
S/N	Serial Number

### **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	8G6210R00231		<b>MAIN ROTOR BLADE ELECTRICAL BOND REPAIR</b>	REF	.		
2	8G6210A03331		Trim tab bonding assembly	1	..		189-329L1
3	8G6210A03551		Shield conductor mesh (large)	2	..		189-329L1
4	8G6210A03651		Shield conductor mesh (small)	2	..		189-329L1
5	A031A001A		ID Plate	1	.		189-215L1
6	A157A001A1		ID Plate	1	.		189-215L1
7	MS27253-2		ID Plate	1	.		189-215L1

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
8	MIL-PRF-680, Type II	Cleaning solvent Ardrex 5503 (C010)	AR	(1)	-
9	CCC-C-46	Soft lint-free cloth (C011)	AR	(1)	-
10	ASTM D740, Type I	Solvent (C005)	AR	(1)	-
11	P-P-101	Abrasive paper (C055)	AR	(1)	-
12	TT-I-735, Grade A	Isopropyl alcohol (C039)	AR	(1)	-

Refer also 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
189-329L1	1	(2)	-
189-215L1	1	(3)	-

#### NOTE

- (1) Item to be procured as local supply.
- (2) Item applicable to all MR blades.
- (3) Item required only for blades not compliant with SB189-215 rev.B or not already equipped with ID plates P/N A031A001A, P/N A157A001A1 and P/N MS27253-2.

## B. SPECIAL TOOLS

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

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
13	Commercial	Multimeter (2 wires)	1	(B1)	-
14	Commercial	Plastic scraper	1	(B1)	-
15	Commercial	Vacuum cleaner	1	(B1)	-
16	Commercial	Vacuum cleaner	1	(B1)	-
17	Commercial	Heat gun	1	(B1)	-
18	Commercial	Spatula (flexible - rounded corners)	1	(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) Item to be procured as local supply.

## C. INDUSTRY SUPPORT INFORMATION

N.A.

### **3. ACCOMPLISHMENT INSTRUCTIONS**

#### **CAUTION**

This procedure can be performed ONLY by an authorized service station or the MR blades manufacturer.

1. Put the main rotor blade on an applicable work table.
2. Perform the paint removal as described in the following procedure:

#### **CAUTION**

Be careful when you remove the top coat and the primer from the surfaces of the blade. Make sure that you do not remove or damage the composite material.

- 2.1 Remove the top coat up to the underlying layer of primer with Abrasive paper (C055), 80 grit or finer.

#### **WARNINGS**

- YOU MUST OBEY ALL THE LOCAL STANDARD FOR THE CONDUCTIVE COATING REMOVAL.
- WHEN YOU REMOVE THE CONDUCTIVE COATING ALWAYS USE APPLICABLE PROTECTIVE MASK.

- 2.2 Carefully remove the conductive coating with a plastic scraper. Use an applicable vacuum cleaner to collect the removed conductive coating.
- 2.3 Remove the primer from the surfaces of the blade with abrasive paper (C055), 180 grit or finer. Be careful to do only spanwise movements on the metallic surfaces.
- 2.4 Clean the rubbed surfaces with a lint-free cloth (C011) and the solvent (C005).
- 2.5 Make sure that there are no signs of damages on the composite and metal parts.  
During the visual examination it is recommend to use a 20-power magnifying glass.
3. In accordance with CR&OP DM 89-A-62-11-01-00A-365A-C, perform the electrical continuity check on the main rotor blade.
4. With reference to Figure 2, remove the upper tab P/N 4F6210A04551 and the lower tab P/N 4F6210A03951 as described in the following procedure:
  - 4.1 Apply the Metallic tape (C221) as protection from heat along the boundary of the trim tab assembly.

#### **CAUTION**

On the blade skin you must not exceed the temperature limit of 70 °C (158 °F).



- 4.2 Locally heat the upper tab with the heat gun.

**NOTE**

Make sure to not cause damage to the trailing edge of the main rotor blade.

- 4.3 Starting from the blade skin carefully remove the upper tab from the main rotor blade and the lower tab with a spatula.
- 4.4 Starting from the blade skin carefully remove the lower tab from the main rotor blade.
- 4.5 Put a lint-free cloth (C011) soaked with the solvent (C005) on the trim tab area of the main rotor blade. Wait until the solvent softens the adhesive. Then, use a plastic scraper to remove the remaining adhesive from the trim tab area.
- 4.6 Remove the metallic tape from the main rotor blade.
- 4.7 Clean the trim tab area with a lint-free cloth (C011) and the solvent (C005) or the isopropyl alcohol (C039) and let the part dry for at least 30 minutes at ambient temperature.
- 4.8 Examine the blade skin to make sure that there is no damage.
- 4.9 In accordance with CSPP DM CSPP-A-60-30-02-01A-913A-D, do a tap inspection for possible debondings and/or delaminations of the blade skin trailing edge. Refer to AMP DM 89-A-62-11-01-00A-31AA-B for the permitted limits.
5. In accordance with applicable steps CR&OP DM 89-A-62-11-01-01A-921A-C and with reference to Figure 1, install the new trim tab bonding assy P/N 8G6210A03331.
6. With reference to Figure 3, if the blade is not already compliant with SB189-215 or the ID plates P/N A031A001A, P/N A157A001A1 and P/N MS27253-2 are not already installed, perform the following procedure:
  - 6.1 Prepare the bonding surfaces as described in the following steps:

**NOTE**

You must bond the ID plates to the MR blade within 72 hours from cleaning by abrasion.

- 6.1.1 Lightly sand the bonding surfaces of the blade skins with abrasive paper (grit 80 - silicon carbide) or abrasive paper (grit 100 - silicon carbide), to remove the shine from the surfaces.
- 6.1.2 Remove sanding residuals with a dry lint-free cloth (C011).
- 6.1.3 Clean the bonding surfaces with the lint-free cloth (C011) and solvent (C005) or aliphatic naphtha (C059) or acetone (C087). Let it dry in the air for at least 30 minutes.

- 6.2 Install in the indicated positions ID plate P/N A031A001A, ID plate P/N A157A001A1 and ID plate P/N MS27253-2 by means of adhesive EA934NA (C054) or adhesive EC9323 (C487).
- 6.3 Mark on the new ID plates the following information:
  - Blade P/N and S/N;
  - Paint scheme P/N;
  - MFG date;
  - Inspection stamp;
  - Applied SB (if any).
7. In accordance with applicable steps CR&OP DM 89-A-62-11-01-00A-257A-C, perform the MR blade painting.
8. With reference to Figure 1, mark the part as described in the following procedure:
  - 8.1 On the metal plate P/N MS27253-2:
    - mark repair drawing P/N 8G6210R00231, method "V", vibro etch;
    - final inspection stamp, method "T", rubber stamp ink marking.
  - 8.2 On the metal plate P/N A157A001A1:
    - add suffix "R" to the existing serial number, method "V", vibro etch.
9. With reference to Figure 1, add suffix "R" to the existing serial number painted on the indicated area. Paint the suffix "R" as required (refer to Annex A for the formatting features requested by the applicable painting scheme).
10. Record compliance with this Service Bulletin on the blade log card. Add the suffix "R" after MR blade Serial Number on the log card.
11. 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](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)

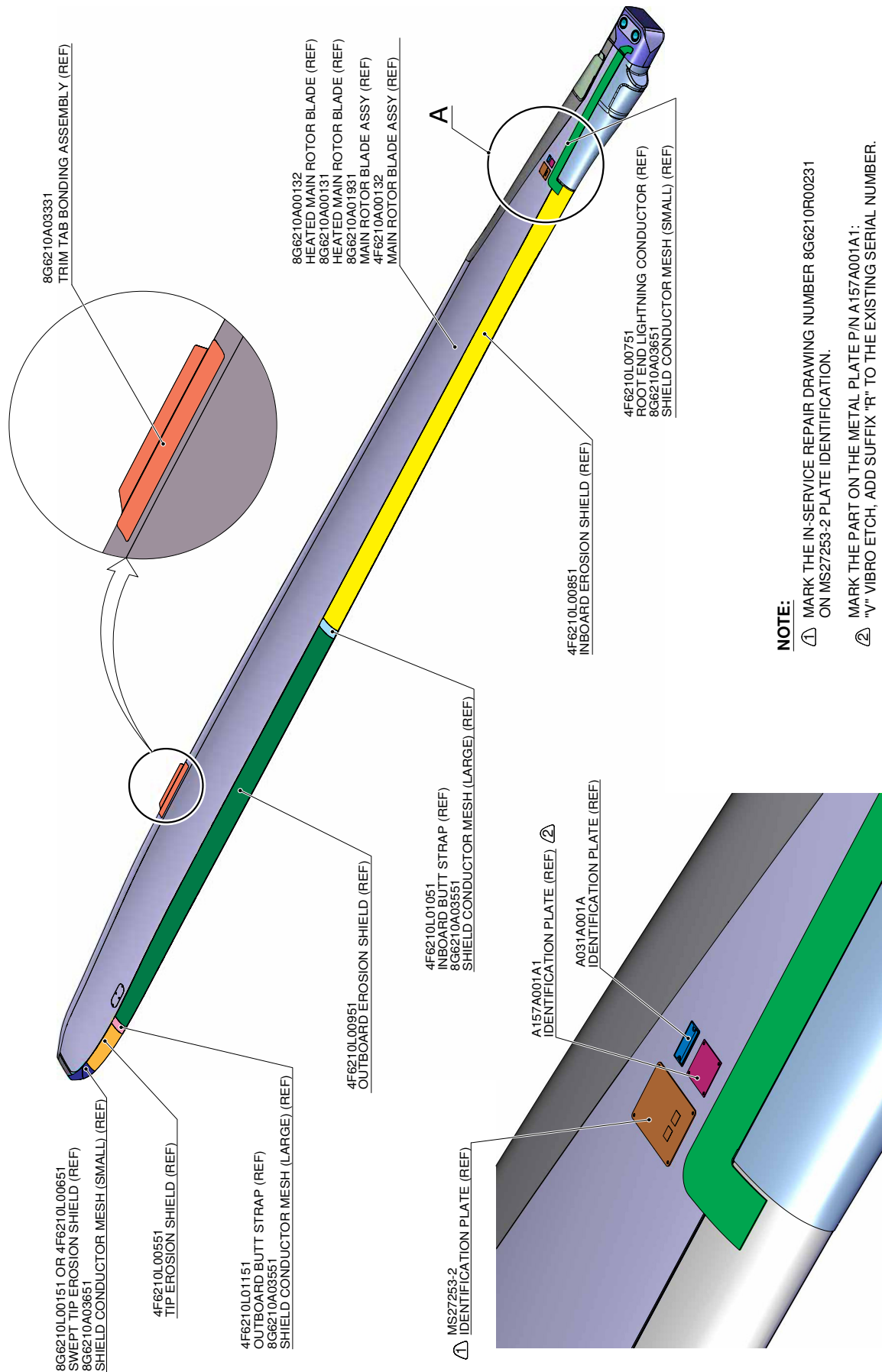
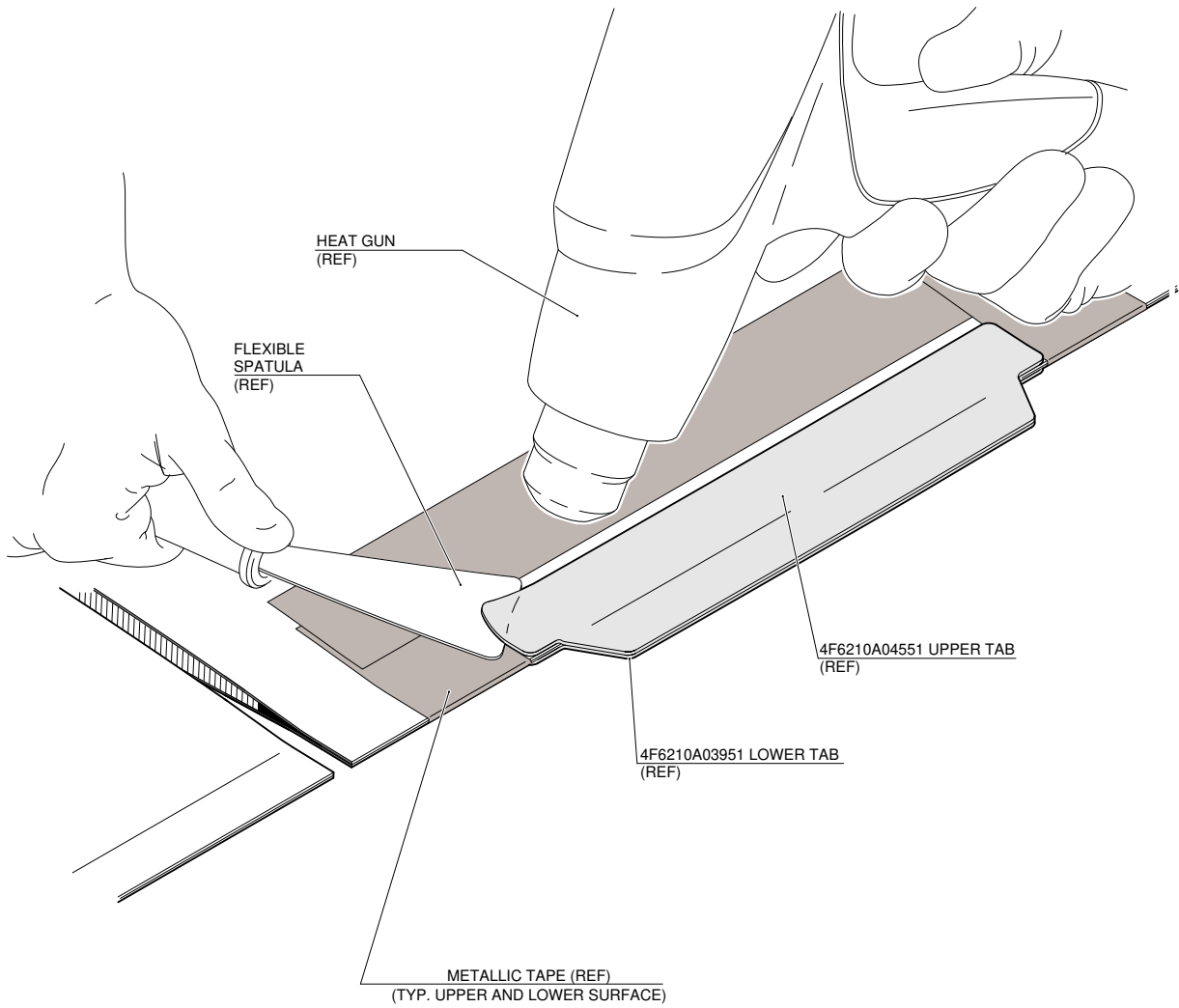
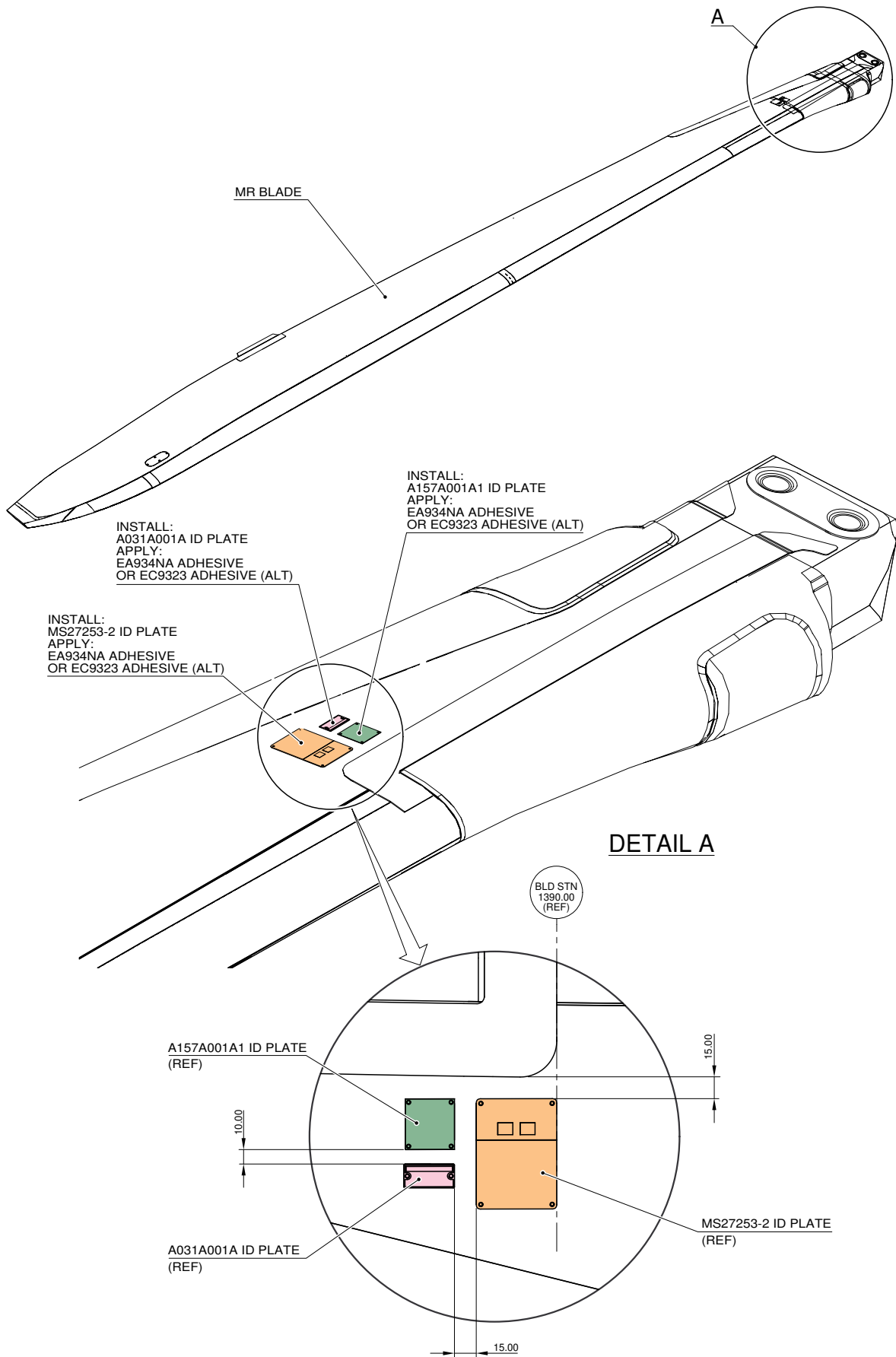


Figure 1



**Figure 2**



**Figure 3**

