
SERVICE BULLETIN**N° 189-090****RECOMMENDED****DATE:** July 25, 2016**REV. :** C - October 16, 2024

TITLE**ATA 71 – NACA COWLING INSPECTION****REVISION LOG**

Helicopters that have complied with rev./ or rev.A or rev.B of this Service Bulletin do not need any additional action.

Revision A was issued October 27, 2016 to:

- Update "helicopters affected" list to include n°10 helicopters that must install the bush P/N 8G7110A20951.

Revision B was issued April, 2017 to:

- Update "effectivity" list to include helicopters S/N 92002, S/N 92004 and S/N 92006 that must install bush P/N 8G7110A20951.
- Update "compliance" paragraph to include a dedicated compliance for the n°3 helicopters added to the SB effectivity.

Revision C has been issued in order to remove content of Part III of the Service Bulletin. The inspection required in Part III is superseded by AMPI chapter 5 task 71-21.

Revision bars in the margins identify the changes.

1. PLANNING INFORMATION

A. EFFECTIVITY

Part I

All AW189 helicopters from S/N 49007 to S/N 49017, S/N 49020, S/N 49021, S/N 89001; S/N 92001 and S/N 92003 not yet compliant with BT 189-026.

Part II

All AW189 helicopters from S/N 49007 to S/N 49021, S/N 49023, S/N 49029, S/N 49033, S/N 49035, S/N 49039, S/N 89001, S/N 89003, S/N 89004, S/N 92001, S/N 92003, S/N 92005, S/N 92002, S/N 92004 and S/N 92006.

Part III

This part is cancelled.

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 100 flight hours after the issue of this Service Bulletin.

Part II

Within and not later than 100 flight hours after the issue of this Service Bulletin.

For helicopters S/N 92002, S/N 92004 and S/N 92006, within 100 flight hours since receipt of Rev.B of this Service Bulletin.

Part III

This part is cancelled.

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 in accordance with LH recommendations. The Operator remains liable for any deviation.

C. CONCURRENT REQUIREMENTS

This Service Bulletin cancels and supersedes BT 189-026.

D. REASON

This Service Bulletin is issued in order to introduce a periodic inspection of the NACA cowling for wear and condition.

LH issued this SB for the following reason:

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

E. DESCRIPTION

Part I and Part II: for the helicopters not yet complied with BT189-026, provides all necessary instruction to:

- replace the pin of the NACA cowling installations with a new design one, to rework the related receptacle on the FWD sliding cowling and to install a safety bracket that prevents the NACA cowling from opening in case of a failure of the pin/receptacle locking system.
- install the buffers P/N 1338 on the NACA cowling panels to protect the engine air intakes from accidental damage during maintenance.

Part III: provides all the necessary instructions to perform a preventive scheduled inspection to keep monitored the conditions of the NACA cowling pin installation and the FWD sliding cowling receptacle. This part is no longer applicable and it is superseded by inspection of AMPI chapter 5 task 71-21.

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 LH 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 six (6) MMH;

Part II: approximately three (3) MMH.

Part III: N.A.

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:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 89-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	I, II
DM02 89-A-06-41-00-00A-010A-A	Access door panel remove procedure.	I, II

Following Data Modules refer to AMPI:

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

I.2 ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
AMPI	Aircraft Maintenance Planning Information
AR	As Required
ASRP	Aircraft Structural Repair Publication
DM	Data Module

DOA	Design Organization Approval
EASA	European Union Aviation Safety Agency
FWD	Forward
IPD	Illustrated Parts Data Publication
ITEP	Illustrated Tools 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

N.A.

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	8G7110P01711		FWD COWLING / NACA COWLING PIN RETROMOD INSTALLATION	REF	.		-
2	8G7110A14851		Alignment pin	2	..	(1)(3)	-
3	8G7110A20751		Safety device LH	1	..	(1)(3)	-
4	8G7110A20851		Safety device RH	1	..	(1)(3)	-
5	8G7110A20951		Bush	2	..	(1)(3)	-
6	A428A3C08T		Screw	4	..	(2)(3)	-
7	MS21043-3		Nut	4	..	(2)(3)	-
8	MS21043-4		Nut	2	..	(2)(3)	-
9	NAS1149C0332R		Washer	4	..	(2)(3)	-
10	NAS1149C0432R		Washer	2	..	(2)(3)	-
11	1338		Rubber buffer	2	..	(3)	-

PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
12	8G7110A20951		Bush	2	.	(1)(3)	-

PART III

N.A.

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

A.2 CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LH CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
13	199-05-002 Type II, Class 2 / Code No. 900004603	Adhesive EA934NA (C054)	AR	(4)	I
14	199-05-152 Ty I, CI 2 Code No 900002980	RTV732 Adhesive RBR (C126)	AR	(4)	I
15	Code No. 900000262	Adhesive Permabond Flexon F241	AR	(4)	I, II
16	P/N 547548630	Boelube B90 (or equivalent)	AR	(4)	I, II

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

A.3 LOGISTIC MATRIX

N.A.

NOTES

- (1) These items will be delivered under the production package P/N 8G7110P01711PDZ or equivalent.
- (2) These items will be delivered under the production package P/N 8G7110P01711STD or equivalent.
- (3) For helicopters affected, these items have been already shipped with Bollettino Tecnico BT189-026.
- (4) Item to be procured as local supply.

B. SPECIAL TOOLS

NOTE

Please contact Leonardo Helicopter Division order administration to request the tools supply on loan. As soon as the present Service Bulletin is implemented the tools supplied on loan shall be promptly returned to Leonardo Helicopter Division.

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

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
17	Commercial	Light source	1	(B1)	I, II
18	Commercial	Mirror	1	(B1)	I, II
19	8G7100G06131	Drilling tool	1	(B2)(B3)	I, II

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

SPECIAL TOOLS NOTES

- (B1) Item to be procured as local supply.
- (B2) These items is been already shipped with Bollettino Tecnico BT189-026.
- (B3) This item is composed of:
 - end mill P/N PEC-189-010-02-01;
 - end mill P/N PEC-189-010-02-02;
 - end mill P/N PEC-189-010-02-03;
 - end mill P/N PEC-189-010-02-04;
 - reamer P/N PEC-189-010-02-05;
 - reamer P/N PEC-189-010-02-06;
 - reamer P/N PEC-189-010-02-07;
 - reamer P/N PEC-189-010-02-08.

C. INDUSTRY SUPPORT INFORMATION

Owners/Operators who comply with the instructions of this 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.

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

Please Issue relevant M.M.I.R. form ((M)aintenance (M)alfunction (I)nformation (R)eport) to your Warranty Administration Dpt.

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) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.
- c) After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.
- d) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
- e) 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. Put the platform (GG-01-00) adjacent to the left side of the fuselage and gain access to the upper deck.
3. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, open the access door 451A.

NOTE

Make sure that the safety locking pins of the FWD sliding cowling are properly installed and that cowling cannot move from the fully open position during procedure given in the following step.

4. With reference to Figures 1 and 2, perform the FWD cowling/NACA cowling pin retromodification P/N 8G7110P01711 in accordance with the following procedure:
 - 4.1 With reference to Figure 2 View F, remove and discard the pin P/N 8G7110A06651 and the existing hardware that attach the pin to the NACA cowling installation LH P/N 8G7110A06831.
 - 4.2 With reference to Figure 2 View F, remove the backing plate P/N 8G7110A06551 and the shim P/N 8G7110A06751. Discard the shim.
 - 4.3 With reference to Figure 2 View F, remove and discard the pin

P/N 8G7110A06651.

- 4.4 With reference to Figure 2 View F install a new pin P/N 8G7110A14851 and the new safety bracket LH P/N 8G7110A20751 with existing backing plate P/N 8G7110A06551. Use n°2 screw P/N A428A3C08T, n°2 washers P/N NAS1149C0332R, n°1 washer P/N NAS1149C0432R, n°2 nuts P/N MS21043-3 and n°1 nut P/N MS21043-4.
- 4.5 Make sure that the pin is correctly aligned with the centre of the receptacle hole of the FWD sliding cowling.

NOTE

Follow the instruction given below for drilling tool
P/N 8G7100G06131 operation:

- Properly protect all the area of the upper deck and the installed equipment under the FWD sliding cowling to prevent FOD contamination and accidental damage.
- Be sure to frequently lubricate the reamer assembly during the rework operation by means of Beolube B90 (or equivalent).
- Refer to the following table and Figure 4 to use the correct tool speed with reference to the reamer used.

<u>P/N</u>	<u>DIAMETER</u>	<u>RPM</u>
<u>END MILL</u>		
PEC-189-010-02-01	9.50	375
PEC-189-010-02-02	11.50	320
PEC-189-010-02-03	13.20	260
PEC-189-010-02-04	14.50	220
<u>REAMER</u>		
PEC-189-010-02-05	9.80	350
PEC-189-010-02-06	10.00	350
PEC-189-010-02-07	14.80	200
PEC-189-010-02-08	15.00	200

- Before starting a drilling operation, check the reamer for condition and damage. Replace the reamer as required.

CAUTION

Make sure that the in the following step, during reaming procedure, the reamer does not protrude more than 5 mm from the hole to avoid damage FWD sliding cowling.

- 4.6 With reference to Figure 3 and Figure 1 Section C, install in position the drilling tool P/N 8G7100G06131 and enlarge the receptacle internal diameter, in the FWD sliding cowling to 15.0 mm.
- 4.7 With reference to Figure 1 Section C, install in the bush P/N 8G7110A20951 in the receptacle by means of adhesive Permabond Flexon F246.
5. Make sure that the reworked receptacle hole is aligned to the pin on the NACA cowling. Adjust the pin position as necessary to avoid interference with the receptacle.
6. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, open slowly the left cowling NACA bonded assy P/N 8G7110A07031, (access panel 471A) to reach the contact point with the left air intake P/N 8G7160A00311, countermark the contact point position by means a stroke of paper adhesive tape.
7. With reference to Figure 5 perform the rework of the left cowling NACA bonded assy P/N 8G7110A07031 (access panel 471A), as described in the following procedure:
 - 7.1 With reference to Figure 5 Detail B, countermark the position of the hole to be performed in the cowling assy in a position near the contact point countermarked at previous step.
 - 7.2 In accordance with AMP DM 89-A-06-41-00-00A-010A-A, remove the left cowling NACA bonded assy P/N 8G7110A07031 (access panel 471A). Retain hardware for later reuse.
 - 7.3 With reference to Figure 5 Detail B, drill n.1 Ø 6.0 hole through the cowling. In accordance with ASRP DM 89-A-ASRP-00-X seal the honeycomb by means of adhesive EA934NA as shown in Figure 5 Section D-D.
 - 7.4 With reference to Figure 5 Detail C and Section D-D, install n.1 rubber buffer P/N 1338 by means of adhesive RTV732. Stretch the pin from the inside of the cowling until the anchor head is correctly settled.
8. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, reinstall the left cowling NACA bonded assy P/N 8G7110A07031 (access panel 471A) by means of existing hardware.
9. Repeat Step 2 thru 8 to for the NACA cowling installation RH P/N 8G7110A06931 (access panel 472A).
10. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, close the access door 451A.
11. Remove all the tools and other items from the work area. Make sure that the work area is

clean.

12. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
13. Gain access to My Communications section on [Leonardo Customer Portal](#) 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.
2. Put the platform (GG-01-00) adjacent to the left side of the fuselage and gain access to the upper deck.
3. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, open the access door 451A.
4. With reference to Figure 1, check if the access door 451A is equipped with n°2 bushes P/N 8G7110A20951. If the bushes are not installed go to the following Step. Otherwise skip to Step 8.

NOTE

Follow the instruction given below for drilling tool P/N 8G7100G06131 operation:

- Properly protect all the area of the upper deck and the installed equipment under the FWD sliding cowling to prevent FOD contamination and accidental damage.
- Be sure to frequently lubricate the reamer assembly during the rework operation by means of Beolube B90 (or equivalent).
- Refer to the following table and Figure 4 to use the correct tool speed with reference to the reamer used

<u>P/N</u>	<u>DIAMETER</u>	<u>RPM</u>
END MILL	mm	
PEC-189-010-02-01	9.50	375
PEC-189-010-02-02	11.50	320
PEC-189-010-02-03	13.20	260
PEC-189-010-02-04	14.50	220
REAMER		
PEC-189-010-02-05	9.80	350
PEC-189-010-02-06	10.00	350
PEC-189-010-02-07	14.80	200
PEC-189-010-02-08	15.00	200

- Before starting a drilling operation, check the reamer for condition and damage. Replace the reamer as required

CAUTION

Make sure that the in the following step, during reaming procedure, the reamer does not protrude more than 5 mm from the hole to avoid damage FWD sliding cowling.

5. With reference to Figure 3 and Figure 1 Section C, install in position the drilling tool P/N 8G7100G06131 and enlarge the receptacle internal diameter, in the FWD sliding cowling to 15.0 mm.
6. With reference to Figure 1 Section C, install in the bush P/N 8G7110A20951 in the receptacle by means of adhesive Permabond Flexon F246.
7. Make sure that the reworked receptacle hole is aligned to the pin on the NACA cowling. Adjust the pin position as necessary to avoid interference with the receptacle.
8. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, close the access door 451A.
9. Remove all the tools and other items from the work area. Make sure that the work area is clean.
10. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
11. 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

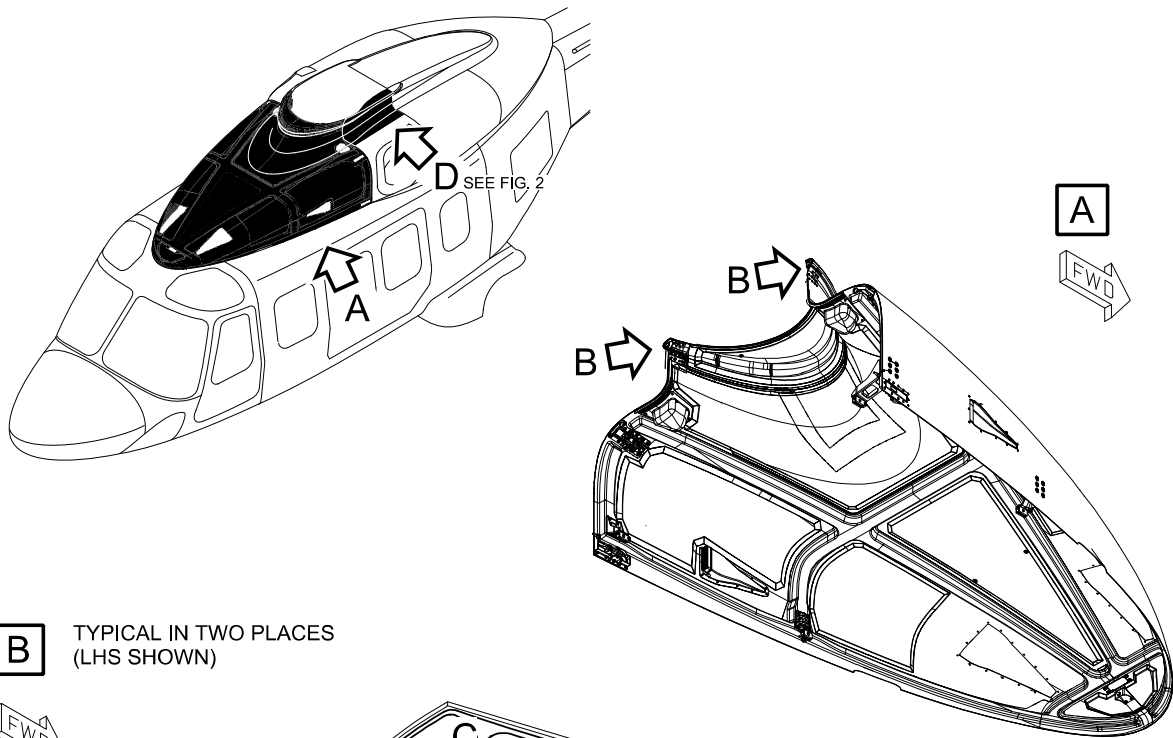
and (for North, Central and South America) also to:

AWPC.Engineering.Support@leonardocompany.us

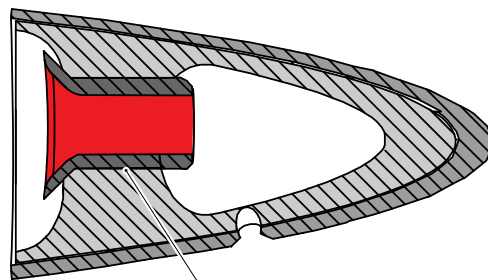
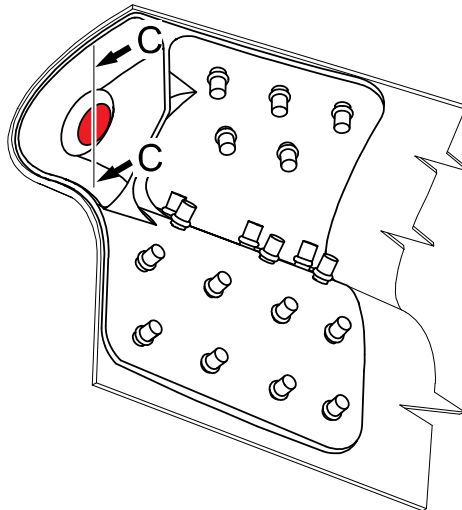
PART III

Content of this part is superseded by AMPI chapter 5 task 71-21.





B TYPICAL IN TWO PLACES
(LHS SHOWN)



REWORK:
DRILL PIN RECESS HOLE Ø 15.0
INSTALL:
8G7110A20951 BUSH
USE:
PERMABOND FLEXON F241

SECTION C-C

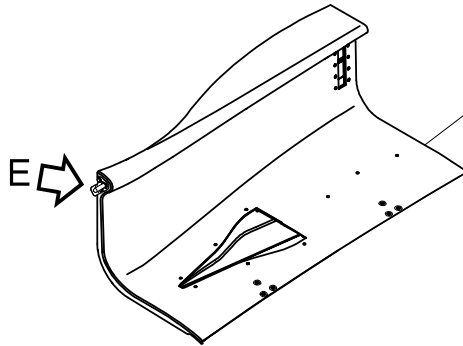
Figure 1

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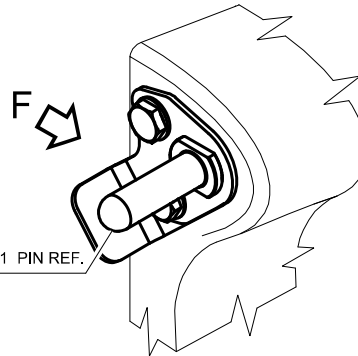
D TYPICAL IN TWO PLACES
(LHS SHOWN)

REF. TO FIGURE 1

8G7110A06831 NACA COWLING LHS REF.
(8G7110A06931 NACA COWLING RHS REF.)



E TYPICAL IN TWO PLACES
(LHS SHOWN)



8G7110A14851 PIN REF.

F

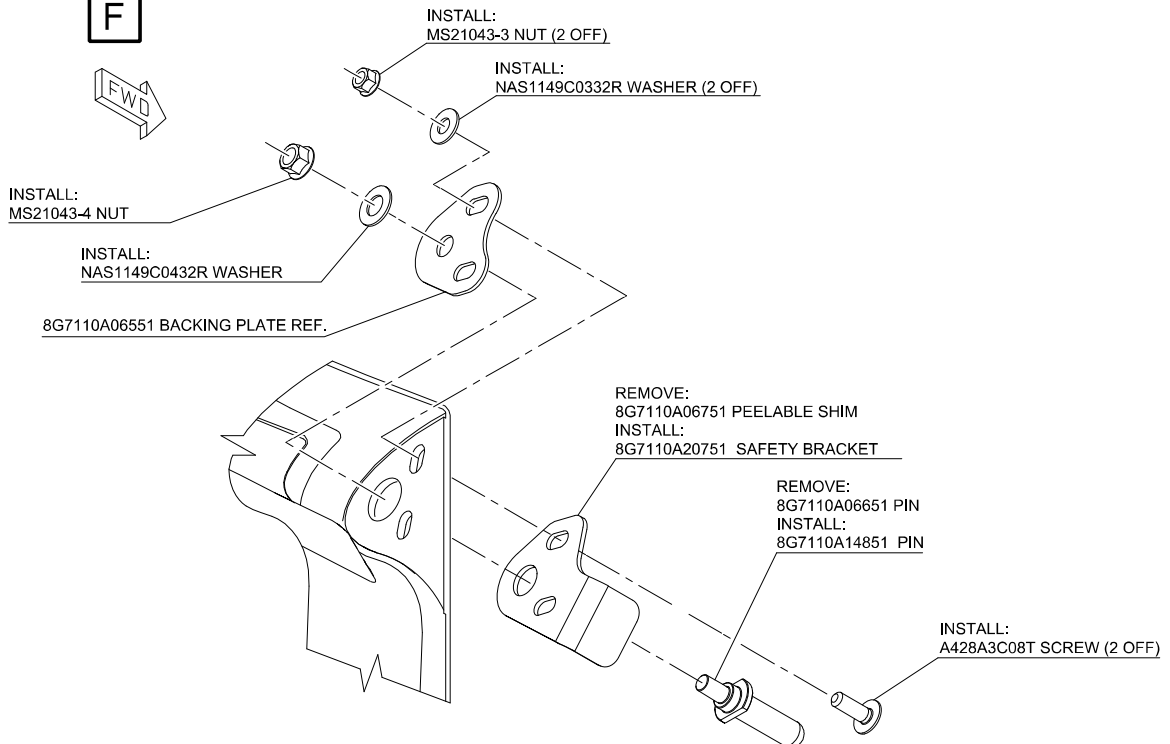
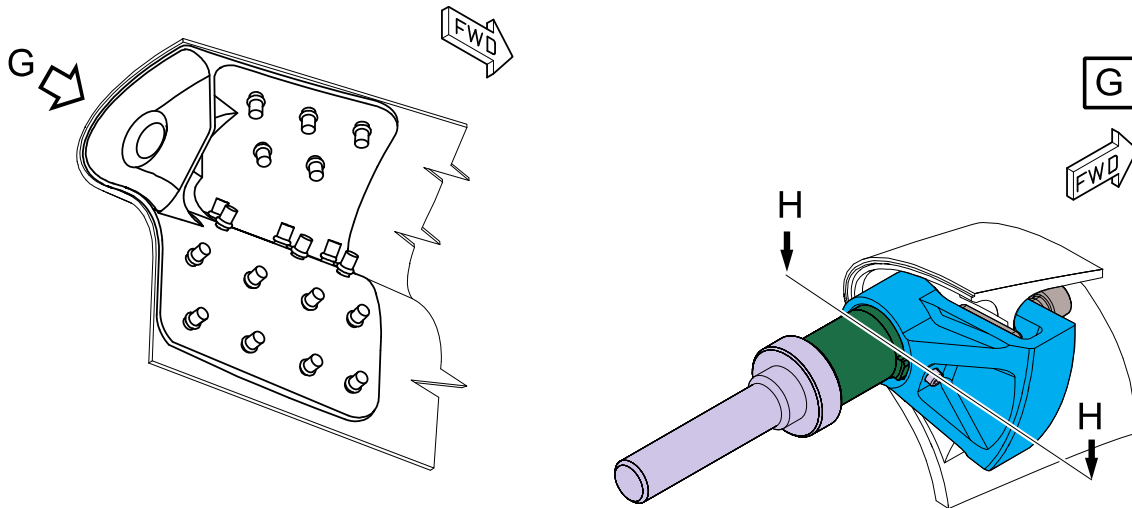
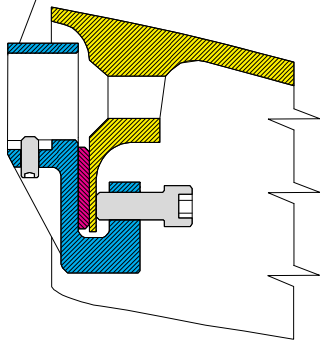


Figure 2

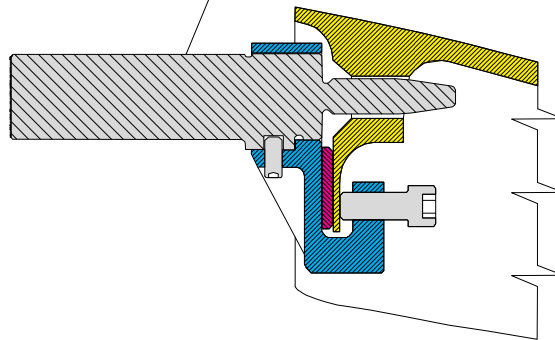


INSTALL:
8G7100G03531 CALIPER ASSY



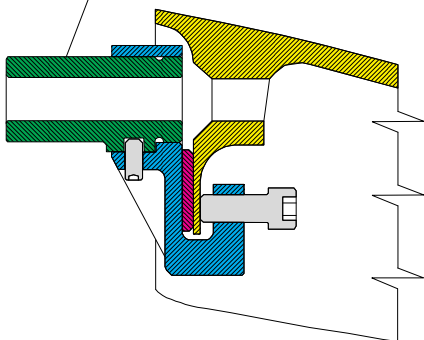
SECTION H-H
STEP 1

ADJUST:
8G7100G03531 CALIPER ASSY
USE:
8G7100G06751 CENTERING PIN



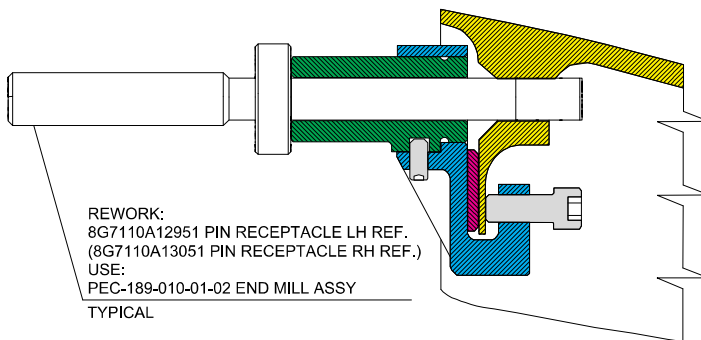
SECTION H-H
STEP 2

INSTALL:
8G7100G068511 BUSHING 9.5
TYPICAL



SECTION H-H
STEP 3

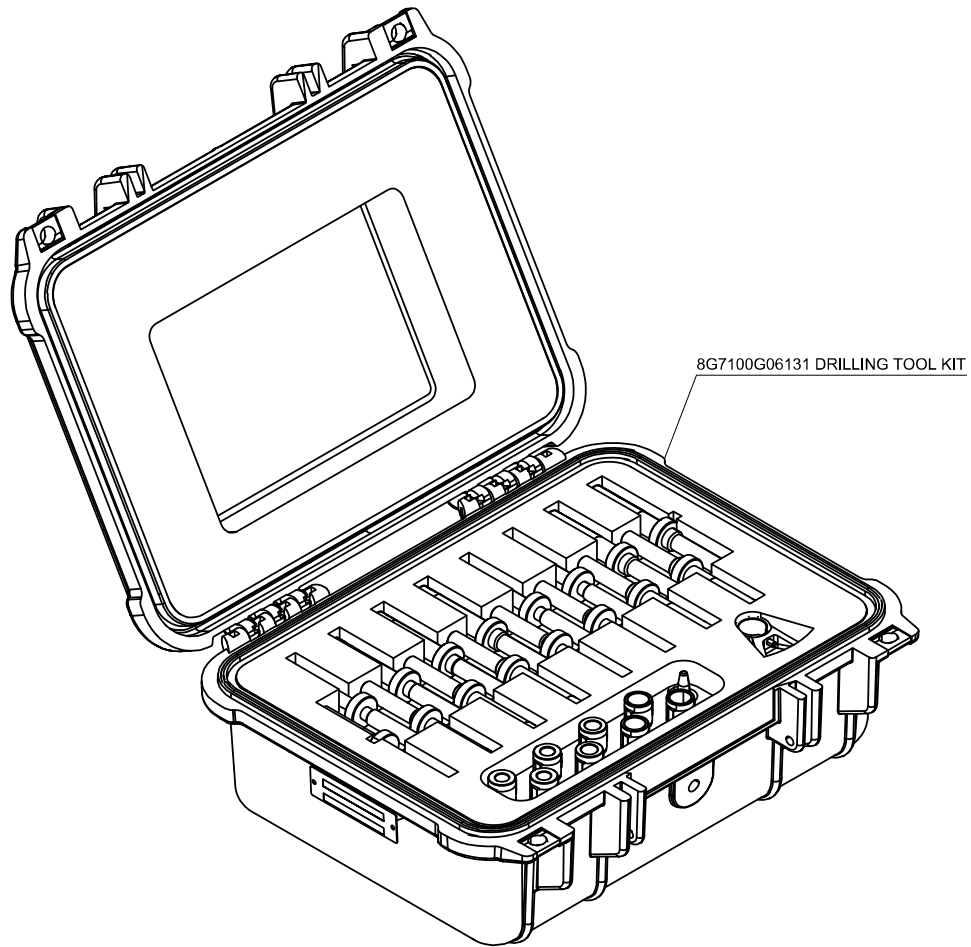
REWORK:
8G7110A12951 PIN RECEPTACLE LH REF.
(8G7110A13051 PIN RECEPTACLE RH REF.)
USE:
PEC-189-010-01-02 END MILL ASSY
TYPICAL



SECTION H-H
STEP 4

Figure 3

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P/N	DIAMETER (mm)	RPM
END MILL		
PEC-189-010-02-01	9.50	375
PEC-189-010-02-02	11.50	320
PEC-189-010-02-03	13.20	260
PEC-189-010-02-04	14.50	220
REAMER		
PEC-189-010-02-05	9.80	350
PEC-189-010-02-06	10.00	350
PEC-189-010-02-07	14.80	200
PEC-189-010-02-08	15.00	200

Figure 4

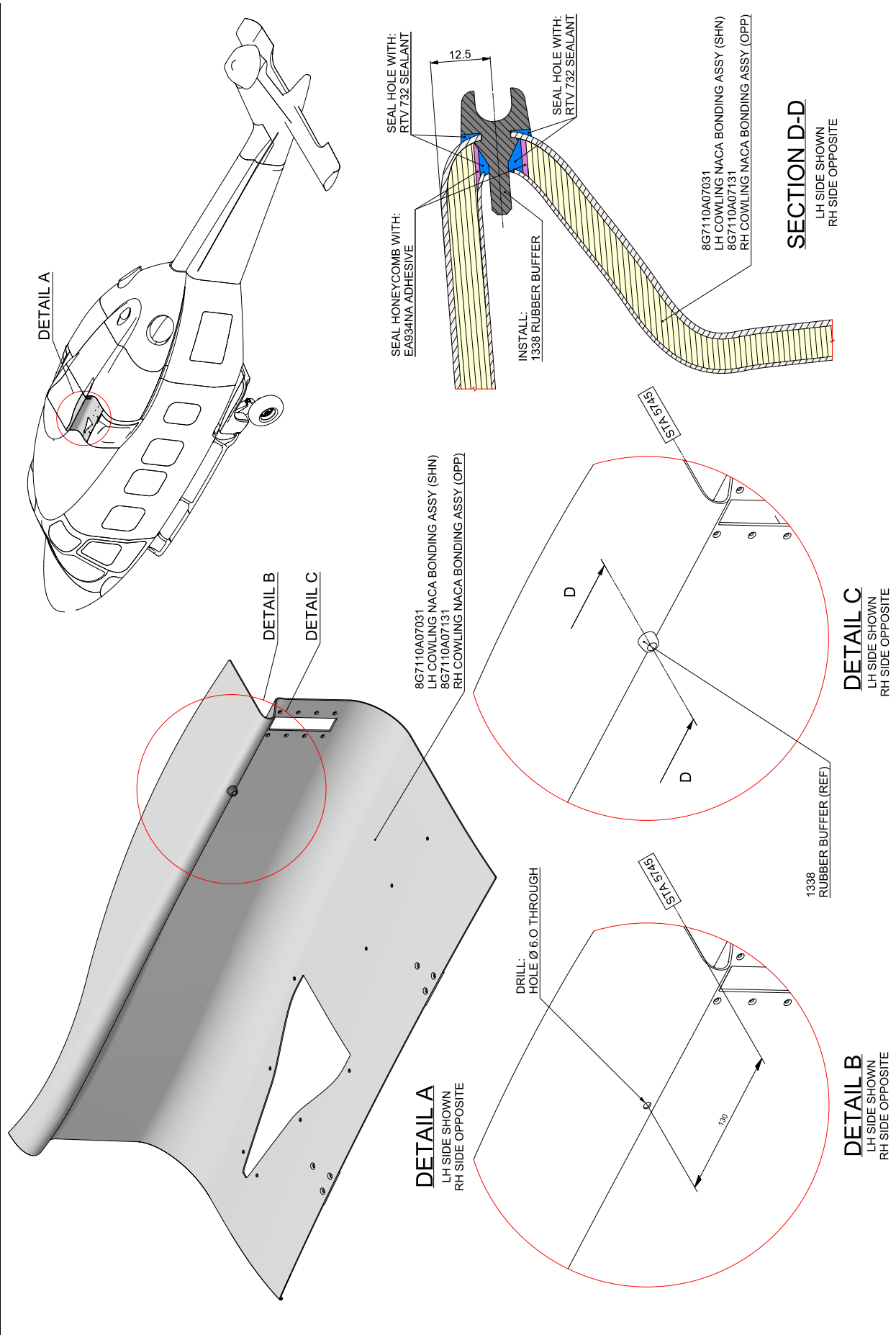


Figure 5

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