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AgustaWestland Products

SERVICE BULLETIN

# OPTIONAL

**N° 189-216**

**DATE:** November 28, 2019

**REV. :** A - June 13, 2024

## TITLE

**ATA 55 – TAILPLANE LOWER FITTING IMPROVEMENT**

## REVISION LOG

Helicopters already compliant with previous issues of this Service Bulletin do not need any additional action.

Revision A is issued in order to introduce the tab washer P/N 8G5350A17851 bending procedure.

Revision bars identify changes.

# 1. PLANNING INFORMATION

## A. EFFECTIVITY

All AW189 helicopters equipped with tailplane lower fitting P/N 8G5350A06732, part of tail assy P/N 8G5350A00131, not already marked with retromod 8G5510P00611.

## B. COMPLIANCE

At Customer's option.

## C. CONCURRENT REQUIREMENTS

N.A.

## D. REASON

This Service Bulletin is issued in order to provide the necessary instruction on how to perform the installation of tail plane retromod P/N 8G5510P00611.

LH issued this SB for the following reason:

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

## E. DESCRIPTION

The retromod introduces on the LH side inboard lug of the tail plane lower fitting assy a fixed bush and a sliding bush as per RH side inboard lug.
In addition the LH outboard bush will be replaced with new bush P/N 8G5350A20151.

## 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 eight (8) 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

### 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. | - |
| DM02 | 89-A-00-60-00-00A-010A-A | Critical parts - General data. | - |
| DM03 | 89-A-06-41-00-00A-010A-A | Access doors and panels - General data. | - |
| DM04 | 89-A-55-11-01-00A-520A-A | Tail plane – Remove procedure. | - |
| DM05 | 89-A-55-11-01-00A-720A-A | Tail plane – Install procedure. | - |
| DM06 | 89-A-53-40-00-01A-921A-A | Tail section - Tail plane bottom fitting bushings - Replacement (remove and install a new item). | - |

### I.2 ACRONYMS & ABBREVIATIONS

| | |
|---|---|
| AMDI | Aircraft Material Data Information |
| AMP | Aircraft Maintenance Publication |
| DM | Data Module |
| DOA | Design Organization Approval |
| EASA | European Union Aviation Safety Agency |
| INBD | Inboard |
| IPD | Illustrated Parts Data Publication |
| ITEP | Illustrated Tools and Equipment Publication |
| LH | Left Hand |

LHD Leonardo Spa Helicopters

MMH Maintenance Man Hours

N.A. Not Applicable

OUTBD Outboard

P/N Part Number

RH Right Hand

SB Service Bulletin

### I.3 ANNEX

Annex A Installation and use of reaming tool P/N PEC 189-019-01.

## J. PUBLICATIONS AFFECTED

N.A.

## K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

# 2. MATERIAL INFORMATION

## A. REQUIRED MATERIALS

### A.1 PARTS

| # | P/N | ALTERNATIVE P/N | DESCRIPTION | Q.TY | LVL | NOTE | LOG P/N |
|---|---|---|---|---|---|---|---|
| **1** | **8G5510P00611** | | **TAIL PLANE RETROMOD** | **REF** | **.** | | |
| 2 | 8G5350A17851 | | Tab washer | 2 | .. | | 189-216L1 |
| 3 | 8G5350A20151 | | Bush | 1 | .. | | 189-216L1 |
| 4 | 8G5510A05052 | | Bearing | 1 | .. | | 189-216L1 |
| 5 | 8G5510A05951 | | Bolt | 2 | .. | | 189-216L1 |
| 6 | 8G5510A06751 | | Bearing | 1 | .. | | 189-216L1 |
| 7 | 999-0050-21-452 | AW004BR14-500D | Bearing | 1 | .. | | 189-216L1 |
| 8 | A864A1151E018R | 8G5510A02151 | Shim | 1 | .. | | 189-216L1 |
| 9 | A904A07PC | | Washer | 2 | .. | | 189-216L1 |
| 10 | A904A07PV | | Washer | 2 | .. | | 189-216L1 |
| 11 | A994A57N030K | | Washer | 1 | .. | | 189-216L1 |
| 12 | MS17825-7 | | Nut | 2 | .. | | 189-216L1 |
| 13 | MS24665-302 | | Pin | 2 | .. | | 189-216L1 |
| 14 | NAS1149C0732R | | Washer | 2 | .. | | 189-216L1 |
| 15 | NAS1149C0763R | | Washer | 1 | .. | | 189-216L1 |

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

Refer also to Annex A for the spares materials required to comply with this Service Bulletin.

### A.2 CONSUMABLES

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

Refer also to Annex A for the consumable materials required to comply with this Service Bulletin.

### A.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 |
|---|---|---|---|
| 189-216L1 | 1 | (1) | Part I |

**NOTES**

(1) Applicable to all helicopters.

## B. SPECIAL TOOLS

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

| # | P/N | DESCRIPTION | Q.TY | NOTE | PART |
|---|---|---|---|---|---|
| 16 | PEC-189-019-01 | Tool kit, tail plane LWR fitting rework | 1 | (B1) | - |

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

Refer also to Annex A for the special tools required to comply with this Service Bulletin.

**SPECIAL TOOLS NOTES**

(B1) Please contact Leonardo Helicopters 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 Helicopters Division.

## C. INDUSTRY SUPPORT INFORMATION

Product improvement.

# 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) Protect properly all those equipment not removed from area affected by the modification during installation procedure.

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

f) All lengths are in mm.

g) Restore protective treatment to machined surfaces of the lower fitting, bushes and spotface plates.

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, remove the access panels 321A and 322A.
3. With reference to Figure 1 thru 4, perform tail plane installation retromod P/N 8G5510P00611 as described in the following procedure:

   3.1 With reference to Figure 1 and in accordance with AMP DM 89-A-55-11-01-00A-520A-A, remove the tail plane assy from the helicopter.

**CAUTION**

Take care not to cause damage to the bores and OUTBD faces of the installed bushes.

   3.2 With reference to Figure 2 Section D-D, ream the OUTBD bores of the LH and RH spotface plates, panels, spar and shims in accordance with the following procedure:

3.2.1 Install the spotface plate and composite skin tail reaming tool, part of reamer tool P/N PEC-189-019-01 to the LH side of the tail. Refer to operation manual P/N PEC-0189-MAN-0013 in annex A.

3.2.2 With reference to Figure 2 Section D-D, perform the reaming procedure of OUTBD bores of the LH spotface plate, panel, spar and shim to 13.990 thru 14.010. Use the reamers part of reamer tool P/N PEC-189-019-01, refer to operation manual P/N PEC-0189-MAN-0013 in annex A.

3.2.3 Remove the tool spotface plate and composite skin tail reaming, part of reamer tool P/N PEC-189-019-01 from the LH side of the tail. Refer to operation manual P/N PEC-0189-MAN-0013 in annex A.

3.2.4 Repeat Step 3.2.1 thru 3.2.3 to perform the reaming procedure on RH side.

**CAUTION**

Take care not to cause damage to the internal bore left within the fitting.

3.3 With reference to Figure 2 View C and in accordance with applicable steps of AMP DM 89-A-53-40-00-01A-921A-A, replace the outboard bush P/N 4F5350A14551 with the new bush P/N 8G5350A20151 in the LH side OUTBD lug of the lower fitting assy. Use the INBD & OUTBD bushing REM/INSTL tool part of reamer tool P/N PEC-189-019-01. Refer to operation manual P/N PEC-0189-MAN-0013 in annex A.

**NOTE**

Use bush P/N 8G5350A20151 to achieve the common bore alignment.

3.4 With reference to Figure 2 Section D-D, ream the bore of the LH side INBD lug as shown by means of the reamer tool P/N PEC-189-019-01 in accordance with the following procedure:

3.4.1 Install the LWR fitting and bushing reworking tool to the lower fitting. Refer to instructions in operation manual P/N PEC-0189-MAN-0013 in annex A.

3.4.2 In accordance with operation manual P/N PEC-0189-MAN-0013, perform the reaming the bore of the LH side INBD lug up to the final diameter 19.490 to 19.551.

3.4.3 Remove the LWR fitting and bushing reworking tool from the lower fitting. Refer to instructions in operation manual P/N PEC-0189-MAN-0013 in annex A.

3.4.4 Deburr the INBD fitting hole by means of INBD hole deburring tool part of reamer tool P/N PEC-189-019-01. Refer to instructions in operation manual P/N PEC-0189-MAN-0013 in annex A.

3.4.5 Check that the hole final diameter is 19.490 to 19.551.

**NOTE**

The bush P/N 999-0050-21-452 shall be cooled in order to perform the installation in the inboard lug.

3.5 With reference to Figure 2 View C, install the bush P/N 999-0050-21-452 into the LH side INBD lug of the lower fitting assy. Use the INBD bushing installation tool part of reamer tool P/N PEC-189-019-01. Refer to instructions in operation manual P/N PEC-0189-MAN-0013 in annex A.

**NOTE**

Use bush P/N 8G5350A20151 to achieve the common bore alignment.

3.6 With reference to Figure 2 Section D1-D1, ream the bore of the bush P/N 999-0050-21-452 as shown by means of the reamer tool P/N PEC-189-019-01 in accordance with the following procedure:

3.6.1 Install the LWR fitting and bushing reworking tool to the lower fitting. Refer to instructions in operation manual P/N PEC-0189-MAN-0013 in annex A.

3.6.2 In accordance with operation manual P/N PEC-0189-MAN-0013, perform the reaming the bore of the LH side INBD lug to the final diameter 15.100 to 15.111.

3.6.3 Remove the LWR fitting and bushing reworking tool from the lower fitting. Refer to instructions in operation manual P/N PEC-0189-MAN-0013 in annex A.

3.7 With reference to Figure 2 View C, mark the retromod P/N 8G5510P00611 on the indicated area of lower fitting assy.

3.8 With reference to Figure 3 Detail A, locate n°1 nylon washer P/N A994A57N030K on the lower fitting assy, over the head of the RH side OUTBD bush.

3.9 With reference to Figure 1, put the tail plane assy in its correct position between the lugs of the lower fitting.

**NOTE**

Make sure that the concave/convex washer arrangement is correctly seated under the tab washer and head of the bolt.

**CAUTION**

The bolt P/N 8G5510A05951 is a critical part. Examine the component for signs of structural damage before you install it on the helicopter. Refer to AMP DM 89-A-00-60-00-00A-010A-A.

**CAUTION**

Make sure to bend correctly the tab washer as shown in Figure 5, in order to avoid contact with the tail plane. Start to bend the tab washer before installation on the helicopter to achieve the correct lock.

3.10 With reference to Figure 3 Detail A1, install the convex washer P/N A904A07PV, the concave washer P/N A904A07PC, the tab washer P/N 8G5350A17851 and the bolt P/N 8G5510A05951.

**NOTE**

Ensure that the nylon washer P/N A994A57N030K is correctly positioned.

3.11 With reference to Figure 3 Detail A1, on the RH side install the bearing P/N 8G5510A06751, the washer P/N NAS1149C0732R and a nut P/N MS17825-7; lightly tighten the nut.

**CAUTION**

Make sure to bend correctly the tab washer as shown in Figure 5, in order to avoid contact with the tail plane.

3.12 With reference to Figure 3 Detail A1 and Figure 5 Detail F1 and Detail F2, bend the tail of the tab washer P/N 8G5350A17851 through 90 degrees to fit against the aft face of the RH spotface plate and bend the other end of the tail to fit against the bolt P/N 8G5510A05951 as shown.

**NOTE**

Take care that the concave/convex washer arrangement is correctly seated under the tab washer and head of the bolt.

**CAUTION**

The bolt P/N 8G5510A05951 is a critical part. Examine the component for signs of structural damage before you install it on the helicopter. Refer to AMP DM 89-A-00-60-00-00A-010A-A.

**CAUTION**

Make sure to bend correctly the tab washer as shown in Figure 5, in order to avoid contact with the tail plane. Start to bend the tab washer before installation on the helicopter to achieve the correct lock.

3.13 With reference to Figure 4 Detail B, temporarily install on the LH side:

- the convex washer P/N A904A07PV;
- the concave washer P/N A904A07PC;
- the tab washer P/N 8G5350A17851;
- the bolt P/N 8G5510A05951;
- the bearing P/N 8G5510A05052;
- the washer P/N NAS1149C0732R;
- the nut P/N MS17825-7.

3.14 With reference to Figure 4 Detail B, lightly tighten the nut P/N MS17825-7.

**CAUTION**

Make sure to bend correctly the tab washer as shown in Figure 5, in order to avoid contact with the tail plane.

3.15 With reference to Figure 4 Detail B and Figure 5 Detail F1 and Detail F2, bend the tail of the tab washer 8G5350A17851 through 90 degrees to fit against the aft face of the LH spotface plate and bend the other end of the tail to fit against the bolt P/N 8G5510A05951 as shown.

3.16 With reference to Figure 3 Detail A1, on the RH side rotate the bolt P/N 8G5510A05951 to align a flat face of the head with the tab on washer P/N 8G5350A17851.

3.17 With reference to Figure 3 Detail A1, on the RH side torque the nut to 20.0 Nm to correctly seat the bearing P/N 8G5510A06751.

3.18 With reference to Figure 3 Detail A1, undo the nut P/N MS17825-7 and the bolt P/N 8G5510A05951 to release the run down torque.

3.19 With reference to Figure 3 Detail A1, torque the nut P/N MS17825-7 to 15.0÷20.0 Nm.

**NOTE**

To ensure correct alignment of the pin hole in bolt P/N 8G5510A05951 and nut P/N MS17825-7 castellations it is acceptable to replace washer P/N NAS1149C0732R under the nut with either washer P/N NAS1149C0716R or P/N NAS1149C0763R as required.

3.20 With reference to Figure 3 Detail A, lock the nut P/N MS17825-7 by means of the cotter pin P/N MS24665-302.

3.21 With reference to Figure 3 Detail A, bend the remaining tab on the washer P/N 8G5350A17851 against the head of the bolt 8G5510A05951 to prevent bolt rotation.

3.22 With reference to Figure 4 Detail B1 and Detail E, measure the gap between the head of the LH side OUTBD bush P/N 8G5350A20151 in the lower fitting and the inner race of the elastomeric bush.

**NOTE**

It is permissible to use an additional shim P/N A864A1151E018R if the gap measured exceeds 2mm. In this situation the measurement should be halved and each shim equally adjusted in thickness to match the total measured dimension.

3.23 With reference to Figure 4 Detail B1 Detail E, adjust the thickness of the shim P/N A864A1151E018R or P/N 8G5510A02151 to match the gap measured at previous step.

3.24 If the peel washer supplied is P/N 8G5510A02151, trim the peel washer to obtain a circular shape with external radius of 10.0. After cutting, remove any sharp edges.

3.25 With reference to Figure 4 Detail B, remove the hardware installed at step 3.13 and install the adjusted shim P/N A864A1151E018R.

3.26 With reference to Figure 4 Detail B, install on the LH side:

- the convex washer P/N A904A07PV;
- the concave washer P/N A904A07PC;

- the tab washer P/N 8G5350A17851;
- the bolt P/N 8G5510A05951;
- the bearing P/N 8G5510A05052;
- the washer P/N NAS1149C0732R;
- the nut P/N MS17825-7.

3.27 With reference to Figure 4 Detail B, repeat steps 3.16 thru 3.21 for the LH side.

3.28 Perform duplicate inspections to check the correct bolts installation, safety, security, final torque and locking.

3.29 With reference to Figure 1 and in accordance with applicable steps of AMP DM 89-A-55-11-01-00A-720A-A, complete the installation of the tail plane assy.

4. In accordance with AMP DM 89-A-06-41-00-00A-010A-A, install the access panels 321A and 322A.
5. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
6. Return the helicopter to flight configuration and record for compliance with this Service Bulletin on the helicopter logbook.
7. 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

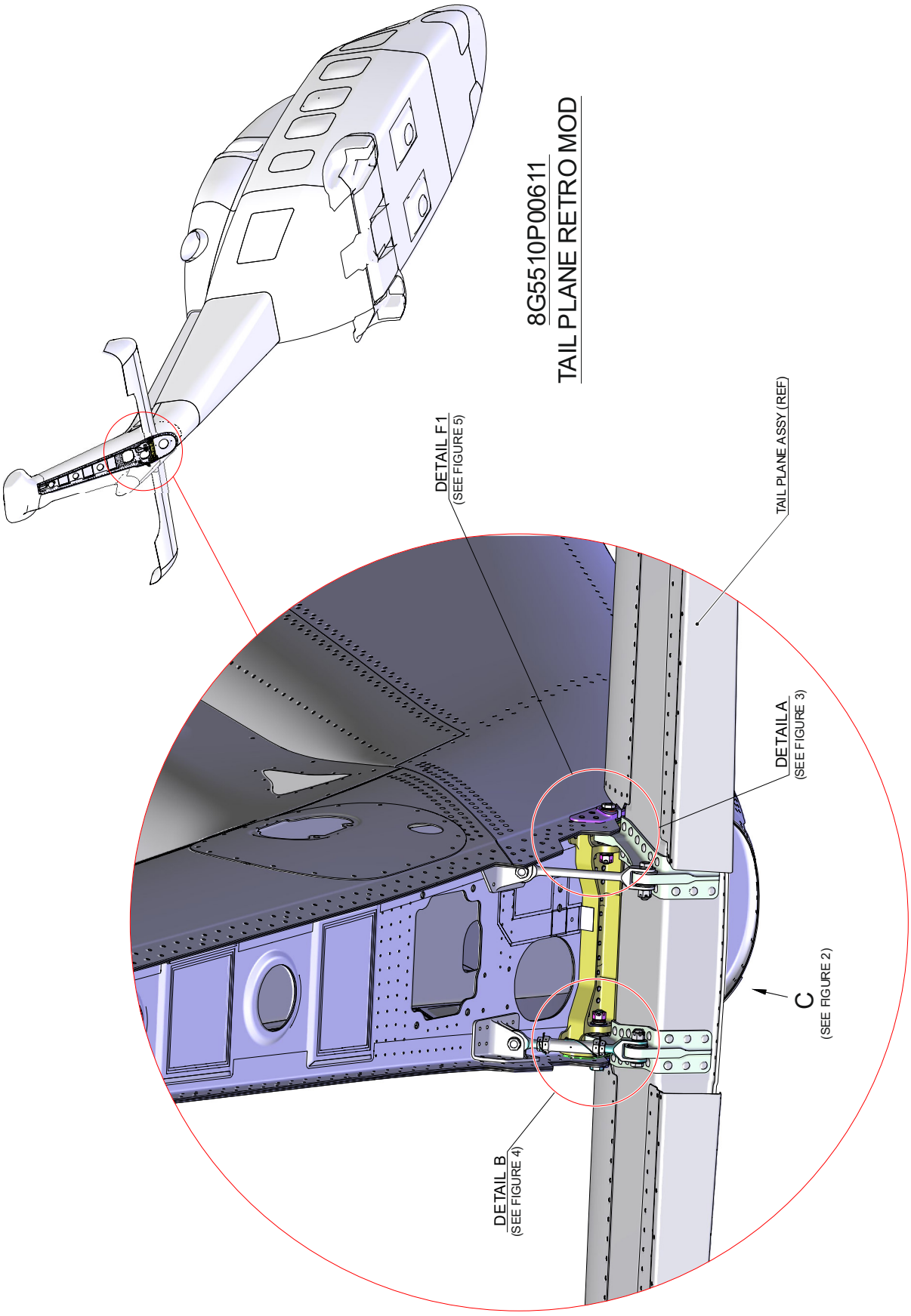
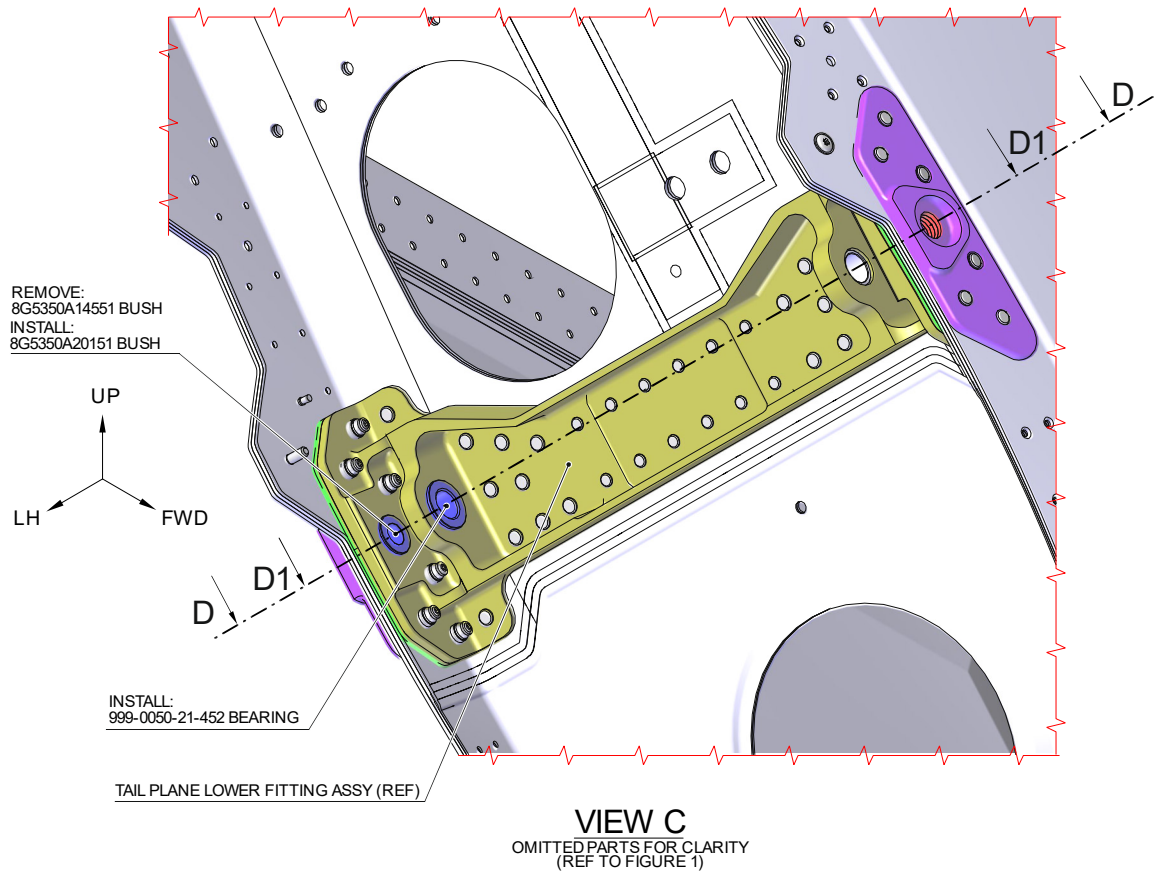
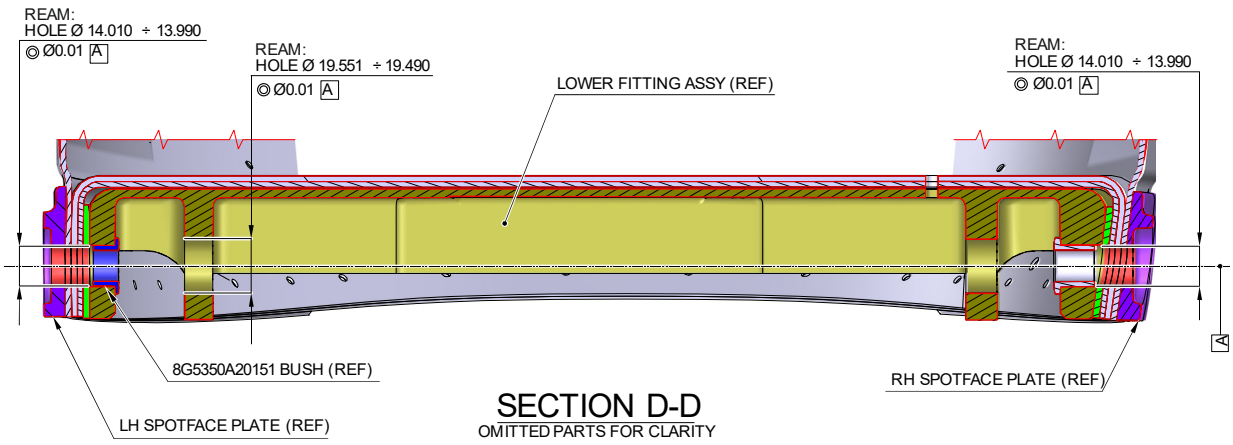

8G5510P00611
TAIL PLANE RETRO MOD
DETAIL F1
(SEE FIGURE 5)
TAIL PLANE ASSY (REF)
DETAIL A
(SEE FIGURE 3)
C
(SEE FIGURE 2)
DETAIL B
(SEE FIGURE 4)

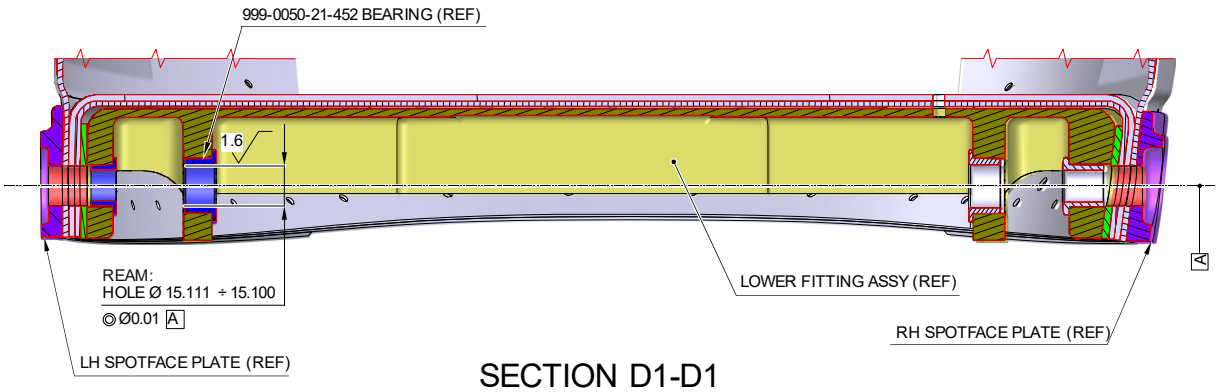
**Figure 1**




VIEW C
OMITTED PARTS FOR CLARITY
(REF TO FIGURE 1)

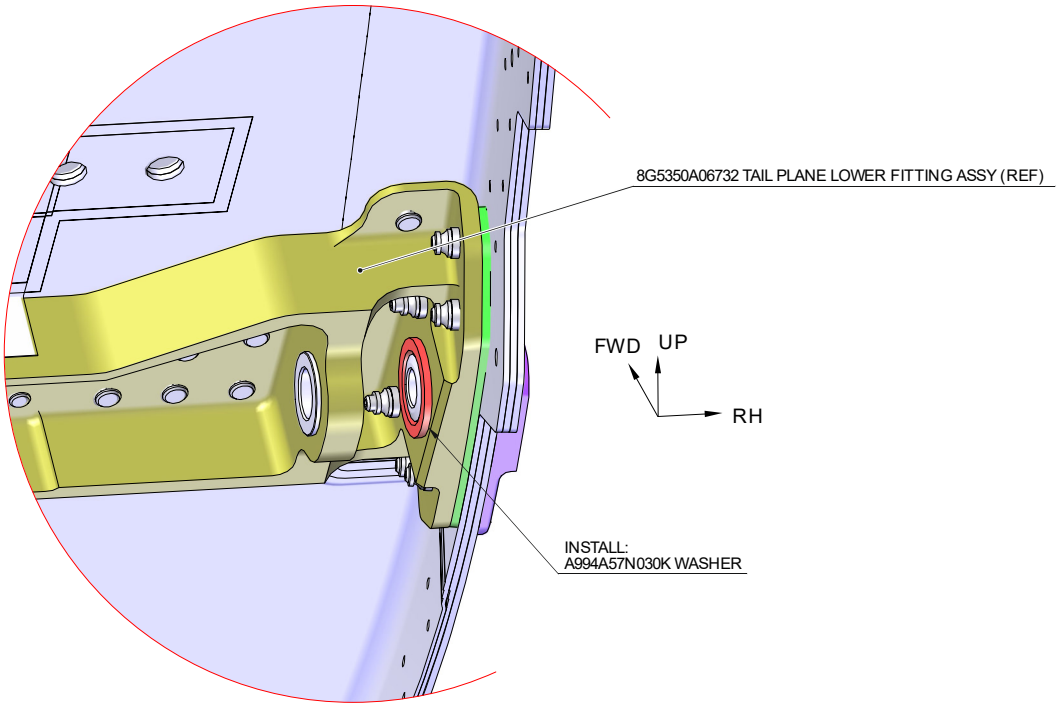



SECTION D-D
OMITTED PARTS FOR CLARITY

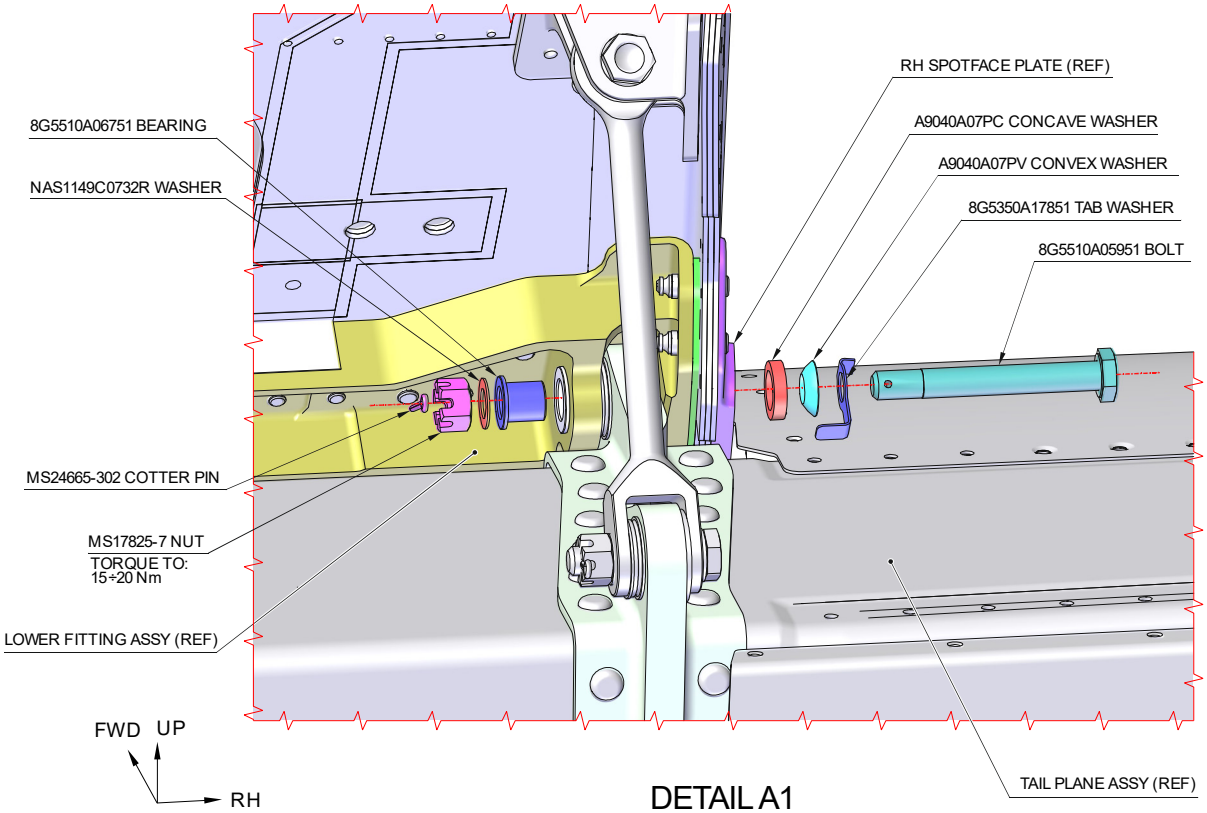



SECTION D1-D1
OMITTED PARTS FOR CLARITY

**Figure 2**

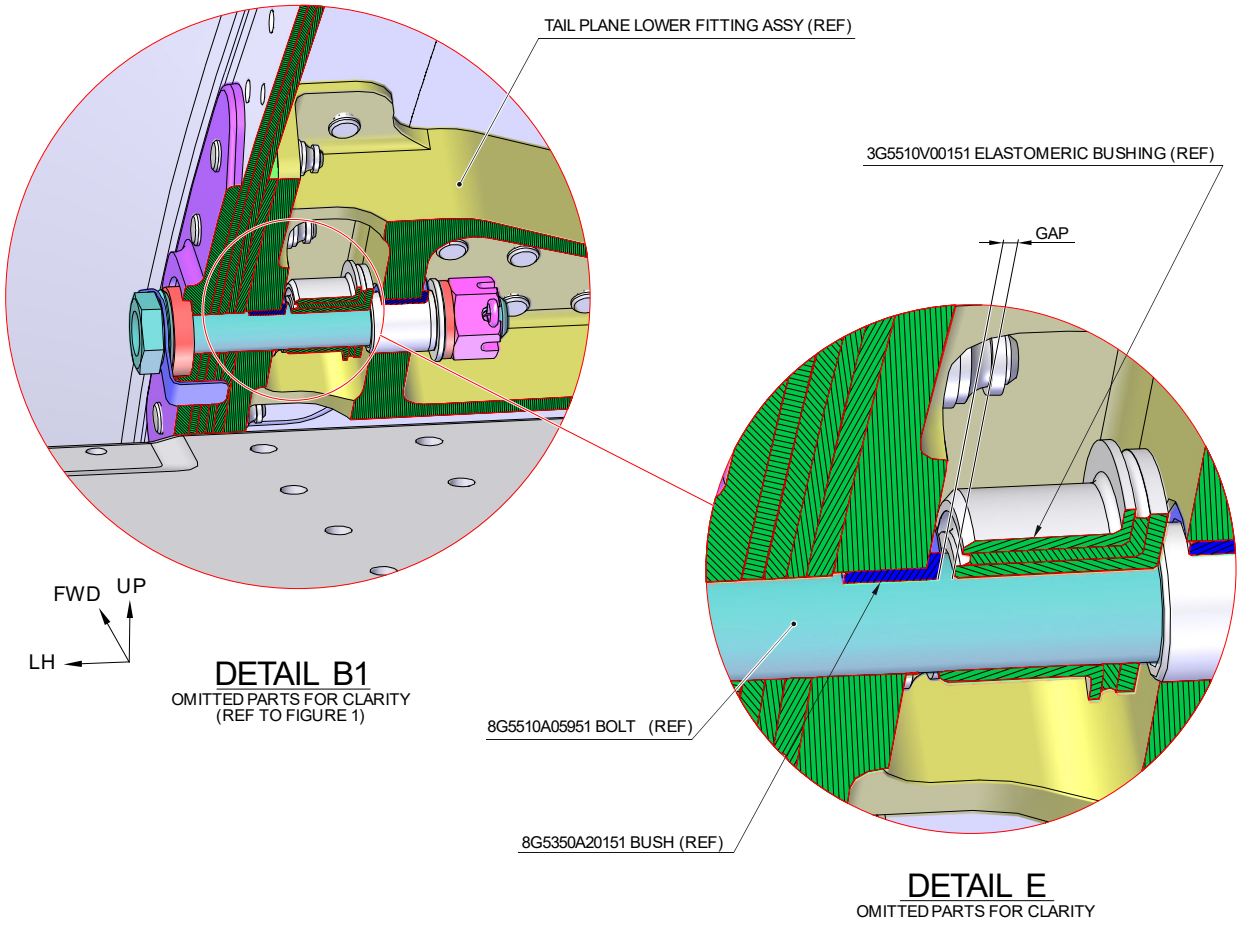



DETAIL A
OMITTED PARTS FOR CLARITY
(REF TO FIGURE 1)




DETAIL A1
INSTALL THE INDICATED HARDWARE
OMITTED PARTS FOR CLARITY
(REF TO FIGURE 1)

**Figure 3**


TAIL PLANE LOWER FITTING ASSY (REF)
3G5510V00151 ELASTOMERIC BUSHING (REF)
GAP
FWD
UP
LH
DETAIL B1
OMITTED PARTS FOR CLARITY
(REF TO FIGURE 1)
8G5510A05951 BOLT (REF)
8G5350A20151 BUSH (REF)
DETAIL E
OMITTED PARTS FOR CLARITY

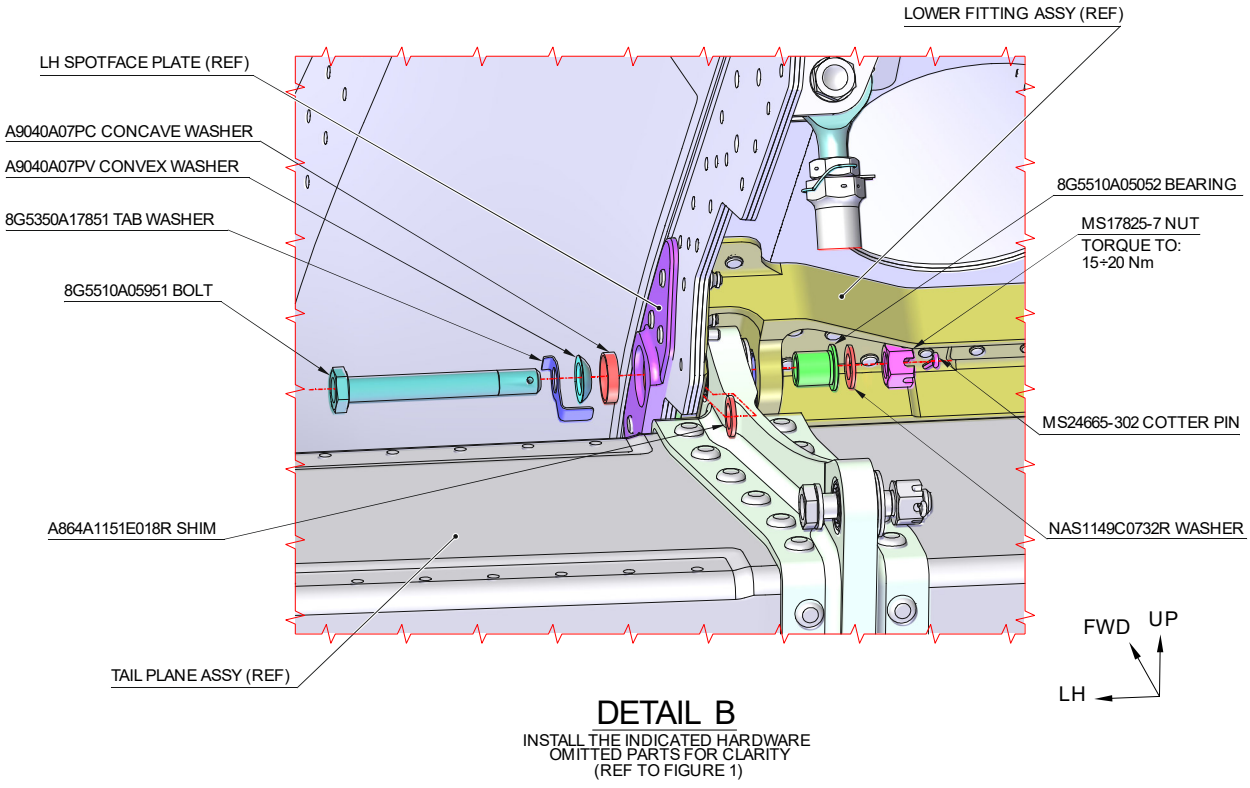

LOWER FITTING ASSY (REF)
LH SPOTFACE PLATE (REF)
A9040A07PC CONCAVE WASHER
A9040A07PV CONVEX WASHER
8G5350A17851 TAB WASHER
8G5510A05951 BOLT
8G5510A05052 BEARING
MS17825-7 NUT
TORQUE TO:
15÷20 Nm
MS24665-302 COTTER PIN
NAS1149C0732R WASHER
A864A1151E018R SHIM
TAIL PLANE ASSY (REF)
FWD
UP
LH
DETAIL B
INSTALL THE INDICATED HARDWARE
OMITTED PARTS FOR CLARITY
(REF TO FIGURE 1)

**Figure 4**

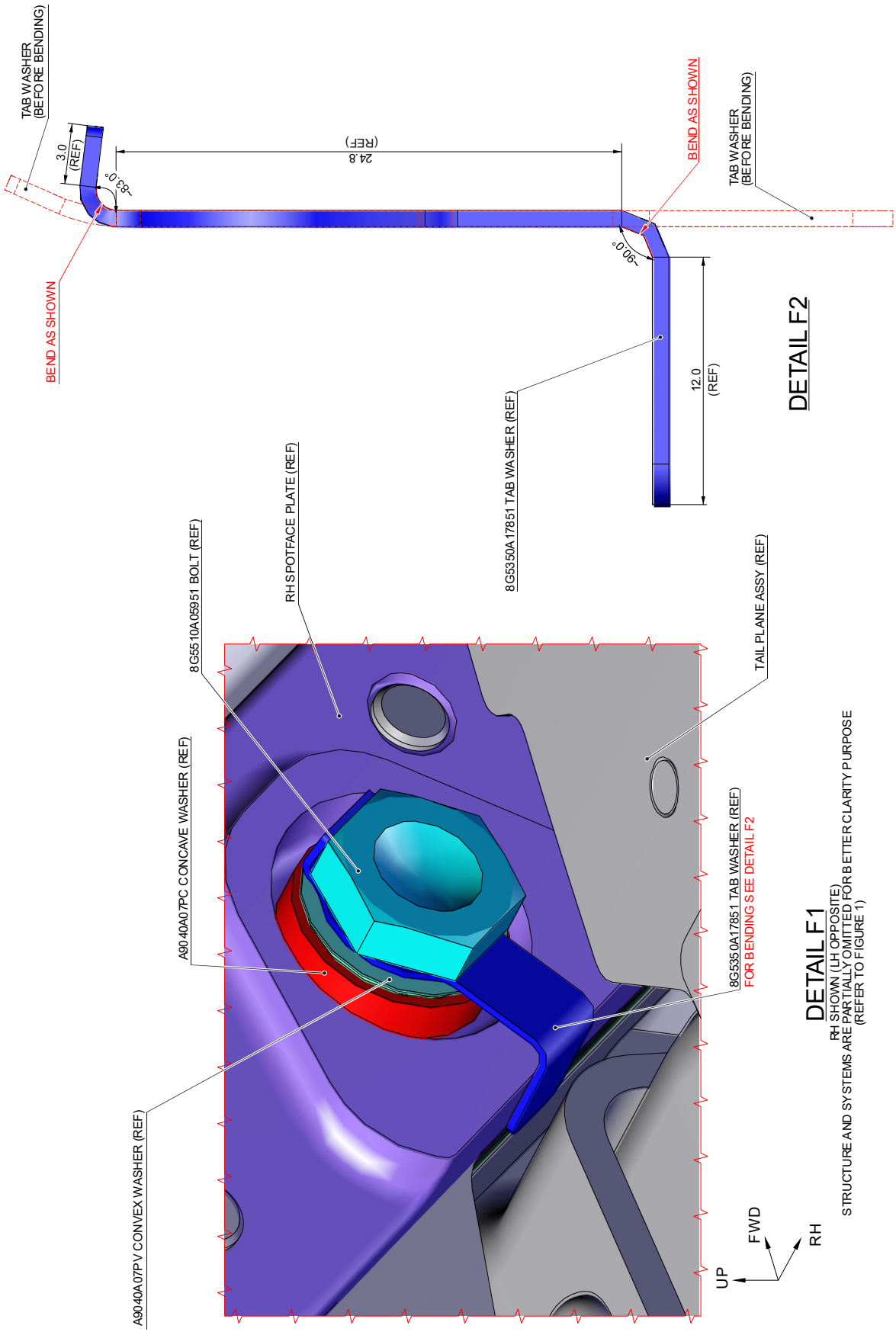

TAB WASHER (BEFORE BENDING)
3.0 (REF)
83.0°
24.8 (REF)
BEND AS SHOWN
TAB WASHER (BEFORE BENDING)
90.0°
BEND AS SHOWN
8G5350A17851 TAB WASHER (REF)
12.0 (REF)
DETAIL F2
8G5510A05951 BOLT (REF)
RH SPOTFACE PLATE (REF)
TAIL PLANE ASSY (REF)
A9040A07PC CONCAVE WASHER (REF)
8G5350A17851 TAB WASHER (REF)
FOR BENDING SEE DETAIL F2
A9040A07PV CONVEX WASHER (REF)
UP
FWD
RH
DETAIL F1
RH SHOWN (LH OPPOSITE)
STRUCTURE AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
(REFER TO FIGURE 1)

**Figure 5**

# ANNEX A

**INSTALLATION AND USE OF**

**REAMING TOOL P/N PEC-189-019-01**

# OPERATION AND MAINTENANCE MANUAL

# For

# PEC-189-019-01

# TOOL KIT, TAIL PLANE LWR FITTING REWORK

## DOCUMENT CHANGE RECORD

| Issue. | Date | Pages/Paragraphs Affected. | Reasons for change |
|---|---|---|---|
| 01 | 03/06/2019 | ALL | First Issue |
| 02 | 06/11/2019 | ALL | General Review |
| | | | |
| | | | |
| | | | |

## DISTRIBUTION LIST

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N.B. Modified parts referring to previous revisions are indicated in Italics with the revision number listed on the left.

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# 1 SCOPE

## 1.1 *APPLICABILITY*

The contents of this document are meant to provide information on the **PEC-189-019-01 TOOL KIT, TAIL PLANE LWR FITTING REWORK.**

## 1.2 *OBJECT*

The object of this document is to explain how to operate and maintain in service the **PEC-189-019-01 TOOL KIT, TAIL PLANE LWR FITTING REWORK.**

## 1.3 *GOAL*

The goal is to show trained operators all phases and possible uses and operations of **PEC-189-019-01 TOOL KIT, TAIL PLANE LWR FITTING REWORK.**

It will also show all needed maintenance operations for the **PEC-189-019-01 TOOL KIT, TAIL PLANE LWR FITTING REWORK**

## 1.4 *WARNING and SAFETY INSTRUTIONS*

A number of symbols are used throughout this document to indicate information to which the user should pay attention to. These are indicated below along with the specific meaning.

| | |
|---|---|
|  **Warning** | ...indicates a danger that might arise from a product and might result in severe injuries or even death, if no precautions are taken. |
|  **Caution** | ... indicates a potentially dangerous situation, which might result injury or damage to the equipment. |
|  **Notice** | ...indicates a note providing information to help the reader during the procedure. |

# 2 DOCUMENTS

## 2.1 *APPLICABLE DOCUMENTS*

The following table lists the applicable documents

| REF | REFERENCE OF DOCUMENT | TITLE |
|---|---|---|
| AD01 | AWCPE189-2018-001 | Engineering Coordination Memo (ECM) |
| AD02 | PEC-189-019-01 | TOOL KIT, TAIL PLANE LWR FITTING REWORK Assembly |
| AD03 | PEC-189-019-02 | TOOL KIT, TAIL PLANE LWR FITTING REWORK Parts |
| AD04 | | |

## 2.2 *STANDARD*

**N.A.**

## 2.3 *ACRONYMS USED*

The main acronyms used in this document are listed below:

| | |
|---|---|
| HC | Helicopter |
| P/N | Part Number |
| N.A. | Not Applicable |
| TB. | Tail Boom |

| | |
|---|---|
| Notice | Users of the Tool Kit, Tail Plane Lwr Fitting Rework must have read and understood the content of this manual before using the equipment. |

## 3 DESCRIPTION

The equipment PEC-189-019-01 TOOL KIT, TAIL PLANE LWR FITTING REWORK is composed of subassemblies and parts to perform the four main operation:

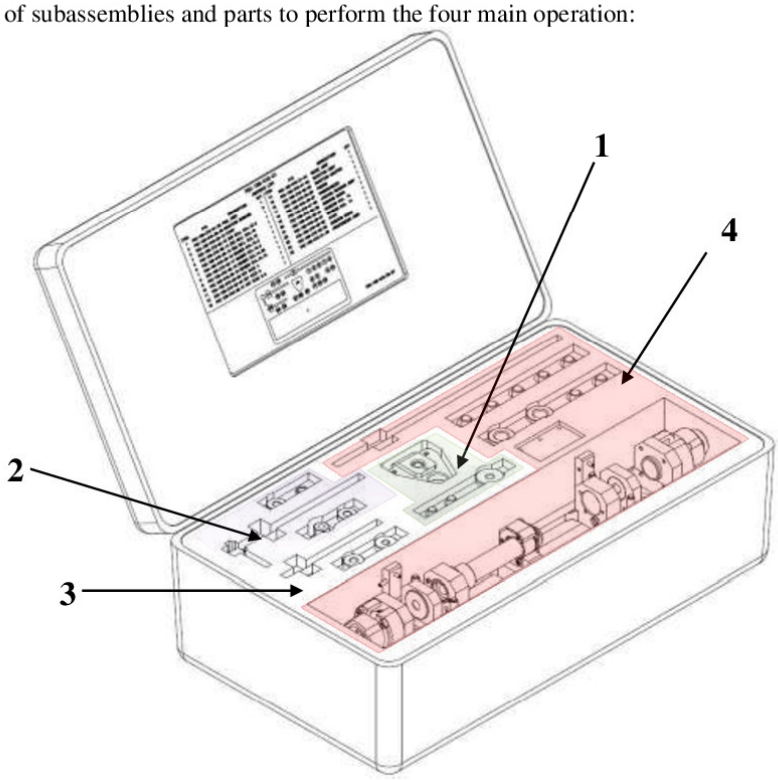



**Figure 1: PEC-189-019-01**

The main operations are:

1. TOOL, SPOT FACE & COMPOSITES SKIN TAIL REAMING
2. TOOL, INBD&OUTBD BUSHING REM/INSTL
3. TOOL, INBD HOLE DEBURRING
4. TOOL, LWR FITTING & BUSHING REWORK

| | |
|---|---|
| **Caution** | The tool shall be sent back to the manufacturer for proper inspection and refurbishment every five times it is operated. It is required to keep record on equipment log card (Annex 1) about any operation involving tool usage. RECORD AFTER USED IN THE TABLE ANNEX 1 |

| | |
|---|---|
| Warning<br>Caution | Use the Tool Kit, Tail Plane Lwr Fitting Rework only for the purpose that it is designed for.<br>Any other use can result in injury or serious material damage to the components. |

## 3.1 *TOP ASSEMBLY DRAWINGS*

See PEC-189-019-01

## 3.2 *IDENTIFICATION TAG*

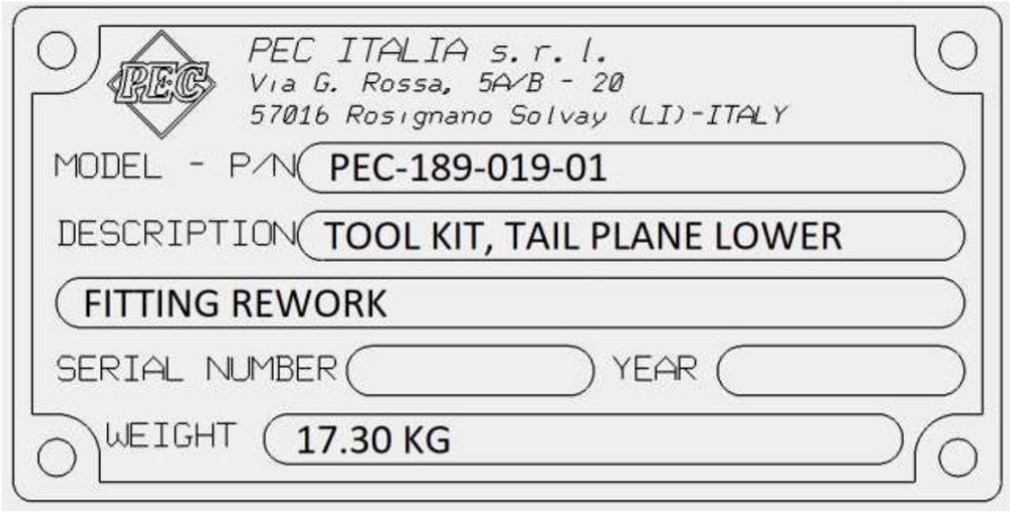



**Figure 2: Tag with P/N**

## 3.3 *WEIGTH*

A. Total Weight: 17.30 kg

# 4 TOOL APPLICABILITY

The tool is designed to change fittings configuration to the new one and to allow periodical fitting maintenance. During maintenance operations the tool allows INBD&OUTBD bushing substitution and in-line reaming of the INBD bushings.

The general layout of the tool is shown in the image below.

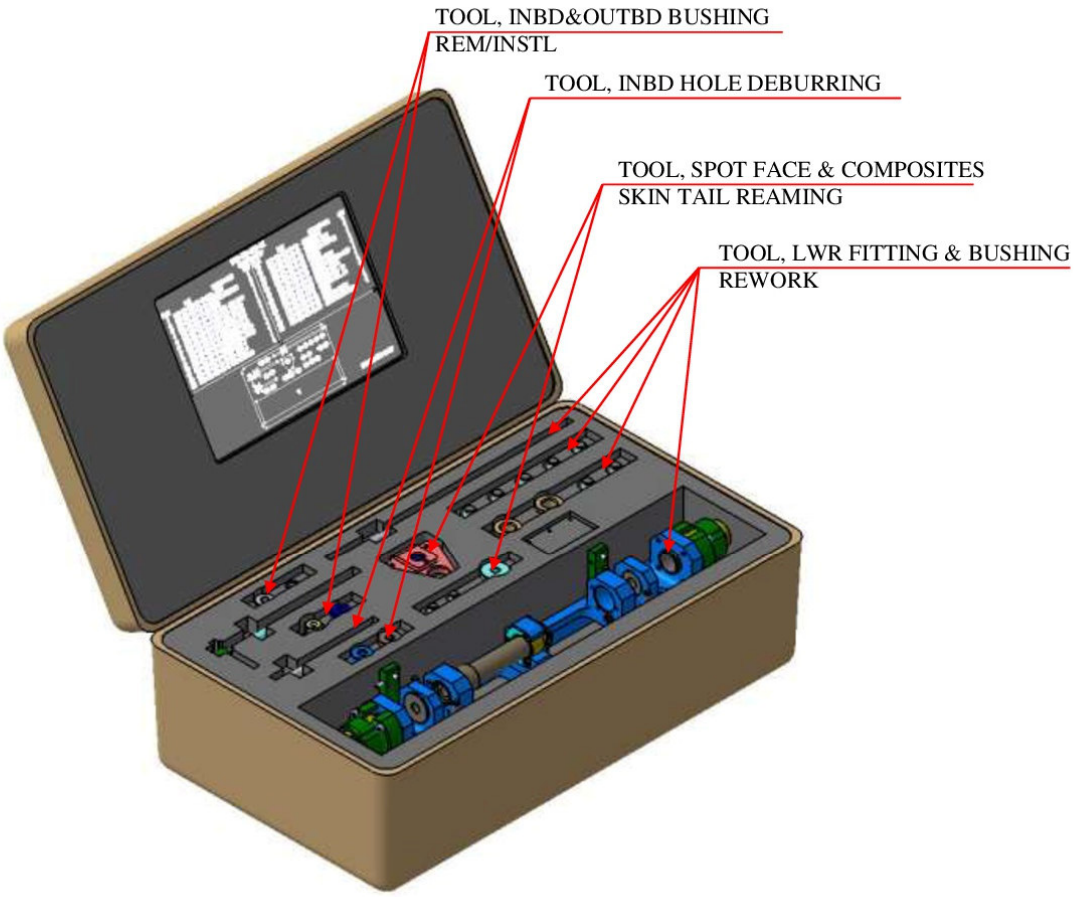



**Figure 3: PEC-189-019-01 TOOL KIT, TAIL PLANE LWR FITTING REWORK**

Use this Kit for the four possible operations.

## 4.1 *TOOL, SPOT FACE & COMPOSITES SKIN TAIL REAMING*

This configuration should be used to ream the spot face & composite skin on both sides, first on metallic components and then on the composite components.

For this operation, follow the instructions below and use the indicated tools:

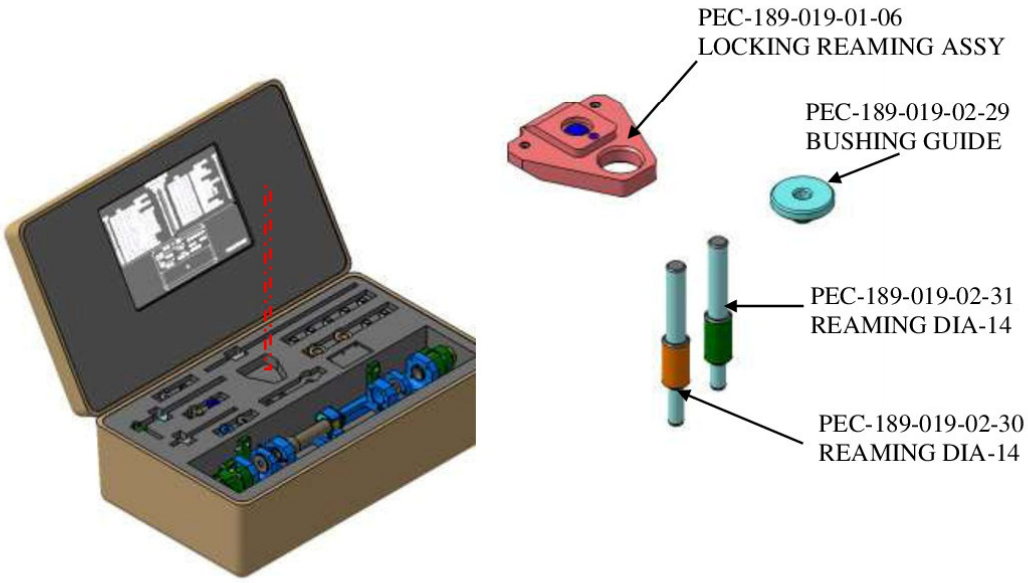



**Figure 4: PEC-189-019-01**

1. Installation BUSHING GUIDE and LOKING REAMING ASSY

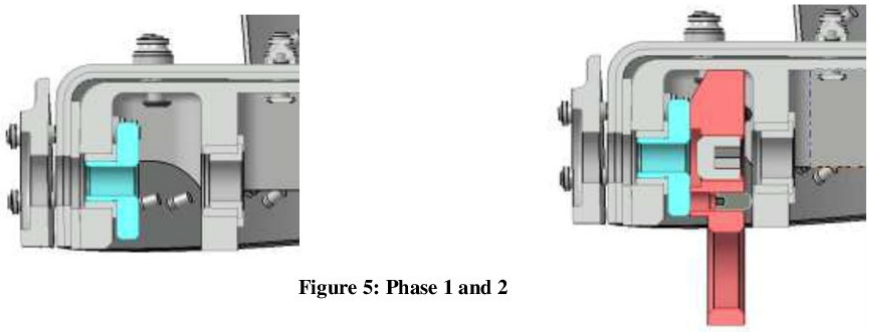


**Figure 5: Phase 1 and 2**

2. Reaming SPOT FACE with REAMING DIA-14 PEC-189-019-02-30

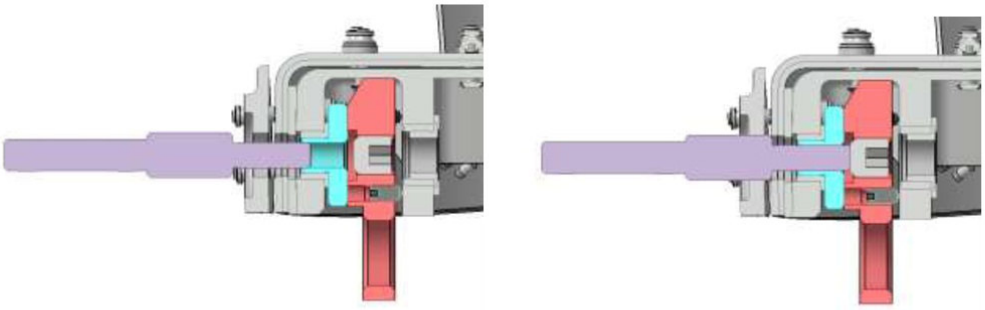


**Figure 6: Phase 3**

3. Reaming COMPOSITE SKIN TAIL with REAMING DIA-14 PEC-189-019-02-31

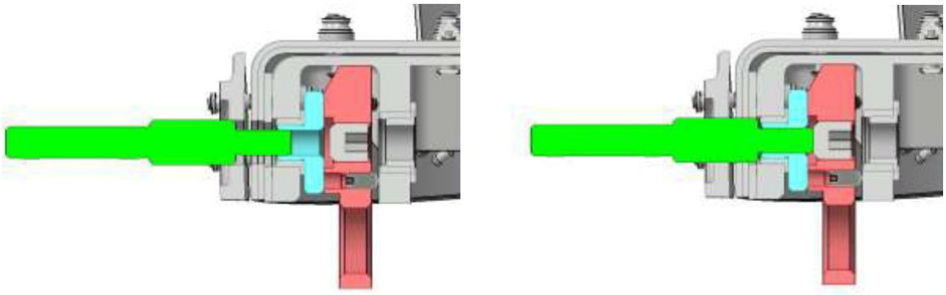


**Figure 7: Phase 4**

| | |
|---|---|
| Caution | Note:<br>Use a drill speed of 150 rpm for the reaming operation |

## 4.2 *TOOL, INBD & OUTBD BUSHING REM/INSTL*

This configuration should be used to remove and then install the INBD & OUTBD bushings.

For this operation, follow the instructions below and use the indicated tools:

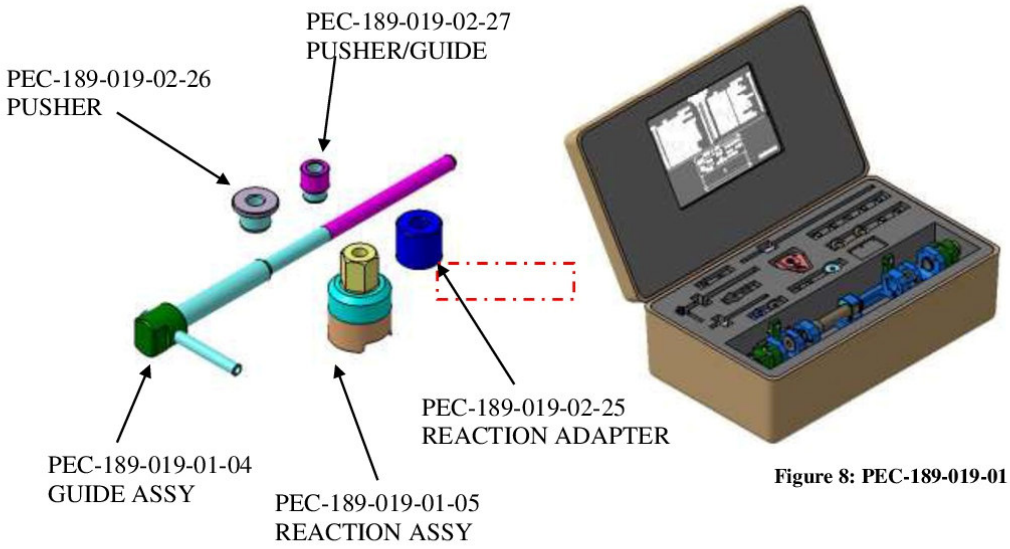



**Figure 8: PEC-189-019-01**

### 4.2.1 *OUTBD BUSHING REM (LH/RH)*

1. Installation PUSHER/GUIDE and GUIDE ASSY

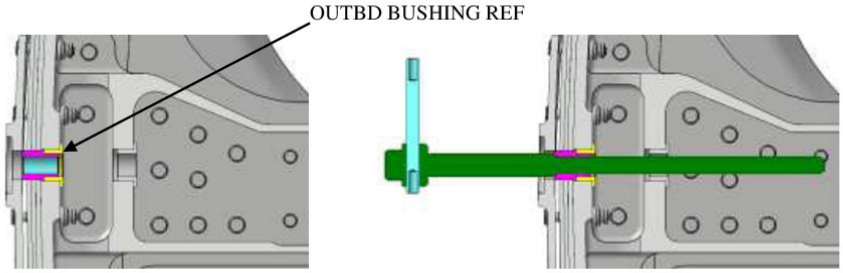



**Figure 9: Phase 1 and 2**

2. Installation REACTION ASSY and remove outbd bushing

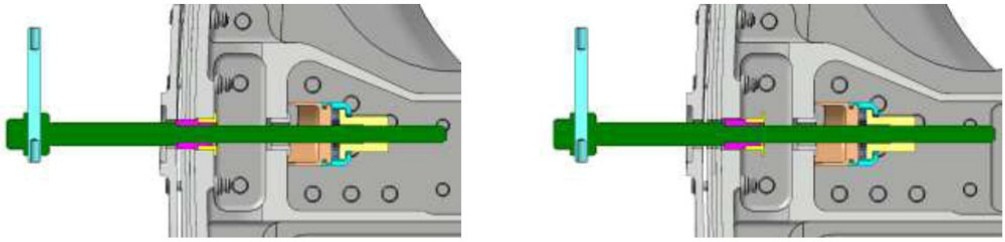


**Figure 10: Phase 3 and 4**

### 4.2.2 *OUTBD BUSHING INSTL (LH/RH)*

1. Installation REACTION ADAPTER and PUSHER/GUIDE

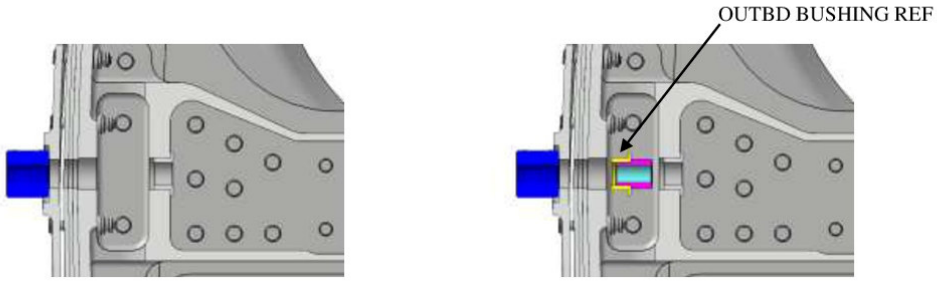



**Figure 11: Phase 1 and 2**

2. Installation GUIDE ASSY and REACTION ASSY

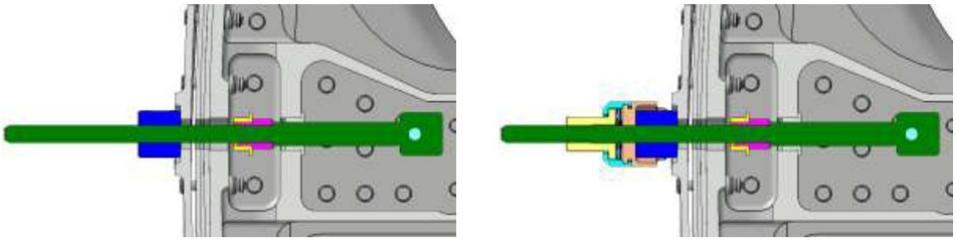


**Figure 12: Phase 3 and 4**

3. Installation outbd bushing

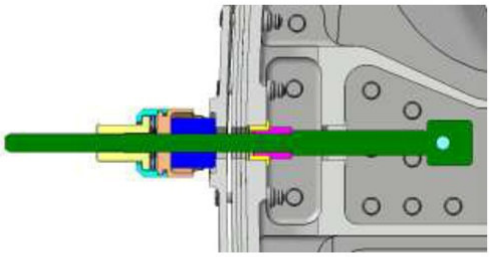


**Figure 13: Phase 5**

### 4.2.3 *INBD BUSHING REM (LH/RH)*

1. Installation PUSHER/GUIDE and GUIDE ASSY

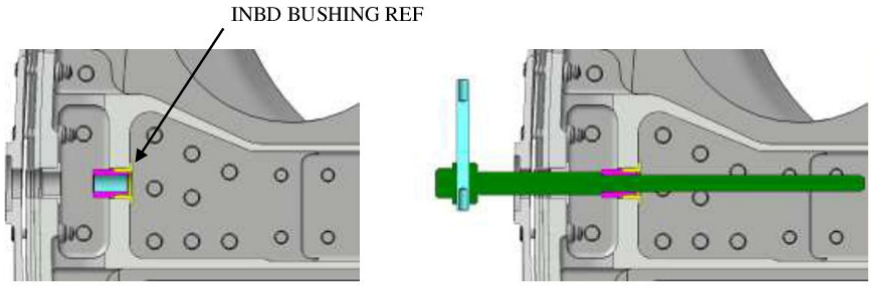



**Figure 14: Phase 1 and 2**

2. Installation REACTION ASSY and remove old inbd bushing

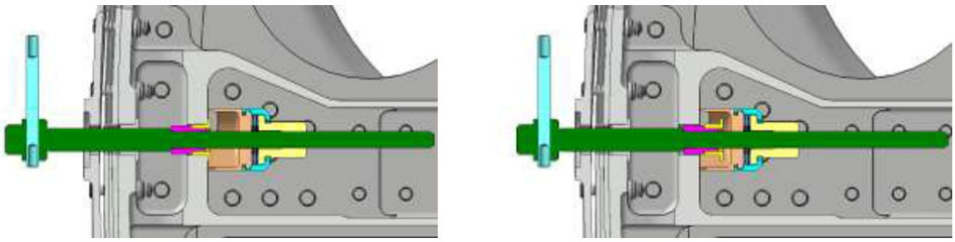


**Figure 15: Phase 3 and 4**

4.2.4 ***INBD BUSHING INSTL (LH/RH)***

1. Installation REACTION ADAPTER and PUSHER/GUIDE

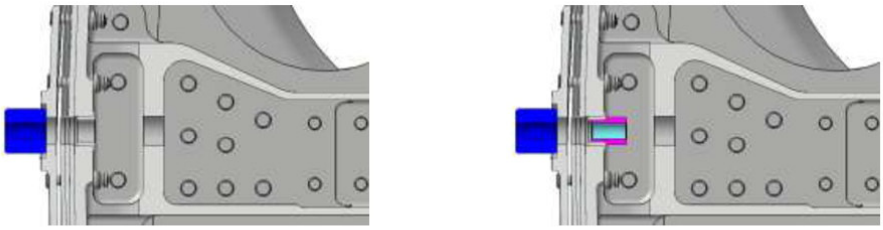


**Figure 16: Phase 1 and 2**

2. Installation REACTION ASSY, GUDE ASSY and PUSHER

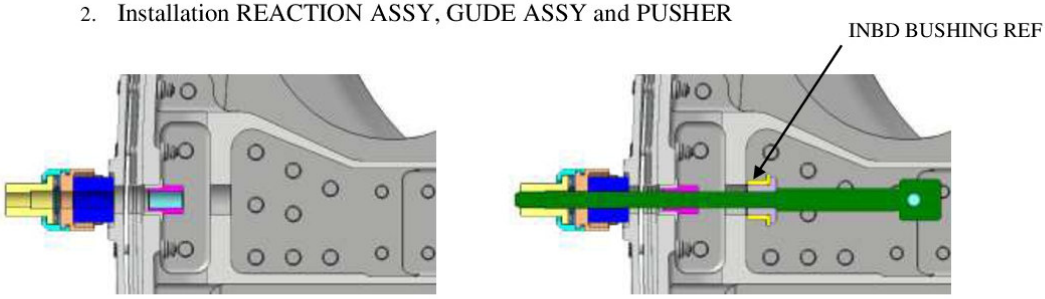



**Figure 17: Phase 3 and 4**

3. Installation inbd bushing ref

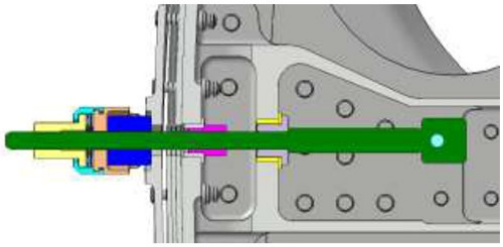


**Figure 18: Phase 5**

## 4.3 *TOOL, INBD HOLE DEBURRING*

This configuration should be used to deburr the INBD fitting hole on inner and on outer side.

For this operation, follow the instructions below and use the indicated tools:

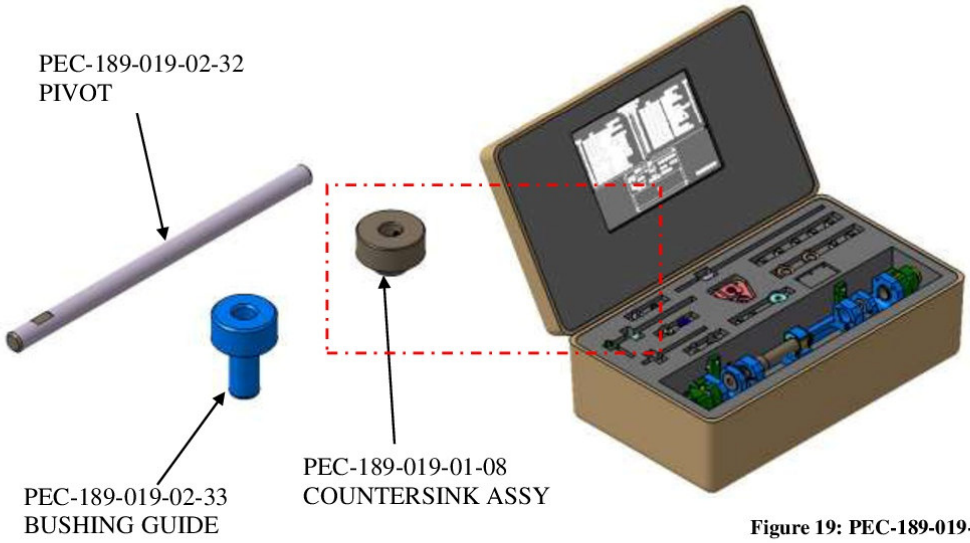



**Figure 19: PEC-189-019-01**

1. Install the BUSHING GUIDE, the PIVOT and the COUNTERSINK ASSY to work the left side of the hole

**Figure 20: Phase 1 and 2**

2. Remove the PIVOT and COUNTERSINK ASSY only

3. Install the PIVOT and the COUNTERSINK ASSY to work the right side of the hole

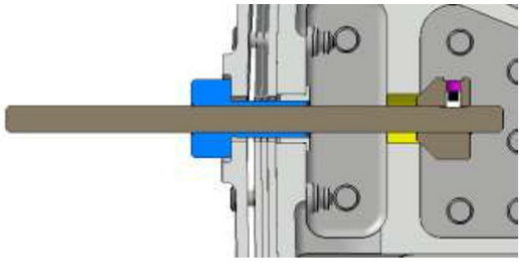


**Figure 21: Phase 3**

| | |
|---|---|
| Caution | Note:<br>Use a drill speed of 50 rpm for the deburring operation |

## 4.4 *TOOL, LWR FITTING & BUSHING REWORK*

This configuration should be used to work the inner fitting hole and to work the internal diameter of the INBD bushing.

For this operation, follow the instructions below and use the indicated tools:

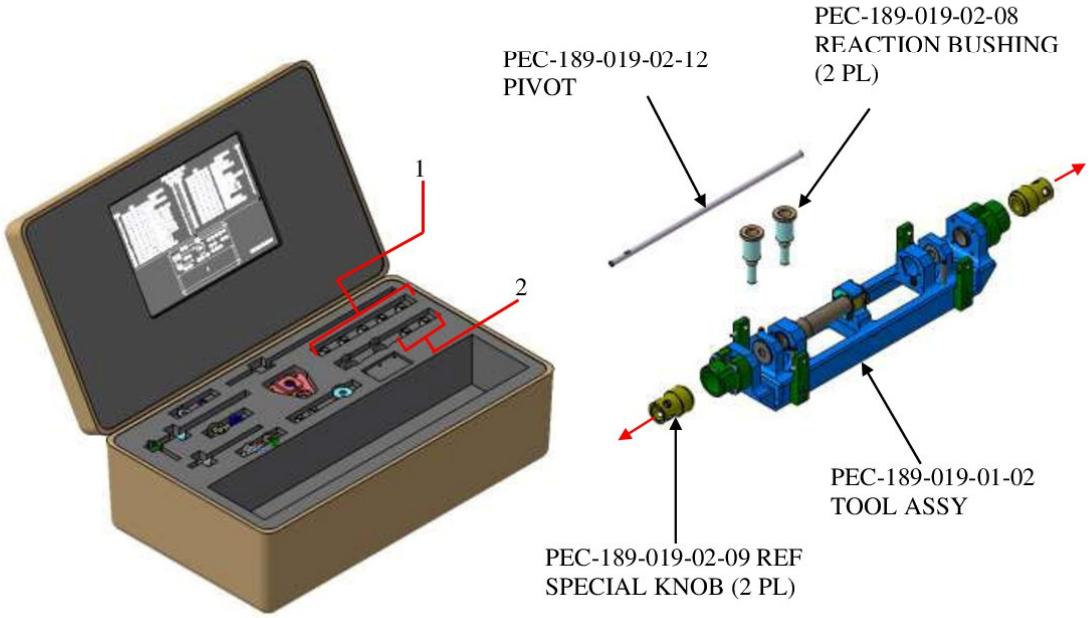



**Figure 22: PEC-189-019-01**

Pos. 1 - END MILL and REAMER for LWR FITTING hole rework

Pos. 2 - REAMER for INBD BUSHING hole rework

### 4.4.1 *LWR FITTING & BUSHING REWORK (LH SIDE)*

Note: the following images are representative of the left side working phases, for the right side please adjust tool configuration according to 4.4.2.

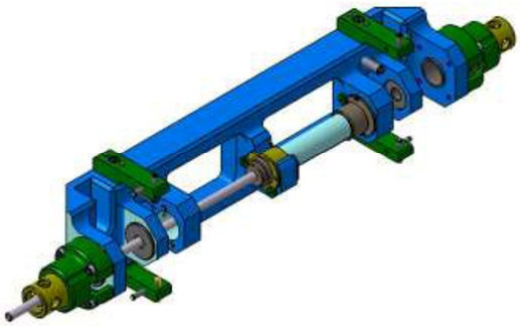


**Figure 23 : LH CONFIG**

1. Install the TOOL ASSY without the SPECIAL KNOB

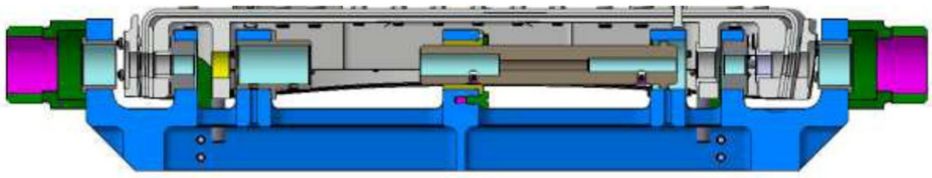


**Figure 24: Phase 1**

2. Install the REACTION BUSHING

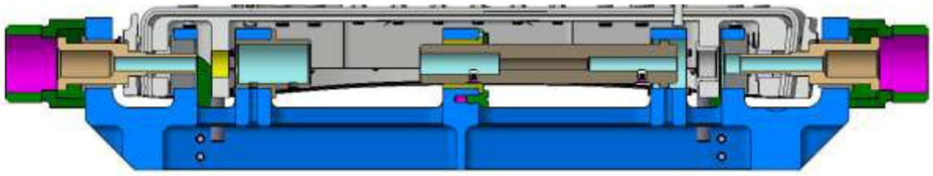


**Figure 25: Phase 2**

3. Install the SPECIAL KNOB

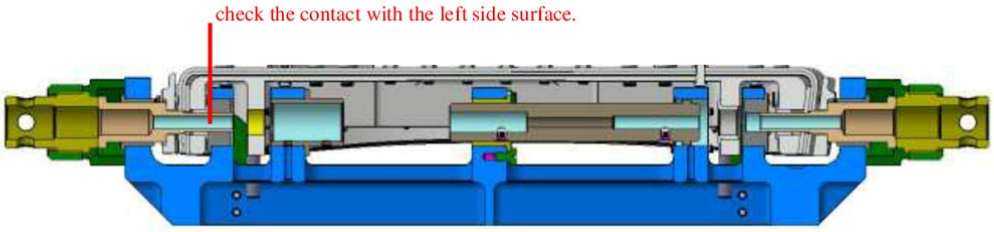



**Figure 26: Phase 3**

- First screw the SPECIAL KNOB on the working side to fit the tool bushing to the INBD fitting bushing.
- Screw the grub screw until they are in contact with the reference surface.

4. Install the PIVOT e torque the GUIDE grub screw

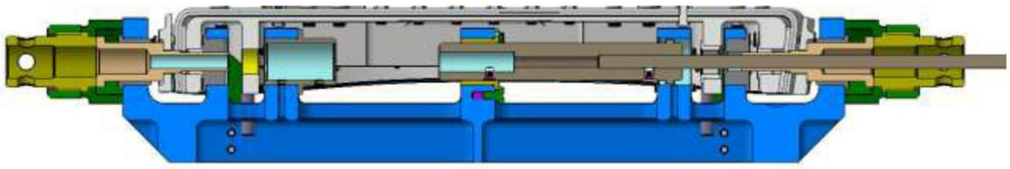


**Figure 27: Phase 4**

- Insert the PIVOT on the opposite side of the hole to be worked

5. Install the END MILL or REAMING

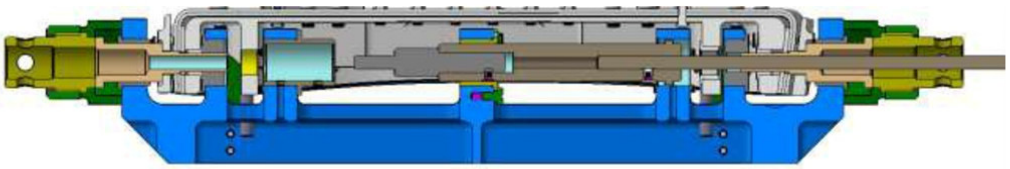


**Figure 28: Phase 5**

6. LWR FITTING LH rework config

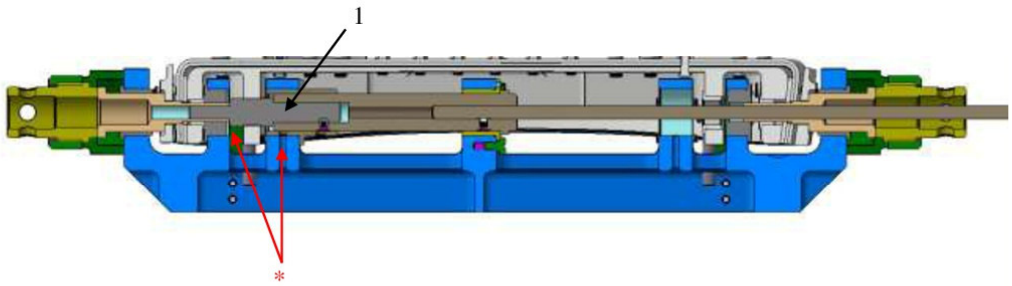



**Figure 29: Phase 6**

To debur the hole please see chapter 4.3

To install bushing please see chapter 4.2.4

7. INBD BUSHING LH rework config

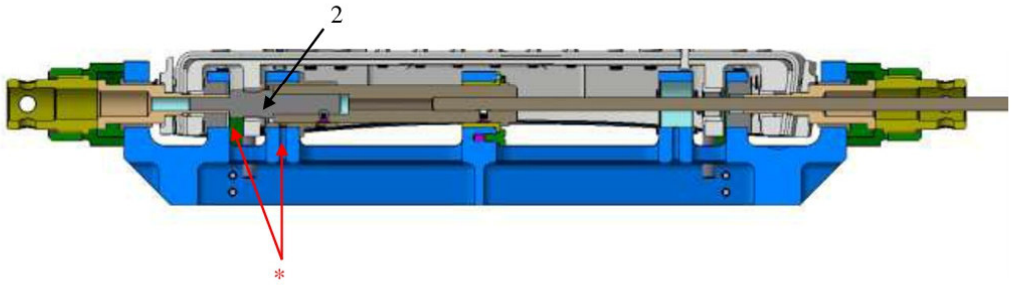



**Figure 30: Phase 7**

| | |
|---|---|
|  Caution | Note:<br>For the drill speed to be used for milling and reaming operation, see the tables below |

| END MILL<br>Helix 10°Right - Cut Right<br>Working : CRES,17-4PH H1025<br>MATERIAL: X-85 (HSS) - TREATMENT: STD | | | | |
|---|---|---|---|---|
| P/N | D | RPM | N° Cutting edge | Q.ty |
| PEC-189-019-02-13 | 16.5 | 580 | 4 | 1 |
| PEC-189-019-02-14 | 18.0 | 530 | 4 | 1 |
| PEC-189-019-02-15 | 19.0 | 500 | 4 | 1 |
| Note : | | | | |

| REAMER<br>Helix 10° Left<br>Working : CRES,17-4PH H1025<br>MATERIAL: X-85 (HSS) - TREATMENT: STD | | | | |
|---|---|---|---|---|
| P/N | D | RPM | N° Cutting edge | Q.ty |
| PEC-189-019-02-16 | 19.3 | 150 | 7 | 1 |
| PEC-189-019-02-17 | 19.5 | 150 | 7 | 1 |
| PEC-189-019-02-18 | 14.95 | 200 | 7 | 1 |
| PEC-189-019-02-19 | 15.10 | 200 | 7 | 1 |
| Note : | | | | |

| | |
|---|---|
|  Caution | Note:<br>Use Cutting lubricant and drilling spray oil where "*" indicated zones while milling and reaming. |

4.4.2 ***LWR FITTING & BUSHING REWORK (RH SIDE)***

1. Remove SPECIAL SCREW

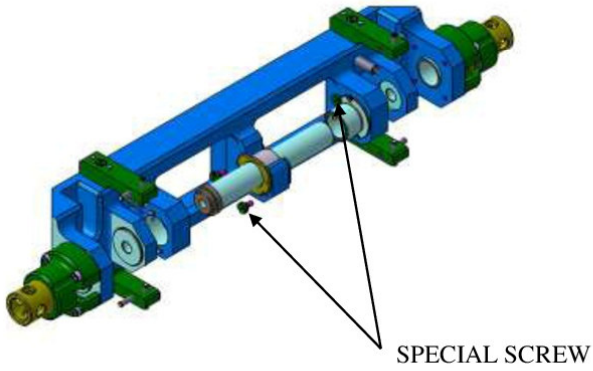



**Figure 31: Phase 1**

2. Remove BUSHING and GUIDE

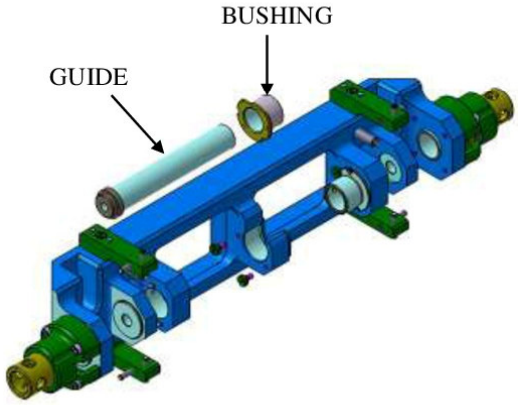



**Figure 32: Phase 2**

3. Remove the GUIDE BUSHING and install it on the opposite hole. Torque the SPECIAL SCREW.

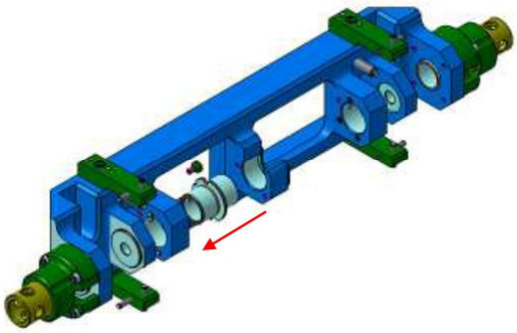


**Figure 33: Phase 3**

4. Remove the GUIDE from the BUSHING

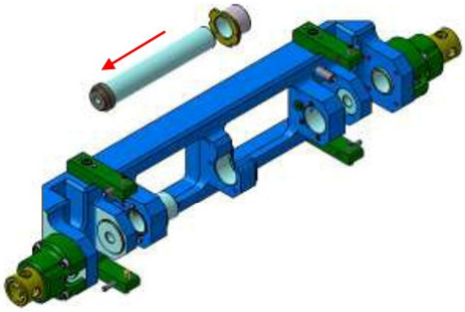


**Figure 34: Phase 4**

5. Insert the GUIDE on the opposite BUSHING side

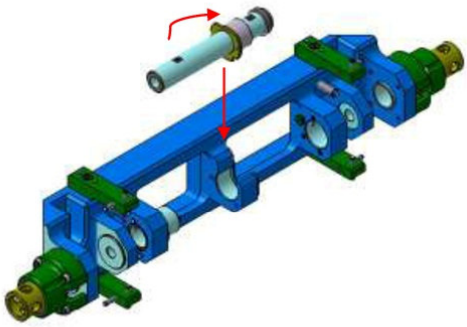


**Figure 35: Phase 5**

6. Insert both GUIDE and BUSHING in the tool and torque the SPECIAL SCREWS

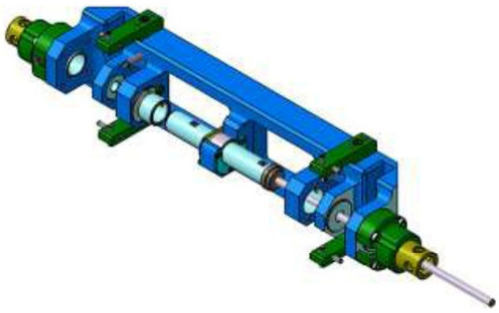


**Figure 36: RH CONFIG.**

# 5 SAFETY NOTES

Before starting to use the equipment, it is necessary to perform a visual check of all parts and see if something is damaged or missing. Do not operate with a tool partially completed, or partially assembled.

Remember to wear protective overalls, safety shoes, protective gloves and glasses during all operational and maintenance phases.

It must be noticed that the Manual can never integrally replace the adequate experience of the user; the operator must be given an adequate and specific training.

This Manual provides guidelines and instructions on the usage of the equipment that are in addition to - but are not intended to replace or modify but only to integrate - any general or specific rule, regulation, decree or law that is in force in the place where the equipment is in use.

Use of the equipment for any operation other than that specified in this document is strictly prohibited.

# 6 STORAGE

The Tool Kit shall be properly stored to provide protection from external weather conditions, damage and dirty particles.
The tools shall be stored in the dedicated transportation box (part of the kit).

Ensure that the tool parts are clean before storage.

## 6.1 *LUBRICATION BEFORE STORAGE*

Apply the Grease (MIL-PRF-23827) on all threaded parts before tool storage

# 7 MAINTENANCE

NOTE:Correct regular maintenance allows preventing most faults and safeguards of tool performance in time, thereby making it last longer.
Every year carry out regular maintenance on a regular basis as detailed in this manual.

NOTE: Periodic inspection of the equipment must be performed every 12 months (even if it has never been used)

NOTE: It is necessary to keep a record on the component log card, ANNEX I, relating to any maintenance operation performed on the equipment.

## 7.1 *CLEANING*

Before inspection and after each use, carry out the cleaning of tool components.

## 7.2 *SPECIAL TOOLS, FIXTURE AND EQUIPMENT*

No special tools, fixture and equipment are required for cleaning.

## 7.3 *PART REQUIREMENTS*

The parts to clean should be free from the moisture, emulsified water, soaps and metal shavings that can develop of corrosive acids.
They must also be free from wide grease and / or slosh deposits.

## 7.4 *MANUAL CLEANING*

A. Clean thoroughly all metal surfaces with a clean lint-free cloth (Local supply) moistened with Cleaning Solvent (MIL-PRF-680C, Type II) to do general spot cleaning of large groups areas. For web slings surfaces rub them only with a clean lint-free cloth.

B. Repeat the cleaning process again by means another clean lint-free cloth (Local supply).

C. Drying.

- Verify that the solvent should not be trapped in the cavity. Normally, the solvent evaporates at room temperature in at satisfactory manner.

## 7.5 *CHECKS*

The equipment must be checked before and after every use to insure their functionality.

### 7.5.1 *OVERALL VISUAL EXAMINATION*

NOTE:The task must be performed by operators, with intermediate skill levels.

A. Examine all parts for any of the visible damage that follows (ref. figure 37 and 38):

| N° | ACTION | ITEM POS. |
|---|---|---|
| 1 | Evidence of impact; | ALL |
| 2 | Crushing or stripping | ALL |
| 3 | Cracks; | A |
| 4 | Dents; | N/A |
| 5 | Wear; | A, B |
| 6 | Distortions; | B, C |
| 7 | Corrosion; | A, B, C |
| 8 | Loose or defective attaching parts. | N/A |
| 9 | Unsticking of parts. | D |

NOTE: Replace the parts that do not obey the inspection requirements.

B. Marking

1) Visually examine the marking.
2) Make sure that external surface and adhesion is in good condition. If the marking is damaged or not readable, proceed to restore it.

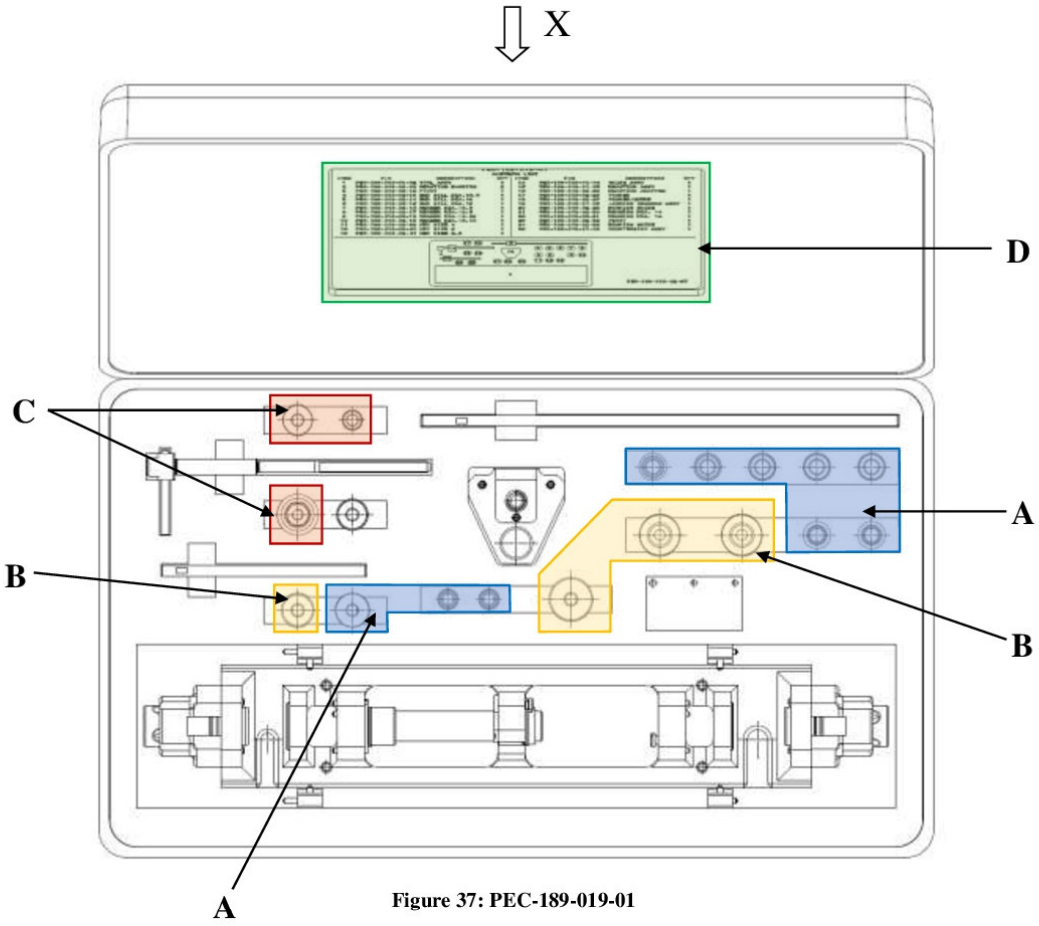



Figure 37: PEC-189-019-01

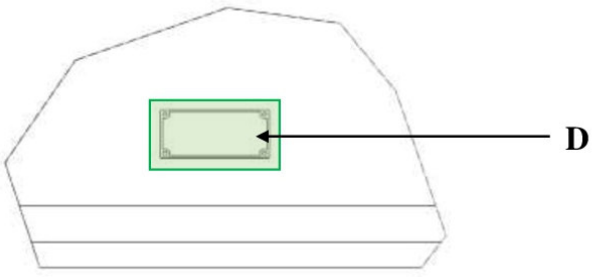



Figure 38: VIEW X

### 7.5.2 *END MILLS AND REAMER EXAMINATION*

#### 7.5.2.1 *VISUAL CHECKS*

Before and after each use, visually inspect the degradation and wear of the cutting tools.

Cutting tools must not present:

1. *CUTTER CHIPPING OR BREAKDOWN*

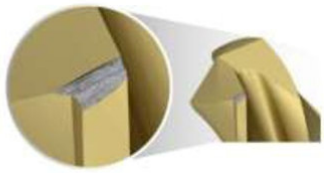


**Figure 39: Example of chipping of the main cutting edges**

**Figure 40: Example of band chipping**

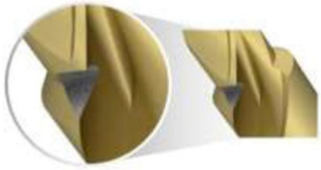


**Figure 41: Example of step chipping**

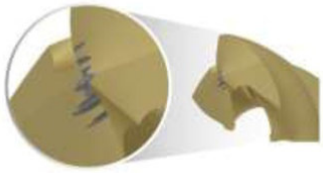


**Figure 42: Example of tip corner chipping**

2. *CLADDING ON CUTTERS*

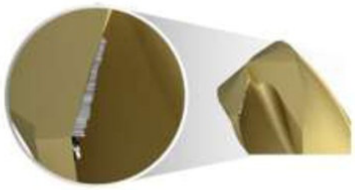


**Figure 43: Example**

N.B. *Pay attention to localized changes in color due to materials. Possible breakdown.*

| | |
|---|---|
| Caution | Note:<br>Replace cutting tools that show this degree of wear or degradation |

7.5.2.2 ***DIMENSIONAL CHEKS***

The items to be checked before and after use are:

1. *PEC-189-019-02-04 GUIDE BUSHING*
   Check the internal diameter of the Bushing Guide with a micrometer for internal dimensions.
   The size must be: Ø22.000 / 22.010

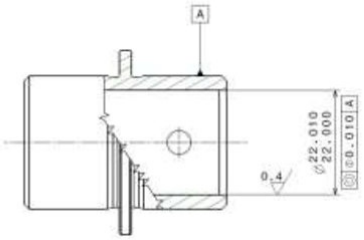



**Figure 44: PEC-189-019-02-04**

2. *PEC-189-019-02-08 REACTION BUSHING*
   Check the internal diameter of the Reaction Bushing with a micrometer for internal dimensions.
   The size must be: Ø8.000 / 8.015

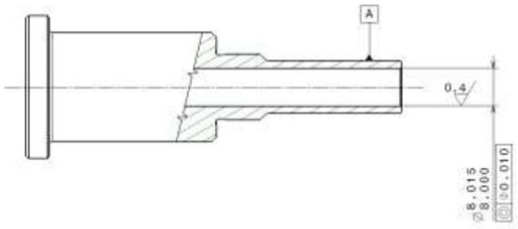
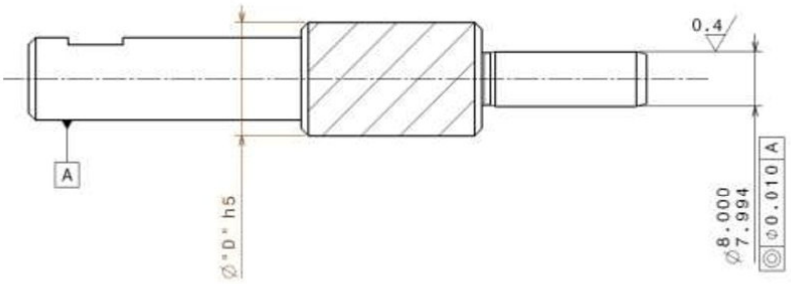



**Figure 45: PEC-189-019-02-08**

3. *PEC-189-019-02-11 GUIDE*
   Check the external diameter of the Guide with a micrometer for external dimensions
   The size must be: Ø21.990 / 21.995

4. *END MILS AND REAMER*
Check the dimensions on the drawing and those shown in the table with a micrometer for external dimensions




| END MILLS | | |
|---|---|---|
| P/N | "D"h5 | N° Cutting edge |
| PEC-189-019-02-13 | 16.500/16.492 | 4 |
| PEC-189-019-02-14 | 18.000/17.992 | 4 |
| PEC-189-019-02-15 | 19.000/18.991 | 4 |
| Note : | | |

| REAMER | | |
|---|---|---|
| P/N | "D"h5 | N° Cutting edge |
| PEC-189-019-02-16 | 19.300/19.291 | 7 |
| PEC-189-019-02-17 | 19.500/19.491 | 7 |
| PEC-189-019-02-18 | 14.950/14.942 | 7 |
| PEC-189-019-02-19 | 15.100/15.092 | 7 |
| Note : | | |

| | |
|---|---|
| **Caution** | Note:<br>Parts that have critical dimensions outside the required tolerances must be replaced with new ones. |

| | |
|---|---|
| **Notice** | N.B. If you do not have the measuring instruments listed in paragraph 7.6, take the components to be checked to a specialized measuring center. |

## 7.6 *SPECIAL TOOLS, FIXTURE AND EQUIPMENT*

- For items PEC-189-019-02-11 and PEC-189-019-02-13/14/15 use a millesimal micrometer for external dimensions with a measuring range from 0 to 25 mm.

**Figure 46: Example of millesimal micrometer for external dimensions**

- For items PEC-189-019-02-16/17/18/19 use a millesimal micrometer for external dimensions and equipped with prism jig with a measuring range from 0 to 25 mm.

**Figure 47: Example of millesimal micrometer for external dimensions and equipped with prism jig**

- For items PEC-189-019-02-04 and PEC-189-019-02-08 use millesimal micrometers for internal dimensions with a measuring range from 5 to 30 mm


**Figure 48: Example of millesimal micrometer for internal dimensions**

### 7.7 *REPLACEMENT*

All the parts for which it is allowed the components replacement are listed in Paragraph 9.

The replacement of these parts does not require specific procedures.

## 8 CALIBRATION

No Calibration is required for Maintenance.

## 9 SPARE PARTS LIST

Referring to the previous maintenance operation, a spare parts list is reported below:

### 9.1 *TOOL, SPOT FACE & COMPOSITES SKIN TAIL REAMING*

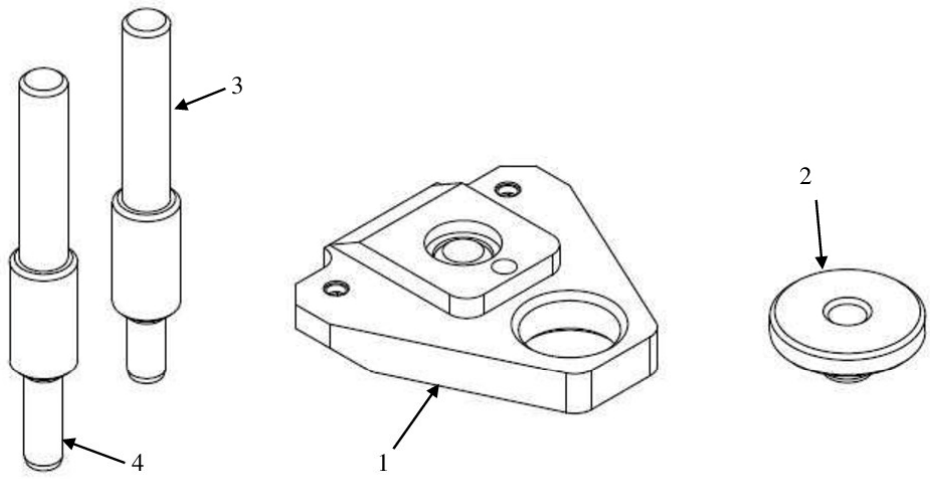



**Figure 49: EQUIPMENT FOR RAMING**

| ITEM | P/N | DESCRIPTION | Q. TY | SUPPLIER |
|---|---|---|---|---|
| 1 | PEC-189-019-01-06 | LOCKING REAMING ASSY | 1 | PEC |
| 2 | PEC-189-019-02-29 | BUSHING GUIDE | 1 | PEC |
| 3 | PEC-189-019-02-30 | REAMER Ø 14.0 | 1 | PEC |
| 4 | PEC-189-019-02-31 | REAMER Ø 14.0 | 1 | PEC |

## 9.2 *TOOL, INBD & OUTBD BUSHING REM/INSTL*

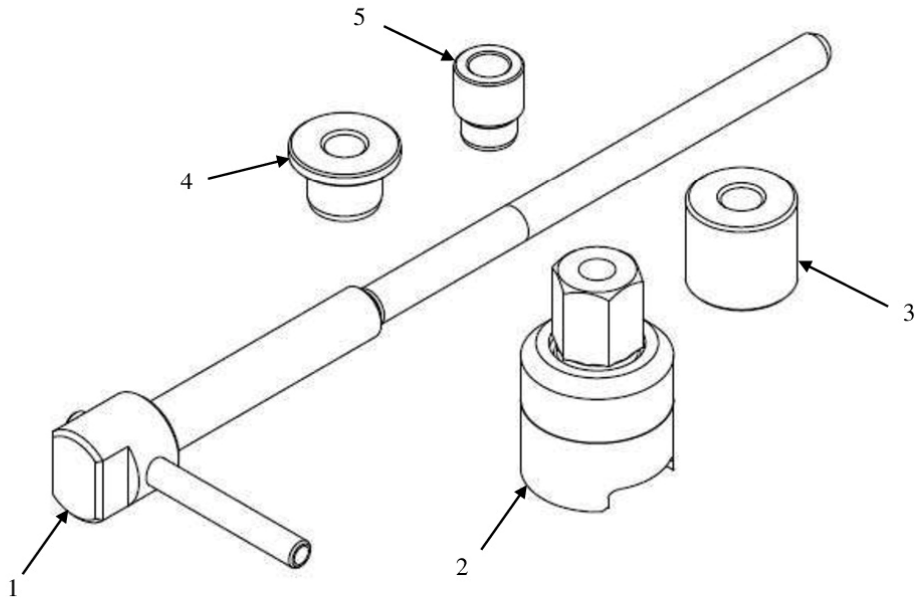



**Figure 50: EQUIPMENT FOR REM/INSTL BUSHING**

| ITEM | P/N | DESCRIPTION | Q. TY | SUPPLIER |
|---|---|---|---|---|
| 1 | PEC-189-019-01-04 | GUIDE ASSY | 1 | PEC |
| 2 | PEC-189-019-01-05 | REACTION ASSY | 1 | PEC |
| 3 | PEC-189-019-02-25 | REACTION ADAPTER | 1 | PEC |
| 4 | PEC-189-019-02-26 | PUSHER | 1 | PEC |
| 5 | PEC-189-019-02-27 | PUSHER/GUIDE | 1 | PEC |

## 9.3 *TOOL, INBD HOLE DEBURRING*

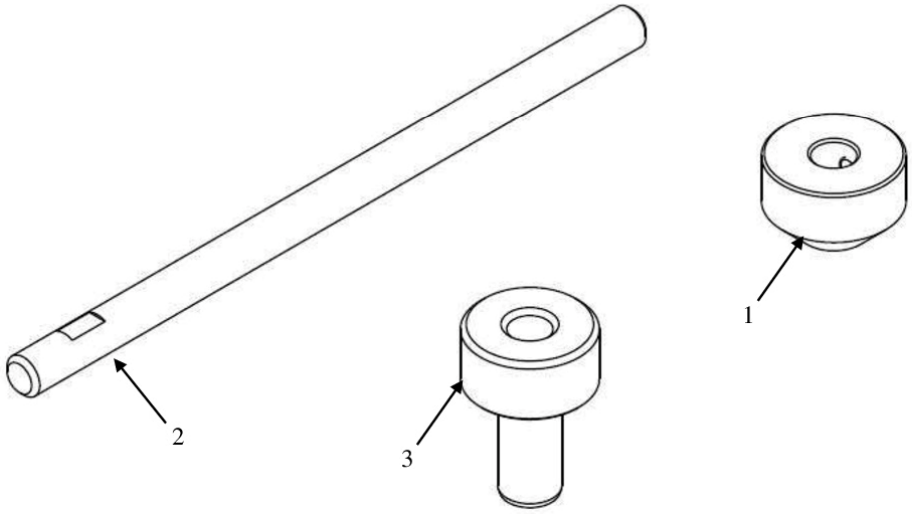



**Figure 51: EQUIPMENT FOR DEBURING**

| ITEM | P/N | DESCRIPTION | Q. TY | SUPPLIER |
|---|---|---|---|---|
| 1 | PEC-189-019-01-08 | COUNTERSINK ASSY | 1 | PEC |
| 2 | PEC-189-019-02-32 | PIVOT | 1 | PEC |
| 3 | PEC-189-019-02-33 | BUSHING GUIDE | 1 | PEC |

## 9.4 *TOOL, LWR FITTING & BUSHING REWORK*

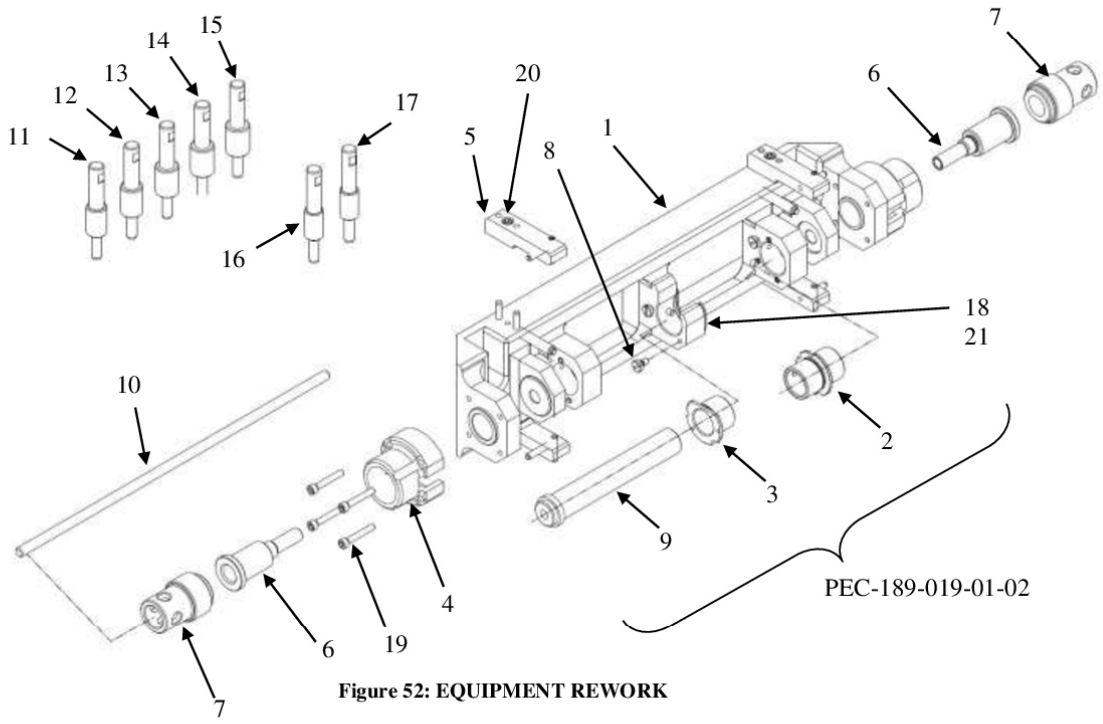



**Figure 52: EQUIPMENT REWORK**

| ITEM | P/N | DESCRIPTION | Q. TY | SUPPLIER |
|---|---|---|---|---|
| 1 | PEC-189-019-01-03 | SUPPORT ASSY | 1 | PEC |
| 2 | PEC-189-019-02-04 | GUIDE BUSHING | 1 | PEC |
| 3 | PEC-189-019-02-05 | BUSHING | 1 | PEC |
| 4 | PEC-189-019-02-06 | THREADED BUSHING | 2 | PEC |
| 5 | PEC-189-019-02-07 | BRACKET | 4 | PEC |
| 6 | PEC-189-019-02-08 | RACTION BUSHING | 2 | PEC |
| 7 | PEC-189-019-02-09 | SPECIAL KNOB | 2 | PEC |
| 8 | PEC-189-019-02-10 | SPECIAL SCREW | 4 | PEC |
| 9 | PEC-189-019-02-11 | GUIDE | 1 | PEC |
| 10 | PEC-189-019-02-12 | PIVOT | 1 | PEC |
| 11 | PEC-189-019-02-13 | END MIL Ø16.5 | 1 | PEC |
| 12 | PEC-189-019-02-14 | END MIL Ø18 | 1 | PEC |
| 13 | PEC-189-019-02-15 | END MIL Ø19 | 1 | PEC |
| 14 | PEC-189-019-02-16 | REAMER Ø19.3 | 1 | PEC |
| 15 | PEC-189-019-02-17 | REAMER Ø19.5 | 1 | PEC |
| 16 | PEC-189-019-02-18 | REAMER Ø14.95 | 1 | PEC |
| 17 | PEC-189-019-02-18 | REAMER Ø15.10 | 1 | PEC |
| 18 | PEC-189-019-02-38 | THICKNESS | 1 | PEC |
| 19 | NAS1351-3-20 | SCREW | 8 | STD |
| 20 | NAS1351-3-10 | SCREW | 4 | STD |
| 21 | MS24693-C2 | SCREW | 3 | STD |

10 **ANNEX I**

***Log Card.***

*LogCard*

| CYCLE "A" | | | | | CYCLE "B" | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USES | CHECKS & S/N | NOTES | DATE | SIGNATURE /STAMP | USES | CHECKS & S/N | NOTES | DATE | SIGNATURE /STAMP |
| 1 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 1 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 2 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 2 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 3 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 3 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 4 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 4 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 5 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 5 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| CHECKED BY MFD on | | | | 9 | CHECKED BY MFD on | | | | 9 |

Apex Legenda

1 *Check described in paragraph 7.5.2.1 VISUAL CHECKS, before equipment use*
2 *Check described in paragraph 7.5.2.2 DIMENSIONAL CHEKS, before equipment use*
3 *Check described in paragraph 7.5.2.1 VISUAL CHECKS, after equipment use*
4 *Check described in paragraph 7.5.2.2 DIMENSIONAL CHEKS, after equipment use*
5 *Record aircraft S/N where the rework has been carried out*
6 *Record all the corrective actions following the failed checks*
7 *Record the date of checks were carried out and the equipment's use*
8 *Signature of the personnel who carried out the checks / use of the equipment and quality dept. stamp*
9 *Area dedicated to the department / supplier that carries out the periodic revision of the equipment*

*LogCard*

| CYCLE "C" | | | | | CYCLE "D" | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USES | CHECKS & S/N | NOTES | DATE | SIGNATURE /STAMP | USES | CHECKS & S/N | NOTES | DATE | SIGNATURE /STAMP |
| 1 | □1 □2 S/N5 □3 □4 | | | | 1 | □1 □2 S/N5 □3 □4 | | | |
| 2 | □1 □2 S/N5 □3 □4 | | | | 2 | □1 □2 S/N5 □3 □4 | | | |
| 3 | □1 □2 S/N5 □3 □4 | | | | 3 | □1 □2 S/N5 □3 □4 | | | |
| 4 | □1 □2 S/N5 □3 □4 | | | | 4 | □1 □2 S/N5 □3 □4 | | | |
| 5 | □1 □2 S/N5 □3 □4 | | | | 5 | □1 □2 S/N5 □3 □4 | | | |
| CHECKED BY MFD on | | | | | CHECKED BY MFD on | | | | |

Apex Legenda

1 *Check described in paragraph 7.5.2.1 VISUAL CHECKS, before equipment use*
2 *Check described in paragraph 7.5.2.2 DIMENSIONAL CHEKS, before equipment use*
3 *Check described in paragraph 7.5.2.1 VISUAL CHECKS, after equipment use*
4 *Check described in paragraph 7.5.2.2 DIMENSIONAL CHEKS, after equipment use*
5 *Record aircraft S/N where the rework has been carried out*
6 *Record all the corrective actions following the foiled checks*
7 *Record the date of checks were carried out and the equipment's use*
8 *Signature of the personnel who carried out the checks / use of the equipment and quality dept. stamp*
9 *Area dedicated to the department / supplier that carries out the periodic revision of the equipment*

*LogCard*

| CYCLE "E" | | | | | CYCLE "F" | | | | |
|---|---|---|---|---|---|---|---|---|---|
| USES | CHECKS & S/N | NOTES | DATE | SIGNATURE /STAMP | USES | CHECKS & S/N | NOTES | DATE | SIGNATURE /STAMP |
| 1 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 1 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 2 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 2 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 3 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 3 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 4 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 4 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| 5 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 | 5 | □1 □2 S/N5 □3 □4 | 6 | 7 | 8 |
| CHECKED BY MFD on | | | | 9 | CHECKED BY MFD on | | | | 9 |

Apex Legenda

1 *Check described in paragraph 7.5.2.1 VISUAL CHECKS, before equipment use*
2 *Check described in paragraph 7.5.2.2 DIMENSIONAL CHEKS, before equipment use*
3 *Check described in paragraph 7.5.2.1 VISUAL CHECKS, after equipment use*
4 *Check described in paragraph 7.5.2.2 DIMENSIONAL CHEKS, after equipment use*
5 *Record aircraft S/N where the rework has been carried out*
6 *Record all the corrective actions following the failed checks*
7 *Record the date of checks were carried out and the equipment's use*
8 *Signature of the personnel who carried out the checks / use of the equipment and quality dept. stamp*
9 *Area dedicated to the department / supplier that carries out the periodic revision of the equipment*

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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. |
|---|---|---|---|---|
| | | | | |
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| | | | | |

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.