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AgustaWestland Products

# SERVICE BULLETIN

**N° 139-728**

**DATE:** October 11, 2022

**REV. :** /

## TITLE

**ATA 64 – TAIL ROTOR DUPLEX BEARING REPETITIVE INSPECTIONS**

## REVISION LOG

First Issue

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

# 1. PLANNING INFORMATION

## A. EFFECTIVITY

**Part I:**

All AB139/AW139 helicopters installing Tail Rotor Duplex Bearing P/N 3G6430V00151, P/N 3G6430V00152 or P/N 3G6430V00153 that have NOT been removed and reinstalled on sliding control assembly P/N 3G6430A02531.

**Part II and Part III:**

All AB139/AW139 helicopters installing Tail Rotor Duplex Bearing P/N 3G6430V00151, P/N 3G6430V00152 or P/N 3G6430V00153 that have NOT been removed and reinstalled on sliding control assembly P/N 3G6430A02531 and that have logged more than 1200 FH.

## B. COMPLIANCE

**Part I:**

Within and not later than 50 FH or 2 months whichever occurs first after the issue of this Service Bulletin and then every 50 FH.

**Part II:**

Within and not later than 50 FH or 2 months whichever occurs first after the issue of this Service Bulletin and then every 100 FH.

**Part III:**

Within and not later than 50 FH or 2 months whichever occurs first after the issue of this Service Bulletin and then every 300 FH or 1 year whichever occurs first.

## C. CONCURRENT REQUIREMENTS

N.A.

## D. REASON

This Service Bulletin is issued in order to introduce repetitive inspections of the TRDB P/N 3G6430V00151, P/N 3G6430V00152 or P/N 3G6430V00153.

## E. DESCRIPTION

Leonardo Helicopters has developed this Service Bulletin in order to provide the necessary instruction on how to perform different repetitive inspections on the TRDB.

Part I of this Service Bulletin gives instructions to apply a slippage mark between the Pitch Control Rod and the trunnion installed on the back-end of the TRA, provided that the cotter pin is perfectly straight, and to perform repetitive inspections for absence of

rotation of the parts. If the inspection fails, PSE must be contacted before next flight for findings evaluation and to receive related maintenance actions.

Part II of this Service Bulletin gives instructions to inspect the TRDB in order to check its condition and for absence of particles within bearing grease. If the inspection fails, the bearing must be replaced before next flight and returned to LHD.

Part III of this Service Bulletin gives instructions to inspect the TRDB by checking the absence of axial play and by performing a roughness check. If the inspection fails, the bearing must be replaced before next flight and returned to LHD.

This Service Bulletin requires additional maintenance actions with respect to SB 139-725, latest revision, which remains applicable.

## F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

## G. MANPOWER

To comply with this Service Bulletin the following MMH are deemed necessary:

Part I: approximately half (0.5) MMH if panel installation is not required or one (1) MMH if required.

Part II: approximately one (1) MMH without bearing replacement or seven (7) MMH with bearing replacement.

Part II: approximately seven (7) MMH without bearing replacement or eight (8) MMH with bearing replacement.

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:

| DATA MODULE | | DESCRIPTION | PART |
|---|---|---|---|
| DM01 | 39-A-00-20-00-00A-120A-A | Helicopter on ground for a safe maintenance | I, II, III |
| DM02 | 39-A-06-41-00-00A-010A-A | Access doors and panels - General data | I |
| DM03 | 39-A-20-00-00-00A-69CA-A | Assembled parts - Slippage Marks | I |
| DM04 | 39-A-64-31-03-00A-520A-A | Cover - Remove procedure | II, III |
| DM05 | 39-A-64-31-04-01A-921A-B | Duplex bearing (sliding control assembly) - Replacement (remove and install a new item) | II, III |
| DM06 | 39-A-64-31-03-00A-720A-A | Cover - Install procedure | II |
| DM07 | 39-A-64-31-07-00A-520A-A | Boot - Remove procedure | III |
| DM08 | 39-A-64-31-01-00A-520A-A | Pitch link - Remove procedure | III |
| DM09 | 39-A-64-31-02-00A-520A-A | Scissors - Remove procedure | III |
| DM10 | 39-A-64-31-04-00A-520A-A | Sliding control assembly - Remove procedure | III |
| DM11 | 39-A-64-31-04-01A-320A-B | Duplex bearing (sliding control assembly) - Operation test | III |
| DM12 | 39-A-64-31-04-00A-720A-A | Sliding control assembly - Install procedure | III |

## 2) ACRONYMS & ABBREVIATIONS

| | |
|---|---|
| AMDI | Aircraft Material Data Information |
| AMP | Aircraft Maintenance Publication |
| DM | Data Module |
| DOA | Design Organization Approval |
| EASA | European Aviation Safety Agency |
| FH | Flight Hours |
| IPD | Illustrated Parts Data |
| ITEP | Illustrated Tools and Equipment Publication |
| LHD | Leonardo Helicopters Division |
| MMH | Maintenance Man Hours |
| MMIR | Maintenance Malfunction Inspection Report |
| P/N | Part Number |
| PCR | Pitch Control Rod |
| PSE | Product Support Engineering |

| | |
|---|---|
| S/N | Serial Number |
| TRA | Tail Rotor Actuator |
| TRDB | Tail Rotor Duplex Bearing |

### 3) ANNEX

N.A.

## J. PUBLICATIONS AFFECTED

N.A.

## K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

# 2. MATERIAL INFORMATION

## A. REQUIRED MATERIALS

### 1) PARTS

**PART I**

| # | P/N | ALTERNATIVE P/N | DESCRIPTION | Q.TY | LVL | NOTE | LOG P/N |
|---|---|---|---|---|---|---|---|
| 1 | 3G6430V00153 | | Duplex bearing | 1 | . | (1) | - |
| 2 | 3G6730V00732 | | Tail rotor actuator | 1 | . | (1) | - |

**PART II**

| # | P/N | ALTERNATIVE P/N | DESCRIPTION | Q.TY | LVL | NOTE | LOG P/N |
|---|---|---|---|---|---|---|---|
| 3 | 3G6430V00153 | | Duplex bearing | 1 | . | (2) | - |

**PART III**

| # | P/N | ALTERNATIVE P/N | DESCRIPTION | Q.TY | LVL | NOTE | LOG P/N |
|---|---|---|---|---|---|---|---|
| 4 | 3G6430V00153 | | Duplex bearing | 1 | . | (2) | - |

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 |
|---|---|---|---|---|---|
| 5 | DX 70002 | Marking paint (C263) | AR | (3) | I |
| 6 | TT-N-95-B /<br>Code No. 531055030 | Aliphatic Naphtha (C059) | AR | (3) | II |

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

### 3) LOGISTIC MATRIX

N.A.

**NOTE**

(1) Item required only if confirmed by PSE.

(2) Item required only in case its replacement is needed because of a failed inspection.

(3) Item to be procured as local supply.

## B. SPECIAL TOOLS

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

| # | P/N | DESCRIPTION | Q.TY | NOTE | PART |
|---|---|---|---|---|---|
| 7 | Commercial | Light source | 1 | (B1) | I |
| 8 | Commercial | Transparent container | 1 | (B1) | II |
| 9 | Commercial | Spatula | 1 | (B1) | II |
| 10 | Commercial | Magnet | 1 | (B1) | II |
| 11 | 3G6405G04032 | Tool kit, T/R duplex bearing removal/installation | 1 | (B2) | I, II, III |

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.

(B2) Item needed only if bearing replacement is required.

## C. INDUSTRY SUPPORT INFORMATION

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

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

With reference to Part I inspection, note that only if PSE will confirm the replacement, please Issue relevant MMIR form to your Warranty Administration Department. PSE approval is mandatory to evaluate your request, otherwise MMIR will be rejected.

With reference to Part II and Part III, if any of the inspections prescribed fails, please Issue relevant MMIR form to your Warranty Administration Dpt. including the following information/documents:

- Pictures of the inspection findings, if applicable;
- Log card of sliding control assembly P/N 3G6430A02531;
- Inspection Report in Figure 4, completed in every part;

If all the required documentation is not provided, MMIR will be rejected.

NOTE: WRM will include RETURN MATERIAL AUTHORIZATION (RMA) number; the TRDB P/N 3G6430V00151, P/N 3G6430V00152 or P/N 3G6430V00153 or TRA P/N 3G6730V00731 or P/N 3G6730V00732 disembarked from the aircraft have to be returned to LHD within fifteen (15) calendar days after the shipment of the replacement part. In case of missing return within fifteen (15) calendar days, Customer will be invoiced for the price of the replacement part.

## 3. ACCOMPLISHMENT INSTRUCTIONS

**GENERAL NOTES**

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.

**PART I**

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.

**NOTE**

If the slippage mark is present, the removal of the panels may not be necessary as visual access may be possible thru the panels grids.

2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figure 1, remove all external panels as required to gain access to the area affected by the inspection.
3. With reference to Figure 1 and Figure 2, perform the inspection for rotation between the parts according to the following procedure:
   - 3.1 If a slippage mark is not present on the mating edge between the trunnion and the PCR perform the inspection and the slippage marking application according to the following procedure, otherwise skip to step 3.2:
     - 3.1.1 With reference to Figure 2 view B, check that the castellated holes of the trunnion are aligned with those of the pitch control rod that goes thru it and check that the cotter pin is perfectly straight and not bended by a rotation movement. If rotation is found skip to step 4.
     - 3.1.2 With reference to Figure 1 view A and in accordance with the applicable steps of AMP DM 39-A-20-00-00-00A-69CA-A apply a slippage mark on the mating edge between the trunnion and the pitch control rod on the rearward facing side, near the cotter pin.
     - 3.1.3 Skip to step 5.

**NOTE**

If necessary, a light source can be used to better lighten the inspection area when looking thru the panels grids.

3.2 If the slippage mark is present, with reference to Figure 1 view A, check for the alignment of the slippage mark. If rotation is found proceed to step 4, otherwise skip to step 5.

4. If rotation is found in step 3.1.1 or step 3.2, perform the following procedure before next flight:
   4.1 Take a picture of the back-end of the TRA, with clear evidence of the rotation.
   4.2 Fill in every part the Inspection Report in Figure 4.
   4.3 Submit the picture taken in step 4.1 and the Inspection Report filled in step 4.2 thru technical query on Leonardo WebPortal or to PSE (engineering.support.lhd@leonardo.com) for finding evaluation and to receive related maintenance actions.
5. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
6. Send the attached compliance form to the following mail box:

   engineering.support.lhd@leonardo.com

   As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”

**PART II**

1. In accordance with AMP DM 39-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 39-A-64-31-03-00A-520A-A and with reference to Figure 3, remove the cover from the helicopter.

**NOTE**

To perform the inspection of the TRDB do not remove it from sliding control assembly P/N 3G6430A02531.

3. Perform the inspection of the TRDB in accordance with the following procedure:
   - 3.1 Inspect the visible parts of the TRDB (including the seals) for absence of wear, damages, corrosion; in case of findings skip to step 4, otherwise proceed to step 3.2.
   - 3.2 Check the visible part of the TRDB for particles absence; if particles are present skip to step 4, otherwise proceed to step 3.3.
   - 3.3 Check for grease leakage on the visible part of the TRDB; if any leakage is present proceed to step 3.4, otherwise skip to step 5.
   - 3.4 Check if any particle is found in the grease leakage by finger touch; in case of findings skip to step 4, otherwise proceed to step 3.5.
   - 3.5 Perform grease inspection for magnetic/metallic particles according to the following procedure:
     - 3.5.1 Put a small quantity of leaked grease using a small spatula in a transparent container.
     - 3.5.2 Add a solvent (aliphatic naphtha).
     - 3.5.3 Put a magnet on the bottom out side of the container.
     - 3.5.4 Check for presence of magnetic particles in the solution; in case of findings proceed to step 4, otherwise skip to step 5.
4. Replace the TRDB in accordance with the following procedure:
   - 4.1 Send pictures of the inspection findings and of sliding control assembly P/N 3G6430A02531 log card, with indication of bearing FH, and the Inspection Report in Figure 4 thru technical query on Leonardo WebPortal or to PSE (engineering.support.lhd@leonardo.com).
   - 4.2 In accordance with AMP DM 39-A-64-31-04-01A-921A-B and with reference to Figure 3 View C, replace the TRDB with a new item and send the removed one to LHD.
5. In accordance with AMP DM 39-A-64-31-03-00A-720A-A and with reference to Figure 3,

install the cover on the helicopter.

6. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
7. Send the attached compliance form to the following mail box:

   engineering.support.lhd@leonardo.com

   As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

**PART III**

1. In accordance with AMP DM39-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 39-A-64-31-03-00A-520A-A and with reference to Figure 3, remove the cover from the helicopter.
3. In accordance with the applicable steps of AMP DM 39-A-64-31-07-00A-520A-A, disconnect the boot from the slider.
4. In accordance with AMP DM 39-A-64-31-01-00A-520A-A, remove all the pitch links from the tail rotor.
5. In accordance with the applicable steps of AMP DM 39-A-64-31-02-00A-520A-A, remove all the scissors from the tail rotor.
6. Check for absence of axial play when trying to move the spider back and forth along the PCR; if axial play is detected skip to step 9, otherwise proceed to step 7.
7. In accordance with AMP DM 39-A-64-31-04-00A-520A-A and with reference to Figure 3, remove the sliding control assembly P/N 3G6430A02531 from the helicopter.
8. In accordance with AMP DM 39-A-64-31-04-01A-320A-B, perform the TRDB operation test and check for absence of roughness in its movement. If test fails proceed to step 9, otherwise skip to step 10.
9. Replace the TRDB in accordance with the following procedure:
   - 9.1 Send pictures of sliding control assembly P/N 3G6430A02531 log card, with indication of bearing FH, and the Inspection Report in Figure 4 thru technical query on Leonardo WebPortal or to PSE (engineering.support.lhd@leonardo.com).
   - 9.2 In accordance with AMP DM 39-A-64-31-04-01A-921A-B and with reference to Figure 3 View C, replace the TRDB with a new item and send the removed one to LHD.
10. In accordance with AMP DM 39-A-64-31-04-00A-720A-A and with reference to Figure 3, install the sliding control assembly on the helicopter.
11. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
12. Send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardo.com

    As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

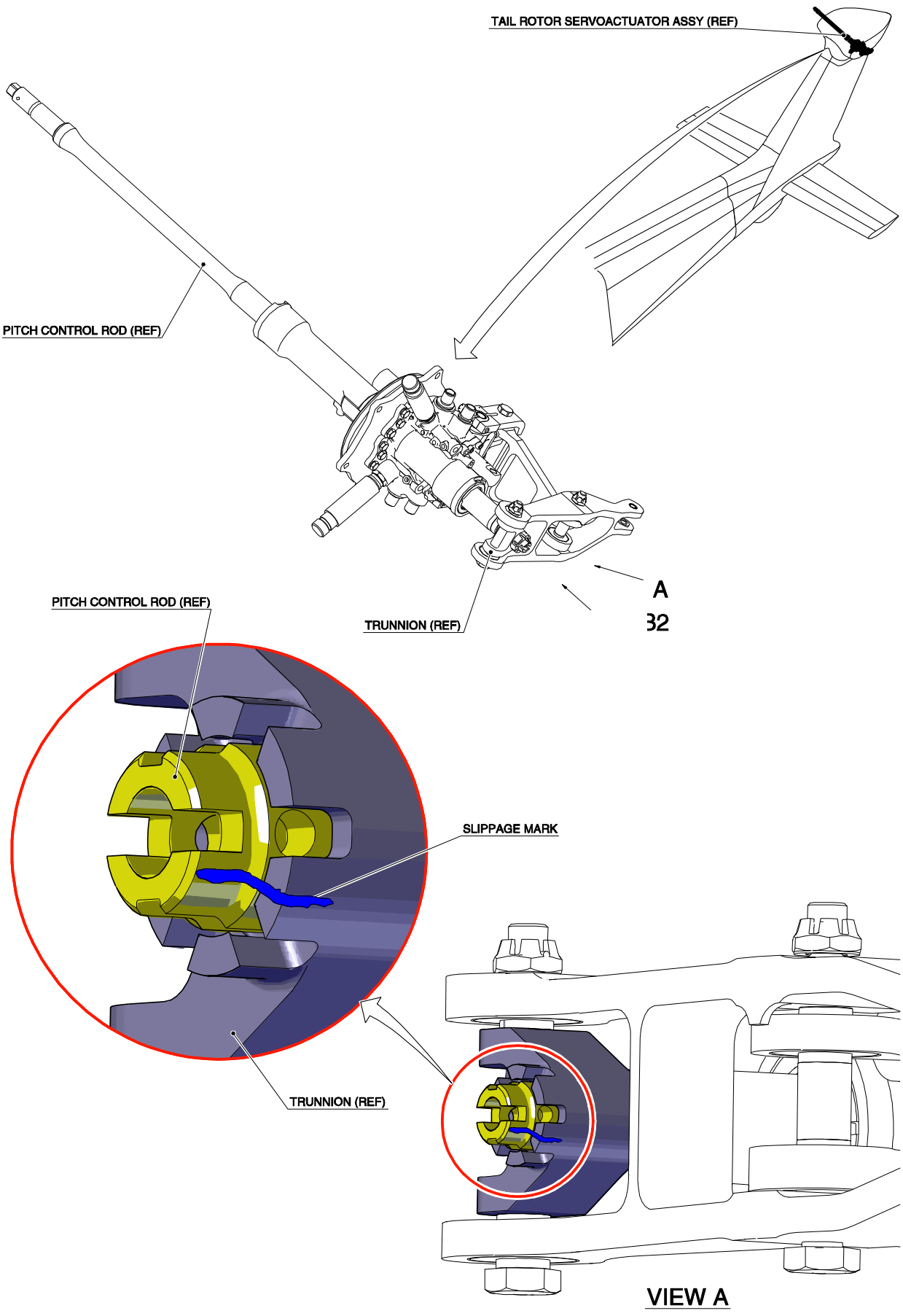
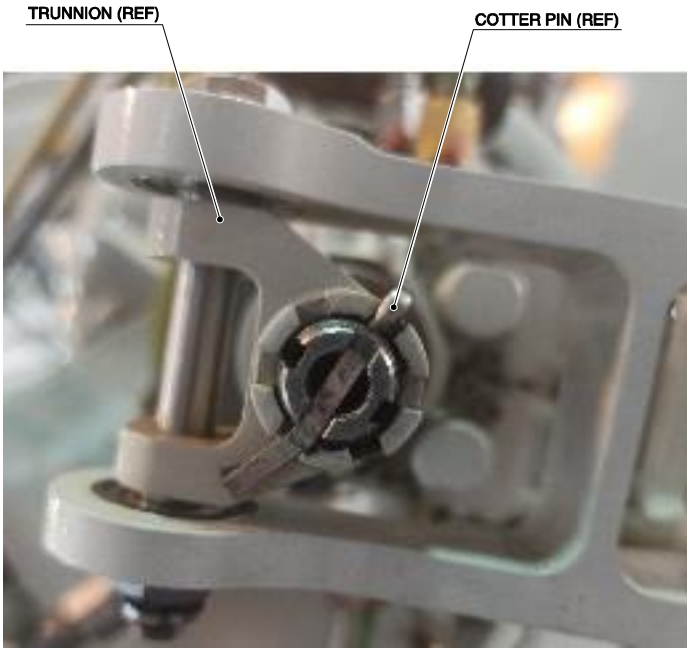

TAIL ROTOR SERVOACTUATOR ASSY (REF)
PITCH CONTROL ROD (REF)
TRUNNION (REF)
A
32
PITCH CONTROL ROD (REF)
SLIPPAGE MARK
TRUNNION (REF)
VIEW A

**Figure 1**




CORRECT COTTER PIN INSTALLATION WITH NO SIGN OF ROTATION
VIEW B

**Figure 2**

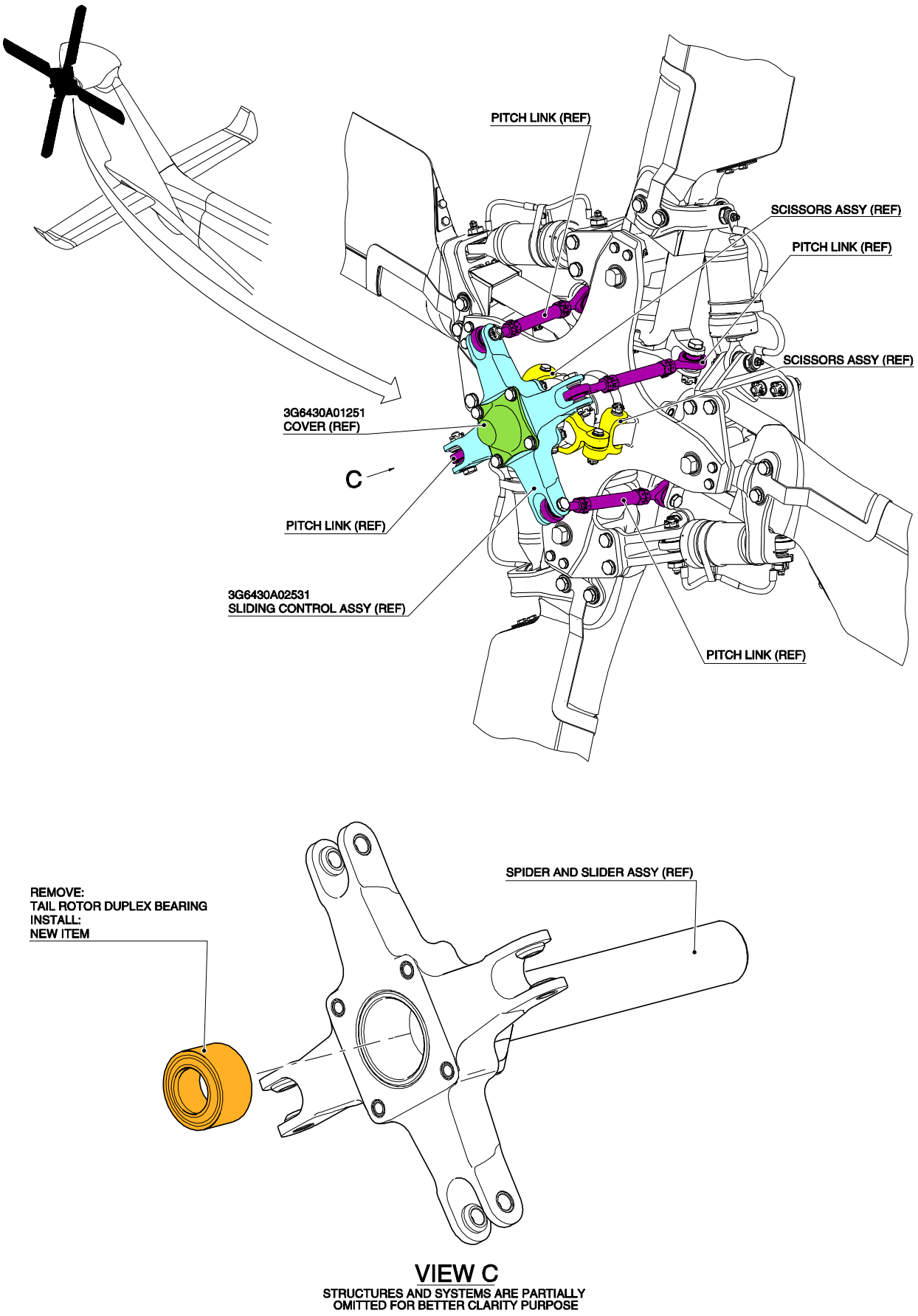

PITCH LINK (REF)
SCISSORS ASSY (REF)
PITCH LINK (REF)
SCISSORS ASSY (REF)
3G6430A01251
COVER (REF)
C
PITCH LINK (REF)
3G6430A02531
SLIDING CONTROL ASSY (REF)
PITCH LINK (REF)
SPIDER AND SLIDER ASSY (REF)
REMOVE:
TAIL ROTOR DUPLEX BEARING
INSTALL:
NEW ITEM
VIEW C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

**Figure 3**

# SB 139-728 – Inspection Report

| | | | |
|---|---|---|---|
| **Date** | | | |
| **Helicopter** | S/N | FH | Landings |
| | | | |
| **Sliding Control Assembly** | S/N | FH | |
| | | | |
| **TR Duplex Bearing** | P/N | S/N | FH |
| | | | |

| **PROCEDURE STEP FAILED** | | **DESCRIPTION OF FINDINGS** |
|---|---|---|
| Part I Steps 3.1.1 or 3.2 | ☐ | |
| Parts II Step 3.1 | ☐ | |
| Parts II Step 3.2 | ☐ | |
| Parts II Step 3.4 | ☐ | |
| Parts II Step 3.5 | ☐ | |
| Part III Step 6 | ☐ | |
| Part III Step 8 | ☐ | |
| **Notes:** | | |

**Figure 4**

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| Please send to the following address:<br><br>**LEONARDO S.p.A.**<br>**CUSTOMER SUPPORT & SERVICES - ITALY**<br><br>**PRODUCT SUPPORT ENGINEERING & LICENSES DEPT.**<br>Via Giovanni Agusta, 520<br>21017 Cascina Costa di Samarate (VA) - ITALY<br>Tel.: +39 0331 225036 Fax: +39 0331 225988 | **SERVICE BULLETIN COMPLIANCE FORM** | Date: |
|---|---|---|
| | Number: | |
| | Revision: | |

| Customer Name and Address: | Telephone: |
|---|---|
| | Fax: |
| | B.T. Compliance Date: |

| Helicopter Model | S/N | Total Number | Total Hours | T.S.O. |
|---|---|---|---|---|
| | | | | |
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| | | | | |
| | | | | |
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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.