Leonardo S.p.A.
Via Giovanni Agusta, 520
21017 Cascina Costa di Samarate (VA) Italy
Tel.: +39 0331 229111 - Fax: +39 0331 229605/222595

AgustaWestland Products

SERVICE BULLETIN

N° 109EP-180

ALERT

DATE: March 21, 2023

REV. : /

TITLE

ATA 64 – TAIL ROTOR HOUSING AND SLIDER GROUP DISASSEMBLY AND REASSEMBLY

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 A109E helicopters that have performed maintenance activities requiring the disassembly of the tail rotor duplex bearing housing after the helicopter delivery.

Part II:

All A109E helicopters.

B. COMPLIANCE

Part I:

Within and not later than 100 (one hundred) flight hours or 6 (six) months, whichever occurs first, after the issue of this Service Bulletin.

Part II:

At each assembly of the tail rotor duplex bearing housing.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to prescribe the disassembly and reassembly of the housing and slider assembly of the tail rotor rotating controls.

E. DESCRIPTION

There have been reported cases of ring-nut tighten loss, likely as a result of poor maintenance tasks accomplishment of the assembly instructions for the tail rotor housing and slider group.

In order to minimize the likelihood of occurrence of potential human errors during maintenance, LH updated the maintenance instructions in order to provide additional guidelines, including a better identification Vital Points (VP) for the assembly of the tail rotor duplex bearing support.

As such, this Service Bulletin requires (Part I) to perform the installation of the tail rotor duplex bearing housing following the IETP updated instructions and (Part II) requires to follow such updated instructions whenever the TR duplex bearing housing is assembled.

During the procedure, the operator must obey the Local Regulations applicable to the Vital Points.

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005.

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

G. MANPOWER

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

Part I: 8 (eight).

Part II: N.A.

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

SECTION/PARAGRAPH	DESCRIPTION	PART
PAR01 00-20-1	Helicopter Safety	I
PAR02 64-00-14	Tail rotor hub and blades assembly – Removal/Installation	I
PAR03 64A-00-13	Tail rotor hub and blades assembly – Removal/Installation	I
PAR04 64-31-6	Pitch change mechanism – Removal/Installation	I, II

2) ACRONYMS & ABBREVIATIONS

AMDI	Aircraft Material Data Information
MM	Maintenance Manual
DOA	Design Organization Approval
IETP	Interactive Electronic Technical Publications
EASA	European Aviation Safety Agency
LH	Leonardo Helicopters
PTUM	Pictorial Tools Usage Manual
MMH	Maintenance Man Hours
P/N	Part Number
S/N	Serial Number

3) ANNEX

Annex A MM Section 64-31 Rev. 16

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

N.A.

2) CONSUMABLES

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

3) LOGISTIC MATRIX

N.A.

B. SPECIAL TOOLS

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

C. INDUSTRY SUPPORT INFORMATION

N.A.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

a) Place an identification tag on all components that are re-usable, including the attaching hardware that have been removed to gain access to the modification area and adequately protect them until their later re-use.

b) Shape the cables in order to prevent interference with the structure and the other existing installations, using where necessary suitable lacing cords and plastic cable tiedown.

PART I

1. In accordance with MM Paragraph 00-20-1, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. In accordance with MM Paragraph 64-00-14 or 64A-00-13 remove from the helicopter the tail rotor hub and blades assembly.
3. In accordance with MM Paragraph 64-31-6 remove the tail rotor pitch change mechanism.
4. In accordance with MM Paragraph 64-31-6 disassemble the tail rotor housing and slider assembly.

NOTE

Vital Point (VP): the point of a component, assembly or installation, where incorrect assembly or an undetected error could cause the loss of rotorcraft and/or fatalities.

5. In accordance with MM Paragraph 64-31-6 Rev. 16 (Ref. Leonardo WebPortal or Annex A of this Service Bulletin) assemble the tail rotor housing and slider assembly.
6. In accordance with MM Paragraph 64-31-6 install the tail rotor housing and slider assembly.
7. In accordance with MM Paragraph 64-00-14 or 64A-00-13 install on the helicopter the tail rotor hub and blades assembly.
8. Return the helicopter to a ready to flight condition and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
9. 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

NOTE

Vital Point (VP): the point of a component, assembly or installation, where incorrect assembly or an undetected error could cause the loss of rotorcraft and/or fatalities.

1. During the application of any maintenance operation requiring the assembly of the TR duplex bearing housing, it is required to perform the relevant assembly procedure in accordance with MM Paragraph 64-31-6 Rev. 16 (Ref. Leonardo WebPortal or Annex A of this Service Bulletin) or later published issues.
2. Record for compliance with Part II of this Service Bulletin on the helicopter logbook.
3. 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”.

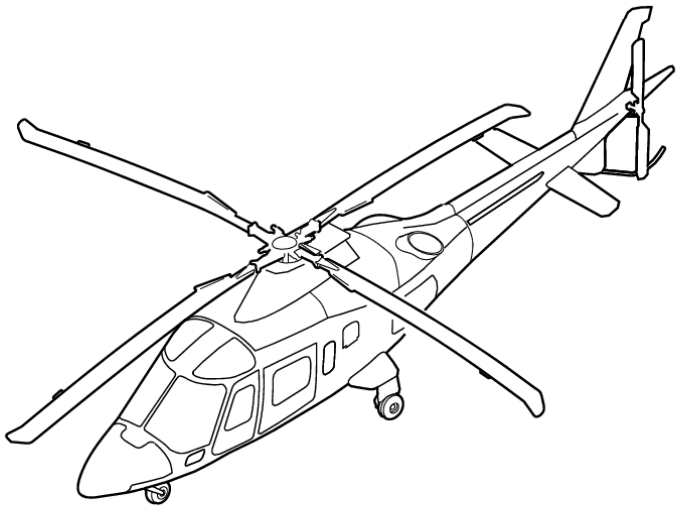
ANNEX A

MM SECTION 64-31 REV. 16

LEONARDO HELICOPTERS

A109E-MM

MAINTENANCE MANUAL



A109E HELICOPTER MODEL

Second Issue: **15th May 2011**

Revision: **No. 16 - 10th March 2023**

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SECTION 64-31

PITCH CHANGE MECHANISM

64-31-1. DESCRIPTION

64-31-2. PITCH CHANGE MECHANISM
(Fig 64-29)

The pitch change mechanism, mounted on the 90-degree gearbox, consists of a sleeve sliding on the 90° output shaft, connected to the tail rotor blades by a slider and two pitch links, and to the control pedals by links and levers.

64-31-3. MAINTENANCE

64-31-4. GENERAL INFORMATION

The maintenance procedures for the pith change mechanism cover the Line Replaceable Units (LRU) listed in Table 64-4. The maintenance procedures include removal/installation, adjustment/test, inspection/check, cleaning/painting and repair instructions as applicable.

Table 64-4. LRU of pitch change mechanism

FIG AND INDEX NO	DESCRIPTION
64-29	PITCH CHANGE MECHANISM

64-31-5. PITCH CHANGE MECHANISM

64-31-6. Removal/installation
(Fig 64-29)

A. Input Conditions

(1) Required conditions:

— Helicopter safe for maintenance (Chap 00)

— Access panels P5 and P12 removed

— Tail rotor hub and blade assembly removed (Sect 64-00).

(2) Support equipment:

— Tool, T/R pitch change slider ring nut removal/installation (LSE NO 49)

— Tool, T/R pitch change housing ring nut removal/installation (LSE NO 130)

— Tool, T/R pitch change housing duplex bearing removal (LSE NO 131)

— Tool, T/R pitch change housing duplex bearing installation (LSE NO 132)

— Tool, T/R pitch change slider installation (LSE NO 133)

— Tool, T/R pitch change slider removal (LSE NO 101)

— Syringe (Local supply)

— Heating gun (Local supply)

— Feeler gage (Local supply)

— Depth micrometer gage (Local supply)

— Refrigerator (Local supply)

(3) Consumable materials:

WARNING: THE CONSUMABLE MATERIALS THE NOMENCLATURE OF WHICH IS PREFIXED BY "(D)" ARE DANGEROUS MATERIALS.
BEFORE USE, MAKE SURE TO KNOW THE SAFETY PRECAUTIONS AND FIRST AID INSTRUCTIONS PRINTED ON:
- THE LABEL ON THE CONTAINER THE MATERIAL WAS SUPPLIED IN
- THE MATERIAL SAFETY DATA SHEET
- THE LOCAL SAFETY REGULATIONS.
ALSO MAKE SURE THAT THE APPLICABLE FIRST AID MATERIALS ARE AVAILABLE.

— (D) Sealing compound (C029)

— Safety wire (C014)

— (D) Primer (C446)

— Safety wire (C013)

— (D) Grease (C594)

— Cloth, soft lint-free (C011)

— (D) Solvent, cleaning (C023)

— (D) Oil (C139)

— (D) Primer (C237)

— (D) Corrosion preventive compound (C509)

— (D) Corrosion inhibiting compound (C505)

— (D) Corrosion preventive compound (C587)

(4) Other recommendations:

WARNING: THIS INSTALLATION INCLUDES VITAL POINTS (VP). DURING THE PROCEDURE, YOU MUST OBEY THE LOCAL REGULATIONS APPLICABLE TO THE VITAL POINTS.

CAUTION: MAKE SURE THAT YOU DO NOT MIX GREASES OF DIFFERENT BRANDS ALTHOUGH THE SPECIFICATIONS ARE THE SAME. REFER TO THE HELICOPTER LOG BOOK TO PREVENT MIXTURE OF UNWANTED GREASES.

CAUTION: THIS COMPONENT INCLUDES CRITICAL PARTS. EXAMINE THE COMPONENT FOR SIGNS OF STRUCTURAL DAMAGE, BEFORE YOU INSTALL IT ON THE HELICOPTER. REFER TO SECT 20-40.

B. Removal Procedure.

(1) Disconnect tail rotor pitch control tube (59) from torque shaft control lever (49) by removing attaching hardware. Discard cotter pin.

(2) Disconnect link (30) from sleeve (25) and link (35) from slider (23) by removing attaching parts. Discard cotter pins.

(3) Detach link (35) from link (30) by removing attaching parts. Discard cotter pin.

(4) Cut lockwire from forward boot (26) and withdraw sleeve (25) from gearbox shaft. Remove forward boot (26) from sleeve (25). If loose remove bushing (27). Ref. to Para 64-31-6B.

NOTE: Mark position of pitch control links (20) to reconnect in same position during reassembly of slider.

CAUTION: REMOVE THE PITCH CONTROL LINK (20) IN THE SEQUENCE AS FOLLOWS FOR NOT DAMAGE THE LINK.

(5) Remove pitch control link (20) from slider arm (23), by removing parts; the bolt (21), the washer (22), damper washer (60), the other washer (22), the nut (38) and discard the cotter pin (38A) remove pitch control link (20).

(6) Remove and discard cotter pin (70), remove the nut (66), the flat surface cup washer (67), the spacer (68) (if installed), the washer (69) and disconnect the pitch control link (20) from the blade (71).

(7) Remove links (10) by removing attaching parts. Discard cotter pins.

(8) Cut lockwire from aft boot (39).

(9) Withdraw housing (15), together with assembled parts, from gearbox shaft.

(10) Disassemble housing (15) and slider assembly (23) as follows:

NOTE: Items 10, 11 and 12 (Fig 64-30) are part of tool (LSE NO 49).

(a) Lock the support (10) on an applicable bench vice.

(b) Put the duplex bearing housing (3) and the pitch change slider assembly (9) on the support (10).

NOTE: In order to avoid damage to the bushings (7) of the pitch change slider (9) during the removal of the ring nut (2), put the pitch change slider (9) on the support (10) with the two pitch change slider arm (6) that touch the two cylindrical fittings (11) as shown in Detail A of 64-30.

(c) Open the two clawed tabs on the lock ring (1), then remove it from the ring nut (2).

(d) Remove the ring nut (2) from the pitch change slider (9) with the wrench (12).

(e) Put the pitch change slider (3, Fig 64-31) and the duplex bearing housing (2) on the support (4) part of the tool (LSE NO 101).

CAUTION: MAKE SURE THAT THE TOOL IS PERFECTLY ALIGNED WITH THE DUPLEX BEARING WHEN YOU PRESS IT OUT IN ORDER TO PREVENT DUPLEX BEARING DAMAGE.

(f) Put the adapter (1) part of the tool (LSE NO 101) on the pitch change slider (3) then, with an applicable press, remove the pitch change slider from the duplex bearing housing (2).

(g) Lock the support (4, Fig 64-32) part of the tool (LSE NO 130) on an applicable bench vice.

(h) Put the duplex bearing housing (1) on the support (4), part of the tool (LSE NO 130), then lock with the two bolts (3 and 5) part of the tool (LSE NO 130).

NOTE: The ring nut (5, Fig 64-30) is installed with retaining compound. To remove it a high torque will be necessary. Use an applicable lever to remove it.

(i) Cut the lock wire, in two places, then, with the wrench (2, Fig 64-32) part of the tool (LSE NO 130), remove the ring nut (5, Fig 64-30).

NOTE: Items 1, 3 and 4 of Fig 64-33 are part of the tool (LSE NO 131).

(j) Put the duplex bearing housing (2) on the support (1).

NOTE: To help remove the duplex bearing (4, Fig 64-30) from the duplex bearing housing (3) a light heating of the external part of the duplex bearing housing with a heating gun is permitted. The temperature must not be more than 90° C. To prevent damage to the duplex bearing do not apply hot air directly on the duplex bearing boots.

(k) Put the two adapters (3 and 4, Fig 64-33) on the duplex bearing housing (2) then with an applicable press remove the duplex bearing (4, Fig 64-30) from the duplex bearing housing (3).

(11) Remove boot (39, Fig 64-29).

(12) Remove attaching parts of levers (5 and 49), then remove levers and shims (8) and extract pivot (9) from lugs on gearbox.

(13) Disconnect pitch control lever (40) from link (46) by removing attaching parts. Remove lever (40). Discard cotter pin.

(14) Disconnect link (46) from lugs on gearbox by removing attaching parts. Remove link (46). Discard cotter pin.

C. Installation Procedure.

(1) Position torque shaft (9, Fig 64-29) in 90-degree gearbox lugs.

(2) Install laminated shims (8) and levers (5 and 49) on torque shaft (9). Do not torque attaching parts.

NOTE: If any of the following items: 90-degree gearbox case, torque shaft (9) levers (5 and 49) laminated shims (8) have been replaced, proceed as follows:

(a) Position torque shaft (9) in 90-degree gearbox lugs.

(b) Position levers (5 and 49) on torque shaft (9) without shims and secure temporarily in position.

(c) Measure the total gap between one lever and the adjacent lug with a feeler gauge. Half of the gap is dimension of each laminated shim (8).

(d) Remove levers (5 and 49) from torque shaft (9).

(e) Fit laminated shims (8) on torque shaft (9) then reinstall levers (5 and 49) and secure. Do not torque nuts (3 and 51) at this time.

(f) Check for free rotation of pivot. If shim thickness is unsatisfactory, modify the shims the same amount on either side to obtain an axial play between 0,03 and 0,08 mm between 90° gearbox lugs bearings and levers (5 and 49) when installed.

NOTE: Before installing the boot in the housing and slider group deform the boot metallic rim to an oval shape with a maximum diameter of 43 thru 44 mm (1.693 thru 1.732 in) as shown in DETAIL D of figure 64-29. This is to help a tighter fit in the seat. Put the inboard boot in its position in the housing and slider group.

(3) Position aft boot (39) on gearbox shaft.

(4) Reassemble housing (15) and slider assembly (23) as follows:

CAUTION: BEFORE YOU ASSEMBLE THE HOUSING AND SLIDER GROUP (1, FIG. 64-34), PUT THE COMPONENT THAT FOLLOW AND THE RELATED ATTACHING PARTS ON AN APPLICABLE WORK TABLE.
CAREFULLY EXAMINE THE COMPONENT AND THE RELATED ATTACHING PARTS FOR CORROSION, NICKS AND DAMAGE, WEAR AND FRETTING. IF YOU FIND THAT THE COMPONENT IS DAMAGED, REPLACE IT.
- THE DUPLEX BEARING (4)
- THE HOUSING (5).

(a) Divide the two parts of the duplex bearing (4).

NOTE: Do Step C.(4)(b) thru Step C.(4)(d) only for removed bearings. New bearings are supplied already lubricated and must not be filled with grease.

(b) Fill the Syringe (Local supply) with the Grease (C594).

(c) Before you install the bearing (8), fill it with 3.5 cc (0.21 in^3) of grease with the syringe from the side opposite to the boot. Refer to Detail A of Fig. 64-34.

(d) Do Step C.(4)(c) again on the bearing (9).

(e) Put the bearing (8) against the bearing (9) with the boot sides externally and the internal and external V-marks aligned to show an arrow. See Detail A, Fig. 64-34.

(f) Install the duplex bearing (4) into the housing (5) in the way that follows:

1. Apply a thin layer of Primer (C446) on the mating surfaces between the duplex bearing (4) and housing (5).

2. Put the housing (5) on the Base (10), part of the tool (LSE NO 132).

WARNING: BE CAREFUL WHEN YOU USE HEAT. HOT PARTS CAN CAUSE INJURY TO THE PERSONS. ALWAYS USE APPLICABLE PROTECTIVE CLOTHING.

3. Heat the housing (5) to a temperature between 60 and 70 °C with the Heating gun (Local supply). This will help you to install the duplex bearing (4) into the housing. Make sure that the temperature is not more than 90 °C (heating gun set to a temperature of 90 °C).

NOTE: As an alternative to heating the housing (5); you can cool down the duplex bearing (4) with the Refrigerator (Local supply) to a temperature between -18 and -40 °C for 30 minutes. Do not touch the cold duplex bearing with bare hands to prevent injury.

4. Push the duplex bearing (4) into the housing (5). To do this, use the Pin (11), part of the tool (LSE NO 132) and an applicable arbor press.

5. Make sure there is no clearance between the two bearings (8 and 9) and between the outer ring of duplex bearing (4) and the shoulder of the housing (5). To do this, use the applicable Feeler gage (Local supply).

6. Remove the housing-bearing assembly (12) from the base (10).

NOTE: Before you continue, make sure that all the components are at ambient temperature.

(g) Install the ring nut (3) into the housing-bearing assembly (12). Obey the instructions that follow:

1. Clean the threads of the ring nut (3) and the housing (5) with the Cloth, soft lint-free (C011) and the Solvent, cleaning (C023). (**VP**)

2. Dry the threads of the ring nut (3) and the housing (5) with a clean Cloth, soft lint-free (C011). (**VP**)

3. Apply a layer of Primer (C237) on the threads of the ring nut (3).

4. Apply a layer of Primer (C237) on the threads of the housing (5).

5. Apply four drops of Sealing compound (C029) on the threads of the ring nut (3). Put them in four equally spaced positions (90 degrees apart). (**VP**)

6. Lock the Base (14), part of the tool (LSE NO 130) in an applicable vice.

7. Put the housing-bearing assembly (12) on the base (14), then lock it with the two Bolts (13), part of the tool (LSE NO 130).

8. Install the ring nut (3) in the housing-bearing assembly (12) with the Wrench (15), part of the tool (LSE NO 130).

9. Torque the ring nut (3) to 118 thru 127 Nm (87 thru 94 lbf ft). (**VP**)

10. Make sure that the duplex bearing (4) turns freely. (**VP**)

11. Refer to Detail B of Fig. 64-34.

a. Measure and record the dimension L.

b. Make sure that the dimension you find is between 23.75 to 24.0 mm (0.935 to 0.945 in).

c. If you find that the dimension is not in the given limits, remove the duplex bearing (4). Then, do Step C.(4)(f) and Step C.(4)(g) again.

12. Refer to Detail C of Fig. 64-34.

a. Measure and record the dimension M.

b. Calculate and record the dimension N with this formula: N = M - L.

13. Remove the housing group (16) from the base (14).

NOTE: The safety wire must be installed with the double-twist method and put in tension. Example of an acceptable safety wire installation is shown in Detail B1 of Fig. 64-34. As a general approach, an "α" angle between 60° and 120° is adviseable.

14. Safety the ring nut (3) to the housing (5) with the new Safety wire (C014) in two places as shown in Detail B1 of Fig. 64-34. Refer also to Section 20-10. (**VP**)

(h) Apply a thin layer of Oil (C139) on the internal surface of the duplex bearing (4).

(i) Put the Bushing (18), part of the tool (LSE NO 133) in its position on the Pin (19), part of the tool (LSE NO 133).

(j) Put the housing group (16) on the pin (19) above the bushing (18).

(k) Put the slider (2) on the pin (19).

NOTE: To help you install the slider (2), heat the housing group (16) in an oven preheated to a temperature of 50 °C for 15 to 30 minutes.
As an alternative to heating the housing group (16); you can cool down the slider (2) with the Refrigerator (Local supply) to a temperature between -18 and -40 °C for 30 minutes. Do not touch the cold slider with bare hands to prevent injury.

(l) Push the slider (2) into the housing group (16). To do this, use the Barrel (17), part of the tool (LSE NO 133) and an applicable arbor.

(m) Remove the housing-slider assembly (20) from the pin (19).

NOTE: Before you continue, make sure that all the components are at ambient temperature.

(n) Make sure there is no clearance between the inner rings of the two bearings (8 and 9) and the shoulder of the slider (2). To do this, use the applicable Feeler gage (Local supply).

(o) Refer to Detail D of Fig. 64-34:

1. Measure and record the dimension N. To do this, use an applicable Depth micrometer gage (Local supply).

2. Make sure that the dimension N measured agrees with the dimension calculated at Step C.(4)(g)12.b.

3. If you find that the dimension N does not agree, remove the duplex bearing (4). Then, do Step C.(4)(f) and Step C.(4)(o) again.

(p) Lock the Base (22), part of the tool (LSE NO 49) in an applicable vice.

(q) Put the housing-slider assembly (20) on the base (22).

(r) Move the braces (23) of the slider against the pins (24) of the base (22). Refer to Detail E of Fig. 64-34.

(s) Clean the threads of the ring nut (6) and the slider (2) with the Cloth, soft lint-free (C011) and the Solvent, cleaning (C023). (**VP**)

(t) Dry the threads of the ring nut (6) with a clean Cloth, soft lint-free (C011). (**VP**)

(u) Apply a layer of Primer (C237) on the threads of the ring nut (6).

(v) Apply a layer of Primer (C237) on the threads of the slider (2).

(w) Apply four drops of Sealing compound (C029) on the threads of the ring nut (6). Put them in four equally spaced positions (90 degrees apart). (**VP**)

(x) Install the ring nut (6) with the Wrench (21), part of the tool (LSE NO 49).

(y) Torque the ring nut (6) to 49 thru 59 Nm (36 thru 43 lbf ft). (**VP**)

(z) Remove the housing and slider group (1) from the base (22).

(aa) Install the new Lock ring (7).

(ab) Bend the clawed tabs of the lock ring (7) on the ring nut (6). Make sure that the two clawed tabs of the lock ring (7) are correctly engaged.

(5) Connect pitch control lever (40) and links (10) to housing (15). Torque nuts to 3,4-4,5 Nm, then install cotter pins and apply the Corrosion inhibiting compound (C505) or Corrosion inhibiting compound (C587) to the shank and under head of the bolt (14).

NOTE 1: It is possible to install the bumper washers (40A) between housing (15) and links (10) between lever (40) and housing (15). Before you torque nuts (11), make sure that the spherical bearings of the control lever (40) and link (10) touch the lug of the housing (15) and not the bumper washers (40A).

NOTE 2: Install the two larger washers (13 and 15A) against spherical bearing of pitch control lever (40) and link (10). Install the two small washers (12) between the larger one (15A) and the nut (11). To obtain proper torque, replacement of one smaller washer AN960C416 with an AN960C416L washer is permitted.

NOTE 3: During the installation, if the total clearance between the pitch control lever (40) and the housing (15) is more than 0,3 mm, install one washer (65) P/N AN960PD416L (superseded by P/N NAS1149D0416K) on one attachment point bolt (14).

(6) Apply the Corrosion inhibiting compound (C505) or Corrosion inhibiting compound (C587) on the shank of the bolt (21).

(7) Connect pitch control link (20) on hub and blade assy (71) then connect the link to the slider arm (23), install the bolt (21), the washer (22), the damper washer (60), the other washer (22), the nut (38), torque the nut (38) to 3,4 - 4,5 Nm, install the new cotter pin (38A).

(8) Apply the Corrosion preventive compound (C509) to the nut (38), protruding thread of bolt (21) and cotter pin (38A).

(9) Apply the Corrosion inhibiting compound (C505) or Corrosion inhibiting compound (C587) on the shank of the blade pin.

(10) On the blade side, install the washer (69) with the countersunk side against the base of the blade pin as shown in detail F of Fig. 64-29.

NOTE: If before removed install spacer (68) as shown in figure.

(11) Put the outboard end of the pitch change control link (20) on the blade pin.

(12) Install the flat surface of cup washer (67) against the pitch change control link (20).

(13) Install the nut (66) and torque to 7,9 - 10,2 Nm.

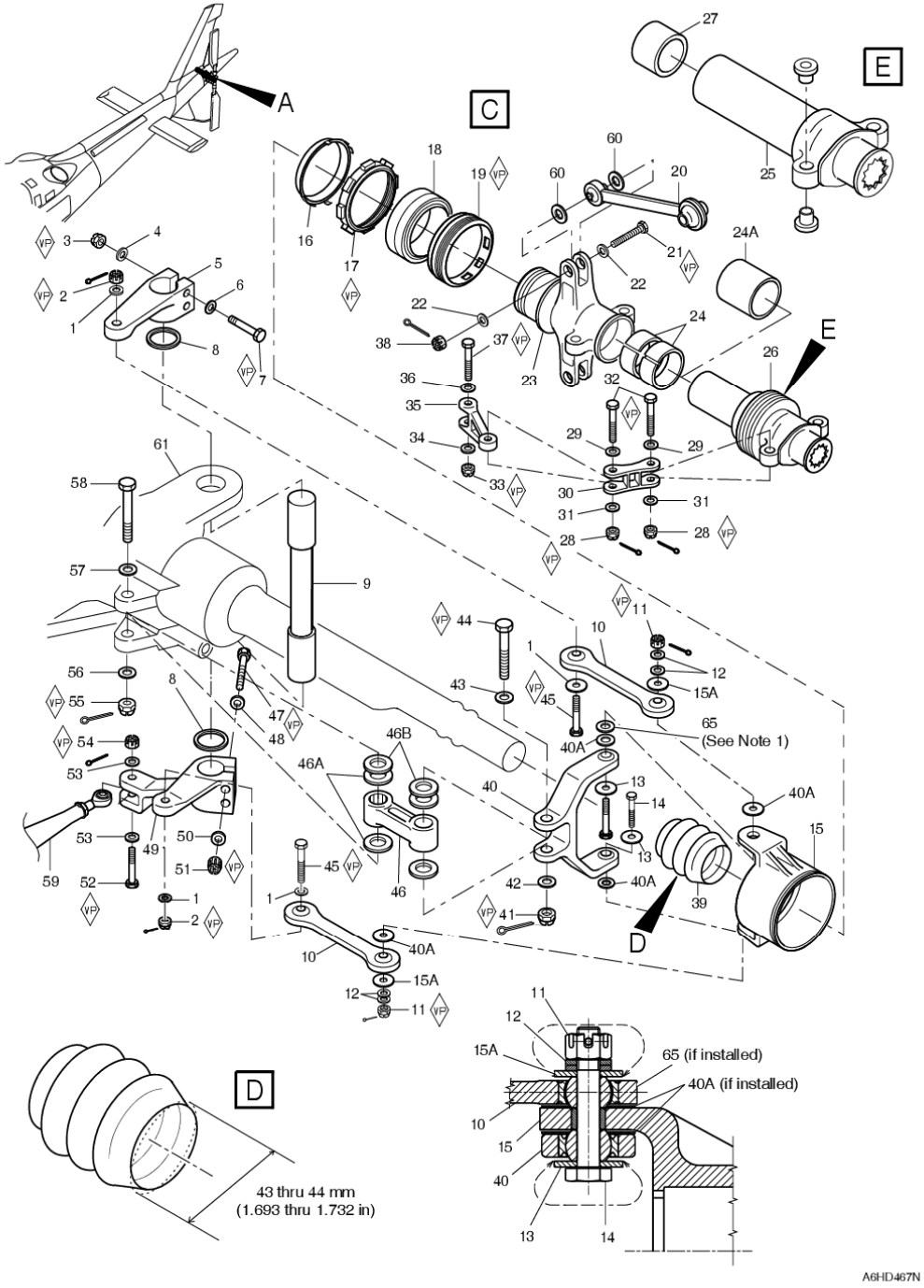

Figure 64-29 (sheet 2 of 4). Pitch change mechanism

1. Washer
2. Nut
3. Nut
4. Washer
5. Lever
6. Washer
7. Bolt
8. Shim
9. Torque shaft
10. Link
11. Nut
12. Washer
13. Spacer
14. Bolt
15. Housing
15A. Shim
16. Lock ring
17. Ring nut
18. Duplex bearing
19. Ring nut
20. Pitch control link
21. Bolt
22. Washer
23. Slider
24. Bushing (*)
25. Sleeve
26. Forward boot
27. Bushing
28. Nut
29. Washer
30. Link
31. Washer
32. Bolt (*)
33. Nut
34. Washer
35. Link
36. Washer
37. Bolt (*)
38. Nut
38A. Cotter pin
39. AFT boot
40. Lever
40A. Bumper washer
41. Nut
42. Washer
43. Washer
44. Bolt
45. Bolt
46. Link
46A. Washer
46B. Washer
47. Bolt
48. Washer
49. Torque shaft control lever
50. Washer
51. Nut
52. Bolt
53. Washer
54. Nut
55. Nut
56. Washer
57. Washer
58. Bolt
59. Tail rotor pitch control tube (ref)
60. Washer, damper
61. T/R gearbox fitting
62. Shim
63. Bushing (**)
64. Shim
65. Washer
66. Nut
67. Flat surface cup washer
68. Spacer (if installed)
69. Washer
70. Cotter pin
71. Hub and blade assy

(*) Used with slider P/N 109-0130-91-105.
(**) Used with slider P/N 109-0130-91-117/-119.

NOTE 1:
Washer (65) is shown in this location but, if necessary, can be installed on opposite bolt (14).

Figure 64-29 (sheet 4 of 4). Pitch change mechanism

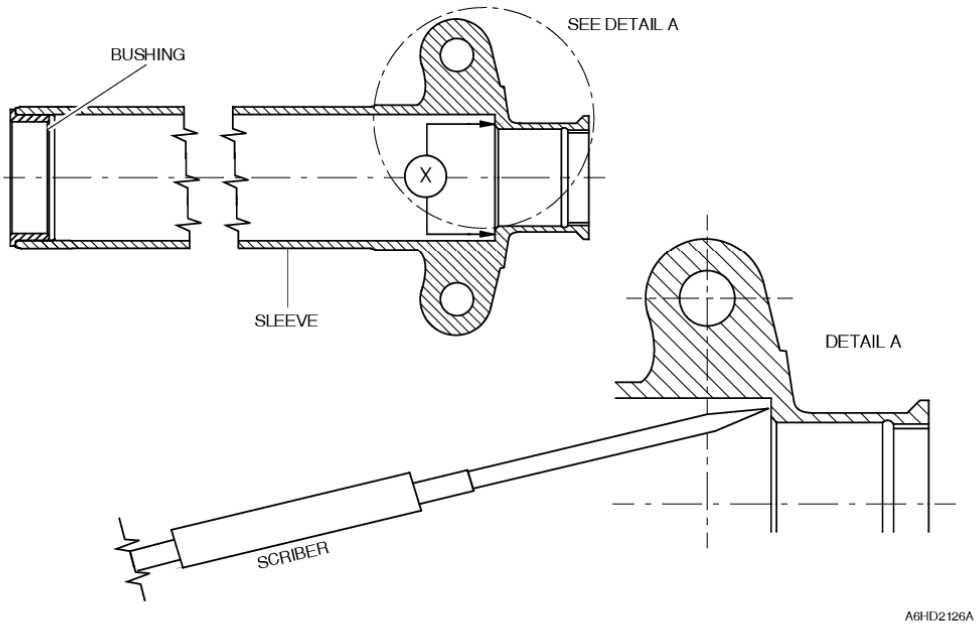

Figure 64-29A. Tail rotor sleeve - Mating surface inspection

1. Housing and slider group
2. Slider
3. Ring nut
4. Douplex bearing
5. Housing
6. Nut
7. Lock ring
8. Bearing
9. Bearing
10. Base (Part of LSE NO 132)
11. Pin (Part of LSE NO 132)
12. Housing-bearing assembly
13. Bolt (Part of LSE NO 130)
14. Base (Part of LSE NO 130)
15. Wrench (Part of LSE NO 130)
16. Housing group
17. Barrel (Part of the LSE NO 133)
18. Bushing (Part of LSE NO 133)
19. Pin (Part of LSE NO 133)
20. Housing-slider assembly
21. Wrench (Part of LSE NO 49)
22. Base (Part of LSE NO 49)
23. Brace
24. Pin

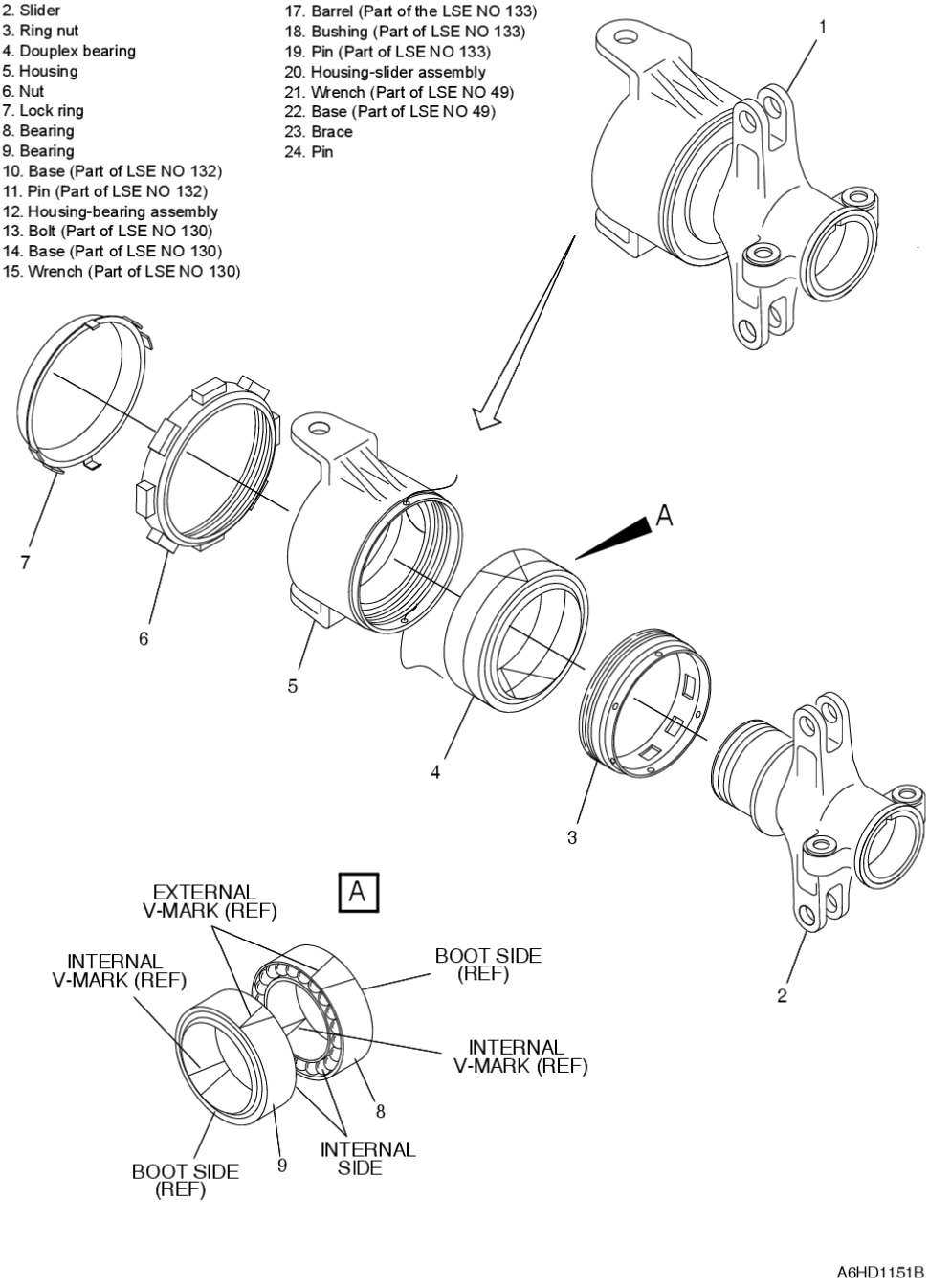

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Figure 64-34 (sheet 1 of 5). Housing and slider group

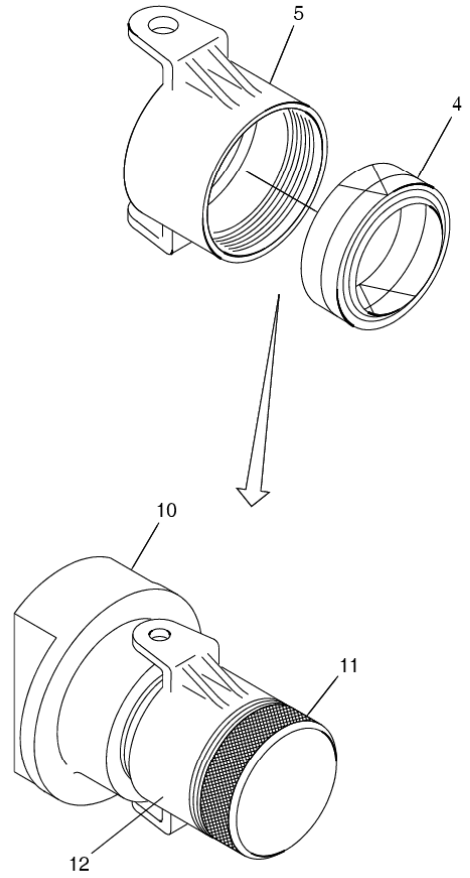

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Figure 64-34 (sheet 2 of 5). Housing and slider group

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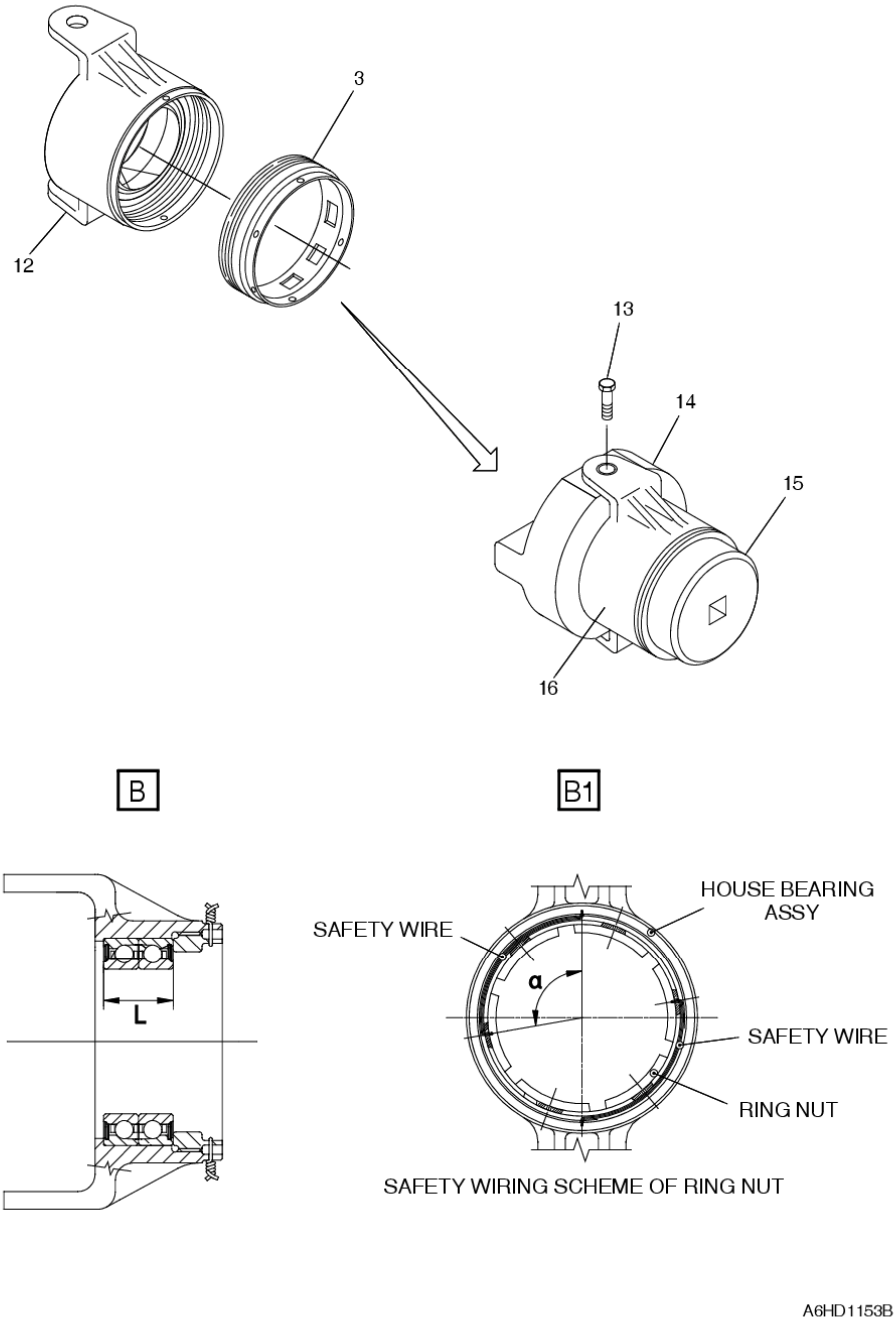

Figure 64-34 (sheet 3 of 5). Housing and slider group

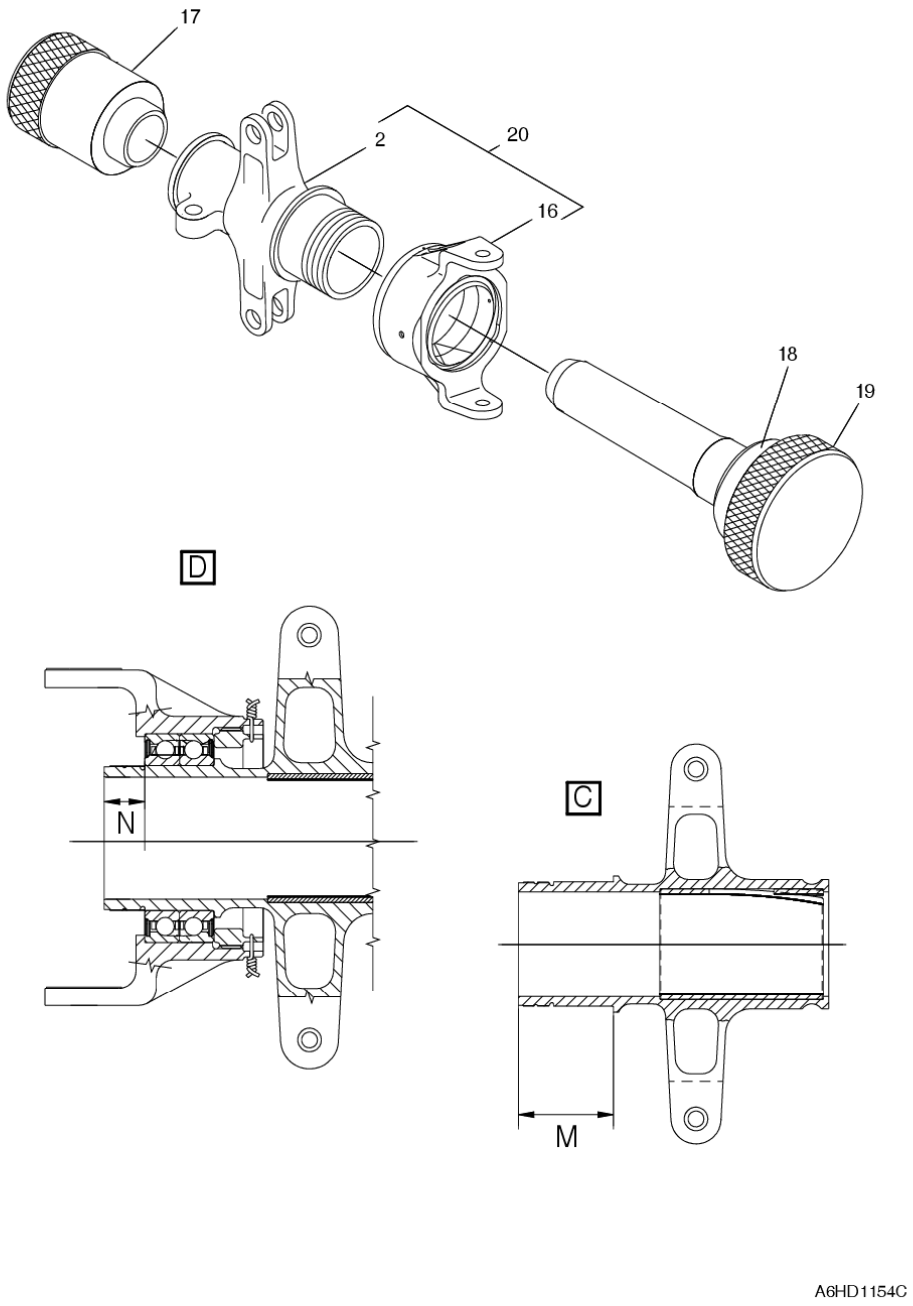

Figure 64-34 (sheet 4 of 5). Housing and slider group

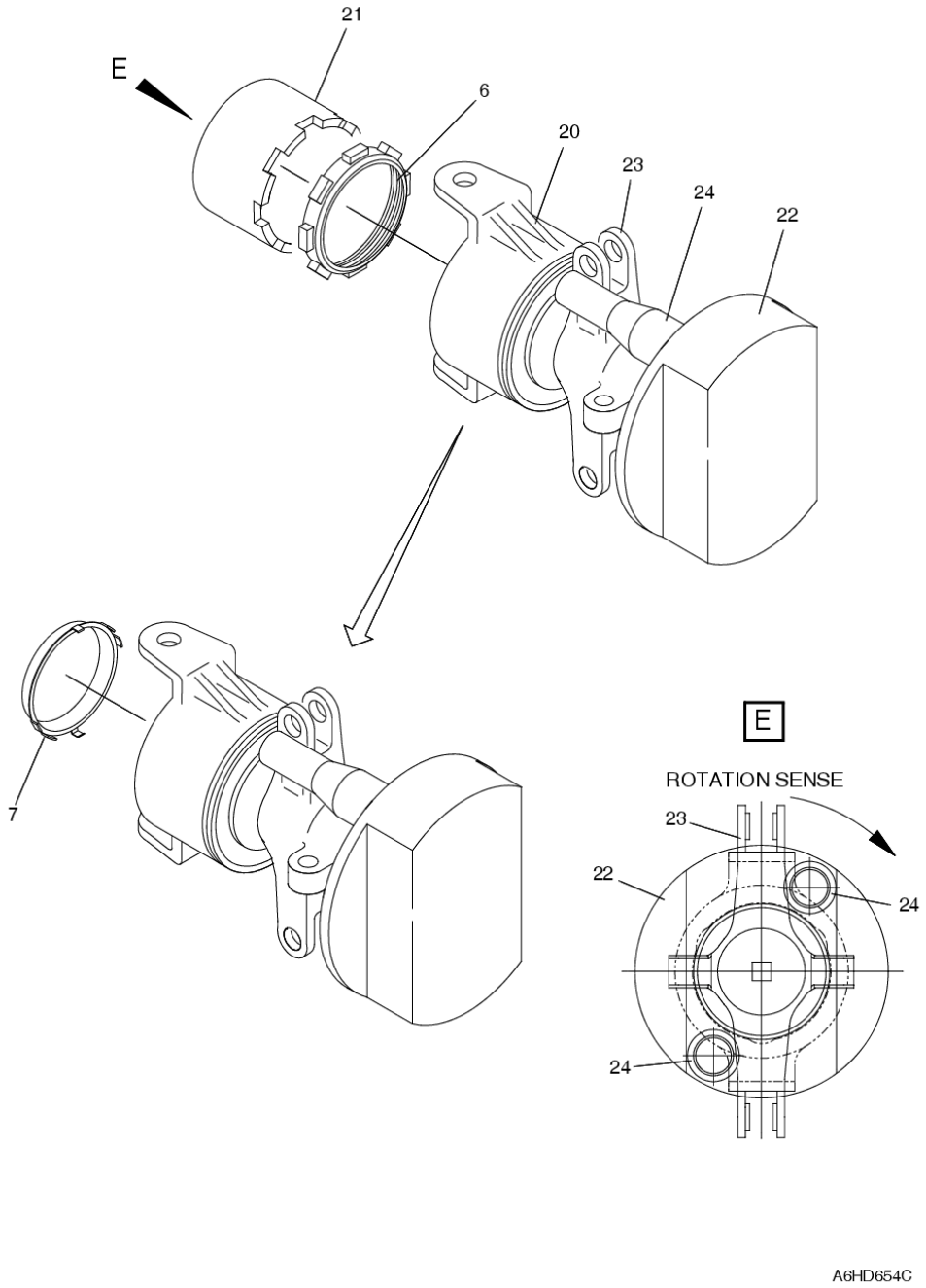

Figure 64-34 (sheet 5 of 5). Housing and slider group

Figure 64-35. Deleted
Figure 64-36. Deleted
Figure 64-37. Deleted
Figure 64-38. Deleted

64-31-6A. Lubrication fitting replacement (Sleeve assy P/N 109-0130-94-113)

A. Initial condition

(1) Required conditions:

— Helicopter safe for maintenance (Chap 00)

— Tail rotor pitch change mechanism removed (Para 64-31-5)

— Tail rotor sleeve assembly removed from pitch change mechanism (Para 64-31-6)

— Duplex bearing removed from tail rotor sleeve assembly (Para 64-31-6)

(2) Support equipment:

— Punch (Procure locally)

— Small tap hammer (Procure locally)

— Arbour press (Procure locally)

(3) Consumable materials: None.

(4) Other recommendations: None.

B. Remove the two grease fittings (1, fig. 64,38A) of the housing in the way that follows:

(1) Put the housing on a clean and flat working surface in a well-lit work area.

CAUTION: DO NOT DAMAGE THE INTERNAL WALL OF THE HOUSING DURING THE GREASE FITTINGS (1) REMOVAL.

NOTE: To prevent housing damage, it is recommended to insert the punch into the bore of the grease fittings (1).

(2) Gently remove the grease fittings (1) with an applicable punch and small hammer. Push from the inside to the outside of the housing.

(3) Do a visual inspection for integrity of the housing bores, the grease fittings and of the surrounding surface. If you find damage contact the Design Authority.

(4) Clean the housing bores with (D) cleaning solvent (C287).

(5) Apply the chemical conversion coating (C425) on the repair area of the housing bores.

C. Install the two grease fittings (1) of the housing (2) in the way that follows:

(1) Gently push the grease fittings (1) into the housing (2) with an arbour press up to the touch surface. Make sure you insert the grease fittings parallel to the housing bore axis.

(2) Make sure that the grease fittings (1) are correctly installed and that no damage occurred to the grease fittings and to the housing bore during installation.

D. Follow-on maintenance required: None.

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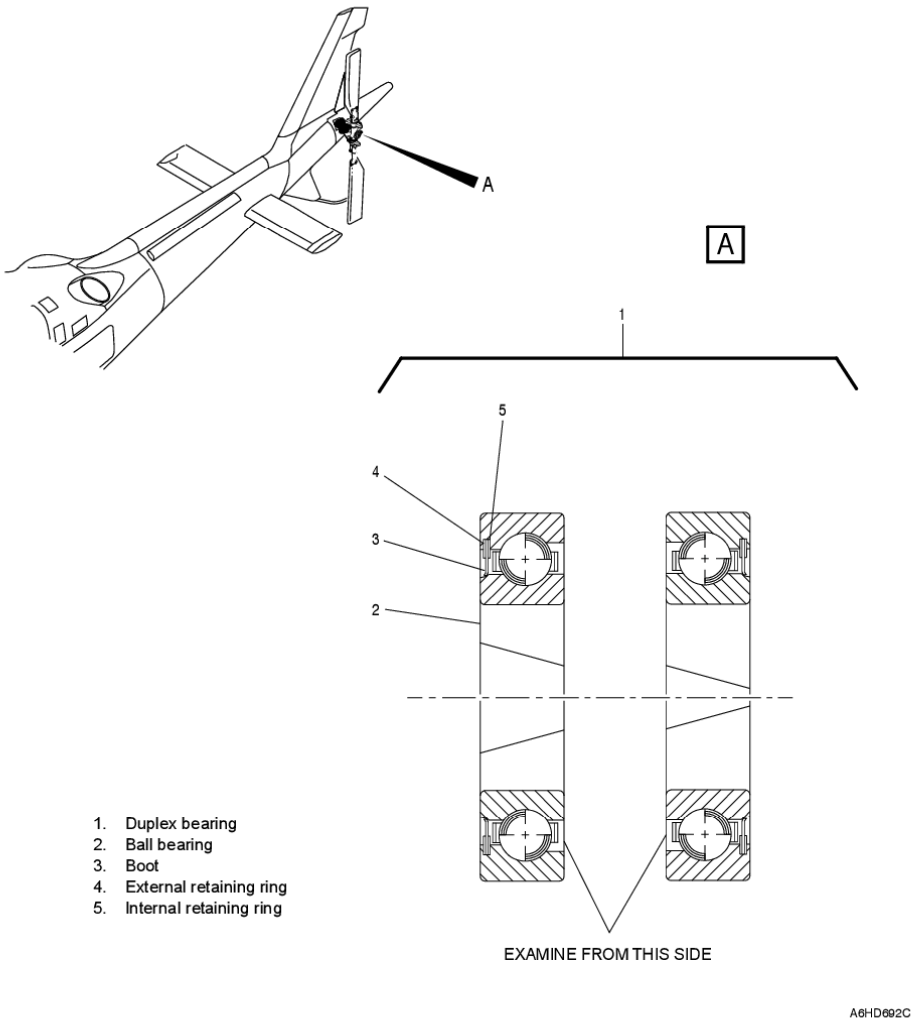

Figure 64-40. Duplex bearing P/N 109-0133-05-101

64-31-01

64-31

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	Number:	
	Revision:	

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

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

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.