

Temporary Maintenance Instruction TMI 139-559

**Duplex bearing (sliding control assembly) –
Replacement (remove and install a new item)**

All AW139 Helicopters

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

The present TMI will be evaluated for its introduction in the standard set of Technical Publication.

If no further notice is received, the present document expires on: June 28th 2023.

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Introduction

This TMI provides the updated instructions and requirements to perform replacement of Duplex bearing in accordance with TIL T-139-22-004.

The following procedures contained in this TMI update and supersede the contents of the following Data Modules:

ANNEX	DATA MODULE CODE	DATA MODULE TITLE
Annex 1	39-A-64-31-04-01A-921A-B	Duplex bearing (sliding control assembly) – Replacement (remove and install a new item)

ANNEX 1

Duplex bearing (sliding control assembly) - Replacement (remove and install a new item)

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References

Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)
39-A-00-60-00-00A-010A-A	Critical parts - General data
39-A-64-31-04-00A-520A-A	Sliding control assembly - Remove procedure
39-A-64-31-04-00A-720A-A	Sliding control assembly - Install procedure

Table 2 Access points

Access Panel / Door Id	Data Module
No Access Point	

Table 3 Zones

Access Panel / Door Id	Data Module
No Zones	

Preliminary Requirements

Required Conditions

Table 4 Required Conditions

Conditions	Data Module/Technical Publication
The helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
The sliding control assembly must be removed	39-A-64-31-04-00A-520A-A

Support Equipment

Table 5 Support Equipment

Nomenclature	Identification No.	Qty
Tool kit, TR duplex bearing	GF-35-00	1
Extractor, TR duplex bearing	GF-35-01	1
Installation tool, TR duplex bearing	GF-35-02	1
Arbor press	ZZ-00-00	1
Refrigerator	ZZ-00-00	1
Heat gun	ZZ-00-00	1

Supplies

Table 6 Supplies

Nomenclature	Identification No.	Qty
Lint-free cloth	C011	AR
Corrosion inhibitor	C003	AR

Table 6 Supplies

Nomenclature	Identification No.	Qty
Cleaning solvent	C010	AR

Spares

Table 7 Spares

Nomenclature	Identification No.	Qty
Duplex bearing	64-31-01-01 -001	AR

Safety Conditions

WARNINGS

- This installation includes Vital Points (VP). During the procedure, you must obey the Local Regulations applicable to the Vital Points.
- The materials that follow are dangerous. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for these materials:
 - Corrosion inhibitor (C003)
 - Cleaning solvent (C010) .

CAUTIONS

- During the installation procedure of the new duplex bearing, be careful not to cause damage to the duplex bearing seals.
- This component is a critical part. Examine the component for signs of structural damage before you install it on the helicopter. Refer to [39-A-00-60-00-00A-010A-A](#).

Procedure

- 1 Put the sliding control assembly (1, [Figure 1](#)) on an applicable work table.
- 2 Remove the duplex bearing (4) from the sliding control assembly (1) with the [Extractor, TR duplex bearing \(GF-35-01\)](#) . Discard the duplex bearing. (VP)

WARNING

Do not install or reinstall a duplex bearing (4) removed from the slider assembly. (VP)

- 3 Install the new [Duplex bearing \(64-31-01-01 -001\)](#) (4) in the sliding control assembly (1) (VP):
 - 3.1 Clean the parts that follow with the [Lint-free cloth \(C011\)](#) and the [Cleaning solvent \(C010\)](#) :
 - The housing of the duplex bearing in the slider (2)

- The duplex bearing (**4**). (**VP**)

WARNING

Be careful when you use the compressed air. Dust and particles can cause injury to your eyes. Always use applicable protective goggles.

CAUTION

Be careful when you dry the duplex bearing (4). Do not let it turn. (VP)

- 3.2 Dry the cleaned parts with the compressed air until you remove all the solvent.
- 3.3 Measure and record the **dimensions** that follow (refer to Section A-A of [Figure 1](#)) (**VP**):
- **Dimension Y** of the duplex bearing (**4**) (**VP**)
 - **Dimension X** between the slider plane W and the spider plane V. (**VP**)

Note

Dimensions X and Y are used when you do [step 5](#).

- 3.4 Put the duplex bearing (**4**) in the [Refrigerator \(ZZ-00-00\)](#) set at a temperature of -20 thru -40 °C. (**VP**)
- 3.5 Keep the duplex bearing (**4**) in the refrigerator for 1 h and 30 min minimum. (**VP**)

WARNING

Be careful when you use heat. Hot parts can cause injury to the persons. Always use applicable protective clothing.

- 3.6 Use the [Heat gun \(ZZ-00-00\)](#) and **increase the temperature** of the bearing housing. Obtain a uniform temperature of the complete bearing housing between **70 thru 80 °C maximum**. (**VP**)
- 3.7 Apply the [Corrosion inhibitor \(C003\)](#) to the surface of the bearing housing.

Note

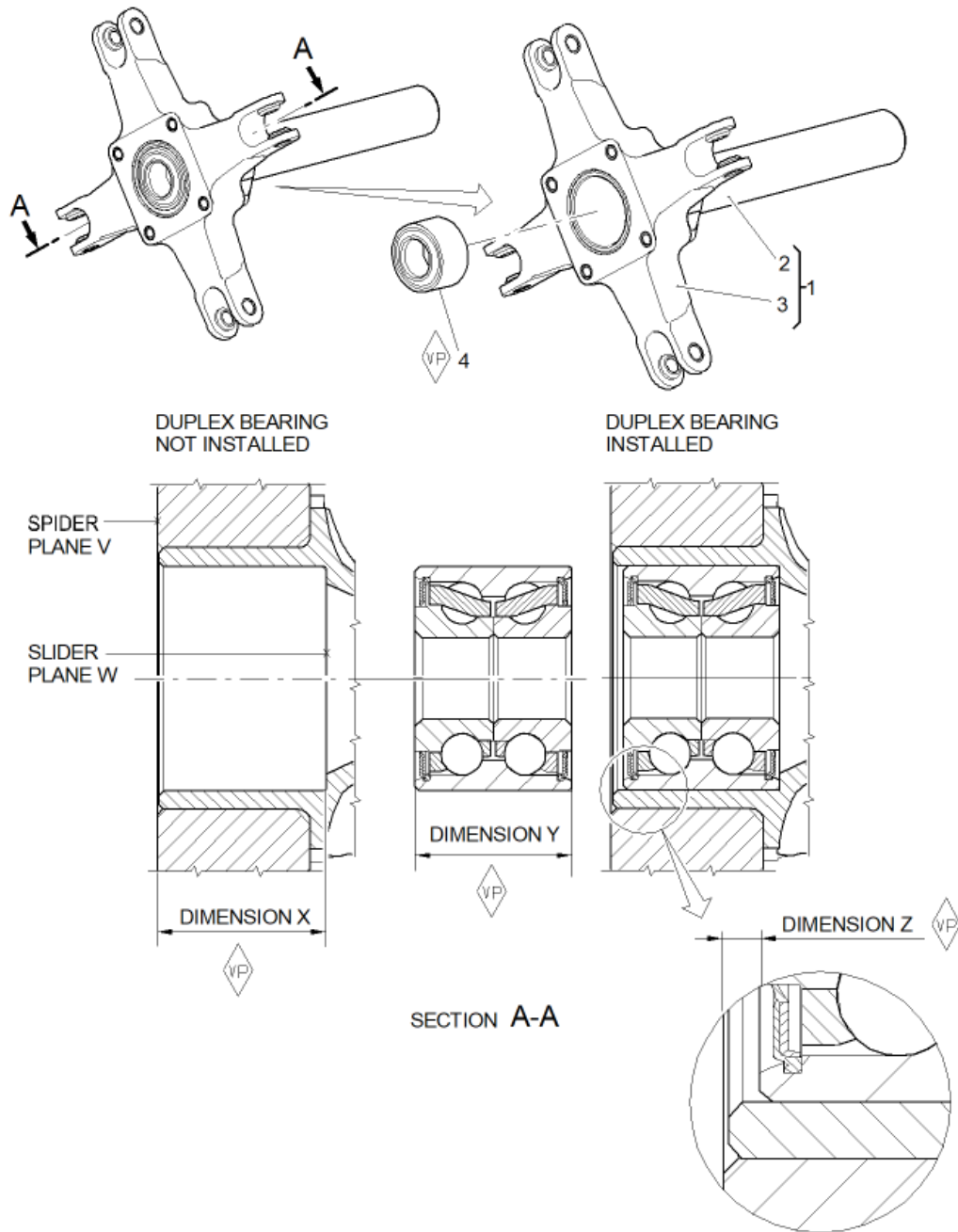
Make sure that the serial number written on the duplex bearing is in view also after the installation.

- 3.8 Put the duplex bearing (**4**) on the [Installation tool, TR duplex bearing \(GF-35-02\)](#) . (**VP**)
- 3.9 Install the duplex bearing (**4**) on the sliding control assembly (1) with the [Arbor press \(ZZ-00-00\)](#) . (**VP**)
- 3.10 Remove the installation tool from the duplex bearing (**4**). (**VP**)
- 3.11 Make sure that the seal of the duplex bearing (**4**) is not damaged. (**VP**)
- 4 Measure and record the **Dimension Z** (refer to Detail A of [Figure 1](#)). (**VP**)
- 5 Subtract **Dimension X** from **Dimension Y** . The result must be equal to **Dimension Z** . (**VP**)

- 5.1 If the result is equal to **Dimension Z** , the installation procedure of the duplex bearing is completed. (**VP**)
- 5.2 If the result is not equal to **Dimension Z** (**VP**):
- Remove the duplex bearing (**4**) with the **Extractor, TR duplex bearing (GF-35-01)** . Discard the duplex bearing. (**VP**)
 - Install a new **Duplex bearing (64-31-01-01 -001)** (**4**). Go to **step 3.** (**VP**)

Requirements After Job Completion

- 1 Install the sliding control assembly on the helicopter. Refer to [39-A-64-31-04-00A-720A-A](#)



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Figure 1 Duplex bearing (sliding control assembly) - Replacement (remove and install a new item)