Temporary Maintenance Instruction
TMI189-056

Tail rotor drive shaft installation - Direct alignment - Function test

All AW189 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: February 1st 2024.

2023-02-01

Introduction

The purpose of this Temporary Maintenance Instruction is to give you the evidence of the new Procedure, applicable to All AW189 Helicopters, DM 89-A-65-11-00-02A-340A-A - Tail rotor drive shaft installation - Direct alignment - Function test.

Tail rotor drive shaft installation - Direct alignment - Function test

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Table 1 References

Data Module	Title
89-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)
89-A-71-11-08-00A-520A-A	Left outboard air intake - Remove procedure
89-A-71-11-08-00A-720A-A	Left outboard air intake - Install procedure

Table 2 Access points

Access Panel / Door Id	Data Module
471A, 481A, 491A, 492A, 494A, 495A	89-A-06-41-00-00A-010A-A

Table 3 Zones

Zone ID	Data Module
470, 480, 490	89-A-06-30-00-00A-010A-A

Preliminary Requirements

Required Conditions

Table 4 Required Conditions

Conditions	Data Module/Technical Publication
The helicopter must be safe for maintenance.	89-A-00-20-00-00A-120A-A
The access doors/panels 471A, 481A, 491A, 492A, 494A and 495A must be opened/removed.	89-A-06-41-00-00A-010A-A
The left outboard air intake must be removed.	89-A-71-11-08-00A-520A-A

Support Equipment

Table 5 Support Equipment

Nomenclature	Identification No.	Qty
Platform	GG-01-00	1
Platform	GG-03-00	1
Gauge supports	139H6300D002A651D	1
Linear gauge test bench	TALL0000M1A686A	1

Supplies

Table 6 Supplies

Nomenclature
No Supplies

Spares

Table 7 Spares

Nomenclature
No Spares

Safety Conditions

CAUTION

The measurement shall be considered acceptable when it is acquired following the general requirements in terms of helicopter configuration. The alignment evaluations shall be done basing on one set of data acquired in accordance with the requirements defined in this document.

Procedure

1 Put the Platform (GG-01-00) adjacent to the left side of the fuselage.

2 Put the Platform (GG-03-00) adjacent to the left side of the vertical fin.

3 Make sure that these components are installed on the helicopter:

- The Number 1 engine
- The Number 2 engine
- The tail rotor head
- The Number 1 flexible coupling (1, Figure 1)
- The Number 2 flexible coupling (2)
- The Number 3 flexible coupling (3)
- The Number 4 flexible coupling (4).

4 Install the Gauge supports (139H6300D002A651D) on the two flanges of the Number 1 flexible coupling (1) (Position A).

5 Put the Linear gauge test bench (TALL0000M1A686A) (refer to Figure 2) adjacent to the Number 1 flexible coupling (1).

6 Install the linear gauge (part of the Linear gauge test bench (TALL0000M1A686A)) on the linear gauge support of the Number 1 flexible coupling (1) (Position A). Refer to Figure 2.

Note

If the batteries of the linear test bench are discharged, connect the linear test bench through the power supply cable to a 220V receptacle

7 Set the ON/OFF switch of the test bench to ON.

8 Make sure that no LED indicators (MAX, MIN, TIR or BANK) are on (all function not active). If one of the LED indicators is on (function active) operate the MODE and BANK buttons until all LED indicators go off (all function not active).

Note

The linear gauge stroke is 5.000 mm. Adjust the position to have the measure value that is far from the full scale. This is to make sure that the measure value does not reach the full scale during the alignment check procedure.

9 Adjust the position of backing plate (part of Linear gauge test bench (TALL0000M1A686A)) until, on the display of test bench, an approximate value of 2.500 comes in view (50% of the linear gauge pin stroke).

10 Push three times the MODE button until the LED indicators above MAX, MIN and TIR are on.

Note

The TIR value is the result of the difference between the MAX and the MIN values measured after each zeroing (reset).

11 Push the P.SET button to set TIR value to 0.

CAUTION

When the tail rotor drive line rotates, make sure the linear gauge pin is not stressed or pinched.

12 Rotate the tail rotor drive line of 360° or more and record the maximum TIR value (rounded to the second decimal place) in the Alignment Data Sheet (Refer to Figure 3)

13 Push the "P.SET" button and then the"MODE" button to reset the test bench.

14 Set the ON/OFF switch to OFF.

15 Remove the linear gauge from the linear gauge support.

16 Remove linear gauge support from the flanges of the Number 1 flexible coupling (1).

17 Do again step 4 thru step 16 for these pars:

- The Number 2 flexible coupling (2) (Position C)
- The Number 3 flexible coupling (3) (Position D)
- The Number 4 flexible coupling (4) (Position B).

18 Make sure that the maximum TIR value recorded at each position is less than 0.79 mm. Differently, tell the Manufacturer.

Requirements After Job Completion

1 Remove all the tools and the other items from the work area. Make sure that the work area is clean.

2 Install the left outboard air intake. Refer to 89-A-71-11-08-00A-720A-A

3 Close/Install the access doors/panels 471A, 481A, 491A, 492A, 494A and 495A. Refer to 89-A-06-41-00-00A-010A-A

4 Remove the platforms from the helicopter.

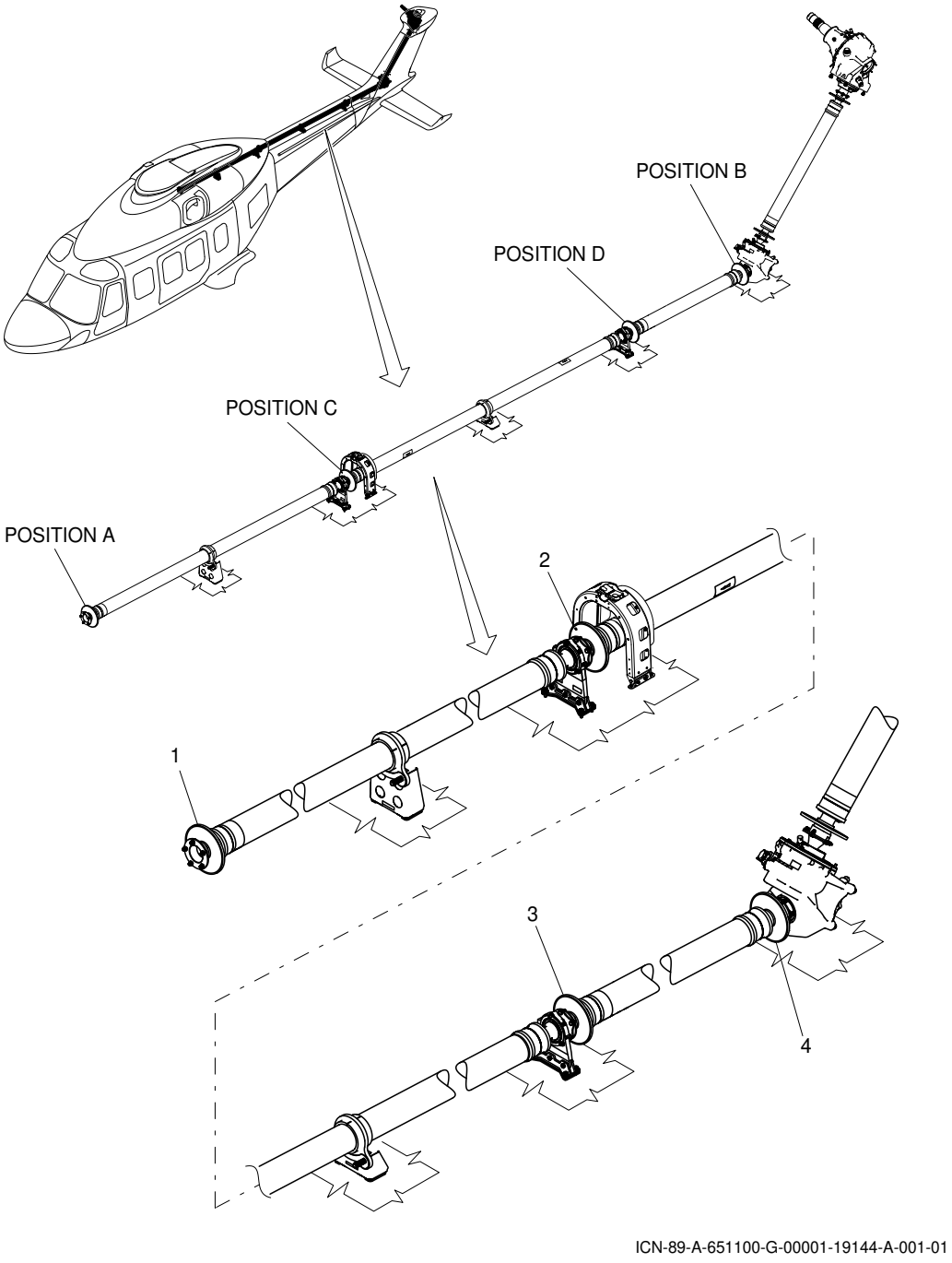
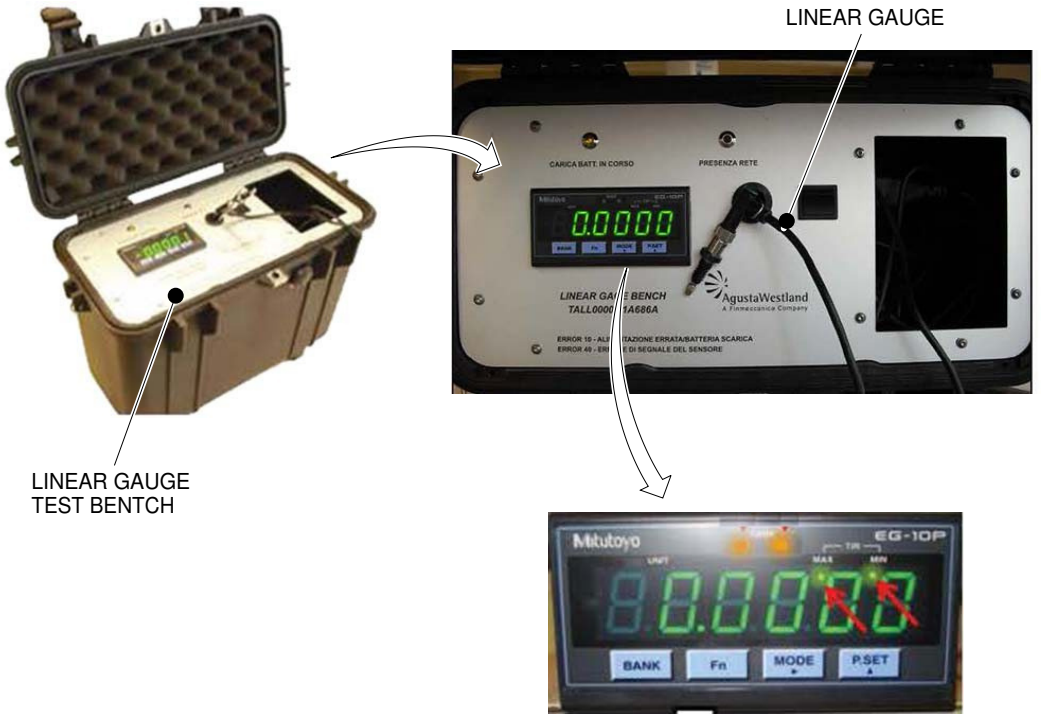


Figure 1 Tail rotor drive shaft installation - Direct alignment - Function test



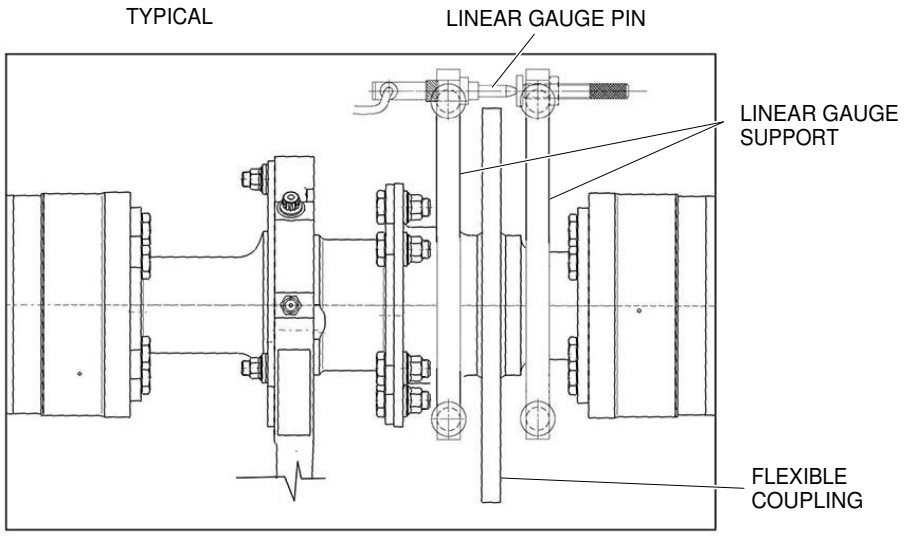


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Figure 2 Linear gauge test bench

LEONARDO HELICOPTERS	AW149/AW189 - TAIL DRIVE SHAFTS DIRECT ALIGNMENT FUNCTION TEST		
DEPT. :		COORDINATOR :	
ORIGIN COMPANY :		MATERIAL P/N :	
TDS INSTALLATION ☐	HARD LANDING ☐	ABNORMAL VIBRATIONS ☐	PERIODIC CHECK ☐
AIRCRAFT S/N :			

COUPLING POSITION	MEASURE VALUES	ALLOWABLE LINEAR DISPLACEMENT [mm]
N.1 FLEXIBLE COUPLING (A)		≤ 0.79
N.4 FLEXIBLE COUPLING (B)		≤ 0.79
N.2 FLEXIBLE COUPLING (C)		≤ 0.79
N.3 FLEXIBLE COUPLING (D)		≤ 0.79

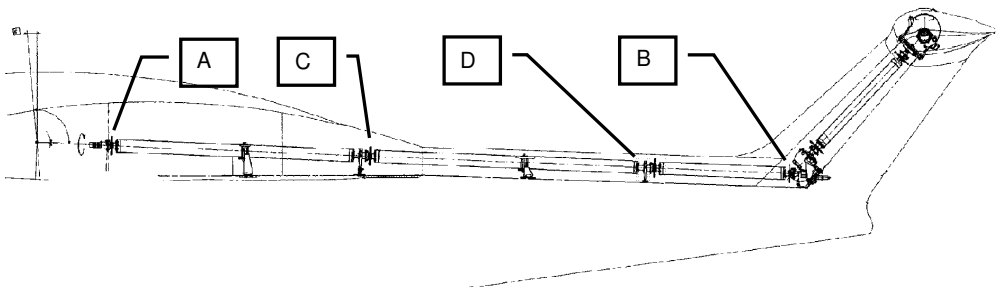

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Figure 3 Alignment Data Sheet

End of Data Module