INSTALLATION INSTRUCTIONS FOR

TM 1000-51

Aircraft Manufacturer: DG-Flugzeugbau GmbH

Aircraft Model(s): DG-1000 variant DG-1000M

Aircraft Serial Number: all

The technical content of this document is approved under the authority of DOA ref. EASA.21J.780.

Issue	Reason for Issue	Affected pp.	Date of issue
01.a	Initial Issue	all	11 Oct. 2024
01.b	Several changes	all	7 Mar. 2025

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Date	7 Mar. 2025	Date	7 Mar. 2025	Date	7 Mar. 2025

1. Descriprion:

Installation of a CFRP bracket between the two upper belt tensioning pulleys and tensioning of the belts according to new maintenance manual specifications

2. Installation Approval:

These instructions have been approved by EASA together with the major change as described in TM1000-51.

3. components / material

The components / materials listed below are required to carry out the modification:

Pos.	Qty.	Item number	Description
1	2	21100051	10M226 Bushing for CFRP-bracket between drive belt guide rollers
2	1		CFRP-bracket for upper drive belt guide rollers
3	2		10M169a Bolt for drive belt guide rollers
4			Araldite 2014-2
5			Loctite 243
6			securing paint
7			Release agent

4. Required/required documents

The documents listed below are required to carry out the modification:

Pos.	Document number	Document type and title
1	MM_DG-1000M_Rev19 TN1000-51	Maintenance manual pages according to TN1000-51

5. Required devices/tools/testing equipment

Devices and gauges

The devices and gauges listed below are required to carry out the modification

Pos.	Device number	Description
1	W66	Tool for V-belt tensioning

Tools

The Tools listed below are required to carry out the modification

Pos.	Description
1	Allen key wrenches 3mm+4mm
2	Ratchet

Pos.	Description
3	Socket wrench size 17 mm
4	Socket wrench size 22 mm

Measuring and testing equipment

The equipment listed below are required to carry out the modification

Pos.	Description
1	Caliper
2	Spring scale min 100N (22lbs)

Pos.	Description
3	Torque wrench

6. Working instructions

Note: To carry out these installation instructions, it is not necessary to dismantle the propeller, and detaching the gas strut and spindle drive from the engine.

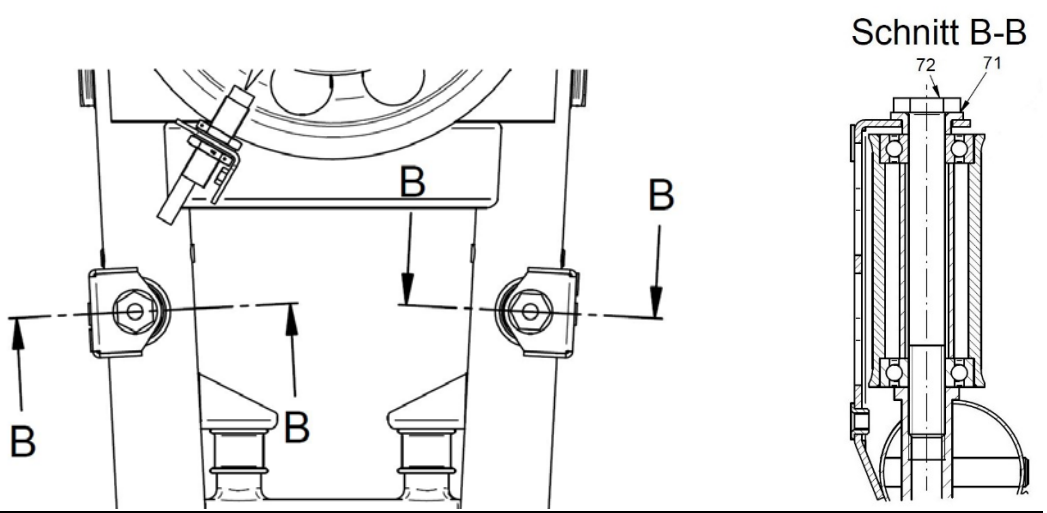
6.1 Removing the belt covers

a) Extend the powerplant to gain access to the powerplant.
b) Cut the power to the power plant by switching off the main switch.
c) Loosen the screws with Allen keys wrenches width 3+4.
d) Remove the belt covers towards the front.

6.2 Releasing the belt tension

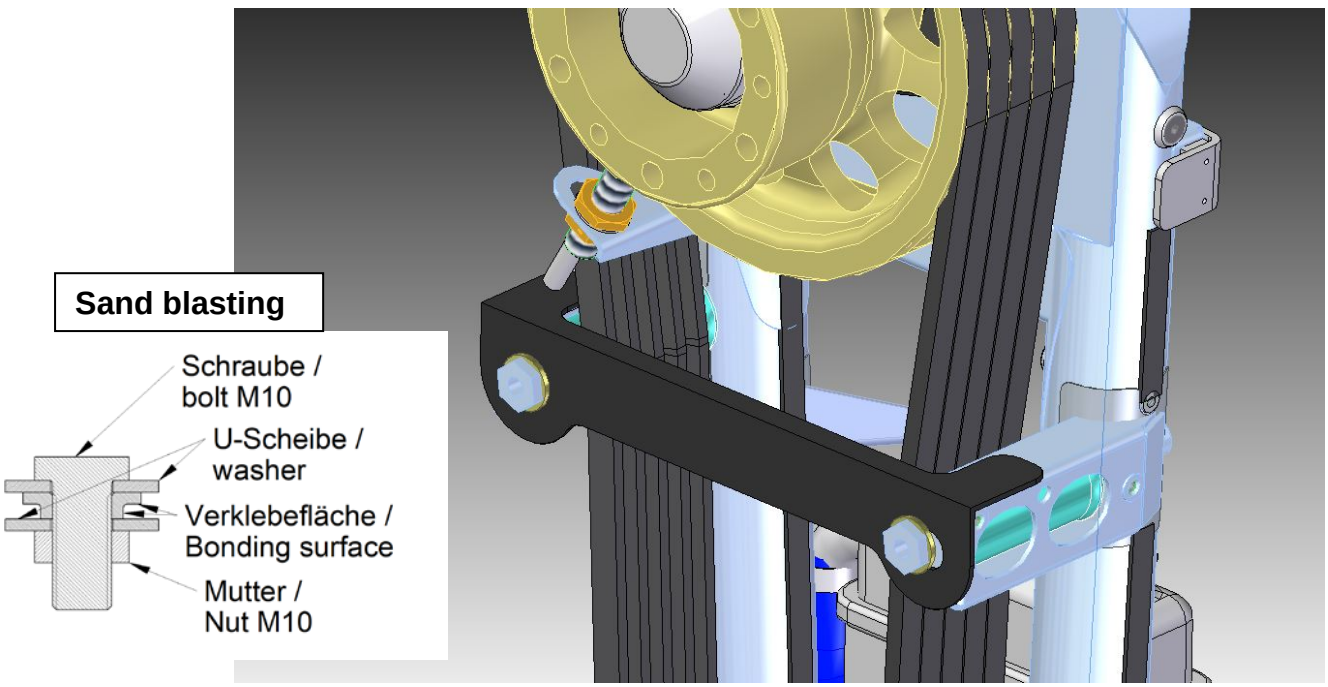
a) The belts are loosened using the screws on the front engine mount, see diagrams 13 and 20 in the maintenance manual DG-1000M.
b) Extend the drive unit so far that you can still hold the M14 nut of the rear screw. Use a ratchet and 22 mm socket wrench to loosen the M14x110 bolt from below.

6.3 Removing the old bolts of the upper drive belt guide rollers



a) Loosen and remove both bolts (72) of the upper rollers using a 17 mm open-end spanner.

6.4 Dry pre-assembly of the bracket with new bushings



a) Dry pre-assemble the bracket 10M227 with new bushings 10M226 and new bolts 10M169a.
b) Bracket has an elongated hole for aligning the bushings.
c) Ensure that nothing is sticking or jamming.
d) Grind a little if necessary.
e) Mark the bushings on the CFRP bracket and then roughen the CFRP bracket for gluing in the bushings according to the markings.

6.5 Gluing the new bushings to the CFRP bracket

a) Sandblast the bushings before bonding or roughen by using 80 grit sandpaper.
Only roughen the surfaces that will later be used for bonding, see inserted figure above.
During sand blasting use a bolt and nut to hold washers on both sides of the bushing, so that the inner surface of the bushing will not be damaged, see inserted figure above.
b) Apply release agent to bolts and drive belt guide rollers to avoid bonding these when bonding the bushings.
c) Apply Araldite 2014 as a wedge to the bushing and glue the bushing to the CFRP bracket with the bolts (72) in place.
Wipe off any excess adhesive.
d) After curing, clean release agent from rollers and bolts.

6.6 Post-curing the CFRP-bracket

a) After the adhesive has cured at room temperature for min. 20h, post-cure the CFRP bracket for 1 hour at 80° C to completely cure the Araldite.
b) Create a temper log.

6.7 assembling of the bracket with new bolts

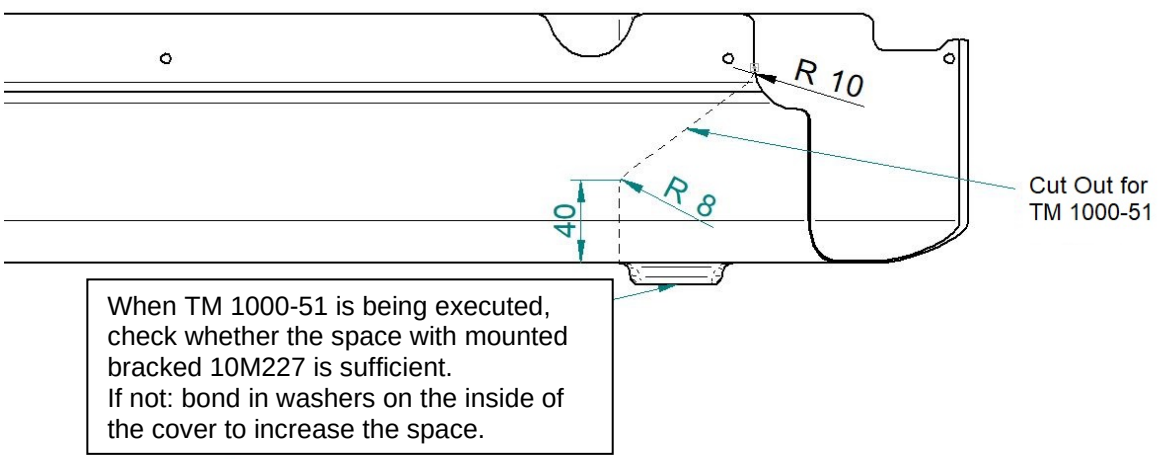
a) After post-curing, check the fit of the CFRP bracket.
b) Insert the new bolts, secure with Loctite 243, see maintenance manual chapter 4.9.
c) Tighten with a torque wrench and socket wrench size 17 to a torque of 10 Nm.
d) Mark bolt with securing paint.

6.8 Tensioning the belts according to the new maintenance manual pages

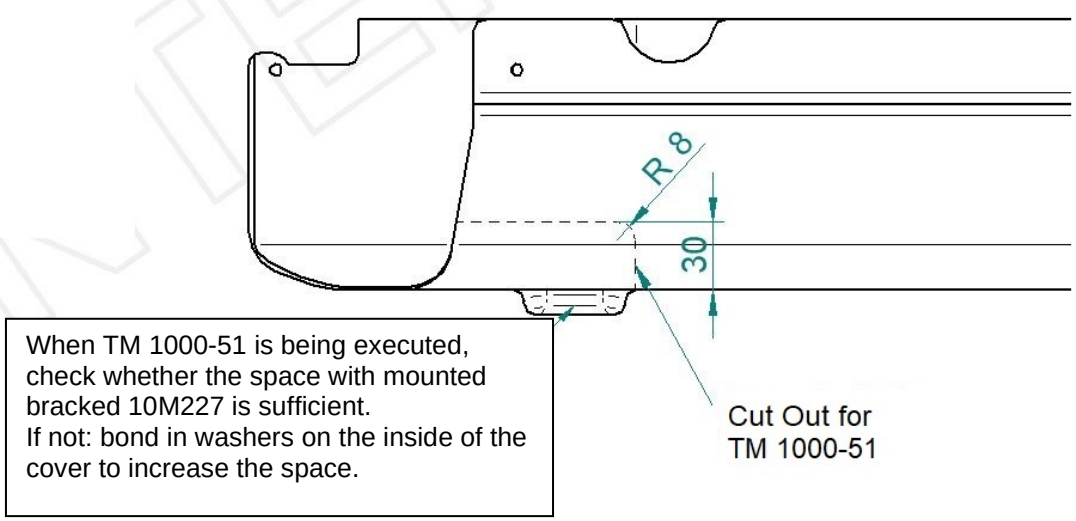
a) The belts are tensioned using the bolts on the front engine mount.
b) Extend/retract the engine so far that you can still hold the M14 nut of the rear bolt. Use a ratchet and socket wrench size 22 mm to tighten the M14x110 bolt from below.
c) Check the tension according to the new maintenance manual pages DG-1000M Rev19 TM1000-51 section 4.10.2.

6.9 Adjusting the belt covers

a) Roughly cut out the belt covers according to the drawings below.
b) Adjust more precisely by repeated fitting and regrinding to achieve the most precise fit possible
c) Create a gap of at least 1 mm between the CFRP bracket and the belt cover, see remark below.



Cut Out left belt cover



Cut Out right belt cover

6.10 Test run

a) Install the belt covers without securing the mounting screws.
b) Test run
c) Check for proper function, grinding noises, vibration on the belt covers.

Warning: Test run may only be carried out with the belt cover fitted and with wings rigged, respect Service Information 0-2/1992 for test runs

6.11 Check the belt tension again

a) After the test run, check the belt tension again as the belts can settle during the test run.
b) When finally fitting the belt covers, secure mounting screws with Loctite 243 and mark with securing paint, see maintenance manual, section 4.9

Recommendation: use new bolts and rosettes as the rosettes in particular can break due to engine vibration

7. ACCOMPLISHMENT INSTRUCTION

Description of Work	Performed by:	Inspection note
Removing the belt covers		
Releasing the belt tension		
Remove the old bolts and bushings from the guide rollers at the top		
Dry pre-assembly of the bracket with new bushings		
Tension the belt according to the new maintenance manual pages		
Bonding the new bushings to the CFRP bracket		
Post-curing the bracket		
Fit the bracket with new bolts		
Fitting the belt covers		
Test Run		
Check belt tension again		
Secure screws of belt covers		

Installation and Installation Inspection performed accordingly:

Date: _____

Certifying Staff:

_____ _____

Name Signature: