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Removal of inner propeller spring on counterweighted MT-Propeller.

Affected Aircraft: Grob G115E
Affected Propeller: MTV-12-B-C/C183-17e installed per EASA STC.10043263

Expendable Material:

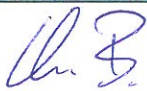
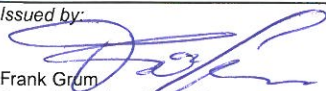
- RTV 109 silicone, or similar
- Safety Wire 0.025 inch (0,63 mm)
- Safety Wire 0.032 inch (0,81 mm)

Reason:

On some Grob G115E airplanes propeller speed surges were observed due to engine oil pressure fluctuations during some aerobatic manoeuvres.

In normal operation the propeller governor is supplied with engine oil from the engine oil system. During aerobatics short engine oil pressure dropouts may occur. This results in insufficient oil supply to the propeller governor. The propeller MTV-12-B-C/C183-17e is controlled with oil pressure to decrease pitch. In case of oil pressure loss the counterweights and the springs inside the hub will turn the blades towards high pitch. In this case the amount of the RPM-drop depends on the length of the oil supply dropouts.

The removal of one (inner) spring reduces the spring force which turns the blades in the high pitch position. This allows a lower oil pressure to control the blade pitch.

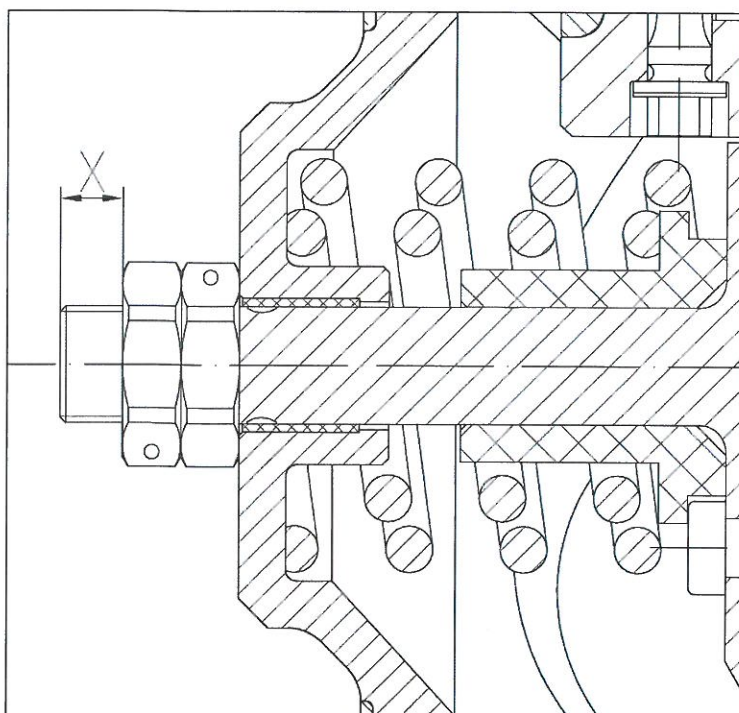
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Required Action:

All numbers in parentheses are references to the drawing on the last page.

1. Unscrew the spinner screws and remove the spinner dome (1).
2. Use a vernier caliper to measure the dimension X shown in the drawing below. Note the dimension; it is important to set the high pitch position accordingly.



3. Use a marker pen to mark the two check nuts, rod and front plate (5) relative position.
4. Remove the 12 front plate screws (3) and spinner front plate (4).

Warning:
Due to the return spring, the front plate is preloaded
(appr. 2000 N – 7400 lbs)

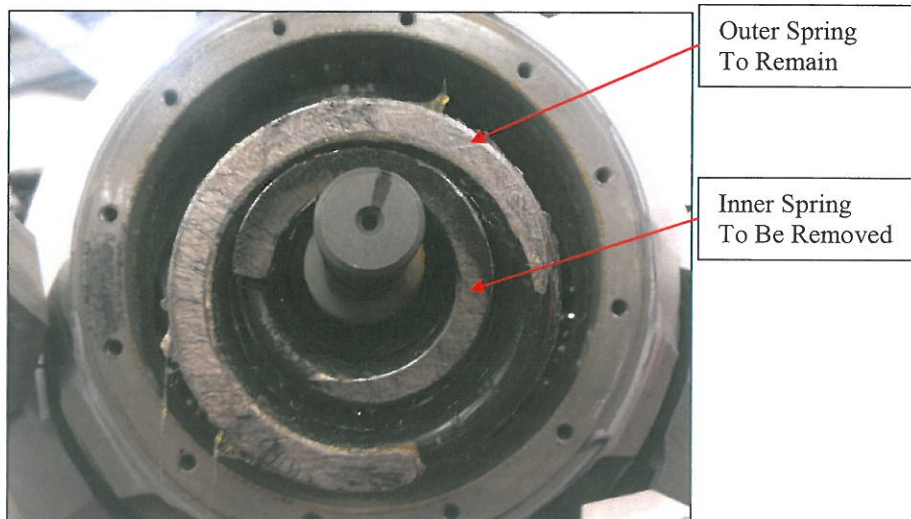
Unscrew check nuts with care until the pre-load force is felt to stop.
This may not be until towards the extremity of the last few threads.

5. Remove propeller front plate (5) by releasing and removing the check nuts (6).

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6. Remove the propeller inner spring (7).

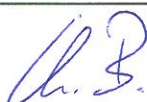
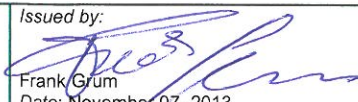


7. Ensure that the outer spring (8) remains in place.
8. Bring propeller front plate (5) into position by pressing it down with one check nut (6). Ensure the breather hole in the front plate aligns with blade No. 1.
9. Apply sealing material RTV 109 or similar on parting line (9) only outside not on the parting surface.

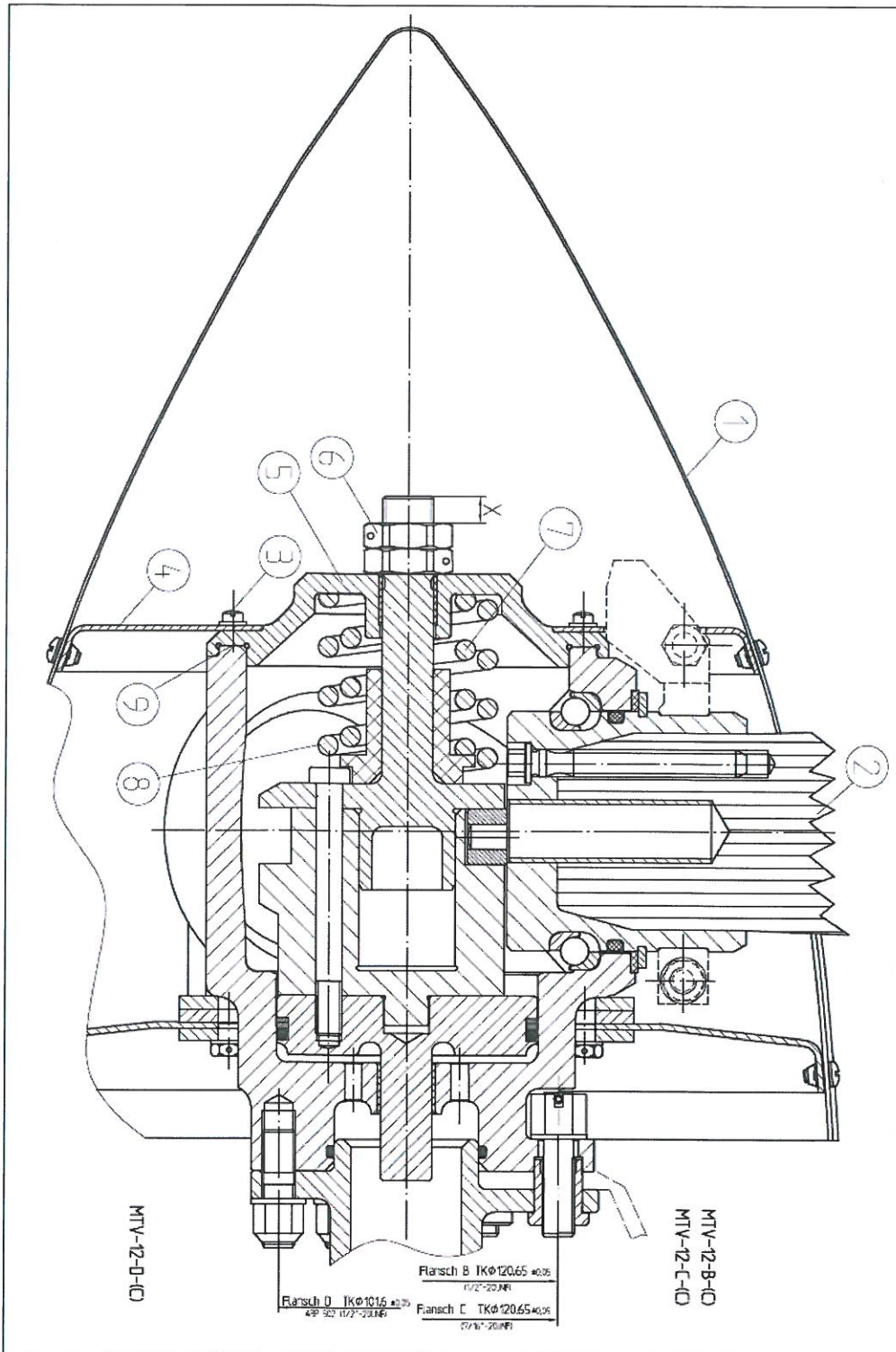
WARNING:

**Do not apply any sealing material between the contacting surfaces
on hub and front plate**

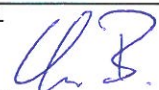
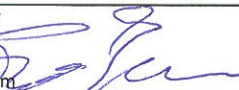
10. Align blade No. 1 index on spinner front support (4) with blade No. 1 and fasten all 12 front plate screws (3) with 6 – 6,5 Nm (52-57 inlbs).
11. Safety wire the front plate screws using 0.025 inch (0,63 mm) standard safety wire.
12. Install both check nuts with the attaching side against each other. Readjust to dimension X and ensure the marks previously applied are aligned and torque the nuts against each other (90 Nm – 100 Nm / 797 inlbs – 885 inlbs). Recheck dimensions A by using the depth function of a vernier caliper.
13. Safety wire the check nuts using 0.032 inch (0,81 mm) standard safety wire.
14. Carry out a duplicate inspection for your Airworthiness Authority if required.
15. Reinstall the spinner taking note of the correct position in relation to blade No. 1.
16. Perform an engine check run and make logbook entries.

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Drawing 1: MTV-12-B-C assembly drawing

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