



GFA AIRWORTHINESS DIRECTIVE

CANCELLED 18/06/2020

**REFER TYPE CERTIFICATE HOLDERS
CURRENT DATA**

TYPE AFFECTED: DG-500 M

SUBJECT: Use of unleaded fuel and manual amendments.

BACKGROUND: High Octane (Premium) unleaded of at least 95 RON may be used provided the fuel drain sealing ring is replaced.

The manuals have been updated to reflect latest practice.

DOCUMENTATION: DG Technical Note NT 843/8 the relevant parts of which form part of this AD. Note that item 1 of this Technical Note is covered by GFA AD 474

ACTION REQUIRED:

1. Before the next Annual Inspection and before using unleaded fuel the drainer sealing ring must be replaced in accordance with Instruction 2 of TN 843/8. Parts may be obtained from DG Flugzeugbau or their Australian Agent.
2. Before 1 October 1997 amend the Flight and Maintenance Manuals by replacing pages 0.1, 0.3 and 2.6 in the Flight Manual and pages 1, 3, 4, 47, 59, 92 and diagram 11 in the Maintenance Manual with pages dated March 1997. These pages must be complied with in all future servicing. Attention is drawn to the improved procedures for using Loctite.

Pages may be obtained from the GFA Secretariat.

WEIGHT AND BALANCE: Not affected

IMPLEMENTATION: Installation of the sealing ring must be completed by persons rated for Annual Inspections on the DG-500 M.

SIGNED: Jonathon Shand

For and on behalf of:

CHIEF TECHNICAL OFFICER AIRWORTHINESS

THE GLIDING FEDERATION
OF AUSTRALIA

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Manual amendments may be completed by the Certificate Holder.

COMPLIANCE:

The requirements of this GFA Airworthiness Directive are mandatory. This Directive is issued pursuant to the Rules and Regulations of the Gliding Federation of Australia.

APPENDIX A

EXTRACTS FROM TN 843/8

REASON:

2. Because leaded fuel will soon not be available, tests have been executed to find out whether it can be replaced by unleaded fuel. It was most important to check if the GFRP fuel tank would be damaged by some components added in high portions to the unleaded fuel, especially MTBE. In addition the drainer valve sealing ring designed for aviation gasoline may be affected. All other parts of the fuel system are from automotive origins and are therefore suitable for unleaded fuel.

The tests showed that the GFRP fuel tank tolerates unleaded automotive fuel of present quality as well as leaded automotive fuel used in the past. AVGAS 100 LL was also tested and proved to be the least aggressive fuel.

The drainer valve sealing ring is not resistant to automotive fuel and must be replaced.

Moreover the Bombardier-Rotax company confirmed in the meantime that, contrary to the manual, engines for motorgliders can be operated with unleaded automotive fuel with minimum 95 octane (RON).

3. When securing with Loctite, some items must be considered, which have not previously been included in the maintenance manual.

INSTRUCTIONS:

2. Exchange of the drainer sealing ring for a sealing ring part no. 60504402.

To accomplish this empty the fuel tank: Therefore use the separate electric fuel pump system and empty the tank through the tank filler opening.

Note how far the drainer valve protrudes into the landing gear box, then remove the drainer valve using a 13 mm socket wrench. Press the drainer valve sleeve to direction "open" and dismantle the sealing ring using a pointed but not sharp edged tool. The new sealing ring can be installed without a tool: Put the ring over the

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flange edge, roll it down to the groove and check proper position of the sealing.

Before reinstallation remove old sealing tape on the drainer's thread. Then roll up tightly minimum three windings with new sealing tape (winding direction clockwise when you look on the thread end). The sealing tape must not interfere with the sealing ring, after winding check operation of the drainer valve. When reinstalling the drainer valve take care to screw in deep enough to avoid interference with the landing gear. Refuel the fuel tank and check for leaks.

3. Instead of leaded automotive fuel with min. 96 octane (RON) as per flight manual leaded and unleaded fuel with min. 95 octane (RON), e.g. "EURO-Super", can also be used. Operating the engine with unleaded fuel "Super Plus" with 98 octane (RON) is not necessary- and not recommended. If there is no unleaded fuel with 95 octane (RON) available (e.g. in USA) it is possible to mix unleaded fuel with min. 92 octane (RON) with AVGAS 100 LL, mixing ratio 50:50. Empty the fuel tank for extended storage periods (more than 3 months). Don't use this fuel in the motorglider again.

4. Study the new instructions for securing with Loctite. Check the lifetime of any Loctite in your possession.

MATERIAL:

Manual pages.

Drainer valve sealing ring part no. 60504402

Sealing tape for drainer valve thread 0,1 x 12 mm DIN DVGW, part no. 70000370