

DG Flugzeugbau GmbH

Otto-Lilienthal-Weg 2 / Am Flugplatz • D-76646 Bruchsal • Germany
Postbox 1480, D-76604 Bruchsal • Germany
Tel. 07251 3020-100 • Telefax 07251 3020-200 • eMail: dg@dg-flugzeugbau.de
Spare part and material sales: Tel. 07251 3020-270 • lager@dg-flugzeugbau.de
www.dg-flugzeugbau.de

FLIGHT MANUAL for the MOTORGLIDER

DG-500MB

Commercial designation **DG-505MB**

Model: DG-500MB
German Data Sheet No.: 843

Factory Serial No.: _____

Registration No.: _____

Date of Issue: July 1999

Pages as indicated by "App." are approved by:

(Signature)



(Authority)

Anerkannt vom
Luftfahrt-Bundesamt

(Stamp)



(Original date of approval)

23. JULI 1999

This motorglider is to be operated in compliance with information and limitations contained herein.

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Flight manual DG-500MB

0.1 Record of revisions

Any revision of the present manual, except actual weighing data, must be recorded in the following table and in case of approved sections endorsed by the responsible airworthiness authority.

The new or amended text in the revised page will be indicated by a black vertical line in the right hand margin, and the Revision No. and the date will be shown on the bottom left hand of the page.

Rev. No.	Affected Pages/section	Description	Issue Date	LBA Approval Date	Inserted Date Signature
1	0.5, 7.8	DEI circuit breaker, manual revision TN 843/13	Oct. 1999	03.11.99	
2	0.3, 4.8	Greasing schedule, manual revision TN 843/16	Jan. 2001	07.02.01	
3	0.3, 0.4, 0.5, 3.3, 3.4, 4.3, 4.5, 4.8, 4.12, 4.13, 4.14, 4.18, 4.21, 4.22, 5.5, 7.6, 7.7, 7.8, 7.12, 8.7	Engine control, manual extension and retraction control, manual revision TN 843/17	July 2002	31.07.02	
6	0.4, 0.5, 4.20, 8.7	manual revision TN 843/19	March 2004		

Issued: March 2004

TN 843/19

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9		9.1	"		

4.5.6 **Engine stop retraction and extension – start in flight and after landing**

4.5.6.1 **Stopping and retracting the engine in flight**

1. Lift the rear view mirror so, that you see the propeller. Check if the red cover of the manual extension - retraction switch on the right side console is in the down position. Check the circuit breaker for engine extension-retraction.
2. Fly at 85-90 km/h (46-49 kts).

Caution: If the throttle is closed at speeds in excess of 100 km/h (54 kts) the engine may retract a little bit due to vibrations when slowing down. The **engine travelling** light will shine instead of **engine extended**. Slow turning of the propeller by the starter motor will no longer function. If necessary extend the engine again via the ignition switch or via the manual switch and turn the propeller into retraction position.

3. Bring the throttle back to idle. A cooling run of approx. ½ minute is recommended.
4. Switch off the ignition. When the aircraft is controlled from the front cockpit switch off the ignition in the front DEI (rear ignition switch remains in "on" position). If controlled from the rear cockpit switch off the ignition in the rear cockpit (front ignition switch remains in "on" position).
5. The engine will be slowed down by the electric propeller brake.
6. If the propeller does not stop in the retraction position, the prop-brake will release automatically until the propeller starts turning slowly.
With the ignition switched off, the propeller may be turned into the retraction position by pressing the starter button.
The starter motor receives only pulses of electric power to turn the propeller slowly. As soon as the propeller is in retraction position, the electric power is cut off.
If turning the propeller with the starter motor doesn't work, you may turn the propeller by increasing the airspeed. Watch the procedure in the mirror!
7. The engine will retract by itself as soon as the control light stops shining.
In case the automatic retraction is defective, the engine must be retracted via the manual extension-retraction switch.
8. After engine retraction set the engine master switch to "off". With only short gliding flights i.e. saw tooth cross country flights, the switch can be left on "on".

Caution: If the electric propellerbrake fails, use the manual brake. Keep the brake on during the entire engine retraction.

Caution: With high temperatures (temperature on ground above 25°C/77°F) there is the risk of overheating the propeller after engine retraction. To avoid damage extend the engine again via the manual switch (approx. 1 second) to open the engine doors, retract again after 5 minutes.

- F. Fuel lines clogged or kinked. Check fuel flow rate see maintenance manual sect. 1.13.3.
- G. If the engine can't be accelerated from idle to full throttle and cleaning the carburettors (see 4 A and B) doesn't help, you should exchange the carburettor membrane and the gaskets.
- H. Clogged air intake filter, see MM sect. 3.5.1 item 8.

5. **Fuel leaks out of the carburettors**

see 4 A

6. **Loss of electrical power**

see flight manual sect. 3.11.

7. **Ignition problems**

No spark:

- **on one spark plug of one ignition circuit:**
Spark plug, ignition cable or electronic box defective.
- **on both spark plugs of one ignition circuit:**
Too low starting RPM; weak battery;
shorting cable or ignition switch having ground connection;
electronic box defective: if after interchanging the boxes with the other ignition circuit the trouble appears on the other ignition circuit; if not, armature plate (in the engine) or cables may be defective.
- **on none of the spark plugs:**
too low starting RPM: weak battery;
shorting cable or ignition switch having ground connection;
cable defective;
If after interchanging the boxes with the other ignition circuit one circuit will function again, one electronic box and the armature plate are defective.

8. **Engine becomes too hot**

Carburettor fuel nozzles clogged
Fuel lines clogged, Fuel filter dirty
Cooling system defective
(Test of the coolant pump see DG Service Info 49-02)
Spark plugs defective
Ignition timing not correct

9. **Disturbance of rear DEI indicators**

This suggests that strong electromagnetic interference acts on the data transmission lines. Check the ignition system.

10. **Sudden power loss at full throttle**

Check pistons and cylinders for seizing marks, see maintenance manual sect. 3.5.1 item 12b.

11. **Coolant pump and 2. fuel pump running** with ignition switched off (engine master switch on). If this failure occurs, there is a short in the generator or generator circuit.