0 Revisions

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 under lying document for the Revision and the date will be shown on the bottom of the page.

Rev. No.	Affected Pages/ section	Description	Issue Date	EASA Approval Date	Inserted Date Signature
1	0.3-0.5, 1.5, 1.6, 2.5, 2.9-2.11, 4.22, 5.3, 5.6, 5.7, 5.9, 5.10, 5.13, 6.6, 6.10, 7.10, 7.13-7.15	Manual revision TN 800/34	September 2007	9. October 2007	
2	0.1, 0.3 ÷ 0.5, 1.2, 1.5, 2.6, 2.8, 2.9, 3.4, 4.4 ÷ 4.6, 4.8, 4.9, 4.11, 4.15, 4.20, 4.24, 4.26, 4.27, 4.29, 5.14, 6.2, 6.4, 6.7, 6.10, 7.1, 7.2, 7.4, 7.9 ÷ 7.11, 7.15, 7.18, 7.20, 7.22, 7.23	Manual revision, Coolant pump Pierburg TN 800/41	May 2012	14. Sept. 2012	

0.2 List of effective pages

Section		page	issued	replaced/	replaced/
0		0.0	June 2005		
		0.1	see manual amendments		
		0.2	"		
		0.3	"		
		0.4	"		
		0.5	"		
		0.6	June 2005		
1		1.1	June 2005		
		1.2	"	May 2012	
		1.3	"		
		1.4	"		
		1.5	"	Sept 2007	May 2012
		1.6	"	Sept 2007	
2	App.	2.1	June 2005		
	"	2.2	"		
	"	2.3	"		
	"	2.4	"		
	"	2.5	"	Sept 2007	
	"	2.6	"	May 2012	
	"	2.7	"		
	"	2.8	"	May 2012	
	"	2.9	"	May 2012	
	"	2.10	"	Sept 2007	
	"	2.11	"	Sept 2007	
	"	2.12	"		
	"	2.13	"		
	"	2.14	"		
3	"	3.1	June 2005		
	"	3.2	"		
	"	3.3	"		
	"	3.4	"	May 2012	
	"	3.5	"		
	"	3.6	"		
	"	3.7	"		
4	"	4.1	June 2005		
	"	4.2	"		
	"	4.3	"		

0.2 List of effective pages (cont.)

Section		Page	issued	replaced/	replaced/
4	App.	4.4	June 2005	May 2012	
		4.5	"	May 2012	
		4.6	"	May 2012	
	"	4.7	"		
	"	4.8	"	May 2012	
	"	4.9	"	May 2012	
	"	4.10	"		
	"	4.11	"	May 2012	
	"	4.12	"		
	"	4.13	"		
	"	4.14	"		
	"	4.15	"	May 2012	
	"	4.16	"		
	"	4.17	"		
	"	4.18	"		
	"	4.19	"		
	"	4.20	"	May 2012	
	"	4.21	"		
	"	4.22	"	Sept 2007	
	"	4.23	"		
	"	4.24	"	May 2012	
	"	4.25	"		
	"	4.26	"	May 2012	
	"	4.27	"	May 2012	
	"	4.28	"		
		4.29		May 2012	
5	"	5.1	June 2005		
	"	5.2	"		
	"	5.3	"	Sept 2007	
	"	5.4	"		
	"	5.5	"		
	"	5.6	"	Sept 2007	
	App.	5.7	"	Sept 2007	
		5.8	"		
		5.9	"	Sept 2007	
		5.10	"	Sept 2007	
		5.11	"		
		5.12	"		
		5.13	"	Sept 2007	
		5.14	"		

0.2 List of effective pages (cont.)

Section	Page	issued	replaced/	replaced/
6	6.1	June 2005		
	6.2	"	May 2012	
	6.3	"		
	6.4	"	May 2012	
	6.5	"		
	6.6	"	Sept 2007	
	6.7	"	May 2012	
	6.8	"		
	6.9	"		
	6.10	"	Sept 2007	May 2012
7	7.1	June 2005	May 2012	
	7.2	"	May 2012	
	7.3	"		
	7.4	"	May 2012	
	7.5	"		
	7.6	"		
	7.7	"		
	7.8	"		
	7.9	"	May 2012	
	7.10	"	Sept 2007	May 2012
	7.11	"	May 2012	
	7.12	"		
	7.13	"	Sept 2007	
	7.14	"	Sept. 2007	
	7.15	"	Sept 2007	May 2012
	7.16	"		
	7.17	"		
	7.18	"	May 2012	
	7.19	"		
	7.20	"	May 2012	
	7.21	"		
	7.22	"	May 2012	
	7.23	"	May 2012	
8	8.1	June 2005		
	8.2	"		
	8.3	"		
	8.4	"		
	8.5	"		
	8.6	"		
	8.7	"		

1.1 Introduction

The flight manual has been prepared to provide pilots and instructors with information for the safe and efficient operation of the DG-808C motorglider.

This manual includes the material required to be furnished to the pilot by JAR Part 22. It also contains supplemental data supplied by the glider manufacturer.

1.2 Certification basis

This motorglider type DG-800, variant DG-808C has been approved by the EASA in accordance with:

Airworthiness requirements:
JAR Part 22 „*Sailplanes and powered sailplanes*“, change 4, issued 27th June 1989.
and
Noise requirements: ICAO Appendix 16, Volume I, Part II, Chapter 10

The Type Certificate No. EASA.A.067 for the variant DG-808C has been issued on January 10. 2006.

Category of Airworthiness: "Utility"

Technical data

Wingspan	m (feet)	15 (49.2)	18 (59.1)
Wing surface	m² (ft²)	10.68 (115.0)	11.81 (127.1)
Aspect ratio	/	21.07	27.42
Mean aerodynamic chord MAC	m (ft)	0.734 (2.41)	0.700 (2.30)
Length	m (ft)	7.055 (23.15)	
Fuselage width	m (ft)	0.63 (2.07)	
Fuselage height	m (ft)	0.81 (2.66)	
Horizontal tail span	m (ft)	2.52 (8.27)	

Data for the version DG-808C Classic

Waterballast wings	kg (U.S.gal)	100 (26.4)	
Waterballast fin tank	kg (U.S.gal)	none	
Empty weight approx.	kg (lbs.)	336 (741)	340 (750)
Wing loading with payload 80 kg (176 lbs.) approx.	kg/m² (lbs./ft²)	39 (7.97)	35.4 (7.29)
Max. weight	kg (lbs.)	525 (1157)	
Max. wing loading	kg/m² (lbs./ft²)	44.5 (9.11)	

Data for the version DG-808C Competition

Waterballast wings	kg (U.S.gal)	120 (31.7) or	150 (39.6)
Waterballast fin tank	kg (U.S.gal)	max. 6.5 (1.72)	
Empty weight approx.	kg (lbs.)	346 (762)	350 (772)
Wing loading with 80 kg (176 lbs.) payload approx.	kg/m² (lbs./ft²)	39.9 (8.16)	36.4 (7.46)
Max. weight	kg (lbs.)	540 (1190)	600 (1323)
Max. wing loading	kg/m² (lbs./ft²)	50.6 (10.35)	50.8 (10.47)

Powerplant

engine	Liquid cooled Solo 2 625 01 two stroke engine	
power	39 kW (53 hp)	
Reduction gear	1:3	
Propeller	Technoflug KS-1G-152-R-122-( )-B	GFRP-Composite
Propeller diameter	1.52 m (4.99 ft).	
Fuel tank capacity	fuselage tank	21 Liter (5.5 U.S.gal.)

Empty masses are with common instrumentation.
*Options will increase the empty mass accordingly!

Coolant temperature indicator (CHT):
On right hand upper side of the DEI-NT display, digital indication with 3 digits, limitation data printed above display:
red 95°C
When exceeding this temperature a full screen warning "CHT overTemp" appears. When this warning has been confirmed (by pushing the selector knob at the right hand side of the display) the CHT display will keep blinking as long as the CHT is above the max. CHT.

Fuel quantity indicator:
On left hand upper side of the DEI-NT display, digital indication with 2 digits. Limitation data for the non useable amount of fuel printed above the display:
red 0.5 l
When a fuel quantity of approx. 4 Litres is reached a full screen warning "Low Fuel" appears, when this warning has been confirmed (by pushing the turning knob at the right hand side of the display) the fuel display is blinking.
When reaching the non usable amount of fuel "R" is displayed and blinking.

2.6 Fuel

Fuel capacity:
Fuselage tank:

total:	21 l	(5.55 US gal.)
Non useable amount of fuel:	0.5 l	(0.15 US gal.)
Useable amount of fuel:	20,5 l	(5.42 US gal)
Wing tank left (Option):	10 l	(2.64 US gal.)
Wing tank right (Option):	10 l	(2.64 US gal.)

Approved fuel grades:

Car super gasoline min. 95 octane (ROZ) (RON) leaded or unleaded
or: AVGAS 100 LL (only if super gasoline is not available)
or: mix 50% AVGAS 100 LL and 50% Car super gasoline unleaded min 92 ctane (ROZ) (RON)

mixed with self mixing Super quality two stroke oil - specification TSC 3 or API TC or JASO FC or higher quality. Mixing ratio 1:50.

Caution: Fuel with more than 5% Ethanol is not acceptable to be used for the DG-808C fuel system.

Note: The SOLO company recommends the following oil types: CASTROL Actevo 2T, or CASTROL Super Two Stroke.

2.9 Approved manoeuvres

This sailplane is certified for normal gliding in the "Utility" category.
Simple aerobatics are approved but only without waterballast and with engine retracted.
The following aerobatic manoeuvres are approved (see section 4.5.12):
Wingflap setting 0° for all manoevres.

Manoeuvre	recommended km/h	entry speed IAS kts.
Spins	/	/
Inside Loop	180	97
Stall Turn	180	97
Lazy Eight	180	97
Chandelle	180	97

2.10 Manoeuvring load factors

The following load factors must not be exceeded:

	Speed	positive	negative
at manoeuvring speed	V_A	+5,3	-2,65
at max. speed	V_{NE}	+4,0	-1,5
with airbrakes extended	V_{NE}	+3,5	0
Wing-flaps landing setting	V_{FE}	+4,0	0

2.11 Flight crew

max. load in the seat 110 kg (242 lbs.)
min. load in the seat see placard in cockpit and weighing report page 6.5

With these loads, the C.G. range given under 6.8 will be kept in the limits if the empty weight C.G. is in its limits (see loading chart in section 6.8).

Caution:
With lower pilot weights lead ballast must be added to the seat.
Ballast put on the seat (lead ballast cushion) must be fastened at the safety belt anchor point.
Option: Provision for removable trim-ballast see sect 7.17.1.

Note: For Australia the lower limit for the min. load in the cockpit should not exceed 66 kg (146 lbs.). A provision for removable ballast (see section 7.17.1) is mandatory.

2.12 Kinds of operation

A) **All configurations**

Flights according to VFR (daylight)
Aerotow
Winch- and auto-launching

B) **In addition when flying without waterballast and with engine retracted**

1. Cloud flying (daylight): permitted when properly instrumented (see section 2.13 b).
2. Simple aerobatics (see section 4.5.12), Category „Utility“

Note: Cloud flying is not permitted in the USA, Canada and Australia.

2.13 Minimum equipment

As minimum equipment only the instruments and equipment specified in the equipment list (see maintenance manual) are permitted.
Note: The actual equipment list is filed in the enclosures of the maintenance manual.

a) Normal operation

Airspeed indicator: Range: 0-300 km/h (0-165kts.): Speed range markings see section 2.3
Altimeter: Range: 0 – min. 6.000 m (20.000 ft.),
Altimeter with fine range pointer, 1 turn max. 1000 m (3000 ft.)
Magnetic compass (compensated in the aircraft)
Four piece symmetrical safety harness
VHF – transceiver: (ready for operation) with noise absorbing earphones (not required for Canada)
Engine speed indicator, Fuel quantity indicator, Coolant temperature indicator, Engine elapsed time indicator (counts as long as the engine is running):
These 4 indicators are incorporated in the DEI-NT. Markings and display of the limitations see section 2.5
Outside air temperature gauge: with probe in the fuselage nose, also incorporated in the DEI-NT.
Rear view mirror
Fire warning light
Parachute: automatic or manual type or a hard back cushion approximately 8 cm (3 in.) thick.
Required placards, check lists and this flight manual

b) In addition for cloud flying : (Not permitted in Canada and Australia)

Variometer
Turn and bank indicator

Note: Experience has shown that the installed airspeed indicator system may be used for cloud flying.

3.8.2 Power loss during flight

Push the control stick forward immediately, watch the airspeed indicator!
Check:
- fuel cock position?
- fuel quantity?

If no change, retract the engine or land with extended engine.

3.9 Fires

3.9.1 In engine on the ground

- close fuel cock and switch off ignition if the engine is still running
- keep engine extended
- switch off main switch (switch 25)
- use extinguisher, cloth or suitable external means

3.9.2 In engine in flight

- close fuel cock
- open throttle fully if engine is still running until engine stops
- if possible retract the engine to quench the fire
- land as soon as possible
- extinguish fire

3.9.3 In the fuselage

3.9.3.1 Front fuselage (electrical fire)

- switch off main switch (switch 25)
- close ventilation, open and side window
- land as soon as possible if the fire is not extinguished (circuits are effectively protected by circuit breakers)

3.9.3.2 Rear fuselage (engine)

- the red fire warning light will indicate a fire (temperature above 140°C, 284°F)
- close fuel cock
- open throttle fully if engine is still running until the engine stops
- if possible retract the engine to smother the fire
- if smoke prevents flying open ventilation
- land as soon as possible
- extinguish fire

Fill with clean water using a graduated measuring vessel.
In addition you may check the content level by holding the filling hose against the scale on the fin.
After filling, push the fin tank dump handle in forward direction (the dump valve will be closed by a spring).
Then remove the filling hose with the hose connector.

4.2.3 Refuelling

4.2.3.1 General:

Preferably fuel is transferred from a can where the correct amount of oil is added and mixed prior to filling /see section 4.2.3.3a)). Refuelling is also possible via the tank filler opening on the fuselage exterior surface (see section 4.2.3.3b)).

4.2.3.2 Oil:

Use only super two stroke oil according to section 2.6.

4.2.3.3 Refuelling procedure

a) Refuelling via a permanently installed refuelling pump

Couple the fuel filler hose via a coupling to the fuselage side filler hose and switch on the main switch of the aircraft.
Start the pump by pressing the push button located in the fuselage main-bulkhead (behind the pilots left shoulder). As soon as the fuselage tank is full a built in device automatically switches off the pump. If you want to interrupt or to stop the filling procedure before the tank is full press the push button again. Starting the pumping again is only possible by pressing the push button again. This procedure will prevent the pump from running inadvertently.

Caution: If when pressing the push button the re-fuelling pump doesn't start running and the DEI fuel level indication changes immediately to 21 L, the tank full sensor is defective. In such a case refuel via the tank filler opening up to the sensor. Otherwise the fuel level gauge will display a higher fuel level than correct. Exchange the sensor as soon as possible.

b) Refuelling via the tank filler opening (on the fuselage exterior surface)

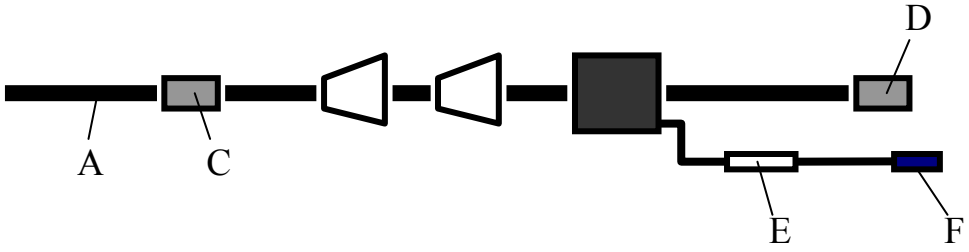
If you can't fill with premixed fuel, half fill the tank with fuel, then add the proper amount of oil and fill up completely.

Calibration: A sensor located at the lower end of the filler tube automatically cuts off the electric power for the pump system, as soon as the fuselage tank is filled and executes a calibration of the fuel gauge. The calibration will be confirmed by the DEI-NT by a beep with approx. 1 second duration.
If you don't use the pump (see a) for filling, the calibration may be done manually: Fill the tank so that the sensor (see above) is covered with fuel. Press the push button see a) (the refuelling pump will not start, as the tank is full).

The calibration will be confirmed by the DEI-NT by a beep with approx. 1 second duration.
At least each time you change the fuel type or quality you have to fill the tank completely to do a calibration to ensure a correct fuel quantity indication.

4.2.3.4 Wing fuel tanks (Option)

Filling can only be done by using the separate electric pump system Z 02/2.



Insert plug F into the 12V socket.
Close the wing tank valves in the fuselage. Attach the quick connector C of the pump system to the wing fuel tank, plug the hose A into the quick connector D and the other end into a canister. Switch on the pump for min. 1 minute to remove air and any remains of fuel from the tank.
Remove the quick connector C from the wing tank and plug hose A into quick connector C.
Place the wing tip of the tank to be filled on the ground.
Connect the quick connector D to the wing tank and fill the wing tank. Fill in max. 10l (2.64 US gal).
After filling the wing tank connect the fuselage connector to the wing connector.

Caution: Empty the wing fuel tanks prior to derigging.
Don't park the rigged glider with filled wing fuel tanks for extended periods!
Warning: Overfilling the tanks will damage the wing-shell due to the pressure of the refuelling pump.

4.2.3.5 Storage of the pump system (see 4.2.3.4)

To increase the lifetime of the pump it is better not to empty the pump, but to store the pump filled with fuel. Therefore remove hose A by disengaging the coupling . The couplings C + D are closing the fuel lines to the pump when disengaged.

4.2.3.6 Refuelling without a can

In case there is no can available for premixing the fuel and oil for filling the wing tanks, the fuselage tank can be used. Transfer approx. 5 litres (1.3 US gal.) of fuel into the fuselage tank, pour in the oil and fill the tank with fuel. Then fill the wing tanks (option) from the fuselage tank with the electric pump system Z02/2

4.2.4 Derigging

Derigging follows the reverse of rigging.
Waterballast must be dumped first.
Transfer the fuel from the wing tanks (Option) to the fuselage tank or empty the wing tanks using the electric pump system in reverse. Disconnect the connectors from the wing fuel tanks.
Lock the airbrakes.

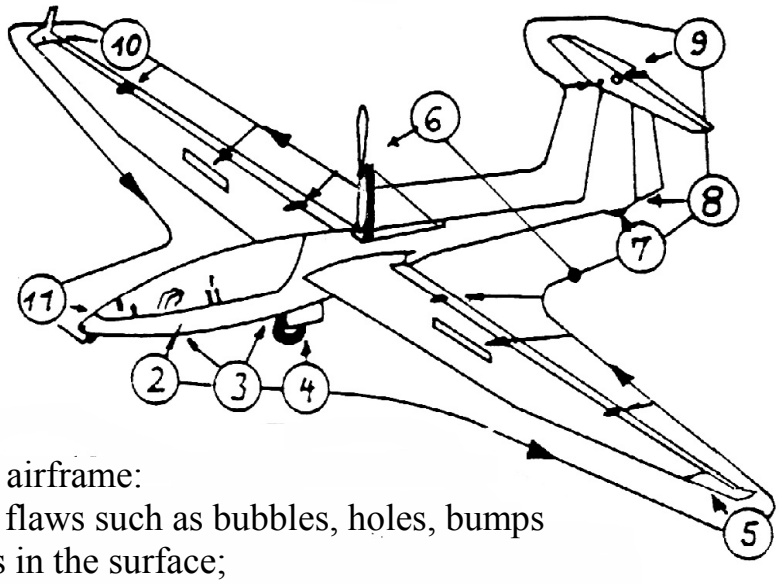
4.2.5 Rigging and derigging the wing tip extensions (Option)

1. Insert the wing tip extensions into the wing.
   Press in the locking pin with your finger.
   Insert the wing tip until the flaperon connector starts to slide into the flaperon slot.
   Strike firmly with the palm of your hand on to the wing tip to lock in the wing tip extension.
2. Disassembling of the wing tip
   Use a 6 mm diameter pin (e.g. tool W36) for pressing in the locking pin on the wing's upper surface.
3. The rigging of the 15 m wingtips with winglets (Option) has to be done in the same manner as the wing tip extensions.

4.2.6 Rigging and derigging the 18 m winglets (Option)

To assemble the winglets pull off the wingtips and slot in the winglets. The winglets are secured to the wings by means of a quarter turn fastener. With a screw driver turn the fastener a 1/4 turn in clockwise direction until it engages.
Removal is the opposite of that described above.
To fly with wingtips instead of winglets, secure the wingtips to the wings by taping the gap.

B Inspection after rigging - Walk around the aircraft



1. All parts of the airframe:
   a) Check for flaws such as bubbles, holes, bumps and cracks in the surface;
   b) Check leading and trailing edges of the wings and control surfaces for cracks;
2. Cockpit area:-
   a) Check the canopy locking mechanism;
   b) Check the canopy emergency release for proper locking. Check the function of the canopy emergency release according to section 7.16 (not each day, but min. every 3 months);
   c) Check the main pin securing;
   d) Check all controls for wear and function, incl. positive control check. Check if the handle of the pedal adjustment cable will be pulled to the front so that it can't hook into the trim release lever at the control stick, even with pedals in a rear position;
   e) Check the tow release system for wear and function incl. cable release check;
   f) Check for foreign objects;
   g) Check the instrumentation for wear and function;
   h) Switch on the main switch, the fire warning light must flash once (self-test-function), check the engine controls;
   i) Check all fuses including the battery fuse;
   j) Check the extension-retraction mechanism by operating it in both directions. The extension time should not exceed 13 seconds!
   k) Check the fuel filter for dirt or sludge, the filter is located in the baggage compartment;
   l) Check the fuel level;
   m) Extend the engine halfway;
   n) **Option disc brake:** Check the brake fluid level (the reservoir is located in the rear left hand side of the baggage compartment;

3. C.G. Tow hook:-
   a) Check the ring muzzle of the C.G. hook for wear and function;
   b) Check both tow hooks (if installed) for cleanliness and corrosion;
4. Main landing gear:-
   a) Check the struts, the gear box, the gear doors and the tyre for wear; dirt in the struts can hinder the landing gear from locking over centre the next time!;
   b) Check the tyre pressure: main wheel: 3 bar (44 psi);
   c) Check wheel brake and cable for wear and function;
      Option disc brake: Check the condition of the wheel brake assy. and the brake hose.;
5. Left wing:-
   a) Check locking of the wing tip (option)
   b) Check the flaperon hinges for excessive free play;
   c) check flaperon drives for ecessive free play;
   d) Check airbrake and box and control rod for wear and free play. It must be possible to retract the airbrake, even if it is pressed backwards in direction of flight. If there is any water in the airbrake box this has to be removed;
6. Power plant checks:-
   a) check the connection of spindle drive and gas strut to engine and fuselage. To accomplish this extend the engine only so far, that you still can see the connection to the engine mount. Check especially for cracks in the spindle drive fork.
   b) **Option BBSA slipping-centrifugal clutch:** Check the propeller-stopper for wear and function, check especially the actuating spring.
   c) extend the powerplant completely;
   d) check all screwed connections and their securing;
   e) check function of throttle, and propeller brake;
   f) check ignition system incl. wires and the spark plug connectors for tight fit;
   g) check toothed belt for wear and correct tension, sudden loss of tension indicates damage of the engine assembly;
   h) check engine retaining cable and its connections in the engine compartment and at the engine;
   i) check fuel lines, electrical wires, bowden cables and structural parts for wear and kinks;
   j) check exhaust muffler, propeller mount, radiator, water pump and accessories for tight fit and any cracking. Check especially the cable which lifts the muffler during engine extension.
      To check the water pump, switch on the ignition.
      You should hear a buzz.
   k) apply strong pressure to the propellermount in forward, backward and sideward directions to check if the bolted connection between the engine block and the propeller mount or any thing else is loose or damaged. Check the rubber engine mounts too.

4.4 Pre-flight inspection

1. Lead ballast (for under weight pilot)?

2. Fin ballast tank emptied or correct amount filled in?
   (only with Version DG-808C Competition)

3. Parachute worn properly?

4. Safety harness buckled?

5. Seat back and pedals adjusted?

6. All controls and knobs in reach?

7. Altimeter?

8. Dive brakes cycled and locked?

9. Wing flaps in initial take-off position?

10. Positive control check? (One person at the control surfaces).

11. Trim?

12. Canopy locked?

Additional checks before self-launching

13. Fuel level?

14. Fuel cock open?

15. Canopy open - propeller clear?

16. After starting the engine - close canopy.

17. Check engine RPM

18. Check both ignition circuits.

4.5.2 Self launching, take-off and climb

4.5.2.1 Take-off distance

Prior to take-off check according to section 5.2.3 if the available runway length is sufficient.

It must be appreciated that a rising runway, wet or uneven surface, long grass, cross wind etc. will increase the take-off distance considerably.

Selflaunching should only be undertaken if in case of power loss or engine failure there are possibilities to clear obstacles or for a safe out-landing.
In case of doubt choose a safe tow launch.

4.5.2.2 Start roll and take off

Wing flaps + 8°, trim fully tail down.
The take-off roll may be executed with one wing on the ground.
With a crosswind if there is no wing runner the lee-wind wing should be on the ground. The drag of the wingtip wheel partly compensates the moment of the wind on the vertical tail. This technique reduces the tendency to turn the glider into the wind.
Gently apply full throttle, as soon as the aircraft rolls lift the wing by applying aileron.
Pull back stick during start roll until you have full control authority.
Then roll on the mainwheel until you reach take-off speed.

4.5.2.3 Climb

After take-off accelerate the DG-808C to Vy = 90 km/h (49 kts) and climb with this speed.
Retract the landing gear after reaching safety altitude.
Execute the whole climb with full throttle to ensure a smooth engine run.

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.
2. Fly at 85-90 km/h (46-49 kts).
3. Bring the throttle back to idle. A cooling run of approx. ½ minute is recommended.
4. Switch off the ignition.
5. The engine will be slowed down by the electric propeller brake (option) or must be slowed down with the manual propeller brake.
6. As soon as the propeller stopped turning, the powerplant will be automatically retracted a little (intermediate position).
   To save altitude you may turn the propeller into the position for retraction (ignition switched off) 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.
   a) without BBSA slipping centrifugal clutch: As soon as the propeller is in the position for retraction the electrical propeller brake (Option) engages or you have to pull on the manual brake. The engine will retract by itself.
   b) with BBSA slipping centrifugal clutch: When the powerplant is retracted into the intermediate position the propeller stopper moves forward in the propeller circle. As soon as the propeller is in the position for retraction (close to the stopper) the engine will retract by itself.

Note: 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!

Note: In case the automatic retraction is defective, the engine must be retracted via the manual extension-retraction switch.

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.

4.5.8 Flight with water ballast

4.5.8.1 Wing tanks

Recommended ballast for smooth thermals:

	rate of climb		ballast	
	m/s	fpm	litres	U.S. gallons
below	1	200	none	
	1 – 2	200 - 400	40	10
	2 - 4	400 - 800	100	26
more than	4	800	max. ballast	

Do not exceed the maximum gross weight when loading the water ballast. The maximum quantity of water allowed is dependent on the empty weight and the cockpit load (see section 6.8.8).

4.5.8.2 Fin water ballast tank

For optimal thermalling performance and handling water ballast in the fin tank should be used to compensate the forward movement of C.G. due to the mass of the wing water ballast. Please refer to section 6.8.9.

Warning: It is prohibited to use the fin tank in icing conditions (see section 2.17.2).

4.5.8.3 General:

If there is the risk of freezing, dump all water before you reach freezing altitude, latest at +2°C (36°F), or descend to lower altitudes. If the OAT decreases +2°C a warning message “WATER FREEZE” will be displayed on the DEI-NT.

Warning: If you suspect a tank is leaking, dump all water immediately.

4.5.8.4 Landing with waterballast

Water ballast raises the approach speed and the stress on the landing gear, so it is recommended to dump the waterballast before landing.

Dump the ballast before an outlanding in any case.

4.5.8.5 Filling the waterballast

See sections 4.2.2. After filling level the wings and check if the dump valves are tight. It is not permitted to fly with leaking water tanks as this may result in an asymmetric loading condition.

4.5.10 Flight in rain and thunderstorms

With light rain the stall speed and the sink rate increases slightly and the approach speed has to be increased.

Warning: Flights and especially winch launches in the vicinity of thunder storms should be avoided. Due to lightning discharge, carbon fibre structures may be destroyed.

With the engine running:

In normal rain, the rate of climb will be reduced by 1/3. The cross country cruising speed will also be reduced by approx. 10 km/h (5 kts).
Take-off in rain should only be done with a long enough airfield and attention given to safety. A take-off should not be attempted in heavy rain.

4.5.11 Cloud flying

Cloud flying is only permitted without waterballast and with the engine retracted.
Take care to fly smoothly and coordinated. It is prohibited to use a spin as a method to reduce altitude in cloud. In case of emergency, pull out the dive brakes fully before exceeding a speed of 200 km/h and dive with max. 200 km/h (108 kts.) to leave the cloud.

Warning: Flying in or near thunderstorm-clouds is prohibited.

Note: Cloud flying is not permitted in the USA, Canada and Australia.

4.5.12 Aerobatics

Permissible only without ballast in the wings and with engine retracted.

Execute only the approved manoeuvres. At the recommended entry airspeeds there is no need to pull up abruptly, unnecessarily stressing the aircraft.
The following manoeuvres are easy to execute.
Wing flap setting for all manoeuvres 0°.

Approved manoeuvres

1. Spins	/		
2. Inside Loop	Entry Speed	180 km/h	(97 kts.)
3. Stall turn	Entry Speed	180 km/h	(97 kts.)
4. Chandelle	Entry Speed	180 km/h	(97 kts.)
5. Lazy Eight	Entry Speed	180 km/h	(97 kts.)

Spins:

Caution: Continuous spinning is best at aft C.G. positions 330-383 mm (13.0 – 15.1 in) behind datum.
It is not necessary to extend the dive brakes during spin recovery. The DG-808C shows a large nose down pitch after leaving spin if you are spinning more than 2 turns. So you have to flare out correspondingly.
With **forward C.G. position** the DG-808C will not remain in a spin.
The DG-808C will recover after 1-2 turns (depending on C.G. position).
As the nose down pitch and the airspeed will be high with this C.G. position spinning should not be executed.
At medium C.G. position there is a tendency that the spin will turn into a spiral dive after 3 turns. Reaching this state you have to recover immediately. The spiral dive tendency can be avoided if you deflect the aileron into the direction of the spin when inducing the spin.

Inducing the spin: (Normal procedure)
Gradually bring the sailplane into a stall. When it starts to burble, pull the stick back completely and kick in full rudder in the spin direction.

Recovering from the spin:
Check ailerons neutral.
Apply full rudder opposite to direction of the spin.
Then ease stick forward until rotation ceases.
At aft C.G. positions at which the glider spins with the nose up, it is necessary to apply full stick forward.
Centralize the controls and carefully pull out of the dive.
Height loss during recovery is up to 150 m (490 ft), the max. speed is 190 km /h (103 kts.).

4.6 Flight with the engine removed from the aircraft

The DG-808C can be flown without the engine when the engine is sent for a major overhaul, or removed to decrease the aircraft empty weight for competition flying.

The following items must be executed: (see section 4.17 in the DG-808C maintenance manual).

1. Remove the powerplant.
   The engine extension-retraction mechanism and the exhaust system will remain in the fuselage.
2. Remove the batteries, insulate the battery connector cables.
   Install and connect a battery in the baggage compartment (see section 7.17.4).
3. Install a mass behind the tailwheel box according to drawings 8R86 and 8R87. The drawings and the necessary parts can be ordered from DG Flugzeugbau.

Warning: Installation of a heavier tailwheel as a compensation mass is prohibited for flutter reasons.

4. C.G. recalculation
   Carry out a C.G. calculation according to section 6.9 using the data of the following table. The inflight C.G. will be moved forward by approx. 0.0-0.020 m (0.0-0.8 in.) depending on the flightmass and empty mass C.G.

1 kg = 2.2046 lbs 0.305 m = 1 ft

	mass behind datum	C.G.	moment
mass reduction	kg	m	kg x m
engine with propeller	-46.4	1.120	-51.97
batteries in front	- 8.2	-1.291	+10.59
additional mass			
battery in baggage compartment	+ 2.9	+0.17	+ 0.49
mass at tail	+ 5	+4.580	+22.9
total difference	-46.7	+0.385	-17.99

5. Fix the limit switch “engine retracted” with a Ty-rap in the actuated position. Otherwise the DEI-NT will remain in the powered flight mode.
6. Tape the engine doors carefully with fabric tape.

Note: After switching on the main switch some failure messages will be displayed. Confirm each message by pressing the selector switch to eliminate the message.

5.3.5.2 Cruising Flight

The cruising speed is 140-145 km/h (76-78 kts.) with maximum continuous power 6300 RPM.

5.3.5.3 Maximum operational altitude

The maximum operational altitude is more than 5000 m (16000 ft) MSL.
For continuous operation at higher altitudes, the main nozzle in the carburettor may be set to a smaller fuel flow in accordance with the engine manufacturer.

5.3.5.4 Maximum Range (without reserve)

Take-off mass 440 kg, 970 lbs. wingspan 18 m

1. At cruising speed
   with full fuselage tank (21 l, 5.5 US gal)= 195 km, 105 nm.
   This is 9.3 km/l; 19.1 nm/US gal.
2. With saw-tooth flight technique Mc Cready 0
   with full fuselage tank (21 l, 5.5 US gal)= max. 525 km; 283 nm.
   This is 25 km/l, 49 nm/US gal.
   These values can only be achieved with still air and exact speed control.
3. With saw-tooth flight technique Mc Cready 1
   with full fuselage tank (21 l, 5.5 US gal)= max. 440 km; 237 nm.
   This is 21 km/l, 43 nm/US gal.
   The values for saw-tooth technique are for beginning the climb at 600 m (1970 ft) MSL and a climb of 1000 m (3280 ft).

5.3.6 Noise data

Noise requirements: ICAO Annex 16, Volume I, Part II, Chapter X

Measured noise level:	61,0 dB(A) with 15m wingspan 540kg
	61,3 dB(A) with 18m wingspan 600kg
	57,1 dB(A) with 18m wingspan 525kg (Version Classic)
Noise limit:	70,0 dB(A) with 15m wingspan 540kg
	70,8 dB(A) with 18m wingspan 600kg
	70,0 dB(A) with 18m wingspan 525kg (Version Classic)

6.1 Introduction

This section contains the payload range within which the sailplane may be safely operated.
A procedure for calculating the in-flight C.G. is also provided.
A comprehensive list of all equipment available for this sailplane is contained in the maintenance manual.

6.2 Weighing procedures

See maintenance manual DG-808C section 5.
Datum: Wing leading edge at the rootrib.
Reference line: aft fuselage centre line horizontal.
Execute the weighing with the powerplant retracted and all tanks emptied.

6.3 Weighing record

The result of each C.G. weighing is to be entered on page 6.5. If the min. cockpit load has changed this data is to be entered in the cockpit placard as well.
When altering the equipment, the new data can be gathered by a C.G. calculation (see section 6.9).
The actual equipment list is enclosed in the maintenance manual.

6.4 Basic empty mass and C.G.

Actual data see page 6.5. With the empty weight C.G. and the cockpit loads in the limits of the diagram on page 6.6, the in-flight C.G. limits will not be exceeded.

6.5 Mass of all non-lifting parts (WNLP)

Maximum mass of the non lifting parts is:

Version DG-808C	Classic	Competiton
wing span 15 m	338 kg (745 lbs.)	354 kg (780 lbs)

WNLP is to be determined as follows:
WNLP = WNLP empty + payload (pilots, parachute, baggage, waterballast in the fin, fuel etc.).
WNLP empty = Total empty weight incl. permanently installed equipment minus weight of the wings.
Note: The waterballast in the fin tank is part of the fuselage payload.

6.8 Loading chart

6.8.1 Cockpit load

Cockpit load see table on page 6.5, weighing report.
With lower pilot weight necessary ballast must be added in the seat or in the optional ballast boxes (see below). Ballast put on the seat (lead ballast cushion) must be fastened at the connections of the safety belts.

6.8.2 Removable ballast for underweight pilots (Option)

see section 7.17.1.

6.8.3 Baggage

max. 15 kg (33lbs)
Heavy pieces of baggage must be secured to the baggage compartment floor (screwing to the floor or with belts). The max. mass secured on one half of the floor (left and right of fuselage centre line) should not exceed 7,5 kg (16.5 lbs.).
The added load in the fuselage must not exceed the max. payload without waterballast (W.B.) (see weighing report section 6.8.6).

6.8.4 Waterballast in the wing tanks

Maximum waterballast

Version DG-808C	Classic	Competiton
wingtanks	100 kg (220 lbs)	120 kg or 150 kg (265 lbs. or 330lbs.)

Warning: Filling the water ballast is only allowed with a filling system which enables determination of the exact amount of ballast filled, e.g. water gauge or calibrated canisters. Don't try to fill more water into the tanks than the specified values. It is only allowed to fly with symmetric wing ballast!

6.8.5 Fin ballast tank (only version DG-808C Competition)

Water ballast in the fin tank should be used to compensate the forward move of C.G. due to the water ballast in the wings.
The amount of ballast in this tank is dependent on the amount of water in the wing tanks and to be determined from the tables in section 6.8.9.

The total amount of ballast (wing and fin tank) is dependent on the empty mass and the fuselage load and can be determined from the tables in section 6.8.8

6.8.8 Ballast chart (total ballast)

To determine the max. allowable total waterballast (wing tanks + fin tank).

Fuselage load = pilot + baggage etc. but without waterballast.
All values in kg (l) 1 kg = 2.2046 lbs. 3.785 kg (l) = 1 US gal.

Version DG-808C Classic)

This table is for the max. TOW of 525 kg (15m and 18m wingspan)

empty mass	350	355	360	365	370	375	380	385	390
fuselage load									
70	105	100	95	90	85	80	75	70	65
75	100	95	90	85	80	75	70	65	60
80	95	90	85	80	75	70	65	60	55
85	90	85	80	75	70	65	60	55	50
90	85	80	75	70	65	60	55	50	45
95	80	75	70	65	60	55	50	45	40
100	75	70	65	60	55	50	45	40	35
105	70	65	60	55	50	45	40	35	30
110	65	60	55	50	45	40	35	30	25
115	60	55	50	45	40	35	30	25	20
120	55	50	45	40	35	30	25	20	15
125	50	45	40	35	30	25	20	15	10
130	45	40	35	30	25	20	15	10	5

Version DG-808C Competition)

This table is for the max. TOW of 540 kg (15m wingspan)

empty mass	350	355	360	365	370	375	380	385	390
fuselage load									
70	120	115	110	105	100	95	90	85	80
75	115	110	105	100	95	90	85	80	75
80	110	105	100	95	90	85	80	75	70
85	105	100	95	90	85	80	75	70	65
90	100	95	90	85	80	75	70	65	60
95	95	90	85	80	75	70	65	60	55
100	90	85	80	75	70	65	60	55	50
105	85	80	75	70	65	60	55	50	45
110	80	75	70	65	60	55	50	45	40
115	75	70	65	60	55	50	45	40	35
120	70	65	60	55	50	45	40	35	30
125	65	60	55	50	45	40	35	30	25
130	60	55	50	45	40	35	30	25	20

1 kg = 2.2046 lbs., 0.305 m = 1 ft

If the actual pilot C.G. is not known, you have to take the values from the following table:

Pilot mass [kg]	Pilot C.G. [m]	
	flight near the forward C.G.	Flight near the aft C.G.
110	-0,582	-0,533
105	-0,583	-0,535
100	-0,584	-0,537
95	-0,585	-0,539
90	-0,586	-0,541
85	-0,587	-0,543
80	-0,588	-0,546
75	-0,589	-0,548
70	-0,590	-0,550
65	-0,591	-0,552
60	-0,592	-0,554
55	-0,593	-0,556

Further C.G. positions:

Baggage and battery in baggage compartment	0,171 m
Instruments	-1,070 m
removable ballast (Option, see section 7.17.1a)	-1,743 m
Waterballast in the wings	0,174 m
Fin ballast tank (see section 6.8.5)	4,400 m
Tail wheel	4,510 m
Batteries in the cockpit, front position	-1,402 m
Batteries in the cockpit, rear position	-1,180 m
Powerplant (see section 4.6)	1.120 m
Fuel tank	0,335 m

C.G. Shift due to extension of the engine

XS2 = XS1 – 6.5/W

W = total mass (kg)
XS2 = C.G. position with engine extended (m)
XS1 = C.G. position with engine retracted (m)

7 Sailplane and systems description

7.1 Introduction

This section provides description and operating of the sailplane and its systems.

M.M. = Maintenance manual

Refer to section 9 "Supplements" for details of optional systems and equipment.

7.2 Airframe

The DG-808C is a single-seater high performance motorglider with 18 m wing span.
As an option wings can be equipped with a parting device at y = 7.25 m, and with winglets for flying with 15 m span.
Winglets for 18 m span are optional equipment.

Construction

Wings	CFRP-foam-sandwich-shell with CFRP-roving spar caps
Flaperons	CFRP-skin
Rudder	GFRP-foam sandwich-shell
Horizontal stabilizer	GFRP-foam sandwich-shell
Elevator	GFRP-skin
Fuselage	CFRP-AFRP-hybrid skin

Canopy

Large single piece canopy, hinged at the nose, supported by a gas strut. Canopy transparency made from Plexiglas GS 241 clear or light green GS 2942 as option.

Tailplane

T-Tail with conventional stabilizer-elevator and spring trim.

Colour

Airframe:	white	
registration numbers:	grey	RAL 7001
or	red	RAL 3020
or	blue	RAL 5012
or	green	RAL 6001

1) Control column - Parallelogram type

2) Release lever for the trim mechanism - green
   Operation see section 7.5 elevator control

3) Trim position indicator and trim preselection lever

4) Tow release knob - yellow 

5) Rudder pedal adjustment knob – black 

   By pulling on the knob, the locking pin will be disengaged and the rudder pedals can be pulled back towards the pilot or pushed forward away from the pilot.

6) Instrument panel
   After removing the side screws at the base 2 x M6 and after removing the screws attaching the cover to the panel 4 x M4, the cover can be removed towards the front. The panel remains in the aircraft.

7) Compass installation position

8) Radio installation position

9) Undercarriage retraction - extension handle - black

   back = retracted,
   front = extended,

   The undercarriage is locked in the extended position by an overcentre locking arrangement and an additional safety catch at the handle. The handle is to be turned toward the cockpit wall, so that the locking catch will engage.

35) Press button to test the second fuel pump with the engine running at full throttle.
Pressing this button, you are switching off the first pump.

fuel pump test

36) Wing fuel tanks with electromagnetic valves **(Option)**
The operating switch and the indication light are installed in the instrument panel at a suitable location. The switch is locked in all positions (operation similar to the ignition switch).
Centre position= off, to the left= left tank, to the right= right tank.
In addition an amber LED flashes if a valve is open. By this signal the pilot will be reminded to close the valve to save electric power.

37) DEI-NT with integrated ignition switch and ignition circuit test switch
Switching up the ignition switch (the toggle has to be pulled out for switching). raises the powerplant to its operating position automatically.
Switching off the ignition: As soon as the propeller stops turning, the powerplant will be automatically retracted a little (intermediate position).
You may turn the propeller into the position for retraction (ignition switched off) by pressing the starter button.

a) without BBSA slipping centrifugal clutch: As soon as the propeller is in the position for retraction the electrical propeller brake (Option) engages or you have to pull on the manual brake. The powerplant will retract by itself.
b) with BBSA slipping centrifugal clutch **(Option):** When the powerplant is retracted into the intermediate position the propeller stopper moves forward in the propeller circle. As soon as the propeller is in the position for retraction (close to the stopper) the engine will retract by itself.

Ignition circuit test switch:

Switch in centre	**I+II**	=	both ignition circuit activated
Switch to the left	**I**	=	1. ignition circuit activated
Switch to the right	**II**	=	2. ignition circuit activated

The switch is spring loaded such that it will always return to the centre position (**I + II**).

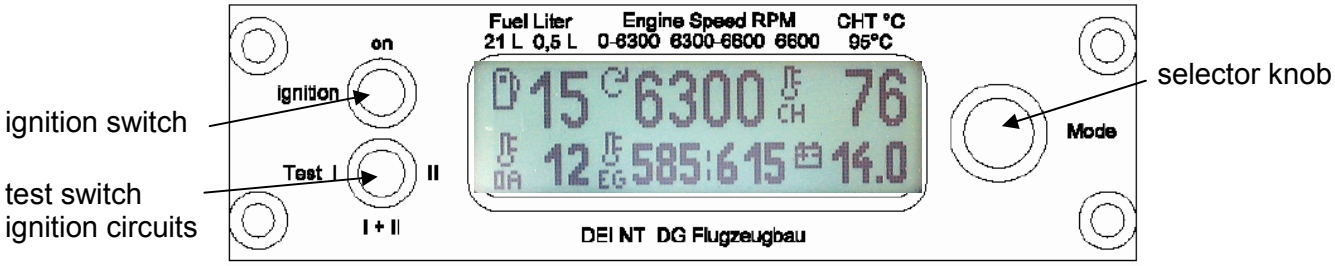
Description of the DEI-NT see section 7.4.

38) Socket for data download from the DEI-NT

39) Selector switch for additional battery (Option),
up = internal battery
centre position = off
down = additional battery
Preferably the gliding computers and loggers shall be connected to this switch.

intern off extern

7.4 DEI-NT Operation



After turning on the main switch the DEI-NT shows a screen with operating times. Then the screen changes to the gliding screen (powerplant retracted) or to the powered flight screen (powerplant not retracted).
You may change to other screens by pushing the selector knob (right hand side) until the DEI_NT beeps twice.
The following screens may be selected:
1. Gliding or powered flight (according to powerplant position),
2. Flight log, 3. Set up, 4. Operating times

Caution: In case of powerplant failures and if warnings are necessary full screen messages are displayed. All messages may be verified by a short push to the selector knob, the DEI-NT changes back to the normal screen.
With software versions below 1.5 the stall can't be verified), only increase of airspeed can eliminate the warning message.
3 short alarm-signals (horn or the optional stick vibrator) will draw the pilots attention to the message, except for the stall warning where the signal is uninterrupted as long as the flight speed is too slow.

Description of the screens:

7.4.1 Gliding and powered flight screens

Upper left: Fuel level: If the fuel level falls short of approx. 4 litres the message "Low Fuel" will be displayed, after verifying this message the fuel level display is blinking, when reaching the amount of non useable fuel (0,5 litres) "R" starts blinking.

Lower left: Outside air temperature OA(T): When the OAT falls below 2°C the message "Water Freeze" will be displayed, after verifying this message the OAT display starts blinking.

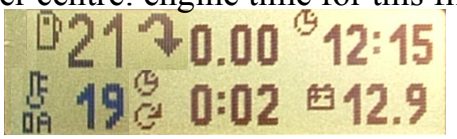
Lower right: Battery voltage: Below a voltage of 11V the message "Low battery" will be displayed, after verifying this message the voltage display starts blinking. Above a voltage of 14,7 V the message "Battery Overch." will be displayed, after verifying this message the voltage display starts blinking.

7.4.1. a) Gliding screen

Upper centre: Stall factor, see set up menu.

Upper right: Time, instead of the CHT, will be displayed as long as the CHT is above 50°C.

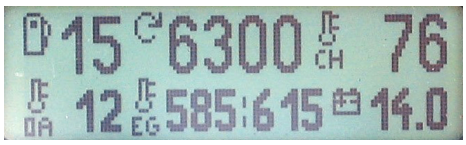
Lower centre: engine time for this flight

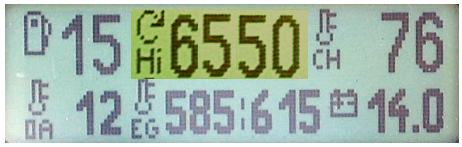


7.4.1. b) Powered flight screen

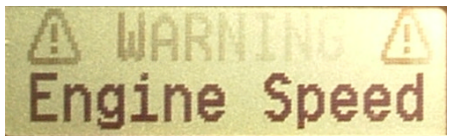
Centre:

c) With the engine running the engine RPM will be displayed in the upper half. When exceeding the max. continuous engine speed “Hi“ will be displayed and is blinking at the left hand side of the RPM display..



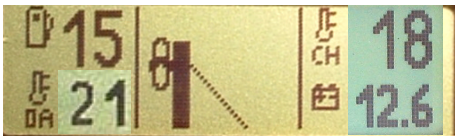


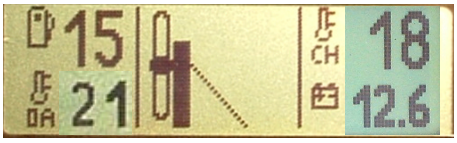
When exceeding the max. engine RPM the message "Engine Speed" will be displayed, the “Warning“ symbol is blinking, after verifying this message the RPM display is blinking.



In the lower half the values of the EGT sensors (Option) will be displayed instead of the engine time.

b) As long as the engine is not running symbols showing the position of the powerplant will be displayed. If the powerplant is moving, in addition an arrow will be displayed showing if the powerplant is being retracted or extended (not when moving the powerplant via the manual switch). As soon as the powerplant is completely retracted the screen changes to the gliding screen. . In case the propeller is not in the position for retraction a short propeller side view) will be displayed. In position for retraction a long propeller will be displayed.





powerplant extended

propeller not in position for retraction propeller in position for retraction

powerplant in intermediate position (propeller stopper extended with optional BBSA clutch)

propeller not in position for retraction propeller in position for retraction

7.4.5 Display of powerplant failures and warnings

In case of powerplant failures and if warnings are necessary full screen messages are displayed. All messages may be verified by a short push of the selector knob, the DEI-NT changes back to the normal screen.

Powerplant failures:

Upper line displays "Failure" and is blinking, 2. line displays:

- "Engine Info" = no data transfer between DEI-NT and control unit
- "Spindle Fuse" = the fuse for the spindle drive is blown → wait until it cools down and resets
- "RPM Pickup" = proximity switch defective → automatic extension-retraction will be switched off
- "Primer Valve" = Primer-valve defective
- "OAT Sensor" = Outside air temperature sensor defective
- "CHT Sensor" = Cylinder head temperature sensor defective
- "Fuel Sensor" = Condensator type probe in the tank (not the full tank sensor) defective
- "Generator" = Generator not charging
- "Water Pump" = coolant pump not working

Note: When installing a coolant pump type Pierburg 7.02058.50.0 this failure message must be deactivated in the DEI-NT (by the manufacturer).

- "Prop Brake" = Short circuit or interrupted connection to the motors for the propellerbrake (Option)
- "EGT Sensor" = EGT sensor (Option) defective

Warning messages:

Upper line displays "Warning " and is blinking, 2. line displays:

- "Spoiler" = airbrakes not locked, this warning is displayed only prior to and during take-off and will not be displayed when airbrakes are unlocked during the flight
- "Raise Gear" = Landing gear should be retracted, appears 4 minutes after take-off in case the landing gear is still extended
- "Landg. Gear " = Landing gear warning when airbrakes are unlocked and the landing gear is still retracted
- "Stall" = Stall warning appears simultaneously with the acoustically or tactile stall warning.
- "Low Battery" = Battery voltage permanently below 11 V
- "Battery Overch." = Battery voltage permanently above 14,7 V
- "CBox OvrTemp" = Starter motor control in control unit above temperature limit
- "CHT OverTemp" = CHT above max. certified value
- "Water Freeze" = OAT below +2°C
- "Low Fuel" = low fuel level

- "Engine Speed" = Engine RPM above max. certified value.
- "Main Switch" = Reminder to switch off the main switch (from software version 1.7 on).

7.7 Landing gear

see diagram 15 and 16 MM.

d) Main wheel:
retractable, assisted by a gas strut, spring mounted, fully sealed landing gear box, internal drum brake (disc brake optionally),
Tyre 5.00 - 5 4 PR or 6 PR, Diameter 362 mm (14.25 in)
Tyre pressure 3 bar (44 psi)

e) Tailwheel:
Tyre 200 x 50 2 PR, Diameter 200 mm (7.87 in)
Tyre pressure 2 bar (29 psi)
With plastic hub (brass hub not permitted)

7.8 Tow hooks

see diagram 5 MM.
"Safety release G 88" for winch- and aerotow installed near the C.G..
additional as option "nose release E 85" installed under the instrument console, only for aerotow.
Both hooks are operated by the same handle.
Warning: If no C.G. hook is installed, winch launching is not permitted with this glider.

7.9 Seats and safety harness

The seat is constructed as an integral inner shell. The backrest is adjustable by means of an aircushion (Adjustment see section 7.3 item 21). The backrest can be screwed to the seat shell at 3 different positions dependent on the thickness of the parachute.
The head rest is integrated in the back rest to take up the rebound forces of the pilots head in the case of a crash landing.
Warning: If the DG-808C is to be flown without back rest, a separate neckrest (Option) must be installed.
As safety harness only symmetric 4-point harnesses fixed at the given fixing points are allowed.

7.10 Baggage compartment

Max. load 15 kg (33 lbs.).
Heavy pieces of baggage must be secured to the baggage compartment floor.
The max. mass secured on one half of the floor (left and right of fuselage centre line) should not exceed 7.5 kg (16.5 lbs.).

7.13 Fuel system

7.13.1 Fuselage tank

21 l (5.55 US gal.) (useable amount of fuel)
A condensator type probe is installed in the tank to allow an indication which is almost independent from the pitch angle.
A switch located at the lower end of the tank filler cuts off the electric power for the electric refuelling pump as soon as the tank is full.

7.13.2 Fuel pump

Electric pump, controlled via the ignition switch, installed on the fuselage floor.
In line to the pump described above a second electric pump is installed. This pump receives it's electric power directly from the generator and operates only with engine running.

7.13.3 Wing tanks (Option)

Bags with approx. 10 l (2.6 US gal.) volume. without a ventilation line.

7.13.4 Coolant pump

Electric pump controlled via the ignition switch, installed at the fire wall in the front left edge of the engine bay.

Note for 7.13.2 and 7.13.4: The first fuel pump and the coolant pump receive their electric power from the batteries. In addition both fuel pumps and the coolant pump receive electric power directly from the engine generator. So with a failure of the electric system, the engine can still continue to run.

7.15 Pitot and static system

see diagram 6 M.M.
Pitot probe in fuselage nose, static ports a short distance behind fuselage nose.
The airspeed indicator is to be connected to these ports and probe.
Probe (PC) for the stall warning device below the fuselage nose.
Second set of static ports near the instrument panel for variometer or flight computer systems.
The altimeter is to be connected to one of these sets of static ports.
Additional holder for a TE-probe or a Multiprobe in the fin is to operate variometer and flight computer systems.
To preserve the sealings inside the holder, the end of the probe should be greased with e.g. Vaseline from time to time.

7.16 Canopy emergency release

For emergency release only the red handle at the canopy is to be operated. By this action the canopy opening lever will also be operated and a hook at the rear canopy lock will be rotated underneath the fuselage part of the canopy frame. Because of the hook, in case of emergency release, the canopy will rotate around this point and will leave the fuselage in a safe and fast way. A spring will open the canopy at the nose far enough to be blown away by the oncoming air.

Checking the emergency release on the ground:

Pull the emergency release knob, the canopy should spring open at the nose min. 6 cm (2.4 in.).

Reinstalling the canopy:

Pull the canopy hinge into the open position. Reinstall the emergency release spring. Two people are required to hold the canopy - one at the nose, the other at the rear. The emergency release locking mechanism should be in the open position. Place the canopy on the hinge and press down. Relocate the locking mechanism. Push the hook forwards at the rear canopy lock until it snaps in.

7.17 Miscellaneous equipment (Options)

7.17.1 Removable Ballast in the fuselage nose (Option)

Up to three lead ballast weights part No. Z11/1 up to Z11/3 each 2.25 kg (4.96 lbs.) can be fixed at the M6 inserts in front of the rudder pedals.
Each weight compensates a pilot mass of 5 kg (11 lbs.). The lead ballast weights are to be fixed with bolts M6 which must be min. 10 mm (.4 in.) and max. 35 mm (1.4 in.) longer than the thickness of the ballast weights.

7.17.2 Oxygen system

Oxygen bottle installation

Max. size of oxygen bottle is 4 l capacity with diameter 100 mm (3.94 in.). The bottle must be fixed at its neck with a bracket part No. Z14.

Installation of the oxygen equipment

To ensure a safe installation ask for an installation instruction.
For the installation of the Dräger Höhenatmer E 20088 you will find an installation plan 6EP27 in the maintenance manual.

7.17.3 ELT Emergency Locator Transmitter

To ensure a safe installation ask DG Flugzeugbau for an installation instruction.
For the ELT ACK you will find an installation plan 8EP38 in the maintenance manual.
Installation of 406 MHZ ELTs: The installation must be performed according to TN DG-G-08. Only the ELT types given in the TN may be installed.

Caution: Concerning 7.17.2 and 7.17.3
The installation has to be accomplished by the aircraft manufacturer or by an approved service station and to be inspected and entered in the aircraft log book by a licensed inspector.

7.17.4 Battery in baggage compartment with battery selector switch.

An additional battery Z73 12V 7AH with holder Z72 may be installed in the baggage compartment. In this case a battery selector switch must be installed in the instrument console.
Switch function:
up = internal battery
centre position = off
down = additional battery
Preferably the gliding computers and loggers shall be connected to this switch.