

Maintenance Manual DG-808C

0 General

0.1 Manual amendments

No.	Page	Description	Date
1	0.3, 0.6, 0.10, 1.11, 8.2, diagrams 5a, 11d, 8EP210	ÄM 800-17-07 Fin tank valve and operating handle, Refuelling pump	April 2007
2	0.3, 0.4, 0.6, 0.7, 0.10, 0.12, 1.28, 1.29, 2.7, 3.3, 3.5, 3.11, 4.2, 4.8, 4.11, encl. 2 page 1, TN 4600-2-2 Solo	TN800/34 Manual revision	September 2007
3	0.6, 8.1, diagram 10	TN800/35 Extension-retraction unit, rear fork of spindle-drive	April 2009
4	0.3 ÷ 0.12, 1.3, 1.5, 1.6, 1.8, 1.10, 1.11, 1.14 ÷ 1.16, 1.24, 1.27, 1.29, 1.30, 2.1, 2.2, 2.6, 2.7, 3.1, 3.3 ÷ 3.11, 4.1 ÷ 4.3, 4.6 ÷ 4.11, 4.13, 4.15, 4.16, 4.18 ÷ 4.23, 4.25 ÷ 4.31, 5.1, 5.2, 6.1 ÷ 6.3, 7.2, 8.1 ÷ 8.4, 9.2, diagrams 1 ÷ 5, 5a, 8, 9, 10, 11, 11d, 12, 13, 13b, 14, 17, 14a removed, 8M110, 8E250, SI 69-10	TN800/41 Manual revision, Coolant pump Pierburg	May 2012
5	0.0, 0.1, 0.3 - 0.6, 0.11, 0.12, 2.1, 2.2, 3.7, 4.33, 8.1 - 8.3, diagrams 3, 9, 8E250h, 8E256b	manual revision, TN800/45	July 2017
6	0.1, 0.3 - 0.7, 0.10 - 0.13, 2.6, 3.11, 8.2, diagram 11c, 8EP210, add diagram 11e, remove diagrams 11 and 11d, file working instruction No. 1 for TN 800/46 at the end of the MM	TN800/46 PU fuel hoses, limitation of life- time, replacement by new types of fuel hoses	February 2018

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0.2 List of effective pages

Section	page	issued	replaced/	replaced/	replaced/
0	0.0	June 2005	July 2017		
	0.1	see manual amendments			
	0.2		"		
	0.3		"		
	0.4		"		
	0.5		"		
	0.6		"		
	0.7	June 2005	Sept. 2007	May 2012	Febr. 2018
	0.8	"	May 2012		
	0.9	"	May 2012		
	0.10	"	Sept. 2007	May 2012	Febr. 2018
	0.11	"	May 2012	July 2017	Febr. 2018
	0.12	"	Sept. 2007 Febr. 2018	May 2012	July 2017
	0.13	Febr. 2018			
1	1.1	June 2005			
	1.2	"	May 2012		
	1.3	"	May 2012		
	1.4	"			
	1.5	"			
	1.6	"	May 2012		
	1.7	"			
	1.8	"	May 2012		
	1.9	"			
	1.10	"	May 2012		
	1.11	"	April 2007	May 2012	
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	1.13	"			
	1.14	"	May 2012		
	1.15	"	May 2012		
	1.16	"	May 2012	Febr. 2018	
	1.17	"			
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	1.19	"			
	1.20	"			
	1.21	"			
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	1.23	"			
	1.24	"	May 2012		
	1.25	"			

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	1.26	June 2005			
	1.27	"	May 2012		
	1.28	"	Sept. 2007		
	1.29	"	Sept. 2007	May 2012	
	1.30	May 2012			
2	2.1	June 2005	May 2012	July 2017	
	2.2	"	May 2012	July 2017	
	2.3	"			
	2.4	"			
	2.5	"	May 2012		
	2.6	"	May 2012	Febr. 2018	
	2.7	"	Sept. 2007		
3	3.1	June 2005	May 2012		
	3.2	"			
	3.3	"	Sept. 2007	May 2012	
	3.4	"	May 2012		
	3.5	"	Sept. 2007	May 2012	
	3.6	"	May 2012		
	3.7	"	May 2012	July 2017	
	3.8	"	May 2012		
	3.9	"	May 2012		
	3.10	"	May 2012		
	3.11	"	Sept. 2007	May 2012	Febr. 2018
4	4.1	June 2005	May 2012		
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	4.17	June 2005			
	4.18	"	May 2012		
	4.19	"	May 2012		
	4.20	"	May 2012		
	4.21	"	May 2012		
	4.22	"	May 2012		
	4.23	"	May 2012		
	4.24	"			
	4.25	"	May 2012		
	4.26	"	May 2012		
	4.27	"	May 2012		
	4.28	"	May 2012		
	4.29	"	May 2012		
	4.30	"	May 2012		
	4.31	"	May 2012		
	4.32	"			
	4.33	"	July 2017		
	4.34	"			
	4.35	"			
	4.36	"			
	4.37	"			
	4.38	"			
5	5.1	June 2005	May 2012		
	5.2	"	May 2012		
6	6.1	June 2005	May 2012		
	6.2	"	May 2012		
	6.3	"	May 2012		
7	7.1	June 2005			
	7.2	June 2005	May 2012		
8	8.1	June 2005	May 2012	July 2017	
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	8.3	"	May 2012	July 2017	
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9	9.1	June 2005			
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diagram	issued	replaced/	replaced/	replaced/
1	June 2005	May 2012		
2	June 2005	May 2012		
3	Nov. 2004	May 2012	July 2017	
4	Nov. 1993	May 2012		
5	Nov. 2004	May 2012	valid up to ser. No. 8-372	
5a	April 07	May 2012	valid from ser. No. 8-373 on	
6	May 2005			
7a	August 2005			
7b	August 2005			
8	August 2005	May 2012		
9	August 2005	May 2012	July 2017	
10	August 2005	April 2009	May 2012	
11c	June 1999	Febr. 2018		
11e	Febr. 2018			
12	June 2005	May 2012		
13	Febr. 1999	May 2012		
13a	May 2012			
14	Nov. 2004	May 2012		
14a	June 2005	May 2012	no more effective	
15	Nov. 2004			
16	Nov. 2004			
17	May 2012			
6EP27M	28.08.90			
8EP38	17.02.99			
8EP210	12.02.07	12.02.07		
8M110	23.10.02	5.07.11		
8M234	25.08.05			
8V96	19.12.94			
W40	30.11.99			
W51	20.11.96			
W57	10.09.99			
W59	18.06.02			
W60	25.10.04			
8E25	25.06.99			
8E210	15.05.97			
8E250	13.09.05	18.10.11	15.01.14	Valid from ser.no. 8-428 on without 431
8E256	24.06.05	15.01.14		Valid from ser.no. 8-428 on without 431
Encl. 1	June 2005			
Encl. 2	Sept. 2007			
TN 4600-2-2 Solo	Jan. 2007			
SI 69-10	14.05.10			
Working instruction No. 1 for TN800/46			Febr. 2018	

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Diagrams

- 1 Elevator control circuit, trim
- 2 Rudder control circuit
- 3 Aileron, wing flap and airbrake control circuits, fuselage side
- 4 Flaperon and airbrake control circuits, wing side
- 5 Tow hook, water ballast system
- 5a Tow hook, water ballast system from ser. no. 8-373 on
- 6 Static and pitot system
- 7a Placards DG-808C Classic
- 7b Placards DG-808C Competition
- 8 Powerplant
- 9 Cooling system
- 10 Extension-retraction mechanism
- 11c Installation of the fuel filter
- 11e Fuel system from ser. no. 8-373 on
- 12 Tailwheel
- 13 Propellerbrake
- 13b Propellerbrake with modified mounting of the propeller-brake retaining rubber cord (Option TN 800/41)
- 14 Engine doors and retaining cable
- 14a ~~Retaining cable mounting in fuselage~~ no more effective TN 800/41
- 15 Undercarriage control circuit
- 16 Undercarriage
- 17 Drain and ventilation holes

Enclosures

- 6EP27M Installation Dräger oxygen system
- 8EP38 Installation plan ELT ACK
- 8EP210 wing fuel tank system fuselage side with electromagnetic valves
- 8M110 Drawing assembly upper drive belt pulley
- 8M234 Ext.-retr. unit, installation propeller stopper Option BBSA clutch
- 8V96 Drawing jigs to determine the static moment of the flaperons
- W40 Puller assy. for lower drive belt pulley
- W51 Drawing hook spanner for bearings
- W57 Tool for measuring the drive belt tension
- W59 Test adapter for coolant pump test
- W60 Puller assy. for lower drive belt pulley Option BBSA clutch
- 8E25 Wiring plan wing fuel tank system fuselage side with electromagnetic valves
- 8E250 Wiring plan DIN A1 (in aircraft log)
- 8E256 Wiring scheme
- 8E210 Extension wires for checking the ignition electronic boxes
- Encl. 1 Download instruction for flightlog and service data from the DEI-NT
- Encl. 2 Instructions for transponder installation
- TN 4600-2-2 Solo Check and modification of the slip-clutch on the engines 2 625 01 and 2 625 02
- SI 69-10 Service Info: Adjustment of propeller after jump of drive belt
- Working instruction No. 1 for TN800/46

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0.4 Airworthiness limitations

0.4.1 Repairs

Repair or replace damaged parts prior to next flight. Follow the instructions of the DG-800B repair manual for repairs of the airframe.

Repairs exceeding those as defined as minor damage in the DG-800B repair manual section 2 and major repairs must be accomplished at a certified repair station or by a certified mechanic rated for composite aircraft structure work in accordance with DG repair methods.

Use only genuine spare parts.

For all aircraft under EASA regulations the following applies: According to part 21, subpart M to accomplish major repairs an approved repair instruction is required, see also TN DG-G-01 “Approved repair methods according to EU Commission Regulation 1702/2003 part 21, subpart M”

0.4.2 Life time of the airframe

The maximum allowable operating time for German composite sailplanes and motorgliders was proofed for 12000 flight hours.

The initial life time for the DG-808C is 3000 flight hours.

Extension of the life time to 12000 hours can only be achieved by implementing a comprehensive inspection program for the aircraft to be carried out in accordance with data that has been approved by an applicable aviation authority, see section 2.4 of this manual.

Only for USA

Note: *The Airworthiness Limitations section is FAA approved and specifies maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulation unless an alternative program has been FAA approved.*

0.5 Further service information

0.5.1 Life time of equipment and components

Use only genuine spare parts. For part. No.'s of all parts please refer to section 8.

Note: You will find detailed instructions for replacement of the life limited parts (if applicable) in section 4 of this manual.

After exchanging life limited parts change the “Summary of operating hours” for your motorglider by entering the replacement dates of the exchanged parts.

- a) The following **components of the power plant** have to be replaced after 400 engine hours.
 1. All nuts and bolts on the engine (part No. 39001025)
 2. The bearings of the upper drive belt pulley (part No. 59332050 and 59320320)
- b) All fuel lines and the gasket for the drainer valve (part No. 60504402) have to be exchanged after 6 years.

TN 800/46: When instructions 3 of this TN have been accomplished the life time of the fuel lines (part. No. 39001075) is 10 years. the life time of the FPM fuel line (part. No. 30092048) between primer valve and carburettor (from ser. No. 8-432 on) is 6 years.
- c) The **coolant hoses** (part no. 39001017 resp. 18) have to be exchanged after 6 years.
- d) **Drive belt** (part. No. 60504012):

Without optional BBSA friction/centrifugal clutch: The drive belt has to be exchanged after 50 engine hours.
With optional BBSA friction/centrifugal clutch: The drive belt has to be exchanged after 100 engine hours
- e) The **spark plugs** (part. No. 40050360) have to be exchanged after 25 engine hours.
- f) The **fabric straps of the safety harness** have to be exchanged according to the instructions of the respective manufacturer. If no limitations are given, exchange after 12 years, approved types see section 6.3.
- g) **Flexible fuel bags in the wings (option)**

Type Uniroyal (rubber): these will have to be exchanged after 10 years.
Type HFK (plastic): see Mounting and testing instructions for HFK TLF.

0.5.2 Service times for other than life limited parts

The **coolant** has to be exchanged after 6 years (type see section 1.12.2).

The **brake fluid of the wheel brake (option)** has to be exchanged after 4 years (types see section 1.6.4).

Note: All **other components** like tow hook, wheels, gas struts, control system parts, bolts, pins etc. have no life time limitation, but should be replaced when worn, damaged or disqualified by excessive corrosion.

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0.5.3 Service time, maintenance documents of equipment and components

Follow the instructions of the respective manufacturer:

- a) Operating Manual for Safety Tow Releases
Series: Europa G 88 Safety Tow Release
latest approved version.

And if installed:
Operating Manual for Tow Releases
Series: E 85 Nose Tow Release
latest approved version.
- b) Safety harness: instructions of the manufacturer latest approved version.
Approved types see section 6.3.
- c) Minimum instrumentation: instructions of the manufacturer.
Approved types see section 6.1, 6.2 and 6.4.
- d) Engine: Manual of the engine manufacturer latest approved version.
- e) Propeller: Technoflug Operation and maintenance manual No. P3 latest approved version.

0.5.4 Power plant trouble shooting

Please find a checklist in the DG-808C flight manual section 8.8.

2.4 Inspection procedure for increase of service time

1. General

The results of fatigue tests of wingspar sections have demonstrated that the service time of GFRP/CFRP gliders and motorgliders may be limited to 12000 hours, if for each individual glider (in addition to the obligatory annual inspections) the airworthiness is demonstrated according to a special multi-step inspection program particularly with regard to the service life.

2. Dates

When the glider has reached a service time of 3000 hours, an inspection must be done in accordance with the inspection program mentioned under point 3. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended by another 3000 hours to a total of 6000 hours (first step).

The above inspection program must be repeated when the glider has reached a service time of 6000 hours. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended to 9000 hours (second step).

When the glider has reached a service time of 9000 h the above inspection program must be repeated. If the results of the inspection are still positive, or if any defects found have been duly repaired, the service time may be extended to a total of 10000 hours (third step).

Proceed analogous when reaching 10000 and 11000 hours (4. + 5. step).

3. DG Flugzeugbau will develop an inspection program to be executed at 3000 h, 6000 h, 9000h, and every 1000 hours thereafter up to the 12000 hour limit. This program will be approved by the aviation authorities and will be available for purchase from DG Flugzeugbau.

When you request the inspection program, the following data should be submitted: Model/Type, Registration, Serial Number and the operating hours at which the inspection will be performed. A charge will be made for the inspection program.

4. The inspection must only be done by a licensed repair station or inspector.
5. The results of the inspections have to be recorded in an inspection test report wherein comments are required for each inspection instruction. If the inspections are done outside the DG Flugzeugbau facilities, a copy of the records must be sent to DG Flugzeugbau for evaluation and information.

3.5.2 Every 3 years

Section not effective (Exchange the coolant only every 6 years together with the coolant hoses, see sect. 3.5.5).

3.5.3 After 50 resp. 100 engine hours

Without optional BBSA friction/centrifugal clutch: The drive belt has to be exchanged after 50 engine hours.

With optional BBSA friction/centrifugal clutch: The drive belt has to be exchanged after 100 engine hours

3.5.4 After 400 engine hours

After 400 engine hours the power plant must undergo a major overhaul.

Apart from the items listed in section 3.5.1, the following items also need to be done:

1. Remove the power plant and remove the engine from the powerplant. Ship the engine to the manufacturer or an aircraft engine maintenance workshop approved by the manufacturer and by the authorities.
2. Replace all the nuts and bolts on the engine
3. Replace the drive belt
4. Replace the bearings of the upper drive belt pulley.

3.5.5 After 6 years

1. Replace the gasket of the drainer valve every 6 years.
2. The FPM fuel hoses between primer valve and carburettor (from ser. No. 8-432 on) must be replaced every 6 years.
3. Replace all fuel lines every 6 years.

TN800/46: When instruction 3 of this TN has been accomplished the rubber fuel lines must not be exchanged after 6 but after 10 years. To allow this after 6 years all fuel hoses are to be inspected visually thoroughly and completely for any damage especially fissures, kinks or leaks. For the check switch on the ignition to run the electric fuel pump to demonstrate operating fuel pressure.

Repeat this inspection every following year.

Caution: New fuel lines must be flushed thoroughly with fuel after assembly.

4. Replace all coolant hoses and the coolant, see section 4.16.

3.5.6 When required

1. If the fuel tank is excessively dirty or when the fuel gauge gives false indications, a thorough flushing of the fuel tank is required (see sections 1.13.2 and 1.13.6).
2. If the engine should run rough between idle and full throttle even after all the points in sect. 3.5.1. are OK, then it is possible that the membranes in the carburettors have hardened. They should then be replaced.
3. After sudden power loss at full throttle: Check pistons and cylinders for seizing marks, see sect. 3.5.1 item 12.

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Cooling system

- 60001201 Electric water pump Webasto U4810 modified (no longer available)
- 40863140 Replacement kit coolant pump Pierburg according to drawing 8R314, see TN 800/41 instruction 1.

Caution: Respect the changed coolant mixing ratio, see section 1.11.2!

- 60001209 Coolant pump Pierburg 02058.50.0 (spare part for 4086314, not for first exchange against type Webasto!)
- 60510565 Probe for coolant temperature TG 150/2
- 60504051 Radiator KTM VW 0095

Rubber mounts for radiator

- 60000275 2 pieces Rundlager Type B (upper mount)
- 60000262 1 piece Rundlager Type A (lower mount)
- 39001018 Service kit cooling system hoses

Fuel system

- 60507550 Drainer CAV 110 (1/8" NPT)

Warning: Replace the sealing ring of the drainer against partno. 60504402 prior to installation

- 60504402 Sealing ring for drainer CAV 110 (for automotive fuel)
- 60507561 Electric fuel pump Facet 40106
- 60507558 Refuelling pump KAVAN 12 V up to ser. no. 8-372
- 60507562 Refuelling pump Facet 60106 from ser. no. 8-373 on
- 60507571 MANN-fuel- filter 500009180 WK 31/2(10) for refuelling pump
- 40873071 Fuel distributor 8M307 with filter for primer valve and restriction for excess fuel line
- 60000527 Fuel cock KH 1072 T
- 60507607 Coupling for refuelling hose KL-006-0-SL007
- 60503070 Primer-valve IWP069
- 45001605 Full tank sensor ready assembled with wiring and gasket 60507547
- 60507547 Gasket O-ring 10 x 2,5 80FPM610 for full tank sensor
- 39001075 Service kit fuel lines incl. gasket for the drainer valve (exchange every 10 years)
- 30092048 Fuel hose 3x1.5 FPM black (for Primer from serial. No. 8-432 on, exchange every 6 years)

Option wing fuel tanks with electro-magnetic valves

- 60507600 Coupling for fuel wing tanks (at fuselage) KL-006-0-SL009
- 60507601 Coupling for fuel wing tanks (at wing) KL-006-2-WR513
- 40872591 Electro-magnetic valve MA242-004V27SAH12/00SW