

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

G59EU  
Revision 3  
DG Flugzeugbau GmbH  
DG-500M  
DG-500MB  
  
October 20, 2016

**TYPE CERTIFICATE DATA SHEET No. G59EU**

This data sheet, which is part of Type Certificate No. G59EU prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: DG Flugzeugbau GmbH  
Im Schollengarten 20  
D-76646 Bruchsal 4  
Federal Republic of Germany

Type Certificate Holder Record: Glaser-Dirks Flugzeugbau GmbH transferred TC G59EU to DG Flugzeugbau GmbH on July 30, 1996

**I. Model DG-500M, Self-Launching (Powered) Glider, Utility Category, approved July 8, 1992**

Engine: Rotax 535C

Fuel: Two stroke mixture  
Premium fuel minimum ROZ 96 octane or Aviation gasoline 100 LL  
Mix 50% Aviation gasoline 100 LL and 50% unleaded premium fuel  
minimum ROZ 95 octane  
With Super-2-stroke oil the mixing ratio is 1:50

Engine Limits: Take off power:  
44 KW (60 HP) at 7200 r.p.m.  
  
Max. Continuous power:  
44 KW (60 HP) at 6900 r.p.m.

Propeller and Propeller Limits: MT 158R 125-1A  
  
Diameter range    maximum 62.20 in. (1580 mm)  
                              minimum 62.00 in. (1575 mm)  
                              (No further reductions permitted)

<u>Airspeed Limits (IAS).</u>	V <sub>NE</sub> (never exceed)	168 mph	270 km/h	164 knots
	V <sub>B</sub> (in rough air)	122 mph	197 km/h	106 knots
	V <sub>A</sub> (maneuvering)	122 mph	197 km/h	106 knots
	Retraction and extension of the power plant	68 mph	110 km/h	59 knots
	V <sub>NE</sub> (Power plant extended)	122 mph	197 km/h	106 knots

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Airspeed Limits (IAS) cont'd.

V <sub>FE</sub> (Wing flaps extended) (+10°, +5°)	122 mph	197 km/h	106 knots
(L=+15°)	93 mph	150 km/h	81 knots
V <sub>LO</sub> (Landing Gear operating)	122 mph	197 km/h	106 knots
V <sub>T</sub> (Aero-tow)	122 mph	197 km/h	106 knots
V <sub>W</sub> (Winch launch)	88 mph	140 km/h	76 knots

C.G. Range.

10.09 in. to 18.9 in. (255 mm to 480 mm) aft of datum.

Empty Weight C.G.

See Flight Manual. (Record of Weight and Balance)

Datum.

Wing leading edge at wing root

Leveling Means.

Aft fuselage midline horizontal and Aft fuselage boom slope 1000:33  
(tail down)

Maximum Weight.

1819 lbs (825 Kg)

No. of Seats.

Two, in front of datum, tandem position.

Maximum Baggage.

33 lb (15 kg) 7 in. (180 mm) aft of datum.

Fuel Capacity.

Fuselage tank 10.6 U.S.Gal (40 l)  
11 in. (230 mm) aft of datum  
Each wing tank (optional) 5.3 U.S. gal (20 liter)  
11 in. (230 mm) aft of datum

Water Capacity.

Each wing 13.2 U.S. gal (50 liter)  
9.6 in. (243 mm) aft of datum

Control Surface Movements.

Aileron at flap setting 0 degrees:  
Up 2.52 ± .12 in. (64 ± 3 mm)  
Down 1.26 ± .12 in. (32 ± 3 mm)  
Measurement radius 5.54 in. (166 mm) from hinge line

Elevator: Up 3.90 ± .04 in. (99 ± 1 mm)  
Down 3.58 ± .04 in. (91 ± 1 mm)  
Measurement radius 8.94 in. (227 mm) from hinge line

Rudder: 8.54 -.2 in. (217 - 5 mm) to the right and left.  
Measurement radius 16.5 in. (420 mm) from hinge line.  
Tolerance for rudder only - not +

Wing flaps: Flap setting - 10°  
Up: 1.57 ± .12 in (40 ± 3 mm)  
Flap setting 0°  
0 in. (0 mm)  
Flap setting L=+15°  
Down: 2.32 ± .12 (59 ± 3 mm)  
Measurement radius 9.0 in. (228 mm) from hinge line

Serial Nos. Eligible.

See Import Requirement

Certification Basis.

- 1) FAR 21.23, 21.29 and 21.50 effective February 1, 1965 including Amendment 21-1 through 21-53.
- 2) Joint Airworthiness requirements for Sailplanes and Powered Sailplanes (JAR-22) Change 4 dated May 17, 1987.
- 3) Preliminary guideline for the stress analysis of glasfiber and carbonfiber reinforced plastic structures for sailplanes and powered sailplanes issued May 1986.
- 4) Type Certificate No. G59EU issued July 8, 1992.
- 5) Date of Application for Type Certificate May 23, 1991.

The German civil airworthiness authority (LBA) originally type certificated this glider under its type certificate Number 843. The FAA validated this product under U.S. Type Certificate Number G59EU. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of Germany. The EASA TCDS number is EASA.A.233.

Import Requirements.

The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the Luftfahrt Bundesamt (LBA) on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to comply with U.S. airworthiness regulations 14 CFR Part 21.17(b) approved under U.S. Type Certificate No. G59EU and to be in a condition for safe operation.'

Model DG-500M Serial Numbers 5E10M6 and 5E24M12 are eligible for a U.S. Standard Airworthiness Certificate when modified in accordance with LBA-approved Service Bulletin TN 843-1 May 22, 1991, and if all other import requirements of this TCDS are satisfied.

Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the glider for certification. In addition, the DG-500M Flight Manual, LBA-approved dated February 1991, is required.

Service Information.

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003 – by the Luftfahrt Bundesamt (LBA).

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

The FAA accepts such documents and considers them FAA-approved for type design data only unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on a case-by-case basis to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

NOTES

- NOTE 1. Current weight and balance data together with list of equipment included in the certificated empty weight, and loading instructions, when necessary, must be provided for each powered glider at the time of original certification. The certificated empty weight and corresponding center of gravity locations must include the following:  
unusable fuel of .3 U.S. gal (1 liter)
- NOTE 2. The placards listed in items 2.19 of the LBA approved DG-500M Flight Manual must be displayed.
- NOTE 3. Section 0. Airworthiness Limitations of the DG-500M. Instructions for continued airworthiness, dated July 1990 is FAA-approved. It specifies mandatory replacement times, and structural repair procedures. These airworthiness limitations may not be changed without FAA approval.
- NOTE 4. All external portions of the powered glider exposed to sunlight must be painted white except the surfaces for the registration Nos. and anti-collision paint as specified by the manufacturer.
- NOTE 5. Major structural repairs must be accomplished at FAA certificated repair stations or by a certified mechanic rated for composite aircraft structure work, in accordance with DG Flugzeugbau GmbH (Glaser-Dirks) repair methods approved by FAA.
- NOTE 6. Information essential for the proper operation, maintenance and Inspection of the glider is contained in the Model DG-500M Flight Manual and Maintenance Manual.

**II. Model DG-500MB, Self-Launching (Powered) Glider, Utility Category, approved August 25, 1999**

<u>Engine.</u>	SOLO 262502			
<u>Fuel.</u>	Two stroke mixture Premium fuel minimum ROZ 95 octane (leaded or unleaded) or Aviation gasoline 100 LL (if premium fuel 95 octane is not available) or Mix 50% Aviation gasoline 100 LL and 50% automotive leaded or unleaded premium fuel minimum ROZ 92 octane With Super-2-stroke oil (specification TSC 3); mixing ratio is 1:50			
<u>Engine Limits.</u>	Take off power: 47 KW (64 HP) at 7000 r.p.m.  Max. Continuous power: 47 KW (64 HP) at 6500 r.p.m.			
<u>Propeller and Propeller Limits.</u>	KS-1G-160-R-110(-)-B  Diameter range    maximum 63.19 in. (1605 mm) minimum 62.80 in. (1595 mm) (No further reductions permitted)			
<u>Airspeed Limits (IAS).</u>	$V_{NE}$ (never exceed)	168 mph	270 km/h	164 knots
	$V_B$ (in rough air)	122 mph	197 km/h	106 knots
	$V_A$ (maneuvering)	122 mph	197 km/h	106 knots

Airspeed Limits (IAS) cont'd.

Retraction and extension of the power plant	68 mph	110 km/h	59 knots
V <sub>NE</sub> (Power plant extended)	122 mph	197 km/h	106 knots
V <sub>FE</sub> (Wing flaps extended) (+10°, +5°)	122 mph	197 km/h	106 knots
(L=+15°)	93 mph	150 km/h	81 knots
V <sub>LO</sub> (Landing Gear operating)	122 mph	197 km/h	106 knots
V <sub>T</sub> (Aero-tow)	122 mph	197 km/h	106 knots
V <sub>W</sub> (Winch launch)	88 mph	140 km/h	76 knots

C.G. Range.

10.09 in. to 18.9 in. (255 mm to 480 mm) aft of datum.

Empty Weight C.G.

See Flight Manual. (Record of Weight and Balance)

Datum.

Wing leading edge at wing root

Leveling Means.

Aft fuselage midline horizontal and Aft fuselage boom slope 1000:33 (tail down)

Maximum Weight.

22 Meter Span - 1819 lbs (825 Kg)  
22 Meter Span - 1797 lbs (815 Kg)

No. of Seats.

Two, in front of datum, tandem position.

Maximum Baggage.

33 lb (15 kg) 7 in. (180 mm) aft of datum.

Fuel Capacity.

Fuselage tank 10.6 U.S.Gal (40 l)  
11 in. (230 mm) aft of datum  
Each wing tank (optional) 5.3 U.S. gal (20 liter)  
11 in. (230 mm) aft of datum

Water Capacity.

Each wing 13.2 U.S. gal (50 liter)  
9.6 in. (243 mm) aft of datum

Control Surface Movements.

Aileron at flap setting 0 degrees:  
Up 2.52 ± .12 in. (64 ± 3 mm)  
Down 1.26 ± .12 in. (32 ± 3 mm)  
Measurement radius 5.54 in. (166 mm) from hinge line

Elevator:  
Up 3.90 ± .04 in. (99 ± 1 mm)  
Down 3.58 ± .04 in. (91 ± 1 mm)  
Measurement radius 8.94 in. (227 mm) from hinge line

Rudder: 8.54 -.2 in. (217 - 5 mm) to the right and left.  
Measurement radius 16.5 in. (420 mm) from hinge line.  
Tolerance for rudder only - not +

Control Surface Movements cont'd.

Wing flaps: Flap setting - 10°  
 Up: 1.57 ± .12 in (40 ± 3 mm)  
 Flap setting 0°  
 0 in. (0 mm)  
 Flap setting L=+15°  
 Down: 2.32 ± .12 (59 ± 3 mm)  
 Measurement radius 9.0 in. (228 mm) from hinge line

Serial Nos. Eligible.

See Import Requirement

Certification Basis.

- 1) FAR 21.23, 21.29 and 21.50 effective February 1, 1965 including Amendment 21-1 through 21-53.
- 2) Joint Airworthiness requirements for Sailplanes and Powered Sailplanes (JAR-22) Change 4 dated May 17, 1987, including amendments 22/90/1, 22/91/1, and 22/92/1.
- 3) Preliminary guideline for the stress analysis of glasfiber and carbonfiber reinforced plastic structures for sailplanes and powered sailplanes issued May 1986.
- 4) Type Certificate No. G59EU issued July 8, 1992.
- 5) Date of Application for Type Certificate September 22, 1997.

The German civil airworthiness authority (LBA) originally type certificated this glider under its type certificate Number 843. The FAA validated this product under U.S. Type Certificate Number G59EU. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of Germany. The EASA TCDS number is EASA.A.233.

Import Requirements.

The FAA can issue a U.S. airworthiness certificate based on an NAA Export Certificate of Airworthiness (Export C of A) signed by a representative of the Luftfahrt Bundesamt (LBA) on behalf of the European Community. The Export C of A should contain the following statement: 'The aircraft covered by this certificate has been examined, tested, and found to comply with U.S. airworthiness regulations 14 CFR Part 21.17(b) approved under U.S. Type Certificate No. G59EU and to be in a condition for safe operation.'

Model DG-500MB Serial Numbers 5E187B3 and 5E189B4 are eligible for a U.S. Standard Airworthiness Certificate when modified in accordance with LBA-approved Service Bulletin TN 843-1 May 22, 1991, and if all other import requirements of this TCDS are satisfied.

Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the glider for certification. In addition, the DG-500MB Flight Manual, LBA-approved dated July 1999, is required.

Service Information.

Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003 – by the Luftfahrt Bundesamt (LBA).

- Service bulletins,
- Structural repair manuals,
- Vendor manuals,
- Aircraft flight manuals, and
- Overhaul and maintenance manuals.

Service Information cont'd.

The FAA accepts such documents and considers them FAA-approved for type design data only unless one of the following conditions exists:

- The documents change the limitations, performance, or procedures of the FAA approved manuals.

The FAA uses the post type validation procedures to approve these documents. The FAA may delegate on a case-by-case basis to EASA to approve on behalf of the FAA for the U.S. type certificate. If this is the case it will be noted on the document.

NOTESNOTE 1.

Current weight and balance data together with list of equipment included in the certificated empty weight, and loading instructions, when necessary, must be provided for each powered glider at the time of original certification. The certificated empty weight and corresponding center of gravity locations must include the following:

unusable fuel of .3 U.S. gal (1 liter)

NOTE 2.

The placards listed in items 2.20 of the LBA approved DG-500MB Flight Manual must be displayed.

NOTE 3.

Section 0. Airworthiness Limitations of the DG-500MB. Instructions for continued airworthiness, dated September 1999 is FAA-approved. It specifies mandatory replacement times, and structural repair procedures. These airworthiness limitations may not be changed without FAA approval.

NOTE 4.

All external portions of the powered glider exposed to sunlight must be painted white except the surfaces for the registration Nos. and anti-collision paint as specified by the manufacturer.

NOTE 5.

Major structural repairs must be accomplished at FAA certificated repair stations or by a certified mechanic rated for composite aircraft structure work, in accordance with DG Flugzeugbau GmbH (Glaser-Dirks) repair methods approved by FAA.

NOTE 6.

Information essential for the proper operation, maintenance and Inspection of the glider is contained in the Model DG-500MB Flight Manual and Maintenance Manual.

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