

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

G43EU
Revision 5

Burkhart GROB
Luft-und Raumfahrt GmbH
GROB G 109
GROB G 109B
July 15, 1996

TYPE CERTIFICATE DATA SHEET No. G43EU

This data sheet, which is part of Type Certificate No. G43EU 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: **Burkhart GROB Luft- und Raumfahrt GmbH**
 Am Flugplatz
 D-86874 Mattsies
 Germany

I. Model GROB G 109, Self-Launching (Powered) Glider, Utility Category, approved 9 August 1982

Engine. Limbach L 2000 1.A

Fuel. Aviation gasoline 100LL or minimum ROZ 96 octane

Engine Limits. For all operations 3400 r.p.m. (80 hp)

Propeller and Propeller Limits. Hoffman HO-V 62-R/L 160 T

Diameter range maximum 65 in
 minimum 61 in
 (No further reductions permitted)

Blade Angle settings - 3 fixed positions: start, cruise, and feather
 Spinner: Hoffman VP 30-81

Airspeed Limits (IAS). Maximum Airspeeds in calm air

V_{NE} (never exceed)	kts	mph	km/h
0 - 6500 ft	130	149	240
6,501-10,000 ft	122	140	225
10,001-13,000 ft	116	133	214
13,001-16,500 ft	110	126	203
16,501-20,000 ft	104	119	192
With Airbrakes extended	130	149	240
V_b (in rough air)	100	115	185
V_A (maneuvering)	100	115	185

C.G. Range. 15.0 in. to 18.3 in. (380 mm to 465 mm) aft of datum.

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<u>Empty Weight C.G.</u>	See Flight Manual
<u>Datum.</u>	
<u>Leveling Means.</u>	Level on top surface of fuselage between 20 in. in front of vertical stabilizer, see Flight Manual.
<u>Maximum Weight.</u>	1820 lbs (825 kg)
<u>Minimum Crew</u>	One pilot
<u>No. of Seats.</u>	Two, (3.6 in. (90 mm) aft of datum).
<u>Maximum Baggage.</u>	44 lbs (39 in. aft of datum).
<u>Fuel Capacity.</u>	Total: 21.1 U.S. gal. (41 in. aft of datum) (See Note 1.)
<u>Oil capacity</u>	2.6 qt. total (54 in. forward of datum)
<u>Control Surface Movements.</u>	<p>Aileron: Up 4.21 ± 0.40 in. (107 ± 10 mm) Measurement radius 9.5 in. (242 mm) on inboard of aileron Down 2.50 +0.20/-0.40 (63 +5/-10 mm)</p> <p>Stabilizer: Up 4.3 ± 0.45 in. (108 ± 12 mm) Measurement radius 11.0 in. (282 mm) on middle of stabilizer Down 3.9 ± 0.40 in. (97 ± 10 mm)</p> <p>Rudder: Left 8.6 ± 0.60 in. (215 ± 15 mm) Measurement radius 16.4 in. (420 mm) on bottom of rudder Right 8.6 ± 0.60 in. (215 ± 15 mm)</p> <p>Trim: Up 1.6 ± 0.20 in. (40 ± 5 mm) Measurement radius 4.0 in. (100 mm) on inboard of trim tab Down 1.2 ± 0.20 in. (31 ± 5 mm)</p> <p>All measured from hinge line. (See GROB G 109 Instructions for Continued Airworthiness).</p>
<u>Serial Nos. Eligible.</u>	See Import Requirement

II. Model GROB G 109B, Self-Launching (Powered) Glider, Utility Category, approved 2 April 1984

(Similar to G 109 except for engine, wing, and cockpit configuration)

<u>Engine.</u>	GROB 2500 E 1
<u>Fuel.</u>	Aviation gasoline 100LL or minimum ROZ 96 octane
<u>Engine Limits.</u>	For all operations 3400 r.p.m. (80 hp)
<u>Propeller and Propeller Limits.</u>	Hoffman HO-V 62-R/L 160 BT
	<p>Diameter range maximum 63 in minimum 62.5 in (No further reductions permitted)</p> <p>Blade Angle settings - 3 fixed positions: start, cruise, and feather</p> <p>Spinner: Hoffman VP 30-82</p>

Airspeed Limits (IAS).

Maximum Airspeeds in calm air

V_{NE} (never exceed)	<u>kts</u>	<u>mph</u>	<u>km/h</u>
0- 6500 ft	130	149	240
6,501-10,000 ft	122	140	225
10,001-13,000 ft	116	133	214
13,001-16,500 ft	110	126	203
16,501-20,000 ft	104	119	192
With Airbrakes extended	130	149	240
V_b (in rough air)	92	106	170
V_A (maneuvering)	92	106	170

C.G. Range.

11.1 in. to 16.8 in. (232 mm to 427 mm) aft of datum.

Empty Weight C.G.

See Flight Manual

Datum.

Wing leading edge at span distance of 4.3 ft (91.3 M) out of oblique wing-fuselage fairing.

Leveling Means.

Level on edge of door frame. (See flight manual.)

Maximum Weight.

1874 lbs (850 kg)

Minimum Crew

One pilot

No. of Seats.

Two, 3.3 in. (83 mm) aft of datum.

Maximum Baggage.

44 lbs (39 kg) (28.3 in. aft of datum).

Fuel Capacity.

Total: 26.4 U.S. gal. (39.4 in. aft of datum) (See Note 1.)

Oil capacity

3.7 qt. total (58.3 in. forward of datum)

Control Surface Movements.

Aileron: Up 4.0 ± 0.40 in. (102 ± 10 mm)
 Measurement radius 9.25 in. (235 mm) on inboard of aileron
 Down 2.0 ± 0.20 (51 ± 5 mm)

Stabilizer: Up 4.4 ± 0.43 in. (112 ± 11 mm)
 Measurement radius 11.54 in. (293 mm) on middle of stabilizer
 Down 4.0 ± 0.40 in. (102 ± 10 mm)

Rudder: Left 8.3 ± 0.60 in. (210 ± 15 mm)
 Measurement radius 16.54 in. (420 mm) on bottom of rudder
 Right 8.3 ± 0.60 in. (210 ± 15 mm)

Trim: Up 0.94 ± 0.16 in. (24 ± 4 mm)
 Measurement radius 2.68 in. (68 mm) on inboard of trim tab
 Down 0.94 ± 0.16 in. (24 ± 4 mm)

All measured from hinge line. (See GROB G 109B Instructions for Continued Airworthiness).

Serial Nos. Eligible.

See Import Requirement

Data Pertinent to all Models**Certification Basis.**

FAR 21.23, 21.29, and 21.50 effective February 1, 1965, Amendment 21-1 through 21-53.

For Model GROB G 109

Compliance with FAR 21.23 has been shown utilizing the provisions of Advisory Circular 21.23-1, dated 12 January, 1981, Section 5, paragraph a. The airworthiness requirements met under this provision are the Joint Airworthiness Requirements for Sailplanes and Powered Sailplanes (JAR22) dated 1 April, 1980, and Section 5, paragraph (e)(6) of Advisory Circular 21.23-1 dated 12 January, 1981. FAR 23.471, 23.473, 23.477, 23.479, 23.481, 23.483, 23.485, 23.493, and 23.497 in effect on 23 June, 1981.

Type Certificate No. G43EU issued 9 August, 1982.

Date of Application for Type Certificate 23 June, 1981.

For Model GROB G 10B.

Compliance with FAR 21.23 has been shown utilizing the provisions of Advisory Circular 21.23-1, dated 12 January, 1981, Section 5, paragraph a. The airworthiness requirements met under this provision are the Joint Airworthiness Requirements for Sailplanes and Powered Sailplanes (JAR22) dated 1 April, 1980, including Amendments 1 through 2, and Section 5, paragraph (e)(6) of Advisory Circular 21.23-1 dated 12 January, 1981. FAR 23.471, 23.473, 23.477, 23.479, 23.481, 23.483, 23.485, 23.493, and 23.497 in effect on 11 November, 1983.

Type Certificate No. G43EU issued 2 April, 1984.

Date of Application for Type Certificate 11 November, 1983.

Import Requirements.**For the GROB G 109**

Model G 109 gliders: Serial numbers 6001 through 6159 are eligible for a U.S. Standard Airworthiness Certificate when:

1) Either:

(a) The FAA inspector is provided with the original Export Certificate of Airworthiness issued by the German Civil Aviation Authority, the Luftfahrt Bundesamt LBA), containing the following statement:

“The glider covered by this certificate has been examined, tested, and found to conform to the type design approved under FAA Type Certificate G43EU and is in a condition for safe operation.”

Or,

(b) The glider has been modified in accordance with the LBA approved GROB Technical Information TM817-5.

2) The glider is found to be in condition for safe operation by the FAA inspector.

3) All other import requirements for the G 109 of this TCDS are satisfied.

Modifications pre-dating the issuance of this Type Certificate and not included in paragraph 1 and 2 of this note, and modifications dated after the issuance of this Type Certificate not covered by note contained in the Service Information paragraph of this Type Certificate must be assumed not to be approved under this Type Certificate.

For the GROB G 109B

Model G 109B gliders: Serial numbers 6200 through 6445, and 6501 through 6579, except 6577 (fatigue test vehicle) are eligible for a U.S. Standard Airworthiness Certificate when:

| 1) Either:

| (a) The FAA inspector is provided with the original Export Certificate of Airworthiness issued by the German Civil Aviation Authority, the Luftfahrt Bundesamt (LBA), containing the following statement:

| "The glider covered by this certificate has been examined, tested, and found to conform to the type design approved under FAA Type Certificate G43EU and is in a condition for safe operation."

| Or,

| (b) The glider has been modified in accordance with the LBA approved GROB Technical Information TM817-14.

2) The glider is found to be in condition for safe operation by the FAA inspector.

3) All other import requirements for the G 109B of this TCDS are satisfied.

Modifications pre-dating the issuance of this Type Certificate and not included in paragraph 1 and 2 of this note, and modifications dated after the issuance of this Type Certificate not covered by note contained in the Service Information paragraph of this Type Certificate must be assumed not to be approved under this Type Certificate.

Equipment.For Model GROB G 109

The equipment approved for the GROB G 109 is listed in the GROB G 109 Master Equipment.

The Required Equipment for the kinds of Approved Operations are listed in the LBA approved GROB Flight Manual, dated 15 June, 1982. LBA approved GROB G 109 Flight Manual, dated 15 June, 1982, is required.

For Model GROB G 109B

The equipment approved for the GROB G 109B is listed in the GROB G 109B Master Equipment List dated 21 November, 1983.

The Required Equipment for the kinds of Approved Operations are listed in the LBA approved GROB G 109B Flight Manual, LBA approved 1 February, 1984. GROB G 109B Flight Manual, LBA approved 1 February, 1984, is required.

Service Information.

GROB Technical Information (Service bulletins), published in the English language for the U.S. Type Design that carry a statement "Approved by the Luftfahrt-Bundesamt (LBA)", may be interpreted as "FAA Approved".

Available Documents for GROB Model G 109:

Flight Manual, LBA Approved 15 June, 1982.

Instructions for Continued Airworthiness dated 5 April, 1982.

Available Documents for GROB Model G 109:B

Flight Manual, LBA Approved 1 February, 1983.

Instructions for Continued Airworthiness dated 1 October, 1983.

NOTES

NOTE 1.

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

For Model GROB G 109

- a) Unusable fuel of 3 lb. (41 in. aft of datum).
- b) Undrainable engine oil of 0.2 lb. (54 in. forward of datum)

For Model GROB G 109B

- a) Unusable fuel of 3 lb. (34.4 in. aft of datum).
- b) Undrainable engine oil of 0.1 lb. (58.3. forward of datum)

NOTE 2.

The placards listed in section II of the LBA approved GROB G 109 or GROB G 109B Flight Manual must be displayed.

NOTE 3.

Section 6 of the GROB G 109/G 109B Instructions for Continued Airworthiness (LBA Approved 15 June, 1982 for Model G 109 and 1 October, 1983, for Model G 109B) specifies mandatory replacement times, structured inspection intervals, and related structural procedures. The 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 wing tips, nose of fuselage and rudder.

NOTE 5.

Major structural repairs must be accomplished at FAA certificated repair stations rated for composite aircraft structure work, in accordance with GROB repair methods approved by FAA.

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