

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

G58EU  
Revision 3  
Stemme AG  
Stemme S 10  
Stemme S 10-V  
  
February 12, 2015

TYPE CERTIFICATE DATA SHEET No. G58EU

This data sheet, which is a part of Type Certificate No. G58EU, 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.                      Stemme AG  
Flugplatzstraße F2, Nr. 6 - 7  
D-15344 Strausberg, Germany

Type Certificate Holder Record.            Stemme GmbH & Co. KG transferred TC G58EU to Stemme AG on August 11, 2014.

I. Model Stemme S 10, Self-Launching (Powered) Glider, Utility Category, approved July 8, 1992.

Engine.    Limbach L2400 EB1.D, or L2400 EB1.AD (ref. to Limbach SB Number 17)

Fuel.     Aviation gasoline 100 LL  
or car fuel super grade according to DIN 51600 or OE-C 1103 min. 96 OCT (RON).

Engine Limits.                                 Takeoff (max. 5 min.) 3400 r.p.m. (69 kW/92.5 hp)  
continuous operation: 3000 r.p.m. (62 kW/83 hp).

Propeller and Propeller Limits.            Stemme 10AP-N  
Diameter 63.4 in. ± 0.08 in. (1610 ± 2 mm)  
No reduction permitted  
Fixed pitch at 22" station: 54.8 in. (1392 mm at 0.7 R).

<u>Airspeed Limits (IAS).</u>		km/h	kts	mph
<u>V<sub>NE</sub></u>	Never exceed speed			
	0-6499 FT	270	146	168
	6500-9999 FT	257	139	159
	10,000-12,999 FT	244	132	151
	13,000-16,499 FT	231	125	144
	16,599-19,499 FT	219	118	136
	19,500-25,999 FT	195	105	121
	26,000-32,999 FT	173	93	107
	33,000-39,499 FT	150	81	93
	<u>V<sub>RA</sub></u>	Rough air speed	180	97
<u>V<sub>A</sub></u>	Maneuvering speed	180	97	112
<u>V<sub>FE</sub></u>	Max. speed flaps extended:			
	-10°, -5°, 0°	270	146	168
	+5°, +10°	180	97	112
	L position (+16°)	140	76	87
<u>V<sub>LO</sub></u>	Landing gear operating speed	140	76	87

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<u>C.G. Range.</u>	-10 in. to -16.5 in. (-254 mm to -420 mm) (aft of datum) No moment change due to the retracting of the landing gear.
<u>Empty Mass C.G. Range.</u>	-20.26 in. to -20.70 in. at 1407 lb. (-515 to -526 mm at 638 kg) -20.10 in. to -20.63 in. at 1429.5 lb. (-511 to -524 mm at 648 kg) -19.33 in. to -20.44 in. at 1500 lb. (-491 to -519 mm at 680 kg) aft of datum; approx. straight line variation between points.  When the empty weight C.G. falls within the range given and the permissible loads are not exceeded, computations of critical fore and aft C.G. locations are unnecessary. Any change of equipment requires recalculation or new weighing. For more details see Maintenance Manual Section 6.3.
<u>Maximum Weight.</u>	1874 lb. (850 kg)
<u>Minimum Crew.</u>	One pilot.
<u>No. of Seats.</u>	Two seats Moment arm +23.5 in (596.9 mm) forward of datum
<u>Maximum Baggage.</u>	48.5 lb. at -3.67 in. (22 kg at -93 mm).
<u>Fuel Capacity.</u>	23.8 U.S. gal. total (two wing tanks 11.9 U.S. gal. each) at -10.43 in. (-265 mm). 0.4 U.S. gal. unusable fuel per tank. (See NOTE 1).
<u>Oil Capacity.</u>	4.7 qt. total. Engine: 3.7 qt. at -20.9 in. (-530 mm). Radiator: 1.0 qt. at -35.5 in. (-900 mm). (See NOTE 1).

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II. Model Stemme S 10-V, Self-Launching (Powered) Glider, Utility Category, approved February 24, 1995.  
(Same as S 10 except for 1: Variable pitch propeller in lieu of fixed pitch; 2: associated modifications).

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<u>Engine.</u>	Limbach L2400 EB1.D, or L2400 EB1.AD (ref. to Limbach SB Number 17)																				
<u>Fuel.</u>	Aviation gasoline 100 LL or car fuel super grade according to DIN 51600 or OE-C 1103 min. 96 OCT (RON).																				
<u>Engine Limits.</u>	Takeoff (max. 5 min.) 3400 r.p.m. (69 kW/92.5 hp) continuous operation: 3000 r.p.m. (62 kW/83 hp).																				
<u>Propeller and Propeller Limits.</u>	Stemme 10AP-V Diameter 64.17 in. $\pm$ 0.12 in. (1630 $\pm$ 3 mm) No reduction permitted Fixed pitch at 22.5" station: in TAKEOFF position: 36 in. (914 mm at 0.7 R), in CRUISE position: 54 in. (1376 mm at 0.7 R).																				
<u>Airspeed Limits (IAS).</u>	<table> <thead> <tr> <th></th> <th></th> <th>km/h</th> <th>kts</th> <th>mph</th> </tr> </thead> <tbody> <tr> <td>V<sub>ne</sub></td> <td>Never exceed speed</td> <td>270</td> <td>146</td> <td>168</td> </tr> <tr> <td>V<sub>RA</sub></td> <td>Rough air speed</td> <td>180</td> <td>97</td> <td>112</td> </tr> <tr> <td>V<sub>A</sub></td> <td>Maneuvering speed</td> <td>180</td> <td>97</td> <td>112</td> </tr> </tbody> </table>			km/h	kts	mph	V <sub>ne</sub>	Never exceed speed	270	146	168	V <sub>RA</sub>	Rough air speed	180	97	112	V <sub>A</sub>	Maneuvering speed	180	97	112
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Airspeed Limits (IAS), cont'd.

V <sub>FE</sub>	Max. speed flaps extended:			
	-10 <sup>o</sup> , -5 <sup>o</sup> , 0 <sup>o</sup>	270	146	168
	+5 <sup>o</sup> , +10 <sup>o</sup>	180	97	112
	L position (+16 <sup>o</sup> )	140	76	87
V <sub>LO</sub>	Landing gear operating speed	140	76	87

C.G. Range.

-10 in. to -16.5 in. (-254 mm to -420 mm) (aft of datum)  
No moment change due to the retracting of the landing gear.

Empty Mass C.G. Range.

-20.26 in. to -20.70 in. at 1407 lb. (-515 to -526 mm at 638 kg)  
-20.10 in. to -20.63 in. at 1429.5 lb. (-511 to -524 mm at 648 kg)  
-19.33 in. to -20.44 in. at 1500 lb. (-491 to -519 mm at 680 kg)  
aft of datum; approx. straight line variation between points.

When the empty weight C.G. falls within the range given and the permissible loads are not exceeded, computations of critical fore and aft C.G. locations are unnecessary. Any change of equipment requires recalculation or new weighing. For more details see Maintenance Manual Section 6.3.

Maximum Weight.

1874 lb. (850 kg)

Minimum Crew.

One pilot.

No. of Seats.

Two seats  
Moment arm +23.5 in. (596.9 mm) forward of datum

Maximum Baggage.

48.5 lb. at -3.67 in. (22 kg at -93 mm).

Fuel Capacity.

23.8 U.S. gal. total (two wing tanks 11.9 U.S. gal. each) at -10.43 in. (-265 mm).  
0.4 U.S. gal. unusable fuel per tank.  
(See NOTE 1).

Oil Capacity.

4.7 qt. total.  
Engine: 3.7 qt. at -20.9 in. (-530 mm).  
Radiator: 1.0 qt. at -35.5 in. (-900 mm).  
(See NOTE 1).

DATA PERTINENT TO ALL MODELS.Serial Nos. Eligible

See Import Requirements

Datum.

Inner wing leading edge.

Levelling Means.

Wedge 1000: 84 and level on upper face of tailboom in front of vertical fine (see maintenance manual Fig. 6.3.a).

Control Surface Movements.

Aileron:	Up:	1.89 ± 0.16 in. (48 ± 4 mm).
	Down:	1.06 ± 0.12 in. (27 ± 3 mm).
	Measuring radius 6.42 in. (163 mm) on inboard of aileron.	
Wing Flaps:	Up:	1.22 ± 0.16 in. (31 ± 4 mm)
	Down:	2.0 ± 0.16 in. (51 ± 4 mm)
	Measuring radius 6.89 in. (175 mm) on inboard of wing flap.	
Elevator:	Up:	1.89 <sup>+0.2</sup> / <sub>-0.08</sub> (48 <sup>+5</sup> / <sub>-2</sub> mm)
	Down:	1.89 <sup>+0.2</sup> / <sub>-0.08</sub> (48 <sup>+5</sup> / <sub>-2</sub> mm)
	Measuring radius 5.51 in. (140 mm) on inboard of stabilizer.	

Control Surface Movements, cont'd.

Rudder:           Left:     8.7 ± 0.6 in. (220 ± 15 mm)  
                      Right:  8.7 ± 0.6 in. (220 ± 15 mm)  
                      Measuring radius 16.5 in. (420 mm) on bottom of the rudder's trailing edge.

All measured from hinge line. See Stemme S 10 Instructions for Continued Airworthiness.

Certification Basis.

14 CFR 21, effective February 1, 1965, Amendments 21-1 through 21-68, Sections 21.17, 21.29 and 21.50.

JAR-22, Joint Airworthiness Requirements for Sailplanes and Powered Sailplanes, effective through Change 3, including Amendment 22/84/1, effective October 22, 1984 with Orange Paper of 1984.

AC 21.17-2, Advisory Circular, effective July 13, 1989.

For the Stemme S 10:

Date of Application for Type Certificate April 8, 1991.  
Type Certificate No. G58EU, issued July 8, 1992.

For the Stemme S 10-V:

Date of Application for Amendment of Type Certificate September 29, 1994.  
Type Certificate No. G58EU, amended February 24, 1995.

The German civil airworthiness authority, the Luftfahrt-Bundesamt (LBA), originally type certificated the Stemme S 10 and S 10-V gliders under the type certificate Number 846. The FAA validated these products under U.S. Type Certificate Number G58EU. 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.054.

Production Basis.

Stemme AG  
Flugplatzstraße F2, Nr. 6 - 7  
D-15344 Strausberg, Germany  
EASA Production Organization Approval Number: DE.21G.0068

Manufacturer Historical Record:

Stemme AG  
Flugplatzstraße F2, Nr. 7  
D-15344 Strausberg, Germany

Stemme GmbH & Co. KG  
Flugplatzstraße F2, Nr. 7  
D-15344 Strausberg, Germany

Stemme GmbH & Co. KG  
Gustav-Meyer-Allee 25  
D-13355 Berlin, Germany

Import Requirements.

A U.S. Standard Airworthiness Certificate may be issued on the basis of an Export Certificate of Airworthiness (Export C of A) signed by a representative of the LBA on behalf of the European Community. The Export C of A should contain the following statement: "The powered glider covered by this certificate has been examined, tested and found to conform to the type design approved under FAA Type Certificate No. G58EU and is in condition for safe operation."

Import Requirements, cont'd.For the Stemme S 10:

Serial Nos. Eligible; 10-012 and up. (Note: Instead of a hyphen (-) a slash (/) may appear between the model number 10 and the serial number. The leading zero(s) in the running serial number may be missing.)

Stemme Service bulletins A31-10-002, A31-10-003, A31-10-006, and A31-10-018 must have been accomplished.

For the Stemme S 10-V:

Serial Nos. Eligible; 14-001 and up, and Stemme S 10 aircraft modified from Model S 10 to Model S 10-V with serial numbers as specified in Service Bulletin A31-10-010. Further information see Import Requirements and NOTE 7.

Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the powered glider for certification. In addition, the following items of equipment are required:

- a) acoustic stall warning indicator, Westerboer, Type "Speed Control";
- b) canopy breakage tool for emergency exit;

For the Stemme S 10:

- c) Stemme S 10 Flight Manual, LBA-approved, dated October 1, 1990.

For the Stemme S 10-V:

- d) Stemme S 10-V Flight Manual Date of Issue: September 6, 1994, LBA-approved, dated February 16, 1995.

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 German civil airworthiness authority (LBA).

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

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

- 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 case-by-case approval to EASA 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 report including list of equipment included in certificated empty weight, and loading instructions, when necessary, must be provided for each motorglider at the time of original certification. The certificated empty weight and corresponding center of gravity locations must include the following:

- a) unusable fuel of 6.7 lb. (0.8 U.S. gal.) at -10.43 in.
- b) undrainable engine oil of 1.7 lb. (1 qt.) at -35.5 in. (-900 mm).

NOTES, cont'd.

- NOTE 2. The placards listed in Section 2 of the LBA-approved Stemme S 10 Flight Manual, or the S 10-V Flight Manual, as applicable, must be installed in the appropriate location. Complete listing of all placards is shown in Section 8 of the Stemme Maintenance Manual, LBA approved February 17, 1995. The Flight Manual airworthiness limitations may not be changed without FAA approval.
- NOTE 3. Section 4 of the LBA-approved Stemme S 10 Maintenance Manual, or the S 10-V Maintenance Manual, as applicable, specifies mandatory replacement times. These Maintenance Manual airworthiness limitations may not be changed without FAA approval.
- NOTE 4. All external portions of the glider exposed to the solar radiation must be painted white, except of areas provided for registration markings and for warning paint.
- NOTE 5. Removed.
- NOTE 6. Optionally the motorglider may be equipped with 2 enlarged fuel tanks of 15.85 U.S. gallons each. This is accomplished in accordance with Modification Bulletin Number A30-92-077, dated July 14, 1992. The modification has no effect on any other aircraft parameter of G.C. of performance.
- NOTE 7. Transformation of motorgliders model Stemme S 10 to model Stemme S 10-V to be accomplished in accordance with Service Bulletin Number A31-10-010. The serial No. of modified aircraft consists of the model index 14, hyphen, the old running number (three figures with leading zeros) and the character M. Example: S/N 10-21 becomes 14-021M after modification. Both old and new identification plate must be mounted close together.

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