

CIVIL AVIATION AUTHORITY OF THE CZECH REPUBLIC

98-02
Revision 2
Schempp-Hirth výroba letadel
spol. s r. o.
Duo Discus C
15.07.2005

TYPE CERTIFICATE DATA SHEET No. 98-02

This data sheet which is a part of Type Certificate No. 98-02 prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Czech Republic.

Model	Application Date	Certification Date
Duo Discus C	03.09.1997	03.04.1998

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Model Duo Discus C

I. General

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|-----------------------------|---|
| 1. Data Sheet No.: | 98-02 |
| 2. Model: | Duo Discus C |
| 3. Airworthiness category: | Utility |
| 4. Type Certificate Holder: | Schempp-Hirth výroba letadel spol. s r.o.,
565 01 Choceň |
| 5. Manufacturer: | Schempp-Hirth výroba letadel spol. s r.o.,
565 01 Choceň |
| 6. Application Date: | 03.09.1997 |
| 7. Certificate Date: | 03.04.1998 |

II. Certification Basis

- | | |
|--------------------------------|--|
| 1. Certification Basis: | Joint Aviation Requirements JAR 22, change 4 Issue 7.6.1987 including: <ul style="list-style-type: none">– Amendment 22/90/1 of 30.6.1990– Amendment 22/91/1 of 9.12.1991– Amendment 22/92/1 of 1.1.1992 |
| 2. Special Conditions: | Directives for part strength certification of sailplanes and motorised sailplanes from glass and carbon composites, issued by LBA, July 1991.

Supplement requirements for water ballast system installation in fin for compensation of seat load rolling moment (LBA I 4-I 413/89 of 25.10.1989).

Proposal NPA 22 D-46 of 30.9.1993 to JAR 22.785 (e) (f) „seats and restraint system“.

Proposal NPA 22 D-64 of 5.10.1993 to JAR 22.788 „head rests“. |
| 3. Exemptions: | None |
| 4. Equivalent Safety Findings: | None |

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: List of drawings for „Duo Discus C“ sailplane, January 1994.
2. Description: Two-seat mid-wing sailplane from glass and carbon composite, two-piece wing with wingtips, double-panel airbrakes on the upper surface, integral water ballast tanks in wing and fin (optional). Glass composite fuselage, retractable main landing gear, fixed nose wheel, tail skid or wheel (optional). T-tail (fixed stabiliser with elevator, fin and rudder).
3. Equipment: Minimum equipment:
 2 Airspeed indicator, up to 300 km/h
 2 Altimeter
 1 Outside air temperature indicator with sensor (when flying with water ballast)
 2 Four-point safety harnesses (symmetrical)
 2 Automatic or manually operated parachutes or back cushions (thickness approx. 10 cm when compressed)
4. Dimensions:
 Span: 20 m
 Length: 8,62 m
 Height: 1,59 m
 Wing Area: 16,4 m²
 Aspect Ratio: 24,4
5. Tow hook: Nose tow hook " E85", LBA approved - No.:60.230/1
 Safety C.G. tow hook " Europa G 88", LBA approved - No.:60.230/2.
6. Air Speeds:
 Never exceed speed V_{NE} 250 km/h
 Manoeuvring speed V_A 180 km/h
 Maximum speed on aerotow V_T 180 km/h
 Maximum car launch speed V_T 150 km/h
 Maximum winch launch speed V_W 150 km/h
 Rough air speed V_{RA} 180 km/h
 Maximum speed for landing gear handling V_{LO} 180 km/h
7. Load factors:
 With airbrakes locked at $V_A = 180$ km/h $n = +5,3$
 $n = -2,65$
 With airbrakes locked at $V_{NE} = 250$ km/h $n = +4,0$
 $n = -1,5$
 With airbrakes extended at $V_{NE} = 250$ km/h $n = +3,5$
8. Weights:
 Maximum permitted take-off mass 700 kg
 Maximum permitted mass of all non-lifting parts 440 kg
 Empty mass 420 kg

9. Centre of Gravity Range: From 45 to 250 mm behind the datum.
10. Datum: Leading edge of the wing root rib.
11. Mean Aerodynamic Cord (MAC): 0,885 m with origin 142 mm in front of datum.
12. Levelling Means: Wedge 100:4,5 on the rear top fuselage, horizontal.
13. Weak links: max. 9,10 kN
14. Minimum Flight Crew: 1
15. Number of seats 2
16. Control surface deflections:
- | | | |
|---|---------------|----------------|
| Aileron | up | 71 mm ± 5 mm |
| | down | 36 mm ± 5 mm |
| Measuring point distance from aileron axis of rotation | | 176 mm |
| Elevator | up | 52 mm ± 4 mm |
| | down | 52 mm ± 4 mm |
| Measuring point distance from elevator axis of rotation | | 170 mm |
| Rudder | to both sides | 190 mm ± 20 mm |
| Measuring point distance from rudder axis of rotation | | 410 mm |
17. Wheels and Tyres:: 5" wheel with disc brake 145-30v, tech. spec. No. 32.240/9TS.
Tyre 5,00 – 5.
18. Other Limitations:
- Fabrication permitted at Schempp-Hirth výroba letadel spol. s r.o., Choceň.
 - All sailplanes outside surfaces exposed to sunlight must be white painted apart from registration Number and anti-collision marking.
 - The sailplane is approved for Day VFR flight.

IV. Operating and Service Instructions

1. Letová příručka pro větroň Duo Discus C, schválená ÚCL, vydání říjen 1997 nebo novější.
2. Flight manual for sailplane Duo Discus C, Issue February 2001
3. Příručka pro údržbu větroně Duo Discus C, vydání duben 1998 nebo novější.
4. Maintenance manual for sailplane Duo Discus C, Issue 2001
5. Betriebshandbuch für die Schleppkupplung, Baureihe: Bugkupplung E85, Ausgabe März 1989, Revision 4 März 2001
6. Betriebshandbuch für die Schleppkupplung/Sicherheitskupplung, Baureihe: Sicherheitskupplung Evropa G 88, Ausgabe Februar 1989, Revision 3 März 2001

V. Notes

1. The Duo Discus C is a license production of the German sailplane Duo Discus. The developing company and holder of the design is Schempp-Hirth Flugzeugbau GmbH, Kребенstraße 25, D-73230 Kirchheim/Teck, Germany
2. **EASA TC No. EASA.A025 has been issued for type Duo Discus C sailplane on February 4, 2005.**