TYPE-CERTIFICATE
DATA SHEET

NO. EASA.A.627

for

Ventus-3

Type Certificate Holder
Schempp-Hirth Flugzeugbau GmbH

Krebenstraße 25
73230 Kirchheim/Teck
Germany

For models: Ventus-3T
Ventus-3M
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Section A: **Ventus-3T**

### A.I General

1. **Type/ Model/ Variant**
   1.1 Type: Ventus-3
   1.2 Variant: Ventus-3T

2. **Airworthiness Category**

3. **Manufacturer**
   Schempp-Hirth Flugzeugbau GmbH
   Krebenstraße 25
   73230 Kirchheim / Teck
   Germany

4. **EASA Type Certification Application Date**
   30 September 2015

5. **EASA Type Certification Date**
   20 July 2018

### A.II EASA Certification Basis

1. **Reference Date for determining the applicable requirements**
   30 September 2015

2. **Airworthiness Requirements**
   Certification Specifications for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5 2009

3. **Special Conditions**
   None

4. **Exemptions**
   None

5. **(Reserved) Deviations**
   None

6. **Equivalent Safety Findings**
   CS 22.207 (a), (c)
   CS 22.335 (f)

7. **Environmental Protection**
   None
A.III  Technical Characteristics and Operational Limitations

1. Type Design Definition
List of drawing files Ventus-3T, Issue April 2018

2. Description
Single seat, mid-wing non-self-launching powered sailplane, CFRP/GFRP/AFRP-construction, 6-piece 18 m wing with Winglets, chamber changing-flaps, triple-panel Schempp-Hirth type airbrakes on upper wing surface, water ballast tanks in wings and fin (optional), CFRP/GFRP/AFRP-fuselage, retractable main wheel with hydraulic disc brake, T-shaped horizontal tail (fixed horizontal stabilizer with elevator, fin and rudder), retractable power plant with folding propeller.

3. Equipment
Min. required Equipment:
1  Air speed indicator (up to 300 km/h)
1  Altimeter
1  Magnetic compass
1  Outside air temperature indicator with sensor (when flying with water ballast)
1  Engine control unit featuring:
   - RPM indicator
   - Engine hour meter
   - Fuel quantity indicator
1  Rear view mirror
1  4-point harness (symmetrical)
1  Automatic or manual parachute
   or
1  Back cushion (thickness approx. 8 cm when compressed) when flying without parachute

Additional equipment refer to Flight and Maintenance Manual

4. Dimensions
Span: 18,0 m
Wing area: 10,84 m²
Length: 6,63 m

5. Engine

5.1 Model
SOLO 2350

5.2 Type Certificate
Type Certificate Data Sheet No. EASA.E.219

5.3 Limitations
Maximum RPM: 5800 min⁻¹
Maximum continuous RPM: 5500 min⁻¹

5.4 Maximum Continuous Power
15,3 kW
6. **Propeller**
   
   6.1 Model
   OE-FL 5.83/83 a5, v92
   
   6.2 Type Certificate
   Data Sheet No. OE-FL /83
   
   6.3 Number of blades
   5
   
   6.4 Diameter
   830 mm +/- 0mm
   Note: Propeller features blades of different lengths (d_{min}/d = 92%)
   
   6.5 Sense of Rotation
   counter-clockwise
   
7. **Fuel capacities**
   
   7.1 Tank in the fuselage
   10,5 l
   
   7.2 Non-usable fuel
   0,3 l
   
8. **Launching Hooks**
   
   Safety hook Tost “Europa G 88”, LBA Datasheet No. 60.230/2
   Nose tow hook Tost “E22”, Datasheet 11.402/9NTS
   
9. **Weak Links**
   
   Ultimate strength:
   - for winch- and car launch: max. 825 daN
   - for aero tow: max. 660 daN
   
10. **Load Factors**
   
   +5,3 / -2,65 (up to V_A)
   +4,0 / -1,5 (up to V_{nit})
   
11. **Air Speeds**
   
<table>
<thead>
<tr>
<th>Speed Type</th>
<th>Minimum Speed</th>
<th>Maximum Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manoeuvring Speed</td>
<td>V_A</td>
<td>180 km/h</td>
</tr>
<tr>
<td>Never exceed speed</td>
<td>V_{NE}</td>
<td>280 km/h</td>
</tr>
<tr>
<td>Maximum permitted speeds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- with flaps at 0, -1, -2, S, S1</td>
<td>V_{FE}</td>
<td>280 km/h</td>
</tr>
<tr>
<td>- with flaps at +2, +1</td>
<td>V_{FE}</td>
<td>180 km/h</td>
</tr>
<tr>
<td>- with flaps at L</td>
<td>V_{FE}</td>
<td>150 km/h</td>
</tr>
<tr>
<td>- in rough air</td>
<td>V_{RA}</td>
<td>180 km/h</td>
</tr>
<tr>
<td>- for winch / car launching</td>
<td>V_{W}</td>
<td>150 km/h</td>
</tr>
<tr>
<td>- for aero towing</td>
<td>V_{T}</td>
<td>180 km/h</td>
</tr>
<tr>
<td>- for gear operation</td>
<td>V_{LO}</td>
<td>180 km/h</td>
</tr>
<tr>
<td>- for extended power plant:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ignition ON</td>
<td>V_{MAX1}</td>
<td>150 km/h</td>
</tr>
<tr>
<td>Ignition OFF</td>
<td>V_{MAX2}</td>
<td>180 km/h</td>
</tr>
<tr>
<td>- for extending / retracting the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>power plant:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V_{POmin}</td>
<td>90 km/h</td>
<td></td>
</tr>
<tr>
<td>V_{POmax}</td>
<td>120 km/h</td>
<td></td>
</tr>
</tbody>
</table>
   
12. **Approved Operations Capability**
   
   VFR Day only
   Cloud flying permitted
   Aerobatic manoeuvres not permitted
   
13. **Launch methods**
   
   Aero tow
   Winch launch and car launch
14. Maximum Masses

Max. Mass: 600 kg
Max. Mass of non-lifting parts:
Power-plant installed: 320 kg
Power-plant removed: 280 kg

15. Centre of Gravity Range

Power-plant installed:
300 mm – 430 mm aft of datum
Power-plant removed:
290 mm – 430 mm aft of datum

16. Datum

Wing leading edge at root rib

17. Levelling Means

Wedge 100 : 3,0 on slope of rear top fuselage to be horizontal

18. Control Surface Deflections

Refer to Maintenance Manual

19. Minimum Flight Crew

1

20. Maximum Passenger Seating Capacity

0

21. Baggage/ Cargo Compartments

2 kg

22. Lifetime limitations

Refer to Flight Manual, section 2
A.IV Operating and Service Instructions

1. Flight Manual
   Flight Manual Ventus-3T, Issue April 2018, or later EASA approved revisions

   Maintenance Manual Ventus-3T, Issue April 2018, or later EASA accepted revisions

   Repair Manual for the GFRP/CFRP powered sailplane model “Ventus-3T”, latest applicable issue

   Approved manual for the SOLO Engine type 2350, latest applicable issue, by SOLO Kleinmotoren GmbH

5. Operating Manual and Maintenance Manual for Propeller
   Approved manual for the folding propeller type OE-FL ./83, latest applicable issue, Ingrid Oehler TB GmbH

6. Manual for the Tost release, latest approved issue
**A.V Notes**

1. Manufacturing is confined to industrial production.

2. All parts exposed to sun radiation – except the areas for markings, registration and the cockpit area – must have a white colour surface.

3. Approved for operations with power plant temporarily removed or inoperative in accordance with the instructions given in the flight manual.
### Section B: **Ventus-3M**

#### B.I  **General**

1. **Type/ Model/ Variant**
   - **1.1 Type:** Ventus-3
   - **1.2 Variant:** Ventus-3M

2. **Airworthiness Category**
   - Powered Sailplane, CS 22 - Utility

3. **Manufacturer**
   - Schempp-Hirth Flugzeugbau GmbH
     - Krebenstraße 25
     - 73230 Kirchheim / Teck
     - Germany

4. **EASA Type Certification Application Date**
   - 2 October 2017

5. **EASA Type Certification Date**
   - 14 November 2019

#### B.II  **EASA Certification Basis**

1. **Reference Date for determining the applicable requirements**
   - 2 October 2017

2. **Airworthiness Requirements**
   - Certification Specifications for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5 2009

3. **Special Conditions**
   - None

4. **Exemptions**
   - None

5. **(Reserved) Deviations**
   - None

6. **Equivalent Safety Findings**
   - CS 22.207 (a), (c)
   - CS 22.335 (f)

7. **Environmental Protection**
   - ICAO Annex 16 (details refer to TCDSN EASA.A.627)
B.III  **Technical Characteristics and Operational Limitations**

1. **Type Design Definition**
   List of drawing files Ventus-3M, Issue September 2019

2. **Description**
   Single seat, mid-wing powered sailplane, CFRP/GFRP/AFRP-construction, 6-piece 18 m wing with Winglets, chamber changing-flaps, triple-panel Schempp-Hirth type airbrakes on upper wing surface, water ballast tanks in wings and fin (optional), CFRP/GFRP/AFRP-fuselage, retractable main wheel with hydraulic disc brake, T-shaped horizontal tail (fixed horizontal stabilizer with elevator, fin and rudder), retractable power plant with fixed propeller.

3. **Equipment**
   Min. required Equipment:
   1. Air speed indicator (up to 300 km/h)
   1. Altimeter
   1. Magnetic compass
   1. Outside air temperature indicator with sensor (when flying with water ballast)
   1. Power plant control unit featuring:
      - RPM indicator
      - Engine hour meter
      - Fuel quantity indicator
      - Coolant liquid temperature indicator
      - Warning signals
   1. Rear view mirror
   1. 4-point harness (symmetrical)
   1. Automatic or manual parachute or
   1. Back cushion (thickness approx. 8 cm when compressed) when flying without parachute
   Additional equipment refer to Flight and Maintenance Manual

4. **Dimensions**
   Span: 18,0 m
   Wing area: 10,84 m²
   Length: 6,63 m

5. **Engine**
   5.1 **Model**
   SOLO 2625-01 according to SOLO Service Bulletin Nr. 4600-7 (sales designation SOLO 2625-01i)
   5.2 **Type Certificate**
   Type Certificate Data Sheet No. EASA.E.218
   5.3 **Limitations**
   Maximum RPM: 6600 min⁻¹
   Maximum continuous RPM: 6250 min⁻¹
   5.4 **Maximum Continuous Power**
   45 kW
6. Propeller
   6.1 Model  
   KS-1G-152-R 122
   6.2 Type Certificate  
   LBA-Data Sheet No. 32.110/18
   6.3 Number of blades  
   2
   6.4 Diameter  
   1580 mm +/-50mm
   6.5 Sense of Rotation  
   counter-clockwise

7. Fuel capacities
   7.1 Tank in the fuselage  
   13,0 l
   7.2 Nonusable fuel  
   0,3 l

8. Launching Hooks
   Safety hook Tost “Europa G 88”, LBA Datasheet No. 60.230/2
   Nose tow hook Tost “E22”, Datasheet 11.402/9NTS

9. Weak Links
   Ultimate strength:
   - for winch- and car launch: max. 825 daN
   - for aero tow: max. 660 daN

10. Load Factors
    +5,3 / -2,65 (up to $V_A$)
    +4,0 / -1,5 (up to $V_{NE}$)

11. Air Speeds
    Manoeuvring Speed  
    $V_A$ 180 km/h
    Never exceed speed  
    $V_{NE}$ 280 km/h
    Maximum permitted speeds
    - with flaps at 0, -1, -2, S, S1  
      $V_{FE}$ 280 km/h
    - with flaps at +2, +1
    - with flaps at L  
      $V_{FE}$ 150 km/h
    - in rough air  
      $V_{RA}$ 180 km/h
    - for winch / car launching  
      $V_W$ 150 km/h
    - for aero towing  
      $V_T$ 180 km/h
    - for gear operation  
      $V_{LO}$ 180 km/h
    - for extended power plant  
      $V_{MAX}$ 180 km/h
    - for extending / retracting the power plant:
      $V_{Pomin}$ 92 km/h
      $V_{POmax}$ 120 km/h

12. Approved Operations Capability
    VFR Day only
    Cloud flying permitted
    Aerobatic manoeuvres not permitted

13. Launch methods
    Aero tow
    Winch launch and car launch

14. Maximum Masses
    Max. Mass: 600 kg
    Max. Mass of non-lifting parts:
    Power-plant installed: 365 kg
    Power-plant removed: 320 kg

15. Centre of Gravity Range
    Power-plant installed:
    320 mm – 430 mm aft of datum
    Power-plant removed:
    300 mm – 430 mm aft of datum
16. Datum
   - Wing leading edge at root rib

17. Levelling Means
   - Wedge 100 : 4,4 on slope of rear top fuselage to be horizontal

18. Control Surface Deflections
   - Refer to Maintenance Manual

19. Minimum Flight Crew
   - 1

20. Maximum Passenger Seating Capacity
   - 0

21. Baggage/ Cargo Compartments
   - 2 kg

22. Lifetime limitations
   - Refer to Flight Manual, section 2
B.IV  Operating and Service Instructions

1. Flight Manual  
   Flight Manual Ventus-3M, Issue March 2019, or later EASA approved revisions

   Maintenance Manual Ventus-3M, Issue March 2019, or later EASA accepted revisions

   Repair Manual for the GFRP/CFRP powered sailplane model “Ventus-3M”, latest applicable issue

   Approved manual for the SOLO Engine type 2625-01i, latest applicable issue, by SOLO Kleinmotoren GmbH

5. Operating Manual and Maintenance Manual for Propeller  
   Operation and Installation Manual No. P3 for the two blade composite propellers with fixed pitch KS 1 G(!)(!)(!) KS 1 C (!)(!), valid issue as appropriate

6. Manual for the Tost release, latest approved issue
B.V Notes

1. Manufacturing is confined to industrial production.

2. All parts exposed to sun radiation – except the areas for markings, registration and the cockpit area – must have a white colour surface.

3. Approved for operations with power plant temporarily removed or inoperative in accordance with the instructions given in the flight manual.
Section C: Administrative Section

C.I Acronyms & Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>AFRP</td>
<td>Aramid Fibre Reinforced Plastic</td>
</tr>
<tr>
<td>CFRP</td>
<td>Carbon Fibre Reinforced Plastic</td>
</tr>
<tr>
<td>GFRP</td>
<td>Glass Fibre Reinforced Plastic</td>
</tr>
<tr>
<td>CRI</td>
<td>Certification Review Item</td>
</tr>
<tr>
<td>CS</td>
<td>Certification Specification</td>
</tr>
<tr>
<td>EASA</td>
<td>European Aviation Safety Agency</td>
</tr>
<tr>
<td>LBA</td>
<td>Luftfahrt-Bundesamt</td>
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<td>VFR</td>
<td>Visual Flight Rules</td>
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C.II Type Certificate Holder Record

Schempp-Hirth Flugzeugbau GmbH
Krebenstr. 25
73230 Kirchheim / Teck
Germany

C.III Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC Issue No. &amp; Date</th>
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<tr>
<td>01</td>
<td>20 July 2018</td>
<td>Initial Issue</td>
<td>Initial Issue, 20. July 2018</td>
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<tr>
<td>02</td>
<td>01 July 2019</td>
<td>Some editorial and layout changes.</td>
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</tr>
<tr>
<td>03</td>
<td>15 November 2019</td>
<td>Addition of new model Ventus-3M</td>
<td>15 November 2019</td>
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