



European Aviation Safety Agency

EASA

**TYPE-CERTIFICATE
DATA SHEET**

EASA.A.030

HPH Glasflügel 304

Type Certificate Holder:

HPH, spol.s r.o.
Čáslavská 234,
284 01 Kutná Hora
CZECH REPUBLIC

For model: Glasflügel 304 CZ
 Glasflügel 304 CZ-17
 Glasflügel 304 C
 Glasflügel 304 S
 Glasflügel 304 MS
 Glasflügel 304 eS

Issue 05: 15 December 2017

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SECTION A: Glasflügel 304 CZ

A.I. General

| | | |
|--|---|------------------------|
| Data Sheet No.: EASA.A.030 | Issue: 03 | Date: 21 November 2016 |
| 1. a) Type: b) Model: | HPH Glasflügel 304 Glasflügel 304 CZ | |
| 2. Airworthiness Category: | Utility | |
| 3. Manufacturer: | HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC | |
| 4. Certification Application Date: | March 20, 1996 | |
| 5. CAA CZ certification date: | April 2, 1998 | |
| 6. The EASA Type Certificate replaces the Czech Republic Certificate No. 98-03 | | |

A.II. Certification Basis

| | |
|--|---|
| 1. Reference Date for determining the applicable requirements: | March 20, 1996 |
| 2. Certification Basis: | As defined by the CAA CZ letter 1941/720-TI/96/Př dated. March 20, 1996 |
| 3. Airworthiness Requirements: | Airworthiness Requirements for Sailplanes and powered Sailplanes (LFSM), Edition October 23, 1975 |
| 4. Requirements elected to comply: | None |
| 5. EASA Special Conditions: | - Directions for the stress analysis of components for sailplanes constructed from glass fiber reinforced plastic, Edition March 1965 - Subpart F and G of Joint Aviation Requirements (JAR 22), change 5, October 28, 1995 - JAR 22.375 (change 5) |
| 6. EASA Exemptions: | None |
| 7. EASA Equivalent Safety Findings: | None |

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:
 - List of Drawings for Sailplane "Glasflügel 304 B"
 - Amendment of List for "Glasflügel 304 CZ", dated March 1998.

2. Description:

Single seat mid-wing cantilever sailplane fiber construction, 2-piece wing, trailing edge airbrakes combined with flaps, wing water ballast - polyethylene water ballast tanks, retractable wheel, wheel-brake, tail wheel, T-tail (fixed stabilizer with elevator, fin and rudder), winglets.

3. Equipment:

Airspeed indicator up to 270 km/h
Altimeter
4-piece safety harness
Parachute or cushion (thickness approx. 10 cm when compressed)

4. Dimensions:

| | |
|---------------|---------------------|
| Span | 15.0 m |
| Length | 6.45 m |
| Height | 1.15 m |
| Wing Area | 9.88 m ² |
| Aspect Ratio: | 22,78 |

5. Launching Hooks:

Nose tow hook "E72", LBA approved - No.:60.230/1 or
Nose tow hook " E75", LBA approved - No.:60.230/1or
Nose tow hook " E85", LBA approved - No.:60.230/1
Safety C.G. tow hook "SH 72", LBA approved - No.:60.230/3 or
Safety C.G. tow hook " Europa G 88", LBA approved - No.:60.230/2.

6. Weak links:

Ultimate strength:
 - for winch launching max. 6500 N
 - for aerotow max. 6500 N

7. Air Speeds:

| | |
|---|--------------|
| Manoeuvring Speed V_A | 200 km/h IAS |
| Never Exceed Speed V_{NE} , flaps 0,-1,-2 | |
| up to 4000 m MSL | 250 km/h IAS |
| from 4000 to 5000 m MSL | 240 km/h IAS |
| from 5000 to 6000 m MSL | 226 km/h IAS |
| from 6000 to 7000 m MSL | 214 km/h IAS |
| from 7000 to 8000 m MSL | 202 km/h IAS |
| from 8000 to 9000 m MSL | 191 km/h IAS |
| from 9000 to 10000 m MSL | 179 km/h IAS |
| from 10000 to 12000 m MSL | 159 km/h IAS |
| Max. permitted V_{FE} , flaps +1, +2 | 200 km/h IAS |
| Rough Air Speed V_{RA} | 200 km/h IAS |
| Max. Aerotow Speed V_T | 150 km/h IAS |
| Max. Winch-launch Speed V_W | 150 km/h IAS |

8. Operational Capability: VFR Day
9. Maximum Weights:
Maximum weight: 450 kg
Maximum weight of non-lifting parts: 240 kg
10. Centre of Gravity Range: Max. forward c/g position aft of datum: 7.87 in (200 mm)
Max. rearward c/g position aft of datum: 14.17 in.(325 mm)
[MAC is 682 mm]
11. Datum: Wing leading edge y = 425 mm from the centreline
12. Levelling Means: Wedge 100:5,2 on slope of rear top fuselage to be horizontal
13. Minimum Flight Crew: 1 (Pilot)
14. Maximum Passenger Seating Capacity: ---
15. Lifetime limitations: Refer to Maintenance Manual
16. Deflection angles of control surfaces:
- | | | |
|-----------|-----------------|------------------------------|
| Elevator: | up and down | $17^{\circ} \pm 2^{\circ}$ |
| Rudder: | right and left: | $25^{\circ} \pm 2^{\circ}$ |
| Aileron: | up | $23^{\circ} \pm 2^{\circ}$ |
| | down | $10^{\circ} \pm 2^{\circ}$ |
| Flap: | up | $08^{\circ} \pm 1,5^{\circ}$ |
| | down | $12^{\circ} \pm 1,5^{\circ}$ |

A.IV. Operating and Service Instructions

Flight Manual (FM): CAA CZ approved Flight Manual "Glasflügel 304 CZ", Issue of January 1998

Maintenance Manual (AMM including Airworthiness Limitations): Service manual "Glasflügel 304 CZ" (Maintenance), Issue of January 1998

Operation instruction for the TOST nose tow release mechanism:

"E72" and "E75", Issue of May 1975, LBA approved.

"E72" and "E75", Issue of March 1988, LBA approved - for overhauled tow hook only.

"E85", Issue of March 1989, LBA approved

Operation instruction for the TOST safety tow release mechanism:

"S72" and "SH72", Issue of May 1975, LBA approved.

"S72" and "SH72", Issue of July 1989, LBA approved – for overhauled tow hook only.

Tost Manual for the launching hook "Europa G 88", Issue of February 1989, LBA approved.

A.V. Notes

1. Serial numbers affected.: 4,8,10 and all serial numbers formatted XX-15
2. Type Certification in Czech Republic: Type Certified on April 2nd 1998 by validation of 7th Revision of Type Certificate No.: 318, approved by LBA on November 28th 1990, and by Additional Certification.
3. Only industrial production permitted.
4. All external portions exposed to sunlight must be painted white, except of the areas for the registration and anti-collision markings.

SECTION B: Glasflügel 304 CZ-17

B.I. General

| | | |
|---|---|------------------------|
| Data Sheet No.: EASA.A.030 | Issue: 03 | Date: 21 November 2016 |
| 1. a) Type: b) Model: | HPH Glasflügel 304 Glasflügel 304 CZ-17 | |
| 2. Airworthiness Category: | Utility | |
| 3. Manufacturer: | HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC | |
| 4. Certification Application Date: | October 9, 2000 | |
| 5. CAA CZ Certification Date: | October 23, 2000 | |
| 6. The EASA Type Certificate replaces Czech Republic Type Certificate No. 98-03 | | |

B.II. Certification Basis

| | |
|--|---|
| 1. Reference Date for determining the applicable requirements: | March 20, 1996 |
| 2. Certification Basis: | As defined by the CAA CZ letter 1941/720-TI/96/Př dated. March 20, 1996 |
| 3. Airworthiness Requirements: | Airworthiness Requirements for Sailplanes and powered Sailplanes (LFSM), Edition October 23, 1975 |
| 4. Requirements elected to comply: | None |
| 5. EASA Special Conditions: | - Directions for the stress analysis of components for sailplanes constructed from glass fiber reinforced plastic, Edition March 1965 - Subpart F and G of Joint Aviation Requirements (JAR 22), change 5, October 28, 1995 - JAR 22.375 (change 5) |
| 6. EASA Exemptions: | None |
| 7. EASA Equivalent Safety Findings: | None |

B.III. Technical Characteristics and Operational Limitations

| | |
|----------------------------|--|
| 1. Type Design Definition: | -List of Drawings for Sailplane " Glasfügel 304 B" -Amendment of List for " Glasfügel 304 CZ", dated March 1998. -Amendment of Drawings for Wing Extentions. |
|----------------------------|--|

2. Description: Single seat mid-wing cantilever sailplane fiber construction, 2-piece wing, trailing edge airbrakes combined with flaps, wing water ballast - polyethylene water ballast tanks, retractable wheel, wheel-brake, tail wheel, T-tail (fixed stabilizer with elevator, fin and rudder), interchangeable winglets and wing extensions for wing span 17,43 m.
3. Equipment: Airspeed indicator up to 270 km/h
Altimeter
4-piece safety harness
Parachute or cushion (thickness approx. 10 cm when compressed)
4. Dimensions:
- | | | | |
|---------------|---------------------|------------|----------------------|
| Span | 15.0 m | optionally | 17,43 m |
| Length | 6.45 m | | |
| Height | 1.15 m | | |
| Wing Area | 9.88 m ² | optionally | 10,68 m ² |
| Aspect Ratio: | 22,78 | or | 28,44 |
5. Launching Hooks: Nose tow hook "E72", LBA approved - No.:60.230/1 or
Nose tow hook " E75", LBA approved - No.:60.230/1or
Nose tow hook " E85", LBA approved - No.:60.230/1
Safety C.G. tow hook "SH 72", LBA approved - No.:60.230/3 or
Safety C.G. tow hook " Europa G 88", LBA approved - No.:60.230/2.
6. Weak links: Ultimate strength for winch launching and aerotow max. 6500 N
7. Air Speeds:
- | | |
|---|--------------|
| Manoeuvring Speed V_A | 180 km/h IAS |
| Never Exceed Speed V_{NE} , flaps 0,-1,-2 | |
| up to 4000 m MSL | 250 km/h IAS |
| from 4000 to 5000 m MSL | 240 km/h IAS |
| from 5000 to 6000 m MSL | 226 km/h IAS |
| from 6000 to 7000 m MSL | 214 km/h IAS |
| from 7000 to 8000 m MSL | 202 km/h IAS |
| from 8000 to 9000 m MSL | 191 km/h IAS |
| from 9000 to 10000 m MSL | 179 km/h IAS |
| from 10000 to 12000 m MSL | 159 km/h IAS |
| Max. permitted V_{FE} , flaps +1, +2 | 180 km/h IAS |
| Rough Air Speed V_{RA} | 180 km/h IAS |
| Max. Aerotow Speed V_T | 150 km/h IAS |
| Max. Winch-launch Speed V_W | 150 km/h IAS |
8. Operational Capability: VFR Day
9. Maximum Weights:
- | | |
|-------------------------------------|--------|
| Maximum weight | 450 kg |
| Maximum weight of non lifting parts | 240 kg |

10. Centre of Gravity Range: Max. forward c/g position aft of datum:
200 mm
Max. rearward c/g position aft of datum:
318 mm
[MAC is 682 mm or 625 mm]
11. Datum: Wing leading edge y = 425 mm from the
centreline
12. Levelling Means: Wedge 100:5,2 on slope of rear top fuselage
to be horizontal
13. Minimum Flight Crew: 1 (Pilot)
14. Maximum Passenger Seating Capacity: ---
15. Lifetime limitations: Refer to Maintenance Manual
16. Deflection angles of control surfaces:
- | | | |
|-----------|-----------------|--------------------------|
| Elevator: | up and down | $17^\circ \pm 2^\circ$ |
| Rudder: | right and left: | $25^\circ \pm 2^\circ$ |
| Aileron: | up | $23^\circ \pm 2^\circ$ |
| | down | $10^\circ \pm 2^\circ$ |
| Flap: | up | $08^\circ \pm 1,5^\circ$ |
| | down | $12^\circ \pm 1,5^\circ$ |

B.IV. Operating and Service Instructions

Flight Manual (FM): CAA CZ approved Flight Manual "Glasflügel 304 CZ-17",
Issue of March 2000

Maintenance Manual (AMM)
(Including Airworthiness Limitations): Service manual "Glasflügel 304 CZ-17" (Maintenance), Issue
of March 2000

Operation instruction for the TOST nose tow release mechanism:
"E72" and "E75", Issue of May 1975, LBA approved.
"E72" and "E75", Issue of March 1988, LBA approved - for
overhauled tow hook only.
"E85", Issue of March 1989, LBA approved

Operation instruction for the TOST safety tow release mechanism:
"S72" and "SH72", Issue of May 1975, LBA approved.
"S72" and "SH72", Issue of July 1989, LBA approved –
for overhauled tow hook only.

Tost Manual for the launching hook "Europa G 88", Issue of February 1989, LBA approved.

B.V. Notes

1. Serial numbers affected 1,2,3,5,6,7,9,11,12,14,15,16,17 and all serial numbers formatted XX-17
2. Sailplane has been approved in compliance with Subpart B of Joint Aviation Requirements (JAR 22), change 5, October 28th 1995 for 17.43 m configuration
3. Only industrial production permitted.
4. All external portions exposed to sunlight must be painted white, except of the areas for the registration and anti-collision markings.

SECTION C: Glasflügel 304 C

C.I. General

| | | |
|---|---|------------------------|
| Data Sheet No.: EASA.A.030 | Issue: 03 | Date: 21 November 2016 |
| 1. a) Type: | Glasflügel 304 CZ | |
| b) Variant: | Glasflügel 304 C | |
| 2. Airworthiness Category: | Utility | |
| 3. Manufacturer: | HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC | |
| 4. Certification Application Date: | November 15, 2000 | |
| 5. CAA CZ Certification Date: | July 25, 2001 | |
| 6. The EASA Type Certificate replaces Czech Republic Type Certificate No. 98-03 | | |

C.II. Certification Basis

| | |
|--|---|
| 1. Reference Date for determining the applicable requirements: | March 20, 1996 |
| 2. Certification Basis: | As defined by the CAA CZ letter 15511/4081-TI/00/Sh dated 1. March 2000 |
| 3. Airworthiness Requirements: | Airworthiness Requirements for Sailplanes and powered Sailplanes (LFSM), Edition October 23, 1975 |
| 4. Requirements elected to comply: | None |
| 5. EASA Special Conditions: | - Directions for the stress analysis of components for sailplanes constructed from glass fiber reinforced plastic, Edition March 1965 - Subpart F and G of Joint Aviation Requirements (JAR 22), change 5, October 28, 1995 - JAR 22.375 (change 5) |
| 6. EASA Exemptions: | None |
| 7. EASA Equivalent Safety Findings: | None |

C.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:
 - List of Drawings for Sailplane " Glasflügel 304 B"
 - Amendment of List for " Glasflügel 304 CZ", dated March 1998.
 - Amendment of List for "Glasflügel 304 C"

2. Description:

Single seat mid-wing cantilever sailplane fiber construction, 2-piece wing, S-H airbrakes, wing water ballast - polyethylene water ballast tanks, retractable wheel, wheel-brake, tail wheel, T-tail (fixed stabilizer with elevator, fin and rudder) , interchangeable winglets.

3. Equipment:

Airspeed indicator up to 270 km/h
Altimeter
4-piece safety harness
Parachute or cushion (thickness approx. 10 cm when compressed)

4. Dimensions:

| | |
|---------------|---------------------|
| Span | 15.0 m |
| Length | 6.45 m |
| Height | 1.15 m |
| Wing Area | 9.88 m ² |
| Aspect Ratio: | 22,78 |

5. Launching Hooks:

Nose tow hook "E72", LBA approved - No.:60.230/1 or
Nose tow hook " E75", LBA approved - No.:60.230/1or
Nose tow hook " E85", LBA approved - No.:60.230/1
Safety C.G. tow hook "SH 72", LBA approved - No.:60.230/3 or
Safety C.G. tow hook " Europa G 88", LBA approved - No.:60.230/2.

6. Weak links:

Ultimate strength for winch launching and aerotow max. 6500 N

7. Air Speeds:

| | |
|-------------------------------|--------------|
| Manoeuvring Speed V_A , | 200 km/h IAS |
| Never Exceed Speed V_{NE} , | |
| up to 4000 m MSL | 250 km/h IAS |
| from 4000 to 5000 m MSL | 240 km/h IAS |
| from 5000 to 6000 m MSL | 226 km/h IAS |
| from 6000 to 7000 m MSL | 214 km/h IAS |
| from 7000 to 8000 m MSL | 202 km/h IAS |
| from 8000 to 9000 m MSL | 191 km/h IAS |
| from 9000 to 10000 m MSL | 179 km/h IAS |
| from 10000 to 12000 m MSL | 159 km/h IAS |
| Rough Air Speed V_{RA} | 200 km/h IAS |
| Max. Aerotow Speed V_T | 150 km/h IAS |
| Max. Winch-launch Speed V_W | 150 km/h IAS |

8. Operational Capability: VFR Day
9. Maximum Weights:
Maximum weight 450 kg
Maximum weight of non lifting parts 240 kg
10. Centre of Gravity Range: Max. forward c/g position aft of datum: 200mm
Max. rearward c/g position aft of datum: 325 mm
[MAC is 682 mm]
11. Datum: Wing leading edge $y = 425$ mm from the centreline
12. Levelling Means: Wedge 100:5,2 on slope of rear top fuselage to be horizontal
13. Minimum Flight Crew: 1 (Pilot)
14. Maximum Passenger Seating Capacity: ---
15. Lifetime limitations: Refer to Maintenance Manual
16. Deflection angles of control surfaces:
- | | | |
|-----------|-----------------|------------------------|
| Elevator: | up and down | $17^\circ \pm 2^\circ$ |
| Rudder: | right and left: | $25^\circ \pm 2^\circ$ |
| Aileron: | up | $23^\circ \pm 2^\circ$ |
| | down | $10^\circ \pm 2^\circ$ |

C.IV. Operating and Service Instructions

Flight Manual (FM): CAA CZ approved Flight Manual "Glasflügel 304 C", Issue of April 2001

Maintenance Manual (AMM)

(Including Airworthiness Limitations): Service manual "Glasflügel 304 C" (Maintenance), Issue of April 2001

Operation instruction for the TOST nose tow release mechanism:

"E72" and "E75", Issue of May 1975, LBA approved.

"E72" and "E75", Issue of March 1988, LBA approved - for overhauled tow hook only.

"E85", Issue of March 1989, LBA approved

Operation instruction for the TOST safety tow release mechanism:

"S72" and "SH72", Issue of May 1975, LBA approved.

"S72" and "SH72", Issue of July 1989, LBA approved – for overhauled tow hook only.

Tost Manual for the launching hook "Europa G 88", Issue of February 1989, LBA approved.

C.V. Notes

1. Serial numbers affected are formatted XX-C.
2. Sailplane has been approved in compliance with Subpart B of Joint Aviation Requirements (JAR 22), change 5, October 28th 1995 .
3. Only industrial production permitted.
4. All external portions exposed to sunlight must be painted white, except of the areas for the registration and anti-collision markings.

SECTION D: GLASFLÜGEL 304 S

D.I. GENERAL

- | | | | |
|----|----------------------------|---|------------------------|
| 1. | Data Sheet No.: EASA.A.030 | Issue 03 | Date: 21 November 2016 |
| 2. | a) Type: b) Model: | HPH Glasflügel 304 Glasflügel 304 S | |
| 3. | Airworthiness Category: | Sailplane, JAR 22 – Utility | |
| 4. | Manufacturer: | HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC | |
| 5. | Certification Date | 08 December 2014 | |

D.II. CERTIFICATION BASIS

- | | | |
|----|---------------------------------|--|
| 1. | Certification Basis: | CRI A01, 8.1.2004 |
| 2. | Airworthiness Requirements: | JAR 22, Amendment 7, 1st September 2003 |
| 3. | Requirements elected to comply: | - Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fiber Reinforced Plastics - issued July 1991 |
| 4. | Environmental Standards: | - |
| 5. | Special Conditions: | - |
| 6. | Exemptions: | - |
| 7. | Equivalent Safety Findings: | - |

D.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: 304S-09-001 - Drawing list of 304S (issued 23.9.2014 or later)
304S-09-001/B - Drawing list of 304S - altered drawings (issued 23.9.2014 or later)
2. Description: Single-seat, mid-wing sailplane, CFRP/GFRP/AFRP fiber construction, 2-piece wing (with removable wing extensions), camber changing flaps, triple-section SH-type airbrakes on upper wing surface, integral water ballast tanks in the wing and in the fin (option), retractable undercarriage with wheel brake, fixed tailwheel, T-tail with fixed horiz. stabilizer with elevator, fin and rudder, fuselage engine compartment as preparation for later conversion to powered variant, optional flexible water ballast tank in fuselage.
3. Equipment: Minimum equipment:
 - Airspeed indicator up to 270 km/h
 - Altimeter
 - 4-piece safety harness
 - Parachute or cushion (thickness approx. 10 cm when compressed)Additional Equipment refer to Flight and Maintenance Manual
4. Dimensions:

| | |
|-----------|---------------------|
| Span | 18 m |
| Wing area | 11.8 m ² |
| Length | 6.794 m |
5. Launching Hooks:
 - 1) Safety hook „Europa G 88“, LBA Datasheet No. 60.230/2
 - 2) Nose tow hook “E 22”, LBA Datasheet No.11.402/9NTSRemark:
Tow hook 1 and 2 optional
6. Weak links: Max. Ultimate Strength:
 - for winch and auto tow launching
max. 780 daN
 - for aero-tow
Max. 780 daN

| | | serial no: XX-S *) [km/h] | serial no: XX-MS *) [km/h] |
|-------------------------------------|--|---------------------------------|----------------------------------|
| 7. Air Speeds: | Manoeuvring Speed V_A | 180 | 200 |
| | Never Exceed Speed V_{NE} | 260 | 260 |
| | Maximum permitted speeds | | |
| | - with flaps at +1, +2 | 200 | 200 |
| | - with flaps at L | 150 | 160 |
| | - with flaps at -2;-1, 0 | 260 | 260 |
| | - in rough air V_{RA} | 180 | 200 |
| | - in aero-tow V_T | 150 | 150 |
| | - in winch-launch V_W | 130 | 130 |
| | - for gear operating V_{Lo} | 180 | 180 |
| | *) REMARK for designation see Notes 3 and 4 at D.V. | | |
| 8. Maximum Masses: | Max. Mass | 600 kg | 600 kg |
| | Max. Mass of Non-Lifting Parts | 278.5 kg | 373 kg |
| 9. Operational Capability | Approved for VFR-flying in daytime. | | |
| 10. Centre of Gravity Range: | Datum: Wing leading edge $y = 425$ mm from the centreline Leveling means: Wedge 100:8,77 on slope of rear top fuselage to be horizontal | | |
| | Forward Limit | 251 mm aft of datum | |
| | Rearward Limit | 387 aft of datum | |
| 11. Minimum Flight Crew: | 1 (Pilot) | | |
| 12. Maximum Seating Capacity: | 1 | | |
| 13. Lifetime limitations: | Refer to Maintenance Manual | | |
| 14. Deflection of control surfaces: | Refer to Maintenance Manual | | |

D.IV. OPERATING AND SERVICE INSTRUCTIONS

1. Flight Manual
Flight Manual for the Sailplane Glasflügel 304 S; doc. no.:G304S/AFM; issued 08/14; EASA approved
2. Flight Manual Supplement for sailplanes serial no.: XX-S
304S Flight Manual Supplement; doc. no.: 304SFM_Supp_XS; issued 08/14; EASA approved; see D.V.4.
3. Technical Manual
Technical Description, Operating, Maintenance and Repair Manual for the Sailplane Glasflügel 304S, doc. no.: 304S/MM; issued 08/14
4. Manual for Operation:
 - a. Operation and Maintenance Manual for Tost tow hook TypeTost E 22, latest approved version
 - b. Operation and Maintenance Manual for Tost tow hook TypeTost G 88, latest approved version

D.V. NOTES

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings and registration – must have a white color surface.
3. Serial numbers affected are formatted XX-MS only if wing serial number formatted YY-MS is installed.
4. Serial numbers affected are formatted XX-S only if wing serial number formatted YY-S is installed.

SECTION E: GLASFLÜGEL 304 MS

E.I. GENERAL

- | | | | |
|----|----------------------------|---|------------------------|
| 1. | Data Sheet No.: EASA.A.030 | Issue 03 | Date: 21 November 2016 |
| 2. | a) Type: b) Model: | HPH Glasflügel 304 Glasflügel 304 MS | |
| 3. | Airworthiness Category: | Powered Sailplane, JAR 22 - Utility capable for self-launching | |
| 4. | Manufacturer: | HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC | |
| 5. | Certification Date | 08 December 2014 | |

E.II. CERTIFICATION BASIS

- | | | |
|----|---------------------------------|--|
| 1. | Certification Basis: | EASA Acceptance Letter doc. no.: 60032537, 21.6.2013 |
| 2. | Airworthiness Requirements: | JAR 22, Amendment 7, 1st September 2003 |
| 3. | Requirements elected to comply: | Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fiber Reinforced Plastics - issued July 1991 |
| 4. | Environmental Standards: | ICAO Annex 16 |
| 5. | Special Conditions: | - |
| 6. | Exemptions: | - |
| 7. | Equivalent Safety Findings: | - |

E.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1. Type Design Definition: 304S-09-001 - Drawing list of 304S (issued 23.9.2014 or later)
304S-09-001/B - Drawing list of 304S - altered drawings (issued 23.9.2014 or later)
2. Description: Single-seat, mid-wing sailplane, CFRP/GFRP/AFRP fiber construction, 2-piece wing (with removable wing extensions), camber changing flaps, triple-section SH-type airbrakes on upper wing surface, integral water ballast tanks in the wing and in the fin (option), retractable undercarriage with wheel brake, fixed or steerable tailwheel (option), T-tail with fixed horiz. stabilizer with elevator, fin and rudder, retractable powerplant.
3. Equipment: Minimum equipment:
 - Airspeed indicator up to 270 km/h
 - Altimeter
 - Magnetic compass
 - Engine control unit indicating RPMs
 - Coolant liquid temperature
 - Fuel quantity
 - Engine time
 - Rear-view mirror
 - 4-piece safety harness
 - Parachute or cushion (thickness approx. 10 cm when compressed)Additional Equipment refer to Flight and Maintenance Manual
4. Dimensions:

| | |
|-----------|---------------------|
| Span | 18 m |
| Wing area | 11.8 m ² |
| Length | 6.794 m |
5. Engine Designation: Solo Type 2625 01
EASA-Datasheet No: TCDS E.218
6. Engine Limits:

| | |
|-----------------------------|-------------------|
| Maximum continuous Power at | 39 kW 6250 rpm |
| Maximum RPM | 6700 RPM |
7. Propeller: KS-1G-152-R 122
Propeller diameter LBA-Datasheet No. 32.110/18
1580 mm ± 5
8. Fuel Quantity:

| | |
|-----------------------------|--------|
| Fixed fuselage tank | 13.5 l |
| Tank in stbd. Wing (Option) | 11 l |
| Tank in port wing (Option) | 11 l |
| Non-usable amount of fuel | 1.5 l |

9. Launching Hooks: 1) Safety hook „Europa G 88“, LBA Datasheet No. 60.230/2
2) Nose tow hook “E 22”, LBA Datasheet No.11.402/9NTS
- Remark:
Tow hook 1 and 2 optional
10. Weak links: Max. Ultimate Strength:
- for winch and auto tow launching
max. 780 daN
 - for aero-tow
Max. 780 daN
11. Air Speeds:
- | | | |
|--------------------|----------|----------|
| Manoeuvring Speed | V_A | 200 km/h |
| Never Exceed Speed | V_{NE} | 260 km/h |
- Maximum permitted speeds
- | | | |
|----------------------|----------|----------|
| - with flaps at | +1, +2 | 200 km/h |
| - with flaps at | L | 160 km/h |
| - with flaps at | -1, 0 | 260 km/h |
| - in rough air | V_{RA} | 200 km/h |
| - in aero-tow | V_T | 150 km/h |
| - in winch-launch | V_W | 130 km/h |
| - for gear operating | V_{Lo} | 180 km/h |
12. Maximum Masses:
- | | |
|--------------------------------|--------|
| Max. Mass | 600 kg |
| Max. Mass of Non-Lifting Parts | 373 kg |
13. Operational Capability Approved for VFR-flying in daytime.
14. Centre of Gravity Range: Datum: Wing leading edge $y = 425$ mm from the centreline
Leveling means: Wedge 100:8,77 on slope of rear top fuselage to be horizontal
- | | |
|----------------|---------------------|
| Forward Limit | 251 mm aft of datum |
| Rearward Limit | 387 aft of datum |
15. Minimum Flight Crew: 1 (Pilot)
16. Maximum Seating Capacity: 1
17. Lifetime limitations: Refer to Maintenance Manual
18. Deflection of control surfaces: Refer to Maintenance Manual

E.IV. OPERATING AND SERVICE INSTRUCTIONS

1. Flight Manual
Flight Manual for Powered Sailplane Glasflügel 304 MS; doc. no.:G304MS/AFM; issued 07/14;
EASA approved
2. Technical Manual
Technical Description, Operating, Maintenance and Repair Manual for the Sailplane
Glasflügel 304S, doc. no.: 304S/MM; issued 08/14
3. Maintenance Manual Supplement for the Sailplane
Glasflügel 304MS, doc. no.: 304MS/MM SUP; issued 08/14
4. Manual for Operation:
 - a. Operation and Maintenance Manual for Tost tow hook TypeTost E 22, latest approved version
 - b. Operation and Maintenance Manual for Tost tow hook TypeTost G 88, latest approved version
 - c. Manual for SOLO engine type 2625 01, latest approved version
 - d. Operation and Instalation Manual P3 for Technoflug propeller KS 1 G () () (), latest approved version

E.V. NOTES

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings and registration – must have a white color surface.
3. Serial numbers affected are formated XX-MS only if wing serial number formated YY-MS is installed.
4. Approved for operations with the power plant temporarily removed or inoperative in accordance with the instructions given in the MM Sup.

SECTION F: GLASFLÜGEL 304 eS

F.I. GENERAL

- | | | | |
|----|----------------------------|--|------------------------|
| 1. | Data Sheet No.: EASA.A.030 | Issue 03 | Date: 21 November 2016 |
| 2. | a) Type: b) Model: | HPH Glasflügel 304 Glasflügel 304 eS | |
| 3. | Airworthiness Category: | Restricted (see F.V. Note 6) Powered Sailplane, JAR 22 - Utility capable for self-sustaining | |
| 4. | Manufacturer: | HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC | |
| 5. | Certification Date | 21 November 2016 | |

F.II. CERTIFICATION BASIS

- | | | |
|----|---------------------------------|--|
| 1. | Certification Basis: | CRI A-1 Issue 3, 04 August 2016 |
| 2. | Airworthiness Requirements: | JAR 22, Amendment 7, 1st September 2003 CS 22, Amendment 2, 5th March 2009: Subpart H and J |
| 3. | Requirements elected to comply: | Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fiber Reinforced Plastics - issued July 1991 |
| 4. | Environmental Standards: | - |
| 5. | Special Conditions: | - SC.22-2014-01; Installation of Electric Propulsion in Sailplanes - SC E-01; Electrical Engine for powered sailplanes |
| 6. | Exemptions: | - |
| 7. | Equivalent Safety Findings: | - |

F.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

- | | | | |
|----|-------------------------|---|--|
| 1. | Type Design Definition: | 304S-09-001 304S-09-001/B 304eS-09-003 | Drawing list of 304S (issued 23.9.2014 or later) Drawing list of 304S - altered drawings (issued 23.9.2014 or later) Amendment of List for " Glasflügel 304 eS" (issued 21.11.2016 or later) |
| 2. | Description: | Single-seat, mid-wing sailplane, CFRP/GFRP/AFRP fiber construction, 2-piece wing (with removable wing extensions), camber changing flaps, triple-section SH-type airbrakes on upper wing surface, integral water ballast tanks in the wing and in the fin (option), retractable undercarriage with wheel brake, fixed tailwheel, T-tail with fixed horiz. stabiliser with elevator, fin and rudder, electric motor and foldable propeller in nose. | |
| 3. | Equipment: | <p>Minimum equipment:</p> <ul style="list-style-type: none"> - Airspeed indicator up to 270 km/h - Altimeter - Magnetic compass - Engine control unit indicating <ul style="list-style-type: none"> RPMs Battery level (V meter, A meter) Motor temperature Engine time - 4-piece safety harness - Parachute or cushion (thickness approx. 10 cm when compressed) <p>Additional Equipment refer to Flight and Maintenance Manual</p> | |
| 4. | Dimensions: | Span Wing area Length | 18 m 11.8 m ² 6.794 m |
| 5. | Engine Designation: | FES-HPH-M100 | Outrunner BLDC brushless synchronous permanent magnet motor with electronically controlled commutation system 3 phase. Accepted as part of the aircraft. |
| 6. | Engine Limits: | Maximum power Maximum continuous power Maximum RPM non loaded | 23 kW, 200 A at 116 V 16 kW at 100 V 5300 RPM |
| 7. | Propeller: | FES-HPH-P1-102 | Tractor type, foldable, fixed pitch composite two blades propeller, sense of rotation clockwise in direction of flight. Accepted as part of the aircraft. |
| | | Propeller diameter | 1000 mm +20 -0 |
| | | Maximum RPM | 4500 RPM |
| 8. | Fuel Quantity: | - | |

9. Launching Hooks: 1) Safety hook „Europa G 88“, LBA Datasheet No. 60.230/2
2) Nose tow hook „Europa G 88“, LBA Datasheet No. 60.230/2
Remark:
Tow hook 1 and 2 optional
10. Weak links: Max. Ultimate Strength:
- for winch and auto tow launching max.
780 daN

- for aero-tow
Max. 780 daN
- | | | serial no:
XX-S *)
[km/h] | serial no:
XX-MS *)
[km/h] |
|-----------------|-------------------------------|---------------------------------|----------------------------------|
| 11. Air Speeds: | Manoeuvring Speed V_A | 180 | 200 |
| | Never Exceed Speed V_{NE} | 260 | 260 |
| | Maximum permitted speeds | | |
| | - with flaps at +1, +2 | 200 | 200 |
| | - with flaps at L | 150 | 160 |
| | - with flaps at -2; -1, 0 | 260 | 260 |
| | - in rough air V_{RA} | 180 | 200 |
| | - in aero-tow V_T | 150 | 150 |
| | - in winch-launch V_W | 130 | 130 |
| | - for gear operating V_{Lo} | 180 | 180 |
- *) REMARK
for designation see Notes 3 and 4 at F.V.
12. Maximum Masses: Max. Mass 571 kg 600 kg
Max. Mass of Non-Lifting Parts 305 kg 373 kg
13. Operational Capability Approved for VFR-flying in daytime.
14. Centre of Gravity Range: Datum: Wing leading edge $y = 425$ mm from the centreline
Leveling means: Wedge 100:8,77 on slope of rear top fuselage to be horizontal
Forward Limit 251 mm aft of datum
Rearward Limit 387 aft of datum
15. Minimum Flight Crew: 1 (Pilot)
16. Maximum Seating Capacity: 1
17. Lifetime limitations: Refer to Maintenance Manual
18. Deflection of control surfaces: Refer to Maintenance Manual

F.IV. OPERATING AND SERVICE INSTRUCTIONS

1. Flight Manual:

- Flight Manual for the Sailplane Glasflügel 304 S;
doc. No. G304S/AFM; revision 0, issued 08/14; EASA approved, including
- Flight Manual Supplement for the Sailplane Glasflügel 304 eS;
doc. No. G304eS/AFMSupp; issued 10/16; EASA approved
- 304S Flight Manual Supplement; doc. no.: 304SFM_Supp_XS, issued 08/14;
with revision R01, 10/16; EASA approved; see F.V.4.

2. Technical Manual:

- Technical Description, Operating, Maintenance and Repair Manual for the Sailplane Glasflügel 304S, doc. No. 304S/MM; issued 08/14 or later approved revision, including
- Maintenance Manual Supplement for the Sailplane Glasflügel 304 eS,
doc. No. 304eS/MMSupp; issued 10/16 or later approved revision

3. Manuals for Operation:

- a. Operation and Maintenance Manual for Tost tow hook TypeTost G 88, latest approved revision
- b. FES Motor Manual FES-HPH-M100, v1.21 or later approved revision
- c. FES Propeller Manual FES-HPH-P1-102, v1.11 or later approved revision
- d. FES Battery pack GEN2 manual, v1.17 or later approved revision
- e. FES FCU instrument manual v1.70 or later approved revision

4. In order to comply with the **EASA AD No. AD-2017-0167-E** the sailplane must be equipped by following additional documents which complements or substitute the original listed in 1, 2 and 3 of this section:

- Flight Manual Supplement for the Sailplane Glasflügel 304 eS;
doc. No. G304eS/AFMSupp; revision 1, issued 11/17 or later approved revision
- Maintenance Manual Supplement for the Sailplane Glasflügel 304 eS,
doc. No. 304eS/MMSupp; revision 1, issued 11/17 or later approved revision
- Maintenance Manual Supplement for the sailplane Glasflügel 304eS – “Repair of battery compartment”, doc. No. 304eS/MMSup2, revision 0, dated 11/17 or later approved revision
- FES Battery pack GEN2 manual v1.19, dated 10/2017 or later approved revision
- FES FCU instrument manual v1.80, dated 10/2017 or later approved revision

F.V. NOTES

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings and registration – must have a white color surface.
3. Serial numbers affected are formatted XX-MS only if wing serial number formatted YY-MS is installed.
4. Serial numbers affected are formatted XX-S only if wing serial number formatted YY-S is installed.
5. Approved for operations with the power plant temporarily removed or inoperative in accordance with the instructions given in the doc. No. 304eS/MMSupp; issued 10/16.
6. Model Glasflügel 304 eS is only eligible for rCofA as engine and propeller are accepted as part of the aircraft according Part 21.A.23(b)(2).

ADMINISTRATIVE SECTION

I. Acronyms

II. Type Certificate Holder Record

| TC Holder | Period |
|--|---------------|
| HPH, spol.s r.o. Čáslavská 234 284 01 Kutná Hora CZECH REPUBLIC | |

III. Change Record

| Issue | Date | Changes | TC Issue & Date |
|--------------|------------------|--|----------------------------|
| 01 | 03 February 2005 | Initial issue | 03 February 2005 |
| 02 | 08 December 2014 | Introduction of models 304 S and 304 MS | 08 December 2014 |
| 03 | 21 November 2016 | Introduction of model 304 eS | 21 November 2016 |
| 04 | 10 May 2017 | F.I.3. Airworthiness category "Restricted" highlighted | 21 November 2016 |
| 05 | 15 December 2017 | F.IV. Implementation of new manual related to corrective action in order to comply with EASA AD No. AD-2017-0167-E + miscellaneous corrections | 21 November 2016 |