

Prezes Urzędu Lotnictwa Cywilnego
President of the Civil Aviation Authority

ŚWIADECTWO UZNANIA ZATWIERDZENIA TYPU
Type Approval Recognition Certificate

NUMER: **UL.A.00 – 003/2023**
Reference:

Niniejsze świadectwo uznania zatwierdzenia typu zaświadcza, że określony typ/model ultralekkiego statku powietrznego został uznany za akceptowalny w Rzeczypospolitej Polskiej zgodnie z obowiązującymi przepisami polskiego lotnictwa cywilnego i pozostaje w mocy przez czas nieokreślony, chyba że zatwierdzenie zostanie zrzucone, zawieszono lub cofnięte oraz że został wpisany na listę typów zatwierdzonych prowadzoną przez Prezesa Urzędu Lotnictwa Cywilnego, o której mowa w przepisach wydanych na podstawie art. 33 ust. 2 i 4 ustawy – Prawo lotnicze (Dz.U. z 2022 r. poz. 1235, 1715, 1846, 2185 i 2642).

This Type Approval Recognition Certificate certifies that the ultralight aircraft type/model specified has been found acceptable in Republic of Poland in accordance with the applicable Polish Civil Aviation regulations and shall remain as such for an unlimited duration unless the approval is surrendered, suspended or revoked and has been entered on the list of approved flying device types managed by the President of the Civil Aviation Authority, referred to in the regulations issued on the basis of Art. 33 para 2 and 4 of the Aviation Law Act dated July 3rd, 2002 (JL. 2022, item 1235, 1715, 1846, 2185 and 2642).

Państwo projektu
State of Design

Czech Republic

Państwo produkcji
State of Manufacture

Czech Republic

Posiadacz zatwierdzenia typu
Type Approval Holder

**Zall SKYLEADER a.s.
Znojemska 826/64, 586 01 JIHLAVA, Czech Republic**

Wytwórca
Manufacturer

**Zall JIHLAVAN airplanes s.r.o.
Znojemska 64, 586 01 JIHLAVA, Czech Republic**

Oznaczenie typu produktu
Product Type Designation

JA – 600 (Skyleader 600)

Numer zatwierdzenia typu
Type Approval Number

ULL 05/2009

Arkusz danych do zatwierdzenia typu
Type Certificate Data Sheet

ULL 05/2009

Przyjęte wymagania techniczne
Type Certification Basis

UL 2 – Part I, issue I 2019

Uwagi
Remarks

Approved by LAA CR the Technical Commission on:
15.12.2009 for MTOM 472,5 kg
17.04.2019 for MTOM 600 kg
EZD ref. LTT-4.5460.5.2022

Z upoważnienia Prezesa Urzędu Lotnictwa Cywilnego
On behalf of President of the Civil Aviation Authority

Marcin Perkowski

Zastępca Dyrektora Departamentu Techniki Lotniczej

Deputy Director, Aviation Technical Department

(pismo zostało wydane w postaci elektronicznej

i opatrzone kwalifikowanym podpisem elektronicznym)

(the letter was published in electronic form

and signed with a qualified electronic signature)

Data pierwszego wydania: **20.01.2023**

Date of original issue:

Data ostatniej zmiany:

Date of last revision: --



Letecká amatérská asociace ČR – Light Aircraft Association of the Czech Republic

Type Certificate

Issued by the Light Aircraft Association of the Czech Republic (hereinafter LAA CR), based on the authorisation by the Ministry of Transport according to Act No.49/1997 Coll., on civil aviation, and on the Act No. 455/1991 Coll., as amended on engaging in trade (The Trades Licensing Act).

Aircraft type designation:

Two-seat, single-engine, aerodynamically controllable, all-metal cantilever low-wing monoplane, ultra-light airplane – Sport Flying Equipment.

Type designation: **JA – 600 (Skyleader 600)**

Maximum take off mass 600 kg including the ballistic recovery parachute.

Detailed technical specification is stated in the Data Sheet.

- Supplement „a“** 27.11.2013 trade name added.
Supplement „b“ 31.08.2015 change of the holder of Type Certificate and typing error.
Supplement „c“ 18.08.2016 change on CAAC request, deletion of flight performance for MTOM 600kg, fuel reference for POH added and typing error.
Supplement „d“ 17.04.2019 maximum take-off mass increase to 600kg by UL-2 part I. (issued 01.2019).
Supplement „e“ 03.02.2020 change of CG position, propeller MTV-34-1-A added.
Supplement „f“ 4.3.2022 propeller E-props added.

Type certificate holder (as of 14.07.2017):

Zal SKYLEADER a.s.

Znojemska 826/64

586 01 Jihlava

Czech republic

Approved by the LAA CR Technical commission on:

15.12.2009 (for MTOM 472,5kg)

17.04.2019 (for MTOM 600kg)

Type certificate is registered at LAA CR under the registration:

ULL 05 / 2009

LAA CR Chief Technical Inspector: *Ing. Petr Tax*



Number of Type certificate:	ULL – 05 / 2009
Type certificate holder:	Zall SKYLEADER a.s.
Type:	JA-600 Rapid
Supplement “a” trade name added	JA-600 (Skyleader 600)
Supplement “b” change of TC holder and typing error	
Supplement “c” changes on CAAC request, deletion of flight performance for MTOM 600 kg, fuel reference for POH added and change of typing error.	
Supplement “d” MTOM increased to 600kg	
Date of issue:	15.12.2009
Supplement “a”:	27.11.2013
Supplement “b”:	31.08.2015
Supplement “c”:	18.08.2016
Supplement “d”:	17.04.2019 increased MTOM to 600kg
Supplement “e”:	3.2.2020 change of CG position, propeller MTV-34-1-A added
Supplement “f”:	5.3.2022 propeller E-props added

TYPE CERTIFICATE DATA SHEET N. ULL 05 / 2009

I. General information

- Type name:** *JA-600 (Skyleader 600)*
- Category:** Sport flying equipment, ultralight airplane aerodynamically controlled
- Type certificate holder** (as of 14.08.2017): Zall SKYLEADER a.s.
Znojemská 826/64
586 01 JIHLAVA
Czech Republic
- Manufacturer** (as of 14.07.2017): Zall JIHLAVAN airplanes s.r.o.
Znojemská 64
586 01 JIHLAVA
Czech Republic
- Valid date:** 15.12.2009 for MTOM 472,5kg
17.04.2019 for MTOM 600kg

II. Regulations basis

- Requirements of airworthiness:** UL 2-part I. Airworthiness requirements for Sport flying equipment, ultralight airplane aerodynamically, modified wording from 17.10.2002 for MTOM 472,5kg
- UL 2-part I. Airworthiness requirements for Sport flying equipment, ultralight airplane aerodynamically issued 1.2019 for MTOM 600kg
- Special conditions:** None
- Exceptions:** None

III. Technical data, performances and operation limits.

1. Type definition:

Type is defined with Type certificate of airplane JA-600 from 15.12.2009 and general drawing n. 600 800 JA-600 from 23.05.2008. There are technical details in report n. JA03-2007-JA6.AS Type draft of JA-600. Airplane is the same as KP 2U – Sova and KP-5 ASA in same parts of construction. Drawings for these parts are marked as original ones.

The aircraft complied requirements UL - 2 Part I, issued 1.2019, for MTOM 600 kg.

2. Technical description:

JA-600 is a two-seater, all-metal, cantilever, low-wing aircraft with side-by-side seats. Supporting surfaces are with two spars. They are composed of a rectangular center-section and a trapezoidal outer wing with Fowler flap. The fuselage is of a semi-monocoque construction. Tail units are cantilever, all metal with a forward HTU. There are two fuel integral tanks in the front part of the wing center section, each one with 60l fuel capacity. The plane has a fixed or retractable tricycle landing gear, with a steerable nose wheel. There are hydraulic brakes on main wheels.

3. Equipment:

For issuing the certificate of registration of airworthiness must be installed basic avionics on each plane, corresponding with requirements of airworthiness mentioned in chapter II. Specification Basis. Detailed list of optional equipment is stated in Aircraft type design. Optional equipment installed in plane on basis of customer's requirement is listed (by serial number) in the Pilot Handbook, chapter 6.3. Equipment list.

4. Basic technical data

Wing span.....	9,9 m
Length.....	7,1 m
Height.....	2,46 m
Wing area	11,85 m ²
Depth of the mean aerodynamic chord	1,27 m
Wing aspect ratio.....	7,78
Flaps area.....	0,7 m ²
Ailerons area	0,55 m ²
Wing profile - root.....	GA(W)-1 - 17 %
Wing profile - tip.....	GA(W)-2 - 13 %
Deflections of ailerons up	24° ± 1°
Deflections of ailerons down.....	16° ± 1°
Deflections of flaps:	
Deflections 1	10° ± 2°
Deflections 2.....	35° ± 2°
Elevator span	2,95 m
Elevator area.....	2,28 m ²
Deflections of elevator up	33° ± 2°
Deflections of elevator down	28° ± 2°

Rudder area 1,73 m²
 Deflections of rudder left 28° ± 2°
 Deflections of rudder right 28° ± 2°
 Landing gear gauge 1,96 m
 Landing gear wheel base 1,28 m
 Dimensions of landing gear tire nose: 300x85 (4") / main: 350x115 (6")

5. Weights

By requirements UL – 2 part I issued 17.10.2002 for MTOM 472,5 kg:

Empty weight with retractable gear
 (standard equipment)..... 304 kg ± 2%
 Empty weight 324 kg ± 2% (with parachute system)
 Maximum take-off weight.....450 kg
 Weight of parachute system may be added to maximum take-off weight.
 Maximum take-off weight..... 472,5 kg (with parachute system)

By requirements UL – 2 part I issued 1.2019 for MTOM 600 kg:

Empty weight max. 381 kg
 Maximum take-off weight..... 600 kg (with parachute system)

Maximum fuel weight (fuel tanks 120 l)..... 90 kg
 Maximum cabin baggage weight 30 kg

6. Flight performances

Performances correspond to sea level in International Standard Atmosphere with Rotax 912 ULS engine and Woodcomp Klassic 170/3/R propeller (pitch angle 15,5°).

	Take-off weight 450 (472,5) kg	Take-off weight 600 kg
All speeds are CAS:		
Stalling speed in landing configuration V _{SO}	61 km/h	68 km/h
Stalling speed with retracted flaps V _{S1}	72 km/h	81 km/h
Maximum speed with flaps fully extended V _{FE}	110 km/h	110 km/h
Maximum speed with gear extended V _{LO}	150 km/h	150 km/h
Max. maneuvering speed V _A	145 km/h	163 km/h
Max. speed of horizontal flight V _H	209 km/h	209 km/h
Never exceed speed V _{NE}	235 km/h	248 km/h
Total distance of take-off (till reaching 50 ft)	250 m	295 m
Climbing	4,8 m/s 110 km/h	4,0 m/s 115 km/h

- 7. Center of Gravity position limits:** Front limit of C – G position: 20% MAC
Rear limit of C – G position: 30% MAC (“change e”)
- 8. Datum plane:** Datum plane is leading edge of centersection wing
- 9. Mean aerodynamic chord:** Depth of MAC= 1 273,6 mm
Leading point of Mean aerodynamic chord is 74,7mm behind leading edge of centersection wing – datum plane.
- 10. Calc. load factor** +4,0 / -2,0.
- 11. Engine:** Rotax 912 UL
For request:
Rotax 912 ULS, Rotax 912 iS, Rotax 914 UL
- 12. Engine limits:**
- | | |
|--------------------------|--|
| Rotax 912 UL | |
| Maximum take-off power | 59,6 kW/ 5800 min ⁻¹ (max. 5 min) |
| Maximum continuous power | 58 kW/5500 min ⁻¹ |
| Rotax 912 ULS | |
| Maximum take-off power | 73,5 kW/5800 min ⁻¹ (max. 5 min) |
| Maximum continuous power | 69 kW/5500 min ⁻¹ |
| Rotax 912 iS | |
| Maximum take-off power | 73,5 kW/5800 min ⁻¹ (max. 5 min) |
| Maximum continuous power | 69 kW/5500 min ⁻¹ |
| Rotax 914 UL | |
| Maximum take-off power | 84,5 kW/5800 min ⁻¹ (max. 5 min) |
| Maximum continuous power | 73,5 kW/5500 min ⁻¹ |
- 13. Propeller:**
- | | |
|---------------------|--|
| Type: | KLASSIC 170/3/R |
| Manufacturer: | Woodcomp s.r.o. (SPORT PROP) |
| Description: | ground adjustable, composite, 3-blade. |
| Diameter: | 1700 mm |
| <i>For request:</i> | |
| Type: | Křemen SR 200c |
| Manufacturer: | Woodcomp s.r.o. |
| Description: | ground adjustable, wooden, 3-blade. |
| Diameter: | 1680 mm |
| Type: | KA 1/2 P |
| Manufacturer: | Kašpar a synové, |
| Description: | 2-blade, mechanical variable pitch. |
| Diameter: | 1610 mm |
| Type: | KA 1/3 P |
| Manufacturer: | Kašpar a synové, |
| Description: | 3-blade, mechanical variable pitch. |
| Diameter: | 1610 mm |

Type:	VARIA 170/2/R
Manufacturer:	Woodcomp s.r.o.
Description:	mechanical variable pitch, composite, 2-blade.
Diameter:	1700 mm
Type:	SR 3000/2W
Manufacturer:	Woodcomp s.r.o.
Description:	electric in flight adjustable, composite, 3-blade.
Diameter:	1750 mm
Type:	AS 1730(1700)/1950
Manufacturer:	Peszke S.C.
Description:	ground adjustable, composite, 3-blade.
Diameter:	1730 (1700) mm
Type:	DUC SWIRL (Standard, Inconel)
Manufacturer:	DUC Hélices
Description:	ground adjustable, composite, 3-blade.
Diameter:	1745 mm
Type:	IDROVARIO HS
Manufacturer:	Alisport srl.
Description:	in flight adjustable, composite, 2-blade.
Diameter:	1760 mm
Type:	POWERMAX
Manufacturer:	TL-Ultralights, s.r.o.
Description:	in flight adjustable, composite, 3-blade.
Diameter:	1748 mm
Type:	DUC Flash
Manufacturer:	DUC Hélices
Description:	ground adjustable, composite, 3-blade.
Diameter:	1730 mm
Type:	MTV-34-1-A (change "e")
Manufacturer:	MT-Propeller Entwicklung GmbH, Germany
Description:	in flight hydraulic adjustable, 3-blade.
Diameter:	1750 mm
Type:	Gloriause (change "f")
Manufacturer:	E props
Description:	in flight hydraulic adjustable, composite, 3-blade.
Diameter:	1750 mm

- 14. Fuel:**
- Car leaded gasoline in accordance with DIN 516000, Ö-NORM C 1103
 - EUROSUPER RON 95 unleaded in accordance with DIN 51607, Ö-NORM 1100 AVGAS 100 LL.
 - For Czech rep is recommended gasoline BA 95 Natural

15. Oil: AeroShell Oil Sport Plus 4 (oil in accordance with ROTAX).

16. Leveling: Leveling points and checklist is described in Technical description and maintenance manual.

IV. Operation and maintenance basis

- Pilot Operation Handbook for JA-600 (with appendixes for installed equipment)
- Operation Handbook for ROTAX 912 / 914
- Operation Handbook for installed propeller
- Instruction manual for parachute system (if installed)
- Instruction manuals for instigated equipment

V. Supplements: None

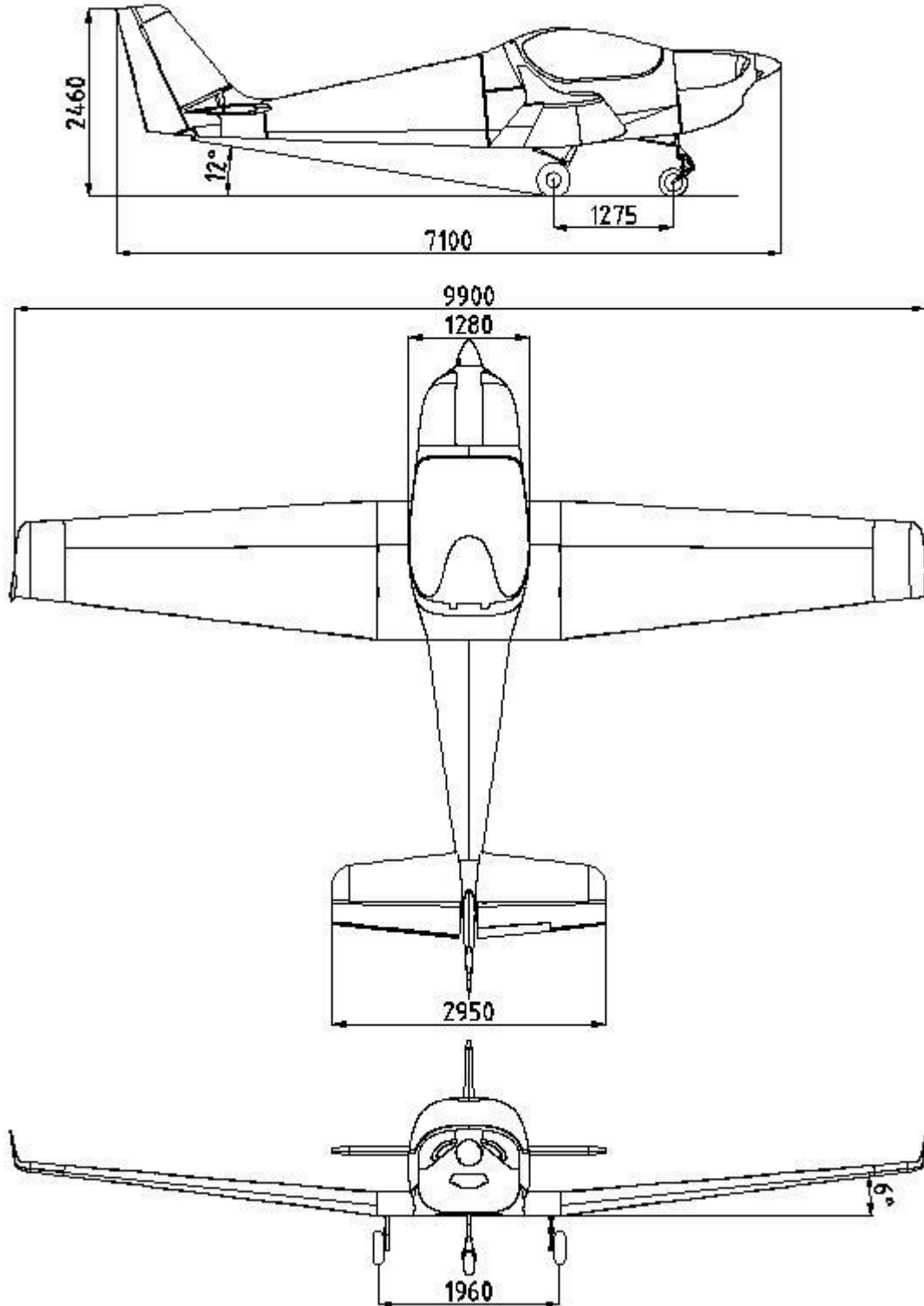
Notes:

Each airplane prepared for certification (Certificate of airworthiness) must have actual Empty aircraft weight measuring and CG position calculation protocol with list of installed equipment (which is computed to empty weight).

Airplane must have all specified placards and marking in accordance with Pilot Operation Handbook.

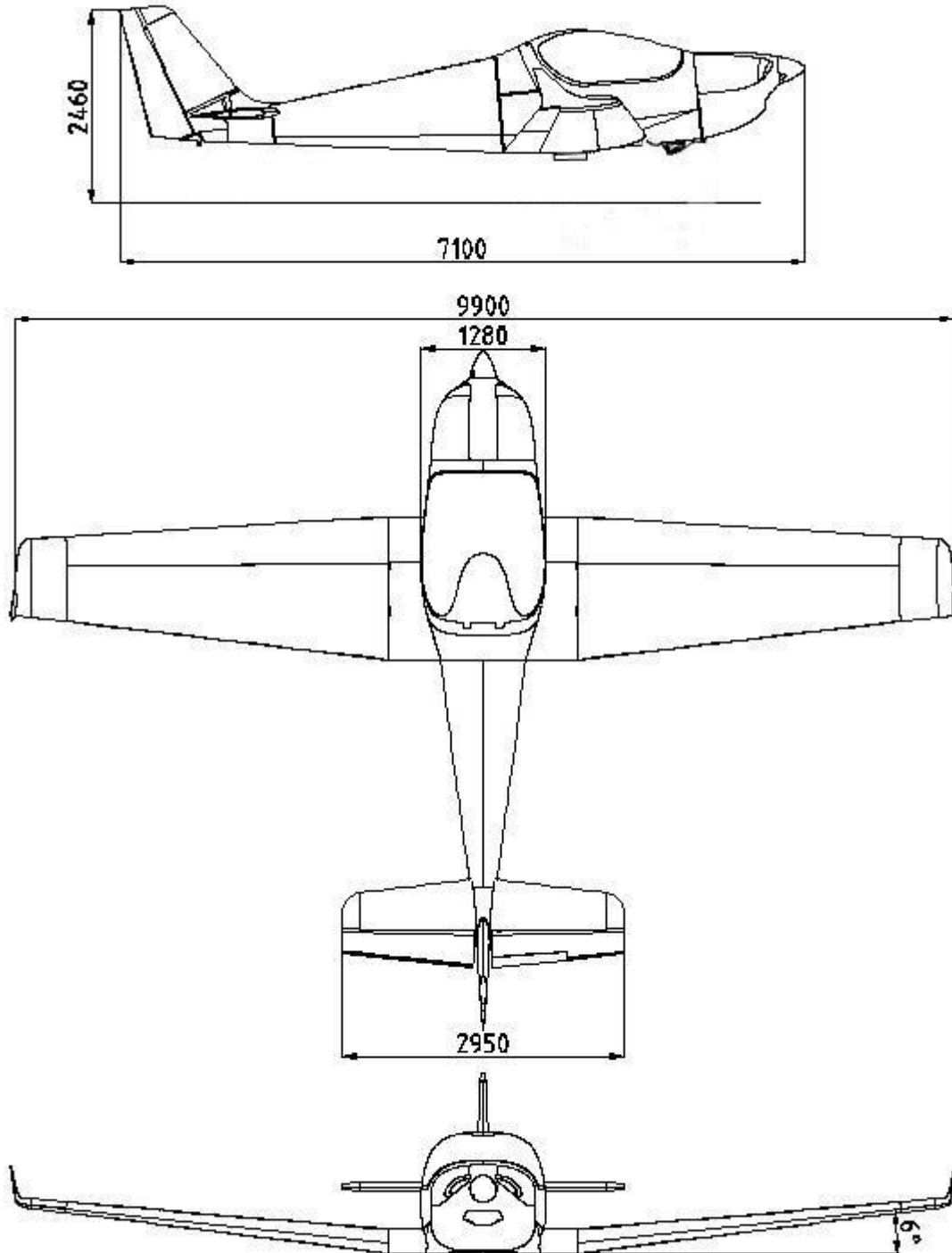
Appendix n.1

Diagram of JA-600 with fixed gear (all dimensions are in millimeters)



Appendix n.2

Diagram of JA-600 with retractable gear (all dimensions are in millimeters)



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