Callsign: EP-1424

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LEGEND 600

Flight and Operating Manual

TABLE OF CONTENTS

1 Introduction

1.1 Ten Rules of Safe Flying

I. Observe all regulations applicable to operation of ultralight (UL) aircraft.

II. Do not overestimate your piloting skills and never show off in front of spectators. Quite to the contrary, practice emergency landing at suitable locations.

III. Watch the weather and its development all the time. Do not attempt long flight if storms, clouds or icing are likely to occur.

IV. Monitor fuel level frequently, not only by watching the needles, but also by comparing the flight time with actual fuel consumption.

V. Always choose your bearing and altitude so that you will be able to make emergency landing.

VI. Always fly with a sufficient speed margin, especially during the take-off and landing.

VII. Do not perform nor mimic any aerobatic figures (e.g. stall turns) even if you feel that your piloting skills and aircraft handling qualities would allow aerobatic manoeuvres.

VIII. Under no circumstances, not even for a very short period of time, exceed the never-exceed speed Vne.

IX. Do not minimize navigation. Do not fly into unknown areas without appropriate navigation preparation and aids (map, compass).

X. Fly only when you are in good physical and mental condition.

1.2 Instructions for use

1) This Manual is issued by aircraft manufacturer and it is recommended being kept on board of the aircraft during each flight.
2) Records shall be made legibly and indelibly, no page may be torn out of the Manual.
3) Manual with complete records forms a part of the aircraft technical documentation.
4) Total number of take-offs and operating time shall be transferred from old into new logbook, along with the information about latest service bulletin performed.
5) The aircraft´s owner is responsible for correctness of operation records.

1.3 Important information

Changes and Amendments to this Manual

Any changes to applicable regulations or to this aircraft's construction will be published in the form of a bulletin (e.g. in the Pilot magazine). It is the responsibility of each aircraft owner to implement the change (or to have it implemented) and to record the change in the respective part of this Manual.

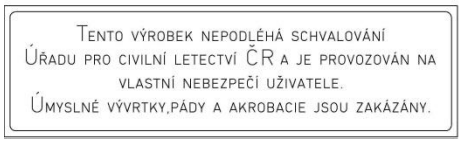
Owner of the aircraft and every operator of the aircraft shall read this Manual carefully and familiarize themselves with its contents.

This aircraft is not subject to the certification by the Civil Aviation Authority of the Czech Republic and it is operated entirely on the user's own risk. Deliberate spins, falls and aerobatics are prohibited.

Any damage to the aircraft shall be reported to applicable inspector-technician. The inspector-technician will recommend the method of repair, supervise the repair and will make a technical inspection after the repair has been completed. A record shall be entered into the aircraft documentation.

1.4 Location of decals

A) SLZ decal (English translation of the text is in bold frame on previous page)



Location: right part of instrument panel, above center.

B) Operating data and limitations

OPERATING DATA AND LIMITATIONS	
Call Sign	EP-1424
Type/Name	LEGEND 600
Serial No./Year of manufacture	2187/2021
Empty weight	353 kg
Max. take-off weight	600 kg
Payload	247 kg
Stall speed	60 km/h
Never exceed speed	250 km/h
Max. speed in turbulent air	190 km/h
Max. speed with 30° flaps	135 km/h
Max. speed with 40° flaps	135 km/h
Fuel tank capacity	130L

Location: left part of left instrument panel.

C) Registration decal

SLZ REGISTRATION DECAL	
Call Sign	EP-1424
Type/Name	LEGEND 600
Manufacturer	AEROPILOT Ltd.
Serial No./Year of manuf.	2187/2021
Empty weight	353 kg
Max. take-off weight	600kg
Payload	247 kg

Location: center tunnel, in front of central control.

D) Payload decal

Fuel tank capacity / Max. payload		
	L	Payload / kg
Full tanks	130	150
3/4 of tanks	98	174
1/2 of tanks	65	198
1/4 of tanks	33	223
30min. fuel reserve	10	240

Location: right part of right instrument panel.

2 Flight manual data

2.1 Data on commissioning

Ultralight aircraft, aerodynamically-controlled.

Name/Model:

LEGEND 600

The aircraft has obtained ULL type certificate.

2.2 Record of aircraft operator / owner

Aircraft owner: ……...
Name: …….
Address: …….
Birth Certificate (VAT number): ……
Date, from – to: ……..
Call Sign: ……

Change of Owner: .....
Name: .....
Address: .....
Birth Certificate (VAT number): .....
Date, from – to: .....
Call Sign: …….....

Change of Owner: .....
Name: .....
Address: .....
Birth Certificate (VAT number): .....
Date, from – to: .....
Call Sign: …….....

Change of Owner: .....
Name: .....
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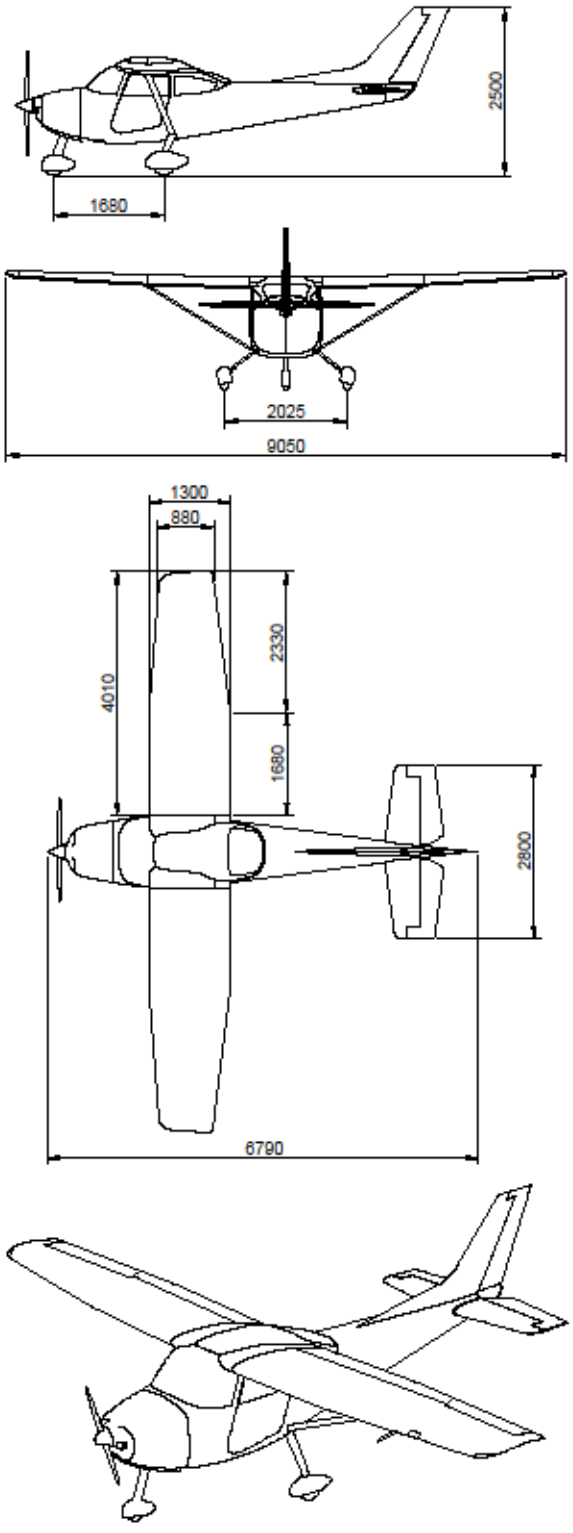
Call Sign: …….....

Change of Owner: .....
Name: .....
Address: .....
Birth Certificate (VAT number): .....
Date, from – to: .....
Call Sign: …….....

2.3 Aircraft data

Aircraft data				
Model	**Airframe ULLa**	**Engine**	**Propeller**	**Rescue System**
Manufacturer	AEROPILOT s.r.o.	Rotax 912 ULS	DUC	GALAXY 6/600 SD
Serial No.	2187	9.142.295		9716
Place & Year of Manufacture	Čáslav 2021	2021	2021	2021
Other Data				

2.4 Aircraft drawing



2.5 Brief technical description

Characteristic

The Legend ultralight aircraft is a two-seat, strut high-wing monoplane of all-composite structure designed for sport, recreational or tourist flying. Favourable flight characteristics make the aircraft suitable for flight training. Sufficient performance allows glider towing. The aircraft features spacious crew and baggage compartments. Large doors provide for comfortable boarding of crew and loading of baggage. Adjustable seats allow the pilots of all heights to find comfortable position. A stiff Kevlar cabin, four-point seat harnesses and rocket assisted rescue system provide maximum safety of crew in emergency situations.

Technical description of aircraft components

A) Airframe

1. The fuselage is a sandwich construction made of carbon composite. Bulkheads are bonded into skin to receive forces from the landing gear, rescue system, stabilizer, rudder, safety harnesses, and wings. There are two doors with a central-lock system mounted on hinges on the sides of fuselage, opening against flight direction.
2. Sandwich-type single-spar wings made of carbon-composite house two fuel tanks within leading section. Wings are fitted with a slotted Fowler flaps. Wings have rectangular centre section with trapezoidal tips. MS 313 wing profile is used. Banking control by ailerons with differentiated deflection 13° down and 23° up . With aileron deflection up, a nose rises from profile, providing favourable yawing moment. The wing strut is made of aluminium profile.
3. Trapezoidal fixed part of elevator is fixed into the fuselage bulkheads by pins and screws. Aerodynamically balanced elevator has electrically servo-actuated trim tab. The elevator deflection is 21° up and 10° down.
4. Fixed part of trapezoidal swept vertical tail is offset from a longitudinal axis to eliminate an angular propeller flow. The elevator deflection is approximately 23°.
5. Rudder and ailerons have dual cable control, elevator is rod-operated. Yoke controls. Rudder and nose landing gear are operated by pedals with top-mounted shafts, which greatly improves the kinematics of controls. Combined central controller allows control of the engine, landing gear brakes, parking brake, and wing flaps, the flaps being driven by central actuator through Bowden cables.
6. Tricycle landing gear with steerable nose wheel. Main wheels – size 15 x 6 – 6 – are provided with hydraulic disc brakes. Amortization by composite legs. The nose wheel fitted with spring shock absorber. The front wheel has size 12 x 4 – 4. All wheels provided with fairings. Tire inflation of all wheels is for 2,5 bar pressure.

B) Powerplants

Rotax 912 ULS and 912 iS engines are used most frequently, providing excellent dynamic and flight characteristics. Rotax 912 ULS and 912 iS engines are four-stroke, four-cylinder engines of “boxer” configuration, having air-cooled cylinders with water-cooled heads and integrated reduction gearbox. Rotax 912 ULS has two carburetors and Rotax 912 iS has indirect injection. For more information, see the engine instructions for use.

Caution!

Neither of the engines mentioned above is certified as an aircraft engine. Even with utmost attention during engine manufacture, engine failure may occur at any time during flight and the pilot bears full responsibility for the consequences. According to UL1 regulation, the pilot must always select bearing and altitude allowing him/her to glide down and land safely at suitable location.

C) Propeller

Three-blade ground-adjustable Woodcomp PROPULSE propeller, three-blade ground-adjustable DUC propeller, two-blade electrically adjustable VAR 2 propeller or two-blade electrically adjustable Woodcomp SR-3000 propeller may be used. For the description of the propeller delivered with your aircraft, see the instructions for the propeller installation and maintenance, delivered along with the aircraft.

D) Equipment

The aircraft may be equipped with traditional analogue instruments, together with GPS navigation or a glass cockpit incorporating flight, engine and navigation instruments, including a transponder.

2.6 Controls

Pedals – pressing left pedal turns aircraft left both on the ground and in the air, and vice versa.

Hand controls – pulling the yoke backwards, towards the pilot, raises the nose of aircraft (the angle of attack increases) and the aircraft climbs. Pushing the yoke forward dives the aircraft. Turning the yoke to the left banks the aircraft to the left, and vice versa.

Engine throttle – moving throttle lever of combined controller located on the middle-panel forward from its central position, in the flight direction, increases engine output, and vice versa.

Brake control – pulling brake lever of combined controller backwards, in the opposite direction of taxiing, brakes the aircraft. Moving the controller backwards and pressing the detent locks the brake (parking brake). To release the parking brake, pull brake lever or combined controller backwards.

2.7 Engineering data

(a) Dimensions

Wing span	9,05 m
Length	7,05 m
Height, total	2,5 m
Wing surface	10,84 m^2
Wing aspect ratio	7,8
Depth of MAC (mean aerodynamic chord)	1200 mm
Wing profile	MS-0313
At root	1300 mm

At tip			880 mm	
Wing flaps surface			1,75 m^2	
Flaps deflections			15° / 30° / 45°	
Horizontal tail plane span			2.8 m	
Horizontal tail plane surface			2,24 m^2	
Vertical tail plane surface			1,04 m^2	
Control surface deflections:				
Ailerons	up	..... 23°	down	..... 13°
Elevator	up	..... 21°	down	..... 10°
Rudder	left	..... 23°	right	..... 23°

(b) Weights

Empty weight, per UL–2	353 kg
Take-off weight, maximum	600 kg

(c) Engine

Type (brief description): Rotax 912 iS – 100 HP – four-stroke, four-cylinder engine, air-cooled cylinders with water-cooled heads, integrated reduction gearbox, dual electronic ignition.

Swept volume	1 400 ccm
Take-off power, max.	73.5kW@5800rpm
Cruising power, max.	69.0kW@5500rpm
Dry weight	56 kg
including accessories	72 kg
Fuel (fuel grade, octane index)	Natural 95
Oil (type)	CASTROL 10W-504T
Oil capacity	3L
Reduction gear (gear ratio)	2.43:1
Fuel tank volume – main tank	130L

(d) Propeller

Diameter / pitch at 75%	Ground-adjustable PROPULSE propeller
Weight	3 kg
Material	Composite

The propeller shall be sent to the manufacturer for inspection in case of even the slightest damage or if crack is found. Flying with damaged propeller may endanger life and limb and is prohibited.

2.8 Aircraft equipment

(a) Flight, navigation and engine instruments

1. Radio Trig TY 91
2. Transponder Trig TT 21
3. ELT KANNAD 406-Integra AF (GPS)
4. Dual Nesis III 8.4 with a touch display
5. Digi engine monitoring
6. 2-axis Autopilot

7. Probes Nesis
8. Amigo
9. Magnetic compass

(b) Ballistic Rescue System

Model, manufacturer, serial No.	GALAXY 6/600 SD, 7729-19-5175-8982
Activation	By pulling the handle on central panel
Descent speed, max. (m/s)	7,3 m/s
At take-off weight	600 kg
Speed at activation, max.	315 km/h

(c) Battery (type, parameters)

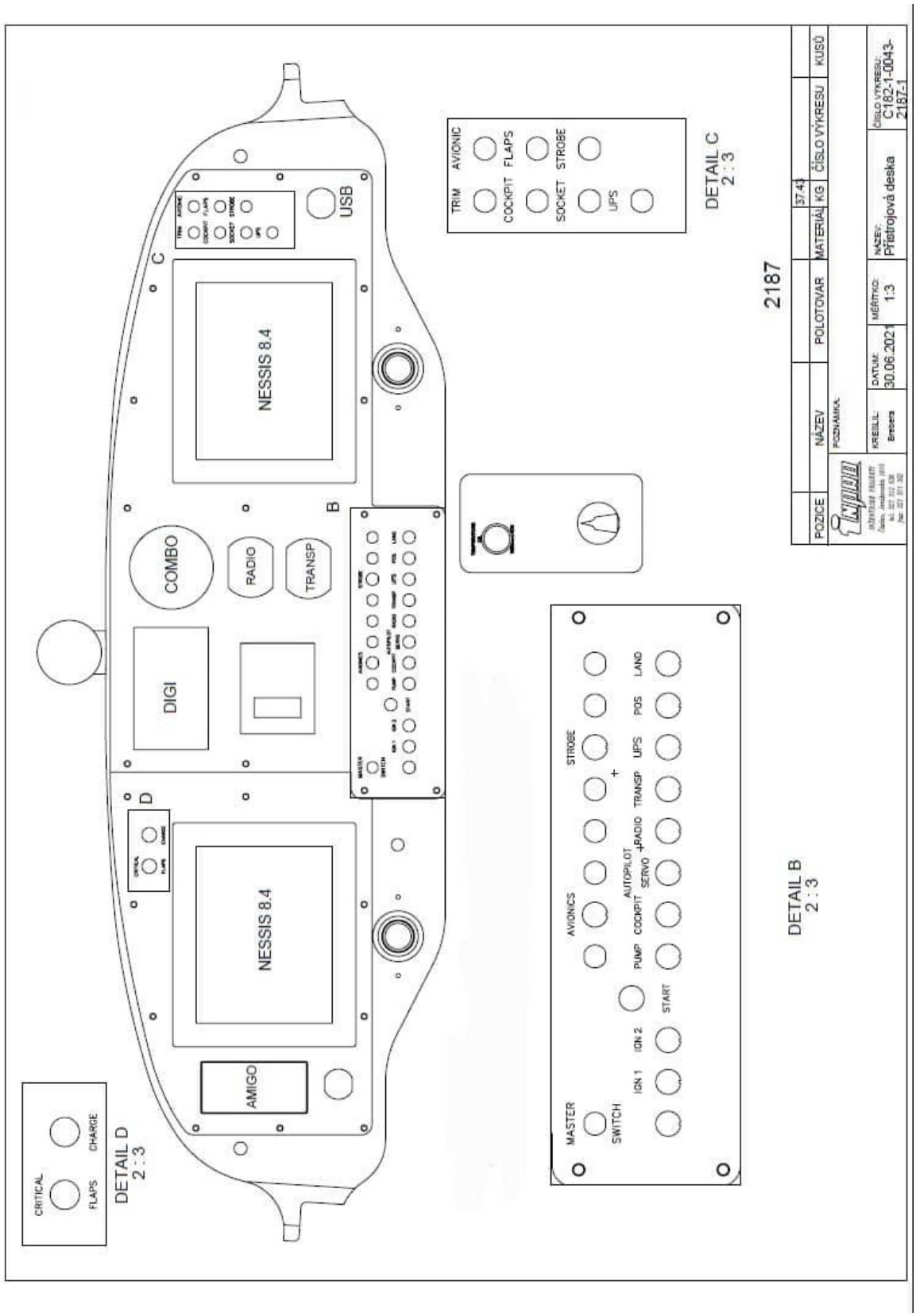
Type	VARTA TT Z105-4
Voltage	12 V
Ah rating	8
Weight	2,9 kg
Location	On firewall, at the highest point of engine compartment
Notice	Only the charger designed for gel batteries may be used to charge the battery. Use of other charger will destroy the battery.

(d) Location of Controllers

Ignition switch	Center panel, left-hand side
Starter	Center panel, left-hand side
Choke	Central controller – left instrument panel
Throttle	Central controller – bottom part of middle panel
Brakes	Central controller – bottom part of middle panel
Longitudinal trim	Control yokes
Wing flaps	Engine throttle + right instrument panel
Closing of the cabin	Front section of the door
Rescue system	Central bottom panel
Radio	Central dashboard panel

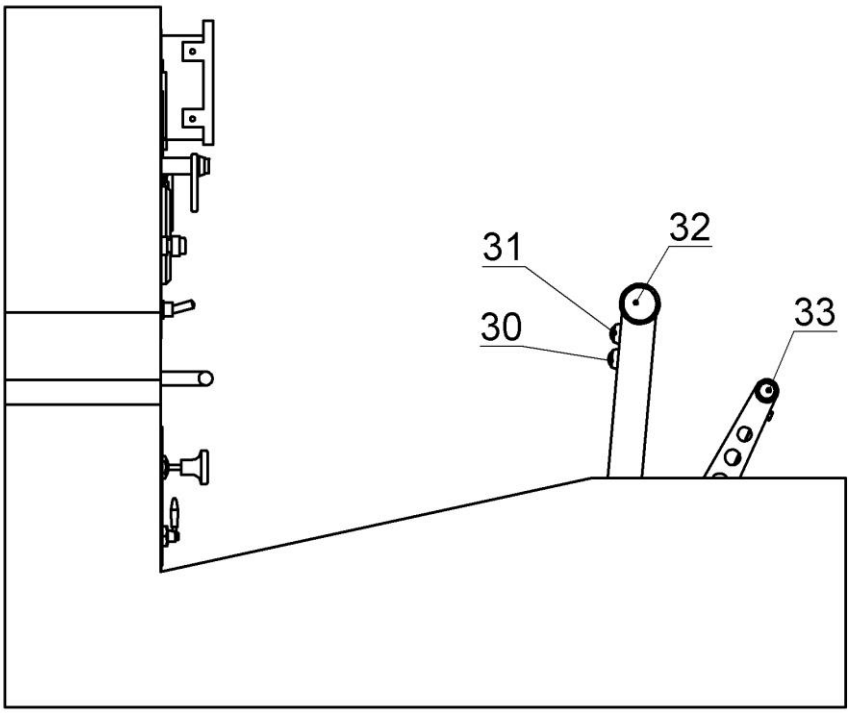
Equipment layout

Drawing:



Central controller functions

Drawing



30 - Flaps extend
31 - Flaps retract
32 - Engine throttle
33 - Wheel brake/parking brake

3 Operating limits

3.1 Speeds

All speeds stated in this Manual are Indicated Air Speeds IAS!

Never-exceed speed V_{NE} = 240 km/h

This speed must not be exceeded under any circumstances!

Stalling speed at maximum take-off weight and at the landing configuration, V_{SO}:		60 km/h
Maximum allowed speed with flaps fully deflected, V_{FE}:		135 km/h
Flaps deflection:		
Degrees/Use	1 – 15° / Take-off	135 km/h
Degrees/Use	2 – 30° / Landing	135 km/h
Degrees/Use	3 – 40° / Landing	135 km/h
Maximum speed in turbulent air:		200 km/h
Maximum manoeuvre speed, V_A:		170 km/h

Do not apply full deflections above this speed

3.2 Wind speed limits

Maximum allowed headwind speed	10 m/s
Maximum allowed crosswind speed:	5 m/s

Tailwind take-off and landing should be avoided.

3.3 Powerplant limits

Maximum allowed speed:	5 800 rpm for 5 minutes
Maximum continuous speed:	5 500 rpm
Idling speed, approximately:	1 400 rpm
Maximum cylinder head temperature:	130° C
Maximum oil temperature:	135° C
Minimum air temperature at starting:	-25° C
Maximum air temperature at starting:	50° C
Oil pressure:	1.15 – 4.0 bar

3.4 Weights

Minimum crew weight:	60 kg
Maximum payload:	250 kg
Maximum take-off weight:	600 kg
Empty weight	350 kg
Maximum COG locations from front edge of wing:	
Forward limit	22,5 % bMAC
Aft limit:	36 % bMAC
Max. baggage weight	15 kg

3.5 Allowed turns

Tight turns up to 60° banking angle, climbing and diving up to 30° from horizontal plane. Intentional spins, falls and aerobatics are PROHIBITED!

3.6 Load factors (per UL-2 regulation)

Maximum positive load factor in the centre of gravity:	4.0
Maximum negative load factor in the centre of gravity:	-2.0

3.7 Types of operation

Only daylight flights are allowed, under VFR (ground-contact) rules.
All other flights are prohibited.

4 Emergency procedures

This section describes recommended procedures for resolving emergency situations which could occur during operation.
Strict adherence to inspection and maintenance schedule prescribed by the manufacturer reduces the probability of a failure to absolute minimum.

4.1 Engine failure

1) During take-off run

- Throttle to idle
- Ignition switch off
- Brake according to actual conditions

2) During take-off (in air)

- Maintain speed 120 km/h minimum
- Less than 300 ft above terrain – land in the direction of flight, manoeuvring the aircraft out of obstructions
- Detect wind direction and speed
- Apply flaps as necessary
- Shut off fuel cock
- Shut off the ignition
- Tighten safety harnesses
- Main switch off

3) In flight

- Dive and glide, maintain speed 120kmph minimum
- More than 300 ft above terrain – :select suitable landing location
- If cause of engine failure is discovered (e.g. empty fuel tank) and flight altitude allows it, try restarting the engine according to the procedure below:
- If engine does not restart or if flight altitude drops below safe level, select suitable landing location and proceed according to previous section.

4) Restarting engine in flight

May be only performed at safe flight altitude to allow safe emergency landing with engine off.

- Fuel cock open, check amount of fuel in selected tank
- Fuel pump switch on
- Ignition switch on
- Throttle up to 1/3 of throttle, not more
- Flight speed 120 – 140km/h
- Press start button

Flying with engine off

If engine fails, it is necessary to maintain speed 120 km/h.

Safety landing

Safety landing is generally made in case of loss of orientation, worsening of weather, low fuel, and/or sudden incapacitation of pilot. Always follow the recommendations listed below:

- Select suitable landing location depending on wind direction and terrain/cover
- If possible, communicate your intention to land
- Fly above right side of selected landing area in the direction of planned landing, maintaining horizon at approx. 150 ft altitude.
- Apply “take-off” flaps, maintain speed 120 km/h.
- Carefully check the location.
- Climb a little, fly small left circuit.
- Perform landing approach and then land.

Check selected area throughout the safety landing procedure.

4.2 In case of fire

a) On ground, during starting

- Release starter button
- Shut off fuel cock
- Switch off ignition
- Main switch off
- Exit the aircraft
- Try to extinguish the fire

b) On ground, engine running

- Shut off fuel cock
- Switch off ignition
- Main switch off
- Exit the aircraft
- Try to extinguish the fire

c) On ground, during take-off

- Speed 120kmph
- Shut off fuel cock
- Switch off heating, if switched on
- Switch off ignition
- Main switch off
- Land and exit the aircraft
- Try to extinguish the fire

d) In flight

- Speed 120 km/h
- Shut off fuel cock
- Open the throttle as much as possible
- Switch off heating, if switched on
- Switch off ignition after all fuel in the carburetors is consumed and engine stops
- Main switch off
- Perform emergency landing and exit the aircraft
- Try to extinguish the fire

Consuming all fuel in the carburetors takes approx. 30 seconds.

Do not try to restart the engine in this situation.

4.3 In case of vibrations

Proceed as follows should any unnatural vibrations occur:

- Adjust engine speed to a value which minimizes the vibrations
- Land at nearest airport or perform safety landing
- If vibrations keep increasing, turn engine off and land with engine off

Icing of carburetor

Icing of carburetor manifests itself by reduced engine power and increased temperature; sometimes, light vibrations also occur.

The following procedure is recommended to try to restore engine power:

- Flight speed 140 km/h
- Throttle adjust to 1/3
- Carburetor heating switch on
- Fly away from icing area – if possible.
- After 1-2 minutes, gradually increase throttle to cruising poser

If engine power cannot be restored, land at nearest airport (if possible), or perform safety landing.

Only switch on carburetor heating for minimum time necessary to fly away from icing location. Switching on carburetor heating leads to reduced engine rpm (by 100 – 200 rpm) and thus to reduced engine power.

This aircraft is approved for VFR flights only.
Flights without sufficient visibility and IMC flights are prohibited.

4.4 Landing gear failure

- If main gear leg is damaged, land with the lowest speed possible, keeping the aircraft on undamaged leg for as long as possible. Begin braking intensively as soon as the damaged leg touches the ground, trying to relieve it as much as possible.
- If nose gear leg is damaged, use elevator to keep the nose up for as long as possible, without braking if possible.
- Always try to land with headwind and with engine off.

4.5 Recovering from unintentional spin

Intentional spins are prohibited. The aircraft has never been tested in this flight regime.

Legend 600, if flown in normal conditions, keeping with operating limits and with careful piloting, does not exhibit tendency to spinning.

Recovering from unintentional spin

- Throttle idle
- Rudder fully opposite to spin direction
- Ailerons maintain center position
- Elevator gradually push fully forward (dive) without moving the ailerons
- Rudder neutral position immediately when rotation stops
- Elevator gradually pull back to recover from steep dive

4.6 Using the rescue system

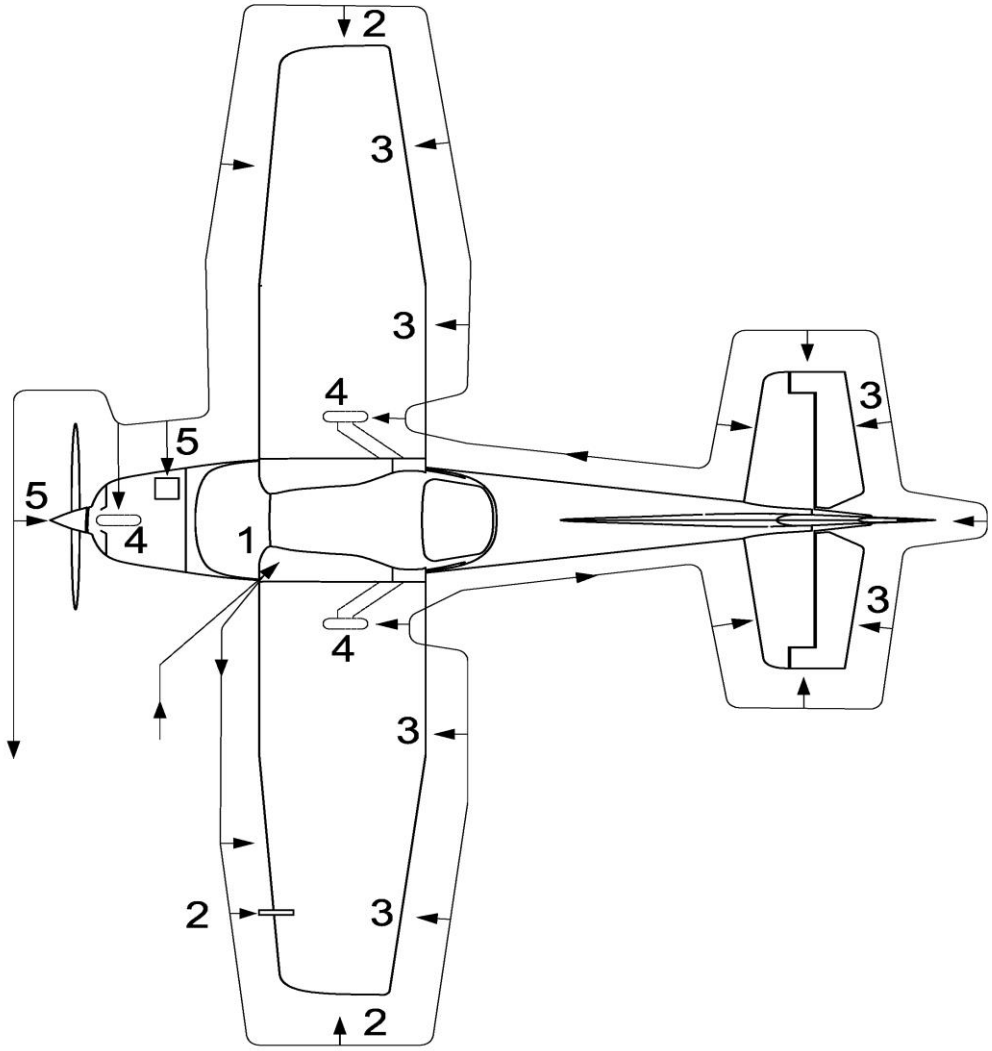
(1) In emergency, when you lose the control of the aircraft:

1. Activate the rescue system
2. Tighten up safety harnesses
3. Switch off the ignition

(2) In case of landing with very short distance available, when there is imminent danger of crashing into obstacle at high speed, activate the rescue system to decelerate the aircraft. In such case, damage to aircraft is likely.

5 Standard procedures

5.1 Pre-flight inspection



1 - Cabin
- Ignition off
- Main switch on, check fuel level, check instruments
- Main switch off
- Check range of movement of all controls, condition of safety harnesses
- Remove loose objects from cabin, check canopy – cleanliness
- Check rescue system – must be locked to prevent inadvertent activation

2 - Fuselage, wings and tail surfaces
- Check surface condition, leading edges
- Check Pitot tube

3 - Control surfaces, wing flaps
- Range of movement and free play of all control surfaces

4 - Landing Gear
- Check wheels for free rotation, tire inflation (2,5 bar), attachment to airframe, check brakes, attachment of wheel fairings, check tire slipping on rims

5 - Engine, propeller, fuel system
- Check fuel level and cleanliness, check propeller and attachment to engine
- Check oil level (according to engine manufacturer's manual), check coolant
- Check engine cowling
- Check tightness of fuels hoses, tank caps, fuel filters
- Check fuel filter for impurities and water

5.2 Refueling

- ROTAX 912 and ROTAX 914 engines are designed for automotive lead-free gasoline (BA95 Natural). Temporary limited use of AVGAS is possible. See Rotax 912 ULS, Rotax 912 iS Operating manual for more details.
- The aircraft has two fuel tanks, capacity 65 L each.
- There are two methods of refueling LEGEND aircraft.

1) Refueling from fuel station (dispenser)

- Fuel station must be certified for aircraft refueling.
- Always neutralize electric potentials of aircraft and station.
- LEGEND aircraft has two grounding points for this purpose. One of them is copper grounding strip at landing gear leg. The other is exhaust manifold, which is better suited for attachment of grounding clip of refueling station. **Do not handle fuel tank before completing the grounding.** Open fuel cap and insert filling nozzle into tank. It is not necessary to use strainer, as certified refueling stations always include it.

2) Refueling from storage containers

- Position stairs or chair next to wing.
- Protect wing surface by suitable mat.
- Fuel containers, if made of metal, must be connected to grounding point of aircraft.
- Open fuel tank.
- Use hose with built-in strainer and self-priming pump (ball valve) to pump fuel from container to fuel tank.
- If hose is not used, use a funnel with wire strainer (mesh).

Physically measure amount of fuel before each flight. Never rely on the gauges to assess the amount of fuel necessary for safe completion of the flight.

During the flight, there is an uneven withdrawal of fuel from the aircraft wing tanks. During the flight, use a cock turned on for both tanks only if both tanks contain at least ¼ total volume (32.5 l). With a smaller residue, switch to a tank with more fuel. **When flying on both tanks with a small fuel residue, there is a risk of aeration of the fuel system and engine shutdown!** This danger does not occur if you have an aircraft equipped with a hull collection tank. If you are flying on one tank with the rest of fuel and the engine stops (loss of fuel pressure), switch to the other tank and turn on the backup fuel pump. If the engine is already stopped, start it.

5.3 Checks on entering the cabin

- Check free movement of pedals and hand controls, check brakes and fuel level
- Check the instruments, set up the altimeter
- Fasten and tighten seat harnesses
- Check that the ignition switch is in OFF position
- Close and latch cabin doors

5.4 Starting the engine

A. Engines with carburettors (912 ULS and 914)

- Apply parking brake
- Main switch on
- Both fuel cocks on
- Set minimum pitch of (in-flight adjustable) propeller
- Choke - activate only when starting cold engine; close gradually when engine warms up
- Throttle - idle setting when starting cold engine; up to 10% throttle when engine is warm
- Electric fuel pump on
- Check area in front and around propeller
- Switch ignition on.

- Start the engine.
- **Only press starter button for 10 seconds or less; if engine does not start, wait 2 minutes before starting attempts**
- **As soon as engine starts, set it to 2 000 – 2 300 rpm – it should run without vibrations**
- **Check oil pressure – it must reach normal operating value within 10 seconds**

B. Injection engine (912 iS)

- Apply parking brake
- Main switch on
- Both fuel cocks on
- Set minimum pitch of (in-flight adjustable) propeller
- Gas approx. 15 % of engine capacity
- Turn on the START POWER switch
- Switch on the ignition (switch is located under the valves)
- Wait until the WARNING A and B lights go out gradually
- Start the engine
- Stabilize the speed to 2 000 – 2 500 rpm
- Check oil pressure
- Turn off START POWER

5.5 Engine test

- Always start to warm up the engine at approx. 2 000 rpm for approx. 2 minutes. Continue at 2 500 rpm until cylinder head and oil temperature reaches 50° C minimum.
- Test maximum rpm; check transition from minimum to maximum rpm and back.
- Check function of both ignition circuits by switching off the first and then the second circuit at 4 000 rpm. Max. permitted drop of rpm when switching is 300 rpm. For the Rotax 912 iS engine, the WARNING lights must go out after restarting the engine again.
- Fuel pressure must not drop below 0.2 bar throughout the test (with secondary fuel pump switched off); oil pressure must not drop below 0.8 bar.
- Note: it is recommended to have a fire extinguisher available.

Nobody is allowed to be present in the vicinity, especially not in the propeller rotation plane.

Do not perform the engine test with the aircraft placed on the loose ground. Loose material, if drawn in by the propeller, may cause personal injury and/or damage to propeller.

5.6 Taxiing

- Taxi at speed 10kmph maximum (fast walking speed)
- Keep the yoke pulled back
- Taxi very slowly when turning at a small radius and control the engine with care (to prevent overloading of nose landing gear leg)

- Under crosswind conditions, keep ailerons “up the wind”.
- Communicate your taxiing intentions and re

5.6 Mandatory actions before take-off – on runway holding point

- Check free movement and function of all controls
- Check fuel level, open cocks
- Check instruments, adjust altimeter if necessary.
- Check engine operating values (temperatures and pressures).
- Check the cabin – tighten seat harnesses, unlock rescue system, close door, remove/secure loose objects.
- Apply flaps – 15° position
- Center the trim
- Set propeller to low pitch
- Unlock rescue system
- Switch on secondary fuel pump
- Check that the runway, including final approach, is clear
- Switch transponder to STAND BY mode
- Radio – check frequency setting, report readiness for take-off
- GPS – switch on, activate planned route

5.8 Take-off

- Set throttle to full take-off power
- Engine rpm: 5 500 rpm minimum
- Instruments: check values
- Keep yoke control in central position
- Pull yoke control slightly on reaching 60 km/h to lift off nose wheel
- On reaching 80 km/h, lift the aircraft off the ground and hold in level flight just above the runway
- On reaching 110 km/h, start climbing, maintaining this speed

Do not take off when:

- Engine does not run smoothly
- Instrument readings are not within prescribed operating limits
- Wind speed is not within prescribed operating limits
- Runway or final approach is not clear

5.9 Climbing

- Best climbing speed is 120 km/h

- If cylinder head temperature or oil temperature reaches maximum operating limit, you must reduce engine power and climbing rate
- Climb to altitude necessary for subsequent flight

5.10 Mandatory actions after take-off

(height above terrain 150 ft)

- Retract flaps
- Switch off electric fuel pump and check fuel pressure
- Radio - communicate
- Reduce engine throttle to approx. 5 000 rpm
- Adjust the propeller pitch to “level flight”

5.11 During flight

- Check that flaps have retracted
- Trim aircraft to cruising speed
- Flight speed 150 – 200 km/h
- Instrument – normal operating values

5.12 Flying in turbulent air

- In strong turbulence, we recommend maintaining flight speed above 110kmph but less than 180 km/h
- When making a turn, do not bank more than 30°.
- Do not use more than 1/3 rudder deflection at speed above 170 km/h; or reduce speed accordingly

5.13 Descent

- During descent from higher altitude and/or during approach, it is not recommended to reduce engine rpm to idle; this could lead to excessive temperature drop and reduced engine power. Glide at increased idle, approx. 3 000 rpm, and maintain engine temperatures within operating limits.

5.14 Final approach

Speed	120 – 130 km/h
Throttle	As necessary
Flaps	15° position and continue to the final maintaining speed 100 – 120 km/h
Propeller	Set minimum pitch
Trim	As necessary

5.15 Landing

Speed	90 – 100 km/h
Flaps	30° position
Trim	As necessary

- At approx. 5m height above runway, start pulling the yoke to reduce descent rate; at approx. 0.5m above runway, let the plane to loose speed gradually, until the touch down.
- Always touch down on main landing gear wheels.
- Pull up yoke gradually to maintain nose gear above ground for as long as possible.
- When nose gear finally touches down, apply brakes as necessary.
- If runway is short or clearway is high, extend the flaps to 40°. With the flaps in this position, descend rate increases markedly. Maintain speed 90km/h.

5.16 Go-around

Throttle	Full engine power (5 700 rpm max.)
Flaps	Retract to “take-off” position
Start climbing	Speed at least 100 km/h IAS
Trim	As necessary
Adjust speed for climbing	120 km/h IAS
Flaps	Retract, min. height above ground 150 ft
Trim	As necessary
Go around	

5.17 Actions after landing

Flaps	Retract
Trim	Middle position
Engine rpm	As necessary
Observe taxiing rules	Speed up to 10kmph

5.18 Stopping the engine

Engine rpm	Idle
Instruments	Engine instrument needles within limits
Avionics	Switch off
Ignition	Switch off
Section switches	Switch off
Main switch	Switch off
Fuel cocks	Close

5.19 Stopping the aircraft, parking

- Taxi very carefully before stopping the aircraft, paying attention to obstacles and terrain
- Brake the aircraft and shut off the engine
- Secure the rescue system
- Secure the aircraft against movement (use wedges, anchors, brakes)

5.20 Flying in rain, snow

There are no special requirements during flying in rain or snow. Aircraft handling and performance do not change.

5.21 Assembly and disassembly of the aircraft

1) Elevator Assembly

- Check condition of rubber sealing edge
- Check elevator hinges and condition
- Slide the elevator into the fuselage from a side and insert elevator pins into fuselage bulkhead
- Screw on the rear bulkhead and secure the screws using wire
- Connect elevator control rod and apply a drop of paint onto new self-locking nut
- Connect the trim control connector
- Check rudder control
- Screw-on rudder control cover
- Check function of rudder controls

2) Wing Assembly

- Check and grease strut and wing pins, remove the locking of the wing flap Bowden cable, check condition of rubber edges at wing
- Prepare the wing strut. Slide the aerodynamic covers onto the strut and screw the strut onto the fuselage hinge
- Thread aileron control cables and flaps Bowden cable into the fuselage.
- Insert wing attachment forks into the fuselage. Secure correct position of wing fittings by moving wing top
- Insert the wing pins
- Check that no cables nor hoses are pinched during assembly
- Lift the wing strut and plug it into the wing hinge
- Secure all pins using self-locking nuts
- Install and fix strut fitting covers
- Connect fuel take-off hoses, fuel gauge hoses and return pipe hoses
- Connect the electrical wing installation
- Connect the hoses of pittot-static system
- Repeat the procedure at the other wing

- Connect the aileron control cable turnbuckles, adjust tension of cables and central position of ailerons. Secure turnbuckles using a drop of paint and wire
- Fix the ends of the wing flap Bowden cables and rods. Check by looking from behind that both flaps are in the same position
- Install cabin ceiling covers, check function of ailerons and flaps, screw-on anchoring lugs

3) Disassembly

- Drain all fuel
- Remove ceiling covers
- Remove and move strut covers
- Perform disassembly in reverse order of assembly. Disassembled wings may only be placed on soft rests or hanged on stands using their fittings as anchors. Remove elevator using similar procedure.

5.22 Long-term storage and transport

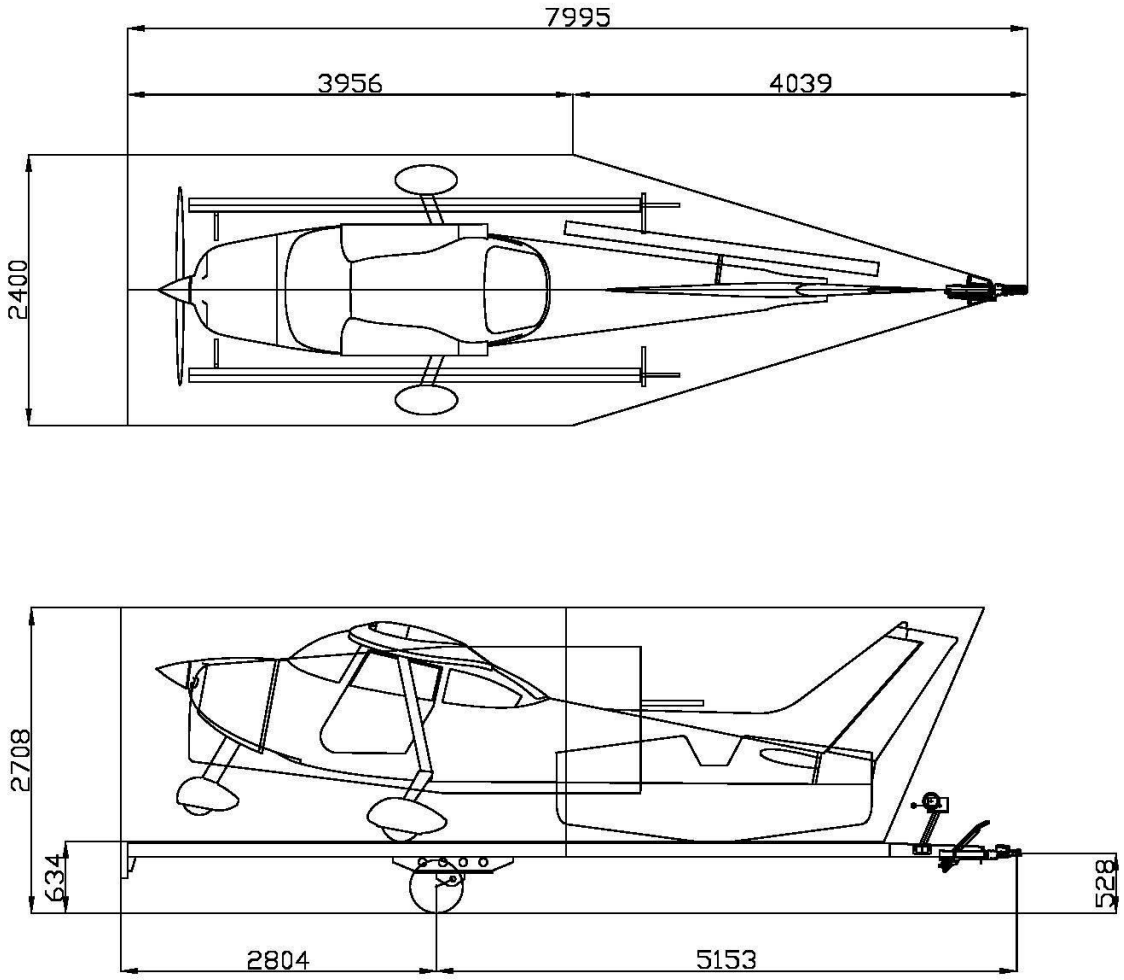
Before long-term storage

- Remove battery and connect to maintenance charger
- Drain all fuel from the tanks through drain valves
- Apply preservation to the engine following manufacturer’s instructions
- Cover glass parts of cabin and/or wings and tail surfaces
- Support main landing gear legs using assembly stands or ensure periodic checking of tire inflation
- Put protective covers on propeller blades

Transport

- The aircraft may only be transported with wings removed. When transporting over longer distance or in closed cargo bay of a truck, elevator must be removed. If elevator is not removed, it must be fitted with red pennants, or accompanying vehicle must be procured.
- During the transport, the fuselage must be connected to truck or trailer by landing gear legs and possibly also by tail bumper. The wings must be anchored using their central-section fittings and wing tip nor leading edges may contact the floor nor be leaned on anything.
- Flap controls must be fixed in position – see section Disassembly. If elevator is transported separately from the fuselage, it must only be fixed using fuselage fittings and front pins. Entire elevator must be protected by soft cover and attached to the truck or trailer using wide straps.

5.23 Determining the location of centre of gravity



Place the aircraft on horizontal floor, with its wheels positioned on three scales (one scale for each wheel).

1) Weighing for aft centre of gravity

- Move seats to rearmost position
- Fill baggage compartment with maximum allowed load
- Empty fuel tanks

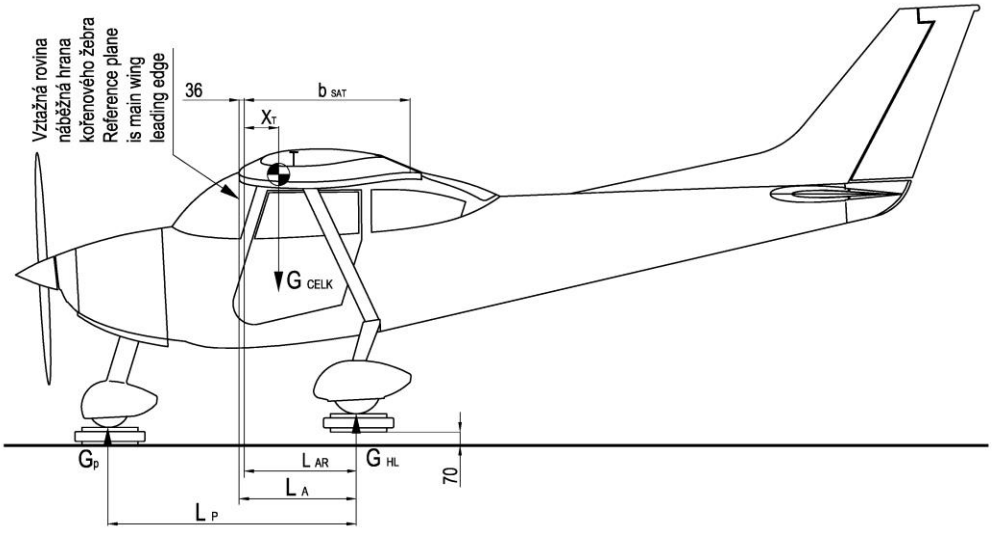
2) Weighing for forward centre of gravity

- Empty baggage compartment
- Move seats to foremost position
- Full fuel tanks

Serial Number: 2187

Weight and balance record of the aircraft LEGEND 600

Configuration		Aircraft	Engine	Propeller	Rescue system
	TYPE	LEGEND 600	ROTAX 912 ULS	DUC	Galaxy 6/600 SD
	Serial number	2187	9.914.295		9716



C.G. position calculation

$$X_T[mm] = L_{AR} - \frac{Gp.Lp}{Gtotal}$$

C.G. Centre of gravity calculation

$$X_T[\%] = - \frac{X_{T[mm]}}{B_{SAT}} * 100$$

Weight calculation

$$G[_{CELK}] = G_P + G_{HL}$$

$L_{A\,[mm]\,=\,568,5}$ $L_{AR} = L_A - 36$ $b_{SAT}[mm] = 1200$ $b_k = 1300$ mm

	Nose wheel G_p	Main gear G_{HL}	Total weight G_{CELK}	C.G. from the wing leading edge	
				X_T[mm]	X_T[%]
Crew 0 Fuel 0 Baggage 0	72,9	280,1	353	393	32,7
Crew 84 Fuel 37,9 Baggage 0	106,8	368,1	474,9	362	30,1
Crew 164 Fuel 63,7 Baggage 15	118,7	477	595,7	405	33,8

Calculated position of C.G. is within a permitted range of 21,6-35,6 % $b_{SAT.}$

_____LKZB_____ Place

_____21. 12. 2021_____ Date

_____ Signature

6 Periodic inspections

6.1 25-hour inspection

- Remove top cowling of engine
- Check condition and leaks of fuel system
- Check condition and leaks of oil system
- Check condition and leaks of cooling system
- Check exhaust system for cracks and leaks
- Check engine mount for cracks
- Check attachment of engine mount and engine
- Check attachment of propeller
- Visual check of electric installation
- Check nose wheel shock absorber and control
- Lubricate nose wheel leg
- Check carburetor control (choke, throttle)

6.2 100-hour inspection

If aircraft is operated in demanding conditions, halve this interval to 50 hours.

Demanding conditions include:

1) Glider towing
2) Ambient temperatures continuously exceeding 35° C

This inspection consists of the following:

1) Engine and propeller service
2) Airframe service
3) Fuel system cleaning
4) Inspection of instruments and equipment

1) Engine and propeller service

Change engine oil and filter, check and clean spark plugs, replace as necessary, check carburetor adjustment and control, check exhaust system condition, check engine mount and attachment of all parts, propeller service, inspection, check tightening of mounting screws using prescribed torque, check condition of propeller hub and blades – concentrate on cracks; other checks prescribed by propeller manufacturer.

Observe engine and propeller manufacturer's instructions during this work.

2) Airframe service

a) Remove seats, remove ceiling covers, remove tail surfaces cover, remove landing gear covers.
b) Check condition and function of control cables, rods, their securing, check for any jerks or contact between control elements and airframe parts (save for bumpers intended to limit movement range). Lubricate manual control rods using graphite grease, lubricate also aileron hinges (using only small amount of grease), lubricate nose wheel leg - in this case, it is better to apply more grease, or lubricate more often.
c) Check condition of landing gear, concentrate on cracks and deformation. Main landing gear must not move at all. Nose leg must not be bent. This inspection is mandatory after each hard landing from height more than 0.5m. Check brakes, add brake fluid.
d) Check proper movement and adjustment of doors.

3) Fuel system cleaning

a) Replace fuel filters; clean prefilter when necessary.
b) Remove carburetor jars and clean.
c) Use electric pump to pressurize fuel system, check for leaks, especially at fuel level sensors and prefilter (glass jar).

4) Inspection of instruments and equipment

a) Check Pitot tube and hoses for leaks.
b) Verify function of all electric instruments and systems, including attachment. Visual check of cables and attachment.
c) Check attachment of rescue system and its components (ropes, carabiners).
d) Verify function of tow hook control cable (if installed).

5) Reinstall engine cowling, propeller cone, ceiling covers, seats, and tail surface cover

7 Performance

7.1 Speed measurement system calibration

km/h IAS	***km/h CAS***
65	63
70	68
75	72
80	77
85	82
90	87
95	92
100	97
105	102
110	106
115	111
120	116
125	121
130	125
135	130
140	134
145	139
150	144
155	149
160	154
165	158
170	162
175	166

km/h IAS	***km/h CAS***
180	170
185	175
190	180
195	184
200	189
205	195
210	202
215	209
220	215
225	220
230	225
235	230
240	235
245	-
250	-
255	-
260	-
265	-
270	-

7.2 Stall speeds

Conditions: Max. TOW, engine at idle	Flaps deflection	km/h IAS	Height loss during recovery [ft]
Horizontal flight	**0°**	77	26
	15°	68	38
	30°	60	50
Turn with 30° bank angle	**0°**	82	36
	15°	73	50
	30°	66	60

7.3 Take-off performance

RUNWAY SURFACE	Take-off run *[m]*	Take-off distance over 50 *ft* obstacle *[m]*
PAVED	90	200
GRASS	105	225

7.4 Landing performance

RUNWAY SURFACE	Landing distance over 50 *ft* obstacle *[m]*	Braking distance *[m]*
PAVED	135	95
GRASS	135	80

7.5 Climbing performance

Conditions: ***Max. continuous power 5 500 rpm, aircraft weight 1 320 Ibs***	**Ideal climbing speed/rate**	
	km/h IAS	***[m/s]***
1 500 ft ISA	120	5.9
4 000 ft ISA	120	4.4
8 000 ft ISA	120	3.3

7.6 Flight

Performance data corresponding to boost pressure 24.

Altitude [ft ISA]	**Engine speed [rpm]**	**Flight speed**
		km/h IAS
1500	4 000	165
	4 400	178
	4 600	189
	4 800	200
	5 000	205
	5 200	212
	5 400	219
	5 600	229
6000	4 000	153
	4 400	164
	4 600	170
	4 800	178
	5 000	180
	5 200	188
	5 400	196
	5 600	206

7.7 Endurance and range

The table lists fuel consumption, range and endurance.

Altitude	[ft ISA]	3 000 ft				
Fuel on board	[L]	130				
Engine speed	[rpm]	**4 400**	**4 800**	**5 000**	**5 200**	**5 500**
Fuel consumption	[L/h]	12	14	15	18	20
Flight speed	km/h IAS	160	180	190	195	210
Endurance	[hh:mm]	10:50	9:17	8:40	7:13	6:30
Range	[km]	1 730	1 670	1 650	1 400	1 365

7.8 Verified performance with crosswind

Max. allowed headwind for take-off and landing	10 m/s
Max. allowed crosswind for take-off and landing	5 m/s

7.9 Optimum gliding speed

Optimum gliding speed	110 km/h IAS

7.10 Ceiling

Operating ceiling	14 000 ft