U15 Phoenix S-LSA Glider

Maintenance Manual

Date of issue: November 10, 2010

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1. GENERAL

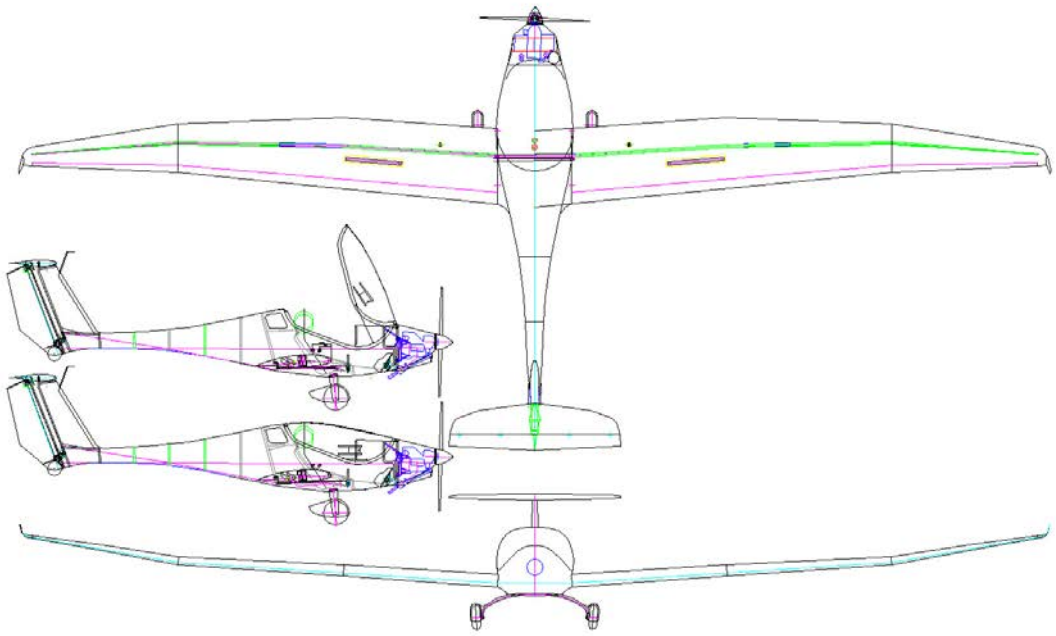
During operation and maintenance of the U15 Phoenix LSA glider is required to follow the instructions stated in following documents

- Maintenance and Inspections Manual for LSA glider U15 Phoenix
- Operations and Flight Manual for LSA glider U15 Phoenix
- Engine Operator's Manual
- Propeller Operator's Manual
- Ballistic rescue system Operator's Manual
- Additional documents supplied with instruments and equipment

The airworthiness and operational readiness of the airplane depends upon careful adherence to the recommended procedures
Periodical inspection intervals should be adapted to the operational conditions of your airplane abstractedly from the recommended intervals. Climate, manner of keeping, RWY conditions and other factors should be considered.
The procedures given in these manual suit average operational conditions of airplane.

Basic description of the airplane

3 view drawing:



Technical data:

Wing

Span/span with wing extension ..... 36/49.00 ft

Area/area with wing extension ..... 100.9/138.5 ft^2

MAC ..... 3.238 ft

Aileron

area ..... 8.62 ft^2

Fuselage

length ..... 21.65 ft

width ..... 3.54 ft

height ..... 4.75 ft

Horizontal tail unit

span ..... 8.20 ft

area ..... 14.00 ft^2

elevator area ..... 4,84 ft^2

Vertical tail unit

height ..... 3.93 ft

area ..... 11.84 ft^2

rudder area ..... 4.73 ft^2

Landing gear

wheel track ..... 5.05 ft

wheel base ..... 13.60 ft

main wheel diameter ..... 1.31 ft

tail wheel diameter ..... 0.65 ft

1.1 General - Listings

1.1.1 Equipment list

1.1.2 Sources to purchase parts

Spare parts can be ordered from Phoenix Air representative in USA – Mr. Jim Lee, Lee Aviation, LLC.

Contact:
Jim Lee
Lee Aviation LLC
460 Bridgetown Ct.
Satellite Beach, FL 32937
352-250-5644
jimlee@phoenixairusa.com

1.1.3 List of disposable replacement parts

Air filter	
Fuel filter	
Oil filter	
Front wheel	
Main wheel	
Battery	
Brake assemblies	
Sparkplugs	

1.1.4 Engine specifications

Description of engine design

4-stroke, 4 cylinder horizontally opposed, spark ignition engine, one central camshaft – pushrods – OHV

Liquid cooled cylinder heads, ram air cooled cylinders, dry sump forced lubrication, dual breakerless capacitor discharge ignition, 2 x constant depression carburetors, mechanical fuel pump, prop drive via reduction gear with integrated shock absorber and overload clutch, electric starter (12V, 0.6 kW), integrated AC generator with external rectifier-regulator (12V, 20A, DC).

Note

For actual and complete information read the Rotax operation manual supplied with the aircraft.

Technical data

Engine Manufacturer : Bombardier-Rotax GMBH

Engine Model: Rotax 912 ULS

Power:

Max. Take-off:	73.5 kW / 100 hp	
Max. Continuous:	69 kW / 95 hp	
	at 5500 rpm	
Cruising:	59 kW / 79 hp	
	at 4800 rpm	

Engine RPM:

Max. Take-off:	5800 rpm, max. 5 min.	
Max. Continuous:	5500 rpm	
Cruising:	4800 rpm	
Idling:	1400 rpm	

Cylinder head temperature:

Minimum:	60 °C	(140 °F)
Maximum:	150 °C	(300 °F)

Oil temperature:

Minimum:	50 °C	(120 °F)
Maximum:	130 °C	(280 °F)
Opt. operating:	90 °C – 110 °C	(190-210 °F)

Fuel pressure (if the fuel gauge and sensor are installed):

Minimum:	0.40 bar (5.8 psi)
Maximum:	0.15 bar (2.2 psi)

Warning

The Rotax 912 UL has not been certified as an aircraft engine and its failure may occur at any time. The pilot is fully responsible for consequences of such a failure.

RPM, oil temperature, oil pressure and CHT table

Function	Minimum Limit	Normal Operating Range	Caution Range	Maximum Range
Engine speed (RPM)	1400	1400-5500	5500-5800	5800
Cylinder Head Temperature (CHT) [°C]	60	60-100	60-150	150
Oil Temperature [°C]	50	90-110	110-140	130
Oil Pressure [bar]	.8	1.5 – 4.0	4.0 – 5.0	7.0 cold engine starting

Note

Original Rotax analog engine instruments are installed in the U15 Phoenix. Do not cross recommended limits.

1.1.5 Weight and balance information

Empty weight determination

The empty weight of on airplane includes all operating equipment that has a fixed location and is actually installed in the airplane. It includes the weight of the painted airplane, battery, avionics, full fluids (oil, coolant, brake fluid). The airplane is weighted without crew, fuel and baggage.
The following procedure is recommended:

1. Position the airplane on the scales
2. Level the airplane using rests (reference plane is the frame below the canopy windows)
3. Check the configuration for weighing
4. Weigh the airplane, record values in the weight and Balance record.
5. Calculate the weight and C.G. position according to formula in the Weight and Balance Record.
6. Calculate the useful load range and up-date the Record “Load Limits” in the cockpit. Record the new empty weight and permitted crew weight for fuelling and baggage weight.

Operating C.G. range calculation

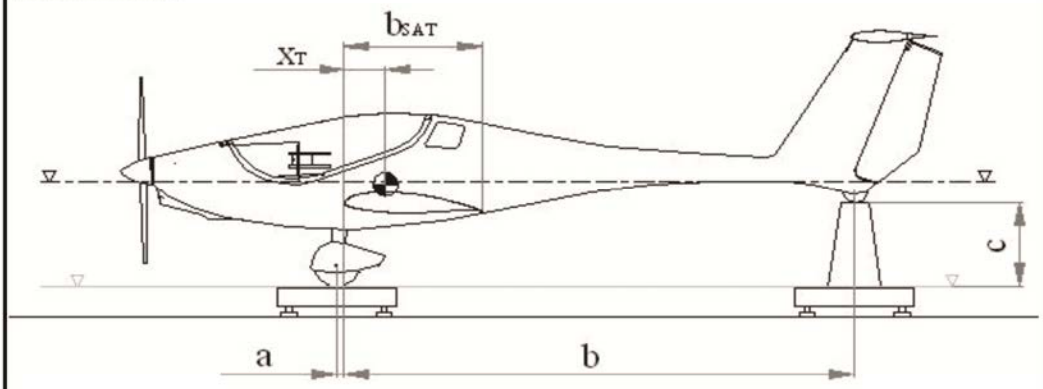
On the basis of knowledge of arms and weights of items such a crew, fuel and baggage it is possible to calculate the operating C.G. position.

Center of Gravity Range
Operating C.G. range 20-35 % MAC bMAC=0,954 m

Empty weight C.G. range 30% +/ – 2% MAC

phoenix air Phoenix Air s.r.o.	Weighting protocol	
Airplane: U -15 Phoenix	**Registration:** N44DY	**Serial number:** 02/U15

Equipment: engine - Rotax 912 ULS, propeller - WOODCOMP Vária 160/2 in flight adjustable, Rescue system -Stratos, airspeed indicator, altimeter, vertical speed indicator, slipball, 1x indicator of tank, RPM indicator, indicator-CHT, indicator-oil temperature, indicator-oil pressure, magnetic compas, long wing extension, battery, heating, tow release, propeller-servo.



a =	73 mm
b =	3903 mm
c =	540 mm
Xbsat =	-65 mm
bsat =	930 mm

Weighting point	Displayed weight Ri (kg)	Weight of support Pi (kg)	Weight Gi=Ri-Pi (kg)
Tail wheel	Rtail = 23,12	Ptail = 0	Gtail = **23,12**
Left main wheel	Rleft = 149,1	Pleft = 0	Gleft = **149,1**
Right main wheel	Rright = 148,9	Pright = 0	Gright = **148,9**

Total weight

m = Gtail + Gleft + Gright = 23,12 + 149 + 148,9

m (kg) = 321

m (lb) = 708

C.G. position

$$xT = \frac{G_{tail} \times (a+b)}{m} = \frac{23{,}1 \times (3976)}{321{,}1}$$

xT(mm) = 286,3

C.G. Position in % of depth of middle aerodynamic chord of wing

$$\overline{xT} = \frac{xt - a - Xbsat}{bsat} \times 100 = \frac{286{,}3 - 73 - (-65)}{930} * 100$$

$\overline{xT}$ = 29,9 %

Permitted C.G. position of empty airplane 30% +/- 2% MAC

Ústí nad Orlicí 24.6.2010
Place / Date

Lubos Srsen
Weighting done by..... (Name / Signature)

1.1.6 Tire inflation pressures

The plane has a two wheel main landing gear with a tail wheel. The main fibreglass legs, main wheel size 400 x 100, hydraulically operated brakes. The steerable tail wheel of 200 x 60 size is controlled by the rudder pedals.

Recommended pressure:

main wheels 2.0 + 0.1 atm (bar)

tail wheel 1.6 + 0.1 atm (bar)

1.1.7 Approved oil and capacities

Oil type:

For approved oil see the Operator´s Manual for all versions of ROTAX 912. Do not use oil additives.

Automotive engine oil of registered brand with gear additives, but not aircraft oil (refer to engine Operator's Manual). API classification „SF" or „SG".

Oil capacity:	6.4 liq pt – min. 4.2 liq pt	(3 l – min. 2 l) (4.7qts)
Oil consumption:	max. 0.13 liq pt/h	(max. 0.06 l/h)

Fuel specification:

Automotive Premium Unleaded per ASTM D 4814, minimum AKI 89 for Rotax 912 UL and minimum AKI 91 for Rotax 912 ULS.

For suitable fuel types refer to the original Rotax Operator's Manual.

Warning

Do not use fuel containing more than 10% ethanol.

Fuel capacity:

2 x wing fuel tank 13.2 gal each, 26.4 gal total.

Brake fluid:

SYNTOL HD 205 (Nom. 097 403)

DOT 4

Cooling fluid:

Dexcool 50/50

1.1.8 Recommended fastener torque values

ATTENTION!
All bolts have to be mounted up to down, inside to outside or front to aft, unless explicitly stated otherwise.

Torque moments

Maximum permitted screw and nut torque moments strength class 5S		
Metric thread M	Torque moment M max (kpm)	Torque moment M max (Nm)
4	0,17	1,67
5	0,35	3,45
6	0,6	5,9
8	1,5	14,7
10	3	28,4

1.1.9 General safety information

ATTENTION!
During all service and repair work beware of activating the Ballistic Parachute system rocket!
While running the engine on the ground keep away from the propeller.
An accidental engine start is very dangerous! Ensure that Ignition Switch and Main switches are turned OFF.

1.1.10 Instructions for reporting possible safety of flight concerns found during inspection/maintenance

To report possible safety of flight concerns forward to Jim Lee [jimlee@phoenixairusa.com] information as follows:

Owner (or contact person)
Inspector
Aircraft Make/Model and S/N
Engine Make/Model and S/N
Date of inspection
TT Airframe
TT Engine
Description of the un-airworthy items found

Or by writing:

Lee Aviation LLC.
460 Bridgetown Ct.
Satellite Beach, FL 32937

Using **Owners Operational Difficulty Report Form** (please use Form from Chapter 1.13)

1.2 Inspections

Aircraft records

Phoenix LSA Inspection and/or Required Maintenance Checklist	100 hour	Annual	Minimum level of certification
Aircraft logbooks. Determine total times, times since overhaul and times since last required or recommended maintenance checks and record on Inspection Coversheet.			RLSA-M
Safety Directives, Airwothiness, Directives and Service Bulletins. Check all SD´s, AD´s and Service Bulletins whitch may need to be complied within the inspection.			RLSA-M
Aircraft records. Check for presence and condition of aircraft federal registration form and airworthiness certificate.			RLSA-M
Aircraft Flight Manual (AFM). Make sure that last revision of AOI, the equipment list and Weight and Balance forms are in use.			RLSA-M

Run-up
See Rotax run-up procedures:

2.8) Test run of engine

▲ WARNING: Always observe the engine from a safe place while it is running. Check that the cockpit is occupied.

- Ensure that all the operating fluids (engine oil, coolant, fuel) are replenished to the specified level.
- Make sure that no loose objects (e.g. tools) are left in the engine compartment.
- Inspect tight fit of propeller.
- Anchor the aircraft suitably to the ground and fix wheel chocks. Ensure that the propeller zone is clear and safe before starting the engine.

In succession:

- establish fuel supply (open fuel cock).
- activate choke.
- throttle lever to idle position.
- master switch "ON".
- ignition for both ignition circuits "ON".
- press starter switch for max. 10 sec. followed by a cooling period of 2 min.
- after engine start, observe oil pressure. Oil pressure has to be built up within 10 sec.
- let engine run for approx. 2 min. at 2000 rpm. Then first use the throttle lever to bring the engine to approx. 2500 rpm and then run through warming up period, until the oil temperature reaches 50 °C (122 °F).
- Check temperatures and oil pressure: At a steady oil temperature above 50 °C (122 °F) and oil pressure above 2 bar (29 psi) engine speed may be increased.
- ignition check as per the current Operators Manual.
- conduct a short full throttle run and check that the engine reaches the max. full power speed. Consult the pilot's operating handbook for maximum speed, as it depends on the propeller used.
- after full-load run, conduct a short cooling run to prevent formation of vapour lock in cylinder heads. This is necessary to prevent steam locks in the cooling and fuel system after shut-down.

▲ WARNING: When shutting down the engine, always switch off ignition and remove the ignition key.

- shut engine down.

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Post run-up

Phoenix LSA Inspection and/or Required Maintenance Checklist	100 hour	Annual	Minimum level of certification
Engine cowling. Remove engine cowling.			owner
Engine oil. Check the level of oil and follow the Operator´s Manual for all versions of ROTAX 912.			owner
Exterior lights. Check operation of landing lights, position lights and strobe lights (if applicable)			owner
Flight controls. Check for smooth operation of all flight controls.			owner
Canopy opening. Check canopy hinges for cracks.			owner
Flight controls. Check controls within entire range for binding, play and unusuel sounds.			owner
Brake System. Check wheel chocks and discs for wearing. Check the level of fluid in hydraulic system.			owner
Battery. Fully charge and clea battery surface and cables. Check the battery for reliable contact with cables.			owner
Fairings, access panels, seats, carpets, covers and spinner. Check for missing or unscrewed bolts and nuts.			owner

Fuselage

Phoenix LSA Inspection and/or Required Maintenance Checklist	100 hour	Annual	Minimum level of certification
Skin surface. Inspectfor obvious signs of damage, including cracks, holes, buckling. Check drain holes for obstructions. Check condition of paint and cleanless.			owner
Placards. Inspect for presence and condition.			owner
Windows. Inspect for cleanless, condition and bonding. Check windows for scratches and cracks. Check air ventilation windows.			owner
Static port. Check static port for evidence of obstructions. CAUTION: DO NOT APPLY COMPRESSED AIR TO THE SYSTEM!			owner
Antennas. Inspect for security and condition.			owner
Aircraft identification tag. Inspect for security and legibility.			owner
Fin. Inspect fin for visible damage and evidence of latent damage. Inspect hinges and attachement points for security and condition.			owner
Parachute. Remove cover and inspect visible components of bridle, parachute, and rocket for chafe, wear, moisture intrusion or other damage.			owner

Wings

Phoenix LSA Inspection and/or Required Maintenance Checklist	100 hour	Annual	minimum level of certification
Wing attachment area. Check wing spar and main bolt bushings for cracks and debonding. Check visible attaching hardware for loss of torque. Check root rib pins for debonding and cracks and fuel leak.			owner
Fuel tanks. Check wing leading edge and forward surface for cracks and fuel leak. Inspect visible area of the fuel tank for forein objects, inspect fuel tank vents for obstructions.			owner
Fuel leaks. Inspect the outer skin tank areas for evidence of fuel stains.			
Fuel filler and caps. Inspect for proper locking, condtion of filler.			owner
Fuel contamination test. Take fuel samples from both wings and fuel strainer. Inspect for contamination and proper grade of fuel.			owner
Wing skins. Inspect for obvious signs of damage, including cracks, holes and buckling. Check condition of paint and drain holes.			owner
Ailerons. Inspect for security of attachment to wing. Inspect for damage, looseness or play and condition of rod attachment.			owner
Wing interior. Inspect wing spar through outer access panel and access holes thru root rib for signs of crack or debonding. Inspect all visible bonded areas of ribs and other structures.			owner
Flight controls. Inspect all push-pull rods, rod end bearings and bellcranks for condition, play, security of attachment and lubrication. Ensure locking is proper where applicable.			owner

Empennage

Phoenix LSA Inspection and/or Required Maintenance Checklist	100 hour	Annual	minimum level of certification
Rudder. Inspect for signs of damage, looseness or play in bearings, condition of hinge attachments, check rudder stops on tail wheel attachment are in contact with rudder mount.			owner
Stabilator. Inspect for visible damage and evidence of latent damage.			owner
Elevator. Inspect for visible damage and evidence of latent damage. Check the elevator deflections.			owner
Flight controls. Inspect all push-pull rods, rod end bearings and bellcranks for condition, play, security of attachment and lubricate. Ensure locking is proper where applicable.			owner

Landing gear

Phoenix LSA Inspection and/or Required Maintenance Checklist	100 hour	Annual	minimum level of certification
Visual inspection. Inspect from top and bottom for scratches, cracks, corrosion (metal parts), signs of overstress.			owner
Wheels. Inspect for cracks and corrosion. Check all hardware. Check tires visually and check tire pressure.			owner
Fairings. Inspect for condition, scratches and cracks. Clean interior.			owner
Wheel bearings. Inspect for damage, wear and corrosion. Check bearing for play, binding and bearing protection. Replace bearings if necessary.			owner
Tail wheel. Lift tail of airplane up and check wheel rotation. Check stainless pushrods.			owner
Hydraulic brake lines. Inspect brake lines for leaks.			owner
Brake calipers, brake pads and brake discs. Clean and inspect for condition, fluid leakage, cracks and corrosion. Inspect brake discs for pitting and signs of overheating. Inspect all hardware for sign of loss of torque. Do not lubricate. Ensure the brake discs have a little amount of free motion along the wheel axle.			owner
Brake fluid reservoir. Inspect for condition, security and fluid level. Service if necessary.			owner

1.3 Structures

1.3.1 Wing

The cantilever wing is a monospar construction with the sandwich skin consists of carbon layers and the special foam core. The spar flanges are made from a carbon fiber. The spar web is the sandwich construction, also. The wing root ribs are stuck between the spar flanges. The wing pins, bushings, control system nuts and fuel level float bracket are laminated to the root rib. The 50 liters fuel tank is an integral part of the each wing.

1.3.2 Empennage

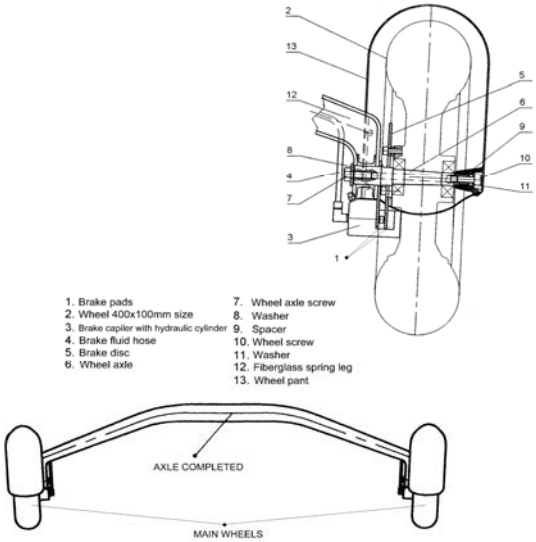
The fuselage is all – carbon/kevlar monocoque construction with integrated seats. Safety belts are attached to the seats and to a shelf for lightweight objects (headphones, maps, etc.) The engine is attached to the firewall covered with the fire resistant mat. The removable engine cowling is attached with 13 CAMLOC screws. The cockpit canopy is made of the Perspex of 3 mm thickness. The canopy may be tilted forwards. Two side sliding windows and the windshield air window are installed on the canopy to vent the cockpit.
An instrument panel is attached to the cockpit front part. Flight, engine instruments, switches, fuses and throttle lever are installed on the instrument panel.
The wing center-section is formed with the two bushings for wing connecting pins.
The hand control system rods are connected by means of the automatic grips installed on the wings center – section ribs.
The fuselage main spar is located between the seats. The rudder pedals are attached to the main spar front part.
The main landing gear leg bracket is attached to the fuselage main spar rear part.
The vertical tail unit is of sandwich construction. The horizontal tail unit is attached to the VTU front part with two pins and one screw.
The rudder is controlled by the two cables. The ailerons, flaps and elevator are controlled through rods. The cockpit heating is done through the two holes located in the firewall cover to bring hot air to the cockpit.

The Magnum Ballistic Parachute System is located behind the canopy. The parachute cover is attached with tape. To inspect the parachute system, remove the tape and the cover. Examine the bridle for chafe or wear. Examine all visible parts of the parachute container and rocket without removing or altering any of the components. Place the cover back in position and use new tape to secure the cover.

1.3.3 Landing gear

Landing gear

The airplane is equipped with fixed landing gear. The tail wheel is controllable. The main wheels on both legs are equipped with hydraulic brakes. There is the brake level on the pilot's control stick. The main leg is formed from fiberglass springs. The main wheels of 400x100 mm size consist of a duralumin alloy rim, bearings and duralumin brake disc. The brake caliper with the one hydraulic cylinder is floating. There is a brake fluid hose connected to the brake caliper to the master cylinder on the control stick. The tail wheel steering is connected to the rudder control.



Brake fluid refilling

Add the SYNTOL HD 205 (Nom. 097 403) brake fluid, DOT 3 or DOT4 (or equivalent) into the brake system by pumping the fluid up from the wheel.

Brake system bleeding

1. Fill a syringe with brake fluid
2. Put the transparent brake hose (~ 300 mm length) on the syringe outlet
3. Put the suitable pot below the Brake system master cylinder located at the control stick
4. Unscrew the Master cylinder cap
5. Loosen the bleeding screw on the left wheel brake calliper
6. Put the transparent hose on the loose left bleeding screw
7. Push/pull repeatedly the syringe lever to add brake fluid into the hydraulic cylinder and bleed it. Repeat until no air bubbles are drawn
8. Tighten the left bleeding screw
9. Proceed on the right wheel. Loosen the bleeding screw, put the hose on, and repeatedly push/pull the syringe lever until no air bubbles flow into the brake system master cylinder located in the cockpit. Overflow brake fluid runs into the pot placed below the master cylinder or may be drawn by the syringe.
10. Screw the Master cylinder cap
11. Check the system for function and leak

Brake pad clearance adjustment

You should take up the clearance of worn-out brake pads because the movement of the hydraulic cylinder is then short and brake system efficiency is going to be unsatisfactory. Measure the clearance using the feeler gauge. Insert the thin sheet of required thickness between the hydraulic cylinder and brake pad to take out the clearance. Two holes for M5 screw must be drilled through that thin sheet.

Brake pad replacement

Unscrew the brake pads and replace by the new ones.
Do not empty the brake fluid.

1.3.4 Structural control surfaces

Control system

The airplane is equipped with a classic dual control system. The elevator and ailerons are controlled by a control sticks, connecting rods and arms. The longitudinal and lateral control system stops are attached to the seats.

There is a green lever between the seats for pitch trim in the longitudinal control system.

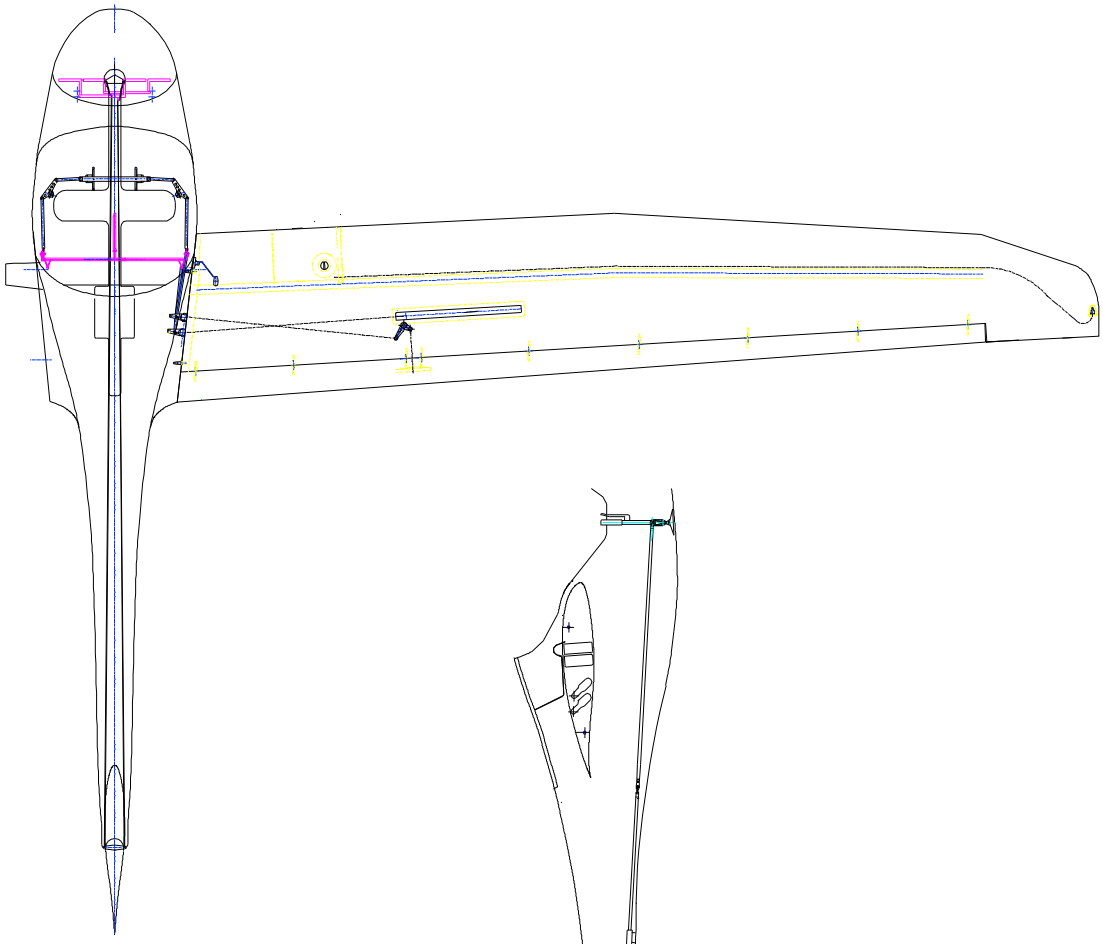
The wing airbrakes are controlled with a blue control lever between seats. The lever is in a changing gate and welded to a torsion tube. There are the levers and rods at both ends of torsion tube to control the airbrakes.

The black handled lever controls the flaps. There are three positions: Negative 8 degrees (for cruise- gliding flight), neutral (for cruise- powered flight), and positive 10 degrees (for thermal soaring or landing).

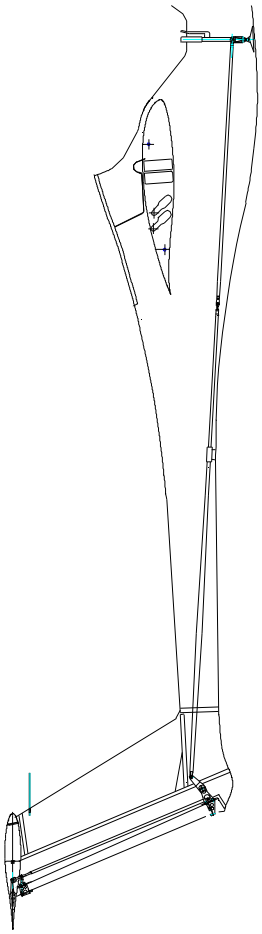
The rudder control system is dual too. The rudder is controlled by cables attached at the rudder pedals and to the hinges on the rudder bottom rib. There are the two turn buckles to adjust the length of the cables.
The rudder control is connected by the rods to the tail wheel steering arms.

Control lines drawings

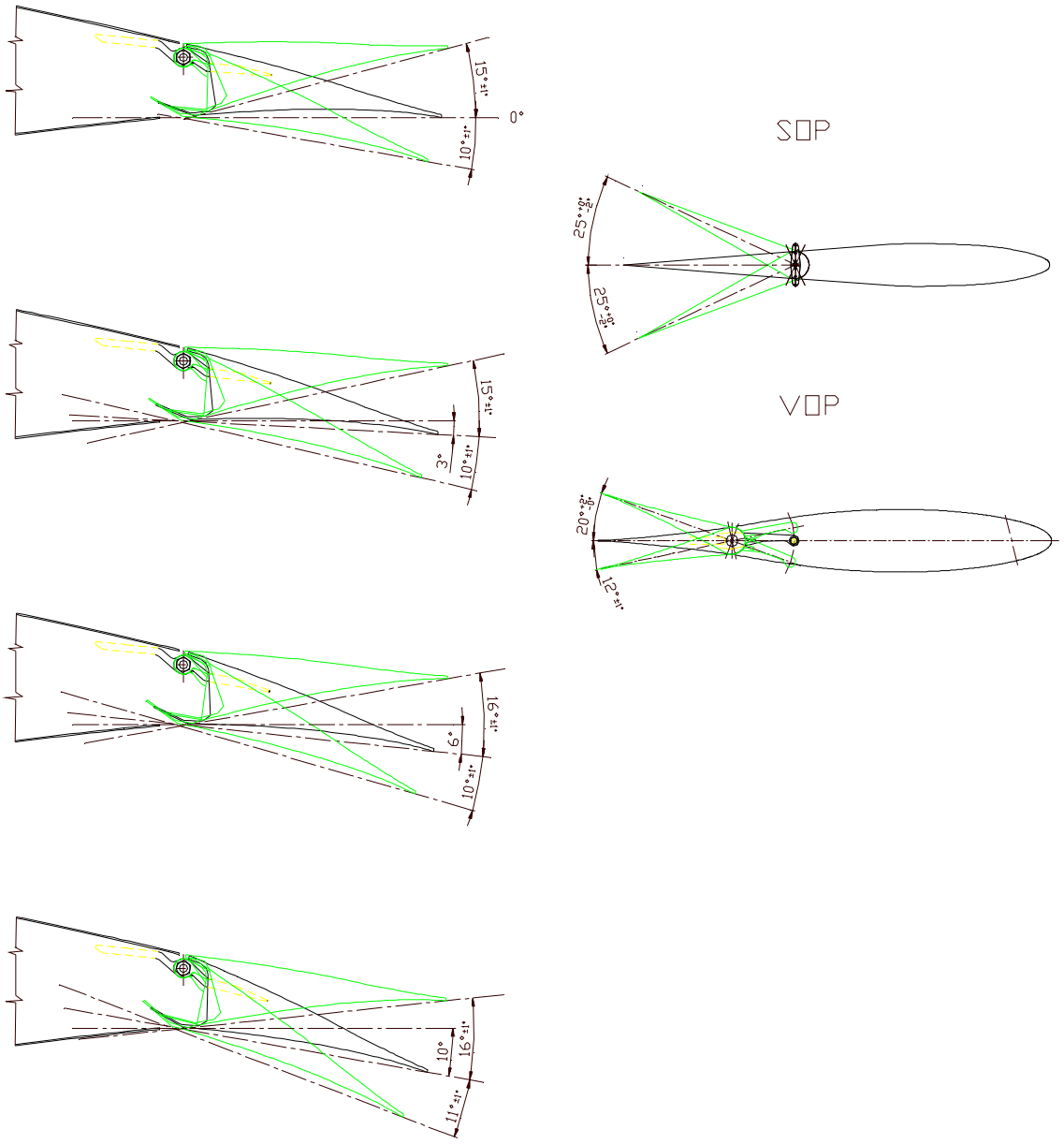
Flaperon, airbrakes and rudder control lines



Elevator control line



Control Surface Deflections



1.4 Engine

For engine inspection and maintenance refer to original ROTAX Manuals supplied with the aircraft.

- Operator´s Manual for all versions of ROTAX 912
- Maintenance Manual (Line Maintenance) for ROTAX Engine Type 912 Series
- Maintenance Manual II (Line Maintenance) for ROTAX Engine Type 912 Series

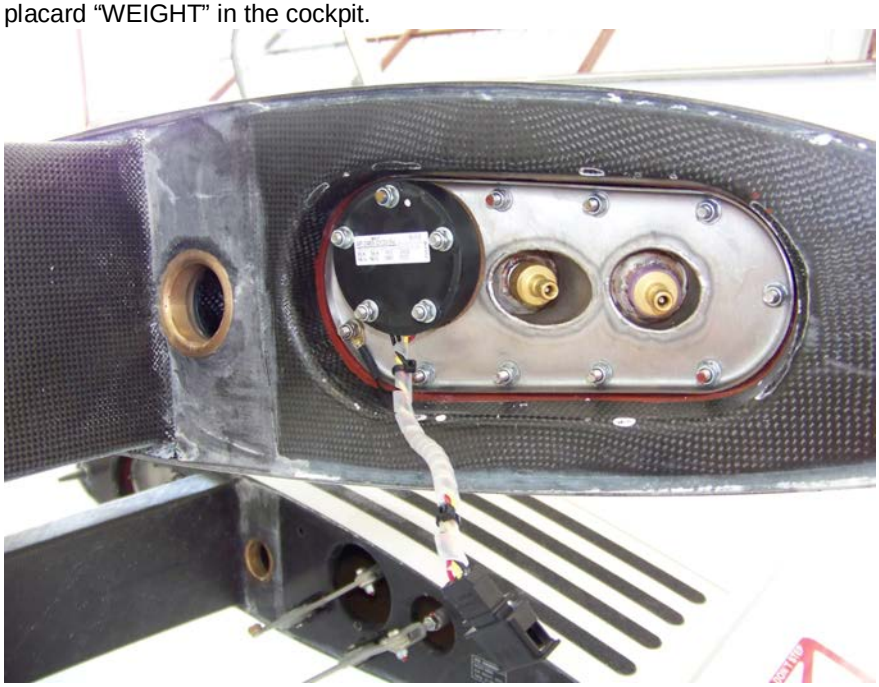
Power plant control

The engine power is controlled by a throttle lever located on the instrument panel, in the panel center line. There are two bowden cables led from the throttle lever to the carburetors.
To start a cold engine the carburetors are equipped with a choke controlled by a lever located on the instrument panel. The ignition switches are located on the instrument panel. Switch on the ignition and turn the key in the in the switch box to start the engine.

1.5 Fuel system

General:
Fuel system inspection and maintenance are to be performed in a well ventilated compartment, away from heaters and open flame.

The airplane is equipped with two 50 liters (each) fuel tanks in both wings.
The fuel tank filler neck is placed on the wing upper surface and equipped with a cap sealed by a packing “O” ring. A fuel tank bleeding hole is located on the wing tip. A fuel tank draining valve is located under the wing in the lowest part of the fuel tank. Use the valve to empty the fuel tank, also.
Fuel is pulled in the fuel tank through the fuel tank outlet coarse screen. Then through the fuel valve and fine screen to the fuel pump and on to the carburetors. Fuel quantity is indicated by a fuel gauge located on the instrument panel. There is installed a capacitance type fuel sensor in the fuel tank to scan the fuel quantity. The fuel gauge displays the relative quantity of fuel inside the fuel tank. Corresponding fuel quantity is shown on the placard “WEIGHT” in the cockpit.



1.6 Propeller

Type of maintenance = line.
For propeller inspection and maintenance refer to the original propeller manufacturer´s manual.

1.7 Utility systems

No special utility systems installed on U15 Phoenix LSA glider.

1.8 Instruments and avionics

Pitot-static system

The pitot tube provides the ram air pressure to the airspeed indicator. The tube is on the right wing. Pressure distribution to individual instruments is done through flexible plastic hoses.
Keep the system dry to assure its correct function. If water gets inside the system disconnect hoses from the instruments and slightly blow into the system.

WARNING!
Do not blow into the system when the instruments are connected - it may cause instrument damage.

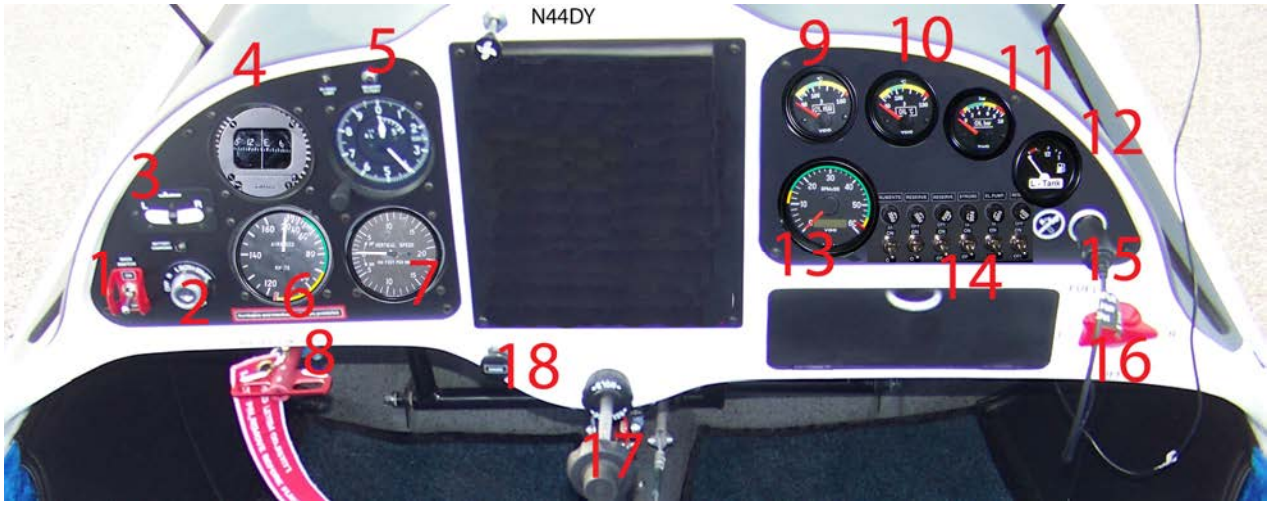
Equipment

Standard equipment
The flight and engine instruments, switches, switch box, fuses, fuel valve and 2 x fuel gauge are on the instrumental panel. Optional instruments may be installed, also.
The seats are integral part of fuselage. The seats are thin-upholstery by the soft removable upholstery. The headphone jacks are located behind the seats
Each seat is equipped with four-point safety belts.

The following optional equipment is installed in the U15 Phoenix airplane

- Ballistic rescue system
- Feathering prop

Instrument panel

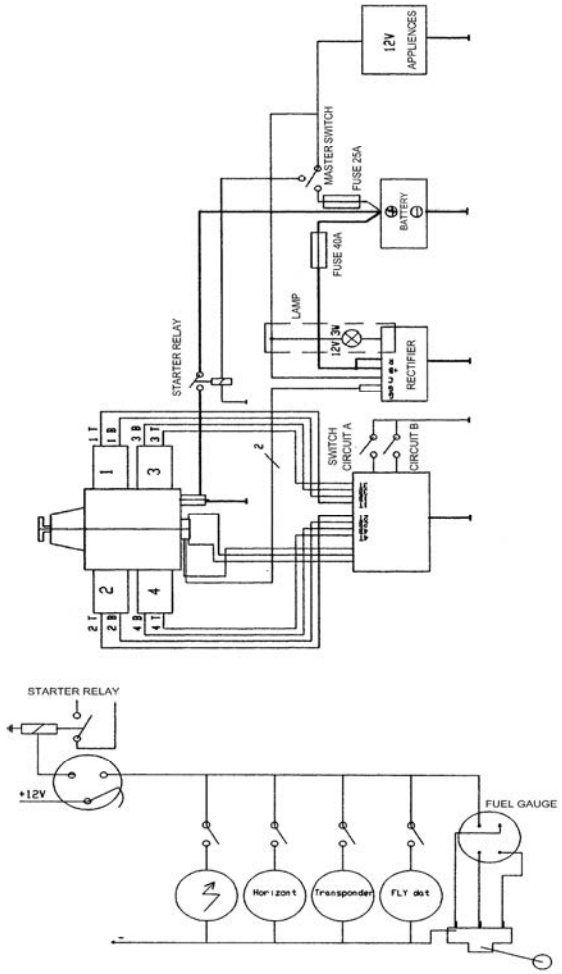


1. Master switch
2. Ignition key
3. Slip/skid
4. Compass
5. Altimeter
6. Airspeed
7. VSI
8. Parachute handle
9. Cylinder head temp
10. Oil temp
11. Oil pressure
12. Fuel gauge
13. RPM
14. Switches
15. 12V power socket
16. Fuel switch
17. Throttle
18. Choke

1.9 Electrical system

The electrical system is single-wire type with negative side connected to the chassis. The power source is a single-phase generator (250 W) with a rectifier and 12 V/14 Ah battery. Separate appliances have separate switches. The circuits of the particular sections are guarded individually by fuses. The dual ignition is a separate part of the electrical system. Each ignition circuit has its own ON/OF switch.

Wiring diagram No.1



Intentionally left blank for optional appliances wiring diagram

1.10 Structural repair

1.11 Paintings and coatings

Cleaning and care

Airplane care outlines

Use mild detergents to clean the exterior surfaces. Oil spots on the surfaces (except the canopy!) may be cleaned with a wax cleaner or strong detergents such as 409.
Upholstery covers can be removed from the cockpit, brushed or washed in lukewarm water with laundry detergent. Dry the upholstery before reinstalling.

External surfaces cleaning

The external fiberglass surfaces of the airplane are protected with weather-proof paint. Wash the airplane surface with lukewarm water and car wash detergents. Then wash the airplane with water and sponge dry. It is recommended to protect painted external surfaces twice a year by applying an automotive type polish. Use only on a clean and dry surface, and polish with a soft flannel rag.

CAUTION

- **Never** wipe a dry surface – the surface may be scratched by dust and dirt
- **Never** apply any chemical solvents
- Repair a damaged painted surface (see par. 5.2)

Interior cleaning

Keep in mind the following:

- Remove any loose objects from the cockpit
- Vacuum the interior and upholstery
- Wipe the upholstery using a rag with in lukewarm water and mild laundry detergent. Then dry or remove the seat upholstery and clean with lukewarm water upholstery cleaners. Dry thoroughly before reinstallation
- Clean the cockpit canopy interior surface (see par.4.10.4 below)

Cockpit canopy cleaning

The canopy may be cleaned by washing it with lukewarm water and car or laundry type detergents. Use a clean, soft cloth. Then use a suitable polisher on the canopy such as Plexus® or Flight Jacket®.

CAUTION

- **Never** clean dry canopy
- **Never use a cleaner with ammonia (Windex®, etc)**
- **Never** apply gasoline or chemical solvents
- Cover the canopy with a soft cover.

1.12 Revisions

1.13 Feedback form

PHOENIX AIR s.r.o.	**OWNER´S OPERATIONAL DIFFICULTY REPORT FORM**

Number of report form:

Owner (or contact person):

Inspector:

Aircraft Make/Model and S/N:

Engine Make/Model and S/N:

Date of inspection:

TT Airframe:

TT Engine:

Description of the un-airworthy items found:

Please be as specific as possible. If needed, attach

2. Inspection, Repair and Alterations

Repairs and alterations

Periodical inspection intervals

The safety of operation and airplane airworthiness depend on a through care for the all parts of your airplane.

The periods for overall checks and contingent maintenance will depend on the conditions of the operations and the overall conditions of the airplane.

The manufacture recommends maintenance checks and periodic inspections in the following periods:

a) after the first 25 ± 2 flight hours
b) after every 50 ± 3 flight hours
c) after every 100 ± 5 flight hours or annual inspection at least

Refer to the Engine Manual for engine maintenance.

The propeller is maintained according to its condition. The inspection performed by a composite repair facility is highly recommended after 50 hours of operation. Please refer to Propeller Manual for maintenance system.

Periodical inspections Sign off sheets

The following Periodical maintenance Sign off sheets are intended for copying and serve as the maintenance Records. It is also recommended to include small repairs, damages and their remedy or replacement.

Damage classification

Various types of damage may occur during airplane operation and handling. It is important to correctly classify damage according to its character, size and especially, which part of airplane has been damaged.
The important parts are the engine, engine mount, and propeller, wing spar center section of wing, stabilizer, landing gear legs and parts of the primary control system.
Minor damage may be repaired by the airplane operator / owner, but major structural damage should be repaired by replacement of damaged parts by the owner or repaired by an authorized service center.
Any damage and its repair should be recorded in the Log Books.

Rudder control cables replacement

Contact the airplane manufacturer for replacement procedure or an authorised Service Center to replace the cables.

Carbon fairing and cowlings repairs

Cracks, breaks and permanent deformations are the most prevalent type of damage.
According to the character of the damage the damage part should be cut out or sanded (bevel approx. 20x material thickness), any point of area to be repaired must be removed.
Put the first carbon cloth layer, then apply the resin L 285 mixed with the hardener H 286 (proportion of mixture 100:38) and continue as needed. The carbon cloths layers should have a short overlap.
After the resin has cured, sand the surface of repaired area, apply the polyester cement.
Sand the edges of repaired area (with 50-100 mm) using sand paper (grit size 400) to remove the old paint and prepare the area for painting.
Cover the place to be not painted and spray the repaired area using T 35 two component colors. Wet sand the area after paint curing using sand papers of 400, 800, 1200 grit size.
Apply polishing paste; use a soft cloth to polish the repaired area.

Periodical inspection after the first 25 hours and every 50 hours

Model :	S/N :	Registration :	Date of inspection :
	Hours flown :	No of Takeoffs :	

Event	Event description	Remark	Carried out by	Inspected by
1	Check control system for condition, plays, check control cables tension. Check control and securing of parts of the tail wheel steering (inside the cockpit)			
2	Check condition and attachment of controls inside cockpit			
3	Check condition and attachment of the seats back rests and safety belts incl. upholstery			
4	Check function of instruments			
5	Visually check canopy conditions. Check function of the struts and lock of canopy			
6	Check wing, fuselage and tail surfaces skin			
7	Check condition and attachment of the canopy			
8	Check condition of parachute, parachute bridle, and rocket for chafe, wear, water intrusion or other damage. Do not remove from aircraft, inspect visible components only.			
8	Check control surfaces condition, free movement and plays			
9	Check condition and attachment of the landing gear			
10	Visually check condition, attachment, security of attachment bolts: engine – engine mount, engine mount – firewall. Visually check condition and integrity wires. Charge battery if needed			
11	Visually check of carburettors, air filters. Check engine controls adjustment			
12	Visually check condition, integrity of the fuel system and fuel tank draining			
13	Visually check of exhaust system and heating for condition, cracks			
14	Check prop attachment, security of bolts			
15	Check operating fluids quantity. Add if needed			
16	Clean the cockpit			
17	Lubricate the airplane per lubricating chart			
18	Engine Test Run			

Periodical inspection after every 100 flight hours

Model :	S/N :	Registration :	Date of inspection :
	Hours flown :	No. of take-offs :	

Event	Event description	Remark	Carried out by	Inspected by
1	Check control system for condition, plays, check control cables tension. Check control and securing of parts of the tail wheel steering (inside the cockpit)			
2	Check condition and attachment of controls inside cockpit			
3	Check condition and attachment of the seats back rests and safety belts incl. upholstery			
4	Check function of instruments			
5	Visually check canopy conditions. Check function of the struts and lock of canopy			
6	Check wing, fuselage and tail surfaces skin			
7	Check condition and attachment of the canopy			
8	Check control surfaces condition, free movement and plays			
9	Check condition and attachment of the landing gear			
10	Visually check condition, attachment, security of attachment bolts: engine – engine mount, engine mount – firewall. Visually check condition and integrity wires. Charge battery if needed			
11	Visually check of carburetors, air filters. Check engine controls adjustment			
12	Visually check condition, integrity of the fuel system and fuel tank draining			
13	Visually check of exhaust system and heating for condition, cracks			
14	Check prop attachment, security of bolts			
15	Check operating fluids quantity. Add if needed			
16	Clean the cockpit			
17	Lubricate the airplane per lubricating chart			
18	Engine Test Run			

Event	Event description	Remark	Carried out by	Inspected by

3. Level of certification

3.1 Owner
3.2. SCHEDULED AIRCRAFT MAINTENANCE – LSA Repairman Maintenance or A/P Mechanic
3.3. LSA AIRCRAFT NON-SCHEDULED MAINTENANCE – LSA Repairman Maintenance or A/P Mechanic
3.4. LSA TECHNICAL CARDS FOR AIRCRAFT OPERATION AND MAINTENANCE
3.5. LSA TECHNICAL CARDS FOR AIRCRAFT NON-SCHEDULED MAINTENANCE
3.6. IMPORTANT INSTRUCTIONS FOR OPERATOR

3.1 Owner

Main Gear Wheel Removal (Tube Replacement)

1) ***Tools Required***
   - Pincers 1 pc
   - Hex-nut wrench 6 1 pc
   - Screwdriver 1 pc
   - Cross screwdriver 1 pc
   - Screwdrivers 200 mm, or (better) crowbar 2 pcs
   - Support with soft top 1 pc
2) ***Preliminary works***
   - Set the chocks under the wheels to prevent plane's rolling.
   - Reset the brake.
3) Main wheel removal

Unscrew the bolt by a hex-nut wrench.

Unfasten the two zeuss fasteners with a screwdriver and release the fairing. Remove the fairing by moving it up. Lift the wing with your flat palms to avoid dents in the underside of the wing. Lift the wing, not the wing extensions. Place a padded post under the wing, or place a block under the landing gear. Pull the wheel from the spindle.

The brake assembly may now be removed, and the components disassembled for replacement.

4) ***Tire removal***

Release pressure from the tube.

Release tire by the screwdriver and pull out the tube.

Replace the tube.

Assembly is a reverse of removal.

Notes:
- The top of the support has to be soft, to prevent damage of the skin and paint.

5) Oil Change

Follow the Rotax manual for instructions to change the oil.

Tail Wheel Removal (Tube Replacement)

1) ***Tools Required***
- Wrench 10x13
- Hex-nut wrench 6

2) ***Preliminary works***
- Before starting, set the parking brake.
- Lift the tail fuselage up.
- Insert the padded support about half meter before the tail wheel.

3) ***Tail wheel removal***
Unscrew the nut by a wrench 10-13 and a hex-nut wrench 6.
Remove the wheel axle.
Unscrew three screws by a wrench 10-13 and a hex-nut wrench.
Replace a tube.

4) ***Assembly***
Assembly is the reverse of removal

Notes:
- The top of the support has to be soft to prevent damage of the skin and paint.
- Set the chocks under the wheels to prevent plane's rolling.

Tailwheel Fork removal (Replacement after damage)

1) Remove tailwheel as above.
2)Remove steering rods
3) Remove nut
4)Remove tailwheel fork

3.2 SCHEDULED AIRCRAFT MAINTENANCE

3.2.1 LSA Prescribed Inspections
Inspections are made each 100 flight hours or every year.
Authorization to Carry out
LSA Repairman Maintenance or A/P mechanic
The fuselage, wings and main landing gear inspection regarding crack absence, protective coating damage and scratches; wing suspensions, stabilizer, elevator, rudder, winglets condition inspection; the axial play and radial clearance inspection of all control surfaces suspension; description, warning and information labels inspection of the entire aircraft according to the Technical Inspection 3.4.1.1.
Pilot area inspection regarding a crack absence, protective coating damage, scratches, extraneous items; safety belts and seats inspection according to the Technical Inspection 3.4.1.2.
The aerodynamic brakes, their fixing and blocking, aerodynamic brakes free operation inspection, axial play and radial clearance inspection according to the Technical Inspection 3.4.1.3.
Canopy condition inspection regarding cracks, silvering or transparency deterioration and obscuring, cockpit overlap closing mechanism condition inspection according to the Technical Inspection 3.4.1.4.
Wheels, tires condition, brake pads and axle caps condition inspection regarding crack absence, protective coating damage and scratches, according to the Technical Inspection 3.4.1.5.
Tailskid condition inspection, tire inspection, tailskid operating rods integrity inspection, according to the Technical Inspection 3.4.1.6.
Control system, joints blocking, free operation, bearing clearances, deformation and corrosion inspection, according to the Technical Inspection 3.4.1.7.
Rudder displacements inspection in case of joystick and pedals displacement according to the Technical Inspection 3.4.1.8.
Dashboard instruments, wiring and loose battery inspection according to the Technical Inspection 3.4.1.9.
Engine, engine bed and exhaust inspection regarding blocking all aggregates and piping fastening and entireness, engine and its tightness inspection, wiring inspection, fuel and oil system tightness and mechanical wear inspection, engine control adjustment inspection, service charges inspection according to the Technical Inspection 3.4.1.10.
Firewall protective layer condition inspection according to the Technical Inspection 3.4.1.11.
Propeller inspection regarding crack absence or another mechanical wear, axial play and radial clearance inspection, propeller control and fastening inspection according to the Technical Inspection 3.4.1.12.
Tanks and fuel plumbing tightness inspection according to the Technical Inspection 3.4.1.13.
Towing gear inspection according to the Technical Inspection 3.4.1.14.
3.2.2 LSA Prescribed Works
Prescribed works are made each 100 flight hours or every year.
Authorization to Carry out
The authorized repair shop, an aeromechanic, carries the prescribed works out.
3.2.2.1 Aircraft cleanup from dirt according to the Technical Inspection 3.4.2.1.
3.2.2.2 Aircraft preparation for operation and maintenance according to the Technical Inspection 3.4.2.2.
3.2.2.3 The aircraft cockpit overlap opening and closing according to the Technical Inspection 3.4.2.3.
3.2.2.4 Engine cowls disassembly and assembly according to the Technical Inspection 3.4.2.4.
3.2.2.5 Main landing gear axle caps disassembly according to the Technical Inspection 3.4.2.5.
3.2.2.6 Rudder pedals greasing according to the Technical Inspection 3.4.2.6.
3.2.2.7 Aerodynamic brakes control lever greasing according to the Technical Inspection 3.4.2.7.

3.2.2.8 Elevator control drive greasing according to the Technical Inspection 3.4.2.8.
3.2.2.9 Stabilizer suspensions greasing according to the Technical Inspection 3.4.2.9.
3.2.2.10 Rudder suspensions greasing according to the Technical Inspection 3.4.2.10.
3.2.2.11 Tailskid and main landing gear bearing greasing according to the Technical Inspection 3.4.2.11.
3.2.2.12 Main wing suspensions greasing according to the Technical Inspection 3.4.2.12.
3.2.2.13 Wing automatons greasing according to the Technical Inspection 3.4.2.13.
3.2.2.14 Fuel filter disassembly and replacement according to the Technical Inspection 3.4.2.14.
3.2.2.15 Fuel sludging according to the Technical Inspection 3.4.2.15.
3.2.2.16 Engine service charges replacement - see engine manual
3.2.2.17 Brake fluid replacement - prescribed after 2 - 3 years
3.2.2.18 Pilot's area cleanout from extraneous items according to the Technical Inspection 3.4.2.16.
3.2.2.19 Main landing gear, wheel and tailskid axle caps cleanout from dirt and extraneous items according to the Technical Inspection 3.4.2.17.
3.2.2.20 Engine test according to the Technical Inspection 3.4.2.18.
3.2.2.21 Compass compensation according to the Technical Inspection 3.4.2.19.

3.3 LSA AIRCRAFT NON-SCHEDULED MAINTENANCE

Aircraft single parts repairs, disassembly and replacement
Authorization to carry out
LSA Repairman Maintenance or A/P mechanic
3.3.1 Propeller disassembly and replacement according to the Technical Inspection 3.5.1.1.
3.3.2 Engine disassembly and replacement according to the Technical Inspection 3.5.1.2.
3.3.3 Main landing gear leg disassembly and replacement according to the Technical Inspection 3.5.1.3.
3.3.4 Directional control ropes disassembly and replacement according to the Technical Inspection 3.5.1.4.
3.3.5 Fuel hosepipes disassembly and replacement according to the Technical Inspection 3.5.1.5.
3.3.6 Oil hosepipes disassembly and replacement according to the Technical Inspection 3.5.1.6.
3.3.7 Cooling hosepipes disassembly and replacement according to the Technical Inspection 3.5.1.7.
3.3.8 Aircraft covering repair according to the Technical Inspection 3.5.1.8.
3.3.9 Aircraft protective coating repair according to the Technical Inspection 3.5.1.9.

3.4 LSA TECHNICAL CARDS FOR AIRCRAFT OPERATION AND MAINTENANCE

3.4.1 Technical Cards for Prescribed Inspections

3.4.1.1 AIRCRAFT FUSELAGE, WINGS, LANDING GEAR AND CONTROL SURFACES INSPECTION REGARDING CRACK ABSENCE, PROTECTIVE COATING DAMAGE, SCRATCHES, CONTROL SURFACES SUSPENSION AND CLEARANCE

Warning
During the control surfaces suspension clearance inspection it is necessary that a staff member hold the joystick or rudder control pedals arrested always in a maximum displacement, and the second staff member manually verifies control surfaces clearances (the clearance can be max +3mm).
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
They are not used.
Consumable Supplies
They are not used.
Staff Member Number
One

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.

AIRCRAFT SURFACE INSPECTION
Warning
During the aircraft covering condition inspection check the entireness and condition of all aircraft warning and information notices.
Check the aircraft propeller spinner condition whether its surface is clean and free of damage traces or whether it is not deformed in a different way.
Verify the tightness of 6 screws attaching the propeller spinner.
Check both propeller blades condition whether its surface is clean and free of damage traces or whether it is not deformed in any way or whether the propeller blade edges and points are not damaged.
Check motor cowls blocking, the entireness and tightness of 13 rapid screws attaching the upper motor cowl and 6 screws attaching the lower motor cowl.
Check the aircraft motor cowls condition whether its surface is clean and free of damage traces or whether it is not deformed in any way, their fitting together with the aircraft covering, and whether there are not some oil and fuel traces at the lower motor cowl.
Check the aircraft fuselage right side covering condition from a motor partition to the wing leading edge and its lower part to the main landing gear leg suspension, whether its surface is clean and free of damage traces or whether it is not deformed in any way.
Check the main landing gear leg surface right part condition and the right wheel axle cap condition whether its surface is clean and free of damage traces or whether it is not deformed in a different way.
Verify proper attachment, tightness and entireness of 4 screws attaching a right wheel axle cap to the right side of the landing gear leg; verify the aircraft grounding wire fixing and condition.
Check the right wing leading edge whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the right wing lower covering and the fuselage right part from the wing leading edge to the wing trailing edge and the fuselage lower part, whether its surface is clean and free of damage traces or whether it is not deformed in any way.
Verify proper attachment and tightness of 6 screws attaching a sludge valve of the wing fuel tank, and whether some fuel leakage signs are not present.
Check the right wing upper covering condition whether the surface is clean and free of damage traces or whether it is not deformed in any way, and whether the tank filler cap is well tightened and whether some fuel is not running off.
Check the wing right end wing butt condition and attachment whether the surface is clean and free of damage traces, whether it is not deformed in any way, and whether a king pin pulling rod is properly fixed and blocked by a keep-pin.
Check wing main suspensions clearance (the wing is not allowed to show any clearance) of the wing end curve by radial and axial movements - distinguish the structure elasticity and the wing clearance itself).
Check the right winglet upper and lower covering condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Verify the right winglet suspension firmness by axial and radial movement made by hand, the entireness and blocking of 1 screw of the winglet end operating rod and the sticky tape integrity at the connection of the wing trailing edge and the winglet leading edge.
Check the fuselage upper covering condition from the cockpit overlap frame back to the wing trailing edge whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Verify proper attachment and tightness of 4 screws attaching a radio aerial to the aircraft fuselage upper covering.
Check the radio aerial condition whether there are not some damage traces or other deformations.
Check the rescue system cover condition whether the surface is clean and free of damage traces or whether it is not deformed in a different way, check its attachment and the sticky tape integrity along the cover periphery.
Comment

During the inspection of all fuselage rear part overhaul also its lower part.
Check the fuselage all rear covering condition from the wing trailing edge to the aircraft tail fin leading edge whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the tail fin covering right part and its leading edge condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the stabilizer covering right lower part from the stabilizer right suspension to its end curve whether the surface is clean and free of damage traces or whether it is not deformed in a different way.
Check the stabilizer covering right upper part from the stabilizer right suspension to its end curve whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the whole elevator covering lower part whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the whole elevator covering upper part whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the elevator surface upper covering as well as the lower one and its fixing to the elevator trailing edge.
Verify the elevator suspension firmness by axial and radial movements made by hand.
Check the rudder left and right surface whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Verify the rudder suspension firmness by axial and radial movements made by hand.
Check the stabilizer covering left lower part from the stabilizer left suspension to its end curve whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the stabilizer covering left upper part from the stabilizer left suspension to its end curve whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the stabilizer leading edge whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Verify the stabilizer main suspension firmness by axial and radial movements made by hand.
Check proper tightness and blocking of the stabilizer suspension front pin (1) by a keep-pin (2).

Figure of the stabilizer front pin blocking

Check flash beacon proper fixing at the stabilizer covering upper part, the entireness and tightness of 2 screws attaching the flash beacon.
Check Pitot tube proper fixing and condition.
Check the tail fin covering left part and its leading edge condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the left wing lower covering and the fuselage left part from the wing leading edge to the wing trailing edge and the fuselage lower part, whether their surface is clean and free of damage traces or whether it is not deformed in any way.
Verify proper attachment and tightness of 6 screws attaching a sludge valve of the wing fuel tank, and whether some fuel leakage signs are not present.
Check the left wing upper covering condition whether the surface is clean and free of damage traces or whether it is not deformed in any way. And whether the tank filler cap is well tightened and whether some fuel is not running off.

Check the left winglet upper and lower covering condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Verify the left winglet suspension firmness by axial and radial movements made by hand, the entireness and blocking of 1 screw of the winglet end operating rod and the sticky tape integrity at the connection point of the wing trailing edge and the winglet leading edge.
Check the left end wing butt condition and attachment and whether the surface is clean and free of damage traces, whether it is not deformed in any way, and whether a king pin pulling rod is properly fixed and blocked by a keep-pin.
Check wing main suspensions clearance (the wing is not allowed to show any clearance) of the wing end curve by radial and axial movements - distinguish the structure elasticity and the wing clearance itself).
Check the left wing leading edge whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the main landing gear leg surface left part condition and the left wheel axle cap condition whether their surface is clean and free of damage traces or whether it is not deformed in any way.
Verify proper attachment, tightness and entireness of 4 screws attaching a left wheel axle cap to the left side of the landing gear leg, verify the aircraft grounding wire fixing and condition.
Check the condition, entireness and proper fixing of 4 screws and the main landing gear leg blocking to the aircraft fuselage lower part.
Check the hydraulic fluid supply to the aircraft main landing gear brake hose fixing and blocking condition.
Check the aircraft fuselage left side covering condition from the main landing gear leg suspension, the wing leading edge and its lower part to the motor partition, whether the surface is clean and free of damage traces or whether it is not deformed in any way.

3.4.1.2 PILOT'S AREA INSPECTION REGARDING CRACKS, SCRATCHES AND EXTRANEOUS ITEMS ABSENCE AND PROTECTIVE COATING DAMAGE

Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments
Hand-held flashlight

Consumable Supplies
They are not used.

Staff Member Number
One

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Open the aircraft cockpit overlap according to the Technical Inspection 3.4.2.3.

PILOT'S AREA INSPECTION
Verify that the circuit breakers, switches, changeover switches are out (a switching-out position is a downward position) and that the rescue system initiation locking pin is inserted.
Check the floor, pilot's cockpit side left inner part and motor partition left front inner part condition in the left pilot's area under the dashboard, whether the surface is clean and free of damage traces or whether it is not deformed in a different way and whether there are not some extraneous items in that area.
Check the blocking and tightness of the oil tank sludge screw under the dashboard.
Verify proper attachment, tightness and entireness of 2 screws for directional control pedals console fixing to the aircraft pilots' cockpit floor, and blocking of 1 nut of the pedals left suspension.
Pull the left pilot's seat out of the aircraft cockpit and put it at a predefined place.
Check the seat tray condition in the area under the aircraft left pilot's seat sitting part whether the surface is clean and free of damage traces or whether it is not deformed in a different way and whether there are not extraneous items in that area.
Check the area behind the aircraft left pilot's seat headrest to the pilots' cockpit rear partition whether the surface is clean and free of damage traces or whether it is not deformed in a different way and

whether there are not extraneous items in that area.
Check the floor, pilot's cockpit side right inner part and motor partition right front inner part condition in the right pilot's area under the dashboard whether the surface is clean and free of damage traces or whether it is not deformed in a different way and whether there are not some extraneous items in that area.
Verify proper attachment, tightness and blocking of 1 nut of the directional control pedals right suspension.
Pull the right pilot's seat out of the aircraft cockpit and put it at a predefined place.
Check the seat belts condition whether the surface is clean and free of damage traces and whether they are not frayed, cut or damaged in a different way.
Verify seat belts locking and unlocking function correctness to their main safety lock.
Verify length adjustment of single seat belts.
Check single belts correct fixing in their suspensions.
Check the seat tray condition in the area under the aircraft right pilot's seat sitting part whether the surface is clean and free of damage traces or whether it is not deformed in a different way and whether there are not extraneous items in that area.
Check the area behind the aircraft right pilot's seat head rest to the pilots' cockpit rear partition whether the surface is clean and free of damage traces or whether it is not deformed in a different way and whether there are not extraneous items in that area.

Warning

During a king pin inspection it is necessary to verify its correct orientation. Its handling part in a blocked position has to be turned through an angle of 180° to the right to a horizontal plane, and at the same time it has to be forelocked at its rear part and locked by a locking wire.
Check both wing root halves king pin blocking.
Check the pilots' cockpit rear partition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the luggage spaces beyond the aircraft pilots' seats whether the surface is clean and free of damage traces or whether it is not deformed in any way and whether there are not extraneous items in that area, and whether the space textile stiffening is not damaged.
Check the dashboard front panel and its upper part whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the seats textile parts condition whether its surface is clean and free of damage or tear and fraying traces.
Check the seats laminate part condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
*

FINAL WORKS

Warning

The seats of both pilots are distinguished to the left side and the right one thence it is necessary to respect their original positions.
Put both pilots' seats back to their original positions.
Close and lock the aircraft cockpit overlap according to the Technical Inspection 3.4.2.3.
*****

3.4.1.3 AERODYNAMIC BRAKES INSPECTION

Comment

When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments

They are not used.

Consumable Supplies

They are not used.

Staff Member Number

One

PREPARATION

Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.

Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

AERODYNAMIC BRAKES INSPECTION

Push the control lever between the pilots' seats to the right, and pull back. (The aerodynamic brakes will be withdrawn from the brakes positioning inside the aircraft wings).

Check the left aerodynamic brake plate upper covering condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.

Check the plate suspension to the aerodynamic brake upper part; verify proper attachment, blocking and entireness of 4 pins fixing the plate.

Check both aerodynamic brake perforated surfaces whether the surface is clean and free of damage traces or whether it is not deformed in any way. Check proper attachment, blocking and entireness of 2 pins and 2 screws fixing the upper and lower surfaces to the aerodynamic brake control lever.

Verify the firmness and clearance in the suspension of the left aerodynamic brake in its suspension levers by axial and radial movements made by hand, verify the entireness and blocking of 1 screw of the brake end operating rod and the entireness and blocking of 2 screws fixing 2 brake control levers to the aerodynamic brake positioning tray sides.

Check the right aerodynamic brake plate upper covering condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.

Check the plate suspension to the aerodynamic brake upper part; verify proper attachment, blocking and entireness of 4 pins fixing the plate.

Check both aerodynamic brake perforated surfaces whether the surface is clean and free of damage traces or whether it is not deformed in any way. Check proper attachment, blocking and entireness of 2 pins and 2 screws fixing the upper and lower surfaces to the aerodynamic brake control lever.

Verify the firmness and clearance in the suspension of the right aerodynamic brake in its suspension levers by axial and radial movements made by hand, verify the entireness and blocking of 1 screw of the brake end operating rod and the entireness and blocking of 2 screws fixing 2 brake control levers to the aerodynamic brake positioning tray sides.

Verify (push out and back the brakes about 5 times over) the aerodynamic brakes control system free operation in its full extent of displacements by the aerodynamic brakes control lever.

FINAL WORKS

Warning

When finished an aerodynamic brakes inspection always leave the brakes pushed back in the aircraft wings profile.

Push the control lever between the pilots' seats forward, and to the left. (The aerodynamic brakes will be pushed back in the brake housing inside the aircraft wings).
Close the aircraft cockpit overlap according to the Technical Inspection 3.4.2.3.

3.4.1.4 AIRCRAFT COCKPIT CANOPY CONDITION INSPECTION Figure 3 - 1
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
They are not used.
Consumable Supplies
They are not used.
Staff Member Number
One

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

AIRCRAFT COCKPIT CANOPY AND CLOSING MECHANISM CONDITION INSPECTION
Comment
During the pilot's canopy glass condition inspection the glass is not allowed to show cracks, scratches, silvering or transparency worsening or obscuring.
Visually check the pilot's canopy glass condition from the internal side as well as external one.
Check left and right quarter vents condition whether the surface is clean and free of damage traces, whether they are not deformed in any way, and whether the quarter vents guides are properly fixed, tightened and blocked to the aircraft cockpit canopy glass.
Check the left and right pivoting windows condition so that the surface is clean and free of damage traces and are not deformed in any way.
Check proper fixing and tightness of 2 screws for the pivoting windows.
Check a blocking console condition whether there are not fractures or different damage, and verify 1 screw attachment and proper tightness.
Comment
When opening and closing ventilation the movement has to be free and without drag signs.
Verify both pivoting windows functions.
Check seal condition all around the canopy frame, the seal is not allowed to show cracks, aging or damage.
Check the entireness of 7 screws fixing guides to the aircraft cockpit canopy glass.
Comment
When opening and closing the aircraft cockpit canopy the system movement has to be free and without drag signs.
Verify the closing and opening system operation of the aircraft cockpit canopy.

Comment
Verify the aircraft cockpit canopy latch from the pilot's position.
Enter the aircraft cockpit.
Close the aircraft cockpit canopy and lock it.
Block the canopy by a safety lock at the rear part of the aircraft pilots' cockpit frame between seats.
Verify the aircraft cockpit canopy closing contact to the aircraft cockpit frame.
Comment
When opening and closing side quarter vents the vents movement has to be free and without friction.
Verify opening and closing of side quarter vents.
Unlock the rear safety lock for the aircraft cockpit canopy.
Open the aircraft cockpit canopy.
Leave the aircraft cockpit.

FINAL WORKS

Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

3.4.1.5 WHEELS, TIRES AND BRAKE PADS INSPECTION

Comment

When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments

They are not used.

Consumable Supplies

They are not used.

Staff Member Number

One

PREPARATION

Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Dismount both main landing gear axle caps according to the Technical Inspection 3.4.2.5.

WHEELS, TIRES AND BRAKE PADS INSPECTION

Check both wheels disk condition, the disk is not allowed to show corrosion, cracks, scratches or protective coating damage.

Warning

In case of discovering tire tread pattern excessive wear (completely worn tread pattern) it is necessary to replace it.

Check the aircraft wheel tire condition, the tire tread pattern is not allowed to show wears, cracks and other damage.

Check whether the aircraft main wheel tire and disk red marks correspond (the tire is not allowed to be turned regarding the disk).

Check the aircraft wheel both tire valves the tire valve is not allowed to show wear and it has to be covered by a cap.

Check both tires inflation correctness of the aircraft main landing gear wheel (the main landing gear wheel tire inflation has to be 190+10KPa).

Check both wheels brake pads and brake disks condition, they are not allowed to show wear, cracks or other damage.

Check fixing and proper tightness of both wheel cap nuts of the hydraulic fluid supply hose to the brakes.

Check properly fixing, tightness and blocking of 2 screws fixing brakes to the aircraft main landing gear leg by locking wire.

Check fixing, properly tightness and blocking of the main landing gear wheel axis pin head by paint.

Check a wheel radial and axial clearance regarding a main landing gear wheel axis (the wheel is not allowed to show any clearance).

FINAL WORKS

Mount both main landing gear wheel axle caps according to the Technical Inspection 3.4.2.5.

3.4.1.6 REAR TIRE AND TAIL SKID CONDITION INSPECTION
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

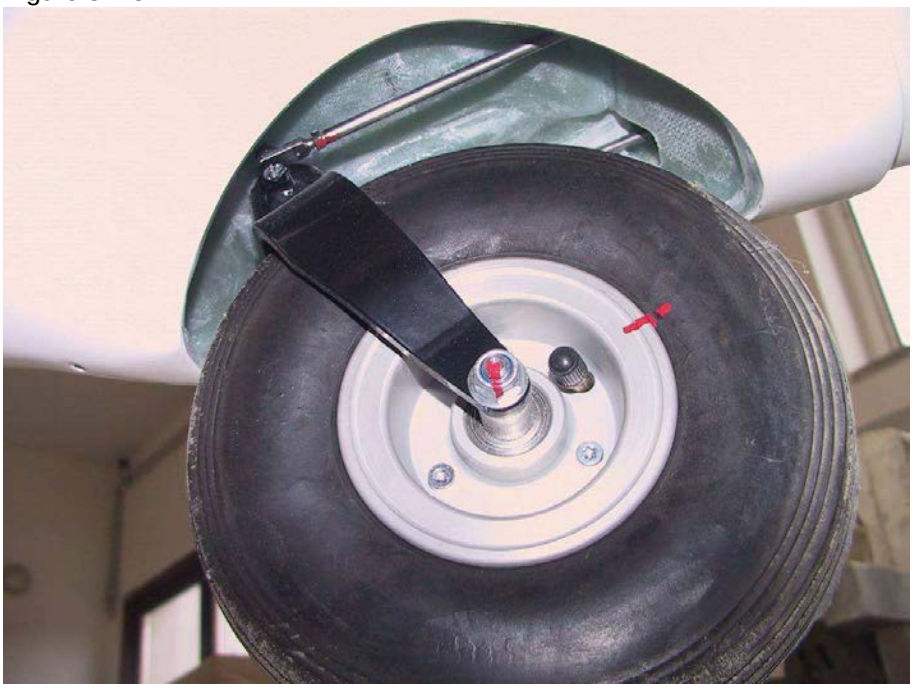
Tools, Ground Equipment and Control & Measure Instruments
A support under the fuselage back
Consumable Supplies
They are not used.
Staff Member Number
One

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Comment
For tail skid and landing gear rear wheel inspection it is necessary to lift off the aircraft fuselage back a bit and secure it by a support.
Lift the aircraft fuselage back off and place the support under it.

TAIL SKID AND REAR TIRE CONDITION INSPECTION
Check rear wheel tire condition, which is not allowed to show a completely worn tread pattern, corrosion, cracks, scratches or protective coating damage.
Warning
In case of discovering tire tread pattern excessive wear it is necessary to replace it.
Check the aircraft rear wheel tire condition; the tire tread pattern is not allowed to show wear, cracks and other damage.
Check whether the aircraft rear wheel tire and disk red marks correspond to each other (the tire is not allowed to be turned regarding the disk).
Check the aircraft rear wheel tire valve, the tire valve is not allowed to show wear and it has to be covered by a cap.
Check the tire inflation correctness of the aircraft landing gear rear wheel (the wheel tire inflation has to be 180+10KPa).

Check the rear wheel tailskid condition, the tailskid is not allowed to show cracks, scratches or protective coating damage.
Check the tailskid suspension in the rear wheel shaft, the tailskid suspended is not allowed to show any axial or radial clearance.
Check both rods operating the tailskid condition, they are not allowed to show wear, cracks or other damage.
Check blocking by a locknut, a lock washer and forks paint of both rods operating the tailskid.
Check blocking and entireness of 2 pins connecting forks of both rods to the console operating the tail skid.
Check the washer entireness, nut tightness and rear wheel pin axis blocking by a mark.
Check a wheel radial and axial clearance regarding a rear wheel axis (the wheel is not allowed to show any clearance).

FINAL WORKS
Remove the support of the fuselage rear part from the aircraft and put the fuselage rear part back to the tailskid wheel.
Figure 3 – 3



3.4.1.7 CONTROL SYSTEM INSPECTION
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
Hand-held flashlight
Mirror
Consumable Supplies
They are not used.
Staff Member Number
One

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

CONTROL SYSTEM INSPECTION IN THE AIRCRAFT COCKPIT

Check the directional control pedals condition whether the surface is clean and free of damage traces or whether they are not deformed in any way.
Verify proper attachment, tightness and entireness of 2 screws for directional control pedals console fixing to the aircraft pilots' cockpit floor, and blocking of 1 nut of the pedals left suspension.
Verify proper attachment, tightness and blocking of 1 nut of the directional control pedals right suspension.
Check tightness and blocking of 2 screws of ropes short operating rods forks for operating a rudder to the directional control ropes eyes.
Check tightness and blocking of short operating rods adjustable eyes to the directional control pedals consoles.
Check blocking of short operating rods adjustable eyes and short operating rods forks by a blocking wire.
Check blocking of short operating rods, eyes, and counternuts by a lock washer and by color marking.
Check the springs connection and blocking to the directional control pedals consoles and blocking by nuts.
Warning
The ropes are not allowed to show fraying or other damage signs (ropes maximum allowed wear - 3 wires can be broken; in case of a higher number of frayed strands or strands damaged in any way it is necessary to replace ropes).
Check the ropes condition and their connection to the short rods operating a rudder.
Verify the rudder operating system free operation by pressing the pedals down to the extreme positions.
Check both longitudinal and lateral control levers condition whether the surface is clean and free of damage traces or whether they are not deformed in any way.
Check fixing of a lever socket for operating brakes to the longitudinal and lateral control left lever.
Check the hydraulic fluid supply hose condition whether there is not ageing or other wear signs.
Verify a connection to the brakes control lever and check hose connection tightness.
Check textile bellows condition covering a connection of longitudinal and lateral control levers to the control block (the bellows are not allowed to be torn or worn in any way).
Check the longitudinal and lateral control levers pointers condition whether the surface is clean and free of damage traces.
Check the aircraft longitudinal balance lever whether it is not deformed or damaged in any way.
Pull both left and right pilots' seats out of the aircraft cockpit and put them at a predefined place.
Check the air-brakes control lever condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check a condition of 2 rods operating air-brakes and 2 rods operating winglets whether the surface is clean and free of damage traces or whether they are not deformed in any way.
Check connection and blocking of 4 screws of 2 rods operating air-brakes between a lever operating air-brakes console and a rear console suspension.
Check connection and blocking of 4 screws of 2 rods operating winglets between a lever operating the lateral control console and a rear console suspension.
Verify free operation of the system operating lateral and longitudinal control by placing the joystick in its extreme positions.

CONTROL CONNECTION TO THE CONTROL SURFACES INSPECTION

Deflect a rudder surface in an extreme max displacement.
Check the rudder control ropes eyes connection to the rudder console.
Check the ropes condition whether there are not wear or fraying signs.
Check tightness and blocking of 2 nuts, 2 screws and ropes connection to the rudder console.
Deflect the elevator surface towards drawing close in a max displacement.
Warning
The elevator control lever bearing has to be fully inserted in the console of the last elevator pulling rod.
Check a connection of the elevator control lever bearing to the console of the last rod pulling elevator.
Check the console and the elevator control lever bearing condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the connection of the winglet last pulling rod eye to the lever operating the winglet.
Check the winglet last pulling rod and operating lever condition whether the surface is clean and free of damage traces or whether they are not deformed in any way.

FINAL WORKS

Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

3.4.1.8 AIRCRAFT CONTROL SURFACES DISPLACEMENTS INSPECTION
Warning
Register all rudders displacements measured values in the enclosed aircraft record.
Comment
Displacements in millimeter values are measured at the trailing edge, at the control surface bracket from the rotation axis.
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
Winglets displacements angle gauge
Rudder displacements angle gauge
Elevator displacements angle gauge
Steel measuring rule
Consumable Supplies
They are not used.
Staff Member Number
Two
PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
Lift the fuselage rear part off and support it.
WINGLETS DISPLACEMENTS INSPECTION
Comment
Both left and right winglet displacement has to be in the range of $28_o \pm 1_o$ (88±3 mm) up and $15_o \pm 1_o$ (47±3 mm) down.
Deflect the lateral control joystick to the left to stop and hold it.
Place an angle gauge to the wing trailing edge and read a left winglet max displacement.
Deflect the lateral control joystick to the right to stop and hold it.
Place an angle gauge to the wing trailing edge and read a left winglet max displacement.
Repeat the operation of a. - d. clauses for a right winglet.

ELEVATOR DISPLACEMENTS INSPECTION
Comment
The elevator displacements have to range between $24_o \pm 2_o$ (95±8 mm) up and $12_o \pm 2_o$ (48±8 mm) down.
Place the elevator displacements angle gauge at the stabilizer end curve from the right side.
Deflect the joystick towards pushing away to stop and hold it.
Read the elevator max displacement in the downwards position.
Deflect the joystick towards drawing close to stop and hold it.
Read the elevator max displacement in the upwards position.

RUDDER DISPLACEMENTS INSPECTION
Comment
Rudder displacements have to range within $25_o \pm 2_o$ (190±8 mm) both to the left and to the right.
Place a rudder displacements angle gauge from the left side at the tail fin leading edge.
Press down on the directional control pedals to stop so that the rudder deflects to the left and hold them.
Read the rudder max displacement at the left position.
Press down on the directional control pedals to stop so that the rudder deflects to the right and hold them.
Read the rudder max displacement at the right position.

FINAL WORKS
Close the aircraft cockpit overlap according to the Technical Inspection 3.4.2.3.
Remove the support of the aircraft fuselage rear part and place the fuselage rear part to the tail skid wheel.

3.4.1.9 WIRING AND DASHBOARD INSTRUMENTS INSPECTION
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works on the aviation technology.
Tools, Ground Equipment and Control & Measure Instruments
Hand-held flashlight
Mirror
Consumable Supplies
They are not used.
Staff Member Number
One
PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Open the aircraft cockpit overlap according to the Technical Inspection 3.4.2.3.
INSTRUMENTS AND DASHBOARD INSPECTION
Check the dashboard front panel condition whether the surface is clean and free of damage traces and whether it is not deformed in a different way.
Check the entireness and tightness of all screws fixing single instruments to the dashboard.
Check screw heads condition whether the screw head slots are not worn.
Check the instruments glasses whether the surface is clean and free of breaks and scratches traces and whether they are not damaged in a different way.
Check all instruments identification condition and correctness whether it corresponds to the data of the aircraft documentation.
Check all dashboard circuit breakers and changeover switches condition whether the surface is clean and free of damage traces or whether they are not deformed in a different way.
Check the fuel lever condition, free operation and whether the surface is clean and free of damage traces and whether it is not deformed in a different way.
Check the fuel valve condition whether there is no wear or other deformation, and whether there is free operation in its extreme positions.
Check a wiring all connectors' correct connection to the dashboard instruments and to changeover switches whether they are duly connected and locked.
Check the dashboard wiring cabling whether they are not worn, broken or twisted off or whether their shielding is not damaged.
Check the battery, its cover and supply cables condition regarding scorching, release or different wear.
Check all warning and information labels condition and entireness in the aircraft cockpit (the labels have to be clean and readable, they are not allowed to be damaged.
FINAL WORKS
Close the aircraft cockpit overlap according to the Technical Inspection 3.4.2.3.
3.4.1.10 MOTOR INSPECTION
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works on the aviation technology.
Tools, Ground Equipment and Control & Measure Instruments
Hand-held flashlight
Mirror
Consumable Supplies
Clean dry cloth
Staff Member Number
One
PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.

Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3. c. Dismount motor cowls according to the Technical Inspection 3.4.2.4
Check the floor, pilot's cockpit side right inner part and motor partition right front inner part condition in the right pilot's area under the dashboard whether the surface is clean and free of damage traces or whether it is not deformed in a different way and whether there are not some extraneous items in that area.
Verify proper attachment, tightness and blocking of 1 nut of the directional control pedals right suspension.
Pull the right pilot's seat out of the aircraft cockpit and put it at a predefined place.
Check the seat belts condition whether the surface is clean and free of damage traces and whether they are not frayed, cut or damaged in any way.
Verify seat belts locking and unlocking function correctness to their main safety lock.
Verify length adjustment of single seat belts.
Check single belts correct fixing in their suspensions.
Check the seat tray condition in the area under the aircraft right pilot's seat sitting part whether the surface is clean and free of damage traces or whether it is not deformed in any way and whether there are not extraneous items in that area.
Check the area behind the aircraft right pilot's seat head rest to the pilots' cockpit rear partition whether the surface is clean and free of damage traces or whether it is not deformed in any way and whether there are not extraneous items in that area.

Warning

During a king pin inspection it is necessary to verify its correct orientation. Its handling part in a blocked position has to be turned through an angle of 180° to the right to a horizontal plane, and at the same time it has to be forelocked at its rear part and locked by a locking wire.
Check both wing root halves king pin blocking.
Check the pilots' cockpit rear partition whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the luggage spaces beyond the aircraft pilots' seats whether the surface is clean and free of damage traces or whether it is not deformed in any way and whether there are not extraneous items in that area, and whether the space textile stiffening is not damaged.
Check the dashboard front panel and its upper part whether the surface is clean and free of damage traces or whether it is not deformed in any way.
Check the seats textile parts condition whether its surface is clean and free of damage or tear and fraying traces.
Check the seats laminate part condition whether the surface is clean and free of damage traces or whether it is not deformed in any way.

FINAL WORKS

Warning

The seats of both pilots are distinguished to the left side and the right one thence it is necessary to respect their original positions.
Put both pilots' seats back to their original positions.
Close and lock the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

3.4.1.11 MOTOR PARTITION AND ITS PROTECTIVE FIREPROOF LAYER CONDITION INSPECTION

Comment

When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments

Hand-held flashlight
Mirror

Consumable Supplies

They are not used.

Staff Member Number

One

PREPARATION

Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Dismount the motor cowls according to the Technical Inspection 3.4.2.4.

MOTOR PARTITION AND ITS PROTECTIVE FIREPROOF LAYER CONDITION INSPECTION

Check the protective fireproof layer condition and whether the surface is clean and free of damage traces

and whether it does not show cracks, cutting or detachment from the motor partition signs.
Check the fireproof layer attachment condition of the passage between the motor partition and the oil tank.

FINAL WORKS

Mount the motor cowls according to the Technical Inspection 3.4.2.4.

3.4.1.12 PROPELLER INSPECTION Figure 3 - 5

Comment

When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments

Flat screwdriver

Consumable Supplies

They are not used.

Staff Member Number

One

PREPARATION

Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
Remove the propeller blades protective cover.

PROPELLER INSPECTION

Check the surface, propeller blade ends and both propeller blades leading and trailing edges regarding wear, chipping, fractures or other wear.
Loosen and unscrew 6 screws fastening the propeller taper to the propeller axis collar and put them at a predefined place.
Check tightness and blocking of 2 screws fastening the propeller axis front part to the propeller center.
Check tightness and blocking of 1 screw blocking the propeller axis front part.
Check 2 nuts blocked by 2 blocking screws fastening the propeller blades to its center.
Check blocking of 2 propeller blades cap nuts by 2 screws to the propeller center.
Check tightness and blocking of 6 nuts of 6 screws holding the propeller collar to the aircraft motor shaft flange.

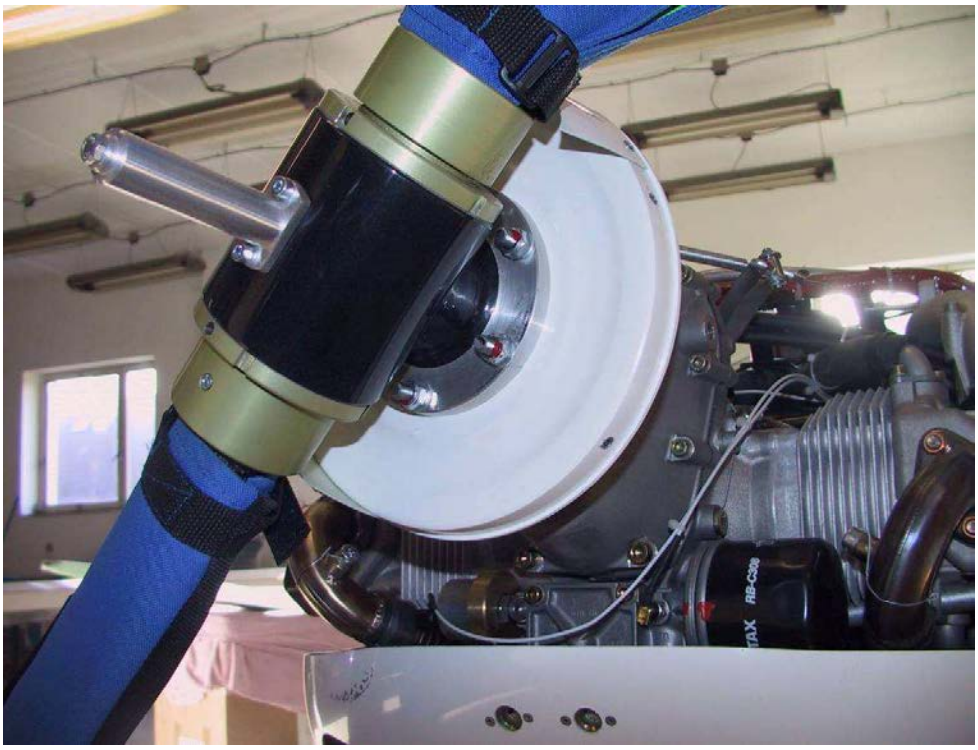
Warning

The propeller is not allowed to show any clearance in its seating.
Verify manually the propeller clearance in the radial and axial direction.
Check blocking and tightness of 1 screw of the spring console for controlling propeller servo adjustment.
Check blocking of 1 pin fixing the lever for controlling the propeller blades to the motor block console.
Check fastening and blocking of 4 screws holding the console to the motor block.
Check blocking of 1 pin at the rope lever for operating the propeller servo.
Check tightness and blocking of 1 nut blocking the rope for operating the propeller servo regarding the pin in the lever.
Check the rope condition whether it is not frayed and whether it does not show corrosion signs and whether it is not worn in any way.
Check the rope Bowden cable for operating the propeller servo whether it is not damaged, twisted or deformed in any way and whether it is not too tight from the lever to the passageway in the motor partition.
Enter the aircraft cockpit.
Check the Bowden cable from the passageway in the motor partition to the servo for operating the propeller blades adjustment whether it is not damaged, twisted, tightened or deformed in any way.
Check fixing and blocking of the Bowden cable to the lever operating propeller servo pin.
Check tightness and blocking of 2 nuts and 2 screws fastening the lever for operating propeller blades to the console in the directional control ropes middle channel.
Check the lever for operating propeller servo condition whether it is not broken or damaged in any way.
Test the lever and the whole system for operating propeller servo adjustment free operation by placing the lever from one position to the other several times (about 5 times).

FINAL WORKS

Put the spinner over the propeller blade center and match the screw openings in the propeller spinner edges with stopnuts in the propeller axis collar edge.

Screw on and firmly tighten 6 screws fastening the propeller spinner to the propeller collar.
Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
Put the propeller blades protective cover on.



3.4.1.13 FUEL TANKS AND FITTING TIGHTNESS INSPECTION
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
They are not used.
Consumable Supplies
Clean dry cloth
Staff Member Number
One

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Open the aircraft cockpit overlap according to the Technical Inspection 3.4.2.3.
Pull both pilots' seats out of the cockpit.

FUEL TANKS AND FITTING TIGHTNESS INSPECTION
Check the drain valve at the wings to see that it does not show leaks or is not damaged in any way.
Check the surface bottom, leading, and trailing edges of both wing halves at the position of fuel tanks to see that fuel does not permeate.
Check to see that both filler caps are well screwed in and tightened.
Check the connection tightness of fuel supply tubing to tanks in the aircraft cockpit at both left and right fuselage sides.
Check connections at the steel pipes of the fuel supply tubing to see that they are not burst, damaged or deformed.
Check all fuel tubing system regarding wear, leak, heat-scorching, porosity, fixing at outlets, blocking throughout without turning points and sharp bends.
Check fuel indicator cable connection.

FINAL WORKS
Put both pilots' seats in the cockpit.
Close the aircraft cockpit canopy.

3.4.1.14 TOWING GEAR INSPECTION
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments
They are not used.
Consumable Supplies
They are not used.
Staff Member Number
One

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.

TOWING GEAR INSPECTION
Clean up towing gear and internal area switches from dirt.
Check proper fixing, corrosion occurrence, deformations, fractures and blocking of the towing gear rope at the rear fuselage.
Warning

The rope is not allowed to show fraying or other damage signs (maximum allowed ropes wear - 3 wires can be broken; in case of a higher number of frayed strands it is necessary to replace the rope).
Check rope condition to see that there is not wear or signs of fraying.
Check proper rope fixing and blocking to the console.
Check the towing gear control function and check switches by towing rope repeated connecting and disconnecting.

3.4.2 Technical Cards for Prescribed Works
Comment
For this manual scope the replacement and adjustment procedures, which are identical for both aircraft sides, are described only for the aircraft left side.

3.4.2.1 AIRCRAFT CLEANUP FROM DIRT

Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments

They are not used.

Consumable Supplies

Sponge
Clean dry cloth
Water

Staff Member Number

One

PREPARATION

Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Close and lock the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
Dismount main landing gear axle caps according to the Technical Inspection 3.4.2.5.

AIRCRAFT SURFACE CLEANUP FROM DIRT

Warning
Before starting the aircraft surface washing it is necessary to verify whether the aircraft cockpit canopy and both lateral quarter vents are closed so that water is not running inside the aircraft cockpit pilot's area.
Wash motor cowlings, both upper and lower parts, propeller taper, propeller blades, both fuselage right and left sides from the cockpit canopy frame to the wing right and left halves leading edge by a sponge and dry them with a clean cloth.
Wash the aircraft fuselage bottom with a sponge and water in the area under the aircraft pilot's cockpit together with the whole main landing gear leg, and dry them with a clean cloth.
Wash the aircraft wing right upper half with a sponge and water and dry it with a clean cloth.
Wash the aircraft wing right lower half and the fuselage right side from the wing lower covering to the lower aircraft fuselage part with a sponge and water, and dry them with a clean cloth.
Wash the fuselage upper part from the cockpit canopy rear frame to the both aircraft wing halves with a sponge and water, and dry it with a clean cloth.
Wash the whole fuselage rear part, incl. its bottom part, from the wing trailing edge to the tail fin leading edge with a sponge and water, and dry it with a clean cloth.
g. Wash stabilizer covering and elevator both upper and lower parts with a sponge and water, and dry them with a clean cloth.
Wash the tail fin and rudder both halves with a sponge and water and dry them with a clean cloth.
Eliminate dirt (mud), possibly extraneous items from a shaft, fork and tailskid wheel in the fuselage back.
Wash a shaft, fork and tail skid wheel of the fuselage back with a sponge and water, and dry them with a clean cloth.
Wash the aircraft wing left upper half with a sponge and water and dry it with a clean cloth.
Wash the aircraft wing left lower half with a sponge and water and dry it with a clean cloth.
Eliminate dirt (mud), possibly extraneous items from the main landing gear axle caps internal part, wash

them with a sponge and water, and dry them with a clean cloth.
Eliminate dirt, mud, and possibly extraneous items from the main landing gear wheels and from the main landing gear leg, wash them with a sponge and water, and dry them with a clean cloth.
Wash the aircraft cockpit canopy from its external part with a clean cloth and soap water solution, and dry it with a clean cotton cloth.
Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
Wash the aircraft cockpit canopy from its internal part with a clean cloth and soap water solution, and dry it with a clean cotton cloth.
FINAL WORKS
Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

3.4.2.2 AIRCRAFT PREPARATION FOR OPERATION AND MAINTENANCE
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
They are not used.
Consumable Supplies
They are not used.
Staff Member Number
Two.

AIRCRAFT PREPARATION FOR OPERATION AND MAINTENANCE
Warning
When pushing the aircraft out from the hangar take great care not to damage the wing end curves.
Push the aircraft out from the hangar to the place predetermined for the aircraft maintenance.
Open the aircraft canopy according to the Technical Inspection …
Comment
In case the power supply is off all the dashboard switches have to be switched down.
Verify that all electric network switches and the aircraft power supply are off.
Verify the aircraft motor starter switching-out, the key is not allowed to be in the ignition system.
Verify the fuel valve is switched to the central position (off).
Warning
When starting any operation at the aircraft it is essential that the aircraft rescue system is blocked because of a possibility of staff serious injury.
Verify that a locking pin is installed in the rescue system initiation lever.
Comment
Block the brake control lever by screwing the aircraft control lever pointer front part screw into position.
Block the aircraft by a parking brake against unwanted movements.
Put blocks under the main landing gear wheels.

3.4.2.3 AIRCRAFT COCKPIT CANOPY OPENING AND CLOSING
Warning
Before opening the aircraft canopy verify that the canopy rear blocking lock is unlocked.
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
They are not used.
Consumable Supplies
They are not used.
Staff Member Number
One.

PREPARATION
Warning
In case of handling lateral quarter vents be very careful not to get through the vents or not to

damage them in any way.

AIRCRAFT COCKPIT CANOPY OPENING

Unlock canopy latch

Lift the aircraft cockpit canopy off a bit by hand upwards and push it up and forward.

AIRCRAFT COCKPIT CANOPY CLOSING

Move the canopy backward and push it to the aircraft cockpit frame.

FINAL WORKS

Push both aircraft cockpit canopy lateral vents in the flight direction to their extreme positions.

3.4.2.4 MOTOR COWLS DISASSEMBLY AND ASSEMBLY Figure 3 - 6

Comment

When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.

Tools, Ground Equipment and Control & Measure Instruments

Cross-point screwdriver

Flat screwdriver

Consumable Supplies

Clean dry cloth

Staff Member Number

One.

PREPARATION

Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.

MOTOR COWLS DISASSEMBLY

Loosen 13 rapid screws on the upper motor cowl by turning the cross-point screwdriver anticlockwise.

Carefully open the upper motor cowl in its front part and release both halves from the motor cowl safety lock.

Pull the motor cowl front part over the propeller axis.

Lift the upper motor cowl off and put it at a predefined place.

Warning

When dismounting the lower motor cowl take great care not to damage the cowl when handling it.

Loosen and unscrew 6 screws holding the lower cowl to the front aircraft part by a flat screwdriver anti-clockwise.

Pull off the lower aircraft motor cowl off and put it at a predefined place.

MOTOR COWLS ASSEMBLY

Comment

When mounting the lower motor cowl it is necessary that the opening for a radiator matches the air entrance to the motor radiator.

Put the lower motor cowl on the closing edge of the motor partition lower part by its rear part.

Match the screws openings in the motor cowl rear part to the stopnuts in the motor partition lower part.

Screw on and firmly tighten 6 screws holding the lower motor cowl to the motor partition lower part closing edge.

Put the upper motor cowl on the upper motor part so that the air inlets are orientated onwards in the flight direction.

Open carefully the upper motor cowl in its front part and pull it over the aircraft propeller axis.

Insert the left front motor cowl part into the safety lock.

Block the upper motor cowl by turning 13 rapid screws a bit clockwise.

FINAL WORKS

Verify tightness of all screws of the motor cowls.

3.4.2.5 MAIN LANDING GEAR LEG WHEEL AXLE CAPS DISASSEMBLY AND ASSEMBLY

Comment