U15 Phoenix S-LSA Glider

SECOND HALF OF MANUAL

Maintenance Manual

Date of issue: November 10, 2010

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
Allan key No 8

Consumable Supplies

Clean dry cloth
Locking wire 0.8 mm

Staff Member Number

One.

PREPARATION

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

MAIN LANDING GEAR WHEEL AXLE CAPS DISASSEMBLY

Comment
During disassembly put all fasteners at a predefined place.
Unlock the locking wire of the aircraft landing gear wheel axle kingpin.
Loosen and unscrew 4 screws fastening the axle cap to the main landing gear leg.
Loosen and unscrew 1 king pin of the aircraft landing gear wheel axel.
Pull the main landing gear wheel axle cap off.

FINAL WORKS

Put the main landing gear axle cap together with the fasteners at a predefined place.

MAIN LANDING GEAR AXLE CAPS ASSEMBLY

Insert the main landing gear wheel axle cap so that a cut for the main landing gear leg is oriented towards the aircraft fuselage, and the main landing gear wheel axle cap leading edge is onwards in the flight direction. At the same time insert the axle cap king pin opening at the landing gear wheel axle.
Match the screw openings in the main landing gear wheel axle cap to the stopnuts in the main landing gear leg axle cap bracket.
Screw on and firmly tighten 4 screws to the main landing gear leg axle cap bracket.
Screw on and firmly tighten 1 pin in the aircraft main landing gear wheel axle.

FINAL WORKS

Lock 1 main axle pin of the aircraft landing gear wheel by a locking wire against loosening.

3.4.2.6 DIRECTIONAL CONTROL PEDALS GREASING

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

Hypodermic syringe

Consumable Supplies

Clean dry cloth

Benzine

Aero Shell Grease 33

Staff Member Number
One.

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

DIRECTIONAL CONTROL PEDALS GREASING
Wash remains of old grease from the middle pedals suspension and from springs operating pedals with benzine, and dry them with a cloth.
Grease the directional control middle pedals suspension by means of oil holes in the pedals suspension console.
Slightly grease 2 springs for operating the directional control pedals.
Wipe excessive grease off with a cloth.
Verify the whole directional control system free operation in max displacements.
FINAL WORKS
Close the aircraft canopy according to the Technical Inspection 3.4.2.3.

3.4.2.7 GREASING OF THE LEVER OPERATING THE AERODYNAMIC BRAKES

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
Hypodermic syringe
Consumable Supplies
Clean dry cloth
Benzine
Aero Shell Grease 33
Staff Member Number
One.

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

GREASING OF THE LEVER OPERATING THE AERODYNAMIC BRAKES
Wash remains of old grease from the lever drive middle suspension with benzine, and dry it with a cloth.
Grease the aerodynamic brakes lever drive middle suspension by means of oil holes in the drive suspension console.
Wipe excessive grease off with a cloth.
Verify the whole aerodynamic brakes control system free operation in max displacements.

FINAL WORKS
Close the aircraft canopy according to the Technical Inspection 3.4.2.3.

3.4.2.8 ELEVATOR CONTROL DRIVE GREASING

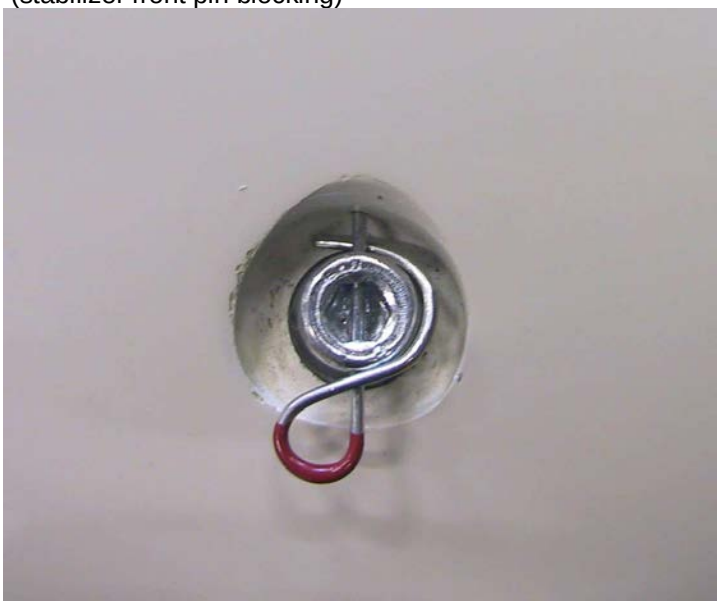
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
Hypodermic syringe
Flat pliers
Allan key No 8
Consumable Supplies
Clean dry cloth
Toluene

Aero Shell Grease 33
Staff Member Number
One.

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

ELEVATOR CONTROL DRIVE GREASING
Unlock and pull out a keep-pin blocking the stabilizer front suspension pin.
Loosen and unscrew a stabilizer suspension front pin.
Push a stabilizer back from the rear suspensions opposite the flight direction.
Lift a stabilizer off a bit and disconnect the flash beacon cabling connector.
Put the stabilizer at a predefined place.
Wash remains of old grease from the elevator last pulling rod console with toluene, and dry it with a cloth.
Grease the elevator pulling rod console.
Put grease in the oil hole of the elevator pulling rod rear suspension pin.
Wash old grease remains from the bearing of the lever operating the elevator with toluene, and dry it with a cloth.
Grease the bearing of the lever operating the elevator.
Wipe the excessive grease by a cloth.

FINAL WORKS
Hold the stabilizer with its leading edge in the flight direction above the tail fin and connect the flash beacon cabling connector.
Insert the stabilizer in the stabilizer rear suspensions and at the same time insert the bearing of the lever operating the elevator in the elevator last pulling rod console.
Match the stabilizer front suspension opening to a nut in the tail fin upper part.
Screw on and tighten a stabilizer front suspension pin.
Block a pin with a keep-pin against loosening.
Verify a correct stabilizer seating by moving it and verify the elevator control system free operation in it's max displacements.
*
(stabilizer front pin blocking)



3.4.2.9 STABILIZER SUSPENSIONS GREASING
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
Hypodermic syringe
Flat pliers
Allan key No 8
Consumable Supplies
Clean dry cloth
Toluene
Aero Shell Grease 33
Staff Member Number
One.

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Dismount the stabilizer according the Technical Specifications 3.4.2.8.

STABILIZER SUSPENSIONS GREASING
Wash old grease remains from 2 stabilizer suspensions, from a stabilizer front suspension nut thread and from a stabilizer front suspension pin with toluene, and wipe with a cloth.
Grease 2 stabilizer rear suspensions at the tail fin upper part.
Grease a stabilizer front suspension nut thread.
Slightly grease a stabilizer front suspension pin.
Wipe the excessive grease by a cloth.

FINAL WORKS
Mount a stabilizer according to the Technical Inspection 3.4.2.8.

3.4.2.10 RUDDER SUSPENSIONS GREASING
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
Hypodermic syringe
Consumable Supplies
Clean dry cloth
Toluene
Aero Shell Grease 33
Staff Member Number
One.

PREPARATION

Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Dismount the stabilizer according the Technical Specifications 3.4.2.8.

RUDDER SUSPENSIONS GREASING
Wash old grease remains from 1 rudder upper suspension and from 1 rudder lower suspension with toluene and wipe with a cloth.
Grease 1 rudder upper suspension at the tail fin upper part.
Grease 1 rudder lower suspension at the tail fin lower part.
Wipe the excessive grease by a cloth.

FINAL WORKS
Mount a stabilizer according to the Technical Inspection 3.4.2.8.

3.4.2.11 MAIN LANDING GEAR WHEEL BEARINGS AND TAIL SKID GREASING
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
Hypodermic syringe
Flat ring spanner No 13
Allan key No 5
Allan key No 6
Pincers
Flat pliers
A support under the fuselage back
Consumable Supplies
Clean dry cloth
Toluene
Aero Shell Grease 33
Staff Member Number
Two.

PREPARATION
Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
Dismount landing gear main wheels axle caps according to the Technical Inspection 3.4.2.5.
Lift the fuselage rear part off and support it.

TAIL SKID WHEEL BEARING GREASING
Loosen and unscrew a nut blocking the tailskid wheel main axle pin.
Pull off a nut and a washer from the pin and put it at a predefined place.
Take out the pin from the tailskid wheel fork and put it at a predefined place.
Pull out the wheel from the fork and put it at a predefined place.
Check the wheel bearing entireness and condition and whether the bearing is not corroded or worn in any way.
Wash remains of old grease from both bearing parts and the tailskid wheel main axle pin with toluene, and dry them with a cloth.
Grease both bearing parts.
Slightly grease the tailskid wheel main axle pin.
Put on the wheel in the fork and match the opening for the pin axle in the fork with (to) the wheel bearing opening.
Draw the pin through the fork opening from the fork right side in the flight direction and at the same time through the wheel bearing opening and pass it through the opening in the fork left side.
Put a washer on.
Warning
During the assembly it is necessary to use a new nut by reason of its single-use.
Screw on and tighten a nut to the pin thread.
Block the nut and pin with blocking paint.

Warning
When tightened the wheel is not allowed to show any radial and axial clearance and its movement has to be free on turning it and it is not allowed to show any run-out signs.
Check the tailskid wheel tightness and clearance firmness.
Remove the support of the fuselage rear part from the aircraft rear part and place the fuselage back on the tailskid wheel.

MAIN LANDING GEAR WHEELS BEARINGS GREASING
Dismount main landing gear wheel axle caps according to the Technical Inspection 3.4.2.5.
Lift the aircraft front part off a bit so that the main landing gear wheels do not touch the surface.
Support the fuselage front part.
Unlock the locking wire blocking 2 screws and holding the brake body to the landing gear main leg console.
Loosen and unscrew 2 screws and put it at a predefined place.
Take off the brake (4) body from the landing gear main leg console.
Warning
On dismounting the brake body it is necessary to fix it to the leg so that it does not lie on the ground and extraneous items cannot get inside.
Fix the brake body to the main landing gear leg so that it does not lie on the ground and the hydraulic fluid supply hose is not in tension.
Take off the wheel from the main landing gear wheel axle and put it at a predefined place.
Check the wheel bearing entireness and condition and whether the bearing is not corroded or worn in any way.
Wash remains of old grease from both bearing parts and the main landing gear wheel axle with toluene, and dry them with a cloth.
Grease both bearing parts.
Slightly grease the main landing gear wheel axle.
Put the wheel back on the landing gear main wheel axle.
Put the brake body back on the brake suspension console.
Screw on and tighten 2 screws blocking the brake body to the console.
Block 2 screws by a locking wire against loosening.

FINAL WORKS
Remove the support from the fuselage front part from the aircraft and position the aircraft back to the landing gear main wheels.
Mount landing gear main wheels axle caps according to the Technical Inspection 3.4.2.5.

3.4.2.12 WING MAIN SUSPENSIONS GREASING
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

Pincers
Flat pliers
Flat screwdriver

Consumable Supplies

Clean dry cloth
Toluene
Aero Shell Grease 33

Staff Member Number

Three.

PREPARATION

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

WINGS DISASSEMBLY FROM THE AIRCRAFT FUSELAGE

a. Place the aircraft at a surface with enough space for pulling the wings out from the aircraft.
b. Verify motor activation ignition system is off.
c. Verify of all electric system switches are off.
d. Verify that the aircraft is blocked against unwanted movements.

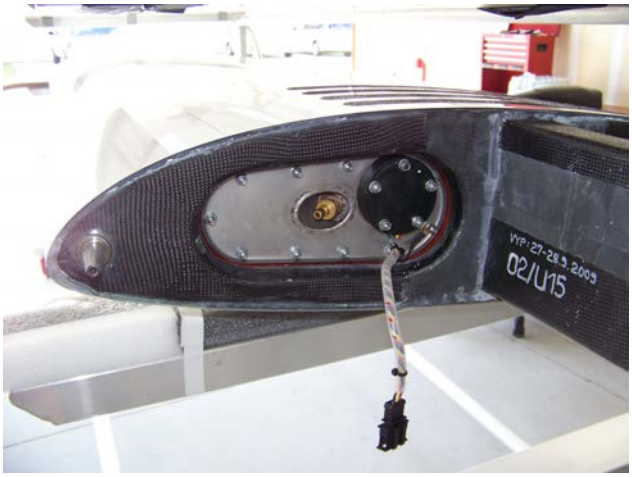
Caution

On discharging the fuel from the aircraft wings pay attention to all safety regulations because an aircraft fire can take place and fuel is a hazardous material.

e. Remove all fuel from the wing tanks by means of the fuel drain valve.
f. Disconnect the electric connectors connecting cables to the fuel sensors.
g. Place the spoiler handle in the middle position (unlocked).
h. With a person on each wing end or by using one wingstand support both wings.
i. Unlock both aft spar pins by pulling out on the pin loop and swivel to lock in the open position.

j. Pull the safety pin and unscrew the safety bolt from the main wingpin.
k. Rotate wingpin up and to the right side of the aircraft to loosen cam action of pin.

l. Pull wingpin from the spars and place on a rag.
m. Slide right wing out of fuselage 4 inches to access fuel line, and disconnect fuel line.
n. Make sure all wires are clear to slide out of fuselage.
o. Remove right wing and place on a well padded wing rack.



p. Slide left wing 4 inches out of fuselage.
q. Disconnect 2 fuel lines (feed and return), static and pitot tubes.
r. Remove wing from fuselage and place on a well padded wing rack.

WING MAIN SUSPENSIONS GREASING

a. Check both wings main suspensions, their condition, whether they have any wear, other deformation or corrosion signs.

b. Wash remains of old grease from the wings main suspensions with toluene, and dry them with a cloth.

c. Wash remains of old grease from the openings at the left and right parts of the aircraft fuselage central wing with toluene, and dry it with a cloth.

d. Grease both wings main suspensions.

e. Grease openings for wings main suspensions at the aircraft central wing.

f. Wipe excessive grease around wings pivots and openings from wings main suspensions at the aircraft central wing.

WINGS ASSEMBLY TO THE AIRCRAFT FUSELAGE

Caution

On discharging the fuel from the aircraft wings pay attention to all safety regulations because an aircraft fire can take place.

Warning

On wings insertion in the aircraft fuselage it is necessary that three staff members are present so that wings or aircraft fuselage are not damaged.

Warning

On pushing the wings back in the aircraft fuselage be very careful not to damage fuel supply

hosepipes and fuel indicator wires, and at the same time pass them through openings for fuel hose fitting and fuel indicator plugs.
a. Verify placing of the lever operating the aerodynamic brakes in the open position.
b. Take the left wing with the assistance of two staff members and take it to the aircraft.
c. Slowly insert the left wing by its root into the aircraft fuselage with the second staff member assistance. Attach the fuel lines and air tubes with wing 4 inches from the fuselage.
d. Insert the left wing rear spar pin.
Warning
Hold with the assistance of one staff member the left wing so that the aircraft is not unbalanced.
e. Take the right wing with the assistance of two staff members to the aircraft and insert to within 4 inches of the fuselage to connect the fuel line.
f. Insert slowly the right wing into the aircraft fuselage with the second staff member assistance and at the same time the third staff member has to slightly lift the left wing until the right wing is completely inserted.
g. Insert the right wing rear spar pin.
h. Pull forward with both wings from the wingtips to scissor the wings tightly together.
i. Insert the main spar pin with the handle to the right.
Comment
The blocking keep-pin is a part of the spar pin and it is attached to it with a rope.
j. Slightly turn the spar pin through an angle of 180° to the left in the flight direction and insert the safety bolt.
k. Block the safety bolt by a locking wire.
l. Connect the electric connectors to the fuel sensors.
Caution
On refuelling it is necessary to ground the filler and at the same time the aircraft has to be grounded.
p. Refuel both aircraft wing tanks.
q. Check for fuel leaks.

FINAL WORKS
a. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

3.4.2.13 WING AUTOMATONS GREASING Figure 3 - 15
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
Pincers
Flat pliers
Consumable Supplies
Clean dry cloth
Toluene
Aero Shell Grease 33
Staff Member Number
One.

PREPARATION

a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Dismount the aircraft wings according to Technical Inspection 3.4.2.12.

WING CONTROL CONNECTION GREASING
a. Wash remains of old grease from bearings of the levers operating balance winglets and aerodynamic brakes at the wing first fin, with toluene and dry them with a cloth.
b. Wash remains of old grease from the consoles in the central wing passageways with toluene and dry them with a cloth.
c. Check the consoles condition in the central wing passageways for wear, deformations or cracks and whether the pulling rods are properly linked to them and corrosion signs.
d. Check the levers condition at the wing first fin for deformations, cracks, protective coating damage and corrosion signs.
e. Check levers suspension and blocking in consoles for clearances, wear or corrosion signs and free operation.
f. Check consoles suspension and blocking by 4 screws to the aircraft wing first fin.
g. Check the operating rods forks for deformation, corrosion or other damage signs.
h. Check the forks in the operating rods for lock washers and counternuts.
i. Check the operating rods forks connection to the levers that screws self-locking nuts are properly tightened with no corrosion signs.
j. Check free operation of the operating rods in the wing first fin passageways and whether there are sufficient clearances between passageways edges at the aircraft wing first fin and the pulling rods themselves.
k. Check bearings for damage, wear or corrosion signs.
l. Grease the lever ends bearings.
m. Grease the levers bearings in the suspension to the consoles.
n. Slightly grease both external and internal console surfaces in the central wing passageways.

FINAL WORKS
a. Mount the aircraft wings according to Technical Inspection 3.4.2.12.
b. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

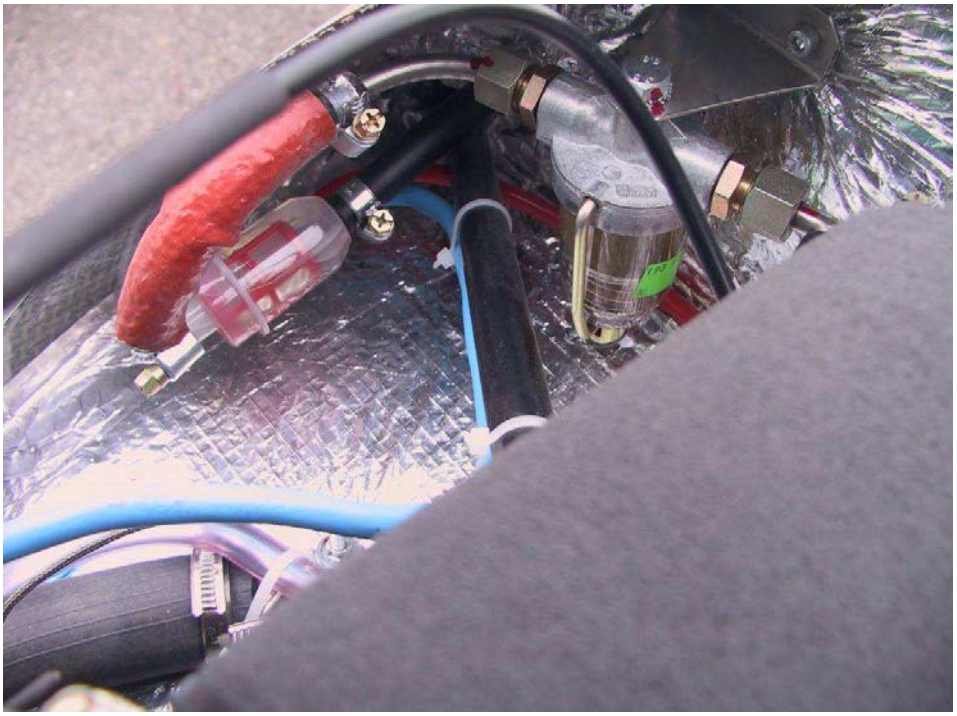
3.4.2.14 FUEL FILTER DISASSEMBLY AND REPLACEMENT
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
Cross-point screwdriver
Consumable Supplies
Clean dry cloth
Staff Member Number

One.

PREPARATION
a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Dismount the motor upper cowl according to the Technical Inspection 3.4.2.4.

FUEL FILTER DISASSEMBLY AND REPLACEMENT
a. Release the clamping socket with a screw at the fuel supply hose to the filter.
b. Release the clamping socket with a screw at the fuel outlet hose from the filter.
c. Take off both hoses ends from both fuel filter sides.
d. Plug both hose ends against fuel leakage.
e. Pull out the fuel filter from the motor area and put it at a predefined place.
f. Remove blind flanges from both hoses ends.
g. Insert a new filter with its narrower end at the fuel supply hose opposite the flight direction.
h. Tighten a socket for blocking a fuel supply hose connection with a screw.
i. Insert a new filter larger side in the flight direction to the hose of the fuel outlet from the filter.
j. Tighten a socket for blocking a fuel outlet hose connection with a screw.

FINAL WORKS
a. Verify tightness of both connected fuel hose ends.
b. Mount the motor upper cowl according to the Technical Inspection 3.4.2.4.
c. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.



3.4.2.15 FUEL DRAINING
Caution

Fuel draining should be done before each flight day to eliminate dirt or water from the fuel.
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

Fitting for fuel draining
Bottle for fuel sampling (0.5 liters)

Consumable Supplies

Clean dry cloth

Staff Member Number

One.

PREPARATION

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

FUEL DRAINING

a. Put the fitting for fuel draining on the drain valve.
b. Place a bottle for fuel sampling under the fitting for fuel draining.
c. Push the drain valve with fitting in the direction towards the wing undersurface (the fuel starts running from the tank).
d. Take up approximately three quarters of the fuel sample bottle.
e. Loosen the drain valve with fitting in the downward position from the wing undersurface (the fuel stops running from the tank).
Comment
If the fuel shows dirt or water it is necessary to repeat draining until the fuel is clean.
f. Continue until the fuel does not contain dirt or water.
g. Repeat the procedure with the second fuel tank.

FINAL WORKS

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

3.4.2.16 PILOT'S AREA CLEANUP FROM DIRT AND EXTRANEOUS ITEMS

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

Vacuum cleaner
Bucket

Consumable Supplies

Clean dry cloth
Soap water solution

Staff Member Number

One.

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

PILOT'S AREA CLEANUP FROM DIRT AND EXTRANEOUS ITEMS
a. Wash dirt from the pilot's area cockpit floor and sides with water and a cloth.
b. Wash dirt from the motor partition internal part under the dashboard with water and a cloth.
c. Wash the area behind the pilots' seats as well as the cockpit area rear partition with water and a cloth.
d. Dry both pilot's area with a dry cloth.
e. Clean extraneous items with a vacuum cleaner in the pilot's area.

FINAL WORKS
a. Check proper elimination of extraneous items from the whole pilot's area.
b. Put both pilots' seats back in the cockpit.
c. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

3.4.2.17 MAIN LANDING GEAR, TAIL SKID SHAFT AND TAIL SKID WHEEL AXLE CAPS CLEANUP

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
Bucket
A support under the fuselage back

Consumable Supplies
Clean dry cloth
Soap water solution

Staff Member Number
One.

PREPARATION
a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Dismount main landing gear axle caps according to the Technical Inspection 3.4.2.5.
c. Lift the fuselage rear part off and support it.

MAIN LANDING GEAR, TAIL SKID SHAFT AND TAIL SKID WHEEL AXLE CAPS CLEANUP
a. Eliminate mud pieces, other dirt and extraneous items from the main landing gear axle caps internal part.
b. Wash dirt remains of the main landing gear axle caps internal part with water and a cloth, and dry it with a cloth.
c. Wash dirt of the main landing gear axle caps external part with water and a cloth, and dry it with a cloth.
d. Eliminate mud pieces, other dirt and extraneous items from wheel, their disks and brakes.

e. Wash dirt remains off the wheels, their disks and brakes with water and a cloth, and dry them with a cloth.
f. Eliminate mud pieces, other dirt and extraneous items from the tailskid wheel shaft internal part.
g. Wash dirt remains of the tailskid wheel shaft with water and a cloth, and dry it with a cloth.
h. Eliminate mud pieces, other dirt and extraneous items from the tailskid wheel fork surface.
i. Wash dirt remains of the tail skid wheel fork surface with water and a cloth, and dry it with a cloth.
j. Eliminate mud pieces, other dirt and extraneous items from tailskid wheel and its disk.
k. Wash dirt remains off the tail skid wheel and its disk with water and a cloth, and dry them with a cloth.

FINAL WORKS
a. Remove the support of the fuselage rear part from the aircraft rear part and position the fuselage back to the tailskid wheel.
b. Mount main landing gear axle caps according to the Technical Inspection 3.4.2.5.

3.4.2.18 MOTOR TEST
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
Main landing gear wheels chocks
Ropes for aircraft anchorage
Fire extinguisher
Consumable Supplies
Clean dry cloth
Staff Member Number
Two.

PREPARATION
a. Move the aircraft to a space predetermined for a motor test.
b. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
c. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
d. Place the main landing gear wheels chocks against unwanted movements and engage the parking brake.
e. Dismount the motor upper cowl according to the Technical Inspection 3.4.2.4.

MOTOR TEST
Caution
During the motor test it is necessary that two staff members are present one of which makes the motor test in the aircraft cockpit and the other is predetermined for a motor inspection during the motor test regarding service fluids leakage or unexpected fire.
Caution
During the motor test a fire extinguisher has to be close to the aircraft for possible aircraft fire.
Caution

During the motor test it is prohibited to approach the motor front part so that any staff injury or death does not occur by a rotating propeller.
Caution
During the motor test the aircraft cockpit canopy has to be closed and locked.
a. Check all service fluids refilling to a prescribed value.
b. Check the motor area whether extraneous items are not there.
c. Check the propeller fixing and blocking.
d. Secure the area around the propeller so that no injury or death risk occurs for involved people.
e. Enter the aircraft cockpit.
f. Close the aircraft canopy according to the Technical Inspection 3.4.2.3.
g. Verify that all changeover switches are off and that the rescue system initiation lever is blocked.
h. Open a fuel valve (if the electric fuel pump is mounted, switch it on and check the fuel pressure increase at the indicators).
i. Use the choke.
j. Set the throttle lever to idling speed.
k. Switch on the master switch.
l. Switch on both ignition circuits.
Comment
When starting the motor it is necessary to start up max 10 sec non-stop, then apply cooling pause (2 min).
m. Start the motor.
Comment
If you start the motor up at low temperature, watch whether the oil pressure does not exceed a max value of 7 bar after starting up. In this case rev down to the lowest possible revolutions.
When the motor is started up, supervise oil pressure (it has to increase during 10 sec).
o. Let the motor run at 2,000 rpm for about 2 min.
p. Rev up and at 2,500 rpm heat motor until the oil temperature and cylinder heads temperature does not show a min prescribed value of the indicators.
Comment
You can increase rpm in case of steady pressure values more than 2 bar.
q. Check the oil pressure and temperature.
r. Adjust the revolutions at 4,000 rpm and switch the first ignition system circuit off (the revolutions drop is not allowed to exceed -300 rpm).
s. Put the switch back to ON position and switch off the second ignition system circuit after 5 seconds (a revolutions drop is not allowed to exceed -300 rpm and the difference between both circuits should not be higher than 180 rpm).
t. Switch the second circuit back to ON position.
u. Verify the flash beacons function.
v. Verify the lateral, longitudinal and directional control free operation.
Comment
Max rpm is specified in the aircraft record and it depends on the applied propeller.
w. Rev up at full power and check whether the motor reaches the max rpm.
x. Rev down at min values and let the motor running at low rpm for motor cooling so that evaporation and bubbling in the cooling and fuel system does not occur.
Caution
Always switch off the motor and take the key out.

y. Switch the motor off.

FINAL WORKS
a. Close the fuel supply valve.
b. Switch off all electric system circuit breakers switches; verify motor activation switching-out and key removal.
c. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
d. Get out the aircraft cockpit.
Caution
Do not open the hot cooling system cap by quick movement. Sudden opening can cause hot fluid gush followed by scalding.
Warning
Always refill service fluids with a motor cooled down.
e. Refill motor oil and cooling fluid as necessary.
Warning
If you have replaced the oil filter, it is necessary to tighten it once more when the motor test is over.
f. Check the motor all aggregates, supply pipeline and service fluids tubing tightness.
g. Release the parking brake.
h. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
i. Mount the motor upper cowl according to the Technical Inspection 3.4.2.4.
j. Remove the chocks from the main landing gear wheels and move the aircraft to a predefined place.

3.4.2.19 COMPASS COMPENSATION
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
Three.

PREPARATION
Warning
For the compass compensation it is necessary that the defined organization is equipped with a compass base.
a. Move the aircraft to the space predetermined for the aircraft compensation.
b. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
c. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

COMPASS COMPENSATION
Comment
During the compass compensation always three staff members have to be present, one of them makes a compass compensation in the cockpit, and the other two members rotate the aircraft in the prescribed direction.
a. Enter the aircraft cockpit.
b. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

Warning
When you compensate the compass it is always necessary to start the aircraft motor up so that all aircraft instruments are activated.
Comment
Make this operation throughout the circle of 360 ° in all predetermined directions according to the instructions for use and maintenance of the compass used in the given aircraft type.
Comment
Before moving the aircraft in another direction it is necessary to switch off the motor.
c. Start the aircraft motor and check the compass adjustment progressively in all directions.
d. Switch the aircraft motor off.
e. Open the aircraft cockpit canopy according to Technical Inspection 3.4.2.3, and get out the aircraft cockpit.

FINAL WORKS
a. Verify all electric system switches, aircraft activation and fuel valves off.
b. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Move the aircraft at a predefined place.

1.1LSA TECHNICAL CARDS FOR AIRCRAFT NON-SCHEDULED MAINTENANCE

3.5.1 Technical Cards of Non-Scheduled Maintenance

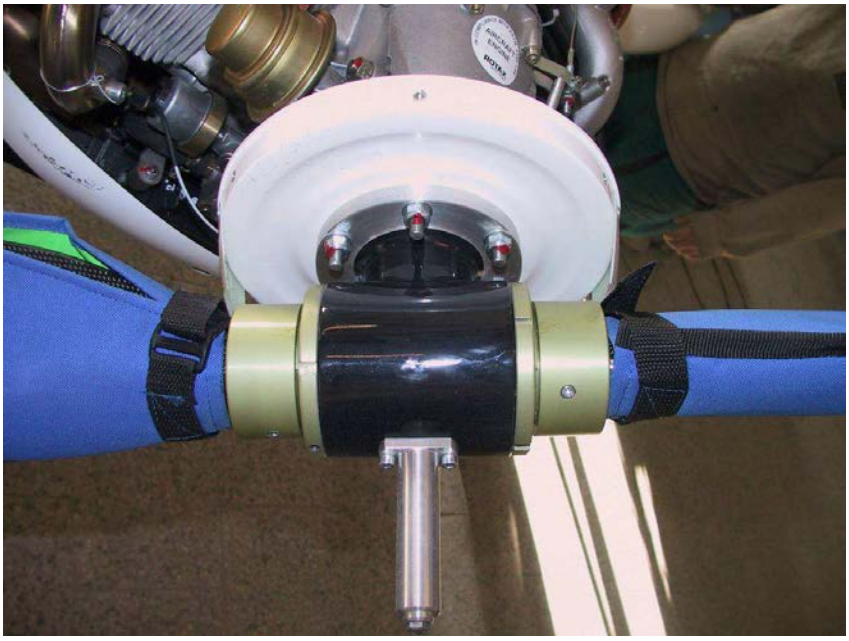
3.5.1.1 PROPELLER DISASSEMBLY AND REPLACEMENT
Comment
When working on the aviation technology respect all hygienic, environmental, fireproof and safety precautions and regulations for works in the aviation field.
Tools, Ground Equipment and Control & Measure Instruments
Flat ring spanner No 13
Allan key No 6
Flat screwdriver
Consumable Supplies
Clean dry cloth
Staff Member Number
One.

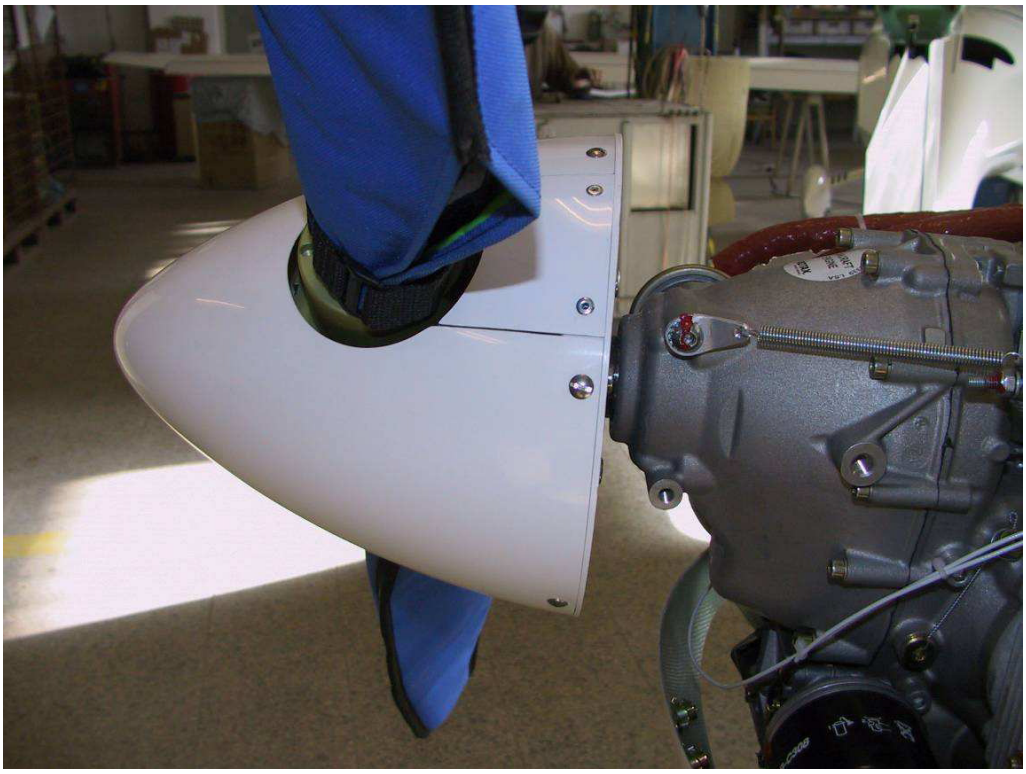
PREPARATION
a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Dismount the motor upper cowl according to the Technical Inspection 3.4.2.4.
c. Loosen and unscrew 6 screws holding the propeller spinner to the propeller collar.
d. Pull off the propeller spinner from the propeller collar and put it at a predefined place together with screws.

PROPELLER DISASSEMBLY AND REPLACEMENT
Comment
Destroy dismounted self-locking nuts because it is prohibited to mount them again.
a. Loosen and unscrew 6 self-locking nuts blocking screws holding the propeller and the collar to the motor block axis flange.

b. Take the propeller carefully off with 6 screws and at the same time from the propeller middle axis.
c. Put the propeller at a predefined place, possibly case it and send it to the producer.
d. Unwrap a new propeller and weigh it whether its weight corresponds to the propeller documentation data.
e. Insert carefully a new propeller at the propeller middle axis and at the same time its flange with 6 screws holding the propeller spinner to the collar.
f. Screw on and tighten 6 new self-locking nuts to 6 screws.
g. Block 6 self-locking nuts with blocking paint.

FINAL WORKS
a. Test the adjustment control function of the propeller blades.
b. Put the propeller spinner over the propeller center and match the openings of 6 screws of the propeller spinner edge with 6 stopnuts of the propeller spinner to collar.
c. Screw on and tighten 6 screws.
d. Mount the motor upper cowl according to the Technical Inspection 3.4.2.4.
e. Make a motor test and verify whether the propeller is not shaking and the max permitted propeller revolutions are not exceeded.
f. Record the propeller replacement in the aircraft service book.





3.5.1.2 MOTOR DISASSEMBLY AND REPLACEMENT

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 spanner No 8
Flat spanner No 9
Flat spanner No 12
Flat ring spanner No 13
Flat spanner No 17
Flat spanner No 22
Allan key No 4
Allan key No 5
Allan key No 6
Flat screwdriver
Cross-point screwdriver
Flat pliers
Pincers
Basin for service fluids collecting
Vessels for collected service fluids

Consumable Supplies

Clean dry cloth
Locking wire 0.8 mm
Tightening straps
Blocking paint

Keep-pins 1.8 mm
Blocking clamps
Staff Member Number
Two.

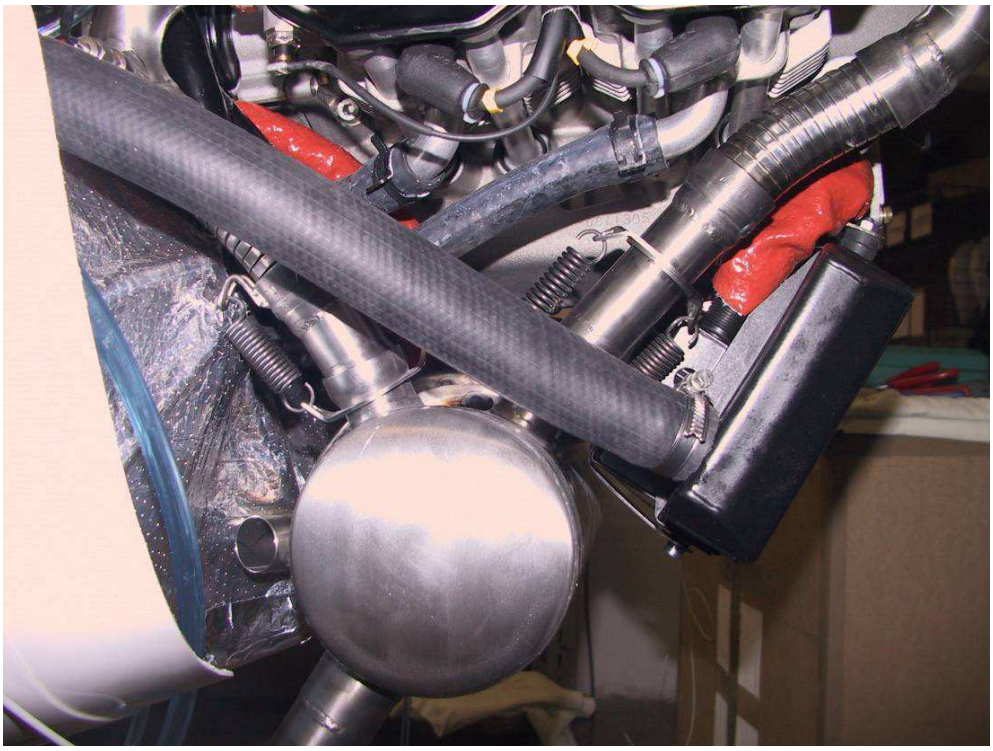
PREPARATION
a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Dismount the motor cowls according to the Technical Inspection 3.4.2.4.
c. Dismount the propeller according the Technical Specifications 3.5.1.1.
d. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
e. Verify that all electric system switches and circuit breakers are switched off.
f. Verify that fuel valve is switched off.
g. Insert a tray for collecting service fluids under the motor.
h. Discharge oil and coolant in the vessels prepared in advance.

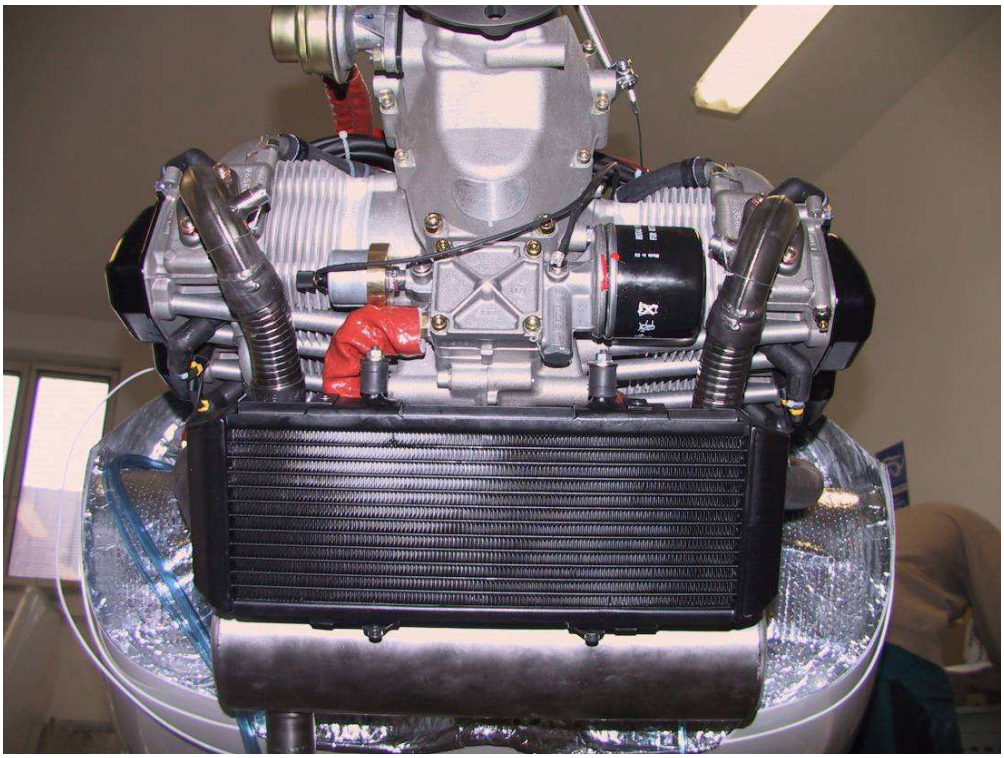
PROPELLER DISASSEMBLY AND REPLACEMENT
Warning
Mark a position of all fasteners or components dismounted from the motor because of their correct orientation when you mount them back, and put them at a predefined place. It is necessary to replace self-locking nuts with new ones; it is not allowed to use them again.
a. Disconnect the fuel supply hoses from the fuel pump outlets of the motor block.
b. Loosen and unscrew 2 screws blocking the fuel supply hoses to the carburetors.
c. Unlock 4 clamps on the hoses to 2 carburetors.
d. Disconnect the hoses from the fuel supply to the carburetors near the tube.
e. Plug the hoses so that the fuel does not escape.
f. Disconnect a spring from the propeller control lever.
g. Loosen and unscrew 4 screws holding the propeller control lever.
h. Loosen and unscrew 2 screws holding the switch of the propeller adjustment to the upper motor part.
i. Disconnect 4 Bowden cables from the levers operating 2 carburetors .
j. Loosen and unscrew 4 counter nuts blocking the ends of 4 Bowden cables to 2 carburetors.
k. Loosen and unscrew cap nuts of 2 outlet gases temperature readers.
l. Unlock tightening straps of the electric cabling blocking system to the motor.
m. Disconnect motor electronic module cabling.
n. Unlock a tightening strap of the expansion tank fluid outlet hose and disconnect it.
o. Loosen 1 screw of the tightening clamp and disconnect the cooling supply hose) from the expansion tank.
p. Loosen and unscrew 1 counter nut blocking 1 screw of the propeller control Bowden cable and unscrew the screw.
q. Loosen and unscrew a screw holding by-pass cables to the motor chassis.
r. Loosen and unscrew cap nuts of 2 tubes of the oil supply to the motor from the oil tank.
s. Unlock the locking wire of 2 hosepipes from an overflow tray of 2 carburetors and disconnect them.
t. Disconnect 8 springs blocking an exhaust to the motor partition and to the supply pipeline.
u. Disconnect a heating pipeline from the motor exhaust.
v. Pull off the exhaust from the aircraft and put it at a predefined place.
w. Loosen 2 screws of 2 tightening clamps blocking the cooling supply hosepipes ends

to a radiator.
x. Take off 2 hoses from the radiator flanges.
y. Loosen and unscrew 4 screws fastening the radiator to the radiator suspensions.
z. Take off 2 damping elements from the radiator.
aa. Pull off the radiator from the radiator suspensions, blind the necks and put it at a predefined place.
bb. Loosen and unscrew 4 nuts pull off 2 bends and put them at a predefined place.
cc. Unlock 4 keep-pins.
Warning
When dismounting the motor from the motor bed it is necessary that two staff members are present, one of them dismounts motor main suspensions of the motor bed, and the second one holds the motor so that motor release, fall to the ground and motor damage or staff injury does not occur.
dd. Loosen and unscrew 4 nuts and pull off 4 washers.
ee. Take off 4 damping elements from the motor main suspensions.
ff. With the assistance of the other staff member pull out the motor from the aircraft motor bed, and put it at predefined place.
gg. Blind all motor openings by blind flanges.
hh. Case the motor and send it to the producer together with a motor service book and all inspection sheets and maintenance records.
ii. Unwrap a new motor.
jj. Unoil the motor.
kk. Take the motor to the aircraft and pull off all blind flanges from the motor pipelines, hosepipes and openings.
Warning
When mounting the motor to the motor bed it is necessary that two staff members are present, one of them secures motor main suspensions of the motor bed, and the second one holds the motor so that motor release, fall to the ground and motor damage or staff injury does not occur.
ll. With the assistance of the other staff member put the motor on its main suspensions of the motor bed.
mm. Put on 4 damping elements to the motor main suspensions.
nn. Put on 4 washers to the motor main suspensions pins.
oo. Screw on and tighten 4 nuts to the motor main suspensions pins.
pp. Block 4 nuts by binding 4 keep-pins.
qq. Put 2 elbows on the motor block and block them by screwing on and tightening 4 nuts.
rr. Put the radiator on the radiator suspensions.
ss. Put 2 damping elements on the radiator upper suspensions.
tt. Screw on 4 screws fastening the radiator to the radiator suspensions and tighten them firmly.
uu. Put 2 hoses on the radiator flanges.
vv. Block by tightening 2 screws of 2 tightening clamps blocking the cooling supply hosepipes ends to a radiator.
ww. Put the exhaust on the aircraft suspensions so that its final part is orientated to the right down in the flight direction.
xx. Connect a heating pipeline to the motor exhaust.

yy. Connect 8 springs to the suspensions blocking the exhaust to the motor partition and to the supply pipeline.
zz. Connect 2 hosepipes to an overflow tray of 2 carburetors and block them by locking wire.
aaa. Match and connect 2 tubes of the oil supply to the motor to the oil tank.
bbb. Screw on and tighten 2 cap nuts of 2 hoses to the oil tank.
ccc. Connect by-pass cables to the motor chassis and screw the screw on and tighten it.
ddd. Screw on 1 screw of the propeller control Bowden cable and block it by a counter nut.
eee. Connect the hose of the cooling supply to the expansion tank, block it by a tightening clamp and by tightening 1 screw.
fff. Connect the expansion tank fluid outlet hose and block it with a tightening strap.
ggg. Connect motor electronic module cabling.
hhh. Screw on and tighten cap nuts of 2 outlet gases temperature readers.
iii. Screw on 4 counter nuts blocking the ends of 4 Bowden cables to 2 consoles of 2 carburetors.
jjj. Connect 4 Bowden cables to the levers operating 2 carburetors.
kkk. Put on a propeller adjustment signaling terminal switch to the motor upper part and block it by screwing on and by tightening 2 screws blocking the terminal switch.
lll. Put a console on the motor block rear part and block it by screwing on and by tightening 4 screws.
mmm. Connect a spring to the propeller control lever.
nnn. Connect the hosepipes system to the fuel supply hose to the carburetors near the tube and block them.
ooo. Fasten the hosepipes system to the tube by tightening straps.
ppp. Connect the fuel supply hosepipes system to the carburetors and block it by screwing on and by tightening 2 screws.
qqq. Connect the fuel supply hosepipes system to the fuel pump outlets of the motor block.
rrr. Block electric cabling by tightening straps.
sss. Block nuts and screw heads by blocking paint.
Comment
When mounting a new motor fill up new service fluids. When mounting the original motor it is allowed to use original service fluids if they have not been polluted or destroyed.
ttt. Verify or refill the prescribed values of all motor service fluids.
Comment
The fuel system tightness visual inspection is made with an open fuel valve and an electric pump switched on.
uuu. Check tightening, blocking and tightness of all service fluids supplies to the motor.
FINAL WORKS
a. Mount the propeller according the Technical Specifications 3.5.1.1.
b. Synchronize, adjust idling speed and check the carburetors control according to the manual of the aircraft applied motor.
c. Make motor test according to the Technical Inspection 3.4.2.18.
d. After the motor test visually check the motor with a view to the fuel, oil and cooling fittings tightness. The exhaust tube tightness. Check whether fastened hosepipes have not been displaced

and whether they do not touch motor hot parts and whether they are not rubbed.
e. When the motor cooled down check the service fluids.
f. Mount the motor cowls according to the Technical Inspection 3.4.2.4.
g. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
h. Record the replacement and the new motor number in the aircraft service book.
Figure 3 – 19





3.5.1.3 MAIN LANDING GEAR LEG DISASSEMBLY AND REPLACEMENT
Figure 3 - 20
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 spanner No 10
Allan key No 5
Flat pliers
A support under the fuselage front part
Drill of diameter 3.3 mm
Cordless drill
Riveting pliers

Consumable Supplies

Clean dry cloth
Blocking paint
2 rivets 3.2 x 6
2 rivets 3.2 x 10

Staff Member Number

Two.

PREPARATION

a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Lift off the aircraft fuselage front part and support it in the area in front of the landing gear main leg suspension of the fuselage lower part (it is allowed to support the aircraft in that area because of a reinforced structure).
c. Block the aircraft fuselage rear part tailskid against unwanted movements by placing a tailskid wheel chock.
d. Dismount main landing gear wheels according to the Technical Inspection 3.4.2.11.

MAIN LANDING GEAR LEG DISASSEMBLY AND REPLACEMENT

Comment
When disconnecting the hydraulic fluid supply hose blind the elbow as well as the supply hose with blind flanges.

a. Loosen and unscrew the interconnecting elbow cap nut at the aircraft central part behind the landing gear leg.
b. Disconnect the interconnecting elbow of the hydraulic fluid supply to brakes.
c. Remove seats and seat pans.
d. Loosen and unscrew 4 nuts holding the main landing gear leg.
e. Pull out 4 screws together with 4 washers and put them at a predefined place.
f. Pull out the original landing gear leg from its suspension and put it at a predefined place.
g. Clean the dismounted landing gear leg, case it and send it to the producer.
h. Unwrap a new landing gear leg and take it near the aircraft.
i. Insert the landing gear leg in the main suspension so that the landing gear leg leading edge is oriented in the flight direction.
j. Draw the screws through openings in the landing gear, place washers, and screw on and tighten 4 nuts into the fuselage.
k. Block screw heads by blocking paint.
l. Screw on and tighten an interconnecting elbow cap nut to the hose supplying hydraulic fluid from the aircraft fuselage.

FINAL WORKS

a. Mount landing gear main wheels at the landing gear leg pursuant to the Technical Inspection

3.4.2.11.
b. Refill the hydraulic fluid and bleed the brakes hose fitting.
c. Verify the aircraft brakes function.
d. Remove the aircraft fuselage front part support and place the aircraft back to the main landing gear wheels.

3.5.1.4 DIRECTIONAL CONTROL ROPES DISASSEMBLY AND REPLACEMENT
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 spanner No 10
Allan key No 5
Flat pliers
A support under the fuselage back
Pincers
Pliers for Nicopress safety locks for blocking ropes
Consumable Supplies
Clean dry cloth
Blocking paint

Aero Shell Grease 33
Wire 0.8 mm

Staff Member Number

One.

PREPARATION

a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Lift the aircraft fuselage rear part off and support it.
c. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
d. Block the aircraft against unwanted movements by placing the main landing gear wheels chocks and block with a parking brake.
e. Dismount both pilots' seats out of the aircraft cockpit.

DIRECTIONAL CONTROL ORIGINAL ROPES DISASSEMBLY

a. Loosen and unscrew 2 nuts, pull off 2 washers, pull out 2 screws and put them at a predefined place.
b. Disconnect 2 ropes from forks of 2 rudder short operating rods.
c. Pinch off the ropes at the area behind the eyes (Nicopress) safety locks of 2 ropes.
d. Pull out 2 bearings from both eyes at 2 ropes ends and put them at a predefined place.
e. Straighten both ends of 2 ropes.
f. Loosen and unscrew 2 nuts, pull off 2 washers and pull out 2 screws attaching 2 ropes ends to the rudder control lever.
g. Pull out 2 ropes eyes from the rudder control lever.
h. Pull 2 ropes for their ends out from the aircraft fuselage towards the rudder.
i. Pull 2 bearings out from the eyes at 2 ropes ends.
j. Put 2 ropes together with 2 bearings at a predefined place.

DIRECTIONAL CONTROL NEW ROPES ASSEMBLY

a. Put the Nicopress safety lock on the rope, create an eye at an end of both ropes, insert a bearing in each eye and pull the Nicopress safety lock through the rope end back.
b. Tighten the rope eye so that the bearing cannot loosen, and block the safety lock with the Nicopress safety locks pliers.
c. Tie a wire at the rope other end and thanks to that pull the rope from the rudder rear lower suspension through the control channel to the aircraft pilots' cockpit area, and pull the rope through a passageway in the control central channel between pilots out.
d. Insert the eye with the rope rear end bearing inside the rudder control lever.
e. Match the rope bearing opening to the rudder control lever opening.

Comment

Slightly grease screw bodies and their threaded parts because of their easier assembly, and at the same time grease also the bearings in the rope eyes.

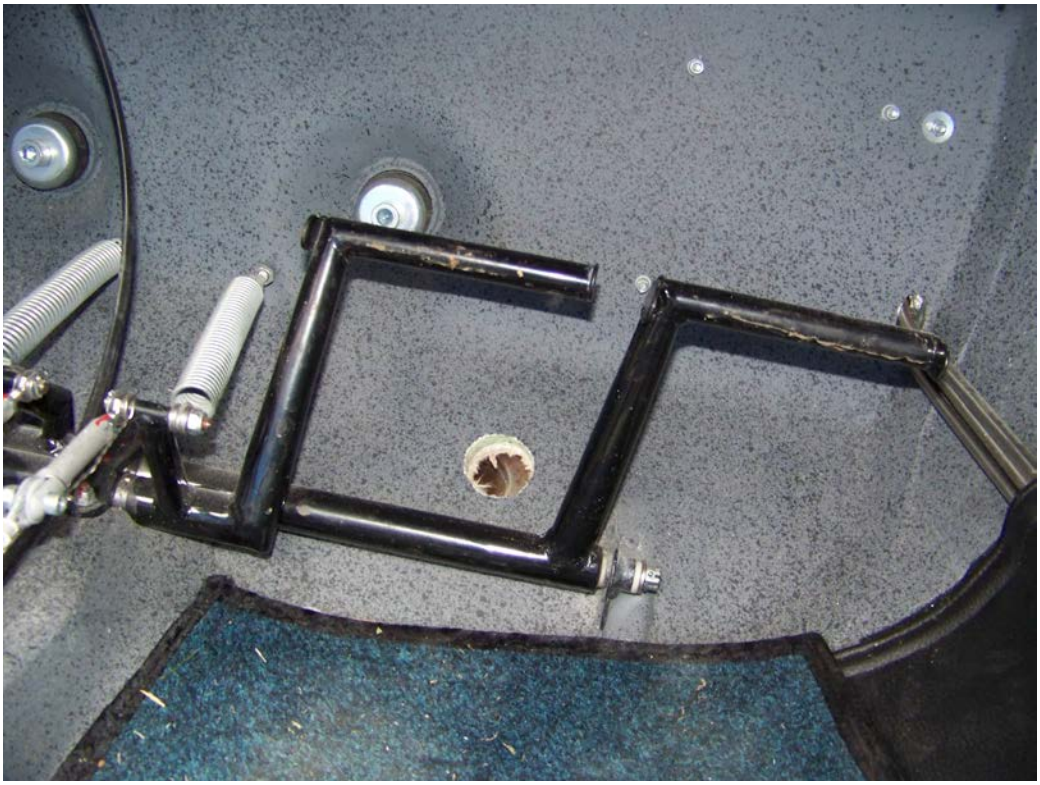
f. Draw 1 screw through the lever opening and through the rope bearing opening so that the screw locking head is orientated upwards.
g. Put 1 washer on 1 screw threaded part, screw on and tighten 1 self-locking nut and block it with the blocking paint.

Comment

When creating the eye at the rope other end in the pilots' cockpit, first it is necessary to match the rope and the bearing eyes to the opening for a screw in the short operating rod fork. At the same time it is necessary to tighten the rope so that it is not swaged.

h. Put the Nicopress safety lock on the rope, create an eye at the rope end, insert bearing in the

eye and pull the Nicopress safety lock through the rope end back.
i. Tighten the rope eye so that the bearing cannot loosen and block with the safety lock by means of the Nicopress safety locks pliers.
j. Insert the eye with rope front part bearing in the rudder control short operating rod fork.
k. Match the bearing opening to the opening for a screw in the short operating rod fork.
Comment
Slightly grease screw bodies and their threaded parts because of their easier assembly, and at the same time grease also the bearings in the rope eyes.
l. Pass 1 screw through so that its head is orientated outwards from the aircraft fuselage longitudinal axis.
m. Adjust pedals, rudder and tailskid neutral position and at the same time both ropes tension.
n. Put 1 washer on 1 screw threaded part, screw 1 self-locking nut on and tighten it and block with the blocking paint.
FINAL WORKS
a. Check directional control free operation in its full extent.
b. Check displacements of the rudder pedals according to the Technical Inspection 3.4.1.8.
c. Remove the support of the fuselage rear part and place the fuselage rear part back to the tailskid wheel.
d. Mount both pilots' seats back in the aircraft cockpit.
e. Release the aircraft parking brake.
f. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3



3.5.1.5 FUEL FITTING HOSES DISASSEMBLY AND REPLACEMENT

Warning

During fuel fitting hoses disassembly and replacement plug hosepipes ends by blind flanges.

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 spanner No 10
Flat pliers
Pincers
Cross-point screwdriver
Flat screwdriver

Consumable Supplies

Clean dry cloth
Blocking paint
Wire 0.8 mm
Single-use blocking clamps

Staff Member Number

One.

PREPARATION

a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Block the aircraft against unwanted movements by placing the main landing gear wheels chocks

and block with a parking brake.
d. Dismount both pilots' seats and seatpans out of the aircraft cockpit.
e. Dismount the aircraft wings according to Technical Inspection 3.4.2.12.
f. Dismount the motor upper cowl according to the Technical Inspection 3.4.2.4.

DISASSEMBLY AND REPLACEMENT OF FUEL FITTING HOSES IN THE AIRCRAFT WING

a. Loosen 3 screws and take off 3 sockets from 3 hosepipes.
b. Pull off 3 hosepipes from tubes supplying fuel to aircraft wing both halves.
c. Measure new hoses lengths according to the original hoses, and cut them to a prescribed length.
d. Put 3 new hosepipes on tubes supplying fuel to aircraft wing both halves.
e. Put 3 sockets on 3 hoses at the connection point with fuel supply tubes.
f. Tighten 3 sockets and block them with a screw.

DISASSEMBLY AND REPLACEMENT OF FUEL FITTING HOSES IN THE AIRCRAFT FUSELAGE

Warning

Before all hoses disassembly mark the position, placement and length of single parts of the whole fuel hoses system.

a. Pull the interconnecting tubes connecting 3 hoses supplying fuel to the aircraft wing out from 3 hoses behind the pilots' seats.
b. Pull 3 locking sockets off from 3 hoses.
c. Unlock 2 blocking clamps of 2 hoses connected to the fuel supply valve.
d. Disconnect 2 hoses from the fuel valve and pull 1 hose at the aircraft cockpit right side out from the passageway of the cockpit right wall cover.
e. Remove straps from 2 hoses connected to the aircraft electric cabling at the cockpit left part under the dashboard.
f. Pull 1 disconnected hose in the area under the dashboard out from the passageway of the aircraft cockpit left part.
g. Remove all blocking straps and release all blocking clamps of the fuel supply hoses in the motor area.
h. Disconnect 2 supply hoses from a motor fuel pump.
i. Disconnect fuel supply hoses from 2 carburetors.
j. Disconnect a hosepipes system from the fuel filter and from a fuel overflow tank.
k. Pull a motor hosepipes system left part out from the passageway of the motor partition left part.
l. Pull all the hosepipes system off from the aircraft motor and put it at a predefined place.
m. Measure all new hoses lengths according to the original system.

Warning

When replacing hoses use new fireproof jackets for fuel and oil hosepipes in the area in front of the firewall. The jacket has to be throughout the length of the hose rubber part, including a fixing socket to the metal neck. The fireproof jacket ends have to be blocked against displacements by means of a tightening clamp of a fireproof material. This blocking cannot limit the hose cross-section. The hoses have to be fastened by tightening straps in that way their contact with motor hot parts or their rubbing of sharp edges owing to vibrations is avoided.

n. Put Aeroquip fireproof jackets on all fuel and oil hosepipes in the area in front of the motor partition.

o. Connect new hoses so that they correspond to the aircraft motor original set.
p. Place hosepipes set on the motor according to the old hoses original set.
q. Pull the left part of the hoses set supplying fuel to the motor through the passageway of the motor partition left part.
r. Connect and block a hosepipes system to the fuel filter and to the fuel overflow tank.
s. Connect and block the hoses supplying fuel to 2 carburetors.
t. Connect and block 2 hoses supplying fuel to a motor fuel pump.
u. Block the whole hosepipes system with blocking straps.
v. Draw 1 piece of the hose through the passageway of the aircraft cockpit left part and connect it to the fuel valve from the upper part.
w. Tie 2 hoses together to the aircraft electric cabling with straps at the cockpit left part under the dashboard.
x. Draw 1 piece of the house through the passageway of the aircraft cockpit right side cover and connect and block it to the fuel valve.
y. Put 3 locking sockets on 3 hoses ends behind the pilots' seats.
z. Insert 3 interconnecting tubes connecting 3 hoses supplying fuel to the aircraft wing into 3 hoses ends behind the pilots' seats.
aa. Block 3 screws, 3 blocking sockets and 3 interconnecting tubes by tightening.
*
FINAL WORKS
a. Mount the aircraft wings according to Technical Inspection 3.4.2.12.
b. Check the complete fuel hose fitting tightness.
c. Mount both pilots' seats back on the aircraft cockpit.
d. Make a motor test according to the Technical Inspection 3.4.2.20.
e. Mount the motor upper cowl according to the Technical Inspection 3.4.2.4.
f. Remove the chocks from the main landing gear wheels and unlock the parking brake.
g. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

3.5.1.6 OIL FITTING HOSES DISASSEMBLY AND REPLACEMENT

Warning

During oil fitting hoses disassembly and replacement plug all ends of hosepipes and oil fitting connecting necks by blind flanges.

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 pliers
Pincers
Cross-point screwdriver
Flat screwdriver
Knife
Basin for collecting service fluids

Consumable Supplies

Clean dry cloth

Staff Member Number

One.

PREPARATION

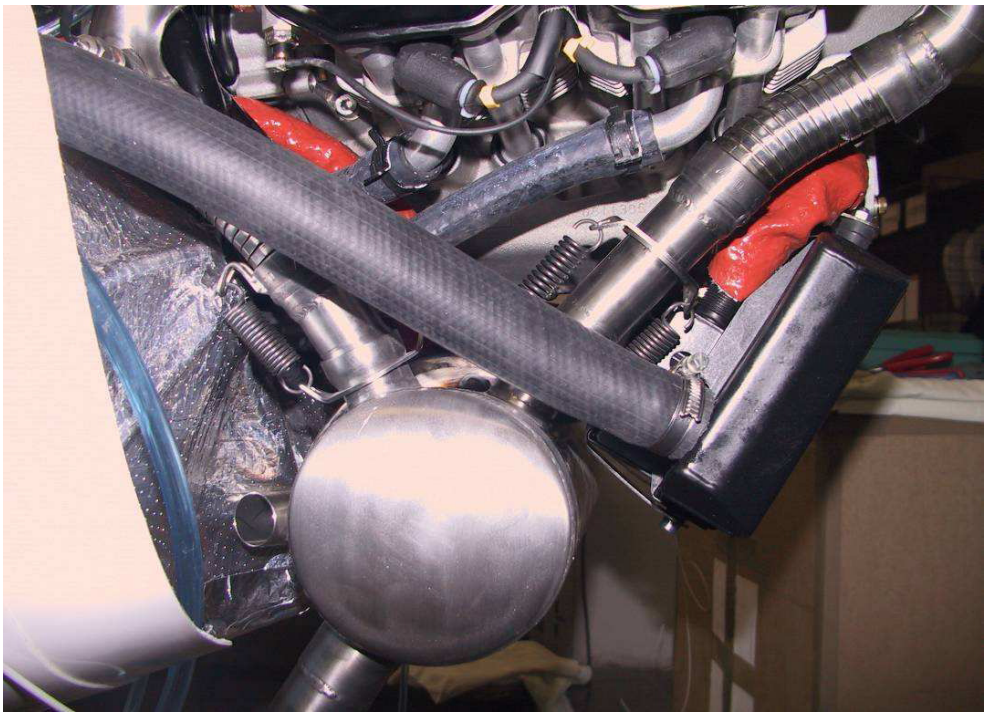
a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Block the aircraft against unwanted movements by placing the main landing gear wheels chocks and block with a parking brake.
d. Dismount the motor cowls according to the Technical Inspection 3.4.2.4.
e. Insert a tray for collecting service fluids under the motor.
f. Remove the oil from the oil hose fitting to the vessel for collecting oil.
Comment
It is necessary to dismount the aircraft exhaust because of a better access to the oil hoses connected to the motor lower part.
f. Dismount the exhaust according the Technical Specifications 3.5.1.2.
OIL FITTING HOSES DISASSEMBLY AND REPLACEMENT
a. Loosen 2 screws of 2 blocking clamps blocking 2 pieces of hoses to the oil supply elbows at the oil tank.
b. Loosen 4 screws of 4 blocking clamps blocking 3 pieces of hoses to the elbows supplying the oil to the oil pump and motor radiator.
c. Disconnect 2 pieces of hoses from the oil supply elbows at the oil tank.
d. Disconnect 3 pieces of hoses from the elbows supplying the oil to the oil pump and the motor radiator.
e. Store the dismounted hoses and fasteners at a predefined place.
f. Measure lengths of 2 new hoses according to the original set.
g. Put Aeroquip fireproof jackets on 3 pieces of new hoses.
h. Connect 3 pieces of new hoses to the elbows supplying the oil to the oil pump and the motor radiator.
Warning
When mounting new hoses maintain the hoses original connection to the motor oil hose fitting, and in particular the oil tank original connection so that a confusion of single hoses connections does not occur.
i. Connect 2 pieces of hoses to the oil supply elbows at the oil tank.
j. Block 3 pieces of hoses by tightening 6 screws of 6 blocking clamps to the elbows supplying oil to the oil pump, motor radiator and oil tank.

k. Block the Aeroquip jackets ends by blocking clamps.
FINAL WORKS
a. Mount the exhaust according the Technical Specifications 3.5.1.2.
b. Check a tightness of a complete oil hose fitting, possibly refill the oil to a prescribed value.
c. Remove a tray for collecting service fluids from the aircraft.
d. Deaerate oil hose fitting pursuant to the paragraph 5.2.2 of the Manual for Rotax Motor Maintenance.
e. Make a motor test according to the Technical Inspection 3.4.2.20 and a repeated inspection of the oil hose fitting tightness.
f. Mount the motor cowls according to the Technical Inspection 3.4.2.4.
g. Release the aircraft parking brake and remove the chocks from the main landing gear wheels.
h. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
3.5.1.7 COOLING HOSEPIPES DISASSEMBLY AND REPLACEMENT
Figure 3 - 23
Warning
During a cooling fitting hoses disassembly and replacement plug all hosepipes ends by blind flanges.
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 pliers
Pincers
Cross-point screwdriver
Flat screwdriver
Knife
Basin for collecting service fluids
Consumable Supplies
Clean dry cloth
Staff Member Number
One.
PREPARATION
a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Block the aircraft against unwanted movements by placing the main landing gear wheels chocks and block with a parking brake.
d. Dismount the motor cowls according to the Technical Inspection 3.4.2.4.
e. Insert a tray for collecting service fluids under the motor.
f. Remove the coolant from the cooling hose fitting.
Comment
It is necessary to dismount the aircraft exhaust because of a better access to the cooling hoses connected to the motor lower part.
g. Dismount the exhaust according the Technical Specifications 3.5.1.2.
COOLING FITTING HOSES DISASSEMBLY AND REPLACEMENT
Warning
Before all hoses disassembly mark the position, placement and length of single parts of all

cooling hoses system.
a. Loosen 2 screws of 2 blocking clamps of 2 cooling fitting hoses connected to the aircraft motor radiator .
b. Disconnect 2 hoses from the aircraft motor radiator.
c. Release 8 self-locking clamps blocking 4 hoses to the elbows of the cooling hose fitting supply to the motor lower part.
d. Disconnect 4 hoses from the elbows of the cooling hose fitting supply to the motor lower part, and store them at a predefined place.
e. Loosen 1 screw of a clamp blocking a hose to the elbow at its other end.
f. Disconnect the hose from the elbow and put it at a predefined place.
g. Loosen 1 screw of 1 clamp blocking a hose to the expansion tank.
h. Disconnect the hose from the expansion tank flange and put it at a predefined place.
i. Release 8 self-locking clamps blocking 4 hoses to the expansion tank and 4 elbows supplying cooling to the motor.
j. Disconnect 4 hoses from 4 elbows supplying cooling to the motor.
k. Disconnect 4 hoses from 4 expansion tank flanges.
l. Put the dismounted hoses at a predefined place.
m. Measure lengths of 10 new hoses according to the original set.
n. Connect 4 hoses to 4 expansion tank flanges.
o. Connect 4 hoses to 4 elbows supplying cooling to the motor.
p. Block 4 hoses ends by means of 8 self-locking clamps to the expansion tank and to 4 elbows supplying cooling to the motor.
q. Connect the hose to the expansion tank flange and block it by tightening 1 blocking clamp screw.
r. Connect the hose to the elbow and block it by tightening 1 blocking clamp screw.
s. Connect 4 hoses to the elbows of the cooling hose fitting supply of the motor lower part.
t. Block 4 hoses ends to the elbows of the cooling hose fitting supply of the motor lower part by self-locking clamps.
u. Connect 2 hoses to the aircraft motor radiator.
v. Tighten 2 screws of 2 clamps blocking a connection of 2 cooling fitting hoses to the aircraft motor radiator.

FINAL WORKS

a. Check connection, blocking and tightness of all hoses of the aircraft cooling system, possibly refill the coolant at a prescribed value.
b. Mount the exhaust according the Technical Specifications 3.5.1.2.
c. Remove a tray for collecting service fluids from the aircraft.
d. Make a motor test according to the Technical Inspection 3.4.2.20.
e. Mount the motor cowls according to the Technical Inspection 3.4.2.4.
f. Release the aircraft parking brake and remove the chocks from the main landing gear wheels.
g. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.




ROTAX

3.5.1.8 AIRCRAFT COVERING REPAIR

Caution

Only an authorized service organization is allowed to make aircraft covering repairs.

Caution

Each fabric substitution has to be approved by the aircraft producer.

Caution

The covering repairs are only allowed in places that are not the aircraft carriage or do not interfere directly in the aircraft airframe primary structure parts and its size does not exceed a measure of 100 x 100 mm.

Caution
When working with resin and hardeners use protective equipments so that the resin or hardener does not affect some body parts.

Warning
In case that it is not possible to use the original fabric, it is possible to substitute it in that way that the surface weight will be kept in each fibers direction. However a weight increase of the aircraft repaired part is possible by this substitution.

Comment
Glass, carbon, aramid or combined fabrics are used in composition parts as reinforcement. The product firmness depends on the reinforcement quantity. It is necessary to maintain the fabric quantity and sort specified in the manufacture documentation in order you maintain the required firmness.
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

Straight scissors
Bent scissors
Knurled sharp scissors
Synthetic hair paint roller
Flat paintbrush
Steel palette knife
Respirator
Safety glasses
Gloves

Consumable Supplies

Clean dry cloth
Acetone
Fabric

MGS L 285 resin
287, 285 hardener
Cotton flakes
Aerosil (white)
Q-CELL 2116/6014 micro balloon (white)
Chipped glass R+G 0,4 mm
Divinicell H-60, Coremat foam
Sandpaper No 400
Sandpaper No 600
Sandpaper No 800
Sandpaper No 1,500

Staff Member Number

One.

PREPARATION

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

b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Block the aircraft against unwanted movements by placing the main landing gear wheels chocks and block with a parking brake.
d. Clean the aircraft damaged place from extraneous items and dirt.
e. Properly mix resin and hardener according to the specified ratio.
AIRCRAFT COVERING REPAIR
a. Abrade the damaged place in a regular shape (external covering, foam filling and internal covering).
b. Enlarge the opening of the external covering and of the foam filling so that the internal covering fabric overlays measurements are kept according to the specified ratio.
c. Abrade the opening surrounds of the external covering by means of sandpaper fixed on a pad so that the bevel of 1:30 from the damage edge is maintained, and the specified width of external covering fabric overlays is maintained according to the specified ratio.
d. Prepare an internal covering patch and a foam filling insertion and paste them up in the opening.
e. Apply the condensed resin in the corners and sharp grooves.
f. Arrange the cement with a paintbrush so that possible bubbles are eliminated.
g. Abrade the foam filling below the lower level of the external covering.
Comment
When laminating the damaged place first apply the largest patch through to the edge of the place ground off, and when applying subsequent layers proceed according to the specified ratio.
Comment
Only dry and clean fabrics can be used for laminating.
h. Cut the fabric in that way it corresponds to the damaged component size.
Comment
The applied resin quantity depends on the fabric thickness. In case of applying a thin fabric a resin large amount would cause fabric small ripples and the component final surface would collapse by shrinking the resin.
i. Cut out the patches of the external covering and laminate the damaged place.
Comment
The aircraft covering repaired part can harden under normal temperature as well as increased one. The hardening time shortens when the temperature increases.
j. After hardening abrade the fabric overlap with sandpaper fixed on a pad to a level of the external covering.
*
FINAL WORKS
a. Repair protective coating of the aircraft covering repaired place according to the Technical Inspection 3.5.1.9.
b. Release the aircraft parking brake and remove the chocks from the aircraft main landing gear wheels.
c. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
3.5.1.9 AIRCRAFT PROTECTIVE COATING REPAIR
Caution
Only an authorized service organization is allowed to repair protective coating of the aircraft larger surfaces or a total paintwork repair.
Caution
When working with paints and thinners use protective equipments so that the resin or

hardener does not affect some body parts.
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 paintbrush
Steel palette knife
Spray gun
Buffing wheel
Cordless drill
Respirator
Safety glasses
Gloves
Bucket

Consumable Supplies

Clean dry cloth
T-35 MGS paint
Hardener for T-35 MGS paint
Sandpaper No 400
Sandpaper No 600
Sandpaper No 800
Sandpaper No 1,500
Water
Plastic film
Band-Aids
Scotch tape
Graphitic pencil

Staff Member Number

One.

PREPARATION

a. Prepare the aircraft for operation and maintenance according to the Technical Inspection 3.4.2.2.
b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Block the aircraft against unwanted movements by placing the main landing gear wheels chocks and block with a parking brake.
d. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
e. Cover the surrounds of the aircraft covering damaged place with a plastic film and a Scotch tape so that the paint does not interfere with an aircraft covering larger part.
f. Clean and degrease the aircraft damaged place from extraneous items and dirt.
*

AIRCRAFT PROTECTIVE COATING REPAIR

Comment
In case of damage of the aircraft paint and the covering first it is necessary to repair the damaged place and then to apply a protective paint.
a. Wet the sandpaper applied at a pad (foam or balsa) with water.
b. Abrade the damaged spot with sandpaper within a roughness of No 400 until the place is properly ground.

c. Apply paint at the aircraft covering damaged place with a paintbrush or a spray gun, and let it get dry.
Comment
When grinding with a sandpaper of a roughness No 400 and 600 mark the place with a dense network of lines made by a mild graphitic pencil for showing off the ground places and unevenness.
d. Grind the hardened paint with sandpaper No 400 fixed at a pad under water, and continue with sandpapers No 600, 800 and 1,500 until the place is properly ground.
e. Polish the damaged place with a buffing wheel until it is absolutely smooth.
*
FINAL WORKS
a. Remove the plastic film and the Scotch tape from the place surrounds of the repaired protective coating.
b. Open the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.
c. Release the aircraft parking brake and remove the chocks from the main landing gear wheels.
d. Close the aircraft cockpit canopy according to the Technical Inspection 3.4.2.3.

1.2 IMPORTANT INSTRUCTIONS FOR OPERATOR

3.6.1 GENERAL OVERHAULS

A maintenance system without general overhauls is designed for the U15 Phoenix. The initial lifetime is designed for 3,000 flight hours. When you reach the specified number of flight hours in case of the first 3 aircrafts, a program of subsequent lifetime increase will be compiled, the requirements for a qualification of the staff authorized for the specified operations, prescribed inspections extent and procedures, lists of spare parts with limited lifetime will be determined. The user is obligated to notify the producer before reaching the specified number of flight hours, and the producer will inform him about a subsequent procedure.

3.6.2 SIGNIFICANT REPAIRS AND CHANGES

All the changes, significant repairs of the primary structure components, repairs following aircraft damage, which can influence flying qualities, weight and gravity center position change, firmness and units and components lifetime, are subject to the producer's approval. The user is obligated to ask a producer's approval before starting works, and to meet the procedures ordered by him.

3.6.3 OPERATION – SPECIFIC TRAINING, SCHOOLING

Following a request and a completion of the relevant agreement the producer undertakes training of the aircraft operator staff or training of an applicant for maintenance in the required maintenance extent.
It is possible to perform a request.

3.6.4 SAFETY REGULATIONS

The producer in compliance with the ASTM F 2295-06 Standard Practice for Continued Operational Safety Monitoring of a Light Sport Aircraft monitors the airworthiness and issues some information for maintaining the airworthiness in a form of bulletins. The information is freely accessible at the Phoenix Air website and at websites of dealers of single regions.

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