

8. AEROPLANE HANDLING, SERVICING AND MAINTENANCE



SECTION 8

8. AIRPLANE HANDLING SERVICING AND MAINTENANCE

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8.1 Introduction

This section includes the procedures for airplane handling, maintenance and operation recommended by the manufacturer.

It is necessary to follow the set-down lubrication plan, scope and periodicity of preventive maintenance depending on climatic and flight conditions according to the Aircraft Maintenance and Inspection Procedures of HARMONY Light Sport Aircraft.

Airplane owner should be in a permanent touch with the manufacturer, either directly or through the network of business representatives, which enables him to get the newest information concerning airplane operation, handling and maintenance. The manufacturer distributes this information to users through Service bulletins (Mandatory bulletins), Information bulletins (letters) and further instructions.

Mandatory bulletins are especially important for keeping up airworthiness and the manufacturer considers them mandatory although they do not come into effect before Airworthiness Directive is issued by aviation authority of user's country.

All correspondence with the airplane manufacturer, distributor or service center must contain **the airplane serial number**. The airplane serial number is shown on the title sheet of these Instructions and on the Manufacturer's plate below stabilizer on the left side of the fuselage.

The manufacturer delivers along with aircraft HARMONY LSA the "Aircraft Operating Instructions (AOI)" and the "Aircraft Maintenance and Inspection Procedures (AMIP)".

Qualification requirements to perform maintenance and repairs are mentioned in the AMIP - item 4.1.1.



Owner/Operator Responsibilities:

- Each owner/operator of an LSA airplane shall read and comply with the maintenance and continued airworthiness information and instructions provided by the manufacturer.
- Each owner/operator of an LSA airplane shall be responsible for providing the manufacturer with current contact information where the manufacturer may send the owner/operator supplemental notification bulletins.
- The owner/operator of an LSA airplane shall be responsible for notifying the manufacturer of any safety of flight issue or significant service difficulty upon discovery.
- The owner/operator of an LSA airplane shall be responsible for complying with all manufacturer issued notices of corrective action and for complying with all applicable aviation authority regulations in regard to maintaining the airworthiness of the LSA airplane.
- An owner of an LSA airplane shall ensure that any needed corrective action must be completed as specified in a notice, or by the next scheduled annual inspection.
- Should an owner/operator not comply with any mandatory service requirement, the LSA airplane shall be considered not in compliance with applicable ASTM Standards and may be subject to regulatory action by the presiding aviation authority.



8.2 Airplane inspection period

Periodical inspections and reviews of airplane must be carried out at the latest in the following intervals:

- after first 25 ± 2 hours of operation
- after every 50 ± 3 hours of operation
- after every 100 ± 5 hours of operation or at least annual inspection
- annual inspection

Details on periodical inspections are provided in the Aircraft Maintenance and Inspection Procedures of HARMONY LSA.

Refer to the Rotax 912 Operator's Manual for engine maintenance. Refer to the Propeller Maintenance Manual for propeller maintenance.

8.2.1 Airplane Failure Card

The Failure Card in Appendix 7 in the Aircraft Maintenance and Inspection Procedures of Harmony LSA is preferably used to report service difficulties.

8.3 Modifications or airplane repairs

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§91.327 require:

(5) Each alteration accomplished after the aircraft's date of manufacture meets the applicable and current consensus standard and has been authorized by either the manufacturer or a person acceptable to the FAA;

(6) Each major alteration to an aircraft product produced under a consensus standard is authorized, performed and inspected in accordance with maintenance and inspection procedures developed by the manufacturer or a person acceptable to the FAA; and

(7) The owner or operator complies with the requirements for the recording of major repairs and major alterations performed on type certificated products in accordance with §43.9 (d) of this chapter, and with the retention requirements in §91.417.

Basic repairs of airplane are described in the Aircraft Maintenance and Inspection Procedures of HARMONY LSA.



8.4 Road transport

8.4.1 Airplane towing

It is possible to move the airplane on a short distance by holding the fuselage end in the position before the fin, eventually by holding the root part of wings.

The hand towing bar can be used for airplane relocation which will be fastened to the nose wheel axis.

To turn the airplane on the spot, push on the fuselage end part in the area before the fin, lift the nose wheel and turn the airplane in required direction.

WARNING

SWITCH OFF IGNITION BEFORE GROUND HANDLING WITH THE AIRPLANE!

CAUTION

AVOID EXCESSIVE PRESSURES ON THE AIRFRAME STRUCTURE, ESPECIALLY ON THE WING TIPS, HTU, VTU ETC.

WHEN HANDLING THE AIRPLANE BY MEANS OF THE TOWING BAR, PROPELLER BLADES MUST BE SET ONE BLADE UP (THREE BLADE PROPELLER). MAXIMUM DEFLECTION OF THE NOSE WHEEL IS $\pm 10^\circ$.

AT MANUAL ENGINE STARTING GRASP THE PROPELLER BLADE AREA, I.E. NOT ONLY PROPELLER EDGE.

8.4.2 Airplane parking

It is the most suitable solution to place the airplane into a hangar possibly into another covered room with stable temperature, good venting, low humidity and dust-free environment. In case of parking out of the hangar it is necessary to anchor the airplane and at long-term parking to cover the canopy, possibly the whole airplane with suitable tarpaulins.



8.4.3 Airplane anchoring

The airplane is anchored at parking out of hangar after termination of flight day or according to need. Anchoring of the airplane is necessary for its protection against possible damage, caused by wings and gusts. For this purpose the airplane is equipped with fixing eyes on the lower side of wings and under the tail skid.

Procedure:

1. Check of fuel selector, off-position of all switches, ignition and master switch.
2. Lock manual control, e.g. by using safety belts
3. Close and lock the cockpit canopy
4. Anchor the airplane to the ground by means of cables pulled through fixing eyes which are located on the lower side of wings. Further it is necessary to anchor the nose landing gear.

NOTE

In case that long-term airplane anchoring is supposed, namely in winter period, it is suitable to cover the canopy, eventually the whole airplane by appropriate tarpaulins which must be properly secured to the airplane structure.

8.4.4 Airplane jacking

Airplane jacking presents no big difficulties due to relatively low airplane empty weight and can be performed by two persons.

First, it is necessary to prepare two suitable rests which will support the airplane.

The airplane can be jacked in the following way:

- by pushing from the above to the fuselage rear part in the position before the fin the front part of fuselage can be jacked and subsequently supported under the fire wall.
- Rear part of fuselage can be slightly jacked only by grasping in the position near the auxiliary skid and by pushing from below and then the lower part of fuselage can be supported by the rest located in the area of the skid.



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- Wings can be jacked by pushing on the wing from below in the area of the main spar. It is necessary to avoid jacking by grasping the wing tip.

8.4.5 Leveling

Leveling procedure is described in the Aircraft Maintenance and Inspection Procedures for HARMONY LSA airplane.

8.4.6 Road transport

The airplane can be transported on communication after its loading on an appropriate trail. It is necessary to dismount wings. The airplane must be secured against possible movement. This way you will preclude possible damage to the airplane.

8.5 Draining of fuel tank

Draining should be done prior to first flight each day. There is a drain valve of each wing tank located on its bottom.

Procedure:

1. Put a transparent cup under the drain valve.
2. Using screwdriver (or appropriate jig) press and turn drain valve counterclockwise to open it.
3. Drain required quantity of fuel.

NOTE

Draining serves to elimination of impurities and deposits from the fuel. Drain until clean fuel flows from the drain valve.

4. Using screwdriver (or appropriate jig) turn drain valve clockwise to close it.
5. Repeat procedure for the opposite tank.



8.6 Cleaning and care

Always use appropriate cleaning agents when cleaning airplane surface. Residuum of oil and fat can be removed from the airplane surface (excluding the canopy) by suitable detergents, possibly by petrol.

The canopy only to be cleaned by washing with ample stream of tepid water with addition of appropriate detergents. Use soft rag, sponge or wash leather. Use suitable polishing agent after wiping rests of water.

CAUTION

**NEVER DRY-CLEAN THE CANOPY AND
NEVER USE PETROL OR CHEMICAL
SOLVENTS!**

Coating, upholstery and carpets in the cockpit can be removed from the cockpit, brushed and, if need be, cleaned with warm water with addition of appropriate detergent. Dry up upholstery after doing this.



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