

**SECTION 8**
HANDLING, SERVICE & MAINTENANCE

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8.1 INTRODUCTION

Section 8 contains factory recommended procedures for correct ground handling and routine care and servicing of the AQUILA AT01.

Furthermore, it includes requirements, which must be followed during inspection and maintenance, and in case of alterations and repairs.

8.2 AIRCRAFT INSPECTION PERIODS

An inspection must be performed every 100 hours of aircraft operation.

The required inspection items are contained in the AQUILA AT01 Maintenance Manual, the Operator's Manual for all versions of ROTAX® 912S engines, and the mt-propeller Operation and Installation Manual.

After the first 25 hours of operation of a newly delivered aircraft, an inspection within the specifications of a 100-hour inspection is to be completed.

After the first 25 hours of operation of newly supplied or overhauled engine, an inspection of the engine must be performed.

CAUTION

If the engine is mainly operated with AVGAS, oil change interval is reduced to 50 hours.

8.3 ALTERATIONS OR REPAIRS

Prior to any alterations on the aircraft the approval of the respective aviation authority must be obtained, to ensure that airworthiness of aircraft is not violated.

Any maintenance and repair should be accomplished in accordance to the instructions contained in the current AQUILA AT01 Maintenance Manual.

In the case of damages to the aircraft the cause of which is unknown or suspect, and prior to major repairs, the aircraft manufacturer should be contacted.

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8.4 GROUND HANDLING AND TRAILERING OF THE AIRCRAFT

8.4.1 Towing

8.4.1.1 Forward Movement

The aircraft can be safely moved forwards by one person on a smooth, level surface using a tow bar attached to the nose wheel. Before attaching the tow bar to aircraft, make sure the propeller blades near the horizontal position. While parking always remove tow bar from aircraft.

8.4.1.2 Backward Movement

To move the aircraft backwards also the tow bar is used preferably. The aircraft is pushed and controlled by means of the tow bar. To hold direction, look for deflection of the tail of the aircraft. Additional one can push on the propeller blades near the spinner. Helpers can push on the wing leading edge near the fuselage.

8.4.1.3 Turn the Aircraft on the Ground

To turn the aircraft on ground if area is limited to maneuver the aircraft, use the following procedure. Only one person is necessary.

Press down on the tailcone in front of the vertical stabilizer to raise the nose wheel off the ground. With the nose wheel clear of ground, the aircraft can be turned by pivoting about the main wheels.

Avoid exert force on the horizontal stabilizer because it is not designed for that.

8.4.1.4 Towing With Tow Vehicle

The tow bar delivered with the aircraft (optionally as equipment) can be used for towing the aircraft with tow vehicle over short distances on suitable ground. The tow bar is for standard designed car trailer couplings (adapter diameter 50 mm). Prior to towing check the tow bar is proper connected to the aircraft and vehicle, and the position of the propeller blades excludes a collision of the blades with the tow bar as well as with the tow vehicle when passing a bend. Move the aircraft cautiously. The speed of 5 km/h should be not exceeded. It is recommended to involve a helper, who watches for security whilst the aircraft is being towed.

In the same manner the aircraft can be moved with the wings removed. Because of the large tail span and the low speed, the trailering of the aircraft in public traffic even if officially authorized, is not recommended.

CAUTION

Never pull, lift or push on the spinner.

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CAUTION

Do not exert force on the control surfaces.

8.4.2 Parking

For short-term parking head the aircraft into the wind, retract the flaps, set the parking brakes and chock the main wheels.

When parking aircraft for any length of time in severe, unforeseeable weather additional tie the aircraft down. Install Pitot-static tube cover, stall warning transmitter cover, and the control stick lock. Close the canopy and cap the cowling openings.

It is recommended, to store the aircraft in a hangar.

8.4.3 Tie-Down

The aircraft has three tie-down points; two are located on the underside of the wings (fittings with M 8 thread) and the third is located on the lower fin. For a better locating, the tie-down points are marked with red ring marks.

It is recommended, the eye-bolts delivered with the aircraft and suitable tie-down ropes always carry in the aircraft. For protecting purposes and to keep laminar flow, seal tie-down fittings with tape before flight.

8.4.4 Jacking

The AQUILA AT01 is raised at two points and supported at the tail. The jack points are located at the bottom of the fuselage root ribs (see als page 2-17). A tail stand with an adapter may be placed under the lower fin skid plate and secured at the tail tie-down using a bolt.

To raise the nose wheel off the ground for any maintenance, a tail-heavy condition may be created by a weight that is attached at the tail tie-down.

8.4.5. Transportation by Road

The aircraft may be transported by means of a trailer with or without canvas cover. During greater distances, a standard semitrailer container or an ISO container with minimum dimensions L=12000 (mm), W=2300 (mm), H=2350 (mm) should be preferably used.

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For the transportation of the aircraft in a container with the above noted minimum dimensions, the wings and the main gear legs must be removed. During disassembly follow the appropriate procedures precisely, outlined in the AQUILA AT01 Maintenance Manual.

Special equipment is required for secure transportation by road.

Additional necessary equipment for securing fuselage and wings during transportation, such as ratching-type loading straps, suitable tie-down straps, as well as padding material should be acquired.

Technical drawings on loading equipment used by the manufacturer, and a loading plan can be obtained on request.

During loading, first stow and secure the wing standing on the wing leading edge by means of a transport frame close the container sidewall so the entire cross-section of the container remains for the aircraft tail with the horizontal stabilizer. Because of the limited space and the horizontal stabilizer that cannot be removed, the fuselage must be anchored with an inclination angle of 45 degrees.

If required, the control surfaces and the flaps should be secured by means of a suitable tape.

8.4.5.1 Loading the Wings

During storage and transportation of the wing, it is to be considered that the main spar of the wing that is removed from the aircraft can only absorb limited bending loads in chord line direction as well as torsional loads. Therefore, the manufacturer transports the wing bolted to a support frame, in the manner as it is attached to the fuselage. The support frame is also used for vertical wing storage. At the same time two padded stands, with a minimum width of 100 mm in the contact area, supports each wing half in the middle area.

If sufficient loading space is available, the wing can be transported lying onto pads and something that is suitable for compensating wing dihedral. Avoid stress loads of the control surfaces as well as of components installed above the wing skin. To prevent damage to aircraft surface load straps should be used always together with padding material.

During loading by means of a crane, the wing can be lifted at the transport support frame or with a suitable soft hoisting strap, looped around the main spar center section. In this case, keep attachment brackets away from loads.

8.4.5.2 Loading the Fuselage

The horizontal stabilizer span of 3000 (mm) is almost the length of the diagonal of a standard container cross-section. Therefore, the fuselage unit, including the engine, the

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propeller, the nose landing gear, and the canopy must be safely stowed and anchored with an inclination angle of 45 degrees. The main landing gear must be removed because of space limitation.

The fuselage is supported by a tail stand in front of the vertical stabilizer, and by a special support frame at the wing mounts. The mounting bolts must be equipped with a special coating to protect the mating surfaces of the wing mount assemblies. Ensure the fuselage support frame base has a minimum width of 1200 mm, and is located in front of the front wing mounts to prevent a tipping of the fuselage.

All loose items must be removed from aircraft or secured in a manner that avoids damage. Additionally the battery must be removed and the vents of the coolant expansion tank as well as of the brake hydraulic fluid reservoir must be capped or plugged. The propeller blades should be protected by packing material and in a safe for the transport position.

For loading the fuselage using a crane suitable hoisting straps may be placed around fuselage at firewall flange and at the area in front of the horizontal stabilizer. Make sure, any slipping of the slings or tipping of the fuselage during hoisting operations is not possible.

8.5 Cleaning and Care

CAUTION

Any dirt on aircraft surface impairs the flight performances and the flight characteristics.

8.5.1 Painted Surfaces

To maintain the flying characteristics and performances of the AQUILA AT01, the external surfaces of the aircraft must remain clean, especially the leading edges of the wings and stabilizers.

Moreover, care of painted surfaces is for preservation of value.

8.5.1.1 Washing

The aircraft should be washed regularly with plenty of water, using chamois leather and a clean sponge.

Heavy dirt deposits and insect residue should be immediately washed off after every flight, because to remove them dried is difficult.

Only in case of especially stubborn dirt cleaning should be performed using a mild soap and water since that will wash away the protective coating of wax gradually.

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Remove oil and grease deposits with a cloth moistened sparingly with kerosene. Commercially available aircraft cleaning agents also may be used since they are grease-soluble.

8.5.1.2 Preservation

The aircraft exterior surface is protected with a resistant, durable automotive finish. To remain this protective characteristic it is necessary to repair minor damages to the paint immediately, and once up to three times a year, to wax the exterior surface of the aircraft using a good silicone free automotive wax.

CAUTION

Only silicone free cleaning and polishing agents may be used

8.5.2 Canopy

The AQUILA AT01 canopy offers an excellent all around view because of the generous windows made from special acrylic material.

Since acrylic glass can be scratched easily, the same basic principles should be considered as during cleaning of painted surfaces. Clean with plenty of water and dry with a soft clean sponge and moist chamois.

For stubborn deposits of dirt special windshield cleaners are commercially available.

Minor scratches may be polished using special acrylic polishing pastes available at authorized dealers. For successful application, always follow the manufacturers instruction on proper usage of their products.

The inner sides of the canopy windows are to be treated as their outer surfaces.

8.5.3 Propeller

Refer to latest issue of the E-124 mt-propeller Operating and Installation Manual.

8.5.4 Engine

Refer to latest issue of the Operator's Manual for all versions of ROTAX® 912s engines.

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8.5.5 Interior Cleaning

To remove dust and loose dirt clean the interior with a efficient vacuum cleaner. Prior to cleaning remove loose or foreign items from aircraft or stow them properly.

Floor carpets may be removed and cleaned thoroughly like any household carpet or by a specialized company.

To clean plastic surfaces such as the glareshield, a lint free, damp cloth should be preferably used.

The instruments can be wiped clean with a dry, soft cloth.

The inner sides of the canopy windows are to be treated as their outer surfaces. (see 8.5.2).

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