

## INTRODUCTION

With the AQUILA AT01 you have acquired a very efficient training and utility aircraft, which is easy to operate and exhibits excellent handling qualities.

To ensure reliable operation and trouble free flight, we recommend that you read this Pilot's Operating Handbook thoroughly and adhere to the operating instructions and recommendations given herein.

<b>CAUTION</b>
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*All limitations, procedures and performance data contained in this handbook are EASA approved and mandatory. Failing to follow the procedures and limits set forth in this handbook can lead to a loss of liability by the manufacturer.*

## THE HANDBOOK

The handbook is presented in loose-leaf form to ease the substitution of revisions and is sized in A5-format for convenient storage in the aircraft.

Tab dividers throughout the handbook allow quick reference to each section. A Table of Contents is located at the beginning of each section to aid the location of specific data within that section.

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**Note:**

If the applicable POH supplement for Night VFR operation is implemented, the list of resulting effective chapters can be found in chapter 9.

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3	A.01	X	3-1 to 3-24	02.03.2020
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5	A.01	(X)*	5-1 to 5-24	02.03.2020
6	A.01		6-1 to 6-14	02.03.2020
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\* - partly approved

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## LIST OF REVISIONS

All revisions to the handbook, with the exception of individual weight and balance data and revisions to the Equipment List, must be recorded in the List of Revisions. Revisions must either be approved by the EASA or, in the case of changes, in accordance with Part 21.A.263(c)(2) by the Design Organization of AQUILA Aviation International GmbH.

Additions and revisions to text in an existing section will be identified by a vertical black line adjacent to the applicable revised area. A new issue code appears in the footer of the revised pages.

If revisions are distributed, the applicable sections are to be exchanged with the updated version. Generally only complete sections of the POH will be exchanged and not individual pages.

The operation of the AQUILA AT01 is only permitted with a current and up to date POH carried on board. Please refer to the following web page whenever the revision status of your POH is in question.

[www.aquila-aviation.de](http://www.aquila-aviation.de)

Issue	Description of Revision	Revised Section(s)	EASA Approval-number	Approval by AQUILA / EASA Date / Signature
A.01	First Issue	All	10072382	02.03.2020
A.02	Editorial changes, AS-27 "(restricted) GFC500"	0, 1, 2, 4, 9	10076303	03.03.2021

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The technical content of this document is approved under the authority of the DOA ref.  
EASA.21J.025.

03.03.2021  
  
Date, Signature Office of Airworthiness

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**AVAILABILITY OF TECHNICAL PUBLICATIONS**

To guarantee safe operation and correct maintenance of the AQUILA AT01-200 aircraft, all manuals and technical publications must be kept in the current effective status.

All manuals and technical publications are available from the companies listed below:

**(a) AQUILA AT01-200 related Manuals and Publications**

AQUILA Aviation International GmbH  
OT Schönhagen, Flugplatz  
D-14959 Trebbin

Tel: ++49 (0)33731-707-0  
Fax: ++49 (0)33731-707-11  
E-Mail: kontakt@aquila-aviation.de  
Internet: <http://www.aquila-aviation.de>

**(b) Engine ROTAX 914 F related Manuals and Publications**

Contact the ROTAX® authorized distributor for ROTAX® Aircraft Engines of the applicable distribution area.

For contact details of the local authorized distributor for ROTAX Aircraft Engines, please refer to chapter 9 of the ROTAX® Operator's Manual for 914 Engines.

**(c) Propeller MTV-21 related Manuals and Publications**

mt-Propeller Entwicklung GmbH  
Flugplatz Straubing-Wallmühle  
D-94348 Atting

Tel: ++49 – (0)9429-9409-0  
Fax: ++49 – (0)9429-8432  
Internet: [www.mt-propeller.com](http://www.mt-propeller.com)  
E-Mail: sales@mt-propeller.com

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## 1.1 INTRODUCTION

This Pilot's Operating Handbook contains all the information the pilot and instructor require for the safe and efficient operation of the AQUILA AT01-200 aircraft.

It includes all information required in accordance with JAR-VLA and additional information considered by the manufacturer to be of value to the pilot.

This Manual consists of nine sections which cover all operational aspects of the aircraft equipped with a Garmin G500 TXi PFD and MVP-50P-AQ.

Optional equipment which has been installed on request of the customer (COM, NAV, GPS and others) is included in Section 9 "Supplements" of this Manual.

Information regarding equipment approved for installation in the AQUILA AT01-200 is provided in Section 6 of this manual and in the approved equipment overview list in the Maintenance Manual (Document Number MM-AT01-1020-110).

## 1.2 AIRCRAFT TYPE CERTIFICATION

The aircraft AQUILA AT01 is type-certified in accordance with the certification specifications of the *Joint Aviation Requirements for Very Light Aeroplanes (JAR-VLA*, including the revision VLA/92/1) by the Luftfahrt-Bundesamt, the National Aviation Authority of Germany.

The Type Certificate under the Type Certificate Data Sheet No. 1106 was issued on the 21<sup>st</sup> of September 2001.

Based on this Type Certificate the model AT01-200 was certified.

*Category of Airworthiness:* Normal

*Noise Certification Basis:* CS-36 (Amendment 5)

*Approved for following operations:* VFR by day

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### 1.3 WARNING, CAUTIONS AND NOTES

Throughout the text, special text boxes marked WARNING, CAUTION and NOTE are used. These terms are defined as follows:

<b>WARNING</b>
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*Procedures, practices, etc. which may result in personal injury or loss of life if not strictly adhered to. The issues addressed under these text boxes directly affect the airworthiness and the safe operation of the aircraft.*

<b>CAUTION</b>
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*Procedures, practices, etc. which may result in damage to or destruction of equipment if not strictly adhered to. The issues addressed under these text boxes have an indirect or minor impact on the airworthiness and the safe operation of the aircraft.*

<b>NOTE</b>
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*Calls attention to additional procedures or information which are not directly associated with flight safety but are nevertheless important or deviate from standard practices.*

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## 1.4 PRINCIPLE AIRCRAFT DIMENSIONS

### 1.4.1 Overall Dimensions

Wing Span:	33.79 ft	(10.30 m)
Length:	24.28 ft	(7.40 m)
Height:	7.87 ft	(2.40 m)

### 1.4.2 Wings

Airfoil:	HQ-XX mod.	
Area:	113.02 sq. ft	(10.50 m <sup>2</sup> )
Aspect Ratio:	10.10	
Mean Aerodynamic Chord (MAC):	3.51 ft	(1.07 m)

### 1.4.3 Horizontal Stabilizer / Elevator

Area:	21.52 sq. ft	(2.00 m <sup>2</sup> )
Span:	9.84 ft	(3.00 m)

### 1.4.4 Fuselage and Vertical Stabilizer / Rudder

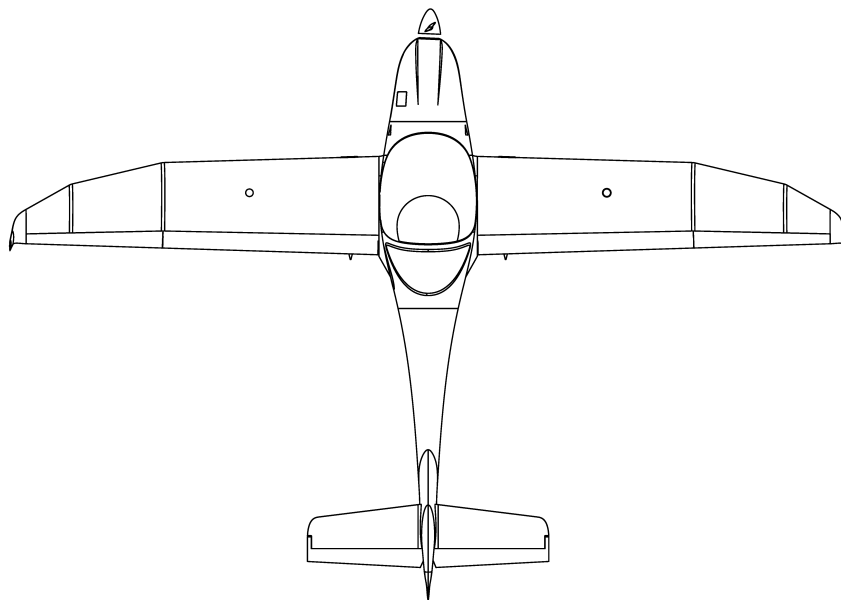
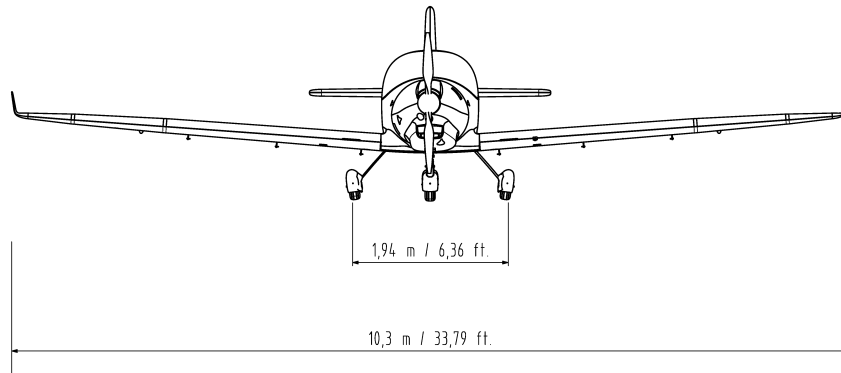
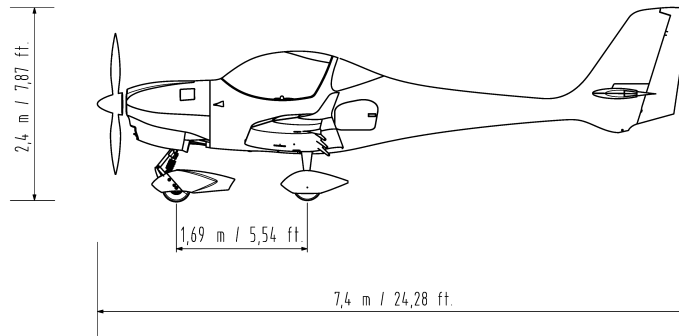
Maximum Fuselage Width	3.94 ft	(1.20 m)
Length	24.28 ft	(7.40 m)
Area (Vertical Tail):	15.61 sq. ft	(1.45 m <sup>2</sup> )

### 1.4.5 Landing Gear

Wheel Track:	6.37 ft	(1.94 m)
Wheel Base:	5.54 ft	(1.69 m)
Tire Size:	5.00-5	

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## 1.5 AQUILA AT01-200 – THREE VIEW DRAWING



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## 1.6 ENGINE

The ROTAX® 914 F3 is a 4-cylinder 4-stroke engine with air cooled cylinders and liquid cooled cylinder heads.

The Propeller is driven via an internal reduction gearbox with an integrated overload clutch and a hydraulic constant speed propeller governor.

Reduction Ratio of internal gearbox:	2.43 : 1
Displacement:	73.9 in <sup>3</sup> (1211 cm <sup>3</sup> )
max. Takeoff power (5 min.):	113,3 BHP (84.5 kW)
at max. Takeoff propeller speed:	2385 RPM
max. continuous power:	98.6 BHP (73.5 kW)
at max. continuous propeller speed:	2260 RPM

## 1.7 PROPELLER

Hydraulic two-blade, constant speed propeller

Manufacturer:	mt-Propeller
Type:	MTV-21-A/175-05
Diameter:	68.9 in (175 cm)

## 1.8 FUEL

The following fuel grades are approved for use (min. RON 95):

EN228 Super	ASTM D4814
EN228 Super plus	
AVGAS 100LL	ASTM D910
AVGAS UL 91	ASTM D7547

	<u>Left Fuel Tank</u>	<u>Right Fuel Tank</u>
Fuel Capacity (total):	15.8 US gal (60 l)	15.8 US gal (60 l)
Usable Fuel (total):	14.48 US gal (54.8 l)	14.48 US gal (54.8 l)
Unusable Fuel:	1.37 US gal (5.2 l)	1.37 US gal (5.2 l)

Due to the higher lead content in AVGAS 100LL, wear of the valve seats, deposits in the combustion chamber and lead sediments in the lubrication system will increase when using this type of fuel. Therefore AVGAS should only be used if you encounter problems with vapor lock or if the other fuel types are not available.

Lead free AVGAS UL 91 is similar to AVGAS 100LL (MON 91 ⇒ RON > 95) when it comes to vapor lock susceptibility. However, it does not suffer from lead induced problems.

(Please refer to the current issue of the operating manual for the ROTAX® 914 engine series)

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## 1.9 ENGINE OIL AND COOLANT

### 1.9.1 Engine Oil

Use only oil with an API classification of “SG” or higher. Heavy duty 4-stroke motor oils tend to meet these requirements. For more information regarding engine oil selection, please refer to the Operator’s Manual for all versions of the 914 engine series and to the current issue of the ROTAX® Service Instruction SI-914-019.

The following chart shows the recommended oil viscosity as a function of the climatic conditions. The use of multi-grade oils is recommended.

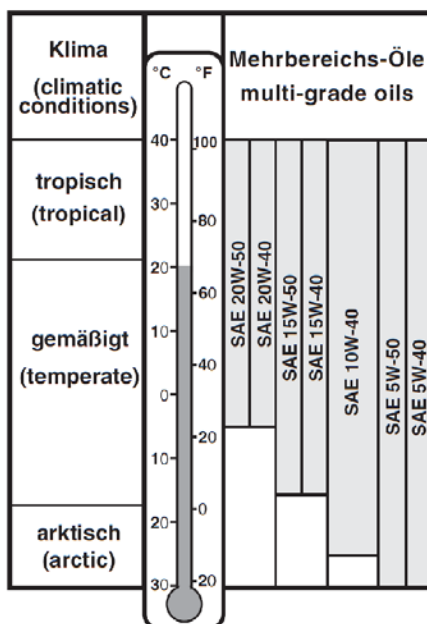


Figure 1-2

### CAUTION

#### **Do not use aviation grade oil!**

When operating the engine with AVGAS do **not** use full synthetic oil!

If the engine is operated extensively on AVGAS 100LL (more than 30hrs within 100hrs) the interval between oil changes shall be reduced to 50 hrs!

(please refer to the current issue of the ROTAX® Service Instructions SI-914-019)

Max. Oil Capacity:	3.17 US quarts	(3.00 l)
Difference between Max/Min:	0.475 US quarts	(0.45 l)
Max. Oil Consumption:	0.063 US quarts/hr.	(0.06 l/h)

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### 1.9.2 Engine Coolant

A conventional, ethylene glycol and water based coolant is used.

Please refer to the Operator's Manual for the 914 engine series, section 2.2, and to the current issue of the ROTAX® Service Instructions SI-914-019 when choosing an engine coolant.

Description	Ethylenglycol	Water
Mixture ratio [%] anti-freeze / water	50 + 15	50 - 15

**CAUTION**

*Low quality or contaminated coolant may lead to deposits in the cooling system which may result in insufficient engine cooling.*

**Coolant Quantity:** Minimum: 2.54 US quarts (2.4 l)  
Maximum: 2.64 US quarts (2.5 l)

**Overflow Bottle:** Minimum: 0.106 US quarts (0.1 l)  
Maximum: 0.21 US quarts (0.2 l)

### 1.10 WEIGHTS

Maximum Takeoff Weight (MTOW): 1653 lb. (750 kg)  
 Maximum Landing Weight (MLW): 1653 lb. (750 kg)  
 Empty Weight (MZFW): Refer to section 6  
 Max. Weight in Baggage Compartment: 88.2 lb. (40 kg)  
 (All baggage must be adequately strapped and secured)  
 Max. Wing Loading: 14.6 lb./ft<sup>2</sup> (71.4 kg/m<sup>2</sup>)  
 Min. Wing Loading: ca. 10.77 lb./ft<sup>2</sup> (52.6 kg/m<sup>2</sup>)

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## 1.11 TERMINOLOGY AND ABBREVIATIONS

### 1.11.1 Speeds

<i>IAS:</i>	(Indicated Airspeed) - the speed shown on the airspeed indicator
<i>KIAS:</i>	IAS expressed in knots
<i>CAS:</i>	(Calibrated Airspeed) - the indicated airspeed, corrected for position and instrument error. CAS is equal to true airspeed in standard atmosphere conditions at sea level.
<i>KCAS:</i>	CAS expressed in knots
<i>TAS:</i>	(True Airspeed) - the airspeed relative to undisturbed air, which is the CAS corrected for altitude, temperature and compressibility.
<i>GS:</i>	(Ground speed) - speed of the aircraft relative to the ground
<i>V<sub>A</sub>:</i>	Maneuvering Speed
<i>V<sub>S</sub>:</i>	Stall speed without engine power
<i>V<sub>S0</sub>:</i>	Stall speed without engine power in the landing configuration
<i>V<sub>X</sub>:</i>	Best Angle-of-Climb Speed
<i>V<sub>Y</sub>:</i>	Best Rate-of-Climb Speed
<i>V<sub>FE</sub>:</i>	Maximum Flap Extended Speed
<i>V<sub>NE</sub>:</i>	Never Exceed Speed - The speed limit that must not be exceeded at any time
<i>V<sub>NO</sub>:</i>	Maximum Structural Cruising Speed is the speed that should not be exceeded except in smooth air and then only with caution.

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### 1.11.2 Weight and Balance

<i>Reference Datum:</i>	An imaginary vertical plane from which all horizontal distances are measured for balance purposes
<i>Reference Line:</i>	fixed horizontal reference line
<i>Lever Arm:</i>	The horizontal distance from the reference datum to the center of gravity (C.G.) of an item
<i>Moment:</i>	The product of the weight of an item multiplied by its lever arm
<i>Empty Weight:</i>	Weight of the aircraft including unusable fuel, full operating liquids and full oil.
<i>Max. Takeoff Weight:</i>	Maximum permissible weight approved for the conduction of the takeoff run
<i>Useful Load:</i>	Difference between takeoff weight and basic empty weight
<i>Usable Fuel:</i>	Fuel available for flight planning
<i>Unusable fuel:</i>	Fuel remaining in the fuel tanks that cannot be safely used in flight.
<i>Center of Gravity (C.G.):</i>	The point at which the aircraft would balance if it were possible to suspend it at that point
<i>MAC:</i>	mean aerodynamic chord
<i>MTOW:</i>	maximum takeoff weight
<i>MWL:</i>	maximum landing weight
<i>MZFW:</i>	empty weight

### 1.11.3 Meteorological Terminology

<i>ISA:</i>	International Standard Atmosphere
<i>MSL:</i>	Altitude above sea level
<i>OAT:</i>	Outside Air Temperature
<i>QNH:</i>	Barometric pressure adjusted to sea level
<i>SAT:</i>	Static Air Temperature - equal to OAT
<i>VFR, Day:</i>	Beginning of morning civil twilight until end of evening civil twilight (sun 6° below horizon)
<i>VFR, Night:</i>	End of evening civil twilight until beginning of morning civil twilight (sun 6° below horizon)
<i>DVFR:</i>	Flight during the day according to visual flight rules
<i>NVFR:</i>	Flight during the night according to visual flight rules

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**1.11.4 Engine and Performance**

**TOP:** (Take-off Power) - maximum power permissible for takeoff  
**MCP:** (Max. Continuous Power) - maximum power permitted for continuous operation

**1.11.5 Various**

**Serial No. (S/N):** Serial Number of the Aircraft  
**Part No. (P/N):** Part Number  
**GFRP:** Glass Fiber Reinforced Plastic  
**CFRP:** Carbon Fiber Reinforced Plastic  
**ACL:** Anti Collision light  
**VFR:** Visual Flight Rules  
**PFD:** Primary Flight Display  
**ADC:** Air-Data Computer  
**AHRS:** Attitude and Heading Reference System  
**GDU:** Garmin Display Unit  
**MFD:** Multi-Function Display  
**AI:** Attitude Indicator or Artificial Horizon  
**LDG:** Flaps - landing position  
**T/O:** Flaps - takeoff position  
**UP:** Flaps - cruise position  
**MP:** Manifold Pressure  
**COM:** Communication  
**NAV:** Navigation  
**CB:** Circuit Breaker  
**ATC:** Air Traffic Control  
**FF:** Fuel Flow  
**rpm:** revolutions per minute  
**AS:** AQUILA Supplement  
**EMS:** Engine Monitoring System  
**TCU:** Turbo Control Unit

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## 1.12 CONVERSION FACTORS

### 1.12.1 Length

$$1 \text{ ft} = 0.304 \text{ m}$$

$$1 \text{ in} = 25.4 \text{ mm}$$

### 1.12.2 Speed

$$1 \text{ kt} = 1.852 \text{ km/h}$$

$$1 \text{ mph} = 1.609 \text{ km/h}$$

### 1.12.3 Pressure

$$1 \text{ hPa} = 100 \text{ N/m}^2 = 1 \text{ mbar}$$

$$1 \text{ in. Hg} = 33.865 \text{ hPa}$$

$$1 \text{ psi} = 68.97 \text{ mbar}$$

### 1.12.4 Mass ("Weight")

$$1 \text{ lb} = 0.454 \text{ kg}$$

### 1.12.5 Volume

$$1 \text{ US Gallon} = 3.78 \text{ Liter}$$

$$1 \text{ Imperial Gallon} = 4,546 \text{ Liter}$$

### 1.12.6 Temperature

$$(t) \text{ }^\circ\text{C (Celsius)} = 5/9 ((t) \text{ }^\circ\text{F}-32)$$

$$(t) \text{ }^\circ\text{F (Fahrenheit)} = 9/5 (t) \text{ }^\circ\text{C}+32$$

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## 2.1 INTRODUCTION

This section includes all operating limitations, instrument markings and basic placards necessary for the safe operation of the aircraft, its engine, standard systems and standard equipment.

<b>WARNING</b>
----------------

*The aircraft must be operated in compliance with the operating limitations.*

The GARMIN G500 TXi Cockpit Reference Guide and the Operating Instructions for the Glass Panel Engine Monitor MVP-50P-AQ must be carried on board the aircraft and be accessible to the crew during flight.

## 2.2 AIRSPEED LIMITATIONS

The airspeeds given below are expressed in Indicated Airspeeds (IAS), the airspeed shown on the airspeed indicator:

Indicated Airspeed (IAS)	[kts]	Remarks
<b>V<sub>A</sub></b> Maneuvering speed	<b>112</b>	Do not make full or abrupt control movements above this speed. This may result in overloading the aircraft structure.
<b>V<sub>FE</sub></b> Maximum flap extended speed	<b>90</b>	Do not exceed this speed with flaps in T/O or LDG position.
<b>V<sub>NO</sub></b> Maximum structural cruising speed	<b>130</b>	Do not exceed this speed except in smooth air, and then only with caution.
<b>V<sub>NE</sub></b> Never exceed speed	<b>165</b>	Do not exceed this speed in any operational condition.

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## 2.3 AIRSPEED INDICATOR MARKINGS

The airspeeds given below are expressed in Indicated Airspeeds (IAS):

Marking (IAS)	[kts]	Remarks
White arc	<b>39-90</b>	Full flap operating range
Green arc	<b>49-130</b>	Normal operating range
Yellow arc	<b>130-165</b>	Operations in this region must be conducted with caution and only in smooth air.
Red line	<b>165</b>	Maximum speed for all operations.

## 2.4 POWER PLANT LIMITATIONS

### 2.4.1 Engine

- a) Manufacturer: BRP-ROTAX GmbH & Co KG, Gunskirchen, Austria  
b) Model: 914 F3

<b>NOTE</b>
-------------

*The engine is equipped with a hydraulic propeller governor and drives the propeller via a reduction gearbox. The gearbox reduction ratio is 2.43 : 1.*

*The tachometer indicates the propeller speed. As a result, all rpm readings in this manual are expressed as propeller speeds, unlike the data in the Engine Operator's Manual.*

- c) Power Plant Limitations

Maximum Takeoff Power:	113.3 BHP (84.5 kW)
Maximum Takeoff Prop Speed (5 min.):	2385 RPM
Maximum Continuous Power:	98.6 BHP (73.5 kW)
Maximum Continuous Prop Speed:	2260 RPM

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- d) Oil Pressure
- |   |              |               |               |
|---|--------------|---------------|---------------|
| Minimum:  | 11.6 psi     | (0.8 bar)     | below 590 RPM |
| Normal:   | 29 –72.5 psi | (2.0-5.0 bar) | above 590 RPM |
| Maximum during a cold start:<br>(only for a short time) | 101.5 psi    | (7.0 bar)     |               |
- e) Fuel Pressure\*
- |          |         |            |
|----------|---------|------------|
| Minimum: | 2.2 psi | (0.15 bar) |
| Maximum: | 5.1 psi | (0.35 bar) |
- f) Manifold Pressure
- |                       |         |
|-----------------------|---------|
| Maximum (MCP):        | 35 inHg |
| Maximum (TOP, 5 min): | 40 inHg |
- g) Oil Temperature
- |          |        |          |
|----------|--------|----------|
| Maximum: | 266 °F | (130 °C) |
| Minimum: | 122 °F | ( 50 °C) |
- h) Cylinder Head Temperature (CHT)
- |          |        |          |
|----------|--------|----------|
| Maximum: | 248 °F | (120 °C) |
|----------|--------|----------|
- i) Minimum temperature to start the engine
- |          |        |          |
|----------|--------|----------|
| Minimum: | -13 °F | (-25 °C) |
|----------|--------|----------|
- At an OAT below -13 °F (-25 °C) the engine must be preheated.

#### 2.4.2 Propeller

- a) Manufacturer: mt-Propeller Entwicklung GmbH, Atting, Germany
- b) Model: MTV-21-A/175-05
- c) Propeller diameter: 68.9 in (1,75 m)
- d) Propeller speed limitations
- |  |          |
|--|----------|
| Maximum take-off propeller speed (max. 5 min): | 2385 RPM |
| Maximum continuous propeller speed:            | 2260 RPM |

\* Difference of fuel pressure minus airbox pressure

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## 2.5 MARKINGS ON THE ENGINE MONITOR MVP-50P-AQ

The following table shows the instrument markings shown on the MVP-50P-AQ and their meaning.

MVP-50P-AQ	Red Line (minimum)	Green Arc (normal operating range)	Yellow Arc (caution)	Red Line (maximum)
Tachometer [RPM]	---	535 – 2260	2260 - 2385	2385
Oil Temperature [°F] [°C]	122 (50)	122 - 266 (50 – 130)	---	266 (130)
Cylinder Head Temperature [°F] [°C]	---	---	---	248 (120)
Oil Pressure [psi] ([bar])	11.6 (0.8)	29 – 72.5 (2.0 – 5.0)	11.6 – 29 (0.8 – 2.0) 72.5 – 101.5 (5.0 – 7.0)	101.5 (7.0)
Fuel Pressure [psi] ([bar])	2.2 (0.15)	2.2 – 5.1 (0.15 – 0.35)	---	5.1 (0.35)
Manifold Pressure [inHg]	---	0 – 35	35 – 40	40
Voltmeter [V]	11	12.5 – 15.5	11 – 12.5	15.5
Amperemeter BAT [A]	---	-3 - +100	< -3	---
Amperemeter ALT1 [A]	-5	+1 - +42	-5 – +1 > +42	---
Amperemeter ALT2 [A]	---	-3 - +20	< -3 > +20	---

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## 2.6 WEIGHT LIMITS

Maximum Takeoff Weight	1653 lb	(750 kg)
Maximum Landing Weight	1653 lb	(750 kg)
Max. Weight in Baggage Compartment	88.2 lb	( 40 kg)

**WARNING**

*Exceeding the weight limits can overload the aircraft and is prohibited. In addition, aircraft performance and handling characteristics may be detrimentally affected. The stall speed will increase, so that the instrument markings are no longer accurate.*

## 2.7 CENTER OF GRAVITY LIMITS

The reference datum is located at the wing leading edge, at the fuselage-wing junction. With the aircraft leveled, the reference datum and the vertical fall in a plane.

The center of gravity must be within the following limits:

Forward Limit:	16.8 in.	(0.427 m)	aft of Datum
Rearward Limit:	20.6 in.	(0.523 m)	aft of Datum

**WARNING**

*Exceeding the center of gravity limits is prohibited. Exceeding the limits reduces the controllability and stability of the aircraft.*

The procedure to determine the center of gravity location for flight is provided in Section 6 of this handbook.

## 2.8 MANEUVER LIMITS

The aircraft is certificated in accordance to the JAR-VLA. That certification includes the following maneuvers:

- All normal, non acrobatic maneuvers.
- Stalls: Wings level stall
- Steep Turns: Angle of Bank  $\leq 60^\circ$
- Chandelle: Entry Speed 120 kts
- Lazy Eight: Entry Speed 110 kts

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**NOTE**

*All acrobatic maneuvers as well as maneuvers with a bank angle exceeding 60° are prohibited.*

## 2.9 FLIGHT LOAD FACTORS

The following flight load factors may not be exceeded while performing any approved maneuvers.

Flight Load Factor [g]	at V <sub>A</sub>	at V <sub>NE</sub>	With Flaps Extended
Positive	4.0	4.0	2.0
Negative	-2.0	-2.0	0

**WARNING**

*Exceeding the flight load factors limits may result in damage to the aircraft structure.*

**CAUTION**

*Maneuvers that include intentional negative flight load factors are not permitted.*

*Intentional Spinning is not permitted.*

## 2.10 CREW

Maximum number of people on board: 2

Minimum crew: 1 Pilot

With only one person on board, the aircraft may only be operated from the left seat.

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## 2.11 KINDS OF OPERATION LIMITS / MINIMUM EQUIPMENT

Certified for: visual flights by Day

Table 1	For VFR by Day*
Flight and navigational instruments	<ul style="list-style-type: none"> <li>• Garmin G500 TXi</li> <li>• Magnetic Compass</li> <li>• Working timepiece with a seconds hand**</li> <li>• VHF Transceiver***</li> <li>• GPS Receiver Garmin 400W / 500W Series or GTN (6XX/7XX)</li> </ul>
Power Plant Instruments	<ul style="list-style-type: none"> <li>• MVP-50P-AQ</li> <li>• Annunciator panel AP7DAQ</li> <li>• BAT2</li> <li>• TCU</li> </ul>
Other Equipment	<ul style="list-style-type: none"> <li>• Seat belts for each occupied seat</li> <li>• Emergency Hammer</li> <li>• Battery <math>\geq</math> 34 Ah</li> <li>• Alternator ALT 2</li> </ul>

\* The minimum equipment listed in Table 1 is valid for Germany. Other countries may require different minimum equipment. This may depend on the type of flight being carried out and the route being flown.

\*\* In Germany a watch with a seconds hand may be used as a working timepiece. Please observe all differing national regulations.

\*\*\* In Germany a VHF Transceiver is not required for flights that do not leave the vicinity of an uncontrolled airfield (§4 Abs. 3 FSAV). Regulations of other nations must still be observed.

**NOTE**

*For specific operations, additional equipment may be necessary. It is the aircraft operator's responsibility to observe the applicable requirements.*

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## 2.12 FUEL LIMITATIONS

	<u>Left Fuel Tank</u>	<u>Right Fuel Tank</u>
Fuel capacity (total):	15.85 US gal (60.0 l)	15.85 US gal (60.0 l)
Usable fuel (total):	14.48 US gal (54.8 l)	14.48 US gal (54.8 l)
Unusable fuel:	1.37 US gal (5.2 l)	1.37 US gal (5.2 l)

For approved fuel grades, please refer to paragraph 1.8.

**CAUTION**

*To ensure both fuel tanks are emptied evenly, switch to the other tank at least every 60 minutes.*

**NOTE**

*The amount of unusable fuel was determined with flap on LDG and  $V_{FE} = 90$  kts. It is the worst case fuel supply configuration within section 4 "NORMAL PROCEDURES".*

**NOTE**

*The fuel quantity, fuel used and fuel remaining functions of the G500 TXi / MVP-50 are advisory information only and must be verified by the pilot.*

## 2.13 TEMPERATURE LIMITATIONS

Parts of the aircraft structure that are exposed to direct vertical sunlight must be painted WHITE.

The cooling system of the engine was certified up to ISA +23°C.

For climbing in OAT higher than ISA +23°C an appropriate airspeed of more than  $v_y$  has to be selected by the pilot.

## 2.14 OPERATING ALTITUDE

The Aquila AT01-200 has a maximum operating altitude of 16,400 ft.

For flights above FL120 an appropriate oxygen supply for all persons aboard is recommended.

Furthermore national regulations have to be considered if applicable.

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## 2.15 PLACARDS

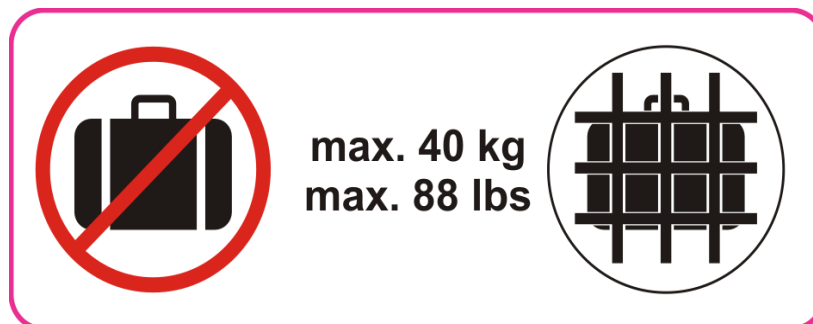
- 1) On the instrument panel, in the lower middle section of the panel:

This aeroplane is classified as VLA (Very Light Aeroplane) approved for day VFR only in non-icing conditions. All aerobatic maneuvers, including intentional spinning are prohibited. See Flight Manual for other limitations.

- 2) On the instrument panel below the Airspeed Indicator:

**Maneuvering Speed**  
**VA = 112 kts**

- 3) On the inner surface of the baggage compartment door:



- 4) On the instrument panel next to the main switches:

**CAUTION**  
Electric Main Fuel Pump  
BAT2 ON for Flight  
OFF for Parking

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## SECTION 4

### NORMAL PROCEDURES

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## 4.1 INTRODUCTION

This section provides normal operating procedures and checklists for the aircraft as well as recommended airspeeds.

Additional information is provided in the current issues of the Operators Manual for ROTAX® engine Type 914 series and the Operation and Installation Manual of mt-Propeller® ATA 61-01-024.

Normal procedures associated with optional equipment can be found in Section 9.

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## 4.2 AIRSPEEDS FOR NORMAL OPERATION

The following airspeeds are based on the maximum take-off weight of 1653 lbs (750 kg). They may also be used for any lower operational weight.

TAKE-OFF		
Airspeed (IAS)		kts
Normal climb speed to 50 Feet (Flaps <b>T/O</b> )		57
Best rate of climb speed at sea level (Flaps <b>UP</b> )	$V_Y$	65
Best angle of climb speed at sea level (Flaps <b>T/O</b> )	$V_X$	52

LANDING		
Airspeed (IAS)		kts
Final approach speed for landing (Flaps <b>LDG</b> )		60
Balked landing (Flaps <b>LDG</b> )		60
Maximum demonstrated crosswind component for take-off or landing		15
Maximum airspeed with Flaps <b>LDG</b>	$V_{FE}$	90

CRUISE		
Airspeed (IAS)		kts
Maneuvering speed	$V_A$	112
Maximum Turbulent Air Operating Speed	$V_{NO}$	130

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### 4.3 DAILY INSPECTION

**CAUTION**

*The daily inspection is begun by checking all 3 fuel sumps for water and contamination. This must be done **before** the aircraft is moved. Otherwise the fuel in the sump may mix.*

- |    |                                |  |
|----|--------------------------------|--|
| 1. | Tank drain (left / right wing) | drain and visually inspect for contamination |
| 2. | Gascolator drain               | drain and visually inspect for contamination |

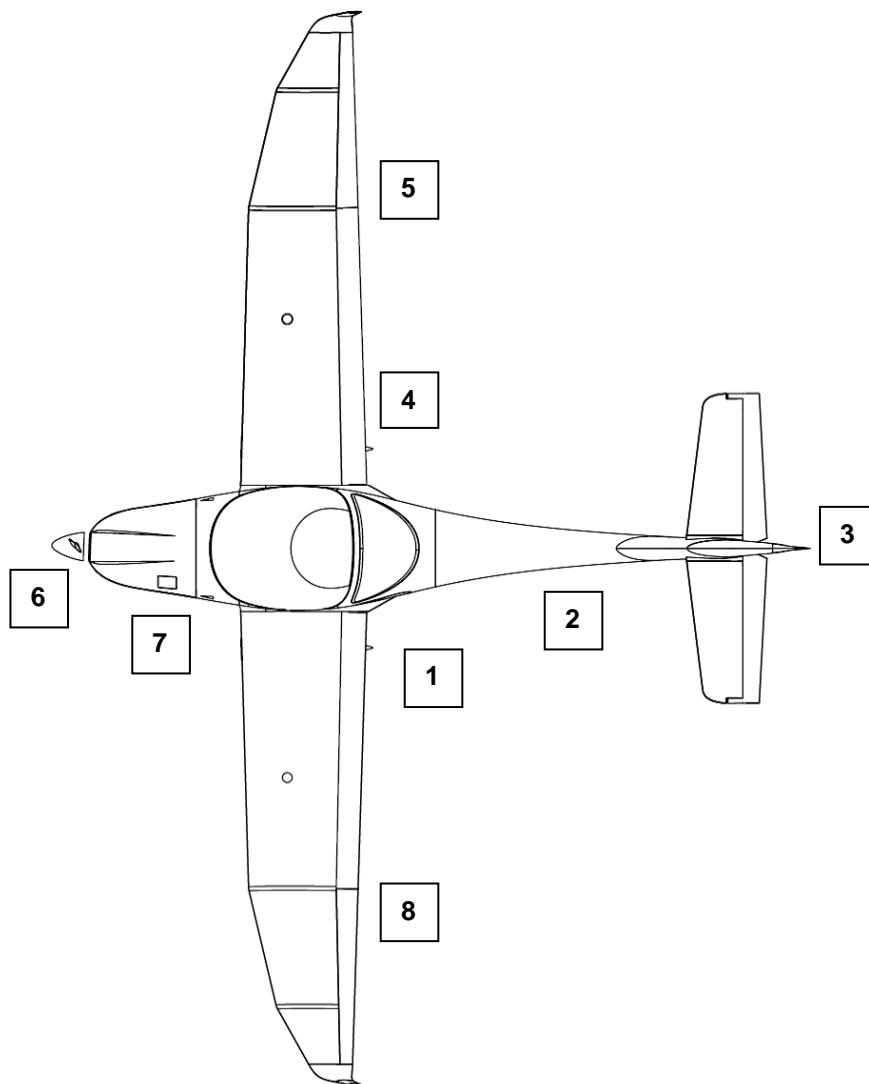
#### A) CABIN

- |     |                              |                                  |
|-----|------------------------------|----------------------------------|
| 1.  | Aircraft Documentation       | CHECK on board                   |
| 2.  | Ignition key                 | REMOVED                          |
| 3.  | <b>ALT1/ BAT</b> switch      | ON                               |
| 4.  | Annunciator (warning lights) | Press <b>TEST</b> ; check all ON |
| 5.  | <b>ALT1</b> switch           | OFF                              |
| 6.  | Engine instruments           | CHECK                            |
| 7.  | Fuel quantity                | CHECK                            |
| 8.  | <b>Nav Lights</b> switch     | ON, CHECK, OFF                   |
| 9.  | <b>Landing Light</b> switch  | ON, CHECK, OFF                   |
| 10. | <b>BAT</b> switch            | OFF                              |
| 11. | ELT                          | CHECK operational                |
| 12. | Foreign objects              | CHECK and REMOVE, when necessary |
| 13. | Baggage                      | STOWED and SECURED               |
| 14. | Canopy                       | CHECK condition and cleanliness  |

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B) EXTERIOR CHECK, Visual Inspection



**CAUTION**

*In this manual, visual inspection means the following:  
Inspect for mechanical damage, dirt, cracks, delamination, excessive play, looseness,  
leaks, incorrect attachment, foreign objects and general condition.  
Control surfaces: in addition, check for free movement.*

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1. Left main landing gear
  - a) Landing gear strut Visual inspection
  - b) Wheel fairing Visual inspection (refer to 7.11.4)
  - c) Tire pressure and slip marking CHECK
  - d) Tire, wheel, brake Visual inspection
  - e) Chocks (if in use) REMOVE
  
2. Fuselage
  - a) Fuselage shell Visual inspection
  - b) Skid plate Visual inspection
  - c) Tail tie-down DISCONNECT
  
3. Empennage
  - a) Elevator Visual inspection
  - b) Horizontal stabilizer Visual inspection
  - c) Rudder Visual inspection,  
CHECK: fitting and bolt  
connection, proper control cable  
connection and safe-tied.
  - d) Vertical stabilizer Visual inspection
  
4. Right main landing gear
  - a) Landing gear strut Visual inspection
  - b) Wheel Fairing Visual inspection (refer to 7.11.4)
  - c) Tire pressure and slip marking CHECK
  - d) Tire, wheel, brake Visual inspection
  - e) Chocks (if in use) REMOVE
  
5. Right wing
  - a) Entire wing surface (upper and under side) Visual inspection
  - b) Fuel vent CHECK if clear
  - c) Flap Visual inspection
  - d) Aileron and inspection window Visual inspection
  - e) Wing tip, NAV lights and ACL Visual inspection
  - f) Fuel level CHECK with dipstick (see inner  
surface of baggage compartment  
door) and verify with the indicated  
fuel level on the fuel gauge cockpit
  - g) Fuel tank filler cap CHECK if closed
  - h) Wing tie-down DISCONNECT

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6. Nose landing gear

- |                    |                   |
|--------------------|-------------------|
| a) Nose gear strut | Visual inspection |
| b) Wheel fairing   | Visual inspection |

**CAUTION**

*Both parts of the 2 piece nose wheel fairing must always be installed on the aircraft*

- |                                   |                   |
|-----------------------------------|-------------------|
| c) Tire pressure and slip marking | CHECK             |
| d) Tire, wheel                    | Visual inspection |
| e) Shock absorber unit            | Visual inspection |
| f) Chocks and tow bar             | REMOVE            |

7. Nose section, cowling**WARNING**

*Before cranking the propeller:  
Ignition, **ALT1/BAT** switch and **ALT2/BAT2** switch: OFF  
Set the parking brake.*

**WARNING****RISK OF BURNS !**

*Only check the oil and coolant levels when the engine is cool.*

- a) Check oil level      Turn the propeller several times in the **direction of engine rotation** to pump oil from the engine back into the oil tank.

**CAUTION**

**NEVER** turn the propeller against the direction of engine rotation.

Stop turning the propeller when air begins to return to the oil tank. This is indicated by the sound of air rushing from the open oil tank.

Use the oil dip stick to check that the oil level is between the -min./max.- markings. The difference between -min./max.- is approximately 0.48 US Quarts (0.45 l).

**CAUTION**

*The oil specification in Section 1.9.1 must be adhered to!*

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b) Check coolant level: Verify coolant level in the **expansion tank** and replenish as required. (The expansion tank must be at least 2/3 filled or coolant has to be visible at the gauge glass.)

Verify coolant level in the **overflow bottle** and replenish as required. (The coolant level must be between the min. and max. markings.)

**CAUTION**

*The coolant specification in Section 1.9.2 must be adhered to!*

- |  |   |
|--|---|
| c) Air Intakes                             | CHECK if clear                            |
| d) Cooler intake (oil, water, intercooler) | CHECK if free from obstructions           |
| e) Cowling                                 | Visual Inspection; CHECK Camloc fasteners |
| f) Propeller and Spinner                   | Visual inspection                         |
| g) Propeller blades                        | CHECK for cracks and other damage         |

8. Left wing

- |   |  |
|---|--|
| a) Entire wing surface (upper and under side) | Visual inspection  |
| b) Fuel vent                                  | CHECK if clear   |
| c) <b>BAT</b> switch                          | ON   |
| d) Stall warning                              | press to upper detent, warning tone is audible                                 |
| e) <b>BAT</b> switch                          | OFF  |
| f) Pitot / Static tube                        | REMOVE cover, CHECK if all openings are clear                                  |
| g) Wing tip, NAV lights and ACL               | Visual inspection  |
| h) Aileron and inspection window              | Visual inspection  |
| i) Fuel level                                 | CHECK with dipstick and verify with the indicated fuel level on the fuel gauge |
| j) Fuel tank filler cap                       | CHECK if closed  |
| k) Flap                                       | Visual inspection  |
| l) Wing tie-down                              | DISCONNECT   |

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**4.4 PRE-FLIGHT INSPECTION (Walk Around)**

1. Daily Inspection Confirm has been carried out.
2. Tow bar Removed?
3. Fuel level CHECK with dipstick and verify with the indicated fuel level on the fuel gauge

**WARNING**

*Before cranking the propeller:  
Ignition, **ALT1/BAT** switch and **ALT2/BAT2** switch: OFF  
Set the parking brake.*

**WARNING**

***RISK OF BURNS !**  
Only check the oil and coolant levels when the engine is cool !*

4. Check oil level Turn the propeller several times in the direction of engine rotation to pump oil from the engine back into the oil tank.  
  
Stop turning the propeller when air begins to return to the oil tank. This is indicated by the sound of air rushing from the open oil tank.  
  
Use the oil dip stick to check that the oil level is between the min. and max. markings. The difference between min. and max. is approx. 0.48 US Quarts (0.45 l).

**CAUTION**

*The oil specification in Section 1.9.1 must be adhered to !*

5. Check Coolant Level Verify coolant level in the overflow bottle and replenish as required. (The coolant level must be between the min. and max. markings)

**CAUTION**

*The coolant specification in Section 1.9.2 must be adhered to !*

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- |                             |  |
|-----------------------------|--|
| 6. Tie-down straps          | remove   |
| 7. Baggage door             | CHECK if closed and locked   |
| 8. Pitot cover              | remove   |
| 9. Control locks            | remove   |
| 10. Seating position        | adjust and lock, check that nose wheel steering and brakes can be operated         |
| 11. Carburetor heat         | CHECK for free movement, then PUSH (OFF)   |
| 12. Cabin heat              | CHECK for free movement, then PUSH (OFF)   |
| 13. Choke                   | CHECK for free movement and automatic reset  |
| 14. Throttle                | CHECK for free movement and if 100% indexed position is perceptible, then set IDLE |
| 15. Propeller Control Lever | CHECK for free movement, then set in HIGH RPM Position                             |
| 16. Weight and balance      | within limits?   |

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## 4.5 CHECKLISTS FOR NORMAL PROCEDURES

### 4.5.1 Before Engine Start-up

- |     |                                 |  |
|-----|---------------------------------|--|
| 1.  | Daily and Pre-Flight Inspection | COMPLETED  |
| 2.  | Passenger Briefing              | COMPLETED  |
| 3.  | Seats                           | ADJUSTED   |
| 4.  | Seat Belts and Harnesses        | FASTENED   |
| 5.  | Canopy                          | CLOSED and LOCKED<br>Check locking mechanism                       |
| 6.  | Parking Brake                   | SET (pull lever back)  |
| 7.  | Control column                  | CHECK for free movement and<br>correct control surface deflections |
| 8.  | Fuel Selector Valve             | LEFT or RIGHT  |
| 9.  | Carburetor Heat                 | PRESS  |
| 10. | Throttle                        | IDLE   |
| 11. | Propeller Control Lever         | HIGH RPM position  |
| 12. | <b>Avionics</b> Switch          | OFF  |
| 13. | <b>P/S Heat</b> (if installed)  | OFF  |
| 14. | Circuit Breakers                | CHECK all set  |

**NOTE**

*Cage the Attitude Indicator (if installed) before switching **ALT1/BAT** on.*

- |     |                          |    |
|-----|--------------------------|----|
| 15. | <b>ALT1 / BAT</b> switch | ON |
|-----|--------------------------|----|

**NOTE**

*Pay attention to messages that may appear on the PFD and MFD displays while the system is loading.*

*The attitude indicators (AHRS module and stand-by indicator) require several minutes to stabilize. Pay attention to information on the Garmin G500 TXi display.*

- |     |  |   |
|-----|--|---|
| 16. | <b>TCU</b> warning light (YELLOW)            | ILLUMINATES (1 second TCU OK, then off) |
| 17. | <b>BOOST</b> warning light (RED)             | ILLUMINATES (1 second TCU OK, then off) |
| 18. | <b>ALT1</b> warning light                    | ILLUMINATES                             |
| 19. | <b>ENG</b> warning lights (RED and YELLOW)   | ILLUMINATE                              |
| 20. | <b>P/S-HEAT</b> warning light (if installed) | ILLUMINATES                             |
| 21. | <b>ACL</b> switch                            | ON                                      |

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#### 4.5.2 Engine Start-up

- |     |                                     |               |                                   |
|-----|-------------------------------------|---------------|-----------------------------------|
| 1.  | <b>Fuel Pump AUX</b> switch         |               | ON                                |
| 2.  | Fuel Pressure                       |               | within GREEN range (AUX pump OK)  |
| 3.  | <b>Fuel Pump AUX</b> switch         |               | OFF                               |
| 4.  | <b>ALT2 / BAT2</b> switch           |               | ON                                |
| 5.  | <b>ALT2</b> warning light           |               | ILLUMINATES                       |
| 6.  | Fuel pressure                       |               | within GREEN range (MAIN pump OK) |
| 7.  | Throttle                            | - Cold Engine | IDLE                              |
|     |                                     | - Hot Engine  | 0.8 in. (2 cm) OPENED             |
| 8.  | Choke                               | - Cold Engine | PULL, and keep pulled             |
|     |                                     | - Hot Engine  | RELEASE (automatic reset)         |
| 9.  | Brakes                              |               | PRESS both pedals                 |
| 10. | Propeller area                      |               | CHECK, if CLEAR                   |
| 11. | Ignition switch                     |               | START, then BOTH                  |
| 12. | Oil Pressure                        |               | CHECK, if oil pressure rises      |
| 13. | <b>ALT 1 / ALT 2</b> warning lights |               | OFF                               |

**CAUTION**

*The oil pressure has to show rising values within 10 seconds after engine start, otherwise shut down the engine immediately!*

**NOTE**

*The starter may not be operated for more than 10 seconds at a time. Allow the starter to cool off for at least 2 minutes between attempts.*

**CAUTION**

*BAT2 switch must be turned ON at all times during flight to ensure a stabilized control voltage at the ALT2 regulator-rectifier unit. If the on-board power supply fails, ALT2 will ensure the MAIN fuel pump power supply.*

**NOTE**

*As long as the propeller keeps moving (also in windmilling) ALT2 will feed the MAIN fuel pump with electricity even in the event of inadvertently switching off ALT2 AND BAT2. However, in this case the stabilizing effect of BAT2 is no longer available, which, in the event of additional extreme voltage fluctuations in the on-board power supply, could result in an automatic shut down of the ALT2 regulator-rectifier unit and cause an engine stoppage.*

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### 4.5.3 Before Taxiing

**CAUTION**

*Engine run for approx. 2 min at 800 RPM and then at 1000 RPM for Oil Temp 122°F (50°C)*

1. **Avionics** switch ON
2. Avionics and flight instruments SET

The GARMIN G500 TXi has an integrated sensor that automatically adjusts the brightness of the display. It is also possible to adjust the brightness of the G500 TXi display manually by using the MFD touch-screen to change into menu “Home” than “System” and into “Backlight”.

3. Annunciator panel PRESS **TEST** and check that the **ALT1 (RED)**, **ALT2 (RED)**, **ENG (YELLOW)**, **ENG (RED)**, **TCU (YELLOW)**, **BOOST (RED)** and **P/S HEAT (YELLOW)** warning lights illuminate
4. Engine instruments CHECK

**NOTE**

*Oil can be brought up to temperature during taxiing.*

5. Voltmeter CHECK if GREEN
6. **ALT1** switch OFF, ammeter ALT2 > 5A (ALT2 OK)
7. **BAT1** switch OFF, CHECK voltmeter if GREEN (BAT2 OK)
8. **BAT1** switch ON
9. **ALT1** switch ON, ammeter ALT2 = 0A (ALT1 OK)
10. Ammeter (BAT, ALT1, ALT2) CHECK if GREEN
11. Trim switch and indication functional CHECK
12. Flap switch and indication functional CHECK, afterwards UP
13. **P/S Heat** switch (if installed) ON, **P/S HEAT** warning light goes OFF
14. **P/S Heat** switch (if installed) OFF, **P/S HEAT** warning light goes ON
15. all switches AS REQUIRED

### 4.5.4 Taxiing

1. Parking Brake RELEASE
2. Brakes CHECK
3. Nose Wheel Steering CHECK (function, free movement)
4. Flight instruments and Avionics CHECK

**CAUTION**

*Do not operate the engine at high RPM when taxiing to prevent damage to the propeller through stones or other foreign objects.*

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#### 4.5.5 Before Take-off (at the Taxi Holding Position)

- |     |                                  |   |
|-----|----------------------------------|---|
| 1.  | Brakes                           | APPLY and HOLD  |
| 2.  | Parking Brake                    | SET   |
| 3.  | Compass and gyro Instruments     | CHECK setting   |
| 4.  | Fuel Selector Valve              | LEFT or RIGHT, switch to the fuller tank  |
| 5.  | Fuel Pressure                    | CHECK if in the GREEN range<br>(otherwise, <u>do not attempt</u> take-off)  |
| 6.  | Engine instruments               | CHECK if in the GREEN range   |
| 7.  | Throttle                         | SET 1700 RPM  |
| 8.  | Ignition switch                  | Magneto check: SWITCH through:<br>"L-BOTH-R-BOTH" – positions.<br>CHECK RPM-drop<br>max. RPM-drop: 120 RPM<br>max. difference L/R: 50 RPM<br>RPM drop must be noticeable<br><u>then</u> : BOTH position |
| 9.  | Carburetor heat                  | PULL (ON)<br>(no RPM drop if TCU OK)  |
| 10. | Carburetor temperature indicator | slight rise in temperature  |
| 11. | Carburetor heat                  | PUSH (OFF)  |
| 12. | Propeller control lever          | SWITCH 3 times between HIGH RPM<br>and LOW RPM positions (end stops)  |
- Check points:
- 1) RPM drop: 200 ± 50 RPM
  - 2) increase manifold pressure
  - 3) constant oil pressure (± 0,5 bar  
then: START position

**CAUTION**

*Pull back the propeller control lever slowly to minimize the load on the two-piece crankshaft!  
For training operation switching between HIGH RPM and LOW RPM once is sufficient.*

- |     |                             |                         |
|-----|-----------------------------|-------------------------|
| 13. | Throttle                    | IDLE                    |
| 14. | <b>Fuel Pump AUX</b> switch | ON                      |
| 15. | Flap switch                 | T/O                     |
| 16. | Trim switch                 | white marking           |
| 17. | Circuit breakers            | CHECK all set           |
| 18. | Control column              | CHECK for free movement |
| 19. | Lap belt                    | FASTENED and TIGHTENED  |
| 20. | Canopy                      | CLOSED and LOCKED       |
| 21. | Parking brake               | RELEASE                 |

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#### 4.5.6 Take-off (up to 50 ft)

**CAUTION**

*To increase power setting raise RPM first and open throttle second.  
To decrease power setting close throttle first and lower RPM second.*

- |    |                          |                                    |
|----|--------------------------|------------------------------------|
| 1. | Throttle                 | WIDE OPEN (TOP = 115% MCP)         |
| 2. | Tachometer               | CHECK if within 2300 - 2385 RPM    |
| 3. | Manifold pressure        | CHECK if within 39 - 40 inHg       |
| 4. | Elevator, control column | NEUTRAL during initial ground roll |
| 5. | Rudder pedals            | Maintain direction                 |
| 6. | Rotatespeed              | 50 KIAS                            |
| 7. | Climb speed              | 57 KIAS                            |

**CAUTION**

*For the shortest take-off distance over a 50-feet obstacle at sea level:*

- |    |                       |         |
|----|-----------------------|---------|
| 7. | Rotate speed          | 50 KIAS |
| 8. | Climb speed ( $V_x$ ) | 52 KIAS |

#### 4.5.7 Climb

- |    |  |  |
|----|--|--|
| 1. | Throttle (max. 5 minutes)                | WIDE OPEN (40 inHg)<br>afterwards 100% MCP (35 inHg) |
| 2. | Propeller control lever (max. 5 minutes) | 2385 RPM, afterwards 2260 RPM                        |
| 3. | Engine instruments                       | CHECK if in GREEN range                              |

**NOTE**

*During take-off and climb at take off power the yellow **ENG** warning light illuminates because the maximum continuous RPM and manifold pressure is exceeded.  
This is acceptable for max. 5 minutes.*

- |    |                             |                 |
|----|-----------------------------|-----------------|
| 4. | Flap switch                 | UP              |
| 5. | Climb speed                 | 65 KIAS         |
| 6. | <b>Fuel Pump AUX</b> switch | OFF             |
| 7. | <b>Landing Light</b> switch | OFF             |
| 8. | Trim switch                 | SET as required |

**NOTE**

*The best rate-of-climb speed,  $V_y$ , is a function of the operating weight and decreases with altitude. For more information, refer to Section 5.2.6.*

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#### 4.5.8 Cruise

- |    |                         |  |
|----|-------------------------|--|
| 1. | Throttle                | AS REQUIRED (Ref. to Section 5, Page 5-11) |
| 2. | Propeller control lever | SET 1650 to 2260 RPM                       |

**CAUTION**

*Continuous operation with throttle wide open and propeller revolution below 2140 RPM should be avoided to prevent engine damage in particular at pressure altitudes below 3000ft and at high CHT (see SL-914-014)*

**NOTE**

*For best manifold pressure/propeller speed combinations: Refer to Section 5, page 5-11*

- |    |                                       |                                      |
|----|---------------------------------------|--------------------------------------|
| 3. | Flaps switch                          | UP                                   |
| 4. | Trim switch                           | SET as required                      |
| 5. | <b>P/S Heat</b> switch (if installed) | AS REQUIRED, OFF AT OAT >59°F (15°C) |
| 6. | Engine instruments                    | CHECK if in GREEN range              |
| 7. | Carburetor temperature indicator      | MONITOR                              |

**CAUTION**

*When carburetor temperature is around 32°F (0°C) Carburetor heat should be applied and engine power should be increased appropriately to prevent carburetor icing.*

#### 4.5.9 Descent

- |    |                                  |                            |
|----|----------------------------------|----------------------------|
| 1. | Throttle                         | First decrease AS REQUIRED |
| 2. | Propeller control lever          | Second SET above 2000 RPM  |
| 3. | Carburetor heat                  | AS REQUIRED                |
| 4. | Carburetor temperature indicator | MONITOR                    |

**CAUTION**

*For a rapid descent proceed as follows:*

<i>Throttle</i>	<i>First IDLE</i>
<i>Propeller control lever</i>	<i>Second START</i>
<i>Carburetor heat</i>	<i>PULL (ON)</i>
<i>Flaps</i>	<i>UP</i>
<i>Airspeed</i>	<i>130 KIAS</i>
<i>Oil and cylinder head temperature</i>	<i>maintain in GREEN range</i>

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**4.5.10 Landing**

- |     |                             |                  |
|-----|-----------------------------|------------------|
| 1.  | Lap belt                    | CHECK SECURE     |
| 2.  | <b>Fuel Pump AUX</b> switch | ON               |
| 3.  | Carburetor heat             | PULL (ON)        |
| 4.  | Throttle                    | AS REQUIRED      |
| 5.  | Airspeed                    | 90 KIAS          |
| 6.  | Flaps switch                | T/O or LDG       |
| 7.  | Trim switch                 | AS REQUIRED      |
| 8.  | Flaps switch                | LDG              |
| 9.  | Approach speed              | 60 KIAS          |
| 10. | Propeller control lever     | START            |
| 11. | <b>Landing Light</b> switch | ON (as required) |

**CAUTION**

*In strong headwinds or crosswinds, in turbulent air or in wind shear, it may be desirable to approach using less flaps and at a higher airspeed.*

**4.5.11 Go-Around (Balked Landing)**

- |    |                         |                  |
|----|-------------------------|------------------|
| 1. | Propeller control lever | First START      |
| 2. | Throttle                | Second WIDE OPEN |
| 3. | Carburetor Heat         | PUSH (OFF)       |
| 4. | Flaps switch            | T/O              |
| 5. | Airspeed                | 65 KIAS          |

**CAUTION**

*Continued operation with throttle wide open and carburetor heat engaged should be avoided to prevent engine damage.*

**4.5.12 After Landing**

- |    |                                       |             |
|----|---------------------------------------|-------------|
| 1. | Throttle                              | AS REQUIRED |
| 2. | Flaps switch                          | UP          |
| 3. | <b>P/S Heat</b> switch (if installed) | OFF         |
| 4. | Carburetor Heat                       | PUSH (OFF)  |
| 5. | <b>Fuel Pump AUX</b> switch           | OFF         |
| 6. | Transponder                           | OFF         |
| 7. | <b>Landing Light</b> switch           | OFF         |

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#### 4.5.13 Engine Shutdown

- |     |                                |   |
|-----|--------------------------------|---|
| 1.  | Throttle                       | IDLE  |
| 2.  | Parking Brake                  | SET   |
| 3.  | Flaps switch                   | LDG   |
| 4.  | ELT                            | CHECK (frequency 121.5 MHz)                               |
| 5.  | <b>Avionics</b> switch         | OFF   |
| 6.  | Engine run with below 1000 RPM | min. 2 minutes (incl. taxiing) for turbocharger cool down |
| 7.  | Ignition Switch                | OFF   |
| 8.  | <b>ALT2 / BAT2</b> switch      | OFF   |
| 9.  | Electrical equipment           | OFF   |
| 10. | <b>ALT1 / BAT</b> switch       | OFF   |

**NOTE**

*The GARMIN G500 TXi and the MVP-50P-AQ are turned off with the **ALT1/BAT** switch.*

- |     |                      |             |
|-----|----------------------|-------------|
| 11. | Chocks and tie-downs | AS REQUIRED |
|-----|----------------------|-------------|

#### 4.5.14 Refueling

1. Engine Shutdown as in Section 4.5.13
2. Ground the aircraft

**CAUTION**

*During refueling, the aircraft **must** be grounded (for example at the end of the exhaust pipe.)*

3. Open fuel tank filler cap
4. Refuel both tanks equally

**NOTE**

*Insert the fuel pump nozzle carefully into the tanks to avoid damage.*

5. Replace the fuel tank filler caps
6. Remove grounding cable

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**4.5.15 Flight in Heavy Rain and/or with Wing Contamination****CAUTION**

*When flying with wet and/or contaminated wings and control surfaces, performance and handling qualities may be reduced. This applies in particular to take-off distance, climb performance, cruising speed and stall characteristics.*

*The stall speed may increase up to 3 kts and the air speed indicator may give false readings.*

*Visibility may deteriorate considerably in rain.*

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## SECTION 9

### SUPPLEMENTS

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### 9.1 INTRODUCTION

In this section, all equipment that is optionally installed in your aircraft is described by the POH-Supplements. Each supplement describes a complete modification or a piece of installed equipment. Only the supplements that apply to the configuration of your aircraft must be contained in this section.

Section 9.2 “Index of Supplements” lists all existing approved supplements for the AQUILA AT01. This table may be also used as a directory for this section, adapted to your aircraft. If modifications requiring an STC have been conducted on your aircraft at a Maintenance Organization other than AQUILA Aviation, it is the owner’s responsibility to ensure that the appropriate supplements are included in this manual and properly recorded in the index of supplements in section 9.2.

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**9.2 INDEX OF SUPPLEMENTS****Registration:****S/N: AT01- 200C -**

Supplement No.	Title	Installed
AST-00	Winter Operation	variable
AST-01	Night VFR (AT01-200C)	
AS-09*	Garmin GTN 650(Xi)	
AS-10	Garmin GMA 350(c)	
AS-11	ELT – Kannad 406	
AS-14	Trig TT22	
AS-17	Garmin GTR 225/225A/225B	
AS-18	Garmin GNC 255A/255B	
AS-19	Garmin GMA 340	
AS-21	Garmin GTX 335 / 345	
AS-22	Garmin G5 Stby AI	
AS-24	Traffic Sensor AT-1	
AS-27	Autopilot (restricted) Garmin GFC500 (AT01-200C)	

**NOTE**

For the devices listed above and marked with an \* software updates will be released on our website ([www.aquila-aviation.de](http://www.aquila-aviation.de)) via dedicated Service Information (SI).

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