## RECORD OF REVISIONS

| Revision Number | Date of Revision | Date Inserted | By | Revision Number | Date of Revision | Date Inserted | By |
|---|---|---|---|---|---|---|---|
| 1 | 01.10.01 | | | 26 | 02.03.15 | | |
| 2 | 29.10.01 | | | 27 | 21.07.15 | | |
| 3 | 05.11.01 | | | 28 | 28.08.15 | | |
| 4 | 07.11.01 | | | 29 | 29.02.16 | | |
| 5 | 26.11.01 | | | 30 | 10.06.16 | | |
| 6 | 01.03.02 | | | 31 | 09.10.18 | | |
| 7 | 15.03.02 | | | | | | |
| 8 | 22.03.02 | | | | | | |
| 9 | 14.05.02 | | | | | | |
| 10 | 18.05.02 | | | | | | |
| 11 | 08.07.02 | | | | | | |
| 12 | 26.04.05 | | | | | | |
| 13 | 28.10.05 | | | | | | |
| 14 | 18.01.06 | | | | | | |
| 15 | 30.04.08 | | | | | | |
| 16 | 15.09.09 | | | | | | |
| 17 | 02.03.10 | | | | | | |
| 18 | 21.06.10 | | | | | | |
| 19 | 25.11.10 | | | | | | |
| 20 | 24.02.11 | | | | | | |
| 21 | 05.11.12 | | | | | | |
| 22 | 19.03.13 | | | | | | |
| 23 | 19.07.13 | | | | | | |
| 24 | 15.08.13 | | | | | | |
| 25 | 30.10.13 | | | | | | |

## RECORD OF TEMPORARY REVISIONS

| Temp. Revision Number | Page | Date of Revision | By | Date Removed | By |
|---|---|---|---|---|---|
| 01 | 05-20-00 p.4 | 24.01.13 | | 19.03.13 | |
| 02 | 05-10-00 p.1 & 2 | 11.06.14 | | 28.08.15 | |
| 03 | 05-20-00 p.7<br>76-10-00 p.203<br>& 204 | 14.08.14 | | 28.08.15 | |
| 04 | 12-14-00 p.301<br>& 302<br>75-10-00 p.201<br>79-20-00 p.201 | 27.04.15 | | | |
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## HIGHLIGHTS OF REVISIONS

| Revision Number | Date of Revision | Reason for Revision | Revision Number | Date of Revision | Reason for Revision |
|---|---|---|---|---|---|
| 25 | 30.10.13 | FAA validation: description/maintenance of electrical system, avionics and structures revised; airworthiness limitations; | | | |
| | | | | | |
| 26 | 02.03.15 | Life time limit, 6000 hour inspection | | | |
| 27 | 21.07.15 | “Fuel” revision; fuel indicating system calibration procedures | | | |
| 28 | 28.08.15 | TBO’s and maintenance checklist revised; Temp. rev. 2 & 3 incorporated | | | |
| 29 | 29.02.16 | Control surface ply lay-up added; repair procedures revised | | | |
| 30 | 10.06.16 | 6000h check & TBOs added; battery check procedure added | | | |
| 31 | 09.10.18 | Rotax: new spark plugs | | | |
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## LIST OF EFFECTIVE CHAPTERS

| Chapter | Title | Date* |
|---|---|---|
| | **GENERAL** | |
| | Table of Contents | 10.06.16 |
| | Introduction | 30.10.13 |
| 04 | Airworthiness Limitations | 02.03.15 |
| 05 | Time Limits / Maintenance Checks | 10.06.16 |
| 06 | Dimensions and Areas | 26.04.05 |
| 07 | Lifting & Shoring | 30.10.13 |
| 08 | Leveling and Weighing | 27.09.01 |
| 09 | Towing and Taxiing | 02.03.10 |
| 10 | Parking, Mooring, Storage & Return to Service | 02.03.10 |
| 11 | Placards and Markings | 05.11.12 |
| 12 | Servicing | 30.10.13 |
| | **AIRFRAME SYSTEMS** | |
| 20 | Standard Practices Airframe | 09.10.18 |
| 21 | Ventilation and Heating | 08.07.02 |
| 23 | Communications | 30.10.13 |
| 24 | Electrical Power | 10.06.16 |
| 25 | Equipment and Furnishings | 30.10.13 |
| 27 | Flight Controls | 30.10.13 |
| 28 | Fuel | 21.07.15 |
| 31 | Indicating/Recording Systems | 30.10.13 |
| 32 | Landing Gear | 15.03.02 |
| 33 | Lights | 30.10.13 |
| 34 | Navigation | 30.10.13 |
| | **STRUCTURES** | |
| 51 | Structures | 29.02.16 |
| 52 | Doors | 30.10.13 |
| 53 | Fuselage | 30.10.13 |
| 55 | Stabilizers | 14.05.02 |
| 56 | Windows | 19.07.13 |
| 57 | Wings | 18.01.06 |
| | **PROPELLER** | |
| 61 | Propeller | 19.03.13 |

## LIST OF EFFECTIVE CHAPTERS

| Chapter | Title | Date* |
|---|---|---|
| POWER PLANT | | |
| 71 | Power Plant | 26.04.05 |
| 74 | Ignition | 09.10.18 |
| 75 | Cooling System | 26.04.05 |
| 76 | Engine Controls | 28.08.15 |
| 77 | Engine Indicating | 26.11.01 |
| 78 | Exhaust | 07.11.01 |
| 79 | Oil | 07.11.01 |
| 80 | Starting | 05.11.01 |
| 91 | Charts and Wiring Diagrams | 30.04.08 |

* The date refers to the issue / revision date of the respective chapter.

The technical content of this document (revision 31) is approved under the authority of DOA ref. EASA.21J.025.

09. 10. 18

AQUILA Head of Airworthiness

Date, Signature Office of Airworthiness

# CHAPTER 20

# STANDARD PRACTICES - AIRFRAME

## TABLE OF CONTENTS

# STANDARD PRACTICES AIRFRAME - GENERAL

1. Introduction

   A. This chapter describes standard maintenance practices applicable to the entire airframe and related systems. Maintenance procedures which are unique to a specific system / component / part are described in the corresponding chapter.

   B. As far as the maintenance of the AQUILA AT01 is concerned, there are no standard practices or relevant safety regulations, which require special knowledge other than that which is commonly expected for the maintenance of small aircraft. Therefore, this chapter should serve basically as a source for conversion data.

2. General Description

   Below a brief description and intended purpose of each section of this chapter is given.

   A. Section 20-00-00 - Standard Practices Airframe - General. This section provides a general overview of content and purpose of the chapter.

   B. Section 20-10-00 - Conversion Data. This section provides various formulae for converting metric, Imperial and US measurements.

## FASTENER IDENTIFICATION AND TORQUE DATA

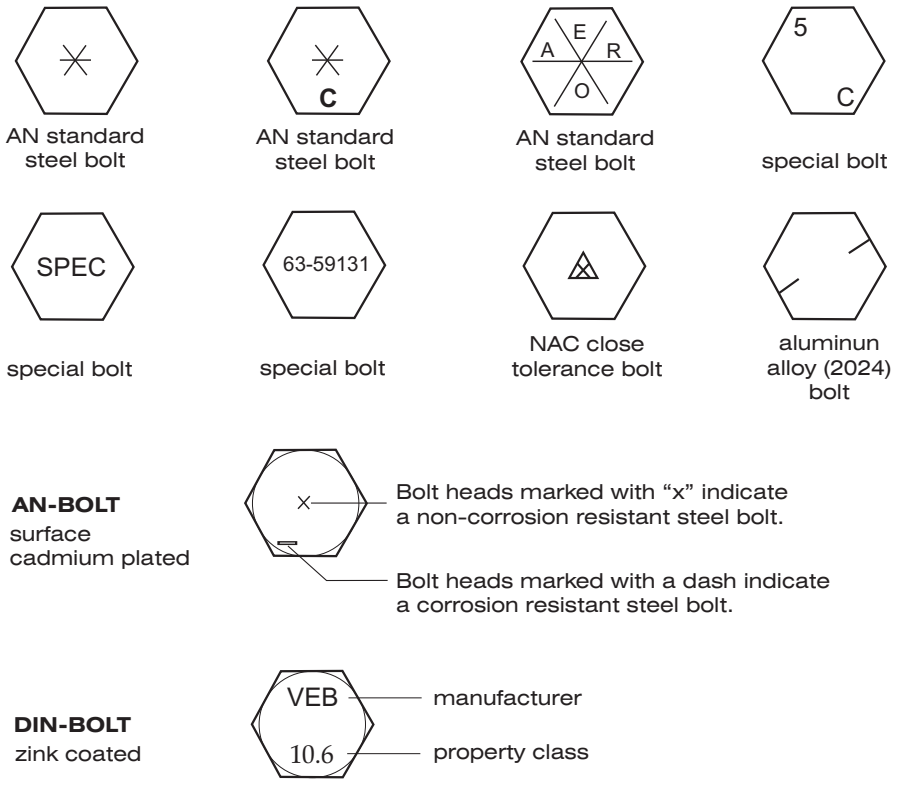
1. General

A. This section contains information concerning the identification of bolts, the correct usage of bolts and nuts and torque data.

CAUTION: OBSERVE STANDARD OR TORQUE VALUES RECOMMENDED BY THE MANUFACTURER AND MAKE SURE THE RECOMMENDED SAFETYING DEVICE FOR EVERY FASTENER IS APPLIED.

2. Bolt Types

A. The bolts used fulfill AN, MS, LN and DIN specifications. They can be identified by code marking(s) on the bolt heads. These markings generally denote the material of which the bolt is made, whether the bolt is a standard type or a special purpose bolt and sometimes include the manufacturer.




Typical Aircraft Bolt Markings
Figure 1

3. Torques

NOTE: When a specific torque is not provided in the maintenance instructions contained in this maintenance manual, use the standard torque patterns shown in table 201 respectively the special torques in table 202.

A. A correct torque application is very important. Undertorque can result in unnecessary wear of nuts and bolts, as well as the parts they secure. Overtorque can cause failure of a bolt or nut due to the overstressing of the threaded areas. Uneven or additional loads that are applied to the assembly may result in wear or premature failure. To ensure that correct torque is applied, observe the following:

(1) Be sure that the torque applied is for the size of the bolt shank and not the wrench size.

(2) Calibrate the torque wrench at least once a year, or immediately after it has been misused or dropped, to ensure continued accuracy.

(3) Be sure that bolt and nut threads are clean and dry, unless otherwise specified by the manufacturer.

(4) Run the nut down to near contact with the washer or bearing surface and check the friction drag torque required to turn the nut. Whenever possible, apply the torque to the nut and not the bolt. This will reduce rotation of the bolt in the hole and reduce wear.

(5) Add the friction drag torque to the desired torque. This is referred to as "final torque," which should register on the indicator or setting for a snap-over type torque wrench.

(6) Apply a smooth even pull when applying torque pressure. If rattling or a jerking motion occurs during final torque, turn back the nut and retorque.

(7) Many uses of bolts in aircraft/engines require stretch checks prior to reuse. This requirement is due primarily to bolt stretching caused by overtorquing.

(8) When installing a castle nut, start alignment with the cotter pin hole at the minimum recommended torque plus friction drag torque.

(9) Do not exceed the maximum torque plus the friction drag. If the hole and nut castellation do not align, change washer or nut and try again. Exceeding the maximum recommended torque is not recommended.

(10) When torque is applied to bolt heads or cap screws, apply the recommended torque plus friction drag torque.

(11) If special adapters are used which will change the effective length of the torque wrench, the final torque indication or wrench setting must be adjusted accordingly. Determine the torque wrench indication or setting with adapter installed as shown in figure 2.

B. Table 201/202 shows the recommended torque to be used when the manufacturer does not supply a specific torque for maintenance procedures.

Table 201: Standard Torques

| | DIN and LN specifications | |
|---|---|---|
| Thread size | Torque values Nm | Torque values in.lbs |
| M4 | 1.8 | 15.9 |
| M5 | 3.6 | 31.9 |
| M6 | 6.4 | 56.6 |
| M8 | 16 | 141.6 |
| M10 | 32 | 283.2 |
| M12 | 60 | 531.1 |

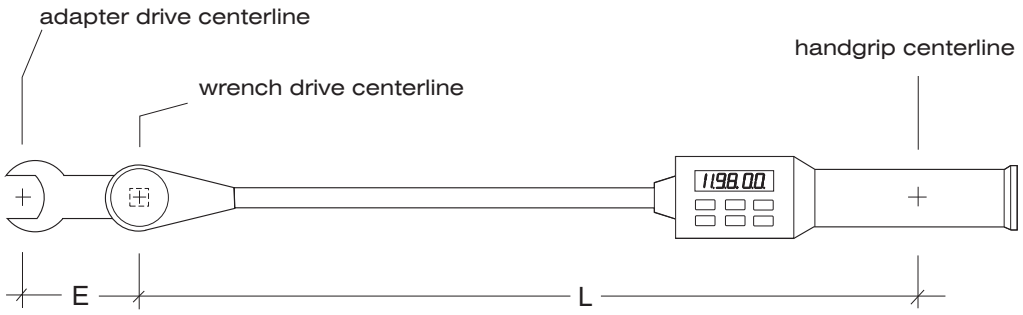
NOTE: Castellated nuts (DIN 935, 937) should be finger tightened.

Table 202: Special Torques[1)]

| Part | Torque (Nm / in.lbs) | Remarks |
|---|---|---|
| Bolts attaching inertia reel retractor of shoulder harness to fuselage structure | 4 / 35 | |
| Bolts attaching lap belts to fuselage structure | 8 / 71 | |
| Bolts attaching engine to ROTAX engine mount | 40 / 354 | |
| Oil drain screw | 25 / 221 | |
| Old spark plugs (P/N 297940)<br>New spark plugs (P/N 297656) | 20 / 177<br>16 / 142 | refer to Rotax SI-912-027 |
| Main gear spring leaf attachment bolts to inner bracket | 45 / 398 | |
| Fuel drainer | - - | tighten until the outer o-ring is snug against the mating surface |
| Bolt attaching nose gear leg to support brace | 28 / 248 | |
| Bolts attaching main gear wheel axle to landing gear leg | 28 / 248 | |

1) Refer to the appropriate ROTAX publications for engine parts.

**1. Variant - The adapter increases the effective length of the torque wrench.**



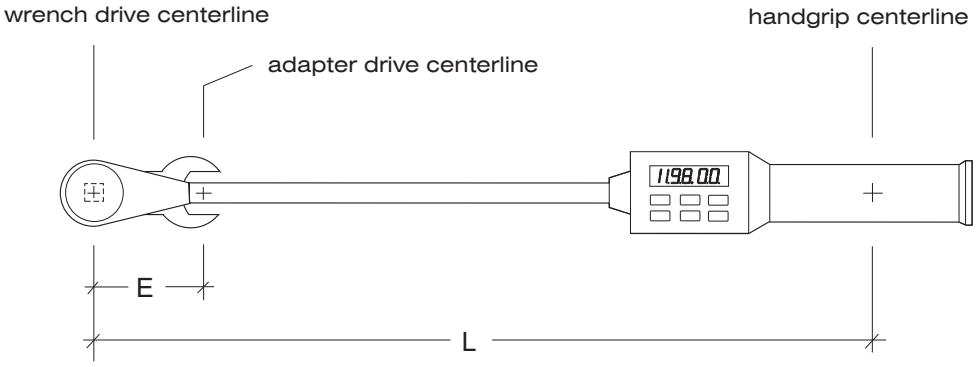

Y = apparent (indicated) torque
T = actual (desired) torque
L = effective length lever
E = effective length of extension

formula: $\frac{T \times L}{L + E} = Y$

example:
T = 14 Nm
L = 30 cm
Y = ?
E = 8 cm

$Y = \frac{14\ Nm \times 0{,}3\ m}{0{,}3\ m + 0{,}08\ m} = \frac{4{,}2\ Nm}{0{,}38} = 11{,}05\ Nm$

**2. Variant - The adapter decreases the effective length of the torque wrench.**




formula: $\frac{T \times L}{L - E} = Y$

example:
T = 14 Nm
L = 30 cm
Y = ?
E = 8 cm

$Y = \frac{14\ Nm \times 0{,}3\ m}{0{,}3\ m - 0{,}08\ m} = \frac{4{,}2\ Nm}{0{,}22} = 19{,}09\ Nm$

Torque Wrench with Adapters
Figure 2

# CONVERSION DATA

## 1. General

A. This chapter is designed to assist the operator with the conversion of commonly used measuring units found in this manual from Imperial, US and metric measuring systems.

## 2. Conversion Factors

A. Subsequent conversion factors of units of measurement are given from the metric system to the US / Imperial systems and vice versa.

(1) Distance and length

Table 1 - Conversion of Distances and Lengths

| Unit: | m | in. | ft. | yd |
|---|---|---|---|---|
| 1 meter; m | 1 | 39,37 | 3,281 | 1,09 |
| 1 inch; in. (") | 0,0254 | 1 | 0,083 | 0,02 |
| 1 foot; ft. (') | 0,3048 | 12 | 1 | 0,33 |
| 1 yard; yd. | 0,914 | 36 | 3 | 1 |

statute mile = 1.609 kilometers, nautical mile=1.852 kilometers

(2) Square measures

Table 2 - Conversion of Square Measures

| Unit | cm² | m² | Sq. in. | Sq. ft. | Sq. yd. |
|---|---|---|---|---|---|
| 1 cm² | 1 | 0,0001 | 0,155 | 0,00108 | 0,0001196 |
| 1 m² | 10000 | 1 | 1550 | 10,764 | 1,196 |
| 1 sq. in. | 6,452 | 0,00064516 | 1 | 0,006944 | 0,0007716 |
| 1 sq. ft. | 929 | 0,092903 | 144 | 1 | 0,111111 |
| 1 sq. yd. | 8361 | 0,836127 | 1296 | 9 | 1 |

(3) Cubic measures

Table 3 - Conversion of Cubic Measures

| Unit | l | m³ | Cu. in. | Cu. ft. | Imp.-Gallons | U.S.-Gallons |
|---|---|---|---|---|---|---|
| 1 Liter | 1 | 0,001 | 61,03 | 0,05332 | 0,22 | 0,2642 |
| 1 m³ | 1000 | 1 | 61023 | 35,315 | 219,97 | 264,175 |
| 1 cu. in. | 0,01639 | 0,00001639 | 1 | 0,0005787 | 0,003601 | 0,004329 |
| 1 cu. ft. | 28,32 | 0,028317 | 1728 | 1 | 6,228783 | 7,480519 |
| 1 Imp.-Gallon | 4,546 | 0,004546 | 277,4 | 0,160545 | 1 | 1,20096 |
| 1 U.S.-Gallon* | 3,785 | 0,003785 | 231 | 0,133183 | 0,832667 | 1 |
| 1 U.S.-Quart | 0,9463 | | | | | 4 |

*= liquid

(4) Surface loads

1 pound by square inch = 1 psi = 1 lb/in.² = 0,0703 kp/cm² = 0,6896 N/cm²

1 kilopound by square inch = 1 kipsi = 1 kip/in.² = 70,3100 kp/cm² = 689,7411 N/cm²

1 AT = 14,7 lbs./in.² = 1,0335 kp/cm² = 10,1386 N/cm²

(5) Weights

1 ounce = 1 octane number = 28,3495g
1 pound = 1 lb. = 16 octane numbers = 453,5920g

(6) Moments

1 pound inch = 1 in.lbs = 0,01152 kpm = 0,11301 Nm
1 pound foot = 1 lb.ft. = 12 in.lbs = 0,13825 kpm = 1,35623 Nm

(7) Temperature

1. Temp. Centigrade = 5/9 (Temp. Fahrenheit -32)
2. Temp. Fahrenheit = 9/5 (Temp. Centigrade +32)

3. Equivalents for Standard Values

A. For conversion data to convert standard drill sizes to inch and millimeter equivalents refer to figure 1.

| mm | Drill | in. | mm | Drill | in. | mm | Drill | in. |
|---|---|---|---|---|---|---|---|---|
| 0,34 | 80 | 0,0135 | 1,85 | 49 | 0,0730 | 4,09 | 20 | 0,1610 |
| 0,37 | 79 | 0,0145 | 1,93 | 48 | 0,0760 | 4,22 | 19 | 0,1660 |
| 0,40 | 1/64 | 0,0156 | 1,98 | 5/64 | 0,0781 | 4,31 | 18 | 0,1695 |
| 0,41 | 78 | 0,0160 | 1,99 | 47 | 0,0785 | 4,37 | 11/64 | 0,1719 |
| 0,46 | 77 | 0,0180 | 2,06 | 46 | 0,0810 | 4,39 | 17 | 0,1730 |
| | - - | - - | | | | | - - | - - |
| 0,51 | 76 | 0,0200 | 2,08 | 45 | 0,0820 | 4,50 | 16 | 0,1770 |
| 0,53 | 75 | 0,0210 | 2,18 | 44 | 0,0860 | 4,57 | 15 | 0,1800 |
| 0,57 | 74 | 0,0225 | 2,26 | 43 | 0,0890 | 4,62 | 14 | 0,1820 |
| 0,61 | 73 | 0,0240 | 2,37 | 42 | 0,0935 | 4,70 | 13 | 0,1850 |
| 0,64 | 72 | 0,0250 | 2,38 | 3/32 | 0,0937 | 4,76 | 3/16 | 0,1875 |
| | - - | - - | | - - | - - | | | |
| 0,66 | 71 | 0,0260 | 2,44 | 41 | 0,0960 | 4,80 | 12 | 0,1890 |
| 0,71 | 70 | 0,0280 | 2,49 | 40 | 0,0980 | 4,85 | 11 | 0,1910 |
| 0,74 | 69 | 0,0292 | 2,53 | 39 | 0,0995 | 4,91 | 10 | 0,1935 |
| 0,79 | 68 | 0,0310 | 2,58 | 38 | 0,1015 | 4,98 | 9 | 0,1960 |
| 0,80 | 1/32 | 0,0313 | 2,64 | 37 | 0,1040 | 5,05 | 8 | 0,1990 |
| | - - | - - | | - - | - - | | - - | - - |
| 0,81 | 67 | 0,0320 | 2,71 | 36 | 0,1065 | 5,11 | 7 | 0,2010 |
| 0,84 | 66 | 0,0330 | 2,78 | 7/64 | 0,1093 | 5,16 | 13/64 | 0,2031 |
| 0,89 | 65 | 0,0350 | 2,79 | 35 | 0,1100 | 5,18 | 6 | 0,2040 |
| 0,91 | 64 | 0,0360 | 2,82 | 34 | 0,1110 | 5,22 | 5 | 0,2055 |
| 0,94 | 63 | 0,0370 | 2,87 | 33 | 0,1130 | 5,31 | 4 | 0,2090 |
| | - - | - - | | - - | - - | | - - | - - |
| 0,97 | 62 | 0,0380 | 2,95 | 32 | 0,1160 | 5,41 | 3 | 0,2130 |
| 0,99 | 61 | 0,0390 | 3,05 | 31 | 0,1200 | 5,55 | 7/32 | 0,2187 |
| 1,02 | 60 | 0,0400 | 3,18 | 1/8 | 0,1250 | 5,61 | 2 | 0,2210 |
| 1,04 | 59 | 0,0410 | 3,26 | 30 | 0,1285 | 5,79 | 1 | 0,2280 |
| 1,07 | 58 | 0,0420 | 3,45 | 29 | 0,1360 | 5,94 | A | 0,2340 |
| | - - | - - | | - - | - - | | - - | - - |
| 1,09 | 57 | 0,0430 | 3,57 | 28 | 0,1405 | 5,95 | 15/64 | 0,2344 |
| 1,18 | 56 | 0,0465 | 3,57 | 9/64 | 0,1406 | 6,05 | B | 0,2380 |
| 1,19 | 3/64 | 0,0469 | 3,66 | 27 | 0,1440 | 6,15 | C | 0,2420 |
| 1,32 | 55 | 0,0520 | 3,73 | 26 | 0,1470 | 6,25 | D | 0,2460 |
| 1,40 | 54 | 0,0550 | 3,80 | 25 | 0,1495 | 6,35 | E | 0,2500 |
| | - - | - - | | - - | - - | | - - | - - |
| 1,51 | 53 | 0,0595 | 3,86 | 24 | 0,1520 | 6,35 | 1/4 | 0,2500 |
| 1,59 | 1/16 | 0,0625 | 3,91 | 23 | 0,1540 | 6,99 | F | 0,2750 |
| 1,61 | 52 | 0,0635 | 3,97 | 5/32 | 0,1562 | 6,63 | G | 0,2610 |
| 1,70 | 51 | 0,0670 | 3,99 | 22 | 0,1570 | 6,75 | 17/64 | 0,2656 |
| 1,78 | 50 | 0,0700 | 4,04 | 21 | 0,1590 | 6,76 | H | 0,2660 |

Equivalents for Drill Sizes
Figure 1

# CHAPTER 74

# IGNITION SYSTEM

## TABLE OF CONTENTS

# IGNITION SYSTEM - GENERAL

1. Introduction

   A. This chapter describes those units and components which generate, distribute and control an electrical current to ignite the fuel air mixture in the engine cylinders.

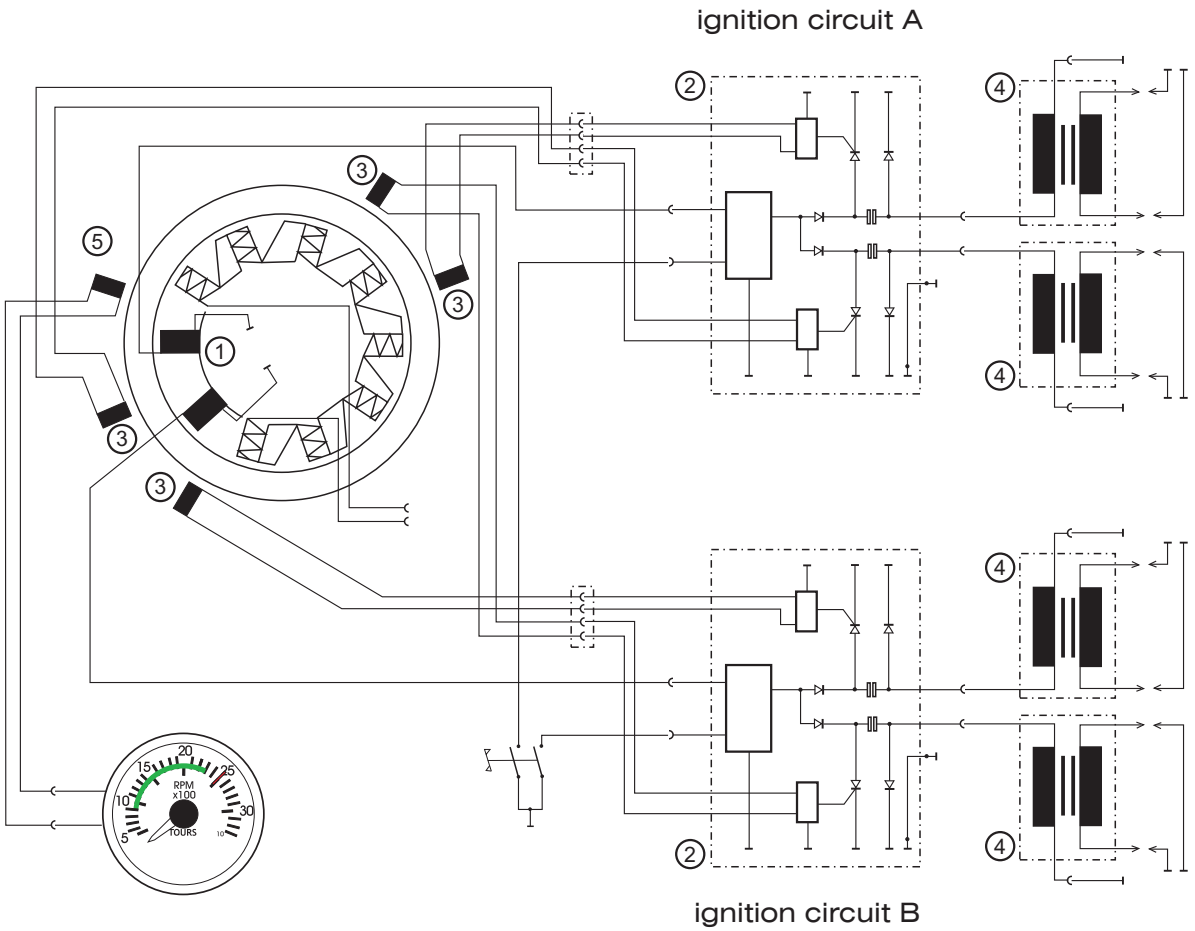
2. General Description

   A. The engine is equipped with a breakerless dual ignition system (DCDI - Dual Capacitor Discharge Ignition). The ignition unit is completely maintenance-free and needs no external power supply.

   Refer to figure 1 for an schematic circuit diagram of the ignition system. Each of the two independent charging coils (1) located on the generator stator supplies one of the two ignition circuits. The energy is stored in capacitors of the electronic modules (2). At the moment of ignition 2 of the 4 external trigger coils (3) actuate the discharge of the capacitors via the primary circuit of the dual ignition transformers (4). The 5th trigger coil (5) is provided for the rev counter signal.

   A combined, rotary-type switch, mounted on the instrument panel right side in the row of switches below the flight instruments, controls ignition system and starter operation. It has the positions OFF, R, L, BOTH and START. With the switch OFF, the charging coils are grounded and will not supply capacitors with current. During normal engine operation, the switch is in the BOTH position. It is switched to L or R only to check the ignition circuits or if one ignition circuit is not working properly. To start the engine, the switch should be rotated to the right into the spring-loaded START position, activating the starter (if ALT/BAT is ON). When the switch is released, it will automatically return to the BOTH position.

## IGNITION SYSTEM




Ignition System Electrical Schematic
Figure 1

## IGNITION SYSTEM - MAINTENANCE

1. General

   A. Maintenance of the ignition system is limited to the removal and installation of components. Information on verification and renewal of spark plugs is also provided.

   B. For information beyond the scope of this section pertaining to the ignition system, refer to the maintenance manual for ROTAX® Engine Type 912 Series.

   C. For inspection time requirements of the ignition system components, refer to 05-20-00.

2. SMD-Electronic Module Removal/Installation

   A. Remove SMD-Electronic Module
      (1) Remove upper engine cowling (refer to 71-10-00).
      (2) Remove battery from aircraft (refer to 24-30-00).
      (3) Disconnect electrical connections to electronic module.
      (4) Remove machine screws, lock washer and washers securing electronic module, cable clamp, and ground cable terminal to engine.
      (5) Remove electronic module from engine.

   B. Install SMD-Electronic Module
      (1) Put electronic module, cable clamp and ground cable terminal in position and secure to the engine using lock washer, washers and screws.
      (2) Connect electrical connections to electronic module.
      (3) Install battery (refer to 24-30-00).
      (4) Install upper engine cowling (refer to 71-10-00).

3. Double Ignition Coil Assembly Removal/Installation

   A. Remove Double Ignition Coil Assembly
      (1) Remove upper engine cowling (refer to 71-10-00).
      (2) Remove battery from aircraft (refer to 24-30-00).
      (3) Remove clamps and cable ties securing ignition cables to engine.
      (4) Remove spark plug connectors from spark plugs.
      (5) Remove machine screws, bolts, nuts, lock washers and washers securing coil assembly to engine.
      (6) Remove coil assembly.

   B. Install Double Ignition Coil Assembly
      (1) Install coil assembly to engine using machine screws, bolts, nuts, lock washers and washers. Ensure correct position of the hardware.
      (2) Route ignition cables to the appropriate spark plug position.

      NOTE: There are yellow marking sleeves on the cables.

(3) Install spark plug connectors to spark plugs.
(4) Install clamps and cable ties securing ignition cables to engine.
(5) Install battery (refer to 24-30-00).
(6) Install engine cowling (refer to 71-10-00).

4. Spark Plug Removal/Installation

A. Remove Spark Plug
(1) Remove engine cowling (refer to 71-10-00).
(2) Disconnect battery (refer to 24-30-00).
(3) Remove resistor spark plug connector from spark plug.

CAUTION: COVER SPARK PLUG HOLE TO PREVENT ENTRY OF FOREIGN MATERIALS.

(4) Unscrew spark plug and remove from engine.

B. Install Spark Plug

NOTE: New spark plugs and spark plug connectors have been introduced by Rotax. Refer to Rotax SI-912-027 for further information.

(1) Clean spark plug as required.
(2) Apply a small amount of heat conduction compound to spark plug thread.
(3) Install spark plug to engine. Torque old plug type to 20 Nm (177 in.lbs) / new plug type to 16 Nm (142 in.lbs) on the cold engine.
(4) Install spark plug connector to spark plug.
(5) Reconnect battery (refer to 24-30-00).
(6) Install engine cowling (refer to 71-10-00).

5. Inspection/Check

A. Spark Plugs

NOTE: Always renew both spark plugs of a cylinder and do not interchange spark plugs between cylinders.

NOTE: Mixing of spark plug types and spark plug connector types is NOT allowed. All spark plugs and spark plug connectors must be of the same part number for the entire engine.

(1) Mark position of the spark plugs (e.g. cyl. 1 top) and remove spark plugs as described above.
(2) Inspect the spark plugs for damage (melt beads, burn off). Renew spark plug if required.
(3) Inspect spark plug thread for damage (especially at burn off). Renew spark plug if required.
(4) Inspect plug face appearance (refer to table 1).
(5) Inspect spark plug electrode gap. Renew spark plug if required.

NOTE: New spark plug type: Due to the curved gap between the center electrode and the ground electrodes, it is suggested to use a wire type feeler gauge for accurate gap measurement. Refer to Rotax SI-912-027.

NOTE: Spark plugs are already gapped upon delivery. No adjustment of the gap is necessary nor allowed.

| Spark plug | Electrode gap: New | Wear limit |
|---|---|---|
| Old type (P/N 297940) | 0,6 mm - 0,7 mm<br>0.024 in - 0.028 in. | 0,9 mm<br>0.035 in. |
| New type (P/N 297656) | 0,8 mm - 0,9 mm<br>0.031 in. - 0.035 in. | 1,1 mm<br>0.043 in. |

(6) Install spark plugs to engine as described above. Ensure the correct type of spark plug is used.

Table 1: Spark Plug Face Appearance and Causes

| Face appearance | Indicates the following: |
|---|---|
| Light colored to brown: | Plug and calibration are correct. |
| Velvet black: | - Mixture too rich;<br>- Insufficient air intake (clogged air filter);<br>- Operating temperature too low; |
| Oily, glossy coating: | - Misfiring;<br>- Too much oil in combustion chamber;<br>- Worn cylinder and piston rings; |
| White with melt droplets: | - Mixture too lean;<br>- Leaking valves; |

B. Ignition System Wiring
(1) Check all cable connectors for tight fit and good contact.
(2) Inspect all ground connections for corrosion and security. Repair as required. Check plug connections between pick-up cable, electronic module, charging and shorting cables for corrosion and security. Repair as required.
(3) Check plug connections between electronic module and ignition coils for security, wear and corrosion.
(4) Check grounding cables for tight fit and corrosion. Repair as required.
(5) Verify shielding of cable assemblies for damage, ground contact and security.
(6) Inspect all eight ignition cables to spark plug connector for damage and tight fit. Check resistor plug connector for tight fit on spark plug. Repair or replace as necessary.