

# SERVICE INFORMATION LETTER



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## **SERVICE INFORMATION LETTER NO. SIL20A1-019**

NOTE: Service Information Letters are used only:

1. To distribute information from Diamond Aircraft Industries (DAI) to our customers.
2. To distribute applicable information/documents from our suppliers to our customers with additional information.

NOTE: Typically there is no revision service for Service Information Letter (SIL). Each new information or change will be sent along with a new SIL.

### **1. TECHNICAL DETAILS**

#### **1.1 Aircraft Affected**

All DA20-A1 aircraft with the Rotax Model 912 engines.

#### **1.2 Subject**

FAA Airworthiness Directive 2013-07-12; and  
EASA EAD 2013-0117-E  
ATA-Code: 72-00

#### **1.3 Reason**

EASA has issued Emergency Airworthiness Directive No. 2013-0117-E mandating an inspection of cylinder head assembly of cylinder no. 2 and 3 (2/3) and refers to Rotax Alert Service Bulletin ASB-912-062R2.

FAA has also issued the Airworthiness Directive No. 2013-07-12 which mandates an inspection and possible replacement of the cylinder head assy (2/3) at certain engine serial numbers.

#### **1.4 Information**

For detailed technical information refer to EASA Emergency AD, 2013-0117-E and/or FAA AD 2013-07-12, which are applicable without any further additions or restrictions.

### **2. OTHERS**

EASA Emergency AD 2013-0117-E, FAA AD 2013-07-12 and Rotax Alert Service Bulletin ASB-912-062R2 are attached to this Service Information Letter

In case of doubt, contact DAI, your local authorized Diamond Service Center or your local civil aviation authority.

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To obtain satisfactory results, procedures specified in this service information letter must be accomplished in accordance with accepted methods and current government regulations. Diamond Aircraft Industries Inc. cannot be responsible for the quality of work performed in accomplishing the requirements of this service information letter. Diamond Aircraft reserves the right to void continued warranty coverage in the area affected by this service information letter if it is not incorporated. If you no longer own the aircraft to which this service information letter applies, please forward it to the current owner and send the name of the current owner to Diamond Aircraft Industries Inc. at the address below.

Diamond Aircraft Industries Inc. 1560 Crumlin Sideroad, London, Ontario, Canada N5V 1S2

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<b>EASA</b>	<b>EMERGENCY AIRWORTHINESS DIRECTIVE</b>
	<p><b>AD No.: 2013-0117-E</b></p> <p><b>Date: 30 May 2013</b></p> <p>Note: This Emergency Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.</p>
<p>This AD is issued in accordance with EU 748/2012, Part 21.A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].</p>	
<p><b>Design Approval Holder's Name:</b> BRP-POWERTRAIN GmbH &amp; Co. KG</p>	<p><b>Type/Model designation(s):</b> Rotax 912 and 914 engines</p>
<p>TCDS Number: EASA.E.121 and EASA E.122</p>	
<p>Foreign AD: Not applicable</p>	
<p>Supersedure: This AD supersedes EASA Emergency AD 2013-0055-E dated 06 March 2013.</p>	
<b>ATA 72</b>	<b>Engine – Cylinder Head Section – Inspection / Replacement</b>
Manufacturer(s):	BRP-Powertrain GmbH & Co. KG, BRP-Rotax GmbH & Co. KG; Bombardier-Rotax GmbH & Co. KG; Bombardier-Rotax GmbH
Applicability:	<p>Rotax 912 A1, 912 A2, 912 A3 and 912 A4 engines, Rotax 912 F2, 912 F3 and 912 F4 engines, Rotax 912 S2, 912 S3 and 912 S4 engines, and Rotax 914 F2, 914 F3 and 914 F4 engines, all serial numbers (s/n).</p> <p>These engines are known to be installed on, but not limited to, the following types of aeroplanes: <b>3-i</b> Sky Arrow 650 TC, 650 TCN, 650 TCNS and 710 RG; <b>Aeromot</b> AMT-200 Super Ximango and AMT-300 Turbo Super Ximango; <b>Aircraft Philipp</b> (formerly Alpla-Werke; Nitsche) AVO 68 series Samburo; <b>Aquila</b> AT01; <b>Cessna</b> 150 and A150 series and (<b>Reims</b>) F150 and FA150 series; <b>Diamond</b> (formerly HOAC) H 36 Dimona, HK 36 series Super Dimona, DV 20 Katana and DA20-A1 Katana; <b>Evektor-Aerotechnik</b> EV-97 VLA; <b>Grob</b> G 109; <b>Issoire</b> APM-20 Lionceau; <b>Scheibe</b> SF 36R and SF 25C; <b>Stemme</b> S10-VT; <b>Tecnam</b> P 92-J, P 92-JS, P2002-JR, P2002-JS and P2006T; <b>W.D. Aircraft</b> D4 Fascination.</p> <p><b>Note:</b> The installation of these engines was either done by the respective <b>aeroplane manufacturer</b> or through modification of the aeroplane by Supplemental Type Certificate.</p>
Reason:	<p>During a production test run, a non-compliance of the installed cylinder head assembly of cylinder no. 2 and 3 (2/3) was detected, which may result in a latent defect on a limited number of engines. The affected cylinder heads may not have been manufactured in accordance with the specification.</p> <p>This condition, if not detected and corrected, could lead to an oil leak in the intake channel in the area of the valve guide. The affected non-conforming</p>

	<p>cylinder heads may have small machined through holes, which can increase the oil consumption and can lead to oil starvation, possibly resulting in engine stoppage or in-flight engine shutdown and forced landing, with consequent risk of damage to the aeroplane and injury to occupants.</p> <p>To address and correct this potential unsafe condition, EASA issued Emergency AD 2013-0055-E to require a one-time inspection of the affected cylinder head assemblies, known to be installed on certain s/n engines and, depending on findings, replacement of the cylinder head assembly.</p> <p>Since that AD was issued, it was found that more engines are likely to have an affected cylinder head assembly installed than initially determined. In addition, it has been found that some affected cylinder head assemblies, identified by Part Number (P/N) 623682 and P/N 623687, have inadvertently been supplied as spares, between 31 January 2013 and 28 May 2013.</p> <p>For the reasons described above, this AD retains the requirements of EASA AD 2013-0055-E, which is superseded, but expands the Applicability to all engines, as it cannot be determined in which s/n engines the affected spare cylinder head assemblies are installed.</p> <p>This AD also prohibits installation of an affected cylinder head assembly on an engine, or a replacement engine on an aeroplane, unless the affected cylinder head assembly of that engine is inspected as required by this AD.</p>
Effective Date:	31 May 2013
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> <li>(1) Within 5 flight hours or 20 days, whichever occurs first after the effective date of this AD, accomplish the following actions: <ol style="list-style-type: none"> <li>(1.1) For engines identified by s/n in BRP-Powertrain Alert Service Bulletin (ASB) ASB-912-062R2 or ASB-914-044R2 (published as a single document), inspect the cylinder head assembly of cylinder no. 2 and 3 (2/3) in accordance with the instructions of Section 3 of BRP-Powertrain ASB-912-062/ASB-914-044.</li> <li>(1.2) For all engines, determine whether a cylinder head assembly P/N 623682 or P/N 623687, supplied by BRP-Powertrain between 31 January 2013 and 28 May 2013, is installed on the engine as replacement part. A review of engine maintenance records is acceptable to make the determination as specified in this paragraph, provided those records can be relied upon for that purpose, and the supply date and P/N of the cylinder head assembly can be conclusively identified from that review.</li> </ol> </li> <li>(2) If, during the determination as required by paragraph (1.2) of this AD, an affected cylinder head assembly is found to be installed, before next flight, inspect the cylinder head assembly in accordance with the instructions of Section 3 of BRP-Powertrain ASB-912-062/ASB-914-044.</li> <li>(3) If, during an inspection as required by paragraph (1.1) or paragraph (2) of this AD, as applicable, excessive deposits (oil or carbon) are found on one of the spark plugs, before next flight, replace the affected cylinder head assembly with a serviceable one in accordance with the instructions of Section 3 of BRP-Powertrain ASB-912-062/ASB-914-044.</li> <li>(4) From the effective date of this AD, do not install any affected engine (type and s/n as listed in BRP-Powertrain ASB-912-062R2/ASB-914-044R2) on an aeroplane, unless that engine has been inspected and, depending on findings, corrected as required by this AD.</li> <li>(5) From the effective date of this AD, installation on an engine of an affected spare cylinder head assembly P/N 623682 or P/N 623687, supplied between 31 January 2013 and 28 May 2013, is allowed, provided that,</li> </ol>

	within 5 FH after installation, the engine (cylinder head assembly) is inspected and, depending on findings, corrected as required by this AD.
Ref. Publications:	<p>BRP-Powertrain ASB-912-062R2 and ASB-914-044R2 (published as a single document), dated 29 May 2013.</p> <p>The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.</p>
Remarks:	<ol style="list-style-type: none"> <li>1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.</li> <li>2. The results of the safety assessment have indicated the need for immediate publication and notification, without the full public consultation process.</li> <li>3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a>.</li> <li>4. For any question concerning the technical aspects of the requirements in this AD, please contact: BRP-Powertrain GmbH &amp; Co. KG, Telephone: +43 7246 601 0; Fax: +43 7246 601 9130; E-mail: <a href="mailto:airworthiness@brp.com">airworthiness@brp.com</a>, Website <a href="http://www.rotax-aircraft-engines.com">www.rotax-aircraft-engines.com</a>.</li> </ol>

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2013-0263; Directorate Identifier 2013-NE-12-AD; Amendment 39-17416; AD 2013-07-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; BRP-Powertrain GmbH & Co KG Rotax Reciprocating Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain BRP-Powertrain GmbH & Co KG Rotax 912 F2; 912 F3; 912 F4; 912 S2; 912 S3; 912 S4; 914 F2; 914 F3; and 914 F4 reciprocating engines. This AD requires a one-time visual inspection for excessive oil deposits or carbon deposits on the No. 2 and No. 3 spark plug center and grounding electrodes, and if found, replacement of the cylinder head before further flight. This AD was prompted by a report of certain No. 2 and No. 3 cylinder heads not manufactured to proper specification. We are issuing this AD to prevent excessive oil consumption, which could result in an in-flight engine shutdown, forced landing, and damage to the airplane.

**DATES:** This AD becomes effective April 30, 2013.

We must receive comments on this AD by May 30, 2013.

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: 202-493-2251.

For service information identified in this AD, contact BRP-Powertrain GmbH & Co KG, Welser Strasse 32, A-4623 Gunskirchen, Austria, or go to: <http://www.FLYROTAX.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park,

Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: 800-647-5527) is the same as the Mail address provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Frederick Zink, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email: [frederick.zink@faa.gov](mailto:frederick.zink@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA Emergency Airworthiness Directive 2013-0055-E, dated March 6, 2013 (referred to hereinafter as "the MCAI"), to correct an unsafe condition for the specified products. The MCAI states:

During a production test run, a non-compliance of the installed cylinder head assembly of cylinder No. 2 and 3 (2/3) was detected, which may result in a latent defect on a limited number of engines. The affected cylinder heads may not have been manufactured in accordance with the specification.

This condition, if not detected and corrected, could lead to an oil leak in the intake channel in the area of the valve guide. The affected non-conforming cylinder heads may have small machined through holes, which can increase the oil consumption and can lead to oil starvation, possibly resulting in engine stoppage or in-flight engine shutdown and forced landing, with consequent risk of damage to the aeroplane and injury to occupants.

You may obtain further information by examining the MCAI in the AD docket.

### **Relevant Service Information**

BRP-Powertrain GmbH & Co KG has issued Rotax Aircraft Engines ASB No. ASB-912-062, Revision 1 and ASB-914-044, Revision 1 (combined into one document), dated March 5, 2013. The actions described in this service information are intended to correct the unsafe condition identified in the MCAI.

### **FAA's Determination and Requirements of This AD**

This product has been approved by the aviation authority of Austria, and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, EASA has notified us of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all information provided by

EASA and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design. This proposed AD would require a one-time visual inspection for excessive oil deposits or carbon deposits on the No. 2 and No. 3 spark plug center and grounding electrodes, and if found, replacement of the cylinder head before further flight. Any excess indicates the cylinder head is not manufactured to proper specification and is leaking oil into the combustion chamber.

### **FAA's Determination of the Effective Date**

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule because of the short compliance time requirement. Therefore, we determined that notice and opportunity for public comment before issuing this AD are impracticable and that good cause exists for making this amendment effective in fewer than 30 days.

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2013-0263; Directorate Identifier 2013-NE-12-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of the Web site, anyone can find and read the comments in any of our dockets, including, if provided, the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78).

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

1. Is not a "significant regulatory action" under Executive Order 12866;



2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and

3. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:



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**2013-07-12 BRP-Powertrain GmbH & Co. KG (formerly BRP-Rotax GmbH & Co KG, Bombardier-Rotax GmbH & Co. KG, and Bombardier-Rotax GmbH):** Amendment 39-17416; Docket No. FAA-2013-0263; Directorate Identifier 2013-NE-12-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective April 30, 2013.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to the following BRP Powertrain GmbH & Co KG Rotax reciprocating engines:

(1) Rotax 912 F2; 912 F3; and 912 F4, from serial number (S/N) 4,413,013 up to S/N 4,413,017 inclusive.

(2) Rotax 912 S2; 912 S3; and 912 S4, from S/N 4,924,468 up to S/N 4,924,491 inclusive.

(3) Rotax 914 F2; 914 F3; and 914 F4, from S/N 4,421,156 up to S/N 4,421,169 inclusive.

**(d) Reason**

This AD was prompted by a report of certain No. 2 and No. 3 cylinder heads not manufactured to proper specification. The cylinder heads may have an oil leak in the intake channel in the area of the valve guide. There is the possibility that the heads have small machined through holes, which can increase the oil consumption. We are issuing this AD to prevent excessive oil consumption, which could result in an in-flight engine shutdown, forced landing, and damage to the airplane.

**(e) Actions and Compliance**

Unless already done, do the following actions.

(1) Within 5 flight hours or 20 days after the effective date of this AD, whichever occurs first, perform a one-time visual inspection of the center and grounding electrodes of both top and bottom spark plugs on cylinder 2, and cylinder 3, for unusual deposits (excessive carbon or oil). Any excess indicates the cylinder head is not manufactured to proper specification and is leaking oil into the combustion chamber.

(2) Before further flight, replace cylinder heads found to be not manufactured to proper specification.

(3) From the effective date of this AD, do not install any engine listed in the applicability of this AD on an airplane, unless the engine has been inspected and, depending on the findings, affected cylinder heads have been replaced as required by this AD.

**(f) Definitions**

For the purpose of this AD, unusual deposits (excessive carbon or oil) is when:

(1) Carbon is a visual buildup of dark carbon deposits on the center and grounding electrodes as well as the immediate surrounding area, and

(2) Excessive oil is a visual buildup indicated by the presence of oil on the center and grounding electrodes as well as the immediate surrounding area, giving a wet appearance.

**(g) Alternative Methods of Compliance (AMOCs)**

The Manager, Engine Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request.

**(h) Related Information**

(1) For more information about this AD, contact Frederick Zink, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email: frederick.zink@faa.gov.

(2) Refer to European Aviation Safety Agency Emergency Airworthiness Directive 2013-0055-E, dated March 6, 2013, and BRP-Powertrain GmbH & Co KG Rotax Aircraft Engines Alert Service Bulletin No. ASB-912-062, Revision 1 and ASB-914-044, Revision 1 (combined into one document), dated March 5, 2013, for related information.

(3) For service information identified in this AD, contact BRP-Powertrain GmbH & Co KG, Welser Strasse 32, A-4623 Gunskirchen, Austria, or go to: <http://www.FLYROTAX.com>. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

**(i) Material Incorporated by Reference**

None.

Issued in Burlington, Massachusetts, on April 4, 2013.  
Colleen M. D'Alessandro,  
Manager, Engine & Propeller Directorate,  
Aircraft Certification Service.



## ALERT SERVICE BULLETIN

### Checking of the cylinder head assy. (2/3) for ROTAX® Engine Type 912 and 914 (Series)

This ASB revises ASB-912-062/ASB-914-044 Revision 1

ATA System: 72-30-00 cylinder head

#### MANDATORY

#### Symbols used:

Please, pay attention to the following symbols throughout this document emphasizing particular information.

#### General note



**WARNING**

Identifies an instruction which, if not followed, may cause serious injury or even fatal injury.



**CAUTION**

Identifies an instruction which, if not followed, may cause minor or moderate injury.

**NOTICE**

Denotes an instruction which if not followed, may severely damage the engine or could lead to suspension of warranty.

#### ENVIRONMENT NOTE

Environment note gives you tips and behaviors to environmental protection.

#### NOTE:

Information useful for better handling.



A revision bar outside of the page margin indicates a change to text or graphic.

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods and prevailing government regulations.

BRP-Powertrain GmbH & Co KG. cannot be responsible for the quality of work performed in accomplishing the requirements of this publication.

## 1) Planning information

### 1.1) Applicability

All versions of the engine type:

Engine type	Serial number
912 A	from S/N 4,410.965 up to S/N 4,410.976 inclusive
912 F	from S/N 4,413.013 up to S/N 4,413.017 inclusive

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912 S	from S/N 4,924.468 up to S/N 4,924.491 inclusive
914 F	from S/N 4,421.156 up to S/N 4,421.169 inclusive

Additional engine S/N as per ASB-912-062/ASB-914-044 Revision 2:

Engine type	Serial number
912 A	from S/N 4,410.977 up to S/N 4,410.981 inclusive
912 F	from S/N 4,413.018 up to S/N 4,413.019 inclusive
912 S	from S/N 4,924.492 up to S/N 4,924.543 inclusive
914 F	from S/N 4,421.170 up to S/N 4,421.177 inclusive

In addition, also affected, all cylinder head assy. 2/3 part no. 623682 or part no. 623687 from 31 January 2013 up to 28 May 2013 inclusive.

### 1.2) Concurrent ASB/SB/SI and SL

none

### 1.3) Reason

Due to a deviation in the manufacturing process some cylinder heads may have an oil leak in the intake channel in the area of the valve guide. There is a possibility of small machined through holes, which can increase the oil consumption which may result in an engine stoppage.

### 1.4) Subject

Checking of the cylinder head assy. (2/3) for ROTAX for engine type 912 and 914 (Series).

### 1.5) Compliance

- before next flight, check of the cylinder head assy. 2/3 part no. 623682 or part no. 623687 of an engine with a serial number (S/N) listed in section 1.1) in accordance with the instructions in section 3.

#### NOTE:

If an inspection as per ASB-912-062R1/914-044R1 have already been carried out, no further inspection is necessary.



**WARNING**

Non-compliance with these instructions could result in engine damages, personal injuries or even fatal injury.

### 1.6) Approval

The technical content of this document is approved under the authority of DOA ref. EASA.21J.048.

### 1.7) Labor time

Estimated labor time:

engine installed in the aircraft - - - labor time will depend on installation and therefore no estimate is available from the engine manufacturer.

### 1.8) Mass data

change of weight - - none.

moment of inertia- - - unaffected.

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### 1.9) Electrical load data

no change

### 1.10) Software accomplishment summary

no change

### 1.11) References

In addition to this technical information refer to current issue of

- Illustrated Parts Catalog (IPC)
- Maintenance Manual (MM)

NOTE:

The status of Manuals can be determined by checking the table of amendments of the Manual. The 1<sup>st</sup> column of this table is the revision status. Compare this number to that listed on the ROTAX® WebSite:

[www.FLYROTAX.com](http://www.FLYROTAX.com). Updates and current revisions can be downloaded for free.

### 1.12) Other Publications affected

none

### 1.13) Interchangeability of parts

- All defective parts and also spare parts in stock are unservicable and must be returned F.O.B to ROTAX® Authorized Distributors or their Service Center.

## 2) Material Information

### 2.1) Material- cost and availability

Price, availability and any possible support will be provided on request by ROTAX® Authorized Distributors or their Service Center.

### 2.2) Company support information

- Replaced parts must be returned F.O.B to ROTAX® Authorized Distributors or their Service Center.
- Shipping costs, downtime costs, loss of income, telephone costs etc. or costs of conversion to other engine versions or additional work, as for instance simultaneous engine overhaul is not covered in this scope and will not be borne or reimbursed by ROTAX®.

### 2.3) Material requirement per engine

parts required if cylinder head change is necessary:

Fig. no.	New part no.	Qty/ engine	Description	Old part no.	Application
-	-	as required	spark plug12	897225	912 A, 912 F,
-	-	as required	spark plug12	297940	912 S
-	-	as required	spark plug12	897257	914 F
-	-	as required	cylinder head assy. 2/3	623682	Power section 912 A, 912 F, 914 F
-	-	as required	cylinder head assy. 2/3	623687	Power section 912 S

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-	-	as required	O-ring 6.4x1.8	430205	valve cover
-	-	as required	O-ring 105x2.5	250285	valve cover
-	-	as required	O-ring 16x5	850930	oil return tube
-	-	as required	valve stem seal	230810	cylinder head
-	-	as required	O-ring 43x2	230910	intake manifold
-	-	as required	O-ring 19x2	950180	bent socket
-	-	as required	Lock nut M8	842950	exhaust bend
-	-	as required	Lock washer A6	945751	intake manifold

**2.4) Material requirement per spare part**

none

**2.5) Rework of parts**

none

**2.6) Special tooling/lubricant-/adhesives-/sealing compound-Price and availability**

Price and availability will be provided on request by ROTAX® Authorized Distributors or their Service Centers.

parts required if cylinder head change is necessary:

Fig. no.	New part no.	Qty/engine	Description	Old part no.	Application
	-	as required	valve spring loading jig assy.	877387	cylinder head

**NOTICE**

When using these special tools observe the manufacturers specifications.

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### 3) Instructions/Accomplishment

**NOTE:** Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements.

**Accomplish-  
ment**

All measures must be taken and confirmed by at least one of the following persons or organization:

- ROTAX® - Airworthiness representative
- ROTAX® - Distributors or their Service Center
- Persons approved by the respective Aviation Authority

**NOTE:** All work has to be performed in accordance with the relevant Maintenance Manual.

**Safety notice**



**WARNING**

Proceed with this work only in a non-smoking area and not close to sparks or open flames. Switch off ignition and secure engine against unintentional operation. Secure aircraft against unauthorized operation. Disconnect negative terminal of aircraft battery.



**WARNING**

Risk of scalds and burns! Allow engine to cool sufficiently and use appropriate safety gear while performing work.

**NOTICE**

Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) be required when undergoing disassembly/assembly, always replace with a new one.

#### 3.1) Checking of cylinder head assy. 2/3

##### 3.1.1) Introduction

This check has to be done in order to establish if there is evidence of excessive oil consumption. New or used engines have to be checked by examining for this evidence as detailed under 3.1.2) Checking of spark plug tip on cylinder 2 and 3.

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### 3.1.2) Checking of spark plug tip on cylinder 2 and cylinder 3

See fig. 1.

NOTE:

If the cylinder heads 2/3 part no. 623682 or part no. 623687 have already been installed in the course of a repair / an overhaul, carry out an engine test run (a minimum engine running time of 20 minutes is required). This must be done prior to the checking of the spark plug tip.

See current issue of Maintenance Manual (Line) of the relevant engine type.

Step	Procedure
1	Visual check of both spark plugs per cylinder (top and bottom).

NOTE:

Unusual deposits (excessive carbon or oil) on the spark plugs are an indication of a defective cylinder head which must be replaced. Figure 1 shows comparison between a used spark plug in normal condition and one that is not.

#### NOTICE

Affected spark plugs with such deposits shown in chapter 4 Fig. 1, have to be removed and can not be reinstalled.

### 3.1.3) Replacement of the affected cylinder head

If excessive deposits (oil or carbon) are found on the spark plugs the cylinder head must be replaced in accordance with the relevant Maintenance Manual (Heavy) and any relevant aircraft manufacturer instructions.

NOTE:

At tightening the cylinder head with 2 collar cap nuts M8 and 2 hex. nuts M8 pay attention to the changed tightening torque. Tighten to 10 Nm (90 in.lb) and then in addition tighten further by applying a 120° rotation.

- Install new spark plugs.
- Restore aircraft to original operating configuration.
- Connect negative terminal of aircraft battery.

### 3.2) Test run

Conduct test run including ignition check and leakage test

### 3.3) Summary

These instructions (section 3) have to be conducted in accordance with the time scales specified in section 1.5. The execution of the mandatory Alert Service Bulletin must be confirmed in the log-book.

Approval of translation to best knowledge and judgement-in any case the original text in German language and the metric units (SI-system) are authoritative.

### 3.4) Enquiries

Enquiries regarding this Alert Service Bulletin should be sent to the ROTAX® authorized distributor of your area. A list of all distributors is provided on [www.FLYROTAX.com](http://www.FLYROTAX.com).

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### 4) Appendix

The following illustrations/drawings should convey additional information:



*Fig. 1  
spark plug*

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**NOTE:**

The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function.

Exploded views are **not technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective engine type.