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 Initial issue

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:

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Serial number</th>
</tr>
</thead>
<tbody>
<tr>
<td>912 A</td>
<td>from S/N 4,410,965 up to S/N 4,410,976 inclusive</td>
</tr>
<tr>
<td>912 F</td>
<td>from S/N 4,413,013 up to S/N 4,413,017 inclusive</td>
</tr>
</tbody>
</table>
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. 632687 of an engine with a serial number (S/N) listed in section 1.1) in accordance with the instructions in section 3.

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.

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 1st column of this table is the revision status. Compare this number to that listed on the ROTAX® WebSite: www.FLYROTAX.com. Updates and current revisions can be downloaded for free.

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

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
1.12) Other Publications affected
none

1.13) Interchangeability of parts
- all defective parts are unserviceable 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:

<table>
<thead>
<tr>
<th>Fig. no.</th>
<th>New part no.</th>
<th>Qty/ engine</th>
<th>Description</th>
<th>Old part no.</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>spark plug12</td>
<td>897225</td>
<td>912 A, 912 F,</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>spark plug12</td>
<td>297940</td>
<td>912 S</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>spark plug12</td>
<td>897257</td>
<td>914 F</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>cylinder head assy. 2/3</td>
<td>623682</td>
<td>Power section 912 A, 912 F, 914 F</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>cylinder head assy. 2/3</td>
<td>623687</td>
<td>Power section 912 S</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>O-ring 6.4x1.8</td>
<td>430205</td>
<td>valve cover</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>O-ring 105x2.5</td>
<td>250285</td>
<td>valve cover</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>O-ring 16x5</td>
<td>850930</td>
<td>oil return tube</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>valve stem seal</td>
<td>230810</td>
<td>cylinder head</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>O-ring 43x2</td>
<td>230910</td>
<td>intake manifold</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>O-ring 19x2</td>
<td>950180</td>
<td>bent socket</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>Lock nut M8</td>
<td>842950</td>
<td>exhaust bend</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>as required</td>
<td>Lock washer A6</td>
<td>945751</td>
<td>intake manifold</td>
</tr>
</tbody>
</table>

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:

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<th>Old part no.</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>as required</td>
<td>valve spring loading jig assy.</td>
<td>877387</td>
<td>cylinder head</td>
<td></td>
</tr>
</tbody>
</table>

**NOTICE**
When using these special tools observe the manufacturers specifications.

3) Instructions/Accomplishment

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

**Accomplishment**
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.

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

See fig.1.

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

### Table

<table>
<thead>
<tr>
<th>Step</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visual check of both spark plugs per cylinder (top and bottom).</td>
</tr>
</tbody>
</table>

**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 logbook.

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).
4) Appendix

The following illustrations/drawings should convey additional information:

![Spark Plugs](image)

**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.