



SERVICE INSTRUCTION

Change of the tightening torque procedure for the installation of cylinder heads for ROTAX® Engine Type 912 i, 912 and 914 (Series)

ATA System: 72-00-00 Engine

OPTIONAL

1) Planning information

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

BRP-Rotax GmbH & Co KG. cannot accept any responsibility for the quality of work performed in accomplishing the requirements of this publication.

1.1) Applicability

All versions of the engine type 912 i, 912 and 914 (Series).

1.2) Concurrent ASB/SB/SI and SL

none

1.3) Reason

In the course of continuous development a new tightening torque procedure for the installation of the cylinder heads depending on the respective crankcase design and that crankcase screws has been introduced.

This new tightening torque procedure results in a more consistent and more durable seal between the cylinder heads and cylinders.

1.4) Subject

Change of the tightening torque procedure for the installation of cylinder heads for ROTAX® Engine Type 912 i, 912 and 914 (Series).

1.5) Compliance

These maintenance instructions shall be considered in any maintenance events, retrofitting, repair and overhaul.



WARNING

Non-compliance with these instructions could result in engine damages, personal injuries or death

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 hours:

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

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1.8) Mass data

change of weight - - - none.
moment of inertia - - - unaffected.

1.9) Electrical load data

No change

1.10) Software modifications

No change

1.11) References

In addition to this technical information refer to current issue of

- all relevant Alert Service Bulletins (ASB)
- all relevant Service Bulletins (SB)
- all relevant Service Instructions (SI)
- all relevant Service Letters (SL)
- Maintenance Manual (MM) Heavy
- Maintenance Manual (MM) Line

NOTE: The status of the Manuals can be determined by checking the table of amendments. The 1st column of this table shows 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.

1.12) Other Publications affected

None

1.13) Interchangeability of parts

- All parts are interchangeable

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2) Material Information

2.1) Material- cost and availability

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

2.2) Company support information

None.

2.3) Material requirement per engine

None.

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

Price and availability will be supplied on request by ROTAX® Authorized Distributors or their independent Service Centers:

Description	Part no.	Application
Cylinder aligning tool	877263	cylinder head

NOTICE

If using these special tools observe the manufacturers specifications.

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3) Accomplishment/Instructions

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 implemented and confirmed by at least one of the following persons or organizations:

- ROTAX® - Distributors or their independent Service Centers
- Persons with approved qualifications for the corresponding engine types. Only authorized persons (iRMT, Level Heavy Maintenance) are entitled to carry out this work.
- Persons with type-specific training

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

Safety notice



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.

ENVIRONMENTAL NOTE
 Environmental notes gives you tips on environmental protection.

3.1) Maintenance-related information

See relevant Maintenance Manual (Heavy) for the respective engine type. Chapter: 72-00-00 Cylinder head installation.

3.1.1) Cylinder head installation

Observe cylinder head installation as described in the latest Maintenance Manual Heavy, chap. 72-00-00. The following steps are maintenance-related information:

Tightening torque procedure:

NOTE: Assemble with clean parts only! Remove any residual carbon or oil from the mating surfaces of cylinder heads and cylinders.

See Fig. 1.

Step	Procedure
1	Raise the cylinder until the centring collar of the cylinder engages in the cylinder head. See latest Maintenance Manual Heavy, chap. 72-00-00.
2	Clean and degrease all threads of studs. NOTE: M8 collar cap and M8 collar nuts also must be clean and free from residues.
3	Lubricate the contact area for the M8 collar cap nuts with grease. NOTE: No grease for M8 collar nuts contact areas!

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Step	Procedure
4	Hand-tighten 2 M8 collar cap nuts and 2 M8 collar nuts evenly (maximum 5 Nm/44 in.lb), until cylinder head rests on cylinder.
5	Attach the cylinder aligning tool part no. 877263 to the intake flange of the cylinder heads with 4 M6x25 Allen screws and tighten to 10 Nm (88 in.lb.), see figure 1. NOTE: This aligns the cylinder heads to ensure a flat support for the intake manifold.
6	Tighten the nuts in torque sequence (see figure 2) following these steps: Step 1: all M8 collar cap nuts and M8 collar nuts with 10 Nm (88 in. lb.). Step 2: all M8 collar cap nuts and M8 collar nuts with 30 Nm (-5 Nm)(265 in. lb.) (-44 in. lb). NOTE: Perform step 3 sequentially for each cylinder head nut one at a time following the torque sequence in figure 2. Step 3: Loosen each M8 collar cap nut or M8 collar nut 360° then tighten to 10 Nm (88 in. lb.) + 150°.
7	Loosen 4 Allen screws M6x25 and remove the cylinder aligning tool.

NOTE: The installation and tightening of a single cylinder head or any individual cylinder head nut is not allowed. The entire procedure to torque both cylinder heads together in one torque sequence must be performed.

- Restore aircraft to original operating configuration.

3.2) Test run

Conduct test run. See chapter 12-20-00 of the latest Maintenance Manual Line for the respective engine type.

3.3) Summary

These instructions (section 3) have to be followed in accordance with the deadlines specified in section 1.5.

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

Translation to other languages might be performed in course of localisation. In any case the original text in English language and the metric units are authoritative.

3.4) Enquiries

Enquiries regarding this Service Instruction should be sent to the ROTAX® authorized distributor of your area.

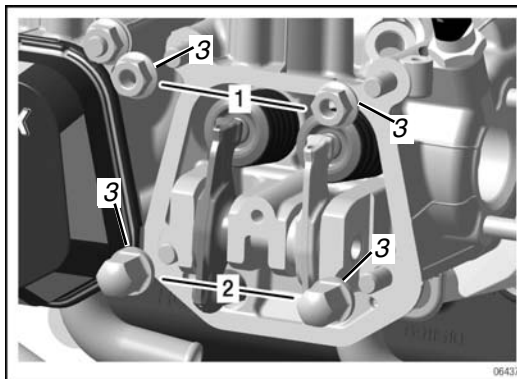
A list of all distributors or relevant independent Service Centers is provided on www.FLYROTAX.com.

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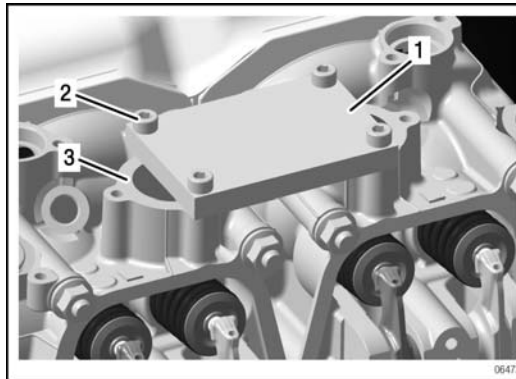
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4) Appendix

the following drawings/schematics/tables should convey additional information:

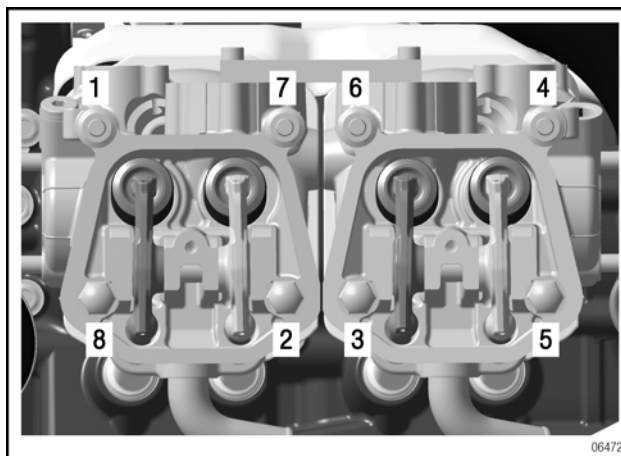


- 1 M8 collar nut
- 2 M8 collar cap nut
- 3 Grease



- 1 Cylinder aligning tool
part no. 877263
- 2 M6x25 Allen screw
- 3 Intake flange

Fig. 1



Torque sequence diagram

Fig. 2

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.

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