



Emergency Airworthiness Directive

AD No.: 2023-0156-E

Issued: 02 August 2023

Note: This Emergency Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I Part M.A.301, or Annex Vb Part ML.A.301, as applicable, 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 [Regulation (EU) 1321/2014 Annex I Part M.A.303, or Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

BRP-ROTAX GmbH & Co KG

Type/Model designation(s):

Rotax 912 and 914 engines

Effective Date: 04 August 2023

TCDS Number(s): EASA.E.121 and EASA.E.122

Foreign AD: Not applicable

Supersedure: None

ATA 72 – Engine – Propeller Gearbox / Magnetic Plug – Inspection / Propeller Shaft – Replacement

Manufacturer(s):

BRP-Rotax GmbH & Co KG, formerly BRP-Powertrain GmbH & Co. KG, Bombardier-Rotax GmbH & Co. KG, Bombardier-Rotax GmbH

Applicability:

Rotax 912 A, 912 F, 912 S and 912 iSc Sport (series) engines, all models, all serial numbers (s/n); and

Rotax 914 F engines, all models, all s/n.

These engines are known to be installed on various general aviation (EASA CS 23, CS LSA, CS-VLA or CS 22 certified) aeroplanes and powered sailplanes. Installation of these engines was done by either the respective aeroplane manufacturers or through a modification of the aeroplane by Supplemental Type Certificate (STC).

Definitions:

For the purpose of this AD, the following definitions apply:



The SB: BRP-Rotax Service Bulletin (SB) SB-912-078 / SB-914-059 / SB-912 i-014 (published as a single document), which include reference to the BRP-Rotax Installation Manual, Maintenance Manual Line and Maintenance Manual Heavy for detailed accomplishment instructions.

Affected part: Propeller shafts, having Part Number (P/N) 937047, which are known to have been installed initially (on delivery) on engines having an s/n as listed in Table 1 (grouped by EASA certified engine type) of Appendix 1 of this AD and those shafts which are known to have been delivered as 'spare part', having a shaft s/n as listed in Table 2 of Appendix 1 of this AD.

Serviceable part: Any propeller shaft, eligible for installation, which is not an affected part.

Groups: Group 1 engines are those that have an affected part installed. Group 2 engines are those that do not have an affected part installed.

Reason:

An occurrence was reported from the production line where it was found that certain propeller shafts showed abnormalities on the surface. Further investigation revealed that this non-conformity was caused by a deviation in the machining process of a certain production batch of shafts. It was determined that this discrepancy could lead to increased wear of the propeller shaft bearings, possibly resulting in engine problems. It was also determined on which delivered (new) engines the affected parts from the identified non-conforming batch had been (initially) installed, and also that several non-conforming shafts had been delivered as spare part.

This condition, if not detected and corrected, could lead to engine in-flight shut down and (for a single engine aeroplane) consequent emergency landing of the aeroplane, possibly resulting in damage to the aeroplane and injury to occupants.

To address this potential unsafe condition, BRP-Rotax issued the SB to provide instructions for inspection and replacement of the affected part.

For the reason described above, this AD requires inspection of the magnetic plug to check the condition of the propeller gearbox and, thereafter, depending on findings, repetitive checks of the magnetic plug. This AD also requires replacement of all affected parts and prohibits (re)installation of affected parts.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Inspection(s):

- (1) For Group 1 engines: Before next flight after the effective date of this AD, and, thereafter, depending on findings as defined in the SB, at intervals not to exceed 10 FH, inspect the magnetic plug to check the condition of the gearbox in accordance with the instructions of the SB.



Corrective Action(s):

- (2) If, during any inspection as required by paragraph (1) of this AD, discrepancies are detected, before next flight, replace the affected part with a serviceable part in accordance with the instructions of the SB.

Replacement:

- (3) As an alternative to the action(s) required by paragraph (1) of this AD, before next flight after the effective date of this AD, or after any inspection as required by paragraph (1) of this AD (no deficiencies detected), replace the affected part with a serviceable part in accordance with the instructions of the SB.
- (4) For Group 1 engines: Before exceeding 50 FH since engine first operation or since first installation of the affected part on an engine, as applicable, or within 10 days after the effective date of this AD, whichever occurs later, replace the affected part with a serviceable part, as defined in this AD, in accordance with the instructions of the SB.

Part(s) Installation:

- (5) For Group 1 and Group 2 engines: From the effective date of this AD, do not install an affected part on any engine.

Terminating Action:

- (6) Replacement of the affected part on an engine as required by paragraph (2) or (4) of this AD, or as specified in paragraph (3) of this AD, constitutes terminating action for the repetitive inspections as required by paragraph (1) of this AD for that engine.

Ref. Publications:

BRP-Rotax SB SB-912-078 / SB-914-059 / SB-912 i-014 (published as a single document) original issue dated 25 July 2023.

The use of later approved revisions of the above-mentioned document is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. The results of the safety assessment have indicated the need for immediate publication and notification, without the full consultation process.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the [EU aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or



may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), STC or other modification.

5. For any question concerning the technical content of the requirements in this AD, please contact: BRP-Rotax GmbH & Co KG, Telephone: +43 7246 601 0, Fax: +43 7246 601 9130, E-mail: airworthiness@brp.com, Website www.flyrotax.com.



Appendix 1

Table 1 – Affected Engines which are known to have been delivered
(from the factory) with an affected part installed

EASA Certified Engine Type	Engine Serial Numbers (s/n)
912 A	s/n 10000823 to 10000826 inclusive
912 S	s/n 10000403, 10000405, 10000406, 10000408, 10000409, 10000411 to 10000414 inclusive, 10000472 to 10000475 inclusive, 10000789, 10000790, 10000792, 10000793 and 10000832
914 F	s/n 10000878 to 10000887 inclusive
912 iSc Sport	s/n 10000893, 10000894, 10001088 and 10001089

Table 2 – Affected Propeller shafts (having P/N 937047)
known to have been delivered as a ‘spare part’ (of a gearbox assembly)

Propeller Shafts Serial Numbers
s/n 222444, 222459, 222465, 222472, 222480, 222485, 222492, 222496, 222517, 222548, 222588, 222596, 222615, 222622, 222626, 222632, 222641, 222644, 222665, 222700 and 222715

