

SERVICE BULLETIN

Flashing of a new Software on the Engine Control Unit 912 iS (ECU) for ROTAX® Engine Type 912 i (Series)

ATA System: 76-00-00 Engine control

MANDATORY

Symbols used:

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

General note



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



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



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

ENVIRONMENTAL NOTE

Environmental notes give you tips on environmentally conscious behaviour..

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 iS	from S/N 4 417 001 up to S/N 4 417 408 inclusive from S/N 7 703 001 up to S/N 7 703 206 inclusive

All ECU Units with part no. 665566.

All ECU Units from serial number S/N 11.0106 up to S/N 12.0727 inclusive.

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1.2) Concurrent ASB/SB/SI and SL

In addition to this Service Bulletin the following Service Instructions must be observed and complied with:

- SI-912 i-002, "B.U.D.S. Aircraft Installation Instruction", current issue
- SI-912 i-003, "B.U.D.S: Aircraft Update", current issue

1.3) Reason

The current ECU Software will be replaced by a new, revised version. With this configuration, which was developed as part of continuous improvements, an optimization of the diagnostic function and the operating characteristics will be achieved.

1.4) Subject

Flashing of a new Software on the Engine Control Unit 912 iS (ECU) for ROTAX® Engine Type 912 i (Series).

1.5) Compliance

At the next maintenance event prescribed by BRP, at the latest January 01 2015, the flashing of the ECU units mentioned in chapt. 1.1 needs to be conducted as described in the following chapter 3. If this engine is not or not often operated during a year, a check, including the accomplishment of the ECU flashing, needs to be done every 12 months.

See chapter 05-20-00 "Scheduled Maintenance Checks" in the latest edition of the Maintenance Manual (Line Maintenance) for engine type ROTAX® 912 i Series.



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:

Flashing of an ECU software installed in the aircraft - - - approx. 15 minutes per ECU unit.

Flashing of an ECU software removed from 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

Flashing of the ECU Software.

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1.11) References

In addition to this technical information refer to current issue of

- Maintenance Manual (MM) Heavy
- Maintenance Manual (Line)
- Operators Manual

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.

1.12) Other Publications affected

- Illustrated Parts Catalog

1.13) Interchangeability of parts

not affected

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

- 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 overhauls are not covered in this scope and will not be borne or reimbursed by ROTAX®.

2.3) Material requirement per engine

none.

2.4) Material requirement per spare part

none

2.5) Rework of parts

none;

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

Price and availability will be supplied on request by ROTAX® authorized distributors or their Service Centers:

Table 1.

Qty /engine	Description	part no./ version
1	B.U.D.S. Set Level 3	864023
1 ¹⁾	Service wiring harness assy.	864280
1 ¹⁾	Power supply (Output: 12 V, 1 A, DC)	-
1	Software configuration ECU 912 iS (Software 29)	864081
1 ^{1) 2) 3)}	Y-Cable	-
1	B.U.D.S. Aircraft Software	Version 2.3
1	ECU-update label	898800

¹⁾ Only required for the flashing process if the ECU has been removed from aircraft (disconnected from harness).

²⁾ Only required if the aircraft has two separate D-Sub DE 9 Maintenance ports.

³⁾ Specification according to latest edition of Maintenance Manual Heavy of engine type 912 i Series.

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 organization:

- 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) General

NOTE: The ECU can be installed in the aircraft during the software update (a removal is not necessary).

3.2) Instructions

In general two different situations can be identified on how to perform the ECU Software loading process:

- **Situation 1:** Flashing of the ECU software on a removed ECU. That means the ECU has been disconnected from the wiring harness or completely removed from aircraft.
- **Situation 2:** Flashing of the ECU software on an installed ECU. The ECU is connected to the wiring harness and is installed in an aircraft.

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Situation 1 ECU removed from the aircraft:

NOTICE

The removal and installation must be done according to the the relevant Maintenance Manual. In addition observe the specification of the aircraft manufacturer.

NOTICE

Avoid unnecessarily disconnecting and reconnecting of the ECU connectors.

The following steps are necessary to flash the ECU:

Step	Procedure
1	Disconnect ECU from engine wiring harness and remove it from the aircraft.
2	Send ECU to ROTAX® authorized distributor or their Service Center.
3	Extracting and storing the ECU log data (fault and operational data) with B.U.D.S. Aircraft is carried out by a ROTAX® authorized distributor or its Service Center. See latest edition of Maintenance Manual Heavy of engine type 912 i Series. Delete Fault-Data with B.U.D.S. Aircraft.
4	The flashing process of the ECU software is carried out by a ROTAX® authorized distributor or its Service Center. See latest edition of Maintenance Manual Heavy of engine type 912 i Series.
5	The ECU will be marked (see Fig. 1) with a corresponding ECU update label. This is carried out by a ROTAX® authorized distributor or its Service Center.
6	The ECU will be returned from the ROTAX® authorized distributor or its Service Center and has to be installed as specified by the aircraft manufacturer.
7	Entry into engine log book.

NOTICE

The ROTAX® authorized distributor or its Service Center must express that the software of the ECU has been flashed and the new part number of the ECU can be seen on the label. The positioning of the update label must match the location and orientation shown in Fig. 1. The label must not be removed.

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Situation 2 ECU installed in the aircraft

The following steps are necessary to flash the ECU:

Step	Procedure
1	Extracting and storing the ECU log data (fault and operational data) with B.U.D.S. Aircraft. See latest edition of Maintenance Manual Heavy of engine type 912 i Series. Delete Fault-Data with B.U.D.S. Aircraft.
2	The flashing process of the ECU software is carried out by a ROTAX® authorized distributor or its Service Center. See latest edition of Maintenance Manual Heavy of engine type 912 i Series.
3	The ECU will be marked (see Fig. 1) with a corresponding ECU update label.
4	Entry into engine log book.

NOTICE

The ROTAX® authorized distributor or its Service Center must attest that the software of the ECU has been flashed and the new part number of the ECU can be seen on the label. The positioning of the update label must match the location and orientation shown in Fig. 1. The label must not be removed.

- Restore aircraft to original operating configuration.

3.3) Test run

Conduct test run. See chapter 12-2-00 in the latest edition of Maintenance Manual Line for engine type 912i Series.

3.4) Summary

These instructions (section 3) have to be conducted in accordance with the deadlines from section 1.5. The execution of the mandatory 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.

3.5) Enquiries

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

A list of all distributors is provided on www.FLYROTAX.com.

4) Appendix

The following drawings should convey additional information:

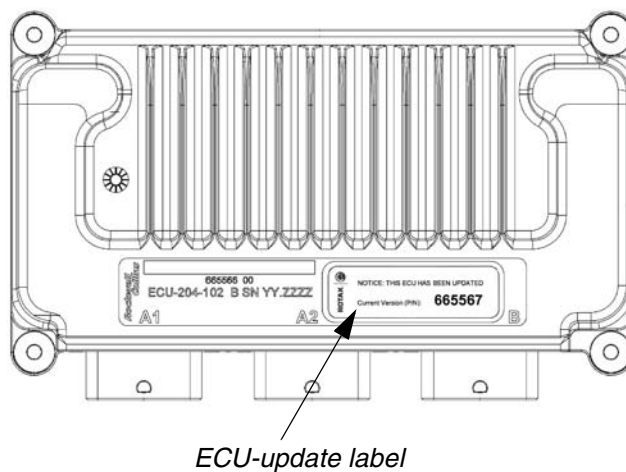


Fig. 1
Positioning of the ECU update label

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NOTE:

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

Exploded views are **no technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective engine type.