

SERVICE INSTRUCTION

B.U.D.S. Aircraft Installation Instructions and Update for ROTAX® Engine Types 916 i, 915 i, 912 i and 914 Series

ATA System: 76-10-00 Engine control

1) Planning information

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods in accordance with 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 ROTAX® engine types:

Engine type	Serial number
916 i Series	all
915 i Series	all
912 i Series	all
914 Series	all*

All engines equipped with TCU part no. 966741 version 4.6.

*NOTE: Software is compatible with engine type 914 Series fitted with TCU part no. 966741 (TCU 4.6) only. Previous TCU versions (4.5 and 4.3) require the use of the appropriate TLR communication program. See Maintenance Manual Heavy (MMH) of 912 /914 Series, Chapter 76-00-00.

1.2) Concurrent ASB/SB/SI and SL

In addition to this Service Instruction the following documents must be observed and complied with:

in general all relevant Alert Service Bulletins (ASB), Service Bulletins (SB), Service Instructions (SI), Service Letters (SL), Service Instruction - Parts and Accessories (SI-PAC) with relevance to perform this maintenance, repair or overhaul task.

1.3) Reason

Release of a new B.U.D.S. (BRP Utility and Diagnostic Software) Aircraft Software for ROTAX® Aircraft Engines. This software, which has been developed as part of continuous improvement, now supports 914 engine type (TCU 4.6). Version 4.0 of B.U.D.S. (BRP Utility and Diagnostic Software) Aircraft fully replaces the previous version 3.0.

1.4) Subject

B.U.D.S. Aircraft Installation Instructions and Update for ROTAX® Engine Types 916 i, 915 i, 912 i and 914 Series.

1.5) Compliance

At latest before the next usage of B.U.D.S. Aircraft.

1.6) Approval

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

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1.7) Labor time

No change.

1.8) Mass data

No change.

1.9) Electrical load data

No change.

1.10) Software accomplishment summary

No change.

1.11) References

No affected.

1.12) Other publications affected

Not affected.

1.13) Interchangeability of parts

Not affected.

2) Material Information

2.1) Material

B.U.D.S. Aircraft is available free of charge online via www.flyrotax.com. See Chapter 3.4).

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/lubricants-/adhesives-/sealing compounds

NOTE: For using and starting B.U.D.S. Aircraft with 916 i, 915 i and 912 i Series, a USB-to-CAN converter (B.U.D.S. Aircraft Set) is required.

Description	Part no.
B.U.D.S. Set level 1 - Viewer Software	864021
B.U.D.S. Set level 2 - Service Software	864022
B.U.D.S. Set level 3 - Maintenance Software	864023

NOTE: For using and starting B.U.D.S. Aircraft with 914 Series, a USB-to-Serial converter is required.

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This table provides a rough overview on the functionalities available with each B.U.D.S. Aircraft Set. Contact your authorized ROTAX® distributor for detailed advice.

Authentication Level	B.U.D.S. Set Level 3 Maintenance Software	B.U.D.S. Set Level 2 Service Software	B.U.D.S. Set Level 1 Viewer Software	USB-to-Serial cable (914 only)
Available Tabs				
- Main Gauges	x	x	x	x
- Health	x	x	x	
- Logs	x	x	x	
- ECU Configuration	x	x	x	
- Fuel and Ignition	x	x		
- Internal and GSM	x			
- Turbo	x			
- TCU Logs				x
- TCU Configuration				x
Maintenance functionalities				
- Live Logging	x	x	x	x
- Change Configuration	x			
- Software Update	x			
- Display Logs	x	x		x
- Extract Logs	x	x	x	x
- Clear Fault Logs	x	x		
- Clear Data Logs	x			x

3) Accomplishment / Instructions

- ROTAX® reserves the right to make any amendments to existing documents, which might become necessary at the time of next revision or issue.

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 person or organizations:

- ROTAX® - Airworthiness representative
- ROTAX® - Distributors or their independent Service Centers
- Persons approved by the respective Aviation Authority
- Persons with approved qualifications for the corresponding engine types

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

General

Further material on general inspection, maintenance and repair can be found also in relevant Advisory Circular AC 43.13 from FAA.

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Advisory Circular

The Advisory Circular (AC) contains maintenance methods, techniques and practices.

3.1) Introduction

This document provides information and installation instructions specific to the B.U.D.S. Aircraft release.

3.2) General Operating Cautions

NOTICE

Always power down the ECU or TCU before making or breaking electrical connections.

3.3) Minimum Requirements

Minimum requirement for PC or laptop:

- Intel Pentium 1.73 GHz single core
- 1 GB of RAM
- 200 MB of hard disk space
- Microsoft Windows 10 or newer
- One unused USB port.

3.4) Download B.U.D.S. Aircraft

B.U.D.S. Aircraft can be downloaded via the ROTAX® Aircraft Engines official website. Therefore, a proper internet connection is required (file size: approx. 100 MB).

NOTE: Installation and usage of B.U.D.S. Aircraft does not require a connection to the internet.

1. Open preferred Internet Browser (e.g. Google Chrome, Firefox, Internet Explorer).
2. Open www.flyrotax.com.
3. Select "Services".
4. Select "Technical Documentation".
5. Choose respective "Engine Type" (916 i, 915 i, 912 i or 914 Series engine).
6. Choose "Document Type": *Software*.
7. Select "Search Database".
8. Search for the latest "BRP Utility and Diagnostic Software B.U.D.S. Aircraft" Software and select the file name in the "Download" column.
9. Depending on the browser used, the software will either be directly downloaded to a default "Downloads" folder or the user is asked where it should be stored. In the second case select an appropriate folder where the software should be stored.
10. Once the download has been successfully completed, navigate to the B.U.D.S. Aircraft Installer using the Windows-Explorer. Now the software can be installed or copied onto a removable media.

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3.5) Install B.U.D.S. Aircraft

NOTE: To install or uninstall B.U.D.S. Aircraft, administrator rights are required for the Windows user performing the installation.

The B.U.D.S. Aircraft Installer can either be downloaded (See section 3.4 Download B.U.D.S. Aircraft) or be transferred onto the PC or Laptop by using a removable media. It is not necessary to have any other prerequisite software preinstalled.

1. Connect the B.U.D.S. Aircraft Set to a USB Port of the PC or Laptop. For 914 Series, connect USB-to-Serial converter to a USB port of the PC or Laptop and configure to either COM1 or COM2 port.

NOTE: If not already installed, the appropriate driver will be installed as part of the B.U.D.S. Aircraft installation process.

2. Navigate to the B.U.D.S. Aircraft installer using the Windows-Explorer and execute it. Then follow the instructions of the installation dialog.
3. Once the installation has been completed, B.U.D.S. Aircraft can be executed by using the desktop icon or the start menu entry created.

3.6) Starting and using B.U.D.S. Aircraft with 916 i, 915 i and 912 i Series engines

1. Connect the B.U.D.S. Aircraft Set to a USB Port of the PC or Laptop.

NOTE: B.U.D.S. Aircraft can only be started and run with a connected B.U.D.S. Aircraft Set.

2. Execute B.U.D.S. Aircraft by using the desktop icon or the start menu entry.
3. When starting B.U.D.S. Aircraft the first time, enter the serial number and the activation key and select "OK".

The serial number, which is printed on the B.U.D.S. Aircraft Set, must be entered numeric without any dots, special characters or letters (e.g. "1234567").

The activation key is a 16-digit code containing letters and digits. Only use capital characters. It does not matter if the special character "-", which is separating the key into four blocks is entered or not. The activation is uniquely assigned to one B.U.D.S. Aircraft Set serial number and can be found on the lid of the B.U.D.S. Aircraft Set packaging, which should not be discarded for this reason.

NOTE: Do not change the configuration directory. The default URL to the B.U.D.S. Aircraft configuration files is "C:\ProgramData\BRP-Powertrain GmbH & Co KG\BUDS\config". Any modification of the configuration files will make them unusable for B.U.D.S. Aircraft.

4. After B.U.D.S. Aircraft has been started, consult "Help" for a detailed explanation of the multiple functionalities.

3.7) Starting and using B.U.D.S. Aircraft with 914 Series engine

1. Connect a USB-to-Serial converter to a USB Port of the PC or Laptop.
2. Execute B.U.D.S. Aircraft by using the desktop icon or the start menu entry.

NOTE: Do not change the configuration directory. The default URL to the B.U.D.S. Aircraft configuration files is "C:\ProgramData\BRP-Powertrain GmbH & Co KG\BUDS\config". Any modification of the configuration files will make them unusable for B.U.D.S. Aircraft.

3. Within the authorization window, click "Cancel".
4. Within the Preferences window, click on the pull down menu beside "Choose Series" and select "914 Series Mode".
5. Select the appropriate COM port, if necessary click "OK".

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3.8) Uninstall B.U.D.S. Aircraft

1. Search for “Uninstall BUDS” in the Windows Start Menu and execute it.

NOTE: Alternatively, B.U.D.S. Aircraft can also be uninstalled via the “Windows Control Panel” / “Add or Remove Programs” (in Windows 10: the “Programs and Features” control panel applet).

2. Follow the instructions of the uninstallation dialog.

3.9) Summary

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

The execution of the Service Instruction must be confirmed in the logbook.

NOTE: Work on EASA certified parts might affect the EASA Form 1 and does require appropriate documentation by authorized persons. Repairs must be entered into the engine logbook and also do apply for the EASA Form 1.

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

Translation into other languages might be performed in the course of language localization but does not lie within ROTAX' scope of responsibility.

In any case the original text in English language and the metric units are authoritative.

3.10) Inquiries

Inquiries regarding this Service Instruction should be sent to the ROTAX® Authorized Distributor of your area.

A list of all ROTAX® Authorized Distributors or their independent Service Centers is provided on <https://dealerlocator.flyrotax.com>.