

EMERGENCY AIRWORTHINESS DIRECTIVE

ENGINE – CYLINDER HEAD SECTION – INSPECTION/REPLACEMENT	
AD No:	2013-002-E
Issue Date:	4 June 2013
Effective Date:	12 July 2013
Type Approval Holder Name:	Type/Model Designation(s):
BRP-POWERTRAIN GmbH & Co. KG EVEKTOR, spol. s.r.o. CZECH SPORT AIRCRAFT a.s.	Rotax 912 and 914 engines SportStar RTC, and PS-28 Cruiser aeroplanes
Related Mandatory Continuing Airworthiness Information Reference:	
EASA EAD No: 2013-0055-E, dated 06 March 2013 (superceded EAD No: 2013-0117-E) EASA EAD No: 2013-0064-E, dated 12 March 2013 (superceded EAD No: 2013-0119-E) EASA EAD No: 2013-0117-E, dated 30 May 2013 EASA EAD No: 2013-0119-E, dated 04 June 2013.	
Supersedure	
TM CAD EAD 2012-001-E dated 13 March 2013	
Related EASA Service Information Bulletin reference:	
N/A	
Manufacturer(s):	
BRP-Powertrain GmbH & Co. KG, BRP-Rotax GmbH & Co. KG; Bombardier-Rotax GmbH & Co. KG; Bombardier-Rotax GmbH; Evektor, spol. S.r.o., Czech Sport Aircraft a.s	
Applicability:	
Rotax 912 A1, 912 A2, 912 A3 and 912 A4 engines, Rotax 912 F2, 912 F3 and 912 F4 engines, Rotax 912 S2, 912 S3 and 912 S4 engines, and Rotax 914 F2, 914 F3 and 914 F4 engines, all serial numbers (s/n). These engines are known to be installed on, but not limited to, the following types of aeroplanes: 3-i Sky Arrow 650 TC, 650 TCN, 650 TCNS and 710 RG; Aeromot AMT-200 Super Ximango and AMT-300 Turbo Super Ximango; Aircraft Philipp (formerly Alpha-Werke; Nitsche) AVO 68 series Samburo; Aquila AT01; Cessna 150 and A150 series and (Reims) F150 and FA150 series; Diamond (formerly HOAC) H 36 Dimona, HK 36 series Super Dimona, DV 20 Katana and DA20-A1 Katana; Evektor-Aerotechnik EV-97 VLA; Grob G 109; Issoire APM-20 Lionceau; Scheibe SF 36R and SF 25C; Stemme S10-VT; Tecnam P 92-J, P 92-JS, P2002-JR, P2002-JS and P2006T; W.D. Aircraft D4 Fascination. SportStar RTC and Ps-28 Cruiser aeroplanes, all serial numbers. Note: The installation of these engines was either done by the respective aeroplane manufacturer or through modification of the aeroplane by Supplemental Type Certificate.	

Justification:

During a production test run, a non-compliance of the installed cylinder head assembly of cylinder no. 2 and 3 (2/3) was detected, which may result in a latent defect on a limited number of engines. The affected cylinder heads may not have been manufactured in accordance with the specification.

This condition, if not detected and corrected, could lead to an oil leak in the intake channel in the area of the valve guide. The affected non-conforming cylinder heads may have small machined through holes, which can increase the oil consumption and can lead to oil starvation, possibly resulting in engine stoppage or in-flight engine shutdown and forced landing, with consequent risk of damage to the aeroplane and injury to occupants.

To address and correct this potential unsafe condition, EASA issued Emergency AD 2013-0055-E to require a one-time inspection of the affected cylinder head assemblies, known to be installed on certain s/n engines and, depending on findings, replacement of the cylinder head assembly.

Since that AD was issued, it was found that more engines are likely to have an affected cylinder head assembly installed than initially determined. In addition, it has been found that some affected cylinder head assemblies, identified by Part Number (P/N) 623682 and P/N 623687, have inadvertently been supplied as spares, between 31 January 2013 and 28 May 2013.

For the reasons described above, this AD retains the requirements of EASA AD 2013-0055-E, which is superseded, but expands the Applicability to all engines, as it cannot be determined in which s/n engines the affected spare cylinder head assemblies are installed.

This AD also prohibits installation of an affected cylinder head assembly on an engine, or a replacement engine on an aeroplane, unless the affected cylinder head assembly of that engine is inspected as required by this AD.

Compliance:

Required as indicated, unless accomplished previously:

- (1) Within 5 flight hours or 20 days, whichever occurs first after the effective date of this AD, accomplish the following actions:
 - (1.1) For engines identified by s/n in BRP-Powertrain Alert Service Bulletin (ASB) ASB-912-062R2 or ASB-914-044R2 (published as a single document), inspect the cylinder head assembly of cylinder no. 2 and 3 (2/3) in accordance with the instructions of Section 3 of BRP-Powertrain ASB-912-062/ASB-914-044.
 - (1.2) For all engines, determine whether a cylinder head assembly P/N 623682 or P/N 623687, supplied by BRP-Powertrain between 31 January 2013 and 28 May 2013, is installed on the engine as replacement part. A review of engine maintenance records is acceptable to make the determination as specified in this paragraph, provided those records can be relied upon for that purpose, and the supply date and P/N of the cylinder head assembly can be conclusively identified from that review.
- (2) If, during the determination as required by paragraph (1.2) of this AD, an affected cylinder head assembly is found to be installed, before next flight, inspect the cylinder head assembly in accordance with the instructions of Section 3 of BRP-Powertrain ASB-912-062/ASB-914-044.
- (3) If, during an inspection as required by paragraph (1.1) or paragraph (2) of this AD, as applicable, excessive deposits (oil or carbon) are found on one of the spark plugs, before next flight, replace the affected cylinder head assembly with a serviceable one in accordance with the instructions of Section 3 of BRP-Powertrain ASB-912-062/ASB-914-044.
- (4) From the effective date of this AD, do not install any affected engine (type and s/n as listed in BRP-Powertrain ASB-912-062R2/ASB-914-044R2) on an aeroplane, unless that engine has been inspected and, depending on findings, corrected as required by this AD.

- (5) From the effective date of this AD, installation on an engine of an affected spare cylinder head assembly P/N 623682 or P/N 623687, supplied between 31 January 2013 and 28 May 2013, is allowed, provided that, within 5 FH after installation, the engine (cylinder head assembly) is inspected and, depending on findings, corrected as required by this AD.

Reference Publications:

BRP-Powertrain ASB-912-062R2 and ASB-914-044R2 (published as a single document), dated 29 May 2013.

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

EASA EAD No: 2013-0055-E, dated 06 March 2013 (superceded EAD No: 2013-0117-E)

EASA EAD No: 2013-0064-E, dated 12 March 2013 (superceded EAD No: 2013-0119-E)

EASA EAD No: 2013-0117-E, dated 30 May 2013

EASA EAD No: 2013-0119-E, dated 04 June 2013.

Remarks:

1. If requested and appropriately substantiated, TM CAD can approve Alternative Methods of Compliance for this AD.
2. Enquiries regarding this AD should be referred to the Airworthiness Inspectorate, Transport Malta Civil Aviation Directorate. E-mail: civil.aviation@transport.gov.mt.
3. For any question concerning the technical aspects of the requirements in this AD, please contact: BRP-Powertrain GmbH & Co. KG, Telephone: +43 7246 601 0; Fax: +43 7246 601 9130; E-mail: airworthiness@brp.com, Website www.rotax-aircraft-engines.com.