EASA	EMERGENCY AIRWORTHINESS DIRECTIVE
	AD No.: 2011-0224-E **Date: 24 November 2011** Note: This Emergency Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, 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 [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].

Type Approval Holder's Name:	**Type/Model designation(s):**
BRP-Powertrain GmbH & Co. KG	Rotax 912 and 914 series engines

TCDS Numbers :	EASA.E.121, EASA.E.122
Foreign AD :	Not applicable
Supersedure:	This AD supersedes EASA Emergency AD 2011-0222-E dated 15 November 2011.

ATA 72	**Engine – Crankshaft – Inspection**
Manufacturer(s):	BRP-Powertrain GmbH & Co. KG, BRP-Rotax GmbH & Co. KG; Bombardier-Rotax GmbH & Co. KG; Bombardier-Rotax GmbH
Applicability:	Rotax 912 A1, 912 A2, 912 A3 and 912 A4 engines, all serial numbers (s/n). Rotax 912 F2, 912 F3 and 912 F4 engines, all s/n. Rotax 912 S2, 912 S3 and 912 S4 engines, all s/n. Rotax 914 F2, 914 F3 and 914 F4 engines, all 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 Alpla-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 and P2002-JF; **W.D. Aircraft** D4 Fascination. **Note:** The installation of these engines was either done by the respective **aeroplane manufacturer** or through modification of the aeroplane by Supplemental Type Certificate.
Reason:	During a production process review, a deviation (double side straightening) in the manufacturing process of certain Part Number (P/N) 888164 crankshafts has been detected, which may have resulted in cracks on the surface of the crankshaft. Only a few crankshafts are suspected to have received this double

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<tr><td></td><td>side straightening treatment, but it has been impossible to identify these by individual serial number (s/n). To address this safety concern, BRP-Powertrain issued Alert Service Bulletin ASB-912-059 and ASB-914-042 (single document) with instructions to identify and inspect the entire batch of crankshafts that could be affected. These crankshafts have been installed on a limited number of engines, but some crankshaft sets have also been shipped as spare parts.

This condition, if not detected and corrected, could lead to crack propagation on the power take off side of the crankshaft journal, possibly resulting in failure of the crankshaft support bearing, in-flight engine shutdown and forced landing, damage to the aeroplane and injury to occupants.

To correct this potential unsafe condition, EASA issued Emergency AD 2011-0222-E to require the identification and inspection for cracks of all affected crankshafts and, depending on findings, corrective action.

Since that AD was issued, it has been determined that there are additional affected crankshafts, currently known to be installed in the ‘UL’ (i.e. non-certified) versions of the affected engines.

For the reason described above, this AD retains the requirements of EASA AD 2011-0222-E, which is superseded, and expands the group of s/n of affected crankshafts, listed in Table 1 of this AD. A records check can be acceptable to determine the s/n of the crankshaft installed on the engine. This AD also prohibits installation of any affected crankshaft on an engine, or installation on an aeroplane of an engine with an affected crankshaft installed, unless the crankshaft has passed the inspection as required by this AD.</td></tr>
<tr><td>Effective Date:</td><td>25 November 2011</td></tr>
<tr><td>Required Action(s) and Compliance Time(s)</td><td>Required as indicated, unless accomplished previously:

(1) Within 4 flight hours or 30 days, whichever occurs first after the effective date of AD, accomplish the following actions concurrently:

(1.1) Identify the s/n of the P/N 888164 crankshaft installed on the engine. The affected P/N 888164 crankshafts are identified by s/n in Table 1 of this AD. A review of engine installation- or maintenance records is acceptable to identify the s/n of the crankshaft as specified in this paragraph, provided those records can be relied upon for that purpose, and the s/n of the crankshaft can be conclusively identified from that review. Engines that are known to have had an affected crankshaft installed, as delivered by BRP-Powertrain, are also identified by engine s/n in BRP-Powertrain Alert Service Bulletin ASB-912-059 and ASB-914-042 (single document), as applicable to engine type.

Table 1 - Affected P/N 888164 crankshafts

40232 thru 40267 inclusive
40293 thru 40374 inclusive
40408 thru 40433 inclusive
40435 thru 40507 inclusive

(1.2) If the s/n of the crankshaft, identified as required by paragraph (1.1) of this AD, is listed in Table 1 of this AD, inspect the crankshaft for cracks, in accordance with the instructions of Section 3 of BRP-Powertrain ASB-912-059 or ASB-914-042, as applicable to engine type.</td></tr>
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	(2) If, during the inspection as required by paragraph (1.2) of this AD, cracks are detected, before next flight, contact BRP-Powertrain for approved instructions and accomplish those instructions accordingly. (3) From the effective date of this AD, do not install on an aeroplane an engine having an affected P/N 888164 crankshaft installed, identified by s/n in Table 1 of this AD, unless the crankshaft has passed the inspection as required by paragraph (1.2) of this AD. (4) From the effective date of this AD, do not install on an engine an affected P/N 888164 crankshaft, identified by s/n in Table 1 of this AD, unless the crankshaft has passed the inspection as required by paragraph (1.2) of this AD.
Ref. Publications:	BRP-Powertrain ASB-912-059 and ASB-914-042 (single document) original issue dated 15 November 2011. The use of later approved revisions of this 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 safety assessment has requested not to implement the full consultation process and an immediate publication and notification. 3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail ADs@easa.europa.eu. 4. 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.