



Civil Aviation Authority

EMERGENCY MANDATORY PERMIT DIRECTIVE



Number: 2011-009-E R1

Issue date: 18 January 2012

In accordance with 22(1) of Air Navigation Order 2009 as amended the following action required by this Mandatory Permit Directive (MPD) is mandatory for applicable aircraft registered in the United Kingdom operating on a UK CAA Permit to Fly.	
Type Approval Holder's Name: BRP - Powertrain GmbH & Co. KG	Type/Model Designation(s): Rotax 912 and 914 Series engines
Title:	Crankshaft Inspection
Manufacturer:	BRP - Powertrain GmbH & Co. KG
Applicability:	Rotax 912UL, 912ULS, 912 ULSFR and 914UL series engines
Reason:	<p>During a production process review, a deviation in the manufacturing process of certain Part Number (P/N) 888164 crankshafts has been detected, which may lead to engine failure.</p> <p>The affected crankshafts, identified by serial number (s/n) in Table 1 of this MPD, have been installed on a limited number of engines or shipped as spare parts for use on the above engine types.</p> <p>This condition, if not corrected, could lead to crack formation 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.</p> <p>For the reasons described above, this MPD requires an inspection for cracks of all affected crankshafts and, depending on findings, corrective action.</p> <p>This MPD also prohibits installation of an affected crankshaft on an engine, or installation of an engine with an affected crankshaft on an aircraft, unless the crankshaft has passed the inspection as required by this MPD.</p> <p>This MPD has been revised because of the cancellation of the original referenced Alert Service Bulletins, and replacement by later bulletins.</p>
Effective Date:	18 January 2012 The original MPD became effective 30 November 2011.

Compliance/Action:	<p>1. For the following engine serial numbers:</p> <p>912 UL :- S/N 6,770.159 to 6,770.176 inclusive 6,770.184</p> <p>912 ULS :- S/N 6,777.492 to 6,777.505 inclusive 6,777.526 6,777.528 to 6,777.542 inclusive 6,777.544 to 6,777.547 inclusive 6,777.563 to 6,777.569 inclusive 6,777.576 to 6,777.594 inclusive 6,777.596 6,777.609 to 6,777.610 inclusive 6,777.624 to 6,777.628 inclusive 6,777.630 to 6,777.631 inclusive 6,777.634 to 6,777.642 inclusive 6,777.667 to 6,777.668 inclusive 6,777.686 6,777.688 to 6,777.690 inclusive</p> <p>912 ULSFR :- S/N 6,777.514 and 6,777.527</p> <p>914 UL :- S/N 6,774.151 to 6,774.160 inclusive 6,774.165 to 6,774.166 inclusive 6,774.168 to 6,774.171 inclusive 6,774.176 to 6,774.193 inclusive 6,774.199 to 6,774.213 inclusive 6,774.220</p> <p>These engines are known to have had an affected crankshaft P/N 888164 installed, as delivered by BRP-Powertrain. Within 4 flight hours or 30 days of the effective date of the original issue of this MPD (30 November 2011), whichever occurs first, accomplish the following actions if not previously accomplished:</p> <p>1.1 If no crankshaft change has been carried out since entry into service, inspect the crankshaft for cracks, in accordance with the instructions of Section 3 of BRP-Powertrain SB-912-059UL/SB-914-042UL, as applicable to engine type.</p> <p>1.2 If a crankshaft change has been carried out since entry into service, determine the part number and serial number of the replacement crankshaft fitted. If crankshaft P/N 888164 is fitted and the crankshaft serial number is included in the list contained in Table 1, inspect the crankshaft for cracks in accordance with the instructions of Section 3 of BRP-Powertrain SB-912-059UL/SB-914-042UL, as applicable to engine type.</p>
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<p>Compliance/Action:</p>	<p>2. For all other Rotax 912UL, 912ULS, 912ULSFR and 914UL series engines:</p> <p>These engines are only potentially affected if a crankshaft change has been carried out since 1 October 2010. Within 4 flight hours or 30 days of the effective date of the original issue of this MPD (30 November 2011), whichever occurs first, accomplish the following actions if not previously accomplished:</p> <p>2.1 Determine from maintenance records whether a crankshaft change has been carried out since 1 October 2010.</p> <p>a) If no crankshaft change has been carried out since this date, no further action is required.</p> <p>b) If a crankshaft change has been carried out since this date, determine the part number and serial number of the crankshaft fitted. If crankshaft P/N 888164 is fitted and the crankshaft serial number is included in the list contained in table 1, inspect the crankshaft for cracks in accordance with the instructions of Section 3 of BRP-Powertrain SB-912-059UL/SB-914-042UL, as applicable to engine type.</p> <p>3. If, during the applicable inspection as required by the above paragraphs, cracks are detected then before next flight contact BRP-Powertrain for approved instructions and accomplish those instructions accordingly.</p> <p>4. From the effective date of this MPD, do not install an engine having an affected P/N 888164 crankshaft fitted, identified by s/n in Table 1 of this MPD, on an aircraft unless the crankshaft has passed the inspection specified in Section 3 of BRP-Powertrain SB-912-059UL/SB-914-042UL.</p> <p>5. From the effective date of this MPD, do not install an affected P/N 888164 crankshaft, identified by s/n in Table 1 of this MPD, on an engine, unless the crankshaft has passed the inspection specified in Section 3 of BRP-Powertrain SB-912-059UL/SB-914-042UL.</p> <p>Report any crack findings to CAA, using the contact details at the end of the MPD.</p> <p>Table 1 –Crankshaft Part No. 888164 – Serial Nos. Covered by this MPD</p> <table border="1" data-bbox="737 1682 1120 1814"><tr><td>40232 to 40267 inclusive</td></tr><tr><td>40293 to 40374 inclusive</td></tr><tr><td>40408 to 40433 inclusive</td></tr><tr><td>40435 to 40507 inclusive</td></tr></table>	40232 to 40267 inclusive	40293 to 40374 inclusive	40408 to 40433 inclusive	40435 to 40507 inclusive
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40293 to 40374 inclusive					
40408 to 40433 inclusive					
40435 to 40507 inclusive					

Ensure compliance with this MPD is recorded in the aircraft logbook	
Reference Publications:	BRP-Powertrain SB-912-059UL and SB-914-042UL (single document), dated 1 January 2012. The use of later revisions of this document is acceptable for compliance with this MPD.
Remarks:	<ol style="list-style-type: none">1. This MPD was not posted for consultation because of the urgency of the requirement.2. Enquiries regarding this Mandatory Permit Directive should be referred to: Airworthiness Evaluation and Surveillance, Civil Aviation Authority, Safety Regulation Group, Aviation House, Gatwick Airport South, West Sussex RH6 0YR.
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