



EASA Safety Information Bulletin

SIB No.: 2014-34
Issued: 23 December 2014

Subject: **Possible Exceedance of Engine Temperature Limits of BRP-Powertrain Rotax 912 and 914 Engines**

Ref. Publication: BRP Powertrain Service Bulletin SB-912-066 and SB-914-047 (single document) dated 08 December 2014, or later approved revisions.

Applicability: All BRP-Powertrain 912 A/F/S and 914 F engines with the following serial numbers (S/N):

912 A	S/N from 4.410.982
912 F	S/N from 4.413.020
912 S	S/N from 4.924.544
914 F	S/N from 4.421.178

and BRP-Powertrain 912 A/F/S and 914 F engines on which cylinder heads with the following Part Numbers (P/N) were installed as replacement parts at cylinder position 2 or 3 since 01 January 2013:

912 A/F:	P/N 413235 or 413236
912 S:	P/N 413185
914 F:	P/N 413235 or 413236

The affected engines are known to be installed on, but not limited to, the following aircraft:

TC Holder	Type / Model
Aero AT SP z.o.o.	AT-3R100
Aeromot-Indústria Mecânico-Metalúrgica Ltda	AMT-200 "Super Ximango" and AMT-300 "Turbo Super Ximango"
Aircraft Design and Certification Ltd.	D4 "Fascination"
Aquila Aviation GmbH	Aquila AT01
Cessna Aircraft Company	150 and A150 series (and Reims F150 and FA150 series)
Costruzioni Aeronautiche TECNAM S.r.l.	P92 series, P2002 series and P2006T, P2008 JC
Czech Sport Aircraft A.S.	PS-28 "Cruiser"

This is information only. Recommendations are not mandatory.

TC Holder	Type / Model
Diamond Aircraft Industries GmbH	H 36 "Dimona", HK 36 series "Super Dimona" and DV 20 "Katana"
Diamond Aircraft Industries Inc.	DA20-A1 "Katana"
E.I.S. Aircraft GmbH	RF 5 "Sperber"
Evektor spol. s.r.o.	EV-97 VLA. SportStar RTC
Flight - Design	CTLS-ELA
Grob Aircraft AG	G109
Issoire Aviation	APM-20 "Lionceau"
M&D Flugzeugbau GmbH & Co. KG	AVO 68 series "Samburo"
Magnaghi Aeronautica S.p.A.	Sky Arrow 650 TC, 650 TCN, 650 TCNS and 710 RG
Korff Luftfahrt	Taifun 17 E II
S.C. Constructii Aeronautice	IAR-46 series, IS-28M2/GR
Scheibe Aircraft GmbH	SF 25 C and SF 36 R
Skyfox Aviation	CA-25N
Sportavia Puetzer	RF-9 ABS
Stemme AG	S10-VT, ASP S15-1, TSA-M S6 series

Note: Installation of the affected engines/parts was either done by the respective aircraft manufacturer during production or by maintenance as a replacement/modification engine/part.

Description:

This SIB is issued to alert aircraft Type Certificate (TC) and Supplemental Type Certificate (STC) holders, owners, operators, repair facilities and engineers of possible service difficulties, including engine failures during flight, arising from unnoticed exceedances of approved engine coolant temperature limits due to installation of an unapproved design.

The reported conditions are the result of an insufficiently communicated engine design change which altered the engine/aircraft interfaces by substituting the previous cylinder head temperature (CHT) measurement (limit temperature 135°C/150°C) with a coolant temperature (CT) measurement (limit temperature 120°C).

This design change is currently not identified by the engine model designation or the engine P/N but only through the cylinder head P/N and the position of the temperature sensor:

CHT measurement → temperature sensor points downward
 CT measurement → temperature sensor points upward

Refer to [Picture 1](#) in Annex 1 of this SIB.

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If affected engines or cylinder heads have been or are installed during production or maintenance without concurrent installation of an adequate aircraft TC/STC holder approved modification, thus altering the previous aircraft CHT indicator/indicator markings/aircraft flight manual limitations, then coolant temperature with a maximum engine operating limit of 120°C (valid for engines operated with water diluted glycol coolant) is displayed on a CHT indicator with a typical limit marking (red radial/range) of more than 120°C. The pilot is therefore not able to identify coolant limit exceedances, subsequent loss of coolant and impending engine failure during flight.

Also, for engines operated with approved waterless coolant, installation of the affected engines needs to be accompanied by adequate aircraft TC/STC holder approved modifications to assure safe aircraft operation.

Installation of affected engines and spare parts without concurrent incorporation of aircraft TC/STC holder approved modifications, even if unintended and unnoticed by production or maintenance, constitutes an unapproved aircraft modification.

Investigations are ongoing at BRP-Powertrain and with aircraft TC/STC holders to identify the extent of unapproved installations and to evaluate potential mandatory airworthiness actions.

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Airworthiness Directive (AD) action under EU [748/2012](#), Part 21.A.3B.

Recommendation(s): EASA recommends the following actions:

For aircraft TC and STC holders/manufacturers:

- Identify if affected engines or cylinder heads, as specified in BRP SB 912-066/SB 914-047, have been installed on an aircraft during production since January 2013.
- Verify if the approved engine installation and the approved aircraft limitations are adequate to incorporate CT measurement instead of the previous design CHT measurement.
- Inform aircraft operators via the TC/STC holder publication system which actions, if any, are required to restore an approved design and to ensure a safe aircraft operation, or if no actions are required.

For operators:

- Identify if affected engines or cylinder heads, as specified in BRP SB 912-066/SB 914-047, have been installed on an aircraft during production or maintenance since January 2013. This can be done through a review of the aircraft

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records or through a visual inspection of the cylinder head design (refer to [Picture 1](#) in Annex 1 of this SIB).

If unfamiliar with these activities, contact an appropriately qualified maintenance organisation, maintenance engineer or Continuing Airworthiness Management Organisation (CAMO) to assist with the document review or physical inspection.

- Check the aircraft TC/STC holder publication system to verify if an approved TC/STC holder modification is available to install the affected engines/spare parts.
If unfamiliar with these activities, contact an appropriately qualified maintenance organisation, maintenance engineer or CAMO to assist with the review of TC/STC holder publication system.
- If no approved modification can be identified for the installation of affected engines or spare parts, do not operate the aircraft and contact the aircraft TC/STC holder for further instructions.

For maintenance organisations/maintenance engineers:

- Before issuing the Certificate of Release to Service for an aircraft equipped with affected engines and spare parts as specified in BRP SB 912-066/SB 914-047, verify if an approved installation/modification is available from the aircraft TC/STC holder to install engines/cylinder heads with CT measurement instead of the previous CHT measurement.
- If no approved modification can be identified for the installation of affected engines or spare parts, do not install them and contact the aircraft TC/STC holder for further instructions.

Contact(s):

For further information contact the Safety Information Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu.

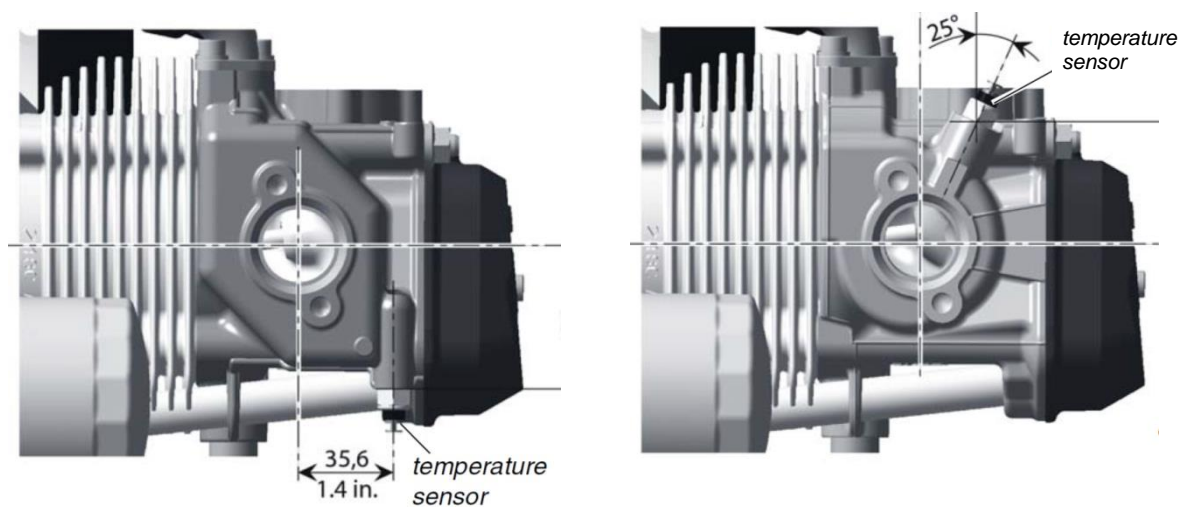
A copy of BRP-Powertrain SB 912-066 and SB-914-047 can be downloaded at

<http://www.flyrotax.com/customer-service/Impressum/technical-publications.aspx>

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Annex 1

Picture 1 – CHT versus CT measurement



Old cylinder head design, CHT measurement

New cylinder head design, CT measurement

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