

Airworthiness Directive

AD No.: 2022-0044

Issued: 15 March 2022

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301 or Annex Vb Part ML.A.301, as applicable, 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 [Regulation (EU) 1321/2014 Annex I, Part M.A.303 or Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:

SOLO KLEINMOTOREN GmbH

Type/Model designation(s):

Solo 2350 C and 2350 D engines

Effective Date: 29 March 2022

TCDS Number(s): EASA.E.219

Foreign AD: Not applicable

Supersedure: This AD supersedes EASA AD 2015-0052R1 dated 19 November 2015.

ATA 72 – Engine – Modification / Inspection
Manufacturer(s):

SOLO Vertriebs- und Entwicklungs- GmbH (Solo), formerly Solo Kleinmotoren GmbH

Applicability:

Solo 2350 C and 2350 D engines, all manufacturer serial numbers.

These engines are known to be installed on, but not limited to, DG-Flugzeugbau Model DG-1000T and Schempp-Hirth powered sailplanes.

Definitions:

For the purpose of this AD, the following definitions apply:

The SB: Solo Service Bulletin (SB) 4603-17 for 2350 C engines, and SB 4603-19 for 2350 D engines, as applicable.

Affected part: Excentre shaft/axle, having Part Number (P/N) 2031216 (for 2350 C engines), or P/N 2031211 (for 2350 D engines).

Serviceable part: Excentre shaft/axle, having P/N 2031211 V2.

Reason:

In 2013 an occurrence was reported on a Solo 2350 C engine of rupture of the excentre axle and consequent shaft failure and propeller detachment. To address this unsafe condition, EASA issued Emergency AD 2013-0217-E to prohibit operation of the engine. That AD was later revised to introduce an optional modification (Solo SB 4603-14) to install a modified excentre pulley-axle, allowing to resume operation of the engine.

Since EASA AD 2013-0217R1 was issued, in 2015 another occurrence was reported on a Solo 2350 C engine of rupture of the excentre axle and consequent shaft failure and propeller detachment, which had resumed operation after being modified in accordance with Solo SB 4603-14.

Consequently, EASA issued Emergency AD 2015-0052-E, which superseded AD 2013-0217R1, to prohibit again operation of all Solo 2350 C engines. That AD was later revised to introduce new, improved optional modifications, developed by Solo (SB 4603-17) and by DG Flugzeugbau GmbH (Technical Note (TN) 1000/26) which include replacement of excentre pulley-axle and installation of an elastomeric damper element between the propeller and the upper pulley.

Since EASA AD 2015-0052R1 was issued, a similar occurrence of rupture of the excentre axle and consequent shaft failure and propeller detachment was reported on a Solo 2350 D engine, installed on a Schempp-Hirth powered sailplane.

This condition, if not detected corrected, could lead to additional cases of shaft/axle failure and consequent release of the propeller, possibly resulting in damage to the sailplane, or injury to persons on the ground.

Consequently, Solo also introduced for its 2350 D engines the installation of a modified excentre pulley-axle, in accordance with drawing 2031211-V2, and issued SB 4603-19, providing in-service modification instructions.

For the reasons described above, this AD retains the requirements of EASA AD 2015-0052R1, which is superseded, and additionally requires modification of Solo 2350 D engines. This AD also requires, for those engines, a one-time inspection of the propeller shaft to detect possible cracks, reporting of the results, and corrective action(s) in case of findings. Finally, this AD introduces a life limit for serviceable parts and prohibits (re)installation of affected parts, as defined in this AD.

Required Action(s) and Compliance Time(s):

Required as indicated, unless accomplished previously:

Modification:

- (1) For Solo 2350 C engines, except those modified in accordance with Solo Kleinmotoren GmbH drawing 2031211-V2: Before next flight after 31 March 2015 [the effective date of the original issue of EASA AD 2015-0052], modify the engine in accordance with the instructions of the SB.
- (2) For Solo 2350 C engines installed on DG-Flugzeugbau Model DG-1000T powered sailplanes, except those modified in accordance with DG-Flugzeugbau drawing 10 M 067: Concurrently with the modification as required by paragraph (1) of this AD, modify the engine in accordance with the instructions of the SB and the instructions of DG Flugzeugbau TN 1000/26.



- (3) For Solo 2350 D engines: Within 30 days after the effective date of this AD, or before exceeding 30 engine operating hours since first installation of the engine on a sailplane, whichever occurs later, modify the engine in accordance with the instructions of the SB.

Note 1: It is allowed to operate a powered sailplane with an affected Solo 2350 C or 2350 D engine installed that is not (yet) modified as required by paragraphs (1) and (2), or by paragraph (3) of this AD, provided this is done in accordance with the limitations and instructions as specified in the applicable powered sailplane's flight manual.

Inspection:

- (4) For Solo 2350 D engines, except those engines (already) modified in accordance with the instructions of the SB: Within 30 days after the effective date of this AD, inspect the excentre axle (magnetic particle or dye penetrant) in accordance with the instructions of Solo Inspection Instruction 4603-1, and report the results, including no findings, to Solo Kleinmotoren GmbH (see contact details below).

Corrective Action(s):

- (5) If, during the inspection as required by paragraph (4) of this AD, any discrepancy is detected, before next flight, accomplish applicable corrective action(s) in accordance with approved instructions obtained from Solo.

Life Limitation:

- (6) After modification of an engine as required by this AD, before exceeding 50 hours of engine operation, replace the serviceable part, as defined in this AD, with a new (not previously installed) serviceable part or a serviceable part that has not (yet) reached its life limit.

Part(s) Installation:

- (7) From the effective date of this AD, do not install an affected part on any engine.

Ref. Publications:

Solo Kleinmotoren GmbH Inspection Instruction 4603-1 dated 26 March 2015.

Solo Kleinmotoren GmbH SB 4603-17 dated 15 July 2015.

Solo Kleinmotoren GmbH SB 4603-19 dated 31 January 2022.

DG Flugzeugbau TN 1000/26 dated 23 September 2015.

The use of later approved revisions of the above-mentioned documents 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. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.



3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate, E-mail: ADs@easa.europa.eu.
4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the [EU aviation safety reporting system](#). This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.
5. For any question concerning the technical content of the requirements in this AD, please contact:
Regarding Solo Inspection Instruction 4603-1, SB 4603-17 and SB 4603-19:
Solo Vertriebs- und Entwicklungs-GmbH, Postfach 600152, 71050 Sindelfingen, Germany,
Telephone: +497031301-0, Fax: +497031301-136,
E-Mail: aircraft@solo-germany.com.
Regarding TN 1000/26:
DG Aviation GmbH, Otto Lilienthal Weg 2 / Am Flugplatz, 76646 Bruchsal,
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