



**Airworthiness  
Directive  
2003-250**

**Luftfahrt-Bundesamt**  
Airworthiness Directive Section  
Hermann-Blenk-Str. 26  
38108 Braunschweig  
GERMANY

**Sauer**

Effective Date: 30 October 2003

**Affected:**

Kind of aeronautical product:	Aircraft Engine
Manufacturer:	Sauer Flugmotoren, Ober-Olm, Germany
Type:	S2100 and S2500
Models affected:	SS2100H1S, S2100-1-SS1, SF2500H1S, S2500-1-FS1, SH2500H1S, S2500-1-HS1, ST2500H1S, S2500-1-TS1, ST2500H2S and S2500-2-TS1
Serial numbers affected:	All models and variants of the mentioned aircraft engines equipped with welded type starter ring gears with the manufacturer part numbers (P/N's) 08 000 338, 08 000 343 und 08 000 343S
German Type Certificate No.:	4580 and 4608

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**Subject:**

Fatigue cracks on welded type starter ring gears as a result of vibrations phenomena / resonances with certain engine / propeller combinations.

**Reason:**

During inspections of the affected engines, fatigue cracks on welded type starter ring gears have been established in several cases. Investigations performed by the manufacturer revealed that this crack initiation was a result of vibrations phenomena / resonances with certain engine / propeller combinations. Due to the investigation results of the cracked starter ring gears the manufacturer developed a new type of starter ring gear which is more resistant against fatigue cracking. The actions specified by this Airworthiness Directive are intended to prevent starter ring gear cracking which can result in severe engine vibration and damage to the airplane.

**Action:**

Within the scope of this Airworthiness Directive, the following actions are required:

1. Visual check of the starter ring gear in the toothed area and the welding seams for signs of cracking.
2. Repetition of this visual check at fixed intervals.
3. Exchange of the starter ring gear, if cracks were determined within the examinations. For the exchange of the starter ring gear only the new shrunk version with the manufacturer part number (P/N) 08 000 380 may be used.

All necessary actions must be performed on the basis of the mentioned manufacturer Service Bulletin.

**Compliance:**

For the actions mentioned above the following compliance times have been laid down:

Action 1: Before the next flight  
Action 2: Every 25 flying hours  
Action 3: Before the next flight, after the damage was found

**Technical publication of the manufacturer:**

Sauer Flugmotoren GmbH Service Bulletin No. 19A dated September 23, 2003. This Service Bulletin becomes here-with part of this AD and can be obtained by the manufacturer under the mentioned address.

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Enquiries regarding this Airworthiness Directive should be referred to Mr. Martin Borsum, Airworthiness Directive Section, at the above address, fax-no. 0049 531/2355-720. Please note, that in case of any difficulty, reference should be made to the German issue!

*LTA's / AD's and Technical Notes are published on the internet at <http://www.lba.de>*