

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Airworthiness Directive

87-14-02 Teledyne Continental Motors (TCM): Amendment 39-5732.

Applies to IO-520, IO-550, and TSIO-520 series engines with starter adapter shaftgear P/N 649343, a freon compressor, and 25 hours or less time in service installed on the following engines:

New Engines	Serial Numbers
IO-520BB	S/N 578239 thru 578250, 578255 thru 578261, 578271, 578272
IO-550B	S/N 675329, 675330, 675334 thru 675336
TSIO-520UB	S/N 527091, 527093
TSIO-520BE	S/N 528383, 528389
IO-520BA	S/N 249568 thru 249570, 249588 thru 249593
IO-520BB	S/N 248585, 248586, 274505 thru 274520, 274522 thru 274526, 274529, 274532, 274536, 274537, 274540, 274544, 274545, 274549, 274550, 274552, 274554
IO-550B	S/N 249124 thru 249130, 249132
Rebuilt Engines	Serial Numbers
TSIO-520UB	S/N 248867, 248869
TSIO-520LB	S/N 237242, 237244, 237247, 241909, 241910
TSIO-520WB	S/N 274004 thru 274008, 274012 thru 274018
TSIO-520BE	S/N 273505 thru 273510

Compliance is required before further flight unless already accomplished.

To prevent possible starter adapter shaftgear failure, which could result in loss of lubricating oil and subsequent complete loss of engine power, accomplish the following:

- (a) Determine if the installed engine(s) has a freon compressor installed.
 - (1) If no freon compressor is installed, no further action is required, proceed to paragraph (f).

(b) Engines in compliance with priority letter AD 87-12-12, but not included in the engine serial numbers listed in this AD, may reinstall the air conditioner drive belt. Proceed to paragraph (f).

(c) Determine the time in service of the starter adapter shaftgear P/N 649343 for each installed engine. If the time in service is greater than 25 hours with the freon compressor drive belt installed, no further action is required. Proceed to paragraph (f). If the time in service is less than 25 hours, accomplish paragraphs (d) or (e) as applicable.

(d) If the engine was new when installed, remove the starter adapter assembly P/N 642087, and return to the manufacturer for replacement. Install the replacement assembly, and proceed to paragraph (f).

(e) If the installed engine is a rebuilt engine, gain access to the drive sheave mounted on the rear of the starter adapter shaftgear. Determine, using a light and mirror, if the drive sheave attaching nut is castellated.

(1) If the nut is castellated with a cotter key installed, no further action is required, proceed to paragraph (f).

(2) If a steel lock nut is installed, inspect the center of the shaft to determine if the shaft has drilled cotter key holes (See TCM Service Bulletin M87-13, dated 29 June 1987, Figure 1).

(i) If the shaft has drilled holes, no further action is required, proceed to paragraph (f).

(ii) If the shaft is undrilled, remove the starter adapter assembly P/N 642087 and return to the manufacturer for replacement. Install the replacement assembly.

(f) Make appropriate logbook entry showing compliance with this AD.

NOTES: 1. Contact TCM for shipping instructions.

2. When replacing the starter adapter assembly, retain the drive sheave for reinstallation on new assembly.

3. TCM Service Bulletin M87-13, dated 29 June 1987, refers to this subject.

Upon request, an equivalent means of compliance with the requirements of this AD may be approved by the Manager, Atlanta Aircraft Certification Office, Federal Aviation Administration, Central Region, 1669 Phoenix Parkway, Suite 210, Atlanta, Georgia 30349.

Priority letter AD 87-14-02 superseded priority letter AD 87-12-12.

This amendment 39-5732 becomes effective October 5, 1987, as to all persons except those persons to whom it was made immediately effective by priority letter AD No. 87-14-02, issued July 8, 1987, which contained this amendment.