

# MANDATORY service bulletin

M87-24  
Supersedes M87-13

Technical Portions Are  
FAA Approved

15 December 1987

**SUBJECT: BROKEN STARTER ADAPTER SHAFTS**

**MODELS**

**AFFECTED:** IO520BA, IO520BB, IO550B, TSIO520BE, TSIO520LB, TSIO520UB & TSIO520WB

**NEW**

**ENGINES:** All Serial Numbers

**REBUILT**

**ENGINES:** All Serial Numbers

THESE ENGINES ARE USED IN BEECH BONANZA, BARON AND PIPER MALIBU AIRCRAFT

**COMPLIANCE:** Before Further Flight

Some Teledyne Continental Motors' engines have continued to experience broken starter adapter shafts on aircraft that are equipped with air conditioning. (Ref. Mandatory Service bulletin M87-13).

The following action is therefore required on the above referenced engines if they are equipped with air conditioning.

- I. Gain access to the drive sheave mounted on the rear of the starter shaft. This sheave is concave and approximately 3.375 inch in diameter (3-3/8 inch).
- II. With a light and mirror, determine if the sheave is a steel locking type. (See Figure B.)
  - A. If the nut is a steel locking type (See Figure B), remove the freon compressor drive belt. This can most easily be accomplished by cutting the belt.
  - B. If the nut is castellated (See Figure A), ascertain via log books and maintenance records that the castellated nut is the original nut and has not been substituted for a steel locking type nut.
    1. If the castellated nut is the original, no further action is required. Make the appropriate log book entry stating compliance with this service bulletin and return the engine to service.

*(Continued)*

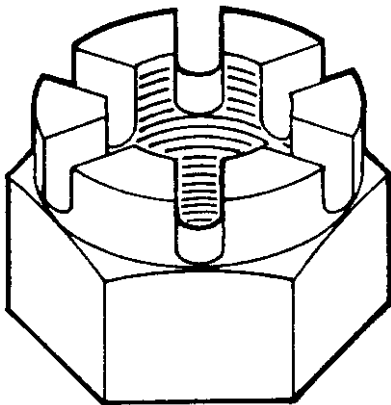
2. If the castellated nut is not the original but a substitution for the originally installed steel locking type nut, remove the freon compressor drive belt. This can most easily be accomplished by cutting the belt.

NOTE...REMOVAL/CUTTING OF THE BELT IS REQUIRED IF THE STEEL LOCKING TYPE NUT IS INSTALLED OR HAS PREVIOUSLY BEEN INSTALLED REGARDLESS OF THE SHAFT TYPE (COTTER KEY HOLE OR NO COTTER KEY HOLE).

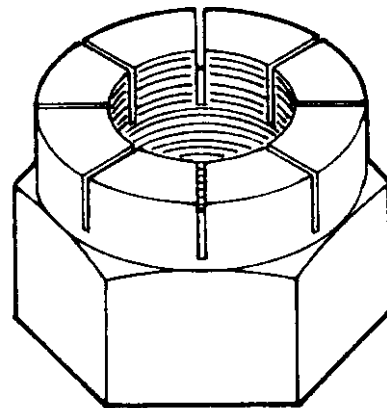
- III. Make appropriate log book entry stating compliance to this service bulletin and return the engine to service.

NOTE...This action is an interim measure. Shaft redesign and testing are ongoing at this time. Instructions to restore use of the air conditioner will be promulgated as soon as possible.

WARRANTY: The action to comply with this service bulletin is covered by the TCM Gold Medallion Warranty subject to its terms and conditions. Warranty claims may be filed through any TCM distributor.



**FIGURE A**  
**CASTELLATED**  
**P/N MS9358-15**



**FIGURE B**  
**STEEL LOCKING**  
**P/N 649311**