



**Customer Services**

# SERVICE LETTER

No. 328

Piper Aircraft Corporation

Lock Haven, Pennsylvania, U.S.A.

February 17, 1960

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**TO: Distributors, Dealers, Certified Service Centers**

**SUBJECT: Lycoming Service Letter No. L126 dated January 29, 1960**

The subject Service Letter is attached for your information as this conversion may be of interest to owners and operators who have experienced difficulty in obtaining 91/96 octane minimum aviation gasoline.

All aircraft that are converted in accordance with this letter must have the placards recommending 91/96 octane fuel removed. These placards appear on the wing leading edges and on fuel cell filler caps.

Very truly yours,

PIPER AIRCRAFT CORPORATION

  
Wes Holmes  
Service Manager

WH/pez

Enclosure - Lycoming Service Letter No. L126.

**P. S.** The following Bulletins from Hartzell Propeller Company and Woodward Governor Company are also enclosed for your information:

Hartzell Bulletin No. 71

Woodward Bulletins Nos. 33505B and 33522

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HARTZELL PROPELLER, INC.

FIQUA, OHIO

December 18, 1959

Bulletin No. 71

"FAA APPROVED"

Amended Dec. 28, 1959

SUBJECT: Replacement of Guide Collars with New Forged Collars on Certain Non-Feathering Flange Mounted Propellers.

EFFECTIVITY: Guide Collars Installed on Propeller Models Listed Below:

Propeller Models	Guide Collar	Serial Numbers of Propellers Having Cast Collars Affected by This Bulletin. These Collars Should Be Replaced in These Propellers.	Serial Numbers of Propellers Having Cast Collars Which Were Physically Tested and Stamped with "P", also, Propellers Having Forged Collars Stamped with "F". These are <u>not</u> Affected by This Bulletin.
HC-82XF-1D	834-4	All Numbers	
HC-82XF-1DB	834-4	All Numbers	
HC-82XG-1D	834-4	All Numbers	
HC-82XG-6DL	834-4	All Numbers	
HC-82XL-1D	834-4	All Numbers	
HC-A2XF-1	834-4		All Numbers
BHC-A2XF-1, and -1A	834-4		All Numbers
HC-92ZK-8D	834-8	100L - 491L	492L and up
HC-82XK-1D	834-9	100G - 846G	847G and up
BHC-92ZF-1D1	834-9		all Numbers
HC-92ZK-8L	834-9	All Numbers	
HC-A2XK-1	834-9		All Numbers

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December 18, 1959, Amended Dec. 28, 1959

DISCUSSION:

The guide collar which supports the rear ends of the piston guide rods, have been made from a heat treated aluminum alloy casting until recently. A number of these have cracked or broken in service. A decision was made early in 1959 to make the parts from forgings, and also to physically test every casting until the forgings were available. The forgings are uniformly much stronger than the castings. In view of the uncertain strength of some of the earlier castings used, it is necessary to replace them with forged parts as soon as practicable; even though failure of the part may not be serious because it is well secured with dowel pins.

RECOMMENDED  
ACTION:

Replace the cast guide collar on these models affected by this bulletin with a forged collar as soon as convenient but not later than the next overhaul or January 1, 1961, whichever occurs first. Until the forged collar is installed, frequent visual inspections of the part is recommended. This can be done without removing the spinner, by looking through the spinner blade cut-outs. The cast parts which have been physically tested need not be inspected or replaced. These collars are marked with the letter "P". Forged collars are marked with the letter "F".

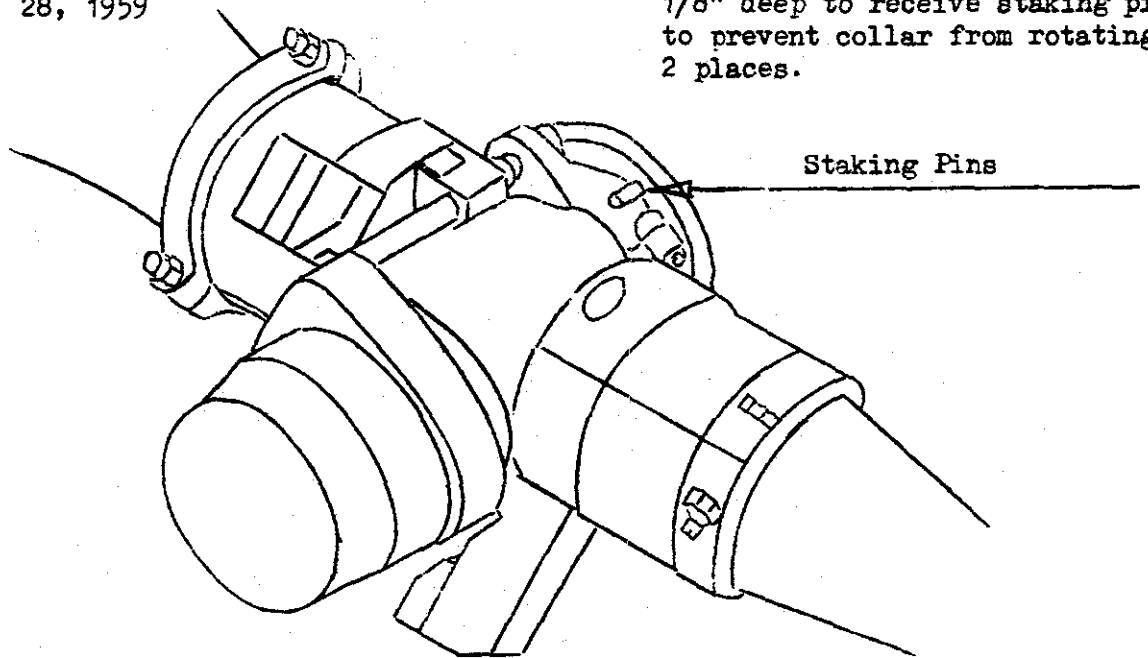
INSTRUCTIONS:

It is necessary to remove the propeller from the aircraft and disassemble according to instructions given in appropriate overhaul manuals.

When the new collar is installed, it will be necessary to spot face the edge of the new guide collar thru the two dowel pin holes and reinstall the dowel pins as shown on Page 3.

Hartzell Propeller, Inc.  
Bulletin No. 71.  
December 18, 1959  
Amended Dec. 28, 1959

After collar is properly located to receive piston guide rods, spot face edge of collar, approx. 1/8" deep to receive staking pins to prevent collar from rotating, 2 places.



Models

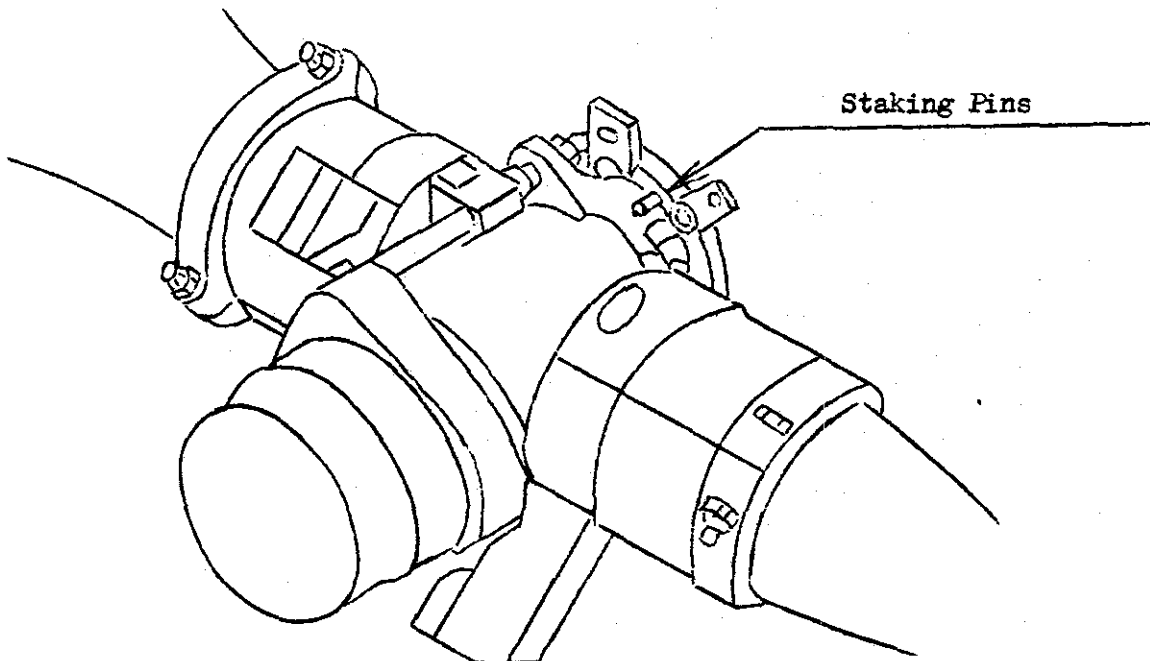
HC-82XG-1D  
HC-82XG-6DL  
HC-82XL-1D  
HC-92ZK-8D  
HC-82XK-1D  
HC-92ZK-8L

Models

HC-82XF-1D  
HC-82XF-1DB

First, install 4 spinner lugs, using new AN4E-4A bolts. After collar is properly located to receive piston guide rods, spot face edge of collar approximately 3/32" deep to receive staking pins to prevent collar from rotating, 2 places.

CAUTION!!! - For Model HC-82XF-1DB, the two steel dowel pins inserted in both the engine and propeller flanges are located 60° from the aluminum staking pins shown. BE SURE TO REPLACE THESE PINS. For the other models, the dowel pins also serve as collar staking pins.



APPROVED by DESIGNATED ENGINEERING REPRESENTATIVE

**SUBJECT**

Proper installation of flyweight retaining ring (75), with the crimp down, in all CSSA and CSDA model governors.

**PURPOSE**

To describe the proper installation of the flyweight retaining ring. Torsional vibration from the engine to the governor drive tends to cause relative rotation between the flyweight head (77) and the retaining ring (75). If the crimped leaf of the retaining ring climbs the chamfer on the lug of the flyweight head, the crimp will no longer be positively retained between the flyweight head lugs, and the retaining ring may be rotated out of the retaining ring groove. Removal of the retaining ring from the flyweight head releases the flyweight pins which causes the governor to be non-controlling, in addition to causing internal damage to the flyweight cavity of the governor body. Installation of the retaining ring, with the crimp down, prevents the crimped leaf from climbing out of the groove on the flyweight head lug.

**EQUIPMENT AFFECTED**

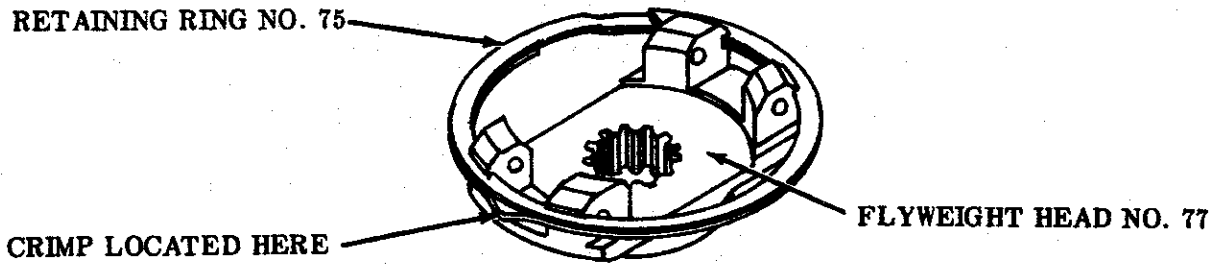
All CSSA and CSDA model governors to the model numbers and between the change letters listed below:

Model No. and change letters

210050 R	thru AA	210185 None	thru K
210055 U	" AF	210190 "	" E
210060 P	" Z	210195 "	" F
210065 T	" AB	210225 "	" A
210075 N	" AC	210230 "	" E
210080 N	" Z	210235 "	" D
210085 M	" W	210245 "	" E
210105 V	" AE	210250 "	" D
210120 C	" N	210255 "	" C
210125 A	" H	210260 "	" C
210130 None	" H	210265 "	" B
210140 None	" G	210270 "	" A
210150 None	" J	210280 "	" C
210155 None	" H	210285 "	" A
210165 None	" E	210290 "	" C
210175 None	" M	210305 "	" D
210175G None	" A	210315 "	" A
210180 None	" E		

**COMPLIANCE**

This procedure must be incorporated at next overhaul or during next 100 operating hours, whichever comes first.



**DETAILS** Retaining ring (75) must be installed on the flyweight head with the crimp of the retaining ring toward the thrust bearing surface and between the flyweight lugs as shown in Figure No. 1. Be sure that the retaining ring is properly seated in the groove. ALL GOVERNORS SO MODIFIED MUST BE STAMPED WITH S22 ON THE GOVERNOR NAMEPLATE.

**PARTS REQUIRED** No new parts are required for this modification; however, crimped retaining rings, as shown in Service Bulletin No. 33512, must be used in all installations.

**PUBLICATIONS AFFECTED** Bulletins No. 33000, 33001 and Service Bulletin No. 33512.

## APPROVED BY DESIGNATED ENGINEERING REPRESENTATIVE

### SUBJECT

Governor body modification for changing propeller control pressure from decrease pitch to increase pitch.

### PURPOSE

To outline necessary governor body modification when a propeller, requiring the opposite control pressure, is installed on the aircraft.

### EQUIPMENT AFFECTED

All type CSSA governors.

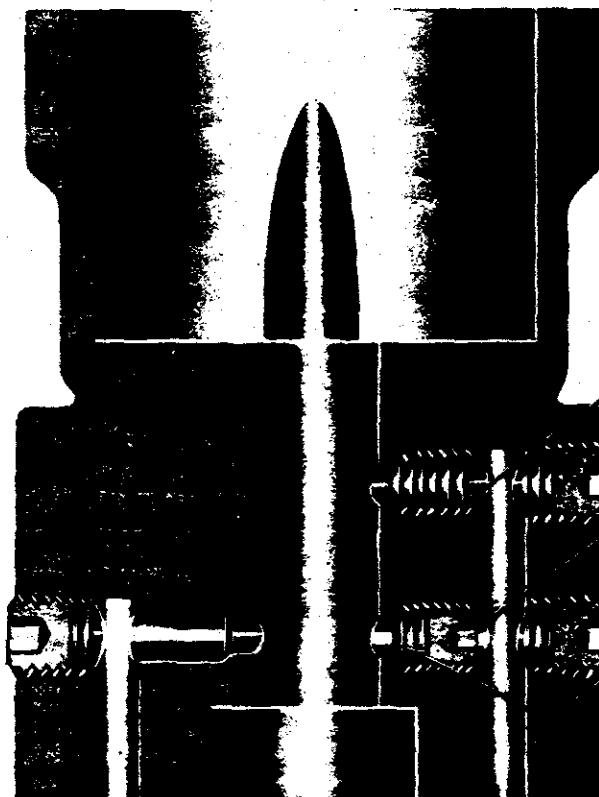
### COMPLIANCE

Must be incorporated concurrent with propeller change.

### DETAILS

All controls that have plug in upper passage, see below, supply propeller control oil to decrease pitch. In the event a change in propellers is made and the new propeller requires control pressure to increase pitch, the governor bodies should be reworked per instructions shown below.

For parts and special tools required see Bulletin No. 33505B.



REMOVE PLUG  
187824 FROM TOP  
HOLE AND

INSTALL IN  
BOTTOM HOLE

TAP 1/16-27 NPTF  
(DRYSEAL)

BASIC GAGE LINE  
TO BE .720 FROM  
THIS SURFACE.  
0 TO PLUS 2  
TURNS FROM BASIC.

Service Letter L126  
January 29, 1960

TO: All Owners and Operators of Lycoming O-320-B Aircraft Engines

SUBJECT: Conversion to Low Compression Engine

Gentlemen:

It has come to our attention that some operators are using 80/87 octane rather than the specified 91/96 octane fuel in O-320-B engines. This is due in many instances to the unavailability of 91/96 octane fuel in some geographic locations.

Higher maintenance costs and shorter engine life are the result of operating on fuels of a lower octane rating than those specified for the engine. (See Service Letter L103A.) Those operators having difficulty obtaining 91/96 octane fuel, and where horsepower is not of great importance, can solve their problem by installing low compression pistons. After this conversion has been made, unlimited use of 80/87 octane fuel will have no effect on either the life of the engine or maintenance costs.

To make this conversion follow the procedures outlined in the overhaul manual for removal and replacement of cylinders and pistons. Discard the high compression pistons (Lyc. P/N 71594) and replace them with low compression pistons (Lyc. P/N 69337). All of the parts required for this conversion are listed in a table at the end of this Service Letter. Future service work on converted engines is the same as outlined for the O-320-B Series, except for the pistons. These are serviced the same as the O-320-A pistons.

Field converted O-320-B engines will be designated O-320-C. For example, an O-320-B1A will become an O-320-C1A; an O-320-B2A will become an O-320-C2A, etc. A new nameplate stamped with the correct model designation, fuel and horsepower rating may be secured from the Lycoming Service Department at a nominal cost of \$1.40 when the old plate is returned to this factory.

When ordering replacement engines for the O-320-C Series, the operator should request the applicable O-320-A model. When ordering service parts refer to the O-320-B Parts Catalog.

### PARTS REQUIRED - PLAIN BARRELS

Nomenclature	Lyc. P/N	No. Req'd.
Piston	69337	4
Piston Pin	68710	4
Piston Pin Plug	60828	8
Top Ring	68513	4
Second Ring	68512	4
Oil Regulating Ring	69457	4
Name Plate (Stamped)	61548	1

### PARTS REQUIRED - CHROME BARRELS

Nomenclature	Lyc. P/N	No. Req'd
Piston	69337	4
Piston Pin	68710	4
Piston Pin Plug	72198	8
Top Ring	71556	4
Second Ring	71556	4
Oil Regulating Ring	68509	4
Name Plate (Stamped)	61548	1

Very truly yours,

LYCOMING  
Division - AVCO Corporation  
Service Department

*R. T. Vandegrift*  
R. T. Vandegrift  
Service Administrator