United States of America

Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number SE00164SE

This certificate issued to McFarlane Aviation, Inc.
696 E. 1700 Road
Baldwin City, KS 66006

certifies that the change in the type design for the following product with the limitations and conditions thereof as specified hereon meets the airworthiness requirements of Part 13 *of the* Civil Air *Regulations.*

Original Product - Type Certificate Number : E-233 E-252, E- 253

Make : Teledyne Continental

Model :

C75 Series C90 Series O-300 Series
C85 Series O-200 Series

Description of Type Design Change:
Installation of Avglas Aircraft Components FG-100 Kit (C75, C85, C90, and O-200) or the FG-105 Kit (O-300) to modify carburetor air housing assemblies. The kit is to be installed in accordance with a. Avglas Drawing B5, Shaft Assembly dated July 27, 1994, and Supplement to Installation Instructions, Drawing B-5, Rev A, dated June 20, 1996, or b. McFarlane Aviation Inc. Drawing List No. 14179 Revision C stamped FAA Approved on July 16, 1998, or later "FAA Approved" revisions.

Limitations and Conditions :
Approval of this change in type design applies to the above model engines only. This approval should not be extended to engines on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that engine. A copy of this certificate must be maintained as part of the permanent records for the modified engines.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : June 27, 1994

Date of issuance : January 11, 1995

Date reissued : September 13, 1996

Date amended : November 22, 1995; July 3, 1996, July 16, 1998

By direction of the Administrator

(Signature)

Jeffrey D. Janusz
Senior Engineer Propulsion
Wichita Aircraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

1. Remove the carburetor heat box from the engine and remove the nut from the control arm shaft.

2. To remove the shaft from the heat box, heat the braze tack points or grind the tack welded points that hold the butterfly and the shaft together. Pull the shaft out of the heat box.

3. File or grind the remains of the old bearing (bushing) from the sides of the heat box to furnish a smooth surfaces for the new bearing housings.

4. Align both bearings and the shaft through the heat box to correspond with the old alignment.

5. Secure the new bearing housings to the heat box by riveting, brazing or tack welding. DO NOT use excessive amounts of heat during brazing or welding as the bronze bearing in the bearing housing can be damaged. Remove the shaft prior to Step 6. (See Note 1)

6. Place the butterfly in the heat box and reinsert the shaft.

7. With the butterfly and the shaft control arm in the cold position, braze or tack weld the butterfly to the shaft. DO NOT use excessive amounts of heat during brazing or welding, as the bronze bearing in the bearing housing can be damaged. Install the washer and self locking nut on the shaft threads.

8. Check for freedom of operation and side play of the shaft assembly prior to re-installation on the engine. The shaft and butterfly assembly must work smoothly with some side play. The butterfly must contact the carburetor heat box surfaces such that it will act as an air valve in both the hot and cold positions.

9. Clean prime and paint the heat effected areas as required to prevent rust. Oil the bearings.

10. Reinstall the carburetor heat box on the engine and then check for proper operation.

Note 1 (Step 5): When installing the bearing housings using the rivet method, use flush head rivets with the heads flush inside of the heat box to eliminate the butterfly from striking the rivet heads during operation.

INSTALLATION ELIGIBILITY (Teledyne Continental Engines)

Kit Number	Carburetor heat box P/N	Engine Model	
FG-100	50256	C-75 / C-85 / C-90	(4 Cyl. Engine)
FG-100	628122, 653675, 641534	0-200	(4 Cyl. Engine)
FG-105	530852, 531143	0-300	(6 Cyl. Engine)

AVGLAS AIRCRAFT COMPONENTS

McFARLANE AVIATION, INC.

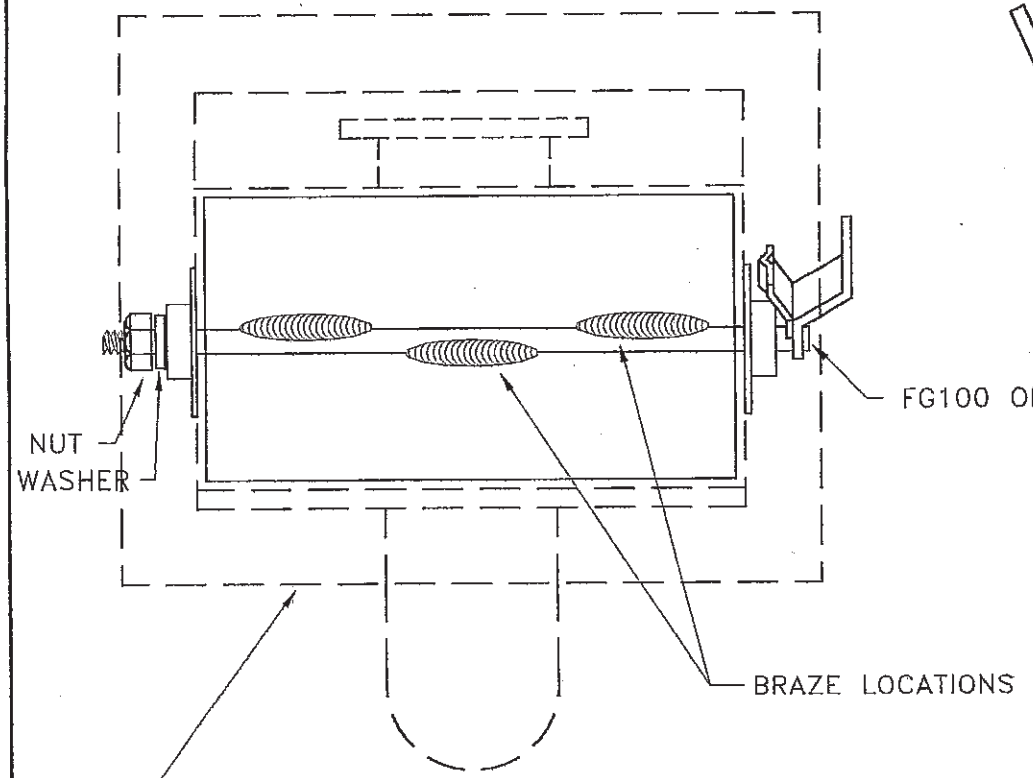
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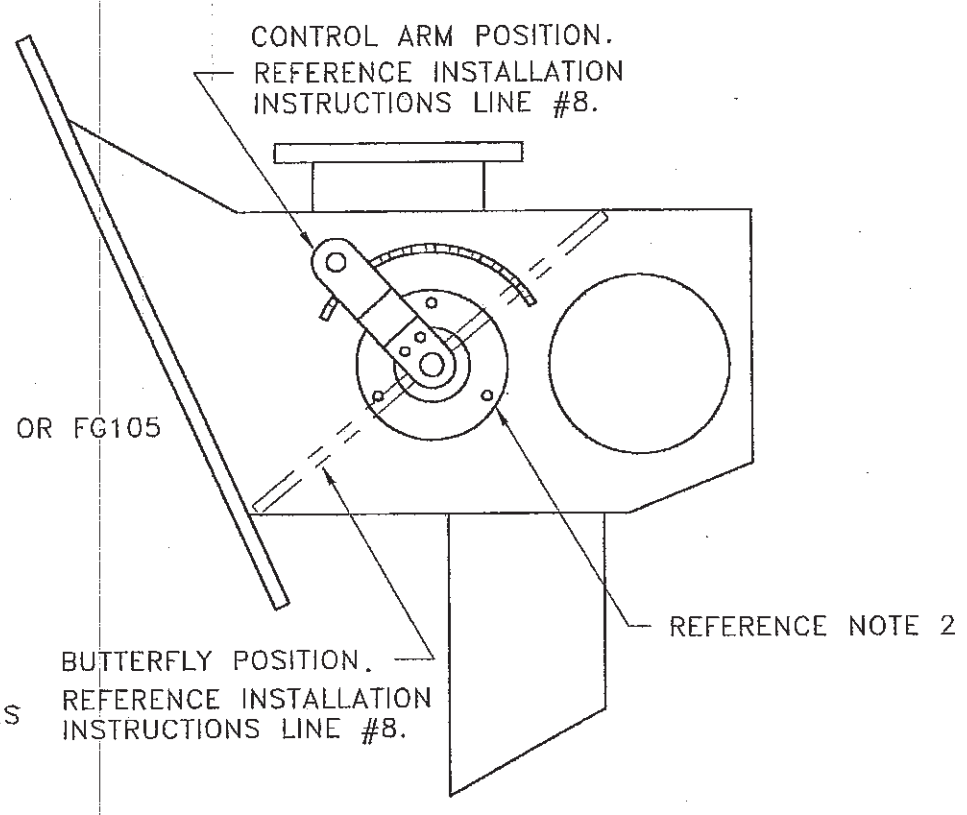
SCALE: N/A | APPROVED BY: D. McFarlane | DRAWN BY: FM

DATE: | PAGE 2 OF 2

SHAFT KIT INSTALLATION INSTRUCTIONS AND APPLICATION

DRAWING NUMBER: B5





REVISION		
D	04-19-02	CORRECTED SPELLING ERRORS.
C	06-16-98	REVISED INSTALLATION INSTRUCTIONS BY ADDING BRAZE CAUTION.
B	09-17-96	REDRAWN REFERENCE REVISION SHEET
A	07-20-96	1-ITEM 6
–	07-27-94	ORIGINAL

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SCALE: N/A | APPROVED BY: David L. McFarlane | DRAWN BY: F.M.

DATE: 09-17-96 | PAGE 1 OF 2

SHAFT KIT INSTALLATION INSTRUCTIONS AND APPLICATION

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