



Instructions for Continued Airworthiness
McFarlane Aviation, LLC. FAA-PMA Part Number MC0713306-1T Cowl Flap Control
FAA PMA Number: PQ3732CE

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Approved By:


Quality Assurance Manager
Engineering Manager
Production Manager

Revisions

Revision	Date	Summary
Original	11/01/2013	Original release
A	02/12/2024	Revised entire document to specify P/N MC0713306-1 and reflect its change to a Turn-to-Lock mechanism
B	03/26/2024	Cowl flap control part number changed from MC0713306-1 to MC0713306-1T

List of Effective Pages

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1-4	11/01/2013
All	02/12/2024
All	03/26/2024

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INTRODUCTION

This document is intended to provide instructions for the continued airworthiness of McFarlane Aviation, LLC. PMA Cowl Flap Control, MC0713306-1T, eligible on Cessna 180C, 182B, and 182C model aircraft.

McFarlane control, MC0713306-1T, is designed to replace the OEM Cessna control, 0713306-1. This document specifically concerns the operation and installation of the McFarlane control. For all items not related to the operation or installation of this McFarlane control, refer to the basic airplane model service and parts manuals.

SYSTEM DESCRIPTION

Cessna Model Series 180C, 182B, 182C aircraft employ moveable cowl flaps to provide variable engine cooling during operation. Control of these flaps is via a dual push/pull control. The OEM Cessna control (P/N: 0713306-1) utilizes a Push-to-Unlock style mechanism, while the McFarlane PMA Cowl Flap Control (P/N: MC0713306-1T) utilizes a Turn-to-Lock style locking mechanism. An illustration is provided in Figure 1 below to clearly show the appearance of the McFarlane PMA control.

The control is fitted with two threaded pushrods which move simultaneously when the control is actuated. One pushrod is attached to each of the two cowl flaps with forks, screwed to the pushrod threads, secured by jam nuts. The design of the OEM, Push-to-Unlock control requires it to be partially disassembled for removal and installation in an aircraft, while the McFarlane Twist-to-Lock requires no disassembly.

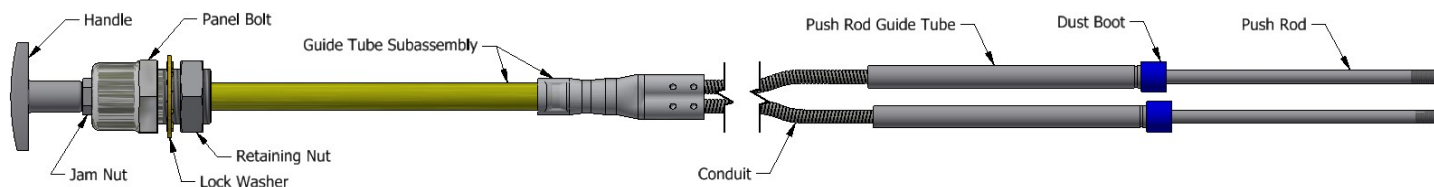


Figure 1: MC0713306-1T, Turn-to-Lock Cowl Flap Control, Fully Extended w/ Subcomponent Descriptions

SPECIAL OPERATING INFORMATION

The operation of the cowl flap control system changes from a Push-to-Unlock style to a Turn-to-Lock style with the installation of the McFarlane control. With the Turn-to-Lock style, the control has two states; locked and unlocked.

The Control is locked when the handle is turned clockwise until tight and the word "LOCK" on the handle is horizontal with the letters right-side up, as seen in Figure 2. When the handle is in this position, the control's movement is restricted and held in its current adjustment.



Figure 2: Turn-to-Lock Handle in Locked Position

The control is unlocked when the handle is turned counterclockwise out of the locked position. In this state, the control is able to be easily adjusted through push-pull movements across the full range of travel.

To operate the control, turn the handle counter-clockwise to the unlocked position and adjust the control with a push-pull motion as normal. When the desired adjustment is reached, turn the handle clockwise to the locked position to secure the control in place. The control should be left in the locked position when not in use.

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PART REMOVAL, REPLACEMENT, AND SERVICE INFORMATION

The following instructions are provided to describe the various steps needed to replace the control with McFarlane part number MC0713306-1T. Installation of the McFarlane control has no impact on the inspection and maintenance instructions found in the relevant Service Manual, D138-1-13.

Removal

1. Inspect the existing control installation noting the routing of the control in the aircraft and the location of any clamps.
2. Mark the pushrod guide tubes near the cowl flaps; number one (1), on the left guide tube and number two (2) on the right guide tube.
3. Disconnect the forks from the cowl flaps.
4. Disconnect the forks from the control pushrods.
5. Remove all clamps securing the control's conduit to the aircraft.
6. For OEM or other Push-to-Unlock type controls: Remove the release knob by rotating counterclockwise. Remove the release knob, spring and spacers (if installed). Remove the rest of the knob by rotating counterclockwise.
For MC0713306-1T or other Turn-to-Lock type controls: Proceed to step 7.
7. Loosen the nut and lock washer behind the instrument panel.
8. For OEM or other Push-to-Unlock type controls: Remove the ferrule nut from the front of the instrument panel.
For MC0713306-1T or other Turn-to-Lock type controls: Fully unthread the nut and lock washer behind the instrument panel and remove by sliding them off the entire length of the control.
9. Remove the control from the instrument panel. Remove the remainder of the control from the aircraft.

Installation

1. Match the conduit lengths of the removed control with those of the new control. Duplicate markings from previous step markings on each guide tube.
2. Enlarge the mounting hole on the control panel from 3/8" to 3/4" with standard drilling equipment.
3. Remove the retaining nut and lock washer from the panel bolt. Insert the control, conduit side first, through the enlarged mounting hole until the panel bolt head rests on the control panel. Ensure the control handle is firmly in the locked position and orient the control so the word "LOCK" on the handle is horizontal and the letters are right-side up.
4. Reinstall the lock washer and retaining nut onto the back of the control with the control panel between the washer and the head of the panel bolt. Tighten the retaining nut until secure.
5. Route and secure the two conduits/push rods. Routes should be as direct as possible without interfering with any other equipment. All routings should be made with the maximum possible radius.
6. Install clamps securing conduit to aircraft.
7. Install the forks and jam nuts removed from the pushrods. Do not tighten jam nuts until completing Step 9.
8. Install the forks on the cowl flaps. Do not secure the forks to the cowl flaps until completing Step 9.
9. Operate the cowl flap control noting the cowl flap position to the cowl when fully closed. Adjust the forks on the pushrods as necessary to ensure both cowl flaps close equally against the engine cowling. Cowl flaps should be fully closed when the control is pushed into the full forward position, and fully open when the control is pulled out to its maximum travel distance.
10. Secure the jam nuts on the forks.
11. Secure the nuts and bolts attaching the forks to the cowl flaps.
12. Cycle the control fully twice to verify proper functionality before returning to service. Control must work smoothly throughout the full travel range with the handle in the unlocked position. The control must lock in place when the handle is rotated to the locked position. The Cowl Flaps must fully open and close with no slippage at the conduit or pushrod attachment points.

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TROUBLESHOOTING

Refer to the Cessna Service Manual D138-1TR9, Figure 12-15 for troubleshooting instructions and the applicable Cessna Illustrated Parts Catalog for mating hardware and higher assembly part numbers. See listing in Data Section below.

PLACARDS

None applicable

DATA

All information to support the continued airworthiness of this replacement part is as defined herein and contained in:

- Relevant Cessna Model Service Manuals.
 - 100 series Service Manual D138-1-13
- Relevant Cessna Model Illustrated Parts Catalog.
 - 180/182 IPC P259-12

INSPECTION

Inspection intervals as recommended by Cessna for the Cowl Flap Control and related system are not affected by the use of the McFarlane PMA control. Refer to the Cessna Service Manual for inspection instructions.

RECOMMENDED OVERHAUL PERIODS

No additional overhaul time limitations exist with the use of these parts.

AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sec. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved. No additional airworthiness limitations exist.

ASSISTANCE & REVISIONS

ICA revisions shall be made available on the McFarlane website, www.mcfarlaneaviation.com/ICA. For questions or assistance regarding these Instructions for Continued Airworthiness (ICA), contact McFarlane Aviation, Inc via email or telephone. Email: engineering@mcfarlaneaviation.com Phone: 1-800-544-8594 (within the US) or 1-785-594-2741.