



McFarlane Aviation Products

Instructions for Continued Airworthiness
 McFarlane Aviation Inc. FAA-PMA Part Numbers:

Part Number Family	Part Number	Part Name
MC0711037	-3, -4, -10, -11, -14, -15, -22, -23	Hinge Half
MC1211661	-1, -2, -4, -5, -6, -7, -8, -9	
MC0711037	-3S, -4S, -10S, -11S, -14S, -15S, -22S, -23S	Hinge Half, Undrilled
MC1211661	-1S, -2S, -4S, -5S, -6S, -7S, -8S, -9S	
MC0711038	-1	Hinge Pin

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Approved By:





Quality Assurance Manager Engineering Manager Production Manager

Revisions

Revision	Date	Summary
Original	05/15/2020	Original release

List of Effective Pages

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Instructions for Continued Airworthiness
McFarlane Aviation, Inc. PMA Door Hinges, Cessna 180 Series and 200 Series
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INTRODUCTION

This document is intended to provide for the continued airworthiness of McFarlane Aviation, Inc. PMA replacement Cabin and Cargo Door Hinge Halves, Undrilled Hinge Halves, and Door Hinge Pins eligible for installation on Cessna model 180 Series and 200 Series single engine aircraft. This includes 180, 182, 185, 205, 206, 207, and 210 series models.

The part numbers are as follows:

- Hinge Halves: MC0711037-3, MC0711037-4, MC0711037-10, MC0711037-11, MC0711037-14, MC0711037-15, MC0711037-22, MC0711037-23, MC1211661-1, MC1211661-2, MC1211661-4, MC1211661-5, MC1211661-6, MC1211661-7, MC1211661-8, MC1211661-9
- Hinge Halves, Undrilled: MC0711037-3S, MC0711037-4S, MC0711037-10S, MC0711037-11S, MC0711037-14S, MC0711037-15S, MC0711037-22S, MC0711037-23S, MC1211661-1S, MC1211661-2S, MC1211661-4S, MC1211661-5S, MC1211661-6S, MC1211661-7S, MC1211661-8S, MC1211661-9S
- Pin, Hinge, Cabin Door: MC0711038-1

For all items not related to the installation of the McFarlane Aviation, Inc. parts listed above, refer to the basic airplane model service and parts manuals. This ICA contains two sections: 1. Hinge Halves, 2. Hinge Pins. Refer to the section most applicable to the parts being replaced.

SYSTEM DESCRIPTION

Cessna model 180 Series and 200 Series aircraft each have one to two cabin doors, with some models being equipped with dual cargo doors. Each of these doors is attached to the fuselage with two hinge assemblies (hinges). The hinges consist of two hinge halves and a hinge pin. One hinge half is attached to the fuselage with threaded fasteners, and the other hinge half is attached to the door with rivets.

Removing the doors to facilitate maintenance or other activities requires removal of the aforementioned threaded fasteners or removing the hinge pins. The original Cessna cabin door hinges were primarily assembled with a non-reusable hinge pin that can only be removed by destructive means, while the cargo door hinges use a reusable clevis pin that was secured with a cotter pin. In all instances McFarlane has utilized the reusable clevis pin design.

SECTION 1: HINGE HALVES

Current part eligibility information can be found at: http://www.mcfarlaneaviation.com/reference/documents/Eligibility_Charts

McFarlane P/N (Hinge Half)	Installation Location	Replaces Cessna P/N	McFarlane P/N (Undrilled Half)
MC0711037-3	Cabin Door, Lower Left Hand, Aft	0711037-21, 0711037-3	MC0711037-3S
MC0711037-4	Cabin Door, Lower Right Hand, Aft	0711037-20, 0711037-4	MC0711037-4S
MC0711037-10	Cabin Door, Lower Left Hand, Forward	0711037-10, 0711037-19	MC0711037-10S
MC0711037-11	Cabin Door, Lower Right Hand, Forward	0711037-11, 0711037-18	MC0711037-11S
MC0711037-14	Cabin Door, Upper Right Hand, Forward	0711037-14	MC0711037-14S
MC0711037-15	Cabin Door, Upper Left Hand, Forward	0711037-15	MC0711037-15S
MC0711037-22	Cabin Door, Upper Right Hand, Aft	0711037-16, 0711037-22	MC0711037-22S
MC0711037-23	Cabin Door, Upper Left Hand, Aft	0711037-17, 0711037-23	MC0711037-23S
MC1211661-1	Forward Cargo Door, Lower, Aft	1211661-1	MC1211661-1S
MC1211661-2	Forward Cargo Door, Lower, Forward	1211661-2	MC1211661-2S
MC1211661-4	Forward Cargo Door, Upper, Aft	1211661-4	MC1211661-4S
MC1211661-5	Aft Cargo Door, Lower, Aft	1211661-5	MC1211661-5S
MC1211661-6	Aft Cargo Door, Upper, Aft	1211661-6	MC1211661-6S
MC1211661-7	Aft Cargo Door, Lower, Forward	1211661-7	MC1211661-7S
MC1211661-8	Aft Cargo Door, Upper, Forward	1211661-8	MC1211661-8S
MC1211661-9	Forward Cargo Door, Upper, Forward	1211661-3, 1211661-9	MC1211661-9S

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HINGE HALVES – SPECIAL OPERATING INFORMATION

The control and operation of the cabin door does not change with the installation of the McFarlane cabin door hinge halves; see applicable Cessna model 180 Series or 200 series Service Manual for the operational control of this system.

HINGE HALVES – PART REMOVAL, REPLACEMENT, AND SERVICE INFORMATION

Note: For best results, McFarlane recommends replacing the forward and aft hinge halves and replacing both the upper and the lower hinges simultaneously.

Hinge half removal and replacement:

1. There may be a film of paint connecting the hinge half to the door and/or fuselage. If it is present, score the paint with a sharp razor blade or utility knife.
2. Disconnect door stops and other non-hinge connections to the fuselage. Remove interior trim as needed to access to the hinge half fasteners.
3. Remove the old hinge pin(s) per the applicable Cessna model 180 Series or 200 Series Service Manual. If replacing an aft hinge half, remove the door from the aircraft.
4. **Door Mounted Hinge Half Removal:** Remove the rivets fastening the hinge half to the door, taking care not to damage the door or rivet holes. Remove the hinge half from the door.
Note: Some rivet removal techniques can be found in FAA Advisory Circular 65-15A, page 177. This document can be downloaded from: https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/23018
5. **Fuselage Mounted Hinge Half Removal:** Remove the hinge half from the fuselage by removing the threaded fasteners.
6. As needed, perform surface cleaning, corrosion repair, and paint preparation of the door & fuselage skins prior to installing the replacement hinge half.
7. **Door Mounted Hinge Half Installation:** Prior to riveting, temporarily install the hinge half with Cleco type fasteners to facilitate door and hinge alignment and checking for proper function. Once alignment and function are appropriate, install the McFarlane hinge half onto the door with appropriate rivets.
8. **Fuselage Mounted Hinge Half Installation:** Install the McFarlane hinge half onto the fuselage with appropriate threaded fasteners, tightening fully after the door and hinge alignment and function are appropriate. *Note: McFarlane Aviation recommends replacing the threaded fasteners with new parts at this time.*
9. Lubricate the pin joint with a solid film lubricant (as specified for piano-style hinges in the applicable Cessna 180 Series or 200 Series Service Manuals) or with a light coating of oil.
10. Reinstall the door by installing the McFarlane hinge pins per the instructions in Section 2 of this document or by installing NEW Cessna pins.
Note: Not every Cessna pins is reusable, if hinge contains a peened/swaged pin it must be replaced every time a Cessna pin is removed.
11. McFarlane provides the hinge halves with a corrosion preventing coating. **For complete corrosion protection, the hinges MUST be painted with an appropriate aircraft grade exterior paint per applicable aircraft maintenance manual.** The McFarlane hinge pins do not require painting.
12. Reconnect door stops and other non-hinge connections to the fuselage. Reinstall interior trim.

When replacing a hinge half with an undrilled part, the installer must locate, mark, and drill the fastener holes. The above instructions apply for the following:

1. The hole pattern must be marked on the undrilled part. Some suggestions for performing this are:
 - After removing the old hinge half, use it to create a drill template.
OR
 - Only remove the hinge half to be replaced, maintaining the door's location and alignment within the door opening. Attach the undrilled half with a McFarlane reusable pin. Using a strap duplicator or accessing the holes from the back side, mark the hole drill centers on the undrilled part.
2. Drill the fastener holes through the part, maintaining perpendicularity between the bit and the part while drilling.
3. Before installing the hinge half, treat the edges of the drilled holes with primer to help prevent corrosion.

No exceptions to Cessna instructions, specific to the McFarlane hinge halves, apply. The McFarlane hinge halves install using the same methods and hardware.

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SECTION 2: HINGE PINS

Current part eligibility information can be found at: www.mcfarlaneaviation.com/reference/documents/Eligibility%20Charts

McFarlane P/N	Installation Location	Replaces Cessna P/N
MC0711038-1	Hinge Pin	0711038-1

HINGE PINS – SPECIAL OPERATING INFORMATION

The control and operation of the cabin door hinge does not change with the installation of the reusable cabin door hinge pin; see applicable Cessna model 180 Series or 200 Series Service Manual for the operational control of this system.

HINGE PINS – PART REMOVAL, REPLACEMENT, AND SERVICE INFORMATION

Remove the old hinge pin per the applicable Cessna Model 180 Series or 200 Series Service Manual.

No exceptions to the Cessna instructions, specific to the McFarlane parts, apply.

The following instructions, specific to the McFarlane parts, apply:

Install the McFarlane reusable hinge pin as follows:

1. Lubricate with a solid film lubricant (as specified for piano-style hinges in Cessna 180 Series and 200 Series Service Manuals) or with a light coating of oil.
2. Insert the pin into the topmost hinge knuckle hole. While maintaining alignment between the forward and aft hinge halves, slide the pin through all hinge knuckle holes until the cotter pin hole is visible underneath the bottom most knuckle and the top of the pin is seated against the top knuckle.
3. Rotate the pin so the cotter pin hole is parallel to the surface of the aircraft and install the cotter pin. Cotter pins must **NOT** be reused and must be replaced every time they are removed from the hinge pin.

Note: McFarlane reusable hinge pins are **NOT** to be installed on aircraft equipped with an emergency door-release system!

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TROUBLESHOOTING

The following troubleshooting instructions, specific to the McFarlane hinges and pins, apply:

1. Door binds during operation.
 - a. Upper and lower hinges are misaligned relative to each other. Upper and lower hinge pins must be on the same hinge line (coaxial).
 - b. One or both hinge halves of a hinge assembly are misaligned. Hinge knuckle pin holes must be on the same hinge line (coaxial).
2. Door sags and doesn't align.
 - a. Hinge pin is worn and/or undersized. Use a new McFarlane hinge pin or a new Cessna hinge pin.
 - b. Knuckles and/or knuckle pin holes are excessively worn. Replace affected hinge halves.
 - c. Hinge halves are misaligned and/or upper and lower hinges are misaligned.
3. Hinge pin cannot be inserted or inserts with great difficulty.
 - a. Ensure the knuckle holes of adjacent halves are aligned.
 - b. Ensure the knuckle holes are clear, clean and not obstructed with metal burrs, paint, debris, corrosion, pieces of previous pins, etc.
 - c. Lubricate pin and knuckle holes with a solid film lubricant or a light coating of oil.
4. Cotter pin cannot be inserted after hinge pin insertion, regardless of orientation.
 - a. Ensure the hinge pin is inserted from the top.
 - b. Ensure the hinge pin's head is fully seated on the topmost hinge knuckle.
 - c. Ensure the cross hole in the hinge pin is free of obstructions.

PLACARDS

None applicable

DATA

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

- Relevant Cessna model 180 Series or 200 Series Service Manuals.
- Relevant Cessna model 180 Series or 200 Series Illustrated Parts Catalogs.

INSPECTION

McFarlane cabin door hinge halves and reusable cabin door hinge pins must be inspected as part of pre-flight checks. Ensure the cotter pins are installed, intact, and are free of damage, corrosion, and breakage. Inspect the hinge half knuckles for cracks and bending. Outside of these checks, McFarlane reusable cabin door hinge pins should be inspected at the same intervals as the original pins and adjacent components of the cabin door and its retention systems, as contained in relevant Cessna model 180 Series or 200 Series Service Manuals.

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 phone.
Email: engineering@mcfarlaneaviation.com Phone: 1-800-544-8594 (within the US) or 1-785-594-2741.