



McFarlane Aviation Products

Instructions for Continued Airworthiness

McFarlane Aviation Inc. FAA-PMA Part Number MC90-380016-1 Fuel Filter Drain Valve
FAA PMA Number: PQ3732CE

*Notice: Verify that this document is the latest approved revision before use! Current version can be found at:
www.McFarlaneAviation.com/ICA*

Approved By:


Quality Assurance Manager


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Production Manager

Revisions

Revision	Date	Summary
Original	06/15/2012	Original release
A	06/03/2021	Section B, Note 4 O-ring part number was M32491-014, now M83248/1-014

List of Effective Pages

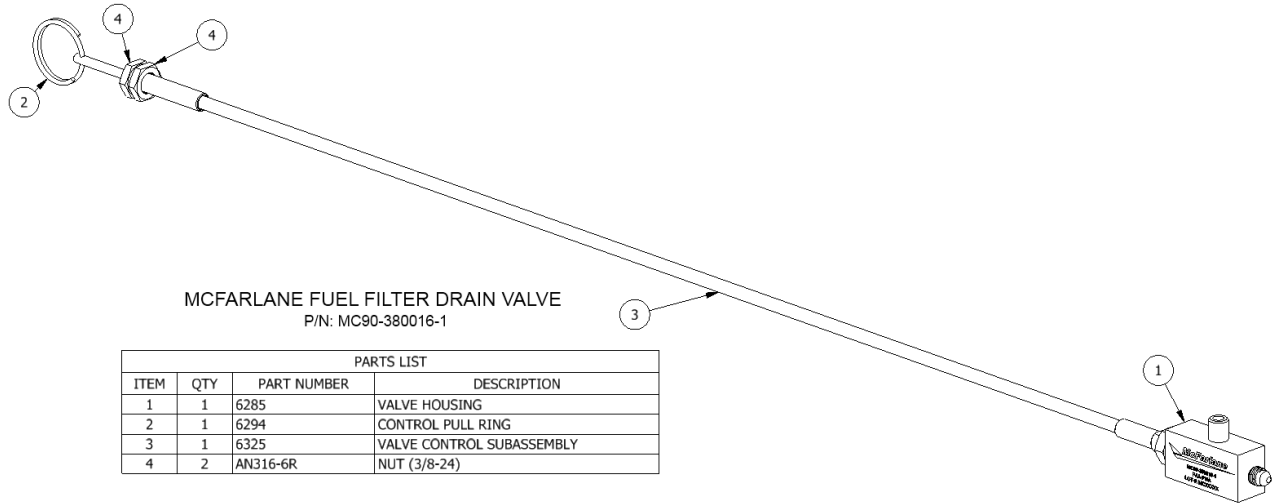
Page	Rev/Date
1	Original / 15-Jun-2012
2	Original / 15-Jun-2012
3	A / 03-Jun-2021
4	Original / 15-Jun-2012

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INTRODUCTION

This document is intended to provide for the continued airworthiness of McFarlane Aviation, Inc. PMA replacement Fuel Filter Drain Valve, eligible for installation on various Beechcraft C90 aircraft. The part number is MC90-380016-1 and is comprised of the valve housing (P/N: 6285) and the fuel drain valve control subassembly (P/N: 6325). Unlike the type certificate part, the McFarlane fuel filter drain is designed for disassembly, which allows for the eventual replacement of the valve control subassembly while retaining the valve housing.



For all items not related to the installation of the McFarlane Aviation, Inc. fuel drain valve, refer to the basic airplane model service and parts manuals.

SYSTEM DESCRIPTION

Beechcraft Model Series C90, C90A, C90GT, C90GTi, E90, and F90 aircraft utilized a fuel filter drain valve on each engine for expelling contaminants from the fuel filter prior to engine operation. The McFarlane Aviation, Inc. fuel drain valve is a direct replacement for Beechcraft P/N's: 5051-1, 90-380016-1, HE751-3-300.

SPECIAL OPERATING INFORMATION

The control and operation of the aircraft fuel system does not change with the installation of the McFarlane fuel drain valve; see applicable Beechcraft published information for the operational control of this system.

PART REMOVAL, REPLACEMENT, AND SERVICE INFORMATION

Remove the fuel filter drain valve and install the McFarlane fuel drain valve per the applicable Beechcraft Model Series C90, C90A, C90GT, C90GTi, E90, and/or F90 Service Manual.

Refer to the applicable Beechcraft Model Series C90, C90A, C90GT, C90GTi, E90, and/or F90 Service Manual for installation/maintenance instructions and the applicable Beechcraft Illustrated Parts Catalog.

The following exceptions to the Beechcraft instructions, specific to the McFarlane fuel filter drain assembly (P/N: MC90-380016-1), apply:

None Applicable

The following instructions, specific only to the McFarlane fuel drain valve control subassembly (P/N: 6325), apply:

A. Removal Instructions of Valve Control Subassembly:

1. Remove the pull ring (Item #2) from end of valve control subassembly, and discard.
2. Loosen the two jam nuts (Item #4) on the threaded end of the valve control subassembly. Once loose, remove the top jam nut and gently free valve control subassembly of mounting bracket. Discard the used jam nuts.
3. Using a 11/16 in. wrench, loosen the jam nut locking the valve control subassembly to the valve housing. Rotating the nut back to expose the first 3 to 4 threads should be sufficient for removal.
4. Remove the valve subassembly from the valve housing by unthreading the valve control subassembly from the housing. A 3/8 in. wrench applied to the flats of the housing terminal may be required to free to the valve control subassembly. Discard used valve control subassembly.

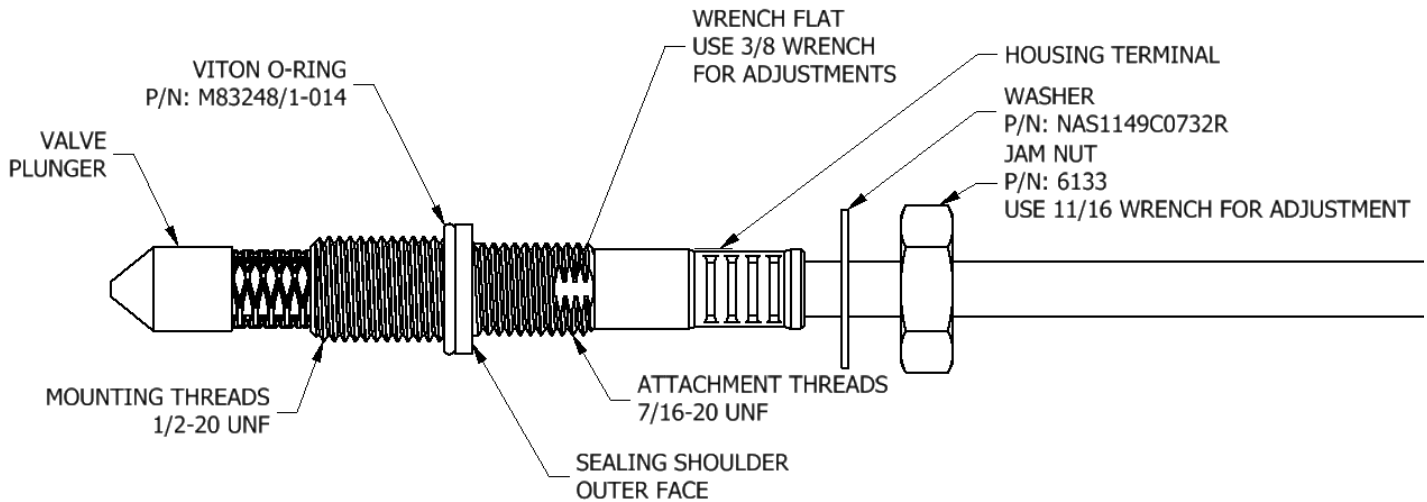
B. Installation of Valve Control Subassembly Instructions:

1. Inspect and clean the internal threads and valve cavity of the valve housing; the valve cavity and threads must be free of contaminants and/or debris prior to installation of the 6325 valve control subassembly. Inspect the two external fuel fittings, these too must be free of contaminants and/or debris. If any of the threads of the valve housing are damaged, the unit cannot be serviced and must be replaced with the complete fuel filter drain valve, P/N: MC90-380016-1.
2. Prepare the valve subassembly for installation. Verify that the first 4 to 5 threads of the housing terminal attachment threads are exposed. Adjust position by unthreading the large jam nut (P/N: 6133) and the accompanying washer away from the outer face of the sealing shoulder on the housing terminal.

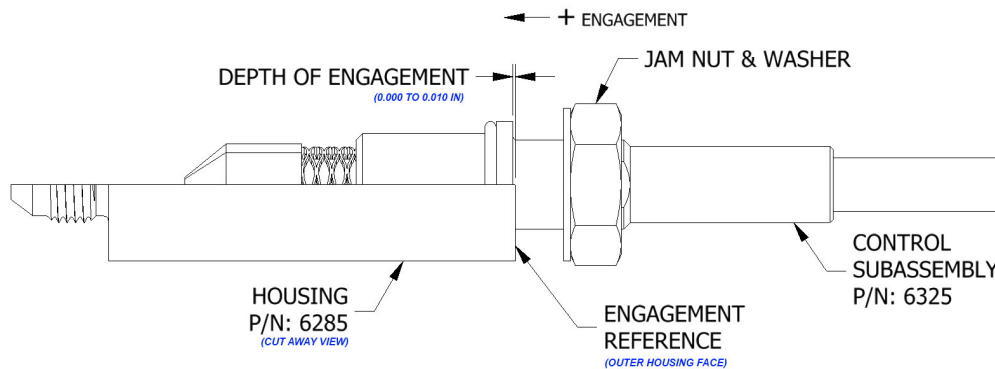
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3. Verify that thread locking tape is on both the mounting and attachment threads. If missing, any "Blue" Loctite liquid thread locker is an acceptable alternative for installation.
4. Verify that the o-ring is properly positioned flush against the housing terminal flange. If missing, replace with Viton O-ring, P/N: **M83248/1-014**.



5. Thread the valve control subassembly (P/N: 6325) into the valve housing, (P/N: 6285). Continue to thread the two parts together until the outer face of the subassembly sealing shoulder is flush with, or just past, the outer face of the valve housing (see illustration below). The initial target engagement between these two parts should be between 0.000 to 0.010 inches.



6. Once positioned, test the action of the plunger by pulling the control terminator out to open the valve. There should be between .090 and .188 inches of control travel.
7. Lock the valve control subassembly to the valve assembly by tightening the 6133 Nut and NAS1149C0732R washer while maintaining a positive engagement against the valve housing. *NOTE: Ensure that the valve control subassembly does not rotate when securing jam nut.*
8. Using the two provided 3/8 inch jam nuts, install other end of the valve control subassembly into the mounting tab located at the firewall. Secure by tightening the two jam nuts.
9. To test valve, pressurize fuel system and watch for leaks. Use the Beechcraft operating instructions to switch on boost pump and pressurize the fuel system. If the valve control subassembly is installed properly, no fuel will escape from the valve inlet, valve outlet, and/or around the sealing flange. Shut off boost pump, and depressurize fuel system.

If leaks are found, correct the problem immediately. Remove valve control subassembly and repeat steps 1 thru 9. Always verify that the proper control travel is maintained after sealing any leak. If leak cannot be corrected or control travel is below low .090 inches, discard both valve control subassembly and valve housing, and replace with the complete fuel filter drain valve assembly, P/N: MC90-380016-1.

10. Complete installation by locking all parts of the assembly by securing all three jam nuts.

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TROUBLESHOOTING

Refer to the applicable Beechcraft Model C90, C90A, C90GT, C90GTi, E90, and/or F90 Service Manual for troubleshooting instructions and the applicable Beechcraft Illustrated Parts Catalog for component part numbers. See listing in Data Section below. For troubleshooting, refer to the relevant Beechcraft Maintenance Manual.

The following troubleshooting instructions, specific to the McFarlane part, apply:

1. If valve leaks in service, depressurize system, disassemble, clean. Re-install valve control subassembly using instructions provided above.

PLACARDS

None applicable

DATA

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

- Relevant Beechcraft Model Series C90, C90A, C90GT, C90GTi, E90, and/or F90 Service Manuals.
- Relevant Beechcraft Model Series C90, C90A, C90GT, C90GTi, E90, and/or F90 Illustrated Parts Catalog.

INSPECTION

RECOMMENDED OVERHAUL PERIODS

No additional overhaul time limitations exist with the use of this part.

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.