

American Champion Aircraft Corp.
Burlington, WI 53105

Service Letter: 458

Date: August 17, 2023

Title: Manifold Pressure Line Upgrade

Models: 8GCBC (IO-390 install)
8KCAB (AEIO-390 install)

Description: This service letter outlines the procedures necessary to change to the new style manifold pressure line. Service Kit 458.

Purpose: Several instances of engine vibrations shaking the solid manifold pressure line out of the compression fittings have been reported. While a simple repair is economical, the issue can be recurrent. This upgrade replaces the entire manifold pressure line with a flexible line in an effort to counteract the issues caused by vibration.

Manifold Pressure System

The manifold pressure line upgrade requires the following new parts:

Part Number	Description	Quantity
11-1259	Manifold Pressure Line	1 of -4 (8KCAB) 1 of -5 (8GCBC)
4034K68	Snubber (optional)	1
4406T16	Fitting	1
4406T21	Fitting (pre-Nov. 2021 aircraft only)	1
AN526C-1032-R10	Screw	1
AN365-1032	Nut	1
AN960-10L	Washer	1
AN960-416	Washer	2
MS21333-98	ADEL Clamp	1
MS21919-WDG4	ADEL Clamp	1
Loctite 242		As required (opt.)
Safety Wire		As required

Procedure – FOR AIRCRAFT MANUFACTURED IN NOVEMBER 2021 OR LATER

Note: Include optional 4034K68 snubber if manifold pressure indicator readings are erratic.

Removal of Existing Manifold Pressure Line (See Fig. 458-2)

1. Remove 11-1259-1 or 11-1259-2 copper manifold pressure line from compression fittings.
2. Unscrew 68F compression fitting from engine.
3. Remove 11-1259-3 manifold pressure line.
4. Remove 11-1263-2 bracket fitting from left rear baffle. DO NOT REMOVE THE MS21912-WDG6 ADEL CLAMP OR MAGNETO LINES.

Optional Snubber Installation

1. Install 4034K68 snubber between 011-04202-00 manifold pressure sensor and firewall-mounted 11-1263 bracket fitting.

Installation of New Manifold Pressure Line and Supporting Hardware (See Fig. 458-3)

1. Install 4406T16 fitting in engine.
2. Install 11-1259-4 (8KCAB) or 11-1259-5 (8GCBC) manifold pressure line between 4406T16 fitting and 11-1263 assembly.
3. Install MS21919-WDG4 ADEL clamp on manifold pressure line.
4. Secure the clamp to left rear baffle with AN960-10L washer, AN365-1032 nut, and AN526C-1032-R10 screw per drawing 7-1614 (8GCBC) or 7-1617 (8KCAB).
5. Unscrew the lower left screw on the #4 cylinder head.
6. Install MS21333-98 ADEL clamp on the manifold pressure line.
7. Install AN960-416 washer (2 req'd) and ADEL clamp on cylinder head with original screw, per drawing 7-1614 (8GCBC) or 7-1617 (8KCAB). Apply Loctite 242 (opt.).
8. Secure manifold pressure line to fittings at each end with safety wire.

Procedure – FOR AIRCRAFT MANUFACTURED PRIOR TO NOVEMBER 2021

Note: Include optional 4034K68 snubber if manifold pressure indicator readings are erratic.

Removal of Existing Manifold Pressure Line (See Fig. 458-1)

1. Remove 1-2392-9 manifold pressure line from compression fittings.
2. Unscrew 68F compression fittings from engine and 011-04202-00 manifold pressure sensor.
3. Remove MS21919-WDG2 ADEL clamp from engine. DO NOT REMOVE THE MS21912-WDG6 ADEL CLAMP OR MAGNETO LINES.

Installation of New Manifold Pressure Line and Supporting Hardware (See Fig. 458-3)

1. OPTIONAL: Install 4034K68 snubber in 011-04202-00 manifold pressure sensor.
2. Install 4406T16 fitting in engine and 4406T21 fitting in manifold pressure sensor or snubber.
3. Install 11-1259-4 (8KCAB) or 11-1259-5 (8GCBC) manifold pressure line between fittings.

4. Install MS21919-WDG4 ADEL clamp on manifold pressure line.
5. Secure the clamp to left rear baffle with AN960-10L washer, AN365-1032 nut, and AN526C-1032-R10 screw per drawing 7-1614 (8GCBC) or 7-1617 (8KCAB).
6. Unscrew the lower left screw on the #4 cylinder head.
7. Install MS21333-98 ADEL clamp on the manifold pressure line.
8. Install AN960-416 washer (2 req'd) and ADEL clamp on cylinder head with original screw, per drawing 7-1614 (8GCBC) or 7-1617 (8KCAB). Apply Loctite 242 (opt.).
9. Secure manifold pressure line to fittings at each end with safety wire.

Approval

The figures and data contained within this service letter are FAA approved via the following ACAC technical drawings: (These drawings are for your reference; they are not required)

<u>Drawing</u>	<u>Title</u>	<u>Revision</u>	<u>Date</u>
7-1614	Install – Lycoming IO-390	B or later	06/15/2018
7-1617	Install – Lycoming AEIO-390	A or later	06/22/2018

Fig. 458-1: Standard Manifold Pressure Line Installation (pre-Nov. 2021)

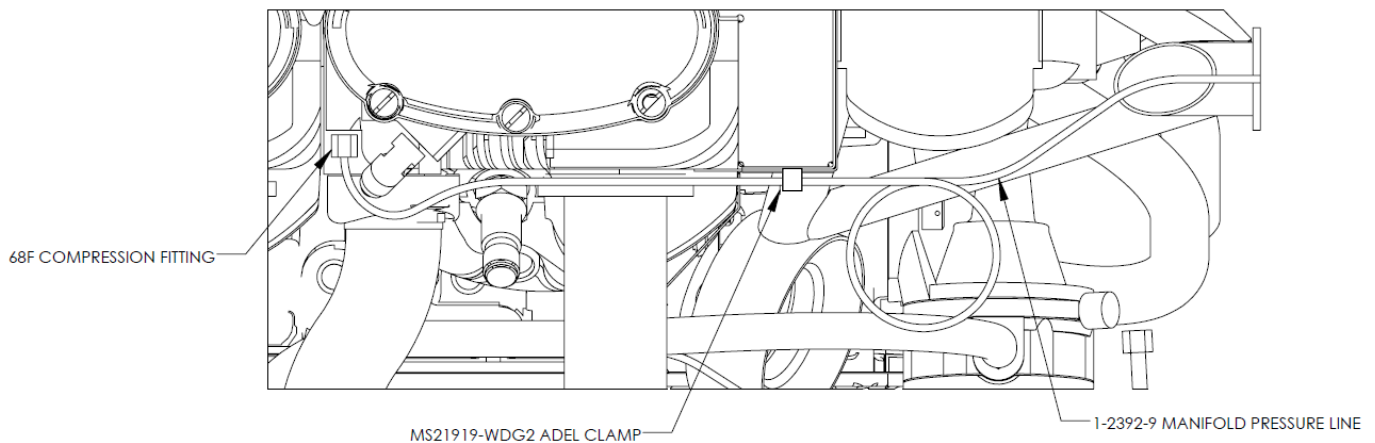


Fig. 458-2: Standard Manifold Pressure Line Installation (Nov. 2021 or later)

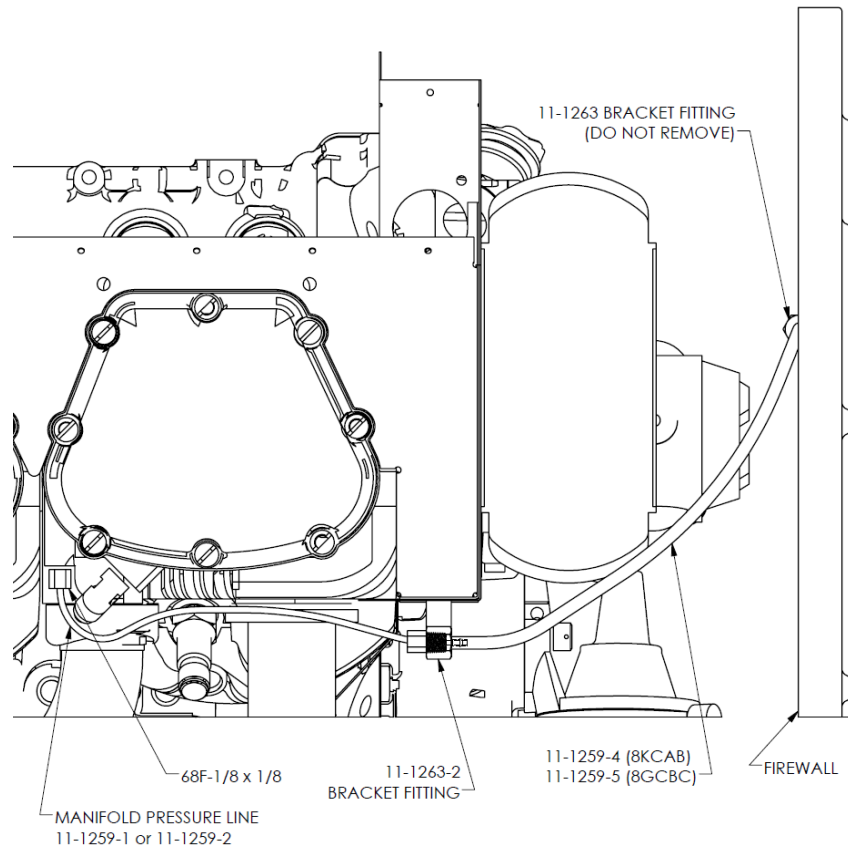


Fig. 458-3: Upgraded Manifold Pressure Line Installation:

