



3220 100TH ST. SW BLDG E  
EVERETT, WASHINGTON 98204  
FAA-PMA FACILITY #PQ111NM

# Service Bulletin Fuel Systems

Bulletin No.: MSA-3  
Revision No.: 1  
Date: 11/16/90  
Revised: 11/18/91

**SUBJECT: OVERHAUL PERIODS FOR FLOAT CARBURETORS.**

NOTE: This service bulletin restates overhaul requirements as previously established in Facet Service Bulletin A1-86

REASON FOR REVISION: Revision 1 clarifies overhaul requirements and adds a calendar time requirement for TBO in **ACCOMPLISHMENT INSTRUCTIONS**

**1. PLANNING INFORMATION:**

**A. EFFECTIVITY:**

All Precision Airmotive, Facet Aerospace and Marvel Schebler Aircraft Float Carburetors utilized on general aviation aircraft.

**B. REASON:**

To establish overhaul periods for items in 1.A.

**C. DESCRIPTION:**

**D. COMPLIANCE:**

**E. APPROVAL:**

**F. MANPOWER:**

**G. MATERIAL AVAILABILITY:**

**H. TOOLING:**

**I. REFERENCES:**

**J. WEIGHT AND BALANCE:**

**K. PUBLICATIONS AFFECTED:**

**2. ACCOMPLISHMENT INSTRUCTIONS:**

- A.** The time between overhaul (TBO) for all carburetors designated in 1.A. of this service bulletin is the same as the TBO specified by the engine manufacturer for the engine on which the carburetor is installed or ten (10) years since placed in service or last overhauled, whichever occurs first.

2. ACCOMPLISHMENT INSTRUCTIONS: (cont)

- B. Upon reaching the appropriate carburetor TBO as specified above, the carburetor must be completely overhauled. During the overhaul, it is recommended that the minimum parts to be replaced in the carburetor, regardless of their apparent condition, are those parts comprising the 286-XXX Major Repair Kit as specified in the current Precision Airmotive/Facet Aerospace, Aircraft Carburetor Service Manual #FSM.

Additional parts may also require replacement. This can be determined by careful aircraft quality inspection techniques.

**NOTE:** In those cases where a carburetor requires service prior to TBO, it is recommended that the minimum parts replaced any time a carburetor is opened for service, are those parts comprising a 778-XXX Minor Repair Kit (Refer to Facet Service Information Letter # 8-21-86 for kit contents and effectivity).

- C. A complete overhaul is mandatory regardless of any FAR operational category when the carburetor has been subjected to a severe environment such as but not limited to:

- (1) Engine fire, external or prolonged air intake manifold fire.
- (2) Contaminated fuel such as water, rust, sand, etc.

Fuel that does not meet engine manufacturer's requirements may be detrimental to engine operation. If non-specified fuel is inadvertently pumped into the aircraft fuel system, contact Precision Airmotive's Product Support Department to determine if overhaul is necessary.

- (3) If any uncertainty exists regarding the need for overhaul, contact Precision Airmotive's Product Support Department, 3220 100TH ST. S.W. #E, Everett, Washington 98204, (206) 353-8181 for consultation.

**NOTE:** Vertical black bands in the left hand margin denote changes from previous release.

**Marvel-Schebler® Aircraft  
Carburetors, LLC**

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**Service Bulletin: SB-17**

Original Date: August 12<sup>th</sup>, 2010

**SUBJECT – BODY TO BOWL FUEL LEAKS**

1. **Applicability:** MA-3™, MA-3A™, MA-3PA™, MA-3SPA™, MA-4™, MA-4SPA™, MA-4-5™, MA-5™, MA-5AA™, MA-6™, and MA-6AA™ UPDRAFT float carburetors manufactured by Marvel-Schebler® Aircraft Carburetors LLC (“Marvel-Schebler”) and its predecessors in interest Volare Carburetors, Precision Airmotive Corporation, Facet Aerospace Products Company, and Borg Warner. (Hereinafter “Marvel-Schebler® Float Carburetors”).

2. **Reason:** Marvel-Schebler® is issuing this service bulletin to make engine manufacturers, mechanics, over-haulers, owners, and operators of Marvel-Schebler® Float Carburetors aware that instances of fuel leakage from the body to bowl joint have been reported. This service bulletin replaces and supersedes Precision Airmotive service bulletin MSA-14 dated 2/7/08. Warning: Failure to follow this advice may result in engine malfunction, damage, injury, or death.

3. **Background:** Instances have been reported of leakage past the gasket between the bowl and throttle body of the carburetor evidenced by fuel stains in the area of the leak. Leakage of this type may be accompanied by loose bowl to throttle body screws.

4. **Time of Compliance:** Within the next 50 hours of engine operation and at each 100 hours of engine operation thereafter or anytime fuel stains are evident on the carburetors external surfaces.

5. **Compliance:**

- a) Check the carburetor for evidence of fuel stains on the outside of the bowl along the throttle body / bowl parting line.
- b) Check the bowl for looseness relative to the throttle body by attempting to wiggle or move the bowl relative to the throttle body by hand.



- c) Check each throttle body to bowl screw and lock-tab washer for any sign of looseness by attempting to wiggle the screw head and lock tab washer with your fingers.

**Warning: Do not turn the screws with a tool (a screwdriver or wrench) when checking them it for looseness. Doing so with the lock-tab washers engaged against the screw may bend the lock tabs and compromise the lock-tab washers' effectiveness.**

- d) If there is evidence of fuel stains, looseness of the bowl relative to the throttle body, or loose throttle body to bowl screws, an appropriately rated mechanic, engineer, or repair station must: Remove the carburetor from the engine. In accordance with the appropriate carburetor service manual; remove the bowl from the throttle body. Inspect the threaded holes in the bowl and screws to be sure the threads are serviceable. Install a new body to bowl gasket. Install new lock tab washers. Install and torque the screws in accordance with appropriate specifications. Test the carburetor in accordance with instructions in the appropriate service manual. Secure the lock tab washers by bending the tabs.
- e) Reinstall the carburetor on the engine and rig it in accordance with the applicable engine and airframe service manual instructions.

Note: Excessive engine vibration may cause the bowl to shake loose from the throttle body. Therefore, it is prudent to inspect the engine installation for damaged or worn motor mounts and/or evidence of an out of balance condition and if such a condition(s) is identified rectify it before returning the aircraft to service in order to prevent loosening of the bowl in the future.

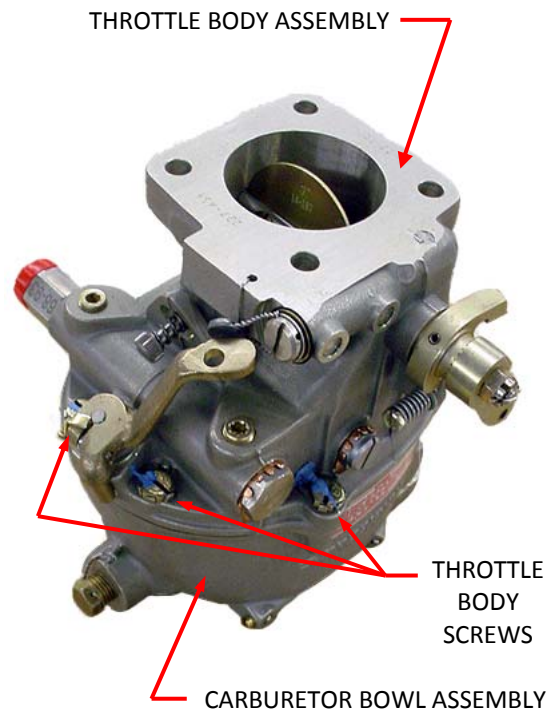
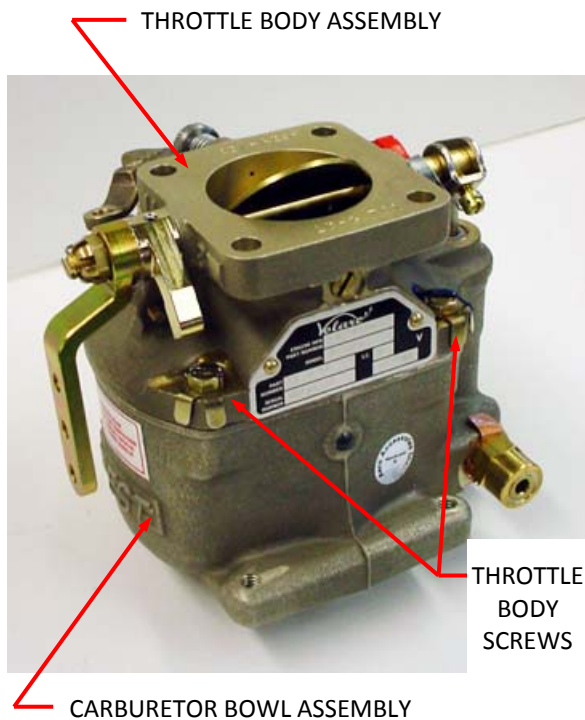
- f) Make appropriate logbook entry showing compliance with this service bulletin.

**6. Voiding of Warranty and Waiver of Liability:** An owner's /operator's failure to inspect and where necessary replace the throttle body to bowl gasket and lock tab washers in accordance with this bulletin, or operation of a carburetor which is non-compliant to the requirements set forth in this bulletin, or operation of a carburetor in which other than genuine Marvel-Schebler® approved parts are installed, **voids any otherwise applicable warranty and constitutes a complete and total waiver** to the extent permitted by law of any and all rights the owner, operator and/or service facility or repairer may have had to hold Marvel-Schebler® responsible or liable for the malfunction or failure of such an aviation carburetor. The owner/operator and/or service facility or repairer that makes an unauthorized repair or modification that is non-compliant with this service bulletin to service shall bear the sole responsibility and full liability for any **damages of whatever nature, injury, or death** arising from any malfunction or failure of such a non-compliant aviation carburetor.

Distributed by:



7. **Safety First:** Marvel-Schebler® Aircraft Carburetors, LLC is a customer-service oriented company committed to technical innovation in pursuit of aviation safety. While Marvel-Schebler® has no authority to compel owners to act responsibly and take prudent action to insure their own safety and the safety of others, Marvel-Schebler® believes compliance with this service bulletin is important and will help to insure better maintained and better performing products. Marvel-Schebler® strongly warns owners of inherent risks involved in operating an aircraft with a leaking carburetor and strongly encourages owners to comply with this service bulletin.



- Models MA-3™, MA-3A™, MA-3PA™, MA-3SPA™, MA-4™, and MA-4SPA™ have four (4) screws.
- Models MA-4-5™, MA-5™, MA-4-5AA™, MA-6™, and MA-6AA™ have six (6) screws.



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## MANDATORY

# SERVICE BULLETIN

DATE: June 2, 2016

Service Bulletin No. 366C  
(Supersedes Service Bulletin No. 366B)  
Engineering Aspects are  
FAA Approved

SUBJECT: Carburetor Throttle Body Screw Inspection

MODELS AFFECTED: All Lycoming engines equipped with Marvel-Schebler, Facet, Precision, or Volare updraft carburetor models MA-3A, MA-3PA, MA-3SPA, MA-4SPA, MA-4-5, MA-4-5AA, and MA-6AA.

TIME OF COMPLIANCE: Within the next 50 hours of engine operation and every 50 hours thereafter during routine engine maintenance

REASON FOR REVISION: Correct the CAUTION after Step 3.

**NOTICE:** Incomplete review of all the information in this document can cause errors. Read the entire Service Bulletin to make sure you have a complete understanding of the requirements.

Instances have been reported of leakage through the gasket between the bowl assembly and throttle body of the carburetor, evident by fuel stains in the area of the leak. Leakage of this type can be accompanied by loose screws that attach the bowl and throttle body.

See Figure 1 for illustrative example of the throttle body attaching screws.

### INSTRUCTIONS FOR COMPLIANCE:

1. Examine the carburetor for evidence of fuel stains on the outside of the bowl along the parting line.
2. Complete a check for movement between the throttle body and bowl.
3. Make sure each throttle body-to-bowl attaching screw is secure and not loose by attempting to move the screw and/or locktab washers with your fingers.

**⚠ CAUTION:** IF ANY ATTACHING SCREW IS LOOSE, DO NOT ATTEMPT TO TURN THE SCREW WITH A SCREWDRIVER. IF YOU TURN THE SCREW WITH A SCREWDRIVER, IT COULD DAMAGE THE LOCK WASHERS AND INCREASE THE LIKELIHOOD THAT THE SCREWS WILL BECOME LOOSE.

4. If there is evidence of fuel stains, movement between the throttle body and bowl, or the throttle body-to-bowl attaching screws are loose then remove the carburetor in accordance with the applicable engine and airframe service manuals. Send the carburetor to a qualified repair station for troubleshooting and repair. Reinstall the carburetor in accordance with the applicable engine and airframe service manuals.
5. Make an appropriate logbook entry showing compliance with this Service Bulletin.



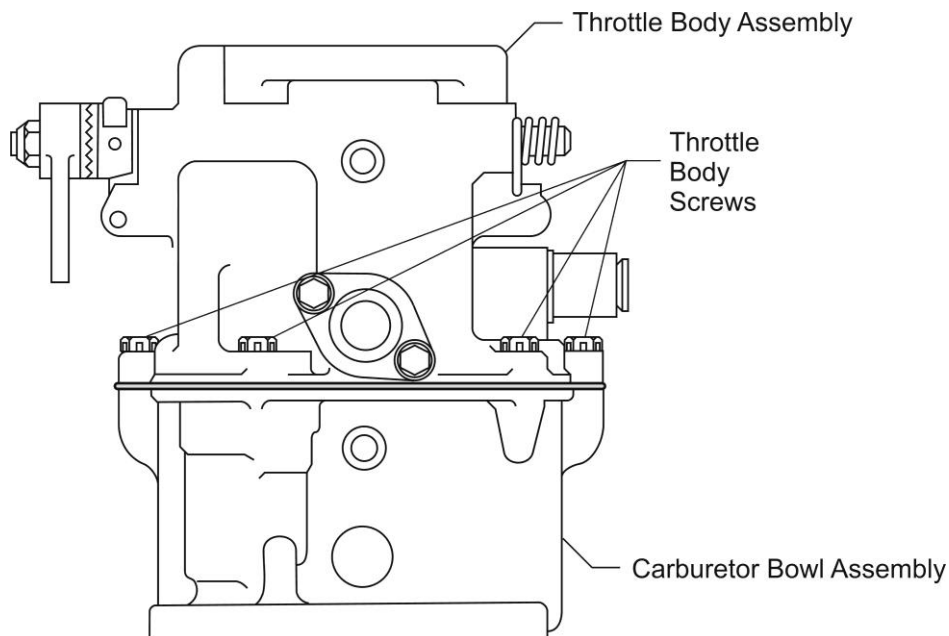
General Aviation  
Manufacturers Association

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| 09     | 14  | 73   | 06      | 02  | 16   |          |          |

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After compliance with this Service Bulletin, if fuel leakage is found at a subsequent inspection, contact Lycoming Technical Support Hotline:

- +1 (877) 839-7878 (Toll Free)
- +1 (570) 327-7222



Models MA-3A, MA-3PA, MA-3SPA, and MA-4SPA have four screws. Models MA-4-5, MA-4-5AA, and MA-6AA have six screws.

**Figure 1**  
**Illustrative Example of Throttle Body Attaching Screws**

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| 09     | 14  | 73   | 06      | 02  | 16   |          |          |          |

# AIRCRAFT CARBURETOR SERVICE MANUAL

MODELS  
MA3A  
MA3PA  
MA3SPA  
MA4SPA

** PRECISION**  
AIRMOTIVE LLC

FSM-OH1 CHANGE 3  
AUGUST 1, 2007

14800 40<sup>th</sup> AVE. NE  
Marysville, Washington 98271

### 3.0 FLOAT INSTALLATION

**CAUTION:** Exercise care during the following operations to prevent damage to the float.

- 3.1 Install the float valve seat and 16-224 (.031") float valve gasket using tool #M-104. Torque to 10-12 foot pounds.

**NOTE:** Initial run-in torque must be at least 6 inch-pounds. If run-in torque is less than 6 inch-pounds, the nylon locking element is degraded or damaged, and the float valve assembly must be replaced.

- 3.2 Position the clip onto the float lever as shown in **Figure 1**.

**FIGURE 1**



- 3.3 Place the float valve into the forked clip on float as shown in **Figure 2**.

**FIGURE 2**



**Detail 2:** Side view of tangs on clip

**DETAIL 2**

- 3.4 To install the float and float valve, place the throttle body with the

mounting flange down and install the proper throttle body to bowl gasket.

- 3.5 Place the float and float valve assembly into the float bracket with the float valve in the float valve seat, as shown in **Figure 3**.

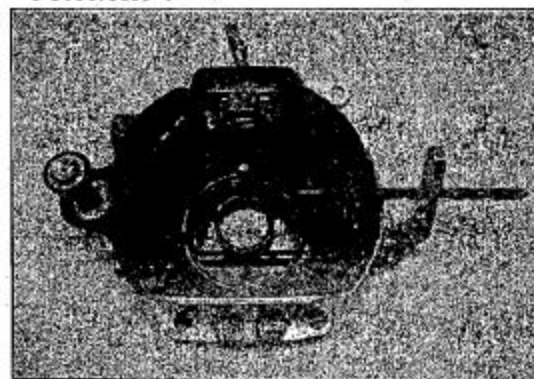
**FIGURE 3**



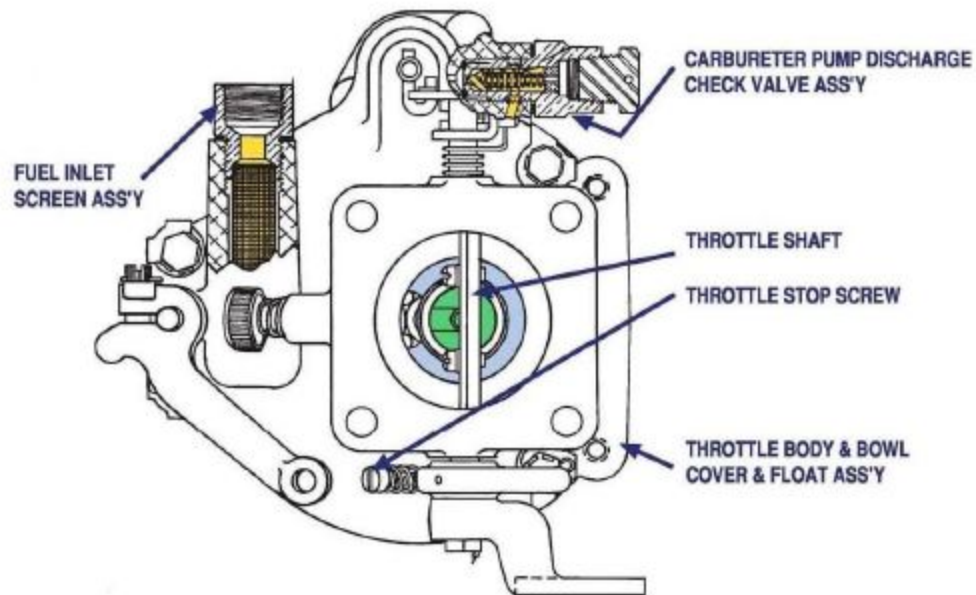
- 3.6 Insert the float shaft through the float bracket and float.

- 3.7 To adjust the float properly it is suggested a 7/32" drill rod be used as shown in **Figure 4** to measure the adjusted clearance between the throttle body to bowl gasket and float, measured near the tip of each pontoon.

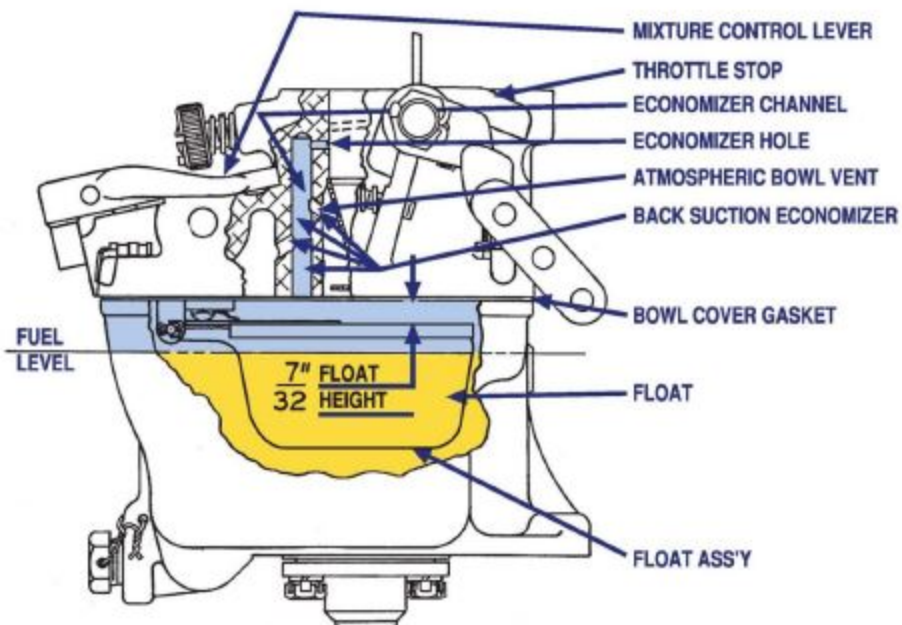
**FIGURE 4**



- 3.8 If adjustment is required, remove the float and bend the adjustment tab (**Figure 5**) located over the float valve to achieve the 7/32" setting. A small screwdriver bent 30° approximately 1/2 inch from its tip is a useful tool for making this adjustment. Do not bend tab more than .030". Ensure that the



FUEL BO



HOLE 2  
HOLE 1-  
HOLE 3-MAX (

