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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.

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Service Bulletin SB-4 Rev. B

Original Date: March 13th, 2009

Revision Date: Sept. 2nd, 2009

SUBJECT: BOWL CLEARANCE MA- SERIES CARBURETORS

Applicability: *This Service Bulletin (SB-4) applies to MA-2, MA-3, MA-4, MA-4-5, MA-4-5AA, MA-5, MA-5AA, MA-6 and MA-6AA model float carburetors manufactured by Volare Carburetors LLC (“Volare”), and its predecessors Precision Airmotive Corporation, Facet Aerospace Products Company, and Marvel-Schebler (Borg-Warner) (hereinafter “Volare”) that are equipped with a brass float assembly.*

1. **Reasons:** **Warning:** **Failure to follow this advice may result in engine malfunction, damage, injury or death.** Reports of sticking, leaking and/or worn floats have been received, see Figure 1. The specified float/bowl clearance **MUST** exist to ensure proper operation.
2. **Operational indications of insufficient float clearance:** Fuel leaks from the carburetor, hard starting, rich idle mixture, black smoke in the exhaust, excessive magneto drop, engine running roughly, difficulty stopping the engine with the mixture control, or partial or complete loss of engine power.
3. **Compliance:**
 - a. PRIOR TO EACH FLIGHT AND AT ANY OTHER TIME DURING ENGINE OPERATION, if any of the indications in paragraph 2 are observed, then the inspections and corrective actions described in paragraph 4 must be performed before further engine operation or before the next flight, unless the root cause of the operational indication is verified to be something other than the carburetor.
 - b. WITHIN 100 HOURS OF OPERATION OR 90 DAYS after the original issue date of this Service Bulletin, which ever comes first, perform the inspections and corrective actions (if required) contained in paragraph 4 of this Service Bulletin.

4. **Instructions:** This inspection must be conducted each time the bowl is removed. Remove the bowl in accordance with Instruction E-1000 or E-1002 contained in Volare Float Replacement Kit 666-1000 or Kit 666-1002, as appropriate by carburetor model.

With the clearance tool M-510 used with the (MA-3, MA-4 series) or M-509 used with the (MA-5, MA-6, MA-4-5 Series) in place, orient the carburetor body with one pontoon uppermost, see Figure 2. Check the clearance between the float pontoon and the bowl wall. A .081 inch gage pin (models MA-2, MA-3 & MA-4), or a .051 gage pin (models MA-4-5, MA-4-5AA, MA-5, MA-5AA, MA-6 and MA-6AA) must pass between the lower surface of the upper pontoon and the throttle bore wall and between the lower surface of the lower pontoon and the lower bowl wall without touching either pontoon. Reorient the carburetor so that the other pontoon is uppermost, see Figure 3. Repeat the clearance check. If, as the gage pin is moved along between the float and the bowl wall the gage pin contacts either pontoon, float clearance is inadequate and the float assembly must be replaced.

Install new parts as necessary. Torque and safety the cover screws and test the carburetor in accordance with instructions contained in the appropriate Carburetor Service Manual (MSAFSM) and Instructions E-1000 and E1002, appropriate to the model. Note: Instructions E-1000 and E1002 apply only to the installation of solid blue epoxy floats. **The float clearance requirements in this Service Bulletin apply to all Volare carburetors to which this bulletin is applicable, i.e., carburetors equipped with brass floats, regardless of the manufacturer of the float and MUST be adhered to.** *This Service Bulletin is not applicable to carburetors equipped with solid, blue epoxy floats, Volare part numbers 30-862 and 30-864.*

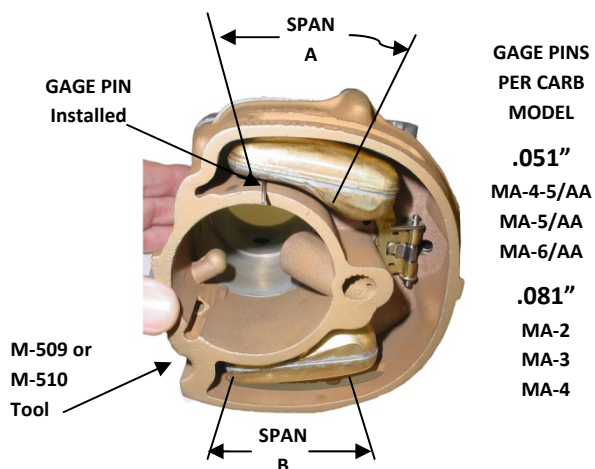
- i. Volare manufactured or serviced carburetors are equipped with a solid, blue epoxy float unless the float was replaced with an unauthorized float subsequent to Volare's release of the carburetor.
 - ii. If Precision Airmotive manufactured, overhauled, or rebuilt the carburetor after November 2005, and the IC number on the carburetor's data tag is 15 or higher, the carburetor is equipped with a solid, blue epoxy float unless the float has been replaced with an unauthorized float subsequent to release of the carburetor by Precision.
 - iii. While Volare believes the information in paragraphs i and ii is correct, and regardless of any error(s) that may be contained in those paragraphs, it is the owner's/operator's responsibility to make a positive determination that a solid, blue epoxy float is installed or to comply with this service bulletin. Where necessary, carburetors must be partially disassembled to make a positive determination. Refer to the aircraft maintenance manual for carburetor removal, installation and adjustment instructions.
5. **Identification/Marking:** Upon completion of this Flight Safety Service Bulletin, stamp the letters "FC" ($\frac{1}{8}$ inch tall (nominal) characters) on the flange adjacent to the throttle shaft, see Figure 6.
6. **Service and Parts Availability:** Float clearance tools M-509 and M-510 and replacement float and parts kits can be ordered from Tempest/Volare distributors.

7. **Voiding of Warranty and Waiver of Liability:** An owner's/operator's failure to inspect and where necessary replace the float assembly in accordance with this bulletin, or operation of a carburetor which is non-compliant the clearance requirements set forth in this bulletin, or operation of a carburetor in which other than genuine Volare 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 Volare responsible or liable for the malfunction or failure of such an aviation carburetor. The owner/operator and/or service facility or repairer that returns a carburetor 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, modified and/or altered aviation carburetor.
8. **Safety First:** Volare is a customer-service oriented company committed to technical innovation in pursuit of aviation safety. While Volare has no authority to compel owners to act responsibly and take prudent action to insure their own safety and the safety of others, Volare believes compliance with this Service Bulletin is essential to protect against failures with unacceptable consequences. Volare strongly warns owners of the inherent risks involved in operating an airplane with a float installation having non-conforming float to bowl clearance and strongly encourages owners to comply with this Service Bulletin.



Floats with Rubbing Wear – FEB 2009

Fig. 1



Carb Orientation 2, Check Spans A & B

Fig. 3



Example: Wear from Rubbing on Small MA Float

Fig. 5

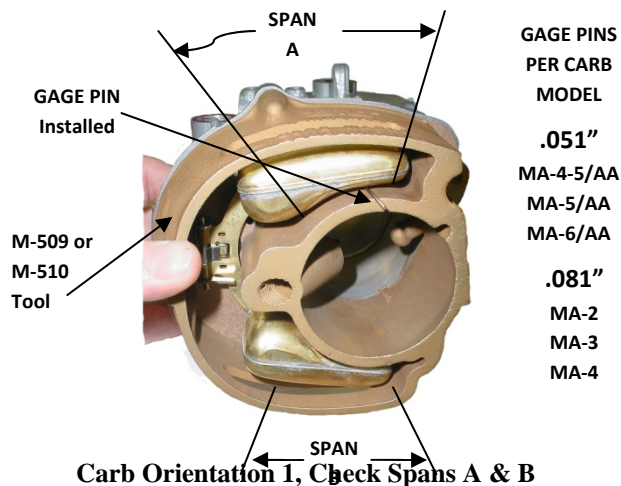
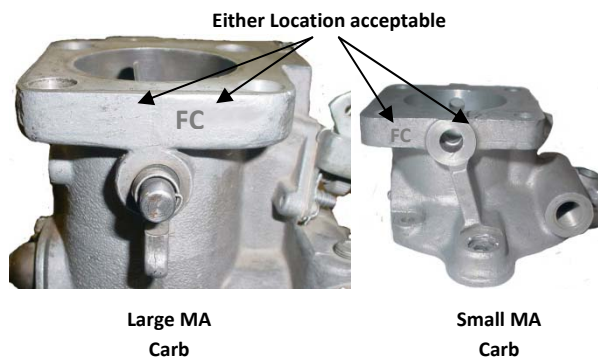


Fig. 2



Example: Wear from Rubbing on Large MA Float

Fig. 4



Conformance with this SB-4 'FC' Stamp Locations

Fig. 6



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Service Bulletin: SB-10 Rev B

Original Date: June 17th, 2009

Revision Date: August 12th, 2010

SUBJECT – UNAUTHORIZED THREAD SEALANT

1. **Applicability:** *ALL MODELS of float carburetors manufactured by Marvel-Schebler Aircraft Carburetors LLC (“Marvel-Schebler®”), and its predecessors Volare Carburetors, Precision Airmotive Corporation, Facet Aerospace Products Company, and Borg-Warner (hereinafter “Marvel-Schebler® Float Carburetors”).*
2. **Reason:** Marvel-Schebler® is issuing this SB to caution owners, operators, over-haulers, and repairers of Marvel-Schebler® Float Carburetors against the improper and unauthorized use of thread sealant during carburetor assembly. **Warning: Failure to follow this advice may result in engine malfunction, damage, injury, or death.**
3. **Background:** During tear-down and inspection of Marvel-Schebler® Float Carburetors at the factory service center, Marvel-Schebler® has found thread sealant inside fuel passages. Marvel-Schebler’s examination of carburetors identified with AVstar data tags reveals extensive use of thread sealant on various fittings and the presence of thread sealant inside carburetor fuel passages. Other facilities may also be following the similar unauthorized practice.

Marvel-Schebler® does not use thread sealant on carburetors it manufactures or services and does not authorize or approve the use of thread sealant on its carburetors by others.

Thread sealant can break away inside a carburetor, clog fuel passages, and result in partial or complete loss of engine power. A previous Marvel-Schebler Service Bulletin, A1-69 and Airworthiness Directive 69-24-03, dealt with a similar issue wherein thread lubricant was discovered in carburetors.

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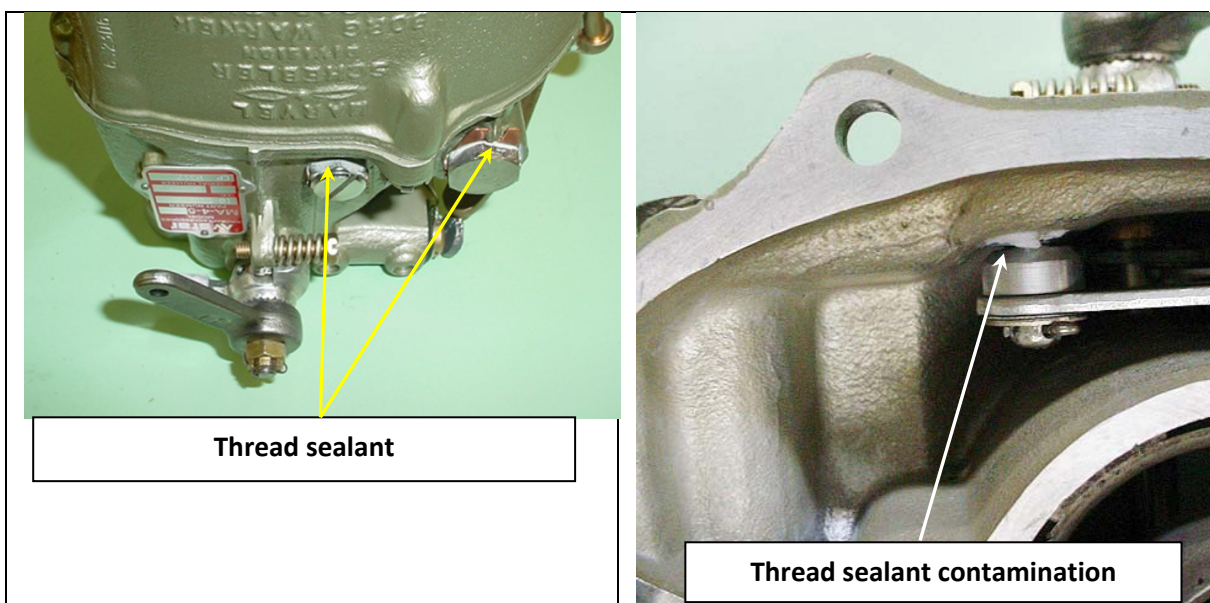


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4. **Compliance:** Owners, operators, over-haulers, and repairers of Marvel-Schebler® Float Carburetors not known to be free of unauthorized thread sealant should:
- a. Immediately inspect such carburetors for evidence of thread sealant around, but not limited to, various fittings particularly the inlet fittings, bowl drain plugs and, on MA-4-5™, MA-5™, and MA-6™ series carburetors, the accelerator pump pivot screw. Thread sealant can often be seen as a whitish appearing hard or semi-hard paste extruding from under a fitting (see photos) but removal of the fittings may be required to conclusively exclude the presence of unauthorized sealant.
 - b. If thread sealant is present, immediately remove the carburetor from service, disassemble it, remove the thread sealant, and inspect all passageways, jets, mechanisms, screens, etc., for contamination by the sealant. Using the appropriate Marvel-Schebler® service manual and all applicable Service Bulletins for the carburetor model being repaired, confirm that all techniques and materials for repairs to be accomplished are Marvel-Schebler® approved. Clean, inspect, and reassemble the carburetor in accordance with the appropriate Marvel-Schebler® service manual. Marvel-Schebler® Service Bulletins can be accessed at Tempestplus.com.







5. **Voiding of Warranty and Waiver of Liability:** Any owners, operators, over-haulers, and repairers, of Marvel-Schebler® Float Carburetors who fail to inspect and where necessary replace or repair a carburetor in accordance with this bulletin, or permit operation of a carburetor which is non-compliant with this bulletin, or permit operation of a carburetor in which other than genuine Marvel-Schebler®-approved parts are installed, **voids any otherwise applicable warranty and such actions constitute 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 returns a carburetor to service that is non-compliant with this service bulletin 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.

6. **Safety First:** 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 essential to protect against failures with unacceptable consequences. Marvel-Schebler® strongly warns owners of the inherent risks involved in operating an airplane with thread sealant in the carburetor's fuel chambers and passages and strongly encourages owners to comply with this Service Bulletin.

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Original Issue Date: 06/17/2009

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