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Service Bulletin SB-4 Rev. B

Original Date: March 13th, 2009

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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.

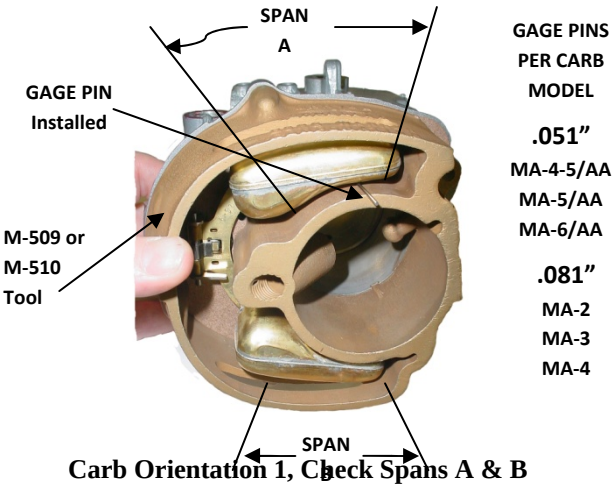
5. **Identification/Marking**: Upon completion of this Flight Safety Service Bulletin, stamp the letters "FC" ($^{1}/_{8}$ inch tall (nominal) characters) on the flange adjacent to the throttle shaft, see Figure 6.

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.

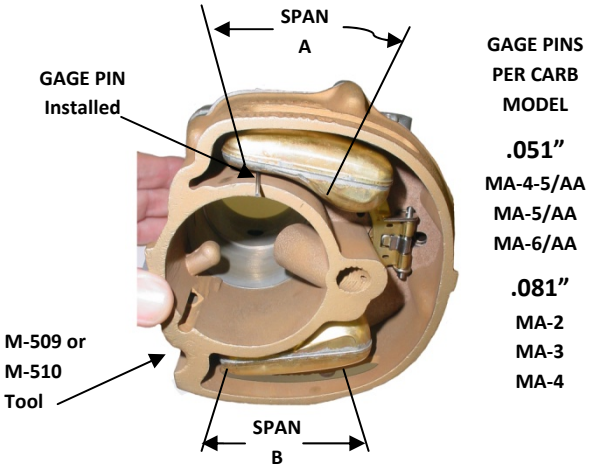
7. **Voiding of Warranty and Waiver of Liability**: An owner's/operator's failure to inspect and where necessary replace the float assembly in accordance with this bulletin, or operation of a carburetor which is non-compliant the clearance requirements set forth in this bulletin, or operation of a carburetor 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.

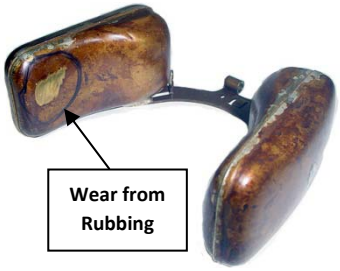
Floats with Rubbing Wear – FEB 2009
Fig. 1



Carb Orientation 1, Check Spans A & B
Fig. 2

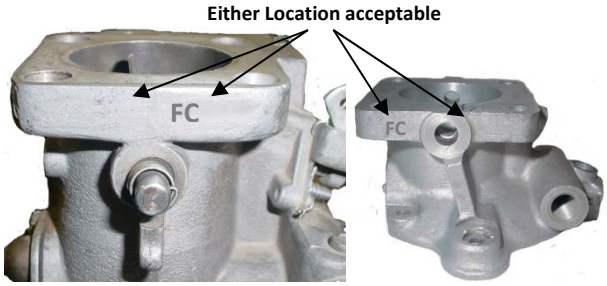


Carb Orientation 2, Check Spans A & B
Fig. 3



Example: Wear from Rubbing on Large MA Float
Fig. 4

Example: Wear from Rubbing on Small MA Float
Fig. 5



Conformance with this SB-4 ‘FC’ Stamp Locations
Fig. 6