



Marvel-Schebler[®] Aircraft Carburetors, LLC

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Service Bulletin: SB-15

Original Date: August 12th, 2010

SUBJECT – THROTTLE PLATE SCREW SECURITY

1. **Applicability:** MA-3[™], MA-4[™], MA-4-5[™], and HA-6[™] type 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”) that have had their throttle shaft and/or throttle valve (butterfly) retention screws replaced by AVStar Fuel Systems Inc.
2. **Reason:** Marvel-Schebler[®] is issuing this SB to make engine manufacturers, mechanics, over-haulers, owners, and operators, of Marvel-Schebler[®] Float Carburetors aware of a dangerous situation involving non-staked throttle valve retention screws.
3. **Background:** Marvel-Schebler[®] Float Carburetors overhauled by AVStar Fuel Systems, Inc., have been released to service with throttle valve retention screws that are not staked. If the non-staked screws come loose they can be ingested into the engine, causing complete or partial loss of engine power. Additionally, should the screws come out, an unsecured throttle valve (butterfly) can cause the throttle to jam, and/or the valve can be ingested into the engine, causing partial or complete loss of engine power and loss of throttle control. NOTE: The information presented in this bulletin is consistent with the FAA Approved Type Design.
4. **Description:** The approved procedure for securing the throttle plate retention screws requires staking the throttle valve SCREWS. Properly staking the screws will prevent the screws from backing out. Staking the shaft will not prevent a loose screw from backing out. Additionally, staking the shaft may lead to cracks in the shaft and/or a broken shaft,
5. **PROCEDURE:** Within the next 30 days after the original date of issue of this service bulletin or 10 hours of operation, whichever occurs first, if the carburetor has been serviced or overhauled by AVStar Fuel System Inc. and the throttle shaft and/or throttle valve securing screws have been replaced;

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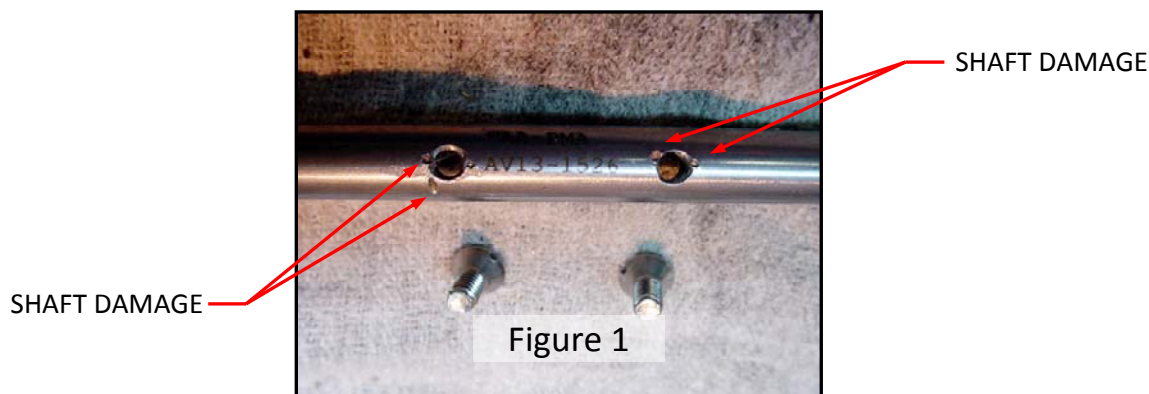
- a. Visually inspect the throttle shaft and the ends of the screws to ascertain that the screws are staked in accordance with this service bulletin and that the throttle shaft has not been staked.
- b. If a staked throttle shaft or one or more non-staked throttle valve retention screws are identified, remove the carburetor from service and replace it with a serviceable carburetor.

Note: In some cases, the ends of the screws can be seen with the carburetor installed on the engine after removing the air inlet box. However, if it cannot be positively determined that the screws are properly staked and that the throttle shaft is not staked with the carburetor mounted on the engine, remove the carburetor from the engine and perform the required inspection.

Figure 1 shows a throttle shaft and throttle valve retention screws. Staking marks can be seen in the shaft. The screws are not staked. The customer reported that the carburetor was received as part of a factory overhauled engine. It is not known if carburetors with non-staked throttle valve screws are reaching the market through other means of distribution. Figures 2 thru Figure 6 show correctly staked throttle valve retention screws. Note that the throttle shaft is not staked. The ends of the SCREWS must be upset sufficiently to prevent the screws from backing out through the shaft threads even if the screws lose torque in the shaft threads. Figure 7 shows an incorrectly staked assembly – The shaft is damaged.

6. **Voiding of Warranty and Waiver of Liability:** 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.

7. **Safety First:** Marvel-Schebler® 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.



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Figure 2

Preferred Method for MA-3™ Series Carburetors
Correct Tool: VM-109



Figure 3

Preferred Method for MA-3™ Series Carburetors
Correct Tool: VM-109

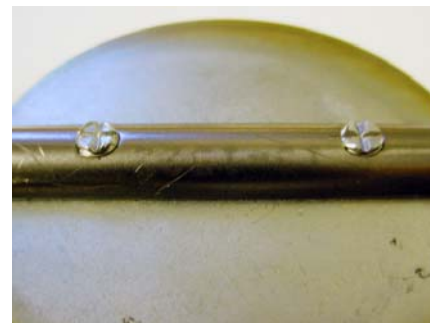


Figure 4

Preferred Method for MA-4™, MA-4-5™, and HA-6™ Series Carburetors
Correct Tool: VM-107



Figure 5

Preferred Method for MA-4™, MA-4-5™, and HA-6™ Series Carburetors
Correct Tool: VM-107



Figure 6

Correct Alternate Method
Only Screws Upset (No Shaft Damage)
Tool: Standard Center Punch

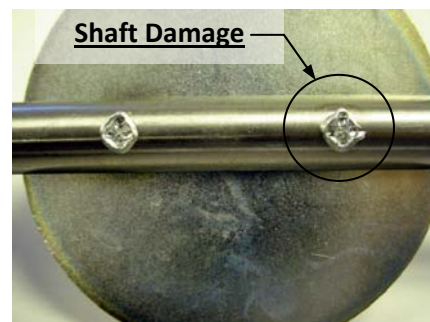
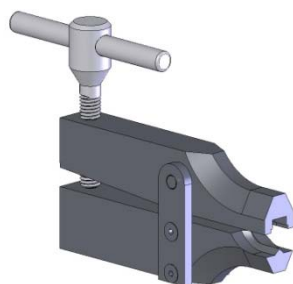
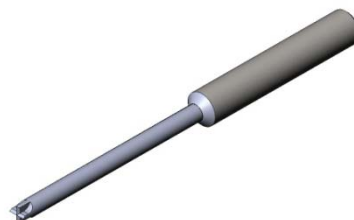


Figure 7

Incorrect Method
Shaft Damaged
Tool: Standard Center Punch



VM-109
Clinching Tool



VM-107
Peening Tool



Standard Center Punch