



Power Systems

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Service Letter

Letter No. 036

Issue Date: Sept. 1, 2009

MIXTURE CONTROL STOP WEAR HA-6 TYPE CARBURETORS

INTRODUCTION:

Volare' Carburetors, LLC (formerly Precision Airmotive/ Facet/ Marvel Schebler/ Borg Warner) issued Service Bulletin SB-6 on June 17, 2009, the subject of which is "Mixture Control Stop Wear, HA-6 Type Carburetors" regarding the inspection and examination thereof. The service bulletin lists several conditions where older designs contribute to severe wear of the mixture control stop. The Volare' Service Bulletin continues to describe in detail the exact condition. However, in units overhauled/repared by Kelly Aerospace Power Systems, the mixture control retaining plate/screw assembly is replaced with a new OE or serviceable part of the appropriate design and the stops examined for wear. If the stops have unacceptable wear, the appropriate action is taken to restore the control stops before the carburetor is considered overhauled. For this reason, ***the Volare' Service Bulletin SB-6 is not applicable to HA-6 carburetors overhauled/repared by KAPS at any time.*** However, should excessive mixture control stop wear be noted on any HA-6 carburetor, have the carburetor repaired or overhauled at KAPS or choose to comply with Volare' SB-6. Either action will result in an FAA approved repair or overhaul.

Kelly Aerospace Power Systems desires that Volare's service bulletin SB-6 be complied with to enhance safety in those aircraft or rotorcraft that use any Precision Airmotive/ Facet/ Marvel Schebler/ Borg Warner HA-6 type carburetor if the service history shows that the carburetor incorporates the ***antecedent*** Mixture Control Assembly design or if extreme mixture control stop wear exists.

This service letter is intended to reduce confusion for customers utilizing KAPS overhauled HA-6 carburetors. If you have an HA-6 type carburetor with a clear history of overhaul/repair by Kelly Aerospace Power Systems and wear at the mixture control stop is acceptable, no action need be taken regarding Volare's Service Bulletin SB-6. (*Acceptable stop wear is defined in Volare' SB-6.*)

COMPLIANCE:

Upon receipt, determine applicability. ***Compliance with this Service Letter for KAPS overhauled carburetors, renders Volare' Service Bulletin SB-6 not applicable.*** All others, compliance per Volare' SB-6.

EFFECTIVITY:

All HA-6 type carburetors overhauled/repared at any time by Kelly Aerospace Power Systems.

All questions, information, or requests pertaining to flight safety service bulletin SB-6 must be forwarded to Volare' Carburetors, LLC, Product Support Dept. (336) 449-5054.

Questions regarding this service letter? Contact KAPS Customer Service at (334) 286-8551.

PROCEDURE:

CAUTION:

The removal of an airworthy part from a complete installation without symptom or cause may present a hazard to owners, operators, and property. Beyond normal maintenance, NEVER open or disturb the carburetor without documented cause.

NOTE:

Any repair or overhaul activity may be accomplished using Kelly Aerospace Power Systems FAA/PMA approved components and spare parts. All KAPS FAA/PMA approved parts are interchangeable with Precision Airmotive/ Facet/ Marvel Schebler/ Borg Warner original parts.

1. Observe Volare' Carburetors SB-6 in its entirety and determine if you are affected, the appropriate compliance time, and what may be your course of action. *(Noted as Attachment A of this service letter.)*
2. Examine the aircraft or engine logbook entries or other aircraft documentation to ascertain whether your carburetor has been overhauled by KAPS. If positive identification is made and the mixture control stops shows only acceptable wear, it is advisable to make an appropriate logbook entry stating that "Volare' Carburetors, LLC Service Bulletin SB-6 is not applicable, refer to Kelly Service Letter 036. *(Acceptable stop wear is defined in Volare" SB-6.)*
3. If positive identification can not be made, comply with the intent of Volare' Carburetors Service Bulletin SB-6 by following the instructions therein. Assure a proper logbook entry of compliance is made per the instructions in the Volare' Service Bulletin.

For reference, please see the Volare' Carburetors, LLC Service Bulletin SB-6 included as "Attachment A" to this service letter. Additional information on this subject may be found in the latest revision of Lycoming Service Instruction No. 1370. ***For information concerning the use of KAPS FAA/PMA parts refer to KAPS Service Letter 028 and FAA SAIB NE-08-40 dated Aug. 8, 2008.***

WARRANTY STATEMENT:

There is no warranty associated with this Service Letter. This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on any model carburetor, fuel system, engine, or aircraft. ***The proper use of FAA/PMA approved airworthy parts in no way constitutes a total waiver of liability for any party.*** All parties retain liability, including product liability to the extent of their responsibilities under applicable law.

CONTACT INFORMATION:

If you have any questions concerning this service information letter, please contact Kelly Aerospace Power Systems Technical Support at 888-461-6077. Or write:

**Kelly Aerospace Product Support
1404 East South Blvd.
Montgomery, AL 36116, USA**

ATTACHMENT A (SL 036)



Volare' Carburetors, LLC

125 Piedmont Avenue
Gibsonville, N.C. 27249, USA

Service Bulletin: SB-6

Revision: Original
Date: June 17th, 2009

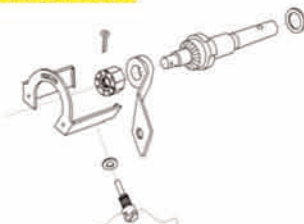
SUBJECT – MIXTURE CONTROL STOP WEAR – HA-6 TYPE CARBURETORS.

1. **Applicability:** *HA-6 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”) having more than 500 hours time in service since new or since installation of a new carburetor body.*
2. **Reason:** Warning: Failure to follow this advice may result in engine malfunction, damage, injury or death. Excessive wear of the mixture control stop can result in malfunction of the mixture control valve and can cause partial or complete loss of engine power.
3. **Compliance:** For carburetors having more than 500 hours time in service since new or since the installation of a new carburetor body: WITHIN 100 HOURS OF OPERATION OR 120 DAYS after the date of this Service Bulletin, whichever comes first, perform the inspections and corrective actions, if required, described in paragraph 4 of this Service Bulletin. Repeat the inspections and perform the corrective actions, if required, described in paragraph 4 every 500 hours of operation after the initial inspection.
4. **Instructions:** Perform all work on the aircraft in accordance with approved procedures and the instructions contained in this service bulletin.
 - a. Turn off the magnetos. Turn off fuel to the engine. Access the carburetor’s mixture control lever.
 - b. NOTE: Figures 1, 2, and 3 illustrate the history of mixture valve design. In addition to complying with this service bulletin’s inspection and corrective actions instructions, carburetors of antecedent design not currently in compliance with Volare/Marvel Schebler Service Bulletin A1-78 must be brought into compliance with that service bulletin prior to return to service.



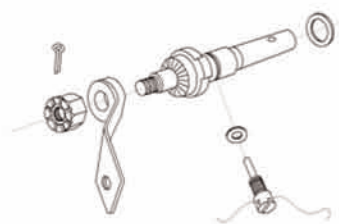
CURRENT DESIGN Retaining Plate
with two screws

FIGURE 1



SUPERCEDED DESIGN Retaining
CLIP with one screw
Bulletin A1-78 Compliant

FIGURE 2



ANTECEDENT DESIGN REQUIRES upgrade
to Fig 1 or Fig 2 design

FIGURE 3

ATTACHMENT A (SL 036)

- c. Examine the mixture valve stops for wear in the areas shown in Figures 4 & 5. The maximum permissible wear depth is .046 inch.

Check for wear on BODY stops
EACH Side, not to exceed .046" deep

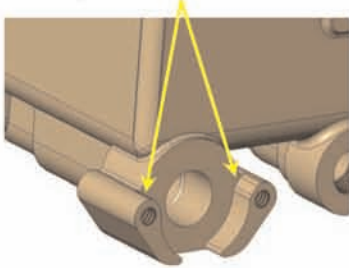


FIGURE 4

Current & earlier fuel mixture stop
designs showing excessive wear examples

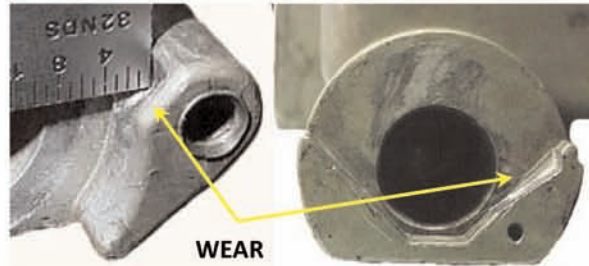


FIGURE 5

- c. **Warning: Take adequate precautions to prevent fire when draining fuel.** If it is necessary to remove the mixture control valve to accurately assess the extent of wear, remove the bowl drain plug and drain the fuel from the bowl.
- d. Note: It may be necessary to remove the mixture control linkage from the carburetor in order to remove the mixture valve assembly. Current Design: (refer to Figure 1) Remove the two screws securing the valve retainer. Remove the valve assembly. Earlier Designs: (refer to Figures 2 or 3 as applicable) Remove the screw and washer securing the valve. Remove the clip (if installed) and the valve assembly.
- e. Use a depth indicator, scale or other suitable measuring device to determine the depth of the wear, if any, of the stops. If the wear exceeds .046 inch below the 'original outline' of the part as shown in Figure 6, the carburetor must be submitted to Volare for repair, as in Figure 7.

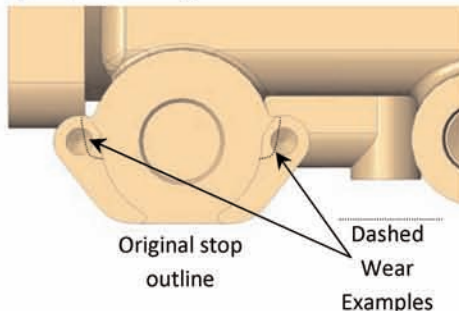


FIGURE 6

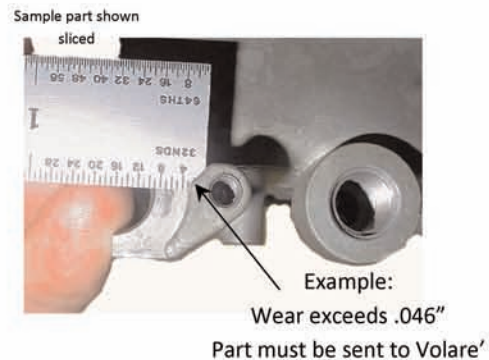


FIGURE 7

- f. If the wear is less than .046 inch deep: Inspect the valve parts and retainer for suitability for return to service. DO NOT reinstall an antecedent mixture valve retention system without the clip, screw and washer called out in Marvel Schebler Service Bulletin A1-78. Carburetors having earlier mixture valve retention systems may be sent to Volare for up-grade to the current configuration. Replace any unserviceable parts. Replace the o-ring on the mixture control shaft with a new o-ring, Volare part number 44-221. Lubricate the valve and o-ring with motor oil. Install the valve, taking care not to damage the o-ring. Install new lock tab washers, Volare part number 78A-111. Install the screws, part number 15-B109, tighten to 10

SB-6_O

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2 of 3

ATTACHMENT A (SL 036)

- 12 inch pounds. For the earlier designs, lubricate the tip of the special screw, part number 15-B395 with silicone grease. Install the clip, part number 55-A239, special screw 15-B395 and washer, part number 15-A292, tighten screw to 10 – 12 inch pounds. Check the valve for freedom of rotation. The shaft must move smoothly from stop to stop. To secure the screw(s), bend the washer tabs or safety-wire, dependent on configuration.
- g. Reinstall the bowl drain plug. For bowl plugs having tapered threads: Thread the bowl drain plug one to two turns into the bowl. Apply Regular Grade Never Seize™ NSBT4, to the exposed threads of the plug. For plug part number 90-34 (allen head, socket, NPT type) required torque is 25 to 30 inch pounds. For plug part number 99-8 (drilled hex head, NPT type) required torque is 50 to 60 inch pounds. For drilled head, straight thread plug, part number 99-45, install seal washer 16-B322 and tighten the plug to 90 to 100 inch pounds torque. Secure drilled plugs with safety-wire.
 - h. Connect and safety the mixture control linkage, if removed. Check the mixture control linkage for proper operation and proper adjustment in accordance with approved maintenance procedures.
 - i. Turn the fuel on. Check the carburetor for leaks. Install parts and cowling as necessary. Perform a ground run-up and operational check of the engine, carburetor mixture control and any other systems disturbed. After engine shut down, re-inspect the carburetor for leaks.
 - j. Memorialize compliance with this service bulletin and describe the wear state of the stop bosses in the aircraft maintenance record.
5. **Voiding of Warranty and Waiver of Liability:** An owner's/operator's failure to inspect and where necessary replace or repair a carburetor body in accordance with this bulletin, or operation of a carburetor which is non-compliant with the maximum wear limitations 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 aviation carburetor.
6. **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 excessively worn mixture control stop bosses and strongly encourages owners to comply with this Service Bulletin.