

## **INSPECTION OF CARBURETOR THROTTLE VALVE PLATE SCREWS**

### **INTRODUCTION:**

It has come to the attention of Kelly Aerospace Power Systems that the two screws that secure the throttle valve plate to the throttle valve shaft may not be of proper length (short). The subject screw KAPS part number CF15-A23, has been sold as individual parts, in KAPS Carburetor Quick Kits, in KAPS Throttle Shaft Kits, and may have been installed in certain carburetors overhauled by Kelly Aerospace Power Systems. The screw length is important in that it must extend beyond the throttle shaft so that they may be "staked" to secure them. Left uncorrected, the two screws that attach the throttle plate may back out. The shortened length will not allow proper compliance with Precision's current overhaul manual.

This Service Bulletin is being issued to mandate the inspection for, and replacement of, short throttle valve plate attachment screws KAPS P/N CF15-A23.

### **COMPLIANCE:**

At the next regularly scheduled maintenance event or annual inspection but not to exceed the next one hundred (100) hours time in service, the first to occur.

### **EFFECTIVITY:**

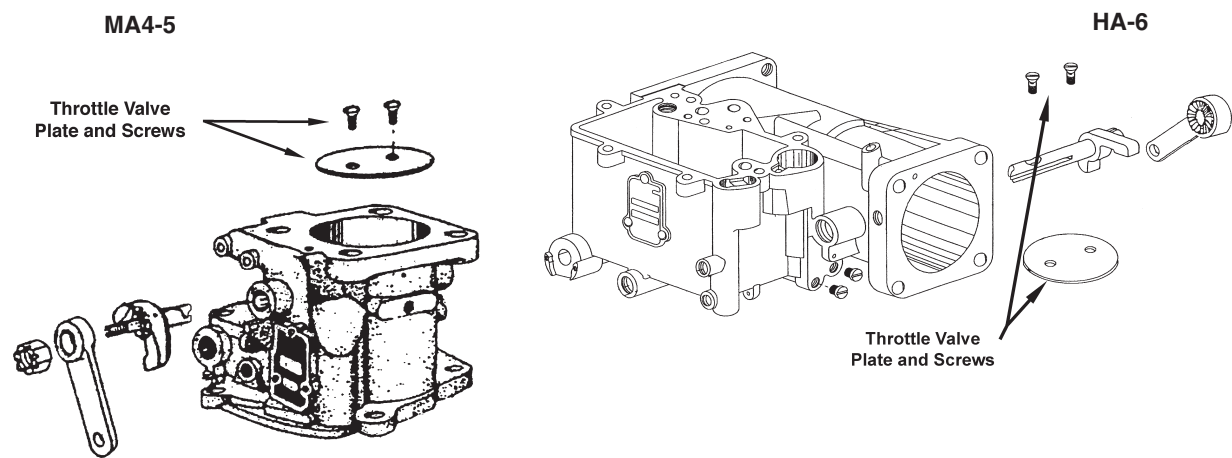
Any aircraft utilizing: **1.)** KAPS overhauled MA4-5 or HA-6 carburetor per the suspect serial number in the table on the next page, **2.)** Throttle Shaft Kit P/N CF778-1008, or Carburetor Quick Kit P/N CF286 (-05 through -11), as sold between September 29, 2006 and Jan. 29, 2008. or **3.)** Incorporated CF15-A23 screw(s) into a throttle valve plate sold between September 29, 2006 and Jan. 29, 2008. *Spare part (on shelf) affectivity for the Carburetor Quick Kit or individual screw may be verified by confirming the proper length of the P/N CF15-A23 screw(s) as indicated in the Disposition of Stock section page 6 Fig. 7.*

### **NOTE:**

The serial numbers listed in the Suspect Carburetor Serial Number Table on the next page are for carburetors overhauled at KAPS using affected spare parts. They are not inclusive of carburetors overhauled in the field using KAPS Carburetor Quick Kits or individual CF15-A23 screws.

**Suspect Carburetor Serial Number  
(Model MA4-5 & HA-6)**

2-21-2540	75027805	BD-0-850	CL-0-173	CP-4-2570	DO-10-801	G-54-10759	K-7B-1041
3909602	75033602	BD-0-915	CL-0-234	CP-4-2743	DV-0-131	G-54-15104	K-7B-1207
3950435	75037410	BD-0-1298	CL-0-393	CP-5-3606	DV-0-148	G-55-11988	K-10-3982
3970193	75043319	BD-0-1736-R	CL-0-671	CP-5-4036	DV-0-179	G-55-12393	K-10-4013
3987108	75046721	BD-1-2164	CL-0-763	CP-5-4140	DV-1-1016	GL-0-739	K-10-4231
3990188	75066808	BD-1-2683	CL-0-918	CP-8-4175	DV-1-1046	H-17-2275	K-10-4411
3997894	75070602	BD-1-2787	CL-0-1059	CQ-1-100	DV-1-1187	H-17-2384	K-10-5352
3998656	75071825	BD-1-2920	CL-0-1165	CQ-2-159	DV-2-1264	H-11-4578	K-10-5509
4000857-R	75083723	BD-9-3188	CL-0-1587	CQ-3-215	DV-2-1322	H-11-4668	K-10-5596
4001219	75097608	BD-15-4551	CO-0-697	CQ-3-292	DV-2-1432	H-11-5661	K-25-64449
4001702	75100006	BD-15-4825	CO-0-919	CU-0-143	DV-2-1439	H-11-6513	K-27-6586
4002347	75110324	BD-15-4693	CO-0-995	DA-0-142	DV-3-2086	H-17-1311	K-28-6664
4002775	75115608	BD-16-5115	CO-0-1930	DA-0-169	EA-3-254	H-17-1716	K-41-7286
4002925	75120611	BD-17-5204	CO-0-2093	DE-0-119	G-5-9688	H-17-2178	K-41-7463
4006295	75123103	BD-23-6258	CO-0-2384	DE-2-447	G-6-1950	F-01-8103	K-42-7586
4009694	75135909	BD-23-6617	CO-3-2774	DE-4-1082	G-6-1969	H-17-2217	K-42-7786
4011811	75137310	BD-23-7201	CO-4-2903	DF-1-661	G-12-553	H-17-2320	K-42-8055
4011820	75392006	BD-24-8080	CO-4-2955	DG-0-458	G-12B-1779	H-17-2384	K-45-8357
4023318	75458706	BD-24-8201	CO-4-3131	DH-0-120	G-18-2887	H-17-2421	K-45-8466
4025807	75857112	BD-29-10012	CO-4-3463	DH-0-147	G-21-3374	H-19-2887	MA2985
4025971	75895812	BU-5-548	CO-4-3517	DL-0-539	G-28-3523	H-19-3351	O-38-4881
4026192	75991912	BU-15-1495	CO-4-3518	DL-0-155	G-32-4377	H-36-656	PAC-72-4909
75000403	A-27-8703	BU-15-1534	CO-4-3236	DL-0-879	G-34-4517	I- 27-8801	PAC-32-5410
75000404	AO-5-8702	BU-15-1677	CO-5-3760	DL-0-903	G-37-5933	K-0-58703	R-5-1690
75000405	AO-8-2374	BZ-2-782	CO-5-3835	DL-3-1071	G-44-6223	K-3-2227	R-5-2071
75004013	AO-15-2937	BZ-13-1639	CP-1-728	DL-4-1328	G-44-6279	K-3-2335	R-7-4056
75006716	AO-22-3707	BZ-19-3082	CP-1-990	DL-10-1619	G-49-1213	K-3-2989	R-9-4834
75009308	AO-38-5509	C-04-3012	CP-1-1437	DO-2-127	G-49-7436	K-3-3653	R-9-5593
75013204	AO-38-5532	C-34-4524	CP-1-1465	DO-2-201	G-50-7688	K-3-3830	RD-0-363
75015315	B-22-8805	C-51-9537	CP-1-9801	DO-4-210	G-50-8743	K-6-207	W-5-391
75017907	BD-0-675	CH-9-1503	CP-4-2179	DO-5-24G	G-51-1067	K-7B-839	W-5-325
75025402	BD-0-734	CH-9-1352	CP-4-2336	DO-5-229	G-51-9178	K-7B-975	



**PROCEDURE:**

**Figure 1 - Typical Carburetor Illustration**

**CAUTION:**

Do not depend on this Service Bulletin for gaining access to the aircraft or engine. This will require that you use the applicable manufacturers maintenance manuals or service instructions. In addition, any preflight or in flight operational checks require use of the appropriate AFM or POH.

**CAUTION:**

Any repair or overhaul work including that in this service bulletin on MA4-5 or HA-6 carburetors must be performed accordance with Precision Aircraft Carburetor Service Manual FSMOH2 (for the MA4-5) or FSMOH4 (for the HA-6) as applicable.

**NOTE:**

The visual inspection procedure may be performed by a competent and qualified A & P mechanic, or repairman experienced in maintenance of the MA4-5 or HA-6 carburetors.

This procedure has two steps. First, the visual inspection to determine if the MA4-5 or HA-6 carburetors have proper length and staking of the throttle valve plate retaining screws. Second, the instructions to remove and repair, or forward for repair, the MA4-5 or HA-6 carburetors affected. *See caution above. See Suspect Serial Number Table on page 2 for serial numbers affected.*

**VISUAL INSPECTION: (per Effectivity)**

1. Determine if your aircraft is affected. This will require that you identify the carburetor serial number per the table on page 2. You **are affected** if a carburetor has been overhauled or repaired using a KAPS Carburetor Quick Kit P/N CF286 (-05 through -11), CF778-1008 Throttle Shaft Kit or have incorporated CF15-A23 screw(s) into a throttle valve plate as sold between September 29, 2006 and Jan. 29, 2008. Logbook verification is acceptable only if an overhaul was recorded properly for the time frame above or if an affected serial number is recorded. *Refer to Fig 1 for typical MA4-5 or HA-6 carburetor illustration.*
2. Gain access to the carburetor by removing cowling, ducts as required. Utilize the aircraft and engine manufacturers service manuals or instructions as applicable to your model aircraft.
3. Using an appropriate light source and magnification, examine the throat of the carburetor and the throttle valve. Open throttle to full power so that the throttle valve plate will be fully open. Visually inspect the bottom side of the throttle valve shaft to determine if the two screws are protruding and each staked with a minimum of 3 peen marks at the end of the screw. See Figure 2 page 4.

## VISUAL INSPECTION: (Cont'd)

4. If the determination is that the screws **are** protruding and staked properly, proceed to step 9 on page 6.
5. If the determination is that the screws **are not** protruding and staked properly, proceed to "Carburetor Repair" section below.

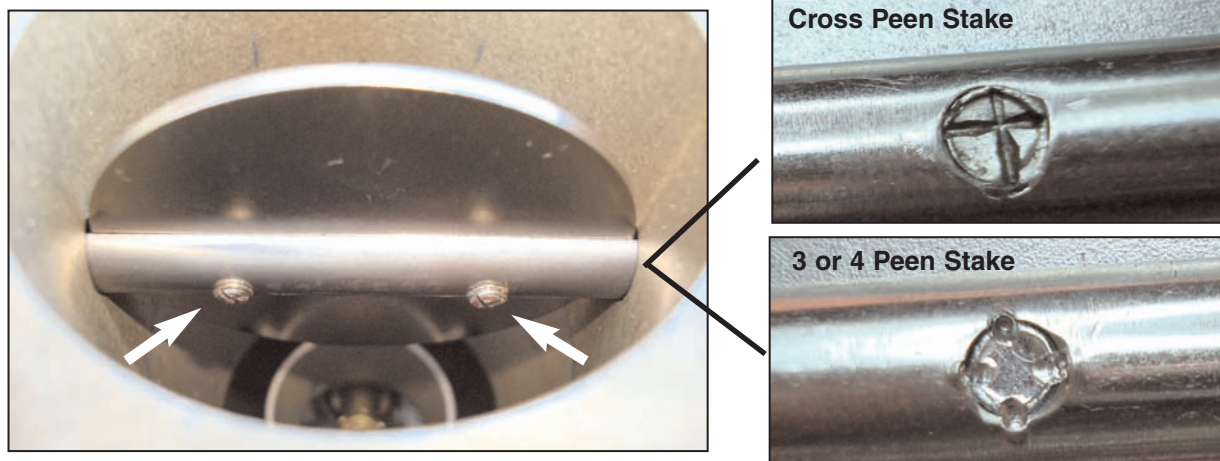


Figure 2 - Throttle Plate Screw Protrusion & Stake

## CARBURETOR REPAIR:

### WARNING:

Take all precautions when removing, repairing, and installing the aircraft engine carburetor. Aviation fuel may be uncontained or spilled creating noxious vapors and a potential fire hazard. This may result in injury to personnel and damage to equipment.

### CAUTION:

All repair or overhaul work must be performed in accordance with Precision Aircraft Carburetor Service Manual FSMOH2 (for the MA4-5) or FSMOH4 (for the HA-6) as applicable as well as these instructions. Any other or further repair of the carburetors (MA4-5 or HA-6) must be performed by qualified personnel at a properly certificated part 145 repair station experienced with these specific carburetors.

### NOTE:

Any and all carburetor repair work must be performed in accordance with the applicable aircraft, engine or STC holders maintenance manual or instructions. (latest revision)

1. With the engine cowl already removed for access, preparation should be made to repair the carburetor. Special tools should be obtained in compliance with the applicable Precision Aircraft Carburetor Service Manual.
2. Carburetor's that fail the visual inspection above must be repaired. The repair consists of replacing and staking the carburetor throttle valve plate retaining screws. This repair may be done in normal field service or sent to a properly certificated part 145 repair station equipped to work on these specific carburetors.
3. Remove the carburetor per the applicable engine manufacturers service or maintenance manuals. When removing the carburetor make sure engine is cold. Take care to limit fuel spillage. Drain residual fuel from the carburetor bowl by removing the drain plug. Cap all fuel lines and cover openings. Observe and record the idle setting and position of any carburetor control linkages. **Be careful handling the empty carburetor as the internal workings are delicate.**

## CARBURETOR REPAIR: (Cont'd)

4. If a field repair is desired, place the carburetor on a suitable work table. Close throttle valve and remove the two suspect screws and discard. Examine the shaft and thread for condition without moving the throttle valve from closed position. Clean throttle shaft threads if required.
5. Prepare to install two CF15-A23 screws by applying a small amount of Loctite 271 on the screw threads. Tap the closed throttle valve plate lightly to seat it in the bore. (It may be necessary to back out the idle speed adjusting screw to allow fully closed valve.) Install the screws and torque each 10 to 15 inch-lbs.
6. With the throttle valve closed, place Precision M100 arbor tool (see Fig. 3) in the throat (inlet) of the carburetor. Place the carburetor with the arbor down on the table so the bottom of the throttle valve shaft is showing. (See Fig. 5). Make sure the arbor is properly aligned with the shaft and using Precision M107 peening tool (see Fig. 4), stake each screw with a light tap. **DO NOT DAMAGE THE VENTURI OR SHAFT DURING THIS OPERATION.** Each screw must have three to four peening marks at the edge of the exposed screw threads. *Do not over peen.* Fig. 6 shows an illustration from the Precision service manual showing the bowl removed. **Do not attempt this method in the field,** it is recommended to be done only at a properly certificated 145 repair station.



Figure 3 - Precision M100  
Throttle Valve Arbor Tool



Figure 4 - Precision M107  
Throttle Valve Screw Peening Tool

7. Remove all caps and protective covers. Install and safety wire carburetor bowl drain plug. **Be careful handling the empty carburetor as the internal workings are delicate.**

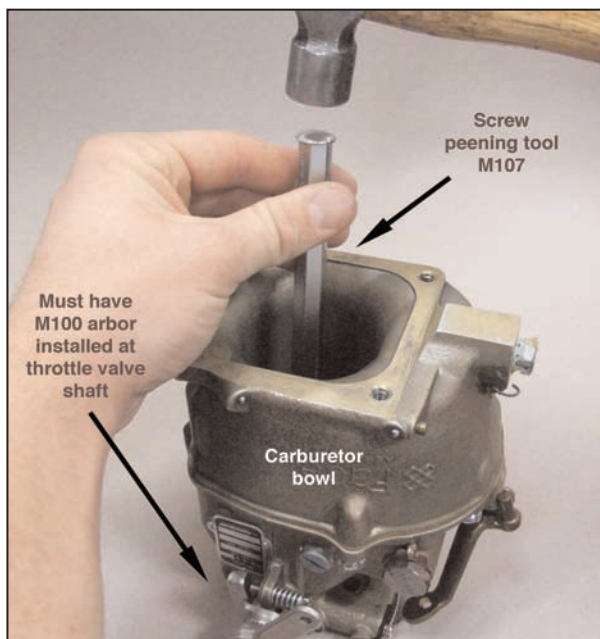


Figure 5 - Staking Carburetor Throttle Valve  
Plate Screws (Field Repair)

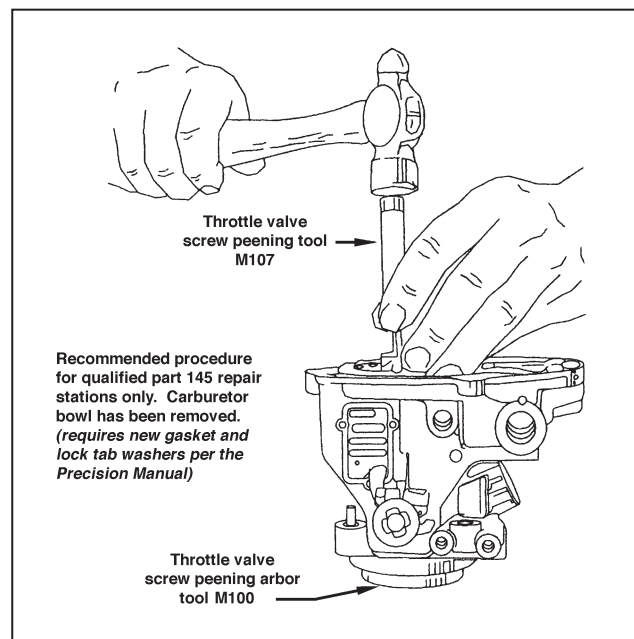


Figure 6 - Staking Carburetor Throttle Valve  
Plate Screws (145 Repair Station Only)

## CARBURETOR REPAIR: (Cont'd)

- Utilizing the applicable aircraft and/or engine manufacturers maintenance manuals or service instructions, re-install the repaired carburetor assembly. Connect all lines and linkages. Check and adjust as required all linkages to the carburetor. Perform an inspection to check for security and leaks at the fittings.
- Clean the carburetor induction duct to avoid contamination of the air inlet. Connect the inlet air ducts or hoses per the applicable aircraft and/or engine manufacturers maintenance manuals or service instructions. Check carburetor performance.

## RETURN TO SERVICE:

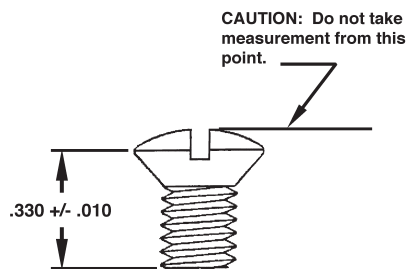
- With the carburetor assembly repaired or replaced, the aircraft may now be prepared for return to service.
- Utilizing the applicable aircraft and engine manufacturers maintenance manuals, perform an appropriate engine performance run-up.
- Utilizing the applicable aircraft and engine manufacturers maintenance manuals, install any portion of the aircraft removed to gain access.
- Upon successful completion of this service bulletin, make an appropriate log book entry of compliance.

## PARTS REQUIRED:

Up to two (2) each per carburetor, part number CF15-A23 as required. Confirm that new CF15-A23 or 15-A23 screws are in compliance with Figure 7 below. *If incidental parts are required in relation to this service bulletin for the aircraft, engine or carburetor, they must be obtained from the applicable manufacturer.*

## DISPOSITION OF STOCK:

Any carburetor throttle valve screw, part number CF15-A23, Throttle Shaft Kit P/N CF778-1008, Carburetor Quick Kit P/N CF286 (-05 through -11) which have been purchased from Kelly Aerospace Power Systems with a procurement date between September 29, 2006 and Jan. 29, 2008 and remains in unused stock, may be returned for replacement. If desired prior to return of any stock, screws may be measured per the dimensions shown in Fig. 7 using suitable measuring tools.



**Figure 7 - KAPS P/N CF15-A23  
Proper Screw Dimension**

**WARRANTY STATEMENT:**

Overhauled carburetors may be returned for repair directly to Kelly Aerospace Power Systems upon validation of warranty per the overhaul Limited Warranty Policy included with each carburetor. *See terms and conditions.*

Upon validation of spare parts warranty, or upon verification that the part was purchased from Kelly Aerospace Power Systems in the affected time frame, two (2) each carburetor screw, part number CF15-A23 will be allowed. No labor allowance is applicable. This offer is valid for six (6) months from the date of this service bulletin.

The sole warranty applicable to this service publication is related to the terms and conditions in the Kelly Aerospace Power Systems Limited Warranty Policy related to overhauled components or spare parts. This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on the carburetor, engine, or aircraft nor does it imply any responsibility for economic or consequential loss.

**CONTACT INFORMATION:**

If you have any questions concerning the instructions in this service bulletin, please contact Kelly Aerospace Power Systems Technical Support at 888-461-6077.

*Questions concerning aircraft, rotorcraft, or engine service or operation must be forwarded to the applicable manufacturer of that product.*