



VSP - 149  
DATE: December 16, 2002 (M)

## VENDOR SERVICE PUBLICATION

**TO:** All affected owners/operators

**SUBJECT:** Distribution of: **Kelly Aerospace Service Bulletin No. A-107A**

### **MODELS AFFECTED:**

### **SERIAL NUMBERS**

PA-23-250 Aztec	27-3584 through 27-8154030
PA-30 Twin Comanche	30-402 through 30-2000
PA-31-Navajo	31-5 through 31-8312019
PA-31-300 Navajo	
PA-31-325 Navajo C/R	
PA-31-350 Chieftain	31-5001 through 31-8452021
PA-31-350 T-1020	31-8253001 through 31-8553002
PA-31P-Pressurized Navajo	31P-3 through 31P-7730012
PA-31P-Pressurized Mojave	31P-8414001 through 31P-8414050
PA-31T Cheyenne II	31T-7400002 through 31T-8120104
PA-31T1 Cheyenne I	31T-7804001 through 31T-1104017
PA-31T3 T-1040	31T-8275001 through 31T-8475001
PA-34-200 Seneca	34-7250001 through 34-7450220
PA-34-200T Seneca II	34-7570001 through 34-8170092
PA-34-220T Seneca III	34-8133001 through 34-8633031; 3433001 through 3433172 and 3448001 through 3448037
PA-34-220T Seneca IV	3448038 through 3448079 and 3447001 through 3447029
PA-34-220T Seneca V	3449001 and Up
PA-39 Twin Comanche	39-1 through 39-155
PA-44-180 Seminole	44-7995001 through 44-8195026; 4495001 through 4495013 and 4496001 and Up
PA-44-180T Seminole	44-8107001 through 44-8207020

**COMPLIANCE TIME:** Within the next ten (10) hours of "combustion heater" operation.

**PURPOSE:** Kelly Aerospace, **Service Bulletin No. A-107A** incorporates modifications to the pressure test procedure. Recurrent inspection requirements are also added.

### **ACTION:**

1. Comply with **Kelly Aerospace Service Bulletin No. A-107A**.

ATA: 2140



## Power Systems

PO Box 273 • Fort Deposit, AL 36032  
(334) 227-8306 • (334) 227-8596 Fax  
<http://www.kellyaerospace.com>

# Service Bulletin

## Alert – Compliance Will Enhance Safety

Bulletin No. A-107A

Issue Date: September 6, 2002

Technical Content is FAA Approved

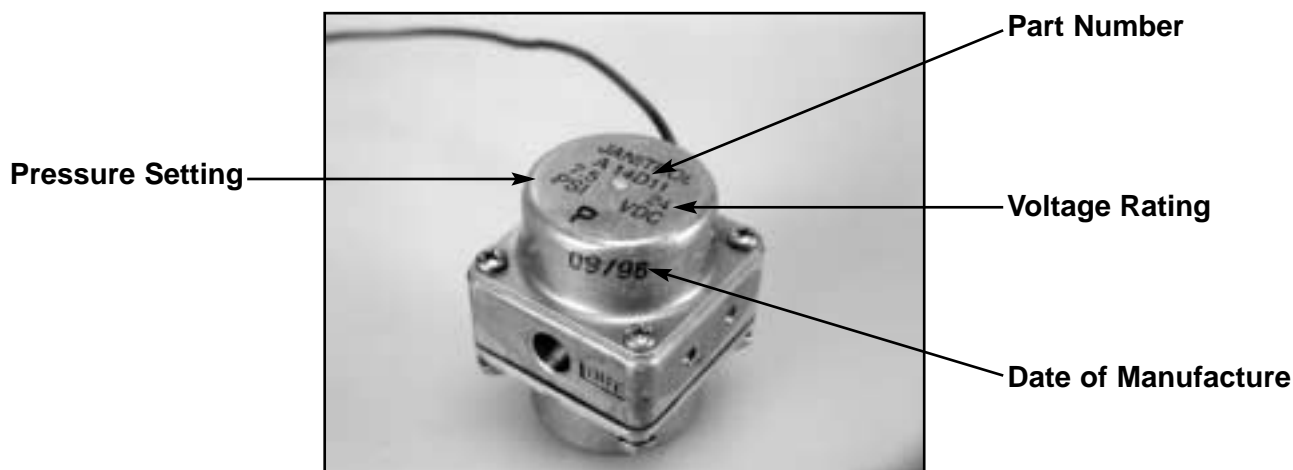
**SUBJECT:** Inspection of Fuel Regulator Shutoff Valve as Used With Kelly Aerospace Combustion Heaters, Models B1500-B4500

**REASON:** Fuel Leakage

<b><u>PART NUMBERS AFFECTED:</u></b>	<b><u>Part Number</u></b>	<b><u>Voltage</u></b>	<b><u>Pressure Setting</u></b>
	14D11	12 volt	7.5
	14D11	12 volt	12.0
	23D04	12 volt	7.5
	23D04	12 volt	12.0
	A14D11	24 volt	7.5
	A14D11	24 volt	12.0
	A23D04	24 volt	7.5
	A23D04	24 volt	12.0
	B14D11	12 volt	1.0
	B23D04	12 volt	1.0
	C14D11	24 volt	1.0
	C23D04	24 volt	1.0

**SUMMARY OF REVISION:** This revision of Kelly Aerospace Service Bulletin No A-107 incorporates modifications to the pressure test procedure described in Sections 3 and 4. Recurrent inspection requirements are added to Section 7. A dark highlight bar in the left-hand margin denotes change locations.

**COMPLIANCE:** Within the next 10 hours of operation, inspect the fuel pressure regulator and shut off valve for signs of fuel leakage as follows.

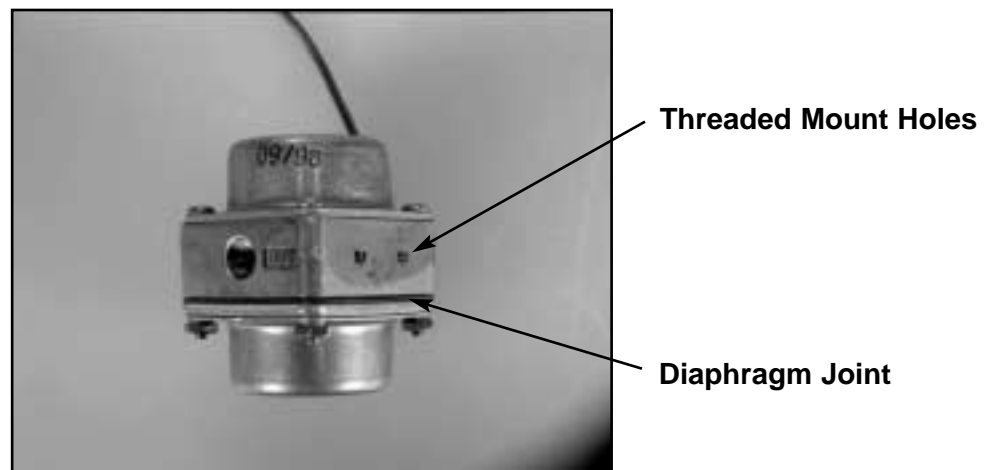


**Figure 1**

### **OVERVIEW:**

Kelly Aerospace part number 14D11 and 23D04 series fuel regulator and shutoff valves provide positive fuel shutoff and regulation of fuel inlet pressure to Kelly Aerospace model B1500-B4500 series combustion heaters as used on both piston powered and turbine powered business aircraft. These valves operate at inlet pressures of 4-50 psi depending upon installation and regulate fuel outlet pressure (inlet supply to the heater) to 1.0 psi, 7.5 psi, or 12 psi depending upon application. Each valve is identified with part number, pressure setting, voltage rating, and date of manufacture as shown in Figure 1.

Recent field reports have indicated the possibility of fuel seepage at either the diaphragm joint or threaded mount holes as shown in Figure 2. Within the next 10 hours of operation, inspect the pressure regulator shut off valve for signs of fuel leakage as follows.



**Figure 2**

### **INSTALLATION INSPECTION:**

- 1) Locate the pressure regulator shut off valve in the installation. Refer to the applicable aircraft maintenance manual for valve location, removal, and installation instructions.
- 2) Prior to removing the valve from the installation, visually inspect the installed valve for signs of fuel leakage as described below in Section 5. If signs of fuel leakage are found replace the valve in accordance with the instruction in Section 6.

### **PRESSURE TEST FOR LEAKAGE:**

- 3) If the valve was not replaced in the preceding step a bench pressure test must be conducted. Remove the valve from the installation exercising care to cap mating fuel lines and valve ports to prevent any leakage in the installation. **CAUTION, refer to aircraft maintenance manual for safety precautions when removing valve.**
- 4) Set up the valve on a test bench and pressure test for leakage as follows.
  - a. Using a suitable source of fluid pressure, configure the valve for pressure test using a No. 4 inlet line with a 0-60 psi gage installed in the fuel inlet line. Seal the outlet port by installing a suitable, 1/8-27 NPTF threaded plug. The outlet port will be pressurized to the same pressure level as the inlet port during this test.

- b. Using mineral spirits or JET-A as the test fluid, pressurize the inlet port of the regulator valve to 50 psi for 1 minute minimum with the solenoid energized. Carefully inspect the valve body for signs of fuel leakage giving careful attention to the diaphragm joint and the threaded mount holes as shown in Figure 2. **CAUTION - prior to test, exercise care to wipe valve body and fittings free of any residual fluid that may have contacted external surfaces of the valve during test setup.** Leakage may appear as a wetness or seepage at the diaphragm joint or threaded mount holes. Rotate the valve during pressure test as necessary to fully inspect all external surfaces.
- c. If signs of fuel leakage are found replace the valve using a new valve of appropriate part number with a manufacture date code of 02/02 or later. Record valve replacement and Service Bulletin compliance in the logbook.

#### **ALTERNATIVE VISUAL INSPECTION:**

**NOTE:** if appropriate equipment to perform the pressure test is not available, an alternative visual inspection may be performed as follows.

- 5) Visually inspect the valve body for signs of fuel stains, paying careful attention to the diaphragm joint and the threaded mounting holes located in sides of the valve body (see Figure 2). Fuel leakage in those applications using AVGAS may appear as a greenish blue stain or residue in the area of the diaphragm joint or threaded mount hole. Fuel leakage in those applications using JET-A fuel may appear as a wetness or oily residue at the diaphragm joint or threaded mount hole. Utilize supplemental lighting if needed to facilitate visual inspection. Visual inspection must include all four sides of the regulator valve body. If signs of fuel leakage are found replace the valve using a new valve of appropriate part number with a manufacture date code of 02/02 or later. Record valve replacement and Service Bulletin compliance in the logbook.

#### **POST INSPECTION:**

- 6) If no signs of fuel stains are found, mark the valve cover with date of inspection (month/year) using permanent ink and letters .12 - .25" high next to or below the date of manufacture. For example, a valve inspected in June 2002 should be marked 06/02. **CAUTION, re-install the valve in accordance with the applicable aircraft maintenance manual exercising care to follow safety precautions.** Record Service Bulletin compliance in the logbook.
- 7) Subsequent inspections should include a visual inspection of the regulator shut-off valve as described in Section 5 concurrent with any service or inspection activity performed on the heater assembly or every 100 hours of service or 24 months which ever occurs first. If signs of fuel leakage are found replace the valve in accordance with the instructions in Section 6. The regulator shut-off valve should be replaced at heater assembly TBO or heater assembly replacement.
- 8) Contact your local authorized distributor for replacement parts. The Kelly Aerospace Sales Office may be contacted at 877-359-5355 for identification of the nearest distributor.
- 9) Contact Kelly Aerospace Technical Department at 334-227-8306 for questions concerning this Service Bulletin.