

## **FUEL PUMP DIAPHRAGM & PLUNGER ASSEMBLY REPLACEMENT**

### **INTRODUCTION:**

It has come to the attention of Kelly Aerospace Power Systems that leakage has been observed on fuel pumps using diaphragm-plunger assemblies manufactured by Kelly Aerospace. This diaphragm assembly can be used in fuel pump models RG15980, RG17980 (Lear/Romec), 201F (Kelly Aerospace), and TCM series 638156, 638155, 630751 and 636898. Investigation has revealed that a manufacturing variation may allow for the diaphragm to leak under certain conditions. Parts affected by this condition were produced over a two year period from September of 2005 to July 25, 2007 and included fuel pump diaphragm-plunger assemblies installed in pumps overhauled by Kelly Aerospace and those sold as spare parts. Left uncorrected this condition may result in fuel leakage overboard reducing on board fuel availability and may also present a fire hazard due to the uncontained fuel.

This Service Bulletin is being issued to mandate the replacement of affected fuel pump diaphragm and plunger assemblies part number CFRB15985 manufactured and sold between September of 2005 to July 25, 2007 as identified on page 2.

### **COMPLIANCE:**

- a. Prior to next flight and each flight thereafter. Perform the visual inspection per the instructions below.
- b. 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. Continue the visual inspection per compliance time (a.) or replace the fuel pump diaphragm and plunger assembly.

### **AFFECTIVITY:**

Any aircraft utilizing a Lycoming or TCM engine with a Kelly Aerospace Power Systems overhauled model RG15980, RG17980, 201F, and TCM series 638156, 638155, 630751 and 636898 fuel pump **-or-** any model RG15980, RG17980, 201F, and TCM series 638156, 638155, 630751 and 636898 fuel pump in which a Kelly Aerospace Power Systems fuel pump diaphragm and plunger assembly (P/N CFRB15985) has been installed with procurement dates between September of 2005 to July 25, 2007. Refer to the overhauled fuel pump serial number verification table on the next page. *Spare part affectivity for fuel pump diaphragm and plunger assemblies is verified by confirming the purchase date of the part.*

### **NOTE:**

The fuel pump serial numbers listed in the Verification Table on the next page will not be the only pumps affected due to overhaul activity using affected spare parts. This includes Quick Kit part numbers CFK-15980 and CFK-17980. If your pump is not listed in the table, be sure a thorough check of the engine and/or airframe logbooks or other records are made to assure your pump is not affected.

**Fuel Pump Serial Number Verification  
(Crane Lear/Romec RG15980 & RG17980)**

B- 115	B-2661	B-5371	B-7267	B-9912	C-2031	C-3518	C-5527
B- 196	B-2706	B-5247	B-7571	B-9933	C-2156	C-3528	C-5677
B- 225	B-2888	B-5463	B-7600	C- 153	C-2171	C-3577	C-5694
B- 402	B-2900	B-5475	B-7621	C- 220	C-2176	C-3651	C-5706
B- 506	B-2920	B-5541	B-7729	C- 224	C-2200	C-3681	C-5710
B- 578	B-2951	B-5628	B-7757	C- 226	C-2204	C-3719	C-6022
B- 793	B-2968	B-5888	B-7826	C- 264	C-2226	C-3751	C-6144
B- 881	B-3009	B-5962	B-7858	C- 411	C-2232	C-3848	C-7998
B- 885	B-3050	B-5983	B-7924	C- 418	C-2246	C-3856	C-8426
B- 889	B-3080	B-5997	B-8071	C- 490	C-2248	C-3907	D-1237
B-1085	B-3126	B-6097	B-8195	C- 493	C-2300	C-3925	D-2465
B-1095	B-3281	B-6240	B-8361	C- 519	C-2309	C-3950	D-6120
B-1180	B-3334	B-6270	B-8442	C- 583	C-2403	C-3982	G- 161
B-1301	B-3343	B-6287	B-8449	C- 597	C-2435	C-3989	G- 896
B-1339	B-3524	B-6362	B-8460	C- 711	C-2478	C-4232	G-2356
B-1341	B-3630	B-6367	B-8505	C- 741	C-2488	C-4243	L-2008
B-1368	B-3854	B-6369	B-8560	C- 790	C-2623	C-4244	R-4757
B-1405	B-4011	B-6395	B-8589	C-1010	C-2630	C-4393	179
B-1455	B-4037	B-6452	B-8611	C-1093	C-2822	C-4431	3145
B-1578	B-4096	B-6569	B-8613	C-1338	C-2852	C-4432	3972434
B-1622	B-4153	B-6650	B-8618	C-1351	C-2869	C-4546	8743RL
B-1646	B-4164	B-6672	B-8629	C-1428	C-2942	C-4572	F-20589
B-1862	B-4184	B-6673	B-8672	C-1453	C-3001	C-4618	F-53470
B-1862	B-4341	B-6743	B-8685	C-1503	C-3030	C-4716	F-53812
B-1877	B-4425	B-6800	B-8750	C-1518	C-3041	C-4781	F-64670
B-1882	B-4583	B-6808	B-8894	C-1530	C-3071	C-4811	F-69116
B-1952	B-4683	B-6832	B-9093	C-1545	C-3194	C-4836	R-8148
B-2102	B-4867	B-6850	B-9360	C-1572	C-3253	C-4867	R-58293
B-2126	B-4901	B-6870	B-9381	C-1812	C-3316	C-4882	RS-7578
B-2184	B-4965	B-6999	B-9469	C-1860	C-3359	C-5051	RW1881
B-2202	B-5133	B-7102	B-9473	C-1895	C-3365	C-5241	SA-183
B-2333	B-5138	B-7108	B-9660	C-1906	C-3376	C-5349	X-101
B-2408	B-5197	B-7177	B-9849	C-1910	C-3406	C-5438	
B-2585	B-5205	B-7234	B-9892	C-2014	C-3496	C-5442	

**(KAPS 201F)**

IAN045FP	IAN049FP	IAN052FP	IEN013FP	IEN016FP	ILN007FP	JCN003FP	JCN008FP
IAN046FP	IAN050FP	IAN053FP	IEN014FP	IEN017FP	ILN008FP	JCN004FP	JEN001FP
IAN047FP	IAN051FP	IAN054FP	IEN015FP	IKN001FP	JCN002FP	JCN005FP	JLN001FP
IAN048FP							

## PROCEDURE:

### 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 inflight operational checks require use of the appropriate AFM or POH.

### NOTE:

The visual inspection procedure may be performed by a competent and qualified pilot familiar with the specific aircraft.

### NOTE:

Repair of fuel pump models RG15980, RG17980, 201F, and TCM series 638156, 638155, 630751 and 636898 must be performed at a qualified repair station equipped and suitable to work on these specific fuel pumps. All work must be performed in accordance with the applicable OEM's maintenance manual or service instructions.

This procedure has two steps. First, the visual inspection; the purpose is to determine if the fuel pump is free of any fuel leakage and may be suitable for operation under compliance time (b). Second, the instructions to remove and forward for repair, the fuel pump models affected. *See caution above. See Verification Table on page 2 for serial numbers affected.*

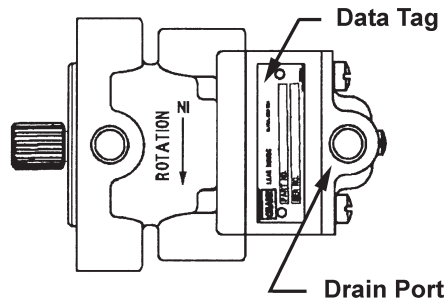
### VISUAL INSPECTION: *(per Affectivity)*

1. Determine if your aircraft is affected. This will require that you identify the fuel pump serial number per the table on page 2 or if the fuel pump has been overhauled between September of 2005 to July 25, 2007. Either method is acceptable but must be verified by either the fuel pump data tag or by logbook entry. *Refer to Fig 1 for typical fuel pump illustration.*
2. Locate the fuel pump overboard drain tube. This is a small 1/8" tube which extends into the airflow and is located beneath the engine cowling. Location varies with aircraft model. It may be alone or grouped together with several tubes.
3. Visually inspect the area around the tube and the belly of the aircraft or the bottom of the cowl on twin engine aircraft. Look for evidence of fuel staining (generally a blue/green stain).
4. If **any** fuel staining is found around the tube or trailing back onto the belly of the aircraft (or the bottom of the cowl on twin engine aircraft.), no further flight is permitted per compliance time (a). Proceed to fuel pump replacement on page 4.

### WARNING:

Prior to starting and running the engine, make sure that an appropriate testing area is selected and that all equipment, staff or other persons are clear of the propeller or rotors.

5. If **no** fuel staining is found, continue per compliance time (b) above. *NOTE: If the aircraft has recently been cleaned, run the engine to power or alternatively, place the mixture control in idle cutoff with throttle retarded and apply boost pump pressure. No fuel should be present or run from the drain tube. If there is no indication of fuel leakage, operation may continue per compliance time (b) above. Either or both methods of test may be performed and are acceptable.*



**Figure 1 - Typical Fuel Pump Illustration**

**FUEL PUMP REPLACEMENT:**

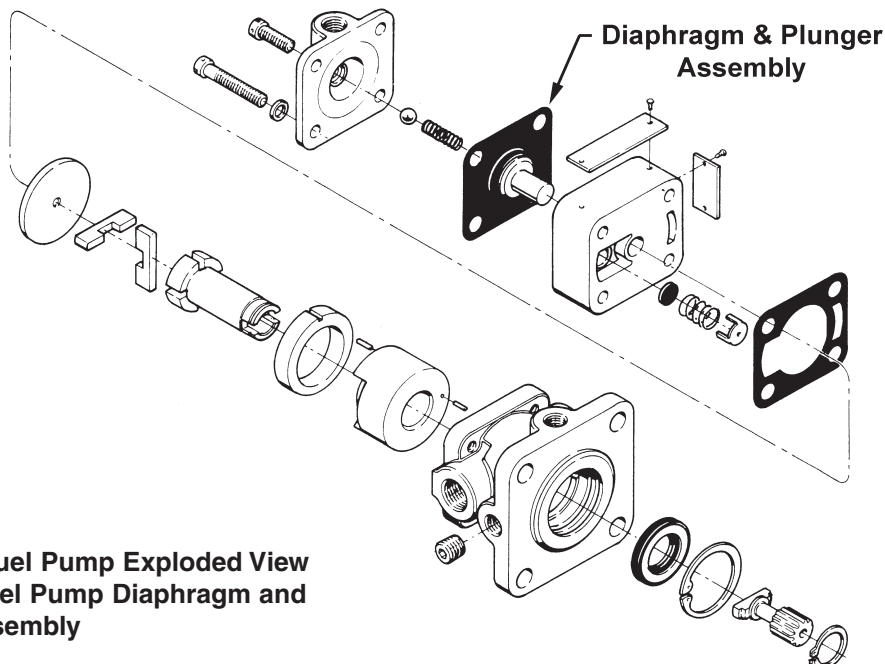
**WARNING:**

Prior to starting and running the engine, make sure that an appropriate testing area is selected and that all equipment, staff or other persons are clear of the propeller or rotors.

**NOTE:**

Any and all fuel pump repair work must be performed in accordance with the applicable OEM's maintenance manual.. Use Lear/Romec (Crane) Component Maintenance Manual for RG15980 Series and RG17980 series pumps. Use TCM maintenance manuals for series 638156, 638155, 630751 and 636898 pumps. *(always use latest revision)* For the 201F fuel pump, use Kelly Aerospace Overhaul Manual, Part Number 200201-0000 Rev. C May 22, 2007 (or latest revision).

1. Remove the engine cowl to gain access to the engine fuel pump. Utilizing the applicable aircraft and/or engine manufacturers maintenance manuals or service instructions.
2. The affected fuel pump models must be removed and repaired. The repair consists of replacing the fuel pump diaphragm and plunger assembly. (See Figure 2) This repair cannot be done in normal field service. Once the pump is removed, it must be sent to a qualified repair station equipped and suitable to work on these specific fuel pumps.



**Figure 2 - Fuel Pump Exploded View Showing Fuel Pump Diaphragm and Plunger Assembly**

## **FUEL PUMP REPLACEMENT: (cont'd)**

3. Utilizing the applicable aircraft and/or engine manufacturers maintenance manuals or service instructions, re-install the fuel pump assembly and connect all lines. Make sure that you clean the fuel pump drain line to avoid a false indication of a fuel leak on the new pump. Perform an inspection to check for security and leaks at the fittings. Check for fuel pump performance.

## **RETURN TO SERVICE:**

1. With the fuel pump assembly replaced, the aircraft may now be prepared for return to service.
2. Utilizing the applicable aircraft and engine manufacturers maintenance manuals, install any portion of the aircraft removed to gain access.
3. Upon successful completion of this service bulletin, make an appropriate log book entry of compliance.

## **PARTS REQUIRED:**

One (1) each per pump, Fuel Pump Diaphragm and Plunger assembly, part number CFRB15985 as required. *This part must be installed by a qualified repair station equipped and suitable to work on these specific fuel pumps.*

## **DISPOSITION OF STOCK:**

Any Fuel Pump Diaphragm and Plunger assembly, part number CFRB15985, Quick Kit part number CFK-15980, or Quick Kit part number CFK-17980 which have been purchased from Kelly Aerospace Power Systems with a procurement date between September of 2005 to July 25, 2007 and remains in stock may be returned for replacement.

## **WARRANTY STATEMENT:**

New pumps must be returned through a Kelly Aerospace Power System Authorized Distributor per the the Limited Warranty Policy included with each new part. *See terms and conditions.*

Upon validation of overhaul or spare parts warranty, or upon verification that the part was purchased from Kelly Aerospace Power Systems in the affected time frame, one (1) each Fuel Pump Diaphragm and Plunger assembly, part number CFRB15985 will be allowed. No labor allowance is applicable. This offer is valid August 28, 2007 and expires February 28, 2008.

The sole warranty applicable to this service publication is related to the terms and conditions in the aircraft or engine manufacturers Limited Warranty Policy. This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on the fuel pump, engine, or aircraft. All claims for warranty must be forwarded to the the airframe and/or engine manufacturer per the requirements contained in their Limited Warranty policies as applicable.

## **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.*