



**ZEE Systems, Inc.**

**SERVICE BULLETIN 67-R134**

1. PLANNING INFORMATION

A. Effectivity: British Aerospace Jetstream 3101 and 3201 aircraft with Zee Systems Air Conditioning equipment.

B. Reason: To modify the SZ67-002-1, SZ67-002-1A, SZ67-002-1B Evaporator Assembly to use CFC free R-134a refrigerant.

C. Description: This service bulletin gives instructions for converting the Evaporator Assembly P/N SZ67-002-1/-1A/-1B used on the Vapor Cycle Air Conditioning system from R-12 (Freon) to EPA approved R-134a refrigerant. This conversion consists of flushing the evaporator coil, minor parts replacement and recharging the system.

D. Compliance: Compliance is optional. Service bulletin 65-R134 and service bulletin R134-01 must be accomplished prior to installing this modified equipment back on the aircraft.

E. Approval: This service bulletin contains no modification data that changes the fit, form or function of the original design and therefore does not require any additional approvals.

F. Manpower: It is recommended it be performed when the components are exposed or removed from the aircraft during regularly scheduled maintenance of the air conditioning system. The time estimated for flushing the evaporator and the replacement of the components is 2.0 manhours. This estimate excludes the time required to discharge the system, expose or remove the evaporator assembly from the aircraft, replace the system to its normal operating configuration in the aircraft, service the system and perform normal leak detection and functional tests accomplished when returning the system to service on the aircraft.

No additional manhours are required to accomplish component replacement if done during overhaul.

G. Material Cost and Availability: Refer to paragraph 3 for a detailed listing of parts and materials required to accomplish the modification procedures outlined in this service bulletin. The required parts, materials, equipment and pricing is available from:

ZEE Systems, Inc  
127 Braniff Dr.  
SAN ANTONIO, TX 78216

1-800-988 COOL<sup>(2665)</sup>  
FAX 210-341-2609  
e-mail: [info@zeeco-zeesys.com](mailto:info@zeeco-zeesys.com)

Equipment and Tooling:

Flushing equipment	Commercially Available
Mineral Spirits	Commercially Available
Nitrogen Bottle	Commercially Available

Source for dry shop air.



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\* Optional equipment used in Discharging and Charging the system.

* Refrigerant Recovery/Recycle Equipment	Commercially Available meeting SAE J1990 or J2209 specifications.
* Manifold Gauge Set, with hoses R-134a compatible	Commercially Available
* Scale .1 lb. increments	Commercially Available
* Leak Detector	Commercially Available
* Vacuum Pump	Commercially Available

I. Weight and Balance: No effect.

J. Electrical Load Data: No effect.

References: Refer to Maintenance and Parts Manual SZ67-002, Evaporator Assembly for basic disassembly and assembly instructions. Disregard references to R-12 servicing instructions. Refer to service bulletin R134-01 for R-134a servicing instructions.

**2. ACCOMPLISHMENT INSTRUCTIONS**

**NOTE**

**COMPONENTS MAY BE RETURNED TO ZEE SYSTEMS FOR MODIFICATION. INSTRUCTIONS OUTLINED BELOW INCLUDE STEPS FOR FIELD MODIFICATIONS.**

A. Preparation: The replacement of components should be accomplished in a clean, dry area free of oil, dirt, moisture and other contamination.

B. Disassembly:

**CAUTION**

**SYSTEM UNDER PRESSURE. APPROPRIATE SAFETY MEASURES SHOULD BE TAKEN WHEN SERVICING THIS EQUIPMENT. ONLY TRAINED PERSONNEL WITH SAFETY EQUIPMENT SHOULD PERFORM THESE DUTIES.**

**NOTE**

**IT IS UNLAWFUL TO RELEASE R-12 TO THE ATMOSPHERE. USE APPROVED RECOVERY/RECYCLE EQUIPMENT TO CAPTURE THE R-12. USE ONLY LAWFUL MEANS TO DISPOSE OF RECOVERED R-12. CHECK WITH LOCAL AGENCIES FOR APPROVED DISPOSAL PROCEDURES.**

**NOTE**

**CAP ALL LINES TO PREVENT CONTAMINANTS AND MOISTURE FROM ENTERING THE SYSTEM.**



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1. Expansion Valve: Remove. Peel back the black insulation wrapping and expose the thermostatic bulb. Loosen the equalization tube (copper) at the expansion valve. Loosen the tube that attaches to the expansion valve disconnect the rigid tube and remove the expansion valve and thermostatic bulb from the evaporator coil.
2. Lines: Disconnect the line to the outlet of the evaporator.

#### C. Flushing:

#### **NOTE**

**ALL COMPONENTS OR LINES WHICH CARRY REFRIGERANT MUST BE FLUSHED OR REPLACED.**

#### 1. Evaporator Coil:

- a. Fill flushing equipment with Mineral Spirits in accordance with manufacturers instructions.
- b. Using a suitable adapter attach the flushing equipment in place of the expansion valve. Attach a suitable reservoir to the outlet side of the coil to capture the dirty flushing fluid. Flush the coil in accordance with the equipment manufacturers instructions. Continue to flush until clean fluid flows from the outlet.
- c. Blow nitrogen through the coil until the inner tubes are dry.
- d. Flush and dry the equalizing line.
- e. Flush and dry the rigid tube that connects to the inlet side of the expansion valve.

C. Modification: Modification occurs when the evaporator coil is flushed and new expansion valve is installed on the evaporator assembly.

D. Assembly: Install and adjust components in accordance with the SZ67-002 Maintenance Manual.

1. Install new expansion valve on the evaporator coil. Secure the thermostatic bulb in the original location on the coil and wrap with black insulating tape (provided in kit K67-R134). Attach equalization tube and tighten.
2. Attach rigid line to expansion valve.
4. Install all components in the aircraft system in their normal configuration (using only the flushed or new R-134 components).
5. Tighten all connections, do not over tighten.

E. Servicing Instructions: Refer to service bulletin R134-01 for servicing instructions.

NOTE: The servicing instructions are basically the same as with an R-12 system. However, a sight glass is NOT used to determine adequate refrigerant charge. The system is charged with a predetermined amount (by weight) of refrigerant.

F. Testing: Check the system in accordance with your normal certification and return to service specifications.



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G. Reidentification: Stamp or etch "R134" behind the serial number on the data plate. Make appropriate log book entries.

**3. MATERIAL INFORMATION**

Parts and Materials required to modify the SZ67-002 Evaporator Assembly are listed below. Quantities are for one evaporator assembly.

1. Modification Kit P/N: K67-R134. The kit contains the following parts:

QTY	Part Number	Description	Old Part Number - Disposition
1	SZ84-760-1	Expansion Valve	1FE2CP60-3/8 - Discard also discard SZ55-024-3 Union. New Expansion Valve has the union attached.
2ft	18-2710	Insulating Wrap	Discard old insulation.
*1	400649-1	Data Plate	Reidentify as per paragraph. 2.,H. of this service bulletin or replace I.D. Plate.

\* ZEE Systems will provide a completed Data Plate provided upon request. User must give Serial Number of unit being modified when ordering kit K67-R134.