



ZEE Systems, Inc.

SERVICE BULLETIN R134-01

1. PLANNING INFORMATION

A. Effectivity: British Aerospace Jetstream 3101 and 3201 aircraft with Zee Systems Air Conditioning equipment installed by A.A.R. of Oklahoma .

B. Reason: To modify and upgrade the Vapor Cycle Air Conditioning system to use CFC free R-134a refrigerant.

C. Description: This service bulletin gives instructions for converting the Vapor Cycle Air Conditioning system from R-12 (Freon) to EPA approved R-134a refrigerant and servicing instructions. This conversion consists of parts replacement and/or flushing then recharging the system with R-134a refrigerant.

D. Compliance: Compliance is optional. Service Bulletin 65-R134 and service bulletin 67-R134 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 accomplishment of this service bulletin 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 performing this service bulletin 3.0 man hours. This estimate excludes the time required to discharge the system, expose or remove the M/C/C 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.

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₍₂₆₆₅₎
FAX 210-349-9208
e-mail: info@zeeco-zeesys.com

H. Equipment and Tooling:

Flushing equipment.	Commercially Available
Mineral Spirits	Commercially Available
Castrol SW100, Refrigeration Oil	Commercially Available
Nitrogen Bottle	Commercially Available
Refrigerant Recovery/Recycle Equipment meeting SAE J1990 or J2209 specifications.	Commercially Available

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Manifold Gauge Set, with hoses R-134a compatible	Commercially Available
Scale .1 lb. increments (Minimum)	Commercially Available
Leak Detector	Commercially Available
Vacuum Pump	Commercially Available

I. Weight and Balance: No effect.

J. Electrical Load Data: No effect.

K. References: Refer to Maintenance and Parts Manual SZ58-002 and SZ65-001, Maintenance and Parts Manual SZ67-002, Aircraft Manufacturers Maintenance Manual and Illustrated Parts List instructions and Maintenance Manuals and Illustrated Parts List supplied by STC holder AAR of Oklahoma. Disregard all references to R-12 servicing instructions. Refer to service bulletin R134-01 for R-134a servicing instructions.

2. ACCOMPLISHMENT INSTRUCTIONS

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.

1. Motor Compressor Condenser Assembly: Remove from aircraft and modify in accordance with Zee Systems service bulletin 65-R134.

2. Evaporator Assembly: Remove from aircraft and modify in accordance with Zee System service bulletin 67-R134.

3. Modulator Valve: Remove from system, discard.



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4. Receiver/Dryer: Remove from system, discard.
3. Lines: Inspect all lines, replace any line that shows signs of wear, deterioration or other defect. Flush all lines that are to be reused to remove residue of the R-12 refrigerant and mineral oil lubricant. Remove flush solvent and dry lines by blowing nitrogen through the lines.

NOTE

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

C. Modification: Modification occurs when components are flushed and/or new/modified components are installed and the system is charged with R-134a refrigerant.

D. Assembly: Install and adjust components in accordance with appropriate Zee Systems, AAR and British Aerospace maintenance manuals and standard industry practices.

1. Install modified M/C/C Assembly, refer to SB 65-R134.
2. Install modified Evaporator Assembly, refer to SB 67-R134.
3. Modulator Valve: Install new valve, see kit KR134-01.
4. Receiver/Dryer: Install new receiver/dryer, see kit KR134-01.
5. Lines: Connect any lines that were replaced or removed for flushing.
6. Reconnect system to its normal configuration.
7. Tighten all connections, do not over tighten.

E. Servicing Instructions: 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.

NOTE

IF YOU ARE USING SERVICING EQUIPMENT THAT CAN BE SET TO DISPENSE A PRESET AMOUNT OF REFRIGERANT SOME OF THE FOLLOWING STEPS MAY DIFFER SLIGHTLY. REFER TO THE OPERATING INSTRUCTIONS FOR YOUR EQUIPMENT.

1. Evacuate the system for a minimum of one hour.
2. Weigh the refrigerant bottle.
3. Introduce a total maximum R-134a refrigerant charge (by Weight) of 1.7 lbs. into a dry system using the following procedure:
4. Open the back seating valves on the compressor.
5. Shut OFF all valves in the manifold set. Attach the manifold line to the refrigerant bottle. Attach the High side manifold line to the Pressure service port (compressor) and the Low side manifold line to the Suction service port (modulator valve). Open the valve on the refrigerant bottle.



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CAUTION

NEVER INVERT THE REFRIGERANT BOTTLE SO THE DISCHARGE VALVE IS ON THE BOTTOM. THE REFRIGERANT BOTTLE MUST BE KEPT UPRIGHT TO PERMIT THE ENTRY OF GAS ONLY INTO THE COMPRESSOR. INVERTING THE BOTTLE WILL PERMIT LIQUID TO ENTER THE COMPRESSOR RESULTING POSSIBLE COMPRESSOR DAMAGE.

6. With the system NOT RUNNING, OPEN the High Pressure manifold valve and the Low Pressure Manifold valve. Allow the system to take a static charge. When the pressures stabilize or if the maximum charge weight is achieved CLOSE both the High and Low pressure valves at the manifold.

7. Check for leaks.

8. With the High and Low pressure valves shut off, turn ON the compressor motor and evaporator blowers. OPEN the Low pressure manifold valve until the Low pressure gauge reads 30 pounds pressure. Keep close watch on the scale and continue to charge the system. When the target weight is reached immediately CLOSE the Low pressure valve. The system should be fully charged. Disconnect the servicing equipment.

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

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 are listed below. Quantities are for one aircraft.

1. Modification Kit P/N: KR134-01. The kit contains the following parts:

QTY	Part Number	Description	Old Part Number - Disposition
1	SZ41-016-1A	Modulator Valve	SZ41-016-1 - Discard
1	SZ84-014-1	Receiver/Dryer	7-8159 - Discard or, 249031-30 - Discard or, 412 - Discard.

The following components must be modified prior to re-installation:

1	SZ65-001	Motor Compressor Condenser, SB65-R134
1	SZ67-002	Evaporator Assembly, SB67-R134