



ZEE Systems, Inc.

SERVICE BULLETIN 65-R134-1

1. PLANNING INFORMATION

A. Effectivity: Zee Systems, Inc. SZ65-001-1 Motor Compressor Condenser Assembly, all serial numbers installed on Bell 212 and 412 helicopters.

B. Reason: To modify the SZ65-001-1 Motor Compressor Condenser Assembly (MCC) to use CFC free R-134a refrigerant.

C. Description: This service bulletin gives instructions for converting the Motor Compressor Condenser Assembly P/N SZ65-001-1 from R-12 (Freon) to EPA approved R-134a refrigerant. This conversion consists of flushing the condenser, minor parts replacement and recharging the system with R-134a refrigerant.

D. Compliance: Compliance is optional. Service Bulletin 70-R134 and Service Bulletin R134-05 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 flushing the condenser and replacement of the components is 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.

No additional man hours are required to accomplish component replacement if done during overhaul of the Motor Compressor Condenser Assembly.

G. Material Cost and Availability: Refer to Section 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.
406 W. Rhapsody
SAN ANTONIO, TX 78216

1-800-988-COOL⁽²⁶⁶⁵⁾
FAX (210) 349-9208
e-mail: info@zeeco-zeesys.com

H. Equipment and Tooling:

Mineral Spirits	Commercially Available
Flush solvent, R-12	Commercially Available
Nitrogen Bottle	Commercially Available



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R-134a Refrigerant	Commercially Available
12 oz. Oil: Any Synthetic Polyol Ester (P.O.E.) refrigerant oil with an ISO (viscosity) of 68 to 100 Lubrizol 2916 Nu-Calgon RL68S CCI Retro-Fix II Castrol SW100-Icematic	Commercially Available
**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.

K. References: Refer to CMM SZ58-65, Motor Compressor Condenser Assembly for basic disassembly and assembly instructions. Disregard references to R-12 servicing instructions. Refer to service bulletin R134-05 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: Refer to CMM SZ58-65, Motor Compressor Condenser Assembly for basic disassembly and assembly instructions.

CAUTION

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



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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.

NOTE

ALWAYS USE A BACK UP WRENCH TO LOOSEN OR TIGHTEN CONNECTIONS.

1. Compressor: Disconnect lines to the compressor and remove the compressor from the compressor plate. Remove the pulley from the compressor. Discard compressor.
2. Lines: Disconnect the flex line from the compressor to the condenser, discard.
3. Remove the union from the condenser coil inlet and outlet, discard.

NOTE

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

C. Flushing:

1. Condenser Coil:

- a. Fill flushing equipment with Mineral Spirits in accordance with manufacturers instructions.
- b. Using a suitable adapter attach the flushing equipment to the inlet (top) line on the condenser coil. 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 or by pumping the mineral spirits through the coil. Continue to flush until clean fluid flows from the outlet.
- c. Flush the coil with an R-12 flushing solvent to remove residue of mineral oil. Pump the solvent through the coil until clean fluid flows from the outlet.
- d. Blow nitrogen through the coil until the inner tubes are dry. Move the coil around to insure that all of the solvent is removed.

D. Modification: Modification occurs when the condenser coil is flushed and new components are installed on the MCC assembly.

E. Assembly: Install and adjust components in accordance with the SZ65-001 Maintenance Manual.

1. Attach pulley on new compressor. Install new compressor on mounting plate and adjust belts.
2. Attach union (DS200U137-6) to the outlet of the condenser.
3. Attach union (DS200U137-8) to the inlet of the condenser.



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- 4. Attach the new flex line Z2008180BCX204. Make sure not to damage the O-Ring.
- 5. Cap the outlet tube. Connect a source of Dry Nitrogen or R-134 refrigerant to the Suction port on the compressor. Slowly pressurize the system to 50 PSIG and check for leaks.
- 6. Install the modified MCC in the aircraft system in its normal configuration (using only the flushed or new R-134 components).
- 7. Tighten all connections, do not over tighten.

F. Servicing Instructions: Refer to Service Bulletin R134-05 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.

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

H. Re-identification: Stamp or etch "R134" behind the serial number on the data plate. Mark an 'X' in block C on the MOD STATUS section of the I.D. Plate. Make appropriate log book entries.

3. MATERIAL INFORMATION

Parts and materials required to modify the SZ65-001-1 MCC are listed below. Quantities are for one MCC Assembly.

1. Modification Kit P/N: K65-R134-1. The kit contains the following parts:

QTY	New Part Number	Description	Old Part Number/Disposition
1	SZ84-913OP-1	Compressor	SCF206T-21905/Discard or CR206R/Discard or CF206R/Discard
1	Z2008180BCX204	Hose	Z1018180W180/Discard
1	DS200U137-6	Fitting, Union	DS102-2/Discard
1	DS200U137-8	Fitting, Union	SZ55-035-3/Discard
*1	400649-1	Data Plate	Re-identify as per paragraph. 2., H. of this service bulletin or replace I.D. Plate.

*Zee Systems will provide completed Data Plate with kit upon request. User must provide Serial Number of unit being modified when ordering Kit K65-R134-1.