



## **ZEE Systems, Inc.**

### **AIRBORNE AIR CONDITIONING and HEATING**

406 W. RHAPSODY - SAN ANTONIO, TEXAS 78216 U.S.A.

210-342-9761 - 800-988-COOL - FAX 210-341-2609

EMAIL info@zeeco-zeesys.com www.zeeco-zeesys.com

## ***SERVICE LETTER SZ43-002-1A***

### ***FREON CYCLE AIR CONDITIONING SYSTEM - MOTOR COMPRESSOR CONDENSER ASSEMBLY - FAN ASSEMBLY CONVERSION OF P/N: SZ43-002-1 TO SZ43-002-1A.***

#### **I. PLANNING INFORMATION**

##### **A. EFFECTIVITY**

All ZEE Systems Part Number SZ43-002-1 Motor Compressor Condenser (MCC) assemblies which have not been updated to the -1A. This will be shown on the unit data plate.

**NOTE:** The Environmental Protection Agency (EPA) recently published two rules under the Clean Air Act Amendments of 1990 (Sections 608 and 609), which impact individuals who service freon cycle air conditioners in aircraft. Refer to standards in 40 CFR, Part 82, Subpart B, Appendix A and FAA Advisory Circular 43-16, Oct. 1993.

##### **B. REASON**

This is a product improvement, to improve the efficiency of the unit by increasing the airflow over the condenser coils. The original two-blade fan assembly is no longer available.

##### **C. DESCRIPTION**

This Service Letter provides instructions for updating the SZ43-002-1 to the SZ43-002-1A (MOD A) and the SZ45-002-3 to the SZ45-002-3A (MOD A). This update consists of the replacement of the two blade Fan Shaft Assy with the improved three blade Fan Shaft Assy, installation of a strap and reidentification of the unit to reflect this update. The part number for the upgrade kit is K43-002-1A, Kit.

##### **D. COMPLIANCE**

Compliance as a product improvement is optional. However, the two blade fan is no longer available, therefore, when replacement or overhaul is required this Service Letter must be accomplished. No action is necessary for units operating at a satisfactory level.



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### **E. APPROVAL**

This Service Letter has the approval of ZEE Systems Inc. This letter contains information from approved design data on DWG SZ43-002 and DWG SZ45-002 and does not require governmental or other regulatory agency approval.

### **F. MANPOWER**

Excluding the removal and replacement of the MCC from the aircraft an estimated 2.0 man hours is required to accomplish the up date as outlined in this Service Letter. If the update is accomplished during overhaul an estimated additional 0.1 man hours is required to install the strap to the condenser housing.

### **G. MATERIAL COST and AVAILABILITY**

Contact ZEE Systems for current cost and availability at the following address:

#### **Corporate Offices**

ZEE System Inc.  
P.O. Box 7901165  
San Antonio, TX 78279-1165  
USA

TEL: 210-342-1880  
FAX: 210-349-9208  
E-mail: sales@zeeco-zeesys.com

#### **Plant**

ZEE Systems Inc.  
406 W. Rhapsody  
San Antonio, TX 78216  
USA

TEL: 800-988-COOL  
FAX: 210-341-2609  
E-mail: info@zeeco-zeesys.com

### **H. TOOLING**

A special spanner wrench to hold the pulley when removing and installing the fan shaft assembly. Contact ZEE Systems, Inc. to see if a loaner is available when ordering parts.

If the system refrigerant must be discharged refer to the SZ43 Maintenance and Parts Manual or the SZ45 Maintenance and Parts Manual for discharge and service equipment requirements.

***NOTE:*** Federal Law now prohibits the discharge of R-12 or R-134a to the atmosphere. An approved recovery/recycling device operated by certified technicians should be used when discharging the system. No other special tooling is required to accomplish this Service Letter.

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### **I. REFERENCES**

Refer to ZEE Systems DWG SZ43-002, DWG SZ41-034, DWG SZ45-002, SZ43 Maintenance and Parts Manual. SZ45 Maintenance and Parts Manual. Figure-Item references for the SZ43 are shown as (43-XX). Figure-Item references for the SZ45 are shown as (45-XX).

### **2. ACCOMPLISHMENT INSTRUCTIONS**

#### **A. PREPARATION**

The work shall be performed in a clean, dry area free of contamination.

#### **B. DISASSEMBLY**

1. The Compressor Motor Assy must be disassembled to a point where the Fan Shaft Assy is exposed and can be removed from the motor and the new Fan Shaft Assy can be installed on the motor. This may be accomplished in numerous ways. One method is to completely remove the MCC from the aircraft. Another method is to remove only the Compressor Motor Assy from the aircraft. On the aircraft another method is to loosen the belts and the motor, then slide the motor back far enough for the Fan Shaft Assy to clear the condenser. Determine method which best suits your time available, ease and accessibility of the MCC installation in your aircraft.

1. Remove the Compressor Motor Assy from the Base Plate. Loosen and remove the Nuts, top (43-27/45-27) 4ea. Care should be taken not to move the bottom nuts; their position aligns the assembly for proper clearance. Lift the Motor Compressor off the threaded studs and slid it away from the condenser.

2. Loosen belts (43-4A/45-4A and 43-6/45-6) in accordance with instructions in the SZ43 Maintenance and Parts Manual or the SZ45 Maintenance and Parts Manual. Remove Belt (43-4A/45-4A).

3. Using a spanner wrench hold the pulley (43-3/45-3) and loosen the Fan Shaft at the 1" hex (43-18A/45-19). Care should be taken not to nick or damage the teeth of the pulley; no force should be placed on the flanges. Remove the Shaft Assy (43-18A/45-19) and Fan Assy (43-20A/45-19A) the Spacer (43-19A/45-18) and discard.

4. It is recommends that the belts be inspected at this time. Replace any worn belts.

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### **C. MODIFICATION**

1. Modification occurs when the K43-002-1A Kit is installed on the Motor Compressor Assy.

### **D. ASSEMBLY**

1. Place the Spacer (43-19/45-18A) on the motor shaft with the recessed hole side facing the motor. The spacer should rest flush against the pulley. If there is a gap the spacer is installed backwards.
2. Using a spanner wrench hold the pulley (43-3/45-3) and install the new Fan Shaft Assy (43-20/45-20). Care should be taken not to nick or damage the teeth on the pulley; no force should be placed on the flanges. Tighten the Fan Shaft Assy at the 1" hex and torque to 80 inch-pounds.
3. Tighten and adjust the belts in accordance with instructions in the SZ43 Maintenance and Parts Manual or the SZ45 Maintenance and Parts Manual.
4. To the flange (ring) in the Inlet Condenser Housing (43-41/45-42) apply one layer of one-half inch wide electrical tape then attach and tighten Strap to the ring on the motor side of the condenser.
5. Attach the Compressor Motor Assy to the Base Plate in reverse order of disassembly (B., 1.). Make sure lock washers (43-49/45-29) are installed between the base plate (43-40/45-40) nuts (43-27/45-27).
6. With the MCC completely reassembled turn the fan shaft by hand to check proper alignment. Fan blades should not touch the condenser coil, housing ring or the strap. Move the nut (43-27/45-27) on the rubber mount (43-26/45-26) just under the plate (43-46/45-45) if height adjustment is necessary for clearance.
7. Attach and secure all hardware and lines. Service system in accordance with the SZ43 Maintenance and Parts Manual or the SZ45 Maintenance and Parts Manual instructions.

### **E. TESTING**

1. No tests or required beyond those outlined in. the SZ43 Maintenance and Parts Manual or the SZ45 Maintenance and Parts Manual



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### **F. IDENTIFICATION**

1. On the I.D. Plate for the MCC stamp or etch the letter "A" after the part number. If the original I.D. Plate is damaged ZEE Systems can supply a new I.D. Plate if the serial number is provided.

### **G. MATERIALS**

1. Parts for this upgrade are included in ZEE Systems, Inc. Kit Part Number K43-002-1A.
2. Electrical tape (D., 4.) required for installation is commercially available.
3. The Kit contains the following:

<b>NEW PART NUMBER</b>	<b>QTY</b>	<b>OLD PART NUMBER</b>	<b>DISPOSITION</b>
SZ41-034-3A Fan Shaft Assy	1	SZ41-024-1 Fan Assy	Discard
		SZ41-018-3 Shaft	Discard
SZ41-019-5 Spacer	1	SZ41-019-3 Spacer	Discard
SZ41-026-3 Strap	1		