ZEE Systems, Inc.

SERVICE LETTER

MODIFICATION OF MOTOR COMPRESSOR CONDENSER ASSY P/N: SZ45-002-1/-1A/-3/-3A WITH UPGRADED MOTOR Z99-800-1.

1. PLANNING INFORMATION

A. EFFECTIVITY: All ZEE SYSTEMS Motor Compressor Condenser (MCC) Units Part Number SZ45-002-1/-1A/-3/-3A may be upgraded to use this motor.

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

B. REASON: The SZ44-003-1/-1A Motor currently used in the MCC is of limited availability. An upgraded motor is now available to improve the reliability and insure continued service of the air conditioning system.

C. DESCRIPTION: This Service Letter provides instructions for installing the new motor in the MCC including parts replacement.

D. COMPLIANCE: Compliance of this product improvement is optional. However, when stock and replacement parts for the existing motor is exhausted the new motor and required replacement parts will be the only option.

E. APPROVAL: This Service Letter has the approval of ZEE SYSTEMS, Inc. This modification does not affect the fit form or function of the MCC as originally installed and does not require other governmental agency approval. This modification and Service Letter contains information from approved design data. Only appropriate service log entries are required.

F. MANPOWER: Excluding the removal and replacement of the MCC from the aircraft an estimated 3.0 man hours are required to accomplish the modification outlined in this Service Letter. It is suggested that compliance be accomplished during service or overhaul of the system.

G. MATERIAL COST and AVAILABILITY: Contact ZEE SYSTEMS for current cost and availability at the followings address:

MAILING - Corporate Offices

ZEE SYSTEMS, Inc.
P.O. Box 791165
San Antonio, TX 78279-1165
USA
EMAIL: sales@zeeco-zeesys.com

TEL: 210-342-9761
FAX: 210-349-9208

SHIPPING - Plant

ZEE SYSTEMS, Inc.
406 W. Rhapsody
San Antonio, TX 78216
USA
info@zeeco-zeesys.com

TEL: 800-988-COOL
FAX: 210-341-2609

H. TOOLING: No special tooling is required for this modification.

I. REFERENCES: Refer to ZEE SYSTEMS DWG SZ45-002, DWG Z99-800, SZ45-SERIES Maintenance and Parts Manual (SZ45MM) dated OCT 95.

2. ACCOMPLISHMENT INSTRUCTIONS

A. PREPARATION: This modification shall be performed in a clean, dry area free of contamination. Remove MCC from aircraft IAW your standard maintenance procedures.

CAUTION:
AIR CONDITIONING SYSTEM UNDER PRESSURE. USE CAUTION WHEN SERVICING THE SYSTEM. APPROPRIATE SAFETY MEASURES SHOULD BE TAKEN WHEN SERVICING THE SYSTEM. ONLY TRAINED PERSONNEL WITH APPROPRIATE SAFETY EQUIPMENT SHOULD PERFORM SERVICING DUTIES.

NOTE:
IT IS UNLAWFUL TO RELEASE R-12 OR OTHER REFRIGERANTS INTO THE ATMOSPHERE. USE APPROVED RECOVERY/RECYCLE EQUIPMENT TO CAPTURE REFRIGERANTS. USE ONLY LAWFUL MEANS TO DISPOSE OF RECOVERED REFRIGERANTS. CHECK WITH LOCAL AGENCIES FOR APPROVED DISPOSAL PROCEDURES. ONLY PROPERLY TRAINED AND CERTIFIED TECHNICIANS SHOULD HANDLE REFRIGERANTS.

NOTE:
CAP ALL LINES OPENED TO PREVENT CONTAMINANTS AND MOISTURE FROM ENTERING THE SYSTEM.

B. DISASSEMBLY: Refer to FIGURE A/B/C/D of SZ45MM.

1. Remove the drive belts in accordance (IAW) with SZ45MM/2.1.3, discard.

2. Remove the adjusting bolt (C-12), remove the four bolts (C-10) and remove the compressor plate (C-30) with compressor still mounted, clean, inspect and set aside.

3. Remove the Jack Shaft Assy (A-14) IAW SZ45MM/2.5.1, clean, inspect and set aside.

4. Remove the two clamps (C-17) by loosening the four nuts (A-16B) and removing the washers (A-16A) and bolts (A-16), clean, inspect and set aside.

5. Remove the fan shaft assembly IAW SZ45MM/2.4.1, disassemble and remove fan assembly from shaft. Clean, inspect and set aside the shaft assembly, discard old fan blades. This is required because the rotation of the new SZ58 motor is opposite the SZ44 motor being replaced.

5A. Save the spacer P/N: SZ41-019-5. It is to be reused when installing the new Fan Shaft Assy P/N: SZ41-034-5T.

6. Remove the compressor drive motor (A-1) IAW SZ45MM/2.3.1, discard.

6A. The new Z99-800 motor has a new pulley installed. Place the Spacer P/N: SZ41-019-5 removed from the old motor on the motor output shaft between the Pulley and Fan Shaft Assy. This spacer is required to maintain proper spacing of the motor pulley.

7. Remove the eight bolts (B-34) and sixteen washers (B-34A/-34B). Save the compressor adjusting bolt (C-12/-12A) and bar (C-12B), clean, inspect and set aside. Save the motor adjusting bar (B-25) and adjusting bolts (B-15/-15A/-15B/-15C) back out the motor locking bolts, clean, inspect and set aside. Discard the two motor supports (C-24) and pads (C-24A).

8. Remove the side frames (B-31, C-32) from the two angle supports(B-45), discard.

C. MODIFICATION: Modification occurs during re-assembly when installing the parts in Kit K45D58.

D. ASSEMBLY: Refer to FIGURE 1/2/3/4 and A/B/C/D of SZ45MM.

1. Attach the side frames (1-31, 1-32), tighten nuts (2-27).

2. Position and attach the two motor supports (1-24) so the long notch is away from the condenser. The two motor support extensions (1-24B) are no longer used, discard. Snug the hardware (3-34C/-34D/-34E) to hold the supports in place, do not tighten at this time.

3. Position and attach the adjusting bars (3-12B, 2-25) removed in step 7 of disassembly using the hardware (B-34/-34A/-34B), do not tighten at this time.

4. Attach the clamps (C-17) using hardware (A-16/-16A/-16B), tighten.

5. Place the new drive motor loosely in the side frames and against the support pads. Make sure pads are seated against motor then tighten the hardware (3-34C/-34D/-34E) for the two motor supports (1-24). Next, align the motor adjusting bar (2-25) so the adjusting bolts are straight into the motor and snug the hardware (C-34/-34A/-34B).

6. Attach the safety clip (4-46) to the adjusting bar (2-25) snug but do not tighten the hardware (4-48/-49/-50). There are no detents on the motor, but rather there are two drilled and threaded holes located approximately 180^{o} opposite the electrical terminals. Loosely attach the two motor safety bolts (4-47) through the clip and into the motor. When the adjusting bar and the motor safety clip are all aligned tighten adjusting bar (2-25) and loosely attach the hardware (4-15/-15A/-15B/-15C). Make sure the motor is firmly in contact with the pads on the motor supports, this will insure the three point mount of the motor. Now, evenly finger tighten the motor mount locking bolts (4-15). Check the mounting points then tighten the two mounting bolts (4-15) and torque to 20 inch-pounds, then tighten the lock nuts (4-15A). Tighten the safety clip (4-46) to the bar and then the motor safety bolts (4-47) and torque to 20 inch-pounds.

7. Reassemble Fan Shaft Assembly by placing new fan assembly on shaft making sure the words "Tornado Tractor" will face motor when fan shaft is attached to motor. Tighten and torque to 20-inch lbs. Attach haft assembly IAW SZ45MM/2.4.2.

8. Install the jack shaft assembly IAW SZ45MM/2.5.3.

9. Install and adjust the primary belt (2-4A) IAW SZ45MM/2.1.5.1.

10. Place the compressor plate on the side frames and loosely attach the bolts (2-10/-10A).

11. Slide the compressor toward the adjusting bar and start the adjusting bolt (3-12) into the compressor plate. Adjust the secondary belt IAW SZ45MM/2.1.5.2.

12. Check belt alignment IAW SZ45MM/2.1.5.3.

13. Check that all hardware is tight. Turn the compressor pulley by hand. Check that there is no rubbing and components are properly aligned and belts are running true.

14. Install MCC back in aircraft. Secure all hardware and lines. Service system IAW SZ45MM.

E. TESTING: No tests are required beyond those outlined in the SZ45MM.

F. IDENTIFICATION: A new Identification Plate is to be installed. Place an "X" in the "D" block to shown the modification status.

1. The new I.D. Plate (400649-1) is made of soft aluminum. Write or stamp the Part Number (P/N) and Serial Number (S/N) of the MCC being upgraded. Copy the Part Number and Serial Number from the old I. D. Plate.

G. MATERIALS: All material to mount the drive motor for this modification is included in kit form. Order part number K45D58. The kit contains the following:

NEW PART NUMBER		*QTY*	*OLD P/N/DISPOSITION*
SZ58-010-1	SUPPORT ASSY, MTR	2	SZ44-008-3 DISCARD
SZ58-012-3	FRAME, SIDE	1	SZ44-004-4 DISCARD
SZ58-012-4	FRAME, SIDE	1	SZ44-004-3 DISCARD
SZ58-013-3	CLIP, SAFETY	1	
SZ43-020-3	BOLT, MTR SAFETY	2	
SZ41-034-5T	FAN ASSEMBLY	1	SZ 41-024-5 DISCARD
AN364-624A	NUT	1	AN364-624A DISCARD
AN365-428	NUT	3	
AN4-11A	BOLT	1	
AN4-44A	BOLT	2	
AN960-416	WASHER	6	
400649-1	I.D. PLATE	1	

The new drive motor Z99-800-1 is sold separately.
The Z99-800-1 Motor supersedes Motor P/N: SZ58-003-1.

Z99-800-1	MOTOR ASSY	1	SZ44-003-1/-1A DISCARD

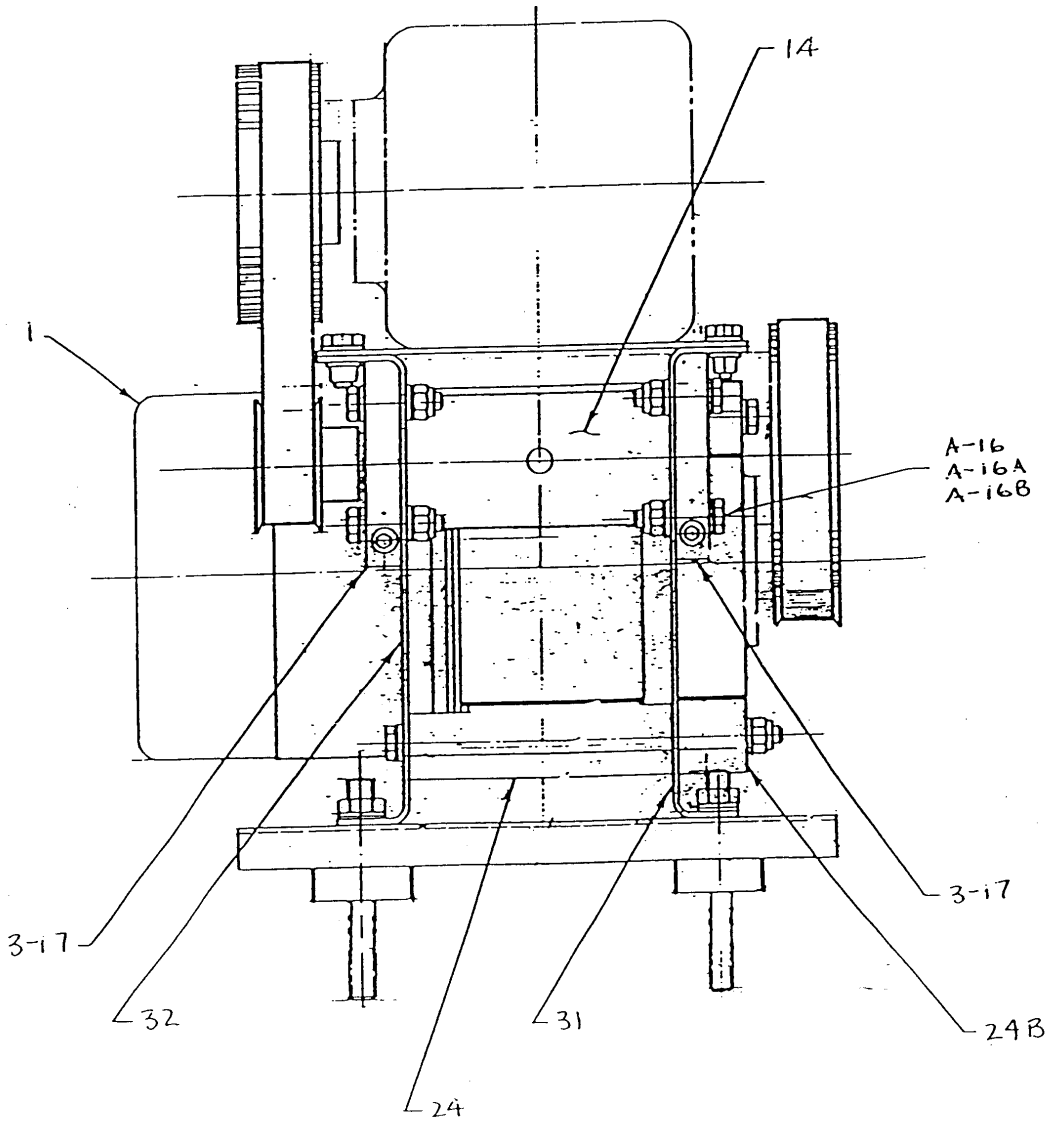

FIGURE 1.

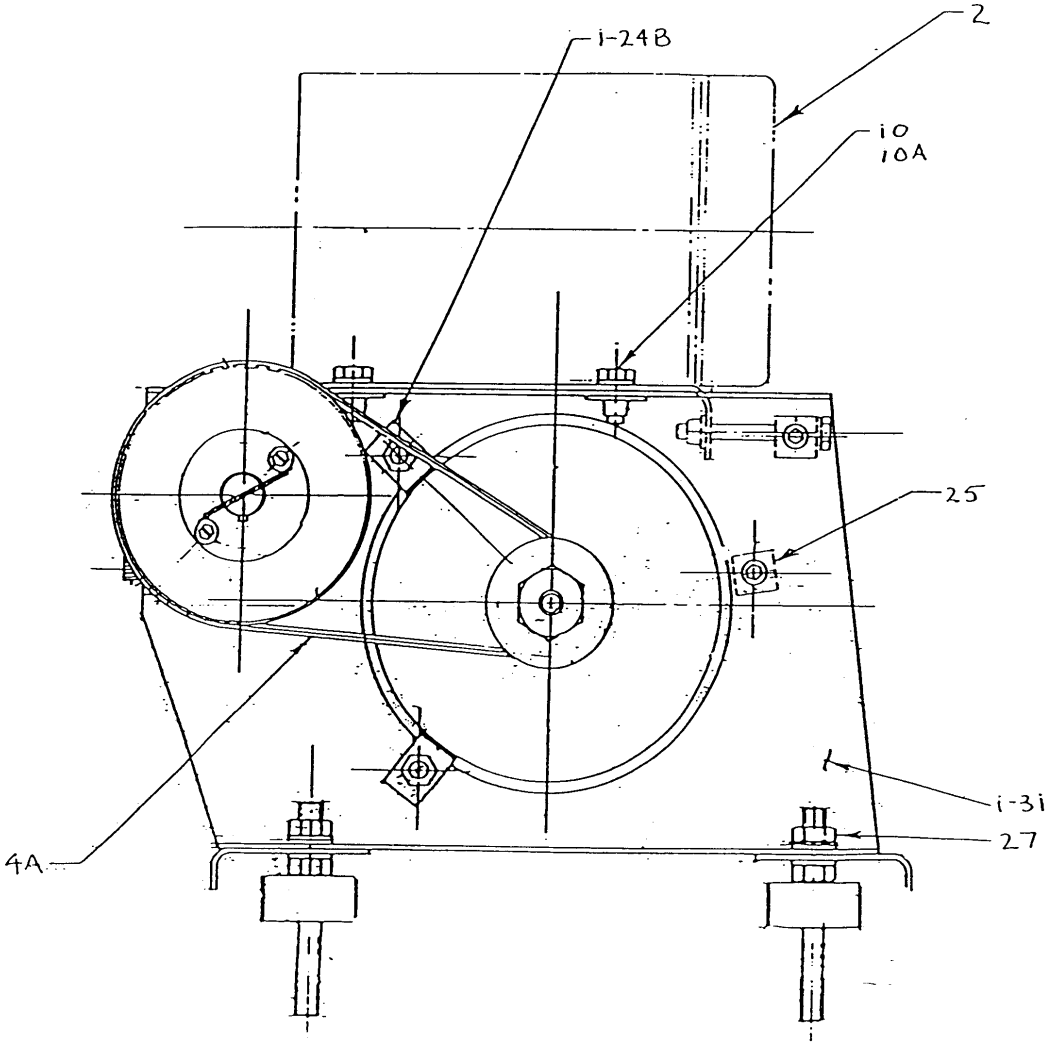

FIGURE 2.

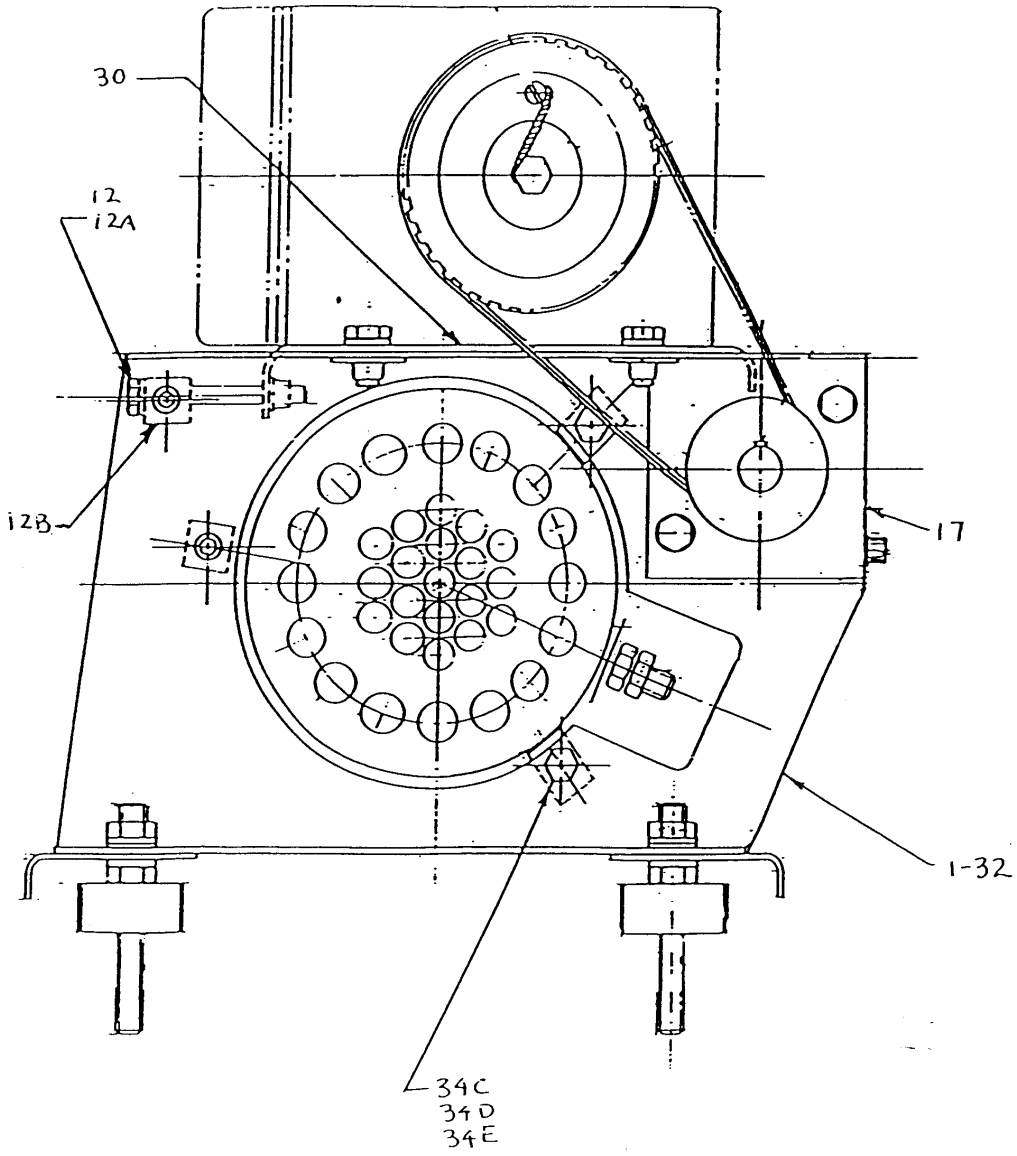

FIGURE 3.

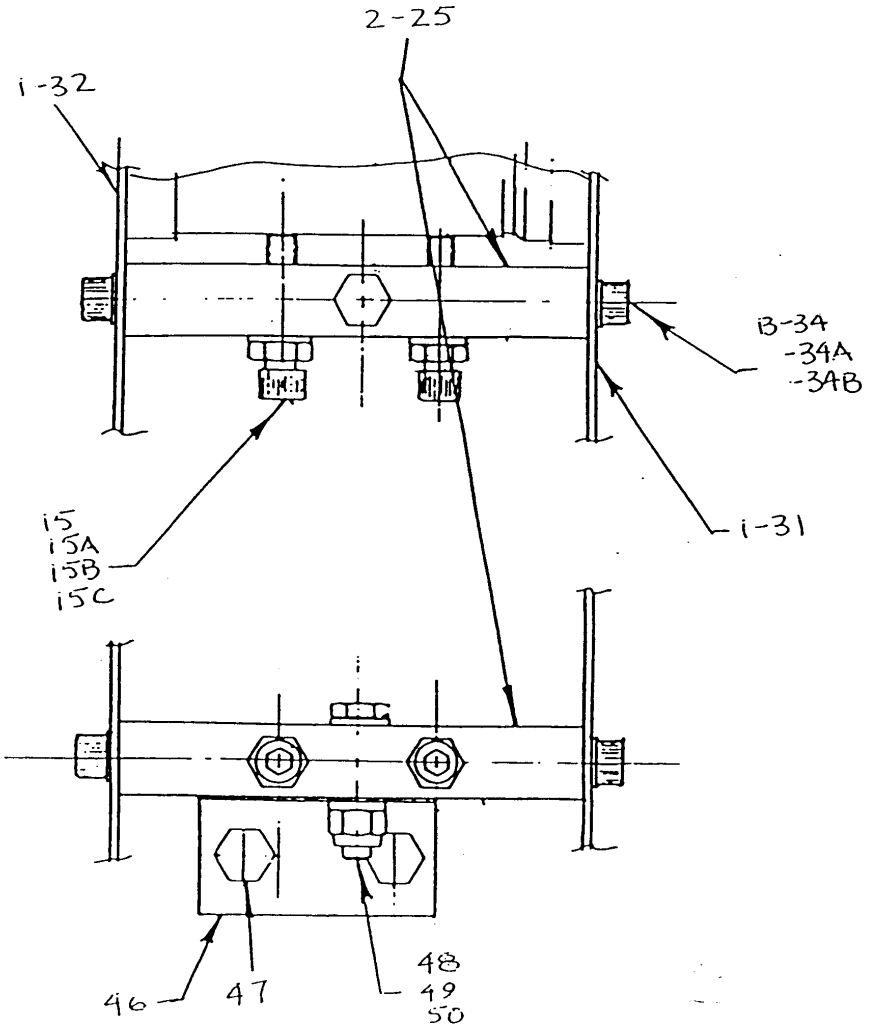

FIGURE 4.