ZEE Systems, Inc.

SERVICE LETTER Z99-915

1.0 EFFECTIVITY: ALL Z99-915-Series Compressors.

2.0 PURPOSE: To provide instructions to remove Pulley, Clutch and Coil from defective compressor and install components on replacement compressor. To provide instructions for oil service procedures for the replacement compressor.

3.0 COMPLIANCE: Compliance is required for proper operation of the replacement compressor.

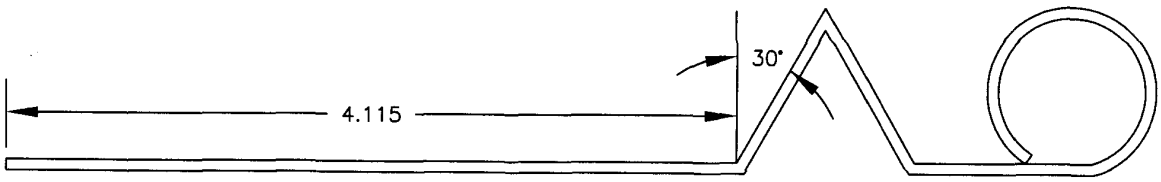
4.0 APPROVALS: No additional approvals are required to provide this service.

5.0 WEIGHT AND BALANCE: There is no change in the original weight and balance.

6.0 ELECTRICAL LOAD OR PERFORMANCE DATA: There is no change in the electrical load and performance of the equipment.

7.0 SPECIAL TOOLS: The following special tools are required to perform this service.

TOOL	DESCRIPTION	SOURCE
Oil Dipstick	Gage to check the oil level.	Commercially Available In-house fabrication. See FIG. 1
Clutch (Armature) Spanner	Hold Clutch (Armature) to remove nut.	Commercially Available
Clutch (Armature) Puller	Pull Clutch (Armature) from compressor.	Commercially Available
External Snap Ring Pliers	Remove Pulley.	Commercially Available
Feeler Gauges	Check Clutch Air Gap.	Commercially Available



Dip Stick
FIG. 1

8.0 MAN POWER REQUIREMENTS: Excluding removal and reinstall in aircraft the service is estimated to take 1 - 1.5 hrs. with about half of the time in draining the oil from the defective compressor.

9.0 INSTRUCTIONS: Remove the compressor from the Motor Compressor or the Motor Compressor Condenser Assembly.

9.1 Adjust the level in the (new) replacement compressor to match the defective compressor. If the system which the compressor being replaced has less than 20 total hours of operation install the replacement compressor with a full oil charge as received from ZEE Systems, Inc.

9.1.1 Drain the oil from the defective compressor. Save the drained oil (9.15).

9.1.2 Remove the oil plug and drain as much oil as possible into a suitable container.

9.1.3 Remove the caps or open the back seat valves on the suction and discharge ports.

9.1.4 Drain the oil from the suction and discharge ports into a suitable container while turning the shaft clockwise only with a socket wrench on the nut holding the clutch.

9.1.5 Measure and record the total amount of oil drained from the compressor.

9.1.6 Drain the oil in the replacement compressor in a suitable container (steps 9.1.2 to 9.1.4).

9.1.7 Add back the same amount of new oil to the (new) replacement compressor that was removed from the defective compressor (9.1.1).

9.1.8 Reinstall the oil plug. Check the O-Ring and replace as necessary. Torque to 11-15 Ft-Lb.

9.2 Move the Pulley, Clutch and Coil from the defective compressor to the (new) replacement compressor.

9.2.1 Hold the clutch, insert the pins of the clutch (armature) spanner into the threaded holes of the clutch plate. Optional method is to apply 24-28 VDC to clutch then hold the pulley by hand.

9.2.2 Hold the clutch plate stationary while removing the ¾", 19mm, 14mm socket wrench, as appropriate.

9.2.3 Remove the clutch Plate assembly using puller. Thread the three bolts into the threaded holes in the clutch plate assembly. Turn the center screw clockwise until the clutch plate comes loose.

9.2.4 If the shims are above the shaft key, remove them now. If the shims are below the shaft key, the key must be removed before the shims can be removed.

9.2.5 Remove the shaft key by tapping loose with a flat blade screw driver and hammer.

9.2.6 Remove shims using a pointed tool and a small screw driver.

9.3 Remove the Pulley and coil from the defective compressor.

9.3.1 Remove the snap ring. Retain the snap ring.

9.3.2 Slowly walk the pulley off the defective compressor. This exposes the coil.

9.3.4 Loosen the wire clamp screw on the coil until the wire can be slipped from under the clamp.

9.3.5 Undo any wire connections (cable ties) which would prevent removal of the coil.

9.3.6 Remove the snap ring.

9.3.7 Remove the coil.

9.4 Reinstall the Coil and Pulley in reverse order of 9.3.1 through 9.3.6.

9.5 Install the clutch on the new compressor.

9.5.1 Install the key on the shaft.

9.5.2 Install the shims to obtain an air gap 0.016" – 0.031".

9.5.3 Align the keyway on the clutch to the shaft key. Using and driver and a hammer or arbor press, drive the clutch down over the shaft until it bottoms on the shims.

9.5.4 Replace the retaining nut and torque to

1/2-20 thread: 20-25 ft-lb.

M8 thread: 11-15 ft-lb.

9.5.5 Check the air gap between the clutch and the pulley. The air gap should be 0.016" – 0.031" (0,4 – 0,8mm)

10.0 REFERENCE MATERIAL: Sanden SD Compressor Service Manual can be downloaded from www.sanden.com.

11.0 TESTING: The following tests may be completed prior to reinstallation.

11.1 Check the air gap on the clutch. Adjust shims so that a clearance of 0.016" – 0.031" is obtained.

11.2 Check that the pulley rotates smooth and free without the clutch being engaged.

11.3 Apply 28 VDC to the clutch circuit to check the operation of the clutch.

11.3.1 Connect the positive lead to the wire marked "COIL (+)", and negative lead to the compressor case. Energize and the clutch should pull in with an audible click.

11.3.2 With the clutch energized rotate the pulley. It should take some effort but should turn smooth.

12.0 IDENTIFICATION: The compressor needs no additional marking.

13.0 RECORDS: Note the serial number of the (new) replacement compressor in appropriate records and log entries.

14.0 MATERIAL COST and AVAILABILITY: Contact ZEE Systems, Inc. Dealers and Distributors for current pricing and availability. Go to www.zeesystemsinc.com for a listing. You may contact ZEE Systems, Inc., direct at,

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