

ZONES: 320  
 A/C NUMBER:  
 REV. DATE: 03/25/08  
 FREQUENCY: A/R

W/C NUMBER: 745Z4901      DATE:

MFR P/N	DESCRIPTION	QTY
396276-1	Airflow Sensor	A/R
360354-2/-3	Delta P Switch	A/R
Ricehullhalves	Ricehull (QTY reflects lbs. required)	10
Solvent	Solvent, Stoddard	A/R

  

TOOLS	DESCRIPTION	QTY
Container	Container/Box 15"x20"	1
Brush	Soft Fiber	1

**REFERENCES**

AMM 49-00-00, 49-17-03, 49-50-03, 49-50-12

**MECH      INSP**

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DC-10 APU COMPRESSOR CLEANING

Cleaning Procedures

- \_\_\_\_\_ XXXXX 1. Start and operate APU per AMM 49-00-00, page 501.
- \_\_\_\_\_ XXXXX 2. With APU operating at no-bleed load, visually inspect surge valve butterfly and notice its position. Place APU/ISOL valve switch in the "OPEN" position and PACK #1, PACK #2 and PACK #3 switches in the "AUTO" position and observe surge valve butterfly position.
- Note: The surge valve is a modulating type valve and can cause the APU to overtemperture. During normal operation, with APU at no load idle, the valve is from full open to two-thirds open. With the load valve opened and N1 97 to 98 percent with all packs off, the surge valve is approximately one-half open. With the load valve opened and N1 97 to 100 percent with all packs on, the surge valve is closed. If the surge valve is not operating normally, it may be due to a dirty airflow sensor or surge valve filter, or loose plumbing to the surge valve.
- \_\_\_\_\_ XXXXX 3. If surge valve positions are normal, go to step 4. If surge valve positions are not normal, correct as required and re-check no-load (electric and pneumatic) EGT. If temperatures continue to exceed limits continue the preparation for compressor cleaning.
- \_\_\_\_\_ XXXXX 4. Record following data before shutting APU down.
- A. EGT \_\_\_\_\_ C

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CHECK BEING PERFORMED: Cust

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B. OAT \_\_\_\_\_ C

C. Electrical Load \_\_\_\_\_ %

\_\_\_\_\_ XXXXX 5. Shut down APU (leave inlet door open by pulling APU DOOR CONT circuit breaker within 60 seconds of placing Master Switch to off).

\_\_\_\_\_ XXXXX 6. Remove Pneumatic Duct (elbow) between load valve and LP check valve.

\_\_\_\_\_ XXXXX 7. Remove delta P switch leaving electrical connector installed.

\_\_\_\_\_ XXXXX 8. Loosen fittings at both "U" shaped lines between surge valve and airflow sensor. Either remove both tubes completely or rotate at one end so air (and rice hull) flow is through sensor-not dead-headed at the sensor.

Note: Airflow sensor removal is not necessary unless APU operation is not normal after cleaning.

\_\_\_\_\_ XXXXX 9. Remove the P3 Line from top of APU starter adapter and leave off during cleaning operation (prevents rice hull accumulation in air-oil separator at base of starter and in the de-oiler in fuel control unit).

\_\_\_\_\_ XXXXX 10. Remove Pneumatic Line going from surge valve to compressor case and install AN929-4 cap at the compressor case.

\_\_\_\_\_ XXXXX 11. Remove inlet screen per Aircraft Maintenance Manual 49-17-03, page 201.

\_\_\_\_\_ XXXXX 12. Place 2-3 lbs. of rice hulls in the container/box.

\_\_\_\_\_ XXXXX 13. Reset APU DOOR CONT circuit breaker and start and operate APU with APU/ISOL switch closed. A generator load is permissable.

CAUTION: DO NOT OPEN APU/ISOL VALVE SWITCH. APU AUTO SHUTDOWN MAY OCCUR SINCE SURGE VALVE FIXED FULL OPEN IN THIS CONFIGURATION.

\_\_\_\_\_ XXXXX 14. With APU operating at no-bleed load slide container/box from left to right into the APU inlet opening. Uniformly feed in rice hulls until container is empty. Repeat until ten pounds is depleted.

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CAUTION: DO NOT COVER MORE THAN HALF OF THE INLET OPENING WITH THE BOX. IF NECESSARY, KEEP CONTAINER/BOX DIAGONALLY ACROSS OPENING TO PREVENT INGESTION OF THE CONTAINER/BOX. EXTREME CAUTION MUST BE TAKEN DURING THE CLEANING PROCESS TO PREVENT INGESTION OF FOREIGN MATERIALS WHICH CAN BE DAMAGING TO COMPRESSOR BLADES. GOGGLES SHOULD BE WORN TO PROVIDE EYE PROTECTION.

- \_\_\_\_\_ XXXXX 15. Shut down APU (leave inlet door open by pulling APU DOOR CONT circuit breaker within 60 seconds of placing Master Switch to off).
- \_\_\_\_\_ XXXXX 16. Manually open load valve after cleaning to remove small quantity of rice hulls that accumulate around the butterfly valve to prevent contamination of A/C (Bleed Air) system.
- \_\_\_\_\_ XXXXX 17. Clean inlet screen with brush and solvent. Wash and flush with water.
- \_\_\_\_\_ XXXXX 18. Re-install inlet screen per the Aircraft Maintenance Manual, 49-17-03, 49-50-03 and 49-50-12.
- \_\_\_\_\_ XXXXX 19. Remove AN929-4 cap at compressor and re-install line at Compressor.
- \_\_\_\_\_ XXXXX 20. Re-install De-oiler Line.
- \_\_\_\_\_ XXXXX 21. Re-install two "U" shaped Lines between surge valve and airflow sensor. Tighten nuts securely.

CAUTION: CAREFULLY CHECK THAT ALL AIR LINES TO AND FROM SURGE VALVE, LOAD VALVE AND SENSOR ARE TIGHT.

Note: If airflow sensor appears extremely dirty, install serviceable Sensor. Sensor/delta P switch replacement may be required if APU shuts down at 95 percent N2 after cleaning.

- \_\_\_\_\_ XXXXX 22. Re-Install delta P switch and connector and re-install Pnematic Duct Elbow between load valve and check valve.
- \_\_\_\_\_ XXXXX 23. Place APU Master Switch to RUN, then reset APU DOOR CONT circuit breaker (this sequence necessary to keep door from recycling). Start APU at no-bleed load and

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same generator load as in step 4. Record the following.

A. EGT\_\_\_\_\_C

B. OAT\_\_\_\_\_C

C. Electrical Load\_\_\_\_\_%

\*\*\*\*\* END OF WORKCARD \*\*\*\*\*