

SERVICE BULLETIN

5/17/2010

Alkota Diesel-Fired Water Heaters, as installed on Modec Mobile Decontamination Apparatus

Required Ongoing Maintenance

As mechanical equipment in which combustion occurs, the Alkota water heaters installed on Modec Mobile Decontamination Apparatus require ongoing maintenance to ensure proper and safe performance. The Alkota owner's manual provided with the decontamination apparatus (also available online at http://www.deconsolutions.com/MABAS_Decon.html) should be consulted for complete maintenance instructions. Included in this Service Bulletin are points which should be observed EACH TIME the unit is in service, and periodically (suggested at intervals no longer than 6 months).

1. Prior to firing heaters, bottom access panels should be removed to observe the mechanical components and floor beneath the heater. Any fuel at bottom of unit should be cleaned up prior to firing heaters. Fuel beneath the heater can indicate a problem with the fuel delivery system (see #6 in the attached Troubleshooting chart).
2. With the system in full operation (all showers flowing, water heaters firing), water heater exhaust should be observed. For black, sooty smoke (indicating excessive fuel in the combustion chamber), air intake should be increased using the attached "Air Band Adjustment" procedure. For white, eye irritating smoke (usually also indicated with excessive "rumble" during ignition), air intake should be decreased.

For additional information or guidance with preventative or corrective maintenance concerning the Alkota Diesel-Fired Water Heaters, please call Modec at 800-967-7887 or Alkota at 800-255-6823.

OIL FIRED WATER HEATER TROUBLESHOOTING

TROUBLE	POSSIBLE CAUSE	REMEDY
1. Machine will not rise to operating temperature	A. Low fuel pressure. B. Water in fuel piping. C. Fuel filter clogged. D. Poor combustion. E. Improper fuel supply. F. Temperature control inoperative (if equipped).	A. See BURNER on MODEL SPECIFICATIONS for specified pressure. B. Drain fuel tank and remove and replace filter per FUEL FILTER INSERT . C. Remove and replace fuel filter element per FUEL FILTER INSERT . D. See "Poor combustion". E. Use fuel specified in "BURNER" section of the MODEL SPECIFICATIONS . F. See TEMPERATURE CONTROL INSERT .
2. Machine overheats	A. Insufficient water. B. Temperature control inoperative. C. Improper fuel supply	A. See Low Operating Pressure on MACHINE TROUBLESHOOTING INSERT . B. See TEMPERATURE CONTROL INSERT . C. Use fuel specified in "BURNER" section of the MODEL SPECIFICATIONS .
3. Dry steam (very little moisture, very hot steam)	A. Insufficient water. B. Improper fuel supply. C. Improper fuel pressure.	A. See Low Operating Pressure on MACHINE TROUBLESHOOTING INSERT . B. Use fuel specified in BURNER section of the MACHINE SPECIFICATIONS . C. See BURNER on MODEL SPECIFICATIONS for specified pressure.
4. Machine smokes (sweet smelling exhaust)	A. Improper fuel supply. B. Insufficient combustion air. C. Leaking fuel system. D. Clogged or improper burner nozzle. E. Loose burner nozzle.	A. Use fuel specified in BURNER section of MODEL SPECIFICATIONS . B. See AIR BAND ADJUSTMENT on OIL BURNER MAINTENANCE INSERT . C. Correct leakage problem. D. Remove (DO NOT CLEAN) and replace nozzle per BURNER ASSEMBLY INSERT . E. See BURNER MAINTENANCE INSERT .
5. Machine fumes (exhaust burns eyes)	A. Too much combustion air. B. Improper fuel pressure.	A. See BURNER TROUBLESHOOTING INSERT . B. See FUEL on MODEL SPECIFICATIONS for specified pressure.
6. Excessive oil dripping from laydown coil condensate.	A. Loose nozzle. B. Fuel pressure too high. C. Burner nozzle defective. D. Incorrect burner nozzle.	A. See BURNER TROUBLESHOOTING INSERT . B. See FUEL PRESSURE ADJUSTMENT section on BURNER MAINTENANCE INSERT . C. Remove and replace with appropriate nozzle found on the BURNER ASSEMBLY OR BREAKDOWN INSERT . D. Remove and replace with appropriate nozzle found on the BURNER ASSEMBLY OR BREAKDOWN INSERT .
7. Poor combustion.	A. Low fuel pressure. B. Improper fuel supply. C. Insufficient combustion air.	A. See Low Fuel Pressure on BURNER TROUBLESHOOTING INSERT . B. See Low Fuel Pressure on BURNER TROUBLESHOOTING INSERT . C. See AIR BAND ADJUSTMENT section on OIL BURNER MAINTENANCE .

OIL BURNER MAINTENANCE

OIL FIRED CLEANERS

AIR BAND ADJUSTMENT

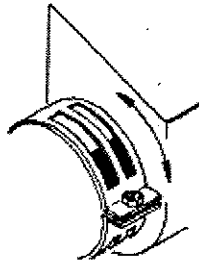
NOTE: The air band adjustment on this burner has been preset at the factory (elevation approximately 1400 feet). On equipment installed where elevation is substantially different, the air band(s) must be readjusted.

1. Loosen the cap screw retaining the air bands.
2. Move the air bands as indicated below with the machine in operation.

NOTE: The air band should be set so the exhaust gives the smoke spot specified in the GENERAL section of the **MACHINE SPECIFICATIONS** on a Shell-Bacharach scale.

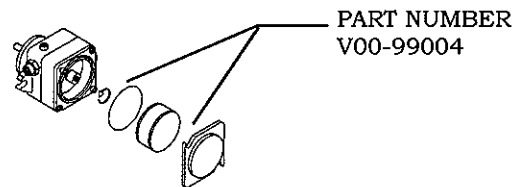
If a smoke tester is not available, a smoky exhaust, oily odor, or sweet smell indicates insufficient air while eye-burning fumes indicate too much air.

3. Tighten the cap screw retaining the air bands.



DANFOSS PUMP

1. Shut off fuel supply.
2. Loosen the 2 screws with 7/64 allen wrench one turn.
3. Turn cover counter clockwise and pull strainer and cover off of pump housing.
4. Clean out any dirt remaining in the bottom of strainer cover. If there is evidence of rust inside of the unit, be sure to remove water in supply tank and fuel filter.
5. Reinstall reverse of removal.
6. Turn on fuel supply.



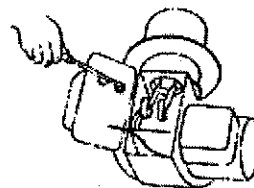
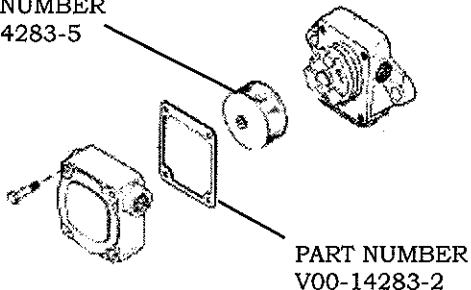
TRANSFORMER TEST

1. Remove burner junction box cover.
2. Turn on burner and make sure ignition transformer is receiving rated voltage.
3. Turn off burner.
4. Loosen screw and swing transformer away from burner gun assembly.
5. Turn on burner.
6. Short the high voltage terminals. **CAUTION:** Use screwdriver with a well insulated handle to avoid shock.
7. Open gap by drawing screwdriver away from one electrode while touching the other.
8. The spark should jump between 5/8 inches and 3/4 inches, if it doesn't jump, replace the transformer.
9. Turn burner off.
10. Partially close transformer. Check if buss bars align and contact transformer electrodes. If buss bars do not contact, see Buss Bar Alignment.
11. Close transformer, reposition retainer clip and tighten screw.

FUEL PUMP FILTER SUNDSTRAND PUMP

1. Shut off fuel supply.
2. Loosen the 4 screws holding the cover to the fuel pump housing.
3. Take cover and cover gasket off and pull strainer off of pump housing.
4. Clean out any dirt remaining in the bottom of strainer cover. If there is evidence of rust inside of the unit, be sure to remove water in supply tank and fuel filter.
5. Turn on fuel supply. Failure to do so will result in fuel pump damage.

PART NUMBER
V00-14283-5



OIL BURNER MAINTENANCE

OIL FIRED CLEANERS

BUSS BAR ALIGNMENT

1. With burner off, loosen screw and swing the transformer away from burner gun assembly.
2. Inspect the buss bars and transformer electrodes for pitting or corrosion.
3. Partially close the transformer. Check if the buss bars contact and are in alignment with transformer electrodes.
4. Proper adjustment is obtained by gently bending the buss bars until they spring against, parallel, and are in full contact with the transformer electrodes.
5. With buss bars aligned, carefully close and fasten the transformer.



BURNER GUN REMOVAL & INSTALLATION

1. Disconnect the fuel line from the burner gun assembly oil line fitting. Loosen the other end of the line and swing line out of the way.
2. Remove the retaining nut.
3. Loosen screw and swing transformer away from burner gun assembly.
4. Carefully remove the burner gun assembly.
 - A. Check and replace electrode insulators if cracked.
 - B. Clean burnt buss bars.
 - C. Clean carbon off electrodes.
 - D. Clean carbon off oil nozzle. (Use caution not to scratch face of nozzle or orifice.)
 - E. Check for a loose oil nozzle. **NOTE:** Check with dealer and/or replace nozzle with proper nozzle.
5. Gently replace burner gun assembly in air tube. **CAUTION:** Do not force. Forcing will cause electrode misalignment
6. Reinstall the retaining nut.

Reinstall the oil line making sure both ends are tight.

7. Partially close transformer. Check if buss bars align and contact the transformer electrodes. If buss bars do not contact, see Buss Bar Alignment.
8. Close transformer, reposition retainer and tighten screw.

ACCESSORIES

Z01-00095 - Fuel Nozzle Changing Wrench
Z01-00092 - Fuel Pump Wrench (Sundstrand)
Z01-00093 - Solenoid Wrench (ASCO)

ELECTRODE ASSEMBLY ADJUSTMENT

1. Loosen screws holding electrode assemblies.
2. Raise electrode tips 5/32 inches above surface plane or end of oil nozzle.
3. Place each electrode tip 5/16 inches from center of spray nozzle hole, maintaining previous measurement.
4. Spread electrode tips to 1/8-inch gap maintaining previous measurements.
5. When the proper measurements are obtained, gently tighten screws that hold electrode assembly in place. **CAUTION:** Do not over tighten, as this will cause the electrode insulator to fail.

