



SIOUX CORPORATION

ONE SIOUX PLAZA - BERESFORD, SD 57004
TOLL-FREE: 888-763-8833 - PH: 605-763-3333
FX: 605-763-3334 - email@sioux.com - www.sioux.com

PRE-SEASON WATER HEATER CHECK LIST

- ✓ Check the **coil inlet pressure**; if the serial number is prior to 0107031, the pressure should be 60–65 psi. If the serial number is after 0107032, the pressure should be 85 – 90 psi. If the pressure is greater than these numbers, the coils are becoming built up with scale and should be delimed.



- ✓ Check the **outlet pressure gauge**. This gauge should be less than 5 psi. If not, check for restriction in discharge plumbing for excessive scale buildup.

- ✓ Remove the inlet screen from the Y-strainer mounted on the pump inlet and clean.

- ✓ With the water pump on, check the operating current of the motor and compare to the name plate rating. If the amperage is higher than the name plate rating, check for bearing wear or other signs of motor drag. Replace if necessary.



- ✓ Inspect the pump for any signs of water leaking around the seal of pump. If water is present, replace the pump seal.

- ✓ With the water pump and burner on, slowly close the ball valve on the discharge of the heating coil. **DO NOT fully shut off valve or you could damage the pump.** As the water flow decreases, the flow switch should turn off the burner when water flow is below approximately 12 gpm. The **low flow light** on the front of each burner/coil should turn on. If the burner will not shut down when partially closed, replace the flow switch on the inlet of the heating coil. When finished, fully open the valve.

- ✓ While closing the **ball valve** on the discharge of the coil, monitor the discharge temperature on the temperature gauge on the outlet of the coil. If the water temperature exceeds 195 degrees, the **high temperature limit switch** should shut the burner off. If it does not, replace the high temperature limit switch.



GAS FIRED BURNERS:

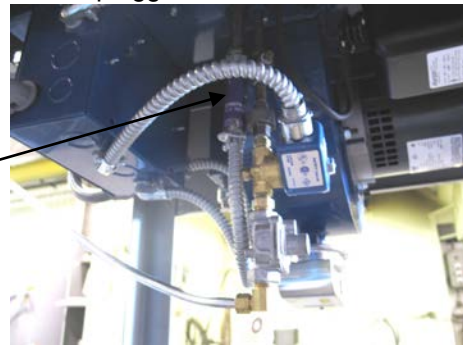
PILOT FLAME SIGNAL:

- ✓ With a DC Volt meter set to 5V scale, check the pilot flame signal on the **Honeywell Relay Module** located in the electrical enclosure mounted on the body of the heating section. Insert the positive probe into the + jack of the flame amplifier and the negative into the – jack. The minimum acceptable steady DC voltage is 4 DC volts. If voltage is less than 4, perform the following diagnosis to improve the flame signal:



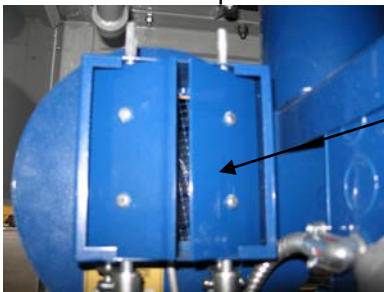
FOR SERIAL NUMBERS PRIOR TO 0107031:

- ✓ Inspect the pilot assembly for cracks or distorted flame pattern and the ignition wires for signs of burned insulation. Replace with a new wire if necessary. Check pilot gap, per the service manual and if necessary adjust per specification. If signal is still low, double check the ground is connected properly on the pilot assembly.
- ✓ The burner is a naturally aspirated type of burner and all burner jets should be visually inspected while the burner is on. Burner jets can become plugged from cement dust, inhibiting combustion air and gas from passing through the orifice. If all jets are not burning or flame color is not blue in color, jets may need to be cleaned. If cleaning is needed, remove the burner and clean all the burner jets.



FOR SERIAL NUMBERS AFTER 0107032:

- ✓ Remove the **purple cad cell** from the pilot assembly and inspect the lens. Clean the lens with a soft rag if dirty.
- ✓ Inspect the pipe that the cad cell attaches to, and if dirty or dusty, clean with a rag to remove buildup.



- ✓ Inspect **air doors and fan** for buildup of dust. Note air door setting, blow out any buildup, and set air door to original setting. If in doubt as to correct settings, contact a local distributor to perform a flue gas analysis, or consult Sioux Corp. for assistance.

OIL FIRED BURNER:

- ✓ Replace **fuel filter** on fuel supply line. Install a pressure gauge on the fuel pump and test the fuel pressure with the burner on. This gauge is available from Sioux and can be easily added to ensure adequate fuel pressure. (Minimum supply pressure should be: Wayne Burner: 100 psi or R. W. Beckett: 300 psi.) If the pressure is less than this, replace the burner nozzle per the specification.



- ✓ Open the **door** and remove the nozzle/nozzle line assembly from the burner. Check and adjust the position and gap between electrodes, per the Owner's Manual. Replace electrodes and nozzles annually. Verify that the oil tube assembly and electrodes are in good condition with no cracks or damage. Inspect the blower fan for dirt buildup and clean with an air hose. Inspect the fan for any cracks or missing blades; replace if necessary.
- ✓ Remove the cad cell from the line assembly. Inspect and clean with a soft rag if dirty. Follow the cad cell trouble shooting section in the manual if the burner lights but goes into a protective lockout.