



## **KETTLE FURNACE Preventative Maintenance Schedule**

### **WARNING**

TO ENSURE THAT THE DRIVEN EQUIPMENT IS SERVICED PROPERLY, TURN OFF AND LOCKOUT OR TAG POWER SOURCE BEFORE PROCEEDING. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN BODILY INJURY.

1. Blower inlet filter should be removed and cleaned using dry compressed air. The period should be every month. A new filter should be installed 2 to 4 times a calendar year.
2. Calibration of all instruments and the thermocouples should be checked at six (6) month intervals.
3. The metal temperature should be checked against an independent hand held thermocouple at one (1) month intervals, and this value checked against instrument and recorder displays.
4. External Kettle thermocouples should be checked semi-annually to ensure their proper seating against the kettle wall.
5. External Kettle thermocouples should be replaced on yearly basis.
6. All combustion limits should be tripped annually, to ensure proper closing of all natural gas solenoid valves, natural gas blocking valves and opening of the natural gas vent valves.

The limits to be tripped are the following:

- a. Low Gas Pressure Switch – one device.
  - b. Low Combustion Air Pressure Switch – one device.
  - c. High Gas Pressure Switch – eight devices.
  - d. Bath High Limit Controller – one device.
7. The flue temperature controller should be tripped yearly to insure its proper operation. This is to make sure that the burners will be forced to the low fire position when the combustion chamber exceeds its preset temperature.



8. The battery for backing-up the Random Access Memory (RAM) in the recorder should be replaced every 2 to 3 years.
9. Visually inspect the perimeter of the furnace, looking for cracking in the concrete or movement of the supporting steel structure. This should be accomplished every three (3) months.
10. Turn off burners, one at a time, remove the flame rods and spark plugs (igniter) and clean them using steel wool. This should be accomplished every three (3) months or whenever a burner is difficult to light. If UV scanners are used, they should be pulled out and the lens wiped with a soft cloth to remove dust deposits.
11. If a standby or spare blower assembly is stored for a long period of time, it must be carefully protected from dampness, dirt and vibration. The inlet and discharge should be covered to keep foreign matter out. The motor shaft should be periodically rotated a few times by hand, to keep the shaft from warping. Failure to comply with any of the preceding will void warranty.
12. Verify the proper settings for natural gas combustion air at both high and low firing based on the original set up sheets. This procedure should be done every three (3) months.
13. **CAUTION:** Serious burns can occur to exposed skin that is too close to the furnace inspection ports! There will be excessive pressure and heat surging from the port when the furnace is at high fire. Only trained maintenance personal should perform this task. **CAREFULLY** open one of the inspection doors and check for excessive amounts of back pressure inside the combustion chamber. At high fire, you should be able to detect pressure coming out of the port, from no more than 12" away from the port opening, on the port opposite of the flue. If necessary, adjust waste gas damper located in the exhaust flue stack.