

Upper chamber -2200 degrees F maximum

Start button depressed and nothing happens:

1. Checking incoming power.
2. Check 5 amp fuse on front panel.
3. Check output on step down transformer- it should be 120v.
4. With an ohm meter, check the start switch to make sure it has continuity when on.
5. Check incoming wires to the start switch for broken or loose wires.
6. Check normally closed stop switch with ohm meter.

Small holding relay pulls in when start button is depressed and unit on light comes on but drops out when start button is released.

1. Check R-1 contact points on holding relay and for power to these points. Test from white neutral wire to R-1 points.
2. Inspect wires to and from R-1 points on holding relay and terminal screws.

Instrument and unit on light stay on but main heater contactor will not pull in when set point on instrument is raised above furnace chamber temperature.

1. Check for 115v power to main contactor magnetic coil.
2. Check at instrument for power between white wire L-2 terminal and the terminal that has the yellow wire going to the heater contactor coil.
3. Check the door safety switch on the right side of the furnace. The door arm cover will have to be removed. Switch may be out of adjustment. If you have power at the terminal on the back of the instrument that has the yellow wire attached to it and no power at the contactor coil, the problem is the door safety switch or the wires leading to and from the switch.
4. No power out of the instrument on the yellow wire terminal to the safety switch will indicate that the instrument may be defective.

Main heater contactor pulls in but no heat.

1. Check heater fuses.
2. Check SCR -a green light on or flashing indicates the SCR is okay.
3. Check for power to the elements.
4. Observe the elements inside the furnace chamber for burned out spots. Check under the hearth plate for scale that may have fallen under it and shorted out the bottom element. The bottom of the furnace chamber should always be kept clean.
5. Check heater terminals for corrosion and tightness. To tighten terminals, put a wrench on the nuts on both sides of the terminal strap and tighten in such a way that you do not move the terminal itself. The elements are very brittle and will break easily.

(DU troubleshooting cont.)

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Defective thermocouple.

1. The digital instrument will display something other than a temperature reading depending on the brand of instrument. Check connections and replace the type K 8" thermocouple.

Temperature rises and then shuts off and does not come back on, but the instrument light indicates that the instrument is calling for heat or power.

1. If all of the above situations check out okay, the instrument may be defective.

Temperature overshoots the set point, then drops to 10-15 degrees F below the set point and never seems to be able to control at set point.

1. Proportioning band is too narrow and needs to be widened. Consult the instrument instruction manual on the CD.

Temperature ranges 2 to 3 degrees above and below set point.

1. Increase cycle time slightly. Too fast a cycle will make contactors work too fast. Do not increase any more than enough to make the temperature hold at set point.
2. Consult the instrument manual CD.

Temperature never reaches set point, but is controlling well, 5-10 deg F below set point or temperature controls over set point.

1. Consult the instrument manual CD.

Lower chamber- 1200 deg F maximum

Depress start button and nothing happens.

1. Press upper chamber start button to see if upper chamber works.
2. Check incoming power to be sure it is on.
3. Check power from step down transformer to start/stop buttons
4. Check 5 amp panel fuse on right side of the instrument panel,
5. Check wire and connections from incoming power to start switch for loose or broken wires.
6. Check normally close stop switch with ohm meter.
7. Check motor overload protection, may be bad or overheated. May need different heaters because of ambient temperature.

Fan starts when start button is depressed but stops when you release it.

1. Holding contacts for start switch are located on the motor contactor. This switch may be faulty or out of alignment. Switch may be bypassed momentarily to check it out.
2. Check for broken wires to and from this auxiliary switch or loose terminals.

(DU troubleshooting cont.)

Instrument operates but unit on light does not come on.

1. Check for 120v at light terminals. The light may have to be replaced.

The unit on light and the instruments light and the blower come on and stay on but nothing happens when the set point is above furnace chamber temperature.

1. Check for power to heater contactor coil for lower chamber. If there is no power, check back to instrument between L-2 (white wire) and orange wire terminal. If there is no power, the instrument is bad.
2. Contactor is powered but does not work- replace the contactor.

Heater contactor pulls in but there is no power to the heaters.

1. Check heater fuses. They may have blown (bad).
2. Check SCR -a green light on or flashing indicates the SCR is okay.
3. Check contacts on contactor to see if they are bad or burnt.
4. Check wire terminals to see if they are loose.
5. Check terminals leaving the heaters. They must be tight and not burnt. To tighten terminals coming from the furnace, put a wrench on the kearny nut and tighten. Watch the terminal rod. It must not turn because the elements are very brittle and can easily break.

The digital instruments read something other than the temperature.

1. Check thermocouple lead wires for breaks or loose connections.
2. If nothing is found, change the thermocouple (type J -15")

Everything works but no heat.

1. The best way to check the heater is to take off the nuts that hold on the door seal ring and slide out the work chamber and look at the heating elements. If there is a break or short anywhere in the element wire, the heating panel should be replaced. This will require the removal of the back plug holding the fan assembly and the elements.

The lower chamber stops, or shuts off and nothing happens when the start button is pushed.

1. Check the motor overload by manually closing the motor contactor with a wooden or plastic stick. If it runs, the motor overload unit may be bad.
2. Check terminals for tightness on the motor contactor. Loose terminals can cause the motor to overheat.
3. Check overload heaters to see if they are burnt out.

Fan bearings seem to go bad too fast.

1. Bearings should be greased with top quality grease or a high temperature grease.
2. Fan motor is being shut off before the furnace cools down to 200 deg F. Turn the set point down to room temperature and open the furnace door until the furnace cools down to 200 deg F and then shut off.