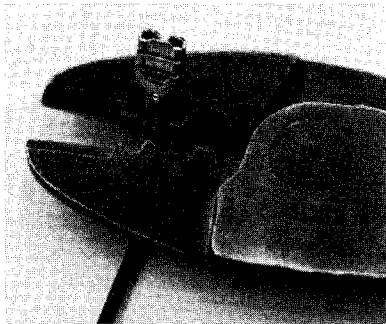


Board Upgrades

Upgrading to the DTC 800 Series Board From the DTC 100 Series

- 1 **UNPLUG** kiln.
- 2 Remove the 4 corner screws holding the DTC 100C or DTC 100 faceplate to the switch box. Lift out the faceplate.
- 3 Loosen screws along the terminal strip on the back of the board. Remove all connecting wires.
- 4 Cut off the wire terminals from the wire ends. (Except for thermocouple wires; they attach to DTC 800 series the same way as DTC 100.)
- 5 Strip 1/4" of insulation from the end of each wire. Crimp a push-on connector (furnished with replacement board) to the wires. If your kiln or furnace has a green wire, crimp it together with the red wire. Also, crimp the blue and black wires together.



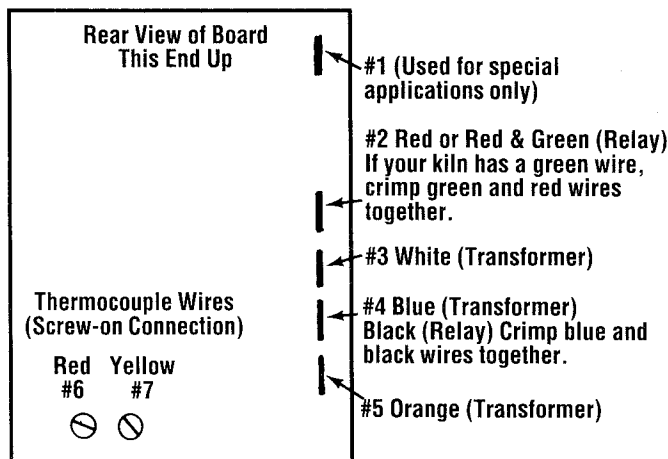
Use the type of crimping tool that leaves a small indent on the push-on connector. The indent goes on the side opposite the seam of the connector.

- 6 Connect wires to board using the diagram below. Install DTC 800 series faceplate to the switch box.

Upgrading from DTC 600 Series

UNPLUG kiln and remove the 4 corner screws holding the board to the switch box. Lift out the faceplate.

600 series boards have six terminals on the back. The 800 series has an extra terminal, labeled below as #1. Transfer wires from your board to the new board ignoring terminal #1 on the new board. (Terminal #1 remains bare except for special applications. See color coding below.)



Safety Rules

The warranty on your DTC 800 series controller does not cover damage from overfiring, regardless of the circumstances. It is the operator's responsibility to make sure the kiln turns off at the end of the firing. Follow the safety rules below in addition to the safety rules for your kiln or furnace.

- Unplug kiln when not in use.
- Do not leave kiln unattended near end of firing.
- Turn controller safety switch off when kiln fires to completion.
- Wear firing safety glasses (available from Paragon) when looking into peephole of a hot kiln.
- Do not touch hot sides of kiln or furnace. Keep unsupervised children away.
- Install your kiln or furnace at least 12 inches from any wall or combustible surface. (See manufacturer's recommendation for your model.)
- Do not open lid or door until kiln or furnace has cooled and all switches are off.
- Fire only in a well-ventilated, covered and protected area away from flammable materials. Keep cordset away from hot sides of kiln.
- **DANGEROUS VOLTAGE!** Do not touch heating elements with anything. Disconnect kiln or furnace before servicing.

Before You Start

Which Instructions Apply To Your Controller

The DTC 800C fires by Cone-Fire or Ramp-Hold. The DTC 800 fires in Ramp-Hold only.

Cone-Fire is a simplified method of firing to a pyrometric cone. Ramp-Hold, a little more advanced, allows you to adjust firing speed and temperature up to eight times during the firing.

Operation Begins from The Idle Display

The controller will display **ErrP** when you first plug it into an outlet.

On the DTC 800 version, the alarm sounds when you first plug in the controller. To turn the alarm off, turn the safety switch on and press ENTER.

Programming begins from **IdLE**. From **ErrP** or a flashing temperature, press any key (except **STOP**) to display **IdLE**. The safety switch (located near the display window) must be in the on position before **IdLE** will display.

If the display shows **FAIL** instead of **IdLE**, the thermocouple is either disconnected or burned out.

Time and Temperature Display

During time display, a center display period appears. During temperature display, the period disappears. The center display period separates hours from minutes (i.e. 1 hour and 30 minutes displays as 01.30).

You can enter up to 99 hours and 99 minutes, displayed as 99.99. In this example, .99 would seem to be tenths and hundredths of hours, yet .99 is 99 minutes.

How to Select °F or °C

The controller operates in °F. or °C temperature. In °C display, a lighted period appears in the lower right, and in °F., it disappears. To switch from °F. to °C. or vice versa: from **IdLE**, touch **ENTER** then 0. **CHG°** will appear. Touch **ENTER** again.

The Safety Switch

IdLE will display only if the safety switch is turned on. When the firing is finished, **CPLt** will display alternating with the total firing time in hours and minutes. Cool-down temperature will display only after the safety switch is turned off.

Turn the safety switch off after the kiln fires to completion. The switch is designed to prevent power flow to the kiln heating elements.

Delay Fire

The Delay Fire programs the kiln to begin firing later. It zeroes out after each completed firing, so if you want to use it for repeat firings, you will need to reset it each time. See Cone-Fire or Ramp-Hold firing instructions.

WARNING: Never leave your kiln unattended near the end of a firing. We cannot guarantee your kiln against overfiring even though the controller is automatic. The operator assumes full responsibility for shutting the kiln off at the proper time.

Repeat Firings & Program Review

To repeat the last firing, just press **ENTER** twice from **IdLE**. The kiln will begin firing. (This works for either Ramp-Hold or Cone-Fire.) But first, use Program Review to make sure you are using the correct program. To start Program Review from **IdLE**, touch **ENTER** then 6. Values for the last program used will display one after the other. You can also use Program Review during firing simply by pressing 6.

Power Failures

After a brief power failure during firing, **PF** will appear in the display, alternating with temperature. Even though it displays **PF**, the kiln will continue to fire normally. The display shows **PF** simply to inform you of

a brief power failure. Press any key except **STOP** and normal temperature display will return.

When a firing has been interrupted by an extended power failure, **ErrP** will display when power returns. In addition, the DTC 800 controller (not the 800C) will sound a steady alarm. Check the witness cones on the shelf. If they have not bent to maturity, fire the load again.

With **ErrP** displayed after the power failure, press **ENTER**. The hours the kiln fired and temperature it reached before the power failed will appear. Then **IdLE** will display.

Setting Alarm From Idle

The alarm beeps when a preset temperature is reached.

- 1 From **IdLE**, touch **ENTER** then 7. **AlAr** will appear alternating with the last alarm temperature entered.
- 2 Enter alarm temperature. Then touch **ENTER**. **IdLE** will appear. (Enter 9999 to turn alarm off.)

When the alarm sounds during a firing, shut it off by pressing **ENTER**. (If it sounds as soon as the furnace begins firing, it is because the alarm was set to 0000.)

Setting Alarm During Firing

After you shut off the alarm during firing, you can set it to go off again later at either a higher temperature or a cool-down temperature.

- 1 The alarm beeps while the kiln is firing. Touch 7.
- 2 Enter the new temperature.
- 3 Touch **ENTER**. The kiln will continue firing.

*Caution: if you touch 7, enter a new temperature, and forget to press **ENTER**, the firing will stop and the kiln will begin to cool down. You must press **ENTER** after entering the new alarm temperature.*

Cone-Fire Mode

This section is for DTC 800C boards, not DTC 800. The DTC 800 uses Ramp-Hold Mode only (see page 5).

Firing Speeds

Cone-Fire fires at slow, medium or fast. Use **FAST** (1) for small, thin-walled ceramic greenware, overglazes, decals and china paint. Use **MEDIUM** (2) for larger, heavier pieces or tightly loaded kilns. Use **SLOW** (3) for hand-thrown pottery or porcelain.

Hold (Soak) Time

“Hold” means heat-soaking the ware at the end of the firing. You can hold the kiln at the final temperature for up to 99 hours and 99 minutes.

CAUTION: Be very careful how you use Hold. It can easily overfire your ware.

Looking Up a Cone Temperature

A feature called "Cone Table" can give you the temperature of a pyrometric cone. Do not be concerned, however, if your kiln's shut-off temperature for a cone does not match the temperature in the Cone Table. The temperature of a cone varies depending on firing speed.

1 From **IdLE** display, touch **ENTER** then 9. **ConE** will appear, then the cone currently programmed in Cone-Fire Mode.

2 Enter the pyrometric cone number you are looking up. Then touch **ENTER**. The display will show the cone temperature. If you enter a non-existent cone number, the display will show **ConE**, ready for you to enter a different cone number.

Fine-Tuning Cone-Fire To a Shelf Cone

Suppose firing in Cone-Fire does not match the bending of a pyrometric cone on the kiln shelf. You can use Cone-Fire Tuning to fire a little hotter or cooler to more closely match the shelf cone.

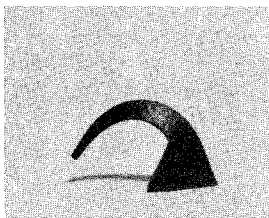
Cone-Fire Tuning can be set from 1 to 9. For normal firing it is set at 5. The lower the number, the hotter the firing:

9	38° F. Cooler
8	26° F. Cooler
7	13° F. Cooler
6	6° F. Cooler
5 (Normal)	No Adjustment
4	5° F. Hotter
3	10° F. Hotter
2	15° F. Hotter
1	20° F. Hotter

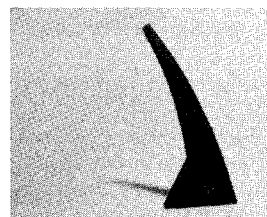
To use Cone-Fire Tuning, **IdLE** must display. Press **ENTER**, then 1. **ConE** will appear. Press 999, **ENTER**. **rSLt** (for result) will display alternating with the current Tuning number. Enter the new number, then press **ENTER**. **ConE** will appear. Continue entering the values for the Cone-Fire program in the usual way (see instructions at right). Once you change the Tuning number, Cone-Fire will remain adjusted to that number until you change it again.

The large cone on the kiln shelf should be visible through a peephole. Avoid exposure to cool air by keeping the cone at least 3" away from the peephole. Program the DTC 800C for the cone on the shelf and fire. After cooling, check the cone:

The cone bent to 6 o'clock:
In this case, the controller is matched to your kiln.

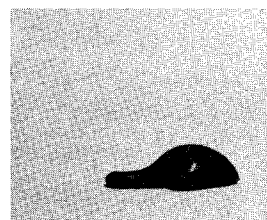


The cone did not bend far enough: Use a lower Tuning number for the next firing.



The cone bent too far: Use a higher Tuning number for the next firing.

Do not be overly concerned with achieving an exact 6 o'clock bend. The difference between a 3 o'clock and a 6 o'clock bend is only a few degrees. Cones, even from the same box, also vary slightly.



Cone-Fire Programming

As the program prompts you for cone, speed, etc., you will see values entered for the last firing. To use these values again, just touch **ENTER**.

To fire without Delay or Alarm: Follow steps 1 through 6 below. Then from **IdLE** press **START** twice.

- 1 Turn controller safety switch ON.
- 2 If controller displays **ErrP** or a flashing temperature, touch **ENTER**. **IdLE** will appear.
- 3 Touch **ENTER** then 1. **ConE** will appear. Enter cone number.
- 4 Touch **ENTER**. **SPd** will appear. Enter speed: **FAST (1)**, **MEDIUM (2)**, **SLOW (3)**.
- 5 Touch **ENTER**. **HLd** will appear. Enter hold time, if any, in hours and minutes (e.g. 12 hrs 30 mins = 12.30).
- 6 Touch **ENTER**. **IdLE** will appear.
- 7 To set alarm, touch **ENTER** then 7. **ALAr** will appear. Enter new alarm temperature. (Enter 9999 to turn alarm off.) Then touch **ENTER**.
- 8 To set delay fire, touch **ENTER** then 3. **dELA** will appear. Enter delay time in hours and minutes (e.g. 12 hours 30 minutes = 12.30). Then press **ENTER**. (Delay zeroes out after each firing.)
- 9 To start program, touch **ENTER** twice. **-On-** will appear, then kiln temperature. If a delay was programmed, **-On-** will appear, then time remaining until start.

To stop the program during the firing cycle, touch **STOP** or turn the safety switch OFF. When program fires to completion, **CPLt** will appear alternating with total firing time in hours and minutes. Turn safety switch OFF when **CPLt** appears. To shut off the alarm when it sounds during a firing, press **ENTER**.

DTC 800C Cone-Fire Shorthand Instructions

Once familiar with Cone-Fire, you will probably prefer these simplified instructions. After you press the key(s) in the left column, the message to the right will appear. (Cone-Fire operates in DTC 800C, not DTC 800.)

NO DELAY FIRE, NO ALARM. IF ALARM SOUNDS DURING FIRING, PRESS ENTER.

KEYS TO PRESS	DISPLAY
Turn controller switch on	ErrP or flashing temperature
ENTER	IdLE
ENTER	----
1	ConE
Cone # of choice	05 Displays cone #
ENTER	SPd
1(Fast), 2(Med.), or 3(Slow)	FASt Med or SLO
ENTER	HLd
Hold time (if any)	00.00 (or hold time)
ENTER	IdLE
ENTER	----
ENTER	-On-

Kiln is now firing to the cone you selected.

Ramp-Hold Mode

Ramp-Hold is available on both the DTC 800C and DTC 800.

In Ramp-Hold, the kiln fires in segments, or stages. Each segment has a firing rate, firing temperature, and hold (or soak) time. Ramp-Hold includes eight segments. Use only the number of segments you need per firing, from one to eight.

Rate is degrees of temperature change per hour, from 1° to 9999°F. (e.g., to increase temperature by 500° per hour, enter a rate of 500).

To control cooling, set the segment to a lower temperature than that of the preceding segment.

Storing User Programs In Ramp-Hold

A “user program” is a set of firing instructions to run the kiln or furnace in Ramp-Hold. A user program includes number of segments needed; firing rate, temperature, and hold (if any) for each segment; and an alarm temperature (if any).

Ramp-Hold can store up to six user programs even when the kiln is unplugged. Potters may want to store a program for crystalline glaze, another for a favorite red glaze, etc. Glass artists might want to store several programs for fusing their favorite types of glass and another for slumping.

When you enter Ramp-Hold mode (see instructions at right), the first prompt to appear is **USER**. The **USER** prompt means, “Select a stored user program for this firing.” If you are using Ramp-Hold for the first time, press 1. Then enter number of segments, firing rate, temperature, etc. using the instructions at right. Each time you add another program to storage, select the next available number, such as 2, at the **USER** prompt.

To use a stored program, select the program number at the **USER** prompt. Press **ENTER**. If there are no changes to the program, press **STOP**. A flashing temperature will appear. Press **ENTER**. **IdLE** will appear. The controller is ready to fire the program you selected. (We suggest using Program Review before firing. See page 2.)

Hold (Soak) Time

“Hold” means heat-soaking the ware at the end of the segment. You can hold the temperature in each segment for up to 99 hours and 99 minutes.

Present Status

Present Status shows which segment the kiln is in while firing. This is especially useful for firings that have heating-up and cooling-down segments. To use Present Status, press 5 during a firing. The current segment will display momentarily.

Skip Segment

Skip Segment works only during firing. To skip a segment, press 9. **SStP** will display. (If you change your mind and don't want to skip that segment, do nothing and the firing will continue as it was.) If you still want to skip

Ramp-Hold Programming

As the program prompts you for segments, rate, temperature, etc., you will see values from the last firing. To use these again, just touch **ENTER**.

To fire without Delay or Alarm: Follow steps 1 through 9. Then press **START** twice.

1 Turn controller safety switch ON.

2 If controller displays **ErrP** or a flashing temperature, touch **ENTER**. **IdLE** will appear.

3 Touch **ENTER** then **4**. **USER** will appear. Enter a number from 1 to 6 for the stored program desired.

4 Touch **ENTER**. **SEGS** will appear. Enter number of segments you will use.

5 Touch **ENTER**. **rA 1** will appear. Enter firing rate for segment 1 (temperature change per hour: any temperature from 1° to 9999° F.).

6 Touch **ENTER**. **°F 1** will appear. Enter the temperature you will be firing to in segment 1.

7 Touch **ENTER**. **HLd1** will appear. Enter segment 1 hold (soak) time in hours and minutes (e.g. 12 hours and 30 minutes = 12.30).

8 Touch **ENTER**. Continue entering values for all segments.

9 Touch **ENTER**. **AlAr** will appear. Enter alarm temperature. (Enter 9999 to turn alarm off.) Then touch **ENTER**.

IdLE will appear.

10 To set Delay Fire, touch **ENTER** then **3**. **dELA** will appear. Enter delay time in hours and minutes (e.g. 12 hours and 30 minutes = 12.30). Then touch **ENTER**. (Delay zeroes out after each completed firing.)

11 To start program, touch **ENTER** twice. **-On-** will appear, then kiln temperature. If a delay was programmed, **-On-** will appear, then time remaining until start.

To stop the program during the firing cycle, touch **STOP** or turn the safety switch OFF. When program fires to completion, **CPLt** will appear alternating with total firing time in hours and minutes. Turn safety switch OFF when **CPLt** appears. To shut off the alarm when it sounds during a firing, press **ENTER**.

the segment, press **ENTER**. **rA** will appear along with the segment number you just skipped to.

DTC 800C & DTC 800 Ramp-Hold

Shorthand Instructions

Once you become familiar with Ramp-Hold, you will probably prefer these simplified instructions. After you press the keys in the left column, the message to the right will appear. If alarm sounds during a firing, press ENTER.

KEYS TO PRESS

DISPLAY

STORING A USER PROGRAM, THEN FIRING. NO DELAY FIRE.

Turn controller switch on	ErrP or flashing temperature
ENTER	IdLE
ENTER	----
4	USEr / 1 etc.
Select program 1 through 6	1 etc. (displays # entered)
ENTER	SEGS
Number of segments needed	1 etc. (displays # entered)
ENTER	rA 1
Temperature change per hour	0200 etc. (displays temp.)
ENTER	° F 1
Final temperature, segment 1	2000 etc. (displays temp.)
ENTER	HLd1
Hold time (if any)	00.00 (or hold time)

Repeat for number of segments desired.

ENTER	ALAr (Alarm temperature)
Alarm temperature (off: 9999)	2000 etc. (displays temp.)
ENTER	IdLE
ENTER	----
ENTER	-On-

Kiln is now firing.

SELECTING AND FIRING A STORED USER PROGRAM. NO DELAY FIRE.

Turn switch on	ErrP or flashing temperature
ENTER	IdLE
ENTER	----
4	USEr / 1 etc. (Select stored program)
1 through 6	1 etc. (displays # entered)
ENTER	SEGS
STOP	STOP then a flashing temperature
ENTER	IdLE
ENTER	----
ENTER	-On-

Kiln is now firing. (See separate Program Review instructions.)

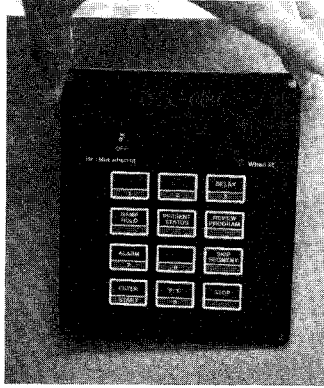
Trouble-Shooting

How to Remove Controller

SWITCH BOX WARNING: Do not open switch box without first unplugging kiln or furnace. Touching a live connection inside switch box could be fatal. Kiln must be unplugged anytime switch box is removed from kiln.

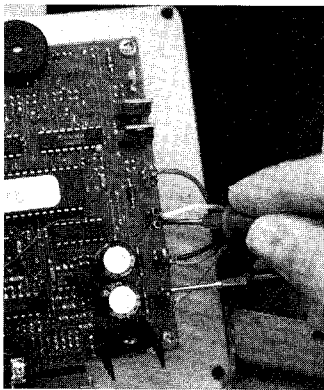
UNPLUG the kiln (or TnF II). Remove the four screws holding the faceplate to the switch box.

TnF II owners: unplug the TnF II from the wall outlet whenever these instructions say to unplug the kiln.



Removing Controller for Voltmeter Check

When checking controller board with a voltmeter, remove only controller faceplate and not the switch box. Before removing controller board, unplug the kiln. Then let the controller board hang on the switch box with the back of the board facing you. Plug the kiln back in before testing the board. The reason to unplug the kiln before you remove the controller board is that some electronic components will be destroyed if they touch a grounded object with the kiln plugged in. See chart on page 1 for connection numbers on back of board.



Problem: Controller Display Does Not Turn On

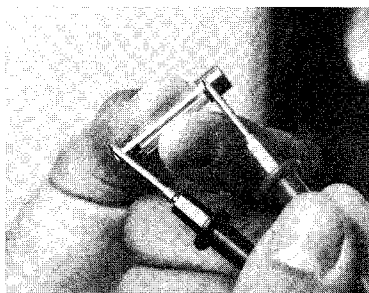
Probable Causes:

- Tripped Circuit Breaker or Blown Fuse, Kiln Unplugged
- Blown Kiln Switch Box Fuse
- Defective Transformer
- Defective Controller Board
- Disconnected Switch Box Wire

Check circuit breakers or fuses for the wall outlet. Then remove kiln's fuse and check it by placing the probes of an ohmmeter on the ends of the fuse. If the ohmmeter reading is 0 ohms, the fuse is okay. If the reading is infinity or no needle movement, the fuse is bad. Replacement fuse:

AGC 1/2 A 250V AC

If replacement kiln fuses keep blowing,



replace the kiln's transformer.

Next check the controller board with a voltmeter. Make sure kiln is unplugged, and remove the 4 screws holding the controller board faceplate to the switch box. Lift faceplate out of box and let the board hang on the box with the back of the board facing you. Plug the kiln back in. Touch voltmeter probes (in AC mode) to connectors 3 and 5. (This should be the white and orange wires.)

Make sure the voltmeter is in the AC mode when placing the probes on connectors 3 and 5.

If you find voltage (approximately 24 volts AC), it means current is reaching the board from the transformer, so the board is probably defective. If there is no voltage, the transformer is probably defective. But before replacing the transformer, UNPLUG kiln, remove switch box, and look for a disconnected wire between the cord set and transformer and between the transformer and controller board.

Problem: Controller Display Lights Up Normally, Some or All Heating Elements Do Not Fire

Probable Causes:

- Worn or Burned Out Elements
- Defective Controller Board
- Defective Relay(s)
- Disconnected Wire in Switch Box

First check the controller board with a voltmeter. Unplug the kiln and remove the 4 screws holding the controller board faceplate to the switch box. Lift faceplate out of box and let the board hang on the outside of the box with the back of the board facing you. Then plug the kiln back in. Program the controller to fire the kiln at fast rate in Cone-Fire or 9999° F. rate in Ramp-Hold.

Put the voltmeter in DC mode. (It must be in DC mode.) Touch probes to connectors 2 and 4 for at least 12 seconds. If the meter reads 12 - 14 volts, the board is sending correct voltage to the relays, so the board is okay. Less than 12 volts at 2 and 4 means a weak transformer. No voltage at 2 and 4 means a defective controller board.

If the controller board checks out okay, UNPLUG kiln and remove switch box. Look for loose or disconnected board-to-relay, relay-to-element, and cordset-to-relay wires.

If you still haven't found the problem, check elements with an ohmmeter. (Kiln is still UNPLUGGED.) Touch the ohmmeter leads to the two element connectors of each element. A no-needle movement indicates a broken (burned out) element.

If the element you are testing has two or more element lead wires attached to the same element connector, you must temporarily disconnect those wires. Hold element connector with pliers as you remove the screw. Be gentle to avoid breaking the element. (Elements are brittle after being fired.) Do not disturb the screw holding the element, only the one holding the lead wires. Reconnect the wires securely after testing the element.

If the elements and wiring check out okay, the problem is most likely a relay.

When a relay makes a chattering noise, the problem may be a weak transformer. A chattering relay can cause erratic temperature readings.

Problem: Firing Interrupted by PF or ErrP

Probable Causes:

- *Temporary Power Failure*
- *Low Voltage at Wall Receptacle*
- *Corroded Cord Plug or Wall Receptacle*
- *Defective Transformer*
- *Disconnected or Loose Wire*

PF alternates with the temperature display during firing: this means the power went off for a moment during firing. Then firing resumed. To go back to a normal temperature display, press ENTER.

ErrP displays instead of firing temperature: this means a firing has been interrupted by a longer power failure of about an hour.

Low voltage can also cause the kiln to shut off and display either **PF** or a blank display. If this happens and you did not have a power failure, have the power company or an electrician check the wall receptacle for low voltage. Sometimes there is just enough voltage to program the board. But when the relays turn on, the voltage from the transformer is drained below the minimum operating level, and the display goes blank.

If the voltage at the wall receptacle is okay, **UNPLUG** kiln, remove switch box, and look for a wire that has disconnected from a relay. If a wire comes loose from a relay and touches anything grounded in the switch box, the board will read **ErrP** when you start the program.

A corroded kiln cord plug or wall receptacle can cause a **PF** or blank display. Pull the plug from the wall and slide it back in several times to remove the corrosion. A loose wall receptacle screw or loose circuit breaker screw can also cause a power failure display.

Replace transformer if the wall receptacle voltage and switch box wiring are okay.

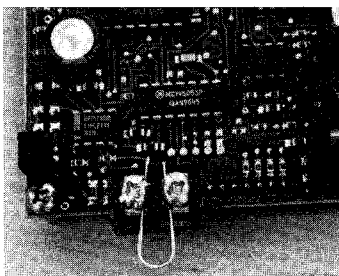
Problem: FAIL Message

Probable Causes:

- *Defective Thermocouple*
- *Disconnected Thermocouple Lead Wires*
- *Defective Board*

UNPLUG kiln. Remove the 4 screws holding the controller board faceplate to the switch box. Lift faceplate out of box. Look at the back of the board. You should see a yellow wire and a red wire connected to connectors 6 and 7 near the bottom of the board. (See diagram, front page.) If one of these wires is disconnected or loose, reconnect or tighten. (Grasp connector block to prevent block from twisting.) The controller should work now. If the wires were attached securely to their connectors, perform this test:

- 1** Remove thermocouple wires from connections 6 & 7.
- 2** Cut a paperclip in half. Insert a U-shaped paperclip piece between connectors 6 & 7. Tighten screws.
- 3** Place the faceplate back into the switchbox with a couple of screws.
- 4** Plug in the kiln. If the board reads room temperature, replace the thermocouple. If it reads **Fail**, replace the board.



The thermocouple and thermocouple lead wires are sold as a single unit. Therefore, damaged thermocouple lead wires call for replacement of the thermocouple itself.

Problem: Err 0 Message

Probable Causes:

- *Electrical Spike or lightning*
- *Arcing on Relay*

When **Err 0** displays, press any key. The display will go back to IdLE. Check your program to make sure it wasn't cleared from memory. Then fire your kiln again.

Problem: Err 1 Message (DTC 800C only)

Cause:

- *Temperature Rise Slower Than 12° F. Per Hour*

Err1 appears when temperature rise is slower than 12° F. or 12° C. per hour in Cone-Fire. When **Err1** appears, the heating elements will shut off.

A kiln that fires this slowly may need new elements, voltage may be low, or you may be trying to fire hotter than the kiln was designed for.

When **Err1** displays, press 1. The display will show the last temperature the kiln reached and the hours fired before it shut off. Then it will go back to **IdLE**.

Problem: Err 6 Message

Cause:

- *Thermocouple Leads Hooked Up Backwards*

Unplug kiln and remove the controller from the switch box. If the yellow and red wires are attached to the incorrect terminals at the bottom of the board (see diagram on front page), reverse the wires. Reinstall the controller.

Problem: Err 8 Message (DTC 800C only)

Cause:

- *Burned out element or loss of power to elements*
- *Defective relay*
- *The Kiln Sitter® shut off (applies to TnFII models)*

Err8 appears when the temperature drops for 18 seconds during the last phase of firing in Cone-Fire.

When **Err8** displays, press 1. The display will show the last temperature the kiln reached and the hours fired before it shut off. Then it will go back to **IdLE**.

Problem: Erratic Temperature Readings

Causes:

- *Thermocouple Lead Wires Attached to Wrong Terminals*
- *Thermocouple Lead Wires Too Close to Other Wires*
- *Thermocouple Lead Wires Touch at Bare Ends*
- *Electrical Noise*

Even though protected by insulation, the thermocouple wires are sensitive to electromagnetic waves. Position them away from other wires inside the switch box. Thermocouple wires must be attached to the correct terminals. Check that the thermocouple wire ends are separated where the insulation has been stripped. Electrical "noise" can cause erratic readings. A chattering relay or arc welding machines operating nearby can cause electrical "noise" and erratic readings.