



**Figure 3: Non-Reversing Dryer Controller Interface**

## Dryer Controller Factory Default Program Settings

DRY CYCLE	COOL DOWN TIME (MINUTES)	TOTAL CYCLE TIME (MINUTES)	DRYING TEMP (°F)	DRYING TEMP (°C)	DRYER LOAD
1	5	35	180	82	Towels, pads, heavy cotton
2	2	20	170	77	Sheets, blended materials
3	5	25	180	82	Cotton
4	2	20	130	54	Synthetic materials
5	2	25	175	79	Blended materials

### MICRO PCB adjustments at rear of PCB

There are two jumpers and one push button on the component side of the dryer controller printed circuit board. The jumper located roughly in the lower right side of the circuit board controls whether the controller display shows and operates in the Fahrenheit or Celsius mode. This jumper is labeled as TEMP SELECT and has three pins. The bottom and middle pins are for Celsius and the top and middle pins are for Fahrenheit, which is indicated by the letter C for Celsius and the letter F for Fahrenheit. The other jumper, located in the top middle of the right side of the component side of the dryer controller circuit board, is used for choosing either a reversing or non-reversing type of dryer. This jumper is labeled as REV and NON-REV. This jumper must be in the reversing position, which are the top and middle pins. If the jumper is in the non-reversing position, the dryer will not reverse direction.

**CAUTION:** If your dryer is made non-reversing it will not reverse the drum by moving the jumper.

The push button, which is located in the middle of the component side of the dryer controller circuit board, is used to reset all five of the dry cycles to the factory default settings. It is labeled as DEFAULT. Even the dry cycles that have been modified using the permanent programming procedure will be changed back to the factory default settings when using this push button. This push button must be pressed and held for at least three seconds with power applied to the dryer controller circuit board.

## Touch Pad Description

Indicator Lights (L.E.D.s)	
Cycle	These L.E.D.s are on solid when a particular cycle is chosen for operation (1 through 5) or programming.
Gas Valve	This L.E.D. is part of the 4-digit numeric display and will be on solid during the drying part of a cycle when the gas valve does <u>not</u> need to be on. The L.E.D. will be blinking when the gas valve needs to be on. The L.E.D. will <u>not</u> be on solid or blinking (off) if the cycle is stopped, complete, in cool down, or terminated.
Programming	These L.E.D.s are on solid as they are selected during the programming of the dryer controller.
Stop	This L.E.D. is on solid when either the STOP button is pressed once or the door is opened during an operating cycle.
Switches (Pushbuttons)	
Up/Increase	This touch pad switch will increment (increase) dry time, cool down time, and drying temperature. It will also scroll upwards when selecting a dry cycle.
Down/Decrease	This touch pad switch will decrement (decrease) dry time, cool down time and drying temperature. It will also scroll down when selecting a dry cycle.
Program	This touch pad switch allows the dryer controller to enter the permanent programming mode.
Select/Enter	This touch pad switch will select one of the three variable parts of the dry cycle (dry time, temperature, or cool down) by sequencing through them. Once one of the variable parts of the dry cycle is chosen and changed, this touch pad switch will enter the new value into the dry cycle program.
Cycle	This touch pad switch allows the dryer controller to enter the temporary programming mode.
Stop	This touch pad switch will stop the dryer during a dry cycle without clearing the present drying cycle if pressed once. If pressed and released twice, consecutively, the present dry cycle will be cleared.
Start	This touch pad switch will start the operation of a dry cycle if pressed and released once. Pressing <u>and holding</u> this touch pad switch will display the current temperature of the dryer heat sensor as long as it is held in the depressed position.

## 4-Digit Numerical Display Messages

Message	Description
LOAd	This message is displayed after a dry cycle is complete and the dryer loading door has been opened or the STOP touch pad key on the dryer controller has been pressed and released twice.
donE	This message blinks immediately after completion of the dry cycle and continues to blink until the stop key on the dryer controller touch pad is pressed or the dryer loading door is opened.
Prog	This message is displayed when entering the permanent programming mode.
.15	This message appears while the dryer is in the heating time of a dry cycle. The decimal point will blink if the output for the gas valve is on, or remain on constantly if the output for the gas valve is not on. The number represents the total time left in the dry cycle (includes cool down time).
C02	This message appears when the cool down time of the dry cycle is reached. The letter "C" represents the cool down (non-heating) part of the dry cycle. The number(s) after the letter "C" represent(s) the total time remaining in the dry cycle.
F5	This message appears if there is a dryer fault. The letter "F" indicates a fault and the number after the "F" represents the specific fault that has occurred. There are five different faults that can appear (F1 through F5).

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# Operating Instructions

To dry a load of items, you must choose one of the five-programmed dry cycles. Each of these five dry cycles may be modified in two different ways to match your load. Please refer to the “Permanent Dryer Controller Programming” or “Temporary Dryer Controller Programming” section of this manual.

There are two parts to each dry cycle. The first part is the heating time, which is when the gas valve is cycled on and off according to the temperature setting in the dry cycle program. The second part is the cool down time, which is after the heating part of the dry cycle, and is when the cylinder continues to turn, but no heat is applied. There will always be at least two minutes of cool down time for each dry cycle. The maximum amount of cool down time is 15 minutes.

The five default dry cycle values are shown in the “DRYER CONTROLLER FACTORY DEFAULT PROGRAM SETTINGS” table in this manual. To improve the drying capabilities of this dryer, you should always separate (untangle) the individual articles in your load before using the dryer.

In the following instruction steps, things that are displayed on the 4-digit numerical display will be in “quotation marks” and any keys on the dryer controller touch pad that physically need to be pressed will be in CAPITAL AND BOLD LETTERS.

**STEP 1:** Place your untangled load into the dryer cylinder and close the dryer loading door. Notice that the dryer controller 4-digit numerical display should show the word “LOAD”. If it does not show this word, then press and release the STOP touch pad key on the dryer controller twice.

**STEP 2:** Press and release the UP or DOWN arrow touch pad key on the dryer controller to select a dry cycle.

**STEP 3:** Once the desired dry cycle is selected, press and release the START touch pad key.

After the dryer controller START touch pad key is pressed, the dryer cylinder will start rotating and the two-digit total dry cycle time, along with a decimal point, will appear on the dryer controller display.

The time shown on the dryer controller display will count down to the programmed cool down time. At that time, the display will change from the decimal point and two-digit number to a letter “C” and two digits.

The letter “C” represents the cool down portion of the dry cycle. The two digits represent the amount of time remaining in the dry cycle. The two-digit time, shown on the dryer controller display, will count down to zero.

When the time decrements to zero, the dryer controller display will flash the word “donE” and the end of cycle tone will sound.

At that point, the wrinkle free cycle will automatically begin. This cycle will wait two minutes, if the door is not opened or the STOP touch pad key on the dryer controller is not pressed, and then rotate the cylinder for 10 seconds and stop. This two minutes of idle time and 10 seconds of tumble time will repeat a total of 10 times, at which time the wrinkle free cycle stops. The cylinder will not rotate again until a new dry cycle is started.

During the wrinkle free cycle the gas valve will not be operated and there will be no heat applied to the load. The word “donE” will also continue to flash and do so even after the wrinkle free cycle is finished. When the dryer loading door is opened, or the STOP touch pad key is pressed, the word “donE” will

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change to the word “LOAD” on the dryer controller display. The dryer will then be ready for another dry cycle.

During the dry cycle, either pressing the STOP touch pad key on the dryer controller or opening the dryer loading door, will stop the dry cycle and not clear it. If you press the STOP touch pad key on the controller and then open the dryer loading door the dry cycle will not be cleared. **However, if you open (or open and close) the dryer loading door and then press the STOP touch pad key on the dryer controller, the present dry cycle will be cleared and the word “LOAD” will appear on the dryer controller display.**

There are two jumpers and one push button on the component side of the dryer controller printed circuit board.

The jumper located roughly in the middle of the circuit board controls whether the controller display shows and operates in the Fahrenheit or Celsius mode. This jumper is labeled as TEMP SELECT and has three pins. The top and middle pins are for Celsius and the bottom and middle pins are for Fahrenheit, which is indicated by the letter C for Celsius and the letter F for Fahrenheit.

The other jumper, located in the middle of the right side of the component side of the dryer controller circuit board, is used for choosing either a reversing or non-reversing type of dryer. This jumper is labeled as REV and NON-REV. This jumper must be in the non-reversing position, which are the bottom and middle pins. If the jumper is in the reversing position, the heating part of the dry cycle will not operate properly. The dryer will not reverse direction either.

The push button, which is located in the upper right side of the component side of the dryer controller circuit board, is used to reset all five of the dry cycles to the factory default settings. It is labeled as DEFAULT SETTINGS. Even the dry cycles that have been modified using the permanent programming procedure will be changed back to the factory default settings when using this push button. This push button must be pressed and held for at least three seconds with power applied to the dryer controller circuit board.

## Temporary Dryer Controller Programming

The temporary programming mode will allow the change of the stored dry cycle settings in the dryer controller for one complete dry cycle. After the dry cycle is complete, the default settings that existed before the temporary change are restored. The temporary dry cycle can be stopped and cleared at any time during the dry cycle operation.

To temporarily change a dryer controller cycle, follow the procedures below. Things that are displayed on the 4-digit numeric display will be in “quotation marks”. Keys on the dryer controller touch pad that physically need to be pressed will be in CAPITAL AND BOLD LETTERS.

If, at any time, you want to escape the temporary programming mode while changing the program settings, you can press the STOP key on the dryer controller touch pad if the 4-digit numeric display is not flashing. The SELECT/ENTER key on the dryer controller touch pad can be pressed and released to enter the flashing value shown on the 4-digit numeric display and allow you to escape.

If you press and release the STOP key on the dryer controller touch pad, when the 4-digit numeric display is not flashing, the temporary changes to the dry cycle program will be cancelled. The stored dry cycle settings that existed before the temporary change will then be restored.

If, at any time, you want to start the temporary dry cycle during the temporary programming mode, press and release the START key on the dryer controller touch pad if the 4-digit numeric display is not flashing. The SELECT/ENTER key on the dryer controller touch pad can be pressed and released to enter the flashing value shown on the 4-digit numeric display and allow you to start the temporary dry cycle. If you start the temporary dry cycle, the 4-digit numerical display will change to the total dry time and count down to 0 as the dry cycle progresses.

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## Procedure

- 1) Make sure the dryer is not in a dry cycle. The 4-digit numeric display on the dryer controller will show "LOAD" when the dryer is not in a dry cycle.
- 2) Press and release the UP or DOWN arrow keys on the dryer controller touch pad to choose the dry cycle that you want to change (dry cycle 1 through 5). The dry cycle L.E.D. will illuminate to indicate which dry cycle you are choosing. If you press either arrow key and hold it down, the controller will sequence through the five dry cycles.
- 3) Press and release the CYCLE key on the dryer controller touch pad once you have chosen the dry cycle you want to change. After you press this key, the programming L.E.D. and the dry time L.E.D. will illuminate. The dry cycle L.E.D. will remain illuminated. The total dry time will also be displayed on the 4-digit numeric display.
- 4) Press and release the UP or DOWN arrow keys to change the total cycle time. Once either of the arrow keys is pressed, the dry time L.E.D. and the total dry time on the 4-digit numeric display will flash. If you press and hold either arrow key down, you will increment (UP arrow) or decrement (DOWN arrow) through the total dry times available (1 through 60 minutes). This displayed dry time includes the cool down time along with the heated time. To not change the total dry time, do not press the arrow keys to change the total dry time.
- 5) Press and release the SELECT/ENTER key. Once this key is pressed and released, the dry time L.E.D. will switch off, the dry cycle L.E.D. and programming L.E.D. will remain on, and the temperature L.E.D. will illuminate. The drying temperature will also be shown on the 4-digit numeric display.
- 6) Press and release the UP or DOWN arrow keys to change the drying temperature. Each press and release of the arrow keys will either increase or decrease the temperature by five degrees Fahrenheit or three degrees Celsius, depending on how your dryer controller is set up. Once either of the arrow keys is pressed, the temperature L.E.D. and the drying temperature on the 4-digit numeric display will flash. If you press and hold either arrow key down, you will increment (UP arrow) or decrement (DOWN arrow) your way through the available drying temperatures (105° Fahrenheit or 41° Celsius, up to 195° Fahrenheit or 90° Celsius). If you do not want to change the drying temperature, do not press the arrow keys. Go to the next step.
- 7) Press and release the SELECT/ENTER key. Once this key is pressed and released, the temperature L.E.D. will switch off, the dry cycle L.E.D. and programming L.E.D. will remain on, and the cool down L.E.D. will illuminate. The cool down time will also be shown on the 4-digit numeric display.
- 8) Press and release the UP or DOWN arrow keys to change the cool down time. Once either of the arrow keys is pressed, the cool down L.E.D. and the cool down time on the 4-digit numeric display will flash. If you press and hold either arrow key down, you will increment (UP arrow) or decrement (DOWN arrow) through the cool down times available (2 through 15 minutes). To not change the cool down time, do not press the arrow keys. Go to the next step.
- 9) Press and release the SELECT/ENTER key. Once this key is pressed and released, the cool down L.E.D. and the programming L.E.D. will switch off, and the dry cycle L.E.D. will remain on. The flashing cool down time on the 4-digit display will stop flashing and remain.
- 10) At this point, you have two choices. 1) You can perform the modified dry cycle by pressing and releasing the START key on the dryer controller touch pad, or 2) You can clear the modified dry cycle program by pressing and releasing the STOP key once. If you start the modified cycle, the total dry time will appear on the 4-digit numeric display and it will count down to 0 as the dry cycle progresses. If you choose to clear the modified dry cycle, the 4-digit numeric display will change to "LOAD".

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# Temporary Dryer Controller Programming Example

**REQUIREMENTS:** Dry a load with 40 minutes of actual heat at 185 °F and five minutes of cool down.

The following procedure will show you how to temporarily modify the existing dry cycle 1 program for one cycle of drying. It is based on the assumption that the factory defaults have not been permanently changed. If they have been changed, the steps of this procedure will be the same, but the values that are displayed will be different. The amount of times that the dryer controller touch pad UP or DOWN keys must be pressed and released may also be different.

If you want the change to be permanent, go to the “PERMANENT DRYER CONTROLLER PROGRAMMING” section of this manual.

## Procedure:

- 1) After the load has been placed in the dryer, press and release the UP or DOWN touch pad key on the dryer controller until the L.E.D. for dry cycle 1 is illuminated.
- 2) Press and release the CYCLE key on the dryer controller touch pad. You will see the number “35” on the dryer controller display. The programming L.E.D. and dry time L.E.D. will be illuminated.
- 3) Press and release the UP arrow key on the dryer controller touch pad 10 times so the display will show a flashing “45”. When the UP arrow touch pad key is pressed the first time, the number “36” will be flashing on the dryer controller display. Each number after that will also flash.
- 4) Now, press and release the SELECT/ENTER touch pad key on the dryer controller. The number “45” will stop flashing and the dry time L.E.D. will switch off. The dryer controller display will now show “180”, the temperature L.E.D. will illuminate, and the programming L.E.D. and dry cycle 1 L.E.D. will remain on.
- 5) Press and release the UP arrow key on the dryer controller touch pad one time so the controller display will show a flashing “185”. Each press of the UP arrow key will increment the temperature by five degrees.
- 6) Now, press and release the SELECT/ENTER touch pad key on the dryer controller. The number “185” will stop flashing and the temperature L.E.D. will switch off. The dryer control display will now show a number “5”, the cool down L.E.D. will illuminate, and the programming L.E.D. and dry cycle 1 L.E.D. will remain on.
- 7) Press and release the SELECT/ENTER key on the dryer controller touch pad, since the desired cool down time is five minutes. After you press the SELECT/ENTER touch pad key on the controller, the cool down L.E.D. and programming L.E.D. will switch off. The controller display will remain at “5” and the cycle 1 L.E.D. will remain on.

You are now ready to start the new dry cycle. This new dry cycle will be in effect for one dry cycle only. After the dry cycle is done, or if the STOP touch pad key on the dryer controller is pressed and released twice, consecutively, the cycle 1 program will revert to the factory default settings.

If you press the START touch pad key on the dryer controller, the controller display will change from the number “5” to the number “45” and dry cycle 1 will begin.

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# Permanent Dryer Controller Programming

The permanent programming mode will allow the change of the stored dry cycle settings in the dryer controller until the operator physically changes them again. The factory default settings can be restored in the dryer controller by pressing the default settings pushbutton on the back (component) side of the dryer controller circuit board. It is labeled and located on the upper right side of the printed circuit board, as you face the component side of the board. It must be pressed and held down for at least three seconds.

To permanently change a dryer controller cycle, follow the procedure below. Things that are displayed on the 4-digit numeric display will be in “quotation marks”. Keys on the touch pad that physically need to be pressed will be in CAPITAL AND BOLD LETTERS.

If, at any time, you want to escape the permanent programming mode while changing the settings, you can press the STOP key on the dryer controller touch pad if the 4-digit numeric display is not flashing. The SELECT/ENTER key on the dryer controller touch pad can be pressed and released to enter the flashing value shown on the 4-digit numeric display and allow you to escape.

## Procedure

- 1) Make sure the dryer is not in a dry cycle. The 4-digit numeric display on the dryer controller will show “LOAD” when the dryer is not in a dry cycle.
- 2) Press and release the PROG key on the dryer controller touch pad.
- 3) Press and release the UP arrow key on the dryer controller touch pad. The programming L.E.D. will illuminate and the 4-digit numeric display on the dryer controller will change to “Prog”.
- 4) Press and release the UP or DOWN arrow keys to choose the dry cycle you want to change (dry cycle 1 through 5). The dry cycle L.E.D. will illuminate to indicate which dry cycle you are choosing. If you press either arrow key and hold it down, the controller will sequence through the five dry cycles.
- 5) Press and release the SELECT/ENTER key once you have chosen the dry cycle you want to change. After you press this key, the dry time L.E.D. will illuminate. The dry cycle L.E.D. and the programming L.E.D. will remain illuminated. The total dry time will also be displayed on the 4-digit numeric display.
- 6) Press and release the UP or DOWN arrow keys to change the total dry time. Once either of the arrow keys is pressed, the dry time L.E.D. and the total dry time on the 4-digit numeric display will flash. If you press and hold either arrow key down, you will increment (UP arrow) or decrement (DOWN arrow) through the total dry times available (1 through 60 minutes). This displayed dry time includes the cool down time along with the heated time. To not change the total dry time, do not press the arrow keys. Go to the next step.
- 7) Press and release the SELECT/ENTER key. Once this key is pressed and released, the dry time L.E.D. will switch off, the dry cycle L.E.D. and programming L.E.D. will remain on, and the temperature L.E.D. will illuminate. The drying temperature will also be shown on the 4-digit numeric display.
- 8) Press and release the UP or DOWN arrow keys to change the drying temperature. Each press and release of the arrow keys will either increase or decrease the temperature by five degrees Fahrenheit or three degrees Celsius, depending on how your dryer controller is set up. Once either of the arrow keys is pressed, the temperature L.E.D. and the drying temperature on the 4-digit numeric display will flash. If you press and hold either arrow key down, you will increment (UP arrow) or decrement (DOWN arrow) your way through the available drying temperatures (105° Fahrenheit or 41° Celsius, up to 195° Fahrenheit or 90° Celsius). If you do not want to change the drying temperature, do not press the arrow keys. Go to the next step.

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- 9) Press and release the SELECT/ENTER key. Once this key is pressed and released, the temperature L.E.D. will switch off, the dry cycle L.E.D. and programming L.E.D. will remain on, and the cool down L.E.D. will illuminate. The cool down time will also be shown on the 4-digit numeric display.
  - 10) Press and release the UP or DOWN arrow keys to change the cool down time. Once either of the arrow keys is pressed, the cool down L.E.D. and the cool down time on the 4-digit numeric display will flash. If you press and hold either arrow key down, you will increment (UP arrow) or decrement (DOWN arrow) through the cool down times available (2 through 15 minutes). To not change the cool down time, do not press the arrow keys. Go to the next step.
  - 11) Press and release the SELECT/ENTER key. Once this key is pressed and released, the cool down L.E.D. will switch off, the dry cycle L.E.D. and programming L.E.D. will remain on, and the 4-digit numeric display will change to “Prog”.
  - 12) Press and release the STOP key to save the cycle program and escape the programming mode. If you want to change the same dry cycle program again, press the SELECT/ENTER key and continue at step 6 of this procedure. If you want to modify another dry cycle program, go to step 4 of this procedure and continue.
  - 13) If you pressed the STOP key to escape the programming mode, you may now start the dry cycle by pressing the START key.

## Permanent Dryer Controller Programming Example

**REQUIREMENTS:** Dry a load with 50 minutes of actual heat at 195 ° F and three minutes of cool down.

The following procedure will show you how to permanently modify the existing dry cycle 1 program for one cycle of drying. It is based on the assumption that the factory defaults have not been permanently changed. If they have been changed, the steps of this procedure will be the same, but the values that are displayed will be different. The amount of times that the dryer controller touch pad UP or DOWN keys must be pressed and released may also be different. If you want the change to be temporary (for only one dry cycle), go to the “TEMPORARY DRYER CONTROLLER PROGRAMMING” section of this manual.

### PROCEDURE:

- 1) After the load has been placed in the dryer, press and release the UP or DOWN touch pad key on the dryer controller until the L.E.D. for dry cycle 1 is illuminated.
- 2) Press and release the PROG touch pad key on the dryer controller. The dryer controller display will not change.
- 3) Immediately, press and release the UP arrow key on the dryer controller touch pad. The controller display will change from “LOAD” to “Prog”. You have now entered the permanent programming mode. The dry time L.E.D. will remain on and the programming L.E.D. will illuminate.
- 4) Press and release the SELECT/ENTER touch pad key once. The dry time L.E.D. and programming L.E.D. will remain on and the dry time L.E.D. will illuminate. The dryer controller will also show the number “35”.

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- 5) Press the UP arrow touch pad key 18 times until the dryer controller display shows the number "53".
  - 6) Press and release the SELECT/ENTER touch pad key once. The dry time L.E.D. and programming L.E.D. will remain on and the dry time L.E.D. will switch off. The temperature L.E.D. will illuminate and the dryer controller display will show the number "180".
  - 7) Press and release the UP arrow touch pad key three times until the dryer controller display shows the number "195".
  - 8) Press and release the SELECT/ENTER touch pad key. The dry time L.E.D. and the programming L.E.D. will remain on and the temperature L.E.D. will switch off. The cool down L.E.D. will illuminate and the dryer controller display will show the number "5".
  - 9) Press and release the DOWN arrow touch pad key twice until the dryer controller display shows the number "3".
  - 10) Press and release the SELECT/ENTER touch pad key. The dry time L.E.D. and the programming L.E.D. will remain on and the cool down L.E.D. will switch off. The dryer controller display will change to "Prog".
  - 11) Press and release the STOP touch pad key. The dry time L.E.D. will remain on and the programming L.E.D. will switch off. The dryer controller display will change to the word "LOAD".

The dryer is now ready for the new modified dry cycle to start. This modified dry cycle 1 program will remain in the dryer controller memory until the default settings push button is pressed. This default settings push button is located on the component side of the dryer controller printed circuit board in the upper right corner.

## Heat Circuit

The control transformer uses the incoming voltage (208-240v or 110-125v) on the primary side and steps it down to 24 volts on the secondary side of the transformer. The 24 volts is then sent through a 1.5 amp fuse on one side of the transformer and supplies power to the computer board on a black wire and 24 volts is also sent to the normally open door switch on a black wire. With the door shut, power is then supplied by the blue wire to the run and gas relay on the computer board. When the START button is pushed on front of computer board it then sends voltage to engage the motor relay which sends power on the violet wire to R1 relay. 24 volts is then sent on a grey wire from the gas relay on the computer board to the manual reset over temp thermostat and through on the black wire then on to the air damper switch and changes to a brown wire and then on to the hi-limit switch where the 24 volts passes through the violet wire and after the drive motor starts, the centrifugal switch inside the motor moves to the run position allowing 24 volts to pass through on the red wire to the spark ignition module. The spark ignition module now sends a high voltage signal to the spark electrode for 10 seconds to light the burner and simultaneously sends 24 volts to the gas valve. When ignition occurs the high voltage spark stops and the gas valve will stay open and burner will continue to burn. If ignition does not occur within 10 seconds, the spark ignition module will try 2 more times with a sequence of 10 seconds of trial and 15 seconds off time and if the burner does not stay burning lock out occurs closing the gas valve and stopping the spark. To reset the spark ignition module, the dryer loading door can be opened or a break in the power and the tumbler allowed to stop and remain stopped for 10 seconds.