

**THIS QUICK TUTORIAL
WILL GUIDE YOU
THROUGH THE STEPS
ON THE SEQUENCE
OF OPERATION FOR
THE 7590D CONTROL
ON THE CG4 BURNER**




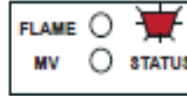
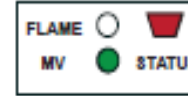
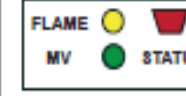
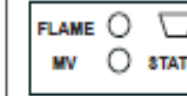
SEQUENCE OF OPERATION

NOTICE

This operation sequence is typical for operation with a 7590 control. This is the only control approved for use on the CG4 Gas Power Burner.

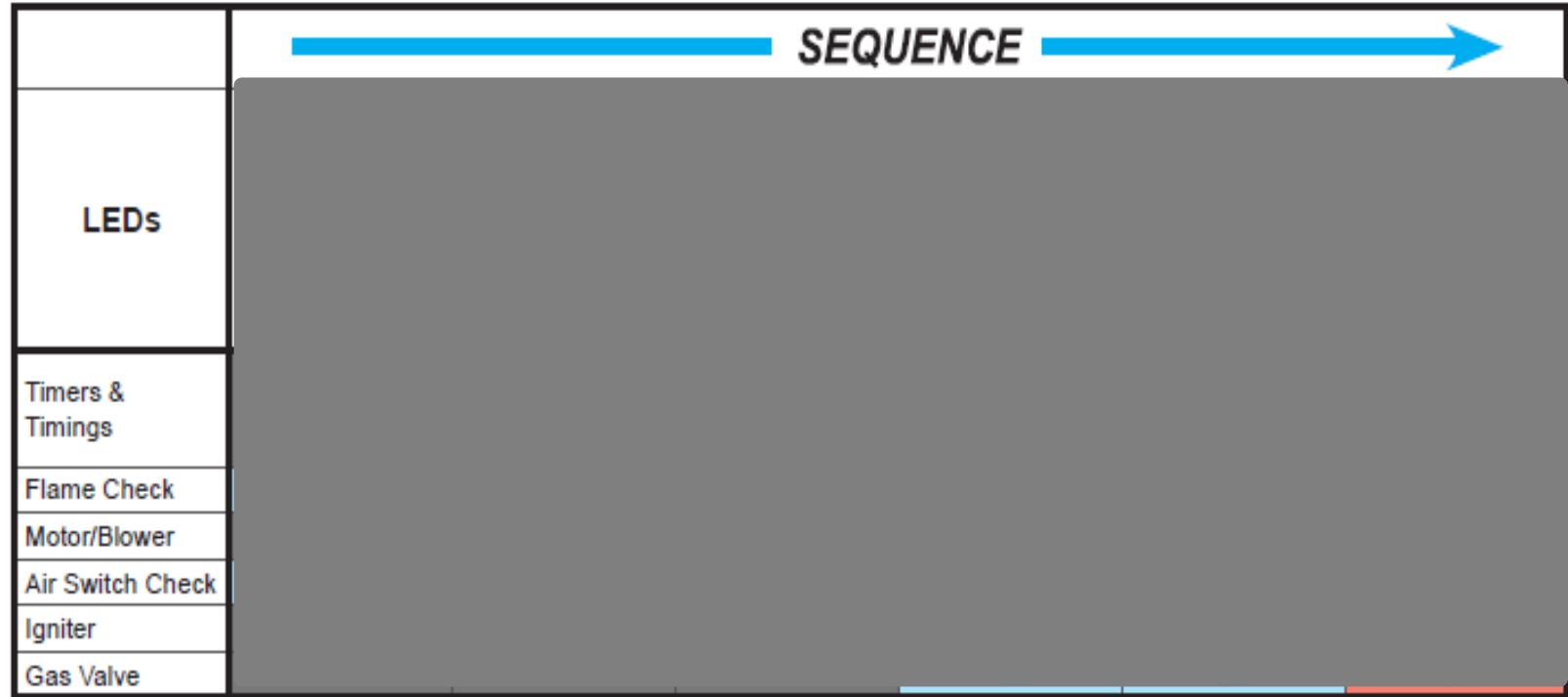


SEQUENCE OF OPERATION

	 SEQUENCE					
	Call for Heat	Motor Start	Pre-purge	Ignition	Run	End Call for Heat
LEDs	 Status LED turns on	 Status LED ON	 Status LED Flashes	 Status, MV LEDs On	 Status, MV, Flame LEDs On	 LEDs Off
Timers & Timings			Pre-purge Timer 1 - 240 Seconds	Ignition Trial Timer 4 - 15 Seconds		
Flame Check	On	On	On	On	On	
Motor/Blower		Blower Starts	On	On	On	Off
Air Switch Check	On	Air Switch Closes	On	On	On	
Igniter				On	Off	Off
Gas Valve				On	On	Off



SEQUENCE OF OPERATION






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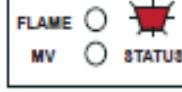
Call for heat, Control performs safe-start check. If safe-start fails, control locks out.

SEQUENCE OF OPERATION

	 SEQUENCE	
LEDs	<p>Call for Heat</p> <p>FLAME <input type="checkbox"/> </p> <p>MV <input type="checkbox"/> STATUS <input type="checkbox"/></p> <p>Status LED turns on</p>	<p>Motor Start</p> <p>FLAME <input type="checkbox"/> </p> <p>MV <input type="checkbox"/> STATUS <input type="checkbox"/></p> <p>Status LED ON</p>
Timers & Timings		
Flame Check	On	On
Motor/Blower		Blower Starts
Air Switch Check	On	Air Switch Closes
Igniter		
Gas Valve		




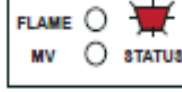
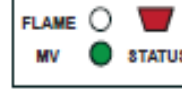
If the air proving switch is open, the motor will start.

SEQUENCE OF OPERATION

			
LEDs	<p>Call for Heat</p>  <p>Status LED turns on</p>	<p>Motor Start</p>  <p>Status LED ON</p>	<p>Pre-purge</p>  <p>Status LED Flashes</p>
Timers & Timings			Pre-purge Timer 1 - 240 Seconds
Flame Check	On	On	On
Motor/Blower		Blower Starts	On
Air Switch Check	On	Air Switch Closes	On
Igniter			
Gas Valve			




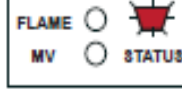
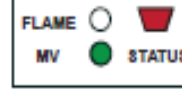
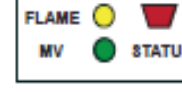
Once the air proving switch closes, pre-purge will begin (lasting 30 seconds). Pre-purge or ignition timings will not start until the air proving switch closes.

SEQUENCE OF OPERATION

	 SEQUENCE			
LEDs	<p>Call for Heat</p>  <p>Status LED turns on</p>	<p>Motor Start</p>  <p>Status LED ON</p>	<p>Pre-purge</p>  <p>Status LED Flashes</p>	<p>Ignition</p>  <p>Status, MV LEDs On</p>
Timers & Timings			Pre-purge Timer 1 - 240 Seconds	Ignition Trial Timer 4 - 15 Seconds
Flame Check	On	On	On	On
Motor/Blower		Blower Starts	On	On
Air Switch Check	On	Air Switch Closes	On	On
Igniter				On
Gas Valve				On


When pre-purge is completed, the control turns on the igniter and the gas valve. MV LED will turn on. Spark continues until end of ignition timing or until flame is proved.

SEQUENCE OF OPERATION

					
	Call for Heat	Motor Start	Pre-purge	Ignition	Run
LEDs	 Status LED turns on	 Status LED ON	 Status LED Flashes	 Status, MV LEDs On	 Status, MV, Flame LEDs On
Timers & Timings			Pre-purge Timer 1 - 240 Seconds	Ignition Trial Timer 4 - 15 Seconds	
Flame Check	On	On	On	On	On
Motor/Blower		Blower Starts	On	On	On
Air Switch Check	On	Air Switch Closes	On	On	On
Igniter				On	Off
Gas Valve				On	On

Once flame is proved, The Flame LED is turned on and the spark is turned off. The gas valve and MV LED remain energized.

SEQUENCE OF OPERATION

	 SEQUENCE					
	Call for Heat	Motor Start	Pre-purge	Ignition	Run	End Call for Heat
LEDs	 Status LED turns on	 Status LED ON	 Status LED Flashes	 Status, MV LEDs On	 Status, MV, Flame LEDs On	 LEDs Off
Timers & Timings			Pre-purge Timer 1 - 240 Seconds	Ignition Trial Timer 4 - 15 Seconds		
Flame Check	On	On	On	On	On	
Motor/Blower		Blower Starts	On	On	On	Off
Air Switch Check	On	Air Switch Closes	On	On	On	
Igniter				On	Off	Off
Gas Valve				On	On	Off

When the call for heat is ended, the gas valve, MV LED, Flame LED, Status LED and motor turn off.

Quick Status Check Quick Reference

QUICK STATUS CHECK		LED Key: ○ = Off ▽ = On ☀ = Flashing				
LED Pattern	Normal Modes	FLAME ○ ▽ MV ○ STATUS	FLAME ○ ▽ MV ○ STATUS	FLAME ○ ▽ MV ● STATUS	FLAME ● ▽ MV ● STATUS	No call for heat or no power to control Slow flash - motor on Pre-purge or Interpurge Trial for Ignition Run Mode - strong flame signal
	Diagnostic Modes	FLAME ☀ ▽ MV ● STATUS	FLAME ○ ▽ MV ○ STATUS	FLAME ☀ ▽ MV ○ STATUS	FLAME ☀ ▽ MV ● STATUS	Run Mode - weak flame signal Fast flash - 3 per sec. Lockout No Retry Flame out of Sequence Control Failure - replace control
		FLAME ○ ▽ MV ○ STATUS	If only the red Status LED is on steadily: - If motor is off = air pressure switch is stuck closed. - if the motor is running = waiting for the air pressure switch to close.			
		FLAME ○ ▽ MV ○ STATUS	If the red Status LED is flashing slowly and the motor is off: The control is in Lockout with Retry - 1-8 hour waiting period			

7590D Configuration for CG4 Burner

Configuration Item	Range	Standard for CG4	Factory Locked?
Separate Flame Rod	None		
BTU Range	Under 400,000 BTUs		
Number of Trials for Ignition	1 to 4	3	Yes
Trial for Ignition Timing	4-15 secs	4 secs	Yes
Pre-purge Timing	1 sec – 4 min	30 secs	Yes
Inter-purge Timing (between trials for ignition)	90 – 300 Secs	90 secs	Yes

7590D Configuration for CG4 Burner

Configuration Item	Range	Standard for CG4	Factory Locked?
Relight or Recycle on Flame Loss	Relight or Recycle	Recycle	Yes
Maximum Number of Flame Losses Allowed During a Single Call for Heat	1-254 or Infinite	3	Yes
Maximum Number of Pressure Switch Losses Allowed During a Single Call for Heat	1-254 or Infinite	30	Yes

7590D Configuration for CG4 Burner

Configuration Item	Range	Standard for CG4	Factory Locked?
Waiting Time for Pressure Switch to Open (if stuck in closed position) on Call for Heat (Start Up) (control locks out if switch has not opened at the end of timing) (motor off)	10 – 240 secs	60 secs	Yes
Waiting Time for Pressure Switch to Close Once Burner Motor Has Started (control locks out if switch has not closed at the end of timing) (motor on)	10 – 240 secs	30 secs	Yes

Note: Pre-purge or Ignition timing will not start until pressure switch goes from open to closed.

7590D Configuration for CG4 Burner

Configuration Item	Range	Standard for CG4	Factory Locked?
Flame Signal Minimum Strength for Strong LED Indication	0-10 μ	1 μ	NA
Operating Hours to Lock Field Setting (field settings cannot be changed after this timing expires)	0 -255 hours		NA
Auto Retry Time (following a soft lockout)	1- 8 hours or none	4 hours	Yes
Purge Prior to Lockout	0 secs to 4 min	15 seconds	Yes