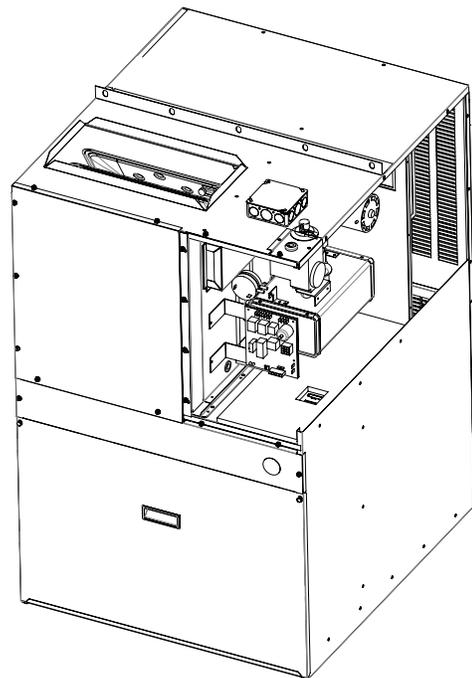
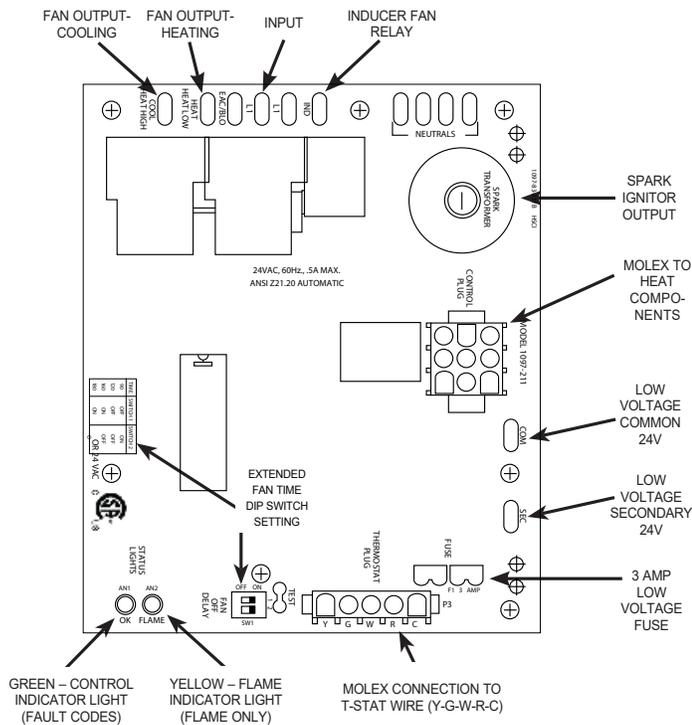


Thru-the-Wall Comfort for all types of Multi-Family Construction

Installation Guide

M-Series Ignition Board Replacement Kit



Installation Procedures:

- (1.) Before starting ensure the unit is completely de-energized and disconnected from gas
- (2.) Start by removing the top right control panel by removing all fasteners
- (3.) Carefully disconnect all wires from the existing board
- (4.) Separate the board from the four plastic standoffs and remove the plastic standoffs from the furnace board bracket
- (5.) Secure the new board to the furnace board bracket using the preinstalled plastic standoffs. Attach the harness to the board and connect the necessary thermostat wires
- (6.) Reconnect all wires. Apply power to the unit and open the gas valve. (Operate unit in heat mode and ensure normal operation referencing the sequence of operations on the backside of this page)
- (7.) Reattach the control panel and tighten all fasteners

Go Thru-the-Wall

Sequence of Operations

Call for Heat – The thermostat sends a call for heat by energizing the “white” wire to the control board. The control checks to see if the limit switch is closed and the pressure switch is open. If the limit switch is open, the limit control acts to interrupt the electric supply to the gas valve. If the pressure switch is closed, the control will do four flashes on the green LED and wait indefinitely for the pressure switch to open. If the pressure switch is open, the control proceeds to Pre-purge.

Pre-purge – The control energizes the venter motor and waits for the pressure switch to close. If the pressure switch does not close within 240 seconds of the venter motor energizing, the control will de-energize the inducer for 10 seconds. After 3 attempts, the green LED will flash two times and will enter a soft lock out. When the pressure switch is proven closed, the control begins the pre-purge time. If flame is present at any time while in pre-purge, the pre-purge time is restarted. If flame is present long enough to cause lockout, the control responds as an Undesired Flame where the valve is open and there is no call for heat. The control runs the venter motor for a 20 second pre-purge time, then proceeds to the Ignition Trial Period.

Ignition Trial Period – The control energizes the spark and main gas valve. The venter remains energized. If flame is sensed during the first 16 seconds, the spark is de-energized and the control proceeds to Heat Blower On Delay. If flame has not been sensed during the first 16 seconds, the control de-energizes the spark output and keeps the gas valve energized for an additional 1 second flame proving period. If flame is not present after the flame proving period, the control de-energizes the gas valve and proceeds with three ignition re-tries until the control de-energizes the gas valve and goes into lockout. If flame is present, the control proceeds to the Heat Blower On Delay.

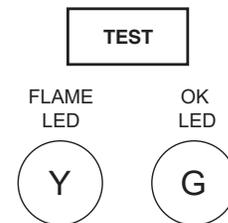
Heat Blower On Delay – The control waits for 30 seconds from the time the gas valve opened and then energizes the blower motor. The gas valve and venter motor remain energized. The control proceeds to Steady Heat.

Steady Heat – The control continuously monitors to ensure that the limit switch and pressure switch are closed, flame is established, and the thermostat call for heat is continuous. When the thermostat call for heat is removed, the control de-energizes the gas valve and begins Post-purge and Blower Off Delay.

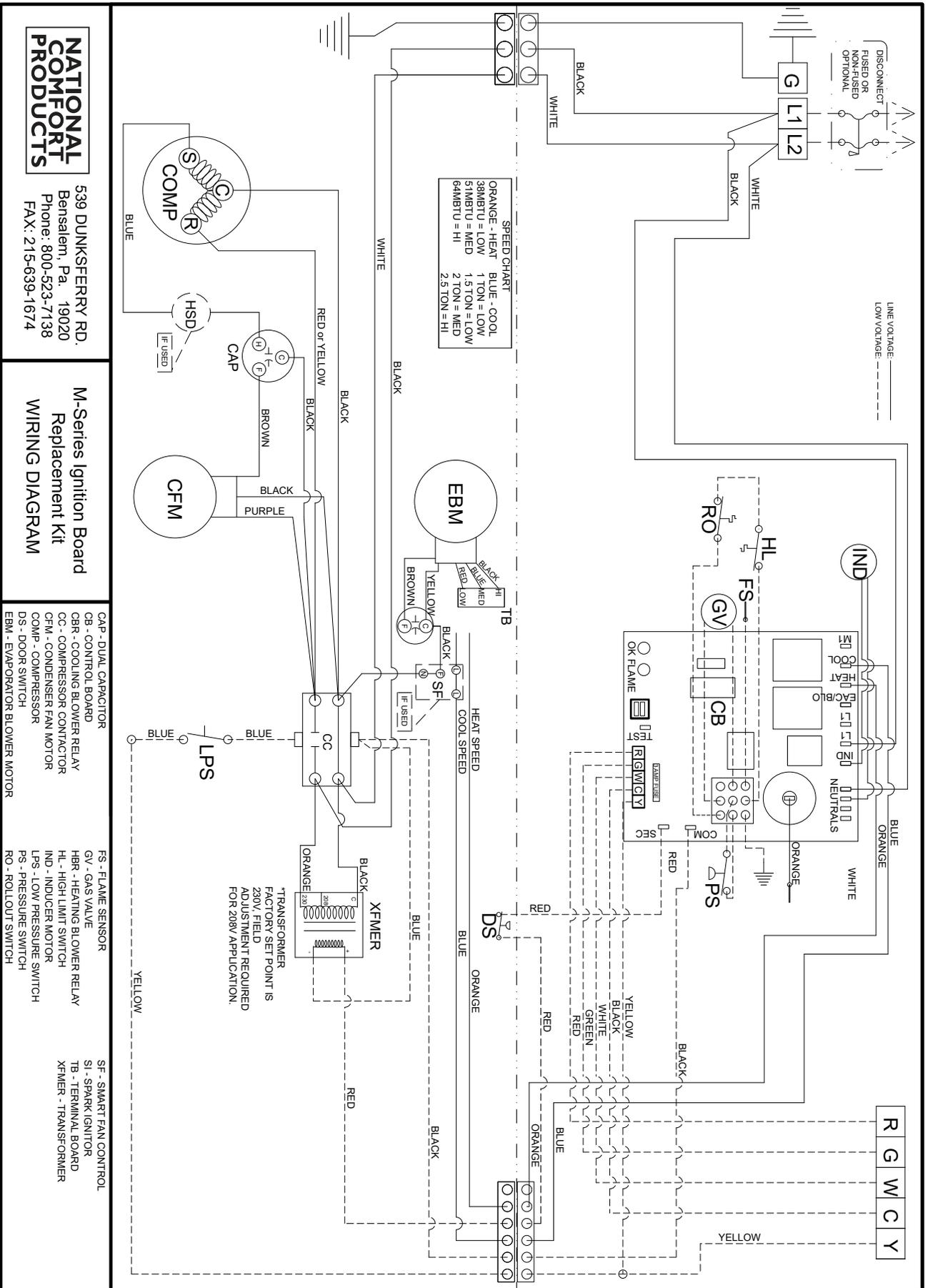
Post-purge – The venter motor output remains on for a 45-second post-purge period after the thermostat is satisfied.

Blower Off Delay – The blower motor is de-energized after a blower off delay 90 seconds factory setting. Timing begins when the thermostat is satisfied.

DSI INTEGRATED CONTROL MODULE	
CONTROL STATUS	GREEN LED
STEADY ON	Normal operation, no call for heat
FAST FLASH	Normal operation, call for heat
1 FLASH	In lockout from failed ignition or flame loss
2 FLASH	Pressure switch does not close for 30 seconds
3 FLASH	Limit switch or rollout switch open
4 FLASH	Pressure switch is closed before venter is energized
STEADY OFF	Internal control fault or no power
FLAME STATUS	YELLOW LED
STEADY ON	Flame sensed
SLOW FLASH	Weak flame (current below 1.0 microamps = +/-50%)
FAST FLASH	Undesired flame (valve open and no call for heat)



FAN OFF DELAY		
TIME	SWITCH	
	1	2
90	OFF	ON
120	OFF	OFF
160	ON	OFF
45	ON	ON



NATIONAL COMFORT PRODUCTS

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M-Series Ignition Board Replacement Kit WIRING DIAGRAM

CAP - DUAL CAPACITOR
 CB - CONTROL BOARD
 CBR - COOLING BLOWER RELAY
 CC - COMPRESSOR CONTACTOR
 CFM - CONDENSER FAN MOTOR
 COMP - COMPRESSOR
 DS - DOOR SWITCH
 EBM - EVAPORATOR BLOWER MOTOR

FS - FLAME SENSOR
 GV - GAS VALVE
 HBR - HEATING BLOWER RELAY
 HL - HIGH LIMIT SWITCH
 IND - INDUCER MOTOR
 LPS - LOW PRESSURE SWITCH
 PS - PRESSURE SWITCH
 RC - ROLL-OUT SWITCH

SF - SMART FAN CONTROL
 SI - SPARK IGNITOR
 TB - TERMINAL BOARD
 XFMR - TRANSFORMER



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