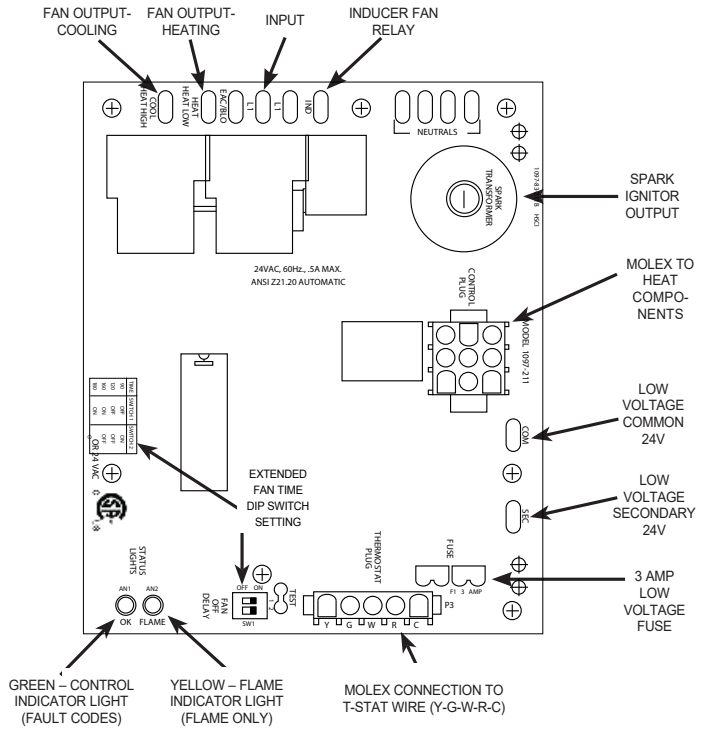
Thru-the-Wall Comfort

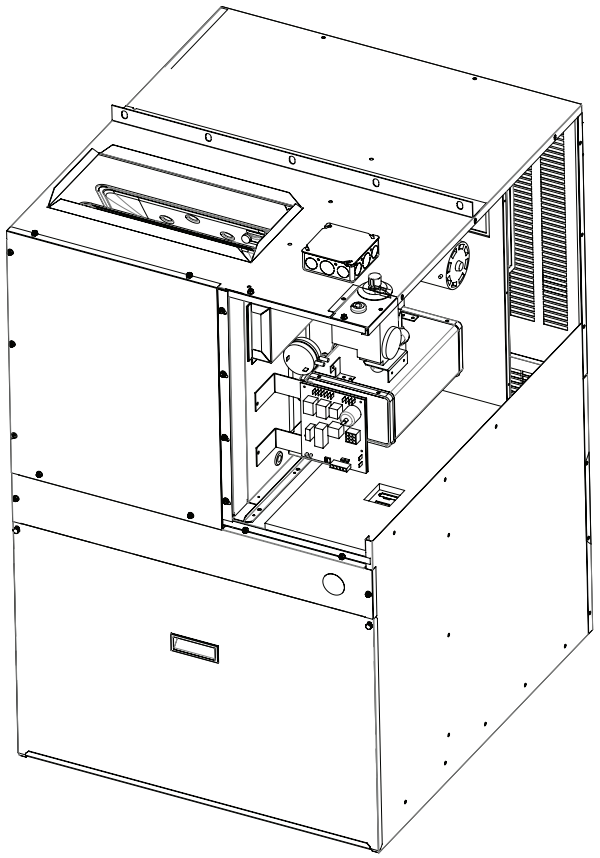
Packaged Heating & Cooling

M-Series Ignition Board Replacement

Kit Part# 14299237

Installation Guide





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

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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.

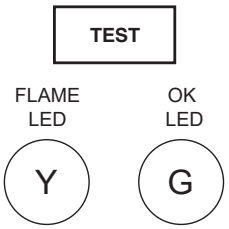
Heat Blower On Delay – The control waits for 30 seconds from the time the gas valve opened and then energizes the blower motor. The gas valve and venter motor remain energized. The control proceeds to Steady Heat.

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.

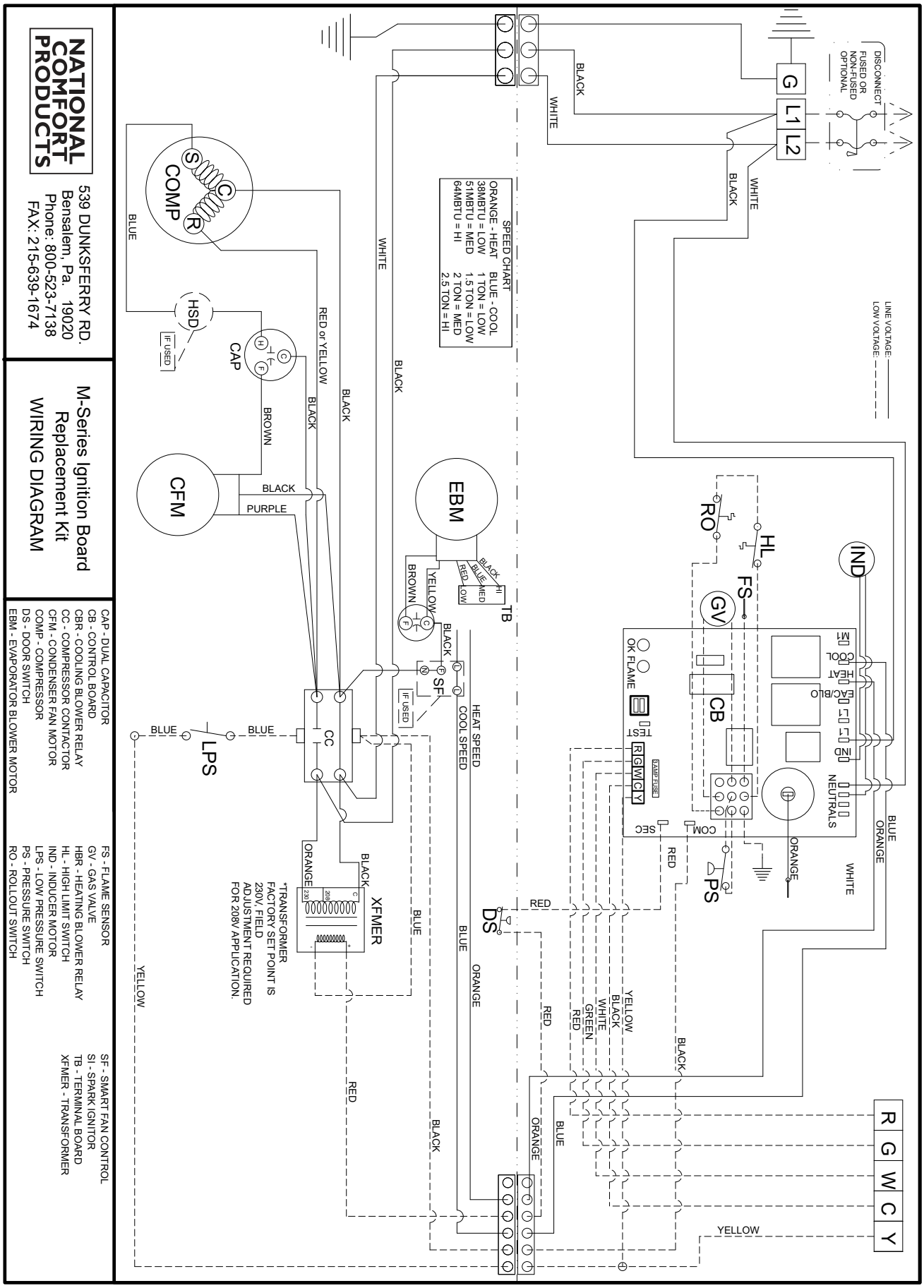
Post-purge – The venter motor output remains on for a 45-second post-purge period after the thermostat is satisfied.

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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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
RO - ROLLOUT SWITCH
SF - SMART FAN CONTROL
SI - SPARK IGNITOR
TB - TERMINAL BOARD
XFMER - TRANSFORMER
DISCONNECT
FUSED OR NON-FUSED OPTIONAL
LINE VOLTAGE:
LOW VOLTAGE:
SPEED CHART
ORANGE - HEAT
38MBTU = LOW
51MBTU = MED
64MBTU = HI
BLUE - COOL
1 TON = LOW
1.5 TON = LOW
2 TON = MED
2.5 TON = HI
*TRANSFORMER FACTORY SET POINT IS 230V, FIELD ADJUSTMENT REQUIRED FOR 208V APPLICATION.
IF USED
R G W C Y

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