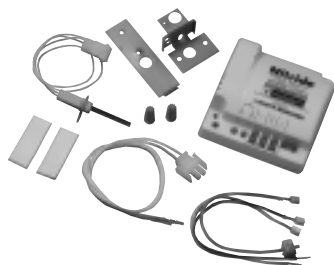


Operator: Save these instructions for future use!

FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.



This upgrade kit is designed to convert existing hot surface ignition (HSI) systems from silicon carbide (flat or spiral) to a nitride ignitor. **This kit will not replace direct sense ignitors or sealed combustion ignitors such as Norton 271A or 271Y, Robertshaw 41-401 or 41-406 or White-Rodgers 767A-356.**

The new power module connects the new nitride ignitor to the existing HSI module. The new module steps down and regulates the voltage to the ignitor providing approximately 80 volts RMS to the ignitor. The module and ignitor are matched to assure proper operation.

The kit contains:

- (1) power supply module
- (1) nitride ignitor
- (2) mounting adaptors
- (1) wiring harness
- (3) lead assemblies
- (2) double-sided foam tape
- (1) nitride upgrade label

DESCRIPTION

PRECAUTIONS

Installation should be done by a qualified heating and air conditioning contractor or licensed electrician.

Do not exceed the specification ratings.

All wiring must conform to local and national electrical codes and ordinances.

This control is a precision instrument, and should be handled carefully. Rough handling or distorting components could cause the control to malfunction.

Following installation or replacement, follow manufacturer's recommended installation/service instructions to ensure proper operation.

CAUTION

Do not short out terminals on gas valve or primary control. Short or incorrect wiring may damage the thermostat.

WARNING



Failure to comply with the following warnings could result in personal injury or property damage.

FIRE HAZARD

- Do not exceed the specified voltage.
- Protect the control from direct contact with water (dripping, spraying, rain, etc.).
- If the control has been in direct contact with water, replace the control.
- Label all wires before disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.
- Route and secure wiring away from flame.

SHOCK HAZARD

- Disconnect electric power before servicing .
- Ensure proper earth grounding of appliance.
- Ensure proper connection of line neutral and line hot wires.

EXPLOSION HAZARD

- Shut off main gas to appliance until installation is complete.

SPECIFICATIONS

Operating temperature: -40° to 176° F; -40° to 80° C

Humidity: 95% non-condensing

Input power: 120 VAC at 1.2 Amps nominal, 7 Amps inrush maximum at 50/60 Hz.

INSTALLATION

The mounting adaptors provide several different mounting schemes for various types of furnaces and ignitor configurations. The correct adaptor will provide proper positioning of the nitride ignitor.

Mounting adaptor 1 (Figure 1) can be configured for different installations by breaking off tabs. Figure 5 shows the types of silicon carbide ignitors that this kit will replace and the tabs that must be removed for the proper mounting.

- 1) **Turn OFF gas supply and electrical power to the unit.**
- 2) Remove the burner compartment access door.
- 3) Remove the burner box cover.
- 4) Locate the two wires leading from the hot surface ignitor and disconnect the wiring by separating the connectors.
- 5) Remove the existing ignitor from the unit saving the screws and any gaskets for reassembly. Discard old ignitor.

NOTE

Removal of the existing ignitor may be easier by removing a mounting bracket from the burner. The mounting bracket will be reused except in Base Type 6 applications (see Figure 5).

- 6) Select the correct adaptor. If using adaptor 1, break off the required tabs. Install the new mounting adaptor on the unit using the screw and gaskets previously removed. Install the nitride ignitor on the adaptor using the thread forming screw. When properly installed, the nitride ignitor will be in the same position as the original ignitor.
- 7) Mount the power supply module in an area on the appliance where it will not be affected by excessive heat. Two pieces of double-sided foam tape (included) may be used to mount the module. Be sure to clean mounting surface before using this tape.

NOTE

The module is shipped configured to provide a high ignitor temperature for induced draft systems. If application is an atmospheric burner (no induced draft), cut red jumper lead to right of the terminal connections.

- 8) Connect the wiring harness and the ignitor wiring connectors as shown in Figure 2. Connect the other end of the wiring harness to the module (terminals IGN1 & IGN2).
- 9) Connect the green ground lead to module (terminal GND) and attach the other end to a good ground on the furnace.
- 10) Attach the black and white lead assemblies to the module (terminals L1 & L2). Cut the connector that the ignitor was connected to from leads coming from the HSI ignition module and attach the new black and white leads to them using the wire nuts provided. Figure 3 shows the typical system wiring before the upgrade. Figure 4 shows typical system wiring after installation of the nitride upgrade.

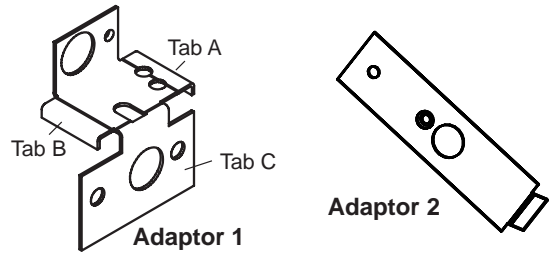


Figure 1. Mounting Adaptors

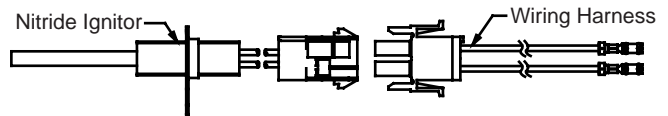


Figure 2. Ignitor/Wiring Harness Connection

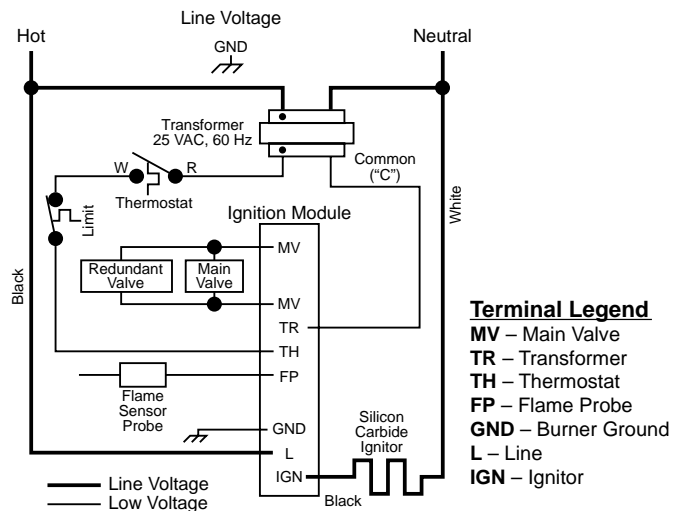


Figure 3. Typical System Wiring Diagram

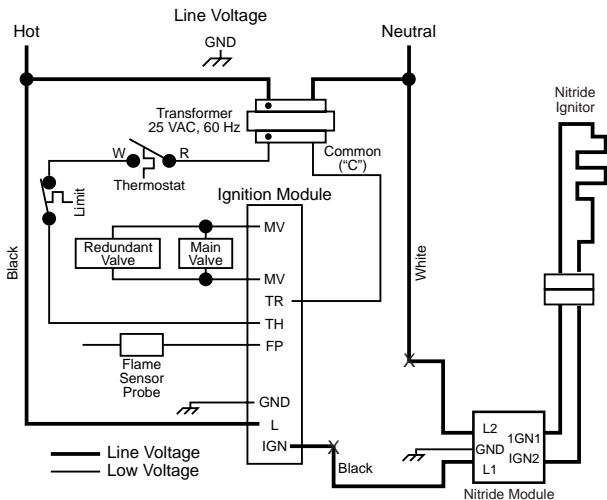


Figure 4. Typical System Wiring Diagram with Nitride Upgrade

Checkout

- 1) Turn on the gas supply and electrical power to the unit.
- 2) Set the room thermostat for heat.
- 3) Test furnace for proper ignition and operation.
- 4) Verify that the Power On LED on the power module is on during nitride ignitor warm-up.
- 5) During ignitor warm-up, using a true RMS voltmeter, measure the voltage across the ignitor. Voltage should be between 50 VAC and 120 VAC.
- 6) Make sure the (nitride) ignitor does not remain energized in the flame for more than 2 seconds.
- 7) Replace the burner compartment door.
- 8) Place nitride upgrade label on front of furnace.

	If old ignitor looks like this	Remove adaptor tabs	Install nitride ignitor to adaptor. Assembly will look like this
Base Type 1	<p>Top End View</p>	<p>B and C</p>	
Base Type 2		<p>A and C</p>	
Base Type 3		<p>A and B</p>	
Base Type 4		<p>B and C</p>	
Base Type 5		<p>B and C</p>	
Base Type 6		<p>Use this adaptor</p>	

Figure 5. Proper Nitride Ignitor Mounting

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