

# White-Rodgers Ignitors

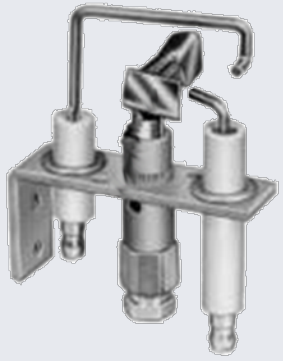
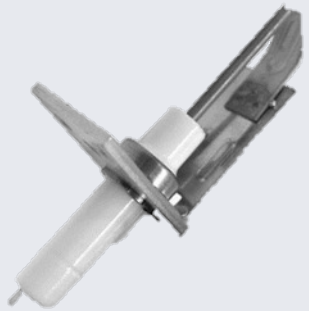
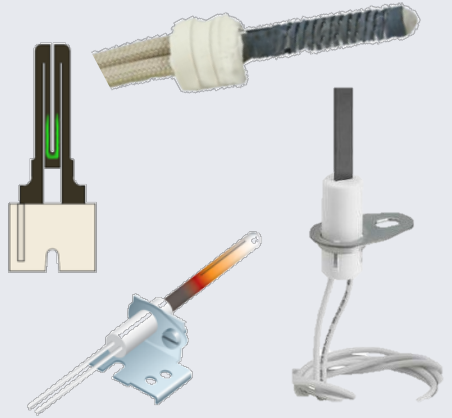
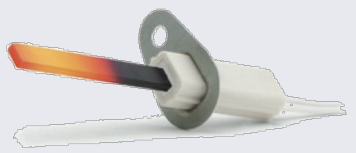
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# Business and Product Overview

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White-Rodgers Ignitors

# Types of Ignition in Hot Air Gas Furnaces

Proven Pilot	Direct Spark	Hot Surface Ignition	
		120 VAC	80 VAC
			
<p>Grounded pilot burner, spark to pilot electrode and pilot flame sensor</p>	<p>Ground electrode, spark to ground electrode. Assembly sometimes includes a main burner flame sensor</p>	<p>Resistive high temperature heating element that heats up to ignition temperature and lights the burner. 120V carbide models may sense flame through ignitor (direct sense) or through separate flame sensor (indirect sense). 80 and 120 Volt nitride models are indirect sense.</p>	

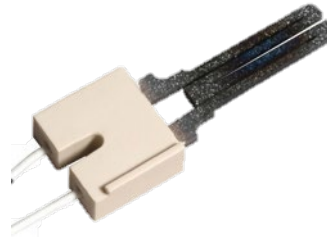
# Ignition Systems – Pros and Cons

## Direct Spark Ignition



- Spark probe rarely wears out.
- Spark coil on board is ignition part that fails most, making repair highest \$ of 3.
- Quick Ignition – doesn't have to wait for anything to heat up.
- Foreign objects can short the spark gap and require cleaning

## Silicon Carbide



- Proven ignition component for over 60 years.
- The ignitor may require routine replacement.
- Carbides are somewhat sensitive in hostile environments.

## Silicon Nitride



- Premium ignitor.
- Durability & longevity over carbide outweighs initial cost.
- Not sensitive to oils or easily broken.
- Retrofitting from carbide becoming easier w/ universal options.



**TECH TIP:** The Silicon Nitride ignition system is preferred by most furnace manufactures.

# White-Rodgers Silicon Carbide Ignitors

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Used by manufacturers for the last 60 years, silicon carbide ignitors are typically about 3/16" thick and come in a "W" form or a spiral.

At White-Rodgers, we offer dozens of 120V OEM replacements for brands such as Amana, Lennox, Rheem, Trane, Goodman, and Nordyne.



# White-Rodgers Silicon Carbide Ignitors

<p><b>AMANA, LENNOX</b></p>	<p><b>WHITE-RODGERS</b></p>	<p><b>YORK, LENNOX</b></p>	<p><b>WHITE-RODGERS</b></p>	<p><b>WHITE-RODGERS</b></p>
<p>767A-356</p>	<p>767A-357</p>	<p>767A-361</p>	<p>767A-365</p>	<p>767A-366</p>
				
<p><b>AMANA, LENNOX</b></p>	<p><b>CARRIER, TRANE, RHEEM</b></p>	<p><b>GOOMAN, YORK, NORDYNE, TRANE, AMANA, ARMSTONG</b></p>	<p><b>RHEEM, LENNOX, TRANE</b></p>	<p><b>GOODMAN, YORK, NORDYNE, TRANE, ARMSTRONG</b></p>
<p>767A-369</p>	<p>767A-370</p>	<p>767A-371</p>	<p>767A-372</p>	<p>767A-373</p>
				

# White-Rodgers Silicon Carbide Ignitors

<b>WHIRLPOOL</b>	<b>WHITE-RODGERS</b>	<b>TRANE</b>	<b>TRANE</b>	<b>AMANA</b>	<b>YORK</b>
767A-374	767A-375	767A-376	767A-377	767A-378	767A-379
					
<b>ARMSTRONG LENNOX</b>	<b>YORK</b>	<b>TRADE</b>	<b>RHEEM</b>	<b>GOODMAN</b>	<b>GOODMAN</b>
767A-380	767A-381	767A-382	767A-383	767A-384	767A-385
					

# White-Rodgers OEM Direct Nitride Ignitors

A Nitride Ignitor is a compound of Silicon & Nitrogen ( $\text{Si}_3\text{N}_4$ ) where the nitride probe has either 24v, 80v, or 120v applied to the wire leads.

The voltage causes the probe to glow hot enough to ignite the gas/oxygen mixture coming out of the furnace burners.

Nitride options exceed carbide ignitors in durability and lifetime, and is the most popular successor to older standing pilot systems.

White-Rodgers offers both 80v and 120v replacement options in Nitride Ignitors, each of which should be paired with control boards that match that voltage output.





# White-Rodgers OEM Direct 80v Nitride Ignitors

TRANE	AMANA	THERMO PRODUCTS	LENNOX, RHEEM	TRANE
768A-815	768A-842	768A-843	768A-844	768A-845
 A white ceramic ignitor with a black electrode tip, a grey mounting ring, and a white plastic connector housing with two wires.	 A yellow ceramic ignitor with a black electrode tip, a metal mounting ring, and a yellow plastic connector housing with two wires.	 A yellow ceramic ignitor with a black electrode tip, a metal mounting ring, and a white plastic connector housing with two wires.	 A yellow ceramic ignitor with a black electrode tip, a metal mounting ring, and a yellow plastic connector housing with two wires.	 A yellow ceramic ignitor with a black electrode tip, a metal mounting ring, and a yellow plastic connector housing with two wires.

# White-Rodgers OEM Direct 120v Nitride Ignitors

**NORDYNE**

789A-914A1



**CARRIER**

789A-751A1



**CARRIER**

789A-751KT1



**CARRIER**

789A-751KT2



**YORK**

789A-956A1



**LENNOX**

789A-801A1



**TRANE**

789A-820KT1



**GOODMAN**

789A-707A1



**TECH TIP:** White-Rodgers 789A Series gives you 120V OEM Plug-n-Go Harness Connectors.

# White-Rodgers Universal Upgrade 120V Silicon Nitride HotRod and HotRod EX



21D64-5PK

- HotRod™ replaces over 170 flat and spiral ignitors
- HotRod™ EX replaces over 260 ignitors
- Wire leads are 14.5" & 15.5" w/ stripped ends
- Includes universal mounting brackets & ceramic wire nuts
- HotRod also comes in a money saving 5 pack – 21D64-5PK



**TECH TIP:** White-Rodgers HOTROD Series gives you options to upgrade from silicon carbide for longer life & fewer callbacks.

# What Makes the HotRod EX Ignitor Better?

Benefit	Feature	Function
<b>Easy to Install</b>	Compact size for easier installation	Easier to install, more forgiving placement
	Simple, universal mounting bracket	<b>Adapts to over 200 OEM ignitor applications</b>
<b>Improved Reliability</b>	Nitride design	More robust than silicon carbide design
<b>Easy to Service</b>	Cross reference information on side panel of the box with expanded version within installation/instruction manual	Have the right replacement at the right time
<b>Peace of Mind</b>	5 Year warranty	Builds confidence, Provides value

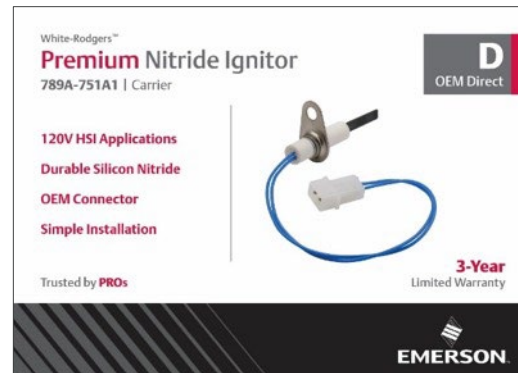
# White-Rodgers Ignitor Warranties

## 5 Years



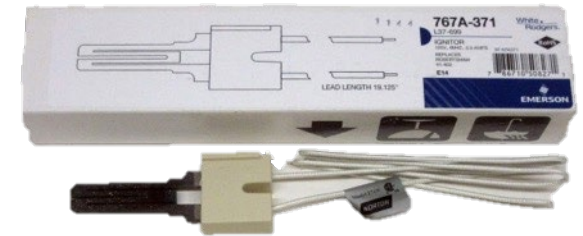
- HotRod Nitride Universal
- Vs. Honeywell Glowfly warranty: 3 years

## 3 Years



- 120V Nitride OEM replacement
- Existing 80V Nitride OEM replacement

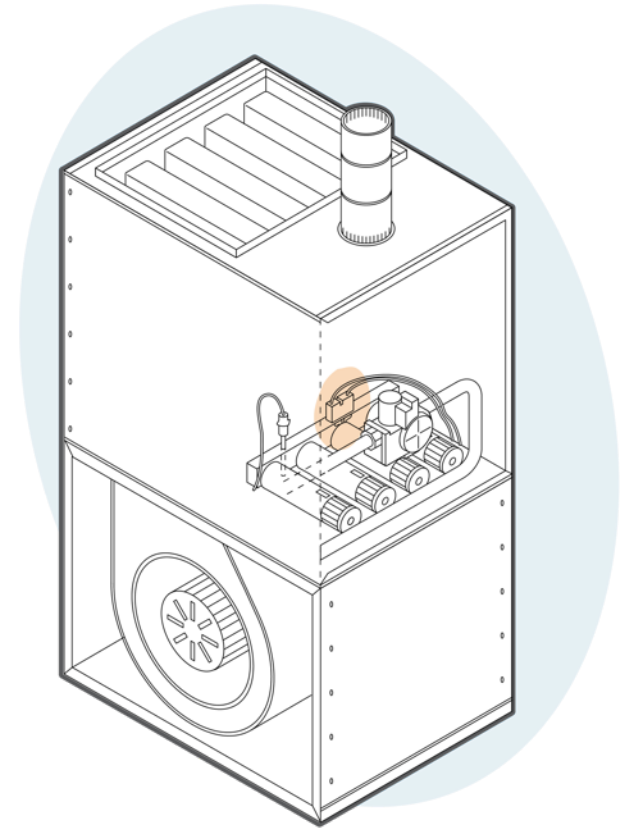
## 1 Year



- All Silicon Carbide OEM replacement

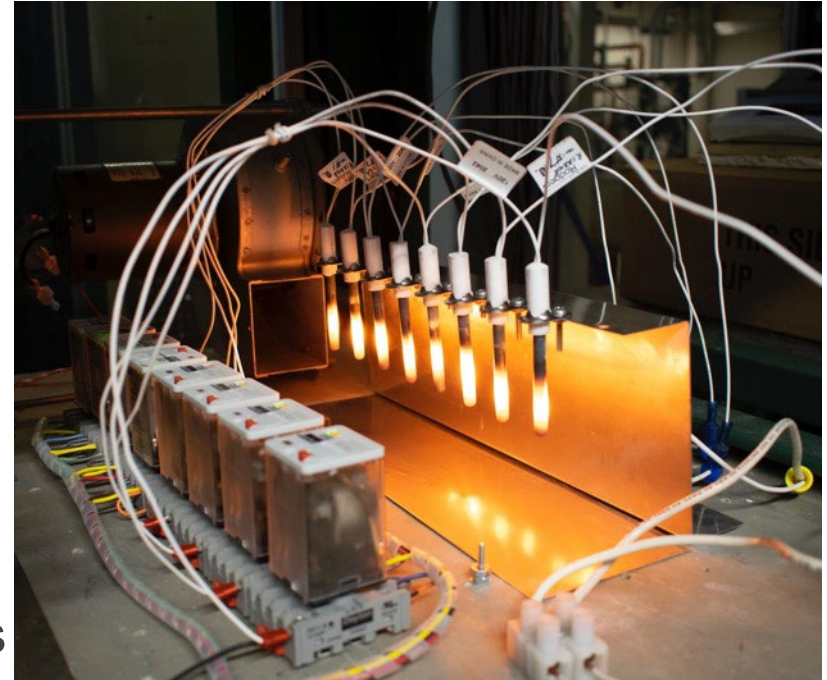
# Market Data

- Our projections put the total replacement market in the United States at ~60 Million forced hot air gas furnaces.
  - West 13.9 Million
  - Midwest 18.7 Million
  - Northeast 11.3 Million
  - South 13.9 Million
- Whether with an OEM direct silicon carbide replacement or with the more durable silicon nitride, there is a healthy replacement market for these products.
- Typical replacement rates:
  - *Carbide = 2-5 Years*
  - *Nitride = 5-10 Years*



# White-Rodgers Ignitors

- ✓ • UL and CSA Certified Lab
- ✓ • OEM Approved
- ✓ • Ongoing Product Testing
- ✓ • Controls and Valves Manufacturer
- ✓ • Systems Application Expertise
- ✓ • Pioneer in 80V Ignitor Applications



# WR Mobile App

Always up-to-date and easy to use:

- Mobile App
- White-Rodgers Website



Your resource for:

- Product information and spec sheets
- Complete Cross Reference
- OEM compatibility
- Installation information and videos
- Wiring diagrams

Download:

- Go to your app store
- Type in **WR Mobile**
- Install the app



OR

- Open your camera
- Hold it over the QR code
- Tap “Open” on the pop-down
- Install the app





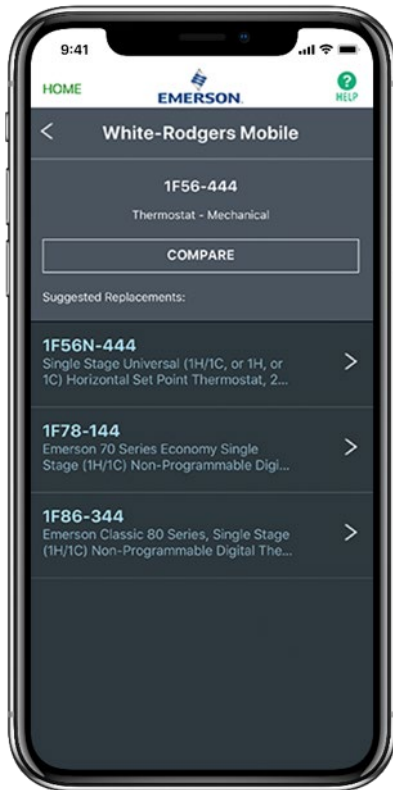
# WR Mobile App

Easy to use!

Search by OEM, Competitive, or White-Rodgers Model Number



## Product Number

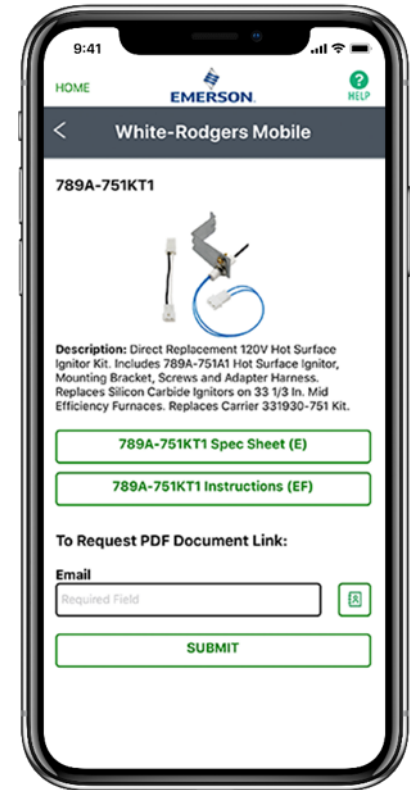


## Scrollable Product List



White-Rodgers Ignitors

## WR Replacement



# White-Rodgers Cross Reference

Go to: [www.whiterodgers.com](http://www.whiterodgers.com)

- Hover over Tools & Resources
- Click on: White-Rodgers Cross Reference/Product Information
- Enter the Model Number or click on: Search Replacement Heating Controls by Major OEM Brand

The screenshot shows the Emerson website's navigation bar and a dropdown menu. The navigation bar includes links for Emerson.com, About Us, Investors, Careers, Contact Us, News & Events, Sign In, and United States (English). Below the navigation bar, the 'CLIMATE TECHNOLOGIES' section is visible, with 'Tools & Resources' highlighted. The dropdown menu lists various resources, including 'White-Rodgers Cross Reference/Product Information', which is highlighted with a green arrow. The background of the website features a cityscape at night with the text 'Transforming How People and Work' and a description of Emerson's expertise in HVACR and infrastructure solutions.

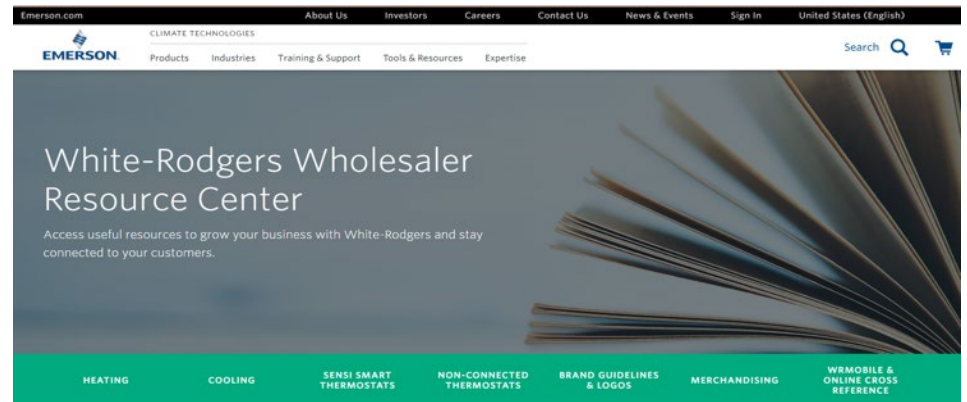
# Wholesale Resource Site

Access useful resources to grow your business.

Visit: <https://climate.emerson.com/en-us/brands/white-rodgers/white-rodgers-wholesaler-resource-center>

You'll find videos, stocking lists and product launch information for the following product families:

- Heating Controls
- Cooling Controls
- Sensi Smart™ Thermostats
- Traditional Thermostats
- Contractor Rewards
- Product Merchandising



The comfort in knowing Emerson is there.

Confidence comes from knowing your reputation is in good hands; that you have the stability of an industry leader by your side; that they've been in the game for 125 years and they'll be around for a whole lot longer. That's the comfort you feel when you recommend Emerson, because you know you're working with the best for your customers and your business.

[BROCHURE](#)

# Why Contractors Trust White-Rodgers

## Industry Leading Products

- Used by more OEM's
- Offering the widest range of Universal Replacement Controls

## Ease of Installation

- Simple, easy to understand instructions

## Product Reliability

- Quality Control assures reliable products

## Affordable

- Competitive pricing

## Supported by Knowledgeable Representatives

- Contractor direct phone support

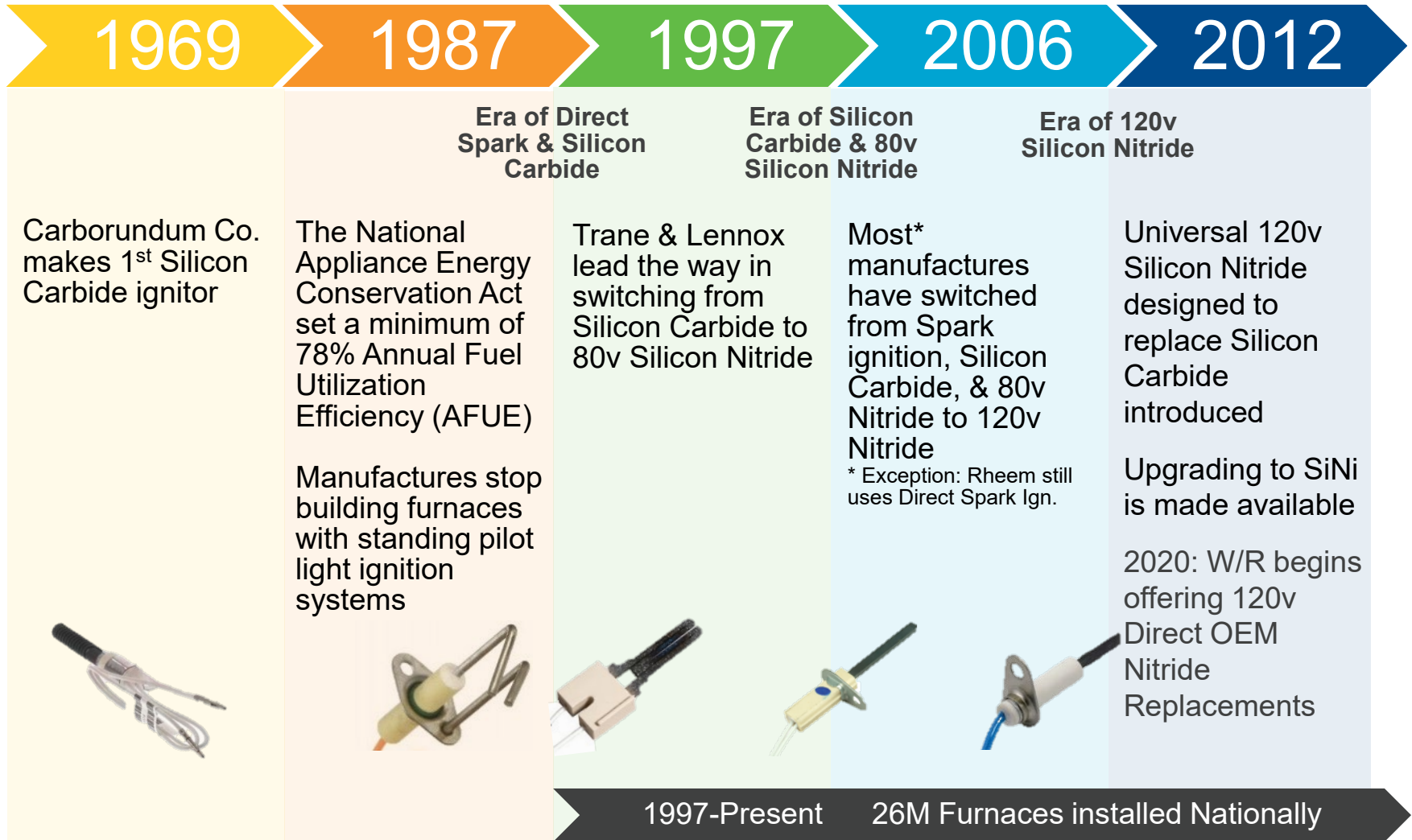


# Technical

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White-Rodgers Ignitors

# Ignition Type History

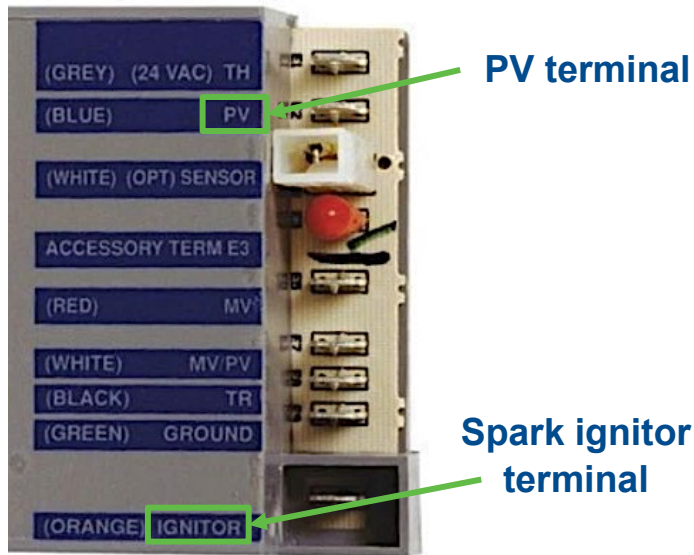


Existing Markets already covered with White-Rodgers product offerings

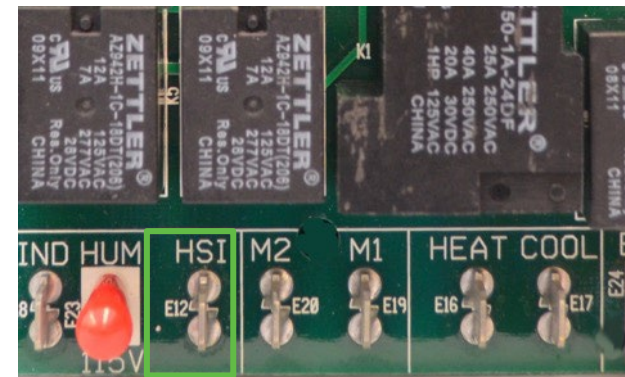
# Verifying Ignition Source

A visual inspection of the current circuit board will identify the ignition source.

- PV is the Pilot Valve: Intermittent Pilot
- No PV with Spark Ignitor terminal: Direct Spark
- HSI: Hot Surface Ignition



*Proven Pilot*

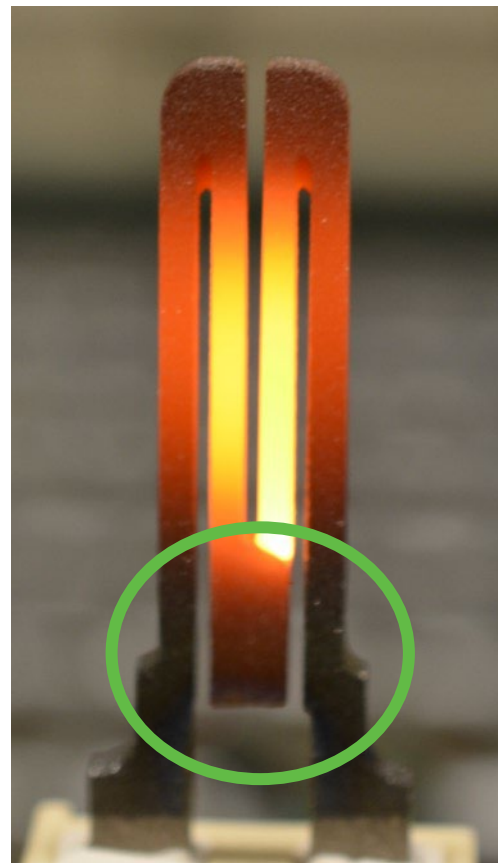


**Hot surface ignitor terminal**

*Hot Surface Ignition*

# When Should You Replace a Carbide Ignitor?

- Check for cracks, visually, prior to the ignition being energized
- OR, look for a bright spot
  - During the warm-up period, if you see a bright “hot spot” this will indicate potential cracking and maintenance replacement
  - **NOTE:** Ignitors can still get hot enough to light gas even if there is a hairline crack.
- Check resistance
  - Cold Resistance should be between 40 and 70 Ohms



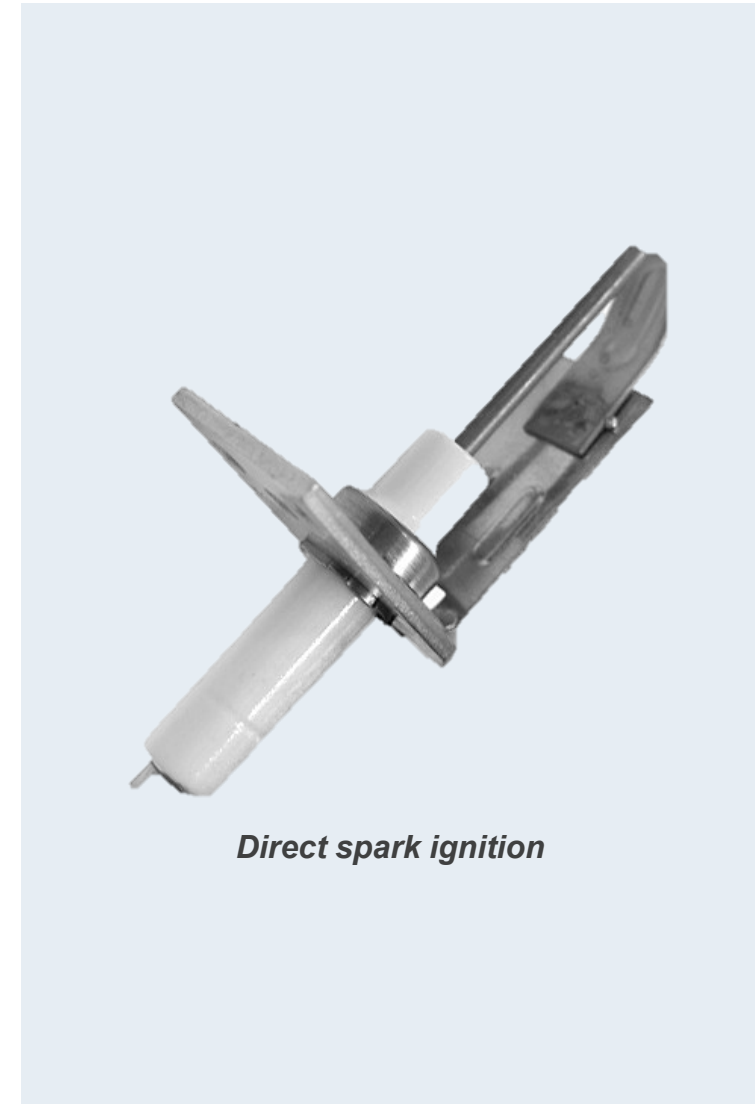
**TECH TIP:** It is always best practices when servicing a furnace to observe the ignitor and look for a hot spot!



# How it Works – Direct Spark

- **Direct Spark Ignition**

- Direct burner ignition system
- Spark electrode is located near combustion surface of burner
- High voltage pulses (in excess of 10,000V) cause a spark to bridge the 1/8" gap between the spark ignitor and the burner ground
- Gas valve opens and passes fuel across ignition source
- Electronic spark is hot enough to ignite the burner
- Burner flame is proven through sensing circuit and allows gas valve to stay open for duration of call



*Direct spark ignition*

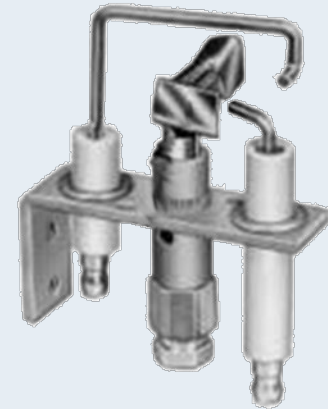
# How it Works – Proven Pilot and HSI

- **Intermittent/Proven Pilot Ignition**

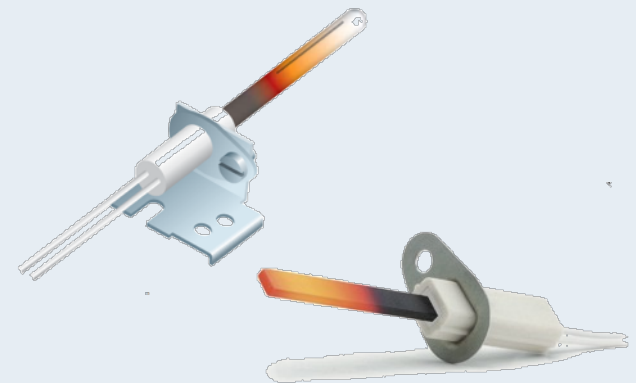
- A pilot tube extends from the gas valve to the pilot burner
- Pilot flame is not standing, but automatically lit during a call for heat
- A flame sensing circuit proves the pilot flame to keep pilot valve open and allow main valve to open

- **Hot Surface Ignition**

- Direct burner ignition system
- Current passes through resistive strip, causing it to heat to a minimum of 1,200°F
- Gas valve opens and passes fuel across ignition source
- Burner flame is proven through sensing circuit and allows gas valve to stay open for duration of call



*Intermittent/Proven  
pilot ignition*



*Hot surface ignition*

# White-Rodgers Ignitor Testimonials

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- September 10, 2014 – jcspress
  - *“I stopped replacing manufacturer original hot surface ignitors and have started using these universal Silicone Nitride replacements. **Haven't had to replace a single one of these yet...**”*
- November 7, 2014 - Ablejo
  - *“I **had a little trouble fitting in** but I used some muffler seal putty to seal the edges and it **works perfectly.**”*
- April 20, 2016 – Anonymous Technician
  - *“This ignitor works very well in many applications and excellent in some brand/model specific applications. I have [used] this type of universal ignitor many times and it **is very reliable** and pretty **easy to install.**”*
- March 1, 2018 – Peter Foss
  - *“**Five Stars.** Our service tech installed the part and worked like a charm!”*

# Install

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White-Rodgers Ignitors

# Installation

In this segment, we'll look at the installation process for a direct replacement for Carrier as well as our Universal 120V HotRod Nitride Ignitor.


*Carrier Direct Replacement*



*120V HotRod Nitride Ignitor Kit*

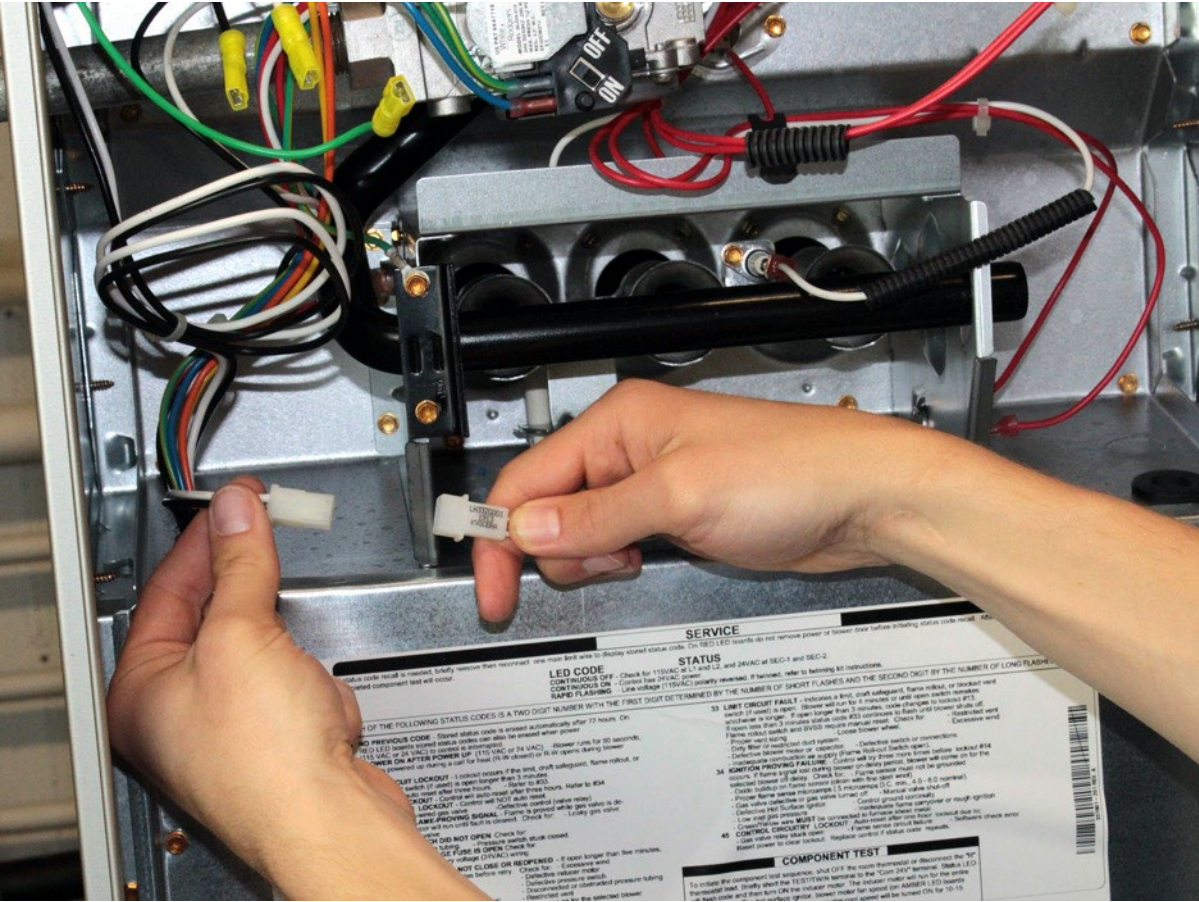


**First,** let's take a look at the direct replacement...

 **TECH TIP:** When replacing an ignitor, always check that the replacement is appropriate for the existing board 80v/120v.

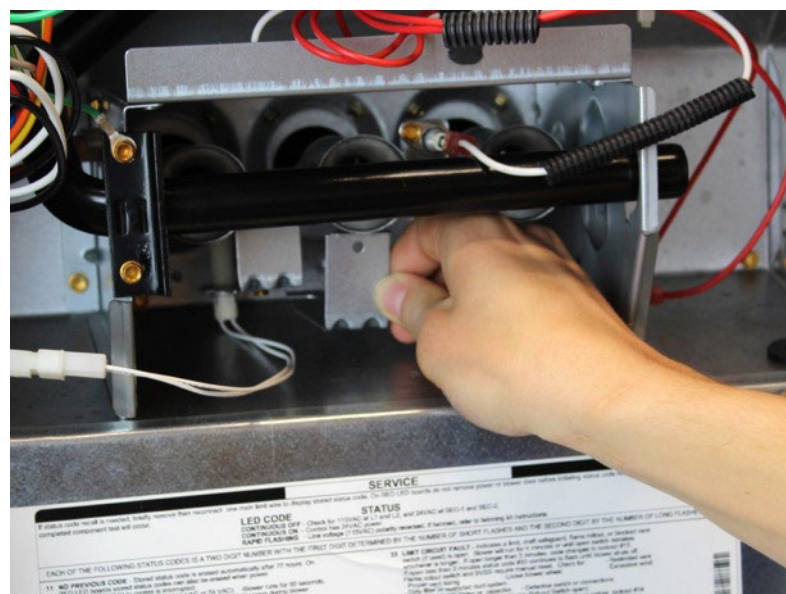
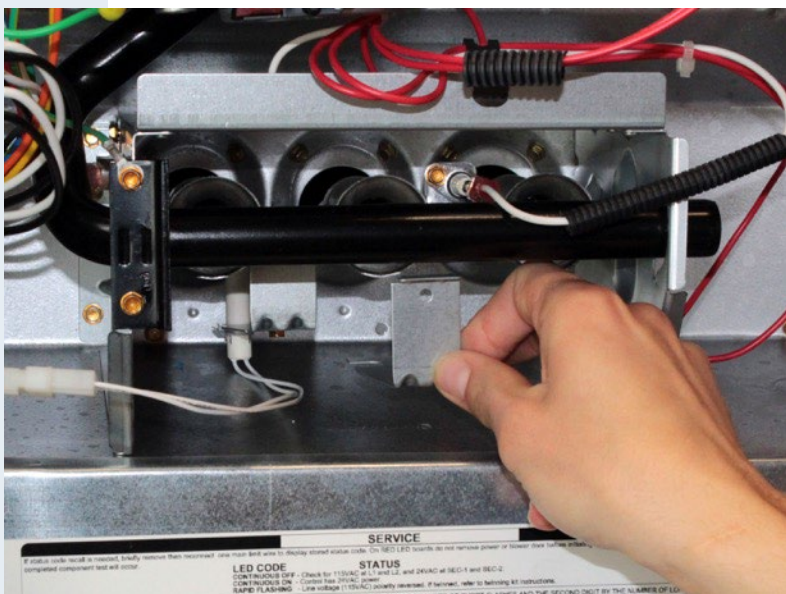
# Installation – Step 1 – Carrier Direct Replacement

1 Disconnect gas, power and wires.



# Installation – Step 2 – Carrier Direct Replacement

- 2 Check the bracket type used in the current unit and choose the correct replacement part.



# Installation – Step 3 – Carrier Direct Replacement

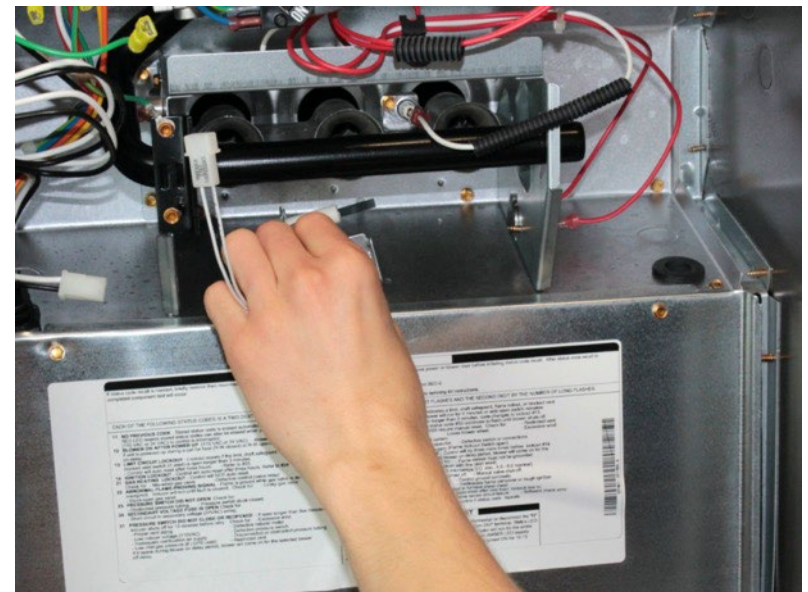
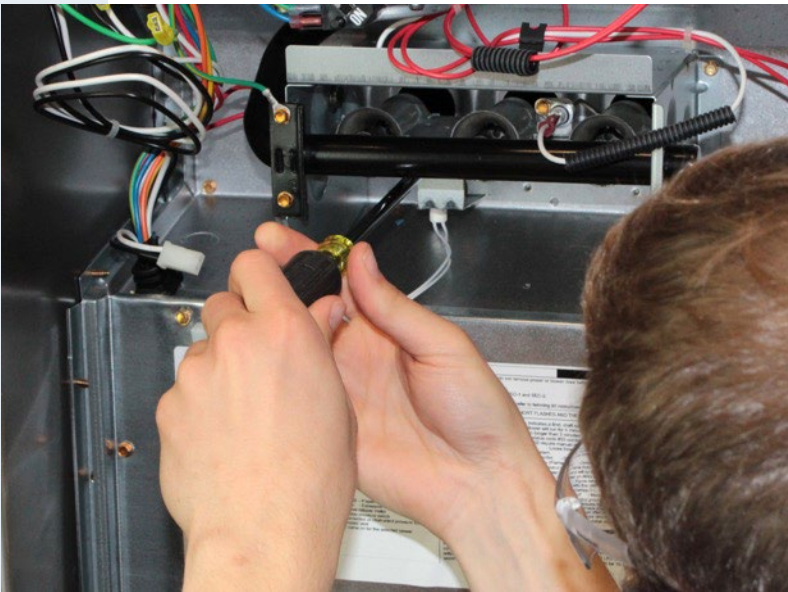
- 3 Take a photo of the current blade placement in order to set-up the new blade the same.





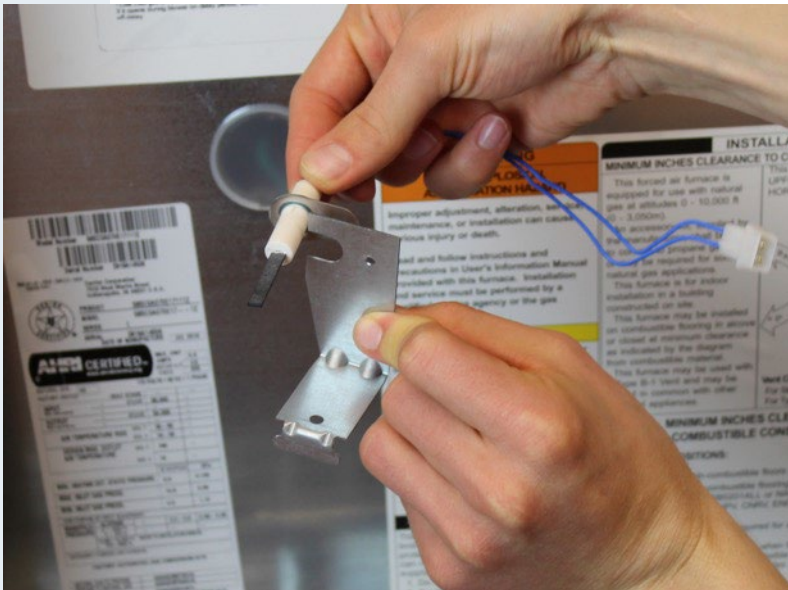
# Installation – Step 4 – Carrier Direct Replacement

- 4** Remove the screw from the ignitor, slide and rotate to remove from the burner assembly.



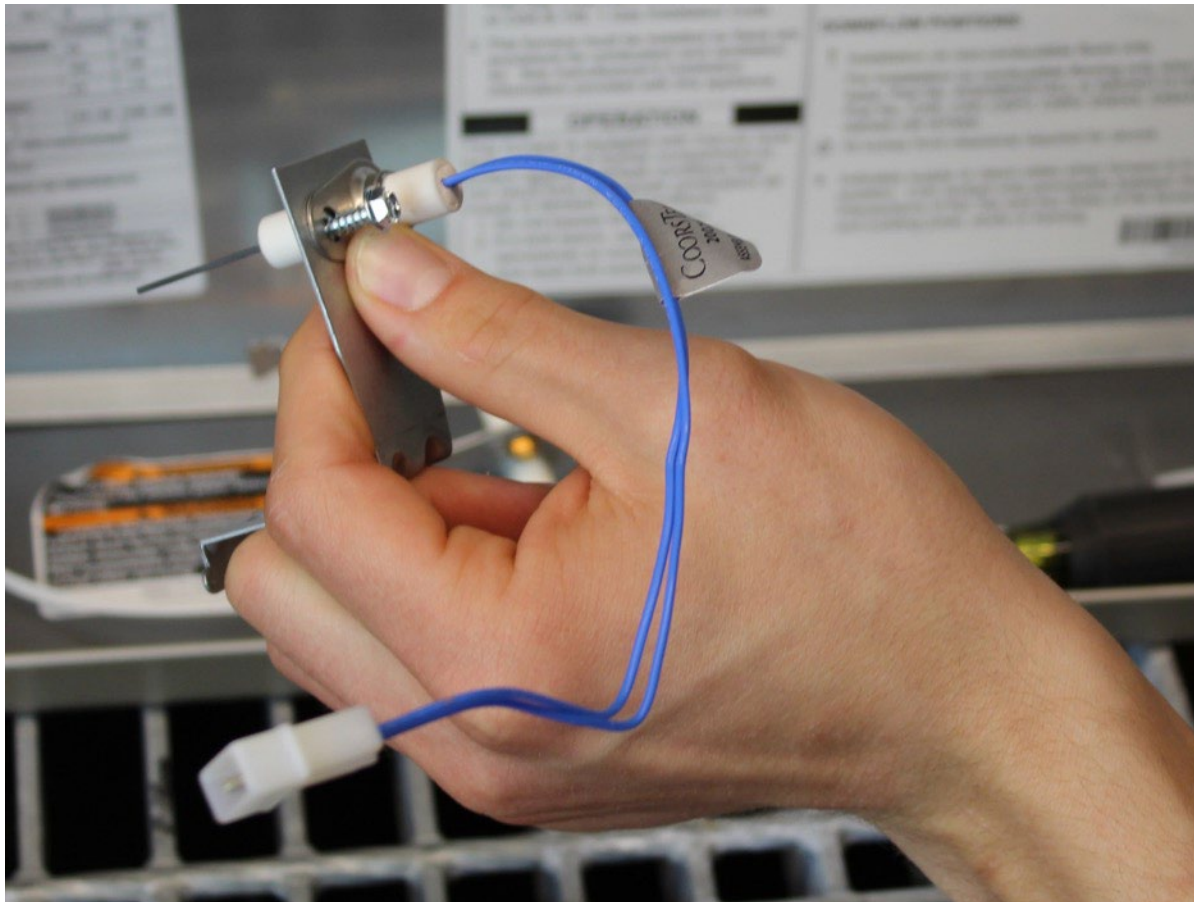
# Installation – Step 5 – Carrier Direct Replacement

- 5** Assemble the White-Rodgers bracket by threading the ignitor through the semi-circle.



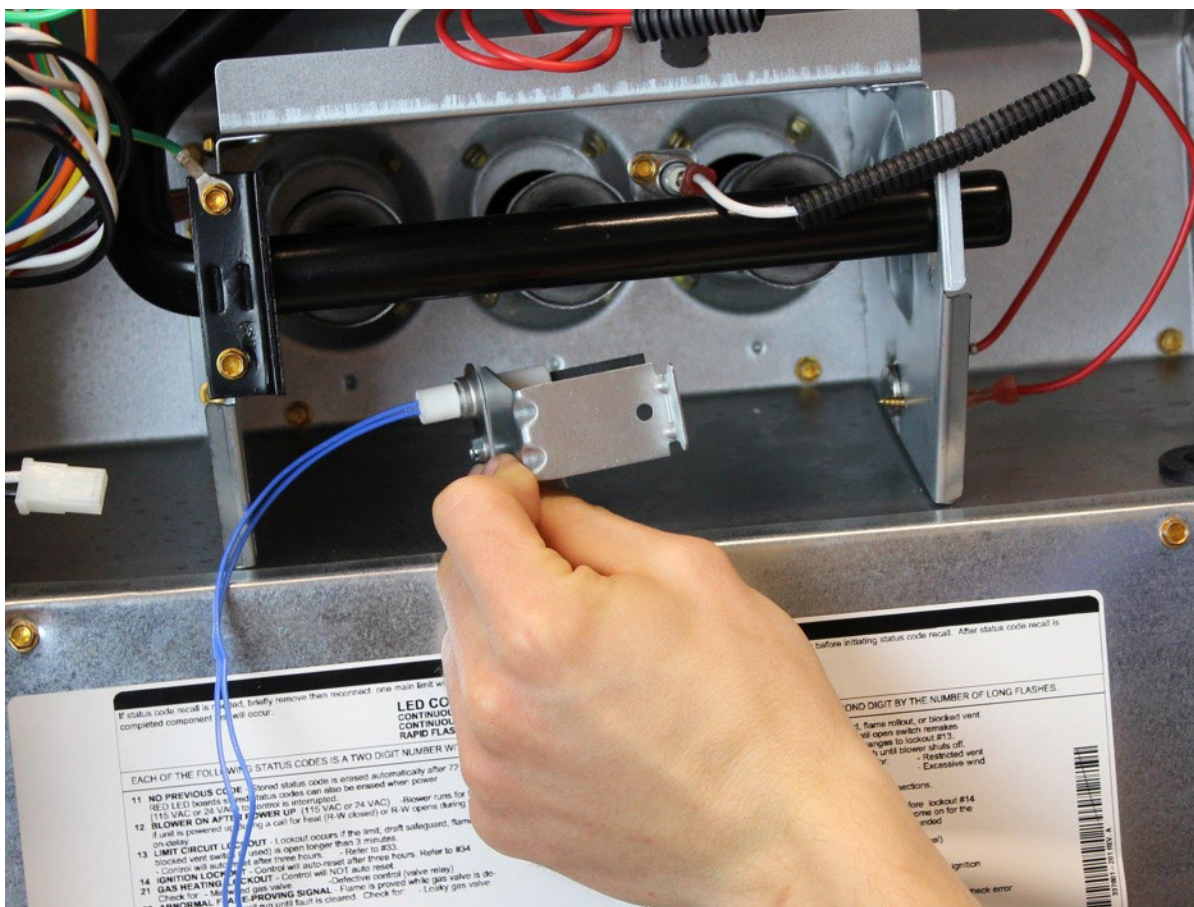
# Installation – Step 6 – Carrier Direct Replacement

- 6 Using the screw from White-Rodgers' replacement, place the screw in the bracket.



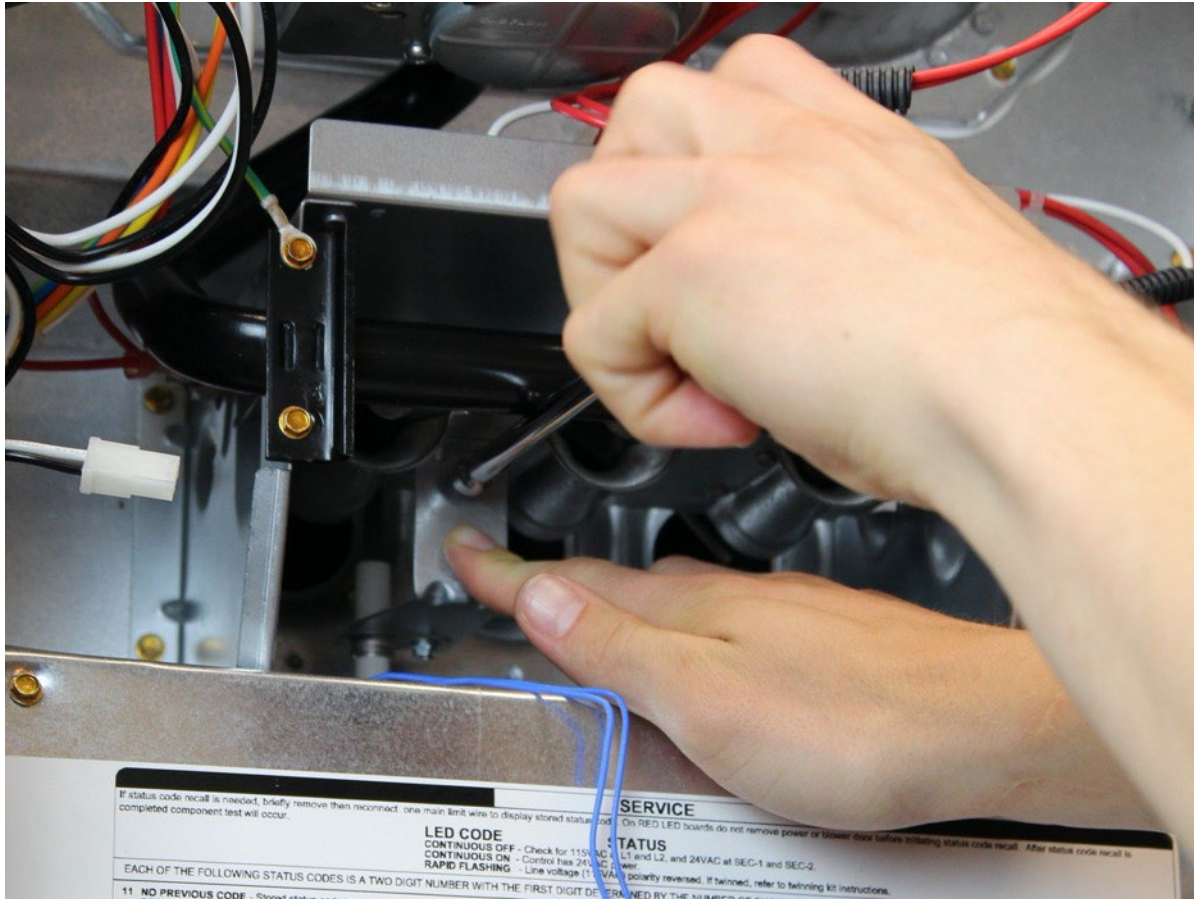
# Installation – Step 7 – Carrier Direct Replacement

- 7 Slide the new ignitor and bracket assembly into the burner box. Align with the existing hole.



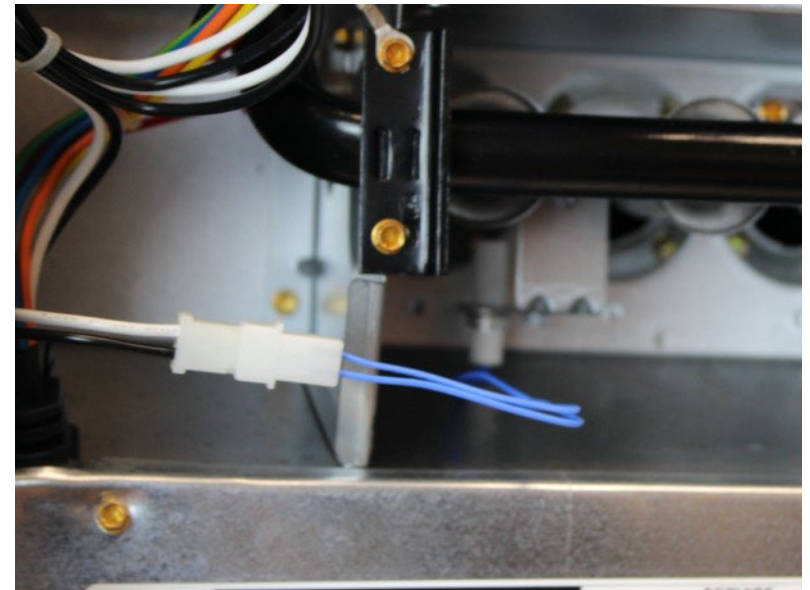
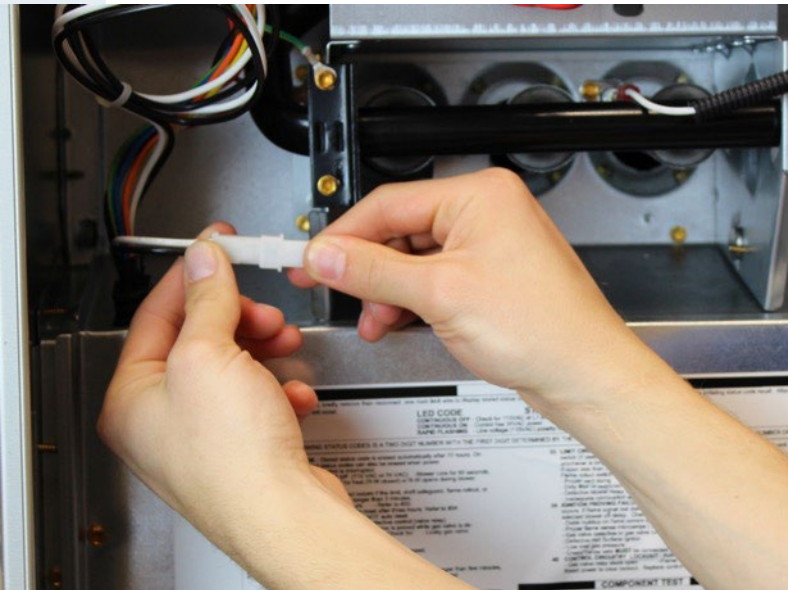
# Installation – Step 8 – Carrier Direct Replacement

- 8 Use the second screw provided to attach the bracket.



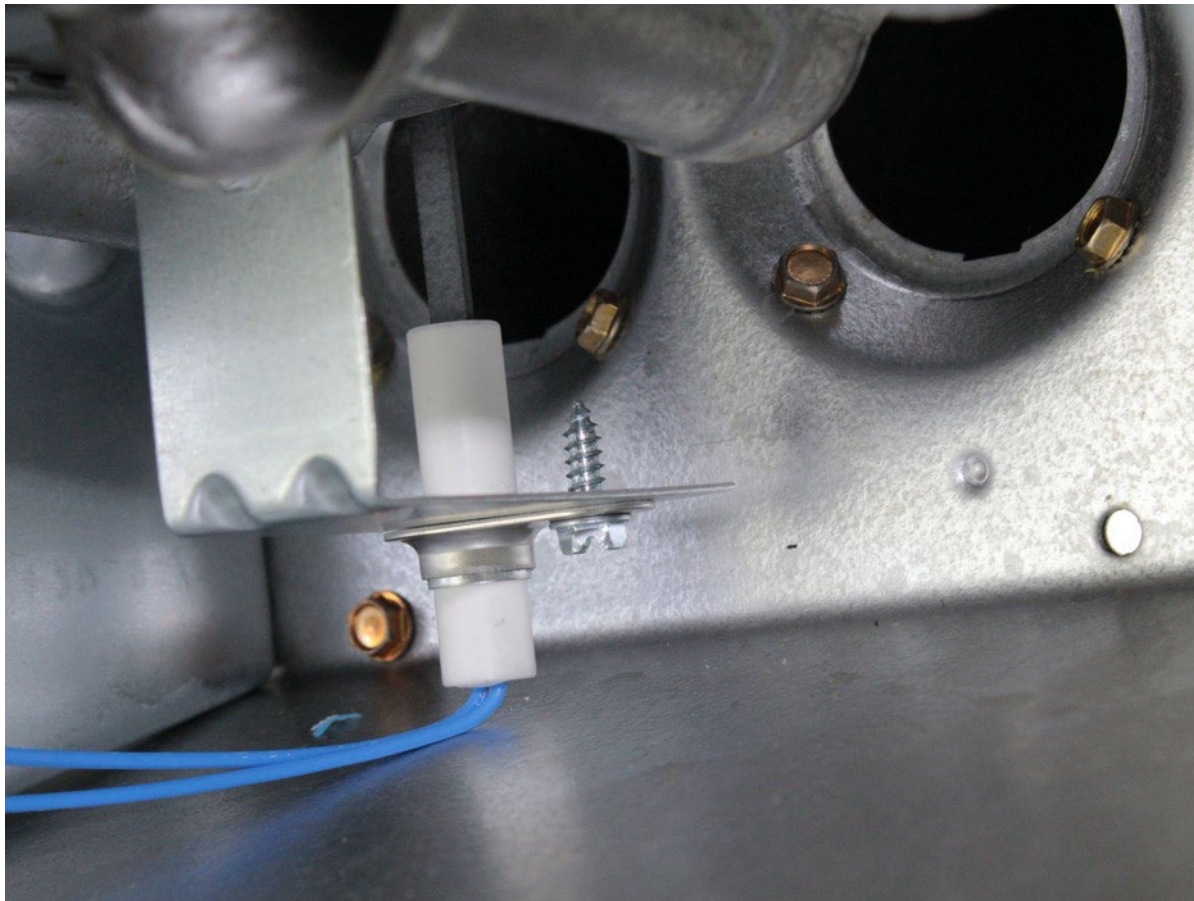
# Installation – Step 9 – Carrier Direct Replacement

- 9 Connect the new ignitor to the factory wiring connector on the furnace.



# Installation – Step 10 – Carrier Direct Replacement

- 10 Make sure the orientation of the blade matches your photo of the old ignitor.



# Installation – Step 11 – Carrier Direct Replacement

- 11 Reconnect the gas and power.





# HotRod

Now, let's take a look at the installation steps for our Universal 120V HotRod Nitride Ignitor.

- HotRod™ replaces over 170 flat and spiral ignitors
- Wire leads are 14.5" & 15.5" w/ stripped ends
- Includes universal mounting brackets & ceramic wire nuts
- HotRod™ also comes in a 5 – single ignitor kits – pack (21D64-5PK)



# Installation – Step 1 – HotRod

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- 1 Disconnect gas, power and wires, take a photo first to ensure you have a record of the existing ignitor's location.



## Installation – Step 2 – HotRod

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- 2 Open package and screw ignitor into bracket using provided screws. In some cases, you may need to re-use the existing bracket.



## Installation – Step 3 – HotRod

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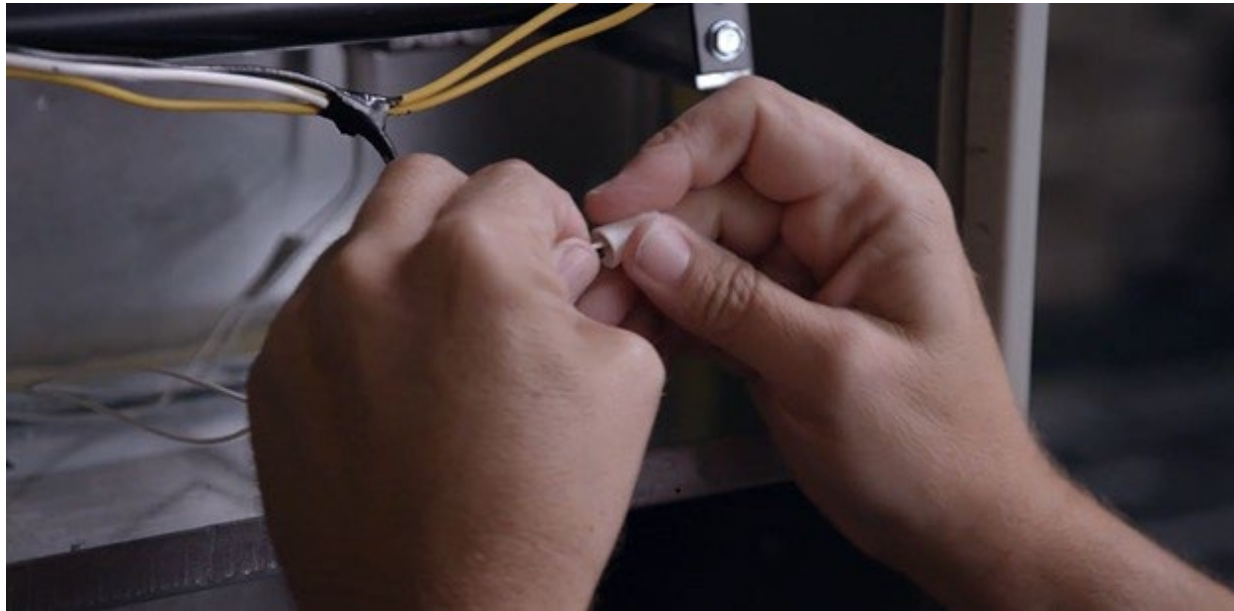
- 3 Attach HotRod ignitor to furnace using existing screws, and make sure the new ignitor is in the same location as the previous.



## Installation – Step 4 – HotRod

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- 4 Strip furnace wires and wire nut to ignitor, matching one wire from the ignitor to one wire from the furnace.



# Installation – Step 5 - HotRod

- 5 Add information to sticker found in HotRod package. Attach sticker to front of furnace. Connect gas and power and test operation.

Place this label on the front of the furnace

THIS FURNACE HAS BEEN UPGRADED WITH A

21D64-44

**HotRodEX**  
Universal Hot Surface Ignitor – Expanded Coverage

**120 Volt Nitride Ignitor**  
Universal Replacement for Silicon Carbide Ignitors

Installed By: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Installation Date: \_\_\_\_\_

5001-9640 Rev. A

White-Rodgers EMERSON

