CONTROL TIPS

A ROBERTSHAW® INFORMATIONAL GUIDE

THIS ISSUE

CARE AND MAINTENANCE OF THE ROBERTSHAW 41-400 and 41-200 SERIES NORTON IGNITORS

The Robertshaw ignitor by Norton is made of high-purity Crystar® recrystallized silicon carbide. Crystar is a proprietary Norton advanced ceramic that combines physical and thermal strength with stable electrical properties. Ignitor leads are enclosed with a high-temperature fiberglass insulation which provides total electrical protection. The ignitor is cemented in a steatite or cordierite block for protection against current leakage under high humidity conditions. Norton ignitors are engineered for easy handling, simple installation, and trouble-free operation.

Installing the Ignitor

The silicon carbide element can be handled without damage. However, it is better and safer to handle the ignitor by the ceramic holder. The myth that the silicon carbide tip cannot be handled because body oils cause contamination is untrue.

- Cracks may occur by hitting the silicon carbide tip or dropping the ignitor.
- Check the appearance of the ignitor. The sleeving over the wire should be examined for chafing, burned portions, or cuts in the wire. The connectors should be properly seated and free from oxidation and/or corrosion.
- Carefully tighten the mounting screw firmly when installing the ignitor. **WARNING**: Overtightening may crack the ceramic block. Maximum torque on the ceramic block is 12 inch pounds.
- 501 RANGE IGNITOR ONLY: The ignitor and valve must be calibrated to ensure proper performance. Current must reach the given specifications in order to supply adequate ignition temperature to open the gas valve. Check to be sure the proper valve is used.

CAUTION: The use of the 601 mini-ignitor as a flame sense is the sole responsibility of the user/OEM to engineer, test, and approve. If it is determined to be used as a flame sense, then the user/OEM assumes all risks. Norton Company does not recommend the use of the ignitor as a flame sense.

Testing the Ignitor

- Perform a simple room temperature resistance (RTR) test after installing a new ignitor. (Remember to disconnect the leads to ensure that only the resistance of the ignitor is measured.) If the RTR is not to specification (see Ignitor Specifications, below), the silicon carbide tip is cracked.
- Perform an RTR test when troubleshooting an appliance where the ignitor is suspect. While the RTR will be higher on a used ignitor, the resistance should be no more than double the original resistance at installation.
- Observe the ignitor during heat up. If a bright white line across one of the ignitor legs is detected, a crack may exist that could cause premature failure. Allow the ignitor to cool, then perform an RTR test.
- Additional signs of a crack are an "open" ignitor or a buildup of white silica dust around the bright spot. Replace the ignitor if you see these cracks.
- Maximum ambient temperature of wire/element connection within block is 905°F/485°C when 450°C wire is used.

  Caution should be exercised to assure temperature does not exceed the recommended maximums.

Ignitor Specifications

Market and Ignitor Model Number	Time Temperature	Temperature Range	Steady State Current	Cold Resistance
Heating 201	34 seconds	Minimum 1800°F/985°C @ 102V Maximum 3100°F/1705°C @ 132V Typical 2400-2600°F / 1315°C-1430°C @ 120V	4.25-4.75 Amps @ 132V	45-400 Ohms
Heating 271	17 seconds	Minimum 1800°F/985°C @ 102V Maximum 3100°F/1705°C @ 132V Typical 2400-2600°F / 1315°C-1430°C @ 120V	4.25-4.75 Amps @ 132V	40-75 Ohms
Heating 601	5 seconds	Minimum 1800°F/985°C @ 102V Maximum 2875°F/1580°C @ 132V	.4-1.0 Amps @ 120V	50-300 Ohms
Dryer 101	Typically 30 seconds	Minimum 1800°F/985°C @ 80V Maximum 3100°F/1705°C @ 132V Typical 2400-2800°F / 1315°C-1540°C @ 120V	Maximum 5.0 @ 132V	40-400 Ohms
Range 501		Maximum 2650°F/1455°C @ 116V	3.2-3.6 Amps @ 116V	50-400 Ohms

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