



INSTALLATION DATA

41-404 HOT SURFACE FURNACE IGNITOR

EXACT REPLACEMENT

WEIL-MCLAIN 511-330-190

The Robertshaw® 41-400 Series Norton Hot Surface Ignitors deliver dependable ignition in heating systems of every description. From furnaces and boilers to rooftop heaters, infrared burners, unit heaters, water heaters, and many other types of HVAC equipment.

The 41-404 is specifically designed to replace Weil-Mclain part number 511-330-190, used on furnace models HE/VHE series 3.

The 41-400 Series Hot Surface Ignitors are made of high-purity recrystallized silicon carbide (Crystar™) which combines physical and thermal strength with stable electrical properties. The 41-400 Series are designed to reach ignition temperature(s) within 17 seconds. They have 18-gauge nickel chrome lead wires embedded and metalized in place for maximum holding strength and electrical conductivity. The lead wires are also enclosed with a special high-temperature fiber glass insulation providing total electrical protection.



CAUTION

THIS DEVICE SHOULD BE INSTALLED BY A QUALIFIED SERVICE TECHNICIAN WITH DUE REGARD FOR SAFETY AS IMPROPER INSTALLATION COULD RESULT IN A HAZARDOUS CONDITION.

INSTALLATION INSTRUCTIONS

DANGER! Hot surface ignitors get hot - up to 2500°F. Therefore wait several minutes allowing the ignitor to cool down, before attempting any service work. Failure to do so will cause severe personal injury.

1. **WARNING** Turn off all gas and electrical power to the equipment being serviced. Failure to do so can cause severe injury, death or property damage.
2. Remove the front panel from the boiler. See figure 1.
3. Carefully disconnect the ignitor plug from the wiring harness.
4. Disassemble and remove the access panel.
5. Disassemble and remove the ignitor mounting bracket.
6. Remove the old ignitor from the ignitor mounting bracket.
7. Carefully assemble the new ignitor and its shield onto the ignitor mounting bracket. See figure 2 for proper assembly.
8. Reinstall the ignitor mounting bracket and then the access panel.
9. Reconnect the ignitor and the wiring harness.
10. Proceed to "system check-out procedures" on back of page.

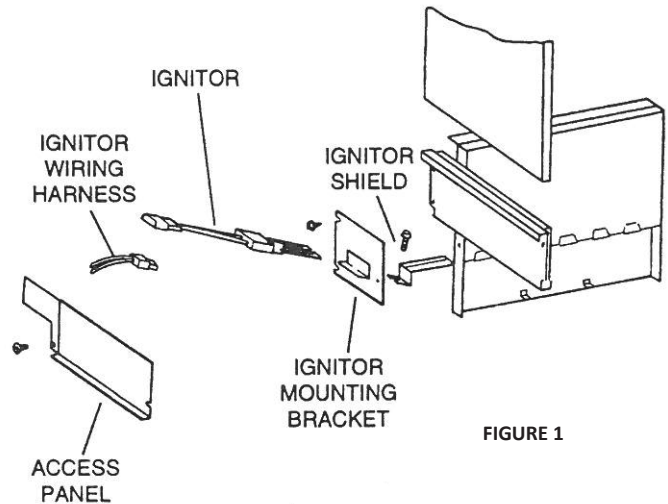
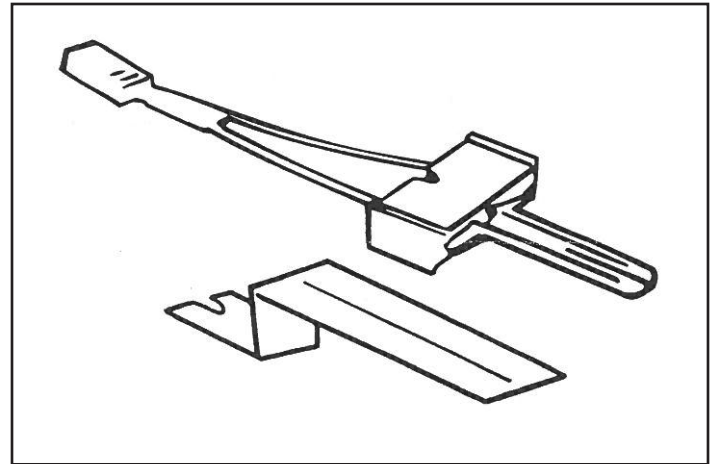


FIGURE 1

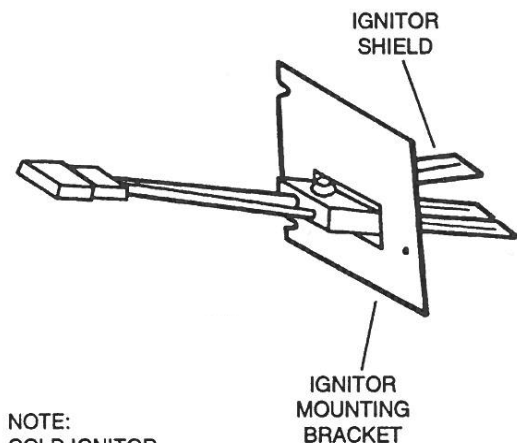


FIGURE 2

INSTALLATION INSTRUCTIONS (Cont'd)

SYSTEM CHECK-OUT PROCEDURES

1. Turn thermostat down below set point. (No call for Heat).
2. Restore gas and electrical power to the equipment being serviced.
3. Test ignition module safety shut-off.
 - A. Turn off manual gas cock on the gas valve.
 - B. Connect a voltmeter to the gas valve terminals. Set meter to read 24V AC.
 - C. Turn thermostat up - calling for heat.
 - D. Ignitor should glow white-hot for 45 seconds. During this time the voltmeter will read 24V AC.
 - E. At the end of 45 seconds, the gas valve main valve should "click" in and for an additional 7 seconds you will read 24V AC, at the end of 7 seconds you will see the meter drop to 0 and you will hear the valve "drop out". The ignitor will also turn-off.
4. Put system into operation:
 - A. Turn on gas at the gas valve.
 - B. Turn thermostat to lowest setting then turn it up to call for heat.
 - C. Follow the "lighting instructions label" on the boiler.
5. With the main burner on check for proper burner flame. Improper flame would be:
 - A. Large flames - overfired.
 - B. Small flames - underfired.
 - C. Yellow tipping on flames - lack of primary air.
 - D. Yellow / orange streaks - caused by dust.
6. Testing boiler safety controls:

If boiler is equipped with a low water safety cut-off or other additional safety controls, they should be tested for proper operation as specified by the control manufacturer. **Note:** Burners should be operating and should go off when controls are tested. Burner should re-ignite when safety controls are reset.
7. Testing limit controls:
 - A. While burners are on, move limit controls temperature indicator below actual set point, or below water temperature.
 - B. Main burner and blower should go off.
 - C. Circulator should continue to run.
 - D. Move limit control temperature indicator back to its original setting. Main burner should re-ignite. **Note:** Maximum high limit setting is 220°F.
8. Testing temperature thermostat:
 - A. Turn thermostat or temperature control to its highest setting.
 - B. Verify that boiler goes through its normal start-up procedure.
 - C. Turn thermostat to its lowest setting - boiler should shut-off.
9. Repeat step #8 two or three times and observe for proper operation.
10. Return thermostat to desired temperature.
11. Re-install front panel that was removed in step #2 on the front page.



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