INSTALLATION DATA
IG-414
HOT SURFACE FURNACE
EXACT REPLACEMENT KIT

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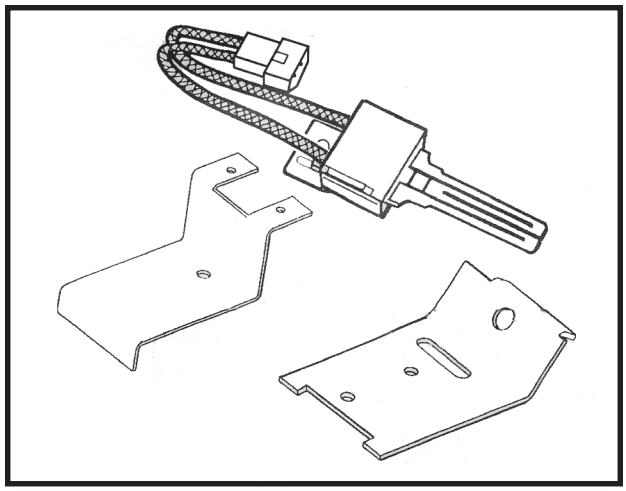
The IG-414 is designed to replace several is designed to replace several hot surface ignitors usedby international Comfort Products, including Intercity, AcroAir, Goodman, Heil, ComfortMaker and Tempstar. The kit includes anignitor with a schock shield, one ignitor mounting bracket and one limit (roll-out) switch mounting bracket. Most applications do not require any of the hardware.

The IG-400 Series Hot Surface Ignitors are made of high-purity recystallized silocon carbide (Crystar™) which combines physical and thermal strength with stable electrical properties. The IG-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 fiberglass insulation providing total electrical protection.

CAUTION
THIS DEVICE SHOULD BE INSTALLED BY A QUALIFIED TECHNICIAN WITH DUE REGARD FOR SAFTEY AS IMPROPER INSTALLATION COULD RERSULT IN A HAZARDOUS CONDITION.



Replaces kits available through:
I.C.P. ArcoAir Tempstar ComfortMaker Heil Intercity

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.

Note: On GDI and GUI models manufactured before 11/1/93 the shock shield will have to be removed prior to installation. See Figure 2.

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 front panel. (On some models there will be other hardware that needs to be removed including burner panels, shields and diverters).

3. Carefully disconnect the ignitor plug from the wiring harness.

4. Remove the ignitor and where applicable the ignitor mounting bracket.

5. Install the mounting bracket (if required) and mount the new ignitor. See Figure 1.

6. Reconnect the ignitor plug and wiring harness.

7. Proceed to system check-out procedures.

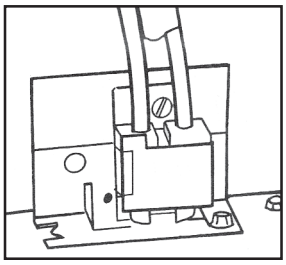


Figure #1

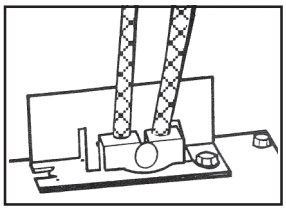
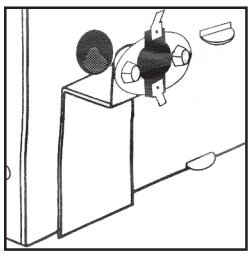


Figure #2

NOTE: ON GNI080 FURNACES, THE ROLL-OUT SWITCH WILL HAVE TO BE ADJUSTED. FOLLOW THESE INSTRUCTIONS CAREFULLY.

1. Remove the roll-out switch mounted on the right side manifold SUPPORT BRACKET.

2. USING TWO #7 x 3.8" screws mount the roll-out switch to the roll-out bracket. Mount the assembly to the manifold support bracket. See Figure 3.



Figure

REPLACING ROUND CARBORUNDUM IGNITORS

1. Remove burner assembly.

2. Remove old ignitor.

3. Mount the ignitor mounting bracket to the burner assembly. See Figure 4.

4. Mount the ignitor to bracket making sure the ignitor is straight and the mounting tabs are engaged in the slots. See Figure 5.

5. Reinstall the burner assembly making sure it locks down into the heat exchanger and is level.

Note: On GUG models the inner diverter shield will have to be notched approximately 1" x 1-3/4" from the right hand side of theiverter shield before the burner is replaced. See Figure 6.

6. Connect the ignitor plug and wiring harness.

7. Proceed to system checkout.

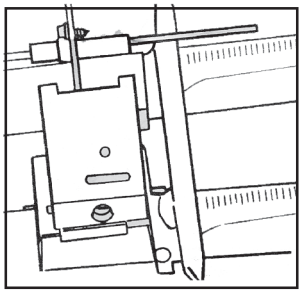


Figure #4

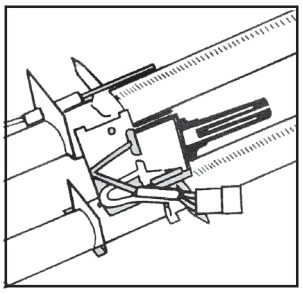


Figure #5

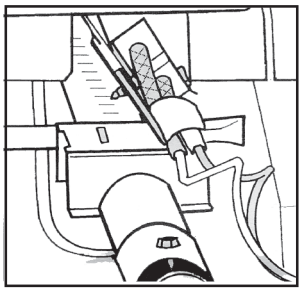


Figure #6

SYSTEM CHECK-OUT PROCEDURES

1. Turn thermostat down below set point. (No call to 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 24 VAC
   C. Turn thermostat up-calling for heat.
   D. Ignitor should glow white-hot for 45 seconds. During this time the voltmeter will read 24 VAC.
   E. At the end of 45 seconds, the gas valve main valve should "click" in and for an additional 7 seconds you will read 24 VAC, 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 broiler safety controls:
   If broiler 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 reignite 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 reignite. 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. Reinstall front panel that was removed in step #2 on the front page.