

Part #4522338 - Instructions for Applying Kit to RC Units, Natural Gas

Objectives:

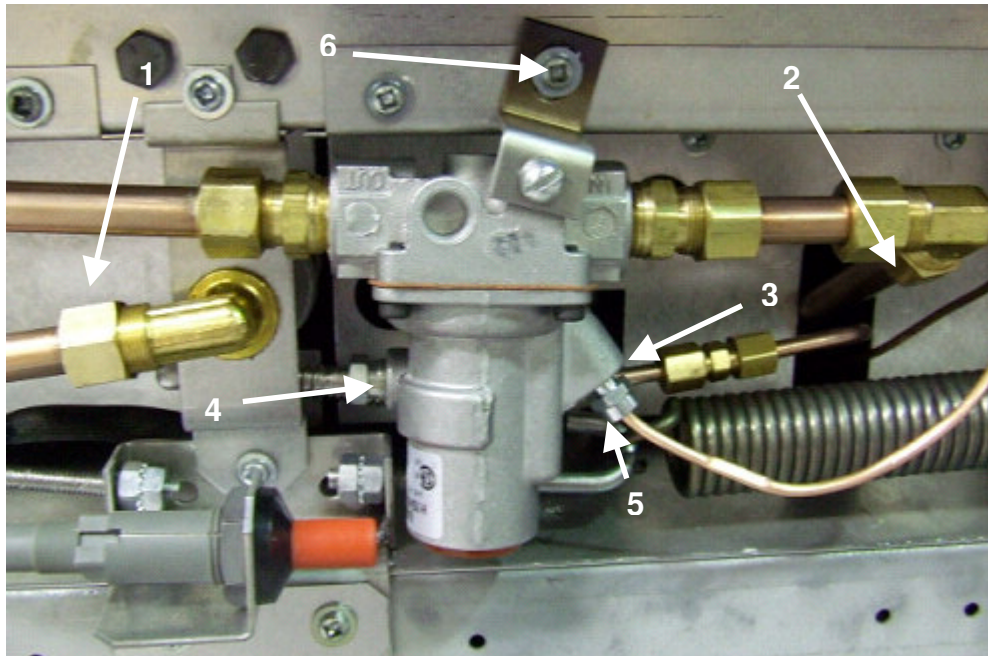
- Install pilot assembly **onto welded bracket on new burner**
- Ensure proper distance between pilot and burner

1) Remove Kick Plate

- Unscrew and set aside

2) Remove Safety Valve

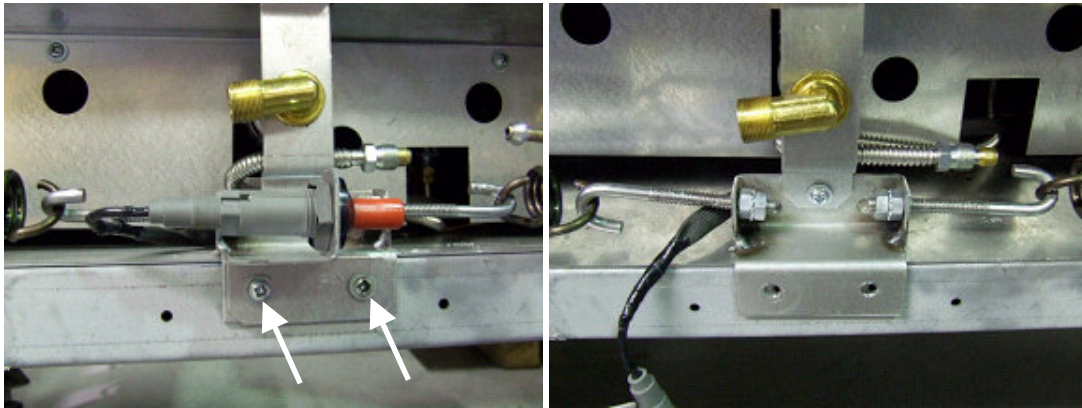
- The following steps will apply for a Baso Valve are installed originally
 - 1) Unscrew 11/16" compression nut on oven orifice fitting.
 - 2) Unscrew 11/16" compression nut on 11/16" elbow on Valve Main Burner Gas Inlet.
 - 3) Unscrew 7/16" compression nut on TS-11 Pilot Gas Inlet.
 - 4) Unscrew 7/16" compression nut on TS-11 Pilot Gas Outlet.
 - 5) Unscrew 3/8" thermocouple nut.
 - 6) Unscrew #10 sheet metal screw holding TS11 bracket onto lower front frame.
 - 7) Remove valve.



Baso Safety Valve: Prior to removal

3) *Unscrew Igniter Bracket*

- Unscrew the two screws holding down the igniter bracket to the orifice bracket.



Left: Before removal, location of screws shown by arrows
Right: After removal

4) *Remove Door Springs*

- **Once the springs are removed, the oven door will be free to fall.** Use a strong tape to keep the oven door closed for safety purposes.
- For the door hinge **with no microswitch**:
 - Insert a long screwdriver underneath the bell crank assembly such that the tip extends behind the air shield. See the following pictures for details.



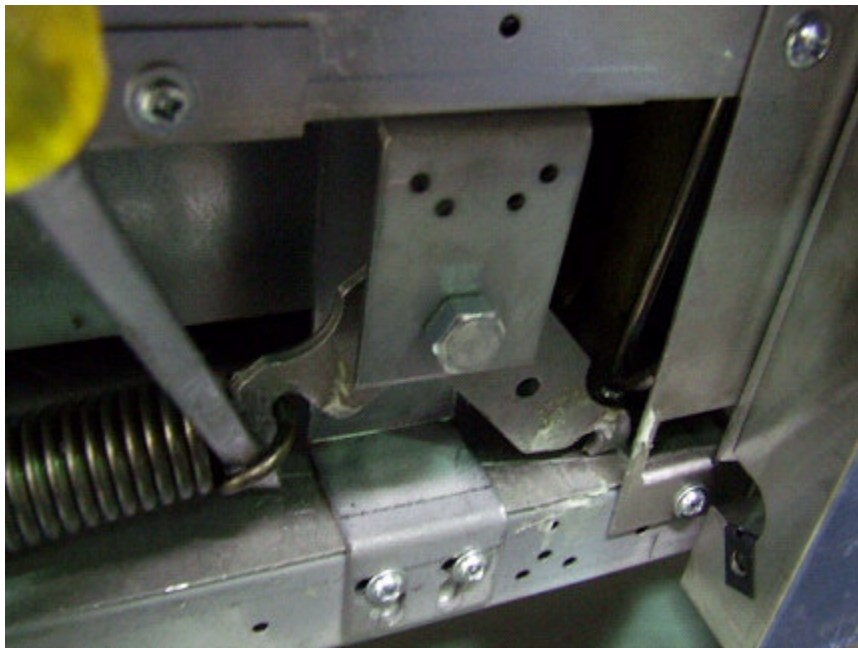
Insertion of screwdriver underneath bell crank assembly and air shield

- Pry upward with the screwdriver. While holding this position, unhook the oven door hinge link.



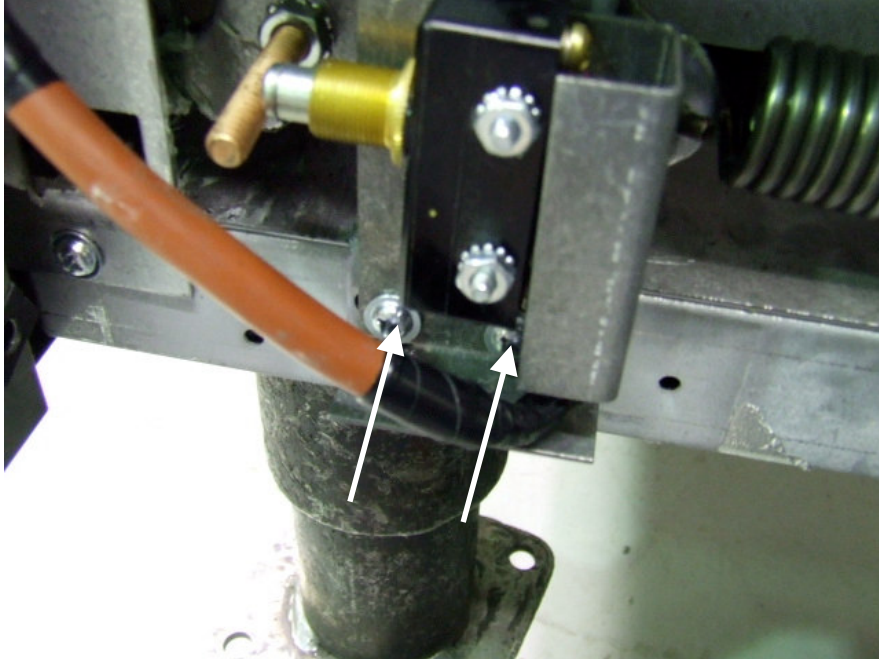
Unhooked oven door hinge link

- Use flat head screwdriver to pry spring from bell crank assembly. Remove spring.



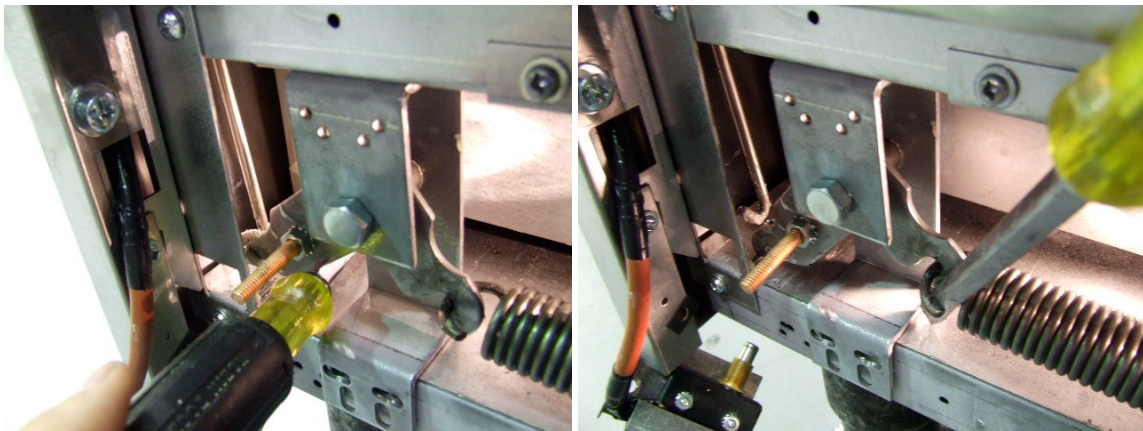
Prying spring from bell crank assembly

- For the door hinge **with a microswitch**:
 - Unscrew the microswitch bracket from the oven frame. **It is important that the microswitch be removed prior to removing the spring** to prevent damage to the microswitch when the springs are reinstalled later.



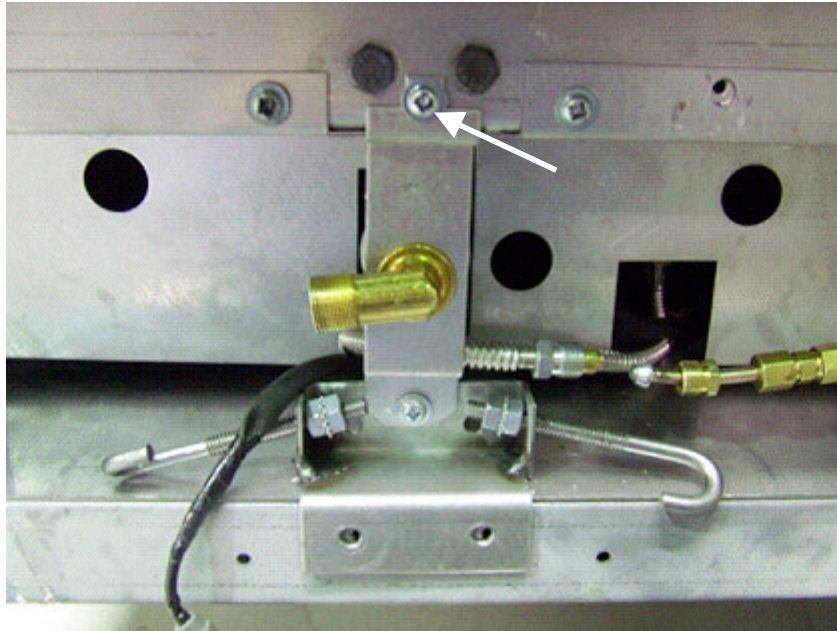
Microswitch bracket held to oven frame by two screws indicated by the arrows

- Follow the same steps as before, using the screwdriver to pry the bell crank assembly upwards to unhook the oven door hinge link, then pry the spring loose from the bell crank assembly.



5) **Remove Orifice Bracket**

- After removing the igniter bracket, the orifice bracket will be held in place by a single screw directly above the orifice.



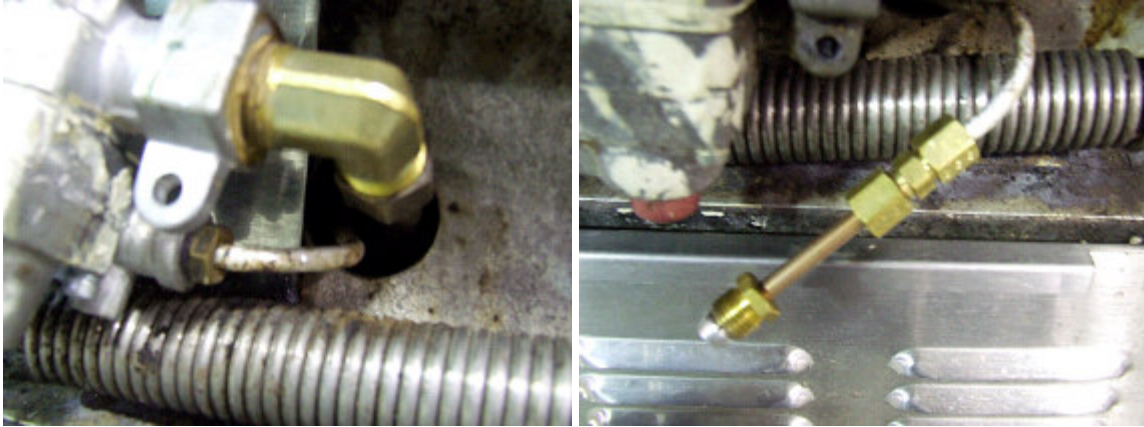
Note that with the removal of the igniter bracket, the orifice bracket is held down by a single screw as shown by the arrow

6) ***Install Gas Tubing Extension***

- **This step is only required if the original valve was an Invensys TS-11 Safety Valve.**
- Do not attempt to forcibly pull the pilot gas tube to reach the valve. This extension will allow it to reach without damaging the tube.
- Cut off a small portion of the free end of the incoming pilot gas tube to remove the original ferrule and nut
- Two unions are provided (Parts 5 and 18, Appendix A). If the pilot gas tube is made of aluminum, use Part 18 only. Otherwise, use Part 5. Only **one** of these unions is used.
- Refer to the Valve / Pilot Setup Schematic (Appendix A) on the last page of this manual:
 - i) Detach one end of the selected union (See previous step; Parts 5 or 18, Appendix A). The ferrule and the nut should then be attached to the free end of the incoming pilot gas.
 - ii) Unscrew the other end of the union and install it on one end of the 3/16" union tubing (Part 7, Appendix A). Join both pieces of tubing together.
 - iii) A 3/16" nut and ferrule (Parts 3 and 11, Appendix A) should be attached to the inlet pilot gas opening of the provided Baso valve. Unscrew these pieces and install them onto the free end of the 3/16" tubing (Part 7, Appendix A).
 - iv) Ensure all connections are leak-proof. Do not over-tighten.



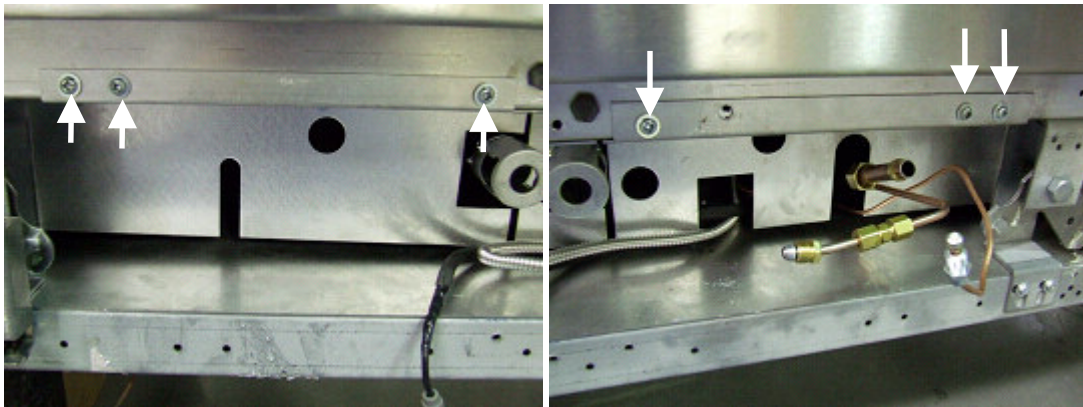
Use of hacksaw blade to remove tip of pilot gas line



Left: Before extension added
Right: After extension added

7) Remove Left and Right Front Shields

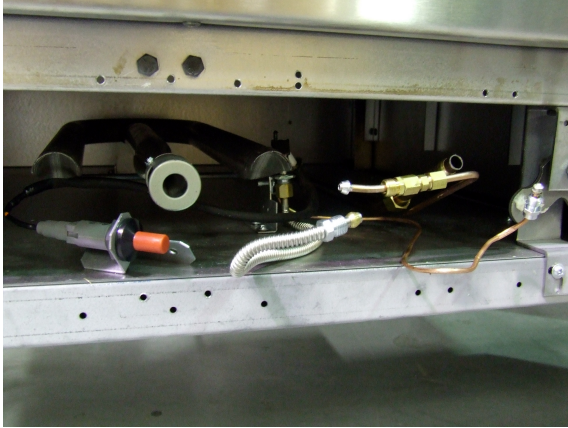
- Both shields are attached to the upper support bar using 3 screws.



Left: Left side front shield, location of screws shown by arrows
Right: Right side front shield, location of screws shown by arrows

8) **Remove Burner**

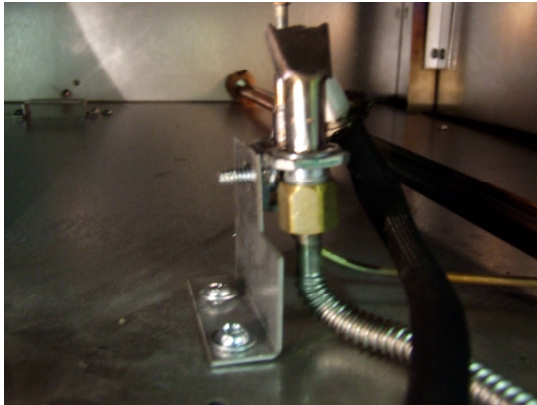
- Burner is not screwed down to oven floor and can be removed by gently sliding it out.
- This burner **will not** be reinstalled.



Left: Lower oven cavity after removal of front shields
 Right: Original burner with single welded bracket at end, will not be reinstalled

9) **Unscrew Pilot Bracket from Oven Floor**

- The bracket is held down to the oven floor using two screws. This bracket will not be reinstalled.



Left: Pilot assembly with bracket mounted to oven floor
 Right: Pilot assembly with bracket removed

10) Detach Igniter and Bracket from Pilot Assembly

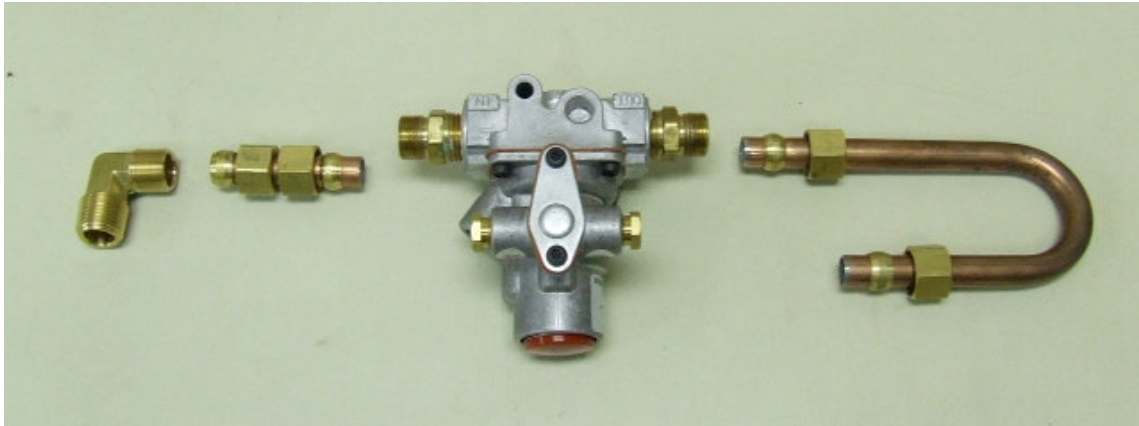
- Use a pair of pliers to gently detach the ignition wire from the igniter.
- The old pilot assembly (including the original gas tube, ignition tip and thermocouple) will not be reinstalled.



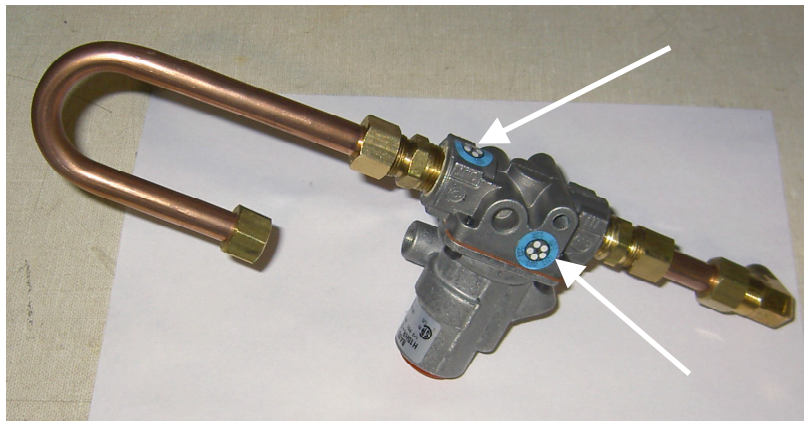
Detach igniter from original pilot assembly. The igniter will be reused with a new pilot assembly

11) Assemble New Safety Valve

- The fittings and tubing for the new safety valve can be found in the Setup Schematic (Appendix A). Assembly positions can be seen on the schematic or in the below pictures.
- Placement of the temperature stickers on the safety valve is **critical**.



Nut and ferrule installation on connections to Baso Safety Valve



Location of temperature stickers shown by arrows

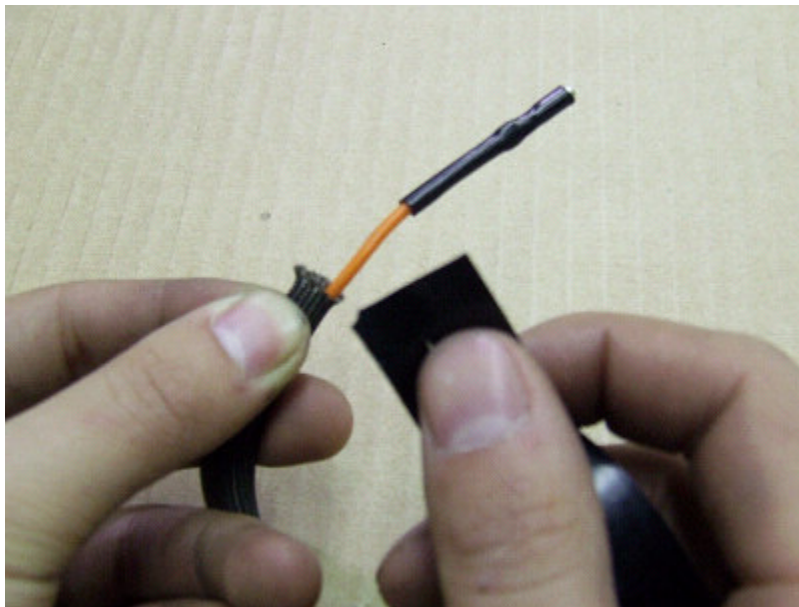
12) Assemble New Pilot Assembly

- A colored line on the top of the pilot indicates the type of fuel used. A **BLACK** line is used on a **natural gas** pilot, whereas a **RED** line is used on a **propane** pilot. For this natural gas kit, ensure that the pilot has a **BLACK** line.
- Insert sheath onto new pilot assembly ignition wire
 - Push sheath onto wire until about 1 inch of orange ignition wire protrudes from the free end



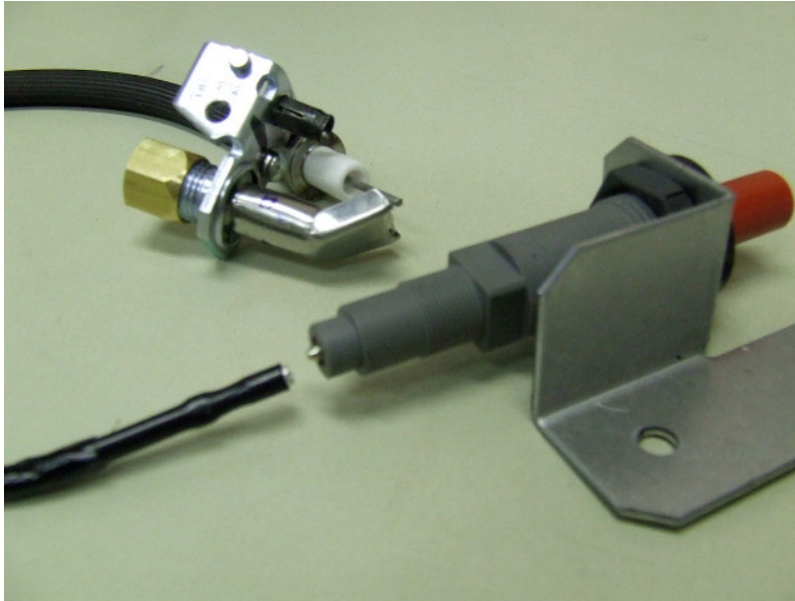
New pilot assembly with sheath inserted onto ignition wire

- Use electrical tape to secure the free end of the ignition wire and the end of the sheath. Use only enough tape to cover up exposed orange ignition wire. Do not tape over the hole at the tip of the wire.



Leave about 1" of ignition wire protruding before applying electrical tape

- Reattach original igniter



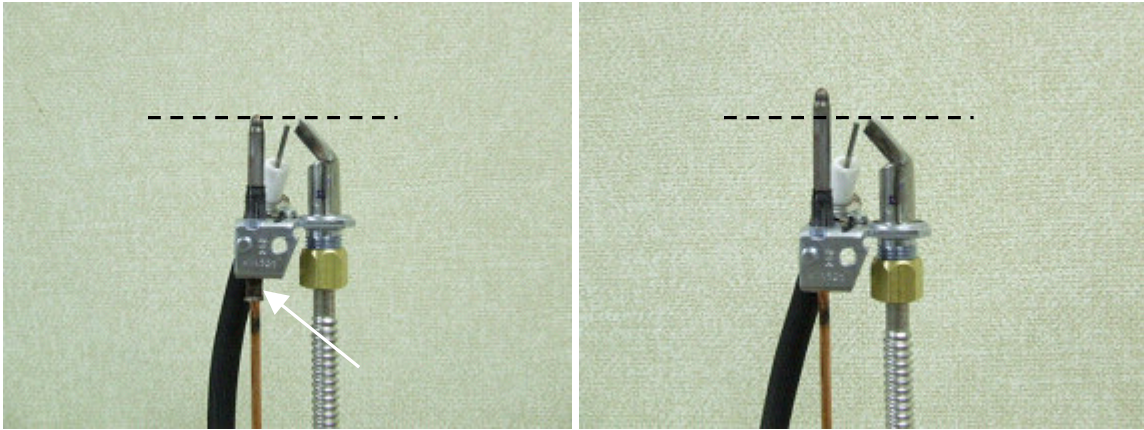
Connection of taped ignition wire end to original igniter

- Attach flex tube to pilot assembly
 - Unscrew the nut on the end of the selected pilot to release the nut, the ferrule and the orifice. Install the nut and the ferrule on one end of the flex tube.
 - Place the orifice back into the pilot and screw on the flex tube.



Nut on new pilot assembly unscrewed, revealing orifice and ferrule.

- Attach new Robertshaw thermocouple to pilot assembly
 - Push the thermocouple **all the way** into its slot on the pilot.



Left: **Wrong installation.** Thermocouple not pushed all the way through socket.
Right: **Correct installation.** Thermocouple pushed all the way through socket.

13) Attach New Pilot Assembly to Welded Bracket on New Burner

- The pilot mounts onto the welded bracket using a single screw
- Bend the thermocouple and flex tube approximately as shown in the picture. This will help with installing them through the front shielding.



New pilot assembly attached to welded bracket on new burner.

14) Install New Burner

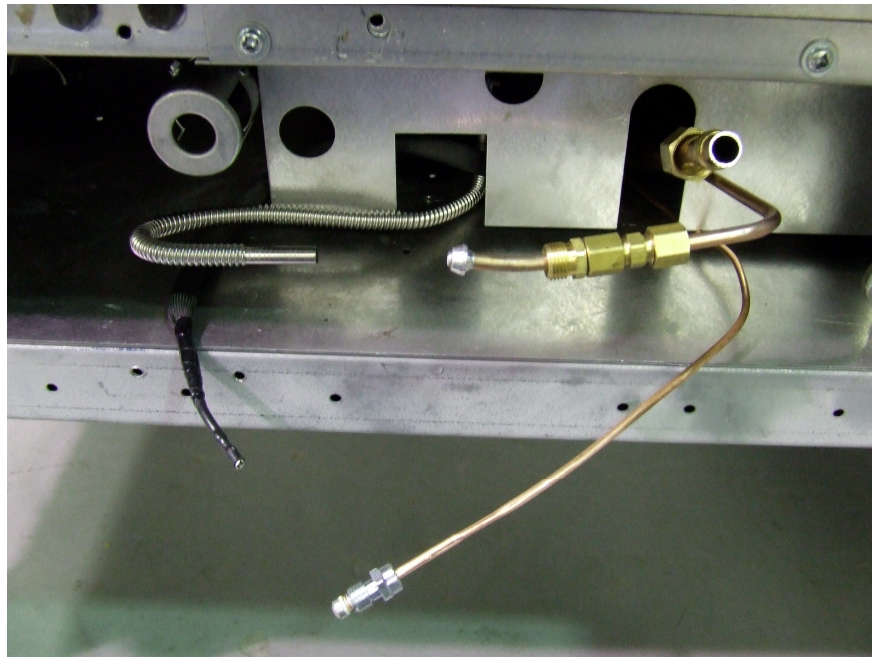
- Ensure that the bracket at the tip of the burner locks onto the bracket attached to the oven floor. No screws are necessary for this procedure.
- The burner may not stand up perfectly by itself. The installation of the oven orifice later will correct this problem.



New burner and pilot assembly installed

15) Reinstall Both Front Shields

- Install the right side shield first, guiding the various pieces of tubing and wire as shown in the below photograph. This setup will allow for an easier installation for the safety valve.



16) Reinstall Orifice Bracket

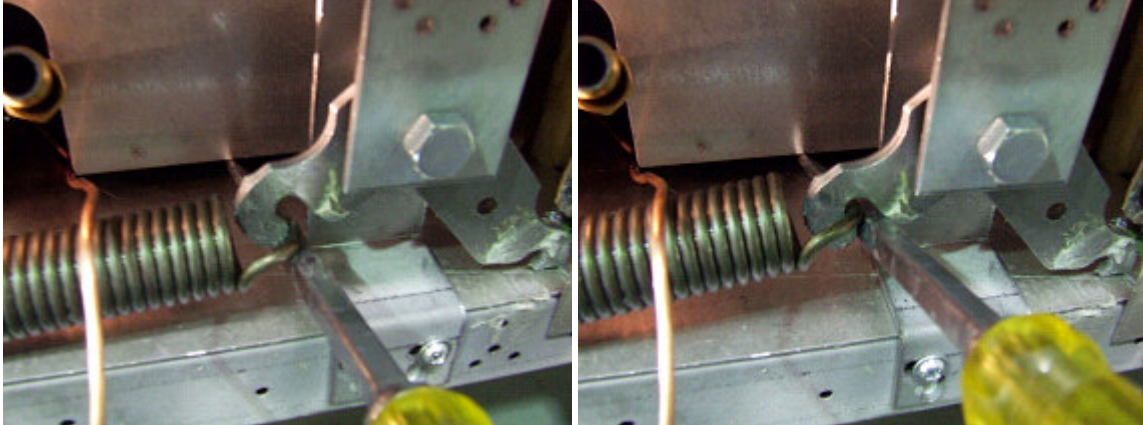
- Refer to Step 5 for orifice bracket connections
- Make sure that the orifice is inserted straight into the burner and not at an angle



Orifice inserted straight into burner opening

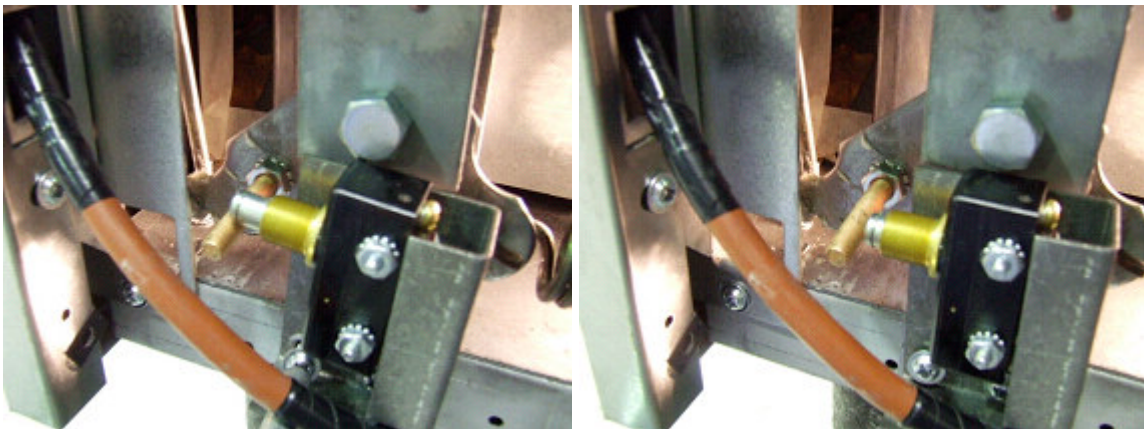
17) Reinstall Door Springs

- Refer to Step 4 for door spring connections
- For the door hinge with no microswitch:
 - Hook on one end of the spring to the hooks from the orifice bracket
 - Place a screwdriver underneath the opposite end of the spring and pry upward to hook that end onto the bell crank assembly.



Left: Setup screwdriver at end of spring underneath hook on bell crank assembly
 Right: Screwdriver pried upward, locks spring into place

- Pry the bell crank assembly upward to hook on the oven door hinge link. This is the same as the uninstalling procedure in Step 4
- For the door hinge with a microswitch:
 - Install the spring and hook on the oven door hinge link using the same method as outlined above
 - Screw on the microswitch bracket. **Ensure that the button on the microswitch is pushed down once the bracket is screwed on. Any other position will break the switch when the door is opened**



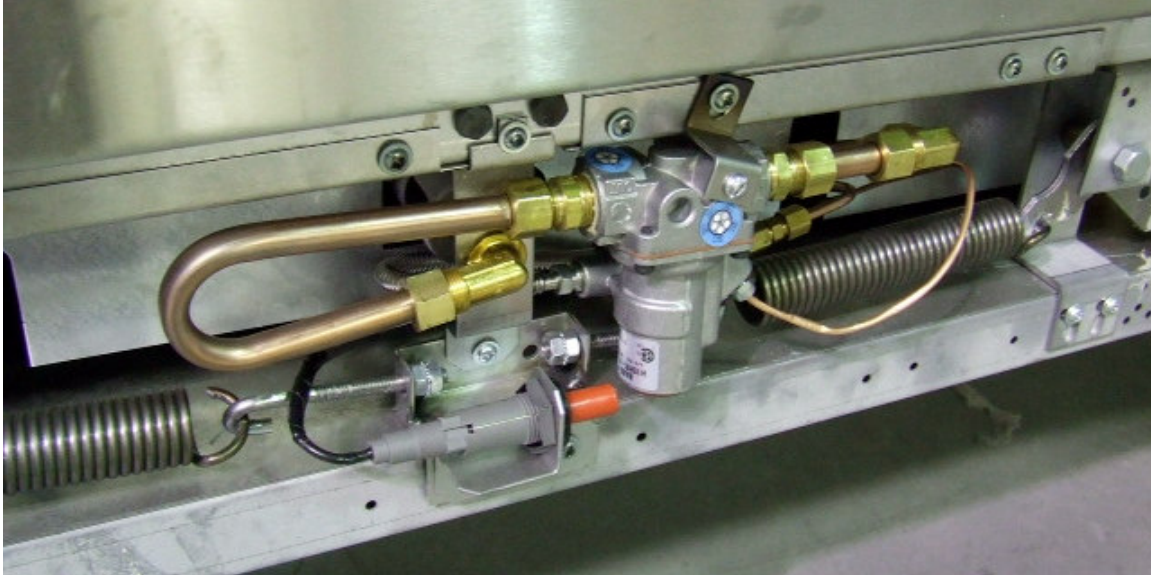
Left: **INCORRECT.** Button is not depressed when bracket is screwed on
 Right: Correct installation with depressed button.

18) Reinstall Igniter Bracket

- Refer to Step 3 for igniter bracket connections

19) Install Safety Valve

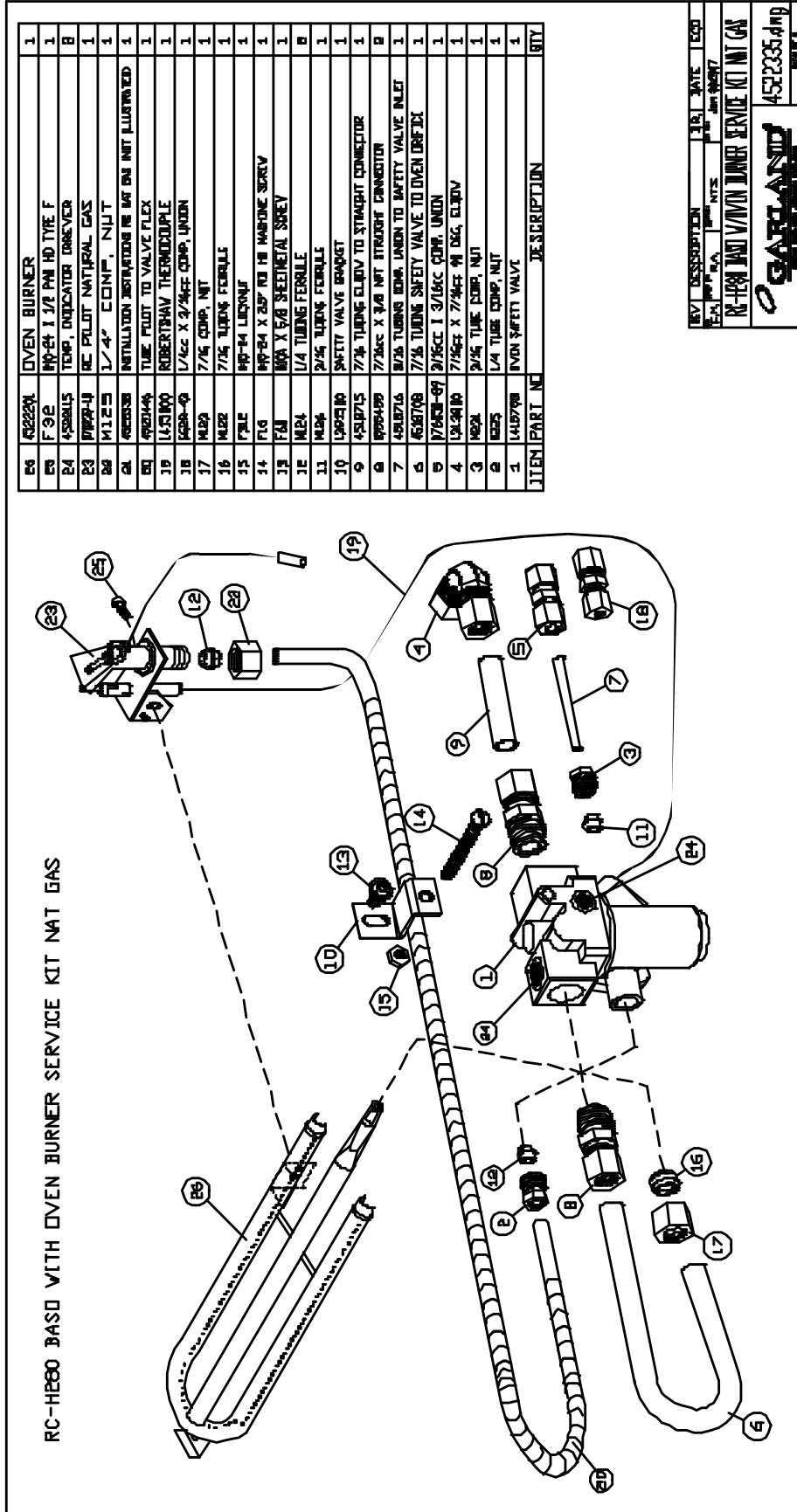
- Tighten connections. Ensure that all connections are leak-proof.
- Thermocouple should be routed over the spring as shown in the picture below. The door springs should not touch any of the tubing or wires.



Installation Complete

20) Reinstall Kick Plate

Appendix A: Valve / Pilot Setup Schematic



REV.	DESCRIPTION	DATE	EQD.
1	RC-HB60 BASED WITH OVEN BURNER SERVICE KIT NAT GAS		

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