

# OPERATING YOUR HEATER

## Manual Control Models

### ■LIGHTING■ INSTRUCTIONS

1. STOP! Read the safety information on the side of heater.
2. Check that gas supply to heater is on.
3. Push in gas control knob slightly and turn clockwise ↻ to the OFF position.

**NOTE:** Knob cannot be turned from "PILOT" to "OFF" unless knob is pushed in slightly. Do not force.

4. Wait five (5) minutes to clear out any air. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in the safety information on the side of the heater. If you do not smell gas, go to the next step.

5. Push in gas control knob slightly and turn counterclockwise ↻ to "PILOT/IGN" and depress for five(5) seconds

**NOTE:** The first time that the heater is operated after connecting the gas supply, the control knob should be depressed for about thirty (30) seconds. This will allow air to bleed from the gas system.

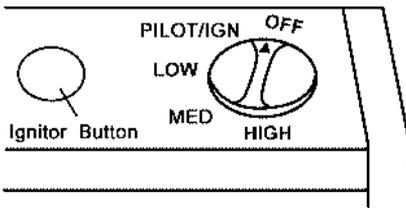
6. With control knob pressed in, push down and release the ignitor button. This will light pilot. If needed, keep pressing ignitor button until pilot lights.

**NOTE:** If pilot does not stay lit, refer to *Troubleshooting*, pages 14 through 16. Also contact a qualified service person or gas supplier for repairs. Until repairs are made, light pilot with match. To light pilot with match, see *Manual Lighting Procedure*.

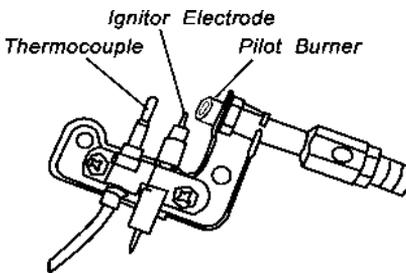
7. Keep control knob pressed in for thirty (30) seconds after lighting pilot. After 30 seconds, release control knob.
  - If control knob does not pop up when released, contact a qualified service person or gas supplier for repairs.

**NOTE:** If pilot goes out, repeat steps 3 through 7. Wait one (1) minute before lighting pilot again

8. Turn control knob counterclockwise ↻ to desired heating level. The main burner should light. Set control knob to any heat level between HI and LO.



**Figure 16 - Control Knob In The OFF Position**



**Figure 17 - Pilot**

### ■TO TURN OFF■ GAS TO APPLIANCE

#### Shutting Off Heater

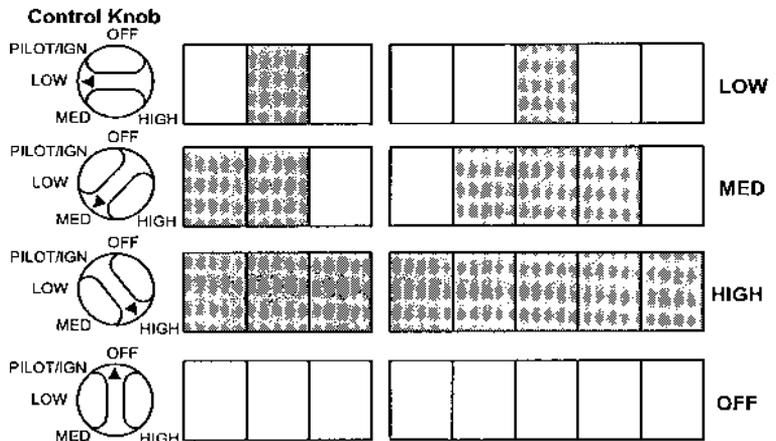
1. Turn control knob clockwise ↻ to the OFF position.
2. Turn off all electric power to the appliance if service is to be performed.

#### SHUTTING OFF BURNER ONLY (PILOT STAYS LIT)

Turn control knob clockwise ↻ to the PILOT/IGN position.

### ■MANUAL LIGHTING■ PROCEDURE

1. Remove lower front panel (see Figure 7 page 7).
2. Follow steps 1 through 5 under *Lighting Instructions*.
3. With control knob pressed in, strike match. Hold match to pilot until pilot lights.
4. Keep control knob pressed in for 30 seconds after lighting pilot. After 30 seconds, release control knob. Follow step 8 under *Lighting Instructions*.
5. Replace lower front panel.



**Figure 18 - Burner Patterns**

# OPERATING YOUR HEATER

## THERMOSTAT MODELS

### ■FOR YOUR SAFETY■ READ BEFORE LIGHTING

**⚠ WARNING:** If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

A. When lighting the pilot, follow these instructions exactly.

B. BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

### WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electric switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- if you cannot reach your gas supplier, call the fire department.

C. Use only your hand to push in or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it, call a qualified service technician or gas supplier. Force or attempted repair may result in a fire or explosion.

D. Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

### ■LIGHTING■ INSTRUCTIONS

1. STOP! Read the safety information on the side of heater.
2. Make sure equipment shutoff valve is fully open.
3. Turn control knob clockwise ↻ to the OFF position.
4. Wait five(5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in the safety information on the side of heater. If you don't smell gas, go to the next step.
5. Turn control knob counterclockwise ↺ to the PILOT position. Press in control knob for five(5) seconds. (see Figure 19).

**Note:** You may be running this heater for the first time after hooking up to gas supply. If so, the control knob may need to be pressed in for 30 seconds. This will allow air to bleed from the gas system.

- If control knob does not pop up when released, contact a qualified service person or gas supplier for repairs.
6. With control knob pressed in, push down and release ignitor button. This will light pilot. The pilot is attached to the front of burner. If needed, keep pressing ignitor button until pilot lights.

**NOTE:** If pilot does not stay lit, refer to *Troubleshooting*, pages 14 through 16. Also contact a qualified service person or gas supplier for repairs. Until repairs are made, light pilot with match. To light pilot with match, see *Manual Lighting Procedure*.

7. Keep control knob pressed in for 30 seconds after lighting pilot. After 30 seconds, release control knob.

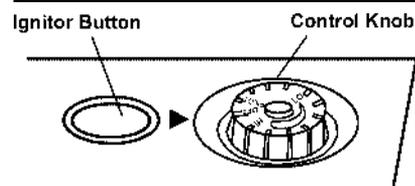
- If control knob does not pop up when released, contact

a qualified service person or gas supplier for repairs.

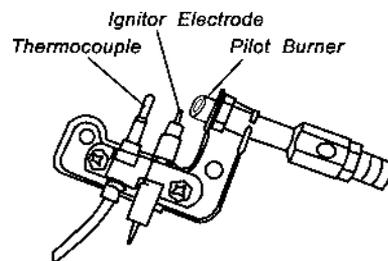
**NOTE:** If pilot goes out, repeat steps 3 through 7. This heater has a safety interlock system. Wait one(1) minute before lighting pilot again.

8. Turn control knob counterclockwise ↺ to desired heating level. The main burner should light. Set control knob to any heat level between HI and LO. (see Figure 19)

**⚠ CAUTION:** Do not try to adjust heating levels by using the equipment shutoff valve.



**Figure 19 - Control Knob In The OFF Position**



**Figure 20 - Pilot**

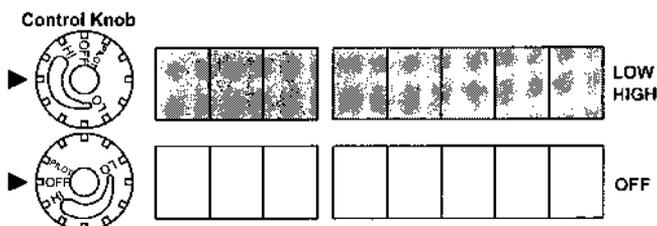
### ■TO TURN OFF■ GAS TO APPLIANCE

#### Shutting Off Heater

1. Turn control knob clockwise ↻ to the OFF position.
2. Turn off all electric power to the appliance if service is to be performed.

#### Shutting Off Burner Only (pilot stays lit)

Turn control knob clockwise ↻ to the PILOT position.



**Figure 21 - Burner Patterns**

# OPERATING YOUR HEATER

*Continued*

## ■ THERMOSTAT ■

### CONTROL OPERATION

The thermostatic control used on these Models differs from standard thermostats. Standard thermostats simply turn on and off the burner. The thermostat used on this heater senses the room temperature. At times the room may exceed the set temperature. If so, the burner will shut off. The burner will cycle back on when room temperature drops below the set temperature. The control knob can be set to any heat level between HI and LO.

**NOTE:** The thermostat sensing bulb measures the temperature of air near the heater cabinet. This may not always agree with room temperature (depending on housing construction, installation location, room size, open air temperatures, etc.) Frequent use of your heater will let you determine your own comfort levels.

## ■ MANUAL LIGHTING ■ PROCEDURE

1. Remove lower front panel (see Figure 7 page 7).
2. Follow steps 1 through 5 under Lighting Instructions on page 12.
3. With control knob pressed in, strike match. Hold match to pilot until pilot lights.
4. Keep control knob pressed in for 30 seconds after lighting pilot. After 30 seconds, release control knob. Follow step 8 under *Lighting Instructions* on page 12.
5. Replace lower front panel.

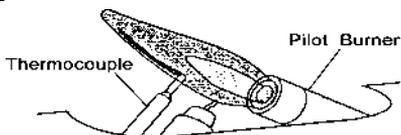
## INSPECTING BURNER

Check pilot flame pattern and burner flame pattern often.

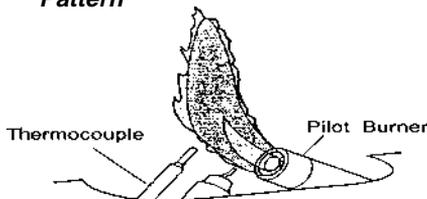
### PILOT FLAME PATTERN

Figure 22 shows a correct pilot flame pattern. Figure 23 shows an incorrect pilot flame pattern. The incorrect pilot flame is not touching thermocouple. This will cause the thermocouple to cool. When the thermocouple cools, the heater will shut down. If pilot flame pattern is incorrect, as shown in Figure 23.

- turn heater off (see To Turn Off Gas to Appliance, page 11 for non-thermostat models or page 12 for thermostat models)
- see Troubleshooting, pages 14 through 16.



**Figure 22 - Correct Pilot Flame Pattern**

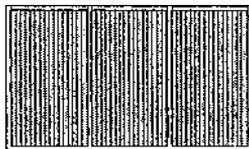


**Figure 23 - Incorrect Pilot Flame Pattern**

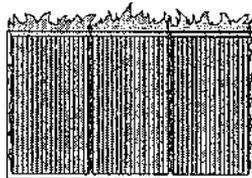
### BURNER FLAME PATTERN

Figure 24 shows a correct burner flame pattern. Figure 25 shows an incorrect burner flame pattern. If burner flame pattern is incorrect, as shown in Figure 25.

- turn heater off (see To Turn Off Gas to Appliance, page 11 for non-thermostat models or page 12 for thermostat models)
- see Troubleshooting, pages 14 through 16



**Figure 24 - Correct Burner Flame Pattern**



**Figure 25 - Incorrect Burner Flame Pattern**

## CLEANING AND MAINTENANCE



**WARNING:** Turn off heater and let cool before servicing.



**CAUTION:** You must keep control areas, burner, and circulating air passageways of heater clean. Inspect these areas of heater before each use. Have heater inspected yearly by a qualified service person. Heater may need more frequent cleaning due to excessive lint from carpeting, bedding material, pet hair, etc.

## CLEANING ODS/PILOT AND BURNER

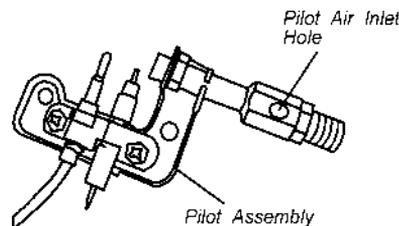
- Use a vacuum cleaner, pressurized air, or a small, soft bristled brush to clean.

## CLEANING BURNER PILOT AIR INLET HOLE

We recommend that you clean the unit every 2,500 hours of operation or every three months. We also recommend that you keep the burner tube and pilot assembly clean and free of dust and dirt. To clean these parts we recommend using compressed air no greater than 30 PSI. Your local computer store, hardware store, or home center may carry compressed air in a can. You can use a vacuum cleaner in the blow position. If using compressed air in a can, please follow the directions on the can. If you don't follow directions on the can, you could damage the pilot assembly.

1. Shut off the unit, including the pilot. Allow the unit to cool for at least thirty minutes.
2. Inspect burner, and pilot for dust and dirt.
3. Blow air through the ports/slots and holes in the burner.

Also, clean the pilot assembly. A yellow tip on the pilot flame indicates dust and dirt in the pilot assembly. There is a small pilot air inlet hole about two inches from where the pilot flame comes out of the pilot assembly (see Figure 26). With the unit off, lightly blow air through the air inlet hole. You may blow through a drinking straw if compressed air is not available.



**Figure 26 - Pilot Inlet Air Hole**

## CLEANING HEATER CABINET Air Passageways

- Use a vacuum cleaner or pressurized air to clean.
- ### Exterior
- Use a soft cloth dampened with a mild soap and water mixture. Wipe the cabinet to remove dust.

# TROUBLESHOOTING

**Note :** All troubleshooting items are listed in order of operation.

**⚠ WARNING:** Only a qualified service person should service and repair heater.

**⚠ CAUTION:** Never use a wire, needle, or similar object to clean ODS/pilot. This can damage ODS/pilot unit.

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
When ignitor button is pressed and control knob is pressed in and turned to the PILOT position, there is no spark at ODS/pilot.	<ol style="list-style-type: none"> <li>Ignitor electrode is positioned wrong.</li> <li>Ignitor electrode is broken.</li> <li>Ignitor electrode is not connected to ignitor cable.</li> <li>Ignitor cable pinched or wet.</li> <li>Broken ignitor cable.</li> <li>Bad piezo ignitor.</li> </ol>	<ol style="list-style-type: none"> <li>Replace ignitor.</li> <li>Replace ignitor.</li> <li>Reconnect ignitor cable.</li> <li>Free ignitor cable if pinched by any metal or tubing. Keep ignitor cable dry.</li> <li>Replace ignitor cable.</li> <li>Replace piezo ignitor.</li> </ol>
ODS/pilot lights but flame goes out when control knob is released.	<ol style="list-style-type: none"> <li>Gas supply turned off or equipment shutoff valve is closed.</li> <li>Control knob not fully pressed in while pressing ignitor button.</li> <li>Air in gas lines when installed.</li> <li>ODS/pilot is clogged.</li> <li>Gas regulator setting is not correct.</li> <li>Control knob not in PILOT position.</li> </ol>	<ol style="list-style-type: none"> <li>Turn on gas supply of open equipment shutoff valve.</li> <li>Fully press in control knob while pressing ignitor button.</li> <li>Continue holding down control knob. Repeat igniting operation until air is removed.</li> <li>Clean ODS/pilot (see Cleaning and Maintenance, Page 13) or replace ODS/pilot assembly.</li> <li>Replace gas regulator.</li> <li>Turn control knob to PILOT position.</li> </ol>
When ignitor button is pressed and control knob is press in and turned to the PILOT position, there is a spark at ODS/pilot but no ignition.	<ol style="list-style-type: none"> <li>Control knob is not fully pressed in.</li> <li>Control knob is not pressed in long enough.</li> <li>Equipment shutoff valve not fully open.</li> <li>Thermocouple connection loose at control valve.</li> <li>Pilot flame is not touching thermocouple, which allows thermocouple to cool, causing pilot flame to go out. This problem could be caused by one or both of the following:               <ol style="list-style-type: none"> <li>Low gas pressure</li> <li>Dirty or partially clogged ODS/ pilot</li> </ol> </li> <li>Thermocouple damaged.</li> <li>Control valve damaged.</li> </ol>	<ol style="list-style-type: none"> <li>Press in control knob fully.</li> <li>After ODS/pilot lights, keep control knob pressed in 30 seconds.</li> <li>Fully open equipment shutoff valve.</li> <li>Hand tighten until snug, then tighten 1/4 turn more.</li> <li> <ol style="list-style-type: none"> <li>Contact local natural gas company.</li> <li>Clean ODS/pilot (see Cleaning and Maintenance, Page 13) or replace ODS/pilot assembly.</li> </ol> </li> <li>Replace thermocouple.</li> <li>Replace control valve.</li> </ol>

# TROUBLESHOOTING

## Continued

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
<p>Burner(s) does not light after ODS/pilot is lit.</p>	<ol style="list-style-type: none"> <li>1. Burner orifice is clogged.</li> <li>2. Burner orifice diameter is too small.</li> <li>3. Inlet gas pressure is too low.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean burner orifice (see <i>Cleaning and Maintenance</i>, Page 13) or replace burner orifice.</li> <li>2. Replace burner orifice.</li> <li>3. Contact local natural gas company.</li> </ol>
<p>Delayed ignition of burner(s).</p>	<ol style="list-style-type: none"> <li>1. Manifold pressure is too low.</li> <li>2. Burner orifice is clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Contact local natural gas company.</li> <li>2. Clean burner (see <i>Cleaning and Maintenance</i>, Page 13) or replace burner orifice.</li> </ol>
<p>Burner backfiring during combustion.</p>	<ol style="list-style-type: none"> <li>1. Burner orifice is clogged or damaged.</li> <li>2. Burner is damaged.</li> <li>3. Gas regulator is defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean burner orifice (see <i>Cleaning and Maintenance</i>, Page 13) or replace.</li> <li>2. Replace burner.</li> <li>3. Replace gas regulator.</li> </ol>
<p>Burner plaque(s) does not glow.</p>	<ol style="list-style-type: none"> <li>1. Plaque is damaged.</li> <li>2. Inlet gas pressure is too low.</li> <li>3. Control knob set between locked positions.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace burner.</li> <li>2. Contact local natural gas company.</li> <li>3. Turn control knob until it locks at desired setting.</li> </ol>
<p>Slight smoke or odor during initial operation.</p>	<ol style="list-style-type: none"> <li>1. Residues from manufacturing processes.</li> </ol>	<ol style="list-style-type: none"> <li>1. Problem will stop after a few hours of operation.</li> </ol>
<p>Heater produces clicking/ticking noise just after burner is lit or shut off.</p>	<ol style="list-style-type: none"> <li>1. Metal is expanding while heating or contracting while cooling.</li> </ol>	<ol style="list-style-type: none"> <li>1. This is common with most heaters. if noise is excessive, contact qualified service person.</li> </ol>
<p>White powder residue forming within burner box or on adjacent walls or furniture.</p>	<ol style="list-style-type: none"> <li>1. When heated the vapors from furniture polish, wax, carpet cleaners, etc. turn into white powder residue.</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn heater off when using furniture polish, wax, carpet cleaner or similar products.</li> </ol>

# TROUBLESHOOTING

## *Continued*



**WARNING:** If you smell gas

- Shut off gas supply.
- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

**IMPORTANT:** Operating heater where impurities in air exist may create odors. Cleaning supplies, paint, paint remover, cigarette smoke, cements and glues, new carpet or textiles, etc., create fumes. These fumes may mix with combustion air and create odors.

OBSERVED PROBLEM	POSSIBLE CAUSE	REMEDY
Heater produces unwanted odors.	<ol style="list-style-type: none"> <li>1. Heater burning vapors from paint, hair spray, glues, etc. (See IMPORTANT statement above).</li> <li>2. Gas leak. See Warning Statement at top of page.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ventilate room. Stop using odor causing products while heater is running.</li> <li>2. Locate and correct all leaks(see Checking Gas Connections, page 10).</li> </ol>
Heater shuts off in use (ODS operates).	<ol style="list-style-type: none"> <li>1. Not enough fresh air is available.</li> <li>2. Low line pressure.</li> <li>3. ODS/pilot is partially clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Open window and/or door for ventilation.</li> <li>2. Contact local natural gas company.</li> <li>3. Clean ODS/pilot (see Cleaning page 13).</li> </ol>
Gas odor even when control knob is in OFF position.	<ol style="list-style-type: none"> <li>1. Gas leak. See Warning statement at top of page.</li> <li>2. Control valve is defective.</li> </ol>	<ol style="list-style-type: none"> <li>1. Locate and correct all leak s(see Checking Gas Connections, page 10)</li> <li>2. Replace control valve.</li> </ol>
Gas odor during combustion.	<ol style="list-style-type: none"> <li>1. Foreign matter between control valve and burner.</li> <li>2. Gas leak. See Warning Statement at top of page.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take apart gas tubing and remove foreign matter.</li> <li>2. Locate and correct all leaks (see Checking Gas Connections, page 10).</li> </ol>
Moisture/condensation noticed on windows.	<ol style="list-style-type: none"> <li>1. Not enough combustion/ventilation air.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to Air for Combustion and Ventilation requirements (page 4).</li> </ol>