The manufacturer recommends that the "User" read all sections of this manual and keep the manual for future reference.

**WARNING**

**FIRE OR EXPLOSION HAZARD**

Failure to follow safety warnings exactly could result in serious injury, death, or property damage.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

- WHAT TO DO IF YOU SMELL GAS:
  - Do not try to light any appliance.
  - Do not touch any electrical switch; do not use any phone in your building.
  - Leave the building immediately.
  - 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.

- Installation and service must be performed by a qualified installer, service agency or the gas supplier.
Congratulations . . .

On your purchase of one of our Single Package Dual Fuel Heat Pumps. This energy efficient system has been precision designed, manufactured of high quality materials and has passed many vigorous inspections and tests to ensure years of satisfactory service.

Please read this manual thoroughly. It will help you understand your system, tell you how to operate it efficiently and how to obtain the greatest measure of comfort at the lowest operating expense.

We appreciate your interest in our products and your decision to purchase our Dual Fuel Heat Pump. Enjoy your comfort.

SAFETY INFORMATION -

• Make sure that the area around the heat pump is clear and free of combustible materials, gasoline and other flammable vapors and liquids.

• Be sure the heat pump is free and clear of insulating material. Some insulations are combustible.

• For proper operation of this equipment, air for combustion and ventilation is required. Make sure that these openings are not obstructed.

• For lighting or shutting down the gas section, refer to the lighting instructions provided adjacent to the burners and also located in this manual.

• A blocked vent roll-out switch is provided in the burner compartment. This switch is a manual reset. If the gas heating section fails to operate, contact a qualified service agency.

• Should the gas supply fail to shut off or if overheating occurs, shut off the gas valve to the unit before shutting off the electrical supply. Then call a qualified service technician.

• Do not use this equipment if any part has been under water. Flood damaged equipment can be extremely dangerous. Attempts to use the gas heat section can result in fire or explosion. A qualified service agency should be contacted to inspect the equipment and to replace all gas controls, control system parts, electrical parts that have been wet or the package unit if deemed necessary.

• Determine the integrity of the installation regarding the flue gas vent, the return and supply air duct, the equipment is well supported and there are no signs of deterioration. The manufacturer recommends that main burner, ignition device and controls are inspected by a qualified furnace technician before each heating season.

This gas/electric, Dual Fuel Heat Pump is designed for outdoor use and can be installed anywhere from grade level to the roof. This Dual Fuel Heat Pump has been specially developed and built to meet dual needs of heating and cooling. That’s why you can rely on efficient, trouble-free operation.

That’s what happens with a heat pump. During the cooling cycle, your system will remove heat and humidity from your structure and will transfer this heat to the outdoor air.

During the heating cycle, your system will absorb heat from the outdoor air* and will transfer this heat to your structure. Remember that your heat pump doesn’t generate much heat, it merely transfers it from one place to another.

*This is possible because even 0°F outdoor air contains a great deal of heat.

SYSTEM OPERATION

THERMOSTATS

Your thermostat puts full control of the comfort level in your structure at your fingertips.

Set your thermostat for heating or cooling. Find the temperature that is most comfortable for you, and then leave your thermostat alone. Manually moving the thermostat up or down to extreme settings will not speed up temperature changes. Avoid moving the thermostat up during heating - particularly where a demand type electric meter is installed. This will increase your operating cost substantially.

COOLING CYCLE

Switch your thermostat to cool. Select a comfortable thermostat temperature setting, typically between 75 and 80 degrees. Comfort sensations vary with individuals. The lower the indoor
temperature desired, the greater the amount of time your unit must operate.

Set your thermostat 2 or 3°F below normal several hours before entertaining large groups during hot weather. People give off considerable heat and moisture.

On an extremely hot day, the indoor temperature may rise 3 to 6°F above the thermostat setting. Properly selected equipment does not have the capacity to maintain a constant indoor temperature during this peak load. Over-sizing your system to handle this peak load isn’t practical because the over-sized system would operate much less efficiently at all other conditions.

For a detailed sequence of operation see the unit installation manual.

HEATING CYCLE

With the thermostat in the heating position, and outdoor temperature in the range of 20 - 30°F or below, the outdoor unit will generally run for extended periods of time.

When the outdoor air is cool and moist, frost may form on the surface of your outdoor coil. When this frost builds to a certain point, your system will switch to a defrost cycle. Although you may feel cooler air coming from your registers, DO NOT adjust your thermostat. This frost will melt quickly, and your system will return to normal operation automatically.

For a detailed sequence of operation see the unit installation manual.

SPARK TO PILOT IGNITION DEVICE

This unit is equipped with a spark to pilot ignition device. The control is designed to automatically light the burner each time the thermostat "calls" for emergency heat or when operating during defrost.

WARNING
Should overheating occur, shut off the manual gas valve external to the appliance before shutting off the electrical supply.

WARNING
Flue hood surface and immediate area is designed to operate at high temperatures during a gas heating cycle. Special attention must be given to keep all human contact and debris away from this area.

INPUT
The correct heat capacity of the gas heating section is regulated by the burner orifices and the gas pressure. The proper orifices are furnished but the gas pressure regulator must be adjusted by the installing serviceman or gas company. This is usually a "one time" adjustment, but should be checked during your regular maintenance schedule.

FOR YOUR SAFETY, READ BEFORE OPERATING

A. BEFORE OPERATING, smell all around the appliance area for gas. Be sure to smell around the base of the unit because some gas is heavier than air and will settle in the area.

WHAT TO DO IF YOU SMELL GAS

- 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.

B. 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. Force
or attempted repair may result in a fire or explosion.

C. 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.

START-UP INSTRUCTIONS - HEATING SYSTEM

NOTE: See General instructions for Start-up and Shutdown of your gas heating system.

1. STOP! Read the safety information.
2. Set the thermostat to the lowest setting.
3. Make sure all electrical power to the equipment is "OFF".
4. This appliance has a device which automatically lights the pilot and in turn, lights the burners.
5. Remove burner access panel by removing screws and lifting panel out.
6. Push the manual gas switch to the "OFF" position.
7. Wait five (5) minutes to clear out any gas. If you then smell gas, STOP! Follow step A in the safety information. If you don't smell gas, go to next step.
8. Push the manual gas switch to the ON position.
9. Replace the control access panel.
10. Turn on all electrical power to the appliance.
11. Set the thermostat to the desired setting.
12. If the appliance will not operate, follow the instruction "To Turn OFF Gas To Application" and call your service technician or gas supplier.

SHUTDOWN INSTRUCTION - TO TURN OFF GAS TO APPLIANCE

Should overheating occur, or the gas supply fail to shut off, shut off the manual gas valve to the equipment before shutting off the electrical supply.

1. Set the thermostat to the lowest setting.
2. Turn off all electrical power to the appliance if service is to be performed.
3. Remove burner access panel by removing screws and lifting panel out.
4. Turn the manual gas switch to the "OFF" position.
5. Replace the control access panel.

SECURE OWNER’S APPROVAL

When the system is functioning properly, secure the owner’s approval. Show the owner the location of all disconnect switches and the thermostat. Teach owner how to start and stop the unit and how to adjust temperature settings within the limitations of the system. Advise owner that the flue exhaust hood surface and the immediate area will experience high temperatures during a gas heating cycle. All unauthorized personnel and debris must be kept away from this area.
MAINTENANCE

NORMAL MAINTENANCE

Periodic maintenance consists of changing or cleaning filters. Under some conditions, the main burners should be cleaned.

LUBRICATION

The indoor blower motor, outdoor fan motor and venter motor are permanently lubricated and require no maintenance.

GENERAL MAINTENANCE

The manufacturer recommends that the equipment be inspected once a year by a qualified service person.

For proper and safe operation, the gas heating section needs air for combustion and ventilation. Do not block or obstruct air openings on the unit, nor the spacing around the unit. Keep the gas heating system area clear and free of combustible materials, gasoline and other flammable vapors and liquids.

Snow or debris should not be allowed to accumulate on the outdoor coil surface or other parts in the air circuit. Cleaning should be as often as necessary to keep the coil clean. Use a brush, vacuum cleaner attachment, or other suitable means. If water is used to clean the coil, be sure that the power to the unit is shut off prior to cleaning.

FILTER CARE

Single phase units are shipped without a filter and is the responsibility of the installer to secure a filter in the return air ductwork or install a Filter/Frame Kit (1FF0110, 1FF0112)

Filters must always be used and must be kept clean. When filters become dirt laden, insufficient air will be delivered by the blower, decreasing your units efficiency and increasing operating costs and wear-and-tear on the unit and controls.

OUTDOOR COIL

Dirt should not be allowed to accumulate on the outdoor coil surface or other parts in the air circuit. Cleaning should be as often as necessary to keep the coil clean. Use a brush, vacuum cleaner attachment, or other suitable means. If water is used to clean the coil, be sure that the power to the unit is shut off prior to cleaning.

CAUTION

Exercise care when cleaning the coil so that the coil fins are not damaged.

Do not permit the air that is being discharged from the outdoor coil to be obstructed by overhanging structures or shrubs.

COMBUSTION AIR DISCHARGE

Visually inspect discharge outlet periodically to insure soot and dirt buildup is not excessive. If necessary, clean to maintain adequate combustion air discharge.

The manufacturer recommends that the system be inspected once a year by a qualified service person.

CLEANING FLUE PASSAGES AND HEAT EXCHANGER

With proper combustion adjustment, the heat exchanger of a gas fired appliance will seldom need cleaning. If the tubing should become sooted, it can be cleaned as follows:

1. Remove the burner assembly as outlined in BURNER INSTRUCTIONS.

2. Remove the screws securing the restrictor plate to the tube sheet.

3. Using a wire brush on a flexible wand, brush out the inside of each heat exchanger from the burner inlet and flue outlet ends.

4. Brush out the inside of the restrictor plate to the tube sheet.

5. If soot build-up is particularly bad, remove the vent motor and clean the wheel and housing.

6. After brushing is complete, blow all brushed areas with air or nitrogen. Vacuum as needed.

7. Replace parts in the order they were removed in steps 1 through 3.

REGISTERS

Supply air and return air registers must be open when the unit is in operation. Furniture must not block airflow in or out of the registers.
TROUBLESHOOTING

BEFORE CALLING A SERVICE-PERSON:

A. Check thermostat setting and insure thermostat is calling for heat or cooling.

B. Check thermostat for lint, dust, etc.

C. Check fuses or circuit breakers.

D. Check filters for excessive dust accumulation and/or restriction.

REPLACEMENT PARTS

Contact your local UP parts distribution center for authorized replacement parts.

SOME EFFICIENCY DO’S AND DON’TS

DON’T heat or cool unused areas. Reduce supply and return air flow to a minimum in areas which are not living spaces (storage rooms, garaged, basements, etc.).

DON’T be a “thermostat jiggler”. Moving your thermostat setting will not make your system heat or cool any faster. Adjust your thermostat to a comfortable setting and leave it there.

DON’T restrict air circulation. Placing furniture, rugs, etc. in such a way that they interfere with air vents will make your system work harder to achieve a comfortable temperature level. This requires more energy, which means greater cost to you.

DON’T heat or cool when you are away. If you are going to be away for a day or more, re-adjust your thermostat accordingly. Your furniture is far less demanding than you are when it comes to comfort levels. However, don’t expect the system to restore comfort conditions immediately upon returning home. It will take a little time.

DON’T locate lamps or other heat-producing appliances (radios, TV’s, heaters, etc.) near your thermostat. The heat from these items will give your thermostat “false information” about the temperature in the room.

DO select a comfortable thermostat setting, but keep in mind that moderation in temperature selection will save energy.

DO turn on your kitchen exhaust fan when cooking and your bathroom exhaust fan when showering. Also, make sure your clothes dryer is properly vented. If these items are neglected, an excess heat and humidity condition may be created, causing your air conditioning system to run longer.

DO set your thermostat a few degrees lower than normal several hours before entertaining a large group of people in a relatively small area. People give off a considerable amount of heat and moisture in a closed area.

DO keep drapes and Venetian blinds closed when practical. These items provide insulation against heat loss/gain.

DO contact a qualified service person to make repairs or adjustments to your system. They have been trained to perform this service.

---

TABLE 1: GAS RATE - CUBIC FEET PER HOUR

<table>
<thead>
<tr>
<th>SECONDS FOR ONE REV.</th>
<th>SIZE OF TEST DIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/2 CU. FT.</td>
</tr>
<tr>
<td>10</td>
<td>180</td>
</tr>
<tr>
<td>12</td>
<td>150</td>
</tr>
<tr>
<td>14</td>
<td>129</td>
</tr>
<tr>
<td>16</td>
<td>113</td>
</tr>
<tr>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>22</td>
<td>82</td>
</tr>
<tr>
<td>24</td>
<td>75</td>
</tr>
<tr>
<td>26</td>
<td>69</td>
</tr>
<tr>
<td>28</td>
<td>64</td>
</tr>
<tr>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>32</td>
<td>56</td>
</tr>
<tr>
<td>34</td>
<td>53</td>
</tr>
<tr>
<td>36</td>
<td>50</td>
</tr>
<tr>
<td>38</td>
<td>47</td>
</tr>
<tr>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>42</td>
<td>43</td>
</tr>
<tr>
<td>44</td>
<td>41</td>
</tr>
<tr>
<td>46</td>
<td>39</td>
</tr>
<tr>
<td>48</td>
<td>37</td>
</tr>
<tr>
<td>50</td>
<td>36</td>
</tr>
<tr>
<td>52</td>
<td>35</td>
</tr>
<tr>
<td>54</td>
<td>34</td>
</tr>
<tr>
<td>56</td>
<td>32</td>
</tr>
<tr>
<td>58</td>
<td>31</td>
</tr>
<tr>
<td>60</td>
<td>30</td>
</tr>
</tbody>
</table>

1. EXAMPLE: By actual measurement, it takes 38 seconds for the hand on the 1-cubic foot dial to make a revolution with just a 100,000 BTUH furnace running. Using this information, locate 28 seconds in the first column of the table. Read across to the column headed “1 Cubic Foot,” where you will see that 95 cubic feet of gas per hour are consumed by the gas heat section at that rate. Multiply 95 x 1050 (the BTU rating of the gas obtained from the local gas company). The result is 99,750 BTUH which is close to the 100,000 BTUH rating of the equipment.