

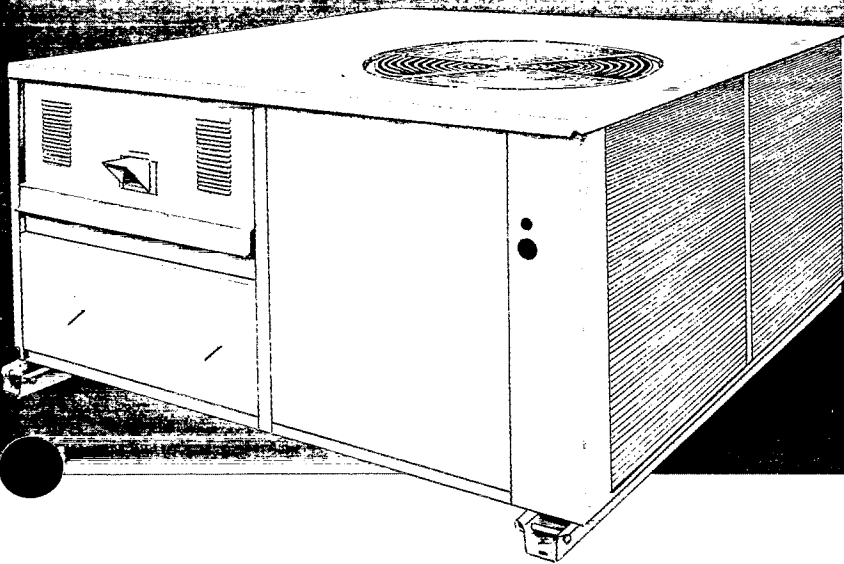
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## Commercial Outdoor Combination Gas Heating/ Electric Cooling Unit

# OWNER'S MANUAL



## OPERATION MAINTENANCE SERVICE

### FOR YOUR SAFETY

If you smell gas:

1. Open windows.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.

### FOR YOUR SAFETY

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

*Congratulations* on your wise investment in a modern, quality, Model 585C090225 Combination Gas Heating/Electric Cooling Unit. Your heating/cooling unit has been designed and developed to provide safe, reliable, and economic operation when properly installed and maintained.

Your year-round air conditioner is a major investment; therefore, you will expect it to perform at its best. By reading this manual, you can learn how to operate it, do recommended routine maintenance, and what to do if a problem should arise. Your new unit should perform at the efficiency level built into it if you will contribute a little of your time and attention.

**unipart**

For replacement parts, use  
"FACTORY-AUTHORIZED UNIPARTS"

**NOTE TO INSTALLER:** This manual should be left with equipment owner.

# Special Instructions to Equipment Owner

**NOTE:** Retain this manual for future reference.

Your heating/cooling unit must have a supply of fresh outdoor air circulating around it during both heating and cooling operation. When the gas heating section is operating, the unit needs fresh air for proper gas combustion and proper ventilation. When the cooling section is operating, the unit needs fresh air for proper airflow through the outdoor (condenser) coil.

**WARNING:** Improper installation, adjustment, alteration, service, maintenance, or use can cause carbon monoxide poisoning, explosion, fire, electric shock, or other occurrences which may injure you or damage your property. Consult a qualified installer, service agency, or the gas supplier for information or assistance.

**WARNING:** To minimize the possibility of serious personal injury, fire, damage to your heating/cooling unit, or improper unit operation; never violate the following safety rules:

1. Always keep the area around your unit free of combustible materials, gasoline, and other flammable liquids and vapors.
2. Never cover your unit, lean anything against it, store trash or debris near it, stand on it, or in any way block the flow of fresh outdoor air to your unit.
3. Never plant trees, shrubbery, or flowers near your unit; and be sure to prevent weeds and/or other vegetation from growing up around your unit. (See recommended operational and service clearances in the unit Installation Instructions.)

## Your Comfort System

Your efficient new gas/electric unit not only represents the very latest in modern engineering development and design—it is a result of over 70 years of experience in gas-fired heating systems.

For your convenience, you or your installer should record, or should have recorded (printed), the following information that is applicable to your system:

### Heating/Cooling Unit Identification

MODEL NO. \_\_\_\_\_

PRODUCT NO. \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

DATE INSTALLED \_\_\_\_\_

### Dealer

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_

## Operating Your Heating/Cooling Unit

The key to operating your comfort system is the *conditioned space thermostat*. A wide variety of thermostats is used, but all have one main function — to automatically maintain the temperature in your building at a level required for your personal comfort, or for a particular application e.g. computer rooms. The thermostat maintains the indoor temperature by controlling the operation of the unit. During the heating season, whenever the temperature around your thermostat drops below the thermostat temperature setting, the thermostat automatically starts the heating section. During the cooling season, whenever the temperature around your thermostat rises above the thermostat temperature setting, the thermostat automatically starts the cooling section.

Your room thermostat has a temperature control selector for selecting the desired indoor temperature. It also has a FAN switch with two selections available: AUTO or ON. When set to AUTO, the blower will operate only when the thermostat starts the unit. When set to ON, the blower will run continuously, regardless of whether the heating or cooling section is

operating. The blower will continue to operate until the FAN switch is set to AUTO and the thermostat stops the unit.

The SYSTEM switch on your thermostat has the following selections: HEAT, OFF, and COOL. Some thermostats may also have a fourth selection — AUTO. The unit will remain off regardless of the room temperature when the SYSTEM switch is set to the OFF position. When set to the HEAT position, the heating section will operate as required. With the SYSTEM switch set to the COOL position, the cooling section will operate as required.

The AUTO selection on some thermostats provides for automatic changeover between heating and cooling operation. With the switch set in AUTO position, the heating section will operate when the room temperature drops below the thermostat heating temperature setting, or the cooling section will operate when the room temperature rises above the thermostat cooling temperature setting.

# Gas Heating Section Startup and Shutdown

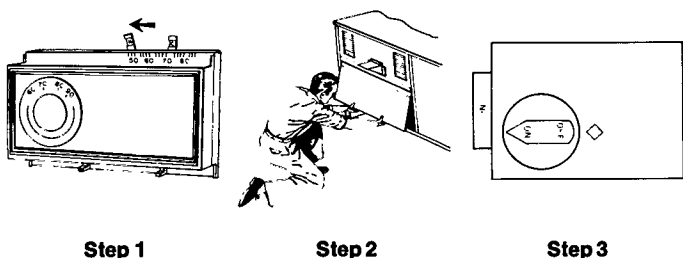
The gas heating section of your unit is equipped with an automatic intermittent ignition system that does not have a continuous burning pilot flame. The pilot is automatically lit by an electric sparking device each time the indoor thermostat "calls for heat." See Figure 3 for location of heating section components.

**WARNING:**

1. Never attempt to manually light the pilot with a match or other open flame. If the electric sparking device fails to light the pilot, refer to the following shutdown procedure and call your dealer for service.
2. Follow the instructions on the lighting instructions plate, located on left side of unit, when starting the heating section.
3. If a suspected malfunction occurs, refer to the following shutdown procedure then call your dealer for service as soon as possible.

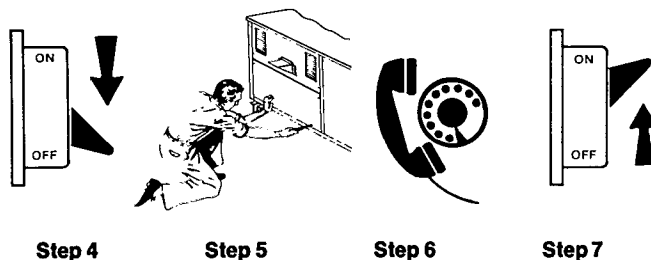
## Shutting Down Your Gas Heating Section

You may be required to, or want to, turn off your gas heating section for one of two reasons: a suspected malfunction has occurred, or the heating season has ended.



Proceed as follows to shut down the gas heating section:

- Step 1 —Set your thermostat heat lever "H" to the lowest temperature setting and set SYSTEM switch to OFF.
- Step 2 —Remove lower heating section access panel to your unit. See Figure 1.
- Step 3 —Turn off pilot and main gas at gas valve. See Figure 4. Rotate valve knob until OFF is aligned with diamond.

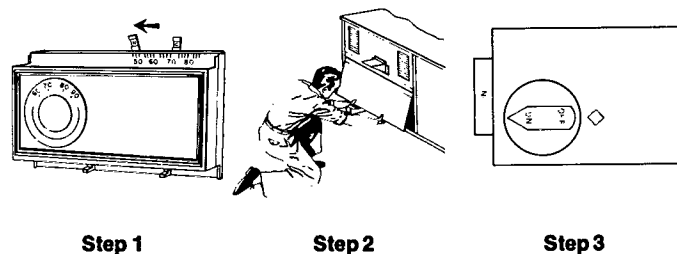


- Step 4 —Turn OFF the electrical power to your unit.
- Step 5 —Replace lower heating section access panel.
- Step 6 —If the unit is being shut down because of a malfunction, call your dealer for service as soon as possible.
- Step 7 —If your unit is being shut down because the heating season has ended, restore electrical power to the unit to ensure operation of the cooling system during the cooling season.

## Starting Your Gas Heating Section

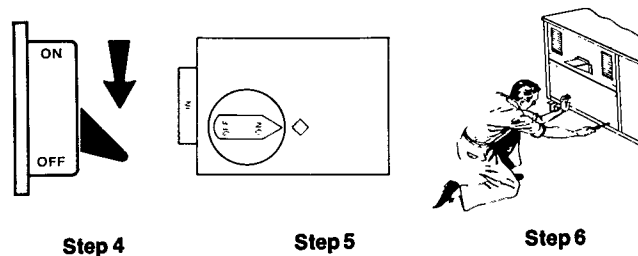
**NOTE:** Be sure air filters are clean and in place.

**WARNING:** Before attempting to start the gas heating section, familiarize yourself with all the procedures that must be followed.

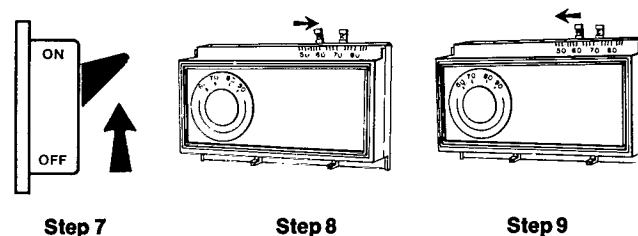


Proceed as follows to start your gas heating section:

- Step 1 —Set thermostat heat lever "H" to the lowest temperature setting and set SYSTEM switch to HEAT.
- Step 2 —Remove lower heating access panel. See Figure 1.
- Step 3 —Turn off pilot and main gas at main gas valve. See Figure 4.



- Step 4 —Turn off electrical supply to your unit.
- Step 5 —After waiting 5 minutes, rotate gas valve knob to ON position. See Figure 4.
- Step 6 —Replace heating section access panel.



- Step 7 —Turn on electrical supply to your unit.
- Step 8 —Set thermostat heat lever "H" slightly above the space temperature to start the heating section. The pilot ignition system now begins sparking and lights the pilot. Approximately 30 seconds later, the gas valve will open and the ignited pilot will light the burners. The blower fan will start 25 to 40 seconds after the burners are lit.
- Step 9 —Set thermostat heat lever "H" to the desired temperature setting.

**WARNING:** If the pilots fail to ignite, the main burners fail to light, or the blower fails to come on, shut down the gas heating section (see procedure in this section) and call your dealer for service.

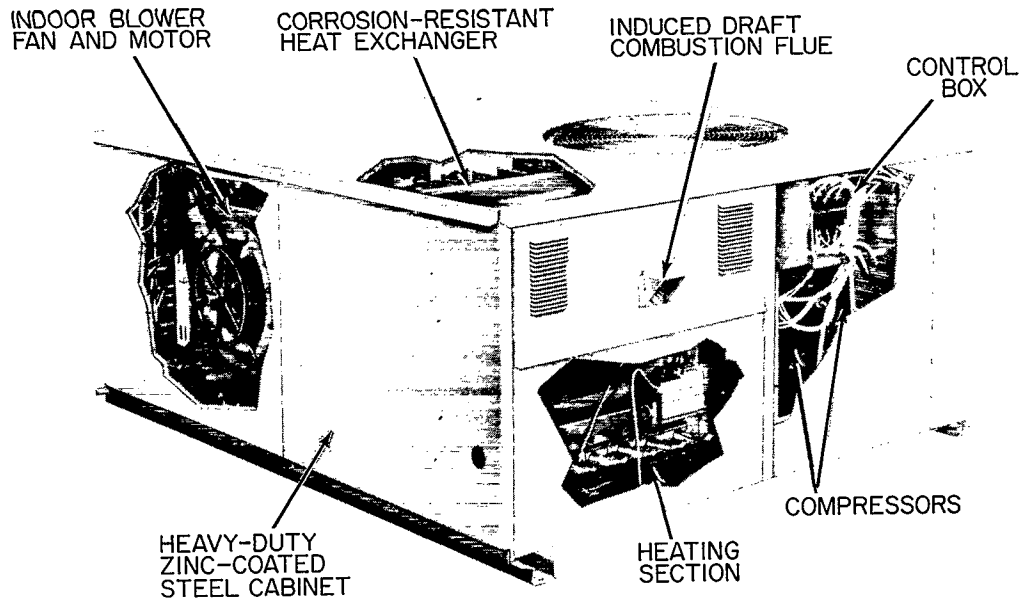


Figure 1 - Cutaway View of Model 585C090225

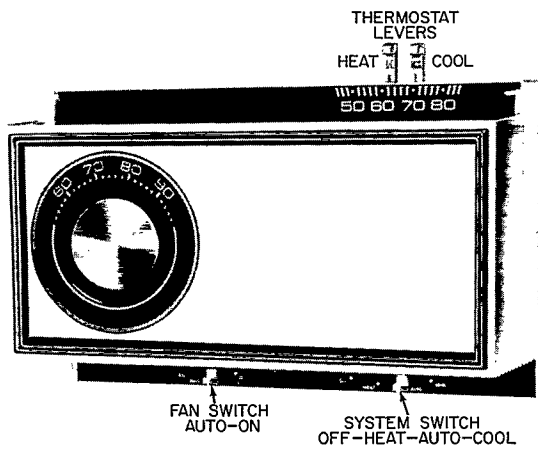


Figure 2 - Thermostat Assembly

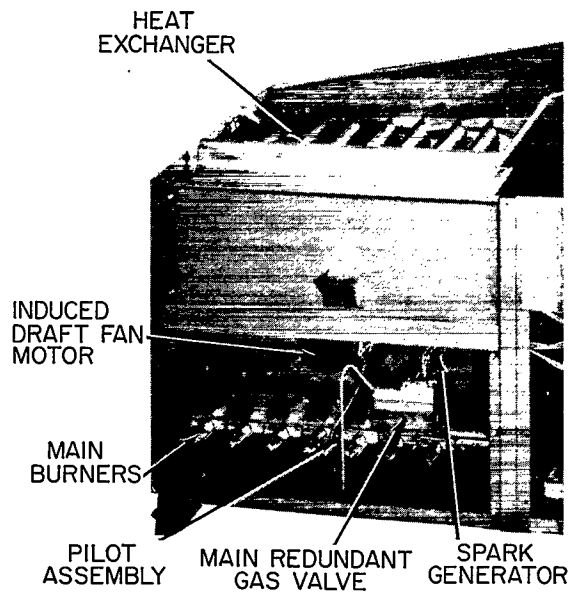
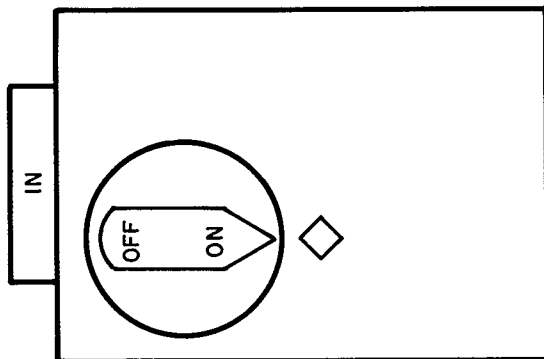


Figure 3 - Heating Section Components



**NOTE:**

Gas valve shown in ON position. Rotate valve knob and align OFF with diamond to shut off pilot and main gas.

Figure 4 - Top View of Gas Valve

# Maintenance by Qualified Service Personnel

Your heating/cooling unit should be inspected by a trained and equipped service person at least once each year. During this inspection, the qualified service person should perform the following minimum maintenance:

1. Inspect all flue product passages, the flue venting system, the pilots, and the burners.
2. Inspect all combustion and ventilation air passages and openings.
3. Check gas pipes leading to and inside your unit for leaks.
4. Readjust the gas/air mixture if the burner flames are not bright blue.
5. Check, and when necessary, clean the condenser and evaporator coils.

6. Check, and when necessary, clean the evaporator drain pan and drain lines.
7. Inspect and clean the blower wheel and housing. Also, lubricate the blower motor as required.
8. Inspect and change air filters if necessary.
9. Inspect all supply- and return-air ducts for obstructions, air leaks, and insulation. Remedy any problem when necessary.
10. Inspect electrical wiring and components for loose connections.
11. Check all safety devices for proper operation.
12. Perform an operational checkout to determine whether the unit is working properly, and if it requires adjustments.

## Maintenance and Care for the Equipment Owner

Before proceeding with those things you may want to maintain yourself, please carefully consider the following:

### WARNING:

1. TURN OFF GAS SUPPLY AND ELECTRICAL POWER TO YOUR UNIT BEFORE SERVICING OR PERFORMING MAINTENANCE.
2. When removing access doors or performing maintenance functions inside your unit, be aware of sharp sheet metal parts and screws. Although special care has been taken to reduce sharp edges to a minimum, be extremely careful when handling parts or reaching into the unit.

### Air Filters

Air filters should be checked every 3 or 4 weeks and changed when they become dirty.

The air filters are not located inside the unit. The filters are dealer-installed in the return-air duct. If you have difficulty in locating your air filters, or if you have any questions concerning proper filter maintenance, contact your dealer for instructions. When replacing the filters, always use the same number, type, and size filters supplied by the installer. Also, make certain airflow arrows on filters point in the direction of airflow (toward unit).

### Heat Exchanger

This checkout should not be attempted by anyone not having the required expertise and equipment to do the job properly. Checking and/or cleaning the heat exchanger involves removing the flue collector box and fuel baffles. Contact your dealer for the required periodic maintenance.

### Lubrication

The combustion-air blower motor and condenser fan motors are prelubricated and do not require lubrication.

If the indoor-air blower motor is equipped with oil cups, oil motor bearings with SAE10-20 nondetergent oil at beginning of each heating and cooling season. Use approximately six drops for each bearing.

Some blower motors are equipped with bearings of a pre-lubricated type.

Blower bearings are the prelubricated type.

### Evaporator and Condenser Coils

Evaporator coil should be cleaned by a qualified service person only.

The condenser coil can be cleaned with a garden hose by spraying the coil with water from the inside of the unit toward the outside.

**WARNING:** Extreme caution must be used when spraying the coil, to avoid getting water in the compressor terminal box or unit control box. It may be desirable to cover these with plastic before spraying.

### Condensate Drain

The drain pan and condensate drain line should be checked and cleaned at the same time the cooling coils are checked by your dealer.

### Condenser Fan

**WARNING:** Do not poke sticks, screwdrivers, or any other objects into the revolving fan blades — severe bodily injury may result.

The fan must be kept free of all obstructions to ensure proper cooling. Contact your dealer for any required service.

### Electrical Controls and Wiring

Electrical controls are difficult to check without proper instrumentation; therefore, if there are any discrepancies in the operating cycle, contact your dealer for service.

## Refrigerant Circuit

The refrigerant circuit is difficult to check for leaks without proper equipment; therefore, if inadequate cooling is suspected, contact your local dealer for service.

## Combustion Area and Vent System

The combustion area and vent system should be visually inspected before each heating season. The normal accumulation of dirt, soot, rust, or scale can result in loss of efficiency and improper performance if allowed to build up. Accumulation on the main burners can result in the burners firing out of normal time sequence. This delayed ignition is characterized by an extra loud ignition that can be quite alarming.

**CAUTION:** If your unit makes an especially loud noise when the main burners are ignited by the pilot, shut down the heating section and call your dealer.

Refer to Figures 1 and 3. Using a flashlight, proceed as follows to inspect the combustion area and vent system of your unit.

1. Turn off gas supply and electrical power to your unit.
2. Remove heating section access panels.
3. Carefully inspect gas burners and pilot areas for dirt, soot, rust, or scale.

**CAUTION:** If dirt, soot, rust, or scale accumulations are found, call your dealer and do not operate your heating section.

4. When you have completed your inspection, follow the startup procedures in this manual to restore your unit to operation.
5. Replace heating section access panels.
6. Remove the two diamond-shaped plates that cover the burner observation ports on the heating controls access panel. Observe unit operation and watch burner flames through the observation ports to see if they are bright blue. If you observe a suspected malfunction, or that the burner flames are not bright blue, call your dealer. Replace the plates over the observation ports.

**NOTE:** Burner flames that have a mixture of yellow, orange, or red flames together with the blue may not be burning gas efficiently. Your dealer may have to adjust the air/gas mixture and/or clean the burners.

## Before Calling for Service

If your combination gas heating/electrical cooling unit does not appear to be performing properly, or does not operate at all, you may save the cost of an unscheduled service call if you check a few things yourself before calling for service.

### Insufficient Airflow

After your equipment has been in operation for a short period, you should become familiar with the "feel" of the air circulation. If you sense a change in the airflow, your problem is probably dirty air filters. Inspect the filters.

If you determine that dirty filters are not causing the problem, call your dealer for service.

### Unit Fails to Operate

Sometimes a unit will stop operating because of an actual malfunction; however, it is common for a unit to appear to have stopped operating because an easily remedied situation has taken place. If your unit fails to operate, follow these step-by-step procedures, and proceed only to the next step if the unit fails to start.

1. Check to be sure that the conditioned space thermostat is above the space temperature during heating season, or below the space temperature during the cooling season. Also, make sure that SYSTEM switch is in the proper HEAT or COOL position — and not in the OFF position.

2. Check to be sure that the electrical power supply to your unit is ON, that a fuse has not blown, or that a circuit breaker has not tripped.
3. During the heating season, check to be sure that the manual shut-off valve in the gas supply pipe leading to your unit is in the open position. The valve is open if the lever points in the same direction the pipe runs, and it is closed if the lever is at a right angle to the pipe. If the valve is closed, open it and then follow the startup procedures in this manual.
4. During the heating season, check the gas valve knob (Figure 4) to be sure that it is in the ON position.
5. If your unit still fails to operate, call your dealer for service.

### When Calling for Service

The product, model, and serial numbers for your unit, together with the date installed (recorded in the space provided on page 2 of this manual), will be helpful for your dealer. If the dealer knows exactly what you have, he may be able to offer some suggestions over the phone to remedy the problem. This could save you needless expense and the dealer a needless visit.

**NOTE:** If you do not have a dealer, refer to your telephone directory or yellow pages for the nearest dealer for the brand name of your unit.

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