PGA/B/D**C

Gas-Electric Heating & Cooling Package Unit

User's Information Manual

WARNING

If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

– 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.**
- **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.

You have purchased a single package heating and cooling unit. It is approved for an outdoor installation only and is designed to provide many years of safe and dependable service with proper installation, use, and maintenance. Take time to familiarize yourself with the information concerning unit installation, features, operation, and maintenance contained within this manual. Refer to the Specification Sheet for the needed clearance around the unit.

Please take the time to fill out your owner's registration card and mail it today. This will assist Amana in contacting you should any service or warranty information change in the future. When filling in the registration card, be sure to include the Model, Manufacturing and Serial Numbers, plus the installation date. If the registration card cannot be located, please call 1-800-843-0304 to register the unit.

Your warranty certificate is also supplied with the unit. Read the warranty carefully and note what is covered. Keep the warranty certificate in a safe place, so you can find it, if necessary. Before using this manual, check the serial plate for proper model identification.

Installer *- Affix this manual, the Installation Guide, and Specifications Sheet adjacent to the appliance.*

Owner *- Keep all product literature in a safe place for future reference.*

Amana® Heating • Air Conditioning

BUILT BETTER THAN IT HAS TO BE™

Contents

THE INSTALLATION AND SERVICING OF THIS EQUIPMENT MUST BE PERFORMED BY QUALIFIED, EXPERIENCED TECHNICIANS ONLY.

Due to policy of continual product improvement, the right is reserved to change specifications and design without notice.

RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION

WARNING

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

WARNING

To avoid death, personal injury or property damage, do not use this unit if any part has been under water. If parts of this unit have been under water, immediately call a qualified service technician to inspect the unit and replace any part of the control system and any gas control which has been under water.

Before using this manual, check the serial plate for proper model identification.

ATTENTION INSTALLING PERSONNEL

As a professional installer you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this manual. Pay special attention to all safety warnings. Often during installation or repair it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is your responsibility to install the product safely and to know it well enough to be able to instruct a customer in its safe use.

Safety is a matter of common sense...a matter of thinking before acting. Most dealers have a list of specific good safety practices...follow them.

The precautions listed in this manual should not supersede existing practices but should be considered as supplemental information.

Remember to leave this manual with the homeowner.

General Information

This unit is built to provide many years of safe and dependable service, provided it is properly installed and maintained. However, abuse and/or improper use can shorten the life of the unit and create hazards for you, the homeowner. Take time to familiarize yourself with the information concerning unit installation, features, operation, and maintenance contained within this manual.

⚠ WARNING

This product contains or produces a chemical or chemicals which may cause serious illness or death and which are known to the State of California to cause cancer, birth defects or other reproductive harm.

⚠ WARNING

To avoid possible equipment damage, personal injury, fire or death, the following instructions must be observed regarding unit location, air requirements and operating procedures.

Unit Location

This unit is approved only for an outdoor installation. The diagram on the Specification Sheet illustrates the required clearances to the unit. It is important that safety measures are taken in the surrounding area of the unit.

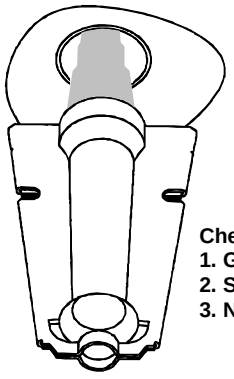
Gutters or deflectors must be installed on the roof to prevent water from shedding on the unit.

1. An area must be available to reach the unit in a clear and unobstructed path.
2. The unit area and the vicinity of any other gas appliances must be kept clear and free of combustible materials, gasoline, and other flammable vapors and liquids. Also, do not store or use flammable items such as paint, varnish, or lacquer in the area.
3. The combustion air supply must not be contaminated by products containing chlorine or fluorine, as they could corrode the heat exchanger. If you need further information on this subject, contact your installing dealer or another qualified servicer.
4. Familiarize yourself with the controls that turn off the gas and electrical power to the unit. If the unit is to be shut down at the end of the heating season, turn off both the gas and electrical power. For safety, always turn them off before performing service or maintenance on the unit.
5. Establish a regular service and maintenance schedule to ensure efficient and safe operation of the unit.
6. The unit must be placed where no runoff water from higher ground can collect in the unit.

Unit Installation

Examine the unit installation to determine the following:

1. The vent connector is in place and is physically sound without holes or excessive corrosion.
2. The physical support of the unit is sound without sagging, cracks, or gaps around the base so as to provide a seal between the support and the base.
3. There are no obvious signs of deterioration of the unit.
4. The burner flames are stable, soft and blue, (dust may cause orange tips but must not be yellow). The flames should extend directly outward from the burner without curling, floating, or lifting off. To examine, turn on the electrical power and gas. Set the room temperature to the maximum setting.



Check the burner flames for:
1. Good adjustment
2. Stable, soft and blue
3. Not curling, floating, or lifting off.

Burner

NOTE: If a strong wind is blowing, it may not be possible to perform the flame inspection.

WARNING

To avoid personal injury or fire, minimum clearances to combustible surfaces must be followed.

Air Requirements

WARNING

To avoid death, personal injury or property damage, adequate fresh air must be provided for proper combustion and ventilation of flue gases.

Since the gas/electric unit is installed completely in the outdoors, the depletion of combustion air is highly improbable. To ensure an adequate supply of combustion air, do not allow the air inlet hood or flue outlet hood to become blocked by leaves, snow, rubbish, or insect (wasps) nests.

Great care has been taken in the design and manufacture of your unit to provide for your comfort and safety. Be aware of the possibility that some problems with your unit or other gas-fired appliances could cause flue gases to be present in your building. These flue gases could include carbon monoxide.

WARNING

Death or personal injury from asphyxiation can result from exposure to carbon monoxide.

Carbon monoxide or “CO” is a colorless and odorless gas produced when fuel is not burned completely or when the flame does not receive sufficient oxygen.

Be aware of these air starvation signals which indicate conditions that may result in carbon monoxide or that carbon monoxide may be present:

1. Headaches-Nausea-Dizziness, Flu-Like Symptoms.
2. Excessive humidity-heavily frosted windows or a moist “clammy” feeling in the home.
3. Smoke from a fireplace will not draw up the chimney.
4. Flue gases that will not draw up the appliance vent pipe.

Indoor Humidity

Relative humidity is the amount of water vapor in the air relative to the amount the air can hold at the same temperature. Example: At 40% relative humidity, the air could hold 2-1/2 times as much moisture (2.5 x 40 = 100%) before becoming saturated.

The colder the air; the less moisture it can hold. As air is warmed, its ability to hold moisture is increased. Example: A winter day, outdoor temperature 10°F, and relative humidity of 70%. If that air enters a home and is warmed to 72°F, the relative humidity will drop to 6% (very dry) if no more moisture is added.

Relative humidity is important to your health and home as proper humidification helps cut down on incidence of respiratory illness and helps keep air cleaner and fresher.

A good relative humidity is one just high enough to barely start condensation along the lower edges or lower corners of the windows. More than that can be damaging.

Frequent fogging or excessive condensation on inside windows indicates the indoor humidity level is too high for outdoor weather conditions. Damage to the building may result if the condition persists. (Condensation on inside of storm windows indicates loose inside windows. Adding weather-stripping to tighten inside windows usually corrects this problem.)

The following table shows the recommended maximum indoor humidity in relationship to the outdoor temperatures.

Outdoor Temperature (ºF)	Maximum Indoor %RH
+20	35
-10	30
0	25
-10	20
-20	15

Table 1

For Propane (LP) Gas Installations Only

For units operating on propane gas, please review the following warnings before use.

WARNING

To avoid death, personal injury or property damage due to explosion or fire, install a gas detecting warning device. Since the odorant in propane gas can be reduced by iron oxide (rust), a gas detecting warning device is the only reliable method to detect propane gas leaks.

General Information

WARNING

If the gas unit is installed in an excavated area or a confined space, contact your propane gas supplier to install a gas detecting warning device since:

- Propane gas is heavier than air and any leaking gas can settle in any low areas or confined spaces.
- Propane gas odorant can fade, making the gas undetectable except with a warning device.

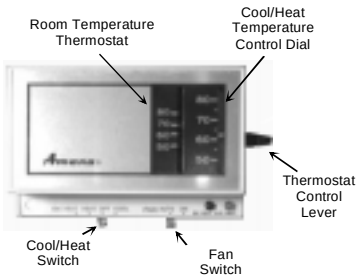
WARNING

An undetected gas leak will create a danger of explosion or fire. If the presence of gas is suspected, follow the instructions on the cover of this manual. Failure to do so could result in SERIOUS PERSONAL INJURY OR DEATH.

Thermostat

This unit will not operate properly without a good quality, correctly installed thermostat. It is very important that the thermostat be located where it can best "sense" the average room temperature. Be sure the thermostat is not exposed to hot or cold drafts or to hot or cold spots on the wall, such as those received from outside walls, walls with pipes inside, or from openings into the attic.

No matter the type or style, thermostat operation is basically the same. The most widely used types will control both heating and cooling functions and will have a Fan Switch with Auto and ON settings. On Auto, the Circulating Air Blower will cycle on/off, but if switched to ON it will run constantly.



System Switch	Fan Switch	Action
OFF	AUTO	None
COOL	AUTO	System only cools, fan cycles off and on.
COOL	ON	System only cools, fan runs all the time.
HEAT	AUTO	System only heats, fan cycles off and on.
HEAT	ON	System only heats, fan runs all the time.
OFF	ON	No heating or cooling, fan runs all the time.

Typical Thermostat

IMPORTANT NOTE: To avoid the possibility of damage to the unit heat exchanger, do not set the thermostat fan switch to ON (constant fan operation) during the heating season without first consulting the installer of the unit or another qualified servicer.

There are thermostats that automatically switch from Heating to Cooling, or with night setbacks. The night set-back, or multiple setback type, will lower the temperature at night or during the day when the building is unoccu-pied.

Igniter

The unit has an electronic ignition device which lights the burners automatically. Never try to light the burners by hand. It also has an induced draft blower to exhaust combustion products.

Indoor Air Circulating Blower

Keep the blower access door panel in place except for inspection and maintenance.

Operating Instructions

WARNING

To avoid death, personal injury, or property damage due to electrical shock, do not remove any internal compartment covers. Electrical components are contained in both compartments. Contact a qualified servicer at once if any abnormal condition is noticed.

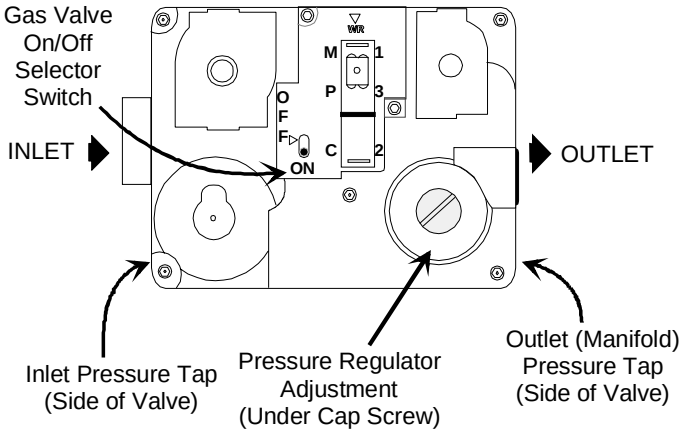
WARNING

An undetected gas leak can create a danger of explosion or fire. The unit and its gas connections must be leak tested before placing in operation.

Heating Start Up

To put your unit into operation, follow the steps listed below.

1. Close the external manual gas shutoff valve.
2. Turn off the electrical power to the unit.
3. Set the room thermostat to the lowest possible setting.
4. Remove the heat exchanger door on the side of the unit by removing screws.
5. This unit is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
6. Turn the gas control switch to the OFF position. Do not use excessive force.
7. Wait five minutes to clear out any gas. Then smell for gas, including near the floor as some types of gas are heavier than air.
8. If you smell gas following the five minute waiting period in step 7, immediately follow the instructions on the cover of this manual. If you do not smell gas after five minutes, turn the gas control switch to the ON position. The switch should turn easily. Do not use excessive force.
9. Reinstall the burner compartment door.
10. Open the external manual gas shutoff valve.
11. Turn on the electrical power to the unit.
12. Adjust the thermostat to a setting above room temperature.
13. After the burners are lit, set the thermostat to desired temperature.



White-Rodgers Model 36E22

Heating Shut Down

To shut down operation, follow the steps listed below.

1. Set the thermostat to the lowest setting.
2. Turn OFF electrical power to the unit.
3. Remove the heat exchanger door on the side of the unit by removing screws.
4. Turn the gas control switch to the OFF position. Do not use excessive force.
5. Close the external manual gas shutoff valve.
6. Reinstall the heat exchanger door.
7. If cooling and/or air circulation is desired, turn ON the electrical power.

Operating Instructions

Cooling Operation

Cooling operation may be obtained as follows:

1. Place the room thermostat selector switch in the COOL position (or AUTO, if available, and if automatic changeover from cooling to heating is desired).
2. Set the room thermostat to the desired temperature.
3. If cooling system does not energize, wait five minutes. The system startup may be delayed by the short-cycle protector feature of the ignition control board. Check the manual reset devices on the rollout and secondary limits, as described in this manual.

Safety Circuits

A number of safety circuits are employed to ensure safe and proper unit operation. These circuits serve to control any potential safety hazards and, as inputs in the monitoring and diagnosis of abnormal operation.

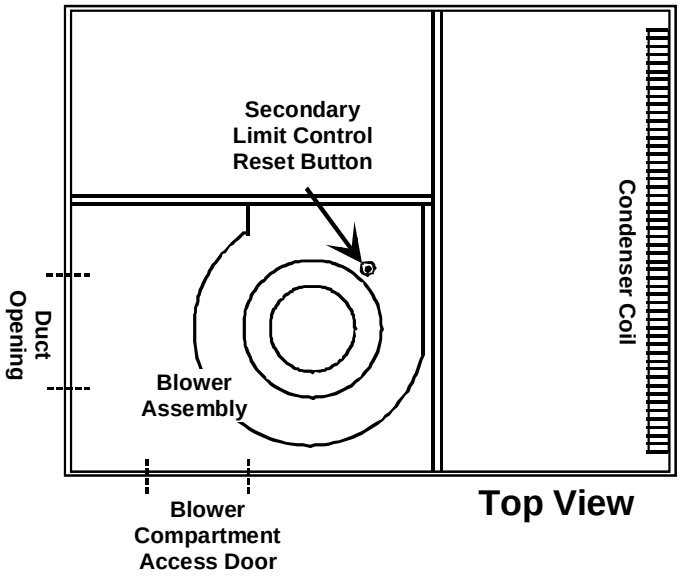
Secondary Limit

The secondary limit control is located on the blower housing and monitors blower compartment temperatures. It is a normally closed (electrically), manual reset, temperature activated sensor. This limit guards against overheating as a result of insufficient conditioned air passing over the heat exchanger. It deenergizes the gas valve if the blower fails.

WARNING

If the secondary limit control should open, the reason must be determined before the control is reset. The electrical power must be disconnected before any panel is removed or maintenance is performed.

NOTE: If the power to the unit is interrupted during the heating cycle, it may cause the secondary limit to trip. To reset, press the red button on the limit.



Secondary Limit Control

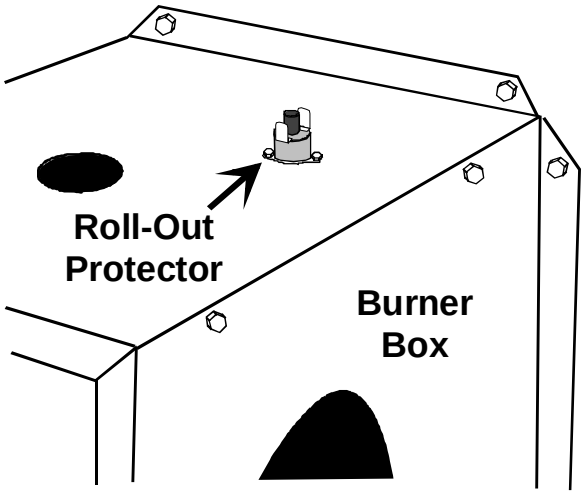
Safety Circuits

Rollout Limit(s)

WARNING

The cause of the rollout protection device opening must be investigated by a qualified servicer before any attempt is made to reset the rollout protection device and turn the unit back on. The electrical power must be disconnected before either front panel is removed.

The rollout limit is a normally-closed (electrically), manual-reset, temperature-activated sensor. It is mounted on the side of the burner box and monitors the burner flame. If there is an improper draw of burner flames into the heat exchanger, the rollout limit will detect it and shut off gas flowing to the burners. Contact a qualified servicer to check the unit before resetting this device.



Rollout Protection Device

Compressor Protection Devices

Amana® gas/electric package unit includes components which are designed to protect the compressor against abnormal operating conditions.

WARNING

To prevent death or personal injury, always disconnect the electrical power before inspecting or servicing the unit. Since all of the compressor protection devices reset automatically, the contactor and outdoor fan may be energized when reset.

NOTE: The operation of the indoor blower will not be affected by any compressor protection devices.

If, during a call for cooling, the indoor fan runs and circulates room temperature air while the compressor and outdoor fan do not operate:

1. Wait five minutes, as a protection device may be holding the compressor off.
2. Check the room thermostat to see if it is correctly set.
3. If the room thermostat is correctly set, call a qualified servicer to determine if one of the compressor protection devices has opened.

Short-Cycle Protector

A short-cycle protector is built into the ignition control. Each time the compressor is off for less than 3 minutes, the short-cycle protector will delay compressor startup for up to 3 minutes. This protects the compressor from improper operation.

NOTE: These units are not designed to provide mechanical cooling at outdoor temperatures below 50°F. If low ambient cooling is needed, consult a qualified servicer.

Routine Maintenance

If you perform maintenance on the unit yourself, remember that certain mechanical and electrical knowledge, skills and tools are required to perform unit maintenance. Personal injury or death my result If you are not properly trained. You should call your installing dealer or place of purchase if you are uncertain about your ability to perform maintenance.

WARNING

To prevent death or personal injury due to fire or explosion, the following procedures must be followed exactly, in this sequence before inspecting the unit:

- Turn OFF gas by closing external gas shutoff valve to the unit.
- Turn OFF electrical power by opening unit power disconnect.
- If the unit has been operating, wait 15 minutes for it to cool.

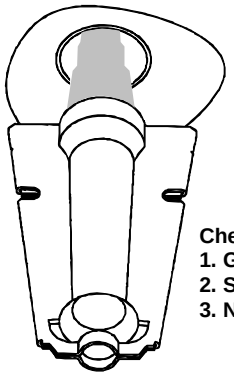
Annual Inspection

Your package unit should be inspected by a qualified installer, or service agency at least twice every year. This check should be performed before the heating and cooling seasons begin. This will ensure that adequate combustion air is being drawn and the vent system is working properly. Particular attention should be paid to the following items. Repair as necessary.

- Check physical support of the unit. Ensure it is sound without any sagging, cracks, or gaps, around the base.
- Check for obvious signs of deterioration of the unit.
- Flue and Air Inlet Hood. Check for blockage (wasp nest, etc.) and corrosion.
- Return Air Connection. Check for physical soundness and ensure that the connection is firmly sealed to the package unit casing.
- Heat exchanger. Check for corrosion and/or obstructions within the heat exchanger passageways.
- Burners. Check for proper ignition, burner flame, and flame sense. Turn the electrical power and gas valve ON. Set the room thermostat to its maximum setting. Inspect the main burner flames. Flames should extend directly outward from burners without curling, floating or lifting off. Flames should be predominantly blue and directed into the tubes. Although dust may cause orange tips, the flames must not be yellow. Also check vestibule area for signs of deterioration. Vacuum out the vestibule annually.

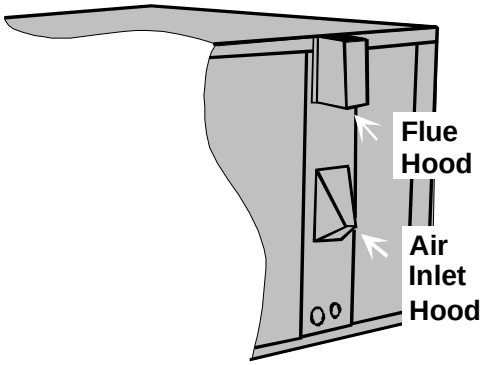
NOTE: If a strong wind is blowing, it may not be possible to perform the flame inspection.

- Wiring. Check electrical connections for tightness and/or corrosion. Check wires for damage.
- Filters. Check that filters are clean and in the proper placement in the unit or duct system.
- Louvers. Inspect louvers behind the air inlet hood on the unit. Ensure the area is clean and free of dirt and debris.



Check the burner flames for:
1. Good adjustment
2. Stable, soft and blue
3. Not curling, floating, or lifting off.

Burner Flame



Vent Hoods

Routine Maintenance

Replacing or Cleaning Filter

IMPORTANT NOTE: Never operate unit without a filter installed as dust and lint will build up on internal parts resulting in loss of efficiency, equipment damage and possible fire.

A return air filter is not supplied with this unit; however, there must be a means of filtering the return air. The filter(s) may be located in the return air duct(s). Consult with your installing dealer for the actual location of the return air filter(s) in your unit.

See Specification Sheet for filter sizes.

A dirty filter is the most common cause of inadequate heating or cooling performance. Filter inspection should be made at least every two months; more often if necessary because of local conditions and usage.

Dirty throwaway filters should be discarded and replaced with a new, clean filter. Dirty permanent filters should be washed with water, thoroughly dried and sprayed with a filter adhesive before being reinstalled. (Filter adhesives may be found at many hardware stores.) Permanent filters should last several years. However, should one become uncleanable, it should be replaced.

When installing a new filter or reinstalling an old one, always make certain the air flow arrows on the filter point in the proper direction.

Clean Outside Coil (Qualified Servicer Only)

WARNING

To avoid death or personal injury due to electrical shock, disconnect the electrical switch before cleaning the coil(s).

The coil with the outside air flowing over it should be inspected annually and cleaned as frequently as necessary to keep the finned areas free of leaves, grass, seeds, and debris.

Indoor Air Circulating Blower Motor Lubrication

The air circulating blower motor bearings are permanently lubricated and do not require additional oiling.

Induced Draft Blower Motor Lubrication

The induced draft blower motor is permanently lubricated and does not require additional oiling.

Outdoor Coil Fan Motor Lubrication

The outdoor fan motor is permanently lubricated and does not require additional oiling.

Compressor

The compressor motor is hermetically sealed and does not require additional oiling.

Safety Labels

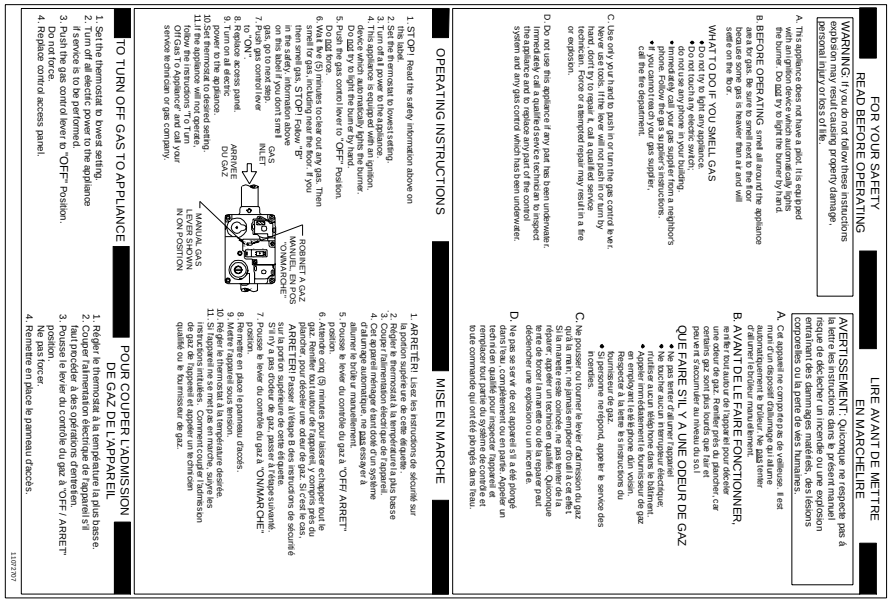
NOTE: If safety labels are missing or illegible, contact the installing dealer or Amana Customer Service Department for ordering information.

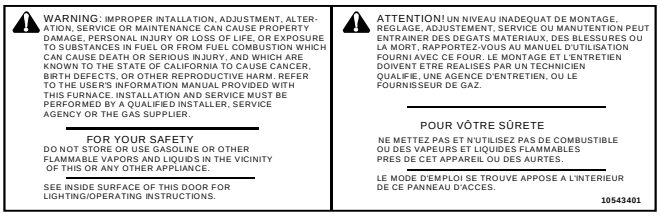
To obtain the proper safety labels, the Model, Manufacturing Number and Serial Number of the unit must be supplied. These numbers are recorded on the nameplate of the unit. For convenience, record this information here:

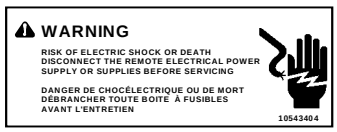
MODEL NUMBER: _ _ _ _ _ _ _ _ _ _ _ _ _

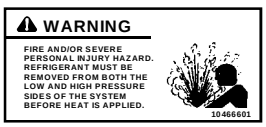
MANUFACTURING NUMBER: P _ _ _ _ _ _ _ _ _

SERIAL NUMBER: _ _ _ _ _ _ _ _ _ _ _ _ _









For Additional Information

Most questions can be answered by the local Amana dealer. Check with dealer first if needing any further information regarding the operation, maintenance, or service of the unit.

If you have any matters that are not resolved locally, or for more information on other heating and cooling products or kitchen appliances offered by Amana is needed - please call:

CONSUMER INFORMATION LINE

AMANA TOLL FREE

1-800-843-0304 (U.S. only)

(Not a technical assistance line for dealers.)

Outside the U.S., call 1-319-622-5511.

(Not a technical assistance line for dealers.)

Your telephone company will bill you for the call.