

Owner Manual

Packaged Rooftop Air Conditioners  
Voyager™ Gas/Electric  
For Servicers and Owners Use

Model 12½ through 25 Ton Packaged Gas/Electric  
27½ through 50 Ton Packaged Gas/Electric

 SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

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Important Safety Instructions

 WARNING

Safety Instructions!  
Failure to follow instructions in this section could result in death, serious injury, and property damage.

General Safety Instructions


- Do not store combustible materials, gasoline or other flammable vapors and liquids near the unit.
- Should overheating occur, or the gas supply fail to shut off, shut off the manual gas valve to the furnace before shutting off the electrical supply.
- Do not use this furnace if any part has been under water. Immediately call a qualified service technician to inspect the furnace and to replace any part of the control system and any gas control system and any gas control which has been under water.
- Never perform any maintenance procedures until the electrical power and/or gas supply to the unit has been turned off.
- Never remove any panels from the unit while it is operating.
- Never remove panels or parts from this unit that are not discussed in this manual.
- Never cover the unit, since it is designed to operate year-round.
- The furnace area must be kept clear and free of combustible materials, gasoline and other flammable vapors and liquids.
- For proper and safe operation the furnace needs air for combustion and ventilation. Do not block or obstruct air openings on the furnace, air openings communicating with the areas in which the furnace is installed, and the spacing around the furnace.

- At installation and the beginning of each heating season, a qualified service technician should examine the furnace to ensure:
- All flue products carrying areas external to the furnace, (i.e., chimney, vent connector, etc.), are clear and free of obstructions.
  - The physical support of the furnace is sound and without sagging, cracks, gaps, etc., around the base so as to provide a seal between the support and the base.
  - There are no obvious signs of deterioration of the furnace.


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Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

 WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe

NOTICE

Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns


Scientific research has shown that certain man-made chemicals can affect the earth’s naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Important Responsible Refrigerant Practices


Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

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WARNING

**Proper Field Wiring and Grounding Required!**  
Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

 WARNING

Personal Protective Equipment Required!  
Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate MSDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit. Failure to follow recommendations could result in death or serious injury.

 WARNING

Follow EHS Policies!  
Failure to follow instructions below could result in death or serious injury.

- All Ingersoll Rand personnel must follow Ingersoll Rand Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. All policies can be found on the [BOS site](#). Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Ingersoll Rand personnel should always follow local regulations.

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Temperature Control Devices

Room thermostats and zone sensors are delicate temperature control devices.

Thermostats’ main function is to energize and de-energize the heating or cooling circuit to maintain the temperature setting you select.

Zone sensors’ main function is to sense the room temperature to allow the unit controls to activate the heating and cooling functions to maintain the temperature setting you select.

Many thermostats and zone sensors contain a room thermometer to indicate the approximate room temperature, and a temperature scale at the adjustment indicator to select the desired indoor air temperature. In addition, most controls have a selector mode switch with Heat, Off and Cool positions, and a fan switch with On and Auto positions.

When the selector switch is positioned at Off, your unit will not operate in either the heat or cool modes. If the selector switch is set at Heat, the unit will automatically cycle on and off to maintain the desired temperature setting. The unit will also operate automatically when the selector switch is positioned at Cool.

The fan selector switch can be used to operate the indoor fan continuously by positioning it at On. When set at Auto, the fan will only operate when required during the heating or cooling cycles.

To ensure that the thermostat or zone sensor operates properly, it must be level and positioned to avoid the influence of such external heat sources such as lamps, televisions or other heat producing appliances.

Air Filters

It is very important to keep the central duct system air filters clean. Be sure to inspect them at least once each month when the system is in constant operation. (In new homes, check the filters every week for the first 4 weeks.) See [Table 1](#) for the required filter size(s).

If you have disposable type filters, replace them with new filters of the same type and size. Do not attempt to clean disposable filters.

Permanent type filters can be cleaned by washing them with a mild detergent and water. Ensure that the filters are thoroughly dry before reinstalling them in the unit (or duct system).

3  
Overview of Manual

One copy of this document ships inside the control panel of each unit and is customer property. It must be retained by the unit’s maintenance personnel.

Your combination gas heating/cooling unit is designed to provide comfort all year long with safe, efficient, trouble-free operation. It is important that you understand how to operate and maintain your unit to keep it operating safely and efficiently. This manual will acquaint you with these important procedures.

Model Number Description

All products are identified by a multiple-character model number that precisely identifies a particular type of unit. Its use will enable the owner/operator, installing contractors, and service engineers to define the operation, specific components, and other options for any specific unit.

When ordering replacement parts or requesting service, be sure to refer to the specific model number and serial number printed on the unit nameplate.

Inspection

- Unpack all components of the kit.
- Check carefully for any shipping damage. If any damage is found it must be reported immediately and a claim made against the transportation company.
- Visually inspect the components for shipping damage as soon as possible after delivery, before it is stored. Concealed damage must be reported within 15 days.
- If concealed damage is discovered, stop unpacking the shipment.
- Do not remove damaged material from the receiving location. Take photos of the damage, if possible. The owner must provide reasonable evidence that the damage did not occur after delivery.
- Notify the carrier’s terminal of damage immediately by phone and by mail. Request an immediate joint inspection of the damage by the carrier and the consignee.

**Important:** Do not attempt to repair any damaged parts until the parts are inspected by the carrier’s representative.

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**Note:** It may be necessary to replace permanent filters annually if washing fails to clean the filter, or if the filter shows signs of deterioration. Be sure to use the same type and size as was originally installed.

Table 1. Recommended filter size

Model <sup>(a)</sup>	Qty	Filter Size (L x W x D)
YS*150	2	20 x 20 x 2
	4	20 x 25 x 2
YSD155, 180, 175, 210/211, 240, 250, 300/301 YHD150 WSD150,180	4	20 x 20 x 2
	4	20 x 25 x 2
YSH155, 180, 175, 210/211, 240, 250, 300/301 YHH150 WSH150,180	8	20 x 25 x 2
	8	20 x 20 x 2
YHD180, 210, 240, 300 WSD240 YZD150, 180, 210	4	16 x 20 x 2
	12	20 x 20 x 2
YHH180, 210, 240,300 WSH240 YZH150, 180, 210	12	20 x 20 x 2
YC*330-420	16	16 x 20 x 2 <sup>(b)</sup>
YC*480-600	17	16 x 20 x 2 <sup>(b)</sup>

(a) \* = Applies to both downflow and horizontal.  
(b) 4" Filters are optional. Replace with same size as originally supplied.

Heating System

Heating Cycle Operation

A normal heating cycle begins when the air temperature in your home drops below the selected setting. The control then energizes the heating electrical circuit that starts and controls the main burners. Shortly after the main burners ignite, the indoor fan starts and circulates warm air through your home, or building.

When the air temperature rises to the selected setting, the control de-energizes the heating electrical circuit which, in turn, extinguishes the main burners. The indoor fan continues to circulate warm air until most of the heat is removed from the unit’s combustion chamber.

Safety Controls

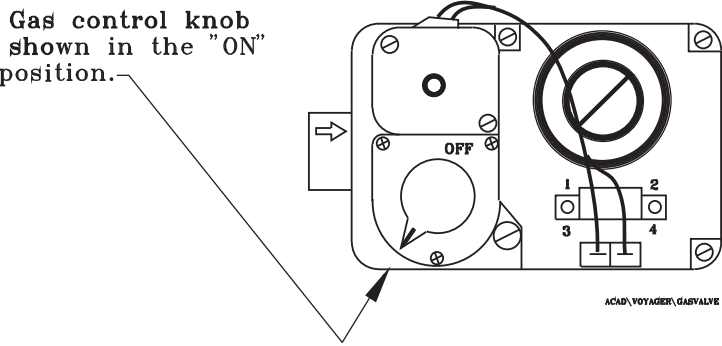
Your unit is equipped with automatic reset safety limit controls to prevent overheating. When one of these controls open, it shuts down the heating electrical circuit until it cools down sufficiently. Inadequate airflow (i.e., caused by dirty air filters or a defective fan motor) may cause the unit to cycle on and off as the limit controls trip and automatically reset. If you suspect that the unit is cycling on its limit controls, immediately contact a serviceman for instructions.

Operating Instructions

- 1. Set the temperature control to lowest setting.
- 2. Turn off all electric power to the appliance.
- 3. This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.

**Note:** Depending on heater size, the gas valve control will be a knob, as shown in [Figure 1](#), or a toggle switch.

Figure 1. Gas valve control knob (toggle switch used in some heater sizes)



4. Remove the access panel that has the following label:

REMOVE THIS PANEL  
TO GAIN ACCESS  
TO THE GAS VALVE

5. Turn the gas control knob clockwise or flip the toggle switch to the “OFF” position.

**Note:** Some valves require the knob to be pushed in slightly before turning. Do not force.

WARNING

**Risk of Fire or Explosion!**  
Use only your hand to push in or turn the gas control knob. Never use tools. If the knob does not push in or turn by hand, don’t try to repair it; call a qualified service technician. Failure to follow instructions could result in death or serious injury.

- 6. Wait five (5) minutes to clear out any gas. If you then smell gas, STOP! Follow “[What To Do If You Smell Gas](#)” in the safety information above in this manual. If you don’t smell gas, go to the next step.
  - 7. Turn gas control knob counter-clockwise or flip the toggle switch to “ON.”
  - 8. Replace panel removed in [Step 4](#).
  - 9. Turn on all electric power to the appliance.
  - 10. Set the temperature control to desired setting.
- Note:** If the unit is equipped with modulating gas heat, the discharge air setpoint will also need to be set before the initial setup is complete.
- 11. If the appliance does not operate, follow instructions in “To Turn Off Gas To The Appliance” below and call your service technician or gas supplier.

To Turn Off Gas To The Appliance

- 1. Set the temperature control to lowest setting.
- 2. Turn off all electric power to the appliance if service is to be performed.
- 3. Remove the access panel that has the following label:

REMOVE THIS PANEL  
TO GAIN ACCESS  
TO THE GAS VALVE

4. Turn the gas control knob clockwise or flip the toggle switch to the “OFF” position.

**Note:** Some valves require the knob to be pushed in slightly before turning. Do not force.

5. Replace panel removed in [Step 3](#).



Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Club Car®, Ingersoll Rand®, Thermo King® and Trane®—work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a global business committed to a world of sustainable progress and enduring results.

