User Guide

Packaged Rooftop Air Conditioners

Foundation® - Gas/Electric

3 to 5 Tons - 60 Hz

Model Number: GDK036-060

⚠ 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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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 practices.
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.

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/national electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labeling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

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⚠ WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

⚠ WARNING

R-454B Flammable A2L Refrigerant!

Failure to use proper equipment or components as described below could result in equipment failure, and possibly fire, which could result in death, serious injury, or equipment damage.
The equipment described in this manual uses R-454B refrigerant which is flammable (A2L). Use ONLY R-454B rated service equipment and components. For specific handling concerns with R-454B, contact your local representative.

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General Information

Important: *Maintenance work must be performed by a qualified service technician with extensive experience servicing this type of equipment.*

⚠ WARNING

Hazard of Explosion or Fire!

Failure to follow instructions could result in death or serious injury and equipment or property damage.
Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
IF YOU SMELL GAS, follow instructions below:

- **Do not try to light any appliance.**
- **Do not touch any electrical switch.**
- **Do not use any phone in your building.**
- **Open windows and doors.**
- **Alert others and evacuate building immediately.**
- **From a phone outside of the building, immediately call your gas supplier. Follow the gas supplier's instructions. If you can not reach your gas supplier, call the fire department.**

⚠ WARNING

Safety Hazards!

Failure to follow instructions below could result in death or serious injury and equipment or property damage.

- **Do not use this furnace if any portion has been under water as it may have rendered the unit hazardous to operate. Immediately call a qualified service technician to inspect the furnace and to replace any part or the control system and any gas control which has been under water.**
- **Should overheating occur, or the unit gas valve fail to shut off, close the gas valve to the furnace before shutting off the electrical supply.**

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⚠ WARNING

Safety Hazards!

Failure to follow instructions could result in death or serious injury.

- **Never perform any maintenance procedures until the electrical power to the unit is turned off.**
- **Never perform any maintenance procedures until the gas valve is the gas supply is turned off.**
- **Never remove any panels from the unit while it is operating.**
- **Never remove panels or parts from the unit that are not discussed in this manual.**
- **Never cover the unit since it is designed to operate year round.**

Thermostat

Room thermostats energize and de-energize the heating or cooling circuit to maintain the temperature setting.

- Thermostats contain a room thermometer to indicate approximate room temperature and a temperature scale at the adjustment indicator to select the desired indoor air temperature.
- Most thermostats have a selector mode switch with **Heat**, **Off**, and **Cool** positions, and a fan switch with **On** and **Off** positions.

When the switch is positioned at **Off,** the 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 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 **On**. When set to **Auto** the fan will only operate when required during the heating or cooling cycles.

To operate properly, the thermostat must be level and positioned to avoid external heat sources or heat producing appliances.

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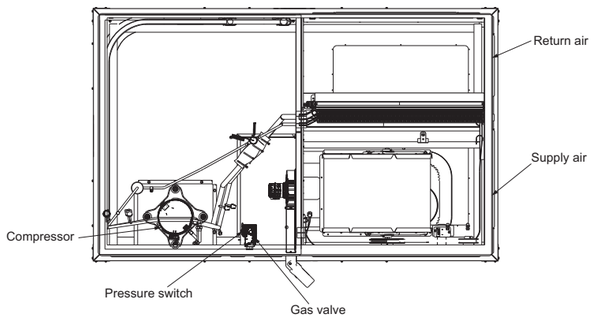
Air Filters

Units ship with factory-installed filters.

Figure 1. Gas unit overview



Keep the central duct system air filters clean and inspect them at least once each month when the system is in constant operation. For new construction, check filters every week for the first four weeks. See Table 1 for the required filter size(s).

Do not clean disposable filters. Replace them with new filters of the same type and size.

Clean permanent filters with water and mild detergent. Confirm filters are completely dry before reinstalling them.

Replace filters annually if washing is not successful. Use the same type as size as originally installed.

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Table 1. Recommended standard filters

	Filter Size	
Unit Model Number	**Inches**	**Millimeters**
GDK036-060	(4) 16x16x2	(4) 400x400x50

Heating Operation

Direct Spark Ignition (DSI)

- The heating system has a solid-state electronic ignition control that lights the furnace burners when the thermostat calls for heat.
- At the end of the heating cycle, the furnace burners are extinguished.

When the air temperature drops below the thermostat setting, a normal heating cycle begins. The thermostat energizes the heating electrical circuit that starts and controls the furnace burners. After the burners ignite, the indoor fan starts and circulates warm air through the conditioned space.

When the air temperature rises to the thermostat setting, the thermostat de-energizes the heating electrical circuit and extinguishes the burners. The indoor fan continues to circulate warm air until most of the heat is removed from the units combustion chamber.

Safety Controls

- The unit is equipped with an automatic reset safety limit control to prevent overheating. When this control opens, it shuts down the heating electrical circuit until the unit cools down sufficiently. Inadequate airflow may cause the unit to cycle on and off as the limit trips and automatically resets.
- If flames from the burner are not properly drawn into the heat exchanger, a flame rollout protection control will open and the furnace will shut-off.

Heating System Start-Up

In order for the unit to operate properly and safely, the furnace needs air for combustion and ventilation. Confirm all air openings are unobstructed and there is adequate clearance around the unit to provide good airflow.

⚠ WARNING

Hazardous Voltage w/ Capacitors!
Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.
Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/ tagout procedures to ensure the power cannot be inadvertently energized. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

1. Set the thermostats heating adjustment lever at its lowest setting.
2. Move the selector switch to the **Off** position.
3. Turn off all electric power to the unit.

⚠ WARNING

Risk of Burn!
Failure to follow instructions could result in serious injury.
NEVER attempt to manually light the burner.

4. This unit is equipped with an ignition device which automatically lights the burners.
5. Remove the access panel that contains the following label:

Figure 2. Label

REMOVE THIS PANEL
TO GAIN ACCESS TO
THE GAS VALVE

6. Change the **ON/OFF** switch to the **OFF** position.

Note: *Some valves require the knob to be pushed in slightly before turning.*

7. Wait five minutes to clear out any gas. If you smell gas, **STOP!** Refer to the warnings provided in the "General Information" section. If you do not smell gas, go to the next step.
8. Change the **ON/OFF** switch to the **ON** position.
9. Replace panel removed in Step 8 above.
10. Turn on all electric power to unit.
11. Set thermostat to desired temperature and move the selector switch to the **ON** position. The unit will now operate automatically.
12. If the unit will not operate, follow instructions to Turn Off Gas to Unit and call the service technician or gas supplier.

Important: *Refer to the unit nameplate for recommended air rise.*

Heating System Shutdown

To shutdown the heating system for brief periods of time, adjust the thermostat selector switch **OFF**.

NOTICE

Property Damage!
Furnace failure could cause property damage, such as frozen water pipes.
If the unit is shut down during the cold weather months, provisions must be taken to prevent freeze-up of all water pipes and water receptacles. Whenever your house or building is to be vacant, arrange to have someone inspect your structure for proper temperature. This is very important in below-freezing weather.

How to Turn Off Gas to Unit

1. Set the thermostat to the lowest setting.

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Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/ tagout procedures to ensure the power cannot be inadvertently energized. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

2. When servicing the unit, turn off all electric power.
3. Remove the access panel that contains the label shown in Figure 2.
4. Change **ON/OFF** switch to the **OFF** position.
5. Replace panel removed in Step 4 above.

Heating System Maintenance

Complete the following unit inspections and service routines at the beginning of each heating season.

Refer to the warnings in "General Information" regarding combustible materials and what to do if you smell gas.

Important: *These steps should only be performed by a qualified service technician.*

1. Inspect the control panel wiring, wiring insulation, and heating controls. Confirm connections are secure.
2. Turn the unit on and off at the thermostat. Confirm the ignition control and spark electrode operate properly.
3. Turn off the gas supply with the unit operating and verify the gas valves closes and a re-ignition cycle is initiated by the ignition control.
4. Check the operation of the gas ignition system.
5. Check the burner manifold pressure. A 1/8-inch pipe plug is provided in the gas valve for this purpose.
6. Visually inspect all of the units flue product passage ways for excessive deposit build up and corrosion. If build up or corrosion is apparent, perform the necessary repairs.
7. A service tech should inspect the unit every other heating season.
8. Visually confirm the main burner flames are bright blue and extend into the heat exchanger sections.
9. Never store anything flammable or combustible around or near the unit.

Condensate Overflow Sensor (Optional)

If installed, the condensate overflow switch will shutdown the unit before a drain pan overflow occurs.

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