

# USER'S INFORMATION MANUAL

## MODELS: All Residential Multi-position Gas Furnaces (33" Models)



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### CONTACT INFORMATION

- Go to website at [www.york.com](http://www.york.com), then click on "Contact Us" and follow the instructions.
- Contact us by mail:

Johnson Controls Unitary Products  
Consumer Relations  
5005 York Drive  
Norman, OK 73069

We recommend that the user read all sections of this manual and keep the manual for future reference.

### ⚠ WARNING

Cancer and Reproductive Harm – [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### ⚠ 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 (including cell 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.

### SAFETY

 This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Understand and pay particular attention to the signal words **DANGER**, **WARNING**, or **CAUTION**.

**DANGER** indicates an **imminently** hazardous situation, which, if not avoided, **will result in death or serious injury**.

**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 **may result in minor or moderate injury**. It is also used to alert against unsafe practices and hazards involving only property damage.

### ⚠ WARNING

#### **FIRE OR EXPLOSION HAZARD**

*This furnace is designed and approved for use with Natural Gas and (LP) Propane Gas ONLY. DO NOT BURN ANY LIQUID FUEL OR SOLID FUEL IN THIS FURNACE.*

*Burning any unapproved fuel will result in damage to the furnace heat exchanger, which could result in Fire, Personal Injury, and/or Property Damage.*

1. The furnace area must be kept clear and free of combustible materials, gasoline and other flammable vapors and liquids.
2. Insulating materials may be combustible. The furnace must be kept free and clear of insulating materials. The furnace area must be examined when installed in an attic or other insulated space or when insulation is added to be sure that the insulation material has been kept away from the furnace.

The following warning applies to horizontally vented furnaces only.

### ⚠ WARNING

#### **CARBON-MONOXIDE POISONING HAZARD**

*Failure to follow instructions could result in severe personal injury or death due to carbon-monoxide poisoning, if combustion products infiltrate into the building.*

*Check that all openings in the outside wall around the vent (and air intake) pipe(s) are sealed to prevent infiltration of combustion products into the building.*

*Check that furnace vent (and air intake) terminal(s) are not obstructed in any way during all seasons.*

3. The furnace needs air for combustion in order to operate properly and safely. Do not block or obstruct air openings on the furnace, air openings to the area where the furnace is installed, or spaces around the furnace.
4. Follow the instructions exactly as shown on the OPERATING INSTRUCTION LABEL on the furnace or the "START-UP AND SHUTDOWN INSTRUCTIONS" section of this manual when lighting the furnace or turning the furnace off.

- Should the gas supply fail to shut off or if overheating occurs, shut off the gas valve to the furnace before shutting off the electrical supply.
- Do not use this furnace if any part has been under water. A flood-damaged furnace is extremely dangerous. Attempts to use the furnace can result in fire or explosion. A qualified service agency should be contacted to inspect the furnace and replace all gas controls, control system parts, electrical parts that have been wet or the furnace if deemed necessary.
- NEVER . . . Store flammable materials of any kind near your furnace. Gasoline, solvents, and other volatile liquids should be stored only in approved containers outside your home. These materials vaporize easily and are extremely dangerous.

- NEVER . . . Store cleaning materials near your furnace. Materials such as bleaches, detergents, powdered cleansers, etc., can cause corrosion of the heat exchangers.
- NEVER . . . Use the area around your furnace as a storage area for items which could block the normal flow of air. This flow of air is required for ventilation of the various furnace components.

## INSTRUCTIONS FOR EXAMINING THE FURNACE INSTALLATION

It is the owner's responsibility to ensure that an annual inspection of the entire heating portion of the unit is made by a qualified service agency. Examine the furnace as outlined below in steps "1 - 8" before each heating season. Use Figures 1 - 4 for visual reference.

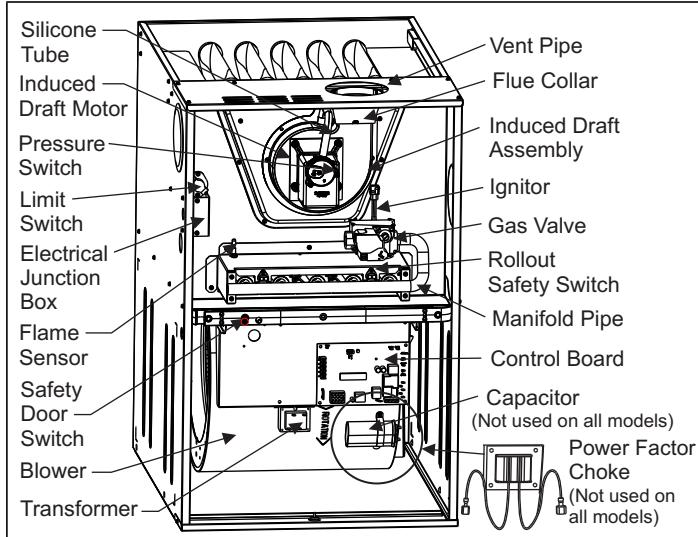


FIGURE 1: Component Location - 80% Single & Two Stage Models

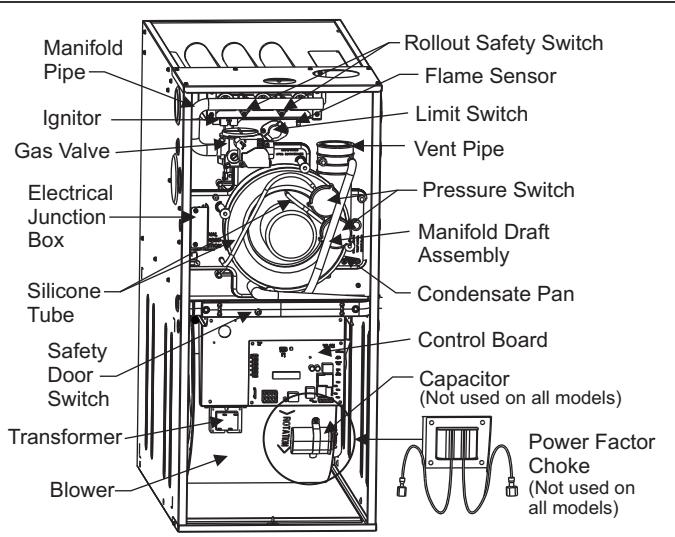


FIGURE 2: Component Location - 95% Single & 96% Two Stage Models

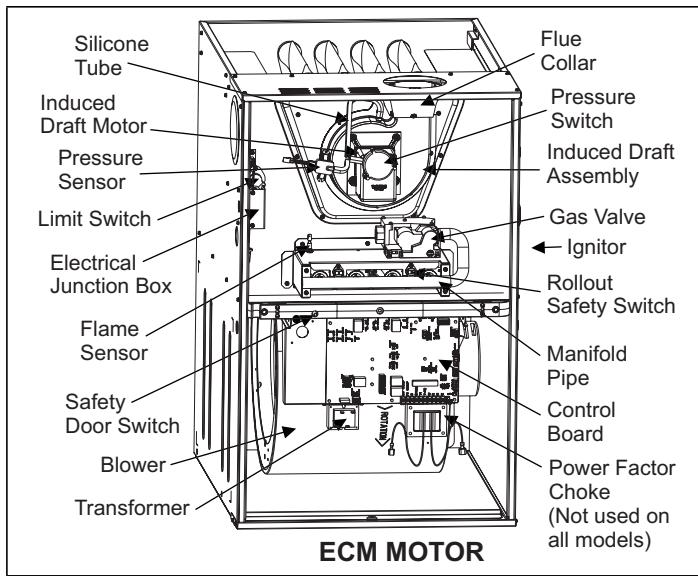


FIGURE 3: Component Location - 80% Modulating ECM Models

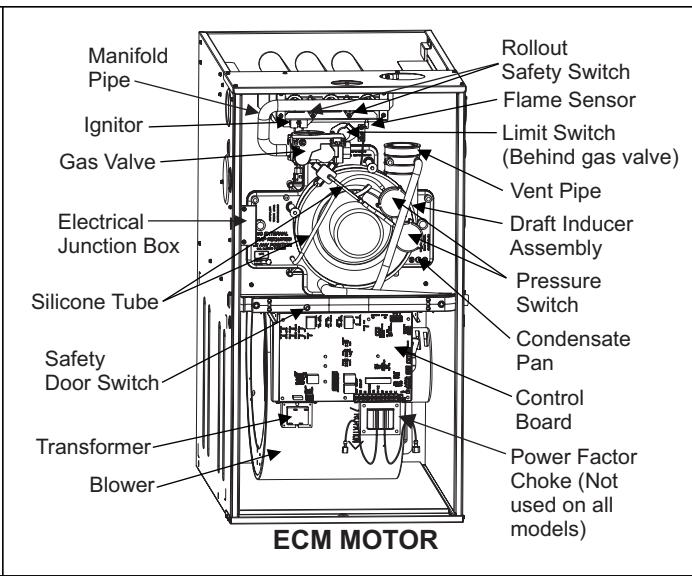
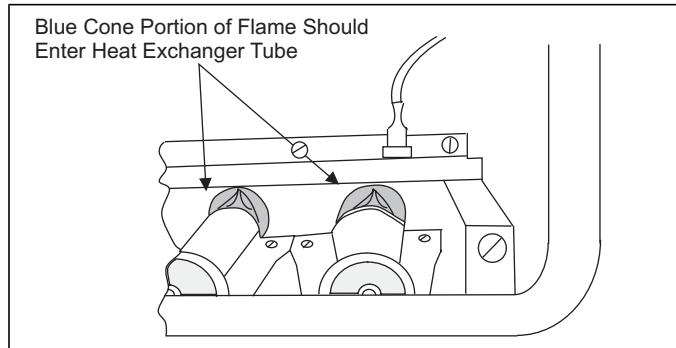


FIGURE 4: Component Location - 97% Modulating ECM Models

1. Examine the heat exchanger, vent pipe, combustion air passages, vent connectors and chimney to be sure they are clear and free of obstructions.
2. Examine the vent pipe making sure it is firmly in place, that it slopes slightly upward and is physically sound without holes and all of the connections are secure.
3. Examine the return-air duct connections to make sure they are physically sound, sealed to the furnace casing, and the ducts terminate outside the space containing the furnace.
4. Examine the furnace casing making sure the physical support is sound without sagging, cracks or gaps. Examine the furnace base making sure it is physically sound without cracks, gaps or sagging and has a good seal.
5. Examine the furnace casing for obvious signs of deterioration.
6. Examine the burner flames to make sure they are in good adjustment. Refer to the pictorial sketch shown in Figure 5 as a comparison to the actual flame.



**FIGURE 5: Burner Flame Drawing (Upflow Configuration Shown)**

7. Examine and replace external air filters as needed to make sure they are not blocked, and proper airflow is provided to the furnace.
8. Examine any installed accessories or system components such as evaporator coils to insure proper operation, drainage of condensate, and that there is no water leakage or damage to the furnace or any components.

## START-UP AND SHUTDOWN INSTRUCTIONS

**Read the Instructions Below Before Trying to Start the Furnace!**

### ⚠ WARNING

*If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury, and/or loss of life.*

#### HOW YOUR GAS FURNACE WORKS

Your furnace is a very easy appliance to take for granted. Season after season, it sits there in your home, keeping you warm and comfortable. For this reason, you may never have given much thought to the way your furnace operates. In order to get the safest and most efficient operation from your furnace, you should understand how your furnace does its job.

When you set your thermostat to provide more heat in your home, you are starting the heating cycle of the furnace. First, the inducer motor starts to purge the heat exchanger of any remaining gases. Next, the hot surface ignitor glows and after a warm-up period the gas valve opens and ignition occurs. A short time later, the blower starts and distributes the warm air throughout the home. When the temperature setting on your thermostat is reached, the gas valve closes, the main burners are turned off, and the blower continues to run until the remaining warm air in the system is distributed. When the blower stops, the heating cycle has ended.

1. This appliance does not have a pilot. It is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
2. BEFORE OPERATING; smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.
3. Use only your hand to push the gas control switch to the ON position. Never use tools. If the switch will not operate by hand, don't try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.
4. 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.

## OPERATING INSTRUCTIONS

1. STOP! Read the safety information above for your protection.
2. Set the thermostat to the lowest setting in the heat mode.
3. Turn off all electric power to the appliance.
4. Remove furnace burner access panel/door.
5. Move gas control switch to the OFF position. Do not force. See Figures 7-9.
6. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Follow "B" in the safety information above. If you don't smell gas, go to next step.
7. Move gas control switch to the ON position. Do not force. See Figures 7-9.
8. Replace furnace burner access panel/door.
9. Turn on all electric power to the appliance.
10. Set thermostat to the desired setting. Burner will light, which may take 30-60 seconds.
11. After three (3) trials for ignition, if the appliance will not operate follow the instructions, "TO TURN OFF THE APPLIANCE" and call your service technician or gas supplier.

## TO TURN OFF THE APPLIANCE

1. Set the thermostat to lowest setting in heating mode.
2. Turn off all electric power to the appliance if service is to be performed.
3. Remove furnace burner access panel/door.
4. Move gas control switch to the "OFF" position. See Figures 7-9.
5. Replace furnace burner access panel/door.

**WARNING**

Should overheating occur, or the gas valve fail to shut off, turn the external manual gas valve in the gas supply line to the furnace to the "off" position and let the furnace cool off before shutting off the electrical power supply.

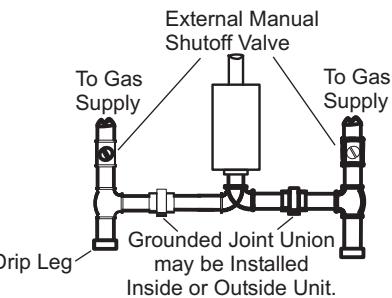


FIGURE 6: Gas Piping

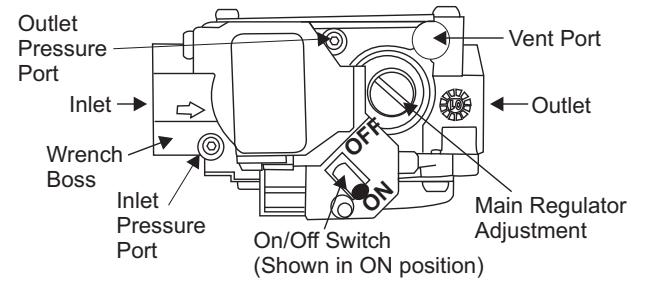


FIGURE 7: Single Stage Gas Valve

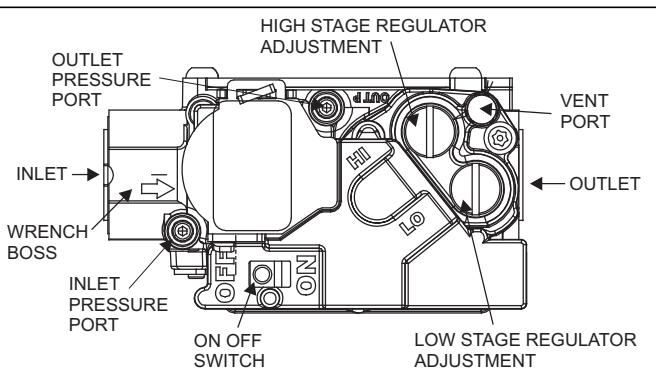


FIGURE 8: Two-Stage Gas Valve

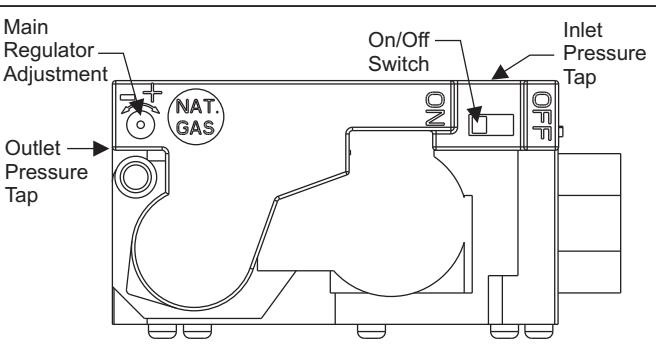


FIGURE 9: Modulating Gas Valve

## FURNACE MAINTENANCE - USER INFORMATION

### ⚠ WARNING

*Before proceeding, be sure the area is well ventilated. Turn the thermostat OFF. If the blower is running, wait until it stops automatically. Turn OFF the gas and electrical power supplies to the furnace. Check all metal parts and surfaces to be sure they have cooled to room temperature before you begin.*

#### EXTERNAL AIR FILTERS

Filters used with this furnace must be installed external to the furnace casing. DO NOT attempt to install filters inside the furnace cabinet.

Some installations may have the air filter in a rack attached to the casing of the furnace or placed in the return air duct. If the filter location or replacement process is not obvious, contact your installer or service technician for assistance.

Every time the external air filters are changed the following items should be visually inspected:

- Check combustion air and vent pipe for blockage or leakage.
- Check all components to be sure they are in good condition and that there are no obvious signs of deterioration.
- Check the drain lines to make sure there are no cracks or leaks.
- Check for dirt or lint on any surfaces or on components. Do not try to clean any of the surfaces or components. Cleaning of the furnace and its components must be done by a qualified service professional.

If during the inspection of your furnace, you find any of the following conditions:

- Excessive amounts of dust and lint on components.
- Damaged or deteriorated components or surfaces.
- Leaks or blockage in the vent pipe passages.
- Water on any surface inside or outside of the furnace.

Do not operate the furnace, call a certified dealer or servicing contractor to check or clean your furnace, or for more information if you have questions about the operation of your furnace.

If all components appear to be in good operating condition, replace the furnace access panels/doors. Turn ON the gas and electrical power supplies to the furnace, and set thermostat to the desired temperature.

#### How to Clean your Filter

High-velocity filters may be cleaned with a vacuum cleaner or washed with a garden hose. Be sure to shake off excess water and allow filter to completely dry before re-installing the filter.

Replace throw away filter(s) with the same size new filter(s). Throw away filter(s) may be replaced with cleanable filter(s) at this time.

#### BLOWER CARE

Even with good filters properly in place, blower wheels and motors will become dust laden after months of operation. The entire blower assembly should be inspected annually. This service must be performed by a qualified service agency.

**NOTE:** The spring-loaded safety cut-off switch, mounted at the blower deck will automatically cut off the electrical power supply to the furnace when the furnace blower access panel/door is removed. As a safety precaution, all electrical power and the gas supply to the furnace should be turned off before servicing.

### ⚠ WARNING

*Make sure you DO NOT move the clip on weight on the indoor fan wheel when cleaning the wheel. This weight is used to balance the wheel. Moving the weight will cause the fan wheel to vibrate.*

#### MOTOR LUBRICATION

The motors in these furnaces are permanently lubricated, and do not require periodic oiling.

## SERVICE INFORMATION

### TROUBLESHOOTING PROBLEMS

If your furnace is not operating correctly, the following visual checks should be made before contacting your local contractor, dealer, or service provider.

1. Check that electrical power to the furnace is turned on.
2. Check that the manual gas shut-off valve in the gas piping supply is turned to the ON position. Refer to Figure 6.
3. Check that the ON/OFF switch on the gas valve is turned to the ON position. Refer to Figures 7, 8 or 9.
4. Check that the furnace blower access panel/door is correctly positioned. The electrical power supply will be cut off if this door is removed.

### FURNACE CONTROL DIAGNOSTICS

The furnace has built-in, self-diagnostic capability. If a system problem occurs, a blinking LED shows a fault code. The LED can flash red, green or amber to indicate various conditions. It is located behind a clear view port in the blower compartment door.

The control continuously monitors its own operation and the operation of the system. If a failure occurs, the LED will indicate the failure code. If the failure is internal to the control, the light will stay on continuously. In this case, the entire control should be replaced, as the control is not field repairable.

Flash sequence codes 1 through 10 are as follows: LED will turn ON for 1/4 second and OFF for 1/4 second. This pattern will be repeated the number of times equal to the code. For example, six ON flashes equals a number 6 fault code. All flash code sequences are broken by a 2 second OFF period.

**SLOW GREEN FLASH:** Normal operation.

**DOUBLE AMBER FLASH:** Normal heating operation - Modulating Furnace Models Only

**SLOW AMBER FLASH:** Normal operation with call for heat.

**RAPID RED FLASHES:** There is a problem with the operation of this furnace. Contact your local dealer, contractor or service provider.

### FURNACE MAINTENANCE - DEALER/CONTRACTOR

The furnace should be cleaned and adjusted by a certified dealer or qualified service contractor once a year or before the start of every heating season. The following items must be cleaned and serviced or replaced if there are signs of deterioration.

1. The vent terminal.
2. The furnace vent and combustion air intake passageways. Should it be necessary to service the vent/air intake system, the manufacturer recommends this service be conducted by a qualified service agency. The operation of this appliance requires the reassembly and resealing of the vent/air intake system.
3. The furnace burners, ignitor and flame sensor.
4. The condensate collection and disposal system. If any disassembly of components containing flue or vent gases is required, a qualified service agency must perform the service.
5. Heat exchanger assembly.
6. Induced draft motor assembly.

### REPLACEMENT PARTS LIST

All components, assemblies, accessories, and replacement parts for this furnace are available through qualified service agencies. It is not recommended that the user purchase, install, or replace any components of this furnace. Contact your local contractor, dealer, or service provider for additional information.

### WIRING DIAGRAM

The unit wiring diagram may be found on the inside of one of the access panels on the furnace. It is intended for reference only. If service is required, contact your local contractor, dealer, or service provider.