

# Heat Exchanger Cell Replacement Kit

Cancels: 40394DP111-A

IJK 394G-55-1  
12-98

## Installation Instructions Part No. 79988

**NOTE:** Read the entire instruction manual before starting the installation.

This symbol → indicates a change since the last issue.

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### INTRODUCTION

This instruction covers the installation of the heat exchanger cell kit Part No. 79988 in models 394GAD, 394GAZ, 394JAZ, 396GAD, 396GAZ, 396JAZ, 58DP, 58DR, 58DRC, 58GP, 58GS, and 58GSC Gas Furnaces.

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**NOTE:** A releasing agent (PAM cooking spray or equivalent, must not contain corn or canola oil, aromatic or halogenated hydrocarbons or inadequate seal may occur.) and RTV sealant (G.E. 162 or Dow-Corning 738) are needed before starting installation. DO NOT substitute any other type of RTV sealant.

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### SAFETY CONSIDERATIONS

Installing and servicing heating equipment can be hazardous due to gas and electrical components. Only trained personnel should install or service heating equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils, or cleaning and replacing filters. All other operations should be performed by trained service personnel. When working on heating equipment, observe precautions in the literature, on tags, and on labels attached to the unit.

Recognize safety information. This is the safety-alert symbol . When you see this symbol on the furnace and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies a hazard which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **would** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

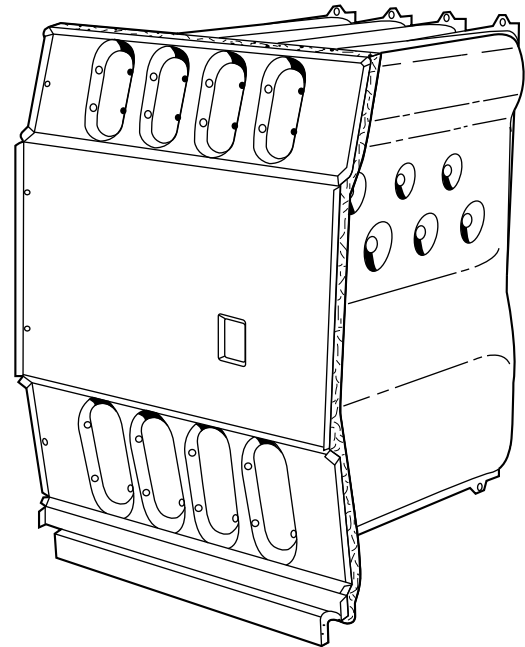
Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available.

### DESCRIPTION AND USAGE

The heat exchanger cell replacement kit can be utilized to restore units having heat exchanger cells that require repair. The cell kit is designed for use in gas furnaces as well as packaged units using the cell design shown in Fig. 1.

This heat exchanger cell replacement kit contains the following items:

|                           |   |
|---------------------------|---|
| Cell assembly             | 1 |
| Gasket (burner opening)   | 1 |
| (vent opening)            | 1 |
| Screw                     | 8 |
| Installation Instructions | 1 |



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Fig. 1—Replacement Cell

### INSTALLATION IN UPFLOW AND DOWNFLOW FURNACES

#### Step 1—Remove Controls and Burners

1. Turn off gas and electrical supplies to furnace.
2. Remove furnace control and blower access doors.
3. Disconnect gas supply pipe.
4. Disconnect pilot gas supply and thermocouple (when used) from gas valve.
5. Disconnect and mark electrical leads at gas valve.
6. Remove secondary-air shield.
7. Remove main burners.
8. Remove gas valve and manifold assembly.
9. Disconnect leads from main limit switch.

#### Step 2—Remove Casing Parts and Vent Pipe

1. Disconnect and support vent pipe. (Remove vent pipe extension from downflow furnaces.)
1. Remove top filler plate (upflow only).
1. Remove drafthood assembly.
1. Remove sweep sheet.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

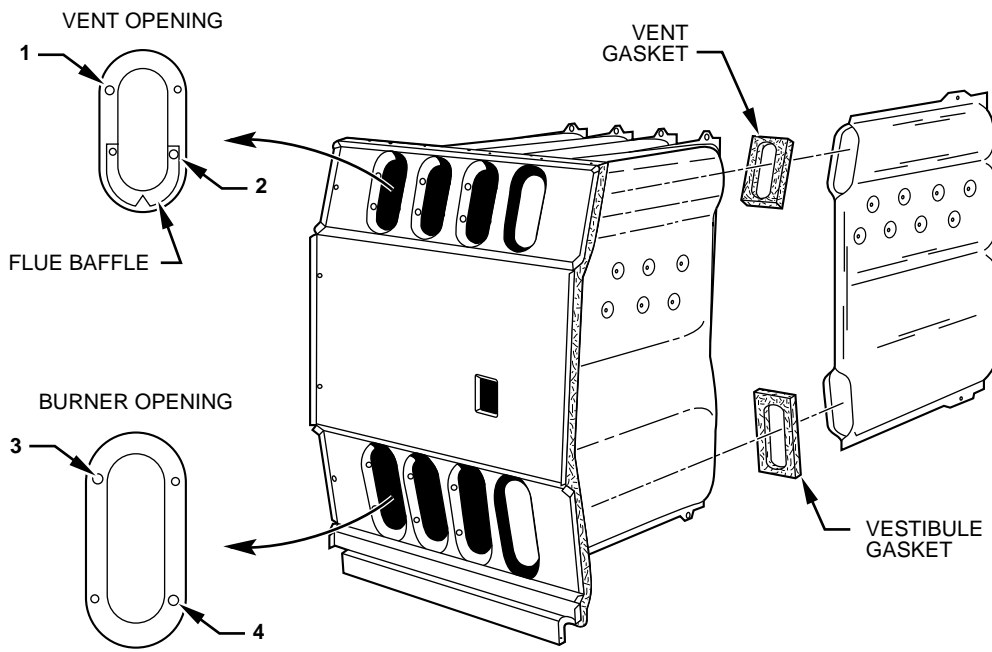


Fig. 2

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### Step 3—Remove Heat Exchanger Assembly

1. Remove screws securing inner front panel to casing sides and blower deck.

**NOTE:** Be careful not to damage insulation on inner front panel.

2. Remove heat exchanger assembly through front of furnace. Some models may require spreading of casing sides slightly for clearance.
3. Remove old sealant from furnace and inner front panel where used.

### Step 4—Install Replacement Cell(s)

With heat exchanger assembly removed from the furnace, carefully examine each cell to determine which cell(s) need replacing.

4. Place heat exchanger on a flat surface with inner front panel facing upward.
5. Remove flue baffle (when used) from vent opening.
6. Remove screws from cell opening of cell(s) being replaced. Remove and replace 1 cell at a time.
7. Using care not to damage insulation, remove cell.
8. Remove baffle from top of cell (downflow only) and install on new cell.
9. Properly position gaskets over cell openings (foil side toward cell). Use masking tape to hold in place until cell is secure to inner front panel.
10. Refer to Fig. 2 and start screws 1, 3, and 4. Do NOT tighten screws.
11. Install flue baffle before starting screw No. 2.
12. Check position of gaskets and inner front insulation. When properly positioned, start remaining screws.
13. With all screws started, remove masking tape and drive all screws in rest of way. Maintain 3-1/2 in. centers as shown in Fig. 3 to assure proper cell alignment.
14. Repeat Step 4 items 2 through 10, for additional cells being replaced.

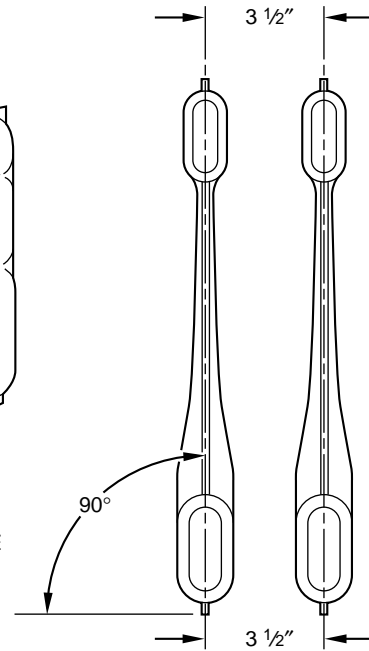


Fig. 3

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### Step 5—Reinstall Heat Exchanger Assembly

**NOTE:** Check insulation around top, bottom, and sides of the inner front panel. Insulation must overlap enough to provide a good air seal when heat exchanger assembly is installed.

1. Slide heat exchanger assembly into furnace casing.
2. Using an awl, align holes and start 1 screw in each corner. Ensure insulation stays in place to provide necessary air seal.
3. Push bottom of inner front panel in, drive screws in bottom of inner front panel first, then drive in remaining screws.
4. Some furnaces have factory-applied sealant across bottom of inner front panel. Reseal this area with RTV sealant G.E. 162 or Dow-Corning 738. DO NOT substitute any other type of RTV sealant.
5. Reinstall casing parts by reversing items 1 through 4 in Step 2.
6. Reinstall burners and controls by reversing items 1 through 9 in Step 1.
7. Proceed to Start-up and Checkout section.

### INSTALLATION IN PACKAGED GAS HEATING/ ELECTRIC COOLING UNITS

This instruction does not illustrate the packaged unit divider panel and heat exchanger cells because they are same as furnace illustrations; therefore, instructions for installation of heat exchanger cells and gaskets are basically the same.

### Step 1—Remove Unit Top

#### ⚠ CAUTION

When removing unit top, use extreme caution to protect air seal between top panel and divider panels that isolate heat exchanger and flue products from the blower and condenser sections. Removal of the unit top must never be attempted by anyone other than qualified technicians.

## **⚠ CAUTION**

Condenser fan and motor are attached to unit top. When removing unit top, use extreme care not to pull fan motor leads loose.

1. Turn off gas and electric supplies to unit.
2. Remove control access panel.
3. Remove vent cap and combustion-air assemblies. Do NOT damage gasket.
4. Remove all screws securing unit top, including screws around 4 sides and those on top that screw into internal divider panels. Save all screws.
5. Tape all side panels at each seam near top of unit to prevent panels from falling when top is removed.
6. Carefully lift top from unit. Do NOT damage seals.
7. Rotate top 90 degrees counterclockwise and set control end of top on ground by unit side that is opposite duct or plenum side. Use insulation between motor leads and top flange unit side panel when needed.

### **Step 2—Remove Controls and Burners**

1. Disconnect main gas supply pipe.
2. Disconnect pilot gas supply tube at gas valve.
3. Disconnect and mark electrical leads from gas valve.
4. Remove secondary-air shield.
5. Remove main burners.
6. Remove manifold and gas valve assembly.

### **Step 3—Remove and Install Cell(s)**

1. Remove screws securing cell to center panel.
2. Using care not to damage insulation, remove cell.
3. Properly position vent and vestibule gaskets over cell openings (foil side of gaskets toward cell). Use masking tape to hold in place until cell is secured to center panel.
4. Insert flue baffles and start screws 1, 2, 3, and 4 as shown in Fig. 2.
5. Check position of gaskets and divider panel insulation. When properly positioned, start remaining screws.
6. With all screws started, remove masking tape and drive all screws in rest of way. Maintain 3-1/2 in. centers to assure proper cell alignment. (See Fig. 3.)

### **Step 4—Reassemble Unit**

1. Reinstall main burners and controls by reversing items 2 through 6 of Step 2 in Packaged Gas Heating/Electric Cooling Unit section.

2. Reconnect main gas supply pipe.
3. Position top cover on unit and align holes. Make sure air seals are properly positioned.
4. Insert all screws in top cover except in control access panel.
5. Reinstall flue shroud, vent screen, and cent cap assembly.

## **START-UP AND CHECKOUT**

This section applies to both furnaces and packaged units.

### **Step 1—Check for Gas Leaks**

## **⚠ WARNING**

Never use a match or other open flame to check for gas leaks. Use a soap-and-water solution. Failure to follow this warning could result in fire, explosion, personal injury, or death.

1. Turn on main gas supply.
2. Check all gas supply connections which were disconnected, and others that may have been loosened while working on unit.
3. Following unit lighting instructions, light pilot if required and set unit in heating operation.
4. Check pilot supply tube for gas leak at gas valve.

### **→ Step 2—Check for Air Leaks**

Thoroughly check for air leaks on completed installation, and seal with RTV sealant G.E. 162 or Dow-Corning 738. DO NOT substitute any other type of RTV sealant.

1. Turn on blower only and block discharge air registers to create a high-static condition.
2. Using a match, check around inner front inlet openings, inducer housing, and along sides and bottom of inner front panel.
3. Turn off blower.
4. Seal any air leaks with silicone.
5. Recheck for air leaks, repeat item 4 if necessary.
6. After completing air leak check, unblock discharge air registers. Operate furnace through 1 complete heating cycle and check for proper operation.
7. Using procedures in unit Installation Instructions, and information on the unit rating plate, verify input rate and temperature rise.
8. Reinstall gas control access door.
9. Set room thermostat to desired temperature.
10. Check unit operation through 1 complete heating cycle.

# SERVICE TRAINING

**Packaged Service Training** programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

A large selection of product, theory, and skills programs is available, using popular video-based formats and materials. All include video and/or slides, plus companion book.

**Classroom Service Training** plus "hands-on" the products in our labs can mean increased confidence that really pays dividends in faster troubleshooting, fewer callbacks. Course descriptions and schedules are in our catalog.

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