

# REPLACEMENT HEAT EXCHANGER 37323713001 INSTALLATION INSTRUCTIONS



FOR MODELS:	
DGAM075BDD	DGAT075BDD
DGAM075BDE	DGAT075BDE
DGAM075BDF	DGAT075BDF
DGAT070BDD	DLAS075BDD
DGAT070BDE	DLAS075BDE
DGAT070BDF	DLAS075BDF

## WARNING

Use of this instruction is intended for qualified individuals experienced in the proper installation and service of manufactured housing heating appliances.

Fire or explosion hazard.

Failure to properly inspect and restore appliance to proper operation may cause property damage, personal injury or loss of life.

## General Information

### A. Before You Start

Once you have read this instruction view the video tape.

1. Thoroughly review this instruction. Contact DGAT Program at: 1-888-665-4640 or on line at dgatprogram@york.com, if you have any questions.
2. Inspect kit contents
  - a. Heat exchanger assembly
  - b. Customer Packet with instructions and labels
  - c. Natural gas orifice bag assembly, LP/Propane gas orifice bag assembly, and hardware bag assembly.
3. Gather test equipment.
  - a. Digital Thermometer
  - b. 5/16" Hex head driver
  - c. Flashlight or droplight
  - d. Inspection mirror
  - e. Phillipshead screwdriver
  - f. Two (2) crescent wrenches
4. Tools needed to install DGAT Program Kit
  - a. 1/2" Wrench
  - b. 7/16" Socket or nut driver
  - c. High temperature RTV Silicone - Source 1 Part Number MA-HTSS-R

### B. To Turn Off Gas to Appliance

These instructions will direct you To Turn Off Gas to Appliance during the inspection. A label with these instructions is located inside the lower door. The instructions are as follows:

1. Set the thermostat to lowest setting.
2. Turn off all power to the appliance.
3. Remove control access panel.
4. Move gas control switch to "OFF" position.

### C. Operating Instructions

These instructions will direct you to follow the Operating Instructions to place the appliance in operation. A label with the Operating Instructions is located inside the lower door. The Operating Instructions are as follows:

1. Set the thermostat 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.
4. Remove control access panel.
5. Move gas control switch to "OFF" position. Do not force.
6. Wait five (5) minutes to clear out any gas. If you smell gas, determine source and repair as necessary.
7. Move gas control to "ON" position. Do not force.

8. Replace control access panel.
9. Turn on all electrical 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, if the appliance will not operate, follow the instructions TO TURN OFF GAS TO APPLIANCE and refer to troubleshooting guide in the Installation Instructions or Owner's Manual.

## D. Product Specifications

Model No.	DGAT070	DGAT075
Input	70,000 Btu/hr	75,000 Btu/hr
Output	57,000 Btu/hr	61,000 Btu/hr
Air Temperature Rise Range	45-75°F	
Maximum Outlet Temperature	165°F	
Maximum External Static Pressure	0.30" wc	

## Part 1: Basic Information

Record the following on the DGAT Program Claim Form. Record information clearly and legibly.

Most of this information should be available before travelling to the job site.

### A. Rating Plate Data

1. Model Number

2. Serial Number

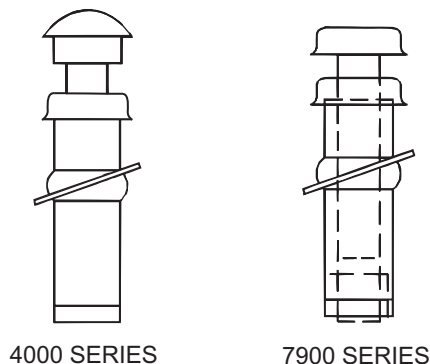
### B. Customer Data

1. Customer name, street address, city, state and zip code.
2. Customer telephone number.

## Part 2: Inspection

### A. Inspect Roof Jack

1. Verify the proper Roof Jack is being used. The DGAT is approved for use with the 4000 Series roof jack only. See Figure 1.



4000 SERIES

7900 SERIES

**FIGURE 1:** Roof Jack

**NOTE:** The 7900 Series Roof Jack can be converted to a 4000 Series Roof Jack by replacing crown. Use p/n 4000-6941/C.

2. Inspect Roof Jack. Replace if damaged, tilted, crooked, or shows deterioration.
3. Remove bird screens or other obstructions to combustion air inlet.

### B. Remove Assembly Burner



**FIGURE 2:** Power Switch

1. Turn power switch to off position. See Figure 2.
2. Follow instructions TO TURN OFF GAS TO APPLIANCE.
3. Disconnect wires to gas valve, igniter, and flame sensor.
4. Turn off gas supply to furnace by closing manual shut-off valve. Disconnect gas supply piping.
5. Remove gas valve. See Figure 3.



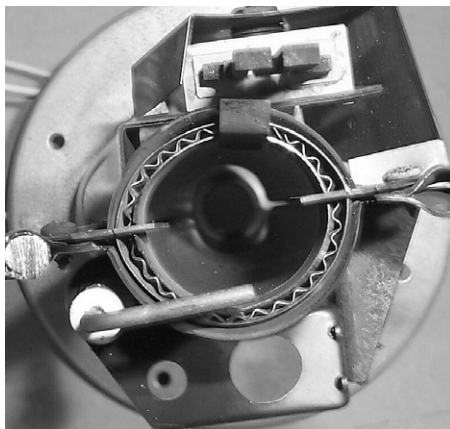
**FIGURE 3:** Gas Valve Removal

6. Remove the burner assembly. See Figure 4.

When burner is removed, check the ribbon porting, located in the end of the burner to insure it is concentric and square. Reference Figure 5. Check the seams between the burner halves to insure that they are completely closed and tight. The flame spreader needs to be checked for proper alignment and to insure that it is not distorted and the burner mounting legs should also be checked for distortion. If any of these items are found to be out of alignment, the burner should be replaced..



**FIGURE 4:** Burner Assembly Removal



**FIGURE 5:** Burner Inspection

### C. Inspect Heat Exchanger

1. Insert inspection mirror through burner opening. Use flashlight or droplight to illuminate surface. Inspect entire interior perimeter of heat exchanger. Note condition per following guidelines.
  - a. Typical Discoloration Pattern
    - i. Surface must be smooth shape with no bumps or indentations.
    - ii. Normal heat pattern may include light to dark gray discoloration. See Figure 6.
    - iii. If visual inspection does not reveal any deformation, crack, or burn through of the heat exchanger surface, then you need to check the entire inside surface of the heat exchanger by feel. If you feel any roughness, deformation, crack or burn through, proceed with replacing the heat exchanger with 37323713001.



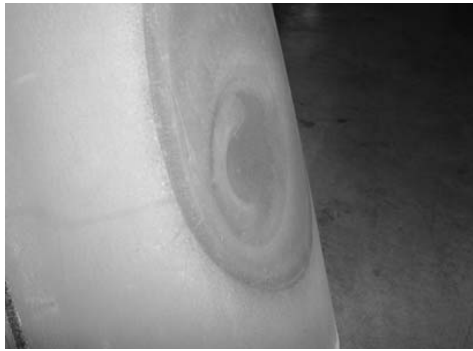
**FIGURE 6:** Typical Discoloration Pattern

- b. Cracked. See Figure 7.



**FIGURE 7:** Cracked Heat Exchanger

- c. Deformed. See Figure 8.

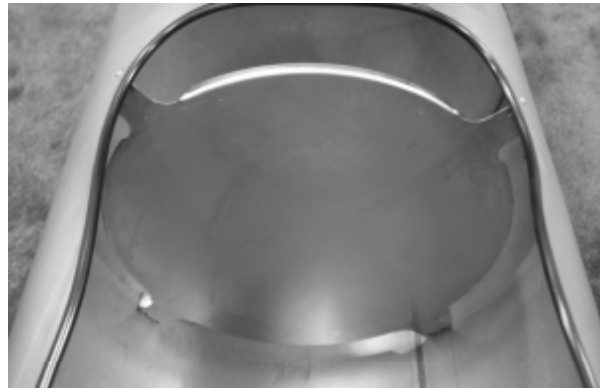


**FIGURE 8:** Deformed Heat Exchanger

d. Burn Through. See Figure 9.



**FIGURE 9:** Burned Through Heat Exchanger



**FIGURE 10:** Overflame Baffle Located in Top of Heat Exchanger Assembly (cut-away view).

2. While you are feeling the inside surface, you should also check the integrity of the rivets that secure the overflame baffle to the heat exchanger drum. You can check the rivets by pushing against each of the four (4) mounting legs. If any of the rivets are missing, the heat exchanger will need to be replaced.

#### D. Corrective Actions

1. Heat Exchanger cracked, deformed or burned through or 1 or more overflame baffle pop rivets are missing. Replace heat exchanger with 37323713001 Replacement Heat Exchanger. Follow instructions in Part 3.
2. If heat exchanger burn through has resulted in damage to the furnace casing insulation and/or a breach in the furnace casing, you will need to contact the DGAT program at: 1-888-665-4640 or on line at [dgat-program@york.com](mailto:dgat-program@york.com) to receive authorization to replace furnace.
3. Heat Exchanger exhibits normal discoloration pattern with no defects.
  - a. Install DGAT Program Kit 37323712001. Follow instructions provided with the kit.

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## Part 3: Replacement Heat Exchanger

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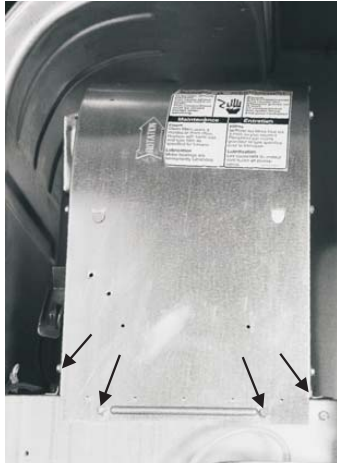
**NOTE:** Note: Early models of the DGAT furnaces were produced with Phillips head screws, while later models were produced with 5/16" hex head screws.

**NOTE:** The auxilliary Limit Switch Assembly is not required with the replacement heat exchanger.

1. Disconnect the thermostat low voltage leads at the furnace connections.
2. Disconnect the two wires from the spade terminals on the combustion air blower. Remove the three mounting screws holding the blower to the combus-

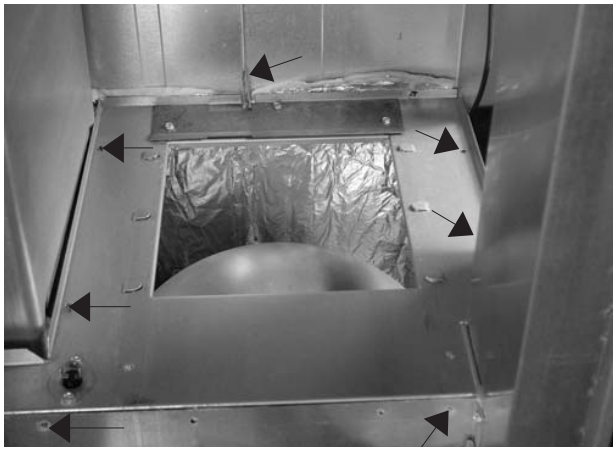
tion air chute and remove the combustion air blower. Note: Some models did not utilize spade connections at the combustion air blower motor. On these units, it will be necessary to disconnect the combustion air blower motor leads from the control board located inside the control compartment.

3. Disconnect the main circulating blower motor leads from the Molex plug connection at the control box. Remove the mounting screws from the blower assembly and remove the blower assembly from the furnace.



**FIGURE 11: Main Circulating Blower**

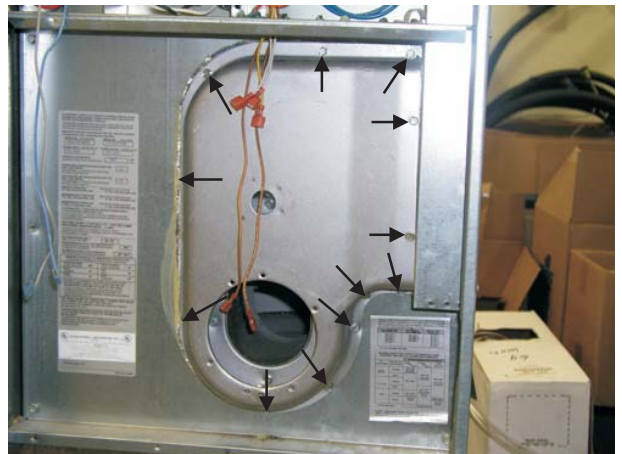
4. Disconnect the two wire leads to the upper limit switch. Remove the seven screws holding the blower shelf to the furnace casing and remove the blower shelf.



**FIGURE 12: Blower Shelf**

5. Remove the five screws holding the coil cavity cover in place and remove the coil cavity cover. If an a-coil is present in the coil cavity, place a 16" x 18" piece of 1/2" plywood on top of the coil and then place 2" x 4"s' as needed against the bottom of the heat exchanger drum to hold the heat exchanger assembly in place. Note that the length of the 2 x 4's will vary depending on the height of the a-coil. (This same procedure will be used when installing the new heat exchanger.) If there is no a-coil in place, you will need to use longer 2 x 4's that can be placed against the side edges of the furnace base up to the bottom of the heat exchanger drum.

6. Remove two screws securing the combustion air pipe to the inlet connection on top of the furnace. Slide the roof-jack assembly up off both the combustion air and flue pipe connections. Remove the three 7/16" nuts used to secure the flue outlet of the heat exchanger to the top of the furnace casing.
7. The divider plate located mid-way in the furnace casing is secured by screws that are driven from outside the furnace casing. If the furnace is installed in a closet or alcove, which limits your access to these screws, you will need to remove them by cutting the screws off, or by using pliers to back the screws out.  
If you can access the screws from outside the cabinet, then you can remove them with a Phillips head screw driver, 5/16" nut driver or open-end wrench. There are also 3 screws located on the bottom side of the divider plate, which will need to be removed if the vestibule panel will not come out of the furnace without removing the divider plate.
8. Remove the 12 screws holding the combustion air inlet pan and remove the pan. Note that on some models there is a sealant caulk used around the inside perimeter of the combustion air inlet assembly. Use caution when removing the assembly so as to minimize damage to the seal. If the seal does become damaged, you can reseal the assembly using a high temperature silicone caulk.



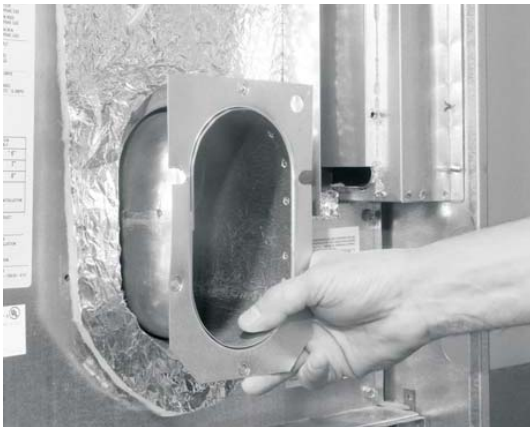
**FIGURE 13: Combustion Air Inlet Pan**

9. Remove the two screws holding the combustion air vane in place and remove the vane.



**FIGURE 14:** Air Vane

10. Remove the four screws holding the burner chute (if used) and remove the burner chute.



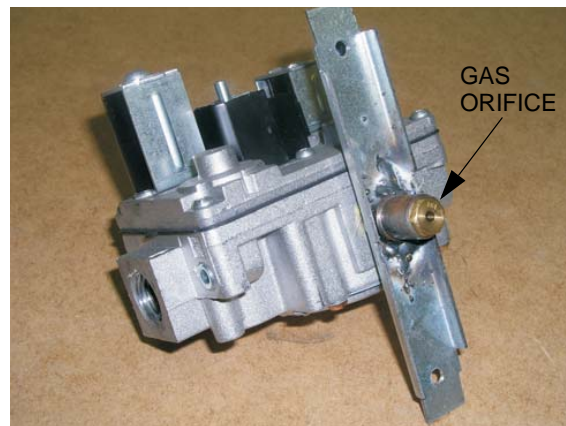
**FIGURE 15:** Burner Chute

11. Remove the two screws holding the burner inlet of the heat exchanger to the vestibule panel.
12. Remove the 12 screws securing the vestibule panel to the furnace casing. Remove the vestibule panel from the furnace. It may be necessary to bow the vestibule panel in order to get it out of the furnace casing.
13. Remove the 2 x 4 blocks holding heat exchanger and allow heat exchanger to rest on plywood. Remove the old heat exchanger assembly from the furnace.
14. Prepare the new heat exchanger for placement into the furnace by placing the new gasket (provided with kit) on the flue collar connection. Have your sheet of plywood and/or 2 x 4's ready to support the new heat

exchanger assembly once it is placed inside the furnace casing.

15. Position the new heat exchanger assembly into the furnace casing, using the 2 x 4's to hold the assembly in position so that you can secure the mounting nuts and screws.
16. Begin securing the new heat exchanger assembly by re-installing the (3) 7/16" nuts to the flue collar connection on top of the furnace.
17. Install new burner opening gasket (provided with kit) to back of the burner opening on the vestibule panel using high temperature silicone. Re-install the vestibule panel back in the furnace casing and secure the panel to the casing before connecting the heat exchanger burner opening to the vestibule panel. Once the panel is secured to the furnace casing, you can then attach the heat exchanger burner opening to the vestibule panel. This will have the heat exchanger assembly secured in the furnace, which will allow you to remove the plywood and the 2 x 4's from the coil cavity area.
18. Re-assemble the remainder of the furnace in the reverse order in which it was dis-assembled. Make sure that you check your gas connections for leaks before placing the furnace back into operation and make sure that you install the comfort size orifice per chart.

**NOTE:** When re-installing the divider plate it may be necessary to install the three screws securing the panel to the side of the furnace casing by screwing them from the inside out to the furnace casing.



**FIGURE 16:** Gas Valve

19. Remove old gas orifice, install new per chart.
20. Install Warning label directly below rating plate on the vestibule panel. See Figure 17.



**FIGURE 17: Warning Label**



**FIGURE 18: Consumer Notice**

21. Install Consumer Notice on top front furnace door and instruct the consumer on how to properly maintain their furnace. See Figure 18.

**GAS ORIFICE SELECTION CHART**

Elevation	Natural Gas			LP/Propane		
	Diameter	Drill Size	Part No.	Diameter	Drill Size	Part No.
Sea Level	.1520	24	9951-1521	.0935	42	9951-0931
2,000	.1495	25	9951-1491	.0935	42	9951-0931
3,000	.1495	25	9951-1491	.0890	43	9951-0891
4,000	.1470	26	9951-1471	.0890	43	9951-0891
5,000	.1440	27	9951-1441	.0890	43	9951-0891
6,000	.1440	27	9951-1441	.0860	44	9951-0861
7,000	.1405	28	9951-1401	.0860	44	9951-0861
8,000	.1360	29	9951-1361	.0820	45	9951-0821
9,000	.1360	29	9951-1361	.0810	46	9951-0810
10,000	.1285	30	9951-1281	.0785	47	9951-0781

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## Part 4: Checkout Data

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### A. Furnace Checkout

1. Check Air Temperature Rise (ATR).
  - a. Make sure furnace has operated for at least 5 minutes.
  - b. Measure return air temperature at top louver openings of top furnace door.
  - c. Measure supply air temperature at the closet register/grille.
  - d. Subtract the return air temperature from the supply air temperature to obtain the ATR.
2. If measured ATR is outside parameters shown on the furnace rating plate, then you will need to determine why unit is operating beyond its design parameters. If the ATR is too low, it is an indication of an underfired furnace. Make sure that your gas pressure is set properly. If the ATR is too high, it is an indication of an overfired furnace. Once again, you will need to make sure that your gas pressure is set properly. If found to be okay, you should then also clock the meter to determine the units firing rate, and if needed, check the supply duct system static pressure. Refer to Part 5 for information on how to measure gas pressure, determine the firing rate and measure supply static pressure.

If any items tested result in findings outside the design parameters listed on the units rating plate, it is an indication of application/installation problems that must be addressed. Since application/installation problems are not covered under the warranty, you will need to discuss this situation with the homeowner as they will be responsible for covering any charges to correct any problems found.

3. If measured ATR is within design parameters, proceed to step B and complete your on-site visit.

### B. Complete On-Site Visit

1. Verify all gas-fueled appliances are returned to normal operation. Follow instructions provided by the appliance manufacturer.
2. Complete the DGAT Program Claim Form.
  - a. Record your name and company information.
  - b. Obtain homeowner's signature.
  - c. Sign claim form to certify the furnace has been properly upgraded.
3. Review the Consumer Notice with the customer.



## Part 5: Additional Testing Procedures

### A. Measure Gas Pressure

- a. Remove gas valve OUT PRESS TAP plug using 3/16" Allen wrench. Install 1/8 NPT hose barb fitting. See Figure 19.

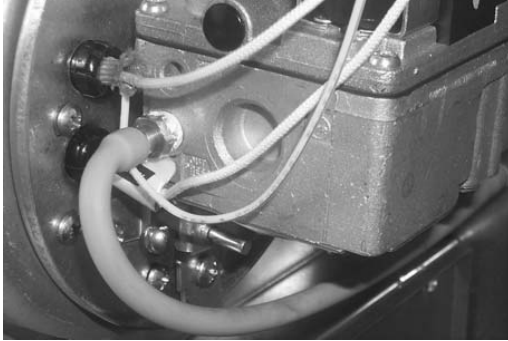


FIGURE 19: Pressure tap

- b. Connect manometer positive (+) pressure hose fitting to OUT PRESS TAP hose barb fitting.
  - c. Follow OPERATING INSTRUCTIONS to place furnace in operation.
  - d. Allow burner to operate 30-60 seconds. Measure Outlet (Manifold) Gas Pressure. Adjust pressure to 3.5" ± 0.2 w.c. for natural gas, or 10.0" ± 0.2 w.c. for LP/propane.
  - e. Follow instructions TO TURN OFF GAS TO APPLIANCE.
  - f. Remove hose barb from gas valve. Install plug.
4. Follow OPERATING INSTRUCTIONS to place furnace in operation.
  5. Operate furnace through at least one (1) complete heating cycle to confirm proper operation.

### B. Measure Input Rate

1. Adjust controls on all other gas-fired appliances to prevent operation. Extinguish pilot(s), if applicable. Follow instructions provided by the appliance manufacturer.
2. Follow OPERATING INSTRUCTIONS to place furnace in operation.

3. Allow burner to operate 5 minutes.
4. Measure time required (in seconds) for gas meter 2 cubic foot dial to rotate one complete turn (or 1/2 cubic foot dial to rotate 4 complete turns).
5. Calculate input:

$$\text{Input} = \frac{[\text{Gas Heating Value}]^2 \times 7200}{\text{Time}}$$

2. Assume 1030 BTU per cubic foot for natural gas if gas supplier cannot provide exact value.

### C. Measure Static Pressure

1. Verify upper door is installed and furnace burner and blower are operating in heating speed.
2. Supply Static Pressure.
  - a. Remove top screws from coil cabinet cover plates (3 total).
  - b. Connect manometer positive (+) pressure hose fitting to Static Pressure Probe.
  - c. Insert static pressure probe into each screw hole. Insert probe straight into hole 6". Probe must be level (horizontal) for proper measurement. See Figure 20.



FIGURE 20: Measuring supply static pressure

## Part 6: Submit Claim

### A. Mail Documentation

1. Submit original DGAT Program Claim to:  
York International  
Attn: Warranty Dept.  
P.O. Box 385  
Norman, OK 73070

## NOTES

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