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.

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.
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

<table>
<thead>
<tr>
<th>Model No.</th>
<th>DGAT070</th>
<th>DGAT075</th>
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<tbody>
<tr>
<td>Input</td>
<td>70,000 Btu/hr</td>
<td>75,000 Btu/hr</td>
</tr>
<tr>
<td>Output</td>
<td>57,000 Btu/hr</td>
<td>61,000 Btu/hr</td>
</tr>
<tr>
<td>Air Temperature Rise Range</td>
<td></td>
<td>45-75°F</td>
</tr>
<tr>
<td>Maximum Outlet Temperature</td>
<td></td>
<td>165°F</td>
</tr>
<tr>
<td>Maximum External Static Pressure</td>
<td></td>
<td>0.30” wc</td>
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</table>

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

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.

![Roof Jack Diagram]

**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
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.

![Power Switch Diagram]

**FIGURE 2:** Power Switch
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.

b. Cracked. See Figure 7.

c. Deformed. See Figure 8.
d. Burn Through. See Figure 9.

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 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.

Part 3: Replacement Heat Exchanger

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 auxiliary 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 combustion 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.
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.

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.

9. Remove the two screws holding the combustion air vane in place and remove the vane.
10. Remove the four screws holding the burner chute (if used) and remove the 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.

19. Remove old gas orifice, install new per chart.

20. Install Warning label directly below rating plate on the vestibule panel. See Figure 17.
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

<table>
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<tr>
<th>Elevation</th>
<th>Natural Gas</th>
<th>LP/Propane</th>
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<tbody>
<tr>
<td></td>
<td>Diameter</td>
<td>Drill Size</td>
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<tr>
<td>Sea Level</td>
<td>.1520</td>
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<tr>
<td>10,000</td>
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<td>30</td>
</tr>
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</table>
Part 4: Checkout Data

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.

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.
   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.

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 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.

   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

Unitary Products Group