



Heat Exchanger Replacement

Model Include : NR83-DVC
NR83DVC(GQ-2457WS-FFA US)
NR83OD(GQ-2457WS US)

This instructional manual is only intended for use by a qualified service professional or authorized Noritz Service Representative. Any unauthorized use of this manual may result in voiding the warranty.

Please contact Noritz Technical Support (866-766-7489) for additional support.

Noritz America Corporation

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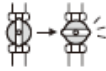
Phone 866-766-7489 Fax 714-241-1196

Procedure

1. Drain the unit as shown in following procedure

Drain water into a bucket to prevent water damage.

1. Close the gas valve.

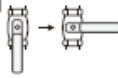


2. Turn off the power button.

3. Turn off the power supply.

Do not touch with wet hands.

4. Close the water supply valve.

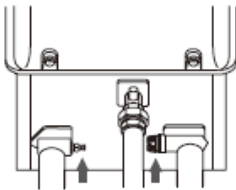


5. Fully open all hot water fixtures.



6. Turn the drain plug to the left to open, and then remove.

7. Check that the water is completely drained, close all the drain plugs and the hot water fixtures after 10 minutes or more pass from operation of 6.



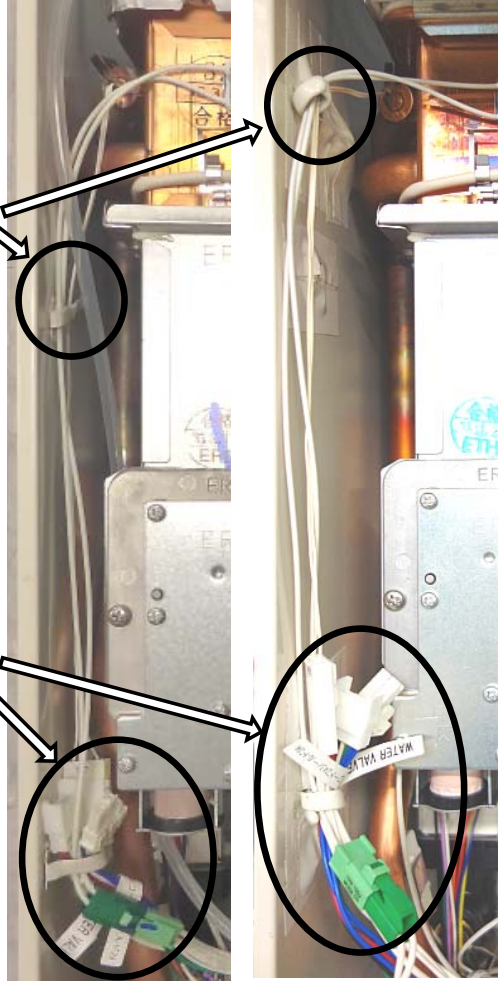
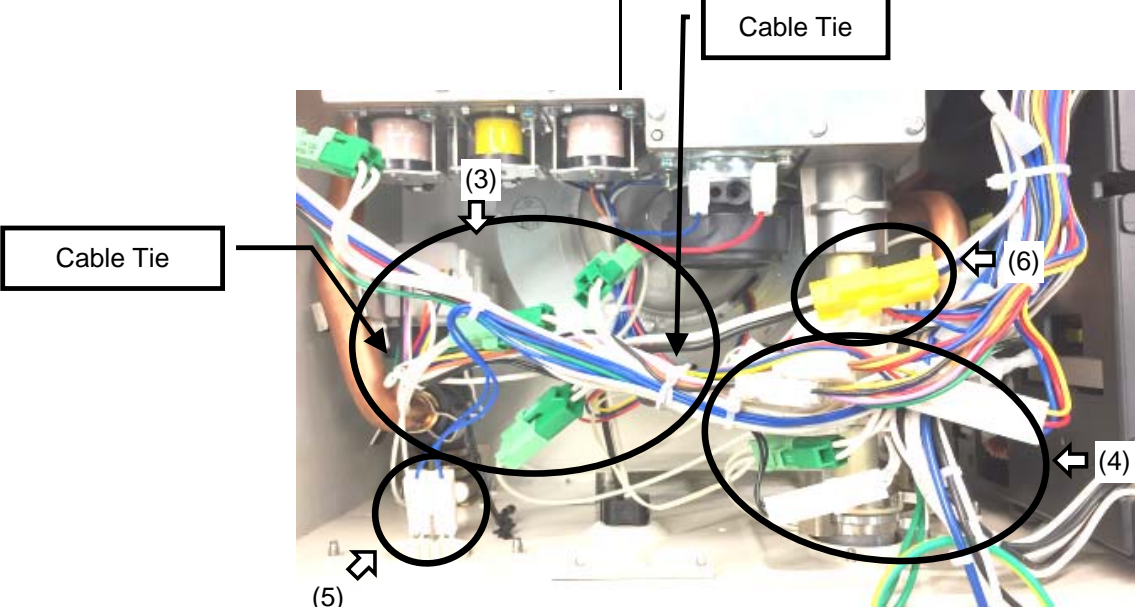
Drain Plugs

Each drain plug might not be visible if insulation is installed around the piping.

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>2. Remove Front Cover</p> <p>(1) Disconnect electrical power to the unit.</p> <p>(2) Turn off gas and water.</p> <p>(3) Remove 4 screws.</p>	 <p>e.g. DVC model</p>
<p>3. Remove Lightning Protection</p> <p>(1) DVC model only ; Remove screw that hold the Mounting plate for Remote Controller, and unplug the connector of Remote Controller. Remove Remote Controller and set aside.</p> <p>(2) Remove 2 screws holding the Lightning Protection Plate.</p> <p>(3) Let Lightning Protection hang outside of the unit.</p>	 <p>DVC model</p>  <p>DVC model</p>  <p>OD model</p>  <p>DVC model</p>

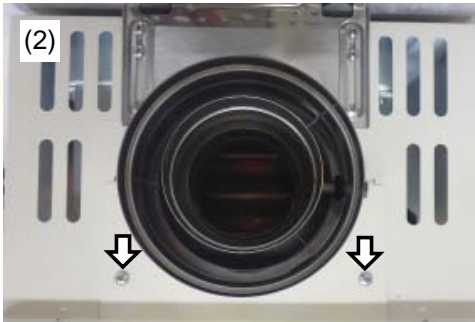
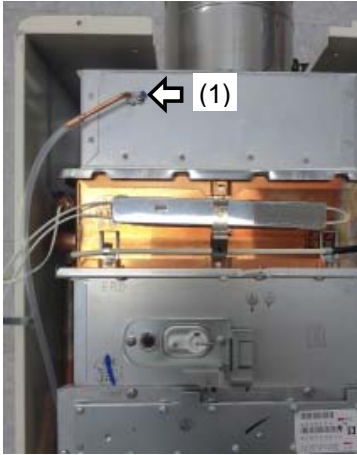
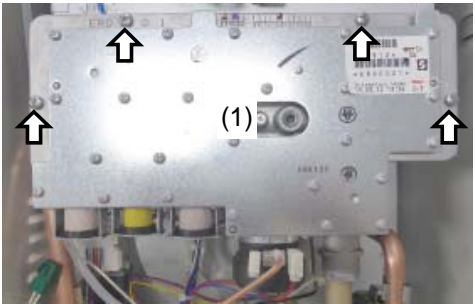
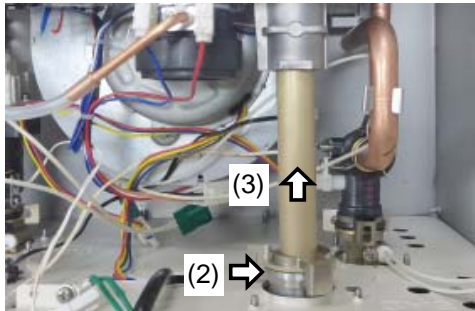
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>4. Unplug all wires that attach to the wiring harness and the body of the water heater</p> <p>(1) Loosen the wire anchor from upper left side of Case.</p> <p>(2) Loosen the wire anchor from lower left side of Case unplug Freeze Prevention Heater and Thermistor - Heat Exchanger.</p> <p>(3) Remove Cable Ties (2), unplug Freeze Prevention Heaters (3).</p> <p>(4) Unplug Freeze Prevention Heater, Wiring for Water Servo - Main, Fan Motor, Water Flow Sensor, Thermistor - Hot Water, - Cold Water, - Air Inlet and Manifold Plate.</p> <p>(5) OD model only ; Unplug wiring for Remote Controller.</p> <p>(6) OD model only ; Unplug wiring for Power supply cord.</p>	 <p style="text-align: center;">DVC model OD model</p>
 <p style="text-align: center;">e.g. OD model</p>	

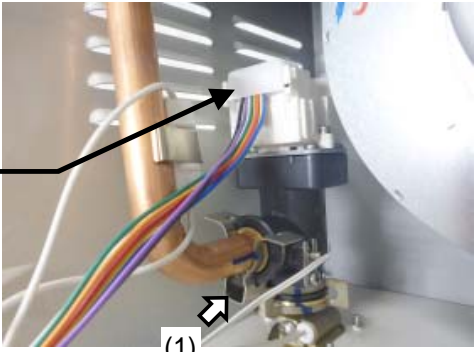
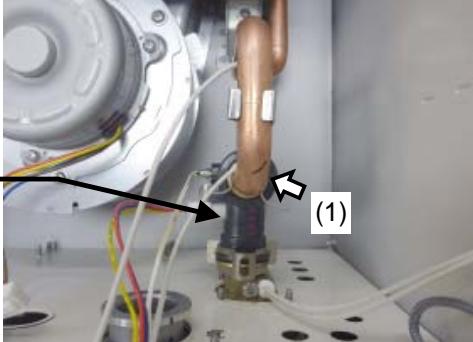
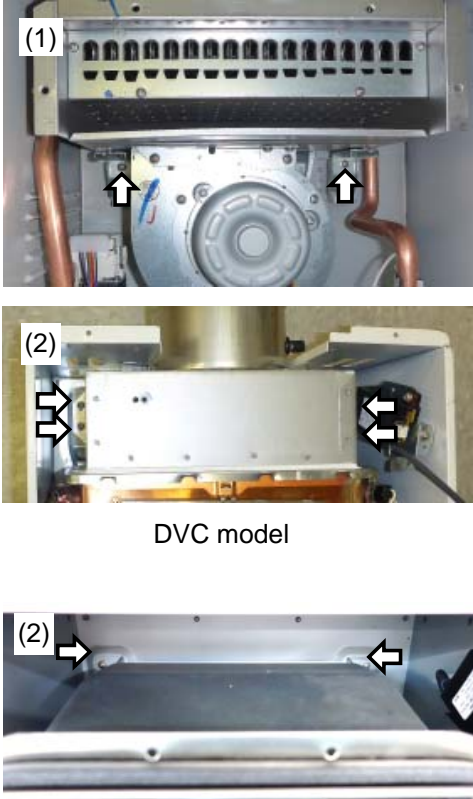
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>(7) Unplug wiring for Igniter.</p> <p>(8) Loosen the wire anchor from right side of Case, unplug High Limit Switch, Thermal Fuse.</p> <p>(9) Unplug Flame Rod and Ignition Plug.</p> <p>(10) Remove the screw holding Circuit Board.</p> <p>(11) Let all wires and Circuit Board hang outside of the unit.</p> <p>OD model only ; Remove Circuit Board to out of the unit.</p>	<p>(7)</p> <p>(8)</p> <p>(8)</p> <p>(8)</p> <p>(10)</p> <p>(9)</p> <p>(11)</p> <p>e.g. DVC model</p>

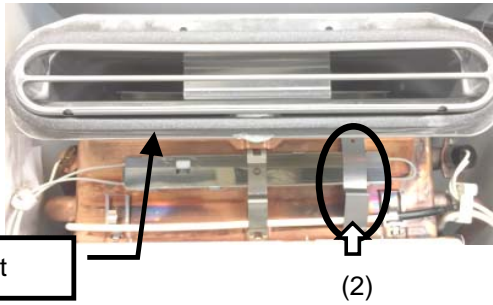
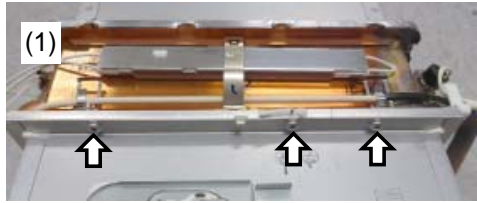
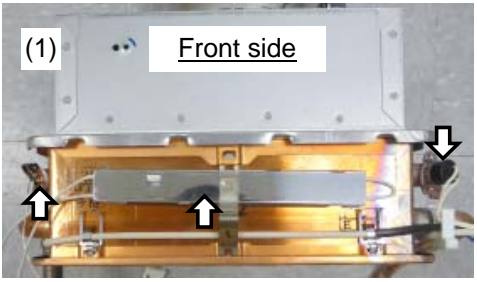


Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>5. DVC model only ; Remove Case Top Cover from top of the unit.</p> <p>(1) Disconnect the venting from the unit.</p> <p>(2) Remove 2 screws and remove Case Top Cover of the unit and set aside.</p>	
<p>6. DVC model only ; Remove Tube - Silicone and Metal Back Pressure Tube.</p> <p>(1) Remove 1 screw on the Exhaust Box that attach the tube.</p> <p>(2) Remove the tube from Exhaust Box.</p>	
<p>7. Remove Manifold Plate</p> <p>(1) Remove 4 big silver screws on Manifold Plate that attach Manifold Plate to Burner.</p> <p>(2) Remove "C" Clamp.</p> <p>(3) Locate inlet pipe to Manifold Plate and push up, remove Manifold Plate.</p>	 

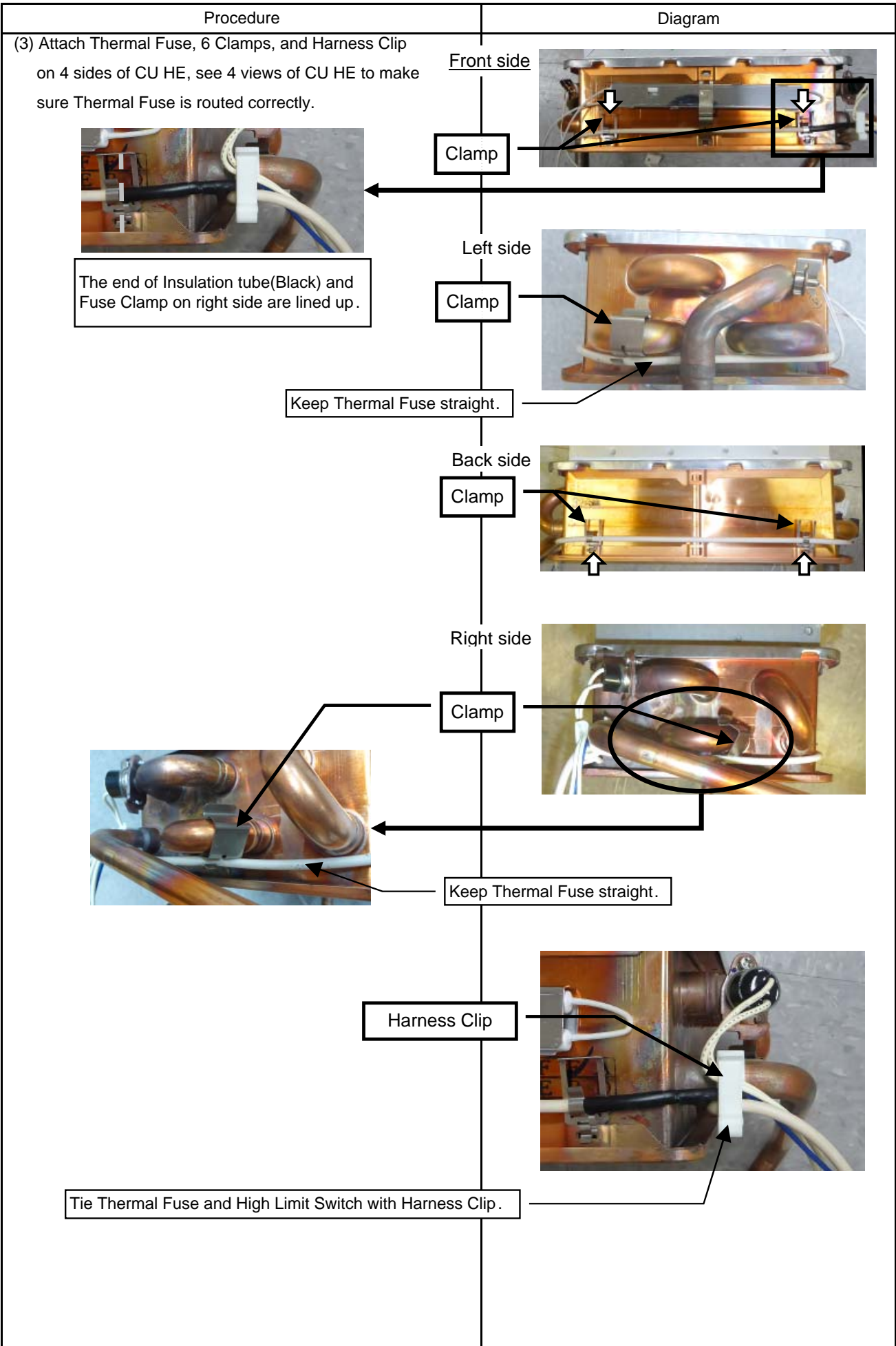
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>8. Disconnect a pipe from Water Servo - Main</p> <p>(1) Remove "C" Clamp, disconnect a pipe from Water Servo - Main.</p> <div data-bbox="552 405 890 470" style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 200px;">Water Servo - Main</div>	
<p>9. Disconnect a pipe from Water Flow Sensor</p> <p>(1) Remove "C" Clamp, disconnect a pipe from Water Flow Sensor.</p> <div data-bbox="552 898 890 963" style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 200px;">Water Flow Sensor</div>	
<p>10. Remove the assembly from the case</p> <p>(1) Remove 2 set screws on the bottom of Burner.</p> <p>(2) DVC model only ; Remove 4 set screws around top of the case. OD model only ; Remove 2 set screws around top of the case.</p> <p>(3) Exhaust Box, Copper Heat Exchanger (CU HE), Burner, and Fan Motor will come out in one section, remove from the unit.</p>	 <p style="text-align: center;">DVC model</p> <p style="text-align: center;">OD model</p>

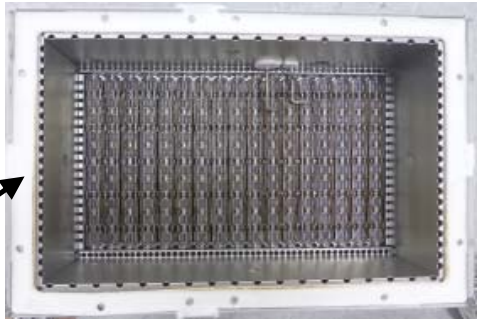
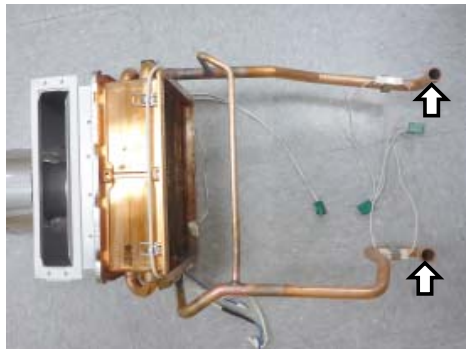
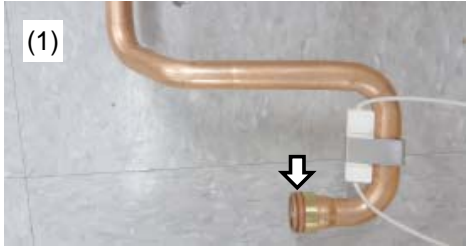
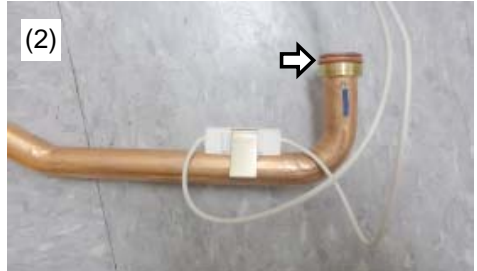
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>11. OD model only ; Replacing the gasket</p> <p>(1) Remove Gasket on the front of Exhaust Box, and reinstall Gasket onto new Exhaust Box.</p> <p>(2) Remove and discard Heater Clamp.</p>	
<p>12. Remove CU HE</p> <p>(1) Remove 10 screws holding Burner to CU HE.</p> <p>(2) Separate Burner from CU HE.</p>	 <p>Ex.) DVC model</p>
<p>13. Remove the CU HE components from old CU HE and put on new heat exchanger</p> <p>(1) Front side: Freeze Prevention Heater, Thermistor - Heat Exchanger , and High Limit Switch.</p> <p>(2) Under side: Freeze Prevention Heater on water outlet pipe, and Freeze Prevention Heater on water inlet pipe. (Secure to put Freeze Prevention Heater on same position.)</p>	 <p>Ex.) DVC model</p>  <p>(2)</p>  <p>(2)</p>

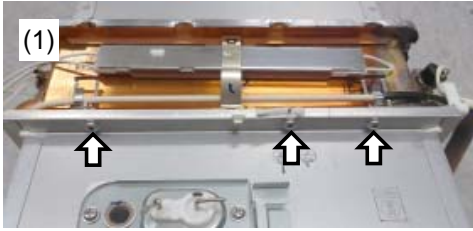
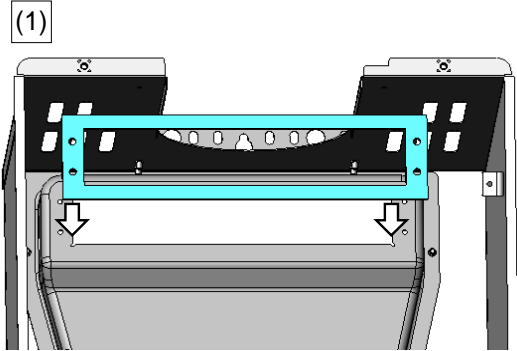
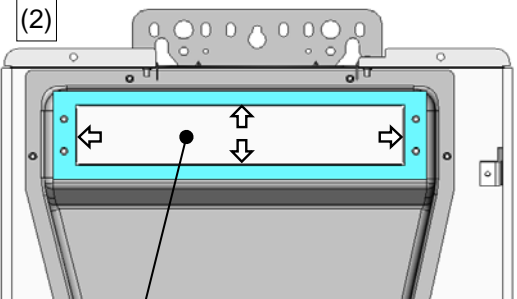
Heat Exchanger Replacement Procedure





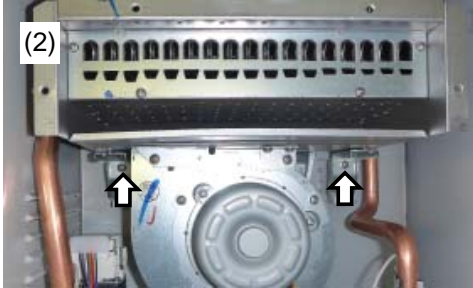

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>14. Replace Gasket</p> <p>(1) Remove old burner Gasket and replace it with new one.</p> <p style="text-align: center;">Gasket →</p>	 <p>The diagram shows a rectangular burner assembly with a metal mesh inside. A black box labeled 'Gasket' has an arrow pointing to the gasket located at the top center of the burner assembly.</p>
<p>15. Place new O - Rings on new CU HE</p> <p>(1) Inlet to CU HE.</p> <p>(2) Outlet from CU HE.</p>	 <p>e.g. NR83-DVC</p> <p>(1) </p> <p>(2) </p> <p>The diagram for step 15 consists of three photographs. The top photograph shows a copper heat exchanger (model NR83-DVC) with two arrows pointing to the inlet and outlet ports. Below it are two close-up photographs labeled (1) and (2), each showing an arrow pointing to a specific fitting on a copper pipe.</p>

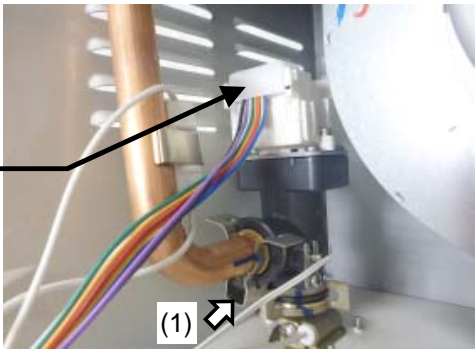
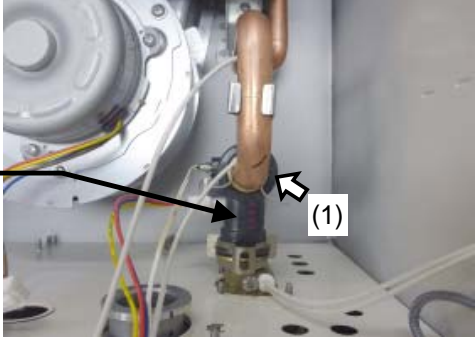
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>16. Replace Burner, and CU HE</p> <p>(1) Attach 10 screws around perimeter of Burner and CU HE.</p>	 <p>(1)</p> <p>e.g. DVC model</p>
<p>17. DVC model only ; Attach case gasket</p> <p>(1) Attach the gasket to the case.</p> <p>※ If has an old gasket, remove the old gasket and attach a new one.</p> <p>(2) Set a gasket to the air intake hole of the case.</p> <p>Make sure not to block the air intake .</p>	 <p>(1)</p>  <p>(2)</p> <p>Air intake hole</p>

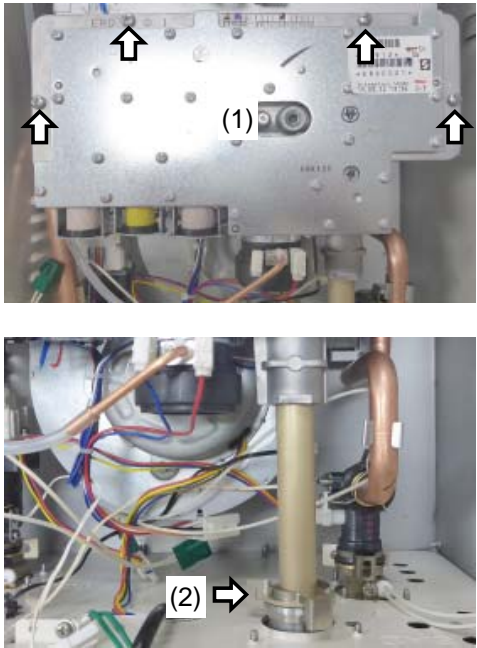
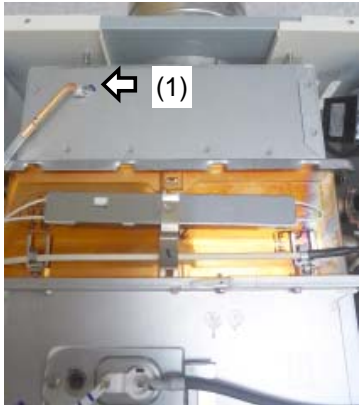
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>18. Replace the assembly back inside the case</p> <p>(1) Secure 4 set screws near the top of the case. OD model only ; Remove 2 set screws near the top of the case.</p> <p>(2) Secure 2 set screws on the bottom of Burner.</p>	<p data-bbox="1107 165 1203 197">Diagram</p>  <p data-bbox="938 271 970 309">(1)</p> <p data-bbox="1066 472 1206 504">DVC model</p>  <p data-bbox="938 560 970 598">(1)</p> <p data-bbox="1082 745 1206 777">OD model</p>  <p data-bbox="938 853 970 891">(2)</p>
<p>19. DVC model only ; Replace Case Top Cover on top of the unit</p> <p>(1) Attach Case Top Cover to the unit and secure 2 screws.</p>	 <p data-bbox="938 1227 970 1265">(1)</p>

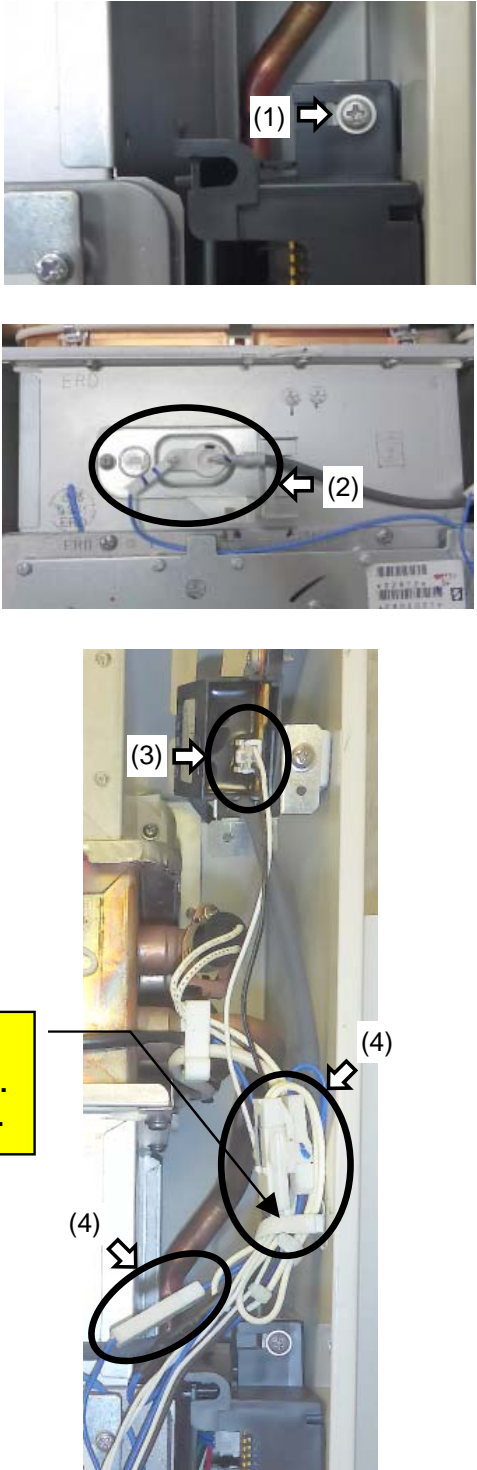
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>20. Reconnect a pipe to Water Servo - Main</p> <p>(1) Insert a pipe to Water Servo - Main, and attach "C" Clamp.</p> <p style="text-align: center;">Water Servo - Main</p>	
<p>21. Reconnect a pipe to Water Flow Sensor</p> <p>(1) Insert a pipe to Water Flow Sensor, and attach "C" Clamp.</p> <p style="text-align: center;">Water Flow Sensor</p>	

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>22. Replace Manifold Plate</p> <p>(1) Secure Manifold Plate to Burner with 4 big silver screws.</p> <p>(2) Secure gas pipe of Manifold Plate to gas inlet fitting with "C" Clamp.</p>	
<p>23. DVC model only ; Replace Tube - Metal Back Pressure Tube</p> <p>(1) Attach the tube with 1 screw.</p>	

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>24. Reconnect all wires that attach to the wiring harness and the body of the water heater</p> <p>(1) Insert Circuit Board and attach with screw.</p> <p>(2) Plug Flame Rod and Ignition Plug.</p> <p>(3) Plug wiring for Igniter.</p> <p>(4) Plug High Limit Switch, Thermal Fuse tie all wires (<u>except for Ignition Wire</u>) with the anchor from right side of the case.</p> <div data-bbox="402 1238 956 1382" style="border: 1px solid black; background-color: yellow; padding: 5px; margin-top: 20px;"><p>Caution! 1. Don't tie Ignition Wire with the anchor. 2. Set Ignition wire behind of other wires.</p></div>	<p style="text-align: center;">Diagram</p>  <p>The diagram consists of three photographs illustrating the reconnection of wires to the water heater control panel. The first photograph shows a circuit board being inserted into a panel, with a screw being used to secure it, labeled (1). The second photograph shows a flame rod and ignition plug being inserted into the panel, labeled (2). The third photograph shows the wiring harness being connected to the panel, with the ignition wire being specifically noted in a callout box, labeled (3) and (4).</p>

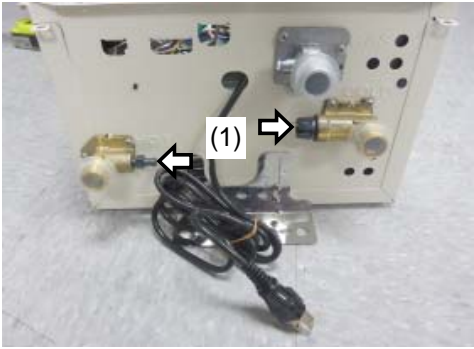

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>(5) Plug Thermistor - Heat Exchanger and Freeze Prevention Heater. And then tie wires with anchor from left side of Case.</p> <p>(6) Tie wires with anchor from left side of Case. DVC model only ; Don't tie Tube - Silicone with Anchor.</p> <div data-bbox="194 510 810 600" style="background-color: yellow; border: 1px solid black; padding: 5px;"> <p>Caution! Don't tie Tube - Silicone with the anchor.</p> </div> <p>(7) Tie wires of Freeze Prevention Heaters (2), Thermistor - Hot water, - Air Inlet, Water Servo - Main with Cable tie.</p> <p>(8) Plug Freeze Prevention Heaters (3).</p> <p>(9) Plug Freeze Prevention Heater (1), Water Servo - Main, Wiring for Fan Motor, Water Flow Sensor, Thermistor - Hot water, - Cold water, - Air Inlet, and Manifold Plate. And then tie wires with Cable Tie.</p> <p>(10) OD model only ; Plug Wiring for Remote Controller.</p> <p>(11) OD model only ; Plug Wiring for Power supply cord. (Yellow connector)</p>	<div data-bbox="890 224 1444 1198"> </div> <div data-bbox="263 1355 1404 1937"> </div> <p>e.g. OD model</p>

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>25. Replace Lightning Protection</p> <p>(1) Attach Lightning Protection Plate with 2 screws.</p> <p>(2) DVC model only ; Replace Remote Controller, and then plug Remote Controller. Attach the Mounting plate for Remote Controller with screw.</p> <div data-bbox="422 1057 785 1476" data-label="Image"> </div> <div data-bbox="162 1585 842 1774" data-label="Text" style="background-color: yellow; border: 1px solid black; padding: 5px;"> <p>NR83DVC(GQ-2457WS-FFA US) and NR83OD(GQ-2457WS US) have "Blue connector" for Scale Flushing.</p> <p><u>NOTE ; Don't connect this blue connector when replacing Heat Exchanger.</u></p> </div>	<div data-bbox="911 219 1390 602" data-label="Image"> </div> <p style="text-align: center;">DVC model</p> <div data-bbox="951 667 1331 1115" data-label="Image"> </div> <p style="text-align: center;">OD model</p> <div data-bbox="908 1196 1383 1552" data-label="Image"> </div> <p style="text-align: center;">DVC model</p> <div data-bbox="911 1648 1386 1944" data-label="Image"> </div> <p style="text-align: center;">DVC model</p>

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>26. Check for water leak</p> <p>(1) Secure 2 drain valves.</p> <p>(2) Turn on water inlet valve slowly. Check for leaks around "C" Clamps.</p> <p>(3) If you get leaks, close water inlet valve. Re-secure "C" Clamps of leaking points.</p>	 <p>e.g. DVC model</p>
<p>27. Check for gas leaks and doing trial operation</p> <p>(1) Turn on gas.</p> <p>(2) Turn on the unit. Check for leaks around Manifold Plate and joining areas. For example ; Between Burner and CU HE</p> <p>(3) If you get leaks, Close gas supply valve Re-secure "C" Clamps of leaking points.</p>	
<p>28. Replace Front Cover</p> <p>(1) Secure Front Cover with 4 screws.</p>	 <p>e.g. DVC model</p>