



Heat Exchanger Replacement

Model Include : NRC1111-OD, NRC1111-DV
NCC1991-OD, NCC1991-DV
NCC1992-DV
NRC111OD(GQ-C3257WX US), NRC111DV(GQ-C3257WX-FF US)
NCC199OD(GQ-C3257WZ US), NCC199DV(GQ-C3257WZ-FF 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

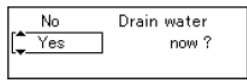
Drainage using the Remote Controller

* RC-7651M

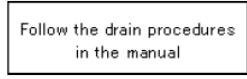
- 1** (1) Turn the power on/off button "off". 
- (2) Press the flow meter alarm set button for about two seconds until the alarm sounds. The maximum hot water temperature will flash. 
(Ex. 120°F)
- (3) Press the flow meter alarm set button again. 
- (4) Press the setting button marked "UP". The display will change from "oF" to "on" after the button is pushed. 

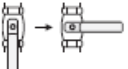
* RC-9018M


- (1)  button is "OFF".
- (2) Press the  button inside the cover, Select **Misc settings** using the  buttons. Press the  button. The "Misc settings" screen appears.
- (3) Select **Drain water** using the  buttons, and then press  button.
- (4) Select "YES" using the  buttons,



Press  button.

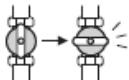


- 2** Close the water supply valve. 

- 3** Fully open all hot water fixtures. 

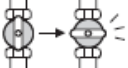
- 4** Open all drain plugs and drain the water out of the unit.


- 5** When the water is completely drained, replace all drain plugs and close the hot water fixtures.

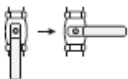
- 6** Close the gas valve and disconnect the electrical power supplied to the unit. 
Do not touch with wet hands.


1. Drain the unit as shown in following procedure

Manual Draining

- 1** Close the gas valve. 

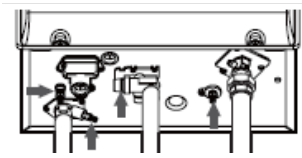
- 2** (1) Turn the power on/off button "On".
(2) Turn and leave open the hot water fixtures for more than 2 minutes and close. 
* If multiple units are being used, drain two minutes for each unit.
* An 11 Error Code may appear on the remote controller. This is not a malfunction of the unit. Do not turn Power ON/OFF Button OFF.

- 3** Close the water supply valve and disconnect the electrical power supplied to the unit. 
Do not touch with wet hands.

- 4** Fully open all hot water fixtures. 

- 5** Open all drain plugs and drain the water out of the unit.


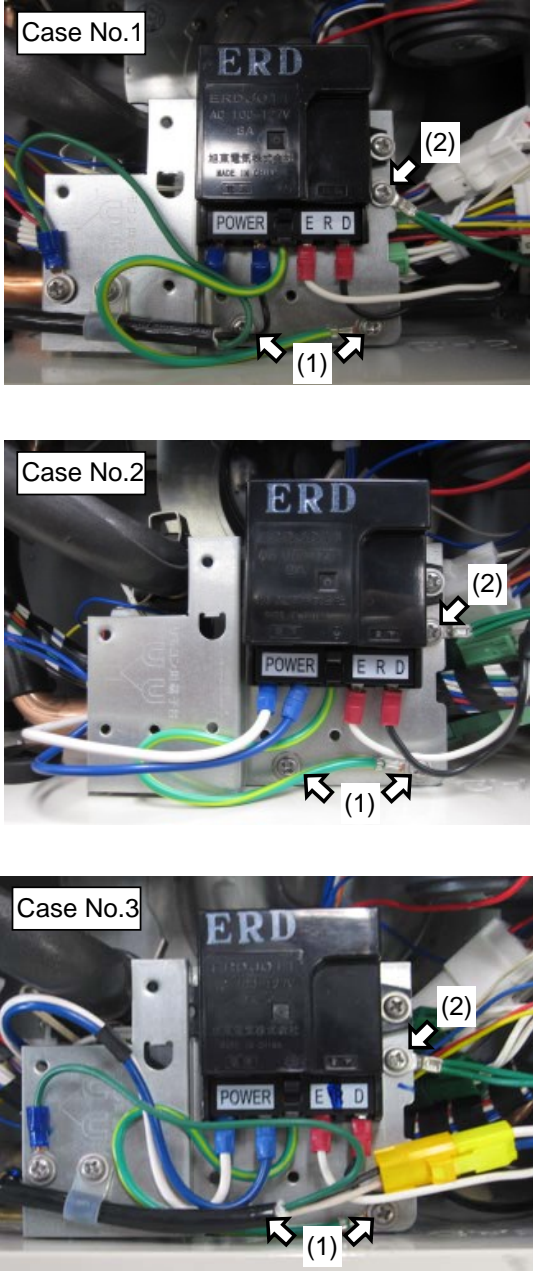
- 6** When the water is completely drained, replace all drain plugs and close the hot water fixtures.



Drain Plugs

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

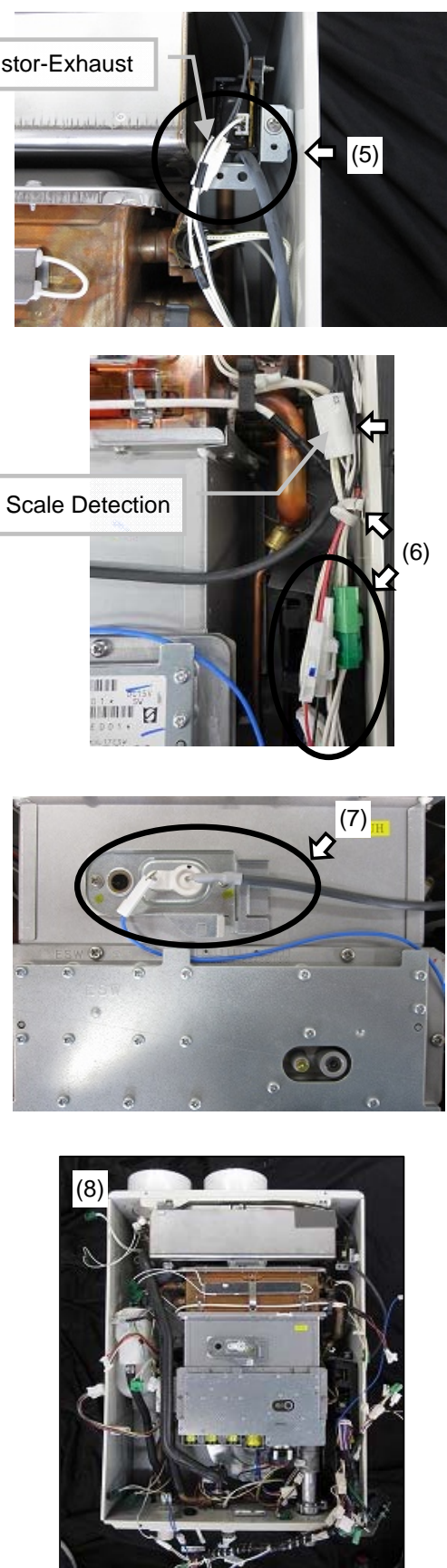
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>2. Remove Front Cover</p> <p>(1) Disconnect electrical power to the unit (2) Turn off gas and water (3) Remove 4 screws</p>	 <p>Ex.) OD model</p>
<p>3. Remove Lightning Protection</p> <p>(1) Remove 2 screws that hold the Lightning Protection Plate (Whichever the unit is in case No.1, 2, 3)</p> <p>(2) Remove additional ground wires</p> <p>(3) Let Lightning Protection hang outside of the unit</p>	 <p>Case No.1</p> <p>Case No.2</p> <p>Case No.3</p>

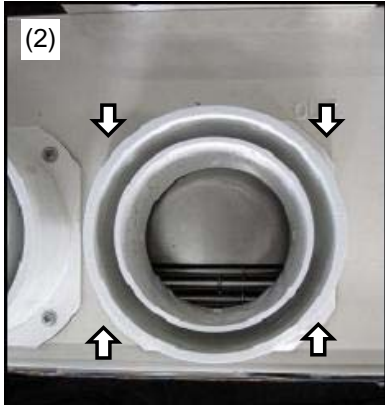
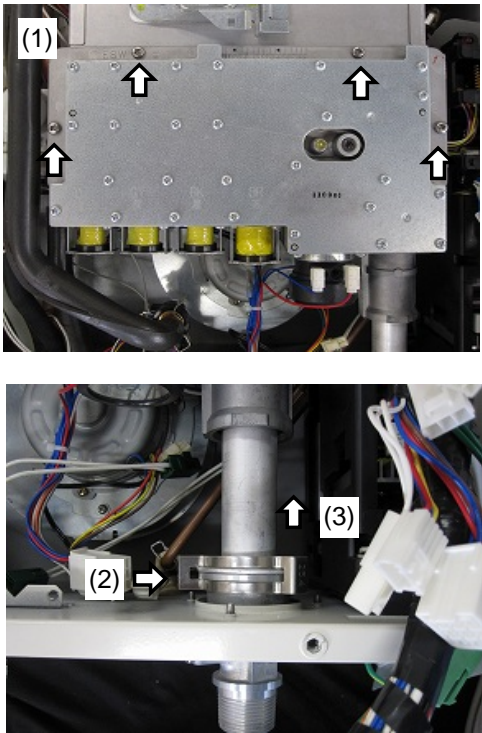
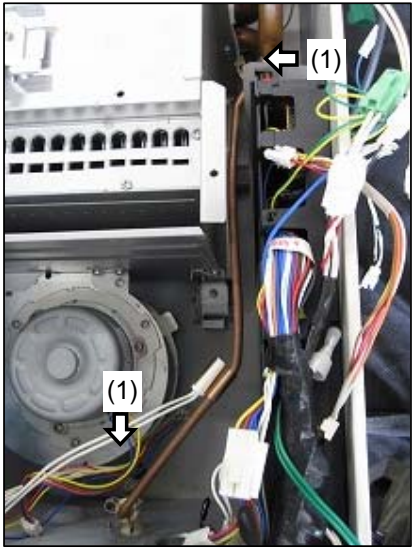
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>4. Unplug all wires that attach to the wiring harness and the body of the unit</p> <p>(1) Loosen the wire anchor from left side of Case, unplug Freeze Prevention Heaters (2), remove Cover - Drain</p> <p>(2) Loosen the wire anchor from Condensate Container, unplug Freeze Prevention Heaters (2), Water Servo - Main, Water Level Electrode, and Thermistor - Heat Exchanger</p> <p>(3) Remove Cable Tie, unplug Freeze Prevention Heaters (3), Water Servo - Bypass, and Thermistor - Hot Water</p> <p>(4) Remove Cable Tie, unplug Freeze Prevention Heaters (2), Wiring for Fan Motor, Water Flow Sensor, Thermistor - Cold Water, and Wiring for Manifold Plate</p>	<p>The diagram consists of four photographs illustrating the steps:</p> <ul style="list-style-type: none"> Step 1: A photograph showing a green connector being unplugged from a wire harness. A white arrow points to the connector, and a label '(1)' is next to it. A white arrow also points to a white plastic cover labeled 'Cover - Drain'. Step 2: A photograph showing a wire anchor being loosened from a component. Two white arrows point to the wire anchor, and a label '(2)' is next to them. Step 3: A photograph showing a white cable tie being removed from a bundle of wires. A white arrow points to the cable tie, and a label 'Cable Tie' is next to it. A label '(3)' is also present. Step 4: A photograph showing another white cable tie being removed from a bundle of wires. A white arrow points to the cable tie, and a label 'Cable Tie' is next to it. A label '(4)' is also present.

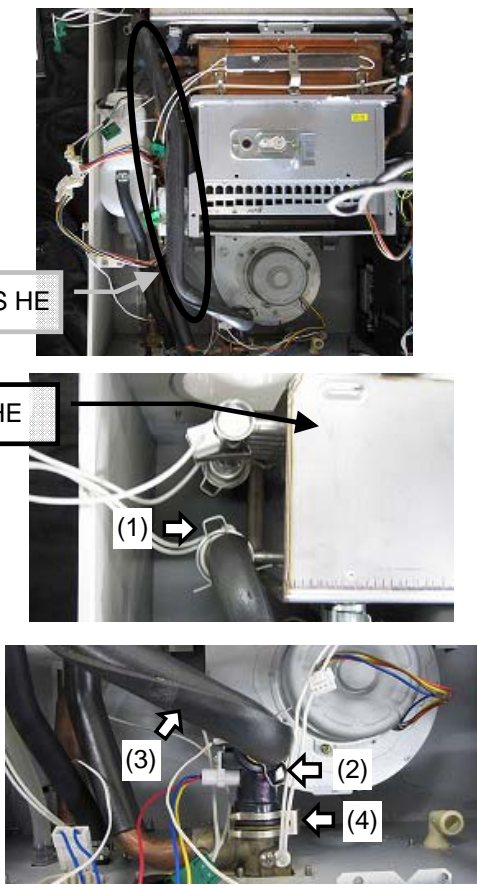
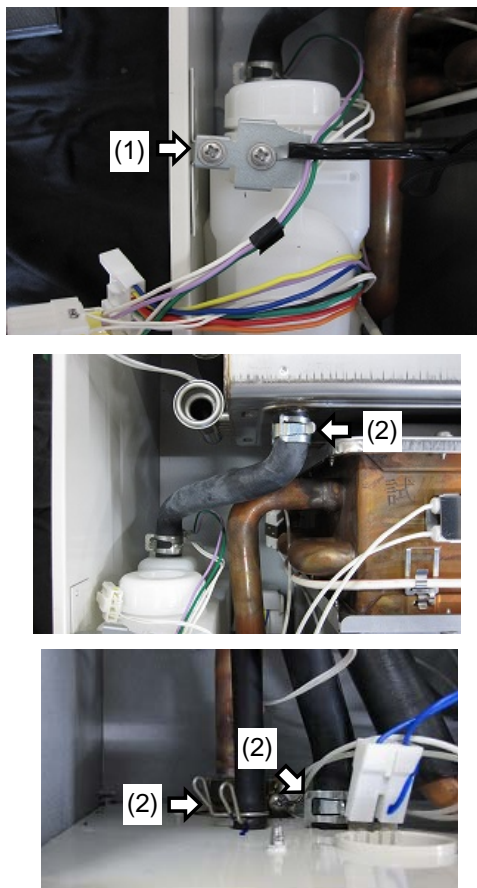
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>(5) Unplug wiring for Igniter DV model only ; Unplug Thermistor - Exhaust</p> <p>(6) Loosen the wire anchor from right side of Case, unplug Freeze Prevention Heater, High Limit Switch, Thermal Fuse (2) and Themistor - Scale Detection*</p> <div style="border: 1px dashed black; padding: 5px; margin: 10px 0;"> <p>*The following models have "Thermistor - Scale Detection"</p> <p>NRC111OD(GQ-C3257WX US)</p> <p>NRC111DV(GQ-C3257WX-FF US)</p> <p>NCC199OD(GQ-C3257WZ US)</p> <p>NCC199DV(GQ-C3257WZ-FF US)</p> </div> <p>(7) Unplug Flame Rod and Ignition Plug</p> <p>(8) Let all wires hang outside of the unit</p>	 <p>The diagram consists of four photographs illustrating the steps. The first photo shows a close-up of the Thermistor-Exhaust being unplugged, with a callout box labeled 'Thermistor-Exhaust' and an arrow pointing to the component, and a circled area labeled '(5)'. The second photo shows the Thermistor - Scale Detection being unplugged, with a callout box labeled 'Thermistor - Scale Detection' and an arrow pointing to the component, and a circled area labeled '(6)'. The third photo shows the Flame Rod and Ignition Plug being unplugged, with a callout box labeled '(7)' and an arrow pointing to the plug. The fourth photo shows the unit with all wires hanging outside, with a callout box labeled '(8)'. Below the fourth photo is the text 'Ex.) DV model'.</p>

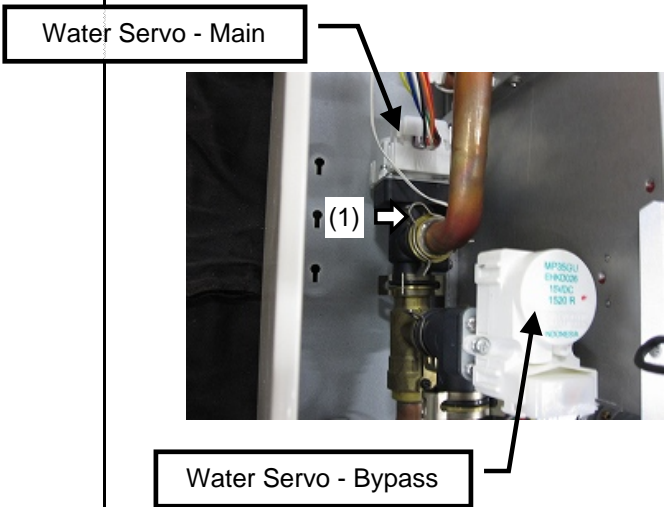
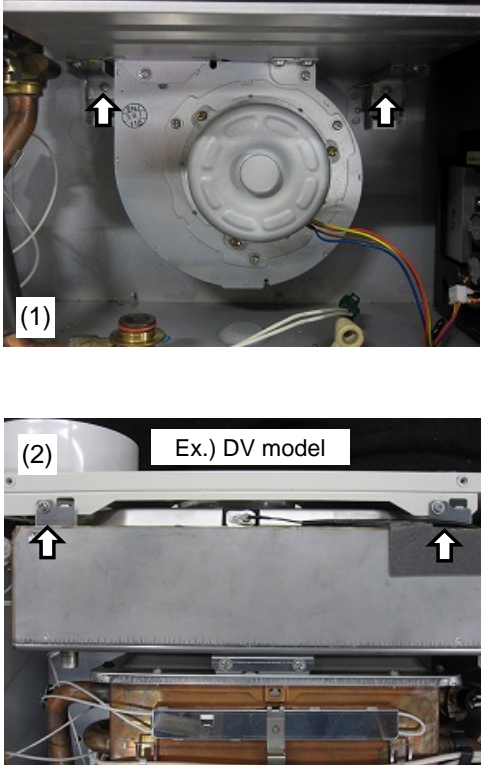
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>5. DV model only ; Remove Exhaust Flue from top of the unit</p> <p>(1) Disconnect the venting from the unit</p> <p>(2) Remove 4 screws and pull Exhaust Flue off of the unit and set aside</p>	
<p>6. Remove Manifold Plate</p> <p>(1) Remove 4 big silver screws on Manifold Plate that attach the Manifold Plate to Burner</p> <p>(2) Remove "C" Clamp</p> <p>(3) Locate inlet pipe to Manifold Plate and push up, remove the Manifold Plate</p>	
<p>7. Remove Pipe - 1/4" Drain from Copper Heat Exchanger (CU HE)</p> <p>(1) Remove 2 "C" Clamps</p> <p>(2) Remove the pipe</p>	

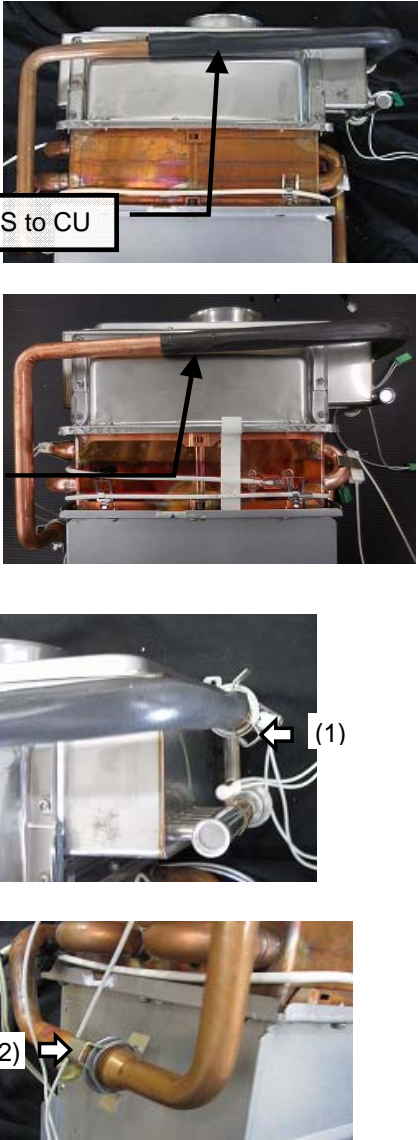
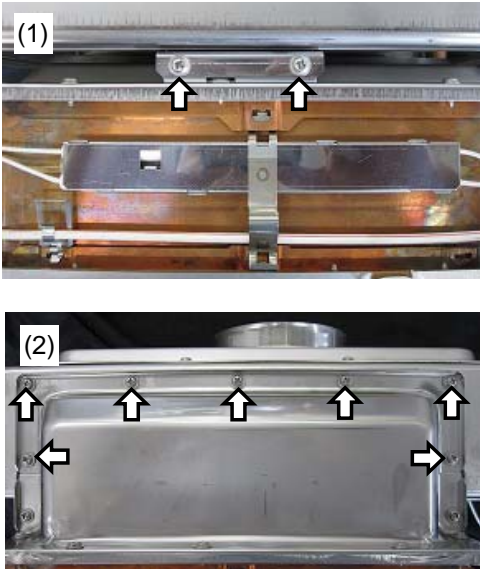
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>8. Remove Pipe - Flow Sensor to Stainless Steel Heat Exchanger (SS HE) and Water Flow Sensor</p> <p>(1) Remove "C" Clamp on top of the pipe going into SS HE</p> <p>(2) Remove "C" Clamp on bottom of the pipe going into Water Flow Sensor</p> <p>(3) Remove the pipe</p> <p>(4) Remove "C" Clamp on Water Flow Sensor, remove Water Flow Sensor</p>	
<p>9. Remove Condensate Container</p> <p>(1) Remove the screw holding the metal clamp on the top of Condensate Container</p> <p>(2) Remove 3 Hose Clamps on the hoses of Condensate Container, 1 will be right below SS HE and other 2 will be on Condensate Container (you will need a needle nose pliers to open Hose Clamps)</p> <p>(3) Pull hoses off and lift up Condensate Container, remove Condensate Container</p>	

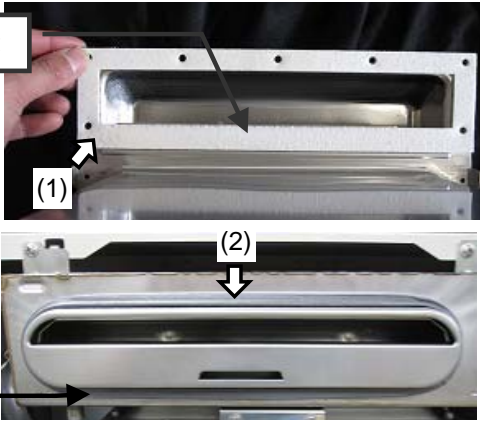

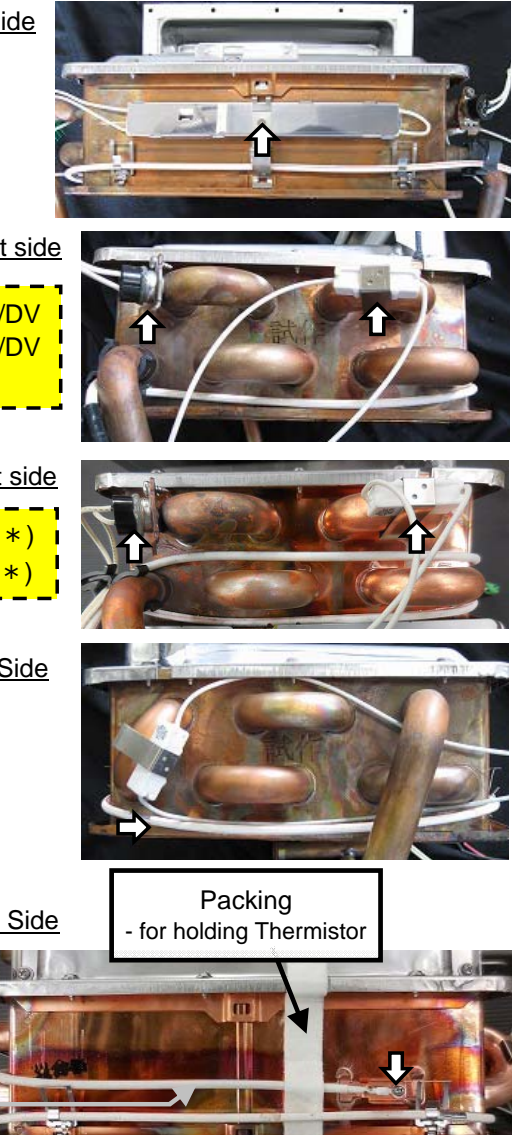
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>10. Disconnect a pipe from Water Servo - Main</p> <p>(1) Remove "C" Clamp, disconnect a pipe from Water Servo - Main</p>	
<p>11. Remove the assembly from Case</p> <p>(1) Remove 2 set screws on the bottom of Burner</p> <p>(2) Remove 2 set screws near the top of Case (Support bottom of the assembly)</p> <p>(3) SS HE, Copper Heat Exchanger(CU HE), Burner, and Fan Motor will come out in one section, remove from the unit</p>	

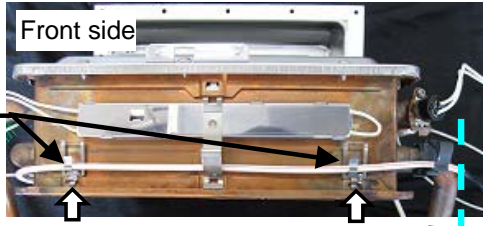
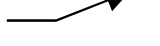
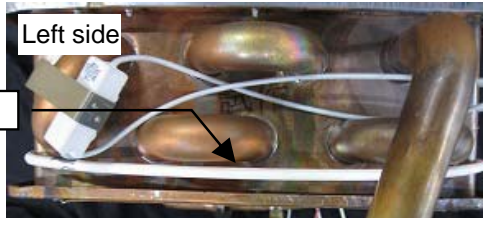
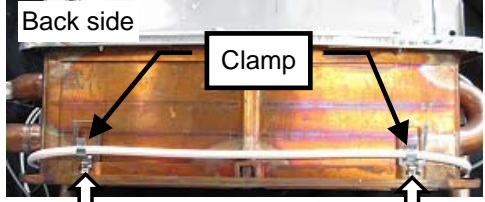
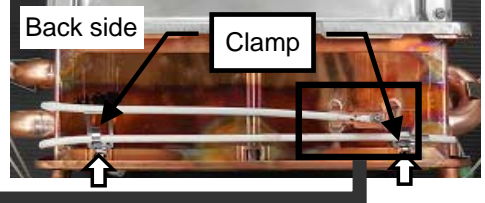


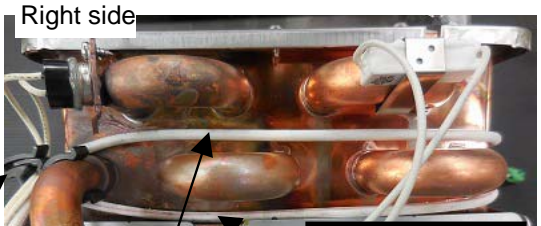
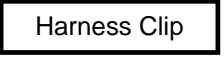
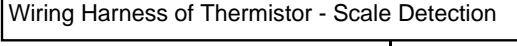

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>12. Remove Pipe - Heat Exchanger SS to CU</p> <p style="text-align: center;">NRC1111-OD/DV NCC1991-OD/DV NCC1992-DV</p> <p>(1) Remove "C" Clamp on top of the pipe going into SS HE</p> <p style="text-align: center;">Pipe - Heat Exchanger SS to CU</p> <p>(2) Remove "C" Clamp on the pipe going into CU HE</p> <p>(3) Remove the pipe</p> <p style="text-align: center;">NRC1110D/DV(GQ-C3257WX * *) NCC1990D/DV(GQ-C3257WZ * *)</p> <p style="text-align: center;">Pipe - Heat Exchanger SS to CU</p>	
<p>13. Separate SS HE from CU HE</p> <p>(1) Remove 2 screws on the bracket between SS HE and CU HE</p> <p>(2) Remove 7 screws that located on the back side of SS HE</p> <p>(3) Separate SS HE from CU HE</p>	

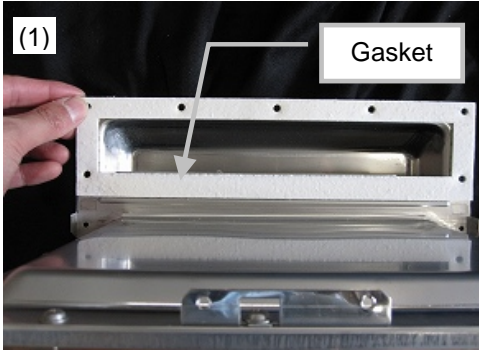
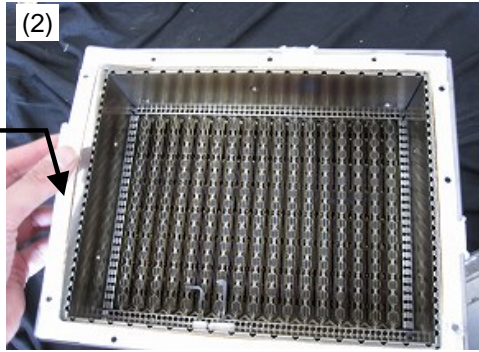
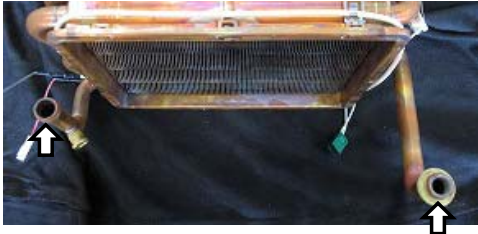


Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>14. Replacing SS HE</p> <p>Note: If you are not replacing SS HE then, you can skip this step and set SS HE aside.</p> <p>(1) Remove old Gasket between SS HE and CU HE Exhaust Box and replace with new one</p> <p>(2) OD model only ; Remove Gasket on the front of SS HE and place on new one</p>	 <p>Gasket</p> <p>Gasket</p>
<p>15. Remove CU HE</p> <p>(1) Remove 12 screws holding Burner to CU HE</p> <p>(2) Separate Burner from CU HE</p>	 <p>(1)</p>
<p>16. Remove the heat exchanger components from old heat exchanger and put on new heat exchanger</p> <p>(1) Front side: Freeze Prevention Heater</p> <p>(2) Right side: High Limit Switch and Freeze Prevention Heater (Secure to put Freeze Prevention Heater on same position)</p> <p>(3) Left side: Freeze Prevention Heater (Secure to put Freeze Prevention Heater on same position)</p> <p>(4) Back side: Thermistor - Scale Detection* Remove Packing on CU HE Remove the small screw(M3x6) on CU HE that holding the Thermistor - Scale Detection</p> <p>*The following models have "Thermistor - Scale Detection" NRC111OD(GQ-C3257WX US) NRC111DV(GQ-C3257WX-FF US) NCC199OD(GQ-C3257WZ US) NCC199DV(GQ-C3257WZ-FF US)</p>	<p>(1)Front side</p>  <p>(2)Right side</p> <p>(2)Right side</p> <p>(3)Left Side</p> <p>(4)Back Side</p> <p>Packing - for holding Thermistor</p> <p>Thermistor - Scale Detection</p> <p>NRC111-OD/DV NCC1991-OD/DV NCC1992-DV</p> <p>NRC111OD/DV(GQ-C3257WX **) NCC199OD/DV(GQ-C3257WZ **)</p>

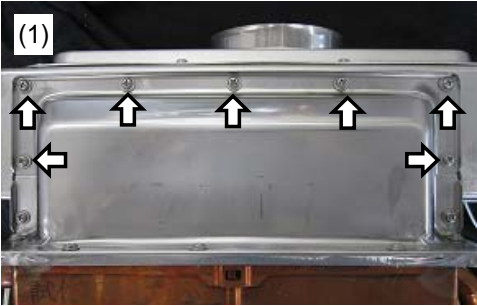
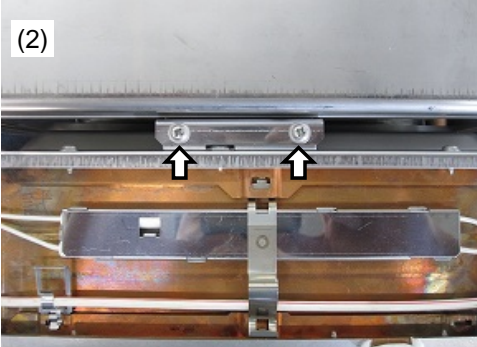
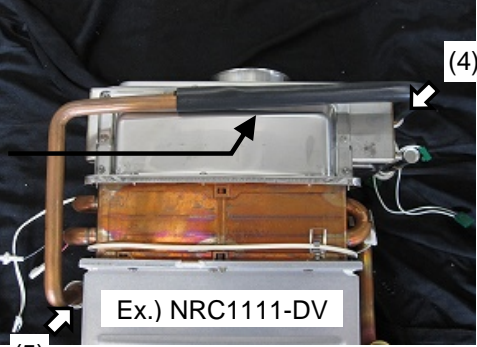
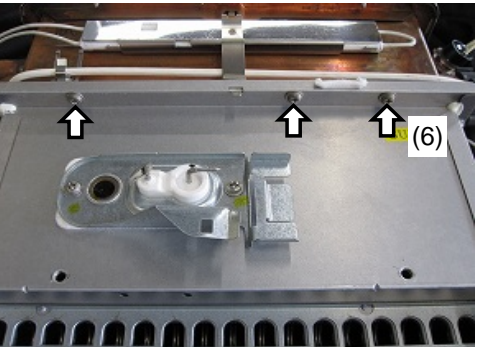

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>(4) Attach Thermal Fuse, 4 Clamps, and Harness Clip on 4 sides of CU HE, see 4 views of CU HE to make sure Thermal Fuse is routed correctly</p>	 <p>Front side</p> <p>Clamp</p>
<p>The end of Insulation tube(Black) and the Inlet pipe of CU HE are lined up</p>	
<p>Keep Thermal Fuse straight</p>	 <p>Left side</p>
<p>NRC1111-OD/DV NCC1991-OD/DV NCC1992-DV</p>	 <p>Back side</p> <p>Clamp</p>
<p>NRC1110D/DV(GQ-C3257WX **) NCC1990D/DV(GQ-C3257WZ **)</p>	 <p>Back side</p> <p>Clamp</p>
	
<p>Secure the Thermistor - Scale Detection with the screw(M3x6) on CU HE NOTE ; Only tighten by a handscrewdriver (No Drills). <u>Not need to attach the Packing (for holding Thermistor - Scale Detection) when replacement.</u> <u>To hold Wiring Harness of Thermistor - Scale Detection, tie the Wiring Harness with Harness Clip.</u></p>	 <p>Right side</p> <p>Thermal Fuse</p> <p>Wiring Harness of Thermistor - Scale Detection</p>
<p>Harness Clip</p>	 <p>Harness Clip</p>
<p>Wiring Harness of Thermistor - Scale Detection</p>	 <p>Wiring Harness of Thermistor - Scale Detection</p>
<p>◆Tie the wiring harnesses of "Thermal Fuse" and "High Limit Switch" with Harness Clip ◆Tie wiring harnesses of "Thermal Fuse", "High Limit Switch" and "Thermistor - Scale Detection" with Harness Clip</p>	 <p>Harness Clip</p>

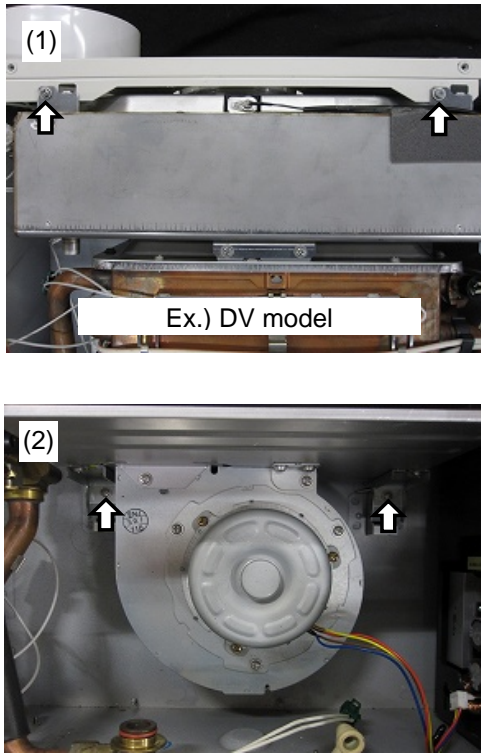
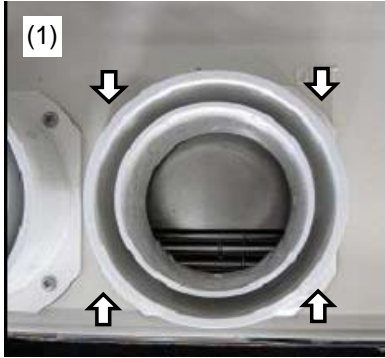
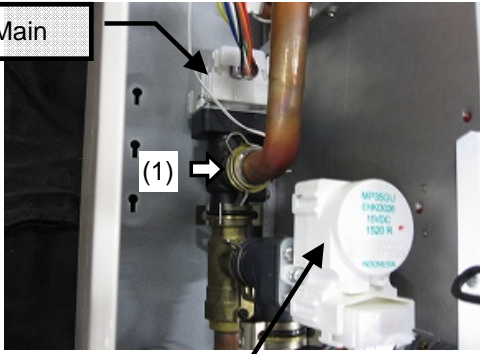
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>17. Replase Gaskets</p> <p>(1) Replace new Gasket on CU HE Exhaust Box</p> <p>(2) Remove old Burner Gasket and replace with new one</p>	 <p>(1)</p>  <p>(2)</p>
<p>18. Place new O - Rings on new CU HE</p> <p>(1) Inlet to CU HE</p> <p>(2) Outlet from CU HE</p>	 <p>(1)</p>  <p>(1)</p>  <p>(2)</p>

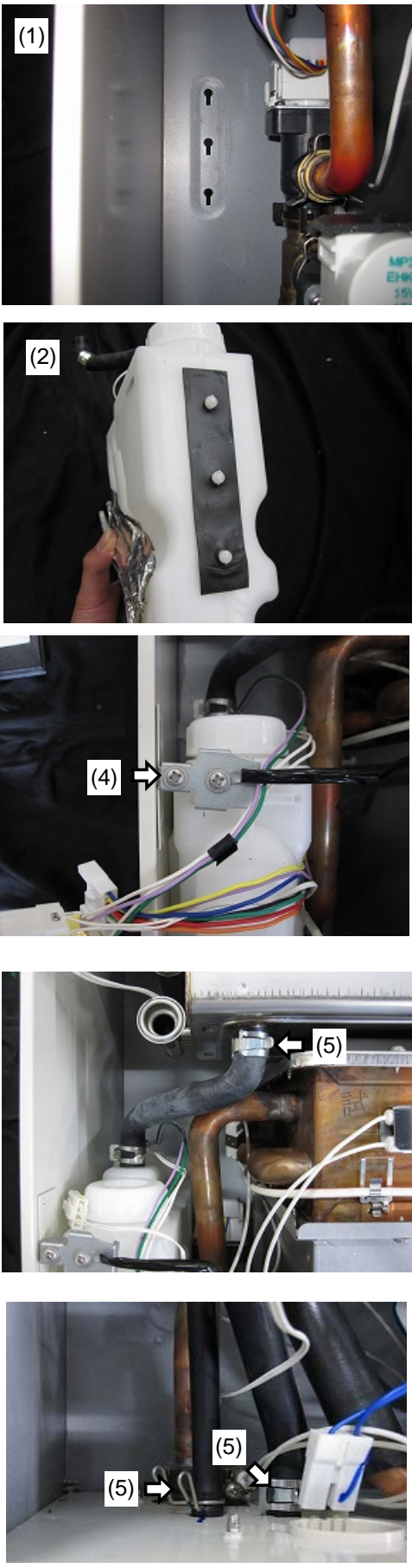
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>19. Replace Burner, CU HE, and SS HE</p> <p>(1) Attach 7 screws that located on the back side of SS HE to hold SS HE to CU HE</p> <p>(2) Attach 2 screws on the bracket between SS HE and CU HE</p> <p>(3) Connect Pipe - Heat Exchanger SS to CU</p> <p>(4) Attach "C" Clamp on top of the pipe going into SS HE</p> <p>(5) Attach "C" Clamp on the pipe going into CU HE</p> <p>(6) Attach 12 screws around perimeter of Burner and CU HE</p>	     <p>Pipe - Heat Exchanger SS to CU</p>

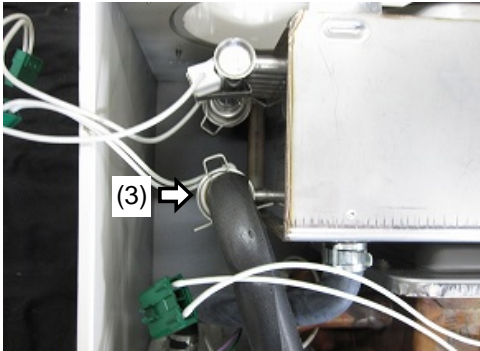
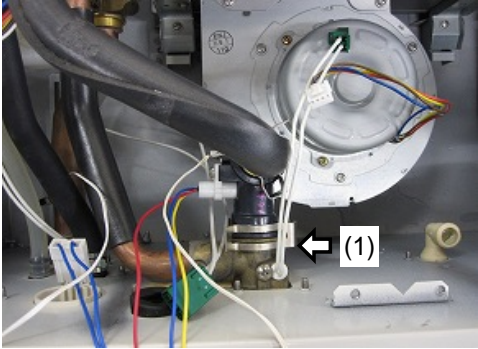
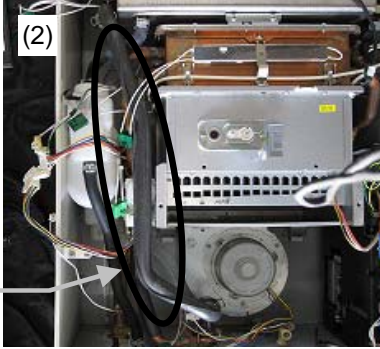
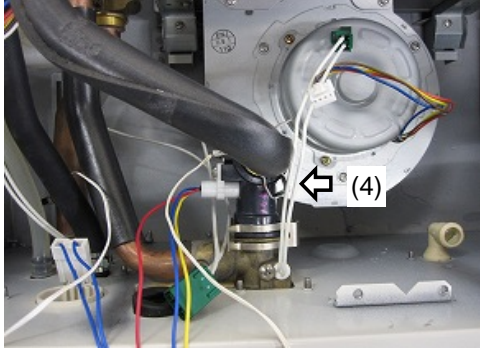
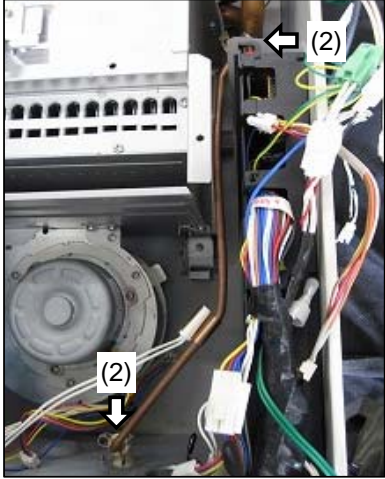
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>20. Replace the assembly back inside the case</p> <p>(1) Secure 2 set screws near the top of Case</p> <p>(2) Secure 2 set screws on the bottom of Burner</p>	 <p>(1)</p> <p>Ex.) DV model</p> <p>(2)</p>
<p>21. DV model only ; Replace Exhaust Flue on top of the unit</p> <p>(1) Attach Exhaust Flue to the unit and secure 4 screws</p> <p>(2) Reconnect the venting to the unit</p>	 <p>(1)</p>
<p>22. Reconnect a pipe to Water Servo - Main,</p> <p>(1) Insert a pipe to Water Servo - Main, and attach "C" Clamp</p>	 <p>Water Servo- Main</p> <p>(1)</p> <p>Water Servo- Bypass</p>

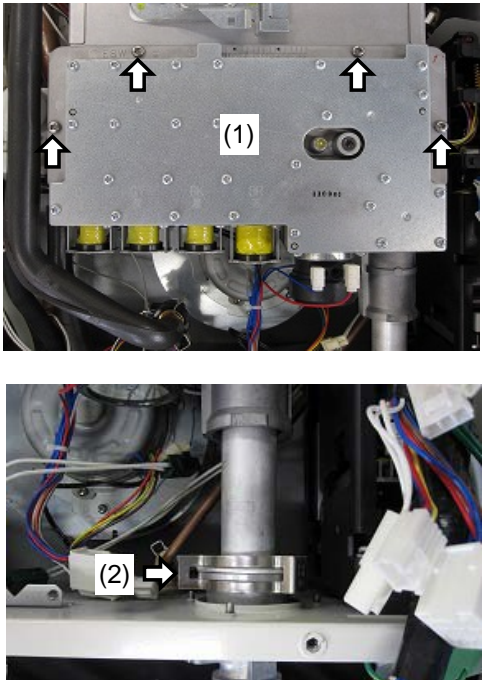
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>23. Reinstall Condensate Container</p> <p>(1) Locate the 3 key holes inside of Case</p> <p>(2) Locate the 3 knobs on Condensate Container</p> <p>(3) Line up the knobs with the key holes and pull down to secure Condensate Container</p> <p>(4) Attach with a screw the mounting plate to secure Condensate Container to bracket on Case</p> <p>(5) Attach 3 hose with Hose Clamps, you will need a needle nose pliers for these clamps</p>	 <p>(1)</p> <p>(2)</p> <p>(4)</p> <p>(5)</p> <p>(5)</p>

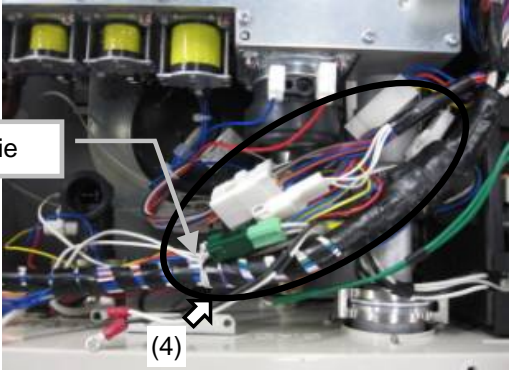
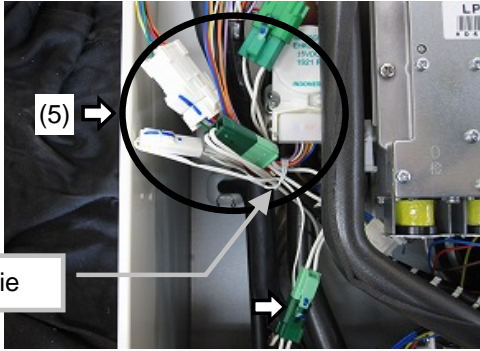
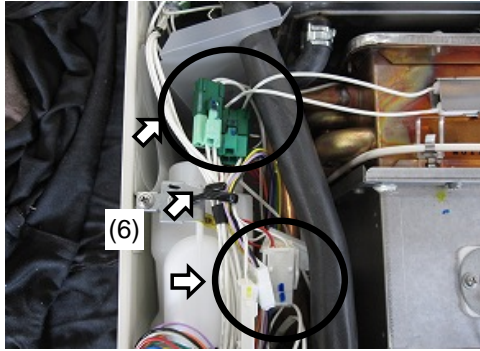
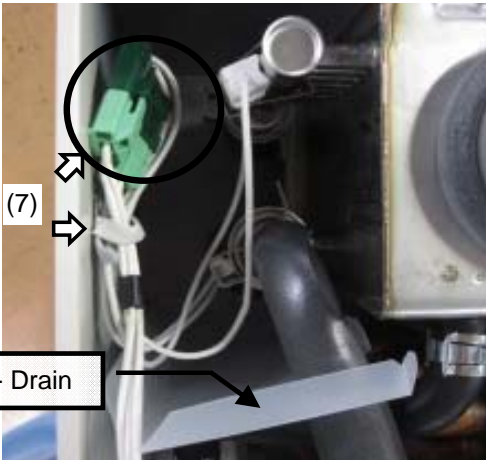
Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>24. Reconnect Pipe - Water Flow Sensor to SS HE, and attach Water Flow Sensor</p> <p>(1) Attach Water Flow Sensor with "C" Clamp</p> <p>(2) Insert the pipe into Water Flow Sensor and SS HE</p> <p>(3) Attach "C" Clamp on top of the pipe going into SS HE</p> <p>(4) Attach "C" Clamp on bottom of the pipe going into Water Flow Sensor</p> <div data-bbox="454 940 845 996" style="border: 1px solid black; padding: 2px; margin: 10px auto; width: fit-content;">Pipe - Flow Sensor to SS HE</div> 	  
<p>25. Reconnect Pipe - 1/4" Drain from CU HE</p> <p>(1) Insert the pipe into CU HE and Drain Connection - 1/4" tube</p> <p>(2) Attach with 2 "C" Clamps</p>	

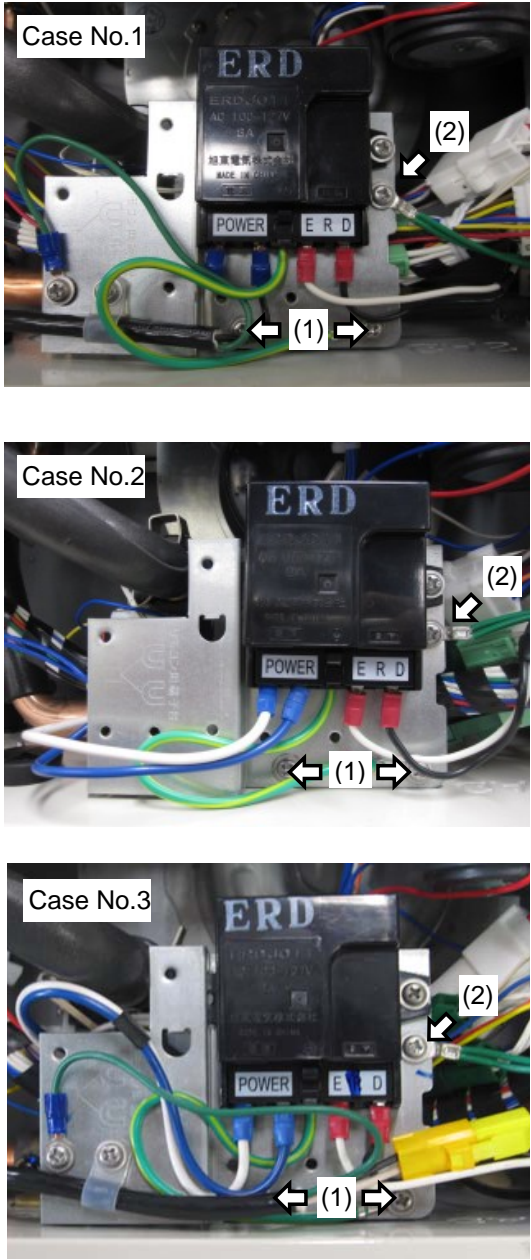

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>26. 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>27. Reconnect all wires that attach to the wiring harness and the body of the unit</p> <p>(1) Plug wiring for Igniter DV model only ; Plug Thermistor - Exhaust</p> <p>(2) Plug Freeze Prevention Heater, High Limit Switch, Thermal Fuse (2) and Thermistor - Scale Detection* Tie all wires with the anchor from right side of Case</p> <div style="border: 1px dashed black; padding: 5px; margin: 10px 0;"> <p>*The following models have "Thermistor - Scale Detection" NRC111OD/DV(GQ-C3257WX * *) NCC199OD/DV(GQ-C3257WZ * *)</p> </div> <p>(3) Plug Flame Rod and Ignition Plug</p> <div style="background-color: yellow; border: 1px solid black; padding: 5px; margin: 10px 0;"> <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;">Ex.) NRC111DV(GQ-C3257WX-FF US)</p>

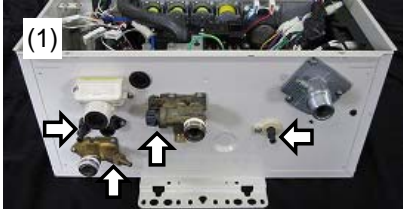

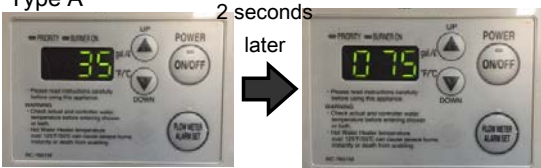


Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>(4) Plug Freeze Prevention Heaters (2), Wiring for Fan Motor, Water Flow Sensor, Thermistor - Cold Water, and Wiring for Manifold Plate And then tie wires with Cable Tie</p>	
<p>(5) Plug Freeze Prevention Heaters (3), Water Servo - Bypass, and Thermistor - Hot water And then tie wires with Cable Tie</p>	
<p>(6) Plug Freeze Prevention Heaters (2), Water Servo - Main, Water Level Electrode, and Thermistor - Heat Exchanger Tie wires with the anchor from Condensate Container</p>	
<p>(7) Plug Freeze Prevention Heaters (2), Tie wires with the anchor from left side of Case And then attach Cover - Drain</p>	

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>28. Replace Lightning Protection</p> <p>(1) Attach Lightning Protection Plate with 2 screws</p> <p>(2) Attach additional ground wires</p>	 <p>Case No.1</p> <p>Case No.2</p> <p>Case No.3</p>
<p>NRC111OD/DV(GQ-C3257WX * *) and NCC199OD/DV(GQ-C3257WZ * *) have "Blue connector" for Scale Flushing</p> <p>NOTE ; Don't connect this blue connector when replacing Heat Exchanger</p>	 <p>Disconnected</p>

Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>29. Check for water leak</p> <ol style="list-style-type: none"> (1) Secure 4 drain valves (2) Turn on water inlet valve slowly (check for leaks around "C" Clamps) (3) If you get leaks, close water inlet valve Re-secure "C" Clamps of leaking points 	
<p>30. Check for gas leaks and doing trial operation</p> <ol style="list-style-type: none"> (1) Turn on gas supply valve (2) Turn on the unit Check for leaks around Manifold Plate and joining areas For example ; Between Burner and CU HE (3) If you get leaks, Close gas supply valve Re-secure "C" Clamps of leaking points 	
<p>31. Replace Front Cover</p> <ol style="list-style-type: none"> (1) Secure Front Cover with 4 screws 	 <p style="text-align: center;">Ex.) OD model</p>
<p>32. Check for correct operation of the water heater.</p> <p>The following steps are for "NRC111DV/OD(GQ-C3257WX**)" and "NCC199DV/OD(GQ-C3257WZ**)"</p> <ol style="list-style-type: none"> (1) Turn on the remote controller The water heater does not need to run now (Do not open the water outlet valve and faucet) (2) Press and hold both the "UP(▲)" and "DOWN(▼)" buttons simultaneously for more than 2 seconds to enter the Maintenance Monitor mode* "03" will first appear on the remote controller *The maintenance monitor data No. will appear on the display for 2 seconds, and then the data will appear (Type A remote controller only) (3) Push the "UP(▲)" button until you see the data No.35** **The data No.35 shows the "Temperature of Thermistor-Scale Detection" (4) Turn on the gas supply valve, and then open the water supply valve and faucet (water outlet valve) to run the water heater for at least 1 minute. (5) Check whether the data No.35 rises when the water heater is running (The water heater operation is correct if it displays more than 32°F) If the temperature does not rise or displays 32°F, then the connection to the Thermistor-Scale Detection need to be checked and repeat (1) - (5) in step 32 (6) Press and hold both the "UP(▲)" and "DOWN(▼)" buttons simultaneously for more than 2 seconds to return normal mode 	<div style="border: 1px dashed black; padding: 5px;"> <p>Type A</p>  <p style="text-align: center;">2 seconds later</p> <p>Type B</p>  <p style="text-align: center;">Ex.) This shows the data No.35 "75°F" (Thermistor-ScaleDetection detects "75°F")</p> <hr/>  <p style="text-align: center;">Ex.) This shows the data No.35 rises "75°F" to "125°F" when the water heater is running</p> </div>