



NRC661 Series Heat Exchanger Replacement

Model Include: NRC661-DV, NRC661-OD

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.

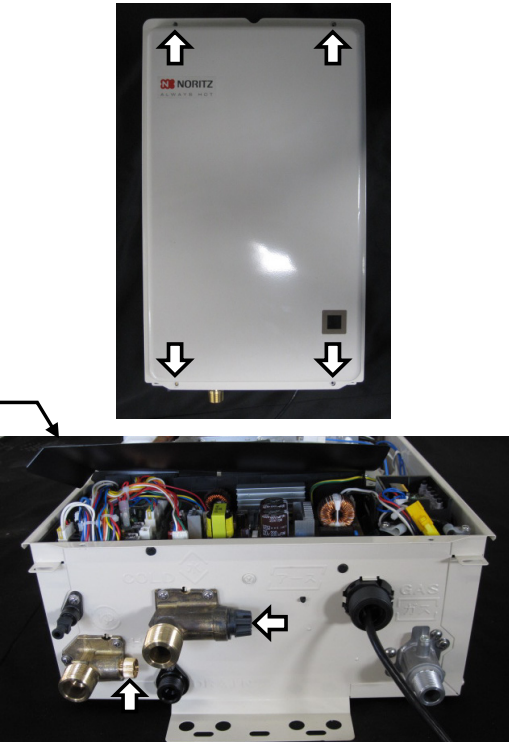
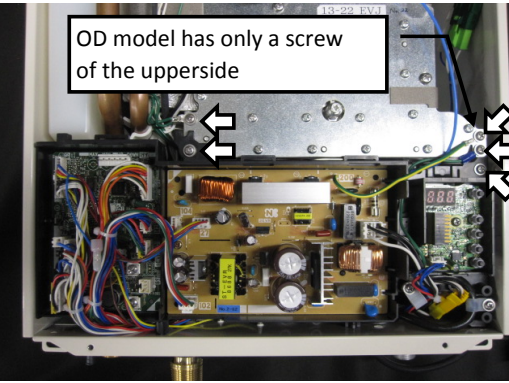
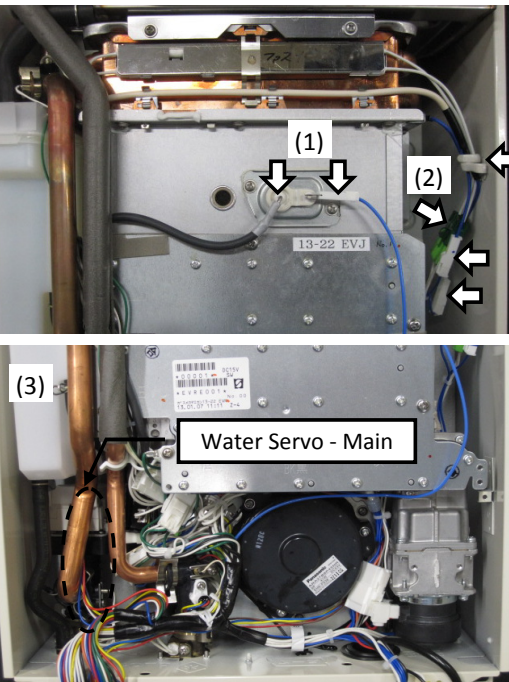
Please contact Noritz Technical Support (866-766-7489) for additional support.

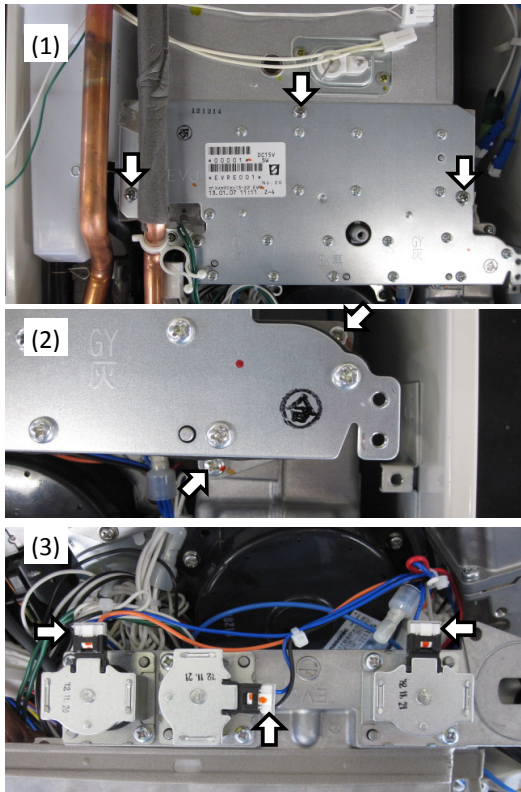
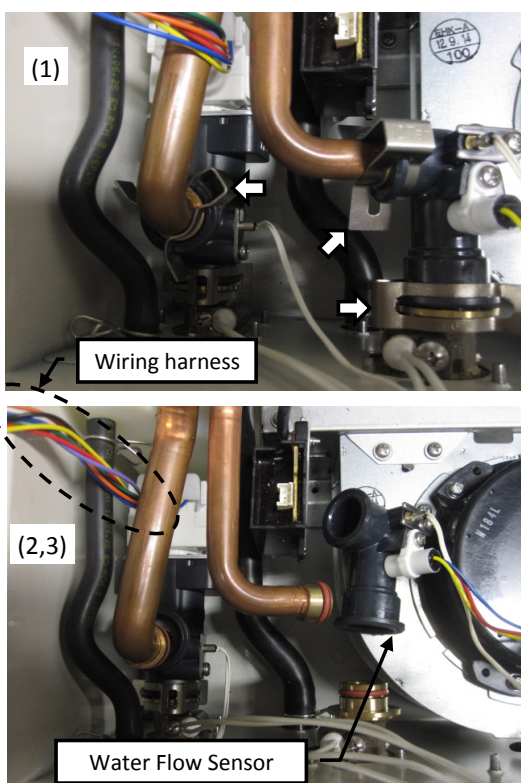
Noritz America Corporation

11160 Grace Avenue, Fountain Valley, CA 92708

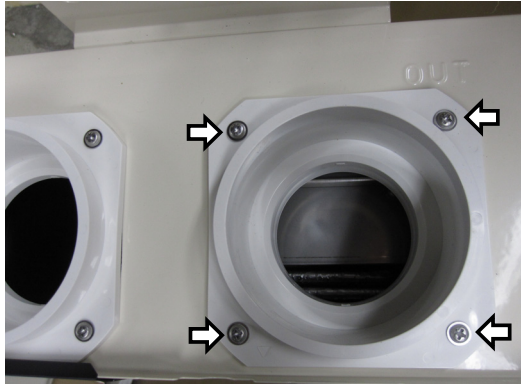
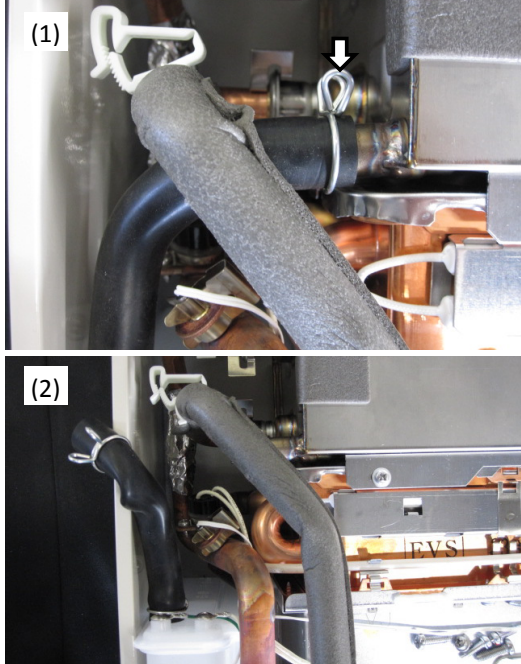
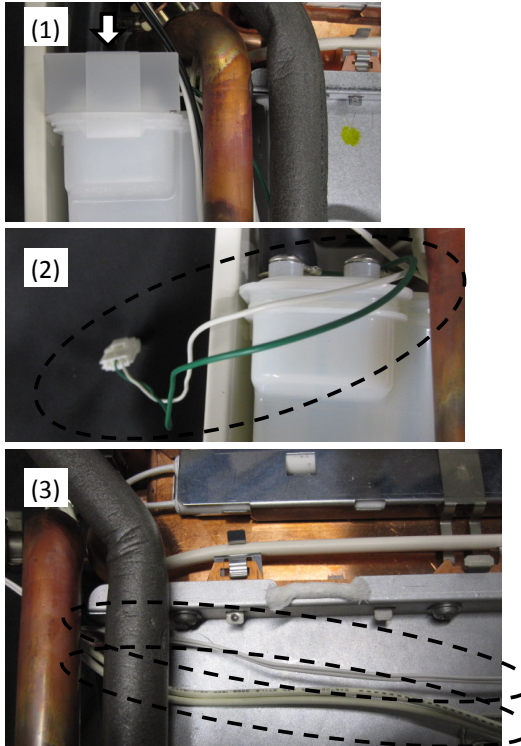
Phone 866-766-7489 Fax 714-241-1196

NRC661 Series Heat Exchanger Replacement Procedure

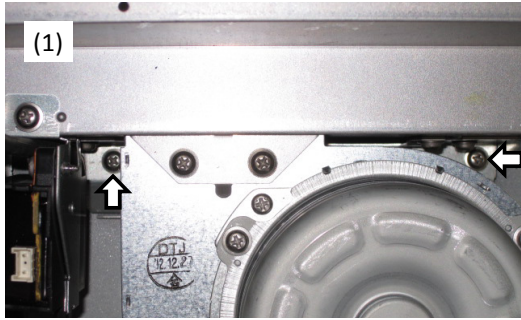
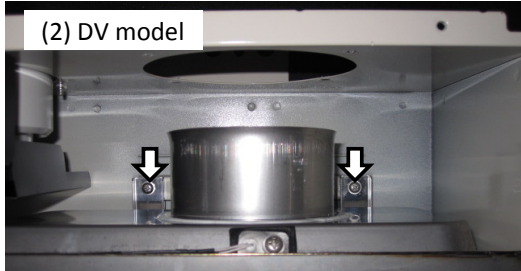
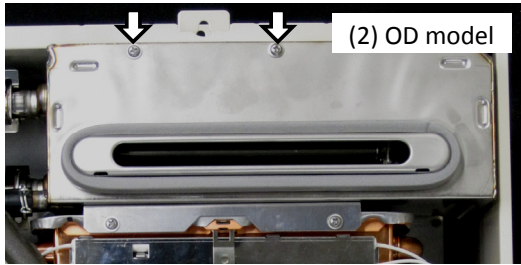
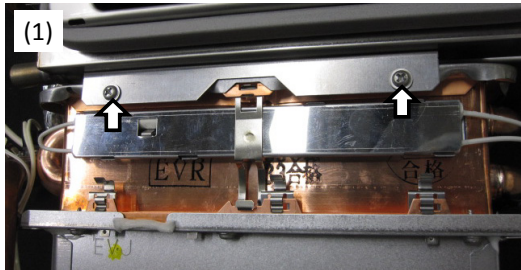
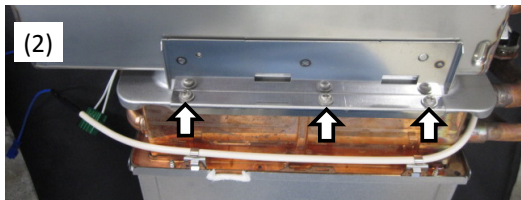
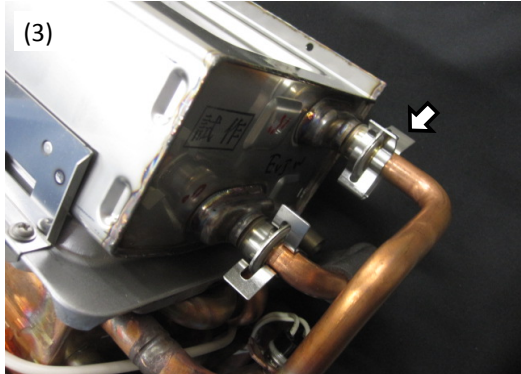
Procedure	Diagram
<p>1. Remove front cover</p> <ol style="list-style-type: none"> (1) Disconnect electrical power to unit (2) Turn off gas and water (3) Remove 4 screws (4) Remove drain valves (2) and drain unit completely (5) Remove cover - circuit board <div data-bbox="603 622 842 667" style="border: 1px solid black; padding: 2px; display: inline-block;">Cover - Circuit Board</div>	
<p>2. Disconnect the connectors from circuit board and remove the ground wire, circuit board</p> <ol style="list-style-type: none"> (1) Disconnect the connectors from circuit board (2) Remove the ground wire DV model; 3 ground wires OD model; 2 ground wires (3) Remove the circuit board; there are 2 screws, one on the right-side and middle-upper of the circuit board. Let the circuit board hang outside of the unit 	
<p>3. Unplug all wires that attach to the wiring harness and the body of the water heater</p> <ol style="list-style-type: none"> (1) Flame rod and ignition plug (2) Loosen wire anchor from right side of case and unplug freeze prevention heater, thermal fuse (2) (3) Unplug all wires that attach to the wiring harness except water servo - main (4) *DV model only Unplug freeze prevention heater, thermistor - exhaust. Release the wire clamps <div data-bbox="312 1917 472 1962" style="border: 1px solid black; padding: 2px; display: inline-block;">Wire clamp</div>	

Procedure	Diagram
<p>4. Remove manifold plate</p> <ol style="list-style-type: none"> (1) Remove the 3 big silver screws on the manifold plate that attach the manifold to the burner (2) Remove the 2 smaller silver screws from the manifold plate that attach the manifold to the gas valve (3) Remove manifold plate and unplug the connector from gas solenoid valves (3) 	 <p>(1)</p> <p>(2)</p> <p>(3)</p>
<p>5. Disconnect water pipes from water flow sensor and water servo - main</p> <ol style="list-style-type: none"> (1) Remove "C" Clamp (3) (2) Remove the water flow sensor (3) Make sure to feed the wires from water servo - main around the outlet water pipe as shown in bottom diagram 	 <p>(1)</p> <p>(2,3)</p> <p>Wiring harness</p> <p>Water Flow Sensor</p>

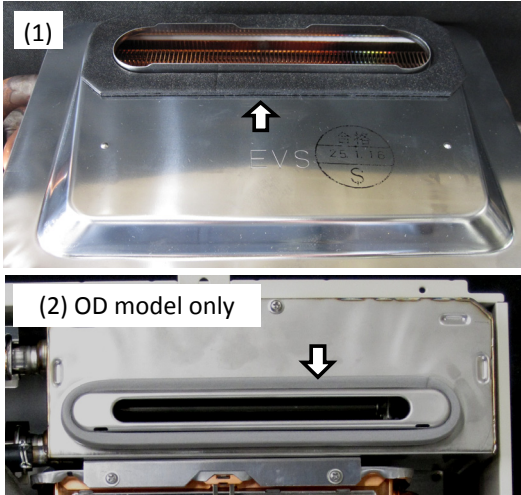
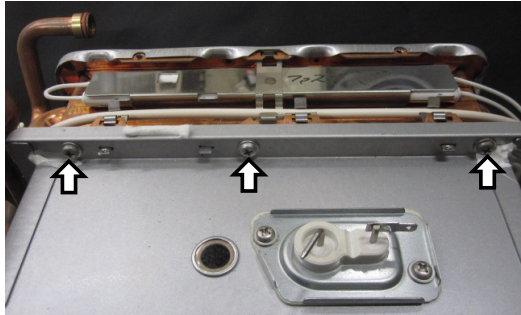
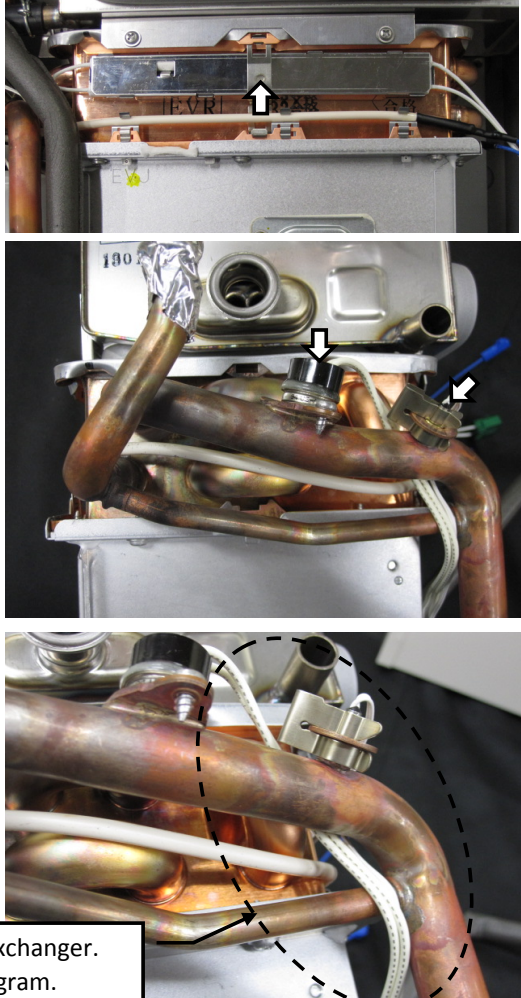
NRC661 Series Heat Exchanger Replacement Procedure

Procedure	Diagram
<p>6. Remove flue from top of unit *DV model only</p> <p>(1) Disconnect the venting from the unit</p> <p>(2) Remove the 4 screws and pull the flue off of the unit and set aside</p>	
<p>7. Remove the drain hose from Stainless Steel Heat Exchanger(SS HE)</p> <p>(1) Remove the 1 spring clamp</p> <p>(2) Remove the drain hose from SS HE and pull the hose out as shown in the right diagram (2)</p>	
<p>8. Remove cover and route wires - water level electrode</p> <p>(1) Remove cover - water level electrode from condensate container</p> <p>(2) Make sure to feed the wires from water level electrode wiring harness outside the case as shown in diagram (2)</p> <p>(3) Make sure to feed the wires from high limit switch and thermistor - heat exchanger wiring harness as shown in diagram (3)</p>	

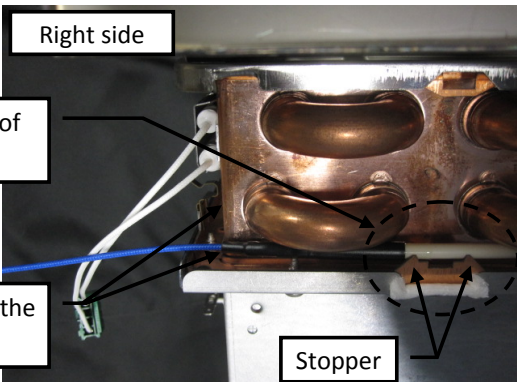
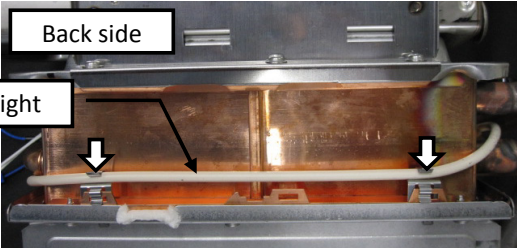
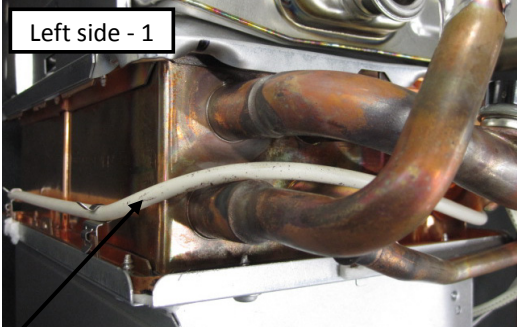
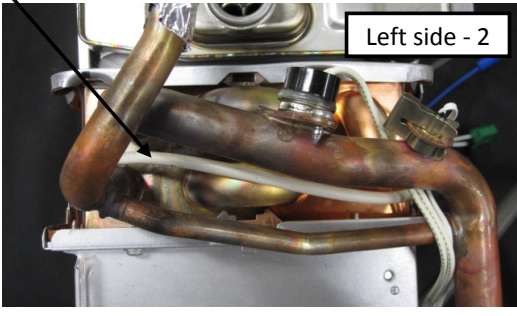
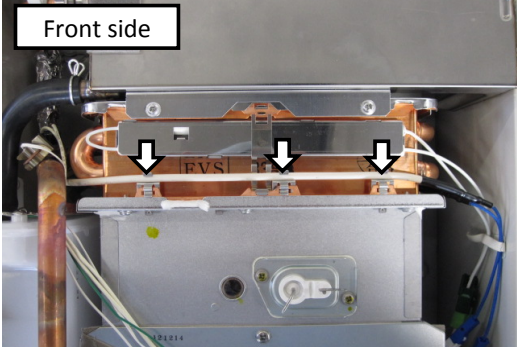
NRC661 Series Heat Exchanger Replacement Procedure

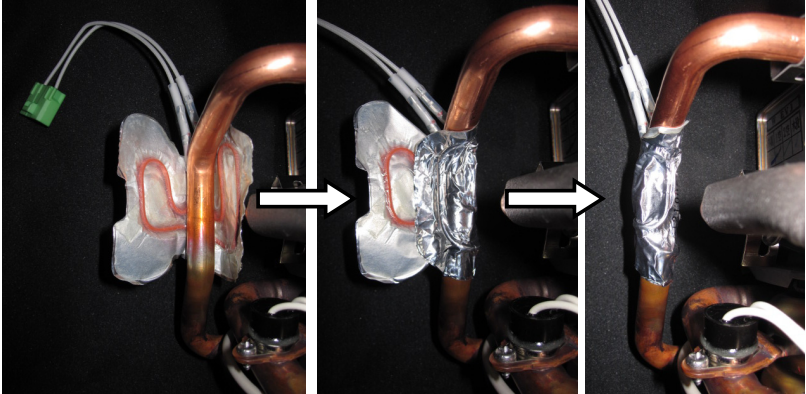

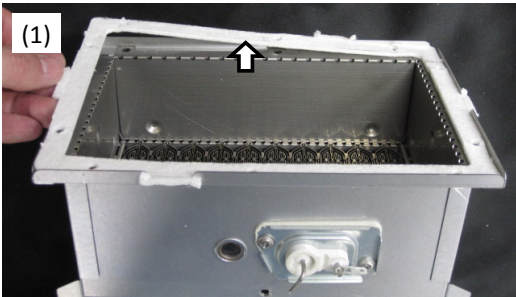
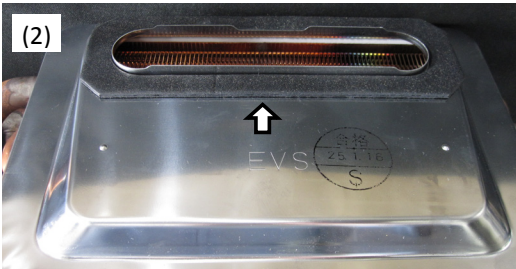
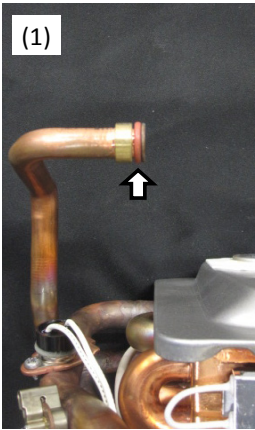
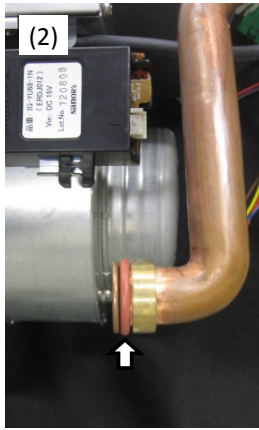
Procedure	Diagram
<p>9. Remove heat exchanger from case</p> <ol style="list-style-type: none"> (1) Remove the 2 set screws on the bottom of the burner (2) Remove the upper left and right set screws near the top of the case (OD Models the screws will be at the top center of the case) (support bottom of assembly) (3) SS HE, Copper Heat Exchanger(CU HE), Burner, and Fan will come out in one section. Remove from unit. 	 <p>(1)</p>  <p>(2) DV model</p>  <p>(2) OD model</p>
<p>10. Separate the SS HE from CU HE</p> <ol style="list-style-type: none"> (1) Remove the 2 screws on the bracket between the SS HE and CU HE (2) Remove the 3 screws that located on the back side of the SS HE (3) Remove "C" clamp (4) Separate the SS HE from the CU HE 	 <p>(1)</p>  <p>(2)</p>  <p>(3)</p>

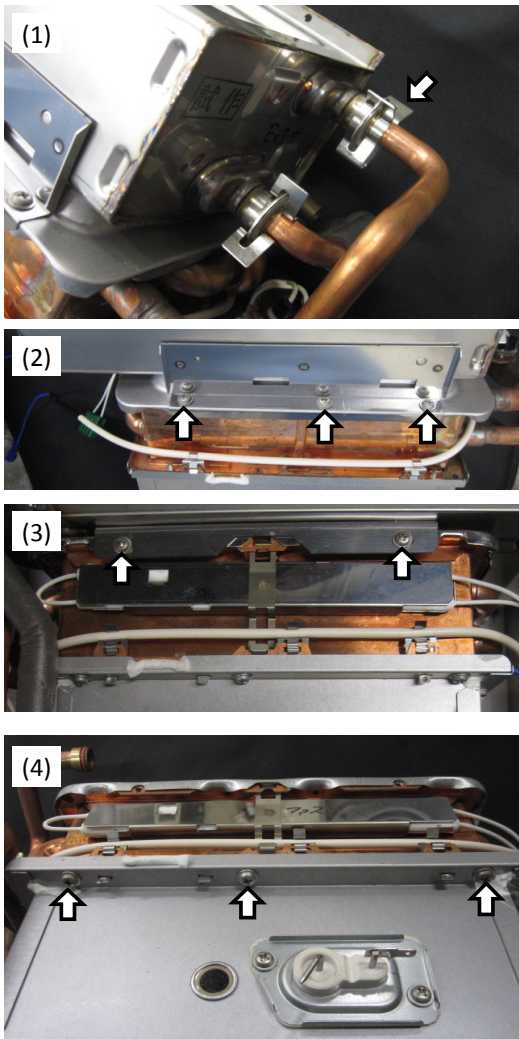
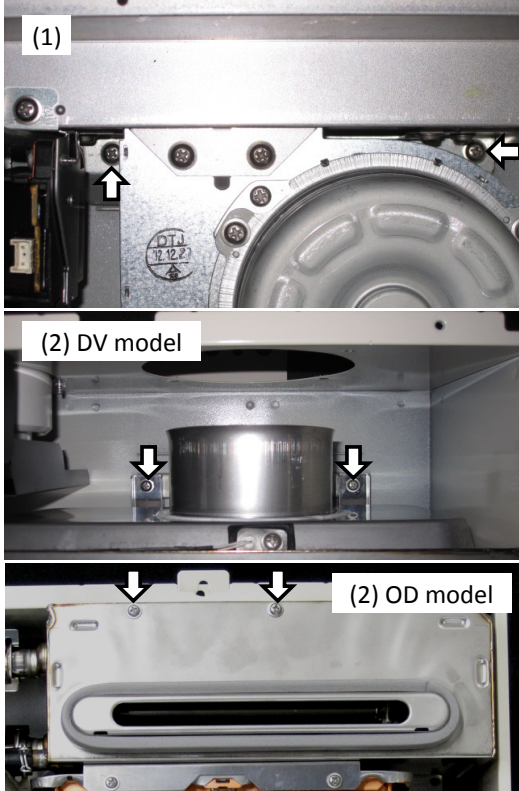
NRC661 Series Heat Exchanger Replacement Procedure

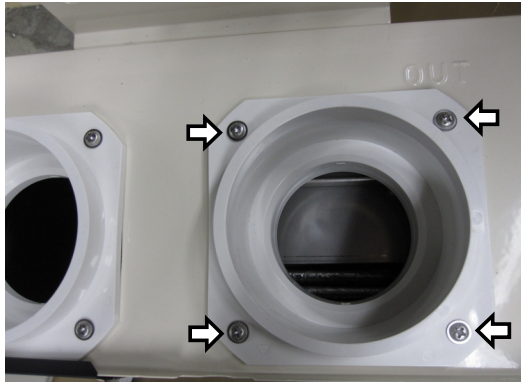
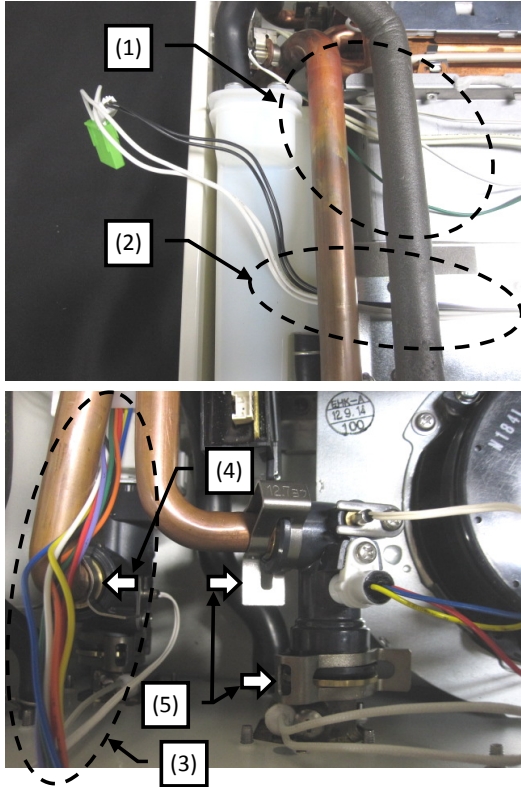
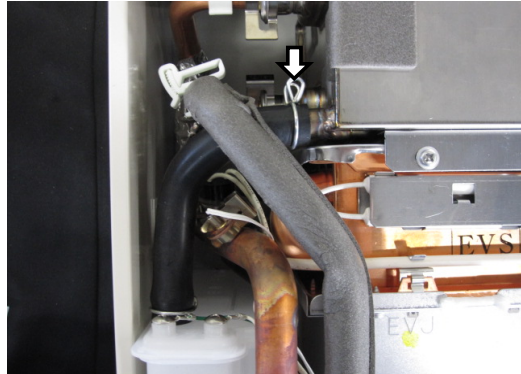
Procedure	Diagram
<p>11. Replacing SS HE</p> <p>Note: If you are not replacing the SS HE then you can skip this step and set SS HE aside.</p> <p>(1) Remove old gasket between SS HE and CU HE Exhaust Box and replace with new one</p> <p>(2) *OD model only Remove the gasket on the front of the SS HE and place on new SS HE</p>	 <p>(1)</p> <p>(2) OD model only</p>
<p>12. Replacing the CU HE</p> <p>(1) Remove 10 screws holding burner to CU HE</p> <p>(2) Separate burner from CU HE</p>	
<p>13. Remove heat exchanger components from old heat exchanger and put on new heat exchanger</p> <p>(1) Front side: Freeze prevention heater</p> <p>(2) Left side: High limit switch and thermistor - heat exchanger</p> <p>*Replace new O Ring for the thermistor - heat exchanger</p>	 <p>For the high limit switch and thermistor - heat exchanger. Make sure to route the wire as shown in the diagram.</p>

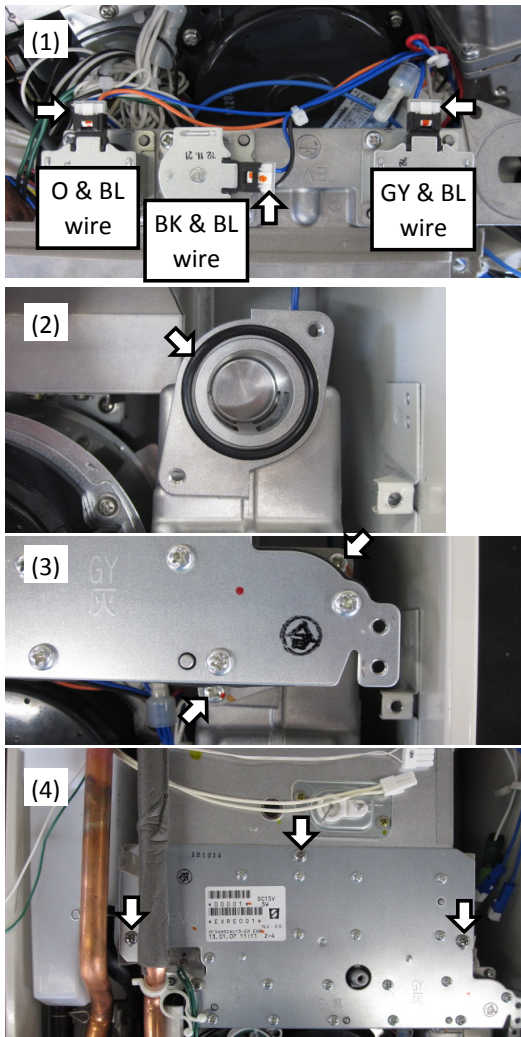
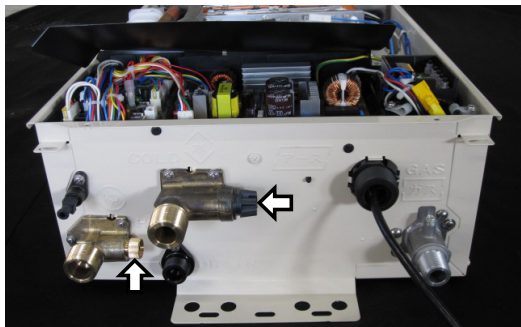
NRC661 Series Heat Exchanger Replacement Procedure

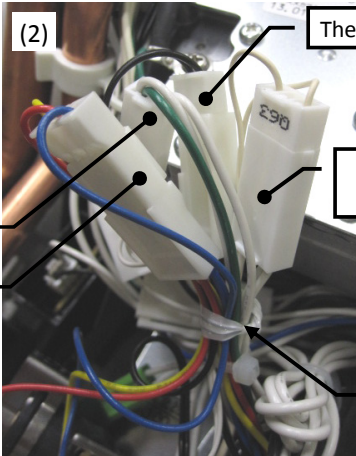
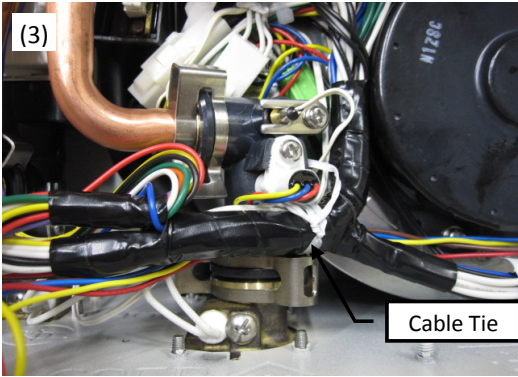
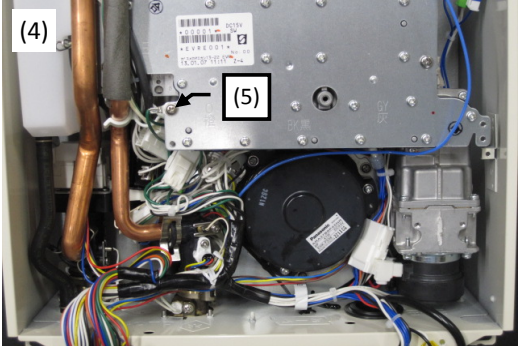
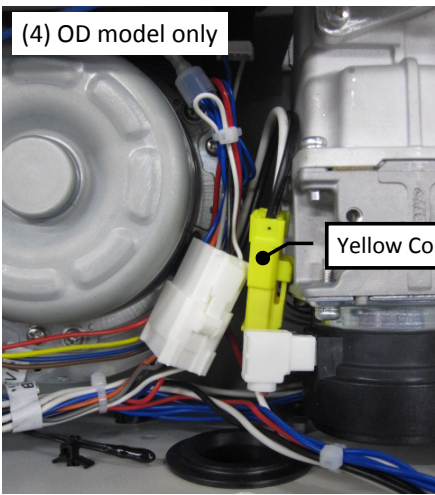
Procedure	Diagram
<p>(3) Thermal fuse and fasteners from 4 sides of heat exchanger, See the 4 views of the heat exchanger to make sure the thermal fuse is routed correctly</p>	
<p>Install the thermal fuse(White) inside of the stopper</p>	
<p>The end of insulation tube(Black) and the front of heat exchanger are lined up</p>	
<p>Keep the thermal fuse straight</p>	
<p>Make sure to route the thermal fuse as shown in the diagram to the right (Left side - 1 & 2)</p>	
	

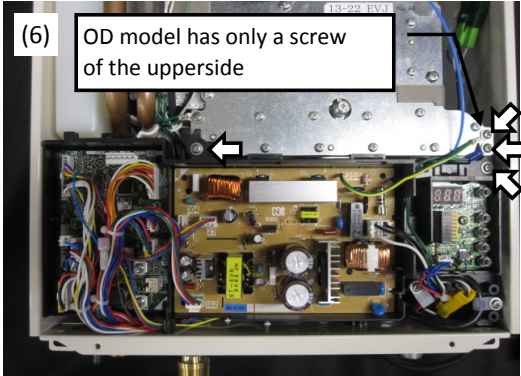

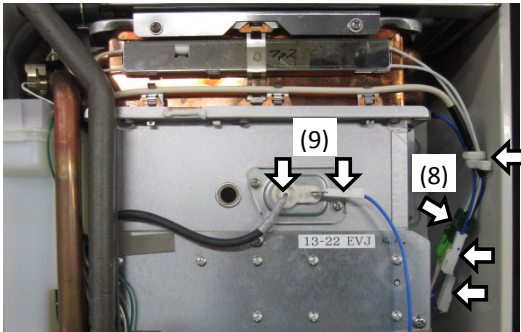

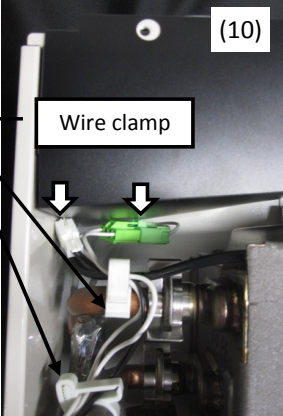
Procedure	Diagram
<p>(4) *DV model only Replace freeze prevention heater with one that was shipped in the heat exchanger kit. Wrap freeze prevention heater around inlet pipe to CU HE.</p> 	<p>Left side of HE</p> 
<p>14. Replace gaskets</p> <p>(1) Remove old burner gasket and replace with new one (2) Remove old gasket between SS HE and CU HE Exhaust Box and replace with new one</p>	<p>(1)</p>  <p>(2)</p> 
<p>15. Place new O Rings on new CU HE</p> <p>(1) Inlet to CU HE (2) Exit to CU HE</p>	<p>(1)</p>  <p>(2)</p> 


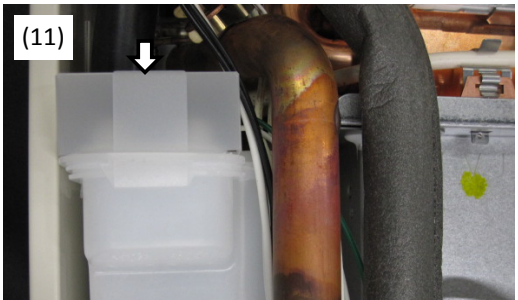
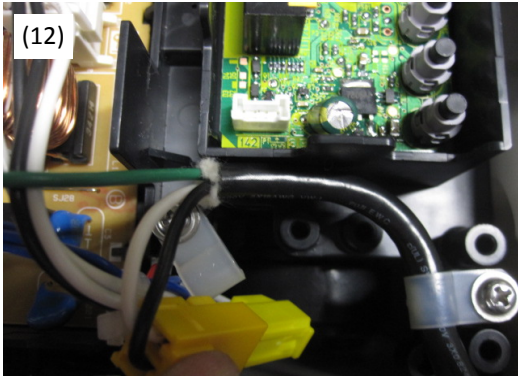
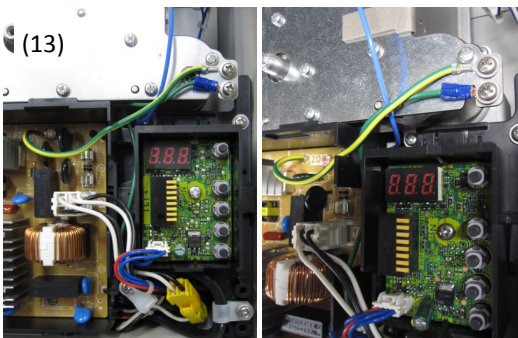

Procedure	Diagram
<p>16. Reattach burner, CU HE, and SS HE</p> <ol style="list-style-type: none"> (1) Attach inlet pipe to CU HE with the "C" Clamp. Make sure to insert pipe in all the way before attaching "C" Clamp. (2) Attach the 3 screws that located on the back side of the SS HE to hold the SS HE to the CU HE (3) Attach the 2 screws on the bracket between the SS HE and CU HE (4) Attach the 10 screws around perimeter of burner and heat exchanger 	 <p>(1)</p> <p>(2)</p> <p>(3)</p> <p>(4)</p>
<p>17. Replace assembly back inside case</p> <ol style="list-style-type: none"> (1) Secure the 2 set screws on the bottom of the burner (2) Secure the upper left and right set screws near the top of the case (OD Models the screws will be at the top center of the case) 	 <p>(1)</p> <p>(2) DV model</p> <p>(2) OD model</p>

Procedure	Diagram
<p>18. Replace flue from top of unit *DV model only</p> <p>(1) Attach the flue to the unit and secure the 4 screws</p> <p>(2) Reconnect the venting to the unit</p>	
<p>19. Reconnect water connections</p> <p>(1) Maintain high limit switch, thermistor - heat exchanger and water level electrode wiring harness as shown in diagram (1)</p> <p>(2) *DV model only Maintain freeze prevention heater and thermistor - exhaust wiring harness as shown in diagram (2)</p> <p>(3) Maintain wiring harness as shown in diagram (3)</p> <p>(4) Insert pipe from CU HE to water servo - main and attach "C" clamp</p> <p>(5) Insert water flow sensor to inlet water connection and attach "C" clamp. And then insert water inlet pipe to water flow sensor and attach "C" clamp.</p>	
<p>20. Replace the drain hose to SS HE</p> <p>(1) Replace the drain hose to SS HE and reattach the 1 spring clamp as right diagram</p>	

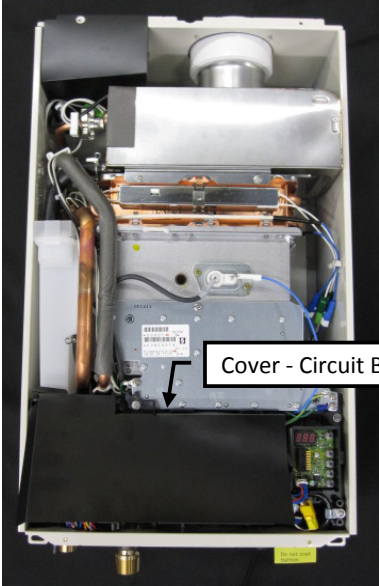
Procedure	Diagram
<p>21. Replace manifold plate</p> <ol style="list-style-type: none"> (1) Plug the connector to gas solenoid valves (3) as right diagram (2) Confirm that there is o-ring before replace manifold plate (3) Replace the 2 smaller silver screws from the manifold plate that attach the manifold to the gas valve (4) Replace the 3 big silver screws on the manifold plate that attach the manifold to the burner (5) Hand tighten all 5 screws equally 	 <p>(1) O & BL wire, BK & BL wire, GY & BL wire</p> <p>(2)</p> <p>(3)</p> <p>(4)</p>
<p>22. Check for water leaks</p> <ol style="list-style-type: none"> (1) Replace drain valves (2) (2) Turn on cold water shut off valve slowly (check for leaks around "C" clamps) (3) If you get leaks shut off water and re-secure "C" Clamps 	

Procedure	Diagram
<p>23. Plug all wires that attach to the wiring harness and the body of the water heater</p> <p>(1) Plug all wires that attach to the wiring harness</p> <p>(2) Tie wires by cable tie as right diagram</p> <p>(3) Tie wires by cable tie as right diagram</p> <div data-bbox="539 459 810 497" style="border: 1px solid black; padding: 2px; display: inline-block;">Thermistor - Hot Water</div> <div data-bbox="571 519 810 557" style="border: 1px solid black; padding: 2px; display: inline-block;">Water Flow Sensor</div> <p>(4) Put the all wires in the position as shown in diagram (4)</p> <p>*OD model only</p> <p>Put the yellow connector in the position as shown in diagram (4) OD model only</p> <p>(5) Secure the ground wire</p>	<div data-bbox="866 253 1385 707"> <p>(2)</p>  <div data-bbox="1177 264 1358 302" style="border: 1px solid black; padding: 2px; display: inline-block;">Thermistor - Air</div> <div data-bbox="1198 405 1385 465" style="border: 1px solid black; padding: 2px; display: inline-block;">Thermistor - Cold Water</div> <div data-bbox="1257 629 1385 667" style="border: 1px solid black; padding: 2px; display: inline-block;">Cable Tie</div> </div> <div data-bbox="866 725 1385 1099"> <p>(3)</p>  <div data-bbox="1257 1032 1385 1070" style="border: 1px solid black; padding: 2px; display: inline-block;">Cable Tie</div> </div> <div data-bbox="866 1117 1385 1462"> <p>(4)</p>  <div data-bbox="1086 1189 1134 1234" style="border: 1px solid black; padding: 2px; display: inline-block;">(5)</div> </div> <div data-bbox="866 1480 1385 1973"> <p>(4) OD model only</p>  <div data-bbox="1198 1704 1385 1742" style="border: 1px solid black; padding: 2px; display: inline-block;">Yellow Connector</div> </div>

Procedure	Diagram
<p>(6) Replace the circuit board; secure 2 screws, one on the right-side and middle-upper of the circuit board. Secure the ground wire. DV model; 2 ground wires OD model; 1 ground wires</p> <p>(7) Reconnect the connectors to circuit board</p> <p>(8) Plug freeze prevention heater, thermal fuse (2) and tie it by wire anchor to right side of case as right diagram</p> <p>(9) Plug flame rod and ignition plug</p> <p>(10) *DV model only Plug freeze prevention heater, thermistor - exhaust. Secure the wire by clamps (2) as shown in diagram (10)</p>	    

Procedure	Diagram
<p>(11) Replace cover - water level electrode to condensate container</p> <p>(12) *DV model only Reinstall power supply cord as right diagram</p> <p>(13) Put all wires as right diagram</p> 	<p>(11) </p> <p>(12) </p> <p>(13) </p> 

NRC661 Series Heat Exchanger Replacement Procedure

Procedure	Diagram
(14) Replace cover - circuit board	 <p>Cover - Circuit Board</p>
<p>24. Check for gas leaks and doing trial operation</p> <ul style="list-style-type: none"> (1) Turn on gas (2) Turn on the unit. Check for leaks around manifold plate and joining areas. For example - Between Burer and CU HE (3) If you get leaks shut off gas, water and re-secure leaking points 	
<p>25. Replace front cover</p> <ul style="list-style-type: none"> (1) Secure front cover with 4 screws 	