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INSTALLATION INSTRUCTIONS

RPI PART #SDK050 VAPORIZER/CONDENSER SERVICE KIT TO FIT NX

RPI PART #SKD051 VAPORIZER/CONDENSER SERVICE KIT TO FIT 100NX

RPI PART #SDK093 INSULATION BLOCK KIT TO FIT NX & 100NX

TOOLS REQUIRED

- ☐ 2.5 mm and 3 mm hex wrenches
- ☐ Soft Jaw Pliers (RPI Part #RXT005)
- ☐ Grounding Strap (RPI Part #RPS998)
- ☐ Compressed or Canned Air
- ☐ Clean surface covered with lint free cloth or paper to contain dust for disposal

OPTIONAL TOOLS AND SUPPLIES

- ☐ Marking Pen
- ☐ Paper or Painters's Tape
- ☐ T-10 Torx® Wrench

PERSONAL PROTECTIVE EQUIPMENT REQUIRED

- ☐ Gloves
- ☐ Dust Mask
- ☐ Goggles

NOTE

When referring to these instructions, please consider the following:

- Sterrad NX has (1) Condenser Housing
- Sterrad 100NX has (3) Condenser Housings

ELECTRICAL WARNING

Dangerous AC voltages are present and exposed when the covers are removed and the power is turned on.

STEP #1 – DETERMINE LEAK RATE BASE LINE

Before removing the Vaporizer/Condenser Assembly, perform a leak back test (see the Sterrad NX or 100NX service manual for a full description of the Leak-Back Test) to determine a baseline leak rate for the system – a passing leak back rate is 25 mtorr/minute or less for at least 10 minutes.

STEP #2 – REMOVING THE VAPORIZER/CONDENSER ASSEMBLY

WARNING Hot surface - do not touch when hot!

WARNING Static Sensitive Components and Circuit Boards – Use Grounding Strap (RPI Part #RPS998) when connecting or disconnecting any electrical wires or connectors.

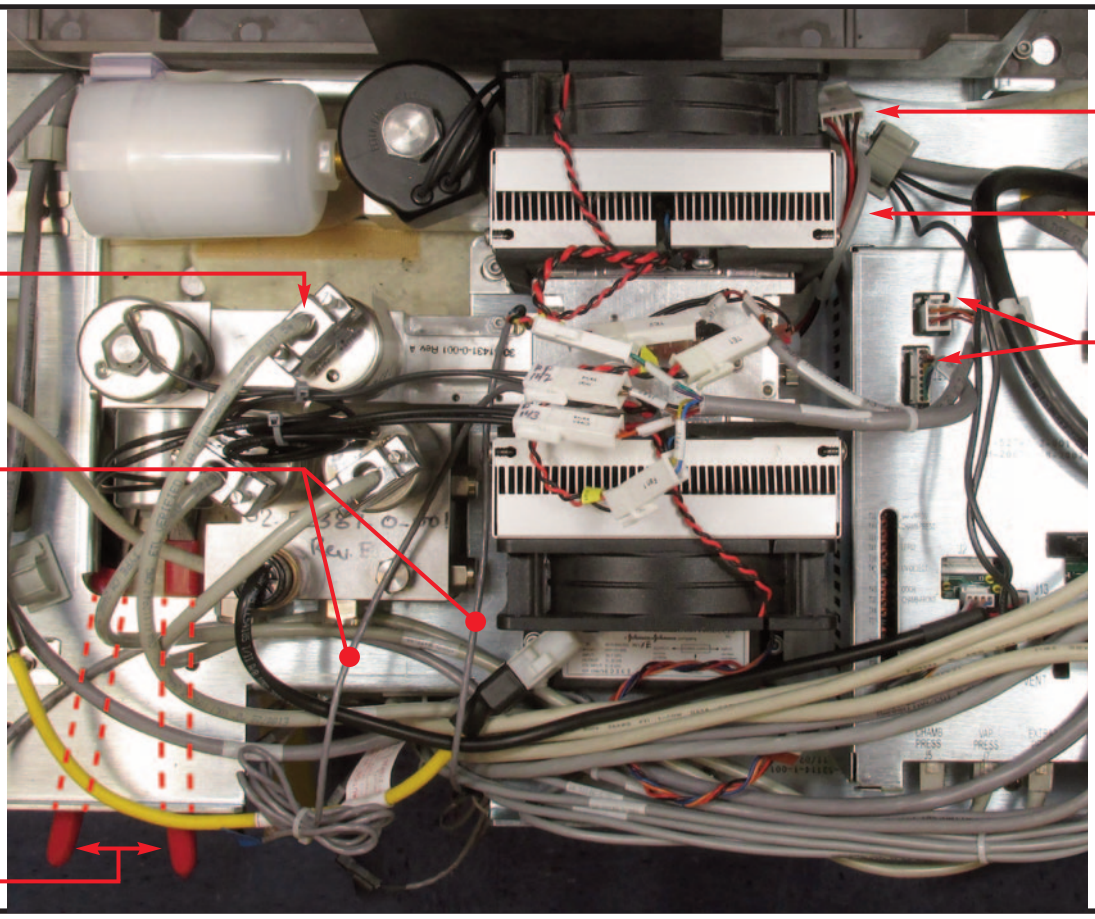
SERVICE TIP Before disconnecting any connectors ensure that both sides of each connector are labeled with the connector number - a fine point marker is suggested. It is also suggested that you label the front of the Condenser Module Housing with TE1 And TE2 ***(see Figure 2 on page 3)*** to match the Thermoelectric Module mounted on each side as well as the locations of each Mounting Bracket for ease of later assembly.

1) Disconnect the following electrical connectors: The two Vaporizer/Condenser Cables marked P25 and P26 located on the Main PCB, and the Pressure Transducer Cable ***(see Figure 1)***.

2) Using a 3mm Hex wrench, loosen but do not remove two socket head screws holding the vaporizer brackets to the chassis.

3) Using a Soft Jaw Plier (RPI Part #RXT005), loosen the Ultra-Torr® fitting at the base of the valve manifold approximately one full turn. For suggested tool placement, ***see Figure 1***.

FIGURE 1



STEP #2 – REMOVING THE VAPORIZER/CONDENSER ASSEMBLY *(continued)*

4) Gently lift the Vaporizer/Condenser Assembly up slightly so that you can continue loosening the two socket head bolts until completely unthreaded. Continue lifting the assembly until the Ultra-Torr® stem is completely out of the fitting, disconnect the heater cable and unscrew the H2O2 delivery tube from the back of the Vaporizer/Condenser Assembly. Remove the vaporizer/condenser from the sterilizer and place on a clean, covered flat surface for further disassembly.

STEP #3 – CLEANING PROCESS

WARNING Chemical and Biological Dust. Cleaning process generates dust which may be dangerous to breathe and irritating to the skin. It is recommended to wear a dust mask, eye protection and gloves for these steps.

WARNING Hazardous Material Warning. All dust and any salts collected during the cleaning process should be handled as hazardous waste, and disposed of per local, state and federal regulations.

1) Clean the dust out of each fan and Thermoelectric Module heat sink by either using canned air or an air compressor and air gun.

OPTIONAL If dust is clogging the heat sink and cannot be easily blown out, the fan shrouds can be removed from the Thermoelectric Module for easy access to clean away the dust. To remove the fan shrouds, first remove the six T-10 Torx® screws – four of which are 3.5 mm (.138") long, and two of which are 4 mm (.158") long. Note that the two longer screws are used to mount the bracket to the fan shroud. Next, carefully move the fan shroud out of the way to gain access to the heat sink fins. Then clean the heat sink fins with extreme caution because they can be easily bent. Replace the heat sink shroud, and avoid pinching the fan power lead wires between the shroud and the fins – the wires are easy to damage. Replace the mounting bracket aligning it to the marks made earlier using the longer 4 mm (.158") T-10 screws, and then reinstall all remaining screws before proceeding to the other module.

2) Disconnect the wire harness from the Solenoid Valves, Thermoelectric Modules (TE1 and TE2), the Fans (FAN1 and FAN2) and the automatic reset Thermostat ensuring that each side of all connectors are full marked and can easily be identified.

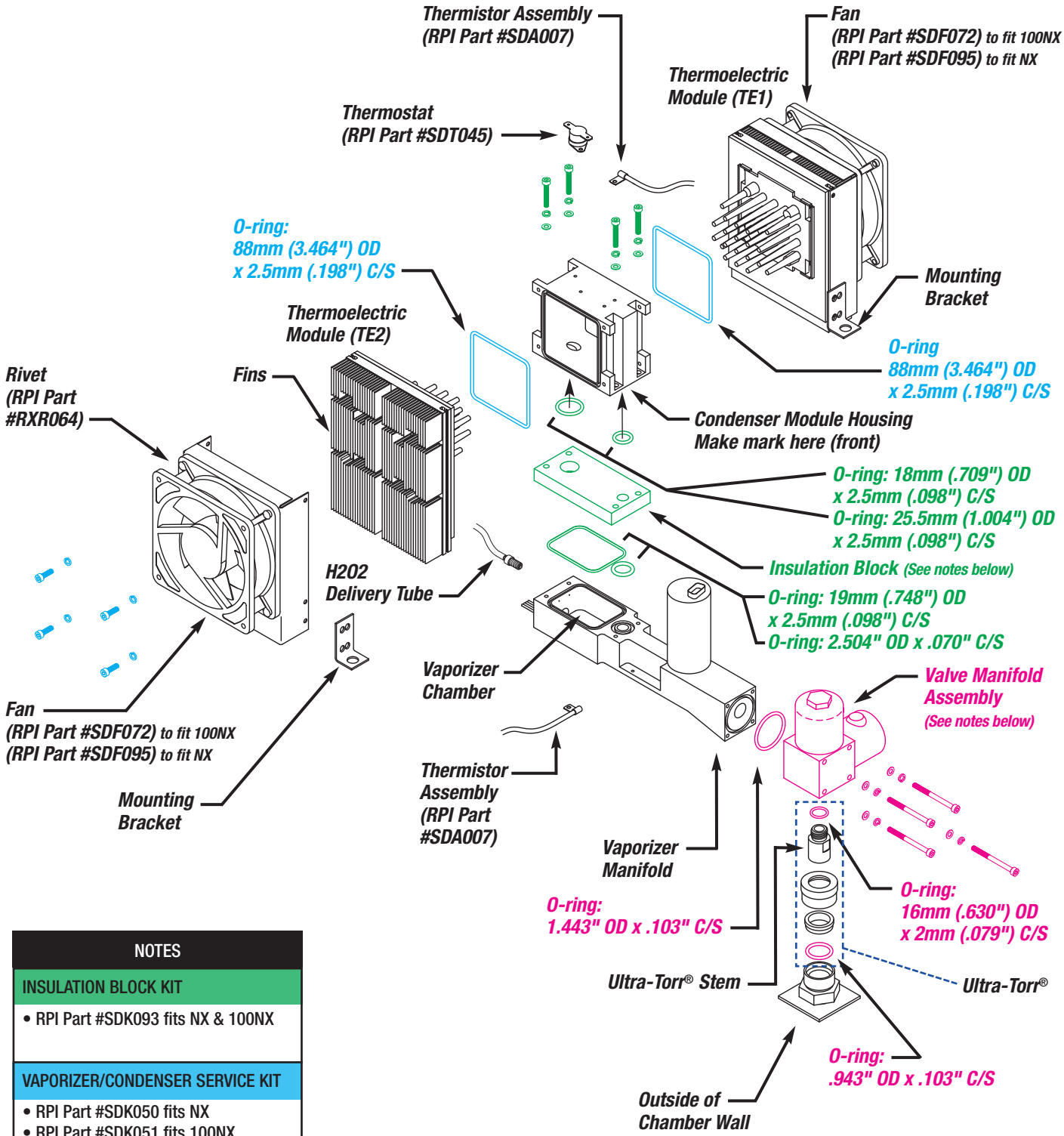
3) Remove the Insulation Blanket and retain for reinstallation later. Remove the two pieces of Velcro® hook found on either side of the Insulation Block and discard. Be sure to note the location of the Velcro strips for placement of new strips to be installed later.

4) Using a 3 mm hex wrench, remove the Valve Manifold Assembly ***(see Figure 2 on page 3)*** and set aside, but do not discard. If possible, leave the O-ring at the end of the Vaporizer in place until later. Discard all hardware.

5) Using a 3 mm hex wrench remove the four socket head screws holding the Vaporizer Manifold Assembly to the Condenser Assembly. Discard removed screws and hardware. Set aside the Condenser Assembly for later disassembly and remove the Insulation Block from the Vaporizer Manifold. **Note:** Leave all O-rings in place on the face of the Vaporizer Manifold until later.

6) Using a dry scrubbing brush, carefully clean the Vaporizer Manifold Chamber – do not attempt to remove all discoloration – just the accumulated salts. Carefully dispose of all collected material. Use canned air or a compressor to clean out any remaining dust. DO NOT USE ANY WATER OR SOLVENTS - JUST AIR. Set the Vaporizer aside for later reassembly. Be very careful when cleaning the top edge of the vaporizer Chamber (use Scotch-Brite™ cleaning pad if necessary) to avoid dislodging the O-ring.

FIGURE 2
Model NX is shown in this Exploded View



NOTES
INSULATION BLOCK KIT
• RPI Part #SDK093 fits NX & 100NX
VAPORIZER/CONDENSER SERVICE KIT
• RPI Part #SDK050 fits NX • RPI Part #SDK051 fits 100NX
VALVE MANIFOLD ASSEMBLY
• RPI Part #SDA048 fits NX • RPI Part #SDA082 fits 100NX

STEP #3 – CLEANING PROCESS *(continued)*

7) Use the cleanout tool provided (RPI Part #RXT062) to clean and ream out the 0.030" hole at the end of the Vaporizer Manifold where the H2O2 Delivery Tubing is attached.

Set the Vaporizer Manifold aside until used later in these instructions.

8) Using a 3mm hex wrench, remove the TE1 module from the Condenser Module Housing by removing the four outer bolts – ***see Figure 3)*** for the correct bolts to remove. Leave the O-ring in the face of the Condenser Module Housing in place until later. Set the remainder of the Condenser Module Assembly aside, and clean the TE1 module.

OPTIONAL Before beginning the process of cleaning the Thermoelectric Module, protect the black solid cell foam insulation with paper or painter's tape to keep the dust out of the inside of the module and to protect the wiring.

9) Using the round wire brush and the cleaning pads, clean the Cooling Rods and Thermoelectric Plate – do not attempt to remove all discoloration – just the accumulated salts. Once all accumulated material has been removed, carefully use the cleaning pad to lightly buff the edges of the Thermoelectric Plate smooth in the directions indicated in ***(see Figure 4)***. Carefully dispose of all collected material. Use canned air or a compressor to clean out any remaining dust. DO NOT USE ANY WATER OR SOLVENTS - JUST AIR. Remove the paper or painter's tape if it was used.

Set the Thermoelectric Module aside for later reassembly.

Remove TE2 from the Condenser Module Housing and clean as above.

FIGURE 3

Remove the four "outer" bolts.
Warning: Do not remove or adjust the four "inner" bolts.

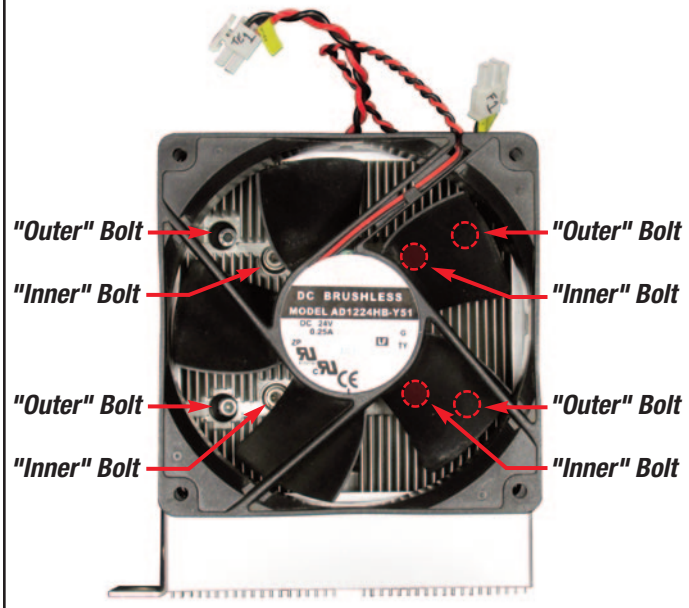
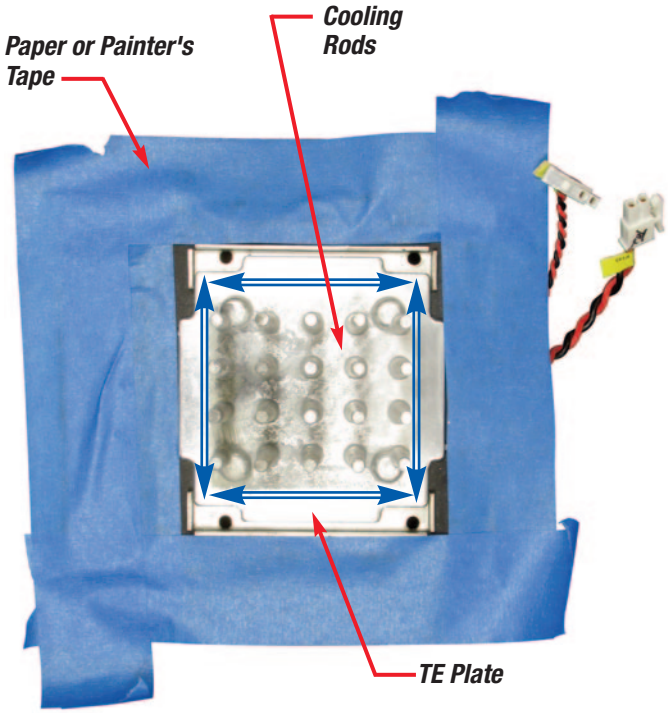


FIGURE 4

Lightly buff the surface of the TE Plate until smooth. The blue double-lined arrows shown below indicate the directions in which to buff the plate.



STEP #3 – CLEANING PROCESS *(continued)*

10) Clean any deposits from the inside walls of the Condenser Module Housing and inspect the O-ring sealing surfaces. Do not attempt to remove all discoloration – just the accumulated salts. Carefully dispose of all collected material. Use canned air or a compressor to clean out any remaining dust DO NOT USE ANY WATER OR SOLVENTS - JUST AIR! Set the Condenser Module Housing aside for later.

STEP #4 – REASSEMBLY

1) Using the included O-Ring Removal Tool (RPI Part #RXT002) that is provided, remove and dispose of the two O-rings retained on the Vaporizer Manifold near the Vaporizer Chamber. Using a lint free cloth or wipe, carefully clean the O-ring grooves.

   Using supplied O-ring lubricant (RPI Part #RPL090), thoroughly coat the 2.504" OD x .070" C/S O-ring which is included in the Kit (RPI Part #SDK093). Avoid stretching the O-ring when applying grease, and install it into the Vaporizer Manifold ensuring that the O-ring is completely seated in the groove, and that the lubricant is keeping the O-ring in place. Apply additional lubricant to the exposed surface of the O-ring, and remove any excess.

   Using O-ring lubricant, thoroughly coat the 19mm (.748") OD X 2.5mm (.098") C/S O-ring which is included in the Kit (RPI Part #SDK093). Install the O-ring into the Vaporizer Manifold ensuring that the O-ring is completely seated in the groove, and that the lubricant is keeping the O-ring in place. Apply additional lubricant to the exposed surface of the O-ring and remove any excess.

2) Place the Insulation Block onto the Vaporizer Manifold ensuring it is in the correct orientation, and that the O-ring in the Vaporizer Chamber groove is still in place.

3) Using O-ring lubricant to thoroughly coat the 18 mm (.709") OD x 2.5 mm (.098") C/S O-ring, and the 25.5 mm (1.004") OD x 2.5 mm (.098") C/S O-ring, both of which are included in the Kit (RPI Part #SDK093). Install both O-rings into the bottom of the Condenser Housing ensuring that the O-rings are completely seated in the grooves, and that the lubricant is keeping the O-rings in place. Apply additional lubricant to the exposed surface of the O-ring and remove any excess.

   Turn the Condenser Module Housing to the correct orientation as shown in ***(see Figure 2 on page 3)***, and set it on top of the Insulation Block aligning the four holes at each corner of the housing with the corners of the block. Using the new hardware provided in the Kit (RPI Part #SDK093), thread the screws through the housing and block, and into the Vaporizer Manifold. DO NOT TIGHTEN THESE SCREWS BEFORE ENSURING THAT ALL O-RINGS ARE IN THE CORRECT LOCATION AND THAT THEY ARE COMPLETELY WITHIN EACH O-RING GROOVE, AND UNIFORMLY COVERED BY THE INSULATION BLOCK.

   Once all O-rings are correctly placed, use a 3mm hex wrench and a cross pattern to tighten the screws.

4) Using the O-Ring Removal Tool provided (RPI Part #RXT002) remove and dispose of the O-rings from each side of the Condenser Module Housing and dispose. Using a lint free cloth or wipe, carefully clean the O-ring groove on both sides of the housing.

   Using O-ring lubricant to thoroughly coat the 88mm (3.464") OD x 2.5mm (.098") C/S O-rings which are included in both of the Kits RPI Part #SDK050 or RPI Part #SDK051. **Note:** Avoid stretching these O-rings when applying the lubricant and install them into both sides of the Condenser Module Housing ensuring that each O-ring is completely seated in the groove and that the lubricant is keeping the O-ring in place. Apply additional lubricant to the exposed surface of each O-ring and remove any excess.

STEP #4 – REASSEMBLY *(continued)*

Model Note: The Vaporizer/Condenser Service Kit (RPI Part #SDK050) that fits the Sterrad NX contains two of the 88mm (3.464") OD x 2.5mm (.098") C/S O-rings; and, the Vaporizer/Condenser Service Kit (RPI Part #SDK051) that fits the 100NX contains six of these O-rings because the 100NX has three Condenser Module Housings.

5) Using the marks made earlier, and the new hardware included in the Vaporizer/Condenser Service Kits (RPI Part #SDK050 or SDK051), install the TE1 module ensuring that the module is correctly oriented and that the O-ring in the Condenser Module Housing is not disturbed. Using a cross pattern tighten the screws holding the TE1 to the Condenser Module Housing.

Repeat the above step for the TE2 module.

6) Retrieve the Valve Manifold removed earlier. Using Soft Jaw Pliers, remove the Ultra-Torr® Stem from the Valve Manifold and retain. Discard the Valve Manifold.

7) Using the O-Ring Pick (RPI Part #RXT002) that is provided, remove and dispose of the O-ring retained on the Ultra-Torr® Stem.

   Using O-ring lubricant, thoroughly coat the 16mm (.629") OD x 2mm (.078") C/S O-ring which is included in both Kits (RPI Part #SDA048 or RPI Part #SDA082). Install it onto the Ultra-Torr® stem ensuring that the O-ring is completely seated in the groove. Use the Soft Jaw Pliers to install the Ultra-Torr® shaft snugly into the new Valve Manifold Assembly.

   Model Note: The Vaporizer/Condenser Service Kit (RPI Part #SDK050) that fits the Sterrad NX contains the RPI Part #SDA048, Valve Manifold Assembly; and, this assembly includes one pre-installed Transition Valve (RPI Part #SDV047) and one pre-installed Inlet Valve (RPI Part #SDV046). The Vaporizer/Condenser Service Kit (RPI Part #SDK051) that fits the 100NX contains only two pre-installed Inlet Valves (RPI Part #SDV046) and not a Transition Valve (RPI Part #SDV047) because the 100NX model does not require a transition valve.

9) Using the O-Ring Removal Tool (RPI Part #RXT002) that is provided, remove and dispose of the O-rings retained on the end of the Vaporizer Manifold. Using a lint free cloth or wipe, carefully clean the O-ring groove.

   Using O-ring lubricant to thoroughly coat the 1.443" OD x 0.103" C/S O-ring which is included in the RPI Part #SDA048 package, or in the RPI Part #SDA082 Kit. Install the O-ring onto the end of the Vaporizer Manifold ensuring that the O-ring is completely seated in the groove, and that the lubricant is keeping the O-ring in place. Apply additional lubricant to the exposed surface of the O-ring, and remove any excess.

   Orient the Valve Manifold Assembly as illustrated in ***Figure 2 on page 3***. Using the new hardware provided in the Kit, attach the Valve Manifold Assembly to the end of the Vaporizer Manifold using a 3mm Hex wrench. Tighten the screws using a cross pattern.

10) Using a 2.5mm Hex Wrench, remove the automatic reset Thermostat (RPI Part #SDT045) found on the top of the Condenser Housing. Clean off any old heat sink compound, and renew with the Heat Sink Compound (RPI Part #RPC464) included. Re-install the existing Thermostat using the original hardware. Remove the two Thermistor Assemblies (RPI Part #SDA007) located on the Vaporizer/Condenser Assembly. Clean off any existing heat sink compound and renew with the Heat Sink Compound included. Replace the two Thermistor Assemblies using the original hardware.

11) Attach the Velcro Hook pieces (included in the RPI Part #SDK093 package) to both of the exposed sides of the Insulation Block at the locations noted in ***Step #3 - Cleaning on page 2***. Replace the Insulation Blanket that was removed in ***Step #3 - Cleaning on page 2.***

STEP #4 – REASSEMBLY *(continued)*

12) Ensuring that each connector is correctly matched, install the Wire Harness onto the Vaporizer/Condenser Assembly. **Important Note:** Be very careful to connect the proper valves to the correct connectors.

13) Disassemble the Ultra-Torr® fitting mounted on the top of the Chamber. Using O-ring lubricant to thoroughly coat the .943" OD x .103" C/S O-ring which is included in the RPI Part #SDA048 package, or in the RPI Part #SDK082 Kit. Install the O-ring into the end of the Ultra-Torr® Fitting. Make sure the O-ring is completely seated, and that the parts of the Fitting are installed correctly. Loosely assemble the Ultra-Torr® fitting.

14) Place the assembled Vaporizer/Condenser Assembly onto the chassis of the NX or 100NX ensuring that no cables or wires are trapped under the Assembly.

Warning: Static Sensitive Components and Circuit Boards – Use Grounding Strap (RPI Part #RPS998) when connecting or disconnecting any electrical wires or connectors.

15) Reconnect the Vaporizer Heater Cable, and re-install the H2O2 Delivery Tubing into the threaded port at the end of the Vaporizer Module.

16) Insert the Ultra-Torr® Stem into the Ultra-Torr® Fitting ensuring that the Vaporizer/Condenser Assembly is completely seated into the fitting, and the mounting brackets are flush to the chassis and all wires are correctly routed.

17) Using a 3mm Hex Wrench, replace the bolts holding the Vaporizer/Condenser Assembly to the chassis, but do not tighten at this point.

18) Using Soft Jaw Pliers, tighten the Ultra-Torr® fitting completely until snug (***see Figure 1 on page 1*** for suggested tool placement).

19) Tighten down the bolts holding the Vaporizer/Condenser Assembly to the chassis.

20) Reconnect the Thermistor Assemblies. BE SURE TO RECONNECT THESE TO THE CORRECT CONNECTOR - SWAPPING THESE CONNECTORS CAN CAUSE CYCLE FAILURES. CHECK MARKINGS DONE EARLIER.

21) Reconnect the two Vaporizer/Condenser Cables marked P25 and P26 located on the Main PC Board. Be sure to properly align these connectors with the contact pins and fully seated.

22) Reconnect the Pressure Transducer cable. Be sure to properly align the connector with the contact pins, and that the connector is fully seated. Ensure that all reconnected cables and wires are correctly routed.

STEP #5 – STARTUP AND TESTING

1) After cleaning, run the Plasma pump down for 5 minutes to reseat all sealing surfaces, and to remove any moisture.

2) Run the Leak-back Test.

Warning: If the Leak-back Test fails, manually pump down the system 3 or 4 times, and then rerun the Leak-back Test. If the Leak-back continues to fail troubleshoot the system for leaks. A passing Leak-back Test is a pressure rise less than 10 Torr per 60 seconds.