# Sterilizer and QuickClean™ Startup Procedures

**Note:** *These instructions outline basic startup procedures. For all technical information and user guides, visit our technical library at www.midmark.com/technical-library.*

# M9 / M11 Steam Sterilizer

**! Equipment Alert**
*Use distilled water or water that meets the water purity specifications referenced in your Users Guide. Failure to comply may result in sterilizer malfunction and/or premature failure due to excessive corrosion.*

## Cleaning...

A) Wash the exterior of the sterilizer according to your facility's procedure for clinical contact surfaces, noting the following: *(Use only quaternary disinfectants to disinfect unit. Staining, pitting, discoloration, or softening could occur if phenolic, iodophor, or glutaraldehyde-based disinfectant is used on plastic surfaces of the unit. Also, use of alcohol or aerosol spray cleaner / disinfectant containing substantial amounts of alcohol in the formula can damage the faceplate).*

B) Wring excess solution from cloth.

C) Using soft cloth, wipe all external surfaces.

D) Follow the instructions provided with the cleaner / disinfectant used regarding rinsing and drying of external surfaces.

E) Examine gaskets for possible damage.

F) Clean gaskets and mating surfaces with a damp cloth.

G) Wash trays, rack, plate, and inside of chamber with mild soap or Speed-Clean and distilled water or water that meets the referenced water purity specifications.



*Door Gasket*

*Dam Gasket*

*Chamber*

*Trays*

*Tray Rack*

*Tray Plate*
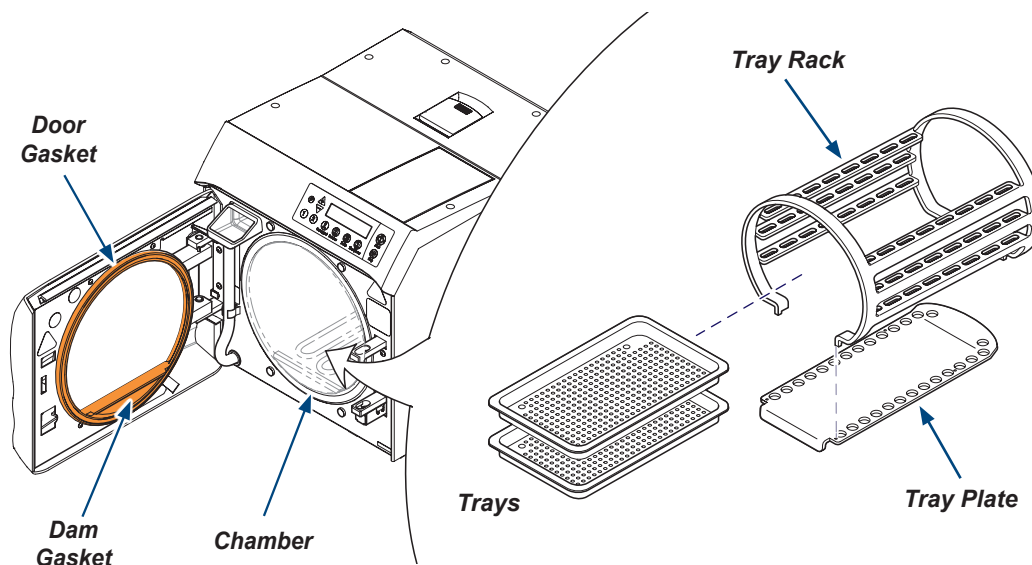
# M9 / M11 Steam Sterilizer - continued

**Check filters...**
Visually check to ensure filter screens are in place, both the back and bottom of your sterilizer chamber.

*Water Level Sensor*

*Air Filter Screen*

*Fill / Vent Filter Screen*
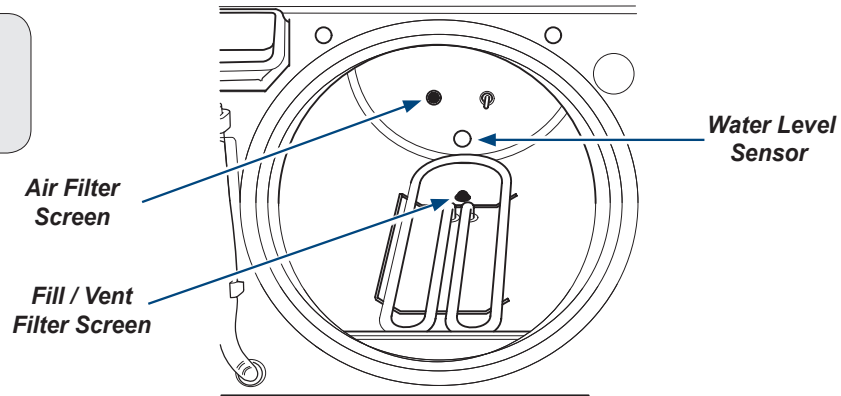
**Equipment Alert**
*Install tray rack / plate with angled end of plate toward the back of the chamber.*
*Do not allow plate to contact the water level sensor.*

**Install tray rack / plate, and trays...**

A)  Insert the tray rack into the tray plate.
B)  Place back of tray plate in chamber.
C)  Press down on tray rack, while sliding into chamber.
D)  Place the trays onto the tray rack slots.

*Tray Rack*

*Trays*

*Tray Plate*
*(Angled end must face back of chamber)*

003-10351-00
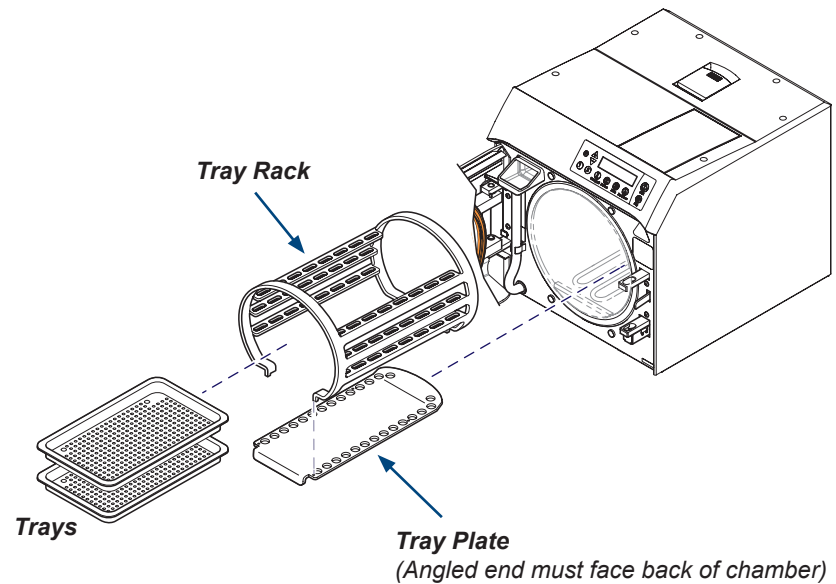
# M9 / M11 Steam Sterilizer - continued

### Fill reservoir...

A)  Open door to unit.
B)  Pour distilled water into fill opening until water level reaches the top of the fill level label on the water level indicator tube.

⚠ **Equipment Alert**
*Use distilled water or water that meets the water purity specifications referenced in your Users Guide. Failure to comply may result in sterilizer malfunction and/or premature failure due to excessive corrosion.*
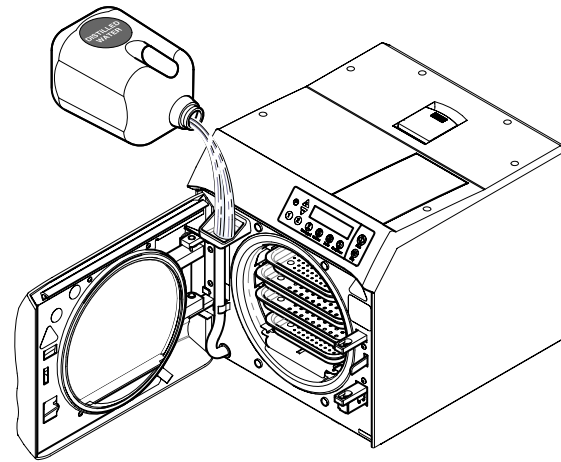
### Connect power cord...

A)  Plug power cord into receptacle on back of sterilizer.
B)  Plug power cord into a properly polarized and grounded receptacle rated for a minimum of 15 amps. A dedicated circuit only used for the sterilizer is recommended.
C)  M9 / M9D and M11 are not equipped with an on/off switch, the display operates off very low power. (example: microwave oven display)

*Note: When power is connected, the messages shown will appear on the display.*

### Note
*For M9-04x / M11-04x models, The User Settings mode will enable the user to set the desired unit of measure and adjust the time clock. Refer to "User Settings" in your User Guide.*

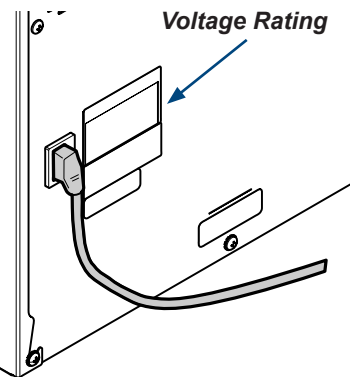***M9-04x / M11-04x
Display Shown***

> INITIALIZING
> SYSTEM

\* 
> TOTAL CYCLES
> 30

\* 
> M11 vX.X.X
> VXXXXXXX

> SELECT CYCLE
> 11/5/20XX 8:24 AM

***Voltage Rating***

\*  *These screens will display the total number of cycles run on the unit, the model number (M9/M9D or M11), the software version number, serial number and M9/M11-04X models also display the date and time.*

# M9 / M11 Steam Sterilizer - continued

## Test Cycle

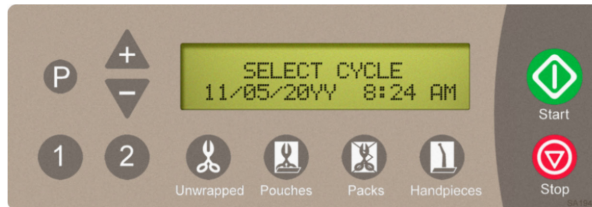Run a test cycle to ensure that your system is running properly.

> ⚠️ **Equipment Alert**
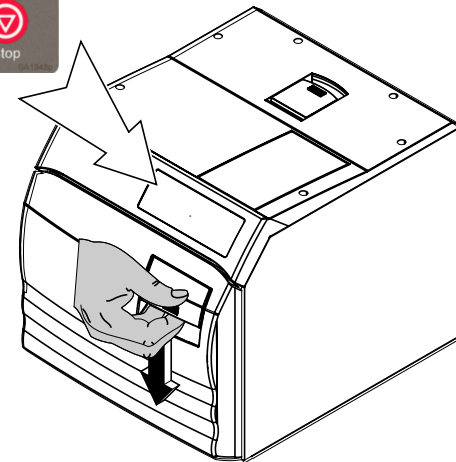> *The sterilizer will not operate unless the door is closed and latched properly.*
>
> **Close and latch the door...**
>
> A) Lift the door handle, then push the door closed.
> B) While pushing in on the door, slide the door handle down to engage the latch.



> **Select cycle...**
> Press the desired cycle button on the display panel.

## Qualification Testing

Your sterilizer should be tested after sterilizer installation, malfunctions, relocation, major repairs, and after sterilization process failure. Qualification testing should be performed prior to placing the sterilizer in service. If multiple cycle types are used, e.g. "Pouches" and "Packs" each cycle type should be qualified. Qualification testing should include at least one Biological Indicator (BI) (sometimes referred to as Spore Tests) and one Chemical Indicator (CI). The test pack should be placed on the bottom tray near the chamber door and performed with items routinely processed and considered to be the most difficult to sterilize. Additional items should be placed in the chamber along with the Biological Indicator and Chemical Indicator so that chamber is fully loaded (don't exceed the maximum capacities listed in the tables under "Guidelines for Loading" in this manual).  Three consecutive test runs, for each cycle type tested, with negative results from the BIs, and the appropriate readings from all physical monitors and chemical indicators demonstrating complete sterilization, provide verification that the sterilizer has been properly installed (or reinstalled after relocation) or repaired to the manufacturer's specifications and that it will function effectively in the facility in which it is installed. All items processed during qualification testing should be quarantined until the results of the biological testing for all three test runs are available.

# M3 Sterilizer

**Cleaning...**

A) Wash unit according to your facility's procedure for clinical contact surfaces noting the following:

   *(Use only quaternary disinfectants to disinfect unit. Staining, pitting, discoloration, or softening could occur if phenolic, iodophor, or glutaraldehyde-based disinfectant is used on plastic surfaces of the unit. Also, use of alcohol or aerosol spray cleaner / disinfectant containing substantial amounts of alcohol in the formula can damage the faceplate.).*

B) Wring excess solution from cloth.

C) Using soft cloth, wipe all external surfaces.

D) Follow the instructions provided with the cleaner / disinfectant used regarding rinsing and drying of external surfaces.

E) Wash gasket and mating surface with a damp cloth.

F) Inspect gasket for damage.

G) Replace gasket if necessary.

H) Visually check to ensure the chamber filter screen is in place.

**Chamber Filter**

**Gasket**
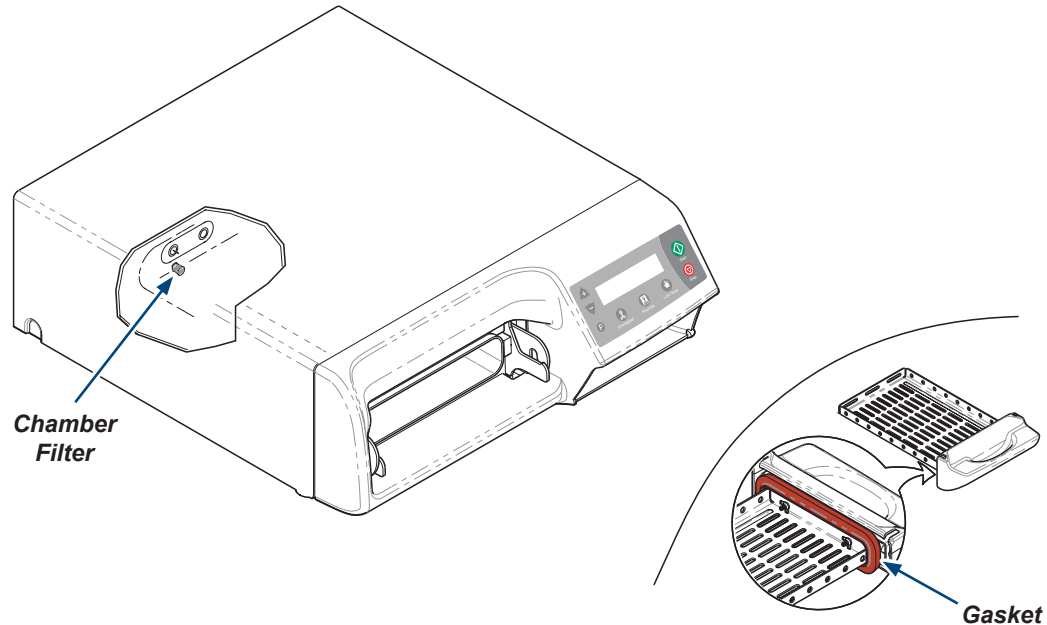
# M3 Sterilizer - continued

**Note**
*External Condensing Tank is not needed if M3 is connected to the VistaCool direct-to-drain thermal reduction system.*

**Equipment Alert**
*The tank hose must be properly connected (and not kinked). Improper connection will cause water / steam leaks or a sterilizer malfunction if water flow to the tank is restricted.*

**Power Cord**
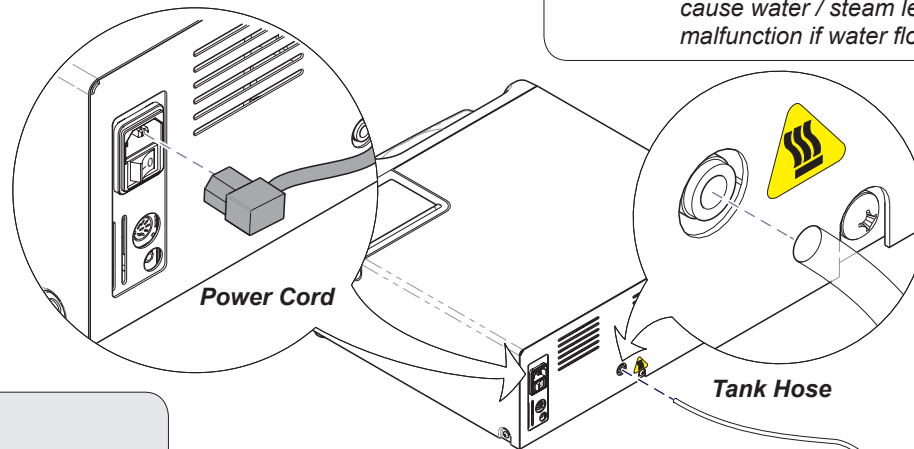
**Tank Hose**

**Connect the condensing tank...**
A)  If connected, disconnect sterilizer power cord.
B)  Push tank hose into compression fitting on lid. Tighten nut. (If step B is difficult - see NOTE)
C)  Connect tank hose to back of sterilizer.
D)  Fill condensing tank with tap water to minimum water level indicator line.
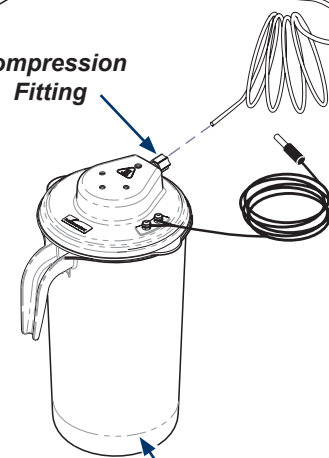E)  Secure the lid on the condensing tank by aligning the tabs and rotate lid clockwise to secure.

**Compression Fitting**

**Note**
**If tubing is difficult to install...**
A)  Remove compression nut & two ferrules.
B)  Install nut and ferrules onto tank hose as shown.
    *(Large & small ferrules must be positioned as shown)*
C) Insert hose into tank fitting, then tighten nut.
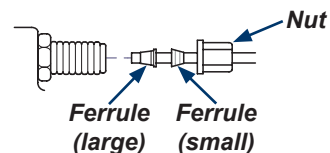
**Min. Water Level Indicator Line**   SA1826*i*

**Nut**

**Ferrule (large)**   **Ferrule (small)**

# M3 Sterilizer - continued

**Connect the condensing tank - continued...**

F) Place tank on a level surface, preferably below the sterilizer but in no case should it be higher than the sterilizer support surface.

G) Connect sensor plug.

H) Plug power cord into receptacle on back of sterilizer.

I) Plug power cord into a properly polarized and grounded receptacle rated for a minimum of 15 amps. A dedicated circuit only used for the sterilizer is recommended.

**Power Cord**

**Sensor Plug**
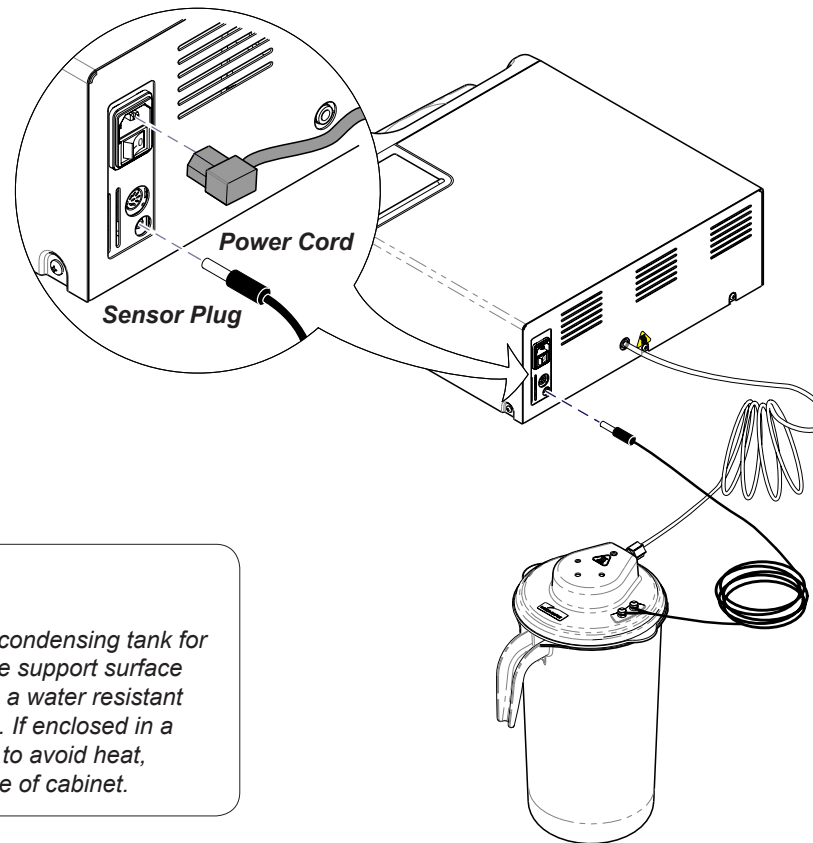
**Note**

**Clearance...**

*Maintain a minimum of 6 inch clearance above the condensing tank for proper steam ventilation. If enclosed in a cabinet the support surface and surrounding surfaces, should be protected with a water resistant material (e.g. plastic, laminate, stainless steel, etc.). If enclosed in a cabinet, it is recommended that the door be vented to avoid heat, moisture build up and potential damage to the inside of cabinet.*

# M3 Sterilizer - continued

**Fill reservoir...**
Pour one (1) gallon of distilled water into fill port.
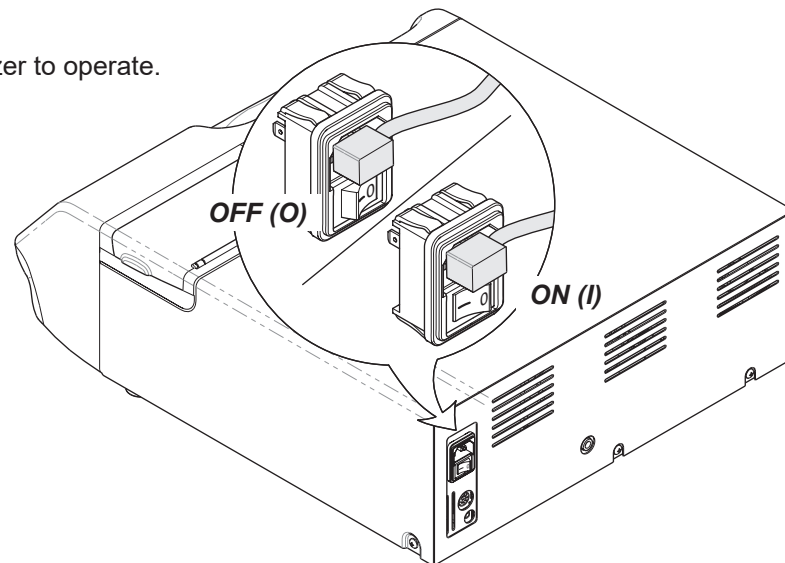Do <u>not</u> fill above lower lip of fill port.
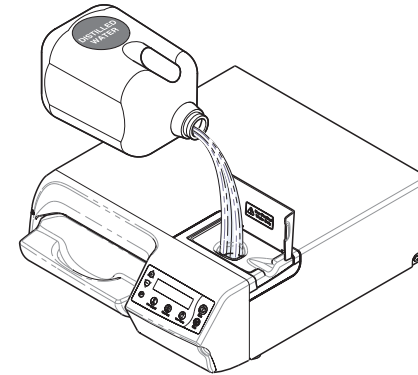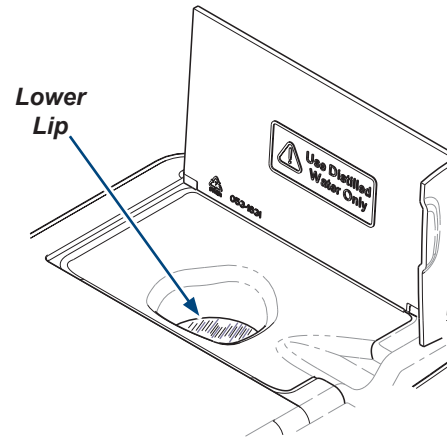
*Lower Lip*

**! Equipment Alert**
*Use distilled water or water that meets the water purity specifications referenced in your Users Guide. Failure to comply may result in sterilizer malfunction and/or premature failure due to excessive corrosion.*

## Power Switch

The power switch must be ON (I) for the sterilizer to operate.

**OFF (O)**

**ON (I)**

# M3 Sterilizer - continued

## Priming the Water Pump

Put the sterilizer into User Diagnostics Mode to prime the water pump.

**To activate User Diagnostic Mode...**

A) Turn Power Switch OFF (O).
B) Press and hold the <START> button.
C) Turn Power Switch ON ( I ).
D) Press the <START> button when the display
    shows "USER DIAGNOSTIC".

**To prime the sterilizer pump...**

A) Put the unit in User Diagnostic Mode.
B) Press the *<START>* button to start the pump priming progress.
   The unit will automatically cycle through a pre programmed priming cycle...
   • Closing the sterilizer door.
   • Heating the boiler.
   • Cycling the pump ON and OFF until the pump is primed.
   When finished the 2nd line of the display will show "PRIMING COMPLETE".
C) Press the *<START>* button to return to the User Diagnostic Menu.
D) Turn the power switch OFF (O) to exit User Diagnostic Mode.
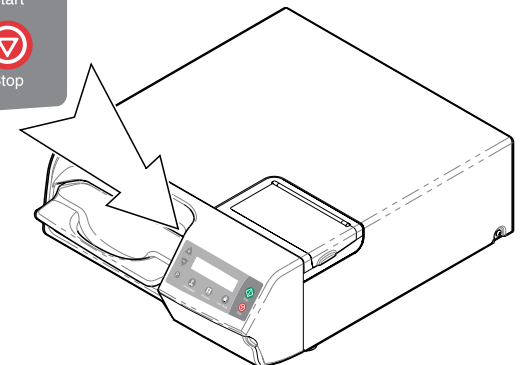
## Test Cycle

Run a test cycle to ensure that your system is running properly.

**Select cycle...**
Press the desired cycle button on the display panel.

## Qualification Testing

Your sterilizer should be tested after sterilizer installation, malfunctions, relocation, major repairs, and after sterilization process failure. Qualification testing should be performed prior to placing the sterilizer in service. If multiple cycles types are used, e.g. "Pouches" and "Low Temp" each cycle type should be qualified. Qualification testing should include at least one Biological Indicator (BI) (sometimes referred to as Spore Tests) and one Chemical Indicator (CI). The test pack should be placed near the front of the tray and performed with items routinely processed and considered to be the most difficult to sterilize. Additional items should be placed in the chamber along with the Biological Indicator and Chemical Indicator so that chamber is fully loaded (don't exceed the maximum capacities listed in the tables under "Guidelines for Loading" in this manual). Three consecutive test runs, for each cycle type tested, with negative results from the BIs, and the appropriate readings from all physical monitors and chemical indicators demonstrating complete sterilization, provide verification that the sterilizer has been properly installed (or reinstalled after relocation) or repaired to the manufacturer's specifications and that it will function effectively in the facility in which it is installed. All items processed during qualification testing should be quarantined until the results of the biological testing for all three test runs are available.
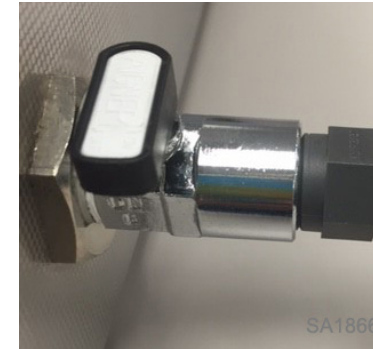
# QuickClean™ Units

**Drain Valve Open**



**Drain Valve Closed**



**Close drain valve...**
Ensure that the drain valve is in the **<u>Closed</u>** position.

**Before Operating the QuickClean™**

A)  Clean unit and wipe out tank. "Clean by wiping with a damp soapy cloth and rinse."
B)  Pour water into the bath so that it reaches the liquid level sensor, but do not exceed the maximum fill level. Follow cleaning agent's recommendations on water temperature. Cleaning efficacy can only be guaranteed if the water temperature is at least 70 F.
C)  Add the required dose of cleaning agent. Follow cleaning agent and instrument manufacturers' recommendations for acceptable cleaners and concentrations.
To accommodate for tank size round up the amount of cleaning agent to the nearest 1 oz/gal, 10 ml/l or 10 gram/l.
D)  Turn on the machine via the switch at the rear of the unit, just above the power cord. The switch will then illuminate.
E)  Run a Degas Cycle.

**Connecting the power cord...**

A)  Plug the power cord into the main power connection located on the back of your unit
B)  Ensure your QuickClean™ ultrasonic bath is plugged into a 115 VAC fully grounded outlet.

*Max Fill Level*



*Bath Fill Line*
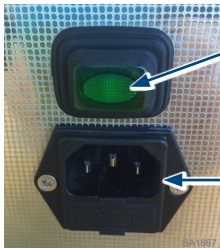
**ON/OFF Switch (Push Button)**



**Main Power Connection**



*Water Level Sensor*

# QuickClean™ Units - continued

## Degas Cycle

```
DEGAS                YES    (<)

                     NO     (<)

(↵)  QuickClean™  (menu)
                            SA1994p
```
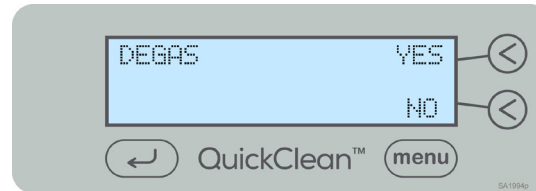
**Degas**

- Degas cycle will allow optimal ultrasonic activity by removing gases present in ordinary tap water.
- The time needed to degas the liquid will vary depending on the amount of gas present in the liquid and the quantity of water in the tank.
- A degas period of 5 to 10 minutes is recommended.
- During the degas cycle you will see bubbles of gas forming on the inside of the ultrasonic bath and slowly rising to the surface, when you no longer see these bubbles come to the surface you can end your degas cycle.

**Running a Degas Cycle.**

A) When the unit is powered on, when you change the solution or when the liquid has fallen below the water level sensor you will receive the option to degas your ultrasonic.
B) Prior to starting the degas cycle, remove all instruments and make sure the unit is filled with liquid and the required dose of cleaning solution.
C) Place the lid on the ultrasonic unit.
D) Select the upper < YES to start the degas cycle.  The screen below will display
E) Once all the bubbles have come to the surface your degas cycle is complete.
F) **Press the ↵ left arrow SKIP to end the degas cycle.  Your degas cycle will NOT automatically stop when degassing has completed**

```
DEGASSING                   (<)

SKIP                        (<)

(↵)  QuickClean™  (menu)
                            SA1995p
```
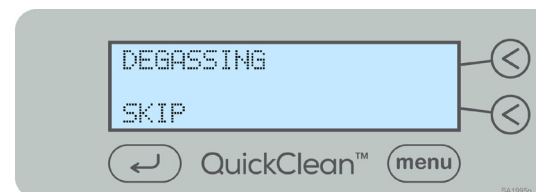
# QuickClean™ Units - continued

## Test Cycle

Run a test cycle by performing a "Foil" test to ensure that your system is running properly.

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**Perform the "Foil" Test**

**Purpose:** Used to determine the efficiency of an Ultrasonic Cleaner.
- Quarterly testing of the ultrasonic cleaner to assure that it is operating properly is recommended.
- Testing should also be performed whenever deterioration in the cleaner performance is suspected.
- This foil test is relatively easy to perform and will provide a permanent record for the future comparative evaluation of the ultrasonic cleaners performance.

*Note: The foil test instructions can be found in your User Guide.*

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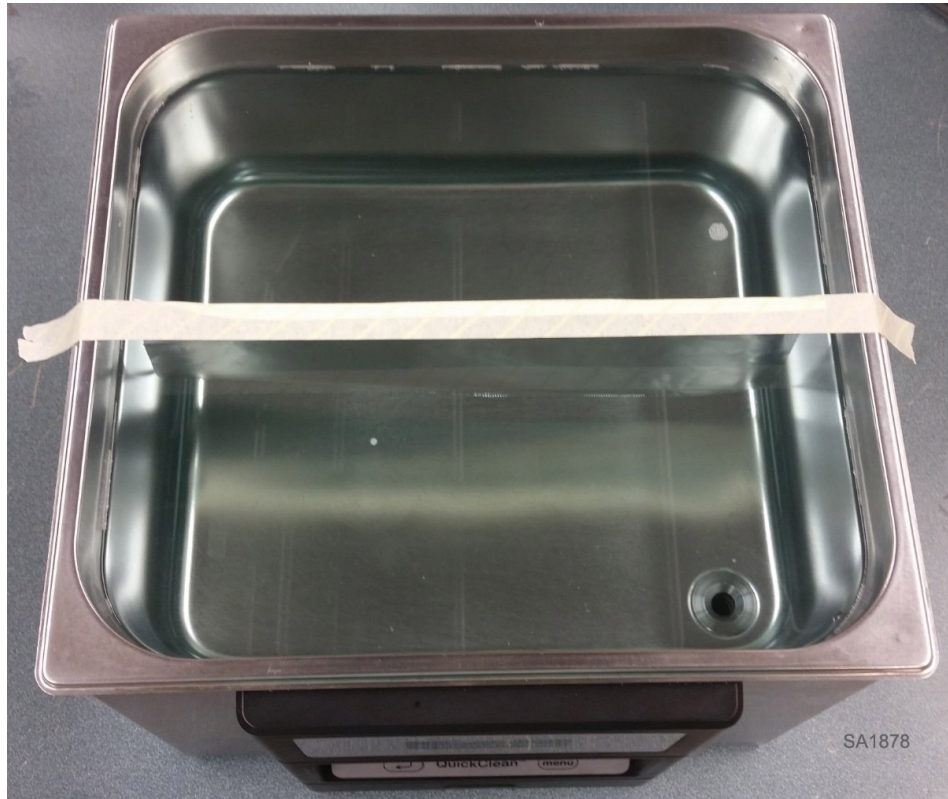


**Foil test set-up submerged in water solution**
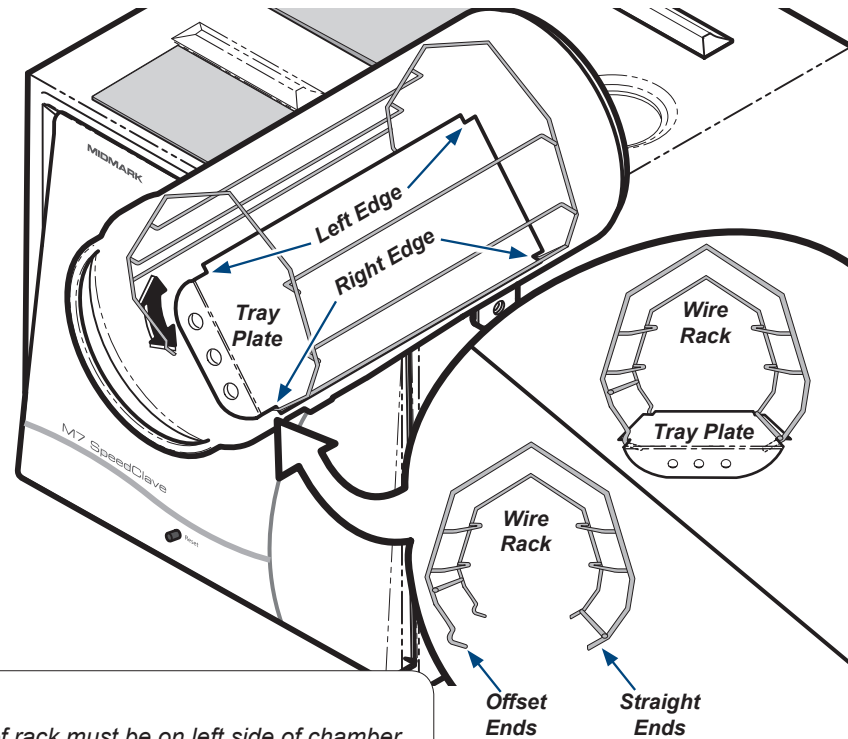
# M7 Sterilizer

## Plate, Rack, and Trays

> ⚠ **Equipment Alert**
> *Do not use metal brushes, steel wool or other abrasives to clean the unit. Do not use solutions containing alcohol or bleach.*

**Clean / Install plate, rack, trays, and chamber...**

A) Rinse the sterilizer exterior, plate, rack, trays, and chamber with <u>distilled water</u> and let dry completely.

B) Holding tray plate with right side point down, insert into chamber.

C) Gently squeeze bottom of rack together and insert into chamber as far as it will go.

D) Position right side of rack under bottom wire aligning straight ends of rack with notches on plate.

E) Holding right side of plate in position, press down left side of plate until it snaps into offsets of wire rack.

F) Place the trays onto the wire rack slots.

**Left Edge**

**Right Edge**

**Tray Plate**

**Wire Rack**

**Tray Plate**

**Wire Rack**

**Offset Ends**

**Straight Ends**

**Note**
*Offset ends of rack must be on left side of chamber.*

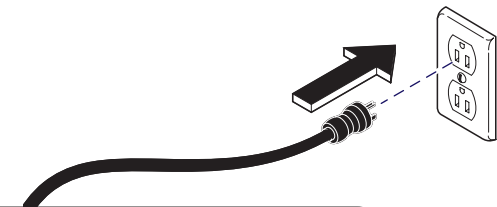## Fill Reservoir and Connect Power Cord

**Fill reservoir...**
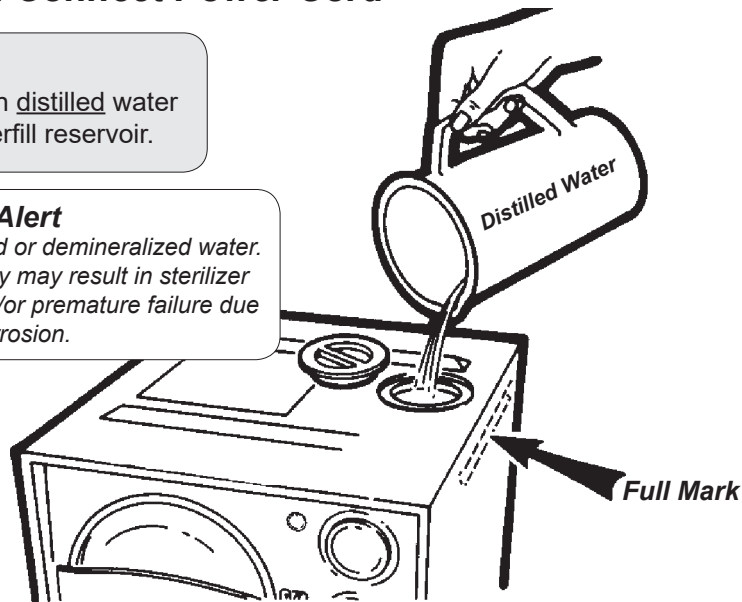Remove cap and fill with <u>distilled</u> water to Full mark. Do <u>not</u> overfill reservoir.

> ⚠ **Equipment Alert**
> *Use only distilled or demineralized water. Failure to comply may result in sterilizer malfunction and/or premature failure due to excessive corrosion.*

**Distilled Water**

**Full Mark**

**Connect power cord...**
Plug Sterilizer into an outlet that has a dedicated circuit.

# M7 Sterilizer - continued

## Test Cycle

Close and latch door and run a test cycle using Process Monitors (at least one BI and one CI) to ensure that your system is running properly.



**Note**
*When Timer is on Pilot Light illuminates to show Heater is on.*

**Step 2: Set Temperature...**
Turn temperature control knob fully to left (counterclockwise). This is maximum setting of 270°F (132°C).

**Step 1: Set Timer...**
Turn timer knob clockwise to 15 minutes.

**Step 3: Re-Set Temperature Control...**
When temperature gauge reaches desired temperature, immediately turn temperature control knob slowly clockwise until pilot light goes out.

**Step 4: Re-Set Timer...**
After re-setting temperature control knob re-set timer to desired sterilization time.