



## **AUTOCLAVE OPERATING PROCEDURES**

**AMSCO® 250LS Life Sciences Small Sterilizers**

# LISTING OF WARNINGS AND CAUTIONS

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The following is a list of the safety precautions which must be observed when operating this equipment. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. These precautions are repeated (in whole or in part), where applicable, throughout the manual. This is a listing of all safety precautions appearing in the manual. Carefully read them before proceeding to use or service the unit.

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## **WARNING—ELECTRIC SHOCK AND BURN HAZARD:**

- ⚠ Disconnect all utilities to sterilizer before servicing. Do not service the sterilizer unless all utilities have been properly locked out. Always follow appropriate Lockout-Tagout and electrical safety-related work practice standards.

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## **WARNING—PERSONAL INJURY HAZARD:**

- ⚠ When closing the chamber door, keep hands and arms out of the door opening and make sure opening is clear of obstructions.


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## **WARNING—BURN HAZARD:**

- ⚠ Sterilizer, rack/shelves, and loading car will be hot after cycle is run. Always wear protective gloves and apron when removing a processed load. Protective gloves and apron must be worn when reloading sterilizer following the previous cycle.
- ⚠ Steam may be released from the chamber when door is opened. Step back from the sterilizer each time the door is opened to minimize contact with steam vapor.
- ⚠ Do not attempt to open the sterilizer door if a WATER IN CHAMBER ALARM condition exists. Call a qualified service technician before attempting to use sterilizer further.
- ⚠ After manual exhaust, steam may remain inside the chamber. Always wear protective gloves, apron, and a face shield when following emergency procedure to unload sterilizer. Stay as far back from the chamber opening as possible when opening the door.
- ⚠ Allow sterilizer to cool to room temperature before performing any cleaning or maintenance procedures.
- ⚠ Failure to shut off the steam supply when cleaning or replacing strainers can result in serious injury.
- ⚠ Jacket pressure must be 0 psig (0 bar) before beginning work on the steam trap.
- ⚠ Proper testing of the safety valve requires the valve to be operated under pressure. Exhaust from the safety valve is hot and can cause burns. Proper safety attire (gloves, eye protection, insulated overall) is required. Testing is to be performed by qualified service personnel only.
- ⚠ Sterilizer operator may be severely burned by scalding water if the water level control malfunctions. The steam generator level control may malfunction if the supply water exceeds 26,000 ohms/cm (38.5 microhms) conductivity minimum. Do not connect treated water (e.g., distilled, reverse osmosis, deionized) unless water resistivity is determined to be acceptable. If water exceeds 26,00 ohms/cm, contact STERIS for information concerning modifications required to the generator control system


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**WARNING–BURN HAZARD (CONT'D):**

-  When sterilizing liquids, to prevent personal injury or property damage resulting from bursting bottles and hot fluid, you must observe the following procedures:
- Use LIQUID cycle only; no other cycle is safe for processing liquids.
  - Use only vented closures; do not use screw caps or rubber stoppers with crimped seal.
  - Use only Type 1 borosilicate glass bottles; do not use ordinary glass bottles or any container not designed for sterilization.
  - Do not allow hot bottles to be jolted; this can cause hot-bottle explosions. Do not move bottles if any boiling or bubbling is present.


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**WARNING–EXPLOSION HAZARD:**

-  This sterilizer is not designed to process flammable compounds.




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**WARNING–SLIPPING HAZARD:**

-  To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading or unloading area.


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**WARNING–PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:**

-  Regularly scheduled preventive maintenance is required for safe and reliable operation of this equipment. Contact STERIS to schedule preventive maintenance.
-  Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Maintenance performed by inexperienced, unqualified persons or installation of unauthorized parts could cause personal injury or result in costly equipment damage.
-  The configure machine section should only be done in the factory or by a qualified service technician.

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**WARNING–STERILITY ASSURANCE HAZARD:**

-  Load sterility may be compromised if the biological indicator or air leak test indicates a potential problem. If these indicators show a potential problem, refer the situation to a qualified service technician before using the sterilizer further.






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## CAUTION-POSSIBLE EQUIPMENT DAMAGE:

- ⚠ Gasket must be fully retracted prior to operating sterilizer door.
- ⚠ Do not try to raise or lower door rapidly as fast operation may damage the manual door mechanism.
- ⚠ If 0 dry time is selected, sterilizer automatically initiates a vapor removal phase in place of drying. This phase can still draw a vacuum to 5 inHg. Consult device manufacturer's recommendations to verify devices being processed can withstand this depth of vacuum.
- ⚠ Lifting the chamber float switch when cleaning the chamber may cause the sterilizer control to initiate a **Chamber Flooded** alarm. If this alarm condition occurs, the operator must turn the control power OFF then ON to clear the alarm. The control power switch is located in the mechanical area at the side of the sterilizer. Placing the sterilizer in standby does not clear this alarm.
- ⚠ Allow thermostatic traps to cool down to room temperature before removing cover. Since there is nothing to limit expansion, the bellows may rupture or fatigue if trap is opened while hot.
- ⚠ Actuation at less than 75% of rated pressure can allow debris to contaminate the seat and cause the safety valve to leak. A leaking safety valve must be replaced.
- ⚠ Insufficient service clearance will make repairs more difficult and time-consuming.
- ⚠ Piping sized too small may cause water hammer, resulting in damage to the sterilizer.
- ⚠ After installation, it is mandatory to brace piping at the drain funnel so that it will not move vertically.
- ⚠ Ensure door opening is clear of any obstruction before closing the door(s).
- ⚠ Do not attempt to open sterilizer door during manual operation unless chamber is at 0 psig (0 bar).
- ⚠ Never use a wire brush, abrasives, or steel wool on door and chamber assembly. Do not use cleaners containing chloride on stainless-steel surfaces. Chloride-based cleaners will deteriorate stainless steel, eventually leading to failure of the vessel.
- ⚠ Immediately wipe up saline solution spills on loading car, to prevent damage to stainless steel.
- ⚠ Do not use cleaners containing chlorides on loading cars. Chloride-based cleaners will deteriorate the loading car metal.
- ⚠ Sterilization of chloride-containing solutions (e.g., saline) can cause chamber corrosion and is not recommended by the manufacturer. If, however, chloride-containing solutions must be processed, clean the chamber after each use.
- ⚠ Avoid damage to the integral steam generator daily. Flush the generator daily. Failure to flush generator daily will void the manufacturer's warranty.

## Definition of Symbols

Symbol	Definition
	Transfer of Heat, Hot Surface
	Protective Earth (Ground)
	Electrostatic Sensitive Device
	Attention, Consult Manual for Further Instructions
<b>A</b>	Amperage Rating of the unit
<b>V</b>	Voltage Rating of the unit
~	Alternating Current
<b>Hz</b>	Frequency of the unit
$\phi$	Phase of the unit
<b>SN</b>	Serial Number of Unit
	Pinch Point

## 3.1 Recommended Sterilization Variables

### 3.1.1 Prevacuum Cycle

The Prevacuum cycle is recommended to process heat- and moisture-stable goods [except liquids] which are capable of being sterilized with steam. This cycle can also be used to decontaminate wastes, including wastes containing liquids, provided the materials are properly contained.

Refer to **Table 3-1** for recommended Prevacuum cycle parameters.

**Table 3-1. Prevacuum Cycle Parameters**

Temperature	Pressure Point Psig (psia)	Minimum Recommended Sterilize Time* Minutes at Temperature
121°C (250°F)	12-14 (27-29)	15
132°C (270°F)	26-28 (40-42)	4

\* Minimum sterilize times are based on obtaining a 10<sup>6</sup> Sterility Assurance Level (SAL) with standard test loads. Your specific loads may require different sterilize times to achieve this level of sterility, or you may require a different SAL.

### 3.1.2 Gravity Cycle

Refer to **Table 3-2** for the type of items which can be processed in a Gravity cycle and the recommended parameters.

**Table 3-2. Gravity Cycle Parameters**

Items	Minimum Recommended Sterilize Time at 121°C (250°F) (minutes)	Minimum Recommended Sterilize Time at 132°C (270°F) (minutes)	Dry Time (minutes)
<b>Glassware</b> Empty, inverted, vented*	15 Min.	3 Min.	0 Min. <sup>†</sup>
<b>Instruments</b> metal combined with suture, tubing or other porous materials (unwrapped)	20 Min.	10 Min.	0 Min. <sup>†</sup>

**Table 3-2. Gravity Cycle Parameters (Continued)**

Items	Minimum Recommended Sterilize Time at 121°C (250°F) (minutes)	Minimum Recommended Sterilize Time at 132°C (270°F) (minutes)	Dry Time (minutes)
Hard Goods Unwrapped	15 Min.	3 Min.	0 Min.†
Hard Goods Wrapped in muslin or equivalent	30 Min.	15 Min.	30 Min.‡

\* If items which can trap air must be sterilized upright, they should be sterilized in a prevacuum cycle.

† Goods will be wet when removed from sterilizer.

‡ Dry time can vary for wrapped goods depending on pack density, weight of goods, pack preparation techniques including type of wrapping material used, and sterilizer loading procedures.

### 3.1.3 Liquid Cycle

Refer to **Table 3-3** for recommended Liquid cycle parameters. The recommended times indicated in **Table 3-3** assume the use of vented bottles or Erlenmeyer flasks. The minimum sterilization time includes the time required to bring the solution up to the sterilization temperature plus the time required to achieve sterilization.

**NOTE:** Use load probes and  $F_0$  option to optimize cycle times.

**Table 3-3. Liquid Cycle Parameters - No Load Probes**

Volume of Liquid in One Container (mL)	Minimum Recommended Sterilize Time at 121°C (250°F) (minutes)*
75	25
250	30
500	40
1000	45
1500	50
2000	55
>2000	55+10 min/L

\* Minimum sterilize times are based on obtaining a  $10^6$  Sterility Assurance Level (SAL) with standard test loads. Specific labs may require different sterilize times to achieve this level of sterility, or may require a different SAL.

### **3.3 Recommendations for the Sterilization Process**

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Saturated steam is a well controlled, reliable method for processing items which can withstand the temperatures and pressures associated with steam sterilization. The requirements for achieving reproducible results are well known by many users, but are not always understood by all users.

The condition most likely to result in sterilization problems is a failure to remove all of the air from the items being processed. For example, placing an empty beaker or bowl in an upright position in a gravity displacement sterilizer may result in the object not being sterilized, or may require exceptionally long sterilization times. This problem is caused by air trapped in the object; air has almost twice the density as does saturated steam under the same conditions. Thus, the air remains in the bottom of the container while steam forms a stable layer above it. (Similar to oil forming a stable layer over water.) As long as there is no mechanism for actively mixing air and steam, the bottom of the container is only exposed to dry heat, which is not an effective sterilization method at the time and temperatures typically used in steam processes.

The best method for enhancing sterilization of solid-bottom containers in gravity displacement cycles is to orient all objects in a position which would allow water to flow out. When steam enters the chamber, it tends to layer over trapped air. If, however, an object is oriented so air is not trapped, but can flow out; air flows out to be replaced by steam. Steam can now reach all surfaces and effect sterilization.



### 3.4 Sterilization Techniques and Recommendations for Liquids

**Important:** Read this section before using the sterilizer to sterilize liquids.

**Recommended minimum exposure time for a 1 liter liquid flask is 45 minutes at 121°C (250°F). Volumes greater or less than 1 liter must be determined.**

The minimum exposure (sterilization) assumes the use of vented bottles or Erlenmeyer flasks and includes the time required to bring the solution up to the sterilization temperature plus the time required to achieve sterilization. Variables that might effect this time include flask/bottle material and viscosity of the liquid to be processed.

**NOTE:** Use load probes and  $F_0$  option to optimize cycle times.

The use of borosilicate glass is required because it is a superior glass capable of resisting thermal shock. If glass less thermally resistant is used, a greater potential for bursting exists.

Vented closures are required because, by design, they release internal pressure build-up by automatically venting the containers, whereas pressure in unvented containers remains until the contents have cooled. Examples of vented closures are shown in [FIGURE 3-1](#).

When loading the sterilizer, place small bottles in a separate basket to minimize sliding.

Always use side rails on the loading car to prevent containers or baskets from falling off.

**WARNING—EXPLOSION HAZARD:**  
This sterilizer is not designed to process flammable compounds.

**WARNING—PERSONAL INJURY HAZARD:** Avoid personal injury from bursting bottles. Liquid sterilization cycle must only be used for liquids in borosilicate (Pyrex) flasks with vented closures.

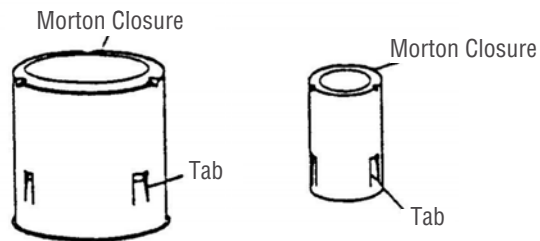
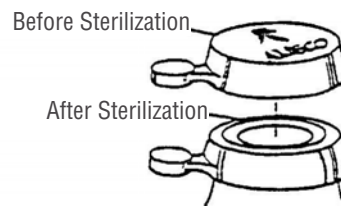
**WARNING—BURN HAZARD:**

- Steam may be released from the chamber when door is opened. Step back from the sterilizer each time the door is opened to minimize contact with steam vapor.

- When sterilizing liquids, to prevent personal injury or property damage resulting from bursting bottles and hot fluid, you must observe the following procedures:

- Use LIQUID cycle only; no other cycle is safe for processing liquids.
- Use only vented closures; do not use screw caps or rubber stoppers with crimped seal.
- Use only Type 1 borosilicate glass bottles; do not use ordinary glass bottles or any container not designed for sterilization.
- Do not allow hot bottles to be jolted; this can cause hot-bottle explosions. Do not move bottles if any boiling or bubbling is present.

**CAUTION—POSSIBLE EQUIPMENT DAMAGE:** Sterilization of chloride-containing solutions (e.g., saline) can cause chamber corrosion and is not recommended by the manufacturer. If, however, chloride-containing solutions must be processed, clean the chamber after each use.



**Figure 3-1. Vented Closures**

## 4.1 Component Identification

The AMSCO® 110LS and AMSCO® 250LS are steam-jacketed sterilizers designed to process a variety of loads using saturated steam under pressure and gravity air removal principals.

The sterilizers are equipped with a fully-programmable microcomputer control system capable of storing process cycles for sterilizing hard goods, lightly wrapped porous loads and liquid loads in vented containers. The control system monitors and automatically controls all cycle operations and functions.

Before operating the sterilizer, it is important to become familiar with the location and function of all major components and controls (see [FIGURE 4-1](#)).



**Figure 4-1. AMSCO 250LS Sterilizer**

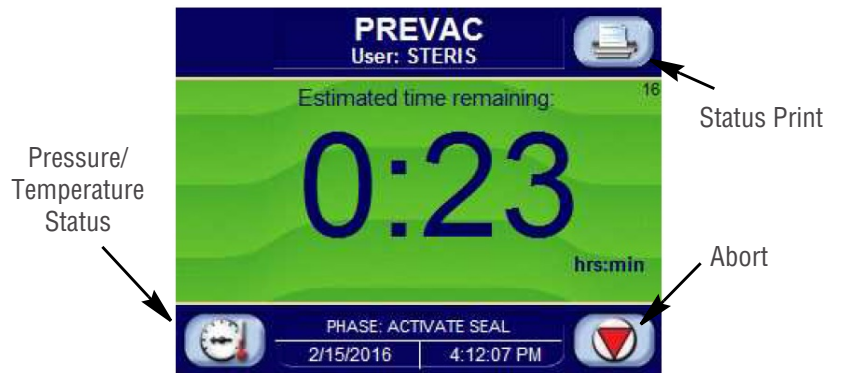
## 4.2 Control Panel

The control panel, located on load end of the sterilizer, is used to direct all sterilizer functions. The operator may control cycle operation, program cycles and sterilizer operating parameters and monitor cycle performance from the control panel.

### 4.2.1 Touch Screen

The touch screen allows the user to operate and program the sterilizer control by touching (pressing) the appropriate touch-sensitive areas on the display. On each screen, all rectangular-outlined boxes are touch-sensitive areas, referred to as **buttons** (see [FIGURE 4-4](#)).

Refer to [SECTION 5, CONTROL INTERFACE](#), for further details on interfacing with the control system's touch screen.



**Figure 4-4. Example of In-Cycle Touch Screen**

**ACTIVATE SEAL PHASE:** Door gasket seals with steam until door seal switch is closed. An additional 20 seconds elapses, after seal switch is closed, before the phase is complete.

### 4.2.2 Printer

Ink-on-paper printer records all cycle data on 2-1/4" wide paper. The following is an example of a typical in-cycle printout in the condensed print format (see [FIGURE 4-5](#)).

```
=====
===== GRAVITY =====
=====
CYCLE START AT      XX:XX:XX A/P
                   ON      XX/XX/XX

CYCLE COUNT          0
LOGIN NAME:          XXXXXX
STERILIZER           XXXXXX

CYCLE TYPE           GRAVITY
CYCLE NO.            2

  STER TEMP = 121.0 C
CONTROL TEMP = 122.5 C
  STER TIME = 0:30:00
  DRY TIME  = 0:01:00

- TIME              T=C          V=inHg
                   P=psig
-----
C 11:48:24A        66.7          0.3V
C 11:49:24A        112.7         10.0P
S 11:49:43A        121.2         16.6P
S 11:51:43A        122.6         17.7P
S 11:53:43A        123.3         17.8P
S 11:55:43A        123.6         16.8P
S 11:57:43A        122.6         17.0P
S 11:59:43A        122.6         17.2P
S 12:01:43P        122.5         17.0P
S 12:03:43P        122.4         17.2P
S 12:05:43P        122.5         16.8P
S 12:07:43P        122.4         16.9P
S 12:11:43P        122.4         17.0P
S 12:13:43P        122.5         17.1P
S 12:15:43P        122.6         17.0P
S 12:17:43P        122.7         17.0P
S 12:19:43P        122.6         16.8P
E 12:19:44P        122.6         16.9P
E 12:19:54P        113.7         3.2P
E 12:20:03P        99.9          11.1V
E 12:21:03P        40.5          28.1V
Z 12:21:46P        68.4          0.5V

LOAD                020903

CHAMBER TEMP MAX=124.8 C
CHAMBER TEMP MIN=121.2 C

CONDITON           = 1:19
STERILIZE           = 30:01
EXHAUST             = 1:42
TOTAL CYCLE         = 33:02

=====
===== READY TO UNLOAD =====
=====
```

**Figure 4-5. Printout**

All printer functions are controlled using the touch screen. For details on each function, refer to [SECTION 5, CONTROL INTERFACE](#).

**NOTE:** Extended print format is available.

### 4.2.3 Operating Mode

When sterilizer is placed in the Operating mode, the generated printout lists the sterilizer type and manufacturer.

```
CONTROL ON
Day, Month XX, XXXX
XX:XX:XX AM
*****
*          STERIS SCIENTIFIC          *
*          AMSCO® LAB SERIES          *
*          PREVAC STERILIZER          *
*                                     *
*****
```

**Figure 4-6. Printout: Sterilizer Type**

### 4.2.4 Cycle Start

When a cycle is started, the generated printout lists name of cycle started, time and date the cycle was started, the current cycle count (number of cycles run since original start up of unit), operator name, sterilizer ID number, default cycle number/type and the programmed parameters for the cycle started.

**NOTE:** *Cycle count value may be changed in the Supervisor Mode.*

### 4.2.5 End-of-Cycle Performance Summary

At the end of a cycle, the generated printout lists number of cycles run that day, the maximum and minimum chamber temperatures reached during the sterilize phase, processing times for key phases and the total cycle time.

### 4.2.6 Alarm Condition

When an alarm condition occurs, the generated printout (see Figure 4-6) lists the type of alarm and time, chamber temperature and chamber pressure when it occurred.

**NOTE:** *Refer to [SECTION 7, ALARMS](#), for listing of possible alarm conditions.*

```
* ALARM
PRESSURE IN CHAMBER
F 10:07:23A    61.7C    34.0P
```

**Figure 4-7. Printout: Alarm Condition**

## 4.4 Manual Operation of Door

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Carefully review [SECTION 1, LISTING OF WARNINGS AND CAUTIONS](#), and the following warnings and cautions before manually operating door(s).

Using hand pressure, pull up or push down on the door handle to operate the door.

**NOTE:** Do not try to raise or lower door rapidly as fast operation may damage the door drive mechanism.

**⚠ WARNING - PERSONAL INJURY HAZARD:** When closing the chamber door, keep hands and arms out of the door opening and make sure opening is clear of obstructions.

**⚠ WARNING - BURN HAZARD:**

- Steam may be released from the chamber when door is opened. Step back from the sterilizer each time the door is opened to minimize contact with steam vapor.
- Do not attempt to open the sterilizer door if a WATER IN CHAMBER ALARM condition exists. Call a qualified service technician before attempting to use sterilizer further.
- After manual exhaust, steam may remain inside the chamber. Always wear protective gloves, apron, and a face shield when following emergency procedure to unload sterilizer. Stay as far back from the chamber opening as possible when opening the door.

**⚠ CAUTION - POSSIBLE EQUIPMENT DAMAGE HAZARD:**

- Gasket must be fully retracted prior to operating sterilizer door.
- Make sure door opening is clear of any obstruction before closing the door(s).
- Do not attempt to open sterilizer door during manual operation unless chamber is at 0 psig (0 bar).
- Do not try to raise or lower door rapidly as fast operation may damage the manual door mechanism.

**⚠ WARNING - BURN HAZARD:**

- When sterilizing liquids, to prevent personal injury or property damage resulting from bursting bottles and hot fluid, you must observe the following procedures:
  - Use LIQUID cycle only; no other cycle is safe for processing liquids.
  - Use only vented closures; do not use screw caps or rubber stoppers with crimped seal.
  - Use only Type 1 borosilicate glass bottles; do not use ordinary glass bottles or any container not designed for sterilization.
  - Do not allow hot bottles to be jolted; this can cause hot-bottle explosions. Do not move bottles if any boiling or bubbling is present.

**⚠ WARNING - EXPLOSION HAZARD:** This sterilizer is not designed to process flammable compounds.

**WARNING - PERSONAL INJURY AND/OR EQUIPMENT DAMAGE HAZARD:** Repairs and adjustments to this equipment must be made only by fully qualified service personnel. Maintenance performed by inexperienced, unqualified persons or installation of unauthorized parts could cause personal injury or result in costly equipment damage.

**CAUTION - POSSIBLE EQUIPMENT DAMAGE HAZARD:**

- ⚠** • Gasket must be fully retracted prior to operating sterilizer door.
- ⚠** • Do not attempt to open sterilizer door during manual operation unless chamber is at 0 psig (0 bar).

## 5.1 General Description

Touch screens allow the user to operate and program the sterilizer by lightly touching (pressing) the appropriate touch-sensitive areas on the display. On each screen, all buttons are touch sensitive areas. When a button is pressed, the display area within the button changes state.

After the sterilizer has been powered up, the display shows the following screen:



Touch any portion of screen to proceed.

*NOTE: Pressing the upper right on the screen enables the control panel.*

The In Standby Screen displays a “. . . Please Wait” message, then displays the Log In Screen.

### 5.1.1 Log In

After touching the In Standby Screen, the display shows the following screen:



Enter the Username.

### 5.1.2 Password Entry

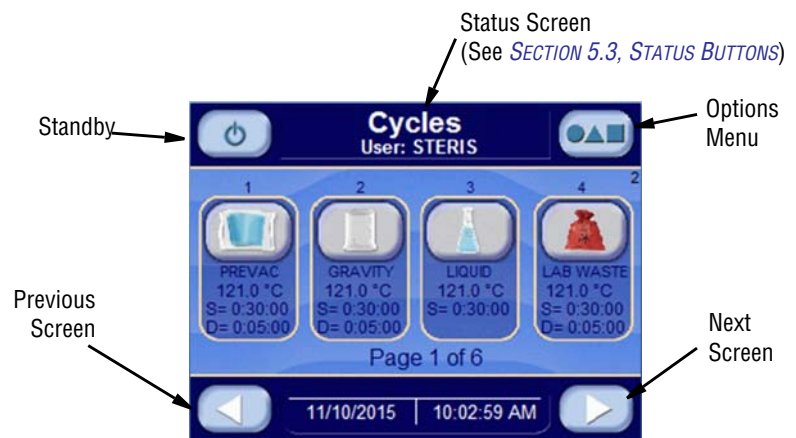
After entering the Username, touch the white area next to Password. An alpha-numeric touch screen is displayed. Enter password and press **ENTER**.



*NOTE: When using Password Screen, the following apply:*

- 1) If username and/or password are invalid, **INVALID USERNAME** or **INVALID PASSWORD** is shown on Screen 14. Re-enter username and/or password or press **left arrow** button to return to Standby Screen.
- 2) After username and password have been successfully entered, every screen during Operating Mode displays username (login name).
- 3) Default username is **STERIS** and password is **1000**. This username and password gains entry to the operating, supervisor and service modes. Once logged in, this username and password may be changed by supervisor.

The Operating Mode Screen appears.

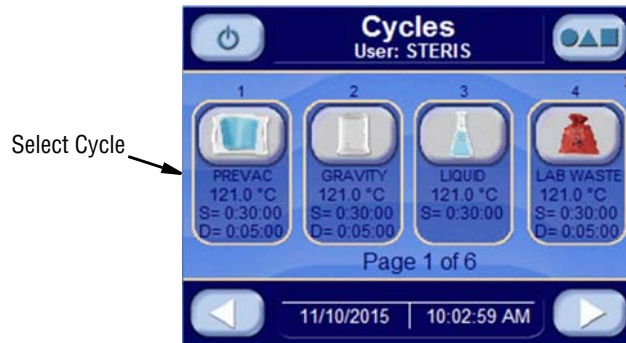




## 5.2 Operating Modes

### 5.2.1 Prevac Sterilizer Only

Press **OPERATING MODE** button to enter operating mode. The operating mode display is shown below:



Press the button associated with the desired cycle. Note that pressing **RIGHT ARROW** button advances to screen showing additional cycles.

#### NOTE:

- Jacket temperature is selectable and can be turned off with the Green Mode. In standard mode, by default, jacket charges with steam to maintain 115°C (239°F).
- If display shows **CLOSE DOOR(S)** message, close the door.
- A cycle cannot be run with door open.
- A cycle may be run while the jacket is still charging.



Press the **START CYCLE** button to start the cycle.

## 6.1 Before Operating Sterilizer

Carefully review [SECTION 1, LISTING OF WARNINGS AND CAUTIONS](#), and the Warnings and Cautions below before operating the sterilizer.

### WARNING – BURN HAZARD:



- Sterilizer, rack/shelves, and loading car will be hot after cycle is run. Always wear protective gloves and apron when removing a processed load. Protective gloves and apron must be worn when reloading sterilizer following the previous cycle.
- Steam may be released from the chamber when door is opened. Step back from the sterilizer each time the door is opened to minimize contact with steam vapor.
- When sterilizing liquids, to prevent personal injury or property damage resulting from bursting bottles and hot fluid, you must observe the following procedures:
  - >> Use LIQUID cycle only; no other cycle is safe for processing liquids.
  - >> Use only vented closures; do not use screw caps or rubber stoppers with crimped seal.
  - >> Use only Type 1 borosilicate glass bottles; do not use ordinary glass bottles or any container not designed for sterilization.
  - >> Do not allow hot bottles to be jolted; this can cause hot-bottle explosions. Do not move bottles if any boiling or bubbling is present.

### CAUTION – POSSIBLE EQUIPMENT DAMAGE:



- Gasket must be fully retracted prior to operating sterilizer door.
- Ensure door opening is clear of any obstruction before closing the door(s).
- Do not attempt to open sterilizer door during manual operation unless chamber is at 0 psig (0 bar).
- Immediately wipe up saline solution spills on loading car, to prevent damage to stainless steel.
- Sterilization of chloride-containing solutions (e.g., saline) can cause chamber corrosion and is not recommended by the manufacturer. If, however, chloride-containing solutions must be processed, clean the chamber after each use.
- Failure to flush the integral steam generator (daily for carbon steel / every two weeks for stainless steel) voids the manufacturer's warranty and can lead to possible generator damage.

**JACKET DRAIN PHASE:** Jacket drains after chamber exhausts to 4.0 psig (0.28 bar). Phase ends after 5 minutes and when chamber pressure is less than 1 psig (0.07 bar).

**DEACTIVATE SEAL PHASE:** Door unseals until seal pressure switch opens, and 20 seconds has elapsed.

**COMPLETE PHASE:** Cycle is complete. Open door and unload chamber. Once door is open, display returns to main operating mode screen.

## 6.13 Cycle Abort

A cycle may abort for one of two reasons; (1) the operator pressed the **ABORT** button or (2) an alarm caused the cycle to abort. An example of a Cycle Abort screen is as follows:



When an operator presses the **ABORT** button, the cycle aborts to the fast or slow exhaust phase [see note] to relieve the chamber of pressure and the printer prints:

\*CYCLE ABORTED BY OPERATOR

**NOTE:** *If the purge phase has not yet run, the cycle aborts to the Deactivate Seal phase.*

When the cycle ends the operating mode screen is displayed.

## 8.3 Clean Chamber Drain Strainer



### **WARNING – BURN HAZARD:**

- **Allow sterilizer to cool to room temperature before performing any cleaning or maintenance procedures.**
- **Failure to shut off the steam supply when cleaning or replacing strainers can result in serious injury.**

**Important:** *The chamber drain strainer must be cleaned at least once a day, preferably in the morning before running the first cycle.*

1. Remove drain strainer from drain in chamber bottom.
2. Remove any obvious debris from strainer. If necessary, clear screen in strainer using a brush, wire or similar tool.
3. Once strainer has been cleared of obvious debris, reverse strainer under running water.
4. Replace strainer in chamber drain.