OPERATOR MANUAL

# Lab 250 a d Lab 110
# Life Scie ces Small Sterilizers

**(11/13/06)** **P387352-364**
**Rev. 0**

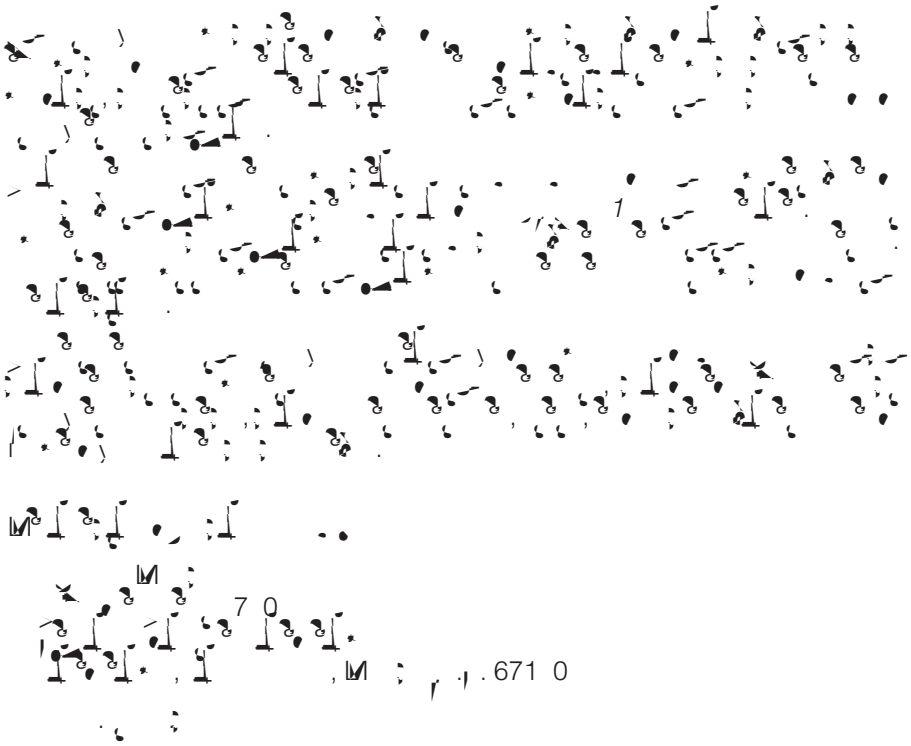
**Table 1. Recomme ded Loads by Sterilizer Size**

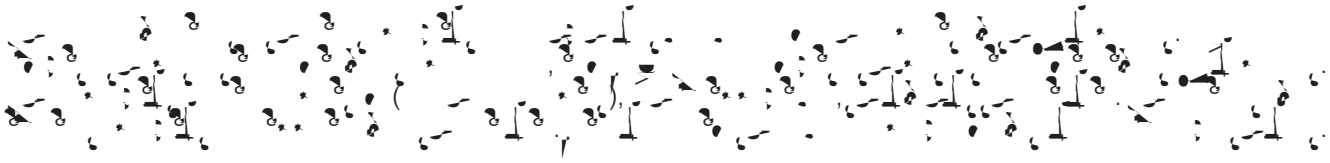
| | Volume (Liters) |
|---|---|
| 16 16 26" (406 406 660 ) | 109 |
| 20 20 38" (508 508 965 ) | 249 |

**Table 2. Sterilizer Co figuratio s**

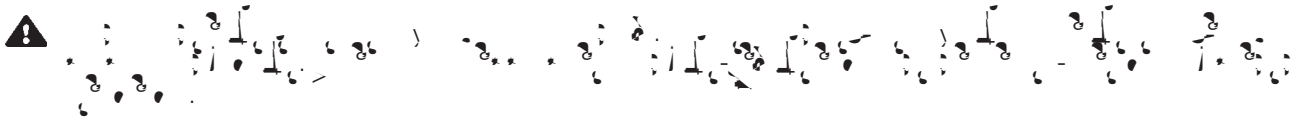
| 16 16" (406 406 ) | 20 20 (50 50 ) |
|---|---|
| 16 16 26" (406 406 660 ) | |
| 20 20 3 " (50 50 65 ) | |
| 16 16 26" (406 406 660 ) | |
| 20 20 3 " (50 50 65 ) | |

## Advisory





WARNING–ELECTRIC SHOCK AND BURN HAZARD:



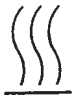
WARNING–PERSONAL INJURY HAZARD:

WARNING–BURN HAZARD:

WARNING–BURN HAZARD:

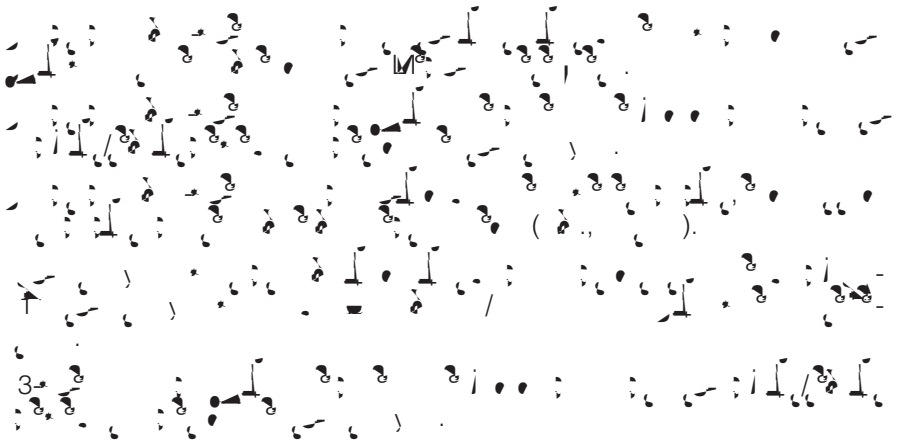
CAUTION – POSSIBLE EQUIPMENT DAMAGE:

## Definition of Symbols

| Symbol | Defi itio |
|---|---|
|  | |
|  | |
|  | |
|  | |
| A | |
| V | |
| ~ | |
| Hz | |
| ϕ | |
| SN | |

## 2.2 Technical Specifications

### 2.2.1 Electrical Service



### 2.2.2 Sterilizer Final Check

### 2.2.3 Cycle Operation

1.0 / (1.3 / ).

(121° 250°F ).

### 2.2.4 Overall Size and Weight

| | | |
|---|---|---|
| **16 x 16 x 26"** | 660 | 1 2 02 |
| **Sterilizer:** | (26" | 74.5" 35.5" ) |
| **20 x 20 x 38"** | 762 | 1 2 1152 |
| **Sterilizer:** | (30" | 74.5" 45.375" ) |

• **Electric:**

230 , 1.5 , 1- , 50/60
120 , .5 , 1- , 50/60

### 2.2.7 Utility Requirements For Units Equipped With Optional Electric Steam Sterilizers

• **Electric:**

120 , 2.5 , 1- , 50/60
20 , 3.2 , 3- , 50/60
440/4 0 , 31/37 , 3- , 50/60
240 , 72.2 , 3- , 50/60

• **Hot Water:**

137. 344.7 (20 50 )
140°F,
4 , 1

• **Stai less-Steel Optio O ly:**

( ),
1 Ω/

### 2.2.8 Environmental Conditions

• **Cold Water:**

206. 344.7 (30 50 )
70°F (21 ,
6 , 140 , 10

10° 32° (50° 0°F)
10 0%
2
( )
5 ( )

# TECHNIQUES OF STERILIZATION

## 3.1 Recommended

Glassware0025 Tc0 Tw9.864 Manual

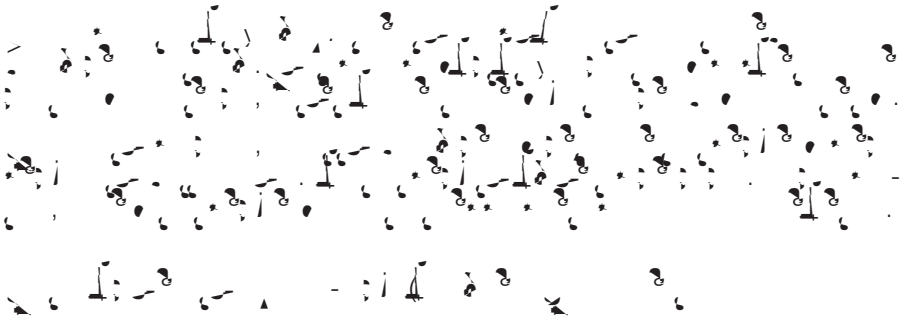
3.-09(6ommended)Tj3.34.011 inverted,(3.2.16ommended)

## Table 3-2. Gravity Cycle Parameters (co t.)

| | Mi imum | Mi imum |
|---|---|---|

## 3.2 Control Measures for Verifying Sterilization Process

### 3.2.1 Biological Monitors



### 3.2.2 Testing for Prevacuum Efficiency

> **WARNING – STERILITY ASSURANCE HAZARD: Load sterility may be compromised if the biological i dicator or vacuum leak test i dicates a pote tial problem. If these i dicators show a pote tial problem, refer the situatio to a qualified service tech icia before usi g the sterilizer further.**

## 3.3 Bowie-Dick Test

## 3.4 Vacuum Leak Test

## 3.5 Recommendations for the Sterilization Process

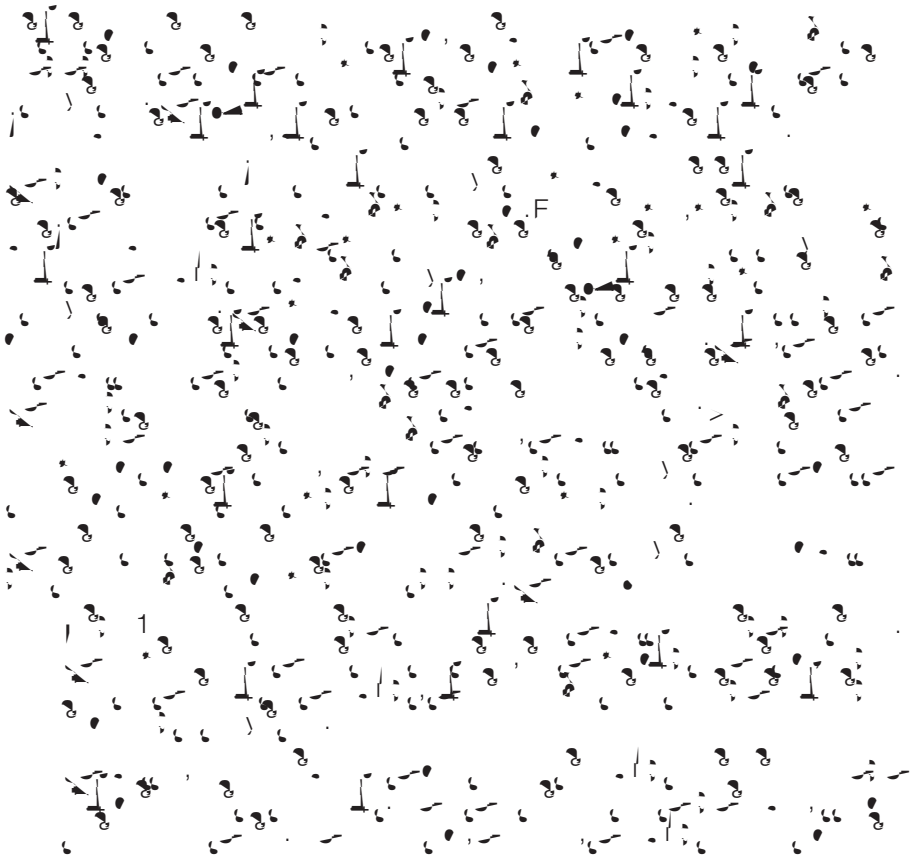
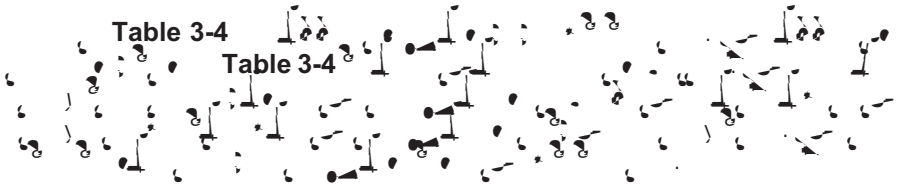


Table 3-4

Table 3-4



## 3.7 Recommendations for Sterilizing Liquids

**⚠ WARNING – EXPLOSION HAZARD: This sterilizer is ot desig ed to process flammable compou ds.**

**⚠ WARNING – PERSONAL INJURY HAZARD: Avoid perso al i jury from bursti g bottles. Liquid sterilizatio cycle must o ly be used for liquids i borosilicate flasks with ve ted closures.**

**⚠ WARNING – BURN HAZARD: Whe sterilizi g liquids, *always* observe the followi g procedures:**

- **Use Liquid cycle o ly.**
- **Use o ly ve ted closures.**
- **Use o ly Type I borosilicate glass bottles.**
- **Do ot allow hot bottles to be jolted.**

**WARNING–BURN HAZARD: Steam may be released from the chamber whe door is ope ed. Step back from the sterilizer each time the door is ope ed to mi imize co tact with steam vapor.**

**⚠ CAUTION: Sterilizatio of chloride-co tai i g solutio s (e.g., sali e) ca cause chamber corrosio a d is ot recomme ded by the ma ufacturer. If, however, chloride-co tai i g solutio s must be processed, clea the chamber after each use.**

IMPORTANT:

F 3-1.

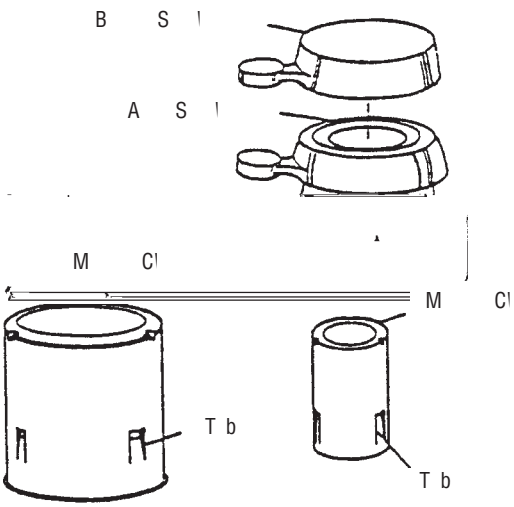
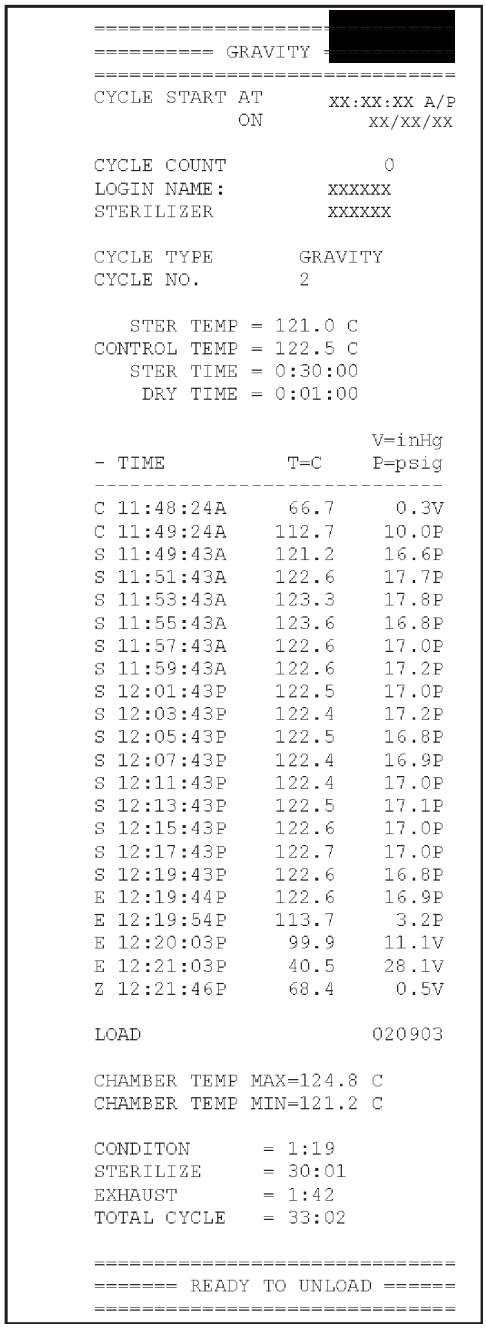



**Figure 3-1. Ve ted Closures**



```
==========[redacted]
========== GRAVITY [redacted]
==============================
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

                              V=inHg
- TIME              T=C       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. Co de sed Pri tout**

*NOTE: E*

### 4.2.3 Operating Mode

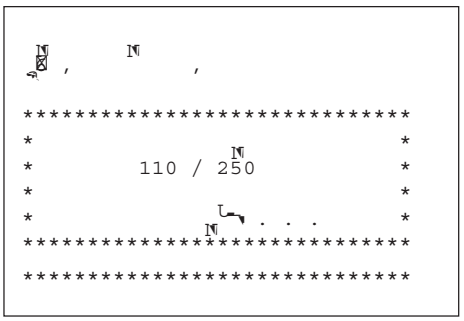



**Figure 4-6. Printout: Sterilizer Type and Manufacturer**

### 4.2.4 Cycle Start

*NOTE: Cycle data and Maintenance Mode.*

### 4.2.5 End-of-Cycle Performance Summary

### 4.2.6 Alarm Condition

(Figure 4-6)

*NOTE: Refer to SECTION 7, ALARMS, for more information.*


**Figure 4-7. Printout: Type of Alarm, Chamber Temperature and Chamber Pressure, and Time of Occurrence**

## 4.3 Manual Operation of Manual Door

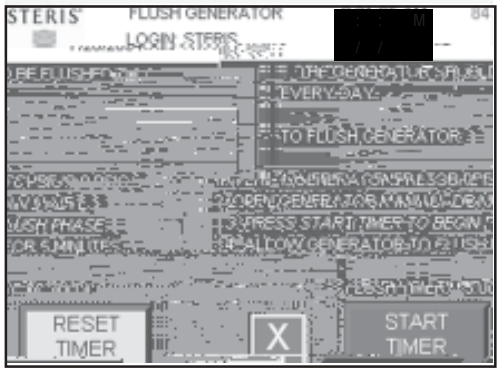
## 4.5 Optional Electric Steam Generator

## Table 4-1. Required Feed Water Quality for Carbo Steel Steam Ge erators

| Co ditio | Nomi al Recomme ded | Maximum Recomme ded |
|---|---|---|
| | | 140° F (60° ) |
| 3* | 0-17 / | 130 / |
| | 50-150 / | 250 / |
| 3 | 50-100 / | 1 0 / |
| | 6. - 7.5 | 6.5 - .5 |
| | 0.1 - 1.0 / | 2.5 / |
| | 2000-6000 | 26,000 |

*17.1 / 1

1. CONTROL INTERFACE




Scree #84

2. [illegible] ( F 4- ).

*NOTE: I* [illegible]
***CANCEL***

**CONTINUE**

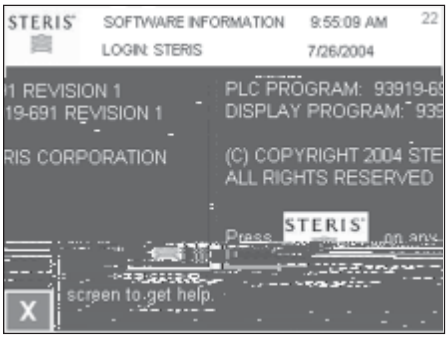
10

10.

## 5.1 General Description


### 5.1.1 Information and Help

**INFO**



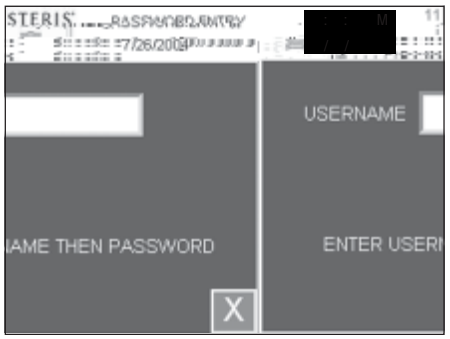
STERIS


Scree #22

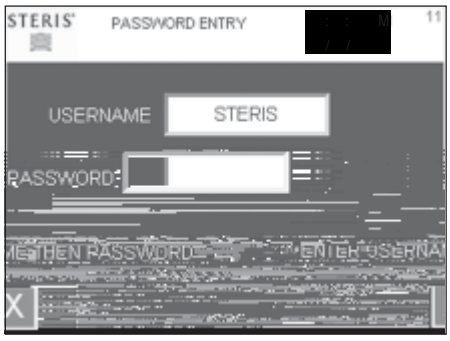
EXIT ( #22). EXIT ( #6).

### 5.1.2 Password Entry

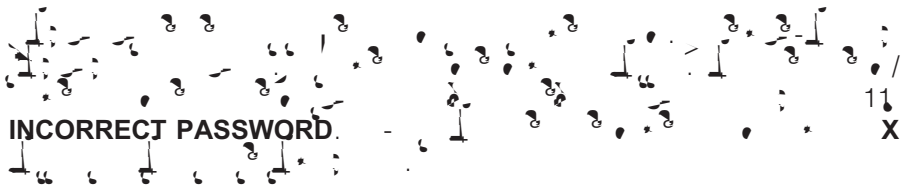
STERIS




Scree #11




Scree #11


11
INCORRECT PASSWORD
X

## 5.2 Operating Modes

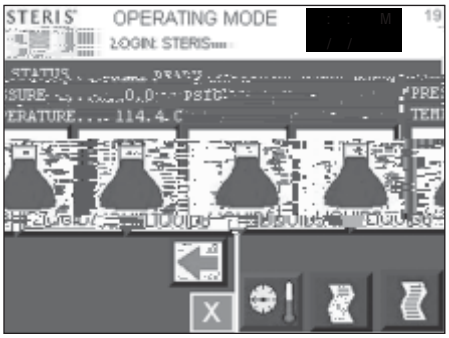
### 5.2.1 Gravity Sterilizer Only

**OPERATING MODE**

**Scree #2**

**RIGHT ARROW**

5 ).




**Scree #19**

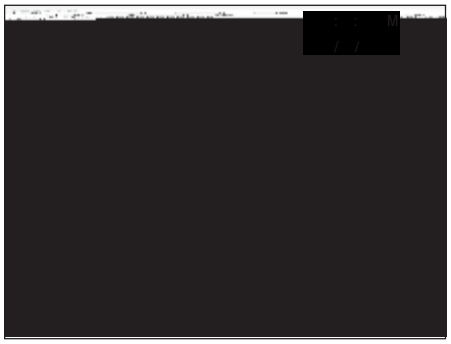
**LEFT ARROW** #2 ( 1 4).

115.0 (23 .0 F).

**DOOR OPEN, READY, JACKET CHARGE**

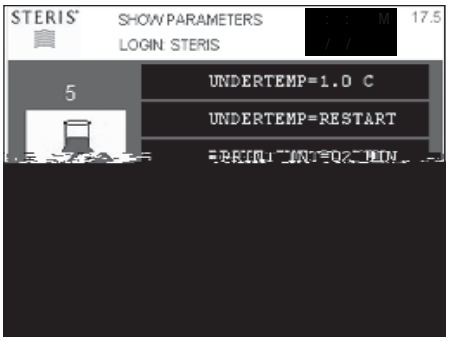
**CYCLE**

1



**Scree #17.5**

**RIGHT ARROW**

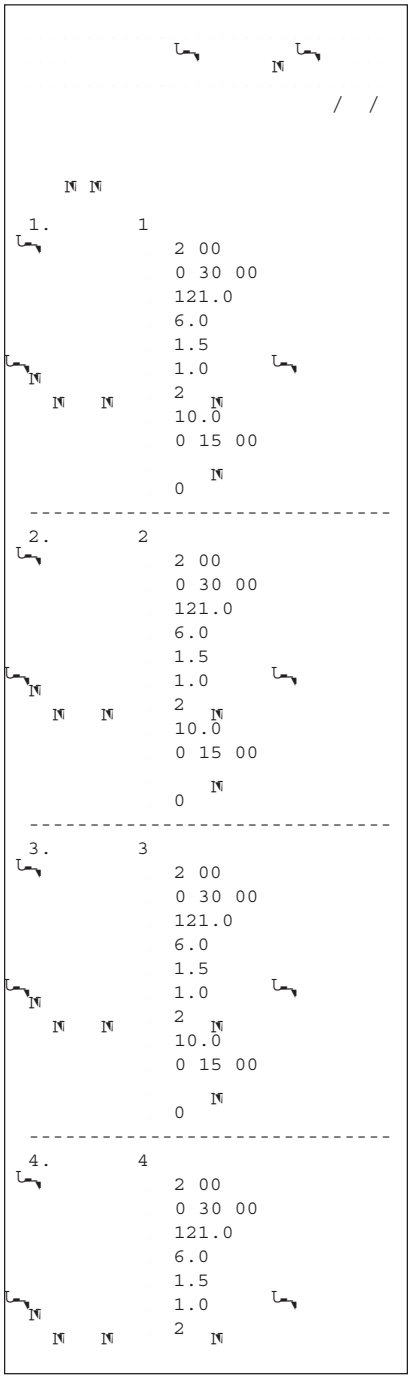



**Scree #17.5**

**LEFT ARROW** **CANCEL CYCLE**
(2 1 ). **START CYCLE**

*NOTE: I a* ***CLOSE DOOR(S)*** *a , . T*

## PRINT CYCLE VALUES



**STANDARD MODE**

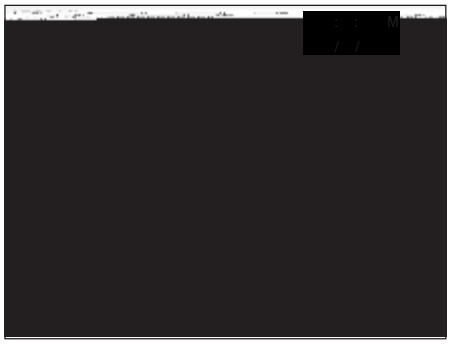
).

115.0 (23 .0 F).

**DOOR OPEN, READY, JACKET CHARGE**

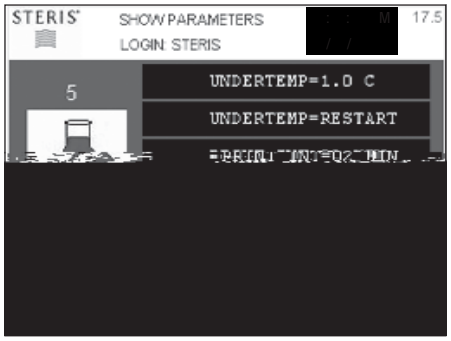
**CYCLE**

1



**Scree #17.5**

**RIGHT ARROW**



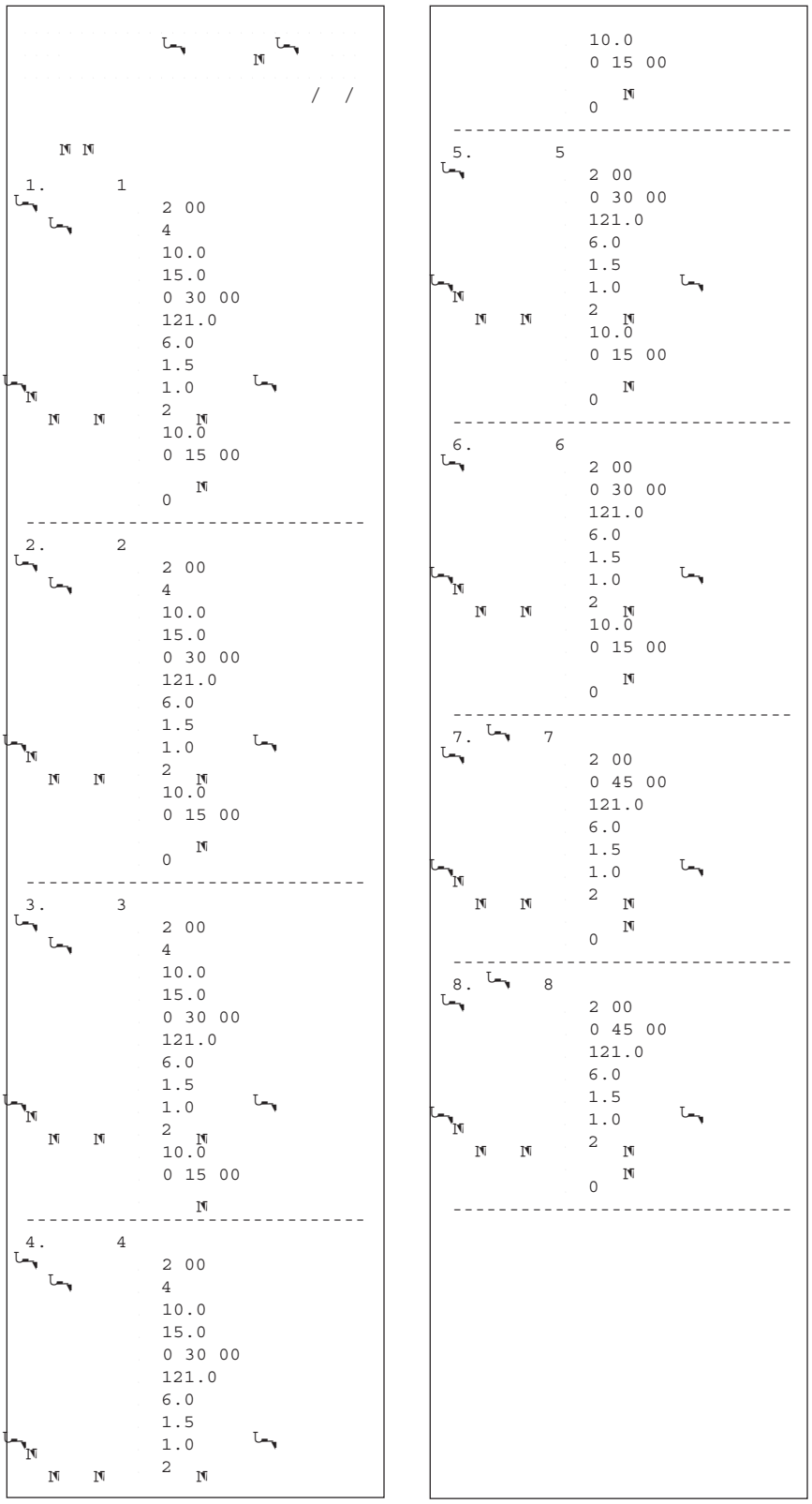

**Scree #17.5**

**LEFT ARROW** **CANCEL CYCLE**

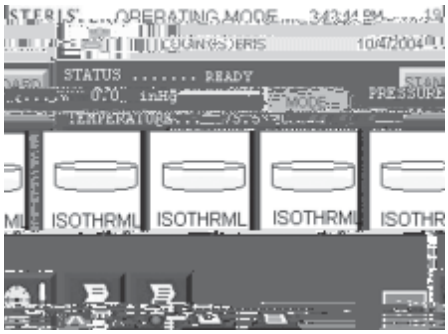
(2 1 ). **START CYCLE**

*NOTE: I a* ***CLOSE DOOR(S)*** *a , o . T*

## PRINT CYCLE VALUES



**OPERATING MODE**




**ISO MODE**

*NOTE: I a a a 80.0 C (176.0 F), a a*

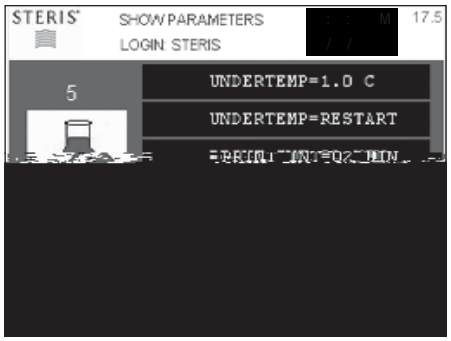
**STANDARD MODE**

).

115.0 (23 .0 F).

**DOOR OPEN, READY,**

**RIGHT ARROW**

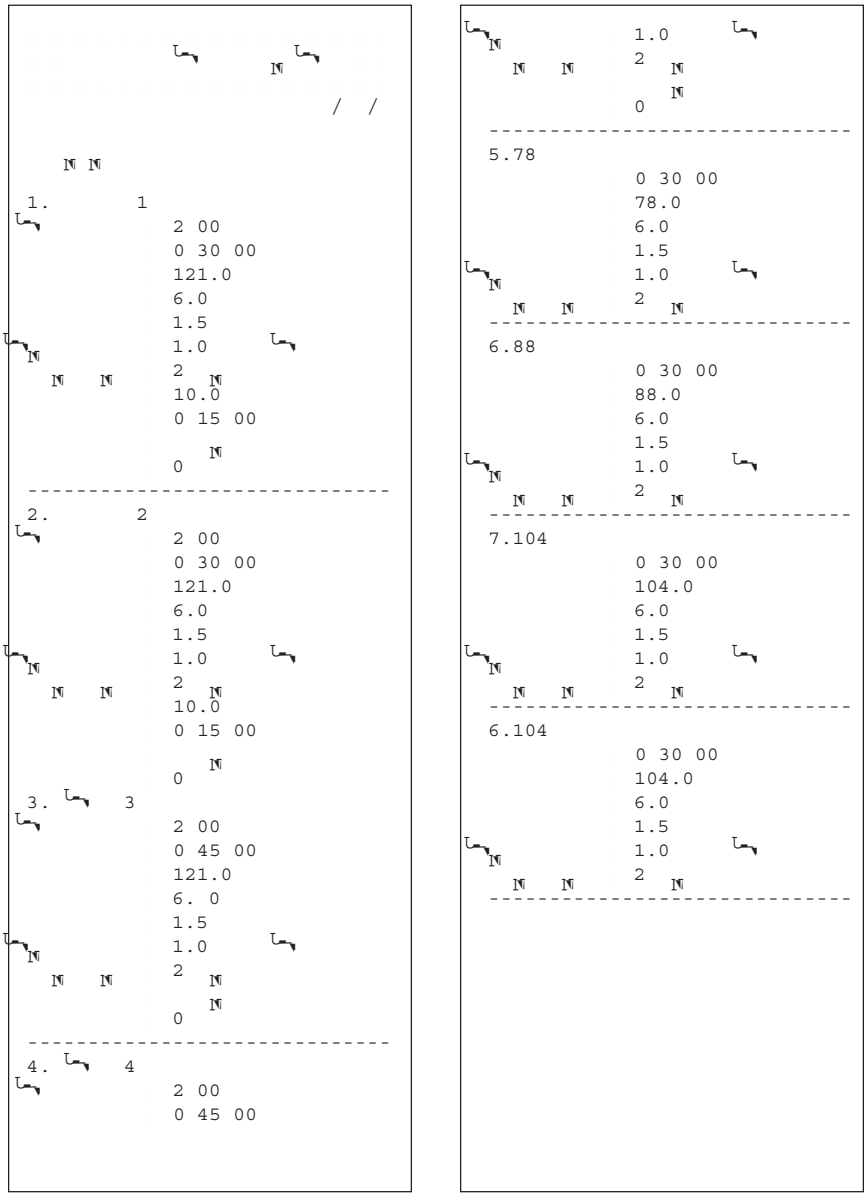



**Scree #17.5**

**LEFT ARROW** (#2 #1 ). **CANCEL CYCLE** **START CYCLE**

*NOTE: I* ***CLOSE DOOR(S)*** *a . T*

## PRINT CYCLE VALUES

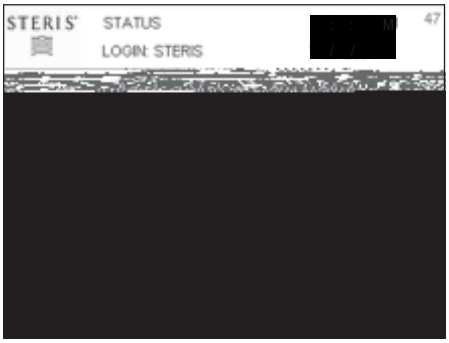


## 5.3 Status Buttons

**PRES/TEMP**, **MACHINE I/O**, **GRAPH**

**PRES/TEMP**

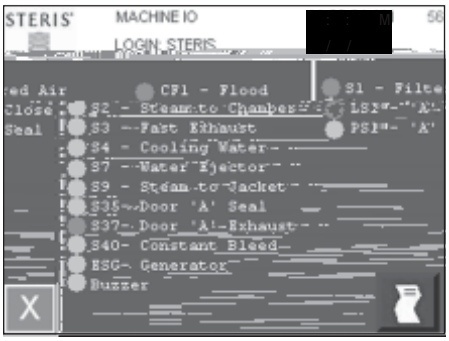
*NOTE: LOAD 1*




**Scree #47**

**EXIT**

**MACHINE I/O**




**Scree #56**

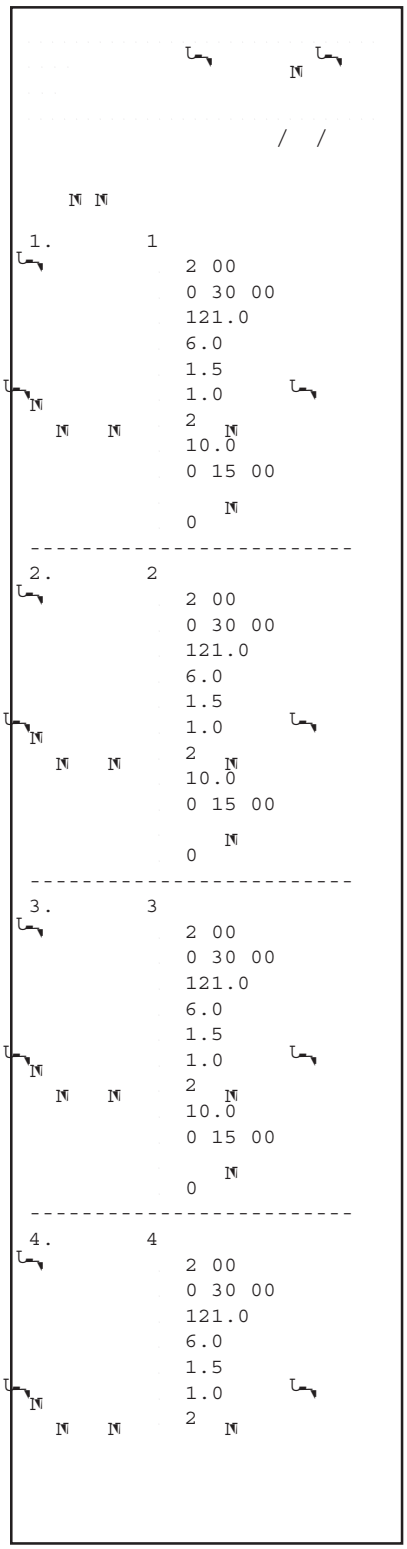
EXIT

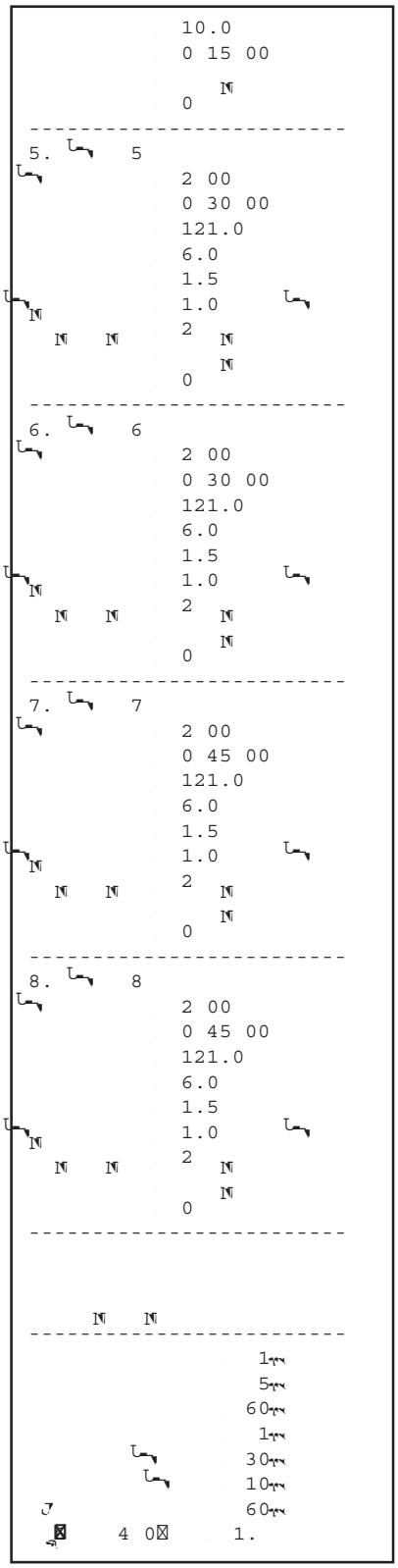
EXIT

Scree #2

PRINT STATUS

| | | |
|---|---|---|
| 11 25 52 | 50.0 | 0.0 |

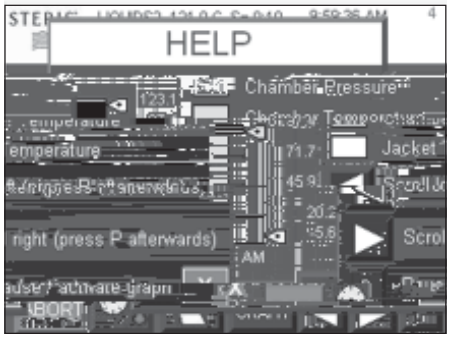




**GRAPH**

**Scree #4**

10- **STERIS**

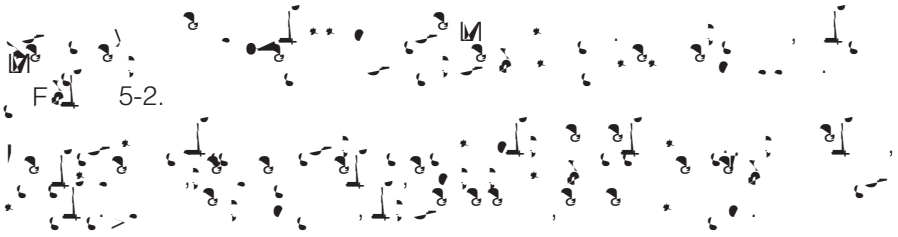



**Scree #4**

5.5,

Fig. 5-1.

### 5.4.2 Printer Operation (Optional Mylox Printer)



F 5-2.

**FEED**

**PRINT**

**POWER INDICATOR**

**PRINT INDICATOR** ( ).

**PAPER INDICATOR**

## 5.5 Compact Flash Card

300,000

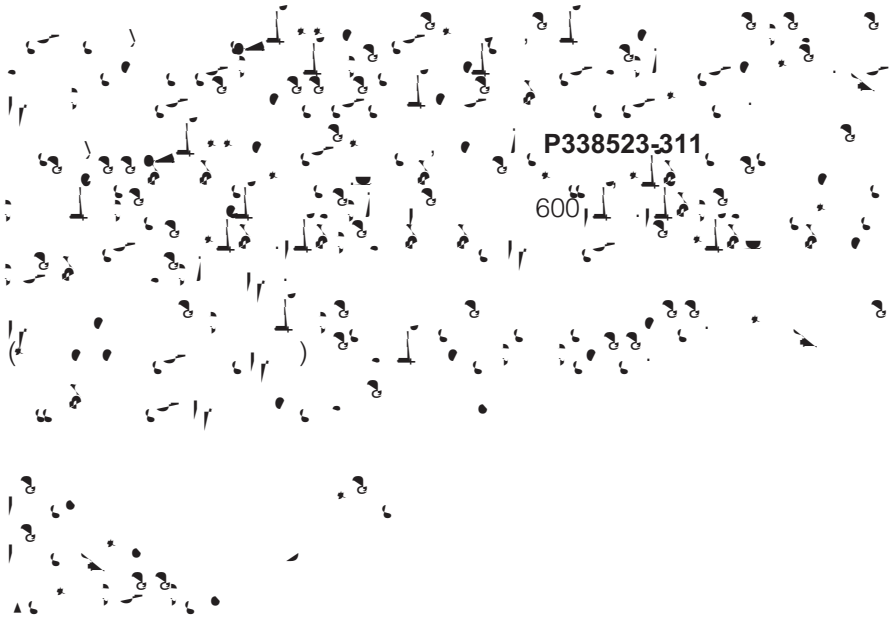
300,000 300,000 . 300,000

**VERY IMPORTANT:**

**6 ( )**

**Scree #6**

## 5.6 RS232 Download To PC



## 6.1 Before Operating Sterilizer

**CAUTION - POSSIBLE EQUIPMENT DAMAGE:**

- **Gasket must be fully retracted prior to operati g sterilizer door.**
- **If 0 dry time is selected, sterilizer automatically i itiates a vapor removal phase i place of dryi g. This phase ca still draw a vacuum to 5 i Hg. Co sult device ma ufacturer's recomme datio s to e sure devices bei g processed ca withsta d this depth of vacuum.**
- **Lifti g the chamber float switch whe clea i g the chamber may cause the sterilizer co trol to i itiate a Chamber Flooded alarm. If this alarm co ditio occurs, the operator must tur the co trol power OFF the ON to clear the alarm. The co trol power switch is located i the mecha ical area at the side of the sterilizer. Placi g the sterilizer i sta dby does ot clear this alarm.**
- **Allow thermostatic traps to cool dow to room temperature before removi g cover. Si ce there is othi g to limit expa sio , the bellows may rupture or fatigue if trap is ope ed while hot.**
- **Actuatio at less tha 75% of rated pressure ca allow debris to co tami ate the seat a d cause the safety valve to leak. A leaki g safety valve must be replaced.**
- **I sufficie t service cleara ce will make repairs more difficult a d time-co sumi g.**
- **Pipi g sized too small may cause water hammer, resulti g i damage to the sterilizer.**
- **After i stallatio , it is ma datory to brace pipi g at the drai fu el so that it will ot move vertically.**
- **Make sure door ope i g is clear of a y obstructio before closi g the door(s).**
- **Do ot attempt to ope sterilizer door duri g ma ual operatio u less chamber is at 0 psig (0 bar).**
- **Never use a wire brush, abrasives, or steel wool o door a d chamber assembly. Do ot use clea ers co tai i g chloride o stai less-steel surfaces. Chloride-based clea ers will deteriorate stai less steel, eve tually leadi g to failure of the vessel.**
- **Immediately wipe up sali e solutio spills o loadi g car, to preve t damage to stai less steel.**
- **Do ot use clea ers co tai i g chlorides o loadi g cars. Chloride-based clea ers will deteriorate the loadi g car metal.**
- **Sterilizatio of chloride-co tai i g solutio s (e.g., sali e) ca cause chamber corrosio a d is ot recomme ded by the ma ufacturer. If, however, chloride-co tai i g solutio s must be processed, clea the chamber after each use.**
- **Avoid damage to the i tegral steam ge erator daily. Flush the ge erator daily. Failure to flush ge erator daily will void the ma ufaturer's warra ty.**

1. (
   Fig. 6-1).
2.
3. ( Fig. 6-2).
4.
5.

6.

115° (23 °F).

7. *6.1.1,*

1.
2. ( F 6-3).
3.
4.

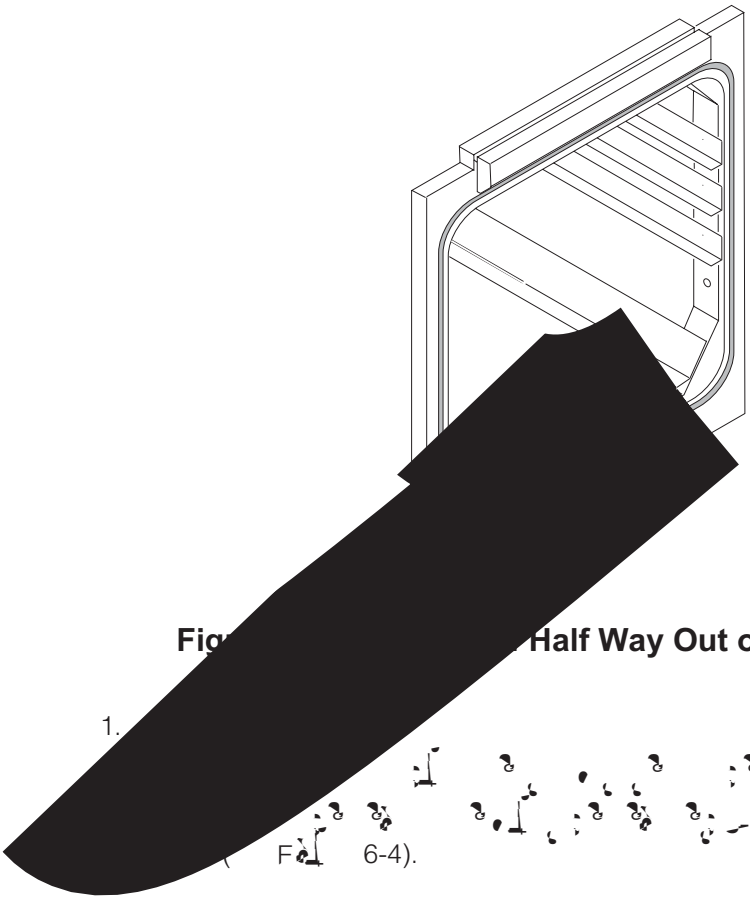


**Fig Half Way Out of Chamber**

1.

F 6-4).

## 6.2 Gravity Cycle

**WARNING – BURN HAZARD:**

**• Do ot attempt to ope the sterilizer door if a WATER IN CHAMBER ALARM co ditio exists. Call a qualified service tech icia before attempti g to use sterilizer further.**

**• After ma ual exhaust, steam may remai i side the chamber. Always wear protective gloves, apro , a d a face shield whe followi g emerge cy procedure to u load sterilizer. Stay as far back from the chamber ope i g as possible whe ope i g the door.**

**• Allow sterilizer to cool to room temperature before performi g a y clea i g or mai te a ce procedures.**

**• Failure to shut off the steam supply whe clea i g or replaci g strai ers ca result i serious i jury.**

**• Jacket pressure must be 0 psig (0 bar) before begi i g work o the steam trap.**

**• Proper testi g of the safety valve requires the valve to be operated u der pressure. Exhaust from the safety valve is hot a d ca cause bur s. Proper safety attire (gloves, eye protectio , i sulated overall) is required. Testi g is to be performed by qualified service perso el o ly.**

**• Whe sterilizi g liquids, to preve t perso al i jury or property damage resulti g from bursti g bottles a d hot fluid, you must observe the followi g procedures:**

**- Use LIQUID cycle o ly; o other cycle is safe for processi g liquids.**

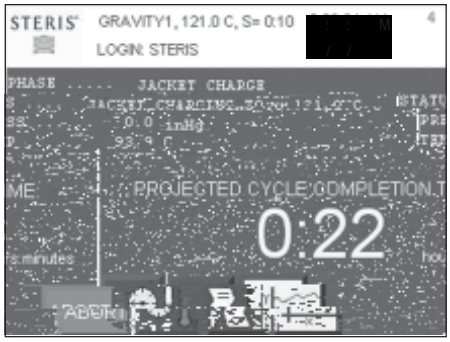
**- Use o ly ve ted closures; do ot use screw caps or rubber stoppers with crimped seal.**

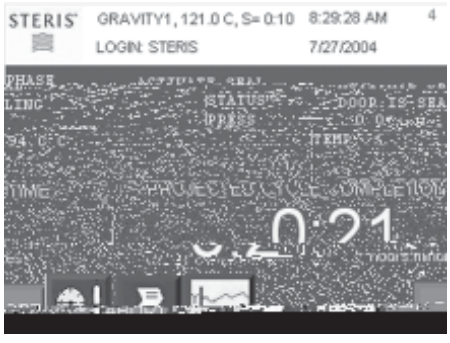
**- Use o ly Type 1 borosilicate glass bottles; do ot use ordi ary glass bottles or a y co tai er ot desig ed for sterilizatio .**

**- Do ot allow hot bottles to be jolted; this ca cause hot-bottle explosio s. Do ot move bottles if a y boili g or bubbli g is prese t.**

GRAVITY

CANCEL CYCLE START CYCLE



**PURGE PHASE:**

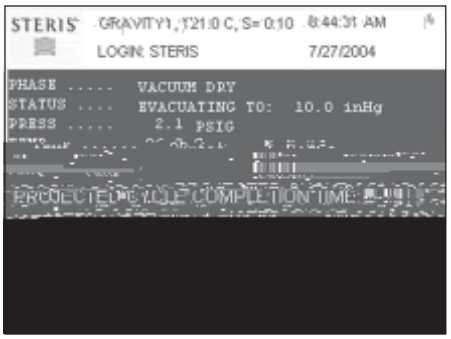
6 (0.41 ) F


**CHARGE PHASE:**

45.0 (113.0 F).


Scree #4

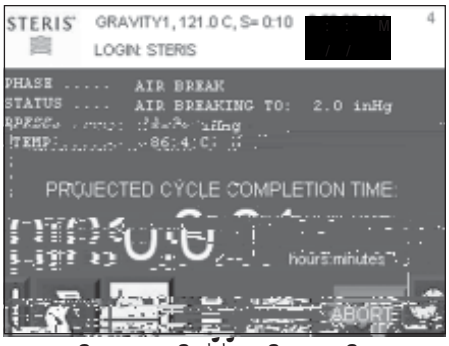
**FAST EXHAUST PHASE:** 4.0
(0.2 ).
4.0 (0.2 ),




**VACUUM DRY PHASE:** 10.0
(-0.34 ) ( ).
10.0 (-0.34 ),

Scree #4

**DRY PHASE:**




Scree #4

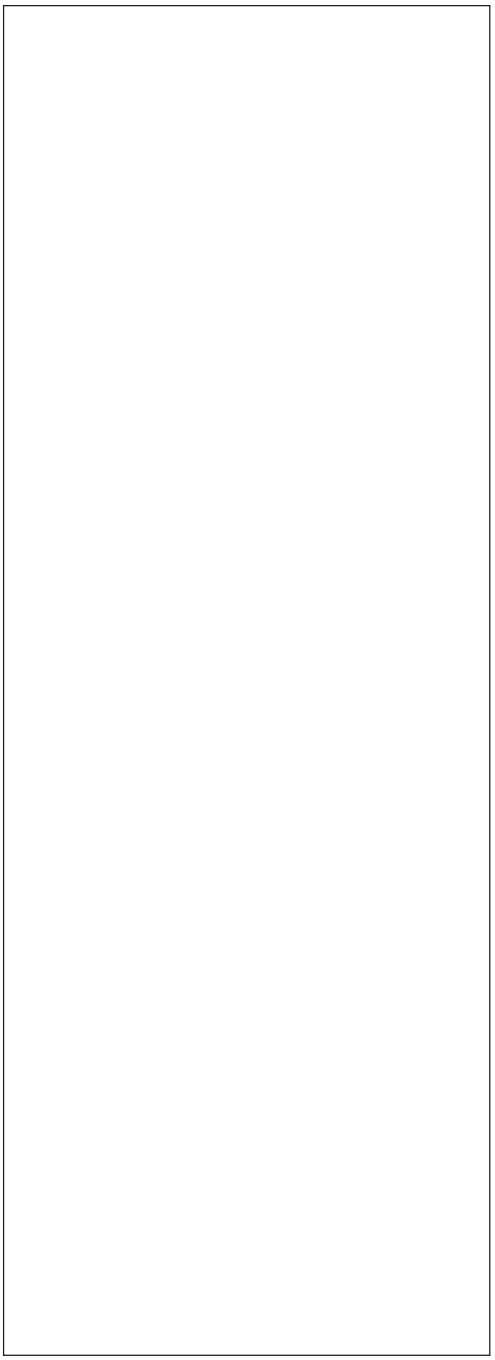
**AIR BREAK PHASE:** 2.0 (-0.17 ) (-0.07 ). 2.0 (-0.17 ),


Scree #4

**DEACTIVATE SEAL PHASE:** 20


Scree #4

**Example of cycle tape.**



## 6.3 Prevac Cycle (Optional)

**WARNING – BURN HAZARD:**

**• Do ot attempt to ope the sterilizer door if a WATER IN CHAMBER ALARM co ditio exists. Call a qualified service tech icia before attempti g to use sterilizer further.**

**• After ma ual exhaust, steam may remai i side the chamber. Always wear protective gloves, apro , a d a face shield whe followi g emerge cy procedure to u load sterilizer. Stay as far back from the chamber ope i g as possible whe ope i g the door.**

**• Allow sterilizer to cool to room temperature before performi g a y clea i g or mai te a ce procedures.**

**• Failure to shut off the steam supply whe clea i g or replaci g strai ers ca result i serious i jury.**

**• Jacket pressure must be 0 psig (0 bar) before begi i g work o the steam trap.**

**• Proper testi g of the safety valve requires the valve to be operated u der pressure. Exhaust from the safety valve is hot a d ca cause bur s. Proper safety attire (gloves, eye protectio , i sulated overall) is required. Testi g is to be performed by qualified service perso el o ly.**

**• Whe sterilizi g liquids, to preve t perso al i jury or property damage resulti g from bursti g bottles a d hot fluid, you must observe the followi g procedures:**

**- Use LIQUID cycle o ly; o other cycle is safe for processi g liquids.**

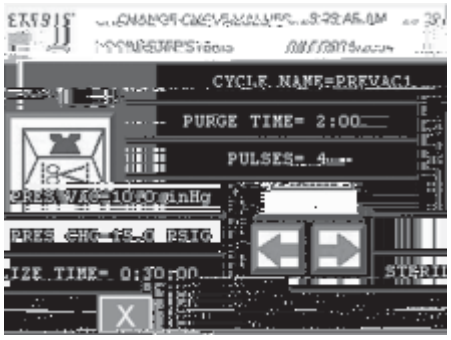
**- Use o ly ve ted closures; do ot use screw caps or rubber stoppers with crimped seal.**

**- Use o ly Type 1 borosilicate glass bottles; do ot use ordi ary glass bottles or a y co tai er ot desig ed for sterilizatio .**

**- Do ot allow hot bottles to be jolted; this ca cause hot-bottle explosio s. Do ot move bottles if a y boili g or bubbli g is prese t.**

**WARNING – EXPLOSION HAZARD: This sterilizer is ot desig ed to process flammable compou ds.**

PREVAC CYCLE. **PREVAC**





**ACTIVATE SEAL PHASE:**

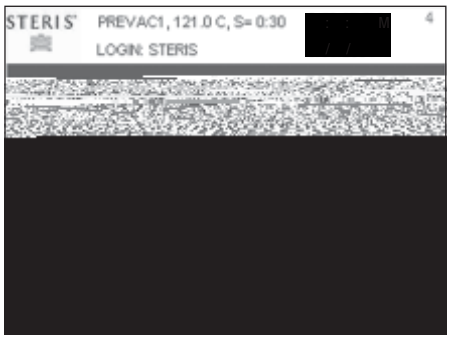

**PURGE PHASE:**

**PULSE EXHAUST PHASE:**


Scree #4

**PULSE CHARGE PHASE:**

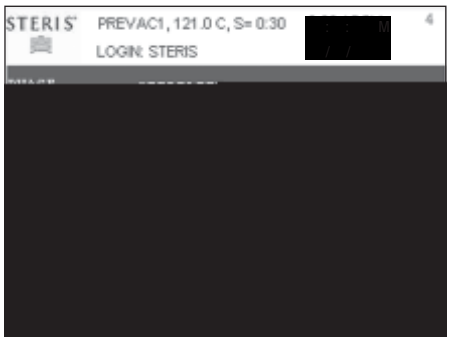
26.0 (0.34 ).




Scree #4

**CHARGE PHASE:**

45.0° (113.0°F).

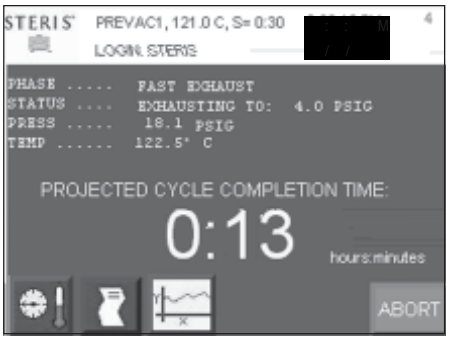



Scree #4

**STERILIZE PHASE:**

( ).

45.0° (113.0°F).

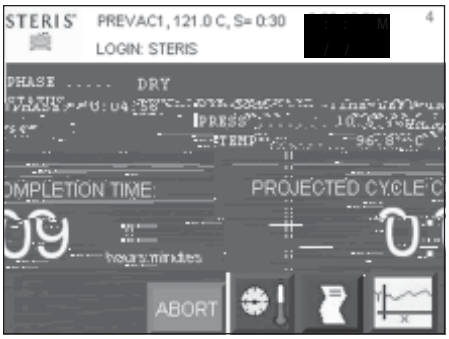



Scree #4

**FAST EXHAUST PHASE:** 4.0 (0.2 ). 4.0 (0.2 ),

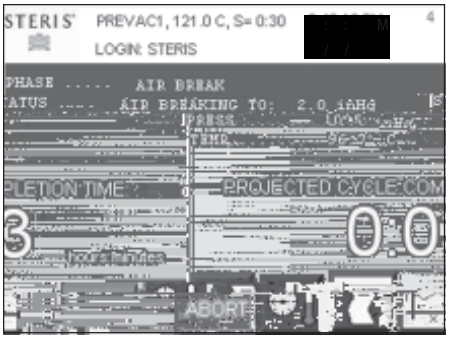

Scree #4

**VACUUM DRY PHASE:** 10.0 (-0.34 ) ( ). 10.0 (-0.34 ),



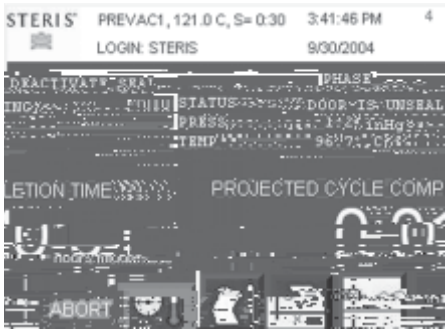

Scree #4

**DRY PHASE:**

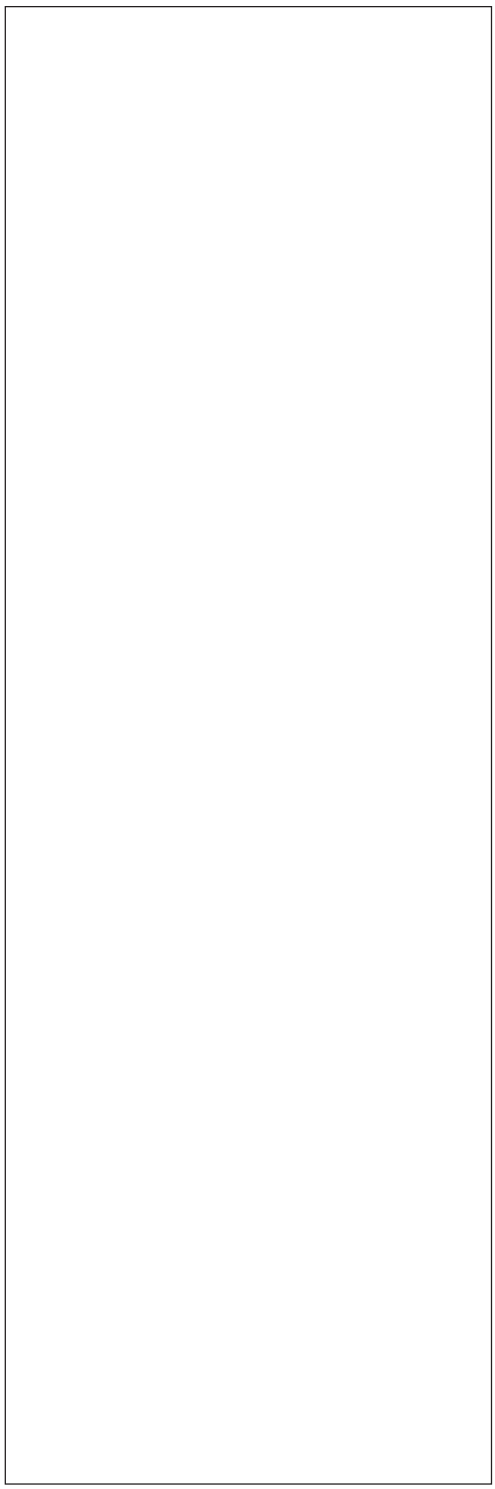



Scree #4

**AIR BREAK PHASE:** 2.0 (-0.17 ).
2.0 (-0.17 ),




**Example of cycle tape.**



## 6.4 Liquid Cycle

**WARNING – BURN HAZARD:**

**• Do ot attempt to ope the sterilizer door if a WATER IN CHAMBER ALARM co ditio exists. Call a qualified service tech icia before attempti g to use sterilizer further.**

**• After ma ual exhaust, steam may remai i side the chamber. Always wear protective gloves, apro , a d a face shield whe followi g emerge cy procedure to u load sterilizer. Stay as far back from the chamber ope i g as possible whe ope i g the door.**

**• Allow sterilizer to cool to room temperature before performi g a y clea i g or mai te a ce procedures.**

**• Failure to shut off the steam supply whe clea i g or replaci g strai ers ca result i serious i jury.**

**• Jacket pressure must be 0 psig (0 bar) before begi i g work o the steam trap.**

**• Proper testi g of the safety valve requires the valve to be operated u der pressure. Exhaust from the safety valve is hot a d ca cause bur s. Proper safety attire (gloves, eye protectio , i sulated overall) is required. Testi g is to be performed by qualified service perso el o ly.**

**• Whe sterilizi g liquids, to preve t perso al i jury or property damage resulti g from bursti g bottles a d hot fluid, you must observe the followi g procedures:**

**- Use LIQUID cycle o ly; o other cycle is safe for processi g liquids.**

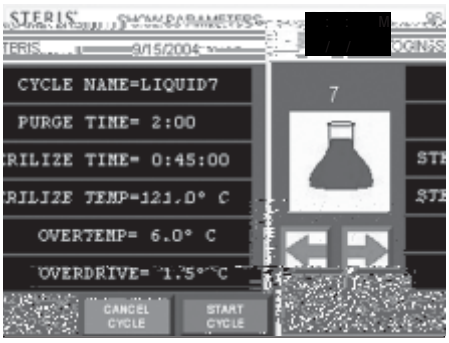
**- Use o ly ve ted closures; do ot use screw caps or rubber stoppers with crimped seal.**

**- Use o ly Type 1 borosilicate glass bottles; do ot use ordi ary glass bottles or a y co tai er ot desig ed for sterilizatio .**

**- Do ot allow hot bottles to be jolted; this ca cause hot-bottle explosio s. Do ot move bottles if a y boili g or bubbli g is prese t.**

**WARNING – EXPLOSION HAZARD: This sterilizer is ot desig ed to process flammable compou ds.**

**LIQUID**



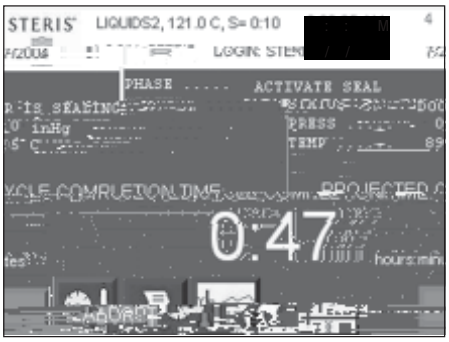

Scree #96

**CANCEL CYCLE** **START CYCLE**
CLOSE DOOR(S)

( 5.3,


Scree #4

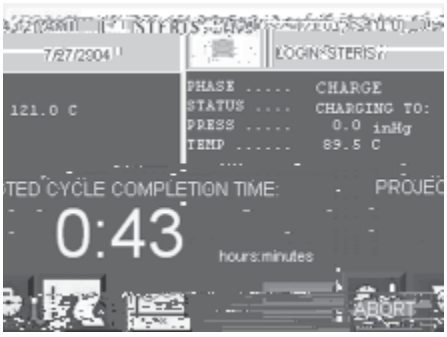
**JACKET CHARGE PHASE:** ( 120.0°
(24 .0 ).




Scree #4

**ACTIVATE SEAL PHASE:**
20

**PURGE PHASE:**

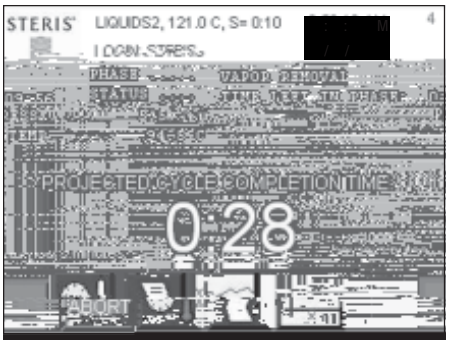



**STERILIZE PHASE:**

45.0° (113.0°F).


Scree #4d2 T3.125017 98

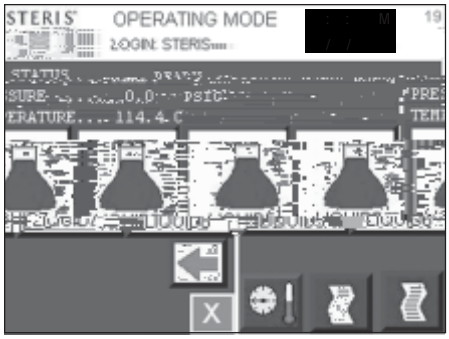
**SLOW EXHAUST PHASE:** 5.0 (0.17 ). 1.6 / (0.11 ) 4.2 (0.2 ) 0.6 / (0.04 ) 5.0 (0.17 ). 4.0 (0.2 ) (0.2 ),




**VAPOR REMOVAL PHASE:** 10

Scree #4

**COMPLETE PHASE:**




Scree #19

## 6.5 Isothermal Cycle (Optional)

**WARNING – BURN HAZARD:**

**• Do ot attempt to ope the sterilizer door if a WATER IN CHAMBER ALARM co ditio exists. Call a qualified service tech icia before attempti g to use sterilizer further.**

**• After ma ual exhaust, steam may remai i side the chamber. Always wear protective gloves, apro , a d a face shield whe followi g emerge cy procedure to u load sterilizer. Stay as far back from the chamber ope i g as possible whe ope i g the door.**

**• Allow sterilizer to cool to room temperature before performi g a y clea i g or mai te a ce procedures.**

**• Failure to shut off the steam supply whe clea i g or replaci g strai ers ca result i serious i jury.**

**• Jacket pressure must be 0 psig (0 bar) before begi i g work o the steam trap.**

**• Proper testi g of the safety valve requires the valve to be operated u der pressure. Exhaust from the safety valve is hot a d ca cause bur s. Proper safety attire (gloves, eye protectio , i sulated overall) is required. Testi g is to be performed by qualified service perso el o ly.**

**• Whe sterilizi g liquids, to preve t perso al i jury or property damage resulti g from bursti g bottles a d hot fluid, you must observe the followi g procedures:**

**- Use LIQUID cycle o ly; o other cycle is safe for processi g liquids.**

**- Use o ly ve ted closures; do ot use screw caps or rubber stoppers with crimped seal.**

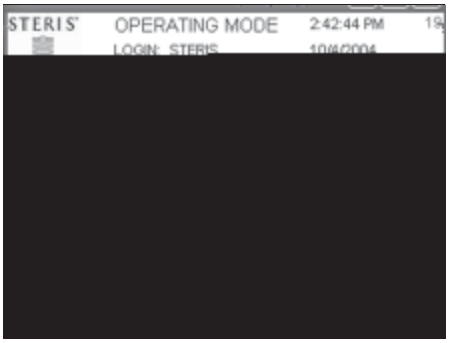
**- Use o ly Type 1 borosilicate glass bottles; do ot use ordi ary glass bottles or a y co tai er ot desig ed for sterilizatio .**

**- Do ot allow hot bottles to be jolted; this ca cause hot-bottle explosio s. Do ot move bottles if a y boili g or bubbli g is prese t.**

**WARNING – EXPLOSION HAZARD: This sterilizer is ot desig ed to process flammable compou ds.**

( ., -
) 7 110° (172 230°F).

**ISOTHERMAL**

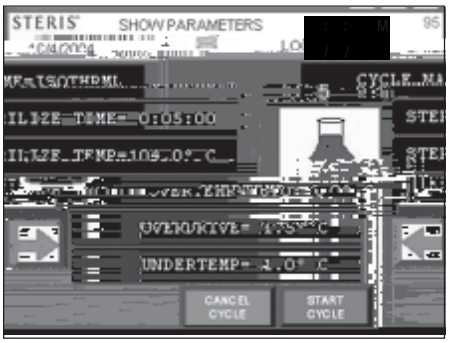



**Scree #19S**

( )

**CANCEL CYCLE** **START CYCLE**

CLOSE DOOR(S) ( ).

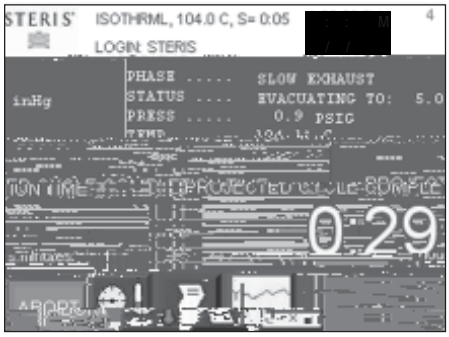



**CHARGE PHASE:**

45.0° (113.0°F).

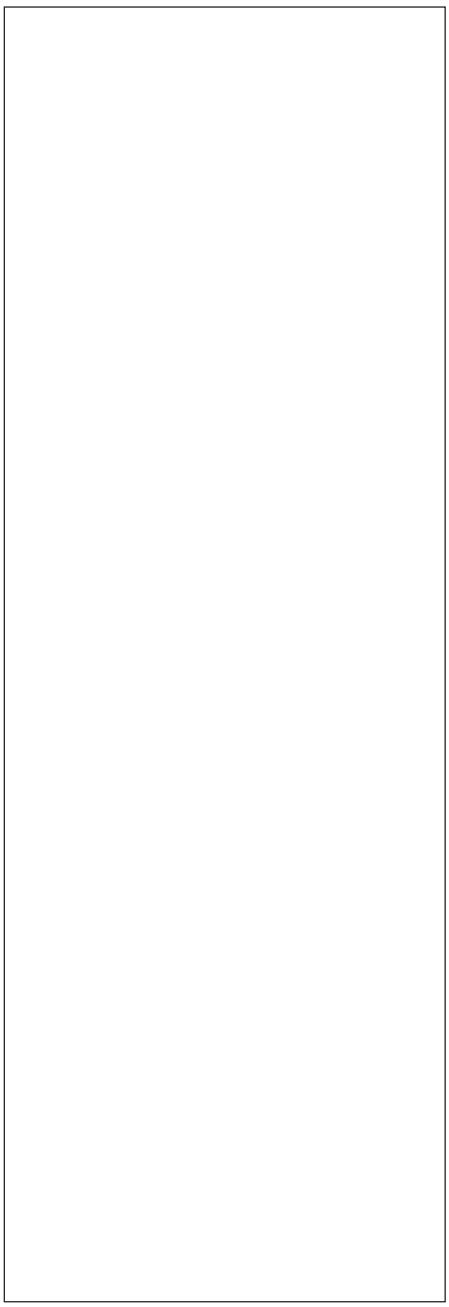
**STERILIZE PHASE:**

45.0° (113.0°F).




**Scree #4**

**Example of cycle tape.**

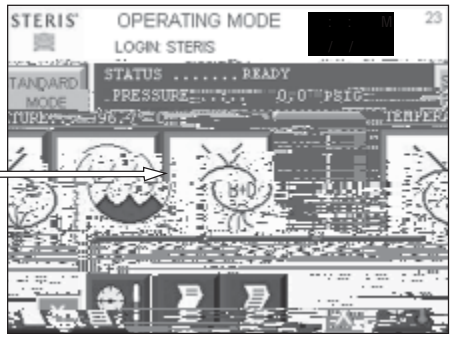


## 6.6 Bowie-Dick Warmup Cycle (Only On Prevacuum Sterilizers)

**WARNING – BURN HAZARD:**

- **Do ot attempt to ope the sterilizer door if a WATER IN CHAMBER ALARM co ditio exists. Call a qualified service tech icia before attempti g to use sterilizer further.**
- **After ma ual exhaust, steam may remai i side the chamber. Always wear protective gloves, apro , a d a face shield whe followi g emerge cy procedure to u load sterilizer. Stay as far back from the chamber ope i g as possible whe ope i g the door.**
- **Allow sterilizer to cool to room temperature before performi g a y clea i g or mai te a ce procedures.**
- **Failure to shut off the steam supply whe clea i g or replaci g strai ers ca result i serious i jury.**
- **Jacket pressure must be 0 psig (0 bar) before begi i g work o the steam trap.**

**BOWIE-DICK WARMUP**



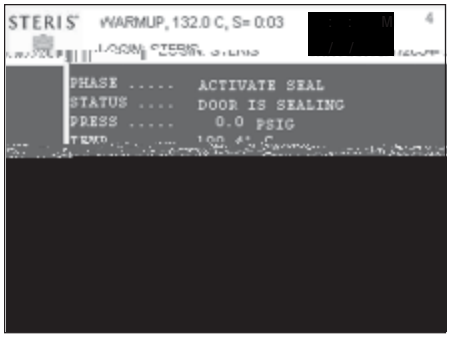

Scree #23

B -D
m C

**TEST MODE** #2 #1


Scree #4

**JACKET CHARGE PHASE:** 132.0° (270.0°F).




Scree #4

**ACTIVATE SEAL PHASE:** 20

Scree #4

**PURGE PHASE:**

6 .F


Scree #4

**CHARGE PHASE:**

45.0° (113.0°F).


Scree #4

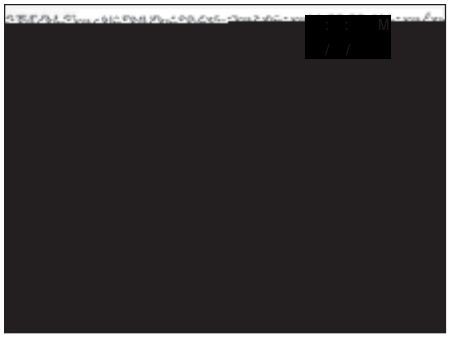
**STERILIZE PHASE:**

( ).

45.0° (113.0°F).

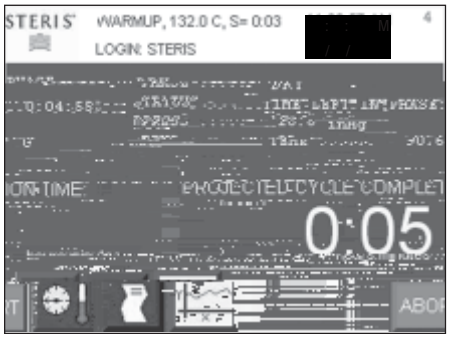

Scree #4

**FAST EXHAUST PHASE:** 4.0 (0.2 ). 4.0 (0.2 ),



Scree #4

**VACUUM DRY PHASE:** 10.0 (-0.34 ) ( ). 10.0 (-0.34 ),




Scree #4

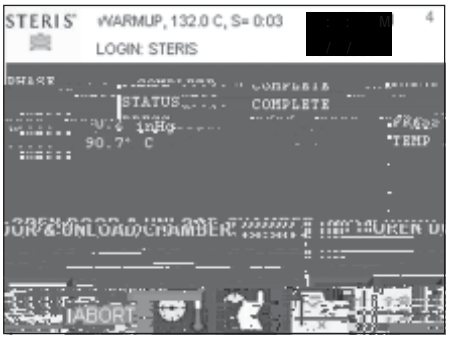
**DRY PHASE:**


Scree #4

**AIR BREAK PHASE:** 2.0 (-0.17 ).
2.0 (-0.17 ),

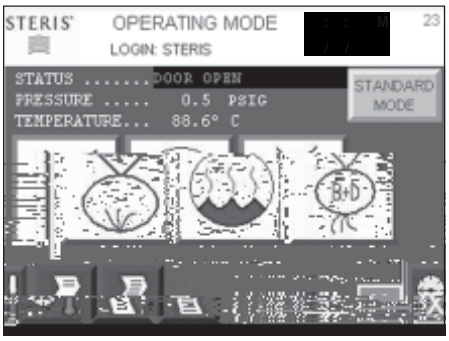

Scree #4

**DEACTIVATE SEAL PHASE:**
20




Scree #4

**COMPLETE PHASE:**




Scree #23

## 6.7 Bowie-Dick Cycle (Only On Prevacuum Sterilizers)

**WARNING – BURN HAZARD:**

**• Do ot attempt to ope the sterilizer door if a WATER IN CHAMBER ALARM co ditio exists. Call a qualified service tech icia before attempti g to use sterilizer further.**

**• After ma ual exhaust, steam may remai i side the chamber. Always wear protective gloves, apro , a d a face shield whe followi g emerge cy procedure to u load sterilizer. Stay as far back from the chamber ope i g as possible whe ope i g the door.**

**• Allow sterilizer to cool to room temperature before performi g a y clea i g or mai te a ce procedures.**

**• Failure to shut off the steam supply whe clea i g or replaci g strai ers ca result i serious i jury.**

**• Jacket pressure must be 0 psig (0 bar) before begi i g work o the steam trap.**

**• Proper testi g of the safety valve requires the valve to be operated u der pressure. Exhaust from the safety valve is hot a d ca cause bur s. Proper safety attire (gloves, eye protectio , i sulated overall) is required. Testi g is to be performed by qualified service perso el o ly.**

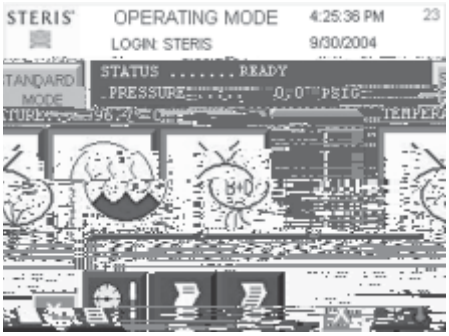
**• Whe sterilizi g liquids, to preve t perso al i jury or property damage resulti g from bursti g bottles a d hot fluid, you must observe the followi g procedures:**

**- Use LIQUID cycle o ly; o other cycle is safe for processi g liquids.**

**- Use o ly ve ted closures; do ot use screw caps or rubber stoppers with crimped seal.**

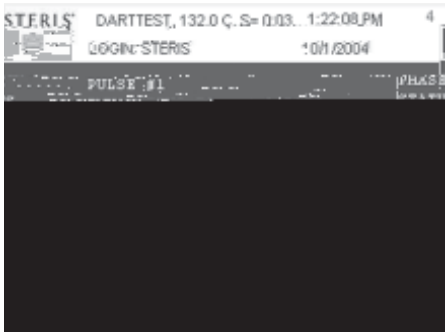
**- Use o ly Type 1 borosilicate glass bottles; do ot use ordi ary glass bottles or a y co tai er ot desig ed for sterilizatio .**

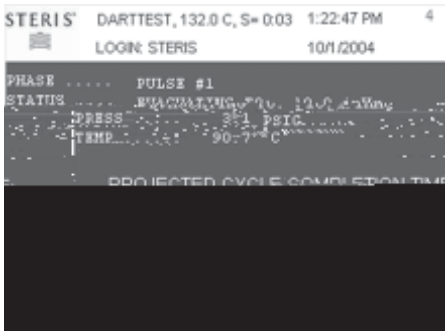
**- Do ot allow hot bottles to be jolted; this ca cause hot-bottle explosio s. Do ot move bottles if a y boili g or bubbli g is prese t.**


STERIS
OPERATING MODE
4:25:36 PM
23
LOGIN: STERIS
9/30/2004
STATUS ..... READY
PRESSURE
0.0 PSIG


LOGIN: STERIS


STERIS
DARTTEST, 132.0 C, S= 0.03
1:19:19 PM
4
LOGIN: STERIS
10/1/2004
PHASE ..... ACTIVATE SEAL
STATUS .... DOOR IS SEALING
PRESS ..... 0.2 inHg
PROJECTED CYCLE COMPLETION TIME:
hours:minutes
ABORT

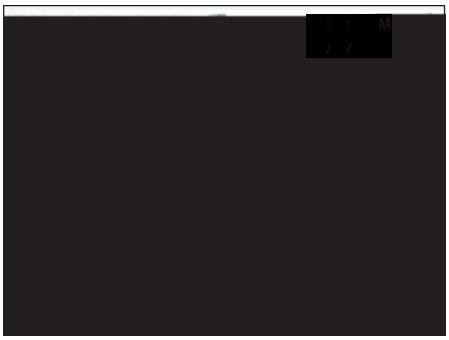

STERIS
DARTTEST, 132.0 C, S= 0:03 1:22:08 PM
LOGIN: STERIS
10/1/2004
PULSE #1


STERIS
DARTTEST, 132.0 C, S= 0:03 1:22:47 PM
LOGIN: STERIS
10/1/2004
PHASE ..... PULSE #1
STATUS .....
PRESS .....
TEMP .....


Scree #4

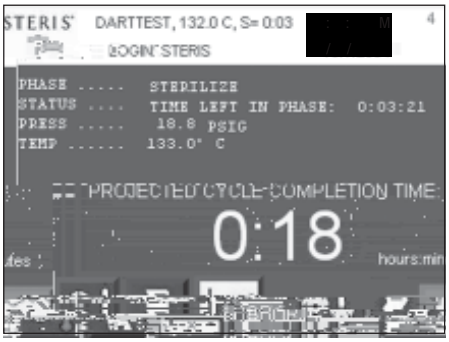
**PULSE CHARGE PHASE:**

26.0 (0.34 ).



**CHARGE PHASE:**

45.0° (113.0°F).




Scree #4

**FAST EXHAUST PHASE:** 4.0 (0.2 ). 4.0 (0.2 ),


Scree #4

**VACUUM DRY PHASE:** 10.0 (- 0.34 ) ( ). 10.0 (-0.34 ),


Scree #4

**DRY PHASE:**

## 6.8 Leak Test Cycle (Only On Prevacuum Sterilizers)

**WARNING – BURN HAZARD:**

**• Do ot attempt to ope the sterilizer door if a WATER IN CHAMBER ALARM co ditio exists. Call a qualified service tech icia before attempti g to use sterilizer further.**

**• After ma ual exhaust, steam may remai i side the chamber. Always wear protective gloves, apro , a d a face shield whe followi g emerge cy procedure to u load sterilizer. Stay as far back from the chamber ope i g as possible whe ope i g the door.**

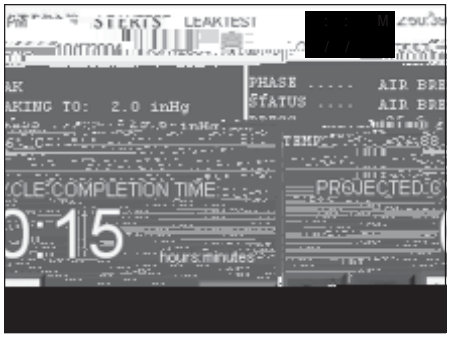
**PULSE CHARGE PHASE:**


Scree #4

**STABILIZE PHASE:** ( . .,
). 45.0° (113.0°F).

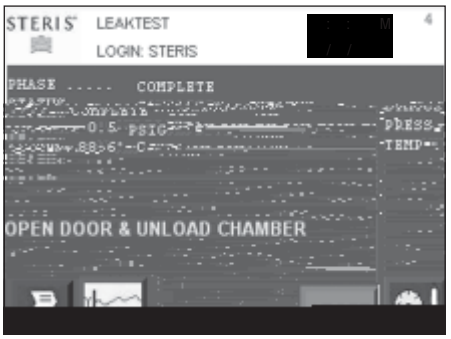

Scree #4

**LEAK TEST PHASE:** 10 .




Scree #4

**AIR BREAK PHASE:** 2.0 (-0.17 ).
2.0 (-0.17 ),




**Scree #4**

**COMPLETE PHASE:**

## 6.9 Cycle Abort


**Scree #64**

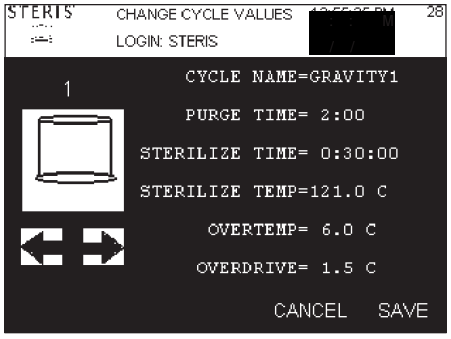
#64,
#2 #1

#10 1 4.

**RIGHT ARROW** 5
#36.

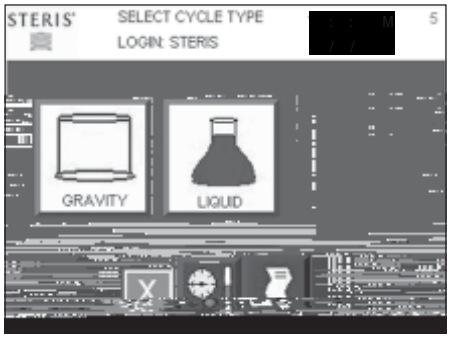
**Scree #36**

**LEFT ARROW** #10. **GRAVITY**
1( ).



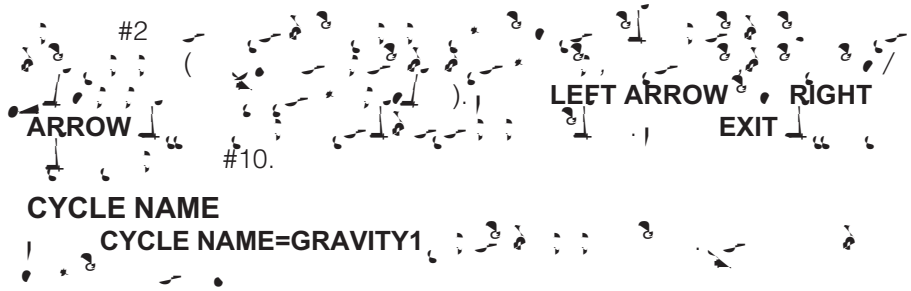

**Scree #28**

1 #2 **GRAVITY**
( ).
PREVAC




**Scree #5**

**LIQUID** **GRAVITY**
**PREVAC**
#2 #32


#2
LEFT ARROW
RIGHT
ARROW
EXIT
#10.
CYCLE NAME
CYCLE NAME=GRAVITY1

**OVERTEMP**

**OVERTEMP=6.0°C**

**Scree #39**

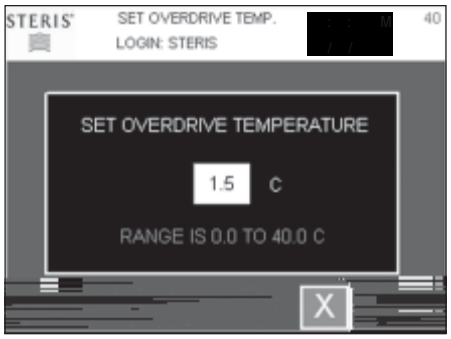
**WHITE** 0.0° (32.0°F) 40.0° (104.0°F).

**ENTER** #3 .

**EXIT** #2 .

**OVERDRIVE**

**OVERDRIVE=1.5°C** ( ) + -




**Scree #40**

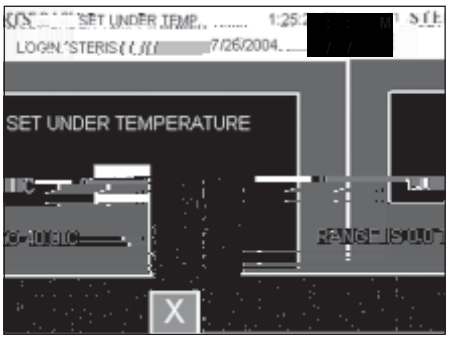
**WHITE** 0.0° (32.0°F) 40.0° (104.0°F).

**ENTER** #40.

**EXIT** #2 .

**UNDERTEMP**

**UNDERTEMP=1.0°C**




**Scree #41**

**WHITE** 0.0° (32.0℉) 40.0° (104.0℉).

**ENTER** #41. **EXIT** #2 .

**PRINT INTERVAL**

**PRINT INT=2 MIN**


**Scree #42**

**WHITE** 0

**ENTER** #42.

**EXIT** #2 .

## DRY TIME

**DRY TIME=0:15:00**

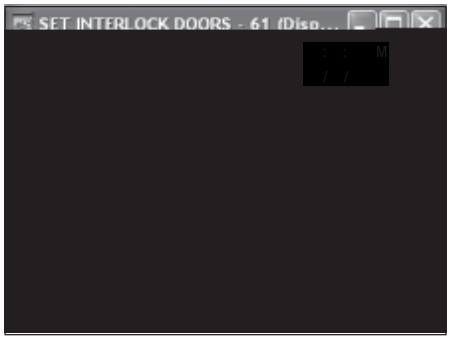
WHITE F
F ENTER
#6 EXIT #2

Scree #69

## INTERLOCK DOORS (double door sterilizers o ly)

INTERLOCK = DOOR B

1. NO INTERLOCKS –




Scree #61

2. SELECT DOOR TO UNSEAL –
sterile side
3. DOOR A UNSEALED –
sterile side.
4. DOOR B UNSEALED –
sterile side.

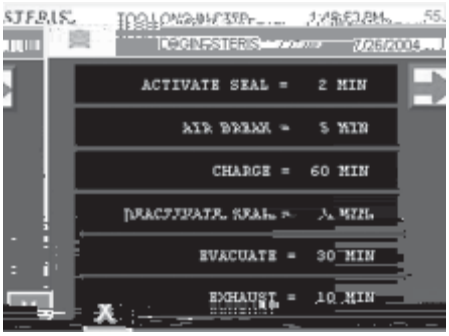
F M #7, TOO LONG IN STEP

LEFT ARROW RIGHT ARROW
EXIT #7( M ).

6.13.2 Too Long In Step **ACTIVATE SEAL**

**ACTIVATE SEAL=1 MIN**

#57.




**WHITE**

**ENTER**

#57.

**EXIT**

#55.

**AIR BREAK**

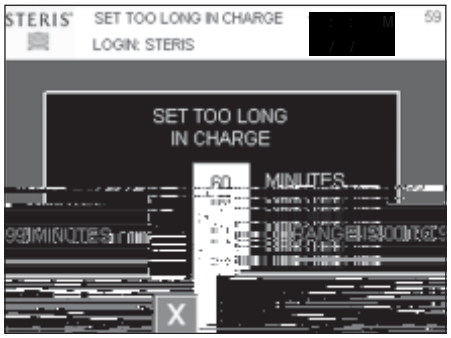
**AIR BREAK=5 MIN**

#62.

**WHITE** #5 **EXIT** **ENTER** #55.

## DEACTIVATE SEAL

**DEACTIVATE SEAL=1 MIN** #63.




**WHITE** #63. **EXIT** **ENTER** #55.

## EVACUATE

**EVACUATE=30 MIN** #60.

Scree #60

WHITE ENTER #60. EXIT #55.

## EXHAUST

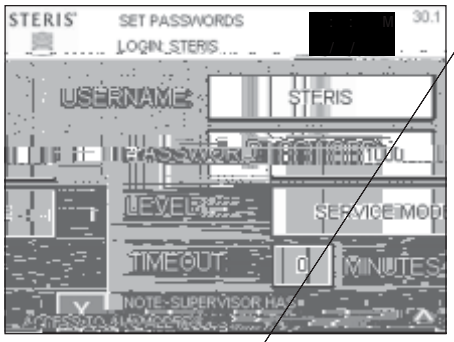
EXHAUST=10 MIN #5


Scree #58

WHITE ENTER #5 EXIT #55.

## JACKET CHARGE

JACKET CHARGE=60 MIN #77.




**Scree #30.1tio is dis 0.12549**

2. **SPACE 1** (1). **SPACE 2** (2 12).
3. **WHITE** **ENTER** #30.
4. **WHITE**
5. **ENTER** #30.
6. **WHITE**
7. **WHITE** ( ).

#6 0

**ENTER** #30.

**ENTER** #12. #12 ( . ., **4 butto** ).

10. **EXIT** #7 ( ).

### 6.13.7 Machine Number

F M #7, **MACHINE NUMBER**

**Scree #46**

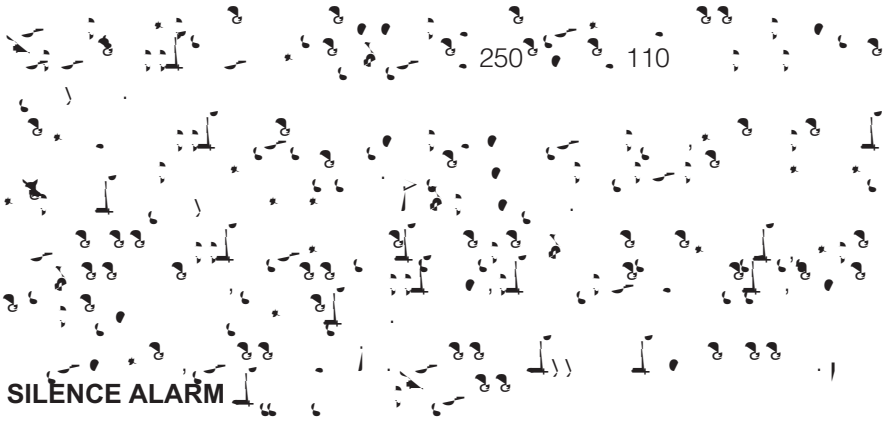
**WHITE** **ENTER**
#46. **EXIT** #7.

### 6.13.8 Default Values

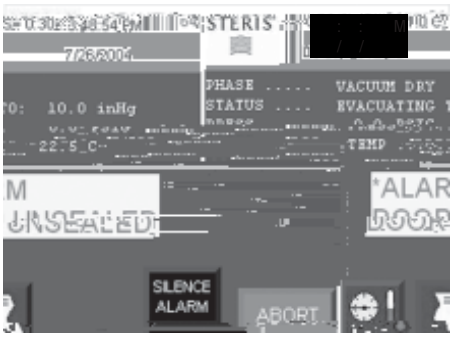
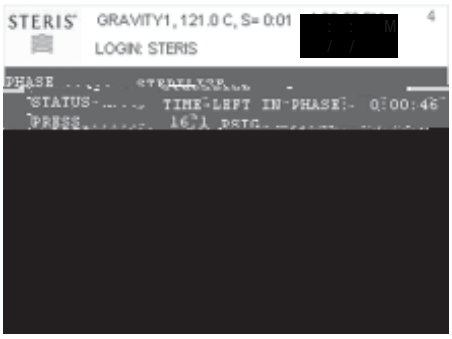
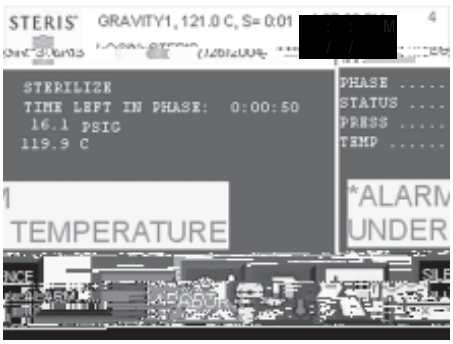
F M #7, **DEFAULT VALUES**

**Scree #9**

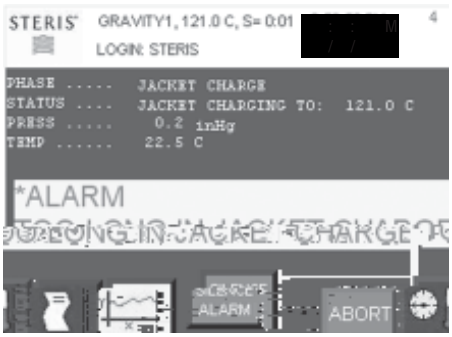
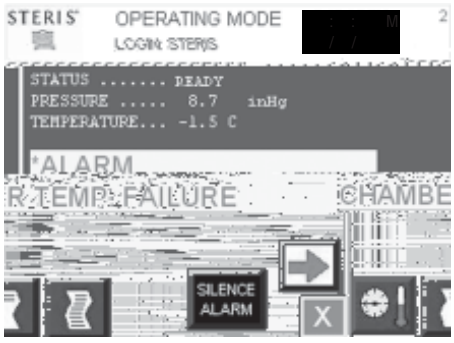
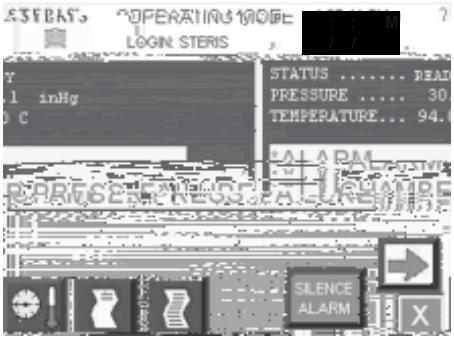
**YES**
**NO** #7.

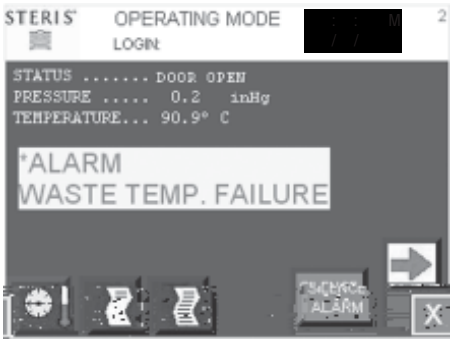
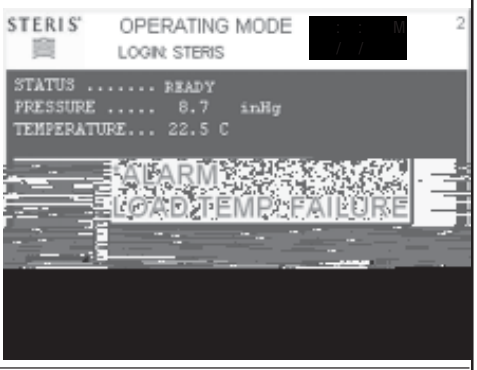



| Alarm | Descriptio | Scree with Alarm |
|---|---|---|
| | 2 (0.14 ) | |
| | | |

| Alarm | Descriptio | Scree with Alarm |
|---|---|---|
| | Scree #54 |  |
| | Scree #49 |  |
| | Scree #4 |  |
| | |  |

| Alarm | Descriptio | Scree with Alarm |
|---|---|---|
| | Scree #4 |  |
| | Scree #4 |   |
| | Scree #4 |   |
| | Scree #4 |   |

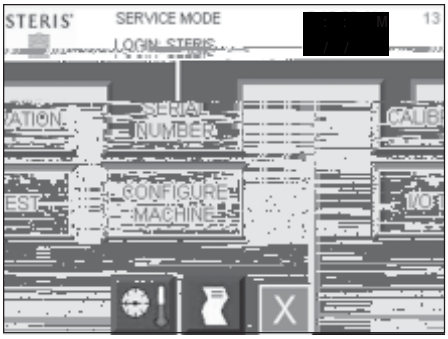
| Alarm | Descriptio | Scree with Alarm |
|---|---|---|
| | Scree #4 |  |
| | Scree #4 |  |
| | Scree #2 |  |
| | Scree #2 |  |

| Alarm | Descriptio | Scree with Alarm |
|---|---|---|
| L<br>F | Scree #2 |  |
| F | Scree #2 |  |
| .F | Scree #2 |  |
| | | |

## 8.1 Service Mode

#6. SERVICE MODE #6

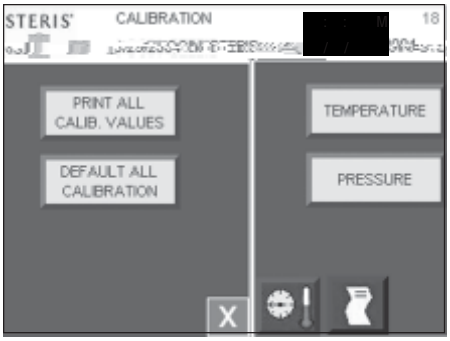
Scree #6




Scree #13

### 8.1.1 Calibration

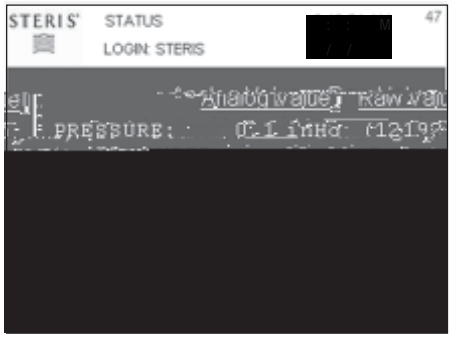
CALIBRATION



**TEMPERATURE CALIBRATION**

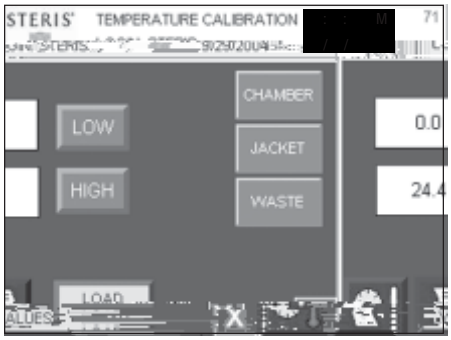
TEMPERATURE #1


NUMERIC 0.1 2 . P a a p :

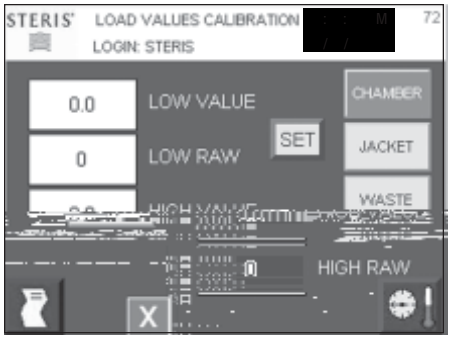


## TEMPERATURE LOAD VALUES CALIBRATION

**LOAD VALUES**




**Scree #71**




**Scree #72**

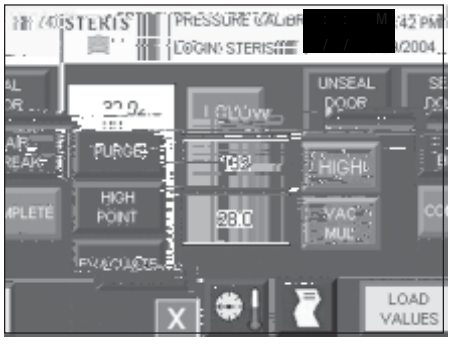
**RTD**

**SET**

**EXIT**

## PRESSURE CALIBRATION

**PRESSURE** #1




**Scree #74**

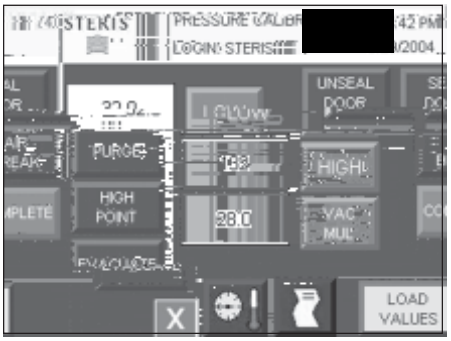
**WHITE**

LOW 0.0 **LOW** ( ). **PRESSURE/TEMP** 0.0. #74. **SEAL DOOR** 30 **PURGE** **HIGH POINT**

(+/- 0.3 ),
35.0 ).
( ).
**PRESSURE/TEMP**
#74.
**EVACUATE**
(+/- 0.3 ), **WHITE** VAC MUL
(
2 ). **VAC MUL** ( ).
**PRESSURE/TEMP**
**AIR BREAK**
**UNSEAL DOOR**
**COMPLETE**

**PRESSURE LOAD VALUES CALIBRATION**

**LOAD VALUES**




**EXIT**

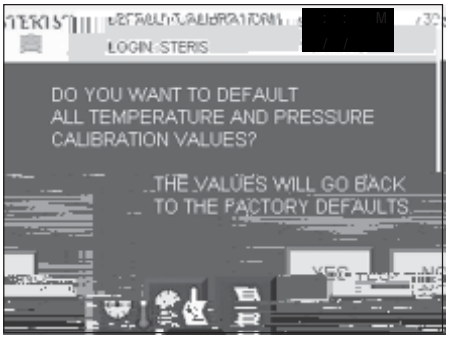
## PRINT CALIBRATION VALUES

PRINT ALL CALIBRATION VALUES

```
 /30/2004   16 44

----------------------------------
      0.0
          12214
       24.4
          28846
      2.040000


----------------------------------
      32.0
          321
       132.0
          1644

----------------------------------
      32.0
          321
       132.0
          1567


----------------------------------
      32.0
          330
       132.0
          1506
```

**DEFAULT CALIBRATION VALUES**

**DEFAULT ALL CALIBRATION**




**YES** **NO**

### 8.1.2 I/O Test

**I/O TEST**

: : M
/ /

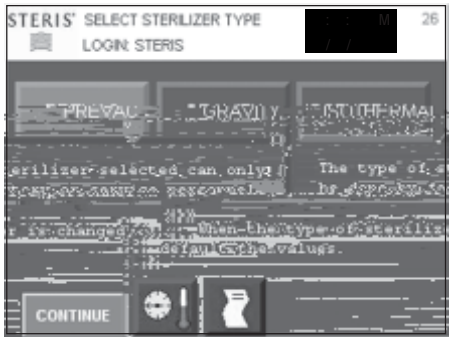
**Limit switches:**

1
1 **A**
2 **B** (  )
1 **A**
2 **B**

**AC outputs:**

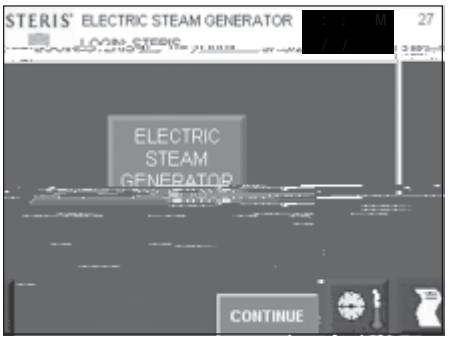
1
2 *
3
4
7
35 **A**
36 **B** ( )**
37 **A**
3 **B** ( )

CONTINUE




Scree #26

CONTINUE




Scree #27

CONTINUE


Scree #37

CONTINUE

1.

2.

7.

0.03 *0.000

## 8.2 Change Printer Paper Roll (Cybertech Printer)

**PAPER LOADING:**

1.
2. F .1
3.
4.
5. .F
6. **Feed** ( ). F .2.
7. #1 #2. F .3.
10. **Feed**
11. **Repri t** ( ) ( ).
12.

**Figure 8-1. Paper Compartme t**

**Figure 8-2. Paper Feed Positio**

**Figure 8-3. Paper Guide**

## 8.4 Change Printer Ribbon (Mylox Printer)

1. [illegible] F[illegible] -4.
2. [illegible]
3. [illegible] ( F[illegible] -4), [illegible]

3.0 ( .)

3.5 . 1 *

3.6 ( ). 1 *

3.7 * * / . * , . 2 *

| | |
|---|---|
| 7.0 F | |
| 7.1 | 6 |
| 7.2 ( ). | 6 |
| 7.3 **STERIS TEST**. | 6 |
| 7.4 | 6 |

## 9.2 Spare Parts

1.
2.
3.

*NOTE: U STERIS a P a P . U a -*
( 2)

**REPLACEMENT PARTS**

| Descriptio | Part Number |
|---|---|
| **Cybertech Pri ter** | |
| ( 5) | 3 7352-55 |
| ( 5) | 3 7352-55 |
| **Mylox Pri ter** | |
| ( 5) | 3 7352-55 |
| ( 2) | 150 2 -440 |

## 10.1 PLC Specifications

**PLC: MicroLogix® 1200 Co troller***

**Catalog umber:** 1762- 24

**Age cy Certificatio** 50 222.2 .142, , . 2, 1604, 222.2 .213)

**Operati g temperature:** 0 55 (32 F 131 F)

**Storage temperature:** -40 5 (-40 F 1 5 F)

**Operati g humidity:** 5% 5% ( )

**Variables stored i flash memory for perma e t storage.**

**ANALOG MODULE: 4 CHANNEL INPUT MODULE**

**Catalog umber:** 1762-F4

**Resolutio :** 15 ( )

**Repeatability:** +/-0.1%

**RTD MODULE: 4 CHANNEL INPUT MODULE**

**Catalog umber:** 1762- 4

**Resolutio :** 0.1 (0.1 F)

**Repeatability:** +/-0.2 (+/- 0.4 F)

**Accuracy:** +/-0. (+/- 1.62 F)

**Maximum drift:** +/-0.026 / (+/- 0.026 F/F)

**RELAY OUTPUT MODULE: 8 AC OUTPUTS**

**Catalog umber:** 1762-

**DISPLAY: PANELVIEW PLUS® 600**

**Catalog umber:** 2711 - 6 20

**COMMUNICATION MODE:**

**Catalog umber:** 2711 - 22

** M lo ® 1200 Co p a a a a o Rb A o a o .*