Section 3: Operating Instructions

3.1 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 operation.

⚠ WARNING–FALL HAZARD: To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading or unloading area.

⚠ WARNING–BURN HAZARD: If 0 (zero) dry time is selected, steam vapors will be released when opening door. Step back away from the door when opening door. Door should only be opened 2-3 inches until no more vapors are seen, before opening the door fully.

Operate sterilizer by referring to the appropriate cycle description in this section. The information in cases 3.1 through 3.7 are general instructions that apply to all cycle operations.

1. Press "ON" touch-screen pad on the sterilizer control display.
   - The printer records the time and date that the power is turned ON.
2. Open chamber door.

⚠ WARNING–BURN HAZARD: Strainer and chamber interior will be hot, use protective gloves.

   a. Check that drain strainer is clean and in place and that chamber interior is clean. See *SECTION 6.2*, if cleaning is necessary.

   b. Close chamber door.

3. Under normal operation utility supply valves remain open. Verify valves are in OPEN position (see Figure 3-1). Valves are accessed from sterilizer equipment room and cannot be accessed from the operator side.
4. Open control access door.

   a. Check printer paper roll.

      • A colored warning stripe is visible when roll is near its end.

   b. See "Changing Paper Roll" in *SECTION 6.5*, if a new paper roll is needed.

5. Run required test cycle:

   » Run a DART (Bowie-Dick) test at least once a day to document the removal of residual air from sample challenge loads.

NOTE: Units configured to run SFPP cycles only, do not require daily running of DART (Bowie-Dick) cycles.

   » Run a vacuum leak test at least once each week to measure the integrity of the pressure vessel and associated piping. This test helps assure that air is not being admitted to the sterilizer chamber during vacuum draw downs.

NOTE: Always run a warm-up cycle before running the daily DART (Bowie-Dick) test or weekly vacuum leak test.

   Press "MORE CYCLES" to access the Vacuum Leak Test and DART (Bowie-Dick) cycle selector touch-screen pads. For instructions on running these tests, refer to cycle descriptions later in this section. Refer also to *SECTION 3, TECHNIQUES OF STERILIZATION*, in the Operator Manual.

6. Once these tests have been run (if necessary), proceed to loading the sterilizer and running cycles.

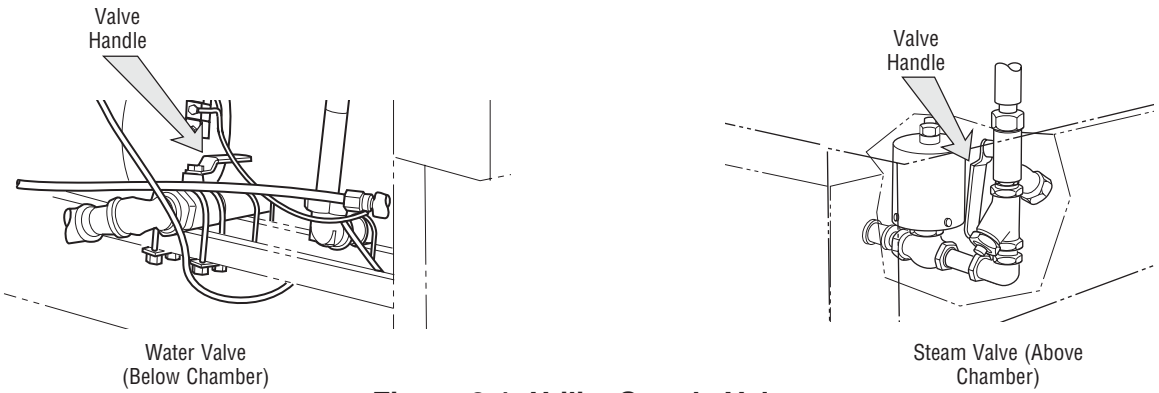


Figure 3-1. Utility Supply Valves

Table 3-1. Factory-Set Cycles and Cycle Values

Prevacuum Sterilizer Cycles and Cycle Values (Table 3-1A)

Cycles:	Sterilize Temp.	Sterilize Time	Dry Time	Recommended Load	Validation Standard
1. PREVAC	270°F (132°C)	4 MIN.	5 MIN.	Single Fabric Pack	ST-8
2. PREVAC	270°F (132°C)	4 MIN.	20 MIN.	Double-wrapped instrument trays, max. weight of 17 lbs (7.7 kg) each. Fabric packs. *Refer to Table 3-2 for recommended quantities.*	ST-8
3. GRAVITY	250°F (121°C)	30 MIN.	15 MIN.	Fabric packs. *Refer to Table 3-2 for recommended quantities.*	ST-8
4. LIQUID	250°F (121°C)	45 MIN.	0 MIN.	*Refer to Table 3-3 for guidelines.*	ST-8

Steam Flush Pressure-Pulse Sterilizer Cycles and Cycle Values (Table 3-1B)

Cycles:	Sterilize Temp.	Sterilize Time	Dry Time	Recommended Load	Validation Standard
1. WRAP/ SFPP	270°F (132°C)	4 MIN.	20 MIN.	Double-wrapped instrument trays, max. wt.: 17lbs (7.7kg) each. Non-porous Goods, only. *Refer to Table 3-2 for recommended quantities.*	ST-8
2. SFPP	270°F (132°C)	4 MIN.	20 MIN.	Fabric Packs *Refer to Table 3-2 for recommended quantities.*	ST-8
3. PREVAC	270°F (132°C)	4 MIN.	20 MIN.	Double-wrapped instrument trays, max. wt.: 17lbs (7.7kg) each. Fabric Packs. *Refer to Table 3-2 for recommended quantities.*	ST-8
4. GRAVITY	250°F (121°C)	30 MIN.	15 MIN.	Fabric packs. *Refer to Table 3-2 for recommended quantities.*	ST-8

Test Cycles for All Units	Sterilize Temp.	Sterilize Time	Dry Time	Recommended Load	Validation Standard
5. Leak Test[1]	270°F (132°C)	N/A	N/A	N/A	ST-8
6. DART Test[1]	270°F (132°C)	3-1/2 MIN.	1 MIN.	DARTor Bowie-Dick Test Pack	ST-8
7. DART Warm-up[1]	270°F (132°C)	3 MIN.	1 MIN.	N/A	N/A

[1] *Not adjustable.*

Table 3-2. Recommended Loads by Sterilizer Size [1]

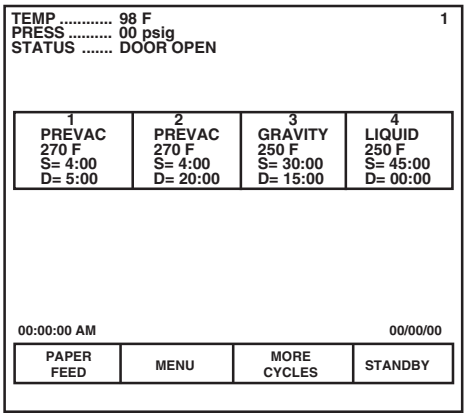
	Wrapped Instrument Trays	Fabric Packs
26 x 37.5 x 36" (660 x 950 x 910 mm)	9	18
26 x 37.5 x 48" (660 x 950 x 1220 mm)	12	30
26 x 37.5 x 60" (660 x 950 x 1520 mm)	15	36

[1] *Refer to Tables 3-1A and 3-1B to determine cycle use guidelines.*

Table 3-3. Liquid Cycle Processing Guidelines

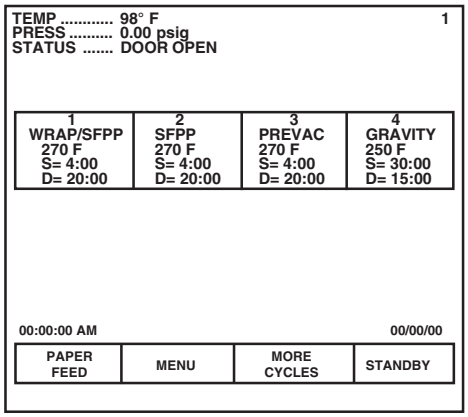
Number of Containers	Volume of Liquid in One Container	Minimum Recommended Sterilize Time at 250°F (121°C) in minutes
3	1000 mL	45

Prevacuum Sterilizer Menu Screen



Cycle Selection Touch Pads

Steam Flush Pressure Pulse Sterilizer Menu Screen



3.2 PREPARING LOADS FOR STERILIZATION CYCLES

Before sterilization, all materials must be thoroughly cleaned.

The Amsco® Century® Medium Steam Sterilizer chamber holds commonly used wrapped or unwrapped instruments and equipment.

1. Wrappers may be made of 100% cotton, 140 thread count, two-ply fabric, and must be laundered; alternatively, use commercially available, non-woven disposable wrappers.
2. Limit the size and density of each muslin pack. [Maximum size: 12 x 12 x 20" (305 x 305 x 508 mm); Maximum weight: 12 lbs (5.4 kg). No pack should have a density in excess of 7.2 lbs/ft^3 (115 kg/m^3).] This ensures complete steam penetration, and minimizes moisture retention.
3. Limit the weight of wrapped instrument sets to 17 lbs (7.7 kg) to minimize moisture retention.
4. Limit the weight of basin sets to 7 lbs (3.2 kg).

3.3 GUIDELINES FOR PLACEMENT OF VARIOUS LOADS

⚠ 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 operation.

Refer to AAMI ST-46 for load placement guidelines.

1. Open the sterilizer chamber door.

NOTE: If a cycle has been run, sterilizer and shelves or loading car may be hot.

NOTE: Wear clean gloves and use clean towels as "pot holders" when carefully placing the load/tray(s) on the chamber shelves or loading car.

2. Place all packs on edge, and arrange load to allow for maximum steam exposure so that there is minimal resistance for steam passage through the load.
3. Place utensils and treatment trays on their edges so that they will be sterilized and properly dried.
4. Place instrument sets in trays that have a perforated or mesh bottom. Place flat for sterilization.
5. In mixed loads of fabrics and hard goods, place the hard goods on lower shelf. This reduces wetting of fabric packs from condensate dripping from a hard goods load.
6. DO NOT OVERLOAD STERILIZER. Allow for steam penetration between packs. Avoid contact of load components with the wall of the chamber.

⚠ 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 any obstructions.

7. After placing load in chamber, close the chamber door. The sterilizer is now ready to run a cycle. Proceed to appropriate cycle description in this section.
8. Materials capable of holding water, such as solid-bottomed pans, basins and trays, should be positioned so that they are oriented in the same direction and so that condensate can be eliminated.

IMPORTANT: Refer to *SECTION 3, TECHNIQUES OF STERILIZATION*, in the sterilizer *Operators Manual*, for additional information regarding pack preparation, loading and placement.

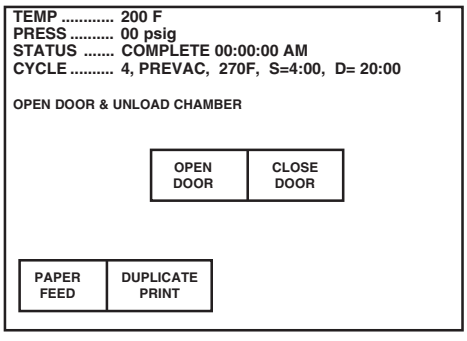
3.4 UNLOADING THE STERILIZER

⚠ WARNING–BURN HAZARD: Sterilizer and shelves will be hot after cycle is run. Always wear protective gloves and apron when removing a processed load.

⚠ 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.

⚠ WARNING–FALL HAZARD: To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading or unloading area.

At the end of a cycle, when end-of-cycle tone sounds and display shows:



. . . open the chamber door.

NOTE: Wear clean gloves and use clean towels as "pot holders" when carefully removing load/tray(s) from the sterilizer shelves or loading car.

NOTE: Never place a sterilized tray on a solid shelf or cold surface. Once the tray has cooled, it can be placed on a wire shelf.

1. Remove the load from chamber shelf (shelves). Avoid unnecessary handling.
2. Visually check outside wrapper for dryness. If there are water droplets or visible moisture on the exterior of the package, or on the tape used to secure it, the pack or instrument tray is considered **unacceptable.**
3. To prevent condensation, transfer the load to a surface which is well-padded with fabric. **Do not place load on a cold surface.** Be sure that no air conditioning or cold air vents are in close proximity.
4. Remove packs or instrument trays from the padded surface when they have reached ambient (room) temperature. Depending on the items and environment of the area, this may take a minimum of 1 hour.

IMPORTANT: After removing load(s) from the chamber, close the chamber door and keep the chamber door closed to minimize utility consumption.

3.5 LOADING CAR INSTRUCTIONS: LOADING

1. Open sterilizer door.
2. Verify that loading car is securely fastened to the transfer carriage.
3. Align the front end of the transfer carriage with the end of the sterilizer. (See Figure 3-2).
4. Move carriage forward until latches engage with mating holes in chamber end frame.
5. Verify that transfer carriage is securely latched by pulling transfer carriage backward (transfer carriage should remain stationary).
6. Once transfer carriage is securely latched, release the loading car from the transfer carriage by lifting the carriage lock.
7. Carefully push the loading car off the transfer carriage and fully into the sterilizer chamber.
8. Disengage transfer carriage latches from end frame by pushing carriage latch knob.
9. Back the transfer carriage away from the sterilizer.
10. Close the chamber door.
11. The sterilizer is now ready to run a cycle. Proceed to appropriate cycle description found in Section 3 of this manual.

3.6 LOADING CAR INSTRUCTIONS: UNLOADING

⚠ 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 operation.

⚠ 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.

1. Open chamber door.
2. Move transfer carriage forward until latches engage with track inside chamber.
3. Verify that transfer carriage is latched to chamber end ring by pulling transfer carriage backward (transfer carriage should remain stationary).
4. Once transfer carriage is securely latched, grasp the loading car handle and carefully pull loading car from chamber onto transfer carriage until transfer carriage latch engages to loading car.
5. Disengage transfer carriage latches from track inside chamber by pushing carriage latch knob.
6. Close the chamber door.
7. Transfer load from sterilizer area.

Figure 3-2. Align Loading Car with Chamber Opening

3.7 LOADING/UNLOADING STERILIZER: RACK AND SHELVES

⚠ 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 operation.

⚠ 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.

⚠ WARNING–FALL HAZARD: To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading or unloading area.

If sterilizer is equipped with the rack and shelves option, refer to instructions below and Figure 3-3.

1. Open chamber door.
2. Transfer load to shelves in chamber. Shelves slide out halfway to facilitate loading.
3. After loading the shelves, slide them to closed position to verify shelf does not interfere with door operation (both doors if double door sterilizer).
4. Close chamber door(s).
5. The sterilizer is now ready to run a cycle. Refer to appropriate cycle description in Section 3 of this manual.
6. Following successful completion of the sterilization cycle, unload the sterilizer as follows:
   a. Open chamber door.
   b. Remove load from chamber.
   c. Slide shelves into chamber, verifying that position does not interfere with door operation.
   d. Close chamber doors.
   e. Transfer load to destination.

3.8 STERILIZER (FACTORY) CYCLE SETTINGS

Amsco Century Medium Steam Sterilizers are shipped with the factory-set cycles and cycle values listed in Table 3-1A and 3-1B.

3.9 PREVACUUM STERILIZER CYCLES

Amsco Century Medium Prevacuum Sterilizers are shipped with the factory-set cycles listed in Table 3-1A.

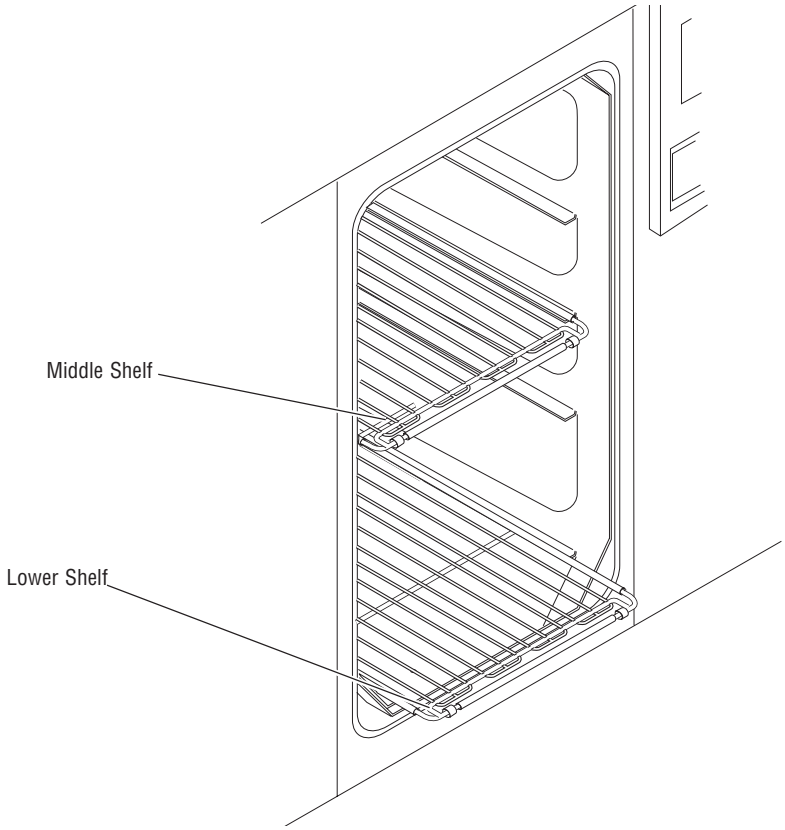


Figure 3-3. Front Elevation Drawing of Loading Shelves

Prevacuum Sterilizer Cycles and Cycle Values (Table 3-1A)

Cycles:	Sterilize Temp.	Sterilize Time	Dry Time	Recommended Load	Validation Standard
1. PREVAC	270°F (132°C)	4 MIN.	5 MIN.	Single Fabric Pack	ST-8
2. PREVAC	270°F (132°C)	4 MIN.	20 MIN.[1]	Double-wrapped instrument trays, max. weight of 17 lbs (7.7 kg) each. Fabric packs. *Refer to Table 3-2 for recommended quantities.*	ST-8
3. GRAVITY	250°F (121°C)	30 MIN.	15 MIN.	Fabric packs. *Refer to Table 3-2 for recommended quantities.*	ST-8
4. LIQUID	250°F (121°C)	45 MIN.	0 MIN.	*Refer to Table 3-3 for guidelines.*	ST-8

[*] *Five minute Dry Time can be used for processing a single fabric pack.*

3.10 SFPP STERILIZER CYCLES

Amsco Century Medium SFPP Steam Sterilizers are shipped with the factory-set cycles listed in Table 3-1B.

Steam Flush Pressure-Pulse Sterilizer Cycles and Cycle Values (Table 3-1B)

Cycles:	Sterilize Temp.	Sterilize Time	Dry Time	Recommended Load	Validation Standard
1. WRAP/ SFPP	270°F (132°C)	4 MIN.	20 MIN.	Double-wrapped instrument trays, max. wt.: 17lbs (7.7kg) each. Non-porous Goods, only. *Refer to Table 3-2 for recommended quantities.*	ST-8
2. SFPP	270°F (132°C)	4 MIN.	20 MIN.	Fabric Packs *Refer to Table 3-2 for recommended quantities.*	ST-8
3. PREVAC	270°F (132°C)	4 MIN.	20 MIN.	Double-wrapped instrument trays, max. wt.: 17lbs (7.7kg) each. Fabric Packs. *Refer to Table 3-2 for recommended quantities.*	ST-8
4. GRAVITY	250°F (121°C)	30 MIN.	15 MIN.	Fabric packs. *Refer to Table 3-2 for recommended quantities.*	ST-8

IMPORTANT: The sterilization cycles listed in Tables 3-1A and 3-1B have been validated using techniques documented in AAMI ST-8. If different cycle parameters (sterilize time and dry time only) other than those in Tables 3-1A and 3-1B are required, it is the responsibility of the healthcare facility to validate the cycle. Reference AAMI guidelines/standards for a guide to validating sterilization cycles and to ensure that proper sterility assurance level (SAL) as well as moisture retention acceptance criteria are met.

NOTE: The 270°F Prevacuum cycle described in section 3.11, and the 250°F Gravity Cycle described in section 3.12, are common to both SFPP and Prevacuum configuration sterilizers.

NOTE: Contact STERIS for information on a wide range of education/training programs designed to meet the educational needs of healthcare industries.