AMSCO Maintenance Manual

OFFICE PRESSURE STERILIZER
Electrically Powered Model 8816A
(120 or 240 Volt)

(7/87) P-762066-001

SV-5947

AMSCO | AMERICAN STERILIZER COMPANY · 2425 WEST 23rd STREET · AMSCO 4072 · ERIE · PENNSYLVANIA 16514

Printed in U.S.A.

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SAFETY PRECAUTIONS

The following are personnel (WARNINGS) and equipment (CAUTIONS) **safety precautions** to be observed when operating or servicing this Sterilizer. The page or pages on which they appear in the text of this manual is indicated by the number in the lower right-hand corner of the **precaution**.

WARNING
LIQUID STERILIZATION

TO PREVENT POSSIBLE PERSONAL INJURY OR PROPERTY DAMAGE RESULTING FROM BURSTING GLASS CONTAINERS AND HOT FLUID, YOU MUST FOLLOW THE RECOMMENDED PROCEDURE LISTED BELOW:

RECOMMENDED PROCEDURE:

- **USE ONLY VENTED CLOSURES — DO NOT USE SCREW CAPS OR RUBBER STOPPERS WITH CRIMPED SEAL.**
- **USE ONLY TYPE 1 BOROSILICATE (PYREX) GLASS CONTAINERS — DO NOT USE ORDINARY GLASS JUGS OR ANY CONTAINER NOT DESIGNED FOR STERILIZATION.**
- **ONLY FOLLOW PROCEDURE FOR STERILIZING LIQUID LOADS.**
- **WAIT 10 MINUTES AFTER COMPLETING THE STERILIZING PROCEDURE, THEN OPEN STERILIZER DOOR, NO MORE THAN ¼ INCH. WAIT AN ADDITIONAL 10 MINUTES BEFORE UNLOADING STERILIZER.**
- **DO NOT ALLOW HOT GLASS CONTAINERS TO BE JOLTED. THIS CAN CAUSE HOT-CONTAINER EXPLOSIONS! DO NOT MOVE CONTAINERS IF ANY BOILING OR BUBBLING IS PRESENT.**

2-1

WARNING

TO PREVENT POSSIBLE PERSONAL INJURY RESULTING FROM BURSTING GLASS CONTAINERS AND HOT FLUID, USE ONLY BOROSILICATE (PYREX) CONTAINERS WITH VENTED CLOSURES FOR STERILIZING LIQUIDS. DO NOT PLACE FLAMMABLE LIQUIDS IN STERILIZER.

- **SEE PAGE 2-4 FOR FURTHER INFORMATION** **-3**

CAUTION: **Do not sterilize petroleum jelly gauze in this unit.**

2-2

CAUTION: **Repairs should be attempted ONLY by experienced mechanics fully acquainted with this equipment. Use of inexperienced, unqualified persons to work on the equipment or the installation of unauthorized parts could invalidate the warranty or result in costly damage.**

4-1, 5-1, & 6-1

SECTION 1

GENERAL INFORMATION

1-1. GENERAL

This section contains factual data relating to the principal descriptive and identifying characteristics of the 8816A Steam Powered Office Pressure Sterilizer. It describes general concepts, purposes, capabilities, limitations and technical specifications of the equipment.

1-2. APPLICATION

This compact unit for pressure steam sterilization is especially suitable for medical offices; dental facilities; nursing homes; industrial aid rooms; specialty service within hospitals; and biomedical and research laboratories where volume requirements do not warrant a conventional, large-size machine.

1-3. DESIGN AND CONSTRUCTION

1. The sterilizer is 13-inches wide by 17-inches high by 22-inches deep with chamber interior 8-inches wide by 8-inches high by 16-inches deep.

2. Chamber is of welded stainless-steel construction. Heat-resisting steel bars are welded to outer surfaces of the chamber to reinforce it. The stainless-steel inner liner of the chamber is removable. One-inch thick fiberglass blanket, faced on one side with aluminum foil, insulates the chamber. The chamber holds three 8 x 16 x 1¾ inch trays. Two aluminum trays with perforated bottoms are furnished.

3. Except for power cord, petcock, part of drain tube, safety valve relief pipe and part of overflow tube, piping and wiring are contained within the one-piece stainless-steel finishing cover.

4. A stainless-steel water reservoir holds approximately three quarts.

5. An aluminum-plate door is mounted on a stainless-steel combination hinge and locking bar. The door is gasketed to assure steamtight closure.

6. A stainless-steel front panel contains a timer, chamber pressure/temperature gauge, thermostat, operating valve handle and indicating light.

7. The sterilizer with six-foot, three-conductor cord operates on either 120- or 240-volt, 60-Hz electric power. Steam is produced by two, 700-watt, Incoloy, sheathed, immersion-type heating elements. These heaters are also used to dry hardgoods and wrapped loads.

8. The thermostat automatically controls the chamber temperature during sterilization for the period set on the timer. This sterilizer is designed for sterilizing hardgoods and wrapped loads at 250 or 270 F and liquid loads at 250 F. Drying hardgoods and wrapped loads is also controlled by the timer. The end of a sterilizing or drying period is signaled by the sound of a bell.

SECTION 2

OPERATING INSTRUCTIONS

WARNING
LIQUID STERILIZATION

TO PREVENT POSSIBLE PERSONAL INJURY OR PROPERTY DAMAGE RESULTING FROM BURSTING GLASS CONTAINERS AND HOT FLUID, YOU MUST FOLLOW THE RECOMMENDED PROCEDURE LISTED BELOW:

RECOMMENDED PROCEDURE:

- **USE ONLY VENTED CLOSURES — DO NOT USE SCREW CAPS OR RUBBER STOPPERS WITH CRIMPED SEAL.**
- **USE ONLY TYPE 1 BOROSILICATE (PYREX) GLASS CONTAINERS — DO NOT USE ORDINARY GLASS JUGS OR ANY CONTAINER NOT DESIGNED FOR STERILIZATION.**
- **ONLY FOLLOW PROCEDURE FOR STERILIZING LIQUID LOADS.**
- **WAIT 10 MINUTES AFTER COMPLETING THE STERILIZING PROCEDURE, THEN OPEN STERILIZER DOOR, NO MORE THAN ¼ INCH. WAIT AN ADDITIONAL 10 MINUTES BEFORE UNLOADING STERILIZER.**
- **DO NOT ALLOW HOT GLASS CONTAINERS TO BE JOLTED. THIS CAN CAUSE HOT-CONTAINER EXPLOSIONS! DO NOT MOVE CONTAINERS IF ANY BOILING OR BUBBLING IS PRESENT.**

2-1. GENERAL

The following instructions are intended as a guide for servicemen to use when: (1) instructing operators in techniques designed to ensure optimum equipment performance; and (2) verifying the validity of operator complaints. These instructions should be performed in the order given. Reference should be made to Section 5, TROUBLESHOOTING if the Sterilizer is not operating properly.

Figure 2-1 shows the Sterilizer controls, valve and gauge in their approximate locations. It is provided as a guide to identification and location of the various items.

2-2. PRIOR TO INITIAL USE OF STERILIZER

Perform the following procedures prior to using the sterilizer for the first time and thereafter when necessary.

1. Check PRESSURE/TEMPERATURE gauge setting (Par. 6-2).

2. Determine Thermostat Control Knob settings for 250 and 270 F (Par. 6-3).

2-3. BEFORE OPERATING (AT BEGINNING OF EACH WORKDAY)

1. Be sure power cord plug of sterilizer is inserted into proper grounded type electric service outlet.

IMPORTANT: Before plugging in sterilizer, check data plate on back of unit for proper voltage (120 or 240 V).

2. Be sure controls are set as follows:

   a. Timer is at "OFF."

   b. Operating Valve Handle is in "DRY" position.

3. Remove Water-reservoir cover and pour distilled or demineralized water into reservoir until water level is ½ inch below top of reservoir (reservoir holds approximately 3 quarts). Tap water is not recommended because it causes rapid buildup of scale formation in

heating chamber and can produce stains and scale buildup on products being sterilized. Replace cover. Periodically check reservoir when sterilizer is being used; replenish water when necessary.

NOTE: Excess water will drain from the overflow tube at the rear of the sterilizer. Provide a device for either catching the water or directing it to a drain.

2-4. OPERATION — HARDGOODS AND WRAPPED LOADS

1. Be sure that you have followed instructions in paragraph 2-3.

2. Open chamber door and remove trays; Water-level indicator should be visible. Pull Operating Valve Handle down to "FILL" position; water flows into chamber. When water in chamber reaches the Level Indicator, push Operating Valve Handle up to "DRY" position; water stops flowing.

3. Before inserting trays (furnished) into chamber, prepare load as follows:

a. **Instruments** — Only use trays supplied with sterilizer. Rinse instruments prior to placing them in trays.

- Wrapped — Place towel in bottom of tray. Wrap instruments in muslin and place them on tray.

- Unwrapped — Place instruments on tray.

NOTE: Muslin or towel cover facilitates drying and prevents contamination in transit.

b. **Dressings, Small Packs, and Rubber Tubes and Gloves** — Wrap them in muslin, and place them loosely in the trays.

c. **Empty Glassware, Syringes and Utensils** — Place empty containers (wrapped or unwrapped) on their sides or inverted in the sterilizer tray. Cover them with muslin.

CAUTION: Do not sterilize petroleum jelly gauze in this unit.

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4. Close chamber door by inserting door handwheel into slot in door lock hinge and turning handwheel clockwise to snug (do not force) door against gasket. Then lower Operating Valve Handle to "STER" position (top of door lock hinge).

NOTE: If door is not sealed; wisps of steam will escape as chamber operating pressure is reached. Turn sterilizer off and wait until pressure returns to zero. Then tighten door by turning handwheel 180 degrees. Turn sterilizer on and recheck for leaks.

5. Turn Thermostat Control Knob to desired temperature (250 or 270 F). These positions were determined in "Thermostat Control Knob Settings," paragraph 6-3.

6. Turn Timer (also ON-OFF switch) knob fully clockwise.

NOTE: If exposure period is started before desired chamber temperature (250 or 270 F) is reached, sterilization will not be accomplished. This sterilizer is thermostatically controlled to prevent overheating. The sterilizer is equipped with an ASME-approved safety valve that will release if chamber pressure reaches 36 psig. This valve has been set by manufacturer and tested by AMSCO. Do **not** adjust valve or remove seal from valve.

7. When PRESSURE/TEMPERATURE gauge shows desired temperature, set Timer for desired exposure period ... see Table 2-1.

TABLE 2-1.
RECOMMENDED MINIMUM STERILIZATION EXPOSURE PERIODS FOR HARDGOODS AND WRAPPED LOADS

	250 F (121 C) Minutes	270 F (132 C) Minutes
Surgical instruments, unwrapped	15	3
Surgical instruments, wrapped	20	10
Dressings and small packs, wrapped	30	
Utensils, syringes and empty glassware with cover	15	10
Rubber gloves, wrapped	20	
Rubber tubing, wrapped	30	

NOTE: Slight pressure fluctuations are normal for thermostat cycling. If PRESSURE/TEMPERATURE gauge fails to register 270 F with Thermostat Control Knob at extreme clockwise position, operate sterilizer at 250 F until thermostat is repaired by an authorized serviceman.

8. A bell will sound indicating that exposure period is completed. Sterilizer will turn off automatically.

9. Raise Operating Valve Handle to "DRY" position.

10. When PRESSURE/TEMPERATURE gauge shows zero psig, open door as follows:

a. Turn door handwheel counterclockwise.

b. Swing door handwheel to right, away from door lock hinge.

c. Pull door open approximately ¼ inch with heat resistant knob in center of door lock hinge.

11. Set Timer for 10 to 15 minutes. **Do not exceed 15 minutes.** Red pilot light and heaters will be energized.

12. A bell will sound indicating that drying period is completed.

13. Completely open chamber door and remove load.

2-5. OPERATION — LIQUID LOADS

WARNING

TO PREVENT POSSIBLE PERSONAL INJURY RESULTING FROM BURSTING GLASS CONTAINERS AND HOT FLUID, USE ONLY BOROSILICATE (PYREX) CONTAINERS WITH VENTED CLOSURES FOR STERILIZING LIQUIDS. DO NOT PLACE FLAMMABLE LIQUIDS IN STERILIZER.

• SEE PAGE 2-4 FOR FURTHER INFORMATION

1. Be sure that you have followed instructions in paragraph 2-3.

2. Open chamber door and remove trays; Water-level Indicator should be visible. Pull Operating Valve Handle down to "FILL" position; water flows into chamber. When water in chamber reaches the Level Indicator, push Operating Valve Handle up to "DRY" position; water stops flowing.

3. Prepare load as follows:

a. **Filled 75 ml Flasks or Test Tubes** — Place them in trays and insert trays into chamber.

b. **Filled 250 or 500 ml Flasks** — Place them inside chamber.

4. Close chamber door by inserting door handwheel into slot in door lock hinge and turning handwheel clockwise to snug (do not force) door against gasket. Then lower Operating Valve Handle to "STER" position (top of door lock hinge).

NOTE: If door is not sealed, wisps of steam will escape as chamber operating pressure is reached. Turn sterilizer off and wait until pressure returns to zero. Then tighten door by turning handwheel 180 degrees. Turn sterilizer on and recheck for leaks.

5. Turn Thermostat Control Knob to 250 F. This position was determined in "Thermostat Control Knob Settings," paragraph 6-3.

6. Turn Timer (also ON-OFF switch) knob fully clockwise.

NOTE: If exposure period is started before chamber temperature reaches 250 F, sterilization will not be accomplished. This sterilizer is thermostatically controlled to prevent overheating. The sterilizer is equipped with an ASME-approved safety valve that will release if chamber pressure reaches 36 psig. This valve has been set by manufacturer and tested by AMSCO. Do **not** adjust valve or remove seal from valve.

7. When PRESSURE TEMPERATURE gauge shows 250 F, set Timer for desired exposure period ... see Table 2-2.

TABLE 2-2.
RECOMMENDED MINIMUM STERILIZATION EXPOSURE PERIODS FOR LIQUID LOADS

	250 F (121 C) Minutes
Test Tubes filled with solution	15
75 ml Square-Pak flasks filled with solution	20
250 ml Square-Pak flasks filled with solution	30
500 ml Square-Pak flasks filled with solution	35

NOTE: Slight pressure fluctuations are normal for thermostat cycling.

8. A bell will sound indicating that exposure period is completed. Sterilizer will turn off automatically.

9. When PRESSURE/TEMPERATURE gauge shows zero psig, raise Operating Valve Handle to "DRY" position.

10. After waiting at least 10 minutes, open door approximately ¼ inch with eye bolt of handwheel still engaged in door lock hinge groove.

11. After waiting an additional 10 minutes, move handwheel out of door lock hinge groove.

12. Open chamber door and remove load.

LIQUID STERILIZATION

Your AMSCO Sterilizer is designed to process liquids when borosilicate (Pyrex) flasks with vented closures are used.

Borosilicate (Pyrex) glass is recommended because it is a superior glass capable of containing higher pressures, of resisting thermal shock (such as cold air striking the hot glass), and of withstanding repeated handling.

Vented closures are recommended because, by design, they will prevent excess pressure by automatically venting a flask!

If other types of glass (such as flint glass) and non-venting (sealed) closures are used to sterilize liquids in your AMSCO Sterilizer, a potential dangerous condition, capable of causing personal injury and property damage, is created. As the liquid and residual air in a sealed flask are heated, they expand and create an internal pressure greater than the external pressure of the steam. With the weaker glass, a greater potential for bursting exists.

After the sterilization exposure, the chamber is exhausted slowly but it still exhausts more rapidly than the pressure within a sealed flask.

This pressure within the flask will exist until the residual air and the liquid have cooled (unlike a flask with a vented closure that prevents this excess pressure). Thus, the potential exists for the flask to burst and cause personal injury or property damage.

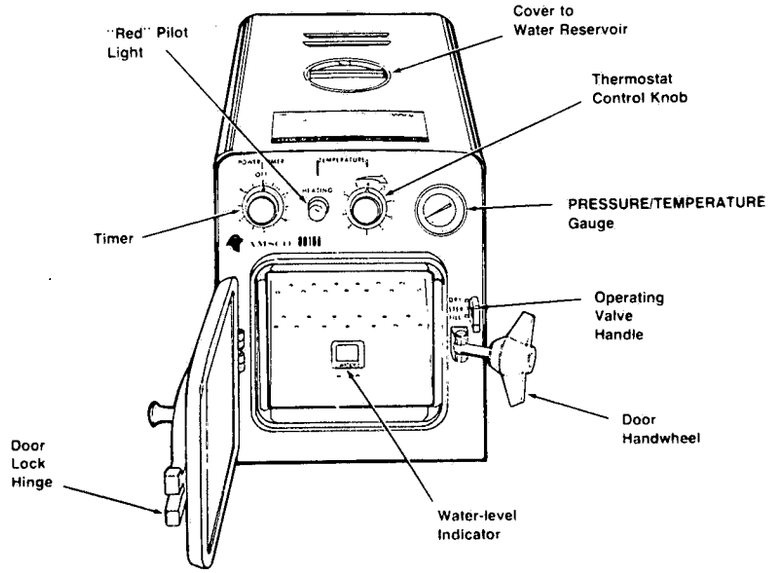

Figure 2-1. CONTROL LOCATIONS.

SECTION 3

CONTROL SYSTEMS

3-1. GENERAL

The Office Pressure Sterilizer (Model 8816A) exposure control is a timer which in conjunction with a thermostat regulates the unit during an exposure period. The "red" pilot light indicates when heaters are energized.

The safety valve prevents the piping and chamber from becoming overpressurized. Before checking a faulty or malfunctioning control system, make certain that: (1) safety valve is in place and operable; (2) electric supply is available at the prescribed capacity; and (3) there is water in the reservoir.

The electrical schematics (Fig. 3-1 or 3-2) and wiring chart Table 3-1 are included to aid in understanding the following descriptions (Par. 3-2 and 3-3).

3-2. DESCRIPTION — STERILIZATION OF HARDGOODS AND WRAPPED LOADS

Sterilizing Exposure Period

1. When the Operating Valve Handle is lowered to the "STER" position (chamber door should be closed), the operating valve is closed. Neither water nor vapor will be allowed to move between chamber and water reservoir.

2. When the Thermostat Control Knob is set to the desired temperature (250 or 270 F), the thermostat contacts close.

3. When the Timer knob is turned clockwise, thermostat, pilot light and heaters are energized through timer and thermostat contacts.

4. Thermostat switch opens when chamber temperature reaches desired temperature, pilot light and heaters are deenergized.

NOTE: If thermostat switch opens and PRESSURE/TEMPERATURE gauge does not indicate desired temperature, the Thermostat Control Knob should be repositioned in order to achieve the desired temperature.

5. With the timer set at desired sterilizing exposure period, the circuit is energized up to the thermostat contacts. During the exposure period the thermostat will maintain desired chamber temperature as follows: pilot light and heaters energized when thermostat contacts close; light and heaters deenergized when contacts open.

6. A bell sounds when timer reaches "OFF" position. Thermostat, pilot light and heaters are deenergized.

7. Raising Operating Valve Handle to "DRY" position allows water and vapor to leave chamber and enter water reservoir.

Drying Exposure Period

1. With timer set between 10 and 15 minutes and Thermostat Control Knob set to desired sterilizing temperature, the pilot light and heaters are energized through timer and thermostat contacts.

2. A bell sounds when timer reaches "OFF" position. Heaters and light are deenergized.

3-3. DESCRIPTION — STERILIZATION OF LIQUID LOADS

1. When the Operating Valve Handle is lowered to the "STER" position (chamber door should be closed), the operating valve is closed. Neither water nor vapor will be allowed to move between chamber and water reservoir.

2. When the Thermostat Control Knob is set to 250 F, the thermostat contacts close.

3. When the Timer knob is turned clockwise, thermostat, pilot light, and heaters are energized through timer and thermostat contacts.

4. Thermostat switch opens when chamber temperature reaches 250 F, pilot light and heaters are deenergized.

NOTE: If thermostat switch opens and PRESSURE/TEMPERATURE gauge does not indicate 250 F, the Thermostat Control Knob should be repositioned in order to achieve 250 F.

5. With the Timer set at desired sterilizing exposure period, the circuit is energized up to the thermostat contacts. During the exposure period, the thermostat will maintain 250 F in chamber as follows: pilot light and heaters energized when thermostat contacts close; light and heaters deenergized when contacts open.

6. A bell sounds when timer reaches "OFF" position. Thermostat, pilot light and heaters are deenergized.

7. Raising Operating Valve Handle to "DRY" position allows water and vapor to move from chamber into reservoir.

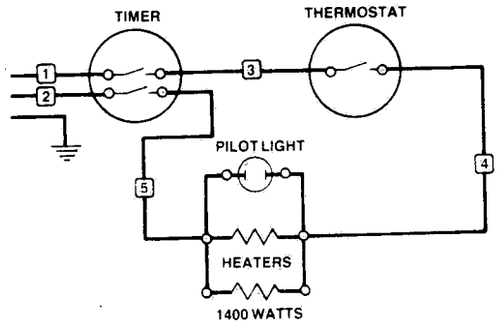

Figure 3-1. ELECTRICAL SCHEMATIC — 120-VOLT MODEL.

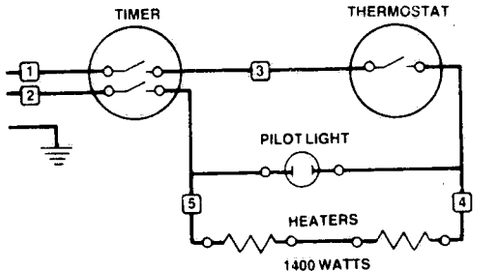

Figure 3-2. ELECTRICAL SCHEMATIC — 240-VOLT MODEL.

TABLE 3-1.
WIRING CHART

WIRE NO.	COLOR	WIRE LENGTH (inches)	FROM	CONNECTION METHOD	TO	CONNECTION METHOD	MODEL	
							120 V	240 V
1	White	30	TB-1	Ring Terminal	Timer L1	Ring Terminal	X	X
2	White	30	TB-2	Ring Terminal	Timer L2	Ring Terminal	X	X
3	White	9	Timer T1	Ring Terminal	Thermostat T1	Quick Disconnect	X	X
4	White	6	Thermostat T2	Quick Disconnect	Light T1	Ring Terminal	X	X
4	White	45	Light T1	Ring Terminal	Heater H1	Ring Terminal	X	X
4	White	6	Heater H1	Ring Terminal	Heater H3	Ring Terminal	X	
4	White	6	Heater H2	Ring Terminal	Heater H3	Ring Terminal		X
5	White	36	Light T2	Ring Terminal	Heater H4	Ring Terminal	X	X
5	White	6	Heater H4	Ring Terminal	Heater H2	Ring Terminal	X	
5	White	6	Light T2	Ring Terminal	Timer T2	Ring Terminal	X	X
Cord	Black	6	Plug	—	TB-1	Ring Terminal	X	X
Cord	White	4	Plug	—	TB-2	Ring Terminal	X	X
Cord	Green	4	Plug	—	Ground Screw	Ring Terminal	X	X

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SECTION 4

PREVENTIVE MAINTENANCE

CAUTION: Repairs should be attempted ONLY by experienced mechanics fully acquainted with this equipment. Use of inexperienced, unqualified persons to work on the equipment or the installation of unauthorized parts could invalidate the warranty or result in costly damage.

4-1. GENERAL

The following operations (Paragraphs 4-2 through 4-4) should be performed periodically to properly maintain the Sterilizer. The times given are recommended intervals, however the exact frequency will be determined by Sterilizer usage. Should a problem occur, refer to Section 5, TROUBLESHOOTING.

4-2. CLEANING

Monthly

1. Clean gasket sealing surface on chamber door frame with *AMSCO PRY CREAM* (included in Door Frame Cleaning Kit, AMSCO Part 753377). Wipe off *PRY CREAM* with damp cloth.

2. Clean the door gasket with alcohol or mild detergent (Figs. 4-1 and 7-5). Do not clean gasket with carbon tetrachloride, kerosene, gasoline or other hydrocarbons.

3. Spray sealing surface on door frame with *AMSCO FLUOROCARBON SPRAY* (also included in Door Frame Kit, see above) to prevent gasket from sticking.

As Necessary

1. Remove knurled nut in center back of chamber liner and slide liner forward toward door (Fig. 7-1). Remove scale from liner and inner walls of chamber, using hot soapy water and a fiber-bristle brush. Rinse with tap water, using a sponge or damp cloth. Wipe dry with a lint-free cloth. To reduce the need for cleaning, use distilled or demineralized water to fill reservoir.

NOTE: Never use abrasive cleaning compounds, wire brush or steel wool.

2. To empty reservoir, use your fingers to open petcock valve at back of unit (Fig. 7-3).

3. Use *AMSCO STAINLESS STEEL CLEANER & POLISH* on Sterilizer stainless-steel exterior surfaces. Apply the cleaner with a damp cloth or sponge, thoroughly wipe off and then polish with a clean, dry cloth. Use *AMSCO PRY CLEANER* to remove stubborn stains.

NOTE: When using *AMSCO STAINLESS STEEL CLEANER & POLISH* or *AMSCO PRY CLEANER*, rub in a back-and-forth motion (in the same direction as the surface grain). Do not rub with a rotary or circular motion. Do not use these cleaners on painted surfaces. Follow directions on containers.

4-3. INSPECTION

Daily

1. Inspect cabinetry for any sign of damage or misaligned parts.

2. Inspect control panel for loose or missing parts, cracked or broken glass or lens, and other obvious defects.

Weekly

Watch the Sterilizer while it is operating to be sure that indicating light and gauge are working properly.

Quarterly

Operate the sterilizer. When the PRESSURE/TEMPERATURE gauge indicates above zero psig, depress safety valve lever by inserting a pencil-like device into the safety valve access hole. Steam should escape from back of sterilizer. If steam does not escape, discontinue use of sterilizer until safety valve has been replaced. See paragraph 6-10 for replacement procedure.

As Necessary

Check door gasket; replace gasket if it has become deformed, brittle or cracked (Par. 6-4).

4-4. LUBRICATION

Quarterly

1. Place a few drops of machine oil on hinge pin and lock pin (Figs. 4-1 and 7-1).

2. Remove hinge pin securing handwheel assembly to sterilizer (Fig. 7-4). Turn eyebolt out of the handwheel assembly to expose threads. Lubricate threads of the eyebolt. Use a lubricant that will operate in range of 50 to 200 F. Reinstall the handwheel assembly.

Recommended lubricants (use only one):

- "Lubriplate Spray Lube A" (manufactured by Lubriplate Division of Fiske Brothers Refining Co., Newark, New Jersey)
- "Lubriplate No. 6-30-2" in grease cartridge (manufacturer same as above).
- "G Rapid Spray Bonded Lubricant" (manufactured by Dow Corning Co., Midland, Michigan).

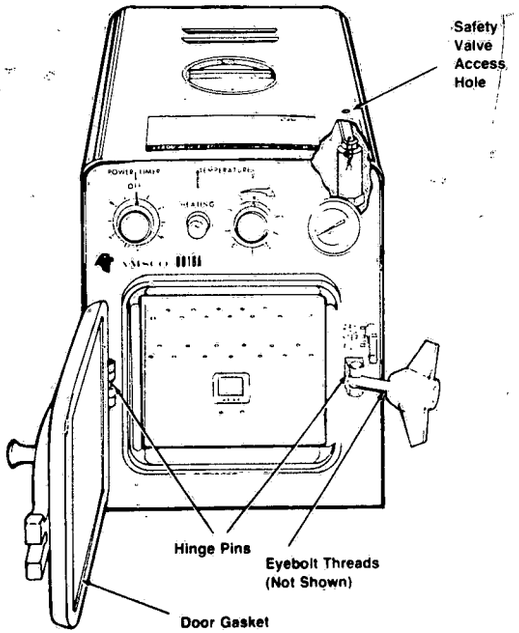

Figure 4-1. PREVENTIVE MAINTENANCE.

SECTION 5

TROUBLESHOOTING

This section contains detailed information for locating and correcting the cause of Sterilizer malfunctions.

CAUTION: Repairs should be attempted ONLY by experienced mechanics fully acquainted with this equipment. Use of inexperienced, unqualified persons to work on the equipment or the installation of unauthorized parts could invalidate the warranty or result in costly damage.

5-1. HELPFUL HINTS

1. Use the operating procedures presented in Section 2 to verify the trouble symptom. If necessary, operate Sterilizer more than once in case reported problem is being caused by periodic component malfunction.

2. Refer to paragraph 5-2 and the TROUBLESHOOTING CHART (Table 5-1) after symptom has been verified.

3. Use the control system descriptions (Section 3), electrical schematic (Fig. 3-1 or 3-2) as aids in understanding system operation and how the malfunction of a specific component would affect it.

4. Refer to the following guide for examples of what to look for and what to do when you are doing the actual troubleshooting.

- **Electrical System**

a. Using the electrical schematic and circuit descriptions, determine the circuit and component function. Correct all loose wires or improper connections.

b. Inspect the individual components and adjust, repair or replace as necessary.

- **Water, Steam & Drain System**

a. Be sure water reservoir is filled.

b. Be sure piping is clear; clean if necessary.

c. Be sure Sterilizer is steam-tight.

d. Be sure Sterilizer is properly leveled.

e. Inspect entire system; correct all leaks.

f. Check operating valve; repair or replace as necessary.

g. Check PRESSURE/TEMPERATURE gauge; set, repair or replace as necessary.

5-2. THE TROUBLESHOOTING CHART — EXPLANATION OF ITS CONTENTS

COLUMN HEADING	EXPLANATION
TROUBLE	Select the problem you think is most appropriate to the particular trouble symptom.
ARE CONDITIONS AS FOLLOWS?	This column lists the specific conditions that should be checked to isolate and correct the one causing the malfunction. The conditions are presented in the order in which they would most likely have caused the malfunction. Check them in order given. Refer to Paragraph 5-1 for what to do if the conditions are not as described. **NOTE:** If the symptom for a malfunction is established as mechanical, the electrical components may be omitted and vice versa.

5-2. THE TROUBLESHOOTING CHART — EXPLANATION OF ITS CONTENTS (Cont'd.)

COLUMN HEADING	EXPLANATION
WHERE TO FIND ITEMS IN MANUAL	Where applicable, the particular paragraph (P) or illustration (F) in which a given component may be found is provided in this area. The illustrations referenced are included in Section 7. The index number after a figure number denotes the specific component.

TABLE 5-1.

STERILIZER TROUBLESHOOTING CHART

TROUBLE	ARE CONDITIONS AS FOLLOWS?	WHERE TO FIND ITEMS IN MANUAL
1. No water in heater chamber	A. Water in reservoir	(P) 2-3; (F) 7-2, 22
	B. Water line clean C. Operating valve operable and handle in "FILL" position	(P) 2-4 or (P) 2-5; (P) 6-6; (F) 7-7
2. Door does not lock tightly	A. Door gasket not deformed, brittle or cracked	(P) 4-2; (P) 4-3; (P) 6-4; (F) 7-5, 2
	B. New door gasket properly installed	(P) 6-4; (F) 7-5, 2
	C. Door properly aligned	(P) 6-4; (F) 7-1, 16
	D. Threads on handwheel assembly not lubricated and not defective	(P) 4-4; (P) 6-4; (F) 7-2, 1
	E. Colored gasket in end of nut on handwheel not worn to point where metal to metal contact between nut and door lock hinge occurs	(P) 6-4
3. Heaters do not work	A. Power input (120 or 240 V) hot	(P) 2-4 or (P) 2-5; (F) 2-1
	B. Timer and thermostat at desired settings	(P) 6-8; (F) 6-4 or (F) 6-5; (F) 7-6
	C. Wires properly connected to terminals of heaters	(F) 7-6
	D. Wires not defective	(F) 7-2, 20
	E. Power supply cord not defective	(P) 6-8; (F) 7-6, 1
	F. Heaters not defective	(P) 6-7; (F) 7-2, 12
	G. Timer not defective	(P) 6-9; (F) 7-2, 4
	H. Thermostat not defective	

TABLE 5-1. STERILIZER TROUBLESHOOTING CHART (Cont'd.)

TROUBLE	ARE CONDITIONS AS FOLLOWS?	WHERE TO FIND ITEMS IN MANUAL
4. Red light is not on	A. Power input (120 or 240 V) hot	(P) 2-4 or (P) 2-5; (F) 2-1
	B. Timer and thermostat at desired settings	(F) 7-2, 7
	C. Bulb not burned out	(F) 7-2, 7
	D. Socket energized	(F) 7-2, 20
	E. Power supply cord not defective	(F) 3-1 or (F) 3-2
	F. Wires properly connected	(P) 6-8; (F) 7-6, 1
	G. Heaters not defective	(P) 6-7; (F) 7-2, 12
	H. Timer not defective	(P) 6-9; (F) 7-2, 4
	I. Thermostat not defective	
5. Temperature does not rise to desired temperature	A. Thermostat and timer at desired setting	(P) 2-4 or (P) 2-5; (F) 2-1
	B. Thermostat properly adjusted	(P) 6-3; (F) 7-2, 4
	C. Proper line voltage	
	D. Door gasket sealing steam tight	(P) 4-3; (P) 6-4; (F) 7-5, 2
	E. Heater not defective	(P) 6-8; (F) 7-6, 1
	F. Timer not defective	(P) 6-7; (F) 7-2, 12
	G. Thermostat not defective	(P) 6-9; (F) 7-2, 4
	H. Chamber properly insulated	(F) 7-4
	I. Steam trap not defective	(P) 6-12; (F) 7-3, 18
6. Burning material	A. Timer and thermostat at recommended settings for sterilizing load	(P) 2-4 or (P) 2-5; (F) 2-1
	B. For hardgoods and wrapped loads only — drying period is 15 minutes or less	(P) 2-4
	C. Operating valve properly oriented	(P) 6-6; (F) 7-3, 21
	D. Liner not too close to heating element	(P) 6-5; (F) 7-1, 12
	E. Thermostat not defective	(P) 6-9; (F) 7-2, 4
	F. Thermostat bulb touching heaters	(P) 6-8; (P) 6-9; (F) 7-6
7. System loses water	A. Tubes, reservoir, fittings and chamber not leaking	(F) 7-2; (F) 7-3; (F) 7-4
	B. Steam trap not defective	(P) 6-12; (F) 7-3, 18
8. Safety valve does not operate properly	Safety valve not defective	(P) 4-3; (P) 6-10; (F) 7-3, 24

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SECTION 6

COMPONENT ADJUSTMENT, REPAIR AND REPLACEMENT

CAUTION: Repairs and replacements should be attempted ONLY by experienced mechanics fully acquainted with this equipment. Use of inexperienced, unqualified persons to work on the equipment or the installation of unauthorized parts could invalidate the warranty or result in costly damage.

6-1. GENERAL

This section includes instructions for the adjustment, disassembly, repair and replacement of selected Sterilizer components. Exploded views and assembly drawings showing the various parts and assemblies referred to in this section are included in Section 7.

6-2. PRESSURE/TEMPERATURE GAUGE SETTING

The sterilizer has been set for operation at an altitude of 1750 feet. If the sterilizer is to be operated at a different altitude, refer to Figure 6-1, "Correction Curve." Then adjust gauge, using the applicable procedure:

If gauge has a metal outer rim

1. Using a small pen knife, pry off face and set it aside.

2. Align 250 F indication on temperature dial with indication on pressure dial corresponding to valve determined from curve.

3. Replace face on gauge.

If gauge has plastic outer rim

1. Unscrew the face and set it aside.

2. Loosen setscrew between temperature and pressure scales.

3. Rotate temperature (outer) scale so that 250 F indication aligns with indication on pressure scale corresponding to value determined from curve.

4. Gently secure setscrew and screw face onto gauge.

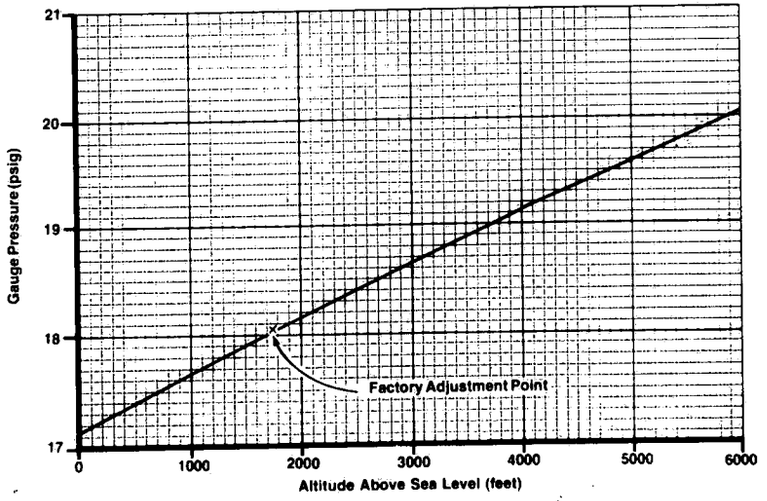


Figure 6-1. CORRECTION CURVE (PRESSURE VERSUS ALTITUDE).

6-3. THERMOSTAT CONTROL KNOB SETTINGS (Fig. 6-2)

Determine the Thermostat Control Knob settings for 250 and 270 F by performing the following:

1. Follow instructions in paragraph 2-3 to prepare sterilizer for operation.

2. Open chamber door and remove trays; Water-level Indicator should be visible. Pull Operating Valve Handle down to "FILL" position; water flows into chamber. When water in chamber reaches the Level Indicator, push Operating Valve Handle up to "DRY" position; water stops flowing.

3. Close chamber door by inserting door handle into slot in door locking bar and turning handle clockwise to snug (do not force) door against gasket. Then lower Operating Valve Handle to "STER" position (top of door locking bar).

4. Set Thermostat Control Knob for 250 or 270 F (approximately the #4 position for 250 F; approximately the #8 position for 270 F).

5. Turn Timer (also ON-OFF switch) knob fully clockwise. The Red Pilot Light will be energized. After 5 or 10 minutes, the pressure in the chamber will begin to increase.

6. When the Pilot Light is deenergized, the PRESSURE/TEMPERATURE gauge should read 250 to 254 F or 270 to 274 F, respectively. If it does not, turn Thermostat Control Knob clockwise to increase temperature; counterclockwise to decrease it.

7. Observe at what temperature the Pilot Light is re-energized. If the temperature drops below 250 or 270, increase the setting. Do not increase it, however, to the point that the temperature exceeds 254 or 274 before the Pilot Light is deenergized.

NOTE: Normal thermostat operation causes 1 to 4 F variation above set temperature.

8. Repeat the above procedure until desired temperature range (250 to 254 or 270 to 274 F) is achieved and maintained on the PRESSURE/TEMPERATURE gauge.

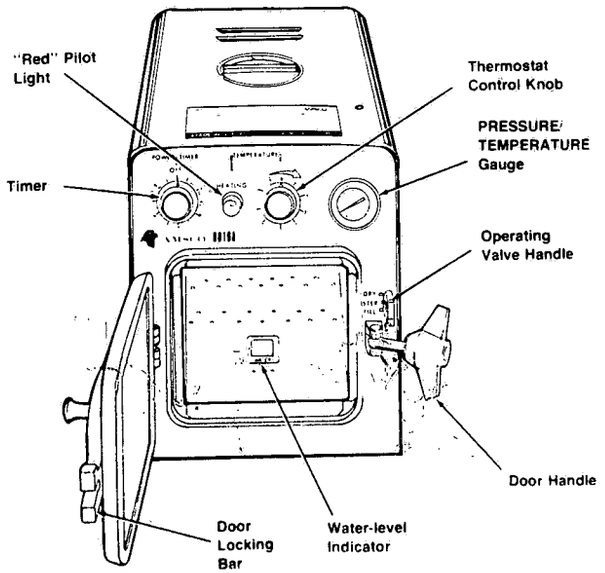


Figure 6-2. SETTING THERMOSTAT CONTROL KNOB.

9. Note **exact** position of Thermostat Control Knob. Then repeat procedure for the other temperature (250 or 270 F).

6-4. CHAMBER DOOR (Fig. 7-5).

Removal and Replacement of Gasket

1. Remove old gasket and clean gasket groove thoroughly.

2. Replacement gasket is accurately sized. Fit new gasket carefully into groove, a short section at a time, without compressing, stretching or cutting. Should gasket appear too long, remove it and start over.

3. Wipe gasket surface.

4. Spray seating surface of end ring with *AMSCO Fluorocarbon Lubricant* to prevent gasket from sticking.

5. Tighten door lightly to seal gasket against end ring.

Removal and Replacement of Door and Door Lock Hinge

1. With door open, remove pin holding door lock hinge to shell assembly.

2. Pull door lock hinge out of hinge block on shell.

3. Remove pin securing door lock hinge to door. Separate door lock hinge from door.

4. If door lock hinge is to be replaced and knob is not damaged, remove button head screw securing knob to door lock hinge. Save screw and knob.

5. Replace defective parts.

6. Assemble door and door lock by reversing the disassembly procedure.

Removal and Replacement of Handwheel Assembly

1. With door open, remove pin holding handwheel assembly to hinge block on shell. Pull handwheel assembly out of hinge block.

2. Replace defective handwheel assembly.

3. Install "new" handwheel assembly to hinge block with the pin.

6-5. CHAMBER LINER (Fig. 7-1)

If it becomes necessary to reposition the chamber liner, proceed as follows:

1. Unscrew and remove liner nut.

2. Slide out liner through entrance of chamber.

3. Drill a ¼-inch hole ⅝-inch below present hole in back of liner.

4. Reassemble liner by reversing the disassembly procedure.

6-6. OPERATING VALVE (Fig. 7-3)

Reposition

1. Loosen hex nut securing valve lever to operating valve.

2. Position valve to create a 90 degree angle between it and valve lever.

3. Tighten hex nut.

Removal and Replacement

1. Drain water from sterilizer.

2. Remove finish jacket assembly (Fig. 7-1).

3. Disconnect tubes at operating valve.

4. Remove round head screw securing lever valve block and handle to valve lever.

5. Take the lever valve block and handle off the valve lever.

6. Disconnect the valve lever from the operating valve.

7. Remove two screws and lockwashers securing valve to shell and remove the valve.

8. Replace the defective operating valve.

9. Install the "new" operating valve by reversing the disassembly procedure.

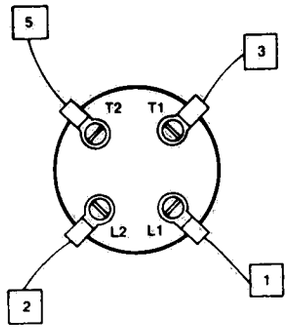


Figure 6-3. CONNECTING WIRES TO TIMER.

6-7. TIMER (Fig. 7-2)

If it becomes necessary to replace the timer, proceed as follows:

1. Unplug power cord from electric service outlet and remove the finish jacket assembly (Fig. 7-1).

2. Disconnect wires (numbers 1, 2, 3 and 5) from back of timer (Fig. 6-3).

3. Remove knob and locknut from front of timer.

4. To remove timer, pull it away from back of front panel assembly.

5. Replace defective timer.

6. Install "new" timer by reversing the disassembly procedure and using locknut included with "new" timer.

NOTE: See Figure 6-3 for connecting wires.

6-8. HEATERS (Figs. 6-4 or 6-5 and 7-6)

If it becomes necessary to replace heaters, proceed as follows:

1. Unplug power cord from electric service outlet and remove the finish jacket assembly (Fig. 7-1).

2. Open chamber door and remove liner nut (Fig. 7-1).

3. Slide out liner through entrance of chamber.

4. Remove hex nut and top plate of clamp assembly that is holding thermal bulb against the heaters.

5. Gently push thermal bulb aside.

6. Disconnect wires from terminals of heaters. The terminals extend through the back wall of the shell assembly.

7. Remove jam nuts and washers securing the heaters to the shell.

8. Remove heaters by pulling them out of back wall of shell toward entrance of chamber.

9. Replace defective heaters. New heaters come with hardware.

10. Remove jam nut and washer from terminals of "new" heaters.

11. Install "new" heaters by reversing the disassembly procedure. Ensure heater gaskets (non-asbestos washers) are on inside of shell and jam nuts are torqued between 50 and 60 inch pounds. **Do not over torque nuts.**

6-9. THERMOSTAT (Figs. 6-6, 6-7, 7-2 and 6-4 or 6-5)

If it becomes necessary to replace thermostat, proceed as follows:

1. Unplug power cord from electric service outlet and remove the finish jacket assembly and bottom cover (Fig. 7-1).

2. Open chamber door and remove liner nut (Fig. 7-1).

3. Slide out liner through entrance of chamber.

4. Remove hex nut and top plate of clamp assembly that is holding thermal bulb against the heaters.

5. Remove stuffing box on capillary tube from bushing in bottom of chamber.

6. Pull thermal bulb out of chamber through the bushing.

7. Remove knob from front of thermostat.

8. Disconnect the two wires connected to the thermostat.

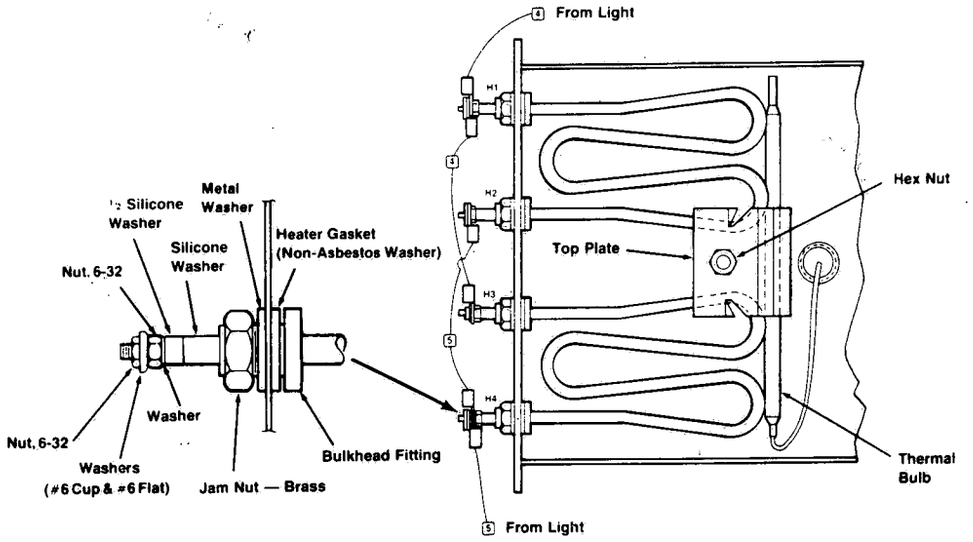


Figure 6-4. HEATERS — 120-VOLT MODEL.

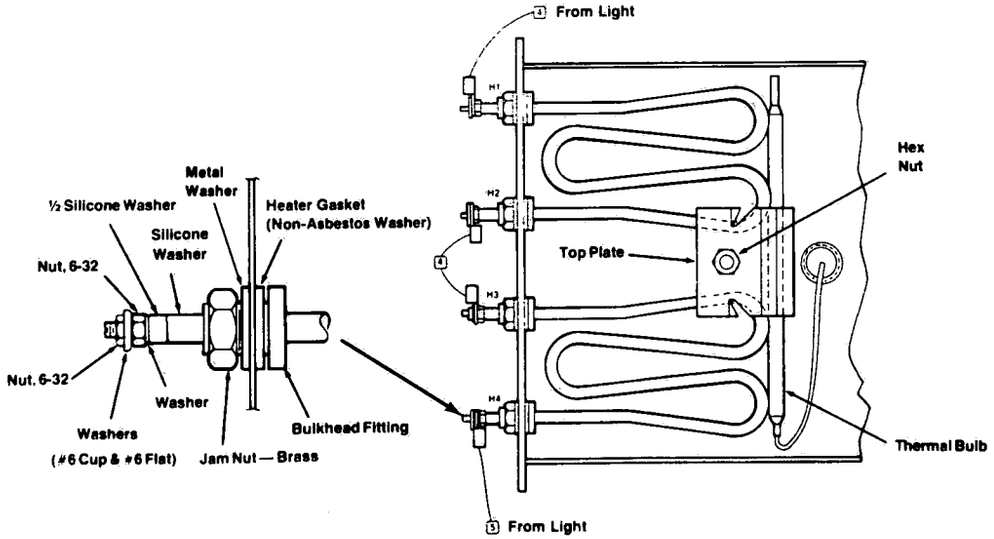


Figure 6-5. HEATERS — 240-VOLT MODEL.

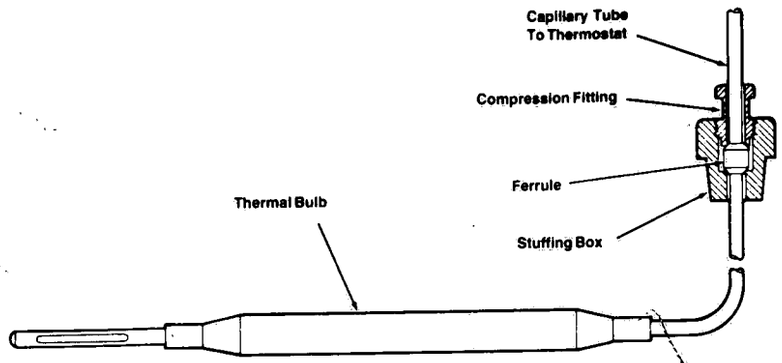


Figure 6-6. SECURING CAPILLARY TUBE IN BOTTOM OF CHAMBER.

9. Remove two screws securing thermostat to front panel assembly.

10. Remove thermostat by pulling it away from the back of the front panel assembly.

11. Replace defective thermostat with new one that includes attached capillary tube with thermal bulb, compression fitting, ferrule, stuffing box and two mounting screws.

12. Install "new" thermostat by reversing the disassembly procedure. Do **not** kink capillary tube.

13. Determine Thermostat Control Knob settings according to paragraph 6-3.

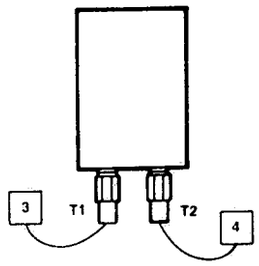


Figure 6-7. CONNECTING WIRES TO THERMOSTAT.

6-10. SAFETY VALVE (Fig. 7-3)

If it becomes necessary to replace safety valve, proceed as follows:

1. Drain water from sterilizer.

2. Remove brass street elbow and brass male compression connector from safety valve.

3. Discard defective safety valve.

4. Assemble "new" safety valve to brass street elbow and brass male compression connector.

5. Do **not** adjust valve or remove seal from valve.

6-11. PRESSURE/TEMPERATURE GAUGE (Fig. 7-2)

If it becomes necessary to replace PRESSURE/TEMPERATURE gauge, proceed as follows:

1. Unplug power cord from electric service outlet and remove the finish jacket assembly (Fig. 7-1).

2. Drain water from sterilizer.

3. Disconnect brass female compression ell from gauge.

4. Remove nuts from back of mounting clamp.

5. Remove mounting clamp.

6. Pull gauge out from lettered side of front panel assembly.

7. Replace defective gauge with new one that includes mounting clamp and nuts.

8. Remove mounting clamp and nuts from "new" gauge.

9. Install "new" gauge by reversing the disassembly procedure.

10. Set PRESSURE/TEMPERATURE gauge according to paragraph 6-2.

6-12. STEAM TRAP (Figs. 7-3 and 7-8)

Adjustment

1. Unplug power cord from electric service outlet and remove the finish jacket assembly (Fig. 7-1).

2. Identify tube connecting steam trap to tee (Fig. 6-8).

3. Disconnect this tube from tee and position tube so that its opening can be observed.

4. Remove water-reservoir cover (Fig. 6-9) and pour distilled or demineralized water into reservoir until water level is ½ inch below top of reservoir (reservoir holds approximately 3 quarts).

5. Open chamber door and remove trays; Water-level Indicator should be visible. Pull Operating Valve Handle down to "FILL" position; water flows into chamber. When water in chamber reaches the Level Indicator, push Operating Valve Handle up to "DRY" position; water stops flowing.

6. Close chamber door by inserting door handle into slot in door lock hinge and turning handwheel clockwise until door is snug against gasket.

7. Insert power cord plug of sterilizer into proper grounded type electric service outlet.

8. Turn Thermostat Control Knob to highest temperature.

9. Remove top cap screw (Fig. 6-8) from steam trap and turn bellows screw to open trap.

10. Turn Timer Knob fully clockwise.

11. When steam issues from tube opening (where tube was disconnected from tee), tighten bellows screw until steam "wisps" from tubing three to five times per minute.

12. Replace top cap screw and check that steam continues to "wisp" from tubing three to five times a minute. If necessary, repeat steps 10 and 11 until steam "wisps" from tubing three to five times a minute with top cap screw installed in steam trap.

13. After unit has cooled, remove top cap screw from steam trap.

NOTE: Do **not** touch bellows screw.

14. Place one drop of Loctite 290 on threads of bellows to prevent movement of bellows screw.

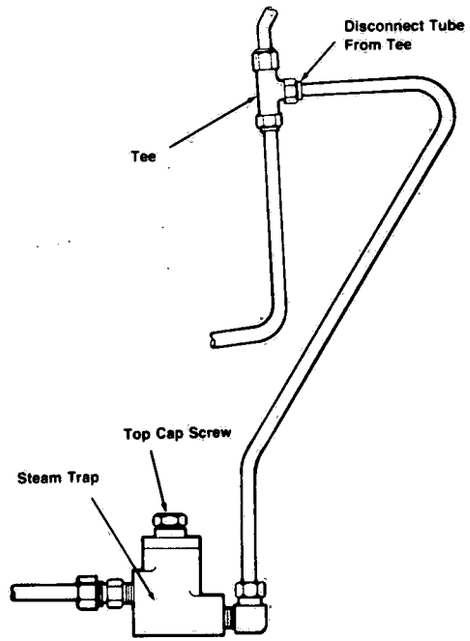


Figure 6-8. ADJUSTING STEAM TRAP.

15. Replace top cap screw and reconnect tube to tee.

16. Disconnect power cord from electric service outlet and install the finish jacket assembly (Fig. 7-1).

Replacement

1. Unplug power cord from electric service outlet and remove the finish jacket assembly (Fig. 7-1).

2. Disconnect compression fitting (8, Fig. 7-4) and brass compression ell (17, Fig. 7-3) from steam trap (18, Fig. 7-3).

3. Replace defective steam trap with new one.

4. Connect "new" steam trap to compression fitting and brass compression ell.

5. Adjust the "new" steam trap using the preceding procedure.

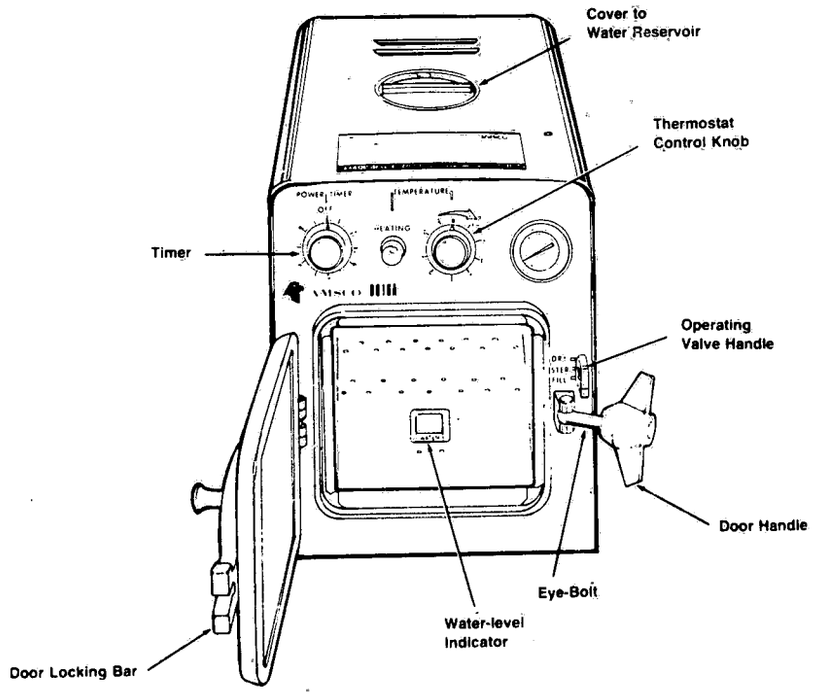


Figure 6-9. CONTROLS FOR STEAM TRAP ADJUSTMENT.

SECTION 7

EXPLODED VIEWS AND PARTS LISTS

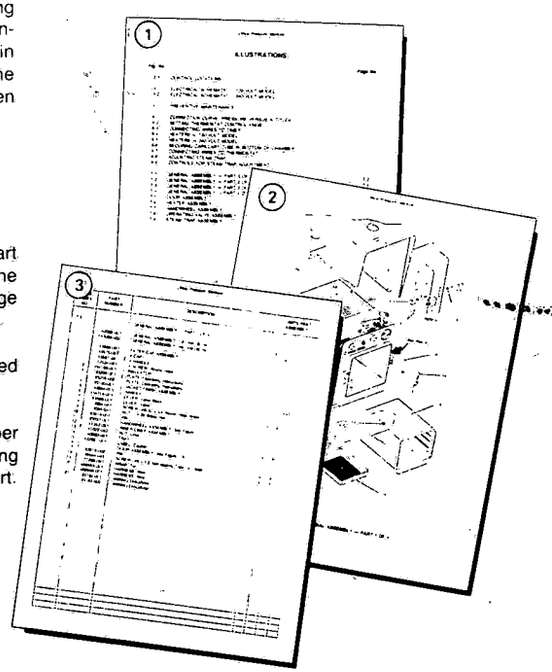
Assemblies and components of Office Pressure sterilizers are illustrated and identified on the following pages. The part number, the description and the quantity required for each usage is given. Each indentation in the description represents the assembly level. The UNITS PER ASSEMBLY column is specific for the given assembly or subassembly level.

HOW TO USE THE ILLUSTRATED PARTS BREAKDOWN

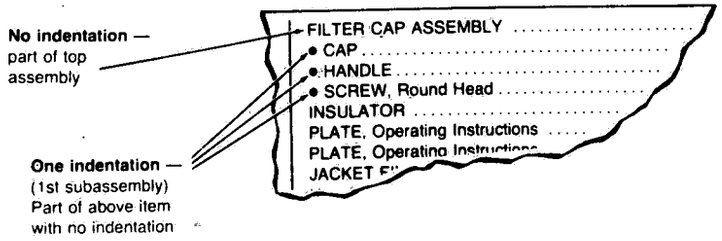
(1) Determine the function and application of the part required. Turn to the List of Illustrations and select the most appropriate title. Note the illustration page number.

(2) Turn to the page indicated and locate the desired part on the illustration.

(3) From the illustration, obtain the index number assigned to the part desired. Refer to the accompanying description for specific information regarding the part.



TYPICAL INDENTATION EXAMPLE



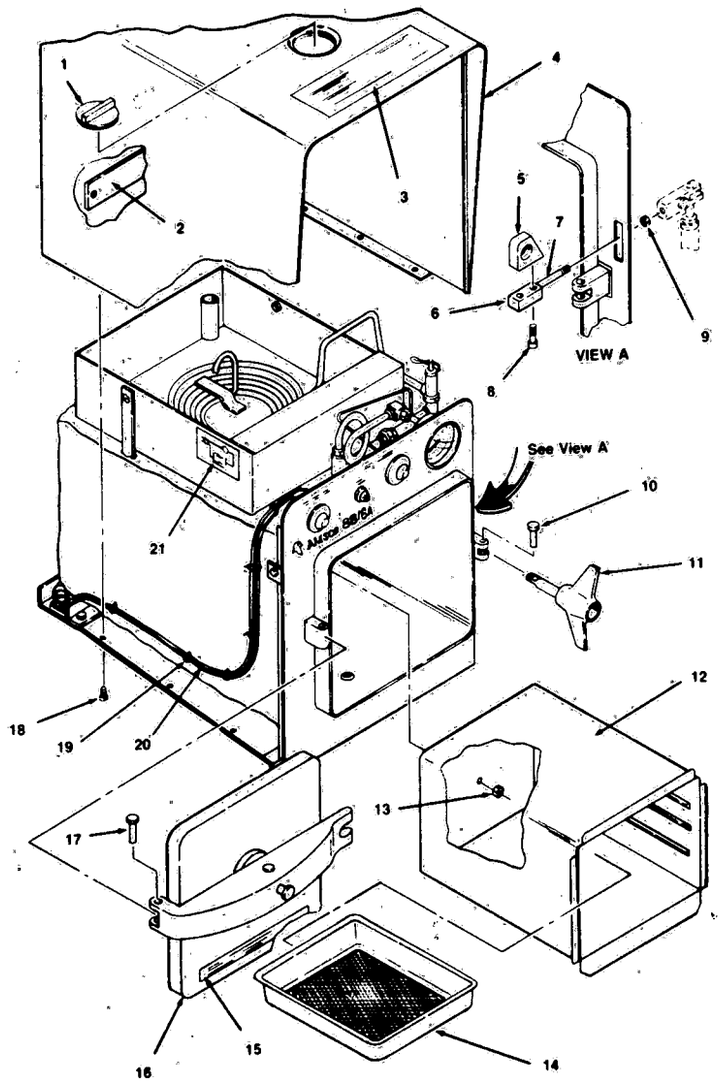


Figure 7-1. GENERAL ASSEMBLY — PART 1 OF 4.

C-1

FIG & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY			
7-1-		GENERAL ASSEMBLY — PART 1 OF 4				
	143086-001	GENERAL ASSEMBLY, 120 Volt, 60 Hz	X			
	143086-002	GENERAL ASSEMBLY, 240 Volt, 60 Hz		X		
1	43596-091	FILTER CAP ASSEMBLY	1	1		
	43575-061	• CAP	1	1		
	43597-091	• HANDLE	1	1		
	12534-061	• SCREW, Round Head	1	1		
2	454189-001	INSULATOR	1	1		
3	93205-001	PLATE, Operating Instructions	1			
	93205-002	PLATE, Operating Instructions		1		
4	93190-001	JACKET FINISH ASSEMBLY	1	1		
5	40864-001	HANDLE	1	1		
6	454716-001	LEVER, Valve Block	1	1		
7	83596-001	LEVER, Valve	1	1		
8	3985-041	SCREW, #6-32 x 3/4 Round Head Brass	2	2		
9	3065-041	NUT, 1/4-28 Brass Hex	1	1		
10	83618-001	PIN	1	1		
11	93037-001	HANDWHEEL ASSEMBLY	1	1		
12	41042-061	INNER LINER ASSEMBLY	1	1		
13	41022-042	NUT, Liner	1	1		
14	40890-061	TRAY	2	2		
15	422861-001	LABEL, Caution	1	1		
16		DOOR ASSEMBLY (See Figure 7-5)	1	1		
17	83618-002	PIN	1	1		
18	35544-045	SCREW, #6-x 1/2 Self-tapping Type "A" Steel	6	6		
19	77299-091	WRAP, Tie	6	6		
20	466555-001	HARNESS, Wire	1			
	466556-001	HARNESS, Wire		1		
21	93192-001	WIRING DIAGRAM	1			
	93192-002	WIRING DIAGRAM		1		

C-2

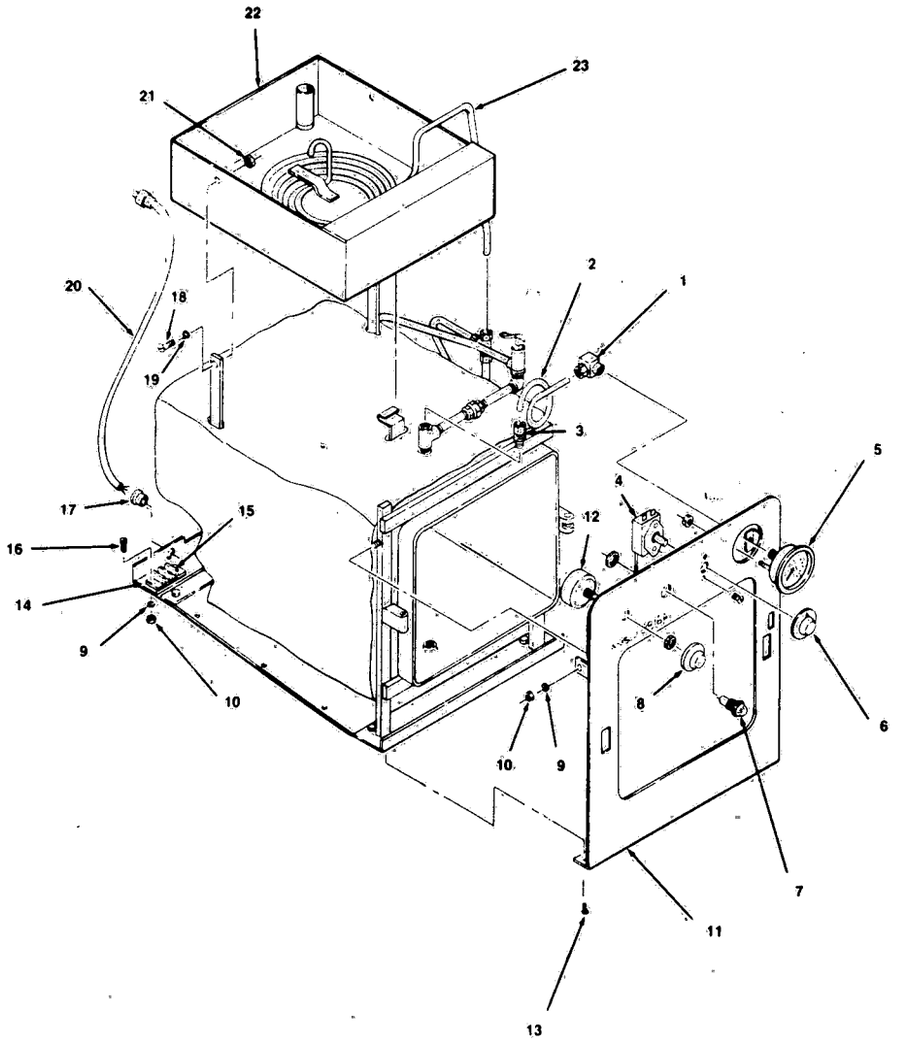


Figure 7-2. GENERAL ASSEMBLY — PART 2 OF 4.

C-3

FIG & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY			
7-2-		GENERAL ASSEMBLY — PART 2 OF 4				
	143086-001	GENERAL ASSEMBLY, 120 Volt, 60 Hz	X			
	143086-002	GENERAL ASSEMBLY, 240 Volt, 60 Hz		X		
1	42582-091	ELL, 1/4 O.D.T. x 1/8 N.P.T. Female Brass Compression Fitting	1	1		
2	41807-001	TUBE, 1/4 O.D.T. x 11-3/16	1	1		
3	19514-091	COUPLING, 1/4 O.D.T. x 1/8 N.P.T. Brass	1	1		
4	93073-001	THERMOSTAT	1	1		
5	93077-001	GAUGE, Pressure and Temperature	1	1		
6	454840-002	KNOB	1			
7	41083-091	LIGHT, Red Pilot		1		
	455050-001	LIGHT, Red Pilot	1	1		
	764317-708	• LAMP (Not Shown) (Box of 10)	1	1		
8	454840-001	KNOB	4	4		
9	79588-001	LOCKWASHER, #8 Shakeproof	4	4		
10	8645-061	NUT, #8-32 Hex	1	1		
11	136275-001	FRONT PANEL ASSEMBLY	1	1		
12	83627-001	TIMER	2	2		
13	20823-061	SCREW, #6 x 1/4 Self-tapping Type "A" Steel	1	1		
14	74547-091	INSULATION, Terminal Block	1	1		
15	45087-091	STRIP, Terminal	2	2		
16	3987-041	SCREW, #8-32 x 3/4 Round Head Brass	1	1		
17	30627-091	BUSHING, Strain Relief	2	2		
18	13334-091	SCREW, #4-40 x 3/8 Brass Round Head	2	2		
19	30743-045	LOCKWASHER, #4 Shakeproof	1			
20	56399-006	CORD ASSEMBLY		1		
	93204-006	CORD ASSEMBLY	2	2		
21	13794-041	NUT, #4-40 Brass Hex	1	1		
22	461637-001	WATER PAN ASSEMBLY	1	1		
23	40930-001	TUBE, 1/4 O.D.T.				

C-4

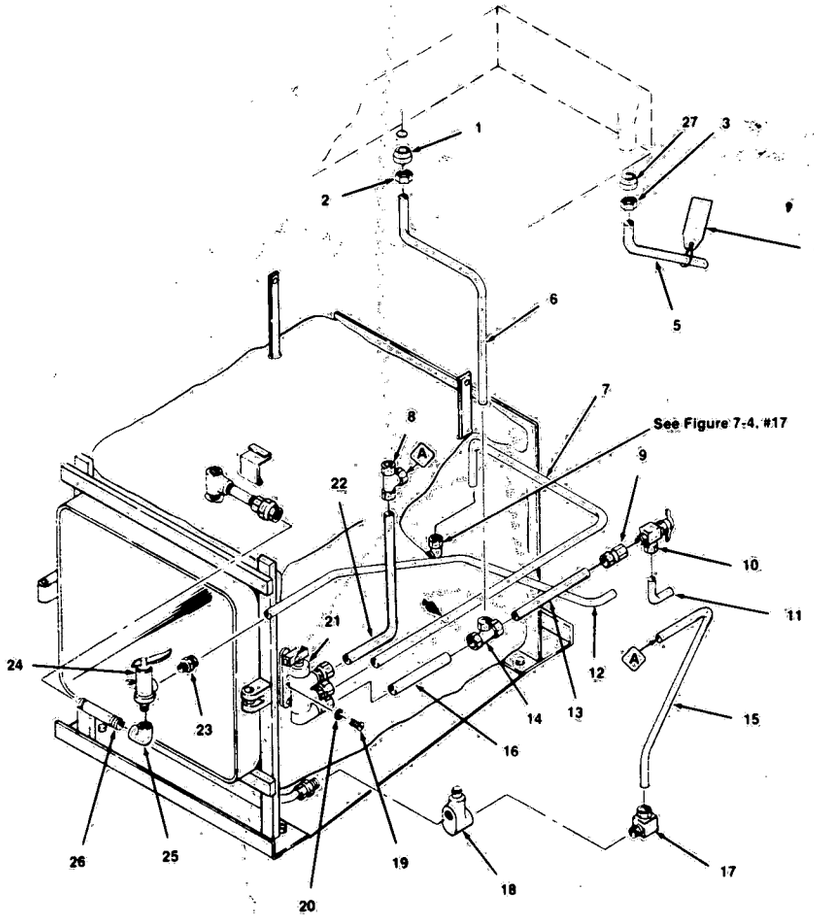


Figure 7-3. GENERAL ASSEMBLY — PART 3 OF 4.

FIG & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY			
7-3-		GENERAL ASSEMBLY — PART 3 OF 4				
	143086-001	GENERAL ASSEMBLY, 120 Volt, 60 Hz	X			
	143086-002	GENERAL ASSEMBLY, 240 Volt, 60 Hz		X		
1	25365-091	FERRULE, Compression	1	1		
2	40881-091	NUT, Compression	1	1		
3	74467-091	NUT, Compression	1	1		
4	27755-091	TAG, "Connect To Waste"	1	1		
5	83624-001	TUBE, 1/2 O.D.T. Drain	1	1		
6	40932-091	TUBE, 5/16 O.D.T.	1	1		
7	40931-091	TUBE, 5/16 O.D.T.	1	1		
8	43200-091	TEE, 1/4 O.D.T. Compression	1	1		
9	40891-091	COUPLING, 5/16 O.D.T. x 1/8 N.P.T.	1	1		
10	6758-044	PETCOCK, 1/8 N.P.T.	1	1		
11	454191-001	TUBE, 5/16 O.D.T. Drain	1	1		
12	418211-001	TUBE, 1/4 O.D.T. x 18-1/8 Copper	1	1		
13	40929-091	TUBE, 5/16 O.D.T.	1	1		
14	39227-091	TEE, 5/16 O.D.T. Compression	1	1		
15	93072-001	TUBE, 1/4 O.D.T. x 15-1/4	1	1		
16	40921-091	TUBE, 5/16 O.D.T. x 4-3/4	1	1		
17	41306-091	ELL, 1/4 O.D.T. x 1/4 N.P.T. Male Brass Compression Fitting	1	1		
18	56223-001	STEAM TRAP ASSEMBLY (See Figure 7-9)	1	1		
19	9308-091	SCREW, #10-32 x 1/2 Phillips Head Steel	2	2		
20	10863-091	LOCKWASHER, #10 Shakeproof	2	2		
21	33245-091	OPERATING VALVE ASSEMBLY (See Figure 7-7)	1	1		
22	43199-091	TUBE, 1/4 O.D.T. x 7-1/2	1	1		
23	34218-091	CONNECTOR, 1/4 O.D.T. x 1/4 N.P.T. Male Brass Compression Fitting	1	1		
24	93071-001	VALVE, Safety, 1/8 N.P.T. x 1/4 N.P.T.	1	1		
25	455034-001	ELBOW, 1/8 N.P.T. Female x 1/8 N.P.T. Male Brass Street	1	1		
26	455036-001	NIPPLE, 1/8 N.P.T. x 1-7/8	1	1		
27	20603-091	FERRULE, Compression	1	1		

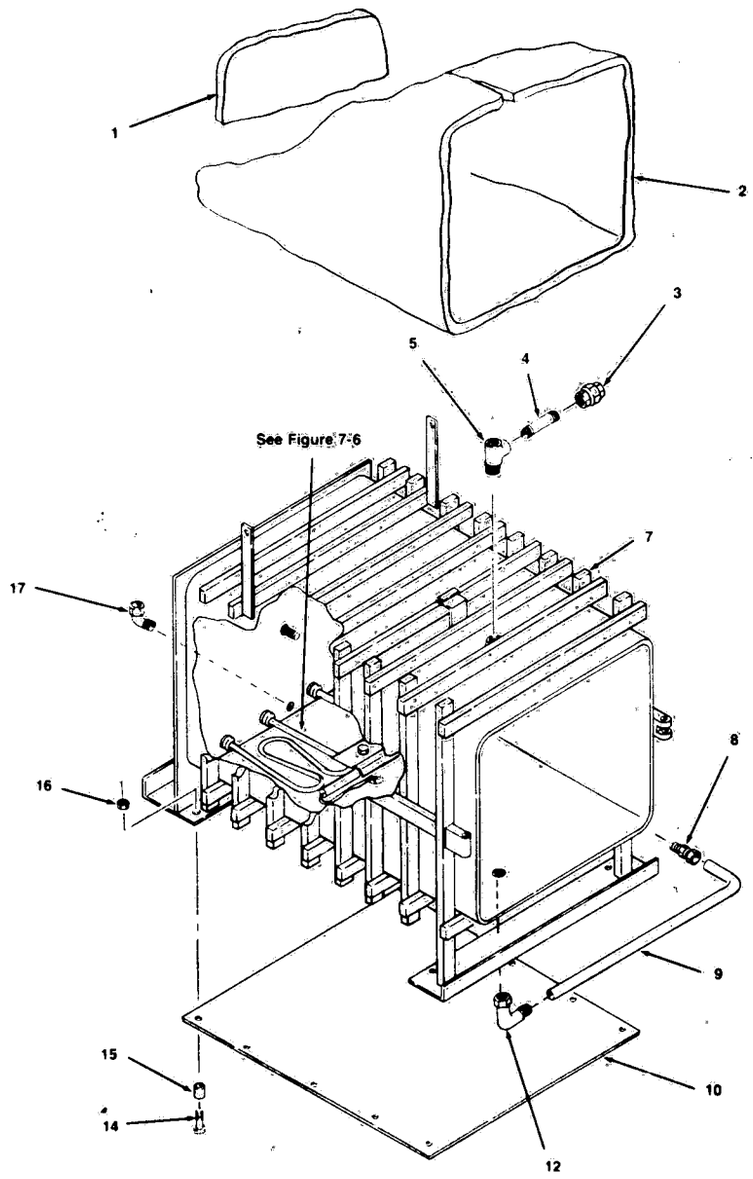


Figure 7-4. GENERAL ASSEMBLY — PART 4 OF 4.

FIG & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY			
7-4-		GENERAL ASSEMBLY — PART 4 OF 4				
	143086-001	GENERAL ASSEMBLY, 120 Volt, 60 Hz	X			
	143086-002	GENERAL ASSEMBLY, 240 Volt, 60 Hz		X		
1	83641-001	INSULATION, Backhead	1	1		
2	83640-001	INSULATION, Shell	1	1		
3	455035-001	UNION, 1/8 N.P.T.	1	1		
4	455036-001	NIPPLE, 1/8 N.P.T. x 1-7/8	1	1		
5	455033-001	TEE, 1/8 N.P.T. Brass Male Run	1	1		
6		Not Used				
7	143079-001	SHELL ASSEMBLY	1	1		
8	22711-091	FITTING, 5/16 O.D.T. Compression	1	1		
9	418210-001	TUBE, 5/16 O.D.T. x 10-1/8 Long Copper	1	1		
10	93068-091	COVER, Bottom	1	1		
11		Not Used				
12	7033-091	ELBOW, 1/4 N.P.T. x 5/16 O.D.T. Brass Street	1	1		
13		Not Used				
14	3986-041	SCREW, #8-32 x 1/2 Round Head Brass	4	4		
15	33168-091	FOOT	4	4		
16	3038-041	NUT, #8 Hex	4	4		
17	6750-091	ELL, 5/16 O.D.T. x 1/8 N.P.T. Compression	1	1		

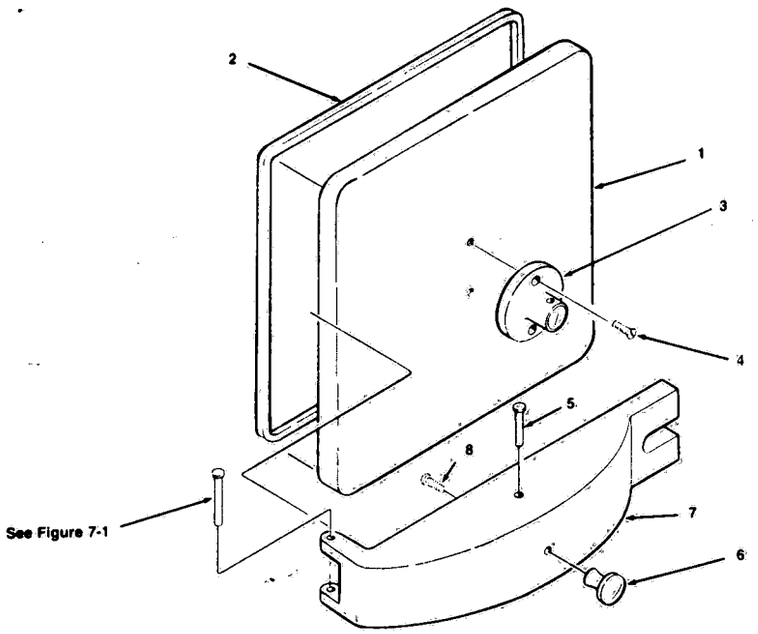
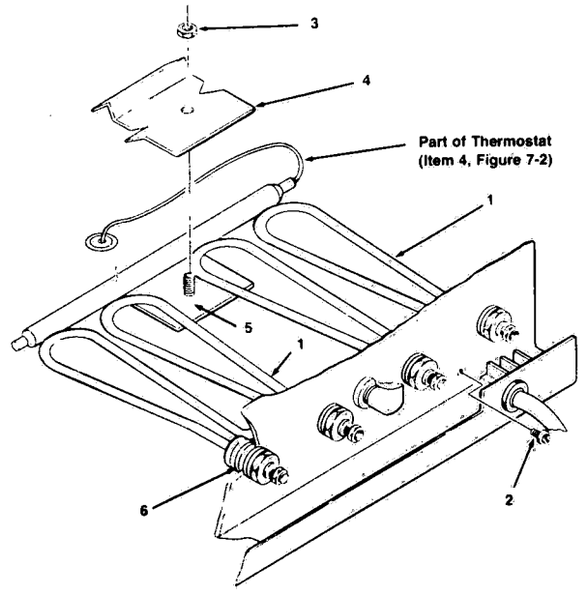


Figure 7-5. DOOR ASSEMBLY.

FIG & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY			
7-5-		DOOR ASSEMBLY	X			
1	93070-001	DOOR	1			
2	74374-091	GASKET, Door	1			
3	83483-001	HUB, Door	1			
4	75666-061	SCREW, 8-32 x 1/2 Slotted Flat Head	2			
5	83484-001	PIN	1			
6	44668-001	KNOB	1			
7	136269-001	HINGE, Door Lock	1			
8	413716-529	SCREW, #10-32 x 3/4 Button Head with Nylok	1			



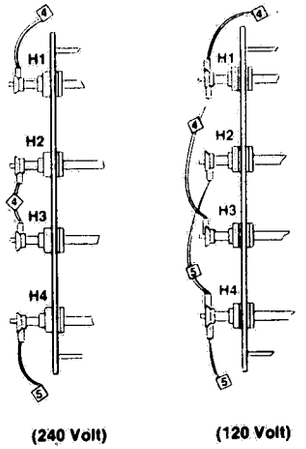


Figure 7-6. HEATER ASSEMBLY.

FIG & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY			
7-6-		HEATER ASSEMBLY	X			
1	93206-001	HEATER	2			
2	82675-001	SCREW, #10-32 x 3/8 Green Ground	1			
	426283-001	CLAMP ASSEMBLY	1			
3	76239-061	• NUT, Hex	1			
4	462283-004	• PLATE, Top	1			
5	462283-002	• WELDMENT, Bottom Plate	1			
6	74093-091	GASKET, Heater (Non-Asbestos Washer)	4			

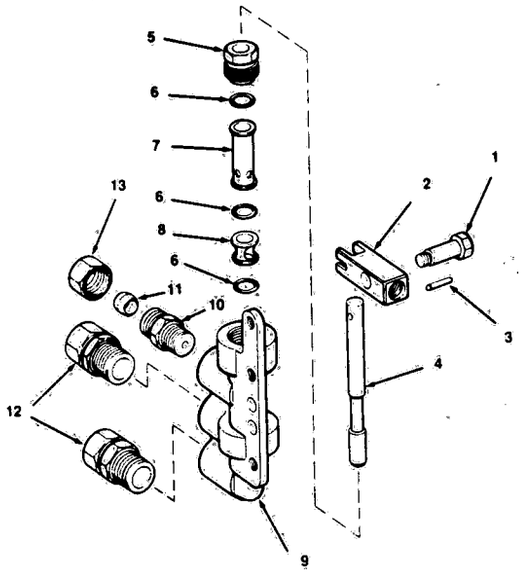


Figure 7-8. OPERATING VALVE ASSEMBLY.

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY
7-8-	33245-091	OPERATING VALVE ASSEMBLY	X
1	33237-091	SCREW	1
2	33238-042	ARM	1
3	33236-061	PIN, 3/32 Long Groove	1
4	33242-061	VALVE	1
5	33243-091	NUT	1
6	33241-091	O-RING, 1/4 I.D. x 3/8 O.D. x 1/16 Thick	3
7	33240-091	PORT, Upper	1
8	33239-091	PORT, Lower	1
9	33244-091	BODY	1
10	38638-091	FITTING, Restrictor	1
11	25364-091	SLEEVE, 1/4 O.D.	1
12	22711-042	FITTING, 5/16 O.D.T. x 1/4 N.P.T. Compression	2
13	30673-091	NUT, 1/4 O.D.T. x 7/16-24 Compression Fitting	1

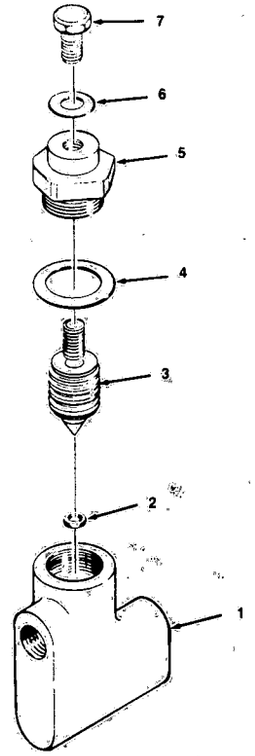


Figure 7-9. STEAM TRAP ASSEMBLY.

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION	UNITS PER ASSEMBLY
7-9-	56223-001	STEAM TRAP ASSEMBLY	1
1	56236-001	BODY	1
2	33155-091	"O" RING, Teflon	1
3	33158-091	BELLOWS ASSEMBLY	1
4	47003-091	GASKET, Asbestos	1
5	150384-001	HEAD, Brass	1
6	454894-001	GASKET	1
7	454893-001	SCREW, 5/16-18 x 1/4 Hex Cap	1

AMSCO SERVICE

OFFICE PRESSURE STERILIZER P-762066-002
ELECTRICALLY POWERED (120 OR 240 VOLT)
MODEL 8816A

7/87