

## 9. MAINTENANCE INSTRUCTIONS

### 9.1 Preventive and Scheduled Maintenance

The maintenance operations described in this chapter need to be followed as indicated, to keep the device in good working condition.

The instructions that follow can easily be carried out by the office personnel and do not require a service technician.

Should the need arise, technical assistance or a service technician can be requested by either calling your dealer or Tuttnauer USA.

#### 9.1.1 Daily

1. Clean the door gasket with a mild detergent, water and a soft cloth or sponge. The gasket should be clean and smooth.

#### 9.1.2 Weekly

1. **ONCE PER WEEK**, clean the air jet. To ensure that the temperature inside the chamber rises properly it is necessary to keep the air jet clean. A dirty air jet will prevent indicator strips from changing color and cause spore tests to fail. See sec. 9.4.
2. Clean the water sensor in the rear of the chamber with a damp cloth or sponge. Cleaning the dirt off the sides of the sensor is more important than the tip (see sec 9.10).
3. Once per week clean and descale the chamber, copper tubes and the reservoir using **Chamber Brite** (see sec. 9.9).
4. Take out the tray holder and trays. Clean the tray holder and trays with detergent or a non-abrasive stainless steel cleaner and water, using a cloth or sponge. Rinse the tray holder and trays immediately with water to avoid staining the metal.



#### Caution

**Do not use steel wool, steel brush or bleach as this can damage the chamber and trays!**

5. Put a few drops of oil on the 2 door pins and door tightening bolt.
6. Clean the outer parts of the autoclave with a soft cloth.

#### 9.1.3 Periodically

1. Once every month clean and check the safety valve.
2. Replace the air filter every 6 months, or as needed (see sec. 9.2).
3. Replace the door gasket every 12 months, or as needed (see sec. 9.5).
4. Once every six months clean the fan grid with compressed air from the inside outward.
5. Clean strainer once a month as per sec. 9.8. Cleaning frequency may be reduced according to previous maintenance.
6. Once a year inspect the locking device for excessive wear.

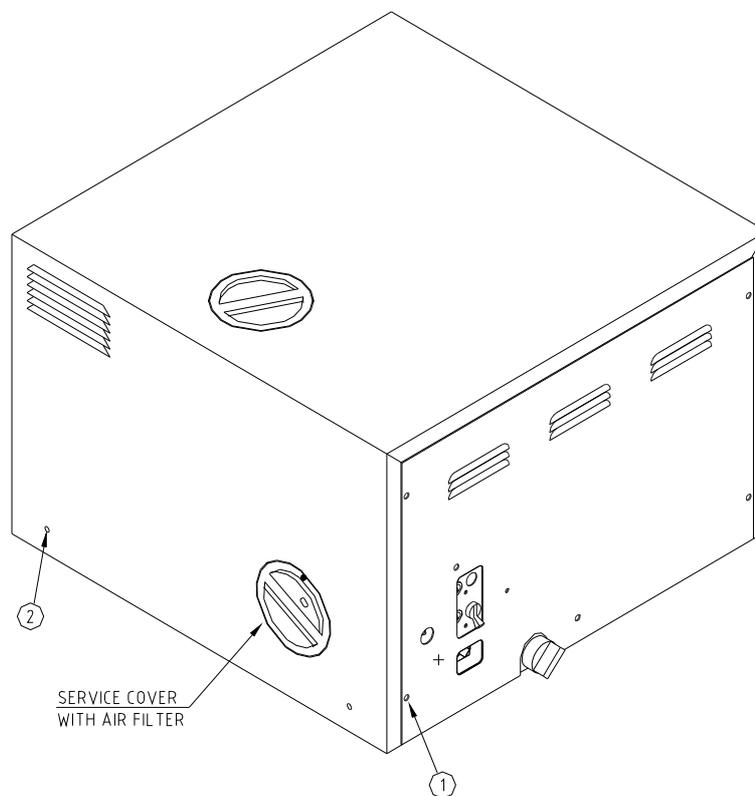
## 9.2 *Replacing the Air Filter*

To facilitate drying the instruments with the door of the chamber closed, the autoclave is equipped with an air compressor and HEPA filter (0.2 $\mu$ m). During the drying stage the compressor draws air through the HEPA filter and forces the circulation of that air through the heated chamber to remove moisture from the wrapped instruments. The filtration of the air is performed by the bacteriological filter. Frequency of replacement will be determined depending on the usage of the autoclave and the surrounding environment.

The filter is mounted in an opening on the right sidewall of the autoclave enclosure, this is to allow easy access for replacing it, (see picture below).

To replace the filter proceed as follows:

1. Remove the securing screws and then the filter cover by turning the cover counterclockwise until the handle is at a vertical position.
2. Pull out the cover with the filter attached.
3. Disconnect the flexible tube from the filter.
4. Replace the filter with a new one, connecting it to the flexible tubing.
5. Reassemble the cover and lock it into position by turning it a ¼ turn.
6. Fasten the securing screws.



### 9.3 *Draining the Reservoir*

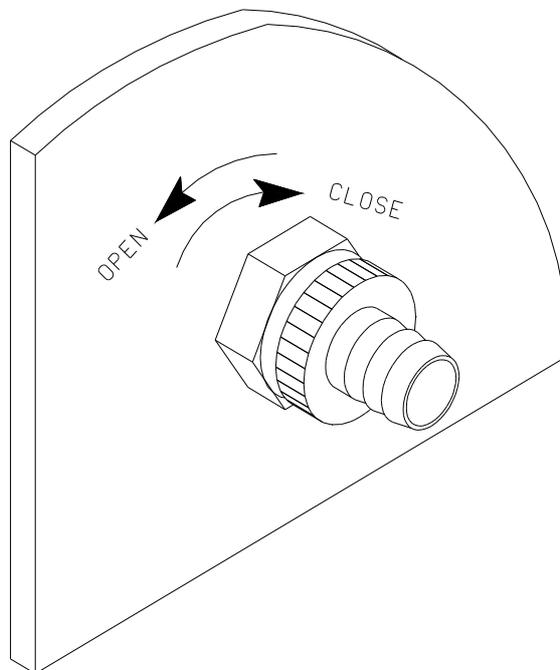


#### **Caution**

**Before starting, ensure that the electric cord is disconnected and there is no pressure in the autoclave.**

The drain valve is located on the front left side of the autoclave after the door is opened. The function of the drain valve is to drain the water reservoir.

1. Connect the silicone hose, supplied with the autoclave, to drain into a bucket.
2. Turn drain valve counterclockwise to the open position.
3. Fully drain the reservoir.
4. With a quart of tap water flush out the reservoir.
5. Turn drain valve clockwise to the close position.
6. Connect the electric cord to power source.
7. Fill the reservoir with distilled water to just below the safety valve (see sec 6.5).
8. Turn on the main power switch.
9. The autoclave is now ready for use.



9.4 **Cleaning the Air Jet**  
(Located in the water reservoir.)



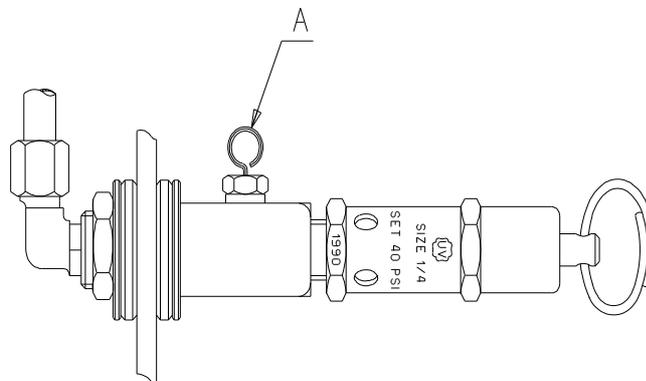
**A dirty air jet is the number one cause of failed spore tests**

The elimination of air from the sterilization chamber during heat up is **critical** to the proper operation of the autoclave. Failure of the air removal system will be responsible for incomplete sterilization, indicator strips that do not turn, failed spore tests and aborted sterilization cycles. A clogged air jet will result in receiving the error message “Low Heat”.

The air jet consists of a small orifice with a clean out wire inserted in it (wire is permanently installed and will not come out). It is required that the air jet be cleaned once per week or more often if necessary, to remove any accumulated dirt and debris.

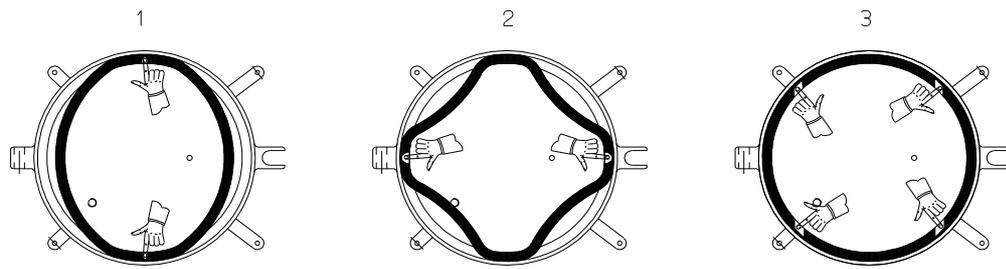
It is preferred to clean the air jet when the unit is running a cycle and under pressure. This is so that any loosened debris will be blown away, however, it can be done while the unit is idle.

1. Remove the water reservoir cover.
2. Clean the hole of the jet by manipulating the air trap wire back and forth 10 times.



**It is important to clean the hole of the air trap, as described at point 2 before starting operation of the autoclave, for the first time.**

### 9.5 Replacing the Door Gasket



Pull off the gasket from the door groove. Install the new gasket as described in drawings 1, 2 and 3 above.

#### Caution!



This gasket is designed with a trapezoidal cross section. The gasket should be placed with the widest side towards the door.

## 9.6 *Checking the Safety Valve* (Located in the water reservoir)

In order to prevent the safety valve from becoming blocked, it is necessary to allow the steam pressure to escape through the valve. This procedure should be done every month as follows:

1. Operate the sterilization cycle according to the manual.
2. Allow a pressure of approximately 30 psi (207 kpa ) to build up in the chamber.
3. Turn the unit off.
4. Remove water reservoir cover.



**Caution!**

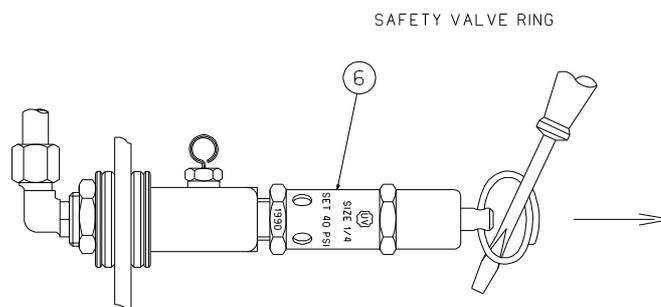
**This next step will expose you to HOT STEAM**



**Caution!**

**To avoid being burned by hot steam, do not place your face over the safety valve.**

5. Pull the ring of the safety valve using a tool, i.e. screwdriver, hook, etc. and open the safety valve for 2 seconds, then release. Be careful not to burn your hands.
6. Turn the unit back on and press the STOP key to abort and vent the cycle.
7. Wait until pressure decreases to zero, only then can the door be opened.



## 9.7 *Replacing the Fuse*



### **Caution**

**Make sure that the electrical power cord is disconnected!**

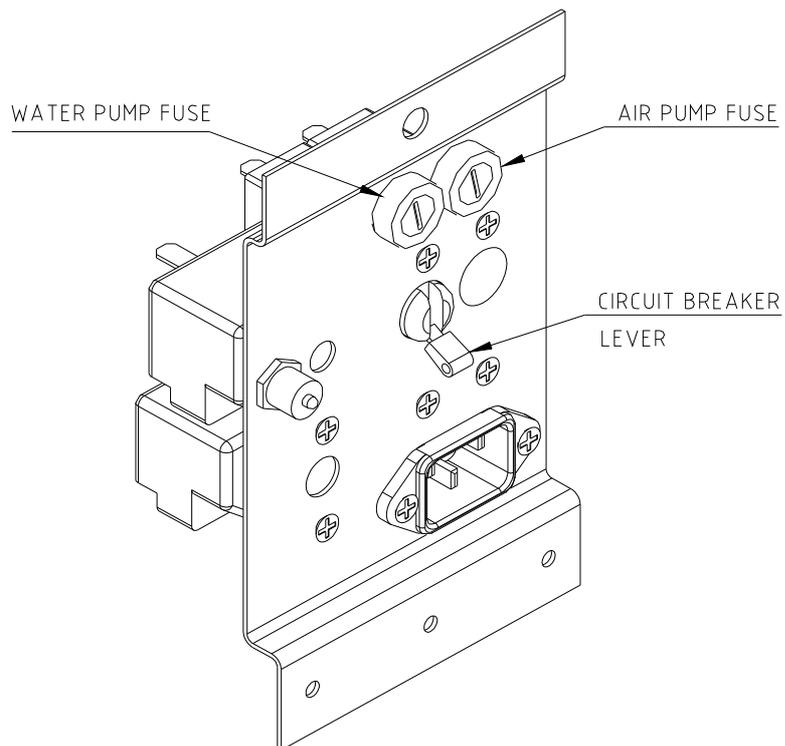
Use a screwdriver to unlock the fuse holder cover by turning it counterclockwise  $\frac{1}{4}$  turn, and pull it out.

Insert a new fuse into the holder and turn the cover clockwise until locked.



**Make sure that the correct fuse is installed**

1. Water Pump Fuse: 1.25 amps
2. Air Pump Fuse: 2.0 amps for 120V  
1.25 amps for 230V



## 9.8 Cleaning Water Outlet Strainer



### Caution!

Before proceeding, make sure that the electric cord is disconnected and there is no pressure or water in the chamber.



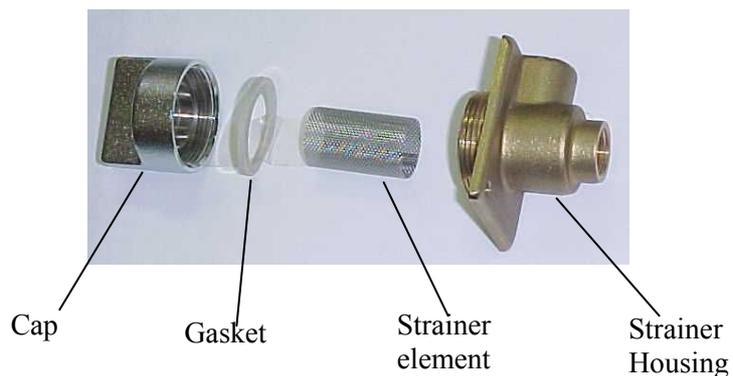
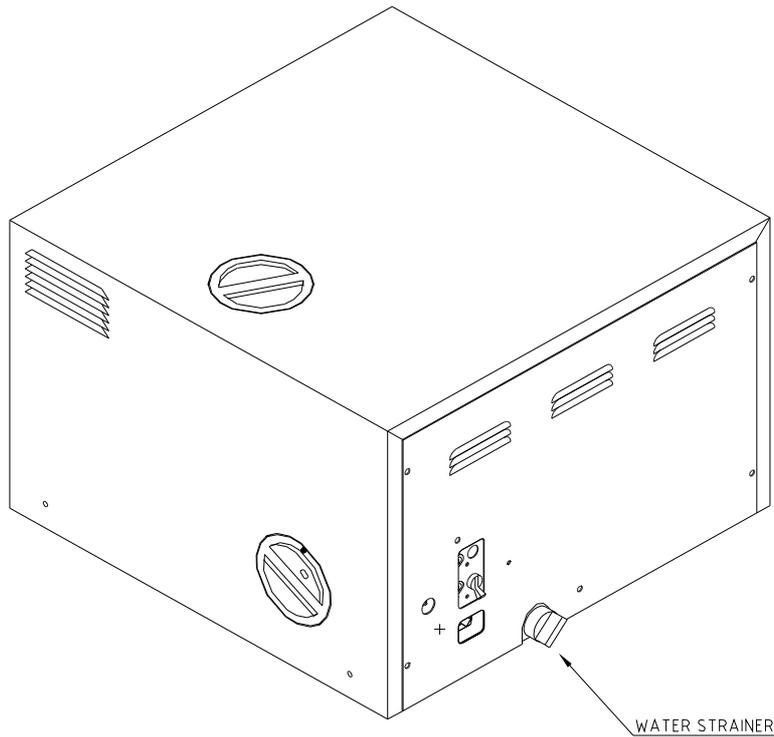
### Warnings

1. *The strainer's cover is HOT*

Do not touch the strainer's cap, mounted on the exhaust line, during and shortly after operation. Touching the hot strainer's cap may cause severe injuries.

2. *If maintenance operation is performed while strainer cap is hot, use heat resistant gloves to avoid injuries.*

1. Open the strainer cap.
2. Remove the strainer element.
3. Rinse the strainer with water, using a brush if necessary.
4. Reinstall the strainer element.
5. Close the strainer cap.



### 9.9 *Cleaning Tabletop Autoclaves with Chamber Brite™*

CHAMBER BRITE™ is a cleaning and descaling agent designed specifically for the cleaning and removal of water deposits, oxides and other sediments that are found in steam sterilizers. The material is a combination of acidic salts and additional cleaning materials. Chamber Brite™ autoclave cleaner has been formulated specifically to be a fast, powerful and easy to use cleaner for steam sterilizers.

If the autoclave is not cleaned regularly, dirt and debris will build up and clog the tubing and solenoid valves. This dirt can also be transmitted to the instruments during sterilization. In addition, a layer of dirt on the stainless steel chamber traps moisture against the metal and will lead to the chamber becoming porous and failing.

**It is recommended that your autoclave be cleaned with CHAMBER BRITE™ once per week**



#### **Caution!**

**NEVER** use bleach, steel wool, a steel brush or anything abrasive to scrub or clean the Chamber.

#### **Cleaning Procedure**

1. Important – all steps in this procedure must be completed without interruption.
2. When the autoclave chamber is cold, remove instruments and trays from the autoclave.
3. Open the door and spread the contents of a packet in a straight even line along the bottom of the chamber, from back to front.
4. Select and start program No. 1 (**without dry**). When the cycle is finished it will automatically exhaust.
5. At the end of the exhaust cycle drain the water from the reservoir.
6. Fill the water reservoir with distilled water.
7. Repeat a sterilization cycle without Chamber Brite™ powder, to remove any excessive dirt in the pipes. Select and start program No. 1 (**without dry**). When the cycle is finished it will automatically exhaust.
8. At the end of the exhaust cycle drain the water from the reservoir.
9. Turn the autoclave off and allow chamber to cool.



10. Remove the tray holder; rinse and wipe the interior of the chamber with a damp cloth.
11. Fill the reservoir with distilled water or mineral free water only.
12. Press the manual water fill button and allow a small amount of water (2-4 ounces) to fill chamber and flush out the fill tube. Remove water from chamber.
13. The instrument is ready to use.



**IMPORTANT:**

**DO NOT sterilize instruments during the cleaning process!!!**



**CAUTION:**

**Keep out of reach of children. Contains mildly acidic ingredients. Avoid contact with the skin, eyes or clothing. Wash hands well after touching the powder, in the case of eye contact flush with continuous running water for at least 15 minutes. If irritation persists get medical attention. If accidentally swallowed, do not induce vomiting, drink large amounts of water and obtain medical attention. MSDS available upon request.**

Use one packet of CHAMBER BRITE™.

Clean every 20 cycles or as needed.

### 9.10 *Water Sensor Cleaning*

It is required that the water sensor be cleaned at least once per week. Cleaning the sensor will ensure that the water level in the chamber is properly reported to the microprocessor all during the cycle.

The water sensor is located in the rear of the chamber. It is easily cleaned using a damp cloth or sponge, you may use a mild soapy solution if you like. It is important to wipe the sides of the sensor as well as the tip, to remove any dirt or debris that may have built up.

