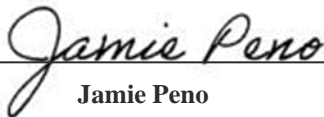
 <div> <div>DIVISION OF RESEARCH &amp; INNOVATION</div> <div>Research Integrity &amp; Compliance</div> </div>		<b>UNT Lab Animal Facility</b> <b>Standard Operating Procedures</b>	
<b>Title:</b> Tabletop Autoclave Use and Maintenance			
<b>Effective Date:</b>	August 15, 2021	<b>Document Number:</b>	LAF-SOP-05-15.00
<b>Approval/Date:</b> <div style="text-align: center; margin-top: 20px;">   <div> <div>Jamie Peno</div> <div>Assistant Vice President, Research Integrity and Compliance</div> </div> </div> <div style="text-align: right; margin-top: 20px;"> <div>8/15/2021</div> <div>Date</div> </div>			
<b>REVISION HISTORY</b>			
<b>Date</b>	<b>Section</b>	<b>Author</b>	

## PURPOSE

This Procedure is to describe the general use and maintenance for the Tuttnauer Autoclave- Steam Sterilizer, Model EZ11-Plus (Serial No. 18020772) housed in the UNT Lab Animal Facility. This autoclave is designed and intended for the sterilization of surgical instruments that are deemed by their manufacturer as sterilizable via high heat steam sterilization techniques.

## SCOPE

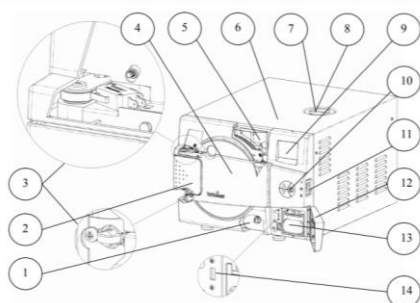
It is the responsibility of UNT LAF staff and management to review and adhere to the procedures described below when using the Table-top autoclave in the UNT Lab Animal Facility. All users should be trained appropriately before using this equipment. For product specifications or diagrams, refer to the Tuttnauer User Manual.

## DEFINITIONS AND ABBREVIATIONS

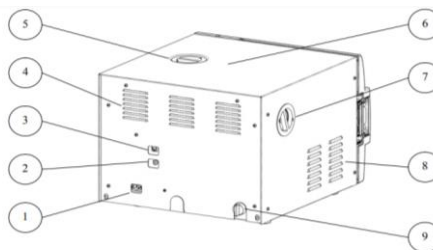
UNT- University of North Texas, Denton  
SOP/SOP's- Standard Operating Procedure(s)  
LAF- Laboratory Animal Facility  
AV- Attending Veterinarian

## PROCEDURES

- I. Diagrams of Unit Parts: for further illustrations see Users Manual



No.	Description	No.	Description
1	Reservoir drain	8	Safety valve
2	Door opening grip	9	EZView display
3	Door microswitches	10	EZPad keypad
4	Door cover	11	Autoclave On/Off Switch & circuit breaker
5	Water reservoir fill & level gauge	12	Printer cover
6	Autoclave cover	13	Printer (optional)
7	Mineral-free water reservoir cover	14	USB port



No.	Description
1	Main power electric cable socket
2	Cut-off thermostat
3	Network port
4	Ventilation grills
5	Mineral-free water reservoir cover
6	Autoclave cover
7	HEPA filter cover
8	Ventilation grills
9	Water outlet strainer

## II. General Operation of Table-top Autoclave

- A.** To start machine operation, operator must first set the switch located on the right side of the front panel to the ON position.
- B.** The system will load and show a SYSTEM READY message on the display and will then automatically unlock the cabinet door.
- C.** When unlocked and open, the display should say DOOR OPEN.
- D.** Fill the water reservoir, using distilled water only, by slowly pouring into the funnel until the water level reaches the blue area marked on the level guage.
- E.** Select the appropriate sterilization program using the UP and DOWN arrow keys on the panel.
  1. Instruments in the LAF are sterilized using the “WRAPPED INSTRUMENT POUCHES” program.
  2. Use only approved steam sterilization pouches to ensure packaging can withstand hight heat/steam sterilization, have the appropriate form of color changing sterilizations indicators, and to ensure appropriate steam penetration to sterilize contents.
  3. Inspect all items before loading into the machine, ensure pouches are appropriately sealed and have not been penetrated or torn before use.
  4. Do not re-use pouch sterilization packaging.
  5. Label each package with date of sterilization.
- F.** Load items into the autoclave cabinet by placing them in the stainless steel trays.
  1. Do not overload or overcrowd the racks to ensure appropriate steam penetration and resulting instrument sterilization.
  2. Items should fit appropriately into trays and not extend to touch the outer walls of the cabinet.
- G.** Close the cabinet door, the display should again show SYSTEM READY.
- H.** Start the cycle by pressing the START/STOP key once. This should automatically lock the cabinet door and begin the sterilization cycle.
- I.** Once the sterilization program is complete, the display will read CYCLE ENDED and the cabinet door will automatically unlock.
- J.** Carefully open the cabinet door, using appropriate heat resistant gloves.
- K.** Visually inspect all items removed from the load.
  1. Items that cool to quickly may result in the forming of condensation which compromises the packaging and should be considered contaminated. These items should be repackaged and resterilized before use.

- a) If items are routinely cooling too quickly or are wet upon removal, refer to troubleshooting section of the user manual.
  - b) Can be more slowly cooled by leaving in the cabinet with the door open for a few minutes prior to removal.
2. Ensure all sterilization indicators show a correct and distinct color change. If indicator has not changed or not fully changed, items should not be considered sterilized and should be repackaged and resterilized prior to use.
  - a) If items are routinely not fully producing the expected color change, refer to Troubleshooting section of User Manual.
  - b) This could indicate the machine is not reaching the appropriate temperatures for sterilization for the appropriate amount of time, the incorrect packaging is being used, the machine was not properly loaded or was overcrowded, faulty or expired packaging, etc.
3. Ensure integrity of packaging has been maintained and that all pouches remain properly sealed and are free of punctures or tears. Compromised packaging should be considered contaminated and items should be repackaged and resterilized prior to use.

**L.** Allow items to fully cool before use to avoid burns and/or contamination.

**M.** Close the cabinet door after each use.

**N.** After the last cycle each day, the autoclave should be turned OFF using the power switch on the right side of the front panel.

**O.** Record the cycle and results on the LAF 07- Autoclave Use Record

### **III. Table-top Autoclave Maintenance**

#### **A. Daily (when in use) :**

1. Inspect and clean the unit prior to use, while machine is still cold, using a mild detergent, water, and a soft non-linting cloth or sponge.
  - a) Clean the door gasket and outside rim of the sterilization chamber The gasket should be free of debris and smooth prior to each use.
  - b) Clean the inside and outside of the gasket flap.
  - c) Clean the water and temperature sensors located in the rear of the cabinet chamber.

#### **B. Weekly (or after every 20 cycles) Maintenance:**

1. While the unit is still cold, select the CHAMBER BRIGHT CLEANING program on the display menu and press the START/STOP key to unlock the cabinet door.
  - a) Clean and descale the chamber, copper tubes, and the water reservoir using ONLY manufacturer approved powdered autoclave cleaner.
  - b) With a mild detergent or a non-abrasive stainless steel cleaner and water, using a soft, non-linting cloth or sponge:
    - i. Clean the tray holder and trays
    - ii. Clean the water outlet strainer
  - c) Inspect the unit safety valve.
  - d) Inspect and remove any debris from the cabinet door hinge.
  - e) Lubricate the door hinge by dropping 1-2 drops of approved lubrication oil on the hinge pins and all moving parts of the door locking mechanism.

#### **C. Bi-Annual (every 6 months or 1,000 cycles) Maintenance :**

1. Inspect the cabinet door gaskets for cracks or damage and replace as needed.
2. Replace the HEPA Filter

### **IV. Troubleshooting and Repair**

- A. Should the unit require any troubleshooting or maintenance, the LAF manager should be notified immediately and the unit should be clearly labeled “Out of Use” to ensure safety of users.
- B. For in-house troubleshooting, refer to the Tuttnauer User Manual.
- C. Repairs should only be completed by an authorized and trained individual.

**V. Safety**

- A. This unit should always be maintained to manufacturer standards and should have appropriate useage training and signage to ensure safety of users.
- B. This unit reaches high temperatures and safety mechanisms and procedures are in place to ensure individuals are not harmed during use. All users should follow recommended procedures for use and maintenance.

**REFERENCES**

- 1. Tuttnauer EX11 User Manual

**APPENDECES**

- LAF 07- Autoclave Use Form