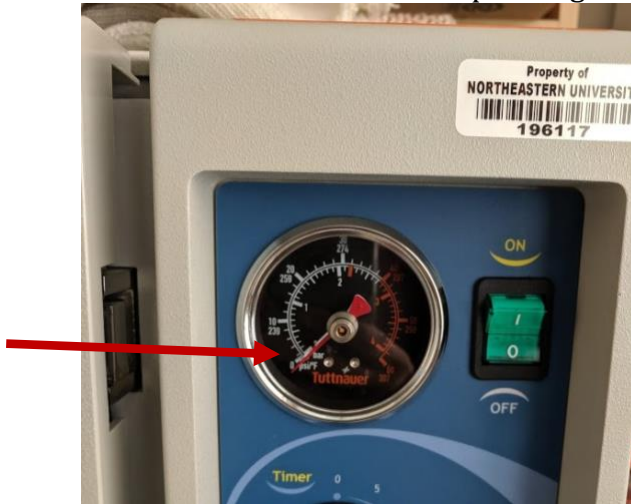


## Autoclave Protocol

**\*\*YOU CANNOT USE THE AUTOCLAVE UNLESS YOU HAVE TAKEN BOTH ONLINE TRAINING THROUGH EHS AND IN-PERSON TRAINING WITH ROSIE FALCO\*\***

*For training and questions, see Rosie Falco (OGL, [r.falco@northeastern.edu](mailto:r.falco@northeastern.edu)). Training takes ~15 minutes and is required per Northeastern EHS policies.*

1. Make sure the white hand is pointing to zero.



- a. If the white hand is not pointing to zero, **DO NOT OPEN THE AUTOCLAVE.** This means the chamber is still pressurized and it is dangerous to open it. Come back later.
  - b. If the white hand is at zero, but the red hand is not, reset the red hand to zero by rotating the center dial before use.
2. Open the door to make sure the autoclave is empty.
    - a. If there are items inside the autoclave, check the log to see who they belong to and how long ago they finished sterilizing. Please allow a reasonable amount of time for other users to remove their items or inform them before removing items from the autoclave.
  3. Turn on the autoclave using the green power button on the front of the machine.
  4. Fill water.
    - a. Open the autoclave door completely until you can see the groove (see photo below).
    - b. Turn the settings dial to Fill Water (pointing right).
    - c. When the water reaches the groove in the front of the autoclave, turn the dial to Sterilize (pointing down).



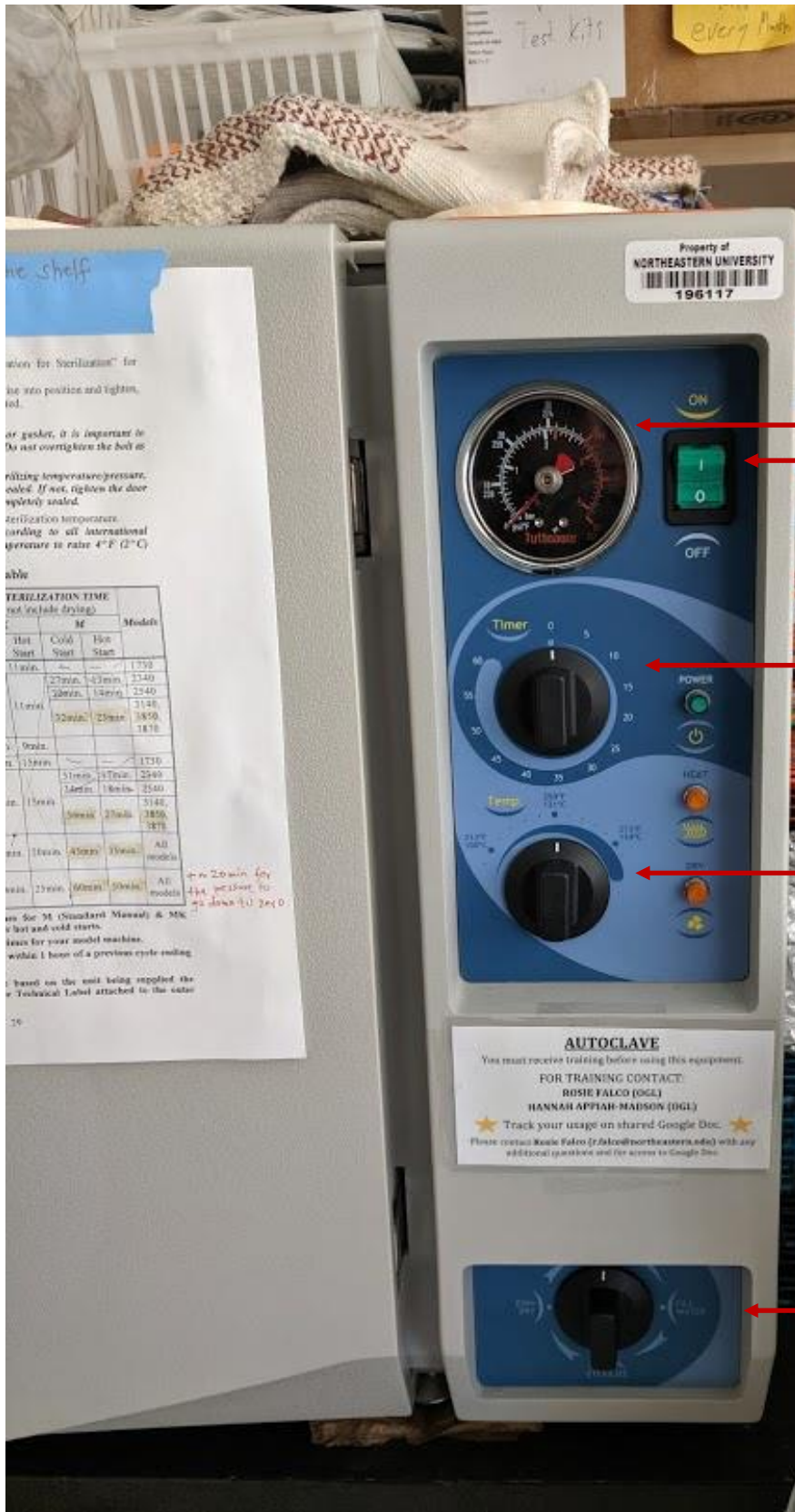
Add water until it fills this groove

5. Put your items into the autoclave.
  - a. **Make sure everything is autoclave safe!**
  - b. **Make sure all lids are loose!**
  - c. **If you don't know if something is safe to be autoclaved, DO NOT put it in the autoclave!**
  - d. **Do not autoclave chemicals! Do not autoclave non-HDP plastic!**
  - e. There is a roll of autoclave tape above the autoclave.
    - i. Autoclavable tape indicates when steam sterilization has occurred by means of a visible black strip which shows after autoclaving (3 mins @ 134°C, 15 mins @ 121°C).
6. Close the door, but do not over tighten.
7. Set temperature based on the specific needs of the items you are autoclaving.
  - a. The time and temperature necessary for sterilization depends on type of material or volume of liquid (see notes below).
8. Set time.
  - a. This begins sterilization.
  - b. Add 10 minutes to allow the autoclave to reach the correct temperature.
  - c. Allow 20 extra minutes for the autoclave to cool and return to ambient pressure.
9. Fill out autoclave log.
  - a. This is an EHS requirement.
  - b. Please write clearly and make sure your name is legible.
10. After sterilization, make sure the white hand is pointing to zero.
  - a. If the white hand is not pointing to zero, **DO NOT OPEN THE AUTOCLAVE.** Come back later.
  - b. The red hand will show the maximum pressure achieved during the sterilization cycle. Make sure it is the pressure you selected. Reset to zero after use.
11. *Optional: If you want to dry your items, open the door, turn the settings dial to Exh+Dry (pointing left), reclose the door and set time for 20-40 minutes.*
12. If the white hand is at zero, open the door to remove your items.
  - a. Allow 20 minutes for the autoclave to cool and depressurize.

- b. There are autoclave gloves above the autoclave. Please remember to return them if you use them!
  - c. Please be considerate of other users and remove your items promptly!
13. Turn dial to 0 (pointing up) and turn autoclave off using the green power button.

**Notes:**

1. Recommendations for sterilization of liquids.
  - a. <500ml : 30 minutes
  - b. 500ml-1L : 40 minutes
  - c. 2-4L : 55 minutes
  - d. >4L : 60 minutes
2. Sterilization time depends on following key variables:
  - a. Volume - The greater the volume of liquid, the longer it takes for the product to reach temperature. 10x 200ml heats faster than 1x 2L.
  - b. Viscosity - Thicker, more viscous solutions absorb heat more slowly than products such as water.
  - c. Material of the container - Different containers with the same volume of liquid will reach temperature at different rates. Metal containers conduct heat more rapidly than glass or PP.
  - d. Load volume - The greater the physical size of the load, the longer it will take to reach exposure temperature. 1x 1L heats faster than 1x 10L.
  - e. Load density - If the bottles are jammed together, it essentially becomes one large mass. So 10x 200ml, if packed tightly together, will become 1x 2L and you will need to select a 55min liquid cycle. If the bottles are separated enough to allow steam to envelope each bottle in the load, each 200ml bottle will come up at approximately the same time as long as the variables mentioned in 1-3 are consistent and a 30min liquid cycle will suffice.
  - f. Location in the autoclave - Bottles that are positioned nearest the heated jacket of the autoclave chamber will tend to reach temperature faster than those in the center of the load.
  - g. Since all of the variables mentioned above can affect the come-up time of the product, when processing mixed liquid loads, the total exposure time selected for the load should be based on the largest volume of liquid in a bottle, placed in the most-difficult-to-sterilize location in the chamber.



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ed.

or gasket, it is important to  
Do not over-tighten the bolt as  
rilling temperature/pressure,  
ealed. If not, tighten the door  
spletely sealed.

erilization temperature  
ording to all international  
peratures to raise 4°F (2°C)

able

STERILIZATION TIME (not include drying)			Models
Hot Start	Cold Start	Hot Start	
11min	27min	13min	1732
	20min	14min	2540
	32min	25min	3148
			3859
			1878
11min	27min	13min	1732
	27min	17min	2540
	27min	18min	2540
	30min	25min	3148
	30min	25min	3859
11min	30min	15min	All models
11min	30min	15min	All models

+ 20 min for  
the washer to  
go down (1) per 0.

see the M (Standard Manual) & MK  
start and cold starts.  
times for your model machines.  
within 1 hour of a previous cycle ending.

based on the unit being regulated the  
Technical Label attached to the autoclave.

10

Pressure monitor  
Power switch

Time

Temperature

Settings Dial

**AUTOCLAVE**  
You must receive training before using this equipment.  
FOR TRAINING CONTACT:  
ROSE FALCO (JGL)  
HANNAH APPIAR-NADSON (JGL)  
★ Track your usage on shared Google Doc. ★  
Please contact Rose Falco (r.falco@northeastern.edu) with any  
additional questions and for access to Google Doc.