

ANIMAL BIOSCIENCES DEPARTMENT
Autoclave Room 105
Standard Operation Procedure

CAUTION

GET TRAINING IF YOU HAVE NOT USED THIS AUTOCLAVE BEFORE!

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HINTS TO AVOID COSTLY REPAIRS & DOWN TIME:

- The machine is purposely set so that a minimum of buttons need to be pushed to start it. If you are turning knobs - DON'T. Random twiddling does not improve performance.
- DO NOT set the dry time to anything greater than 20 min. That is more than sufficient. More time is resulting in extreme wear (and repairs) on the S5 solenoid.
- There are 2 power switches - OCCASIONALLY they are turned off when repairs are being made or the building power is off - so if you arrive to no display, check the power is on first.
- ALWAYS put a tray under your load - and ALWAYS clean up any spills!
- If there is a problem (malfunction, water leaking, whatever) seek IMMEDIATE technical assistance - don't just walk away - PLEASE!
- The autoclave is under service contract. The manual is beside the autoclave, plus information on how to reach the service provider.

CONTINUE TO OPERATION & TROUBLE SHOOTING HINTS

OPERATION OF THE AUTOCLAVE

BEFORE STARTING THE AUTOCLAVE LOAD:

- **Is the door properly secured?** - door is double hinged (apply pressure evenly to BOTH sides of door wheel when closing chamber door **CLOCKWISE**)
- all the door “pins” have to lock up inside the outer part of the chamber door
- **4 cycles available** - at Sterilize Temp 121C, cycles 1-3 are preset
 - cycle 1 - Liquid - Sterilize Time 25 min
 - cycle 2 - Gravity - Sterilize Time 30 min, Dry Time 20 min
 - cycle 3 - Gravity - (garbage) Sterilize Time 2 hr, Dry Time 20 min
 - cycle 4 - this cycle can be changed – follow directions below

IMPORTANT for cycle 4: change ONLY the type of cycle (LIQUID, OR GRAVITY and the TIME - NOTHING ELSE)

- press cycle number “**once**” - will give information on that cycle
- press cycle number “**twice**” within 5 sec - will start cycle
- **Check that steam is not escaping around the door** - it makes quite a loud noise so it should be obvious if there is a problem
- “**reset**” will **abort cycle**
- **at end of cycle** - open door **SLOWLY** about 2.5 cm, to allow steam to escape - autoclave begins 10 min countdown - **MUST wait 10 minutes** - even if door will open - need to get liquids below the boiling point of 100C by 5C - to prevent liquids exploding.
- **IMPORTANT** - let printer finish printing message - **THEN** hit reset (if too early hitting “reset” printer will just keep trying to print warning message)
- “**auto utility**” days in work week **5**, shutdown **5 pm**, restart **8:30 am** (if “auto utility on” - press any numbered button to activate the unit)
- during a scheduled steam shut down or campus closure (ie Christmas) - adjust power switch to “standby” - shuts off all steam and water
- **SIGN the LOG BOOK** - near the autoclave

BEFORE LEAVING THE AUTOCLAVE - YOUR LOAD IS COMPLETE

- **Remove autoclaved material using gloves** - return gloves to room 105

TEMPERATURE/STEAM SETTINGS:

3 Valves above the chamber door – HI/Lo, Steam and Water

DO NOT adjust the **HI-LO** steam setting. Correct position - **turns clockwise** - doesn't

need to be completely open **Steam (red) and Water (blue)** – Correct position - both should be all the way **counter clockwise** to the stop point

The AMSCO service technician has set the autoclave for LO steam (121C/250F)
The steam pressure available in the University lines is not sufficient to operate this autoclave at 132C/270F.

AUTOCLAVING GARBAGE:

- **Please autoclave garbage at end of day - after 4:30 pm**
- Use cycle 3 (gravity - sterilize time 120 min (2hr))
- Since our temperature is 121C, longer exposure times required for a complete kill.
- If possible - combine garbage loads with other users (do not stack bags).
- Always put a SHALLOW drip tray under the garbage bag.
- Do not seal the bags - steam **MUST** be able to get into and out of the bag.
- Remove completed loads promptly
- Seal bags for disposal.
- Autoclaved garbage smells badly - please consider the people who work in this lab.
- **Autoclaving Sharps containers** – room 105 has a gravity displacement unit – therefore the lid should be open and the container on its side – put the lid on after sterilization is complete.

AUTOCLAVE LOADING HINTS:

- Center load in autoclave (front to back and side to side) - Away from walls
- This is a STEAM STERILIZER - Sealed containers will NOT be sterilized
- Steam **MUST** be able to get into and out of each item in load
- Use shallow trays - higher sides on the trays mean longer exposure times required to get steam into load.
- NOTE - for loads that contain **both dry & liquid materials**, use the liquid cycle.
- **Liquids**
 - DO NOT CAP containers tightly - pressure build up may cause glass may break and liquid also will not sterilize properly.
 - vessel should be twice as large as volume to be autoclaved.
 - DO NOT MOVE hot liquids - bumping may cause bottles to break explosively.
- Choose appropriate cycle/sterilize time for your load - keep in mind a longer exposure time is better than too short - refer to the binder for more information.

TROUBLE SHOOTING HINTS

Check strainer not plugged (ie if pressure not decreasing very fast, error “low temp”, chamber full of water - this may be the problem)

- located front of chamber, center bottom

- threads in and out - NOTE - it will be HOT - wear gloves
- 2 slots on each side - need to put something solid across slots (screwdriver) to get it started

Control panel selections include - sterilize, exhaust, complete, door unlocked

If complete or door unlocked does not appear - consider the following:

- if only the lamps are burned out - the printer should cycle (make a whirling sound) when the exhaust cycle is complete (ie load completed) and the door opened - if no sound as the door is opened then the **door sensor** is stuck

- another way to check the door sensor - with the door open - where the radial arms push up and lock - look at the top of the chamber where the door would fit - will see a plate - push up on this plate with a screwdriver and release - should hear the printer cycle - if not then a door problem

- if the **door sensor is not working properly - SAFETY CONCERN** - reason - someone could accidently push cycle (ie gravity or liquid) - easily done as drying oven sits close and walkway not wide at that point - even with the door open, steam would be introduced into the chamber - ie 30 lb of steam rushing into the chamber - it would be extremely difficult to get to the reset switch to stop it without getting scalded.

Re cleaning the chamber

- do not attempt to clean a hot chamber – caution burn hazard

Door won't open

If door won't open **counter clockwise** - turn door handle to right a partial turn and then try counter clockwise again

Demand Print

By pressing "Print" button during a cycle, unit will print: D - time of day - temp and pressure - **If more problems develop** push the rocker button forward where it says "Print" to get more detailed information.