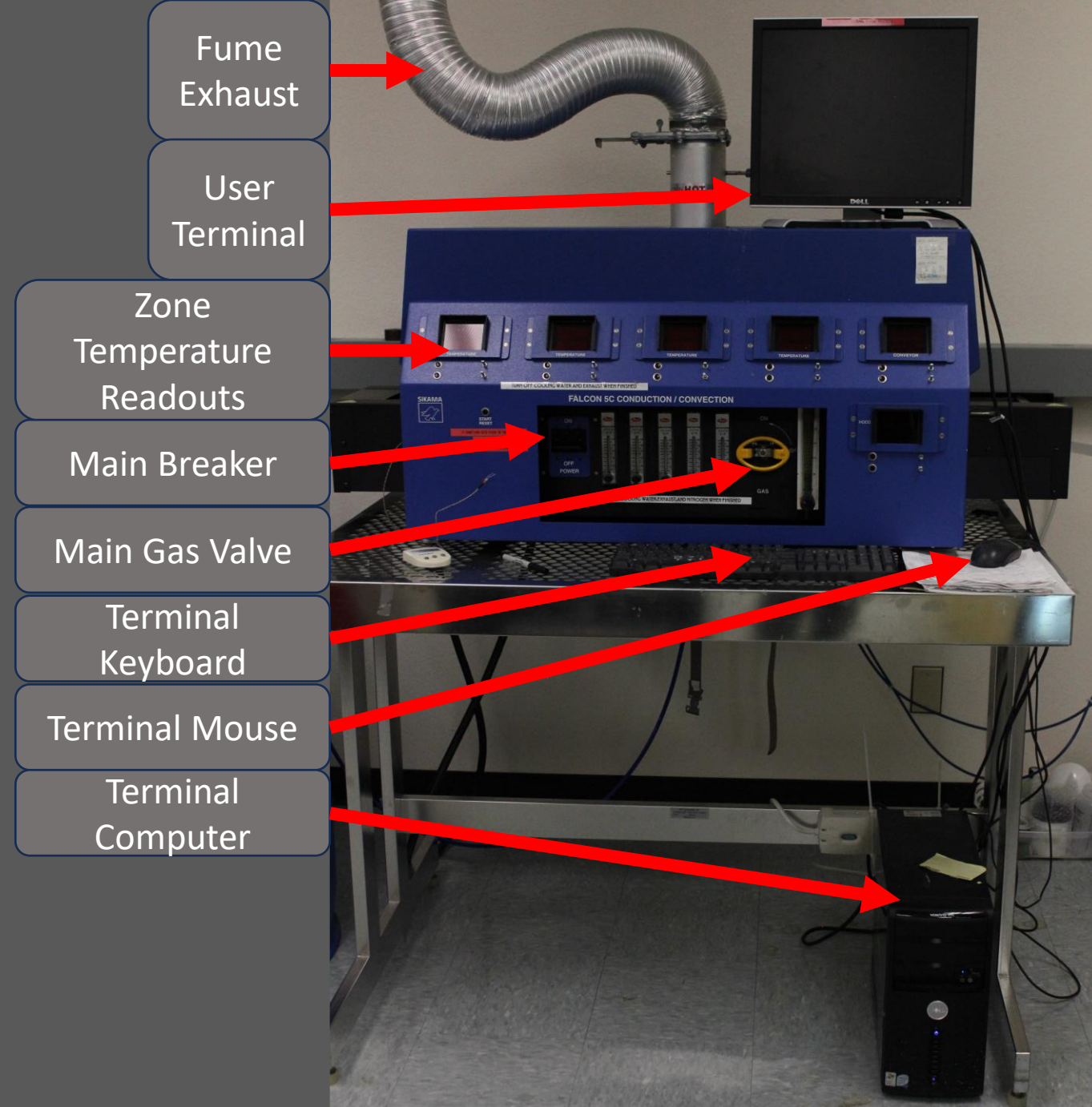


HIDEC Sikama Reflow Oven SOP

By Michael Lynn

Getting Started : The Oven Itself

- When approaching the oven look at the main breaker, terminal computer and gas valve. Ensure the main breaker and gas valve are off, and the main terminal is on.
- Wiggle the mouse or type on the keyboard to wake up the monitor.



Getting Started : The Paste Fridge

- The solder paste fridge is where all epoxies, solder pastes and temperature sensitive materials for use with the Sikama are stored.
- You should be able to find/store what you need in here. If you have trouble finding the right material, speak with HiDEC staff.

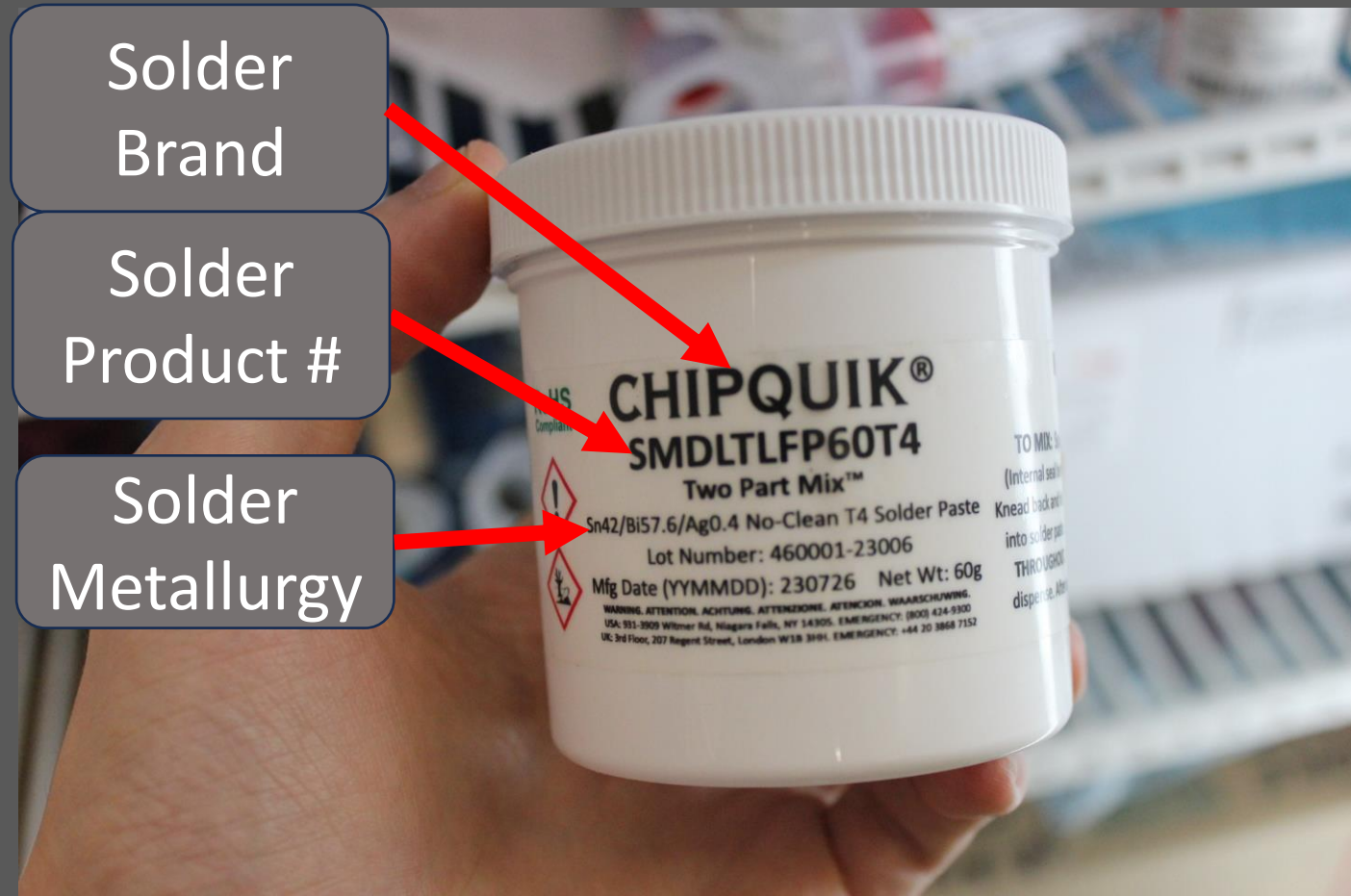
Paste Fridge

Solder Paste Rack



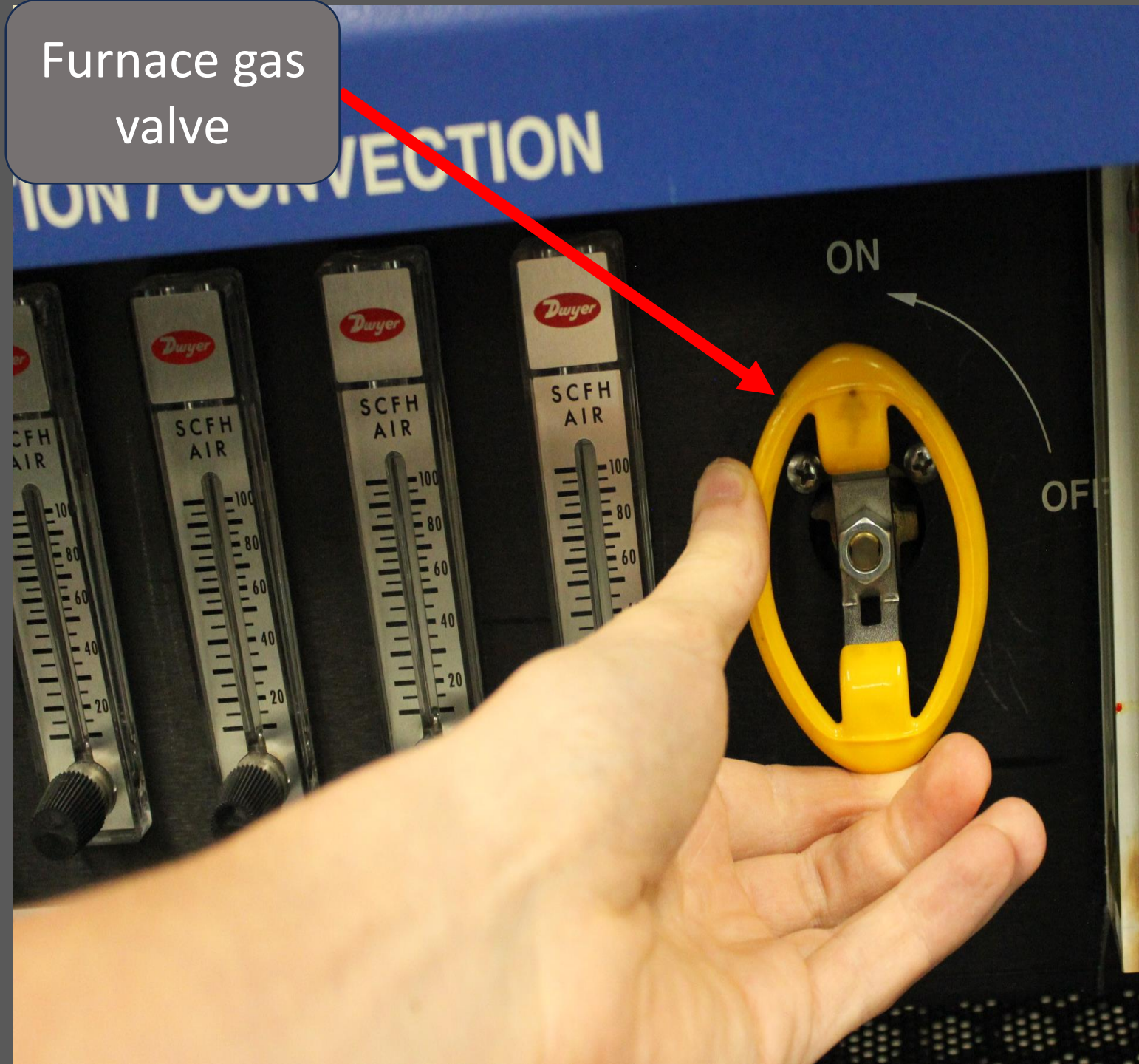
Getting Started : The Paste Fridge

- A typical jar of surface mount solder looks like that shown here.
- It should have a manufacturer label on it which contains information about composition.
- Looking up the name brand and
- Product number should let you find a datasheet on the material online or in a appropriate reference book.
- Select and apply your paste, and mount your parts.



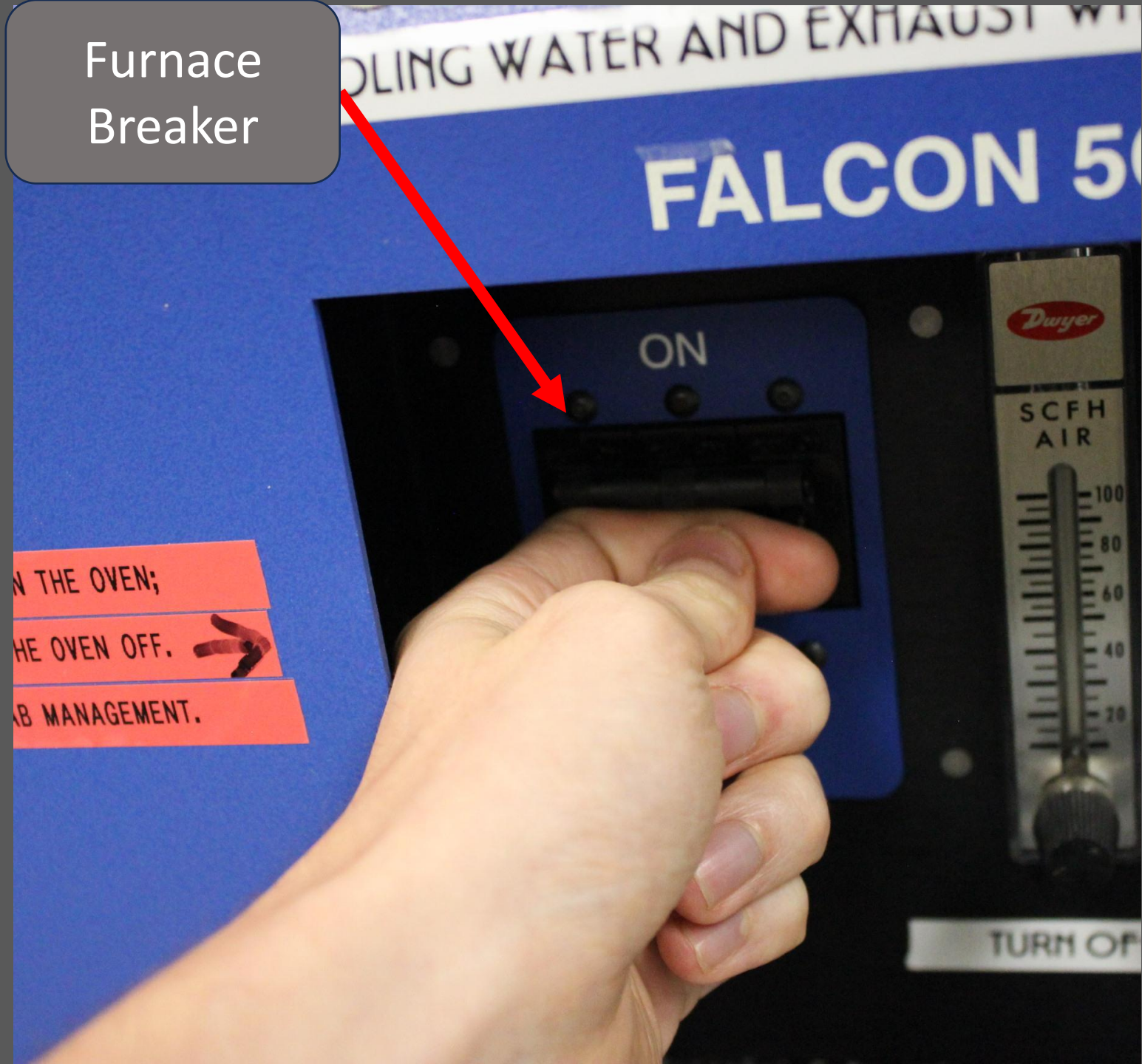
Getting Started : Oven Startup

- Turn the big yellow furnace gas valve to the on position for nitrogen flow over your parts as you reflow.
- This only opens the furnace internal gas baffles, it does not let nitrogen into the furnace.



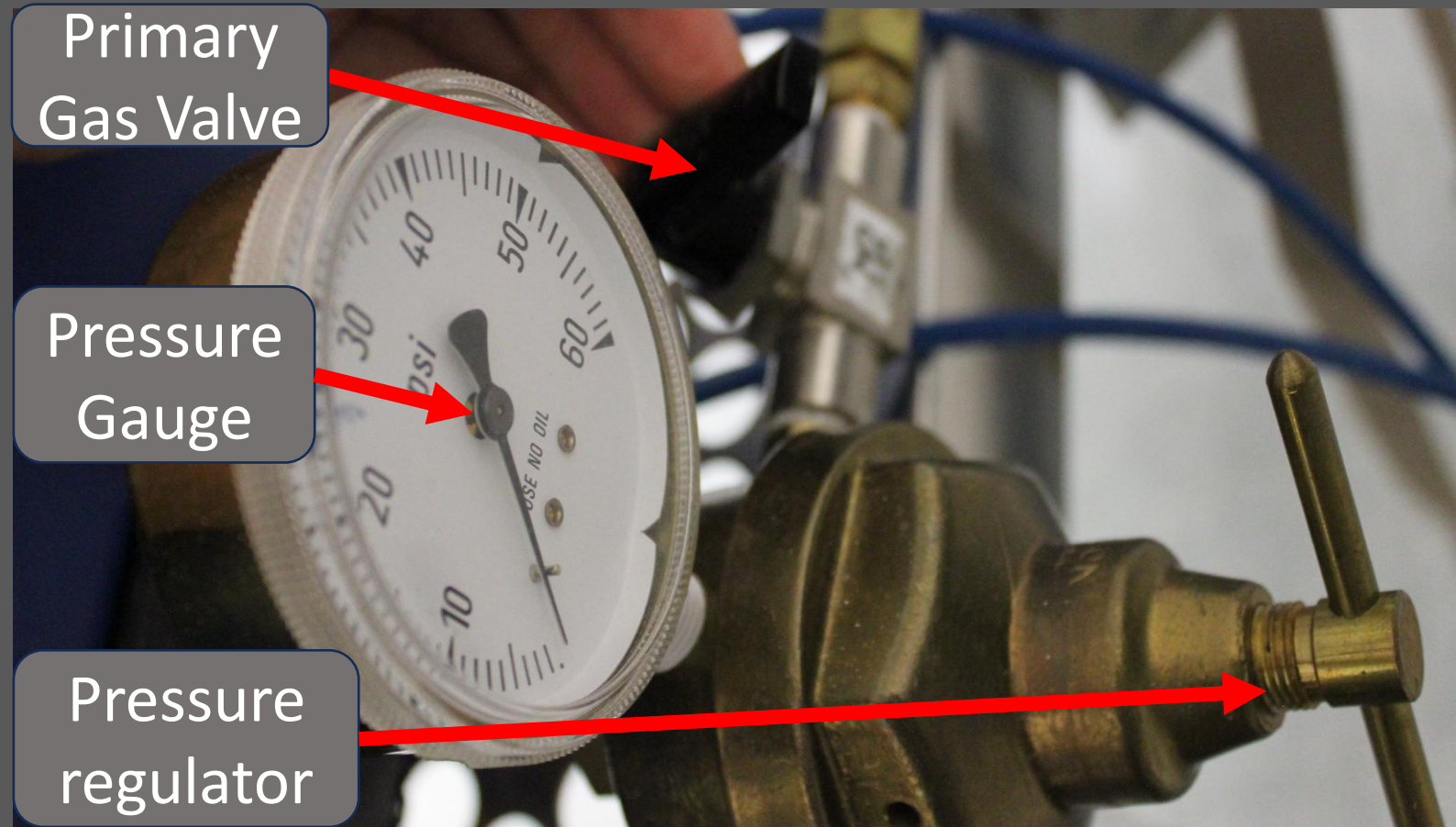
Getting Started : Oven Startup

- Turn the furnace on by switching the breaker up, into the on position gently.
- It will require a bit of force, but should *click* into place once it crosses the mid point of its travel.



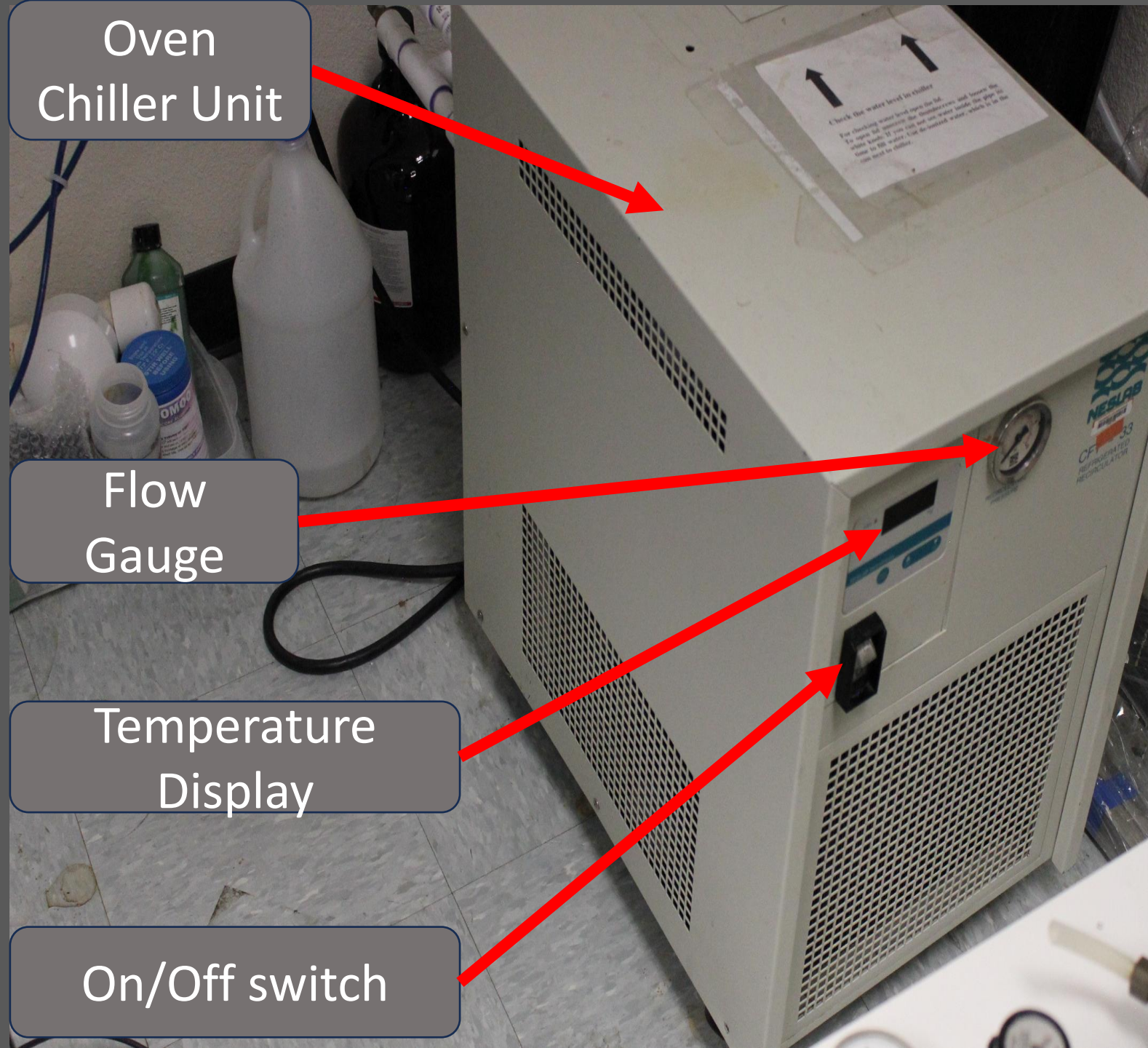
Getting Started : Oven Startup

- **Do not touch the pressure regulator!**
- The black primary gas valve should be turned gently until it is inline with the gas line.
- The pressure gauge should read ~20-28 PSI. this indicates that nitrogen gas is flowing.



Getting Started : Oven Startup

- The chiller unit is on the floor to the right of the Sikama oven.
- Before doing anything with the oven, the chiller must be turned on to keep the oven temperatures under tight control.



Oven
Chiller Unit

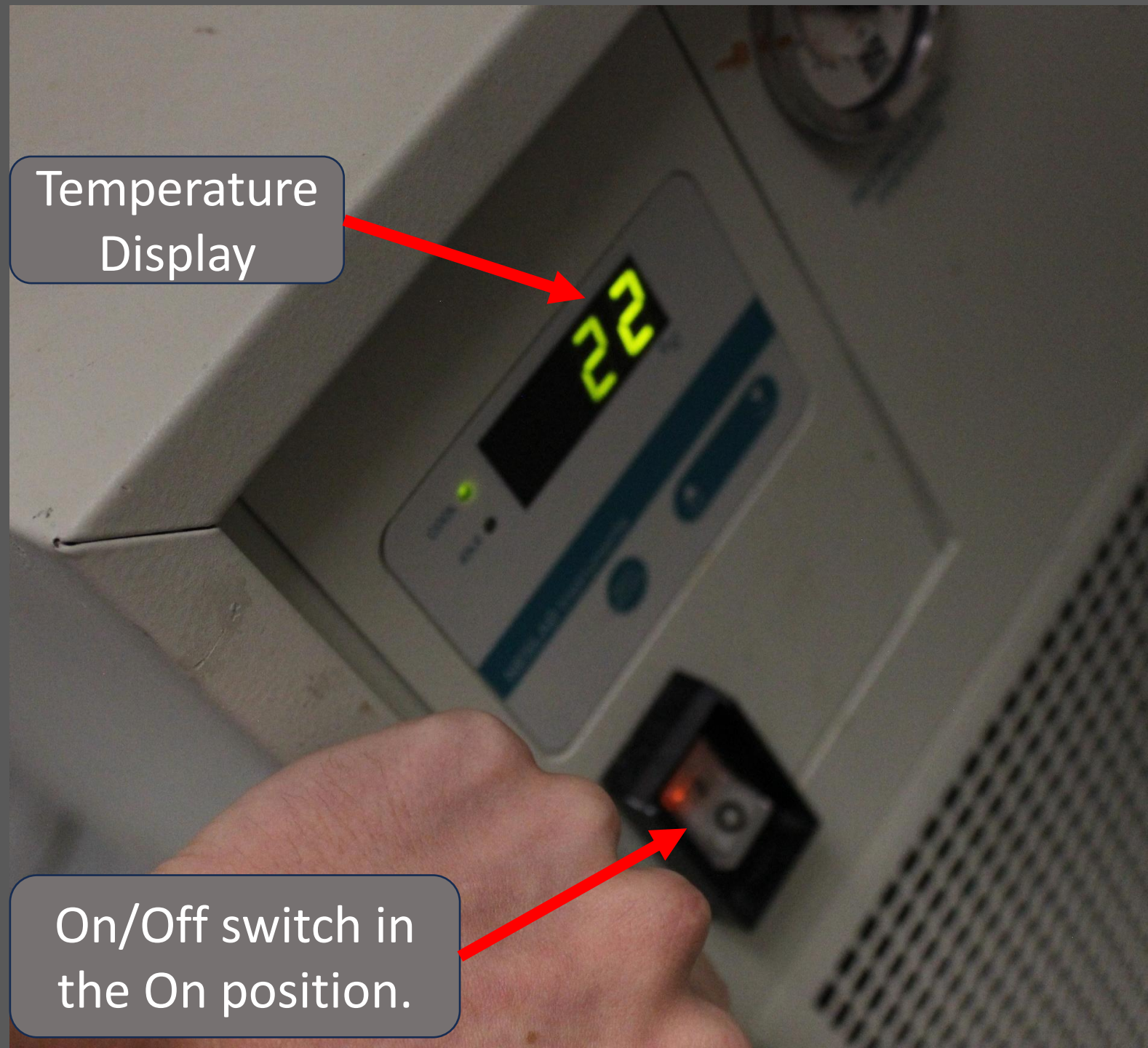
Flow
Gauge

Temperature
Display

On/Off switch

Getting Started : Oven Startup

- Turn the chiller on. The temperature display should show a green digital number. This is the water temperature.
- The furnace requires water to keep its temperatures under control.

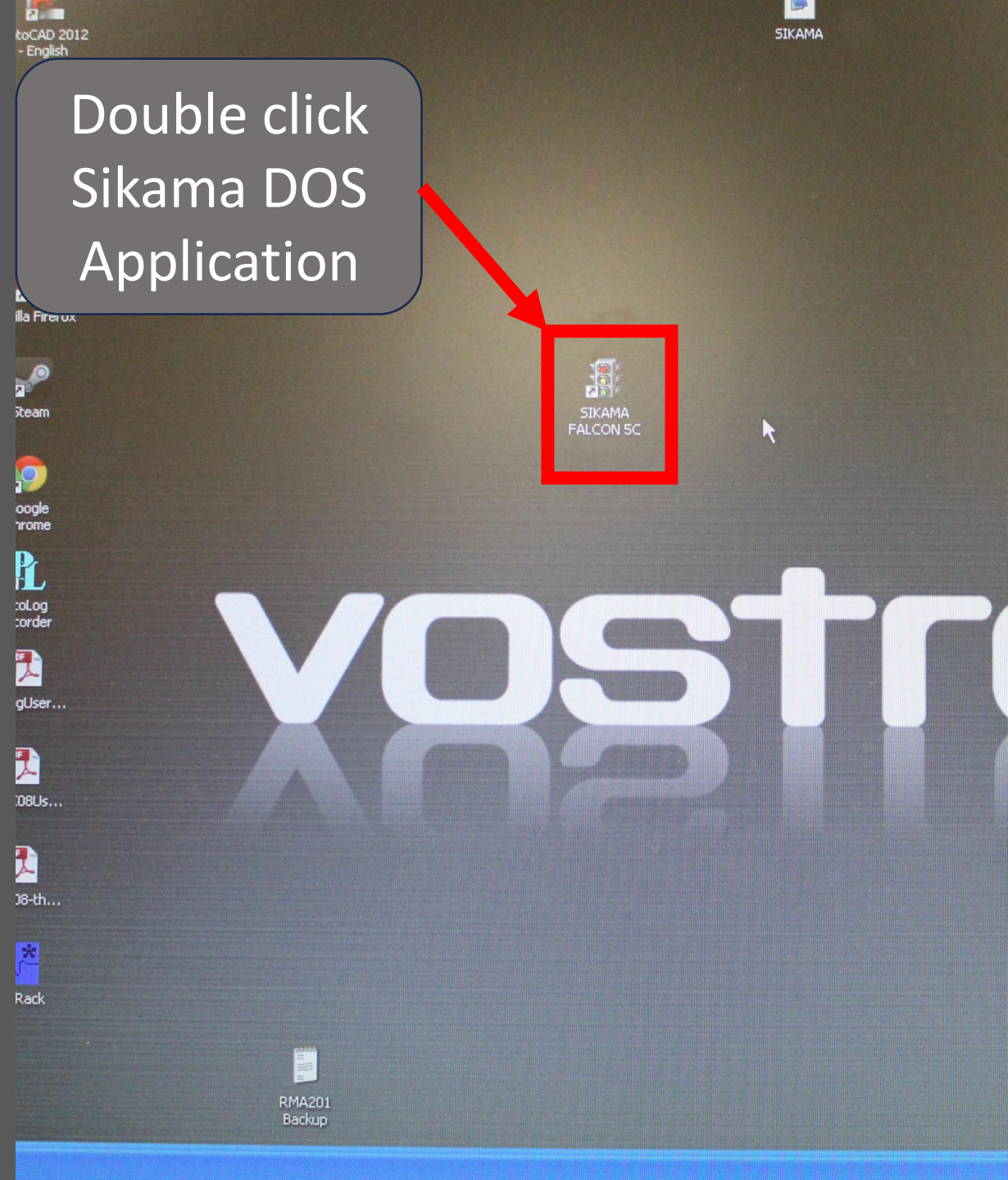


Temperature
Display

On/Off switch in
the On position.

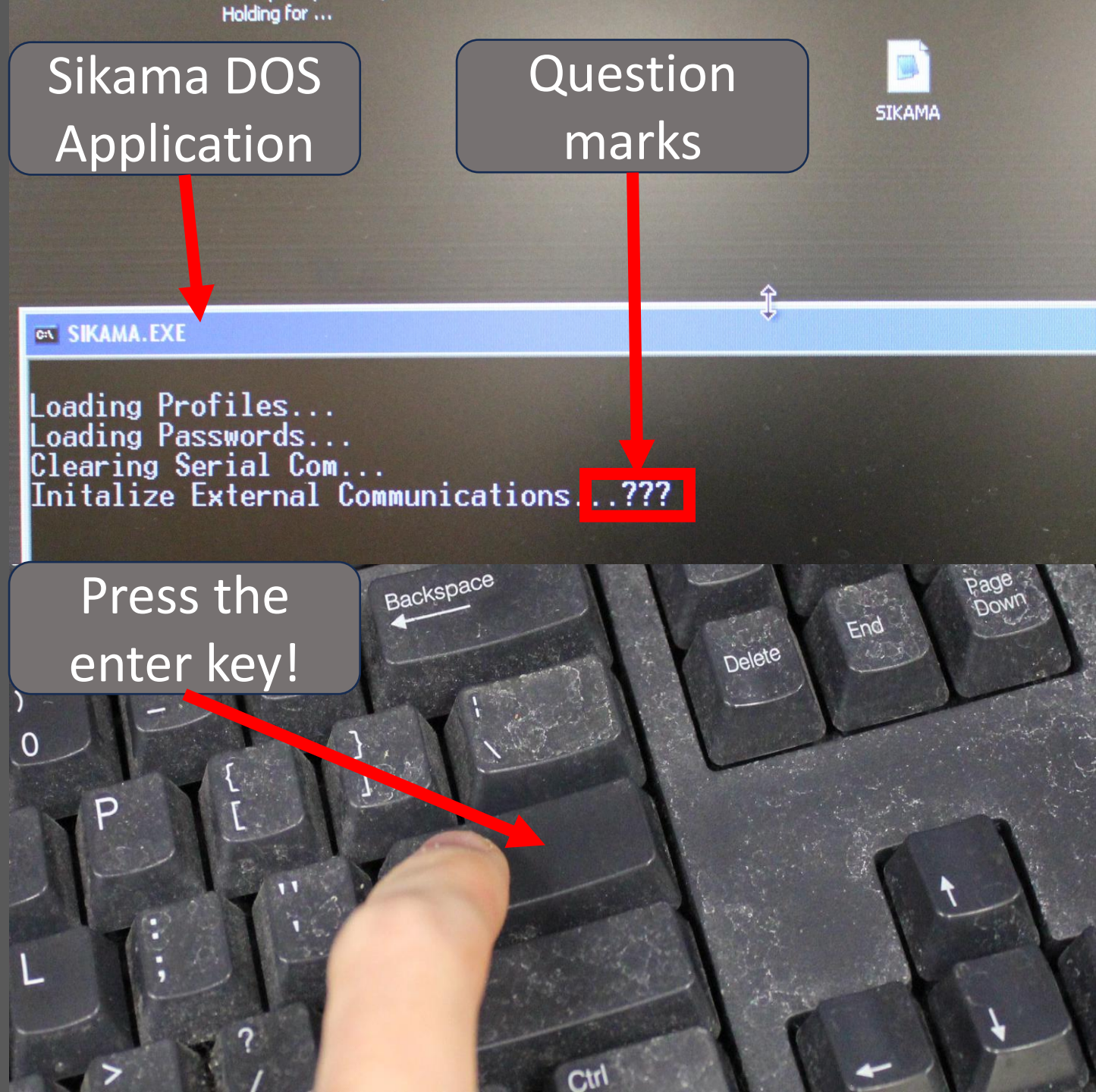
Getting Started : Computer Setup

- Once the furnace has nitrogen and water flowing and its power breaker is turned on, move to the keyboard and mouse in front of the oven.
- Wake up the computer, login under HiDEC, Password : h1d3c and look for the Sikama Falcon 5C application on the desktop. Double click it to open.



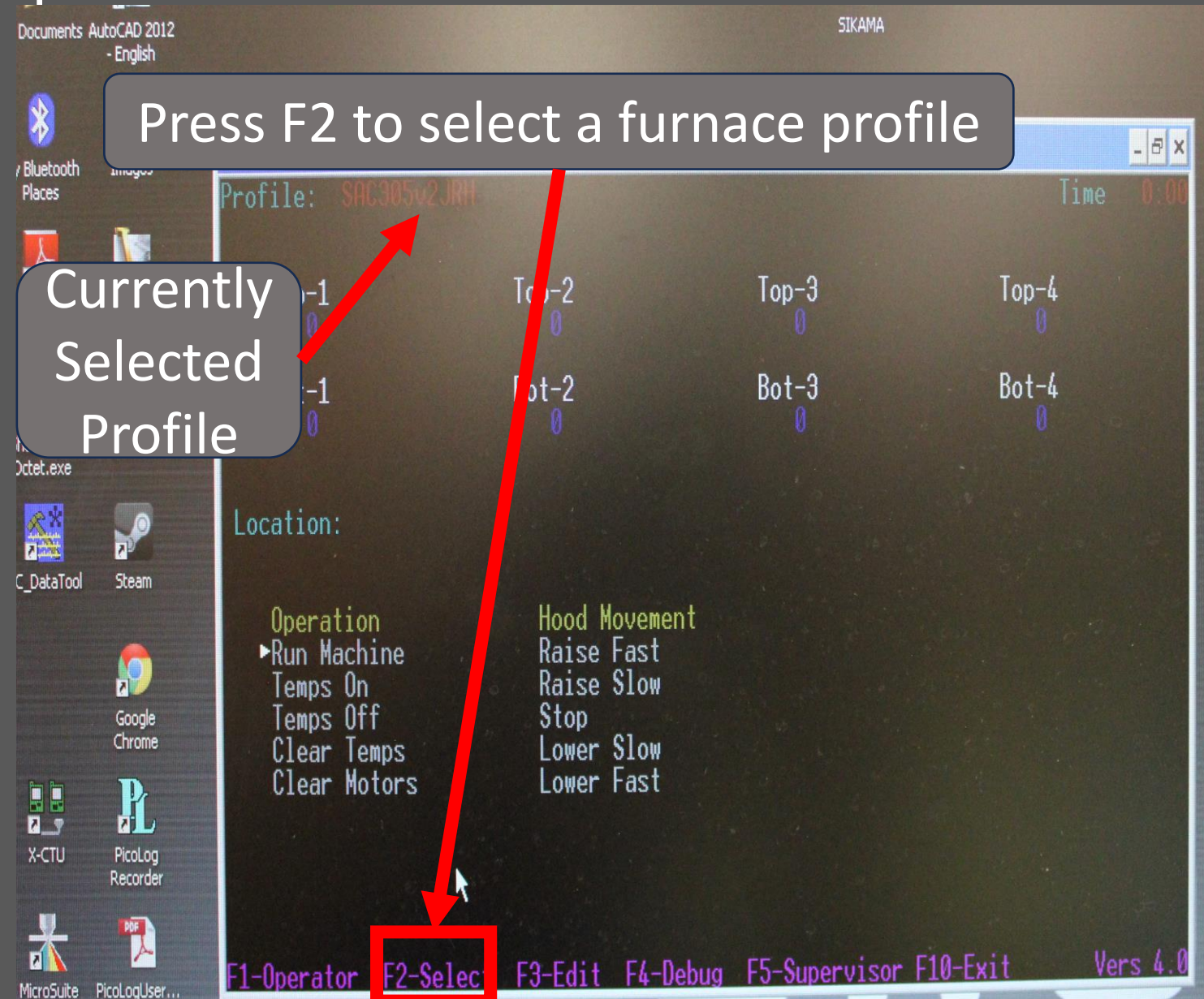
Getting Started : Computer Setup

- Once the sikama program opens, question marks will begin to appear in the program window.
- Press the 'Enter' key when you see the question marks.



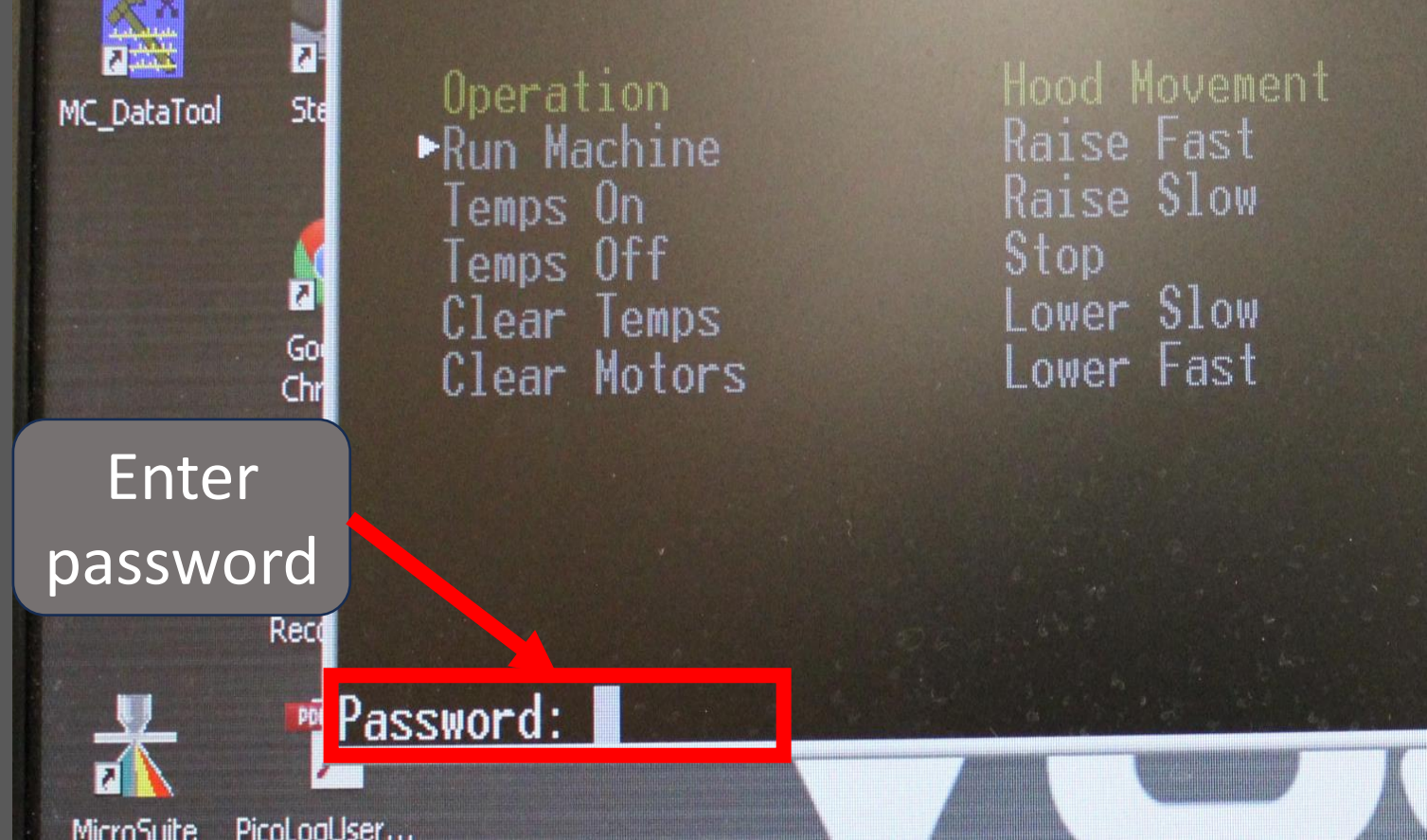
Getting Started : Computer Setup

- Once you click enter, you will be dropped into the operations screen. Which displays temperatures of the top and bottom of each oven zone and has the primary controls for turning on or off the heaters, and motors and other oven parts.



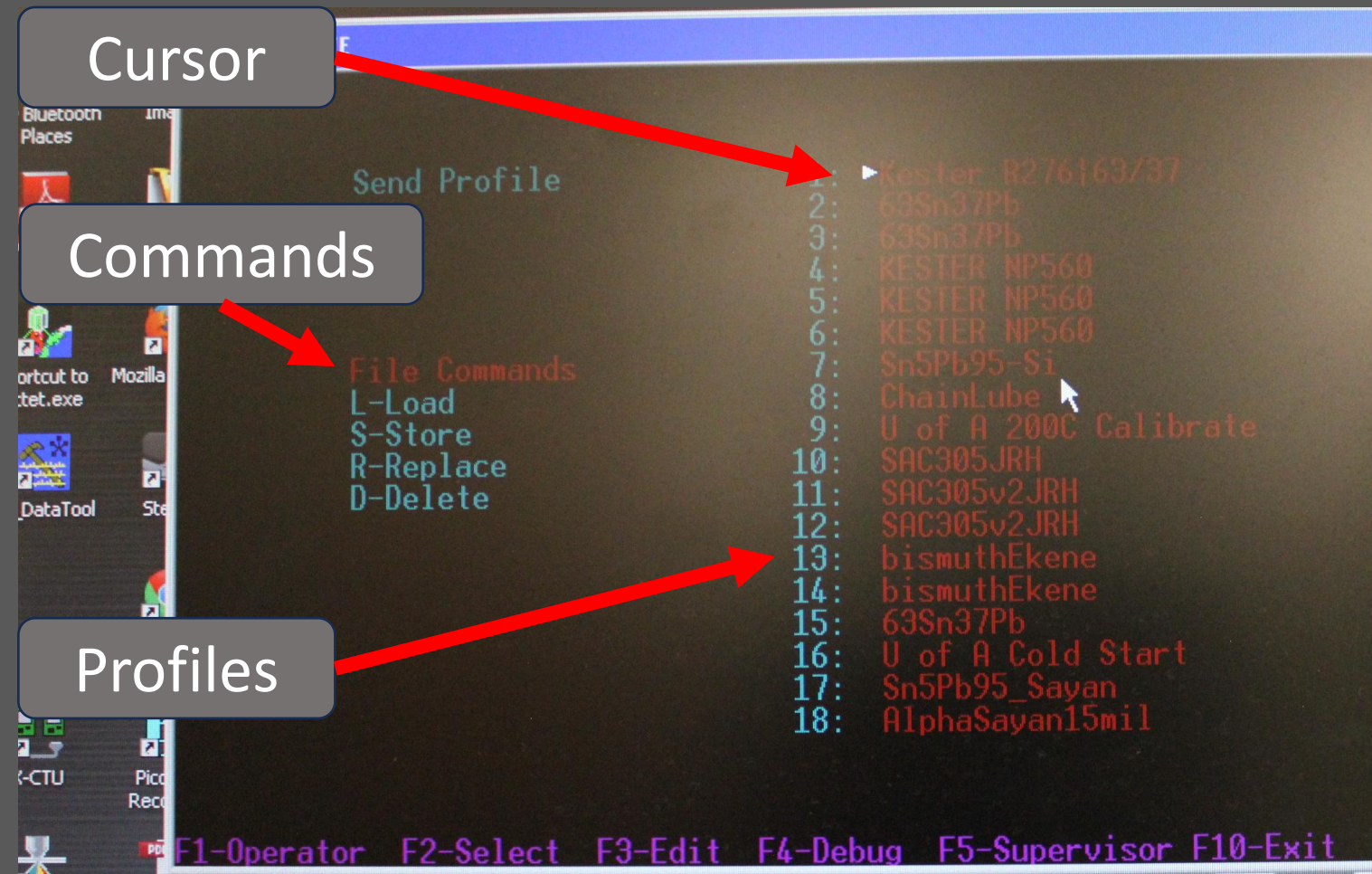
Getting Started : Computer Setup

- In the operations screen, press F2 on the keyboard to go to profile select.
- The password is 1234



Getting Started : Profile Selection

- Entering the password correctly and pressing enter should put you in the profile selection screen.
- Select the profile you want to use from the list on the right. By moving the cursor with the arrow keys and pressing L on the keyboard to load the profile



Getting Started : Profile Selection

- Pressing F3 on the selected profile, will bring you to the profile editing menu.

TALK TO HIDEK STAFF BEFORE EDITING ANY REDCIPE!

Profile you are editing

Recipe Editing Screen

Zone	Deg C	+Alarm	-Alarm
Top-1	150	10	10
Bot-1	150	10	10
Top-2	200	10	10
Bot-2	200	10	10
Top-3	230	10	10
Bot-3	230	10	10
Top-4	255	10	10
Bot-4	255	10	10

Operation

Operation	Dwell Time
Send Profile	Minutes 0
Read Profile	Seconds 0

Sweeper

Sweeper	Speed	Location	Torque Limit
Bar	5	2500	20

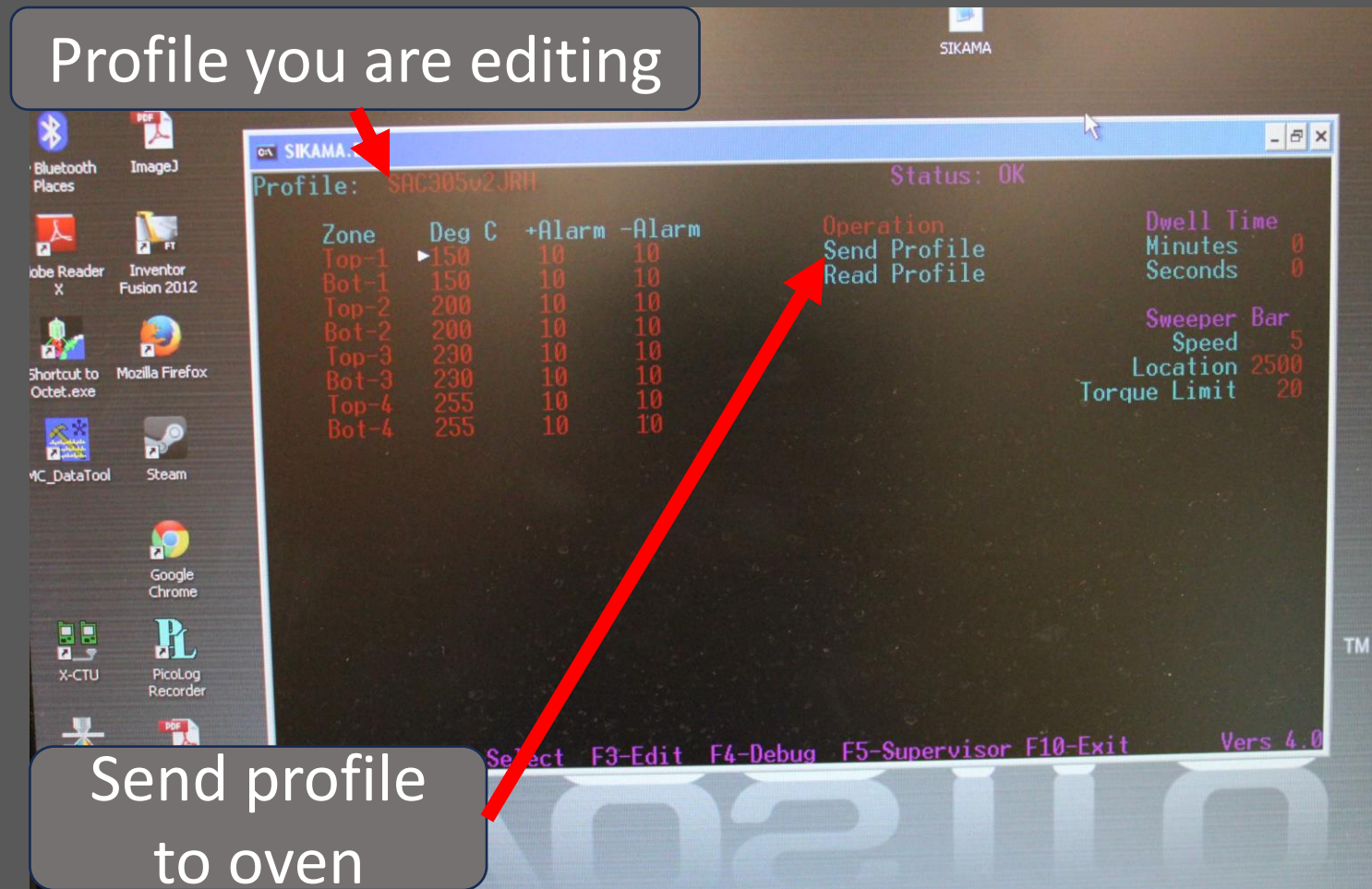
Zone Temperatures

Belt speed

Time spent in each zone

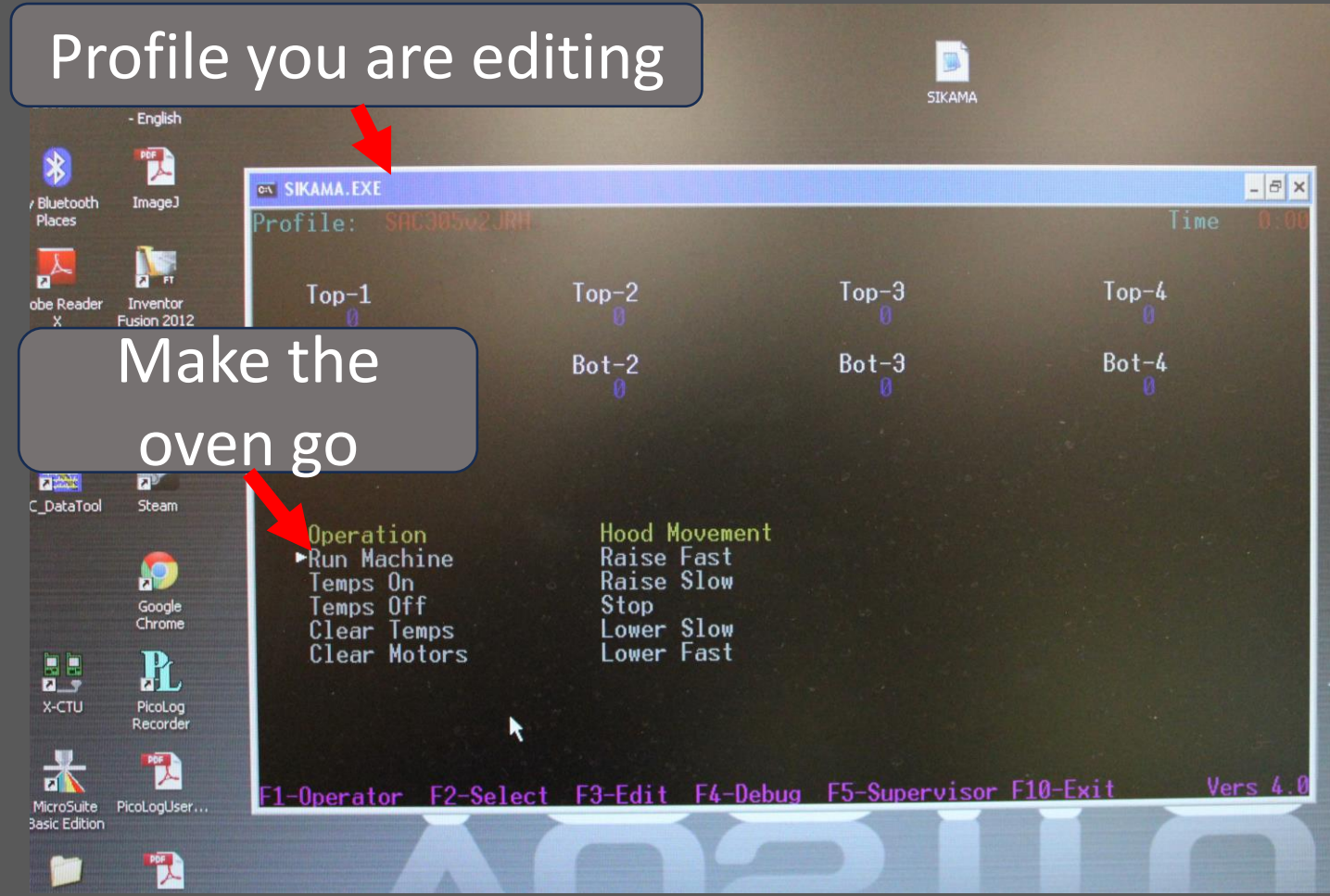
Getting Started : Profile Selection

- From the profile editing menu or from the operations screen, move your cursor using the arrow keys to the “send profile” option when you are ready to start the furnace.
- Hit enter on the keyboard to send the profile.



Getting Started : Profile Selection

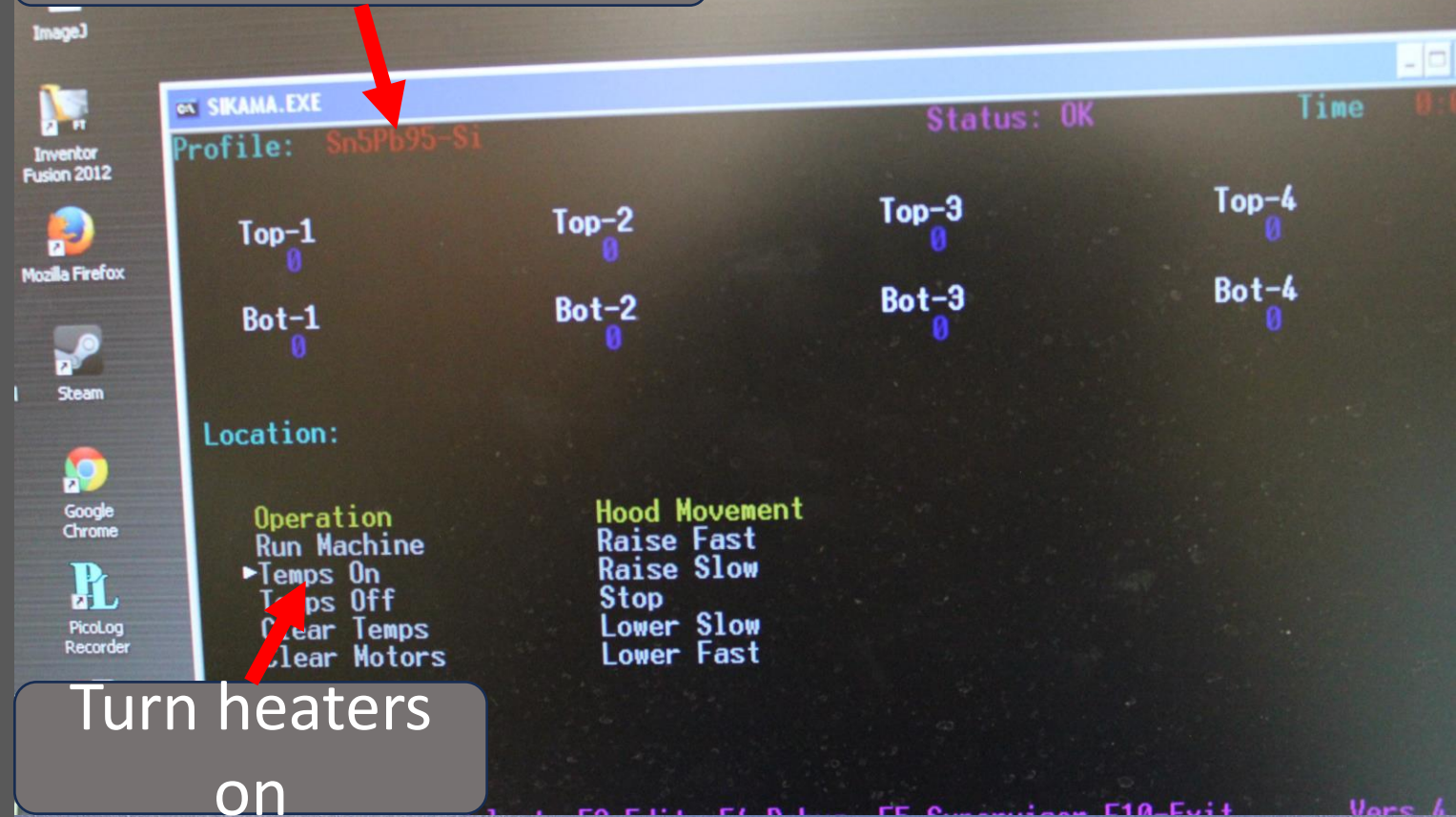
- Hit F2 on the keyboard to return to the operations screen.
- Once in the operations screen with a profile loaded and sent, use the arrow keys to select “Run Machine”. The red indicators on the oven will show flashing dots.



Getting Started : Oven Start

- Then select “Temps On” to activate the heating zones.
- When you do this, the red displays on the furnace should switch to flashing the temperatures set in the profile. The top display of each zone is the bottom temperature. Vice-versa.

Profile you are editing



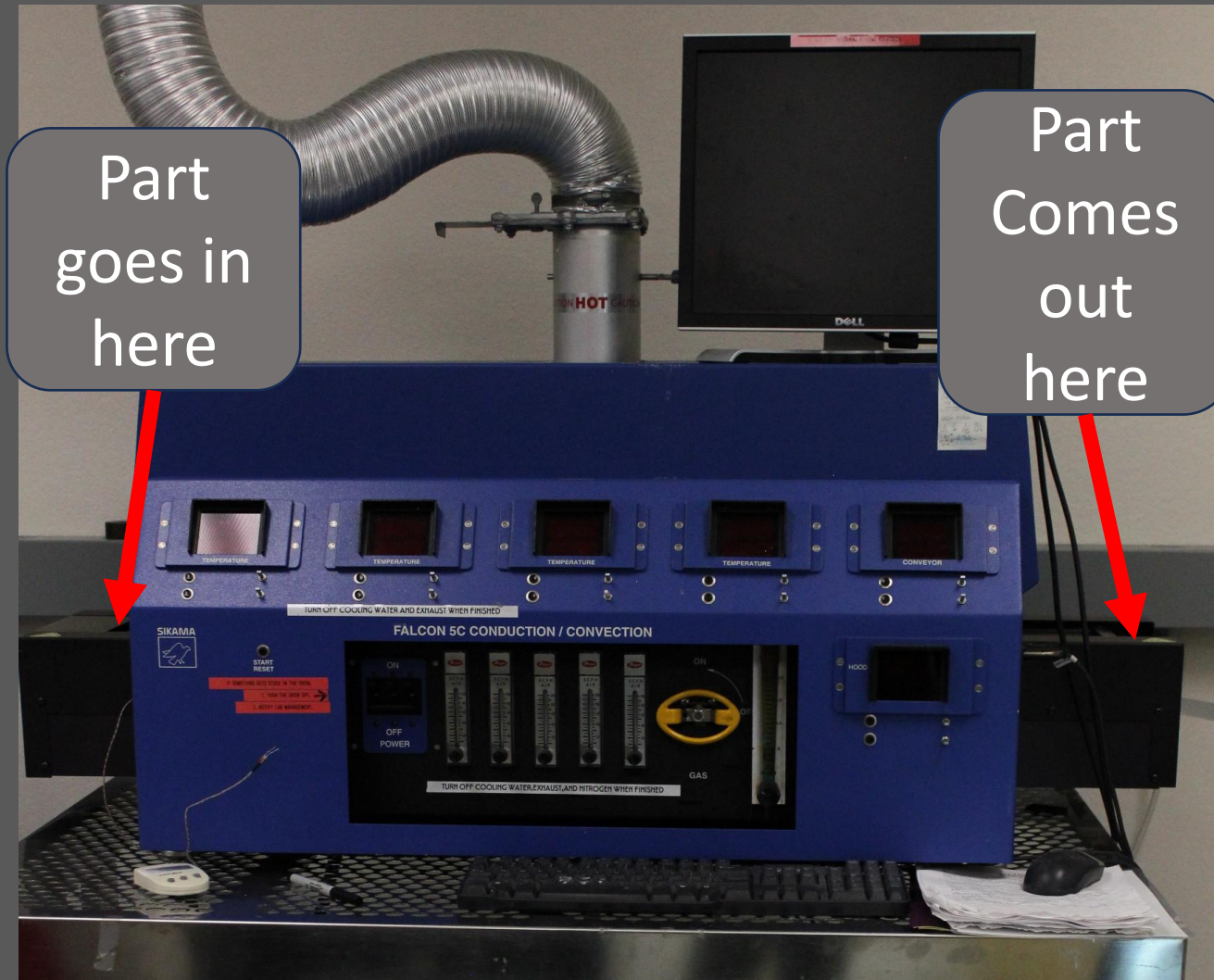
Turn heaters on



After you turn “Temps On”

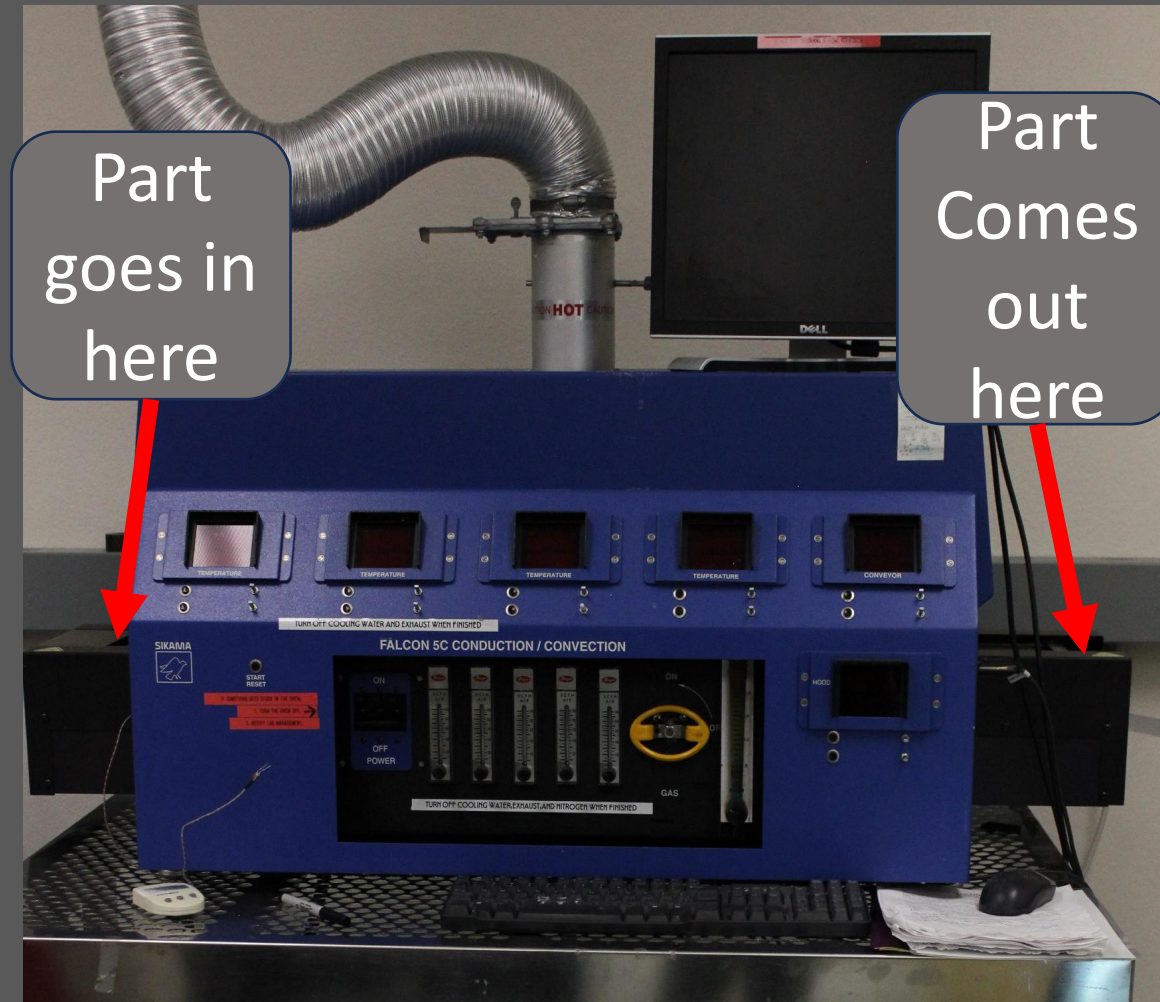
Getting Started : Preparing Your Parts

- While the furnace is heating up or before you started working with the furnace you should prepare your solder through stenciling, and your parts in their respective preforms / soldering jigs.
- When the oven is at temperature, carefully place your jigged/preformed/stencil pasted assembly for reflow in the left side of the oven in the center of the belt.



Getting Started : Preparing Your Parts

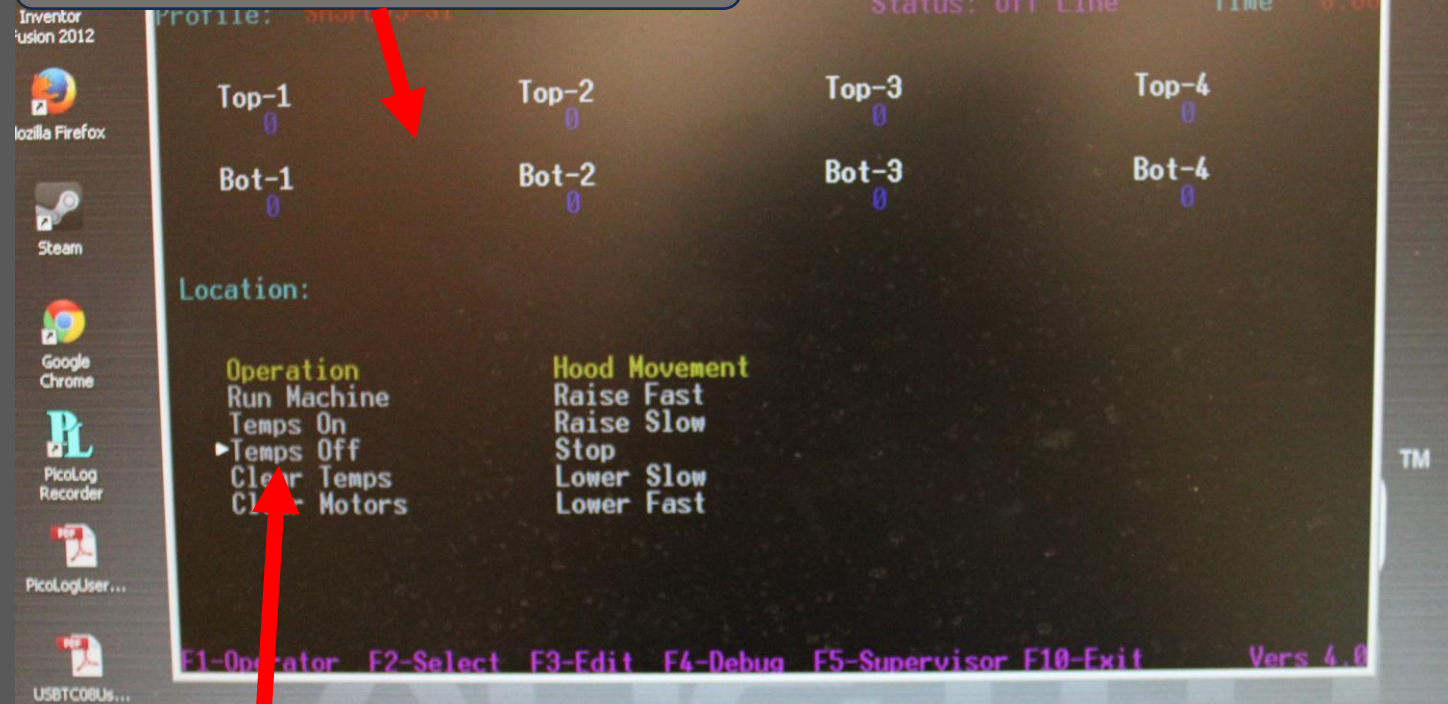
- Your part should transit slowly through each zone of the oven over the next several minutes at the specific speed, and for the specific dwell times.
- A speed of 20 requires 20 seconds to transition from zone to zone.
- A speed of 40 requires 10 seconds.
- A dwell time of 1 minute with a speed of 40 will allow 50 seconds in each zone, with 10 second transitions



Finishing up: Oven shutdown

- To shut down when you are finished, return to the operation screen.
- Select “Temps Off”, and press enter on the keyboard.
- You will then need to wait until the zones cool to ~100 degrees C to select “Clear Temps”. You may then proceed with the rest of the shutdown process.

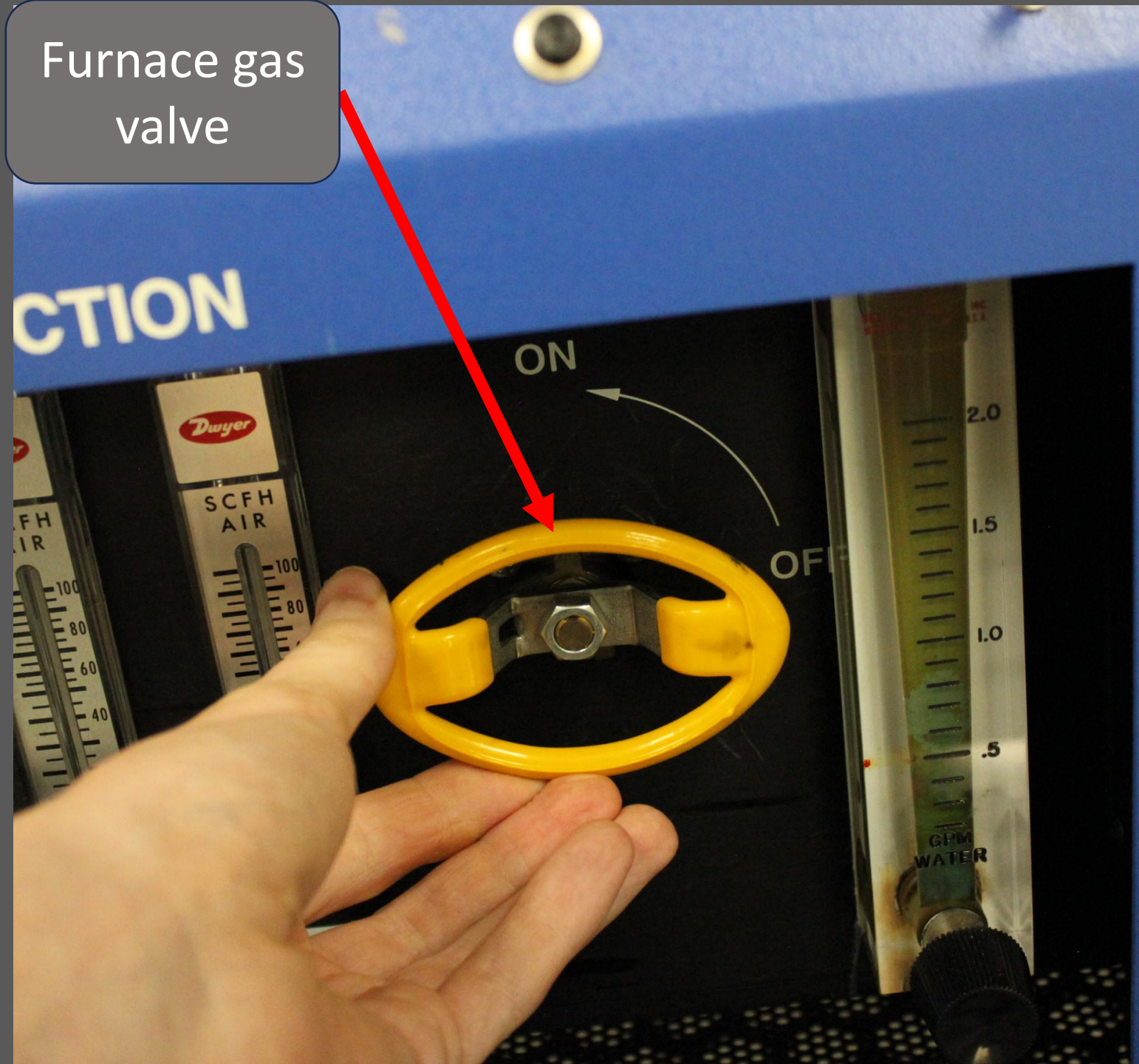
Profile you are editing



Turn heaters
off

Finishing up: Oven shutdown

- When you are finished using the oven, turn off the big yellow oven gas valve.



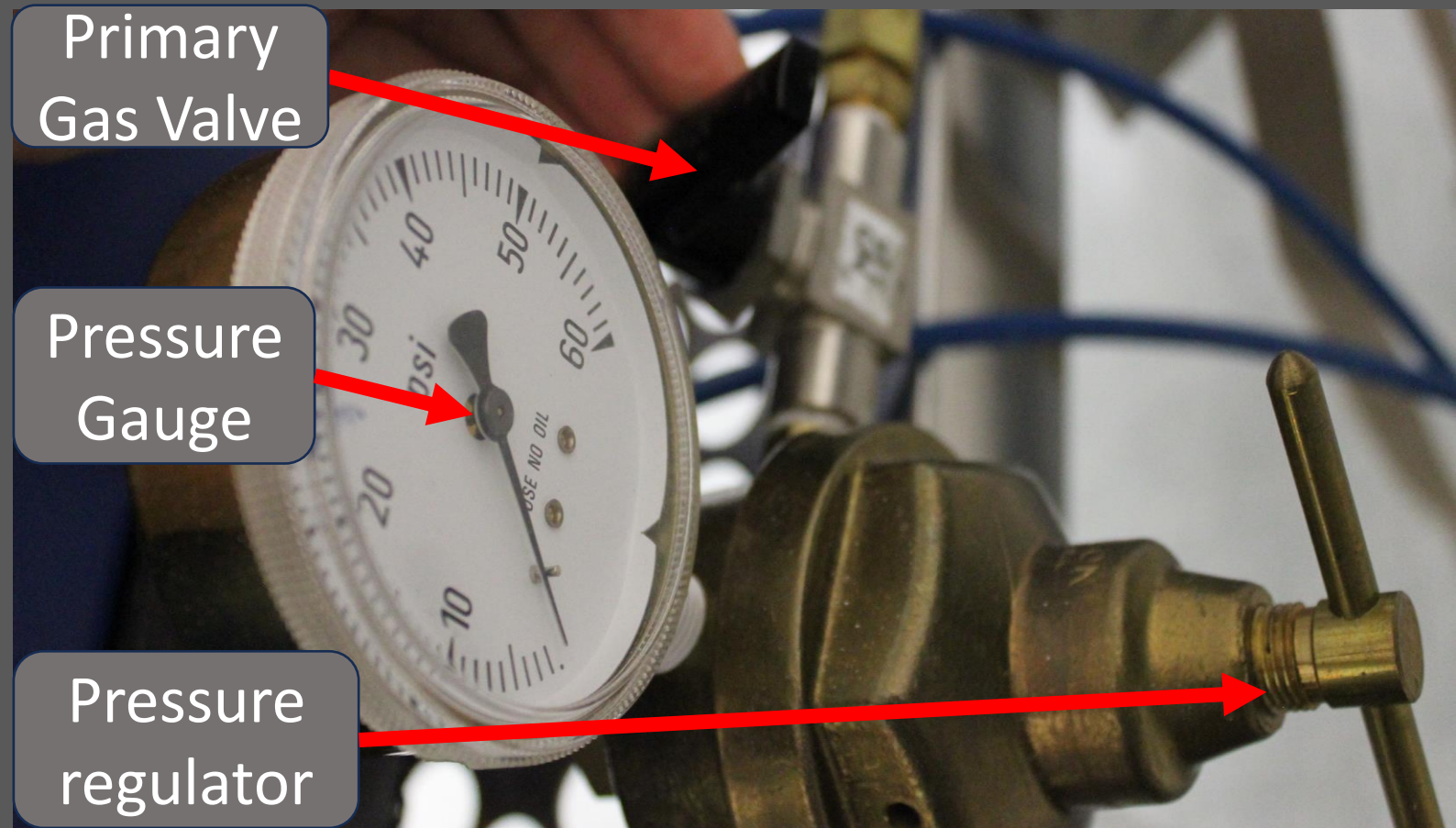
Finishing up: Oven shutdown

- When you are finished using the oven, flip the furnace breaker to the off position.



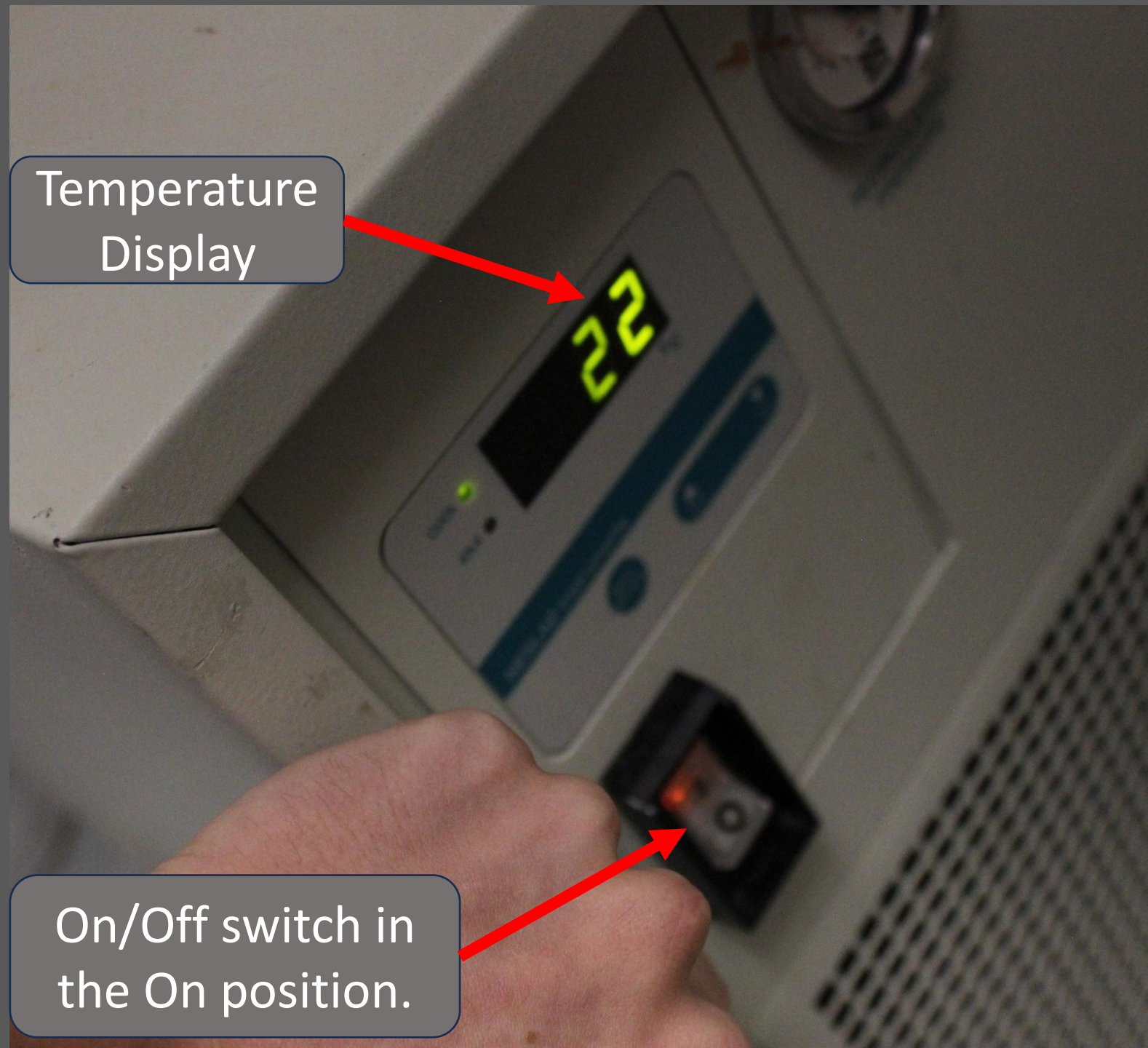
Finishing up: Oven shutdown

- **Do not touch the pressure regulator!**
- The black primary gas valve should be turned gently until it is perpendicular with the gas line.
- The pressure gauge should read ~ 0 PSI. this indicates that nitrogen



Finishing up: Oven shutdown

- Turn the chiller Off as the final step. The temperature display should turn off once you flip the switch to the off position.



Temperature
Display

On/Off switch in
the On position.