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BLUE MYCO PRESSURE COOKER

USER MANUAL

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EQUIPMENT DISCLAIMER

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Questions regarding alterations, adjustments, or significant changes to the equipment outlined in this user manual should be refered back to your BMT Wellness, Inc. sales professional or by calling [951-834-2660] or emailing reab@bmtwellnessinc.com for additional assistance.

CONTENT CHANGE AND VERSION DOCUMENT

The following information furnished below is a chronological description of the Blue Myco Pressure Cooker User Manual and all versions of the document since its inception. For previous copies of this document, please contact Richard by telephone at 951-415-7219 or my email at reab@bmtwellnessinc.com.

Revision History

Version	Date	Revised by	Sections Modified	Details of amendment
1.00	03/30/2023	Doug Trovinger	All	Initial Version of User Manual

TABLE OF CONTENTS

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INTRODUCTION TO THE BLUE MYCO PRESSURE COOKER

The **Blue Myco Pressure Cooker** provides a controlled and consistent experience to sterilize grains and other products. The model in focus provides the convenience of compact space, minimal installation, and drastically increase production capacity. Our product also provides several safety features including mechanical pressure release valves which regulate and automatically release pressure when it exceeds a preset mechanical parameters and automatic shut-off systems which ensure that equipment, personnel, and other assets are always protected.

USER MANUAL FEATURES

The structure of this guide is presented in a manner that is easy to follow, read, and use so minimal time is needed to transition from the installation stage to the production stage and utilization of the equipment. In the following subsections below, please take a moment to review the important components of the Blue Myco Pressure Cooker User Guide.

User Manual Structure

The User Manual structure is position in a way that our customers will be able to obtain information in a quick and efficient manner. Furnished below in the bulleted list are the main sections of this guide and the highlight(s) of that part of the Guide:

- ✓ Core Component Identification of Blue Myco Pressure Cooker – this section provides a visual and brief explanation of the key pieces of the Blue Myco Pressure Cooker and PID Control Panel.
- ✓ Best Practices Prior To Using the Blue Myco Pressure Cooker – tips and general recommendations to maximize productivity and use of the Cooker.
- ✓ Setting and Starting Up the Blue Myco Pressure Cooker – information and a sequential process of how best to assemble the cooker and prepare for production.
- ✓ Operating the Blue Myco Pressure Cooker – detailed instructions of how best to optimize the pasteurization/sterilization of the product and maximize the lift out of the equipment.
- ✓ Shutting Down the Blue Myco Pressure Cooker – processes and procedures of how best to reset the equipment once product has been made over time.
- ✓ Maximizing the Blue Myco Pressure Cooker – guidance and support to keep your Blue Myco Pressure Cooker in optimal shape at all times; includes recommendations for preventative maintenance, cleaning, sanitation, and troubleshooting.

Icons Used in the Manual

There are four (4) different types of callouts that you will see in this User Guide. These are helpful hints, safety notices, and other information that are furnished to ensure the product is cooked safely and accurately. Additional symbols are used above and beyond what is presented in the following below:

CAUTION!
DO NOT touch the vessel while in operation. Significant burn injuries may result due to the vessel components being very hot. Use site-approved gloves if needed to touch the equipment.

DANGER!
NEVER open the electrical or PID Control Panel while the equipment is turned on. Significant injuries including electrocution, equipment damage, and permanent injuries may result. Always power down and turn off equipment before accessing.

NOTE
Always ensure that the Casters (or wheel locks) are firmly engaged and places so that the equipment does not move or shift while the Cooker is in use.

WARNING!
Complete a pre-check of all equipment components prior to using the equipment. Failure to do so may result in spilled liquid, trip hazards, equipment damage, and possible shock hazards.

Focus on Safety and Safe Operation of the Equipment

The safety of our customers and equipment operators is our top priority. Due to the nature of our Blue Myco Pressure Cooker, there are several Personal Protection Equipment (PPE) we recommend using at all times. The items listed below are commonly seen in any food production or manufacturing facility. Please note that these are strict recommendations to operate the equipment in a safe and responsible manner. Refer to your company's safety guidelines for any additional requirements or restrictions set forth below.

Symbol	PPE in Focus	Justification and Rationale
	Short or Long-Sleeved Shirts and Pants	Prevention of scalding from steam or spray escaping the Cooker and shielding from hot product coming out of the Cooker once done.
	Steel-Toed Footwear	Foot protection in the event of liquid spilling onto the production floor area surrounding the Cooker.
	Heat-Resistant Gloves Available	Safely remove pasteurized/sterilized product once it has completed its required time in the equipment. Also eliminates burn risks when touching handles or equipment
	Safety Googles	Protection of eyes from steam or spray that may escape the vessel once up to temperature.
	Ear Protection (Optional)	For sensitive personnel, ear protection such as headphones or earplugs are recommended due to the noise made when the Cooker is depressurized or completely relieved of all pressure.

Throughout the remainder of the Guide, we will provide additional safety tips and directives so that your experience without equipment is not only a productive one but positive as well.

CORE COMPONENT IDENTIFICATION OF BLUE MYCO PRESSURE COOKER

To best understand how to setup, startup, operate, and shut down the Blue Myco Pressure Cooker, it is best advised to review the core components of the equipment as shown below in the graphic provided. This also includes a picture of the PID Control Panel which will be explained in the second half of this section below:

Blue Myco Pressure Cooker Core Components

Figure 1 – Blue Myco Pressure Cooker Main Components

	NOTE Additional components not listed in the general diagram above are described in the next section on Page 8.

PID Control Panel Layout

Figure 2 – PID Control Panel

Equipment Overview

Inner and Outer Jackets

The Blue Myco Pressure Cooker is made up to two (2) jackets – Inner and Outer. The **Inner Jacket** is the location where the product is pasteurized/sterilized. The **Outer Jacket** is the sides of the Blue Myco Pressure Cooker **with the exception** of the dome lid. When the Cooker is in operation, the **Outer Jacket** can be touched as it is insulated from the inside. However, DO NOT touch the dome lid or other components in and around the vessel as they are hot and likely to be more than 200 degrees Fahrenheit. This will result in immediate burn or scald injuries.

Dome Lid

On top of the equipment where the **Clean in Place (CIP) Pipe** and **Venting Pipe** are located is the **Dome Lid**. This is welded to the vessel and provides additional space inside the Cooker for steam and pressure to build up. On top of this also includes a-Mechanical Pressure Relief (PRV) Valve which will depressurize when necessary. A visual of the Dome Lid is located below in Figure 3.

	**WARNING!** Under no circumstances should you touch the dome lid while the product is being pasteurized/sterilized inside the vessel without heat-proof gloves. Instant burn injuries will result as the dome is an unprotected part of the vessel and can exceed a temperature of more than 200 degrees Fahrenheit.

Figure 3 – Dome Lid

Temperature Probe and Pressure Release Valve

The **Temperature Probe** is located on the backside of the Blue Myco Pressure Cooker which works with the **PID Control Panel** to provide the temperature that is inside the vessel. The probe is a digital read-out of the temperature of the steam at the top of the vessel and must be calibrated with the use of the pressure gauge to ensure accuracy and that the product is being properly pasteurized / sterilized. This is essential to ensure that enough heat is placed inside the container so pressure can build. It is recommended to use heat shrink tubing that has heat-proof thermal tape to protect the wiring and minimize damage over time and replacement of components. See Figure 4 below for a visual of what it looks like.

The **Pressure Release Valve** is located adjacent to the **Temperature Probe** on the Blue Myco Pressure Cooker Dome Lid. This is an adjustable safety valve which has a maximum pressure of 14.7 PSI and the stainless-steel Pressure Relief Valve (PRV) can handle pressure up to 30 PSI. It is also in place to automatically release pressure from inside the vessel when it exceeds the safety limit of 15 PSI. When doing an inspection of the device before a production shift, always ensure that this is properly installed and not tampered with. In the event it is, stop using the equipment immediately and do maintenance / replace.

Figures 4 and 5 below show both critical components on top of the Dome Lid.

Figure 4 – Temperature Probe (Left) and
Figure 5 – Pressure Release Valve (PRV) (Right)

Clean In Place (CIP) Valve

The **Clean in Place (CIP) Valve** is located on the left side of the Blue Myco Pressure Cooker if you are looking at it straight on. This is used to cycle liquid inside the vessel for cleaning and sanitation purposes. At the bottom of the valve, the **Pump** Inlet would be connected to the bottom of the tank. Then, the outlet would be connected to the CIP valve. The **Spray Ball** at the top of the tank allows for the cleaning process to complete. Tri-clamps are used not only here but any other part of the tank that requires a secure transition point. Like the **Blowoff Valve**, this piece of equipment is hot when in use. Do not connect any hoses to it until it is fully cooled and safe to handle. See Figure 6 below.

Figure 6 – CIP Inlet

Manway

The **Manway** is the door and opening where products can be inserted inside the Blue Myco Pressure Cooker. Within the vessel is a grate (or set of grates depending on the model) are located to place the product onto. Each **Manway** has a set of six (6) clamps that must be tightened in a star-like pattern prior to pressurizing the vessel (see the Operating section of this document for specific instructions on how to tighten them for optimal sealing and pressure). Figures 7a and 7b show the **Manway** and an example of products loaded inside the vessel.

Figure 7a – Manway w/Clamps (Left) and
Figure 7b – Manway Opened with Product in Vessel

Pressure Gauges

Located on the right side of the equipment is a set of two (2) **Pressure Gauges.** These are used to measure the amount of pressure that is inside the vessel. Remember that it should always be assumed that there is pressure in the vessel even if there is a zero PSI reading on the dial. The one on top as shown in the picture below is the main meter and the other one is a backup should the primary meter malfunction.

Figure 8 – Pressure Gauges

	NOTE The equipment is designed to run at a maximum of 14.7 Pounds of Pressure per Square Inch (or PSI). The optimal pressure reading is around 14.7 PSI.

Blowoff Outlet and Butterfly Valve

The blow off outlet is located on the right side of the vessel where the Pressure Gauges are housed. The purpose of the blowoff arm is to depressurize the vessel. The buildup of condensation is a result of heating the vessel and it is part of the SOP for the equipment. Caution must be taken with this part of the vessel as the pipe itself is not insulated. It is recommended to use heat-proof gloves and/or a potholder to move the Butterfly Valve to release pressure or steam into the bucket. Otherwise, burn injuries may result. A picture of the arm and valve inside the bucket is shown in Figures 9a and 9b below.

Figure 9a – Blowoff Arm (Left) and
Figure 9b – Adjustable 14.7PRV connected to the Butterfly Valve (Inside Bucket; Right)

Water Level Sight Glass Indicator

Located in a pipe that sticks out in front of the vessel is the **Water Level Sight Glass Indicator**. This is a visual that is important to use each time a product run is executed. This shows how much water is inside the Cooker. Sufficient water must always be inside the vessel for the equipment to function. It must be enough to trigger a set of three (3) probes that are behind the sight glass. If there is insufficient water is not in the vessel, it will not operate properly and disable the controller and can result in significant equipment damage.

In the event the sight glass ever gets damaged or breaks, discontinue use of the Cooker immediately and order a replacement part. Never operate the equipment with this damage as it may result in serious injury, property and equipment damage, and inaccurate water levels which result in being properly under or overcooked.

Figure 10 – Water Level Sight Glass Indicator

Drain Outlet

The drainpipe is located on the bottom of the Blue Myco Pressure Cooker. It is recommended to have a heat-proof hose that can withstand temperatures of up to and over 250 degrees Fahrenheit to prevent melting, splitting, cracking, or leaks. The hose should be placed in an area where it can safely drain liquid away from foot traffic, personnel, or other equipment. Figure 11 provides an example of a drainpipe without a hose hooked up to it.

Figure 11 – Drain Outlet

Element Connections on Base of Blue Myco Pressure Cooker Unit

The final component (not identified in Figure 1 above) is the power connections for the elements for the Blue Myco Pressure Cooker. Depending on the configuration of the equipment, one, two, or all three (3) elements can be used for cooking products. Each one has a connection on the underbelly of the vessel. A power cable is then connected to the Controller. Like other sensitive equipment on the vessel, it is very important to ensure both the power cable is in

good condition and free of frays and bends as much as possible. Bent cords over time may result in insufficient power going to the elements inside the vessel or power surges that can damage equipment. See Figure 12 below for the visual.

Figure 12 – Electrical Wiring

Control Panel Overview

The Control Panel (also known as the **Controller**) for the Blue Myco Pressure Cooker is a simple setup which only takes minutes to learn and use. Prior to describing the purpose of each part of the panel, let's look inside the cabinet to show what is included inside. Figure 13 below shows the wiring setup inside the cabinet. Note that on the far right are the switches that control the elements. The main breaker has a set of three wires for each heating element. The **BLACK** wire is connected to Terminal/Position 1 (or T1). Termina/Position 2 (T2) has a **WHITE** wire attached, and conclusively a **RED** wire is connected to Terminal/Position 3 (or T3). Other components located here assist with the cycling of the elements turning on and off when cooking takes place as well as powering the digital temperature readout in the upper left-hand corner.

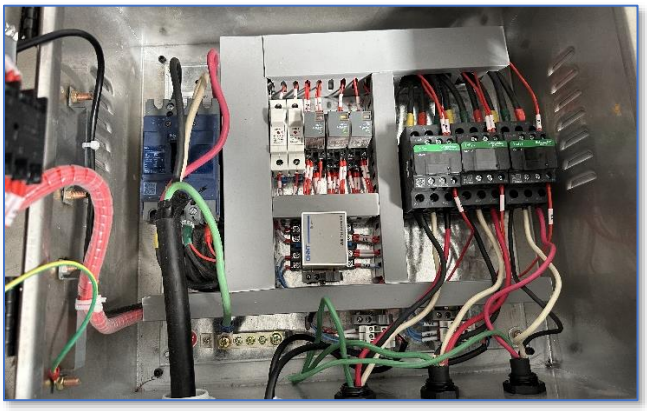


Figure 13 –Control Panel Internal Wiring Setup ~~for Blue Myco Pressure Cooker~~

	**DANGER!** **NEVER PERFORM ELECTRICAL WORK** while the equipment is turned on. Significant injuries including electrocution, equipment damage, and permanent injuries may result. Always power down and turn off equipment before performing any type of electrical work.

Now let's take a moment to look at key parts of the **operation panel**, starting with the **Proportional Integral-Derivative (or PID) Controller**. This is likely one of the most important components of the Blue Myco Pressure Cooker outside of the Pressure Gauges on the side of the vessel. This PID Controller serves as the central processing unit of the

cooker. Numerous tasks can be done in this area including temperature adjustments and recalibration of the unit to name a couple of key processes. Functionality and how to use this will be explained in detail later in this Guide.

Figure 14 – PID Controller

Expanding beyond the **Temperature Gauge** are the pair of timers, dials, and confirmation lights that are on the top and middle rows of the panel. Starting at the top and working left to right, we begin with the **Cycle Timer**. This is a manufacturer preset time (T1 = 6minutes and T2 = 30seconds) that determines how long the elements are on at any one given time and will only work when setting the control panel to automatic. When activated, the set of three (3) GREEN lights to the right of the timer will be lit. Depending on how many elements are used, only those will be highlighted. The others will remain off if less than three (3) are used for a cooking cycle.

The row below starts on the left with the **Insultation Timer (We are going to change this to cook time or pasteurization/sterilization timer.)** This can also be known as the **Cooking Timer**. This is the preset amount of time product will spend pasteurization/sterilization once the targeted temperature (The green numbers on the PID controller) is reached inside the vessel. For the heat to be generated to get there, though, the set of black dials must be turned to the AUTO position or to the right. It is recommended to run the Blue Myco Pressure Cooker in AUTO mode for the best results. The dials will also ensure that those elements are on for the duration of the cooking cycle. When cooking is completed, the equipment will automatically shut down.

Figure 15 – Top and Middle Rows of the Controller

Finally, with respect to the bottom row of the **Controller** are the main controls of the device. The **RED** Emergency Stop button is on the left side of the row. This button should be used only for (a) emergency situations which require a rapid shutdown of the equipment and (b) to fully shutdown the Blue Myco Pressure Cooker when completing use of the equipment after a production shift or day. The **GREEN** **Heating Auto On** and **RED** **Heating Auto Off** buttons are used to turn on and off the device. Note that the **HO-YW** light to the right **must** be on for the unit to start. This light represents that sufficient water is inside the vessel and observed through Sight Glass. Figure 15 below shows the configuration of these in a row.

Figure 16 – Main Controls of Blue Myco Pressure Cooker

BEST PRACTICES PRIOR TO USING THE BLUE MYCO PRESSURE COOKER

To utilize the Blue Myco Pressure Cooker in the best way possible, this section provides a checklist of tasks that should be completed at least daily to maximize the likelihood of consistent product quality outcomes. This section is split into two pieces with one focused on pre-start equipment checks and tools to always have on hand at or near the Blue Myco Pressure Cooker.

Pre-Start Equipment Checks

✓ Check to ensure that the **Casters** (or wheel locks) are engaged and locked, and the equipment is located on a solid, flat surface.

CAUTION!
Casters that are on an uneven surface may result in product being overcooked or undercooked on one side of the vessel, hot liquid spills, incorrect pressure readings inside the vessel, and damaged equipment.

✓ Check the tri-clamps on top of the vessel and **Pressure Relief Valves (PRVs)** to ensure they are installed correctly.

NOTE

It is recommended to check these at least once a week for heavy/daily use or once a month at a minimum to ensure they are secure and in their correct position.

WARNING!

If any of the PRVs are damaged or loose, **DO NOT** use the equipment until replacement parts have been installed.

✓ Inspect **Clean In Place (CIP) Pipe**, **Venting Pipe**, and **Drainpipe** are clamped and properly installed. Gaskets should seal comfortably, and no air should escape where they connect. Make sure the Butterfly Clamps are also fully closed before pasteurizing/sterilizing products.

CAUTION!

Pipes that are loose and worn gaskets may result in liquid or steam to escape from the vessel and cause scald or burn injuries.

✓ If using a water supply, verify the hose connected from the water source to the intake outlet on the right side of the vessel is secured and clamped.

✓ Visually check each of the elements (up to three (3) depending on model) and ensure they are wrapped in thermal tape.

WARNING!

Elements that are not submerged in liquid when the Cooker is in operation may result in the elements warping to other components inside the vessel and popping. Externally, always use thermal tape or other protection to maximize the life of the element connections on the outside of the vessel.

NOTE

Always inspect the **Sight Glass** to ensure enough water is inside the vessel before operating the equipment. Make sure the water in the vessel is clean as This will aid in the elements in properly functioning over time.

NOTE

Do not criss-cross or group the element wiring between the vessel and the **Controller**. Allow each of the cables (up to three (3) run independent into one another to the Panel. This ensures sufficient and correct current is transferred between the Cooker and Panel.

✓ Inspect the **Main Pressure Gauge, Backup Pressure Gauge, and Pressure Relief Valves** monthly to ensure they are in good condition and operable.

DANGER!

Failure to inspect the gauges and valves increase the risk of an explosion hazard occurring and significant property and equipment damage as well as personal injuries in the immediate area of the Blue Myco Pressure Cooker.

✓ Open the **Manway** and confirm the inside of the vessel is free of residue after a cleaning and sanitation cycle. If it is in-between cleaning cycles, confirm there is no residue on the elements. Wipe it out and off if needed.

NOTE

Depending on the amount of use, it is recommended to clean the vessel inside and out at least weekly to minimize sediment build up inside the Blue Myco Pressure Cooker. Periodically inspect and clean the Temperature Probes in a similar fashion.

✓ Attach the **External Steam Exhaust Tube** to the pipe outlet that will be used to eject steam from the vessel to achieve the targeted pressure rate.

NOTE

It is recommended to install the hose **before** starting a batch of product to minimize the chance of a burn injury from occurring.

	**NOTE** Installing the **External Steam Exhaust Tube** is necessary when depressurization needs to take place.

✓ Complete a secondary check of all clamps ensuring they are hand-tightened on the vessel. Adjust as needed but do not overtighten.

	**CAUTION!** Overtightening the clamps results in the internal components inside bending and reduces their useful life.

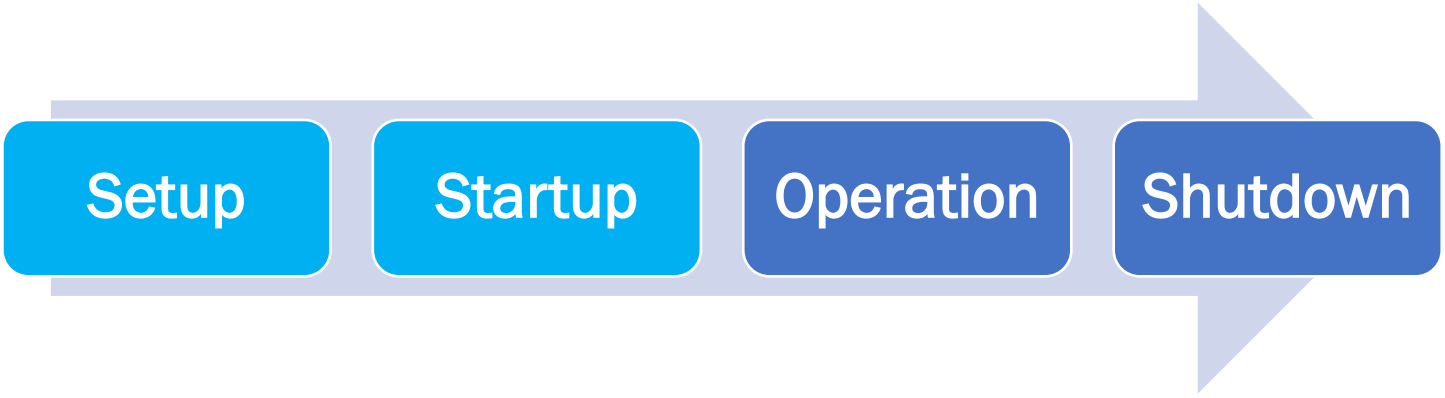
✓ Go to the **PID Control Panel** and ensure that it is receiving power. Review the Troubleshooting section at the end of the Guide for steps to correct should this not happen.

Recommended and Required Tools to Have Present

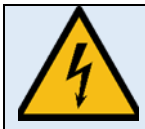
To continuously receive the best outcomes for product cooked inside the Blue Myco Pressure Cooker, the following tools are recommended to be always at or near the equipment:

- Tightening Rod to assist with tightening clamps.
- Bucket with a metal handle to use to collect liquid coming from the Blowoff Valve.
- Heat-Resistant Gloves, Oven Mitts, or Potholders.
- Rack or a dedicated location for product to rest upon its cooking cycle completion.
- Slip-resistant mats near the Blue Myco Pressure Cooker to minimize slip accidents.
- Thermal Tape or Insulation to cover sensitive components on the outside of the Blue Myco Pressure Cooker.
- Water (either from a dedicated source or nearby to maintain enough inside the vessel during a cooking process).

SETTING UP AND STARTING THE BLUE MYCO PRESSURE COOKER



Once the Blue Myco Pressure Cooker has been thoroughly inspected and cleared to use, it is time to set up the equipment so that a seamless startup can take place. In this section, we will review tips to ensure that the Blue Myco Pressure Cooker maximizes use and functionality.

	**CAUTION!** Before performing any setup processes, ensure that all electrical components are not damaged in order to prevent the risk of an arc flash or electric shock hazard.

Gather Ingredients and Inspect Inside of Vessel

The first task that is recommended is to have proper flow would be more critical because this would optimize the time it takes to load the sterilizer. It doesn't matter if the door is open while loading as this will allow the heat to permeate through the product and ensure an even cook.

Depending on how many cooked batches are set to be done in-between cooking cycles, it is suggested to inspect the cavity of the Cooker to ensure there is limited or no residue or dirty liquid inside. If there is excess liquid, drain promptly before putting the new product in.

	**NOTE** Emptying the cavity of the Cooker and cleaning periodically ensures that steam and pressure circulates properly, accurate temperatures are recorded, and residue does not build up on sensitive pieces of equipment like the temperature probe.

	**NOTE** Depending on the type of grain that is set to be cooked, it is recommended to empty the water out at a minimum every two to three (3) batches. For less frequent use, a minimum of once a week is suggested.

Addition of Water to Cooker

The next step in the process of setting up and starting the equipment is to add water inside the vessel. Depending on the setup that is being used, water can be added in one of two (2) ways: manually or through the **Water Intake Valve** (commonly on the right side when looking straight at it).

When inserting water into the vessel, it is recommended to use warm or hot water to begin the process. When adding in this, the heating process is accelerated and less time is required to get to the desired temperature. If a subsequent cooking is taking place, **DO NOT** use cold water as it results in the elements expanding to the point they break. Hence, they would need to be replaced at that time.

RO (Reverse Osmosis) or Distilled water is highly recommended. Standard tap water is sufficient when adding it to the vessel. Bottled water or jugged water is also acceptable. Remember that the main purpose of the liquid is to generate steam and pressure inside the kettle so that the product pasteurizes/sterilizes.

With respect to the amount of water to add, it is required to add enough water so that it reaches 3/4 level inside of the Sight Glass (Adding water to fill the entire sight glass is highly recommended if preforming pasteurization and then sterilization.) If there is not enough water, the equipment will not run because there must be enough water to cover the level sensor.

After water has been added, check to see if the water level remains constant for at least 10 seconds. If there are leaks, they are likely to form. Look at the **Sight Glass** to see if there is sufficient water at the **Water Level Indicator (WLI)**.

	**CAUTION!** If any liquid spills on the floor or in the surrounding area of the Blue Myco Pressure Cooker, promptly clean up with soaking pads or with a mop to prevent slips and falls due to standing water.

	**NOTE** The equipment will **NOT** turn on if there is an insufficient amount of water inside the vessel. Overriding this will result in the heating elements shorting out and warping to other parts of the kettle.

	**WARNING!** Confirm that all clamps are secure on the outer piping of the Blue Myco Pressure Cooker. Failure to do so may result in liquid spewing out of the openings and cause scalding and burn injuries.

Placement of the Grate(s)

Once water has been added inside the Blue Myco Pressure Cooker, carefully install the grate(s) inside. Depending on the model, there may be more than one grate that can be placed inside at one time. When inserting the grate, make sure that it is flat. Do not tilt or force the grate which would lead to it tilting to one side. Product should be able to lay flat on the grate on all sides.

Blue Myco Pressure Cooker Startup and PID Panel Operation

Now that the equipment is set, you can now proceed to the PID panel. When pasteurizing/sterilizing a batch of products, always change or adjust the time **BEFORE** you turn on the equipment. To adjust the timers, simply press the down (-) buttons on top or the up (+) buttons on the bottom. You can also change the time intervals between 'H' (hours), 'M' (minutes), and 'S' (seconds). If you are making different types of products over the course of a day, it may be necessary to adjust the timer after each production run OR different product run type.

An important note regarding the timer is *when* to make changes to the timers. Any changes made while the equipment is on will not register and default to the previous setting. In other words, if the Cooker is set to three (3) hours and it is changed to four (4) hours while it is cooking, it will not register the adjustment. Hence, the product will cook for the three (3) hour period. *Time can be adjusted by pressing the emergency stop button and adjusting the time. Then disengaging the emergency stop button to turn back the cooker.

Figure 17 – Timer on CIP Panel

At this point, all inspections have been made and there is sufficient water in the vessel. To initiate the equipment, start with turning the element(s) on. This can be done in two (2) steps. First, you will need to activate the **Heating Auto** dial that is in the smaller blue box highlighted below in Figure 18. Then, depending on how many elements are to be used, turn on any or all the remaining dials to the **'Auto'** position.

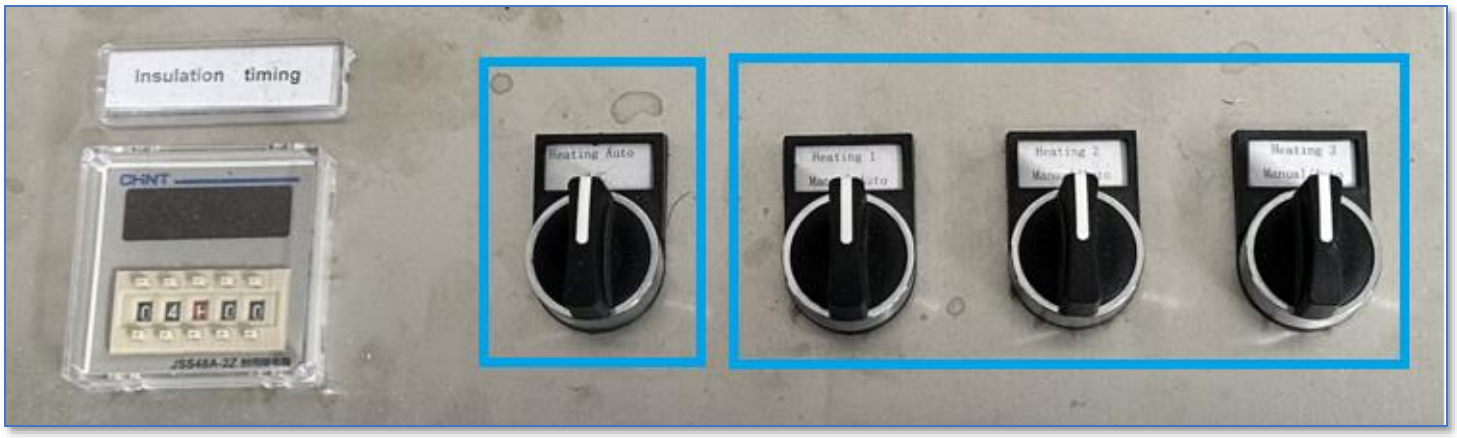


Figure 18 – Heating Element Dial Switches

	NOTE While cooking takes place, it may be necessary to control which elements are operating at any one time. Simply move the dials between the 'Auto' position (right) and the 'OFF' position (centered as shown) to maintain the required temperature and pressure levels.

The last step of the setup and startup process is likely the easiest of all. With all prechecks completed, water in the vessel, and the timers properly set, all you will need to press the GREEN button. The button is immediately to the left of the RED Emergency Stop button. (See Figure 18) below. Note the light that is to the right of the RED **Stop** button must be lit to start the Cooker. If it is not on, check to ensure water hasn't leaked out of the vessel before continuing.

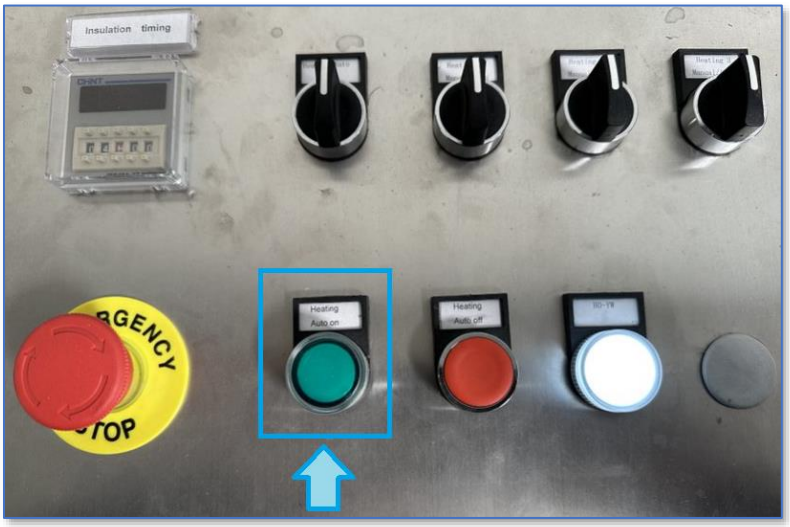
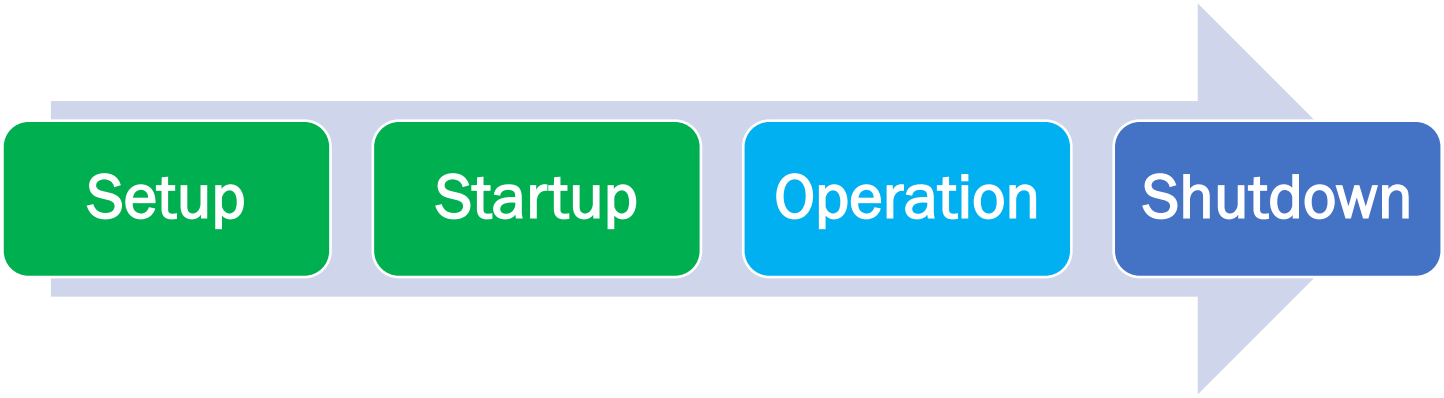


Figure 19 – GREEN Start (Auto) Button

OPERATING UP THE BLUE MYCO PRESSURE COOKER



Once the Blue Myco Pressure Cooker has been Setup and started, the next task is to operate the equipment in a safe manner. When operating the equipment, there are three (3) subtasks that often take place: product insertion into the cavity of the vessel, recalibration of the Cooker, and removal of pasteurized/sterilized product. While all of this takes place, it is imperative that you always monitor the pressure and temperature. This will yield the best result for the products cooked in the time allotted.

Product Insertion into Blue Myco Pressure Cooker

Once the Blue Myco Pressure Cooker is beginning to come up to the desired temperature, you can insert the product into the vessel. When putting product inside, create a lattice or a crisscross pattern. The bottom layer will have the length of the bag going against the length of the grates and the layer on top would go the opposite direction. Then, place products in a similar manner in the center of the Cooker. Once the first layer has been completed, repeat the process for an additional layer or two (depending on the size of the product blocks/bricks used). Take a moment to review Figure 20 below highlighting product properly placed in the Blue Myco Pressure Cooker:

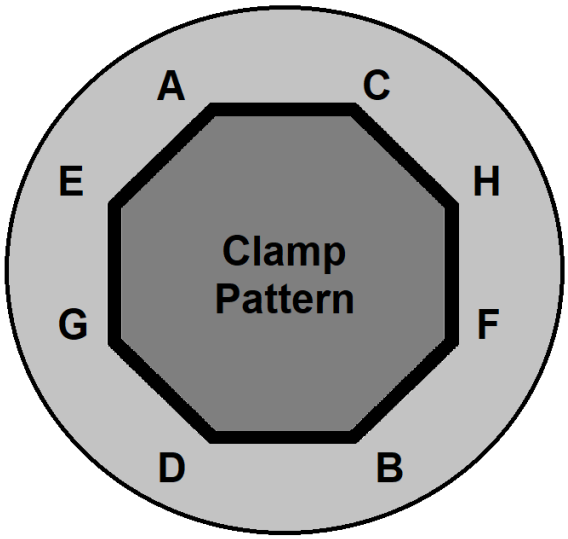
Figure 20 – Example of Properly Staged Product Inside Vessel

	NOTE When putting product inside the vessel, alternate space in-between the rows in the middle to provide space for the steam and pressure to flow. Stuffing product on top of one another without these gaps may result in product taking additional time to cook and/or some product undercooking and other product overcooking.

	NOTE Only fill the vessel to no more than halfway up when doing a batch. This ensures that product will not shift and shuffle when pressure is adjusted and/or during the cooking process.

Before starting the pasteurization/sterilization process, confirm that all clamps are properly tightened and all valves on the bottom half of the vessel are closed. Executing this step is critical to ensure no steam, spray, or liquid escapes as the vessel gets to temperature. It is also one of the most likely causes of it taking additional time than it should.

After all is checked, close the Manway and hand tighten the clamps. When tightening the clamps, it is important to follow the diagram shown below in Figure 21. Like a clock, you will want to start in the upper-left hand corner clamp (approximately in the 10 o'clock position or Clamp A). Once hand tighten, repeat the same process for the clamp in the 4 o'clock position (designated as Clamp B). Repeat the same tightening sequence as shown.
Modify the diagram to reflect 8 bolts like our actual manway.



After hand tightening, use the tightening rod and place it inside the loop to do one additional tightening of the clamps. Follow the same pattern as shown above when completing this step.

	CAUTION! Do not overtighten any clamp that is located on the Blue Myco Pressure Cooker. Failure to do so will result in the clamp warping and require the assembly to be replaced.

	NOTE Make sure and evenly apply pressure to all clamps. Always swap sides when tightening the Manway. Uneven pressure may result in the PSI reading to be off and potentially unevenly distribute steam and pressure inside the vessel.

Next, confirm that at least **one** valve is open so that heat can escape the vessel after circulating inside the dome. These are located behind the **CIP Valve** and **Venting Pipe** as designated in the location arrow below in Figure 22. Periodically check the temperature readout on the PID Control Panel as well as the pressure gauge. Once the internal temperature reaches 200 degrees Fahrenheit, close the valve so that the steam and pressure can build inside.

Figure 22 – Valves on Top of Blue Myco Pressure Cooker Dome

Conclusively once the vessel reaches a minimum temperature of 250 degrees Fahrenheit, confirm that the amount of pressure inside is at or near 15 PSI. Once we hit 15PSI, we should be at 250F. This will result in the vessel depressurizing which, in turn, results in a hermetic seal on the bags of grains inside. Do not forcefully depressurize the vessel because the bags of product inside will pop. If it doesn't get to the target temperature explained here, we will need to offset the PID to so that it reaches the minimum temperature of 250F.

When the correct pressure and temperature point are both achieved, the **Cooking Timer** will engage (see Figure 26 below) and the product will cook. Once the cooking cycle has completed, the **Blue Myco Pressure Cooker** will automatically shut off. See the '***Finished Product Handling and Removal***' process below on Page 28 to review the process of safely taking product out of the vessel.

Venting of Steam and Liquid from Inside the Vessel

Prior to reaching the final sterilization temperature, it is necessary to partially depressurize the cooker to ensure all non-compressible gasses have been ejected from the inside of the cooker. It is highly recommended to do this step at around 225F. In order to do so, the **Venting Hose** must be heat resistant to at least 300 degrees Fahrenheit to handle liquid and steam exit. Additionally, the **Butterfly Valve** should be installed where you move it **UPWARD** when and not down towards the ground. Figure 23 below shows an example of the hose hooked up and the **Butterfly Valve** correctly installed.

Figure 23 – Butterfly Handle Correctly Positioned and Venting Hose Hooked Up

	**DANGER!** Always position the Venting hose **away** from other pieces of equipment, personnel, and high traffic areas. Failure to do so will result in passers-by scalded and/or receiving significant personal injuries.

	**WARNING!** Never open the Manway cover without first depressurizing the Blue Myco Pressure Cooker. Failure to do so will result in a significant explosion hazard. This may result in significant equipment and property damage, severe personal injuries, and potentially electrocution.

When releasing steam and liquid, it is best practice to go one click on the **Butterfly Handle** to start. This provides a large enough opening for steam to begin the vessel in a safe manner. As shown in Figure 28, this is an example of the valve initially being opened. After releasing steam for around 5 minutes, the valve can be closed and allow the cooker to reach the final temperature of 250F.

Figure 24 – Illustration of Steam and Liquid Safely Coming Out of Venting Hose

	**WARNING!** Use extreme caution when holding the Butterfly Handle to release steam and liquid from the vessel. Metal parts in and around it is extremely hot and can lead to instant scald or burn injuries.

	CAUTION! When opening the valve, move it slowly and carefully. Moving the valve too quickly will result in too much pressure attempting to escape which can cause the Venting Hose to pop off. Steam and liquid would then escape out of the Venting Pipe at a rapid pace and result in severe burns and/or other personal injuries.

	NOTE Incrementally opening the valve to release steam and moisture built up inside the Cooker ensures that product bags placed inside do not shift or move during the depressurization process.

Recalibrating the Blue Myco Pressure Cooker While Completing a Cooking Cycle

As mentioned above, the cooking cycle has begun but it is possible that the temperature or pressure may be below or exceed the targeted values entered the PID. Should this occur, **the vessel should be recalibrated as quickly as possible to minimize downtime**. Product does not need to be eliminated from the vessel, while a recalibration takes place since this process only takes a minute or two to complete.

	CAUTION! Use caution when clearing the Blue Myco Pressure Cooker of contents as parts of the equipment are very hot and can cause significant burn injuries when touching them.

	NOTE Never open the Manway when completing a recalibration test. Failure to do so will result in the vessel incorrectly calibrated. This will result in product that may be overcooked, soggy, or undercooked.

The first thing you will need to do is to check the ~~Air~~ **Pressure Gauge** to see how close it is to 15 PSI. Note that if there is a zero reading on the idea, it is possible that pressure is still building in the Cooker. Additionally, go to the PID Control Panel and check the set temperature and actual temperature. If they are more than a degree apart, the recalibration will need to be done.

To do that, start by pressing the left-most button on the temperature readout in the upper-left hand corner of the PID screen (Figure 25a). Then, cycle through the menu options until you come to the 'Loc' option (Figure 25b). If you miss the menu choice, you will need to cycle back through the menu options to come to it again.

Figure 25a – Menu Button on Left Hand Side (Left) and Figure 25b – Menu Choice to Put in Passcode (Right)

Once you have gotten to the menu, press the Press the far up (▲) button until you reach the number 8. Then, press the left arrow key button (◄) to move to the second and third digits. Press the up (▲) button again until you have the value 8.08 on the screen. The passcode 808 is needed to adjust the temperature (displayed in Figure 26).

Figure 26 – Passcode Entered into Temperature Readout

	NOTE If the incorrect passcode is entered into the system, you will need to repeat the process above as it will not allow you to complete the recalibration.

After the value above has been entered, you will need to press the menu arrow on the far left several times until you come to the 'Scb' menu as presented in Figure 27. This option in the PID Control Panel helps with offsetting the temperature so it is at or near the desired temperature.

Figure 27 – 'Scb' Menu Option on Temperature Readout

Continue the process by setting the temperature variance by using the up and down keys. Please note that it will take a few seconds for the adjustment to take place and the pressure level to reach the target of about 15 PSI. Once the target temperature and the set temperature are about one (1) degree within each other, the cooking timer located directly below the temperature readout will activate.

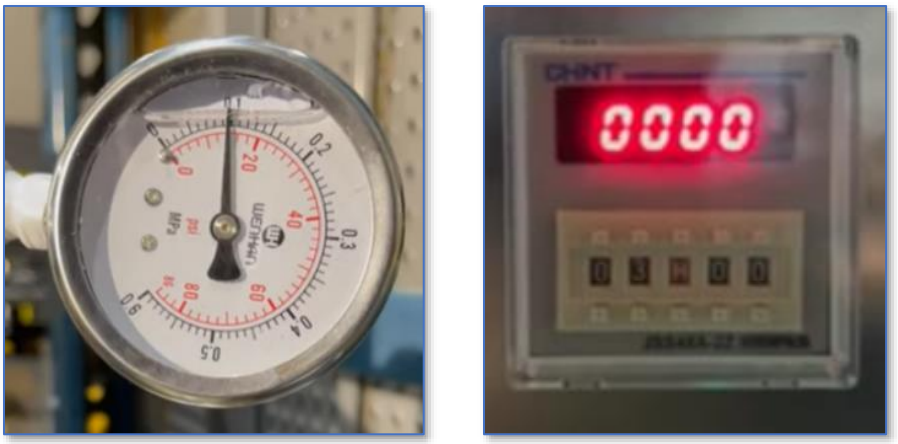


Figure 28 – Pressure Gauge Showing About 15 PSI (Left) and Cooking Timer (Right)

	NOTE Remember that the timer cannot be adjusted when a cooking cycle has begun. The PID Control Panel and unit must be shut down to adjust the cooking timer. Any change made otherwise is ignored by the panel and will utilize the previous cooking time entered.

During the cooking process, periodically check the temperature against the set value entered. If there are significant variances between them, the cooking process would need to be stopped and a second recalibration may be required.

Finished Product Handling and Removal

Once the vessel has reached an internal temperature of approximately 100 degrees Fahrenheit and the stream of steam has ceased, it is now safe to open the vessel. Carefully loosen the clamps in a similar pattern that they were tightened. This ensures that pressure around the door is reduced in a similar fashion as it was tightened. Then, carefully open the door and stand back when you do as any leftover steam will escape directly in front of you.

Place a cooling rack, cart, or other place where cooked product can be transferred once the vessel is opened. Using heat-proof gloves in the vent product is still very hot, carefully remove the bags of product one at a time. Place the bags in rows starting with the ones that were placed in the equipment first. Repeat this process until it is completed. Putting more than one row of product on top of each other may result in the bags compressing and becoming uneven. Thus, all products cooked should be organized where no additional ones are on top of it.

Once all bags are out, inspect to determine if the water needs to be drained from the vessel. When there is excessive sediment inside, it can result in the Water Level Sight Glass providing an incorrect reading for better or worse. This can impact a number of variables for future batches such as cooking time, temperature variances, pressure being too high or low, and so on. Shown below in Figure 29 is an example of when the water inside needs to be emptied and what sediment is left behind if significant time is in between liquid drains. A pungent smell like fermented water will be quite noticeable as a result.

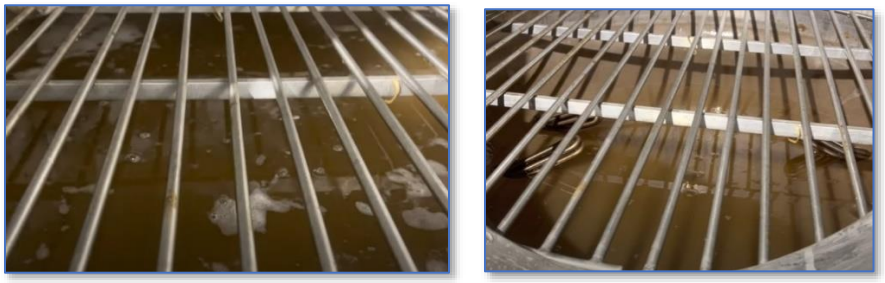
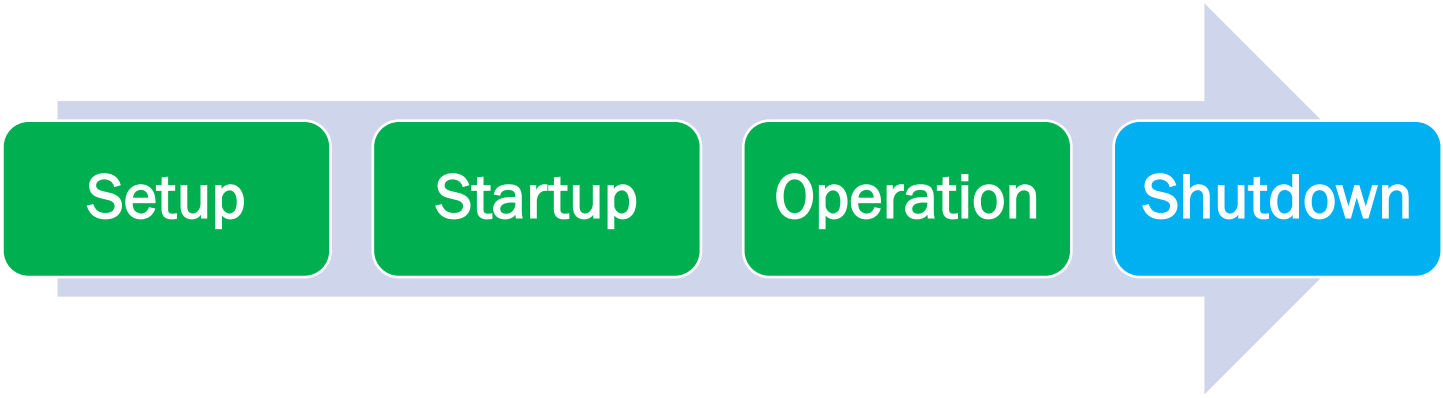


Figure 29 – Illustration of Steam and Liquid Safely Coming Out of Venting Hose

However, if the water is still in good shape, insert a new batch of product into the vessel and complete the processes provided here in the '***Operating the Equipment'*** section of the User Guide until all product needed for a production run has been cooked. When all the products have been completed, go to the next section of the Guide for the process of shutting down the equipment.

	NOTE Depending on the type of product that is cooked, the water and sediment levels will vary. However, it is best to change water out every few days so that the maximum amount of steam and pressure can be had inside the Cooker.

SHUTTING DOWN THE BLUE MYCO PRESSURE COOKER



Thus far, we have discussed how to set up, startup, and operate the equipment. Once all the product has been exhausted and completed for a production run, we now need to turn our focus to shutting the equipment down. This can be broken down into an easy set of subtasks which take a minimal amount of time to do. These include powering down the vessel cleaning and rinsing, and, if applicable, removing the **Venting Hose** to prevent tripping hazards. To best understand what takes place here, the content provided in this section is done *after* any product has been removed.

Powering Down the Unit

When the Blue Myco Pressure Cooker has completed a cooking cycle, the **PID Control Panel** will automatically disengage power to the unit. As a result, no additional cooking will take place and the temperature will slowly decrease. Releasing steam and any accompanying liquid will expedite this process through the **Venting Pipe** and attached **Venting Hose**. To ensure that the unit does not turn on accidentally (whether automatically or if a button is bumped), push in and engage the RED **Emergency Stop** button in the lower left-hand corner of the panel (see Figure 30).

Figure 30 – PID Control Panel with Emergency Stop Button in Lower Right-Hand Corner Highlighted

To ensure that internal parts such as grates can be safely removed, open the **Manway** (unless it is already open) and let any remaining steam or pressure subside out of the vessel. The internal temperature should be less than 100 degrees Fahrenheit when completing this step to eliminate the risk of burn injuries that can occur.

Next, open the **Drainpipe** that is located on the bottom of the Cooker (Figure 31). Use the **Butterfly Clamp** to slowly release the water either (a) through a hose attached or (b) directly into a drain that is below or near the pipe. When opening the pipe, it is best practice to use heat-proof gloves in the event the residue or water is still hot.

Figure 30 – PID Control Panel with Emergency Stop Button in Lower Right-Hand Corner Highlighted

If there is a significant amount of residue (see Figure 29 and the **right** picture for an example of what it may look like after water has been drained), carefully remove the product grate and set to the side. Scoop out all residue and place in a waste container or trash can. If there is a significant amount of sediment, pour warm water into the vessel while the **Drainpipe** is still in the open position. Once as much residue has been removed, use a food-grade cleaning solution, cloths, and/or paper towels to clean the vessel. After it has been scrubbed and sanitized, perform one additional rinse cycle to prevent any soap or other cleaning agents from being present when used again. Then, reinsert the product grate and let the equipment air dry. While the inside dries, remove the clamp that is attached to the Venting Pipe Hose and point the hose downward into a drain to let any liquid or residue flow downward. Then, place it in a location away from foot traffic or where it may cause a trip hazard.

Finally, after drying, close the **Manway** and tighten the clamps like what should be done when product is placed inside. This prevents any debris from entering the vessel after this process. Complete one final visual inspection of the equipment to finalize the shutdown process. Then the Blue Myco Pressure Cooker will be ready for the next production shift and batch of product.

MAXIMIZING USE OF THE BLUE MYCO PRESSURE COOKER

Maximizing the life of your BMT Wellness, Inc. Blue Myco Pressure Cooker is important to be able to safely and properly cook as many bags as possible of product possible issue-free. In this section, we have provided some general recommendations to maintain the Cooker, keep it clean and sanitized, and common issues that may arise when using the equipment.

Preventative Maintenance, Cleaning, and Sanitation

To get the most optimal performance of your Blue Myco Pressure Cooker, here are some tips that can be used to get a high-quality product result every cook:

- ✓ Empty the residue and liquid left behind from cooking multiple batches at least once a day if you are consistently using the equipment to cook batches.
- ✓ Visually inspect the heating elements both inside the vessel and the external connections (up to three) daily.
- ✓ Never hand-tighten the clamps on the Manway cover tight to the point they would be difficult to unwind to prevent damaged screws.
- ✓ Always use approved heat-resistant gloves when handling any external component before, during, and after a cooking batch.
- ✓ Only use approved hoses which can withstand liquid discharges of up to 300 degrees Fahrenheit (~149 degrees Celsius). Always point into a drain or away from persons and other equipment.
- ✓ Fully wash and sanitize the equipment at least once a week.
- ✓ Never let sediment and water remain in the vessel for long periods of time. Caking and it becoming sticky may result.
- ✓ Use food-grade approved cleaners and degreasers to clean both inside and outside the tank. Do not use bleach.
- ✓ Let the equipment air dry with the Manway open. If any soap or cleaning product is visible, complete a warm water rinse until it is no longer visible.

Troubleshooting the Blue Myco Pressure Cooker

Provided below are common scenarios that may occur with the Blue Myco Pressure Cooker and best practices to rectify the issue quickly and efficiently.

Issue	Resolution
The unit will not power on.	• Make sure there is sufficient water in the unit to trigger the sensors. • Inspect the sensors to see if they are dirty; clean if needed. • Confirm all electrical sources are connected to the PID and vessel. • Inspect the heating elements for damage or seizing.
The PID readout is showing the wrong temperature (shown as the opposite of the customer wanting Celsius or Fahrenheit degrees displayed).	• Press the change arrow button on the temperature readout (far left). • Scroll to the 'Loc' screen and type in '8.08' and hit the change arrow button again. • Cycle to the Fru and reset to 60 Hertz Fahrenheit. Press the change arrow to complete the adjustment. • Scroll back to where the target temperature is shown in GREEN and the actual temperature is displayed in RED.

There is an excessive amount of pressure inside the vessel	• Hook up the steam exhaust hose (unless already done so). • Slowly open the butterfly handle upward to release steam inside the vessel. • Once the PSI level reaches zero, carefully close the valve and repressurize the vessel to reach the target of 15 PSI. • Alternately, check the temperature and/or perform a recalibration of the unit.
The countdown timer was reset while pressure and temperature were being reached in the vessel, but the cooking time is still the same.	• Make sure to **power down** the unit to make an adjustment on the PID cooking timer. • Adjust the timer as needed. • Turn the equipment back on which will reflect the adjusted time.
Product is unevenly cooked in a batch.	• Make sure that all bags of product are evenly distributed inside the vessel. • Never load product to one side of the vessel as it may result in uneven cooking. • Leave open spaces in the middle of the vessel so that steam and pressure can build evenly during the cooking cycle. • Do not overload the vessel with more than **halfway** of product so that air and steam can circulate.
There is uneven heating in the vessel during a cooked product batch.	• Check to ensure that all elements are turned on that are being used for the cooking cycle as desired. • Confirm all switches are turned to the ON position on the top row of the PID panel for elements used. • Prior to cooking, visually inspect the elements weekly for residue build-up OR physical damage (more frequent if the equipment is running more than 12 hours a day daily). Replace as needed.
The variance in the actual temperature and target temperature is off.	• Review the '*Recalibration of Unit While in Operation*' process located in the Operating the Equipment section of the manual.