Ruby Street Brewing

Ruby Pro II Owner's Manual

Electric Version

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Introduction

Thank You for purchasing The Ruby Pro II™

Our machines are hand built and shipped mostly assembled using high quality components and materials. All additional assembly can be accomplished by hand tightening with no tools required. With proper use and care, this equipment will provide many years of outstanding performance

NOTICE!

Please review this manual in its entirety prior to any operation of this equipment

Failure to follow all manufacturer's instructions could result in serious personal injury and/or property damage.

Ruby Street Brewing, LLC assumes no responsibility for personal injury or property damage sustained by or through the use of this product.

If you have any questions or need assistance please contact us at:

Ruby Street Brewing, LLC

Email:
Questions@RubyStreetBrewing.com

SAVE THESE INSTRUCTIONS

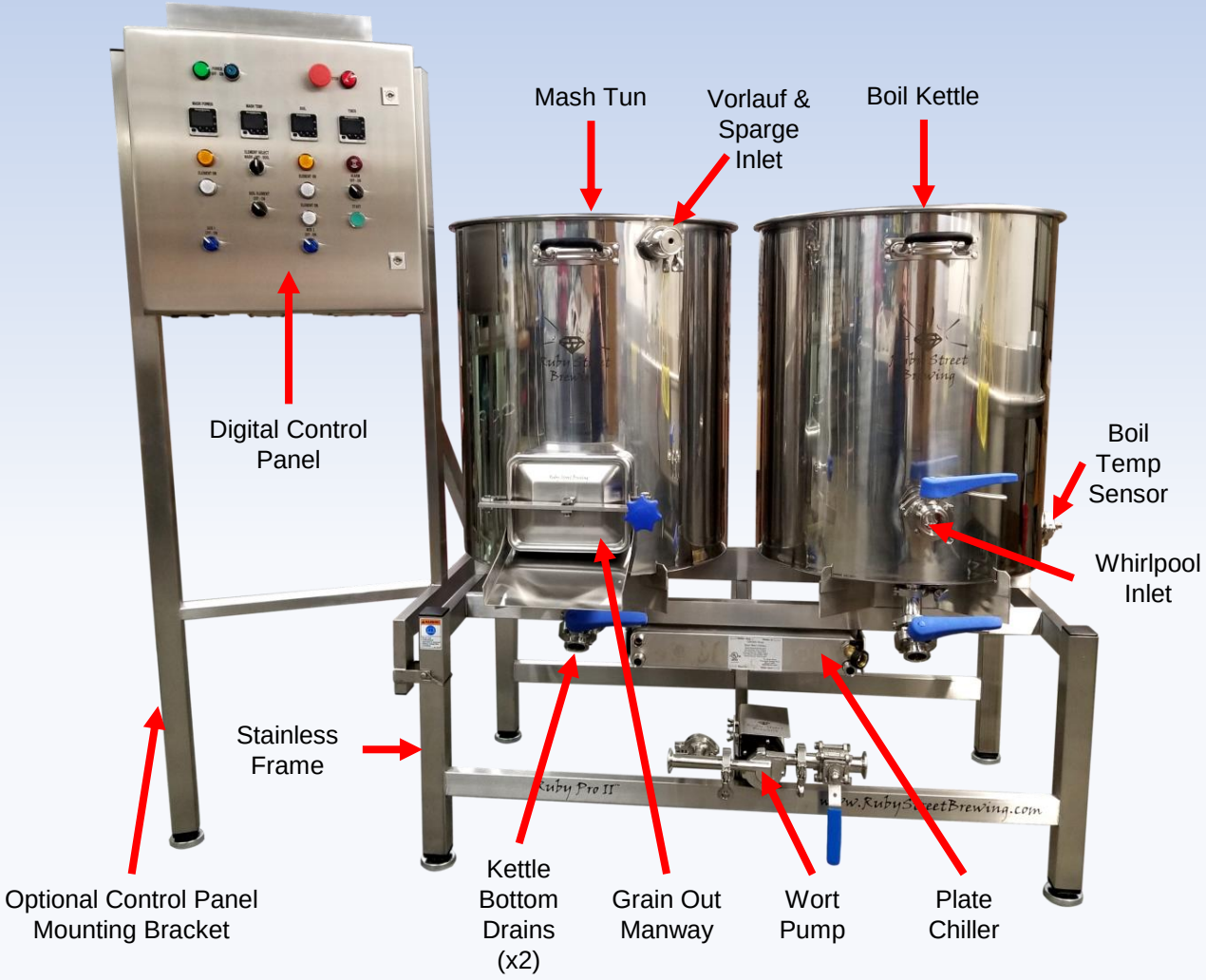
Safety Instructions

WARNING: To Reduce the risk of serious injury, read the following important precautions before using the Ruby Pro system

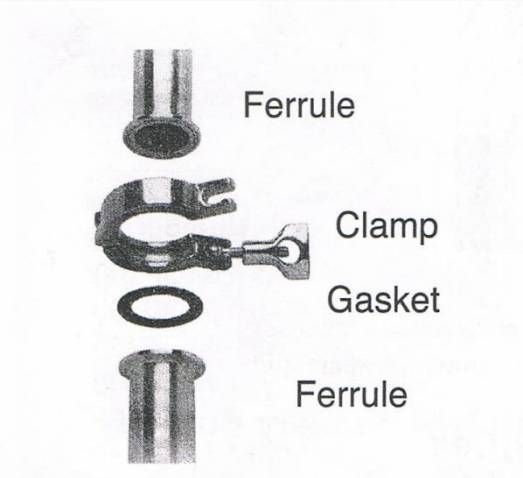
- It is the responsibility of the owner to ensure that all users of this equipment are adequately informed of all precautions.
- Use this equipment as described in this manual, do not use for anything other than its intended purpose.
- The brewing structure must only be used on a level hard surface such as concrete. Do not use on a flammable surface or surface that could be damaged by moisture.
- Make sure that all 4 caster wheels contact the ground evenly, and that the frame cannot rock or sway during use. Adjust casters as needed to correct for uneven surfaces. Lock all (4) casters prior to use.
- Inspect and tighten all parts before each use. Replace any parts that are worn or damaged immediately.
- Keep children and pets away from this equipment during use.
- DANGER! Water and Electricity Do Not Mix… Make sure that the control system is plugged into a GFCI protected circuit. If in doubt consult a licensed electrician before using.
- Do not leave brewery unattended at any time during operation.
- Do not attempt to move the brewery unless all liquid is removed from the kettles.
- Always make sure that the control panel is powered off and all control switches are in the off position before connecting or disconnecting any power, pump, or element connections at the panel.
- DANGER! Unplug Panel from the main outlet before opening or servicing the panel.
- Never dry fire stainless heating elements. Energizing an element that is not submerged in liquid will result in immediate and permanent damage.

Brewery Overview

Familiarize yourself with all system components prior to assembly



Our breweries are constructed with high quality solid stainless steel tri-clamp fittings. These fittings are extremely easy to clean and keep sanitary and offer a completely universal connection system. See illustration at right for proper assembly



Brewery Overview

Electric heating and control system components

Key Switch and Power On Indicator Light

Mash Power Controller

Mash Temp Controller

Element Selection Indicator Lights (orange)

Element Energized Indicator Lights (white)

Element Selector Switch (RIMS Heater / Boil Element 1)

Element ON/OFF Switch (Boil Element 2)

Stop Button and Indicator Light

Process Timer

Boil Controller

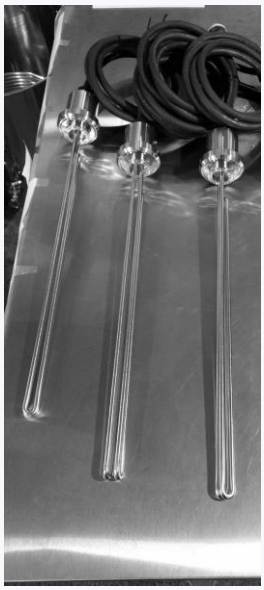
Alarm

Alarm on/off switch

Timer Start Button

Wort Pump Switch

Water Pump Switch



3 Stainless Steel Heating Element Assemblies

Main Power Cord (Non cUL Models Only)

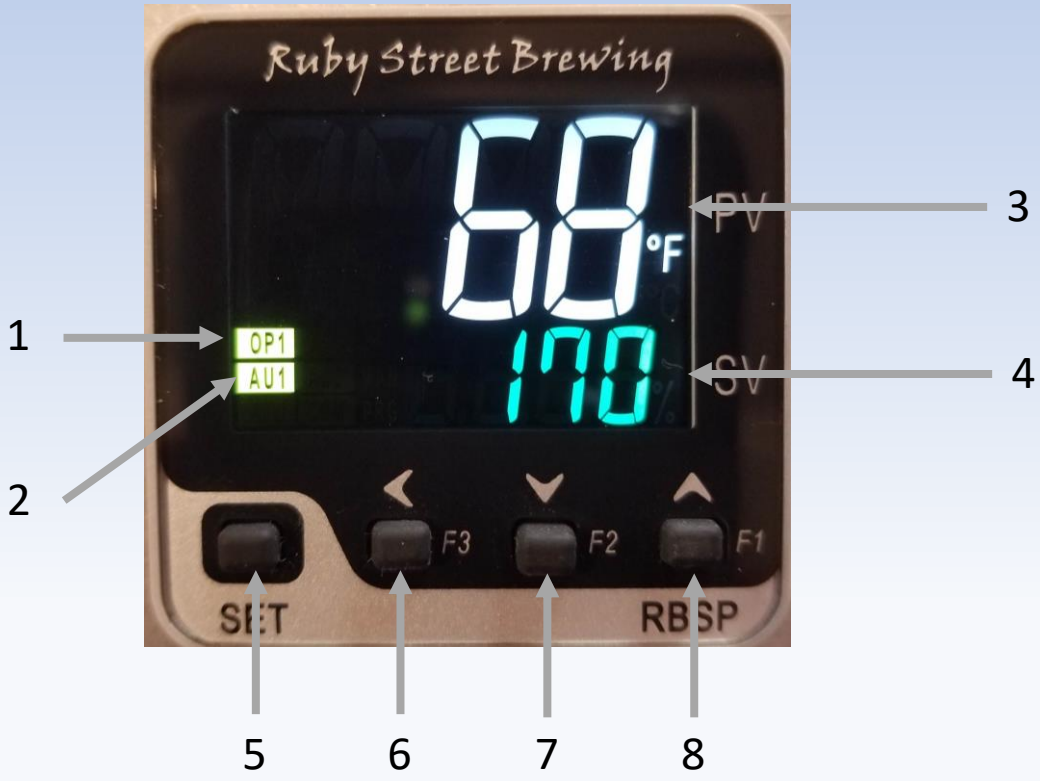
Sensor Cables (x2)

Safety Shutoff Key

Key to Open Enclosure

Brewery Overview

Digital temperature controller



1 – Output Indicator – When indicator light is on, control cycle is calling for heat (if the element on/off switch is in the on position, the elements will be energized).

2 – Alarm 1 Indicator – Temperature alarm triggered when lit (if the alarm switch is in the ON position, alarm will sound when lit).

3 – Process Value – Indicates temperature measured by sensor probe (sensor input).

4 – Set Value – Indicates temperature set value (user input).

5 – Set Key – Used to enter adjusted values and access parameters menu.

6 – Data shift key – When setting temperature values, this key will shift the adjustment position to the tens and hundreds allowing for faster temperature adjustments

7 – Decrement key ▼: Decreases numeric value of the temperature setting.

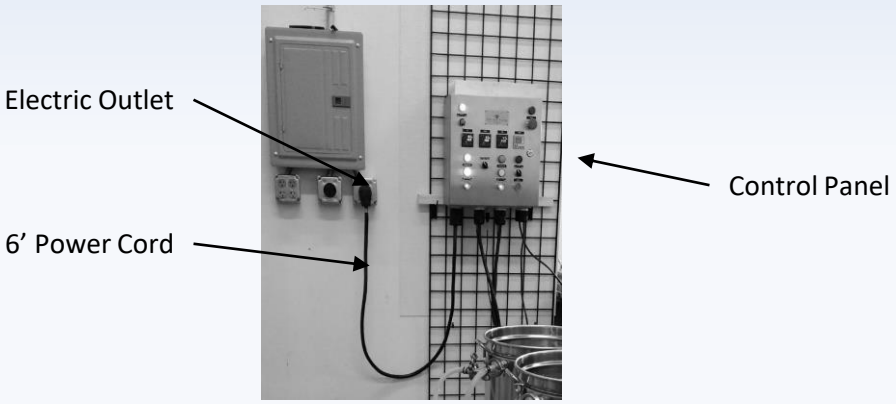
8 - Increment key ▲: Increases numeric value of the temperature setting.

Brewery Assembly

Power supply and panel mounting

When choosing a location for your brewery, you need to plan ahead to make sure there is adequate space for the system, wall mounted control panel, and necessary power receptacle. You also want to make sure that your flooring surface is solid and wont be damage by moisture. The brewing system creates a significant amount of steam so make sure that you have a plan for proper ventilation, as the excess steam can damage wall and ceiling surfaces.

Power Supply:
Your panel includes a 6' power cord that connects the panel to the wall outlet. We recommend that you place the wall outlet within 3' of the panel mounting location and close to the same height. See illustration below.



The supply outlet for your brewery must be a dedicated GFCI protected circuit installed by a licensed electrician based on the following specifications:

- 50 Amp Systems:
  - 60 Amp 240VAC Single Phase GFCI Protected (4 Wire) circuit.
  - Plug Type: NEMA 14-50
- 100 Amp Systems:
  - (2) 60 Amp 240VAC Single Phase GFCI Protected (4 Wire) circuits.
  - Plug Type: NEMA 14-50 (x2)

Panel Mounting:

Choose a location to mount your control panel either directly to the left or right of the brewing system location. The panel should be mounted at a height that has good access for adult use (out of reach of small children).

Your panel includes (2) mounting holes at the top of the enclosure. When securing the panel to your wall make sure that you are mounting to a solid wall surface using anchors and fasteners that are rated in excess of the panel weight (the control panels are heavy!).

Brewery Assembly

Kettle Placement and Assembly

Step 1:

Gently place both kettles on the frame in their proper positions. The mash tun with the manway goes in the left position. The boil kettle with the whirlpool inlet goes on the right.

Step 2:

Pull each kettle forward until it contacts both kettle stops. The bottom drain port should be centered between the stops.

Step 3:

Locate and identify all manway door components: stainless door, silicone door gasket, lock assembly, hinge pins
(note that some components may be pre-assembled)

Brewery Assembly

Kettle Placement and Assembly

Step 4:

Install manway door and lock assembly onto the door frame as shown by inserting the hinge pins from the top in both sides. Place the silicone gasket inside the door. Align the door on the door frame making sure that the gasket extends evenly around all sides of door frame. Gently tighten the lock assembly to secure the manway door. The manway door should only be tightened enough to prevent leaks. Overtightening can permanently damage the door and or frame.

Step 5:

Install the false bottom into the bottom of the mash tun as shown. The false bottom handle should be towards the back of the kettle. The bottom drain hole in the front and the element port in the back should be centered between the (2) welded false bottom supports.

Step 6:

Install the domed false bottom into the bottom of the boil kettle as shown. The tab on the bottom of the false bottom dome should index into the bottom drain hole

Brewery Assembly

Kettle Placement and Assembly

Step 7:

Using clamps and gaskets install the 45 degree tri clamp elbows and butterfly valves onto both kettles. Make sure that you orient each valve so that the handle swings downward when opening. Squeeze the metal lever beneath the handle to rotate each valve open to check for proper operation and clearances.

Step 8:

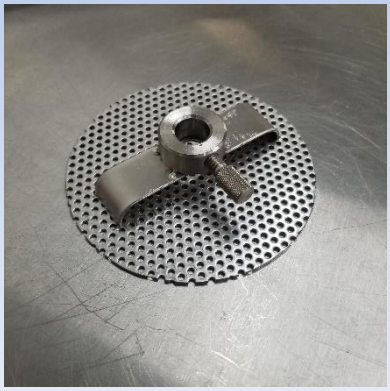
Install the temperature probe into the sensor port on the boil kettle using clamps and gaskets.

Brewery Assembly

Kettle Placement and Assembly

Step 9:

Locate and identify vorlauf and sparge assembly components: tri clamp sparging tube, sprinkling disc.



Step 10:

Install the tri clamp sparging tube into the mash tun upper port as shown with a clamp and gasket.

Step 11:

Place the sprinkler disc onto the sparging tube and secure by tightening thumb screw. Make sure that the sprinkler disk is level by rotating the sparge tube at the tri clamp fitting prior to tightening the clamp. We recommend removing the vorlauf and sparge assembly when mashing in and cleaning to avoid damage and allow better access to the mash tun when stirring.

Brewery Assembly

Kettle Placement and Assembly

Step 12:

Install the whirlpool arm into the boil kettle. Align it facing left or right and secure with a clamp and gasket

Step 13:

Install a butterfly valve onto the whirlpool arm with a clamp and gasket. Make sure that you orient the valve so that the handle swings outward when opening. Squeeze the metal lever beneath the handle to open the valve and check for proper operation

Step 14:

One of the kettle lids is designed as a CIP (clean-in-place) lid with a welded tri clamp port. Insert the included spray-ball assembly into the CIP lid, align the tri clamp connection directly away from the lid handle and secure with a clamp and gasket.

Brewery Assembly

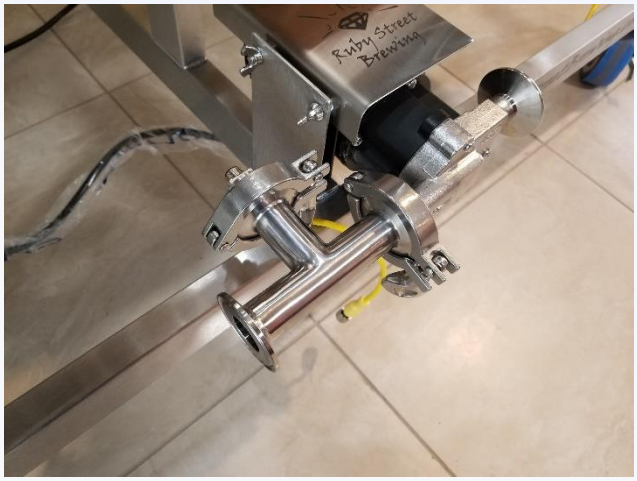
Pump and Chiller Assembly

Step 15:

Place the pump onto the pump brackets and secure with wing nuts as shown. Locate the short pump extension cord that has a twist lock plug on one end and a regular plug on the other end. Plug the power cord from the pump into the pump extension cord. This cord will be plugged into the control panel in a later step.

Step 16:

Install the sensor tee onto the wort pump inlet with the sensor probe facing towards the inside of the brewery frame as shown.



Step 17:

Place the plate chiller onto the plate chiller bracket and secure with wing nuts from the backside as shown. The plate chiller should be installed with the (2) water fittings upward as shown.

Brewery Assembly

Sensor Cable Assembly

Step 18:

Connect the boil sensor cable to the boil kettle sensor probe. Make sure that the cable is routed outside of the frame and away from risk of damage.

Step 19:

Connect the mash sensor cable to the sensor tee connected to the wort pump.

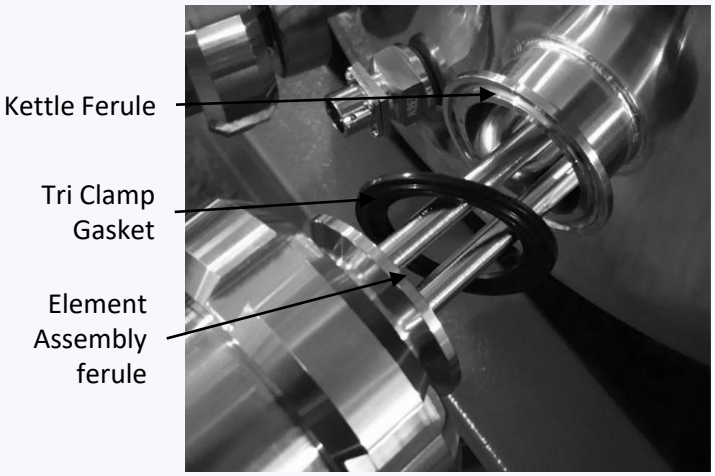
Brewery Assembly

Element Assembly

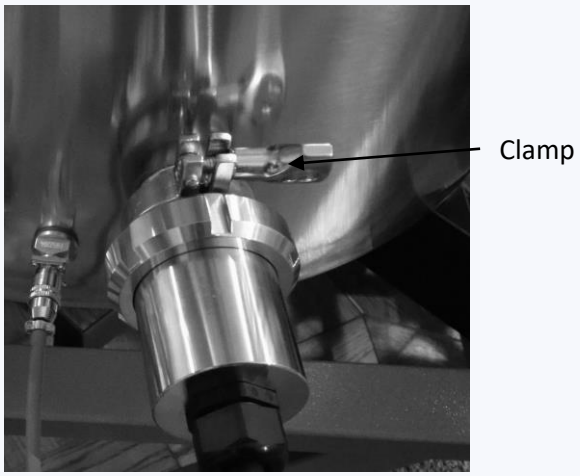
Step 20:

Install the heating elements into the tanks. Place a tri-clamp gasket onto each of the three heating elements by pushing the gaskets over the element and up against the sealing surface. Install the elements into the kettles as shown below. The Boil kettle elements will intersect (one over the other) in the kettle. Once an element is in the tank properly, make sure the tri-clamp gasket is properly mated onto both sealing surfaces (ferrules), and install a stainless clamp to complete the connection as shown below..

The stainless steel false bottom for the mash tun is designed to prevent any solid material from coming into contact with the heating element, and is designed with a channel to direct the liquid flow along the element for proper internal RIMS operation. The false bottom includes a 3” tall stainless support on the bottom side with an open channel through the center. Make sure that the element is centered in the channel beneath the false bottom when assemble



Installing Element



Installed with Clamp

Brewery Assembly

Control Panel Connections

Step 21:

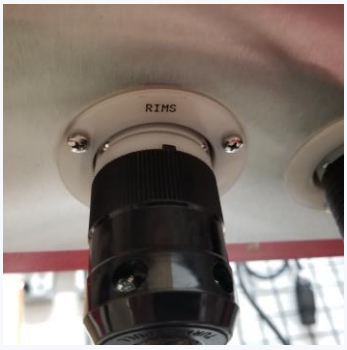
Make sure that all switches (including the key switch) are in the off position on the control panel.
Connect the (2) temp sensor cables into the correctly labeled sockets on the control panel as shown. The socket that is labeled mash should be connected to the pump sensor tee.

Step 22:

Plug the wort pump power cable into the panel as shown. There is an additional socket, cord and switch on the panel that can be used to power an auxiliary pump to provide water to the system.

Step 23:

Plug the (3) element power cables into the panel as shown, making sure that the correct kettle is plugged into the corresponding labeled sockets. The mash tun will plug into the single socket labeled “RIMS or Mash”.



Pump Operation

DO NOT RUN DRY:
Any pump that you are using must be properly primed with the pump head completely flooded with liquid prior to starting the pump. The pump impeller bearings rely on liquid for lubrication. Running a pump dry for even a few seconds may damage the pump impeller resulting in need for replacement.

How to Prime Your Pumps:
Connect the appropriate hose from the kettle you wish to pump from to the inlet side of the pump (the connection opposite the pump flow control valve). Connect an outflow hose to the outflow (valve) side of the pump. With the power off, hold the open end of the outflow hose above the level of the Tanks, open the ball valve on the pump completely followed by opening the ball valve on the kettle completely. This should allow the pump head to flood with liquid and at this point you should see liquid flow through the pump and into the beginning of the outflow hose. Do not start the pump. Once you have confirmed that the pump head is filled with liquid, close the outflow valve on the pump. Connect the pump outflow hose to the proper connection or simply place the hose into the bottom of the kettle you want to pump into. Start the appropriate pump from the control panel. Slowly open the pump control valve to the desired flow rate. If liquid is not flowing from the outflow hose, the pump did not prime. Stop the pump, and repeat the process above. With practice, you will find that priming centrifugal force pumps can be fairly simple. Keep in mind that any air trapped in the pump head will cause difficulty when priming.

Cleaning Your Pumps:
Pumps that have been used for anything other than clean water must be immediately cleaned and flushed after brewing. Make sure that you circulate PBW or similar brewery cleaner through the pump to flush out any residual sugars or solids. Backflush the pumps with clean water to remove all cleaning solutions from the pumps. If you're not going to re-use the system within a day, remove all water from the pumps by loosening the pump from the mounting bracket, remove the valve from the pump and gently shake out any excess water from the pump head. Store the pump ball valves half-way open to allow the entire valve to drain and completely dry.

Pump Maintenance:
It may be necessary to occasionally disassemble your pumps for a thorough cleaning, or if the pump impeller gets stuck. This can be easily accomplished by removing the (4) screws on the front of the pump head, and then removing the (4) screws on the backside of the pump head to remove the impeller cover and access the pump cavity. Oil your pump motors once per year via the oiling port marked on the motor with 4-5 drops of SAE20 non-detergent oil.

Tune and Test

Never Dry Fire the Elements – The electric elements must be submerged in liquid (water or beer wort) any time they are energized. Supplying power to a dry element for even a few seconds will permanently damage the element. The best way to ensure that this never happens is to always verify that your element selector switch(s) are turned off until you have confirmed that the element is completely submerged. Make sure to turn elements off prior to liquid level falling below the element any time you are draining a kettle. If an element is damaged, replace immediately

Tune and Test

Testing the Mash Controller

Prior to brewing on the system we recommend doing a water run to completely familiarize yourself with the operation and heating characteristics of the system.

Step 1: Make sure that the valve on the mash tun is in the closed position. Fill the mash tun about ½ full with clean water.

Step 2: Connect a 4' length of hose from the mash tun valve to the Inlet side of the wort pump. Connect a 7' length of hose to the to the wort pump outflow valve. Prime the wort pump by following directions on page 18. Connect the 7' hose onto the return fitting at the top of the mash tun.

Step 3: Confirm that all pump switches and element selector switches on the control panel are in the 'OFF' position. Turn the key switch on the control panel to the 'ON' position, twist the red Stop button clockwise to release the button if pressed in. At this point, the mash temp and boil kettle controllers should be reading temperatures on the top Process Value (PV) display relative to the temp probe positions. If either displays are not reading temperatures, double check all sensor cable connections.

Step 4: Press and hold the up or down arrow keys on the **Mash Temp** controller until the Set Value (SV) display reads 150 degrees F. Press the Set Key one time to enter the new temperature set-point. The Output (OP1) indicator light on the controller should now glow green.

Step 5: On the **Mash Power** controller, press and hold the up arrow key to adjust the mash power output to 100 (100%). The Output (OP1) indicator light on the controller should now glow green.

Step 6: Start the wort pump using the control switch on the panel, and slowly open the flow control valve on the wort pump to the full open position. Water should now be pumping back into the mash tun. If water does not flow with the pump running, refer to the priming process on page 12.

Step 7: Turn the Element selector switch to 'Mash' on the control panel. At this point both the orange and white HLT indicator lights should illuminate on the control panel, and the mash tun should begin heating.

Step 8: Once the mash tun reaches 150 degrees, reduce the output of the **Mash Power** controller to 20 (20%). You can adjust this value up or down to see how the controllers work in tandem to maintain the mash temp.

Step 9: Turn the element selector switch to the 'Off' position and turn the wort pump switch off. Transfer the water to the boil kettle for testing

Tune and Test

Variable Power RIMS

Variable Power RIMS Process Notes:

The element inside of the mash tun is referred to as a variable power RIMS (Recirculating Infusion Mash System) heater. The 2 mash controllers on the control panel work in tandem to control the RIMS element. The mash power controller regulates the power supplied to the element by pulsing the electricity on and off based on the percentage of output adjusted on the mash power controller. The mash temp controller turns the element on and off based on the need for heat as referenced by the process value (temp probe reading) and the Set Value of the controller. The temp controller is designed to keep the recirculating wort within 1 degree of the setpoint. The output lights on both controllers must glow green in order to energize the element. The output light on the mash power controller will flash based on the percentage of output. As a rule of thumb, the RIMS element should only be turned on when the pump is recirculating the mash tun. Since the temp probe is located at the pump, the mash temp controller only reads accurately during mash recirculation.

When mashing in with this system you have the option of bringing hot water directly into the mash tun either from an existing HLT or on-demand water source. You can use the RIMS heater to dial in the perfect temp for your strike water or to heat cold water up to strike water temp. One alternative (faster) method for heating strike water is to heat the water in the boil kettle using both elements and then pump the heated water over into the mash tun.

The concept behind the variable power RIMS heater is that you have the option of using a full 6,000 watts of power to quickly heat strike water or heat the mash between temperature steps. When maintaining mash temps during a rest period we recommend to reducing the mash power in order to precisely regulate the temp of your mash.

Recommended Initial Mash Power Controller Settings:

- 100% - Heating Strike Water
- 75%-100% - Raising Mash Temp Between Steps (Step Mash)
- 20%-30% - Maintaining a set Mash Temp for a period of time

Tune and Test

Testing the Boil Controller

The Controller for the Boil kettle is not setup like the mash temp controller. PID type control does not work for boiling, because there is not a perfect temp that provides a steady boil. Instead, the Boil controller is setup like the power controller for the mash (% output). By adjusting the output % of the controller, you can attain a more or less vigorous boil based on your needs.

Step 1: Make sure there is enough water in the boil kettle to cover the electric elements (we recommend at least 2" above).

Step 2: Press and hold the up arrow key to adjust the boil power output to 100 (100%). The Output (OP1) indicator light on the controller should now glow green.

Step 3: Turn the Element selector switch to 'BOIL' on the control panel. At this point both the orange and 1 of the white BOIL indicator lights should illuminate on the control panel, and the Boil kettle water should begin heating. Turn the boil element on/off switch for element 2 on the control panel to 'On'. The second white BOIL indicator light should illuminate. While heating gently stir the boil kettle. With electric heat, you must always keep the water moving while heating in order to avoid stratification. If the water isn't stirred, the temp probe and thermometer will not read accurately, and the boil will take longer to achieve.

Step 4: Once the water in the boil kettle begins boiling, you can reduce the output % by using the down arrow key to adjust and then the enter key to register the new value. We find that 70% output generally provides a nice rolling boil on the Alpha Ruby systems. Keep in mind you will likely always use 100% output while heating to the boiling point to save time. Note that in case you are close to boil over, the element selector switch is the fastest and easiest way to stop the boil kettle (much faster than dialing down the output percentage).

Step 5: Turn the element selector switch to the 'Off' position followed by turning the Boil Element On/Off switch to the 'Off' position. You can now drain the boil kettle (using the pump as needed).

Brewing Instructions

Please note that these instructions are only intended to illustrate the basic use of this system and its components. We highly recommend that you read one of the many available books on all grain brewing procedure. Contact your brewing equipment supplier for recommendations. Note that some of the benefits of our system having a heated mash tun is the ability to heat strike water directly in the mash tun and the ability to do more complex step mashes. The internal RIMS mash tun also allows the brewer to perform a 170° F mash-out if desired. While the directions below are based on fly-sparging, batch sparging is also possible with this system and is becoming a popular alternative for many brewers.

Heating Strike Water:

- Add cool clean water (strike water) to the mash tun at a rate of 1.25 quarts of water per pound of grain plus 5 gallons (to fill dead space beneath the false bottom). At this time, add any water treatments as necessary.
- Connect hoses as shown below and begin recirculating the strike water through the vorlauf and sparge assembly (refer to page 18 for instructions on priming the pump).
- Set the strike water temperature on the mash tun temp controller, and set the mash power to 100%. Use the RIMS element to adjust the temp of the strike water as needed. There are many online programs and even cell phone apps to help you calculate the correct strike water temperature. Generally strike water temp range is around 165°–169° F

HOSE ARRANGEMENT FOR HEATING STRIKE WATER AND MASHING

Brewing Instructions

Mashing In:

- Once the strike water is up to temp, turn off the RIMS element and stop the pump.
- Remove the clamp that attaches the vorlauf and sparge assembly to the mash tun and pull the assembly through the port and allow to hang as shown in the photos below. Doing this allows full access to stir the mash without having to disconnect or reconnect any hoses.
- Add the entire grain bill into the mash tun and stir thoroughly to break up any dry clumps and homogenize temperatures throughout the mash.
- Once the mash is thoroughly mixed, re-connect the vorlauf and sparge assembly, restart the pump and adjust the flow by setting the outflow valve on the pump to about half-way open.
- Set the mash tun digital temp controller to the correct mash temperature and the power control to 20%. Turn the element selector switch to 'MASH'
- Allow the mash to recirculate for approx. 60 minutes.
- Keep in mind that while recirculating the mash, the temperature is measured at the wort pump. If the flow stalls for any reason, the control system cannot properly measure and adjust the mash temperature.

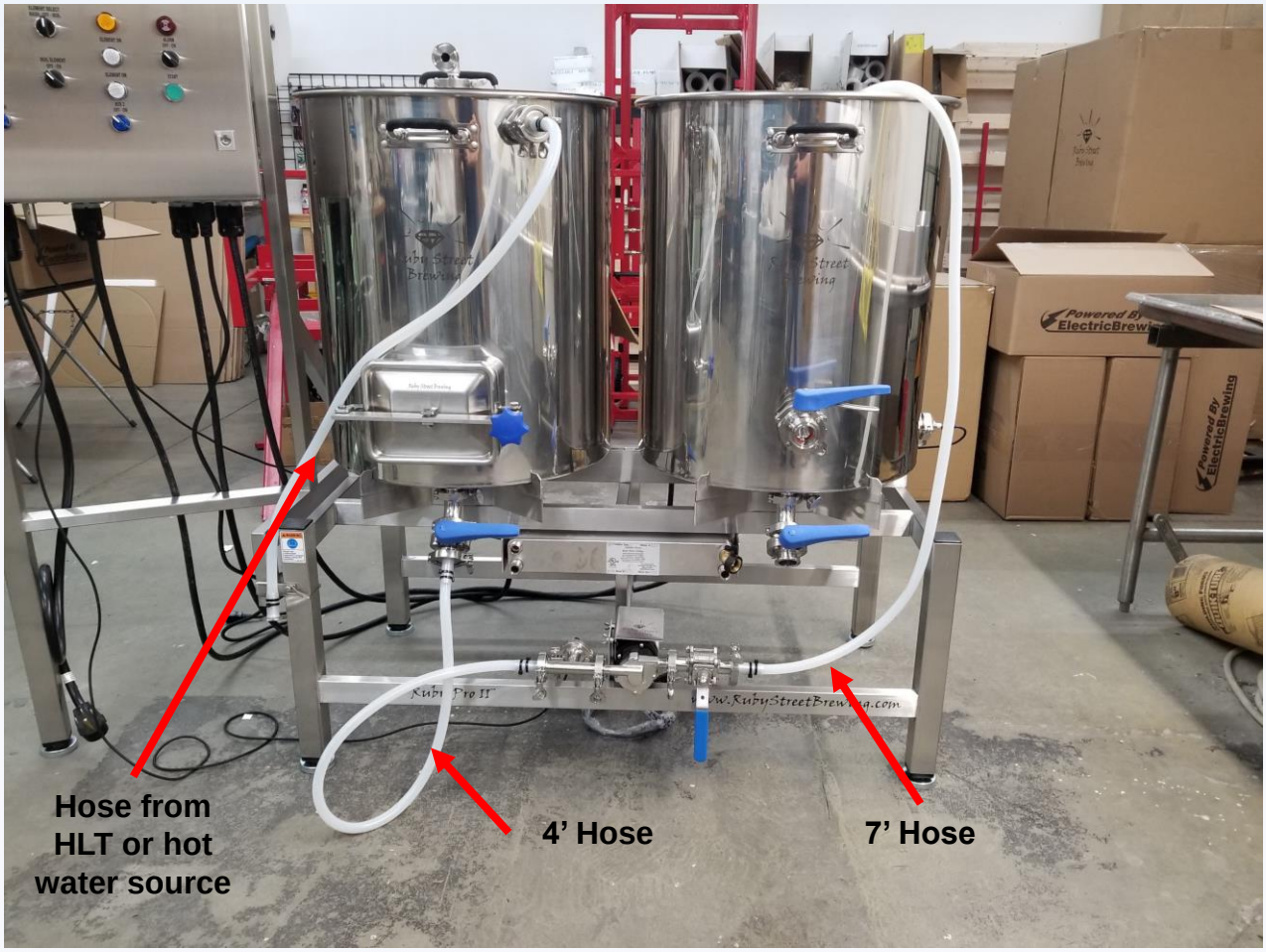
Brewing Instructions

Setting up for Fly Sparge:

- Once the mash is complete, you are ready to begin the process of fly sparging.
- Turn the element selector switch to ‘OFF’, stop the pump and close all liquid valves
- Connect the brewing system hoses as shown below to prepare the system for fly sparging.

Note that we prefer to transfer the wort to the boil kettle by placing the hose over the top of the kettle as shown below. This allows you to pick up the hose at any time to view and test your flow rates. If you prefer to transfer with the lid on, you can connect the 7’ hose to the whirlpool port instead.

HOSE ARRANGEMENT FOR SPARGING



Brewing Instructions

Sparging:

- Once all hoses are connected you are ready to begin sparging the grain with water from the HLT while simultaneously transferring the wort from the bottom of the mash tun into the boil kettle.
- We recommend that the sparging process take about 90 minutes for optimum efficiency. Start by slowly transferring wort to the boil kettle by adjusting the flow rate with the wort pump outflow valve. Typical pre-boil volumes in the boil kettle should be about 36 gallons for a 1 BBL finished batch. You can use a measuring bucket to capture, measure and time your wort runoff to adjust your flow rate. 36 gallons / 90 minutes = 0.4 gallons per minute.
- It is best to maintain a water level above the grain bed in the mash tun at all times during transfer. To achieve this adjust the flow rate of the 170 degree sparge water coming into the mash tun so that you maintain a water level 1”-2” above the grain bed.
- To reduce the amount of time that is required to bring the boil kettle up to boiling temps, we recommend turning on the boil kettle elements as soon as you have a few inches of wort collected above the level of the elements in the boil kettle. Set the boil kettle power to 100% initially and then adjust power as needed to keep the kettle temp just below boiling and you should be able to boil immediately upon hitting your target runoff volume.

Starting the boil:

- Once you hit the target runoff volume in your boil kettle stop the wort pump, the flow from your HLT and close all liquid valves. Begin heating the Boil Kettle to bring the wort volume to a full boil.
- Be careful to avoid a messy boil-over by stirring and reducing the element output as liquid nears boiling temperatures. We recommend boiling the wort between 60-90 minutes.
- Add all hop additions to the boil either in hop bags or in stainless hop filters to avoid plugging the plate chiller with hop material.

Mash Tun Cleaning:

- To help shorten your brew day, we recommend using the boiling time to clean your mash tun. The first thing you need to do when cleaning the mash tun is make sure that you have all of the liquid completely pumped out of the grain bed. This is accomplished by simply placing the hose you were using to transfer to the boil kettle into a bucket or suitable drain as shown. Restart the wort pump and run the pump until all liquid is removed from the grain.

Brewing Instructions

Grain Removal:
Your brewing system is designed with a manway in the mash tun that makes grain removal fast and easy.

- Attached the stainless steel grain chute to the manway by hooking the sides of the grain chute over the welded brackets on both sides of the manway frame as shown in the photo below.

- Position a container to capture the spent grain underneath the grain chute. You can use a large bucket or wheelbarrow for this purpose.
- Open the manway and use either a plastic scoop or food hoe to pull the spent grain out of the mash tun.
- Once as much grain as possible has been removed from the mash tun, pull the false bottom out of the mash tun and clean separately.

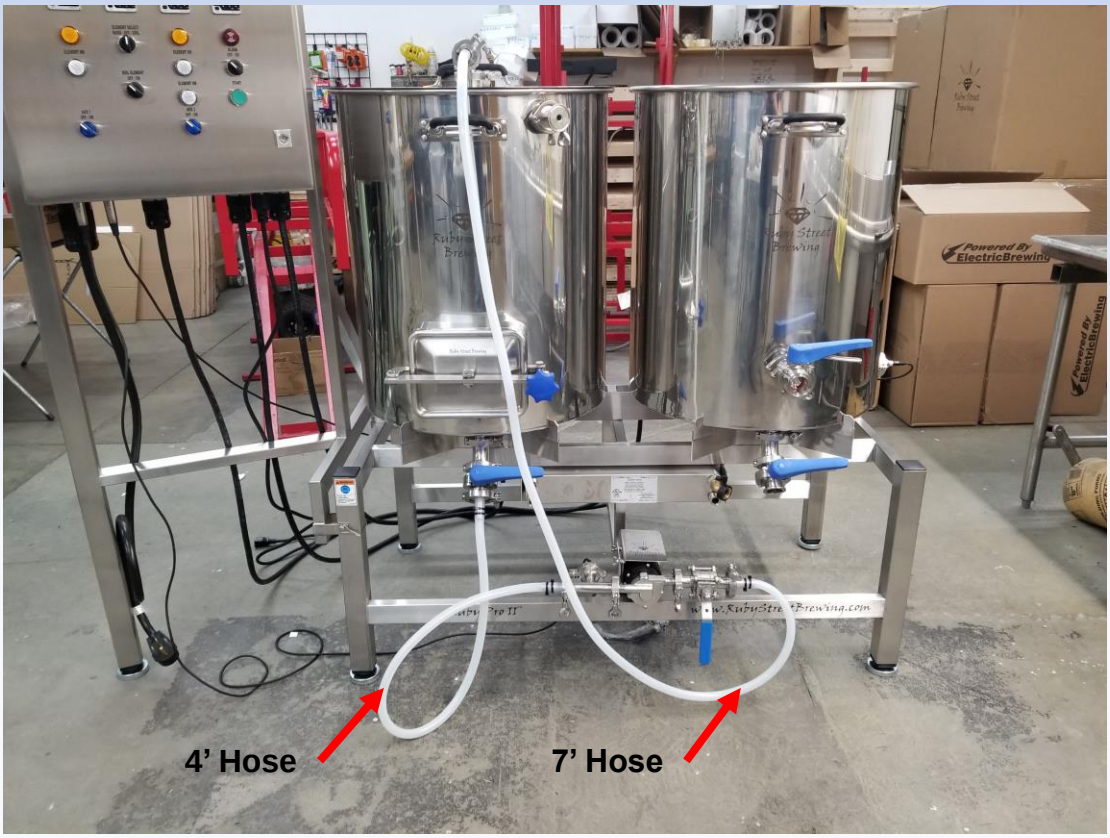
Spray Down:

- Place a short hose from the bottom drain on the mash tun into a bucket or drain as shown and open the bottom drain valve.
- Use a hose end sprayer to completely spray out the mash tun making sure to rinse all visible solid material out of the kettle via the bottom drain. Any leftover grains or husks in the mash tun can plug the sprayball during CIP.
- Place the false bottom back into the mash tun.

Brewing Instructions

CIP (Clean-In-Place):

- Setup your mash tun clean in place by placing the cleaning lid with the spray-ball on the mash tun and attach hoses as shown below using the water pump to recirculate.

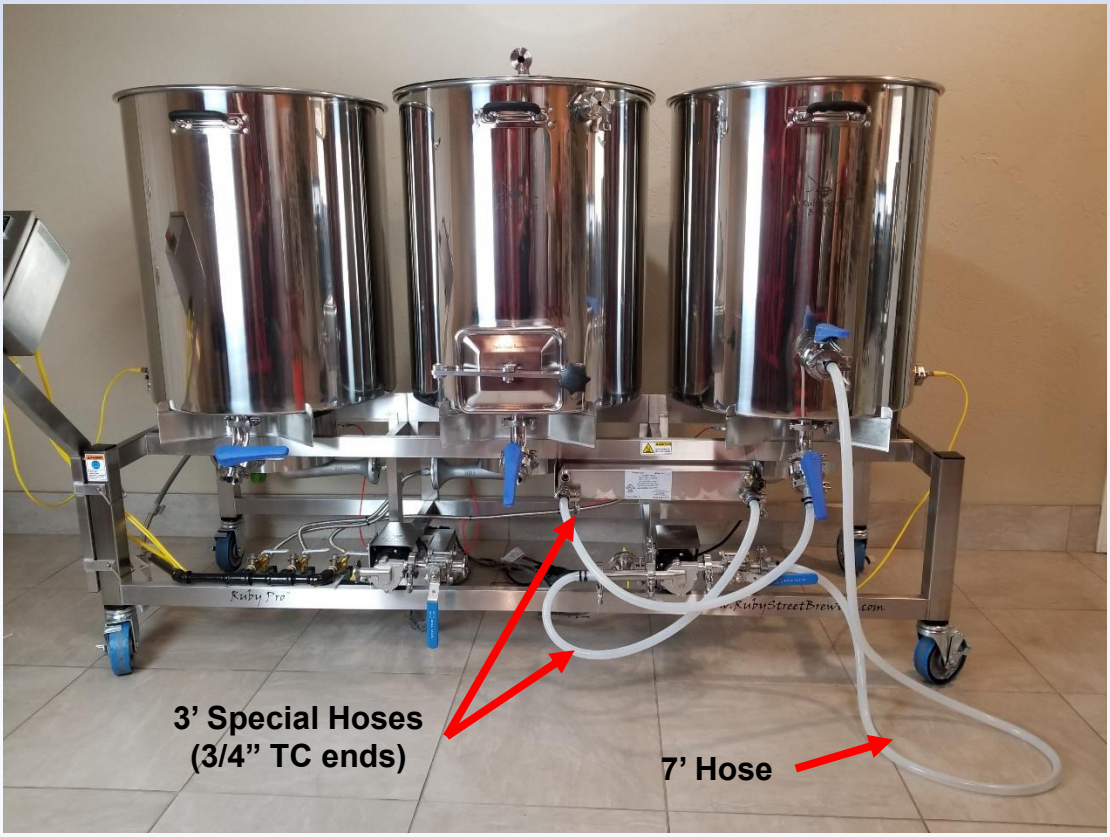


- Add 1 gallon of hot water (min 120 degrees) to the mash tun (you can use hot water from the HLT) and add 2 TBSP of PBW (Powdered Brewery Wash).
- Allow the hot PBW solution to recirculate through the sprayball for at least 30 minutes. **Do Not** open the lid during this process as the hot solution will spray out.
- After 30 minutes of CIP, stop the pump, disconnect the 7' hose from the spray-ball and place the hose into a bucket or drain.
- Remove the lid and use a hose end sprayer to rinse out the kettle and flush clean water through the pump and hoses.
- Allow the mash tun to air dry with the lid off.

Brewing Instructions

Hot Loop Sanitizing and Whirlpool

- Hot loop sanitizing is the process of recirculating near boiling wort through the pump, hoses, and plate chiller to heat sanitize all components prior to transferring to the fermenter.
- Prior to the end of your boil, arrange the hose connections on your brewery as shown below. Note that there are (2) special 3' hoses that are used to connect to your plate chiller with 3/4' clamps and gaskets.



- Once boiling is complete, turn off the boil kettle burner and carefully prime the wort pump
- Immediately post-boil recirculate the hot wort through the pump, plate chiller, and back into the boil kettle through the whirlpool valve. Allow the kettle to whirlpool for about 10 minutes. After whirlpool, place a lid on the kettle, stop the pump, close the pump outflow valve and allow the wort to settle for another 10 minutes.

Brewing Instructions

Prepare In-Line Oxygen (Optional)

- If your brewing system includes the in-line oxygen package, follow these directions. If not, you can move on to the next step.
- We recommend soaking the oxygen tee in a bucket of StarSan for several hours, and removing it from the StarSan immediately before use.
- If you are using a conical fermenter, connect the oxygen tee to the fermenter valve as shown (Alternatively, if you are using plastic or glass fermenters, the oxygen tee can also be placed at the plate chiller outflow).
- Open the fermenter valve, connect an oxygen tank/regulator to the oxygen tee and run oxygen through the tee for a few seconds to push any sanitizer out of the stone. We recommend setting the flow control to 1.5 LPM and pushing oxygen during the entire transfer period.

Brewing Instructions

Wort Cooling and Transfer:

- Close all liquid valves, remove the 7’ hose from the whirlpool valve, and reconnect the hose to the fermenter (with the oxygen tee if equipped) as shown

- Attach a cold water garden hose to the chilling water valve in the upper right hand corner of the plate chiller. Close the water valve on the plate chiller, and turn on your cold water source. Attach a waste water hose to upper left hand connection on your plate chiller and route that hose into a suitable drain.
- Fully open the cooling water valve on the plate chiller allowing the cooling water to flow through the plate chiller and drain from the waste hose. Make sure that your fermenter is able to vent by confirming that the blow-off tube or airlock connection is unrestricted. Open the oxygen tank valve to start oxygen flow (if equipped). Open the wort pump outflow valve and start the pump. Monitor the outflow temps on the mash tun controller and use both the wort pump valve, and the cold water valve to dial in the chilling temp between 65 and 68 degrees. If the temp falls below 65 degrees, restrict the cold water flow until the proper temp is reached. If the temp rises above 68 degrees, restrict the wort flow until the proper temp is reached. Once all of the wort has transferred into the fermenter, stop the pump and immediately close the wort pump outflow valve. If you are using an in-line oxygen system, close the oxygen cylinder and disconnect the plastic tubing connector between the oxygen tee and the flow regulator. Finally close the valve on the fermenter.

Brewing Instructions

Final Cleaning:

- Remove the false bottom from the boil kettle and clean separately
- Disconnect the special hose from the bottom valve on the boil kettle and leave all other hoses connected.
- Attached a short 4’ hose from the bottom valve on the boil kettle and place it into a bucket or suitable drain and open the bottom drain valve.
- Use a hose end sprayer to completely spray out the boil kettle making sure to rinse all visible solid material out of the kettle via the bottom drain. Any leftover material in the boil kettle can plug the spray-ball during CIP.
- Setup hoses exactly like you did for the hot loop sanitizing step earlier as shown.

- Add about 2 gallon of hot water to the boil kettle mixed with 4 Tbsp of PBW. Open the valves and start the pump to recirculate PBW through the pump and plate chiller for 5 minutes in the forward direction.
- Stop the pump, close the valves and switch the two wort connection hoses on the plate chiller in order to reverse the flow through the plate chiller. Run the recirculation loop again for another 5 minutes in the reverse direction through the plate chiller.
- Remove the 7’ hose from the whirlpool valve and place into a bucket or drain and pump the remaining PBW solution out of the boil kettle and plate chiller.
- Rinse the boil kettle with clean water allowing the clean water to run through the hoses, pump and plate chiller to rinse all cleaning solution out of the chiller.

Brewing Instructions

CIP (Clean-In-Place):

- Setup your boil kettle CIP by placing the cleaning lid with the spray-ball on the boil kettle.
- Attach hoses to use the wort pump to recirculate the boil kettle similar to when you ran the CIP loop on the mash tun.
- Add 1 gallon of hot water (min 120 degrees) to the boil kettle (you can use hot water from the HLT) and add 2 TBSP of PBW (Powdered Brewery Wash).
- Allow the hot PBW solution to recirculate through the spray-ball for at least 30 minutes. **Do not** open the lid during this process as the hot solution will spray out.
- After 30 minutes of CIP, stop the pump, disconnect the 7’ hose from the spray-ball and place the hose into a bucket or drain.
- Remove the lid and use a hose end sprayer to rinse out the kettle and flush clean water through the pump and hoses.
- Allow the boil kettle to air dry with the lid off.

Troubleshooting Guide

If any component of the digital control system is not functioning properly, please use the tips below to troubleshoot the problem. For any problems that cannot be resolved using the troubleshooting guide, please contact Ruby Street Brewing, LLC for support

No display on digital control panel

- Confirm that key switch is on
- Make sure unit is plugged in and check the building circuit
- Reset circuit breakers located inside of control panel

One or more kettles are not displaying temperature

- Confirm that sensor cables are properly connected at both ends
- Could indicate faulty sensor or sensor cable. Switch cable and sensor connections using different combinations of cables and probes to isolate the problem. Contact Ruby Street Brewing, LLC for replacement parts.

Controller is powered up (displays are illuminated), but elements and pumps will not operate

- Confirm that emergency stop button is released by gently twisting the emergency stop button clockwise
- Turn all element and pump switches on the control panel to the ‘OFF’ position. Reset the panel by turning the key switch ‘OFF’ and back ‘ON’ again

For any other troubleshooting issues contact Ruby Street Brewing, LLC directly for support

Limited Warranty

Ruby Street Brewing, LLC warrants this product to be free from defects in workmanship and material, under normal use and service conditions for one year from the date of purchase. This warranty extends only to the original purchaser. Ruby Street Brewing, LLC's obligation under this warranty is limited to replacing or repairing at Ruby Street Brewing, LLC's option. All repairs for which warranty claims are made must be pre-authorized by Ruby Street Brewing, LLC. This warranty does not extend to any product or damage to a product caused by or attributable to freight damage, abuse, misuse, improper or abnormal usage, or repairs not provided by Ruby Street Brewing, LLC authorized service personnel. Specifically excluded are damages caused by or attributable to the following incidents: Any damage to the frame , kettles, or components attributable to improper handling or freight damage; damage resulting from improper storage; damage to the pump, motor, plumbing, and components due to improper maintenance; or damage resulting from failure to properly follow owners manual operating and maintenance instructions. Excluded are components that are subject to replacement due to normal wear including but not restricted to silicone tubing, o-rings, and gaskets. The warranty also excludes any deterioration, burning, or discoloration of the applied finish on the frame and or burner grates. No other warranty beyond that specifically set forth above is authorized by Ruby Street Brewing, LLC.

Ruby Street Brewing, LLC is not responsible or liable for indirect, special or consequential damages arising out of or in connection with the use or performance of the product or damages with respect to any economic loss, loss of or damage to property including water damage, fire damage, loss of revenues or profits, loss of use, or other consequential damages of any nature. Some states do not allow the exclusion or limitation of incidental or consequential damages. Accordingly, the above limitation may not apply to you.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Ruby Street Brewing, LLC, Fort Collins, CO