

USER MANUAL

100L Pilot Beer Brewing Equipment

Supplier: Shandong carry Equipment Co., Ltd
www.carrybrew.com

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Overview

This user manual is the basic instruction on how the brewhouse will be used for your brewing requirement. Maybe it won't cover the special technical aspect you or your brewer needed. Please consult with our sales guy for more details.

It's highly recommended to simulate the whole brewing process with water before pouring your ingredients in. This will allow you to familiar with the operation process, and also gives time for trouble shooting if have.

We are available for your technical service online, please get in touch with our sales guys if needed.

Wish you a successful brewing and looking forward to having your beers on tap.

Cheers!

CARRY Brewtech Team

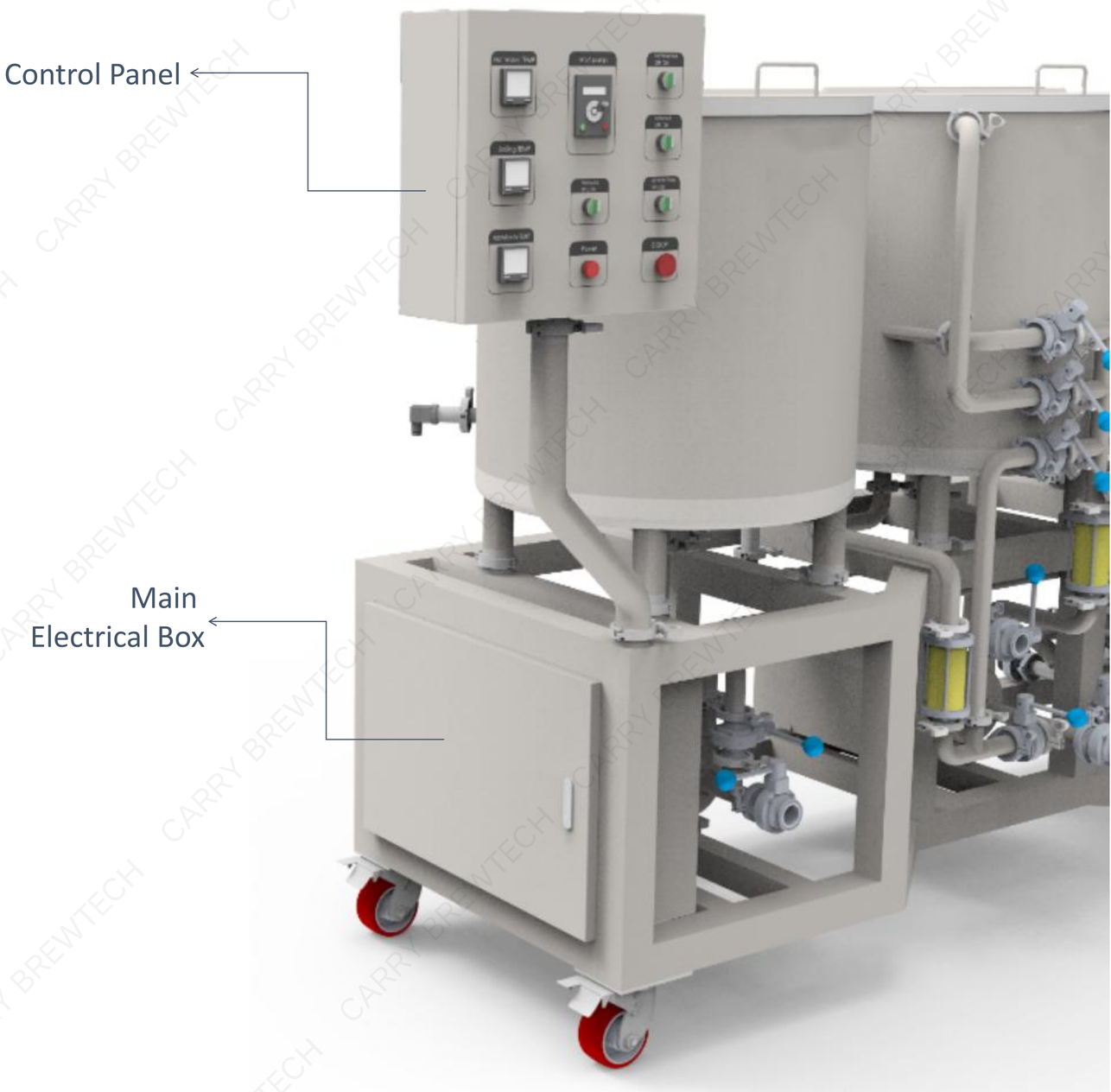


1. Set Up

Design power Standard: 380V, 50HZ, 3 Phases(customized)

This product is wired ready in factory and debugged before shipment.
You will need to find a licenced electrician to finalized the final wiring from brewhouse to your building electrical power.

Total consumable power(maximum) is:
6KW (kettle/whirlpool) + 6KW(Hot water tank) + RIMS (optional: 3KW) + 0.55KW(wort pump) + 0.55KW(hot water pump) + 0.1KW (Control cabinet)
= 16.2 kw



Attention:

- Always turn off the main power before servicing the electric box
- Don’t open the panel when the brewhouse is working
- Please make sure the electrical power box is away from any sweat and heating risk
- Protect the electric heating elements from dry heating
- fastern all the clamps, valves before testing

2. Control Panel

This Control panel is mobile and fixed with tri-clamp near the Hot water tank. Please don’t take it off without the permission of manufacturer.



Kettle/whirlpool Tank Temperature Monitor

Hot water tank Temperature Monitor

ON/OFF control of
Heating elements inside of Hot water tank

ON/OFF control of Hot water pump

Mash/lauter Tank Temperature Monitor

Emergency Stop

ON/OFF control of Heating elements of **RIMS**

ON/OFF control of
Heating elements inside of Kettle tank

Wort Pump Frequency converter

Comments: please always be saft during operating the panel, message your sales representative if you want to do any modifications

3. Tips before start

Pump:

You have 2 sets of pump on your brewhouse system, right side is wort pump, used for transferring your worts between tanks. The left side is hot water pump, used for transferring hot water from hot water tank into your brewhouse tanks.

Attention:

A: liquid inlet
B: Liquid outlet

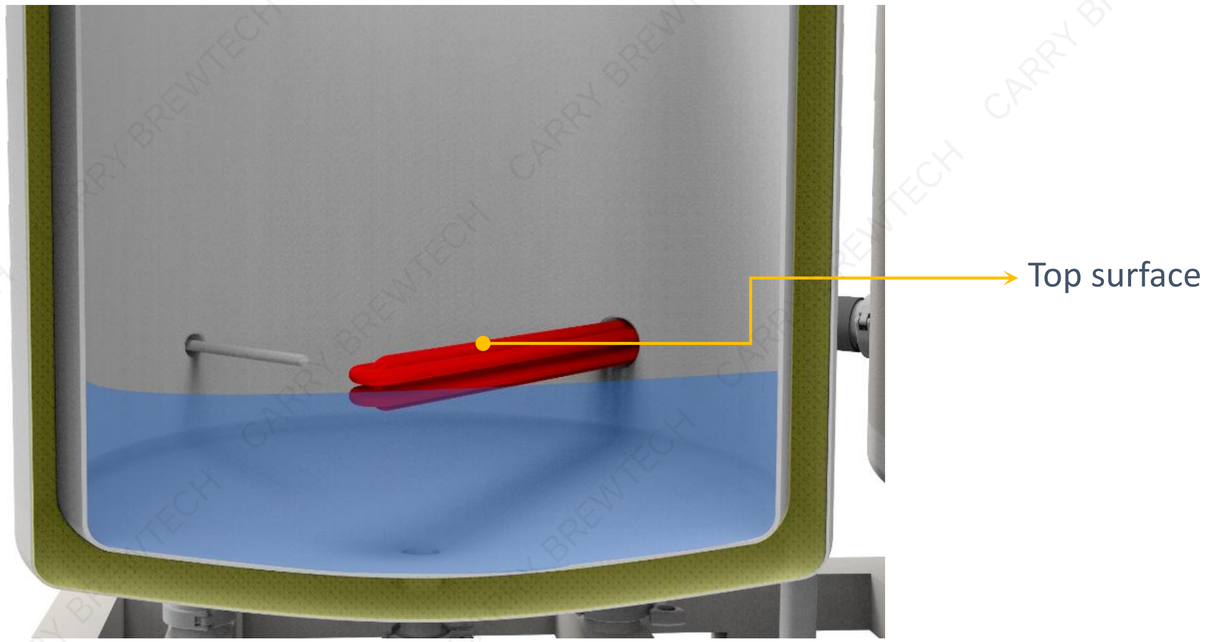
please don’t turn on the pump if there is no liquid medium between!



Electric heating element:

You have 2 sets of elements in HLT and K/W tank.
Please make sure all the switch for them are turn off when you power on the brewhouse.

Be sure to switch it on only if the liquid level is beyond the top surface of element. Otherwise there will be potential damage or burnt.



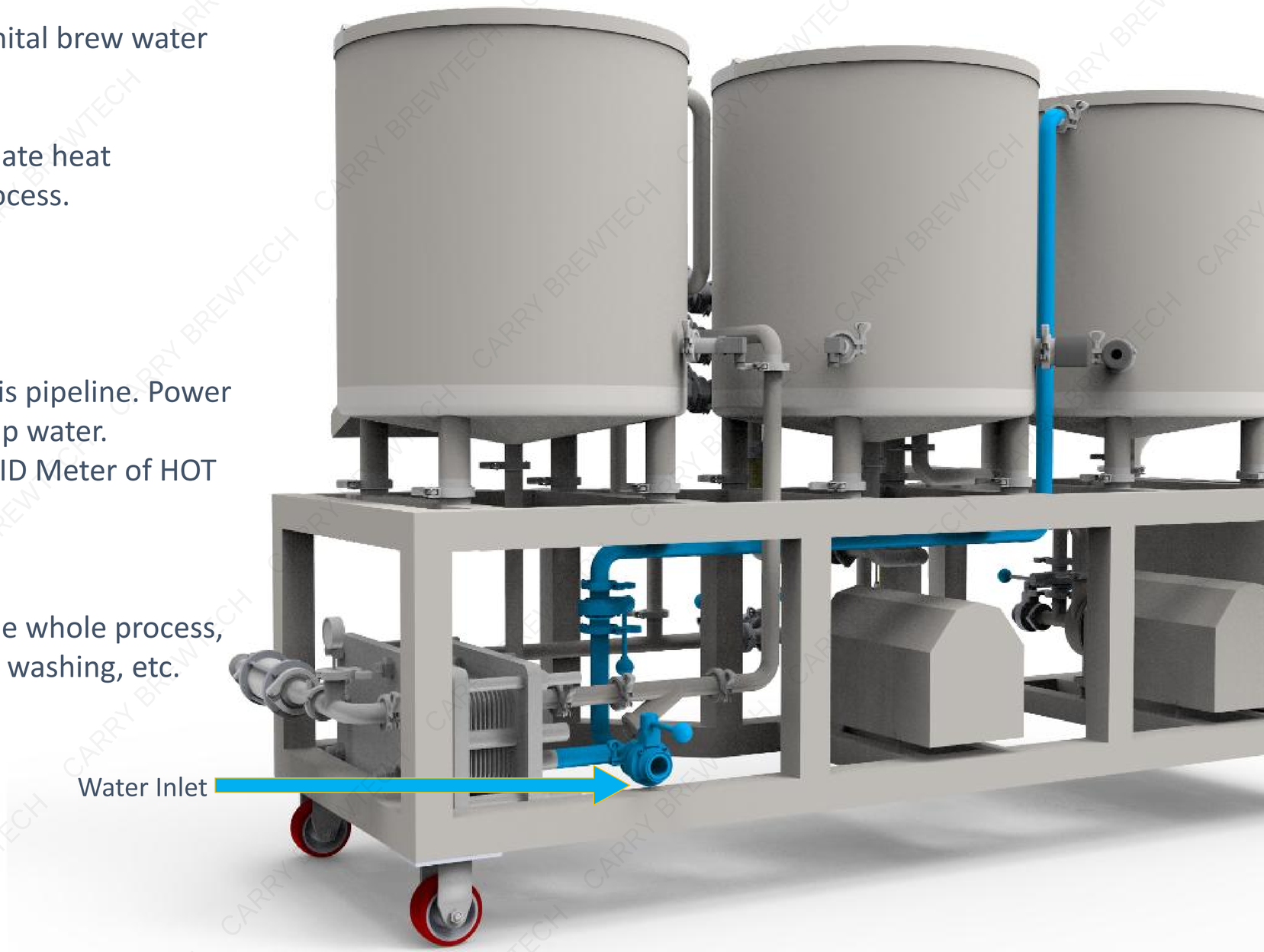
4. Start from HLT

The pipeline marked in blue is for adding the ininital brew water into your HLT.

It also be used to cycle the cooling water from Plate heat exchanger back into HLT during the knockout process.

Once the desired volume is reached, close off this pipeline. Power on the Hot Water Heat button, start to heating up water.
You can monitor the temperature vaule on the PID Meter of HOT WATER TEMP.

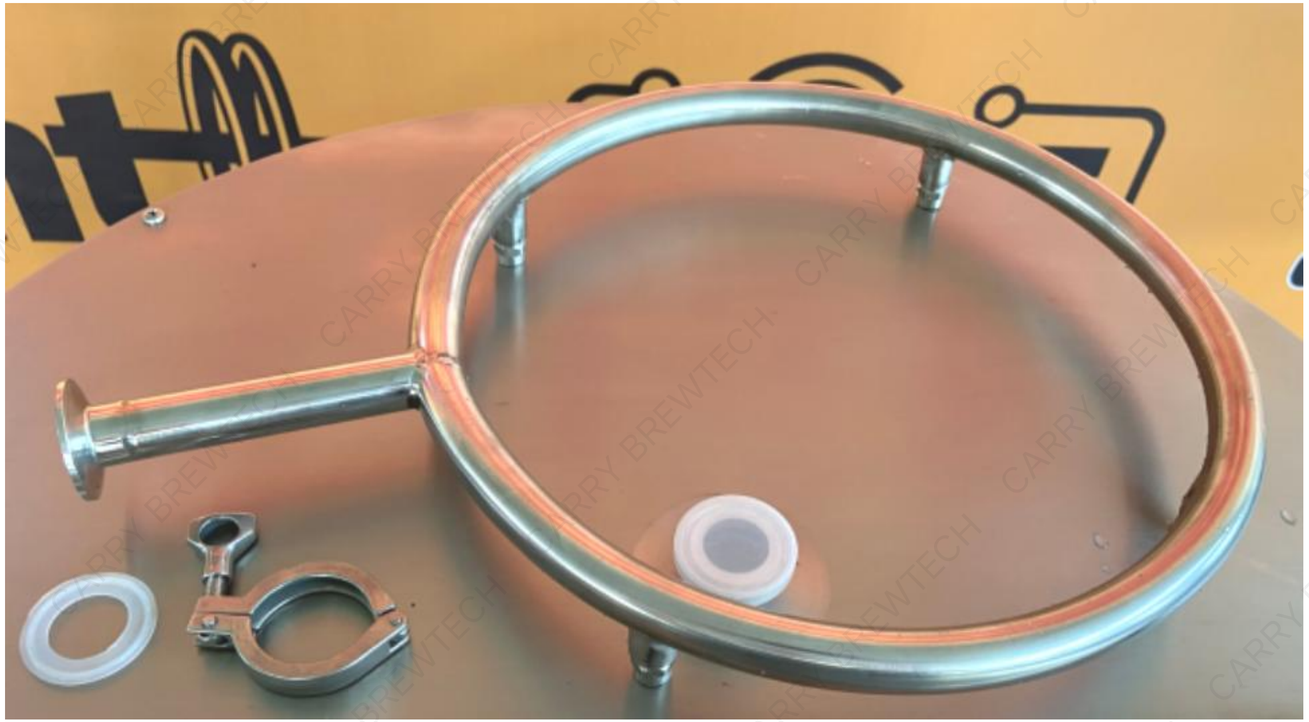
Tips:
Please always store +10% volume of water for the whole process, make sure it’s enough for mashing, sparging and washing, etc.

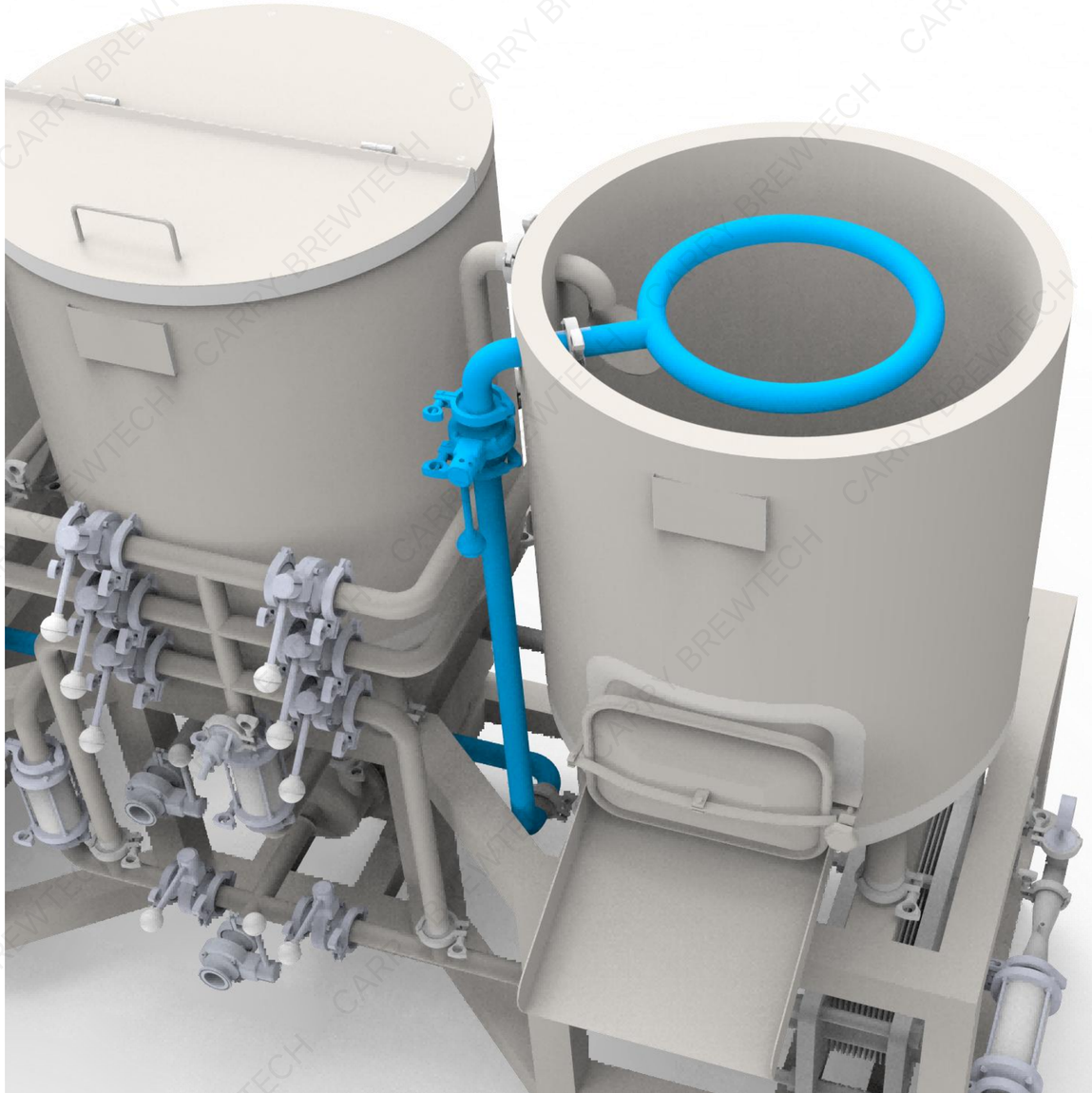


4. Start from HLT

This ring inside of mash tun is for sparging water during the adding water and mashing process.

It’s connected by Tri-clamp, please take it off before you adding milled malt inside of mash tun. And put it back when it’s sparging time.





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5. Mashing In

This is the initial step to start your brew day. Please make sure your malts are milled ready to use during this step.

Beofre pouring the grains into mash tun, please fill in brewing water with corresponding volume. Then, use the stire to mix grains into water.

See attached pic, make sure the valves on this line is open before you power on the Hot water pump.
You can control the flow speed by adjusting the degree of butterfly valve on the side of mash tun.



Comments:
This instruction is for the very basic brewing procedure, helping you work out how this system & pipelines works. Please always trust your recipe is the best one. As long as it’s workable, just give it a try, you can do it.

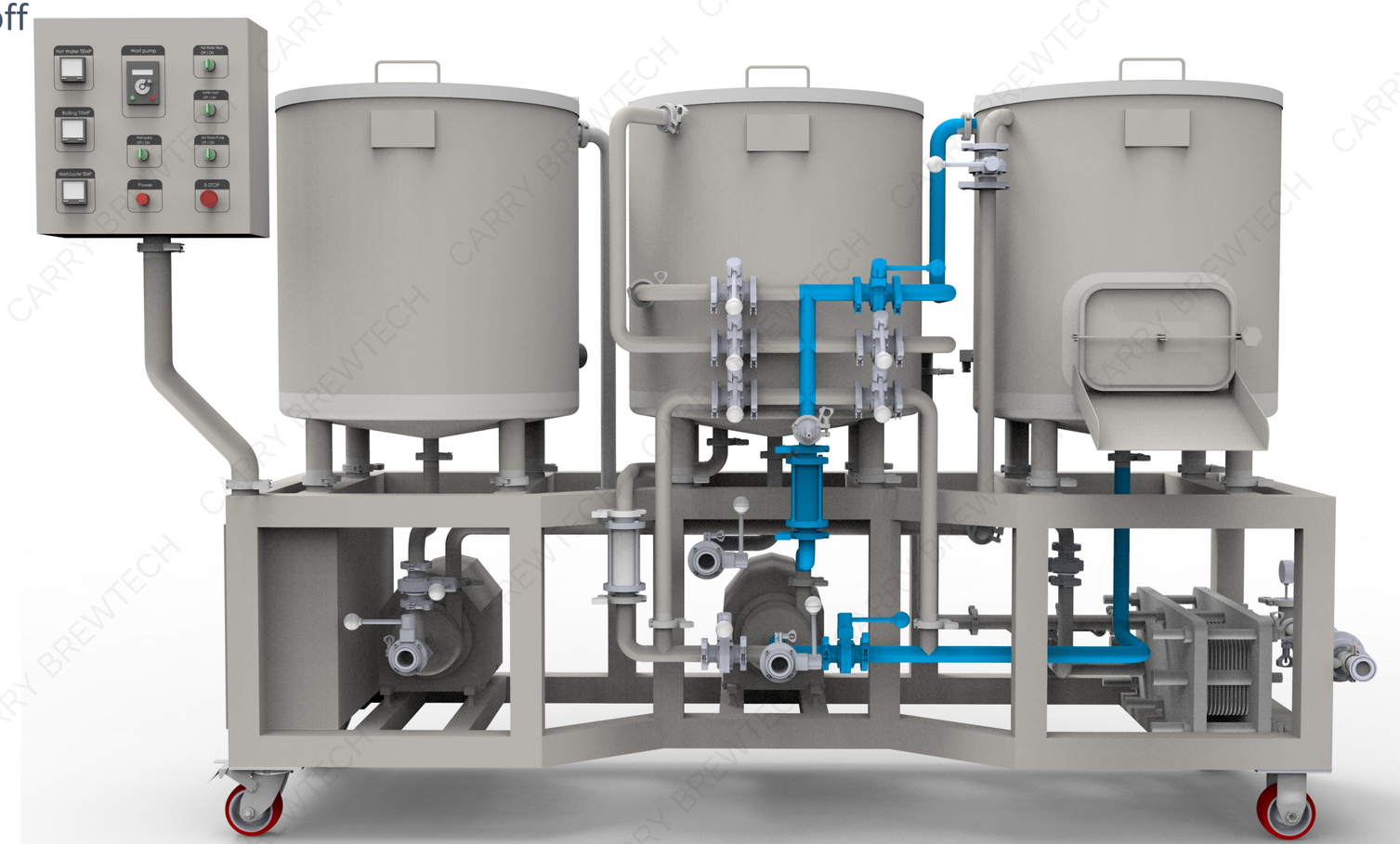
Tips:

> Make sure the mash tun is warmed up beforehand to minimize the loose of temperature during mashing process. You can circulate the hot water from HLT.

6. Wort Backflow

Wort backflow is the process to clean the wort underneath the sieve.
See below pic, open valves along this pipeline firstly, then power on the wort pump gradually to enable worts flow off from bottom and back into mash tun on top.

It can be stopped when the liquid is clear seeing from the sight glass.



6. Wort Backflow - step mashing through RIMS (optional)

RIMS(Recirculating Infusion Mash System) is the optional function which can help to maintain or raise up temperature of worts during mashing process.

Please make sure the valves on this pipeline are open, and liquids are flowing through this tube before you switch on the button on panel.

There always potentional afterheat on the heating elements, please take this into consideration when you are counting on the temperature celsius degrees.





7. Lautering

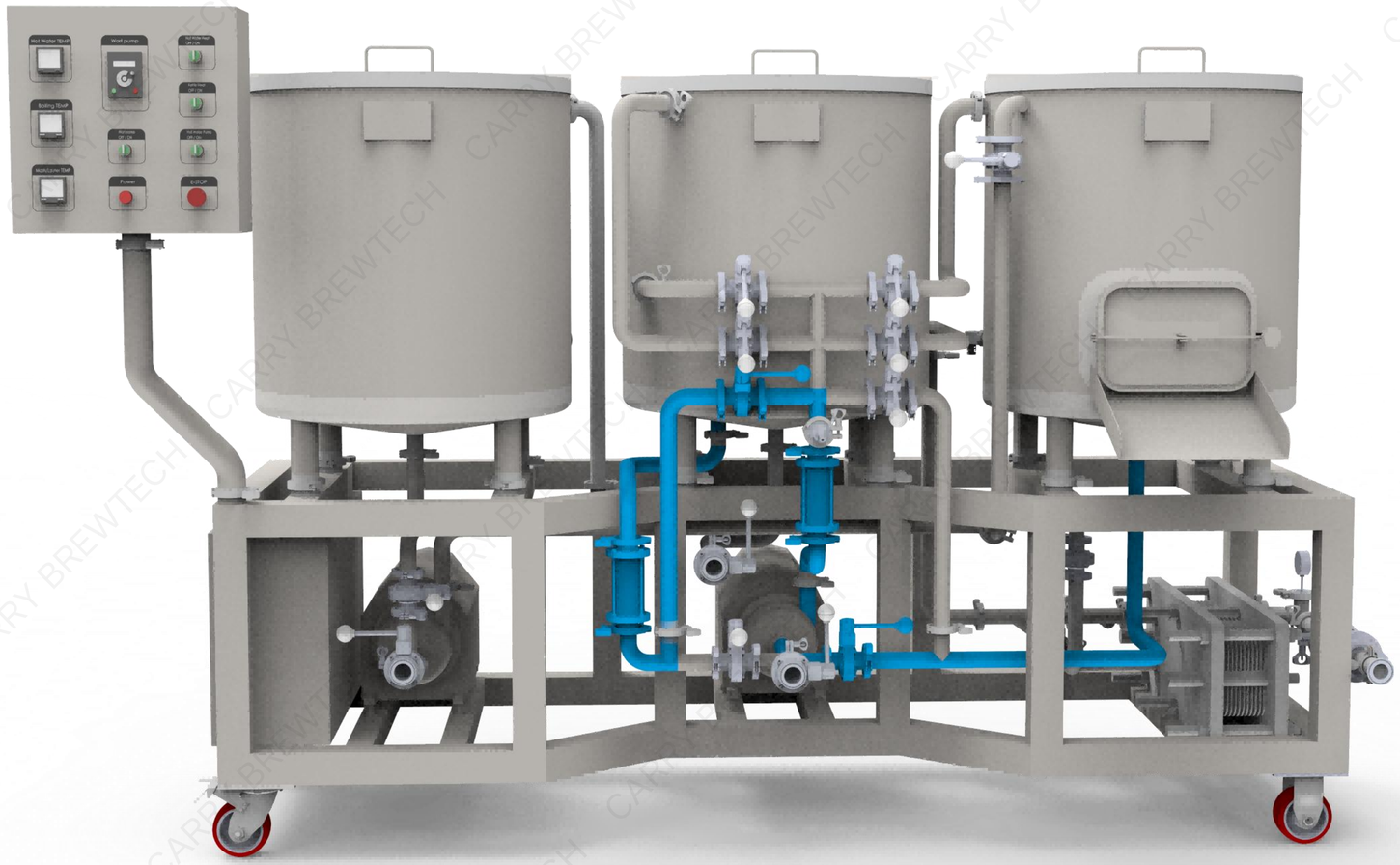
Once the mashing process is completed, it’s time to lauter your worts into kettle tank.

See attached pic, open all these valves before switch on the wort pump. Just in case, you won’t have to open valves in full rate, hold the liquid flow steady before you are satisfied with the lautering effect.

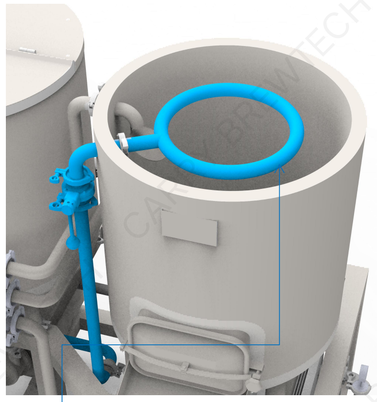
Turnning the rotary knob on the VFD panel clockwise, start from minimum rate of 1 to maximum rate of 50.

Attention:
To protect your grains and get rid of stucking mash, suggest to hold the VFD rate under 20.





8. Sparging



Sparging is the process of “washing” the grains to get enough usable wort into kettle tank. Please re-attached the sparge ring back into position during this step. Hold the liquid flow rate by controlling the openning degree of valve.

For this equipment, we will use “fly sparging” method, which means the speed of water in to mash tank closely equal to the speed of lautering wort into kettle tank.
This is the most popular and time-saving way. If you are after multiple steps mashing, just adjust your brewing sequence accordingly. It’s flexible.



Tips:
when to start sparge?
> When the liquid level is around 50mm above the grain bed surface.

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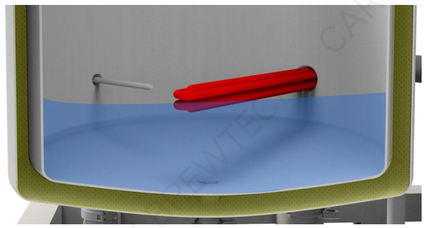
9. Boiling

You can start to heat up the wort inside of kettle tank once the elements is fully submerged during the lautering process.

Set the PID Meter of BOILIING TEMP onto 100 degree celsius, switch on the button of “Kettle heat”, then the boiling is start.

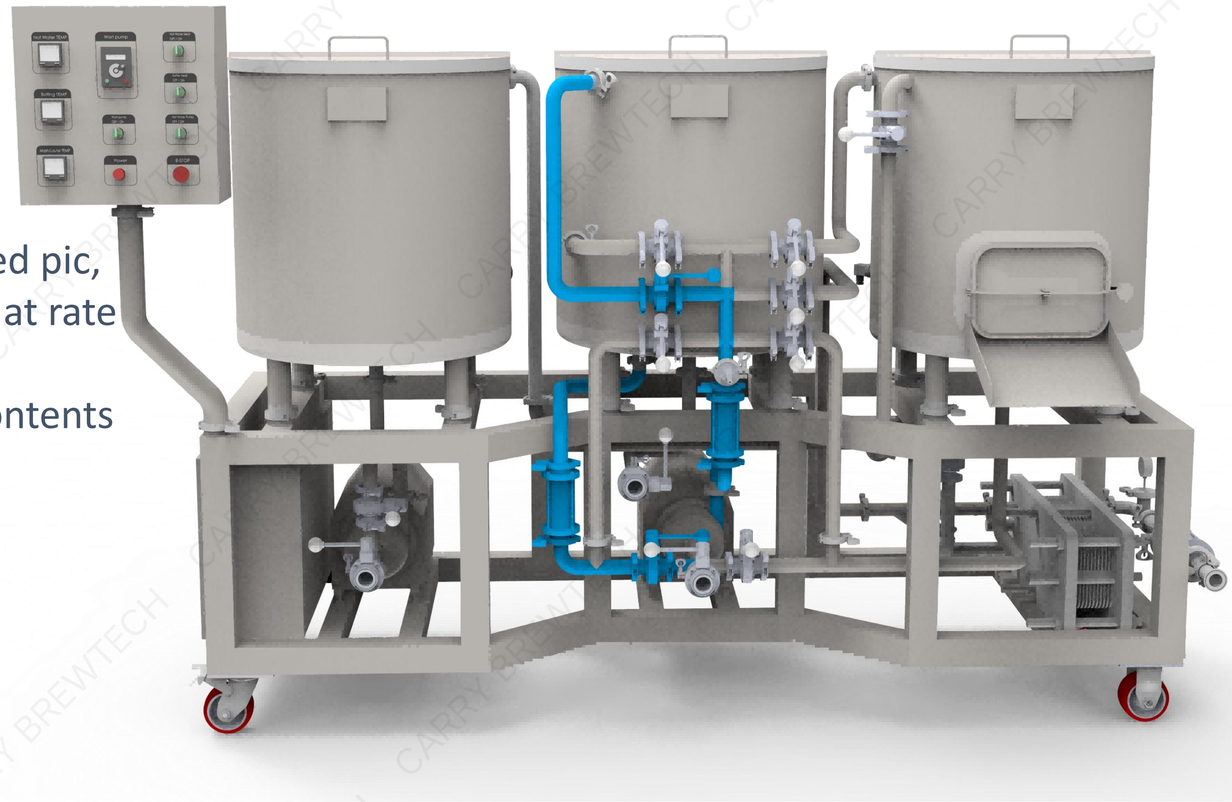
Tips:

1. Protect the electric elements as requested, always keeps the liquid level upper than the elements when you power it on.



2. Another way to protect the electric elements from burnt, see attached pic, have this pipelines & valves on, and the Wort pump on (est. VFD speed at rate of 10~20).
Let the wort circulate itself inside of kettle tank, make sure the sugar contents won’t stick on the elements during heating up process.

3. Adding hops according to your recipes.



10. Whirlpool

Whirlpool is the most important procedure before knocking out worts into fermenter. Its very helpful for wort clarification, and get rid of risk of clogging the plate heat exchanger.

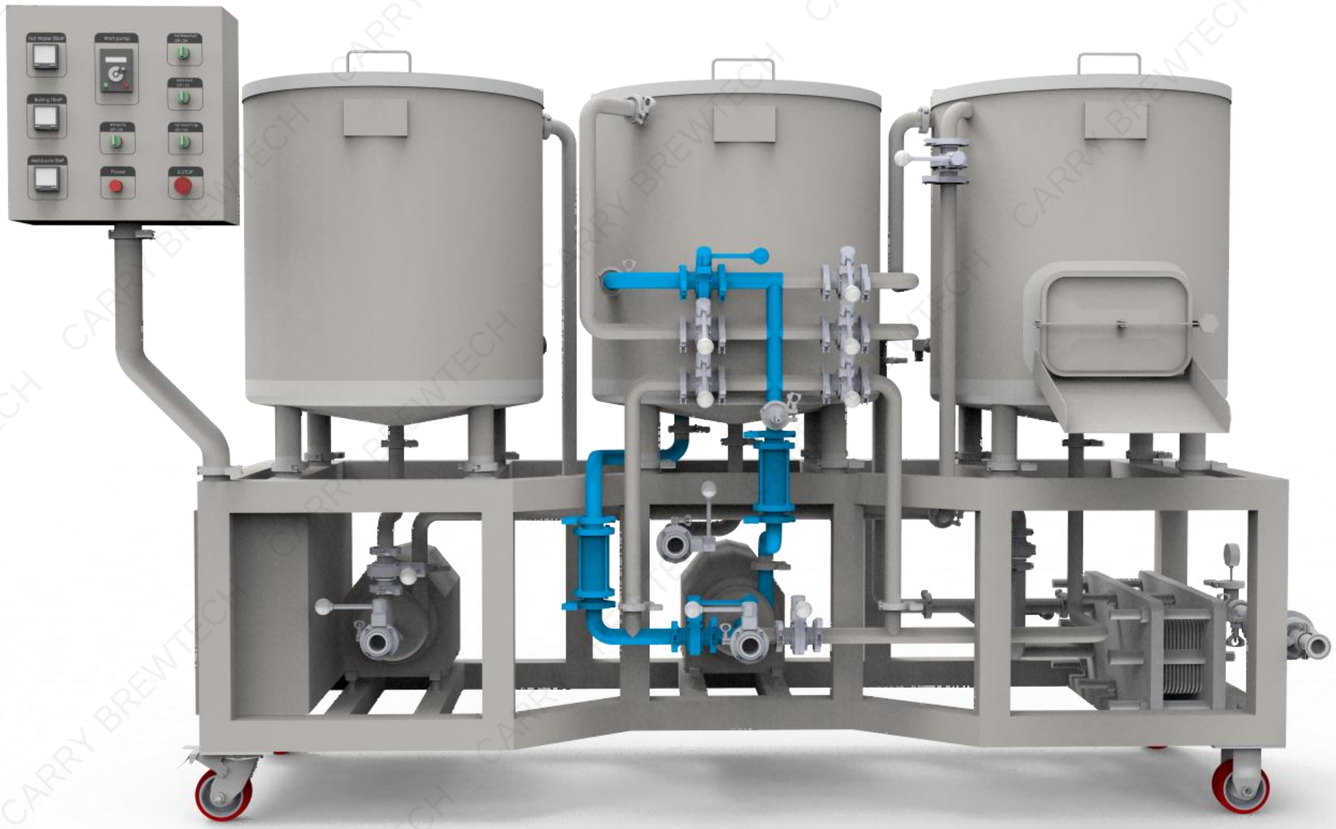
See below pic, open the valves on this pipeline before power on the wort pump, same as before, increasing the speed of wort pump gradually from 0 to max value, or the value you prefered.

Tips:

1. The liquid inside of kettle tank is almost 100 degree celsius, please be careful when you swith on any of the valves.

2. Always remember:
Power on and increase the wort pump transferring speed slowly.

3. Keep Wort Pump running for around 10 mins, When the liquid produces a natural swirling vortex, can stop pump and leave it for natural whirlpool for 30 mins until liquid is still.
Now you will get a natual cone in the center of the kettle tank.

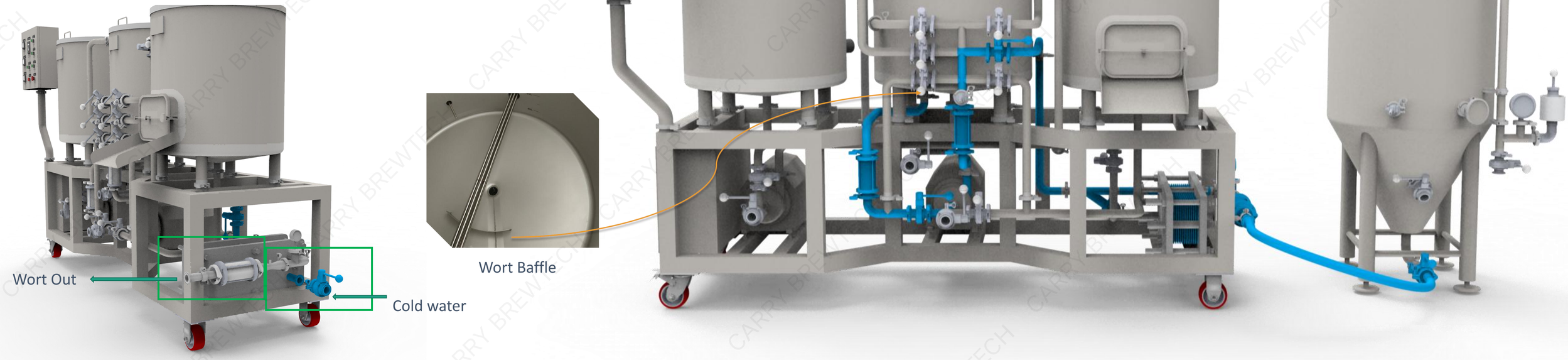


11. Knocking-Out

After around 30 mins of whirlpool process, now it’s time to knock out the wort through plate heat exchanger into fermenter.
You will need to prepare sanitary hose and fermenter to be ready for this process.

Tips:

1. Connect hose on the outlet of heat exchanger and the bottom drain port of your fermenter.
2. Make sure the pressure relief valve/spunding valve is working properly before pumping worts in.
3. see below pic, familiar with all the pipeline & valves before openning them us. It’s very important to open valves & pumps slightly to make sure the liquid inside of kettle won’t get muddy.
4. Connect your cold water source
(tap water or any other cold liquid source)
onto your heat exchanger water inlet port.



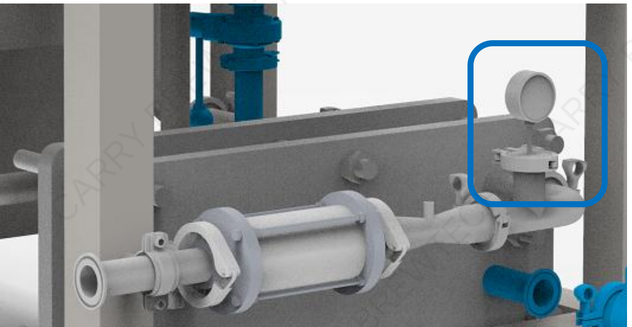
11. Knocking-Out

Before switch on the knocking off pipelines & pump, please make sure the cold water in & out lets are established ready.
See below pic, cold water going through the plate heat exchanger, it can be drained into the drainage, or recapture these water back into the hot water tank for the next brewing batch.

Once the cold water flow is setting up, open the knocking out valves and switch on the wort pump slightly. Suggest to keep the speed rate under 10 to make sure there is enough time for the hot wort & cold water stay inside of the plate heat exchanger.

During this process, you can monitor the instant temperature on the gauge as below, adjusting the wort pump speed or valves to control flow speed until you get a desired degree. Oxygen can be blowed in through the air inlet before the sight glass (if needed).

Once the wort liquid level inside of the kettle is down to limitation, turn off the wort pump immediately and close off all valves on brewhouse and fermenter accordingly.





11. Support

Carry Brewtech Technical Support

Carry Brewtech provides life-time technical support to your business.

Generally, we will set up a service group on **Wechat** App, please install this App on your phone, and let us know your wechat ID, we will add you into our group. Our engineer, technical guy will all in the group, any of your questions can be solved asap. Most importantly, this app have auto-translation function, very helpful.

Reference: https://www.wechat.com/

Or, please advise the preferable way you want to keep communication online. We will follow accordingly.

We appreciate any of your feedback on Strengths and Weaknesses of our product & service. That will be the most powerful engine for us to become a better one.

Thanks again for all your cooperation and support. Wish you successful brewing!

Carry Brewtech Team


Congratulations, now you will have your 1st brew batch beer on tap soon!

THANK YOU

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