

# Single Batch 500L Brewery Solution

-----Shandong HG Machinery Co., Ltd.



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## Design Basis

### Production Process

1. Designed according to the production process of 500L/batch craft beer, automatic operated, and daily output is two batches.
2. The mashing process adopts three-vessels model used in conjunction with ice water. The mashing process is automatic controlled, and the fermentation method uses automated temperature-controlled fermenter. Natural gas boilers for heating, and air-cooled refrigeration units for cooling.

### What We Offer?

1. Confirm the craft flow and related parameters of the product  
(To offer craft flow chart)
2. Selection and matching of workshop equipment  
(All of equipment models and specifications)
3. Production workshop area planning and production equipment layout  
(To offer production equipment layout)
4. Help with other related utilities and auxiliary works.

Item	Parameter	QTY
<b>Wort capacity</b>	500L/batch	
<b>Ratio of main and auxiliary materials</b>	100% malt	
Raw materials handling	300-500kg/h	1 set
<b>Feeding</b>		
Total feed: Malt	To be confirmed	
<b>Cooker/Mash:</b>		
Cool wort per batch	500L	
Batched per day	1 batch per day	
Boil period	70-90 min	
Boiling evaporation rate	8%-12%	
<b>Wort cooling:</b>		
Wort cooling type	Single stage	
Cooling medium	2-4℃	
<b>Fermentation:</b>		
Net volume of fermenter	500L	5 sets
Fermentation period	To be confirmed	
<b>CIP</b>	50L	1 set
<b>Other</b>		
Chiller	5HP	1 set
Boiler	50kg/h	1 set
Beer solution	Lager, ale and other special beers.	

## Company Strength

- 20+ years industrial experience from malt milling to mashing and beer filling lines
- The largest turnkey project supplier in Mainland China, with global completed 296 turnkey projects in 2021
- 18,000+ sqm factory and 300+ staff providing First-class service and deliveries to make brewery equipments and beer filling lines better
- 120+ countries coverage, 18,000 sq meters factory area, 300+ staff

## Technology Strength

- Advanced technique, better Lauter tun diameter design, patent automated controls system and energy saving in Automatic/semi-automatic/manual operation solutions
- Efficient raw material utilization; ensure beer quality and best economic benefits through mature technology
- Modularity and high integration saves your budget, smaller footprint, shorter installation time, and extremely fast operation.
- Comprehensive utilization of energy, energy saving



## Malting

Barley is steeped in water, allowed to germinate, then kiln dried.

**Barley / Malt**



**Hammer mills**



## Milling

The malted barley is crushed and added to the mash tun.



**Mash tun**

**Water**



## Mashing

Hot water activates enzymes which convert malt starches into fermentable sugars.

**Mash kettle**



**Lauter tun**



## The Boil

The wort is boiled in a kettle. This is the point where the hops are added.

**Hops**



**Wort kettle**

## Whirlpooling

The boiled wort is whirlpoiled causing the spent hops (trub) to collect at the bottom for removal.

**Whirlpool tank**



**Cooling**  
The hopped wort is cooled to room temperature and transferred to fermenters.

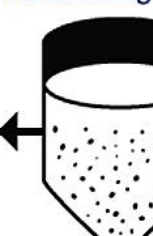
**Cooler**



**Yeast**



**Fermenting Tank**



**Used Yeast**

Yeast is added which consumes the sugars producing alcohol, flavors, and carbon dioxide. This process takes days.

**O<sub>2</sub>**

**Oxygen**

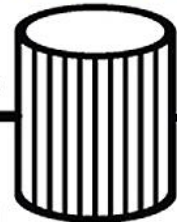
## Aging

Aging allows the carefully crafted flavors to develop. A process which takes a number of weeks.



**Resting Tank**

**Filtration Unit**



**Bottler**

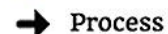


**Packaging**

The beer can now be placed in bottles or kegs ready to enjoy.



**Ingredients**



**Process**

## Quotation

Equipment		Qty
<b>Grist mill system</b>		
01	Malt mill	1 set
<b>Mash system</b>		
02	500L Mash tun	1 pc
	500L Lauter tank	1 pc
	Wort grant	1 pc
	500L Kettle/Whirlpool tank	1 pc
	Hops adding device	1 pc
	Mash pumps	2 sets
	6 m <sup>2</sup> Plate heat ex-changer	1 set
	Wort Aeration Device	1 pc
	Steam boiler	1 set
	Flow meter	1 set
	Pipeline and accessories	-
Work platform	-	
<b>Fermentation system</b>		
03	500L fermenters	5 pcs
	Yeast adding tank	1 pc
	Sanitation Hoses	1 pcs

Refrigerating system			
04	1000L Glycol tanks		1 set
	5HP Refrigerator unit		1 set
	Glycol water pump		1 set
CIP system			
05	50L CIP System(2 tanks)		1 set
Control system			
06	Control system PLC touch screen		1 set
Filling system			
07	Keg washer&filler unit machine		1 set
	Cans filler 4-1		1 set
Distiller			
08	300L distiller		1 set

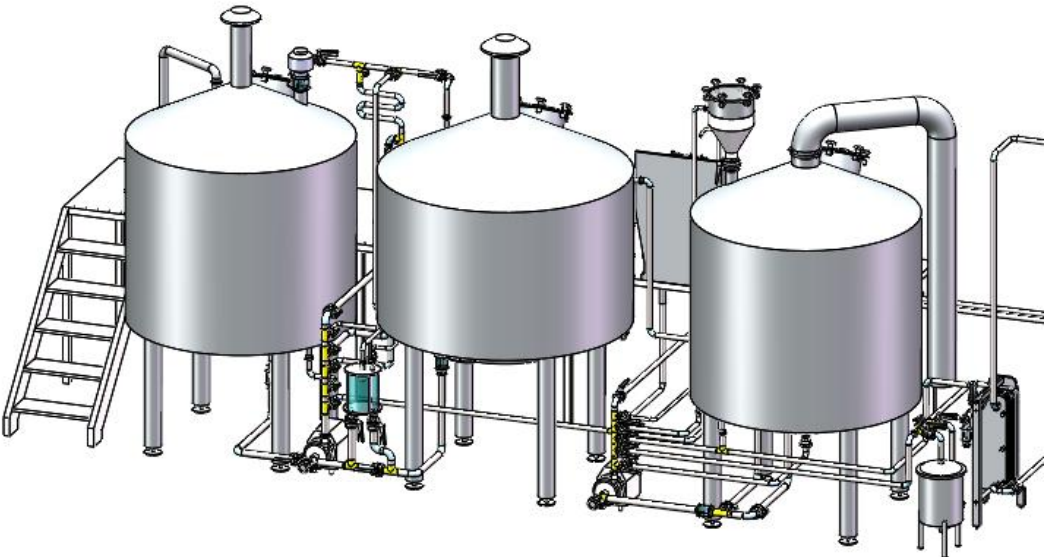
**Options:**

1. Change PLC control to **PID control** system: Cost decreased by USD2,900
2. Change manual butterfly valve to **pneumatic valve**: Cost increased by USD9,000
3. Change three vessels to **two vessels**: Cost decrease by USD 3,800
4. Change **200L distiller to 500L**: Cost increase by USD 12000 USD
5. Steam generator could be used with electricity, natural gas and diesel.


**Notes:**

- 1.This price is based on EXW.
- 2.Payment: 50%TT before production, 50%TT before shipment.
- 3.This quotation is valid within 30 days.
- 4.Time of delivery of the brewery equipment: 60 days.
5. Guarantee: 3 years for the tanks and 1 year for the electrical components.
6. Layout advice, visually 3D drawing, individually flow chart design etc. are provided for free.

## Detailed Equipment List

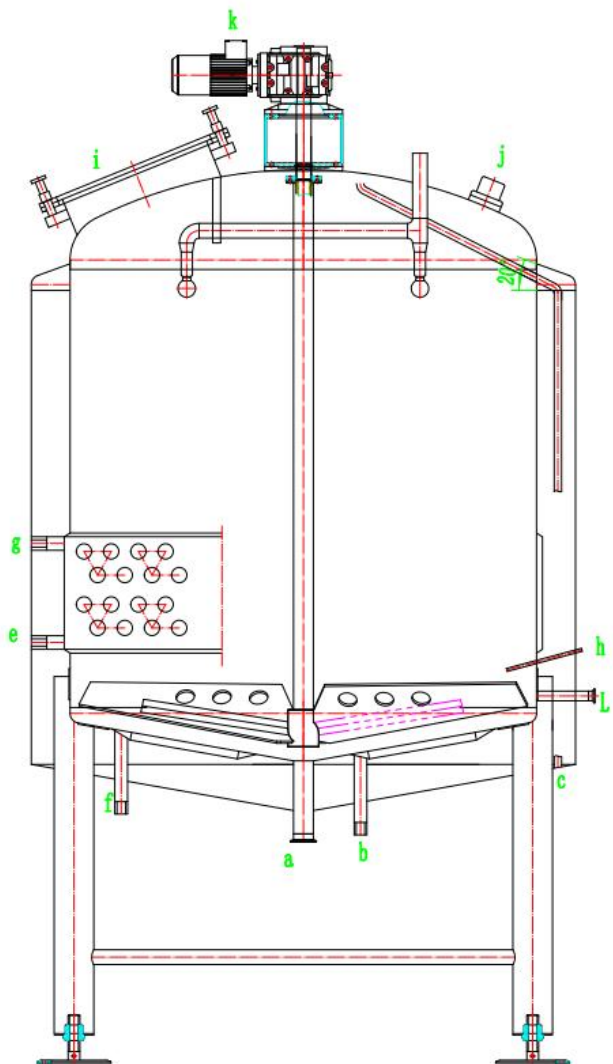
No	Name	Parameters
<p><b>Details for milling system and brewhouse</b></p> 		



Name	Parameters
<p data-bbox="376 292 495 320">Malt mill</p> 	<ul style="list-style-type: none"> <li data-bbox="707 272 1055 301">✧ Capacity: 300-500Kg/h</li> <li data-bbox="707 333 1368 362">✧ Equipment type: roller type, motor, pulley, belt</li> <li data-bbox="707 394 1066 422">✧ Material: stainless steel</li> <li data-bbox="707 454 1032 483">✧ Motor power: 2.2KW</li> <li data-bbox="707 515 987 544">✧ The wight: 125KG</li> <li data-bbox="707 576 1182 604">✧ Size: 750×550×1300mm(L×W×H)</li> <li data-bbox="707 636 1592 665">✧ Roller type: <b>Double roller type</b>, designed specifically for malt mill</li> <li data-bbox="707 697 1989 726">✧ Accessories: Contains motor, motor mounts, rolls, shafts, bearings gear boxes, pulley, belts, etc.</li> <li data-bbox="707 758 1458 786">✧ Design: Roller width is adjustable, eliminate the noise.</li> <li data-bbox="707 818 1805 847">✧ Advantages: <b>Little dust, low noise, work environment has been greatly improved.</b></li> <li data-bbox="707 879 1603 908">✧ Function: Milling malt, the main raw material in beer production.</li> </ul>

## Mash Tun

- ✧ Material: Stainless steel 304
- ✧ Outline size:  $\phi 1160 \times 2150$ mm
- ✧ Gross capacity: 650L
- ✧ Useful capacity: 500L
- ✧ Insulation thickness: 80mm
- ✧ Inner-Jacket (SUS304) thickness: 3.0mm
- ✧ External-Jacket (SUS304) thickness: 2.0mm
- ✧ Dish head for the tank
- ✧ With Spraying apple type washing ball
- ✧ With flow meter and liquid level sensor.
- ✧ The material in/outlet port on the bottom of tank
- ✧ With CIP cleaning port on bottom
- ✧ Temperature is controlled by thermometer blind tube
- ✧ LED sight light to observe inside conveniently, DN100, 24V 100W
- ✧ With glass manway on the top
- ✧ Special design of motor threading pipe
- ✧ Motor reducer on the top of the tank
- ✧ Tank body is completed with dimple plate jacket
- ✧ Head brand: Beihai or Weide (best supplier in China)
- ✧ Heat exchange area: 0.5 m<sup>2</sup>
- ✧ The heating rate: 1°C/min
- ✧ Specially designed paddles for automatic blender
- ✧ Blender power: 0.75KW; Output speed: 1-60RPM (frequency control)
- ✧ With height adjustment bolt component
- ✧ Polishing accuracy: 0.4um (three times polishing process)
- ✧ Pickling & passivation inside
- ✧ The inside and outside of the head and inner cone are sanding smooth and the rest are well protected.
- ✧ The welding seam is polished with a fine sanding tape of 40mm, the legs are polished, and the outer cone and legs are fully welded.
- ✧ Argon shielded welding 100%
- ✧ Water-filled leak testing, jacket water pressure testing, the test pressure is 0.4Mpa. All testing keep for 48 hours

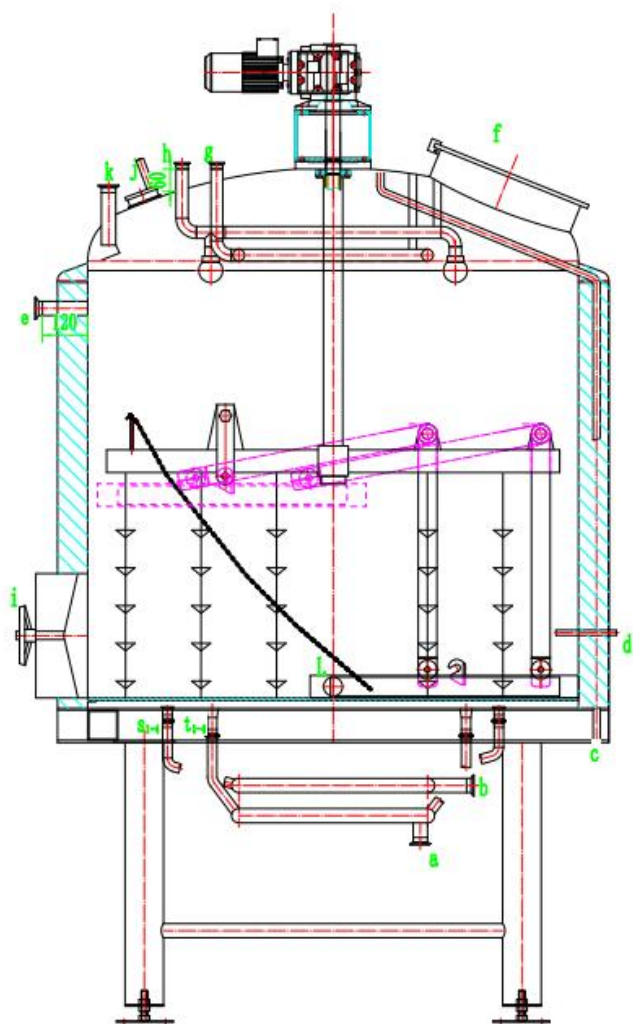


**Advantage:** The bottom installation is more stable, which is convenient for maintenance

**Benefit:** More stable operation, more stable production, saving time and energy, thereby saving costs

## Lauter Tun

- ✧ Material: Stainless steel 304
- ✧ Outline size:  $\phi 1160 \times 2150$ mm
- ✧ Gross capacity: 650L
- ✧ Useful capacity: 500L
- ✧ Insulation thickness: 80mm
- ✧ Inner-Jacket (SUS304) thickness: 3.0mm
- ✧ External-Jacket (SUS304) thickness: 2.0mm
- ✧ Dish head for the tank
- ✧ With Spraying apple type washing ball
- ✧ With baffle on the top of the tank
- ✧ The material in/outlet port on the bottom of tank
- ✧ With backwash pipe and backwash port on bottom
- ✧ With CIP cleaning port on bottom
- ✧ With Backflow port
- ✧ Top with ring pipe for washing grain
- ✧ Temperature is controlled by thermometer blind tube
- ✧ LED sight light to observe inside conveniently
- ✧ With glass manway on the top
- ✧ Spent grain door on the tank body
- ✧ Special design of motor threading pipe
- ✧ Motor reducer on the top of the tank
- ✧ Tank body is completed with dimple plate jacket
- ✧ Head brand: Beihai or Weide (best supplier in China)
- ✧ Milling seive plate for false bottom
- ✧ Automatic raker with grain remover
- ✧ With height adjustment bolt component
- ✧ Polishing accuracy: 0.4um (three times polishing process)
- ✧ Pickling & passivation inside
- ✧ The inside and outside of the head and inner cone are sanding smooth and the rest are well protected.
- ✧ The welding seam is polished with a fine sanding tape of 40mm, the legs are polished, and the outer cone and legs are fully welded.
- ✧ Argon shielded welding 100%
- ✧ Water-filled leak testing, jacket water pressure testing, the test pressure is 0.4Mpa. All testing keep for 48 hours



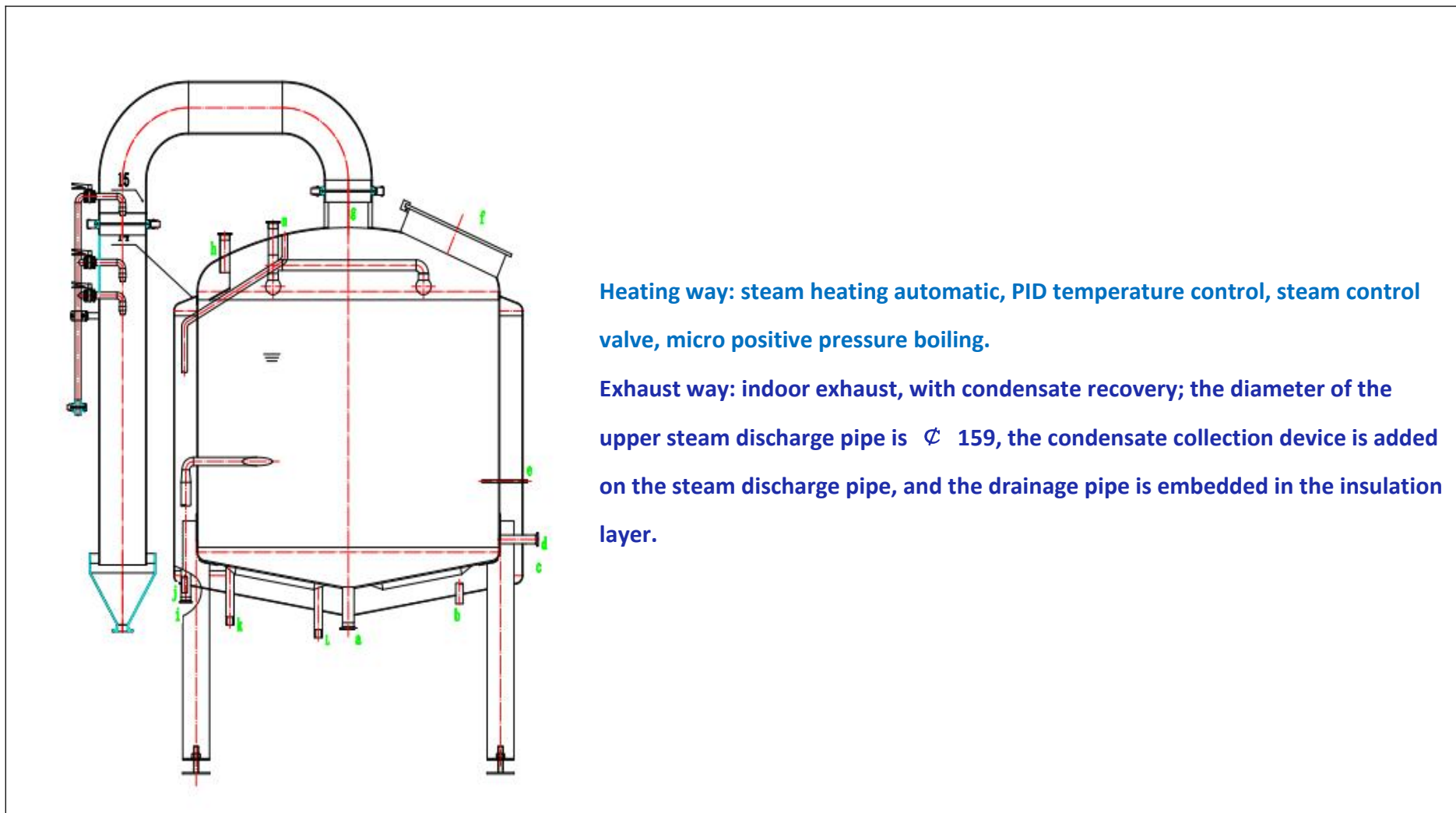
**Advantages:**The raker can deal with the spent grain vertically and horizontally. Good for the lauter. The raker is with chain. When the raker is not in use, just use the chain to lift the raker. The raker includes spent grain plate. Spent grain out automatically.

Milled sieve, 4mm, load of sieve: 160-190kg/m<sup>2</sup>, Filter gap 0.7mm, the thickness of the bottom plate is 10mm, the distance between the filter plate and the pot bottom is 2-5cm, which is evenly distributed at the bottom of the filter tank, connected with the distribution pipe, and equipped with nozzles and combined check valves, and the flow rate of each nozzle is 1m<sup>3</sup> / h.

**The sight glass is horizontal installed.**

### **Kettle/whirlpool tank**

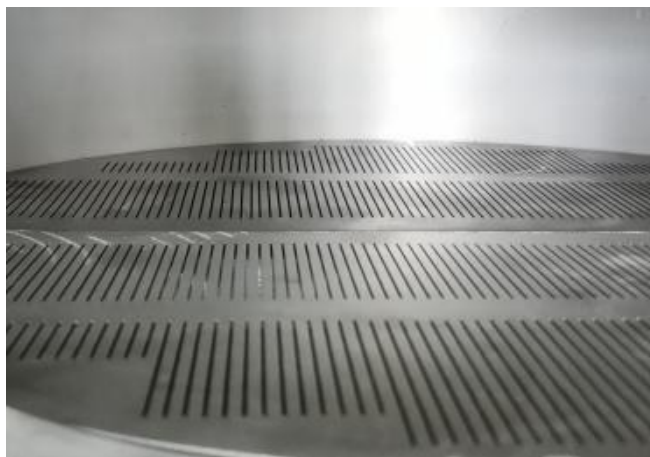
- ✧ Material: Stainless steel 304
- ✧ Outline size:  $\phi 1160 \times 2150$ mm;
- ✧ Gross capacity: 700L
- ✧ Useful capacity: 500L
- ✧ Heat exchange area: 0.5 m<sup>2</sup>
- ✧ Insulation thickness: 80mm
- ✧ Inner-Jacket (SUS304) thickness: 3.0mm
- ✧ External-Jacket (SUS304) thickness: 2.0mm
- ✧ Steam jacket is on the tank body and bottom
- ✧ Dish head for the tank
- ✧ With Spraying apple type washing ball
- ✧ With CIP cleaning port on bottom
- ✧ Material inlet on bottom
- ✧ Material outlet on bottom
- ✧ Whirlpool inlets on the tank body
- ✧ With drain outlet
- ✧ Top glass manhole
- ✧ Thermometer blind tube and PT100
- ✧ Top with exhaust port
- ✧ Indoor exhaust
- ✧ LED sight light
- ✧ With wire threading pipe
- ✧ Four legs with leg support plate
- ✧ With height adjustment bolt component
- ✧ Polishing accuracy: 0.4um (three times polishing process)
- ✧ Pickling & passivation inside
- ✧ The inside and outside of the head and inner cone are sanding smooth and the rest are well protected.
- ✧ The welding seam is polished with a fine sanding tape of 40mm, the legs are polished, and the outer cone and legs are fully welded.
- ✧ Argon shielded welding 100%
- ✧ Water-filled leak testing, jacket water pressure testing, the test pressure is 0.4Mpa. All testing keep for 48 hours



Heating way: steam heating automatic, PID temperature control, steam control valve, micro positive pressure boiling.

Exhaust way: indoor exhaust, with condensate recovery; the diameter of the upper steam discharge pipe is  $\varnothing 159$ , the condensate collection device is added on the steam discharge pipe, and the drainage pipe is embedded in the insulation layer.

**Details**



**Milling sieve plate**



**Spent grain outlet door**



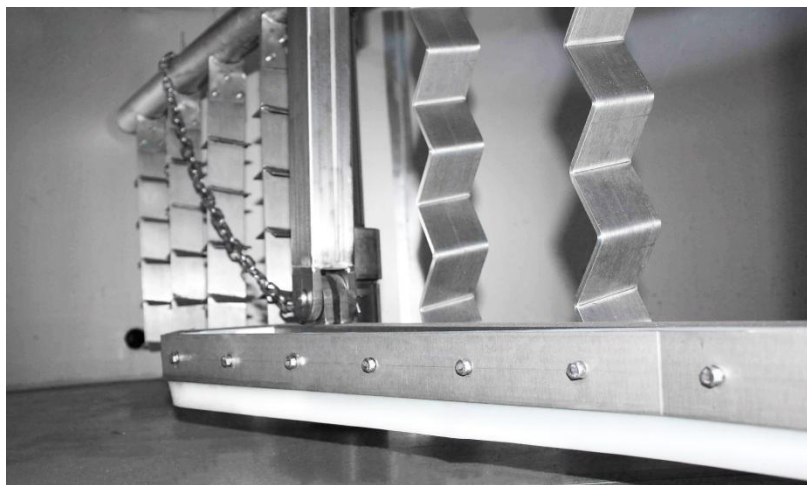
**Argon shielded welding line**



**Top glass manhole**

**Details**





Automatic raker



Pneumatic valve



Grant wort (glass)



Indoor exhaust

**Details**



**LED sight light to observe the inside easily when brew**





**Ring pipe for collecting wort and backwash on bottom**



**Hops adding device for boiling**



**Flow meter**

<p>Wort pump</p> 	<ul style="list-style-type: none"> <li>◇ Material: stainless steel 304</li> <li>◇ flow: 3m<sup>3</sup>/h, lift:18m, 0.75kW, <a href="#">frequency control</a></li> <li>◇ inletφ38,outlet:φ32, clamp connection</li> <li>◇ Standard: DIN,SMS</li> <li>◇ Impeller: open impeller, no sanitary dead angle</li> <li>◇ Working conditions: Sanitary centrifugal pump belongs to high and low liquid level and horizontal transmission, not self-priming type.</li> <li>◇ Surface treatment: Polish the wetted part, and the rest is matte or sandblasted</li> <li>◇ Function:mash wort go into lauter tank, after lautering, wort coming into boiling tank</li> </ul>
<p>Plate heat exchanger</p> 	<ul style="list-style-type: none"> <li>◇ Qty: 1 set. Single stage</li> <li>◇ Model: BR0.23/6 6 m<sup>2</sup></li> <li>◇ <a href="#">Wort cooling: 8m<sup>3</sup>/h, the wort can be cooled from 98°C to 10°C</a></li> <li>◇ <a href="#">Brewing water temperature: the water can be from 3°C to 65°C</a></li> <li>◇ Sealing material: Nitrile-butadiene rubber</li> <li>◇ Clamp connection: With clamp connector</li> <li>◇ Wort outlet: With bimetallic thermometer (0-100°C)</li> <li>◇ Cooling medium: With 2 bimetallic thermometers in wort inlet (water from 0-100°C, glycol water from -50 ~ 50°C)</li> </ul>

Electric Steam boiler



- ◇ LZD0.1-0.4
- ◇ Power: 36kw
- ◇ Material: carbon steel
- ◇ Soft water device and automatic hydration
- ◇ Rated Evaporation: 50kg/h
- ◇ Highest Evaporation: 60kg/h
- ◇ Rated Pressure: 0.8Mpa
- ◇ Rated Steam Temperature: 175℃
- ◇ Water Volume: 24L
- ◇ Thermal Efficiency:100.18%
- ◇ 0-0.1Mpa Steam Output: 5mins
- ◇ 0-0.7Mpa Steam Output: 10mins
- ◇ Water Inlet Caliber : DN25
- ◇ Steam Caliber: DN40
- ◇ Drain Caliber: DN40
- ◇ Chimney Caliber: 150mm
- ◇ Safety Equipment: Lack of Water, Electronic Over-pressure, Mechanical Over-pressure, Leakage, Water Pump Overload Protection
- ◇ Energy Saving Configuration: Energy Saving Device, Condenser
- ◇ Control Configuration: Microprocessor Control, 3.2inch LCD, Pump Running Status, Water Level


	Monitoring, Pressure Level Display
Exhaust	<ul style="list-style-type: none"> <li>✧ Material: stainless steel304</li> <li>✧ Indoor or outdoor exhaust</li> </ul>
Brewhouse pipeline	<ul style="list-style-type: none"> <li>✧ Material: stainless steel304</li> <li>✧ ISO: <math>\Phi 51/\Phi 38/\Phi 32</math></li> <li>✧ Satiary stainless steel valve and pipe, Single-sided welding and double-sided forming</li> </ul>
Wort thermometer	<ul style="list-style-type: none"> <li>✧ WNG/WNY(<math>0\sim 100^{\circ}\text{C}</math>)</li> <li>✧ Material: glass/06Cr19Ni10</li> <li>✧ SS sleeve</li> </ul>
Oxygenate device	<ul style="list-style-type: none"> <li>✧ SUS304 ,Flow rate control, uniform dissolved oxygen;</li> <li>✧ Heating plate exchanger wort outlet</li> </ul>
Carbonation stone	<ul style="list-style-type: none"> <li>✧ Material: Titanium</li> <li>✧ Filtration accuracy: <math>0.45\mu\text{m}</math>; Port size: M12</li> </ul>
Measuring barrel	<ul style="list-style-type: none"> <li>✧ <math>\phi 32</math>, L=400; SUS304</li> </ul>
Saccharometer	<ul style="list-style-type: none"> <li>✧ <math>10^{\circ}20^{\circ}</math></li> </ul>
Grain rake	<ul style="list-style-type: none"> <li>✧ SUS304, L=1300</li> </ul>
work platform	<ul style="list-style-type: none"> <li>✧ Made by SUS304 Checkered board</li> </ul>


### Deatils for Fermentation & Chilling System

Fermenter




- ✧ Material:SS304;
- ✧ Overall dimensions(mm):  $\phi 1060 \times 2250$ (adjustable);
- ✧ Gross capacity:700L,useful capacity:500L;
- ✧ Heat exchange area:1.6m<sup>2</sup>;
- ✧ Insulation: Polyurethane
- ✧ Insulation thickness:80mm;
- ✧ Inner jacket thickness: 3mm; external jacket stainless steel thickness 2mm,external jacket wire drawing board
- ✧ Mechanical pressure relief valve with pressure guage
- ✧ Food Grade Aseptic Sampling Valve
- ✧ With drain outlet
- ✧ Racking arm beer outlet and bottom outlet for optional
- ✧ CIP washing tube and apple type washing ball
- ✧ Top manhole
- ✧ Breathing valve on top of tank
- ✧ Carbon stone for CO<sub>2</sub> charging
- ✧ Cooling jacket on cone and cylinder
- ✧ Automatic temperature control process

	<ul style="list-style-type: none"> <li>◇ Automatic pressure control process</li> <li>◇ Temperature measurement way: PT100</li> <li>◇ With height adjustment bolt component</li> <li>◇ Polishing accuracy: 0.4um(three times polishing process)</li> <li>◇ Pickling &amp; passivation inside</li> <li>◇ The inside and outside of the head and inner cone are sanding smooth and the rest are well protected.</li> <li>◇ The welding seam is polished with a fine sanding tape of 40mm, the legs are polished, and the outer cone and legs are fully welded.</li> <li>◇ Argon shielded welding 100%</li> <li>◇ Water-filled leak testing, jacket water pressure testing, the test pressure is 0.4Mpa. All testing keep for 48 hours</li> <li>◇ Usage: Wort is fermented in this container according to certain process</li> </ul>
<p>Yeast adding device</p>	<ul style="list-style-type: none"> <li>◇ Material: SUS304</li> <li>◇ Effective volume: 10L</li> <li>◇ Inner shell is polished and outer shell stainless steel; the valves and accessories are matched</li> </ul>
<p>Food grade hose</p>	<ul style="list-style-type: none"> <li>◇ <math>\Phi 32</math> Internal diameter: <math>\Phi 32</math></li> <li>◇ L=20m/pc, with hose connector</li> </ul>
<p>Refrigerant pipeline</p>	<ul style="list-style-type: none"> <li>◇ Material: PPR</li> <li>◇ <math>\phi 32/\phi 25</math>, including valves and pipe fittings</li> </ul>

<p>Insulation pipeline</p>	<p>Material: polyethylene, <math>\phi 32/\phi 25</math> (Internal diameter) With PAP board and tape</p>
<p>Glycol tank</p> 	<ul style="list-style-type: none"> <li>✧ Material: Stainless steel 304;</li> <li>✧ Outline size: <math>\phi 1260 \times 2250 \text{mm}</math>;</li> <li>✧ Gross capacity: 1200L, usefully capacity 1000L;</li> <li>✧ Insulation layer: Polyurethane-thickness: 80mm</li> <li>✧ internal pickling of weld, external polishing sanding belt, matching valves and accessories;</li> <li>✧ With height adjustment bolt component</li> <li>✧ Polishing accuracy: 0.4um(three times polishing process)</li> <li>✧ Pickling &amp; passivation inside</li> <li>✧ The inside and outside of the head and inner cone are sanding smooth and the rest are well protected.</li> <li>✧ The welding seam is polished wit a fine sanding tape of 40mm, the legs are polished, and the outer cone and legs are fully welded.</li> <li>✧ Argon shielded welding 100%</li> <li>✧ Water-filled leak testing, jacket water pressure testing, the test pressure us 0.4Mpa. All testing keep for 48 hours</li> </ul> <p>Uses: Used for heat exchange and temperature control of fermentation tanks.</p>



<p style="text-align: center;">Chiller</p> 	<ul style="list-style-type: none"> <li>◇ Material: assembly, (5HP), air-cooled refrigerator</li> <li>◇ Model: MG-5C(D)</li> <li>◇ Power supply: customized</li> <li>◇ Water temperature control: -10℃~ +30℃</li> <li>◇ Power :6.5kW</li> <li>◇ Temp. range: -5℃~0℃</li> <li>◇ Compressor type: Scroll type, Panasonic or Copeland</li> <li>◇ Refrigerant type:R407A</li> <li>◇ Evaporator type: Dry shell and tube type</li> <li>◇ Condenser type: Screw copper tube covered aluminum fins</li> <li>◇ Safety Protection:Compressor over current protection, overloadprotection, High/low pressure protection ,Phase sequence/phase missing protection,Anti freezing protection, Over temperature protection, water flow protection.</li> </ul>
<p style="text-align: center;">Glycol pump</p>	<ul style="list-style-type: none"> <li>◇ Flow:3m3/h</li> <li>◇ Lift 25m;</li> <li>◇ Self-priming 220V 0.75kW heat exchanger; with stainless steel cover.</li> </ul>
<p style="text-align: center;">Pipes and valves</p>	<ul style="list-style-type: none"> <li>◇ Material: PPR; <math>\phi 32/\phi 25</math>,</li> <li>◇ Including valves and pipes</li> </ul>
<p style="text-align: center;">Insulated pipeline</p>	<ul style="list-style-type: none"> <li>◇ Material: Polyethylene</li> <li>◇ <math>\phi 32/\phi 25</math> (inner diameter) with PAP board and tape.</li> </ul>

### Details for CIP System



- ✧ Material: SUS304, 910mmx1500mm
- ✧ Alkali tank+Disinfection tank+moving cart,+control cabinet; Effective volume is 50L;
- ✧ Thickness of cylinder: 2mm;
- ✧ Wire drawing board;
- ✧ Matching of valves and accessories;
- ✧ Sand polishing belt at weld joint;
- ✧ Electric heating tube 8kW;
- ✧ Temperature display.

#### CIP pump

- ✧ Flow rate: 3m<sup>3</sup>/h, lift: 18m, 0.75kW
- ✧ Clamp connection for inlet  $\phi$ 38 and outlet  $\phi$ 32
- ✧ Overall dimensions: 500x250x350.

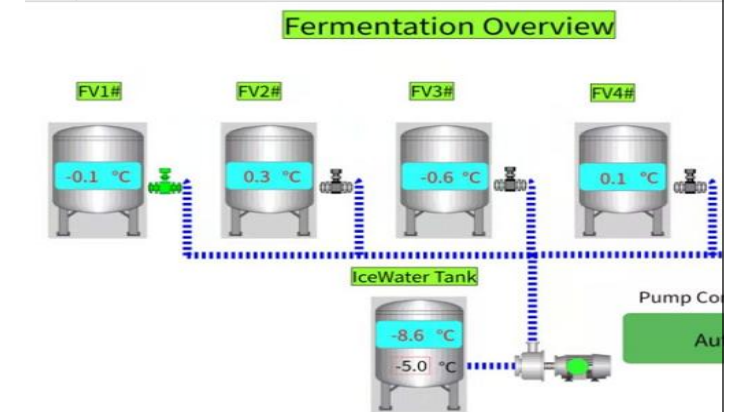
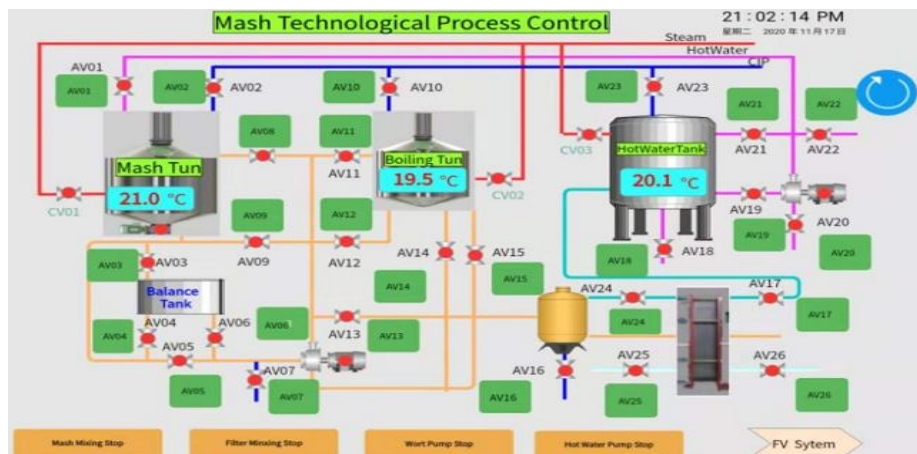
### Detail for Controlling System

Control cabinet



- ✧ Material: Stainless steel
- ✧ Dimension: 600×350×1500
- ✧ PLC control
- ✧ Fermentation system PLC control
- ✧ Mashing system PLC control
- ✧ Including power control, refrigeration control, fermentation control, mashing control, etc.
- ✧ Mainly used for automatic control of the whole system
- ✧ Can automatically control fermentation temperature and ice water tank temperature
- ✧ The control accuracy is  $\pm 0.1^{\circ}\text{C}$
- ✧ Intensive, simple, easy to operate
- ✧ Wort Pump on/off by VFD; Hot water pump on/off; Rake knife motor on/off
- ✧ Temperature display and Auto heating Control for brewhouse
- ✧ Temperature display and Auto Control for FVs
- ✧ Separate control for each fermentation tank, temperature display control
- ✧ Each pump can be controlled individually
- ✧ The control cabinet temperature exceeds  $40^{\circ}\text{C}$  protection function

## Special Design: Automatic Control and Mobile Phone APP Control



1. Electric controlling system
2. Completely accurate temperature control, 0.1 °C
3. Used on mobile phone APP
4. Could achieve remote control



## One head keg washer, filler unity machine



### 5.1 The machine features

1.1 This equipment is designed for stainless steel kegs of washing, sterilizing and filling. The process of washing, sterilizing, filling is finished automatically. The temperature of hot water and alkali is controlled automatically. Filling volume is controlled by high-speed positioning filling skill. It has the function of auto washing of pipeline. It is a high-quality products consist of washing and filling.

1.2 The control unit adopts the Germany's Siemens's control system to control the process. All control parameters (time value) can be adjustment without stopping the equipment.


1.3 Available to connect more than one machine together to reduce the invest.

### Beer keg washing, filling unity machine parameter


Filling accuracy	5‰
Keg size	10L-60L
Capacity	10-40kegs/hour
Compressed air:	pressure > 0.4Mpa
Wince resource pressure	0.25~0.4Mpa
Equipment size	900mm x1530mm x1950mm
Filling/washing nozzle	one/one
Size of plate form (mm)	525x640
Height of plate form (mm)	660
Outer size (mm)	900×1530×1950
The maximum stroke of the stopcock	300 mm
Weight	245kgs
Production capacity	30 kegs/H
Air consumption	4 – 11.5m <sup>3</sup> /H
Water consumption	0.5 – 1.5 m <sup>3</sup> /H
Power	1100W
Washing, filling method	inversion
Keg size	Diameter: φ250-500    Height: 400-660 mm

No.	Item		Name	Specification	Qty	Material	Technical Parameter
500L Distilling System	Main Machine	1	Pot Still	500L	1 piece	Jacket is Stainless Steel (SS) 304; Inner is Red Copper (C12200)	Gross Capacity: 580 L Effeciency Capacity: 500L Outlet: Φ350mm Manway Steam Jacket Heating Recommend Steam Energy: 50-60Kg/H Insulation thickness:50mm; Inner container shell thickness:3mm; 3mm,2mm; Plate surface protection, do a sanding polishing on welding line.
		Accessories	Pot Still Accessories		1 piece	SUS304	Level gauge Sewage outlet Safety exhaust valve and pressure gauge Φ 300mm Full-view mirror glass pressure-resistant operating window; 8" Tri-clamp Port;
		2	Spher Helmet	8" Diameter	1 set	Red Copper (C12200) Tri-clamp Port is Stainless Steel	8" Tri-clamp Port; 1.5" Tri-clamp Port*2; With SMS76 Sight Glass
		3	Agitator		1 set	SUS304	Mechanical agitation: cycloidal needle wheel reducer , Ex-750W/380V/50Hz-3PH; 60r/min
		4	Red Copper Still Column	8" Diameter	1 set	Red Copper (C12200) Tri-clamp Port is Stainless Steel	1000*Φ154mm- Five Tiers (Five Sight Glass) ; Twelve*25.4 mm Bubble Cap Three* 25.4mm Downcomer
			Red Copper Still Column	8" Diameter	1 set	Red Copper (C12200) Tri-clamp Port is Stainless Steel	2000*Φ204mm- Ten Tiers (Ten Sight Glass) ; Twelve*25.4 mm Bubble Cap Three* 25.4mm Downcomer

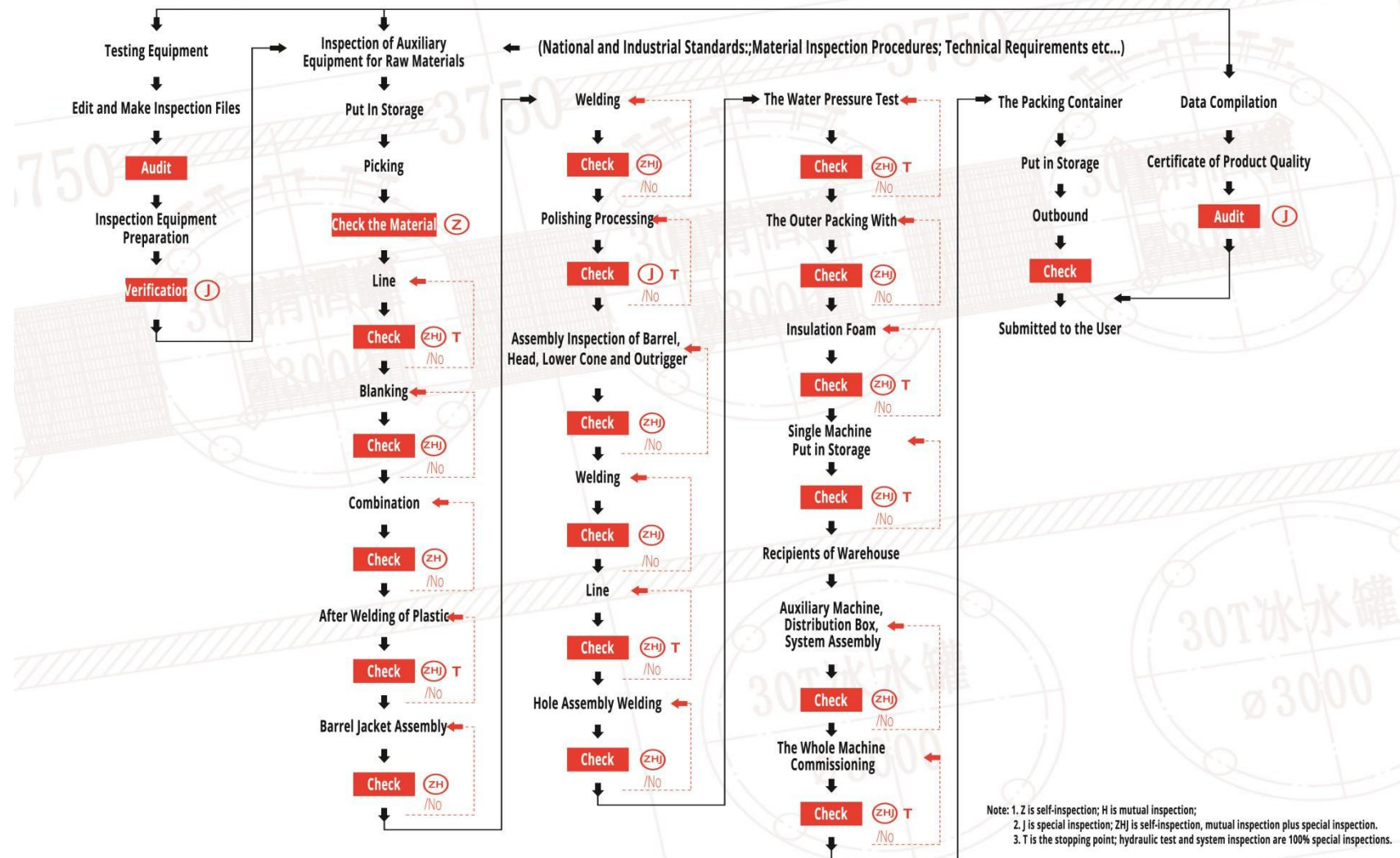


		5	Delphlegmator	8" Diameter	2 piece	Red Copper (C12200)	250mm*Φ204mm;Φ204 mm Helmet With Thermometer;
		6	Gin Basket	8" Diameter	1 piece	SUS304	800mm*Φ 204mm. Sieve Tray: Φ 154mm-Holes Φ 2mm
		7	Condenser	10" Diameter	1 piece	SUS304	1000mm*Φ 254mm-19*Φ 10mm Tubes Exchange; Thickness is 2mm
		8	Beak Peak		1 Set	SS304	
		9	Platform		1 piece	SS304	Length 1200mm*width 350*height 1200mm
	<b>Accessory</b>	1	Combination of Pipeline&Valves		1 set		ISO: Φ 38mm
		2	Control Cabinet		1 set		
		3	Clean in Place(CIP) Pump	0.75kW	1 piece		380V/50Hz-3PH, 1.1Kw Lift: 24m/55.49ft Inlet: Φ38; Outlet: Φ19 Clamp Connection Size:500×250×300mm
		4	CIP Pipeline		1 set		ISO: Φ19




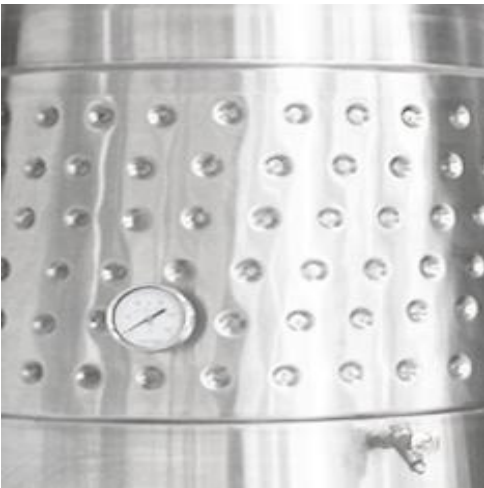
No.	Item		Name	Specification	Qty	Material	Technical Parameter
300L Distilling System	Main Machine	1	Pot Still	300L	1 piece	Jacket is Stainless Steel (SS) 304; Inner is Red Copper (C12200)	Gross Capacity:360 L Outlet: Φ300mm Manway Steam Jacket Heating Insulation thickness:50mm; Recommend Steam Energy: 20-30 Kg/H Inner container shell thickness:3mm ; 3mm,2mm; Plate surface protection, do a sanding polishing on welding line.
		Accessories	Pot Still Accessories		1 piece	SUS304	Level gauge Sewage outlet Safety exhaust valve and pressure gauge Φ 300mm Full-view mirror glass pressure-resistant operating window; 6" Tri-clamp Port;
		2	Spher Helmet	6" Diameter	1 set	Red Copper (C12200) Tri-clamp Port is Stainless Steel	6" Tri-clamp Port; 2" Tri-clamp Port*2; 1.5" Tri-clamp Port; With SMS76 Sight Glass
		3	Agitator		1 set	SUS304	Mechanical agitation: cycloidal needle wheel reducer , Ex-750W/380V/50Hz-3PH; 60r/min
		4	Red Copper Still Column	6" Diameter	1 set	Red Copper (C12200) Tri-clamp Port is Stainless Steel	1000*Φ154mm- Five Tiers (Five Sight Glass) ; Twelve*25.4 mm Bubble Cap Three* 25.4mm Downcomer
Red Copper Still Column	6" Diameter		1 set	Red Copper (C12200) Tri-clamp Port is Stainless Steel	2000*Φ154mm- Ten Tiers (Ten Sight Glass) ; Twelve*25.4 mm Bubble Cap Three* 25.4mm Downcomer		

		5	Delphlegmator	6" Diameter	2 piece	Red Copper (C12200)	250mm*Φ154mm;Φ204 mm Helmet With Thermometer;
		6	Gin Basket	6" Diameter	1 piece	SUS304	600mm*Φ154mm. Sieve Tray: Φ154mm-Holes Φ2mm
		7	Condenser	8" Diameter	1 piece	SUS304	1000mm*Φ204mm-19*Φ10mm Tubes Exchange; Thickness is 2mm
		8	Beak Peak		1 Set	SS304	
		9	Platform		1 piece	SS304	Length 1000mm*width 350*height 1200mm
	<b>Accessory</b>	1	Combination of Pipeline&Valves		1 set		ISO: Φ38mm
		2	Control Cabinet		1 set		
		3	Clean in Place(CIP) Pump	0.75kW	1 piece		380V/50Hz-3PH, 0.75Kw Lift: 16m/55.49ft Inlet: Φ38; Outlet: Φ19 Clamp Connection Size:500×250×300mm
		4	CIP Pipeline		1 set		ISO: Φ19

# Process Quality Control



- Strict quality control: raw material test, check on blanking , welding and polishing, tank pressure test and installation test, etc.
- Professional machineries and tools are equipped for process QC.

Production tools	Function	Finished product
	<p><b>Automatic welding machine</b></p> <p>Perfect and uniform longitudinal welding seams high tensile resistance , less oxidation and longer X-ray testing to avoid any welding defects. Fast cooling of welding seams to avoid deformations.</p>	
	<p><b>Automatic punching machine</b></p> <p>Automatic formation of dimple jackets as to design uniform shaping and punching without damages.For high pressure testing and durability.</p>	



**Laser cutting machine**

Cut precisely as per technical drawing

Smooth cutting edges without burrs

3D cutting available to meet customized designs



**Decoiling machine**

Perfect flatness without scratching

Cut stainless steel plates in precise length

Automatic conveying to laser cutting machine





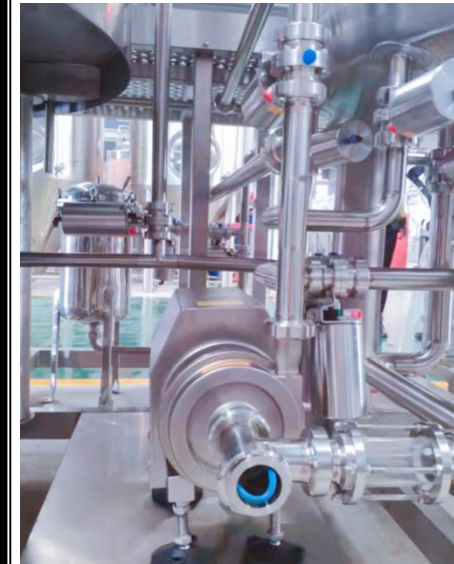
### **Cone rolling machine**

Precise cone formation as per custom design  
Protect the finish from scratching or damaging  
To avoid any deformation failures



### **Blader and other accessories processing equipment**

Neat and smooth welding seams without dead angles  
Less oxidation and longer service life  
High working efficiency without man-made failure



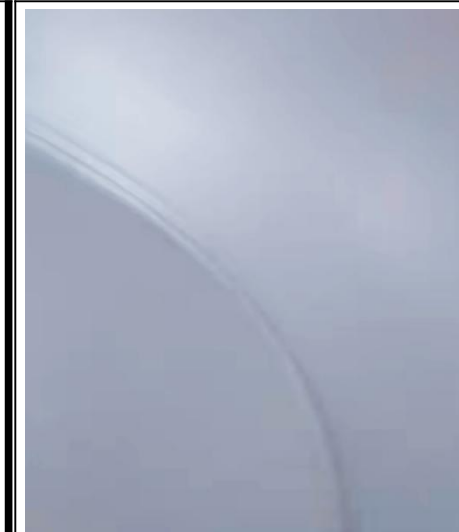


### Polishing machine

Well control of polishing precisions as requirements

High polishing accuracy to ensure sanitary finishes

Smooth and shiny appearance



### Polishing detector

The hydrothermal tank reaches  $0.6\mu\text{m}$

The cold tank reaches  $0.4\mu\text{m}$



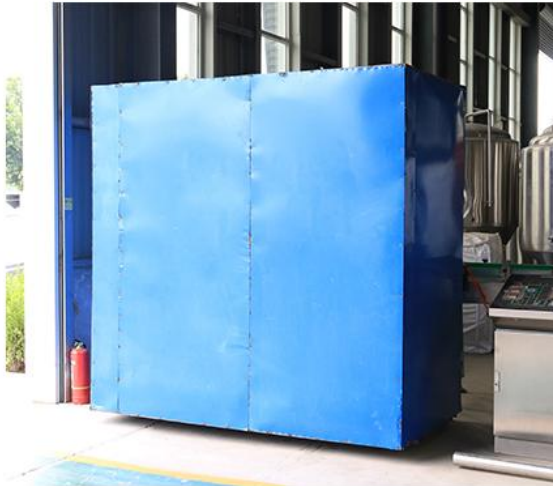




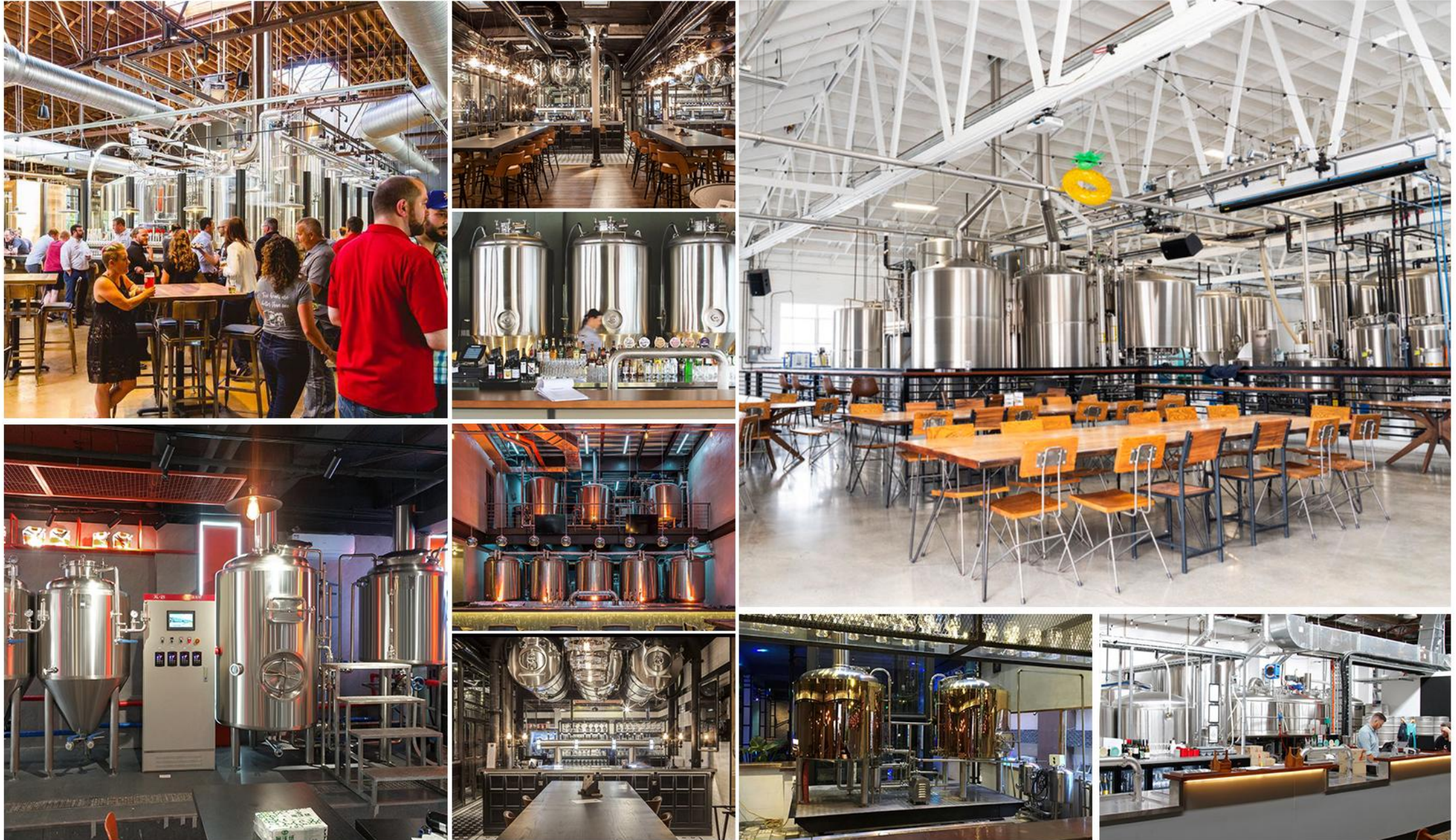
Shandong HG Machinery Co., Ltd is founded in 2012, more than 18000 square meters work-house. HG Company specializes in designing, researching and manufacturing fully automatic and semi automatic beer, beverage and the other liquid production and filling line. HG company has more than more than 22 years experienced engineers in brewery industry, and owns more than 79 innovation patents. Products are sold to USA, Canada, Australia, Europe and South Africa etc, more than 150 countries and areas.



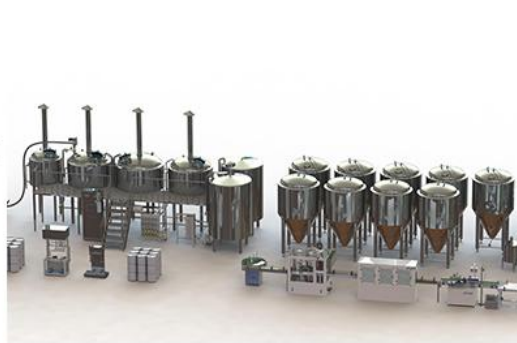
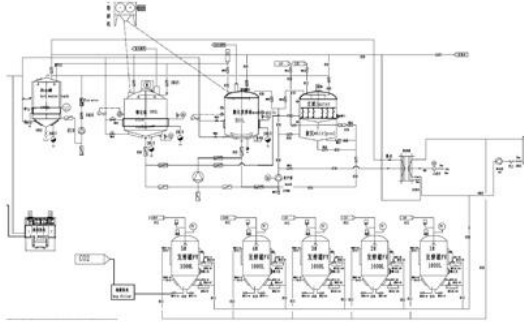
HG company has ISO 9001:2016 quality system international certification, CE certification, UL certification, SGS certification. The company pays attention to technology research and development, and has been recognized by high-tech enterprises.



- ▶ Container loading (20GP, 40GP & 40HQ)
- ▶ Packed with plastic film and Iron frame for main tank, Fittings use iron cabinet
- ▶ Customer's requirements available



## Pre-sales



- ▶ Free consultation service
- ▶ Project planning and design services
- ▶ Layout: Send us your building floor plan, sketch, we can provide you with layout
- ▶ Technical drawings We will offer the drawings of every tanks according to your requirements.
- ▶ 3D layout: To make sure you have a more intuitive experience.

## After-sales



- ▶ We can provide weekly production report to let you clear of production progress and details
- ▶ Will do equipment test and test report available for you
- ▶ Help you to arrange transportation till to your location
- ▶ Providing pipelines connection drawings and operation manuals
- ▶ Providing installation, debugging and training service

Main machine guarantee for two years, electronic components have one year free warranty. Supply lifetime maintenance and technical service.

