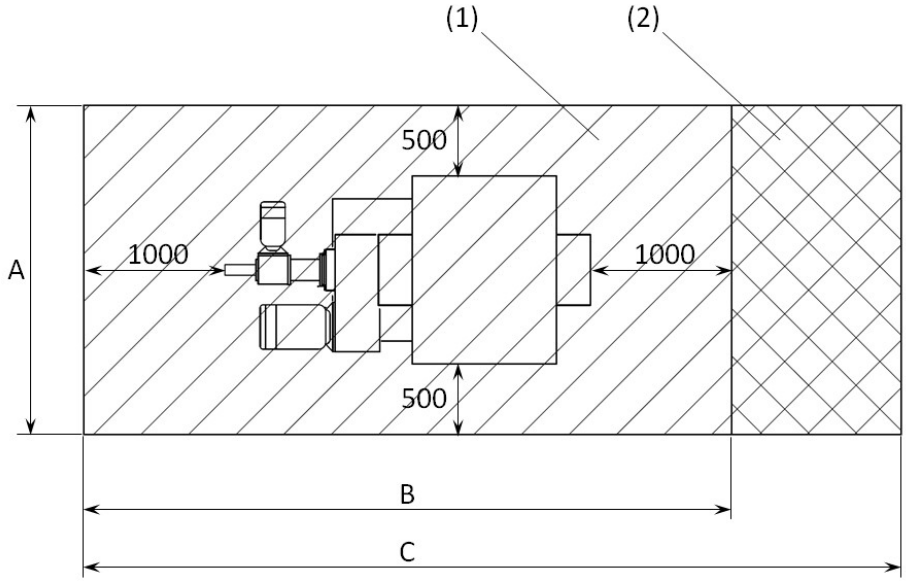
1 Installation

1.1 Preparing the setup location

1.1.1 Space requirement for assembly



Space required for the normal operating.

Space required for the maintenance.

Description	A	B	C	Unit
RefinerConche 500L	2150	4500	6000	mm

Cordon off the assembly area against unauthorized access.

Keep sufficient space clear for working on the machine.

Ensure access to the switch cabinet.

1.1.2 Machine load

The following value include the machine and the rated product volume.

Description	Value	Unit
RefinerConche 500L	27	kN/m^2

Place the machine base on the machine load information.

Recommend to use the anti-vibration pad between the machine base and ground.

1.2 Unpacking

The degree of the dismantling of the machine is determined by the transport conditions and local conditions.

Unpack the sub-assemblies as close as possible to the final installation location.

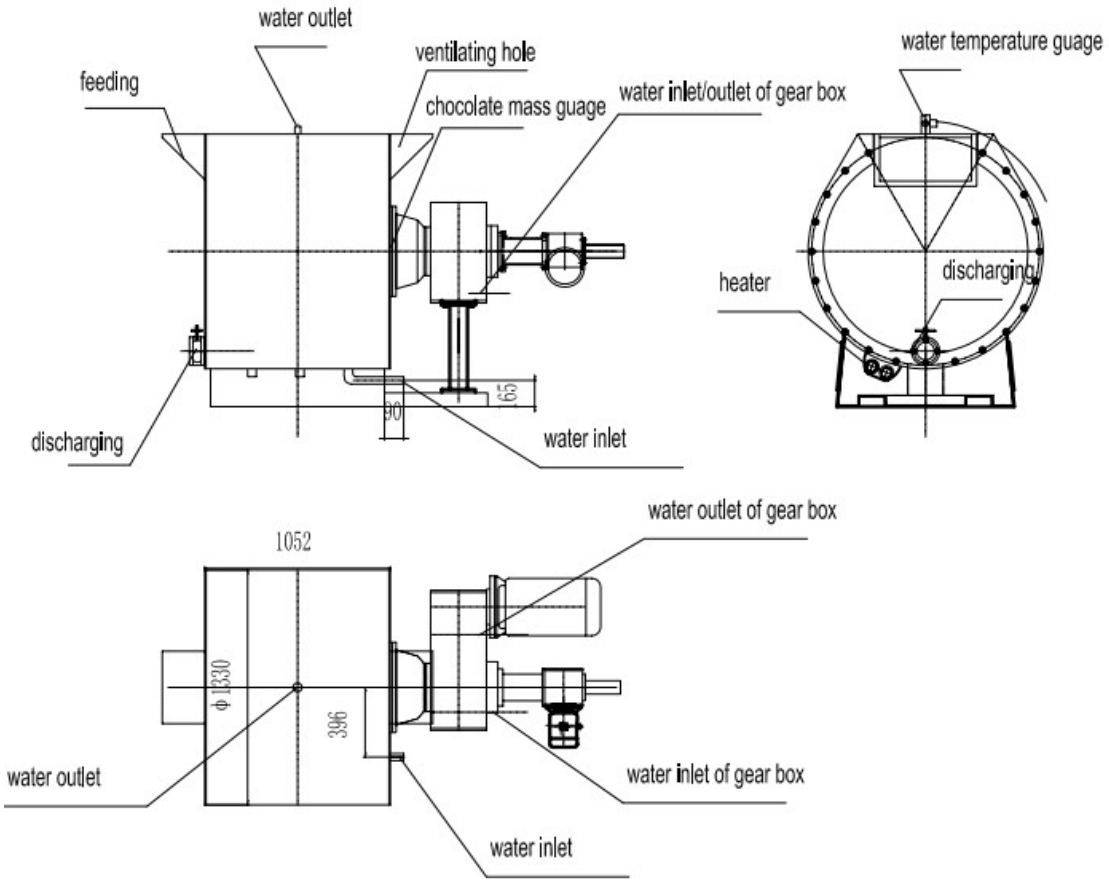
Remove the protective materials from around the sub-assemblies.

Leave the sub-assemblies on the original shipping supports until installation.

Sort the packaging according to material type and dispose of it in compliance with the local law and regulations.

Note: Usually we test the machine with cocoa butter or cooking oil in our factory, the testing material can't be discharged complete, remaining material will still inside. So there may be some bad smell when you open the package or seems the machine was used/second hand. It's normal, just because we test with material and the machine kept in warehouse long time.

1.3 Installing



Prerequisites:

- The foundations must be solid and vibration-free, and should preferably be made of concrete. If put the machine on upstairs, loading of floor where put the machine must be larger than 2000kg/M^2. No need to fix with foot bolts due to the machine's itself weight.
- The surface must be horizontal and flat.
- Crane and move the machine according the guider. See chapter 5.4.
- Put the machine on the arranged place.
- Connect the water pipes of the vessel, supply from the bottom to the top.
- Connect the cooling water to the gearbox.
- Finish the wiring work according the electrical schematic diagram. See 4.7

DANGER

Electric shock

The danger WILL result in death or serious injuries.

Ensure that the operating voltage and frequency match the information on the nameplate and in the control cabinet.

Only connect the machine when the electrical mains power supply is disconnected.

Observe electric wiring diagram.

Observe the motor's direction of rotation.

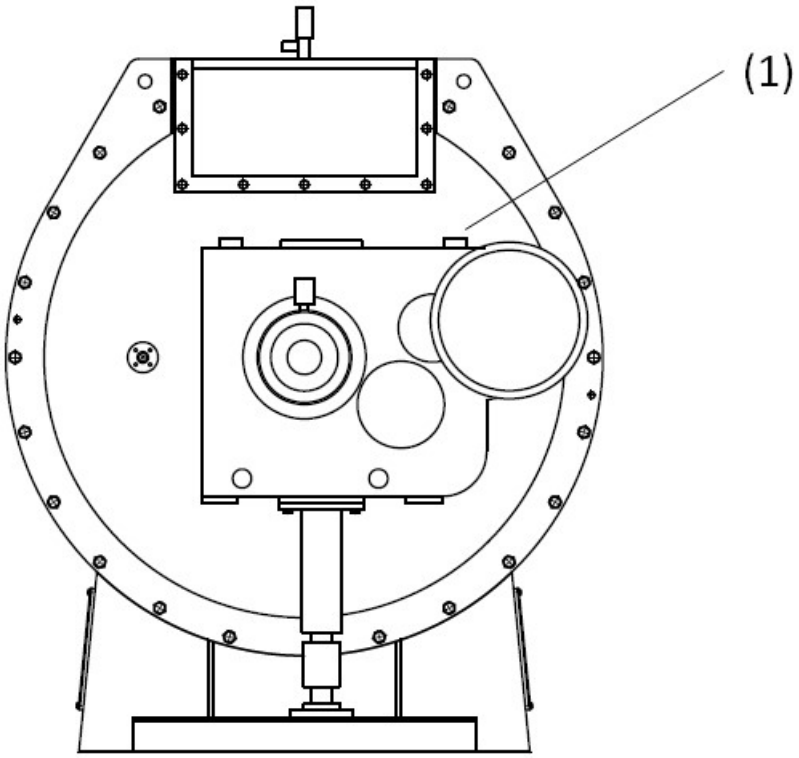
1.4 Checking the installation

The installation work only be finished until you have checked and ticked all following check points.

No.	Check points	√
1	Remove the craning and moving tools.	
2	There is enough space for operation and maintenance.	
3	The machine is leveled horizontally and fixed stably.	
4	All components have been installed.	
5	All coverings have been installed.	
6	All pipes are connected in good condition, no leakage.	
7	The electrical connections have been checked according to the electric wiring diagram.	
8	The water pressure is controlled as the requirements.	

2 Commissioning

2.1 Fill the oil to the gearbox



(1) Filling point

Fill in the oil to the marked line(about to the second red line of lever meter on gearbox.)

During the running, the temperature will increase, and then the viscosity of the oil will be lower; some vaporous water will settle on the bottom of the gearbox.

Recommend to change the oil every 15 days.

NOTICE

Running without oil

Damage to the machine.

Fill in the oil properly

2.2 Check the motor rotating direction

Prerequisites:

Make sure the grinding blade is loosen

NOTICE

Motor running without in incorrect direction

Damage to the machine.

Inching control the motor to make sure the rotating direction is correct as marked.

2.3 Fill the water to the jacket

- Don’t block the upper water outlet.
- Fill the water from the bottom; until the water is full.
- Make sure the water is in a good condition of circulation.
- Set water temperature around 40℃, only can feed chocolate and start the machine when the temperature raise above 35℃

2.4 Clean the process zone

- The tighten must be in loosen position and ensure the right rotating direction of motor, before start the machine.
- The new machine must be cleaned with cocoa butter/vegetable fat. Put around 100kg clean material into conch, then run 3~4hours, then drain out dirty fat and put into new clean material again, repeat this process at least 3times until the machine is clean. Then feed in cocoa butter
- Clean the outlet pipe and outlet hopper with vegetable fat.
- Dispose of fat properly.
- Ensure the lids are closed.

2.5 Checking the commissioning preparing

The commissioning preparing work only is finished until you have checked and ticked all following check points.

No.	Check points	√
1	The water is fully filled, and in a good circulation condition.	
2	The motor is rotating in correct direction.	
3	The oil of the gearbox is filled to the marked line.	
4	The cooling of the gearbox is working as request.	
5	All the safety device is fixed	

2.6 Checking safety equipment

It is necessary to check and tick all following check points.

No.	Check points	√
1	The EMERGENCY STOP button stops all drives relevant for safety.	
2	The machine does not start after unlocking the EMERGENCY STOP button. The machine must be restarted.	
3	All the fixed sensors are working in accordance with requirements.	

3 Operation

3.1 Preparing for production

- Preheat the cylinder first with the electric heater to raise the water thermometer temperature above 35℃.
- Start the machine after water temperature raise above 35℃
- Heat the machine until the mass in the process zone has liquid.

Important: After the conche is turned on, the abrasion of scrapers with the lining will result in temperature. Before the conche is turned on, cut off the electric preheating.

3.2 Fill the material in

- Adjust the machine to extreme loosening position before fill chocolate.
- the sequence should be oil materials, powder, cocoa butter and cocoa liquid cubes, which should be cut into small pieces and heated to dissolve first (under a temperature of no more than 50℃) before being fed.
- It is prohibited to throw solid cubes or throw in the materials at one stroke to avoid damaging the scrapers and the inner lining and affecting the blending and grinding.

3.3 Mixing

- Ensure material is melted into liquid sufficiently before switch on the mix.
- Switch on the main motor to mix the filled material.
- The grinding blade is loosen

3.4 Grinding

After the mixing is done, start to tension the grinding blade for the grinding. Recommend to tension the blade step by step. Recommend that the materials in one

cylinder should be tightened three times. The first time is 1 hour after feeding; the second time is 4 hours after feeding; the third time is 6 hours after feeding. As required by grinding, it is best to tighten in a number of times. One-off tightening is forbidden, for it will cause excessive mechanical wear and a marked rise of heavy metals and iron in the paste of chocolates, thus seriously impairing the quality of finished chocolates.

Control the motor load, the electric current should be controlled <30A.

During the grinding, the product temperature should be controlled <50°C.

During fine grinding, chocolate paste will thicken with temperature rise. To ensure the fluidity of paste, a proper amount of lecithin should be added generally 2 hours before discharge along with a proper amount of vanillin.

3.5 Discharge

For purpose of discharge, the conch should be loosened to put the scrapers and liners in a loosened position, meaning that the conch must be loosened and the motor must be turned off before the discharge

Before open the valve.

3.6 Finishing production

Stop the machine directly.

Empty the machine properly.

Clean the machine and pipes with vegetable fat, if the machine will be shut down more than 2 weeks.