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I. Site Photo**COMPACT rendering equipment overview**

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Note: This manual is coming with equipment, pl take care of keeping it, which is for the future maintenance. If this system has technical update or promotion, we will not notify separately.

II. Product features and main uses

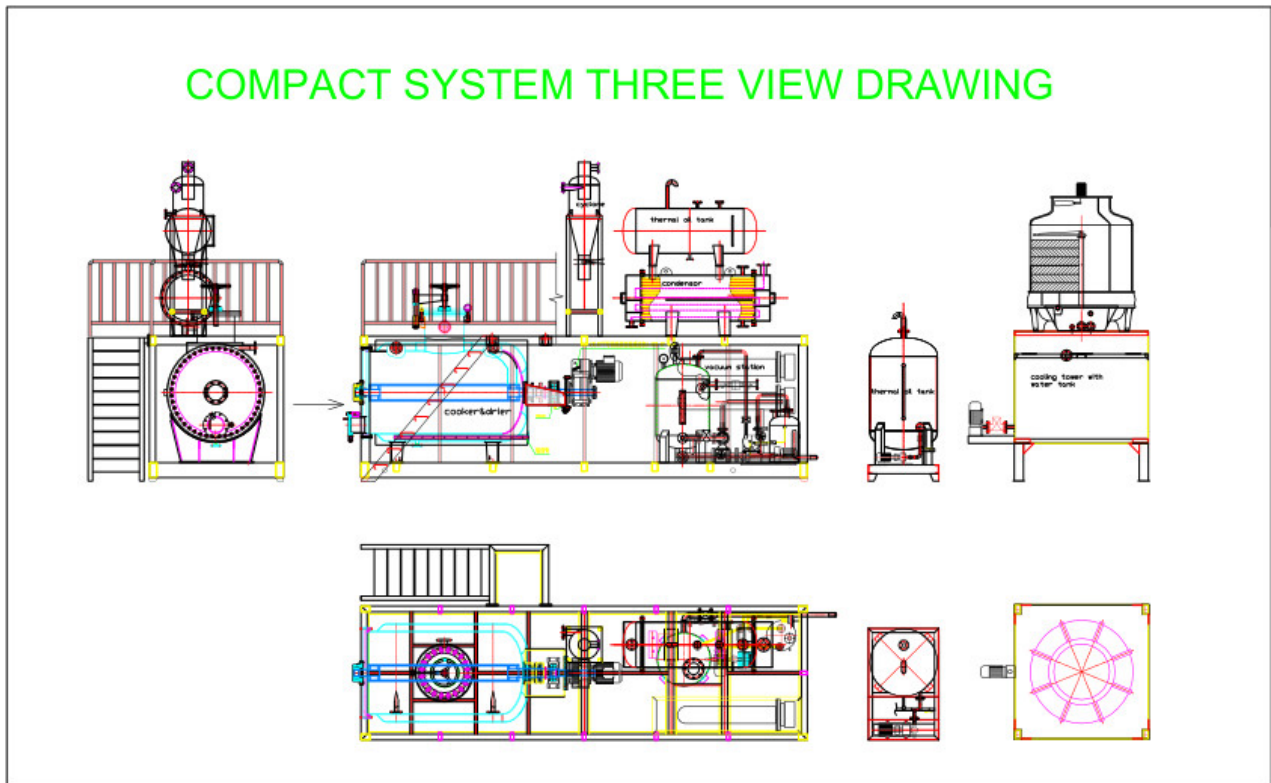
CZW serial products is compact and small installation area required; stable in transmission, low noise; Easy operation, simple maintenance, reliable operation and save energy.

CZW serial products use the advanced technical of combined sealing structure, which with the high wear resistance and sealing, at the same time ,this serial production can bear the high temperature, and resist the corrosive properties of various types of chemicals.

CZW serial products' driving unit is FAF which is a speed variable device, which reduce the frication caused by the intermediate connecting member; FAF driving unit working stable, save energy.

CZW serial products is suitable for different kinds of poultry feather, animal hide and hair, offal, meat remains, intestinal and others, which all can be turned into autoclaved feather meal, meat or bone meal, etc.

III. Structural characteristics and working principle



When pressure reach to 0.2-0.3 Mpa and keep it for about 15minutes, during this time, the temperature of material is about 130℃ , which to kill E. coli and other bacteria; After that relief the steam in cooker which go to odor processing device; According to the features of different kind of raw material keeping heating for about 4-5 hours, the drying is complete during this time, and discharge the meal and storage it as the fertilizer or feather meal.

Note: If the processed raw material with fat, the oil pressing device can be added to remove the fat, separating device which used to separate the oil and fat; the final production is meat or meat bone meal, and oil which is easy storage and high profit in recycling.

IV. CZW Serial main parameter

Model	DIMENSION			Capacity (T/batch)	Power (KW)
	Length (mm)	Width (mm)	Height (mm)		
CZW-1000	9000	2300	5000	1	77

V. Working flow

Raw material — crush(optional) — raising pressure ·Kill E. coil —
relief pressure ·drying — discharging — cooling — packing

VI. Installation and testing operation

1、Installation:

- (1) The equipment is firmly fixing on cement basement
- (2) The clearly reading the manual, cleaning the equipment and pipeline is needed to avoid blocking when operation;
- (3) All the pipeline, valve, gauge, electricity have to install by the professional people; pre-installation checking is needed; The equipment must installed connection to the ground, making lightning protection for the part above the building.

2、Checking before testing

- (1) The preparation for electricity:

2.1.1 Keep the voltage stable;

2.1.2 Keep the control panel electric leaking protection working normal;

2.1.3 Fastening the terminal; Grounding wire meet the requirement;

2.1.4 The rotating direction keeps same for each equipment;

- (2) Each equipment follow the below item:

2.2.1 Keep all the pipeline connection normal, valves open normal, pressure and oil relief valve normal, and keep the raw material inlet and exist can work normally.

2.2.2 Pressure safety valve keep at status of ± 0

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2.2.3 Discharge all the sundries.

2.2.4 Transmission parts no wound, no personnel stay, guard fence firmly.

2.2.5 Add lubricant for all the parts, keep oil level normal for reducer.

2.2.6 Thermal transforming oil recycling normal, no big wave movement, the high level is 1/3 of tank.

After checking if all normal, can start heating, when the temperature reach to 150°, then can start feed raw material.

VII、 Equipment safety procedures

Safety procedures:

1. PI read the manual before work; The non-workers is not allowed to enter the plant during operation; The workers have to wear protection device.
2. Checking power supply and protection device.
3. Rotating part add lubricant each week, the gear box add lubricant according to reducer manual.
4. Checking fastening the seal at inlet and exist before each shift, avoid leaking steam.
5. Keep the no blocking of steam enter valve, pressure gauge, safety valve, pressure relief valve, pipelines.
6. Close the entrance before pressure raise.
7. Checking and remove the wound which tripped with rotating place, no big part block.
8. Before start, let maintenance people and other non-workers away from the high temperature and rotating part.
9. Prohibit people stay nearby feed inlet and exist.
10. The equipment have to working within its safe pressure range, it's not allowed higher than it.
- 11 .Each month once checking for pressure gauge, and one time special department checking each year.

Guarding measure:

1. Must wear safety device before work, no tired or drunk working.
2. Checking the steel shock when feeding raw material due to the steam pressure cause scalding. .
3. Stop the working and checking the equipment if have the un-usual noise.
3. According to the cooker capacity to feeding the raw material, the big parts need to crush.
4. Selecting the twisted parts or hard parts in raw material.
5. The equipment responsible worker should at site if make maintenance and put the label.
6. Keeping site, equipment, tools clean.
7. Tight power rotating part, and screw, piping line to avoid leaking.

Note : The maintenance people must have knowledge of machine; if still have questions, pl notice the manager.

VIII. Safe operation

1、 **Feeding process:** be sure the exit closed well → start feeding when the temperature reach to 150° → start running the equipment clockwise → feeding the raw material to the fixed level → clean the dirt in sealing ring → close the enter → close pressure relief valve → enter the stage of disinfection

Note:

Due to the different raw material and technical design, pl don't feed the high water

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contains or high fat raw material into the cooker, if have, pl contact with the engineering manager, which may have the lose or scalding.

2. Sterilization and hydrolysis : continuously heating with oil→ the temperature keeping from 200°to 260°→According to the different material, the material temperature reach to 0.25Mp to 0.3Mpa→high temperature with high pressure cooking finish → relief the pressure and drying

Note: The engineer must checking the working when pressure raising each working due to the different raw material have different features, the sterilization is not enough if pressure too low, and danger if the pressure too high.

3. Pressure relief:

Start the fan of cooling tower working → Turn on the water recycling pump of condenser work→ switch on the small pressure relief (DN40) 1/8→ when the pressure low to 0.03Mpa (the valve turn on bigger and bigger during the pressure lowing),time is not less than 20 minutes.→ then turn off slowly , and turn on the big pressure relief valve until to 0 Mpa→ Turn on the pressure relief valve completely to 0mpa→switch on the vacuum station working → drying

Note : During this process, the exhaust pipeline is easy blocked by the meal for the different nature of raw material. So pl turn on the valve slowly, no big vibration or friction.

3. Drying and discharging :

Start drying→ turn on the vacuum drying system→ according time to fix drying time (normally 4-5 hours) → App.: if the raw material mixed with some Rice bran, wheat bran, soybean meal, the drying time can be shorter → keep the normal or negative pressure when discharging→ turn on the buffer tank valve to keep the pressure at ±0→ open the raw material feeding enter to check the meal shape (according to it can status of meal to decide adding cooker time)→the cooker stop running→ open the exist to check the meal if reach to the standard (if not reach to the standard request, close the exit and go on vacuum drying)→ meal reach to the standard and vacuum pump stop working→ stop the cooling condenser water pump→ stop the cooling tower fan→ anti-clock wise discharging→ after discharging ,close the exit to the next batch→ stop the working of oil heater if don't constant working→ when the oil temperature low to90°, then close the oil pump

Note: The feeding the raw material, the pressure relief valves, butter tank must turn off; the meal

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exit must be switch on after checking the meal reach to the standard request with the checking at feeding enter to avoid scalding.

The thermal oil pump is turn on before heater working, and the pressure gauge of pump don't have big vibration. When the heater turn off the temperature have to lower than 90°, Which is good for working life.

IX. Failure Analysis and Troubleshooting

Common fault	Fault reason	Solution
Noise inside the tank	1、 Checking if have foreign matters 2. Cutter deformation	1、 Remove foreign matters 2、 Mind blade
Motor high temperature	1、 Voltage low 2、 Feeding overload	1、 Adjust voltage 2、 Feeding according to capacity
Steam leaking	1、 Screw not loose 2、 Packing damage	1、 Tight screw 2、 Remove packing
Noise at transmission	1、 Lubricant too low or small 2、 Driver wearing or screw loose	1、 Feeding or replace lubricant 2、 Replace or tight.

IX. Failure Analysis and Troubleshooting

- 1、 Checking safety valve, pressure gauge on time annually.
- 2、 Cleaning the electric panel and dust on equipment.
- 3、 Feeding lubricant on shaft on time
- 4、 Replace the packing on time
- 5、 Daily maintenance

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Code	Name	Content	Period	Remark
A	Feeding port	cleaning	After each shift	12#Tetrafluoroethylene packing
B	Packing	Tight the leaking part. Or replace	daily	16#Tetrafluoroethylene packing
		Feed lubricant on packing	Any time	High temperature lubricant
	Rock wool washer	Replace if leaking	Any time	
C	Discharge door All the moment part	Clean and lubricant	Any time	Bearing lubricant
D	Belt	Check tightness	Any time	According to fact
E	Gear box	Check if the gear box lubricant leakage, and add it in time	Checking weekly , replace monthly	00# half liquid type lubricant
		Check if the gear box lubricant leakage, and add it in time	Each week checking Replace monthly	80W / 90 gearbox oil
G	bearing	Add oil maintenance· cleaning	Each week	260° lubricant
H	Steam trap	Cleaning and checking the work	Each month	According to fact
J	Safety valve· pressure meter	Low temperature manual test, discharge sewage	Each month	Checking annually
K	Tank and jacket	Checking the working and friction status	6 month	
M	Motor	Check and lubricant bear oil	1000 hour	260° lubricant
P	Rotating connector	Replace if leaking		According to fact
T	Screw on flange	Tight when necessary	Any time	

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Information resources

Further information on the contents

of this brochure is available from:

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