Champion®

Installation, Operation and Cleaning Manual

PHX-250 Shown

Phoenix Recycling Machine

Models:

PHX-250
PHX-320
PHX-700
PHX-700-AL
PHX-900
PHX-900-AL
PHX-2400-AL
PHX-2400-AL

Issue Date: 11.24.15

Manual P/N *115521 rev. A*

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Printed in the USA

Champion, an Ali Group Company

Champion

For future reference, record your service information in the box below.

Service Agent _____ Tel:_____

Parts Distributor _____ Tel:_____

National Service Department

In Canada:
Toll-free: (800) 263-5798
Tel: (905) 562-4195
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In the USA:
Toll-free: (800) 858-4477
Tel: (336) 661-1556
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ATTENTION:

The model no., serial no., voltage, Hz and phase are needed to identify your machine and to answer questions.

The machine data plate is located on the right side of the machine.

Please have this information ready if you call for service assistance.

REGISTER YOUR PRODUCT ONLINE

Make sure you are connected to the internet then enter an address below:

In the U.S.A.

http://www.championindustries.com/register

In Canada

http://www.championindustries.com/canada/register

Champion®

The Dishwashing Machine Specialists

PRODUCT REGISTRATION BY FAX

COMPLETE THIS FORM AND FAX TO:

(336) 661-1660 in the USA

1-(800) 204-0109 in Canada

PRODUCT REGISTRATION CARD

Model	Serial #

Date of Installation: ___/___ /____

Company Name: _____

Address: _____ _____ _____
(Street) *Province* *Postal Code*

Telephone #: ( ) _____ --- _____

Contact: _____

Installation Company: _____

Address: _____

Telephone #: _____

Contact: _____

FAILURE TO REGISTER YOUR PRODUCT MAY VOID YOUR WARRANTY

IMPORTANT IMPORTANT

Part 1: *GUIDELINES FOR SAFE OPERATION*

1. Safety Instruction

To ensure safe operation, please carefully read the following warnings and cautions prior to using any of the organic waste dehydrating systems.

HIGH VOLTAGE! – DO NOT ATTEMPT ANY REPAIRS OR MAINTENANCE BEFORE TURNING OFF THE MAIN POWER!

ALWAYS TURN THE MAIN POWER OFF AND LET THE MOTOR AND ALL MOVING PARTS COOL DOWN AND COME TO A COMPLETE STANDSTILL PRIOR TO ATTEMPTING ANY MAINTENANCE, ADJUSTMENT OR CLEANING OF THE MACHINE

BEFORE STARTING THE OPERATION OF THE MACHINE, MAKE SURE THAT **ALL PERSONNEL ARE CLEAR OF ALL MOVING PARTS** OF THE MACHINE

FAMILIARIZE YOURSELF WITH THE LOCATION AND OPERATION OF ALL START / STOP BUTTONS AND SAFETY SWITCHES OF THE MACHINE

DURING PERIODIC MAINTENANCE, CHECK ALL SAFETY SWITCHES TO ENSURE THAT THEY ARE WORKING PROPERLY

DO NOT REMOVE OR ALTER GUARDS

DO NOT REMOVE OR ALTER SAFETY LABELS. IF SAFETY LABELS ARE DESTROYED, MISSING OR ILLEGIBLE, PLEASE CONTACT GREENSMITH ENVIRONMENTAL FOR REPLACEMENTS

DO NOT OBSTRUCT ELECTRICAL SWITCHES OR PUSH BUTTONS

KEEP THE AREA OF OPERATION CLEAN AND DRY TO ENSURE THE SAFETY OF THOSE WORKING IN THE AREA.

DO NOT USE SOLVENTS TO CLEAN THE UNIT. CLEANING SHOULD BE DONE WITH A DAMP SPONGE OR TOWEL (WATER ONLY!!) ON A DAILY BASIS.

DO NOT ATTEMPT TO ALTER OR "JUMP START" THE MACHINE IN ANY WAY

2. Food Waste Consideration

- It is recommended that oversized vegetables are chopped before they are put into the machine. For optimal results, a pulper can be used to process food waste BEFORE being put into the Eco Smart unit.
- Do NOT insert large animal bones, which may impede the operation of the crankshaft & paddle arms and cause malfunction.
- The processing time may be prolonged if food waste contains excessive water.
- The standard capacity of the machine is 2/3 height of the drum. Overloading food waste impedes the progress of the crankshaft paddles and may cause a malfunction of the equipment.
- It is recommended that food waste containing a lot of starch (rice, noodle, etc…) be mixed with vegetables for an optimal processing time. Food waste containing starch should not exceed 30% of the food waste component since it may stick to the agitator if not diluted with additional food types.
- It is recommended that food waste fill at least 1/2 of the drum's capacity in order to maximize the effective utility of the machine.
- Do NOT put OIL into the machine. Oil cannot be dried and leaves a greasy residue.

3. Use of the Machine

- DO NOT open the input lid while operation. Also, DO NOT touch the inside of the drum, which is extremely hot.
- DO NOT disassemble the lid or seals of either the Input or the Output door. Altering these components allows processing vapors to escape during the operation.
- Low level noises are commonplace during operation. Should there be excessive noise, turn the equipment off, allow cooling and removing any obstructions to the equipment's operation.
- After the cycle is complete, DO NOT discharge dried waste for 30 minutes or until the machine has fully cooled down.
- During discharge, it is recommended that some dried waste (approx. 1 inch) be left at the bottom of the drum accelerate the drying process of the next cycle.
- Regularly clean the outlet door.
- As you load food waste into the drum, be careful to ensure that food waste does not enter the blower.

Part 2: *OVERVIEW OF THE DEHYDRATING SYSTEM·*

1. Food Waste Dehydrating Machine

The Food Waste Dehydrating Machine is an automated, on-site drying system that speeds up the drying process and turns food waste into a rich soil amendment. The drying time will vary depending upon type of input, but the entire cycle finishes within 24 hours. The machine is constructed of durable stainless steel with an easily accessible control panel equipped with locking mechanism.

2. Specifications

Model	HGF-250ML	HGF-320ML	HGF-700ML	HGF-900ML
Cycle Times Full Load (Note 1)	1 Cycle 12-16hrs	1 Cycle 14-19hrs	1 Cycle 15-19-hrs	1 Cycle 17-22hrs
Capacity (Note 2)	75kg/160lbs	150kg/320lbs	300kg/700lbs	400kg/900lbs
Width	1004mm	1204mm	1300mm	1500mm
Length	1104mm	1304mm	1500mm	1910mm
Height	1000mm	1200mm	1280mm	1600mm
Reduction Rate	80% - 90%			
Electricity (Note 4)	220V/380V/440V, 50/60Hz, 1Phase/3Phase			
Total Watt	4,680 Watt	8,066 Watt	15,402 Watt	20,052 Watt
Power Usage (Note 3)	3.2kw/hour	4.72kw/hour	6.86kw/hour	11.9kw/hour
Power Rated (Note 3)	4.7kw/ 8.47Amp	8.1kw/ 10.9Amp	15.5kw/ 15.52Amp	20.1kw/ 27.61Amp
Max. Ampere (Note 3)	12.30Amp	21.20Amp	40.42Amp	52.68Amp
Av. Amp (70%) during Operation (Note 3)	8.6Amp	14.8Amp	28.29Amp	36.87Amp
Net Weight	400Kg	550Kg	800Kg	1,300Kg

***** NOTE:**

1. Cycle times will vary from load to load depending on the moisture content of the food waste.
2. Weight capacity is subject to variations in organic waste content.
3. The calculation above is for 220V, and the calculation may differ depending on local electricity.
4. Ampere Calculation = Total Watt ÷ Voltage ÷ 1.73

3. Advantages of Drying Decomposition System

- Within 24 hours per cycle.
- All kinds of organic food waste can be processed: It does not require assortment of food waste before putting it into the drum.
- Using circulating air system to smell free: Circulating air system prevents smell leaking and pollutants while operation.
- Automated operation system: Entire process is completely carried out automatically by one touch button.
- Economical use: As the machine uses only electricity, it is very economical.
- Compact size with superior performance: Compact size suits in to any surroundings while giving out superior performances.

4. Components of the Machine

Emergency Stop

LED Lamp

Control Switch

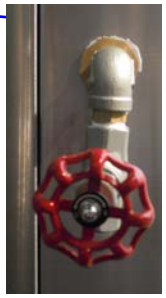
Caster

Discharge Door

Electrical Panel

Power Connection

Cleaning Tap



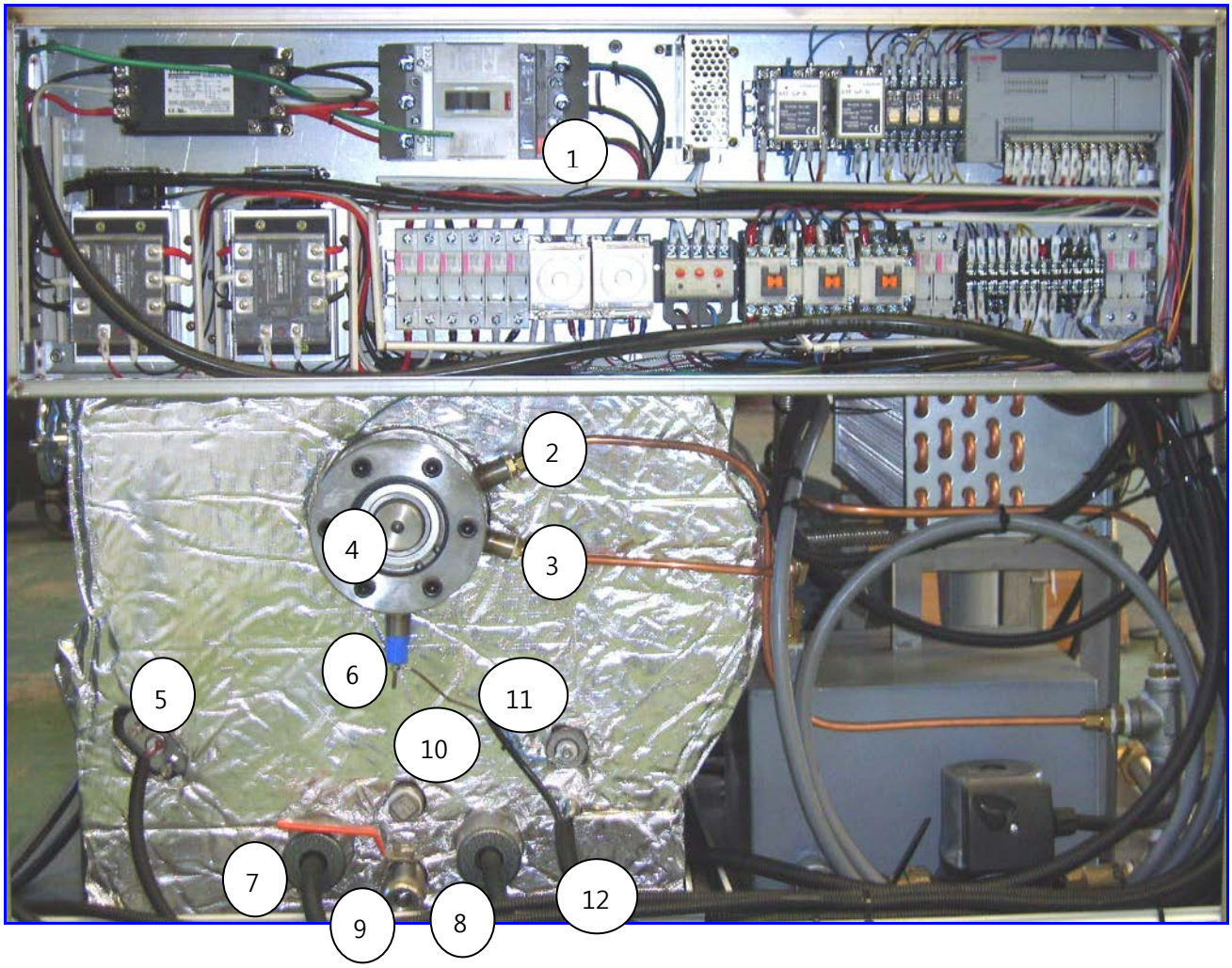
Condensed Water Discharge

5. Outlook of the Machine

Whole View 1	Whole View 2	Front
		
Side	**Back**	**Impeller**
		

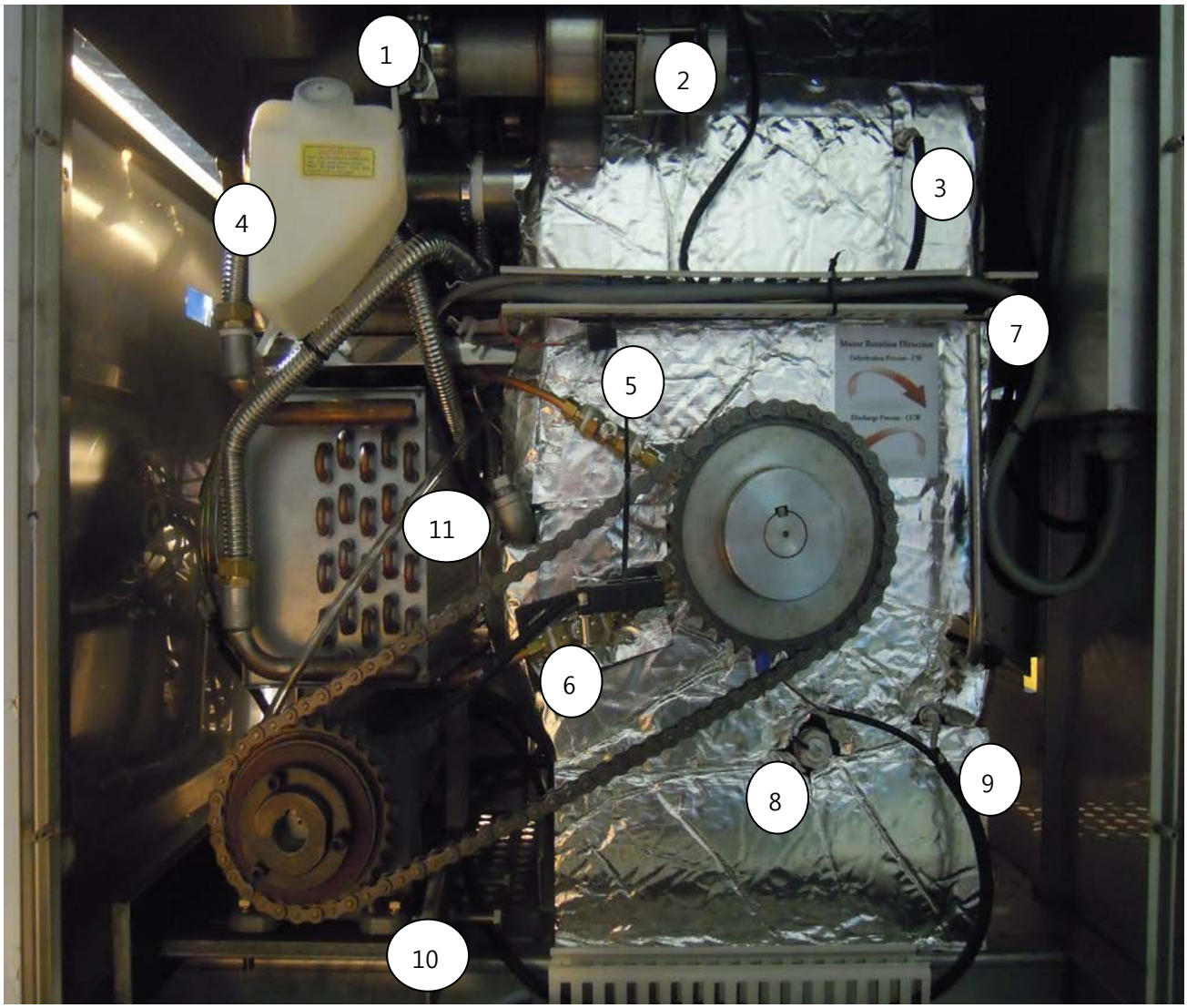
6. Components of Inner Side

(1) Right side View



No.	Parts	No.	Parts
1	Electrical Panel	7-8	Oil Heater
2-3	Bearing Cooling	9	Heating Oil Drain Valve
4	Bearing	10	Drum Drain Valve (Cleaning)
5	Heater Bimetal (185 C)	11	Moisture Sensor
6	Bearing Leaking Sensor	12	Oil Temp Sensor

(2) Left side View



No.	Parts	No.	Parts
1	Air Heater	7	Heating Oil Stick (& air vent)
2	Blower	8	Moisture Sensor
3	Air Heater Temp Sensor	9	Oil Temp Sensor
4	Coolant Sub Container	10	Motor Adjusting Bolt
5-6	Bearing Cooling Valves	11	Heating Oil Refill

Part 3: *OPERATING INSTRUCTION·*

1. Operating Switch

POWER ON

1. Input Food Waste
① Put Food Waste into the drum of the machine and close the lid.
② Food Waste should not be at a level higher than the crankshaft paddles.
③ Close and lock the top lid for input.
④ The machine should be operated only after the lid is closed!!

DEHYDRATION

2. Press the POWER BUTTON to ON.

3. Press the GREEN RUN Button => Dehydration Start
**** At this point, the unit will operate automatically in accordance to the preset temperature settings (Oil 150 / Air 100).**
① As the Power is ON, Heater and Motor will be operated.
② The Blower Fan (exhausting steam & vapor) will operate as the temperature is reached to the set temperature.
③ HEATER : the Heater will cycle ON and OFF throughout the Process as temperatures reach pre-set range
④ The machines will complete the cycle automatically.
※ Green Lamp will be ON during the dehydration process.
※ LED Lamp on Switch Panel
Dehydration => Cool Down=-> Discharge
Emergency Switch: Light ON => Operating Stop
OverLoad: Light ON => Operating Stop
Safety Switch: Light ON => Operating Stop
Bearing: Light On => Operating Stop: Bearing or Seal is leaking; Needed service (Replace Seal)

COOL DOWN

4. After the Drying Process finishes (Green Run Lamp will be OFF) and the remaining sterile biomass will be cooled down automatically before the Green Run Lamp turns OFF,
Place the bucket under the discharge chute and open the outlet door.

5. Press the GREEN DISCHARGE BUTTON.
① AUTO setting: Discharging will stop automatically after approximately 15 minutes.
② Remaining dry waste can be left in the machine until the next load. The machine does not need to be cleaned internally unless there is an accumulation of hardened starch clinging to the paddles or axis bar.

DISCHARGE

6. After discharge is complete, wipe the output with a cloth and close the lid.

7. Press POWER SWITCH from ON to OFF.

Green : Motor ON
Red : Motor OFF
Amber : Overload or Error

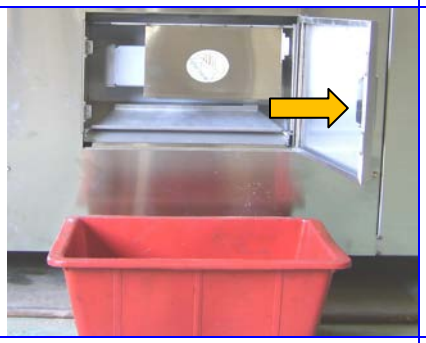
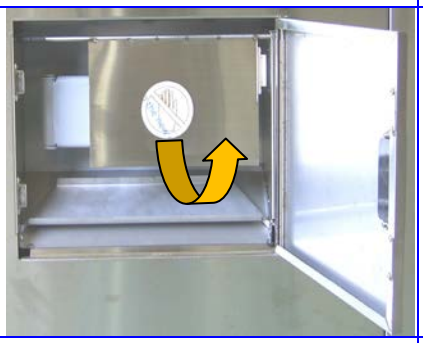
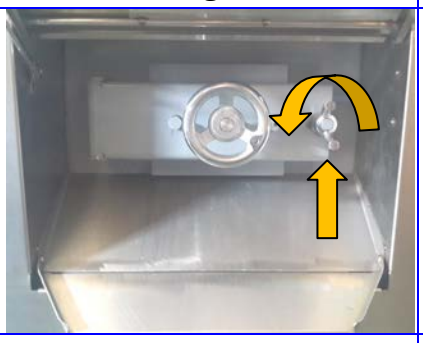
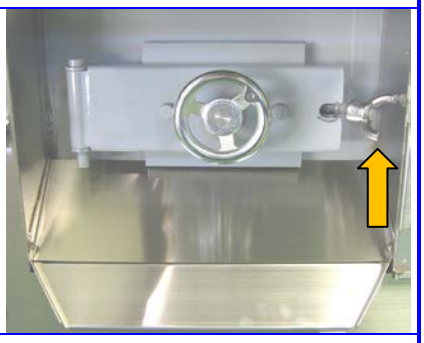
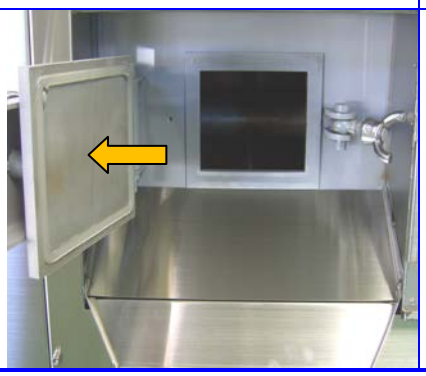
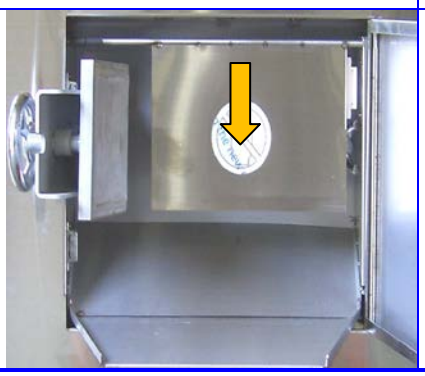
2. LED Warning Lamp on the Switch Panel

	EMERGENCY SWITCH Warning Lamp **ON** Emergency Switch is activated => Emergency Switch OFF
	SAFETY SWITCH Warning Lamp **ON** Input Hooper or Discharge Safety Bar is opened => Check the Input Hooper or Discharge Safety Bar. => Check the gap of Limit Switch on the Input Hooper or Discharge Bar
	OVERLOAD Warning Lamp **ON** **=>** Turn OFF the machine and Remove any obstacles inside of drum => Input volume of food waste is over the capacity: remove food waste
	BEARING Warning Lamp **ON** => Leaking on Retainer => Call for Service and Replace Retainer (or Bearing)
	OVERHEATING Lamp ON => Check Coolant, Blower, and Condenser,

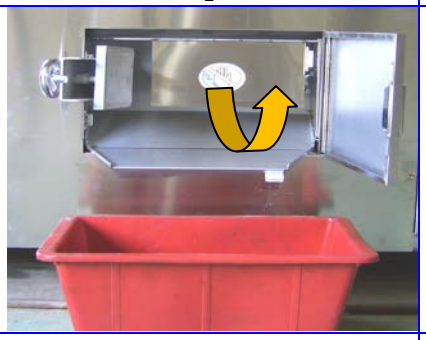
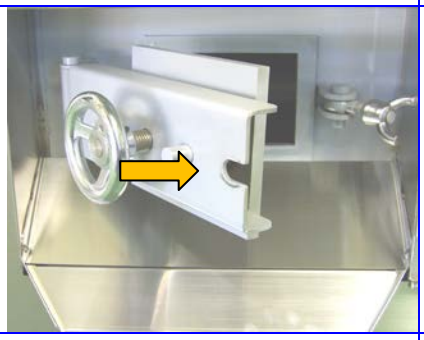
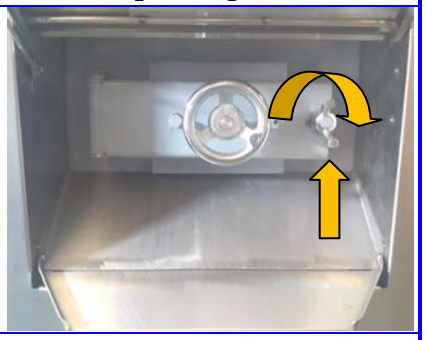
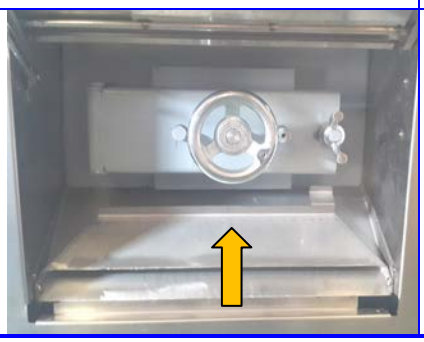
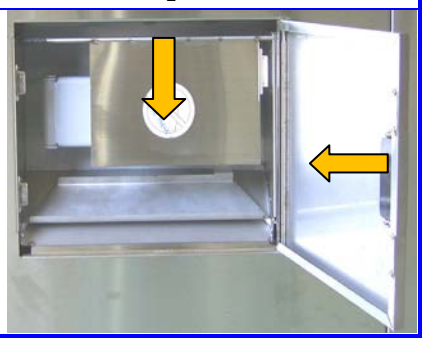
3. Discharge Instruction

- **DO NOT OPEN the Discharge Door during the dehydration process.**
- **DO NOT PUT Hands or Sticks into the Discharge Door during the discharging process, which will cause serious injury.**
- **For safety reason, unless the Swing Safety Panel is down to the correct position, the discharge process will NOT be activated.**

To DISCHARGE AFTER THE DEHYDRATION PROCESS

1. Place the Discharge Bucket & Open the Discharge Cover Panel	2. Hold the Swing Safety Panel up	3. Drop the Discharge Chute
		
4. Twist open the Submarine Circular Knob to allow the Discharge Door	**5. Twist open the U-Shaped Wing Nut to open the Discharge Door**	**6. Filing the U-Shaped Wing Nut to the right side**
		
7. Open the Discharge Door	**8. Put back the Swing Safety Panel down**	**9. Push the Discharge Button on the Switch Panel to start discharging process**
		

AFTER DISCHARGE IS FINISHED

1. Hold the Safety Swing Panel up	2. Close the Discharge Door	3. Twist and tighten the U-Shape wing nut first
		
4. Twist and securely tighten the Submarine Circular knob	**5. Push the discharge chute back into the upright position**	**6. Put back the Swing Safety Panel down & Close the cover panel**
		

4. Air Inlet & Condenser Cleaning

4-1		***** Condenser Cleaning ***** **Connect water hose to the cleaning tap, and run the water for over 10~20 minutes.** **It is recommended to clean the condenser once a month.**
4-2		***** Air Inlet Cleaning ***** **If debris is accumulated inside of air inlet with high pressure water, drying process may be longer** **It is recommended to clean the air inlet every 6 month.**

Part 4: *INSTALLATION GUIDE*

1. Installation Guideline

- The machine should be installed in accordance to applicable local and federal codes and ordinances.
- A 220 volt, 3phase, 4 wire circuit [or 120V/380V/415V, 1phase] shall be installed for proper functionality of the unit by a licensed, insured and qualified electrician.
- Place the machine in a suitable installation place.
- Leveling bolts are located at the bottom of the unit. Adjust as necessary.
- For optimal operation, the machine is to be installed with a minimum 8” clearance on all sides from walls and other obstructions.
- The machine comes equipped with a condensate drain line. The drain line should be connected by a licensed plumber and into a sealed drain line.
- The operating temperature comes preconfigured and set at 185 degrees Fahrenheit. When adjustment is necessary, the temperature gauge can be adjusted.

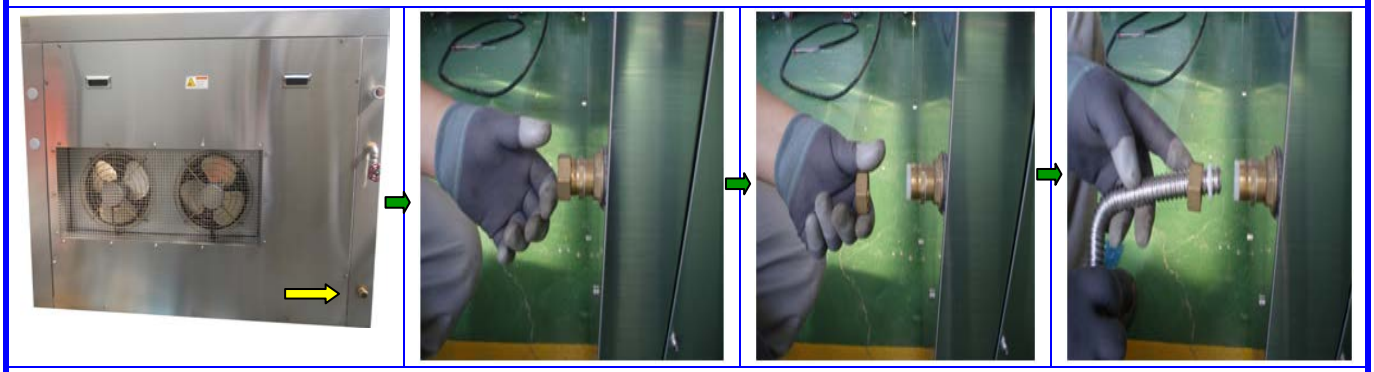
2. Caster & Level Foot

Moving		Make the level foot higher than a caster, and move to a suitable installation place.
Fixing		Make the level foot lower than a caster, and fix the machine at a suitable installation place.

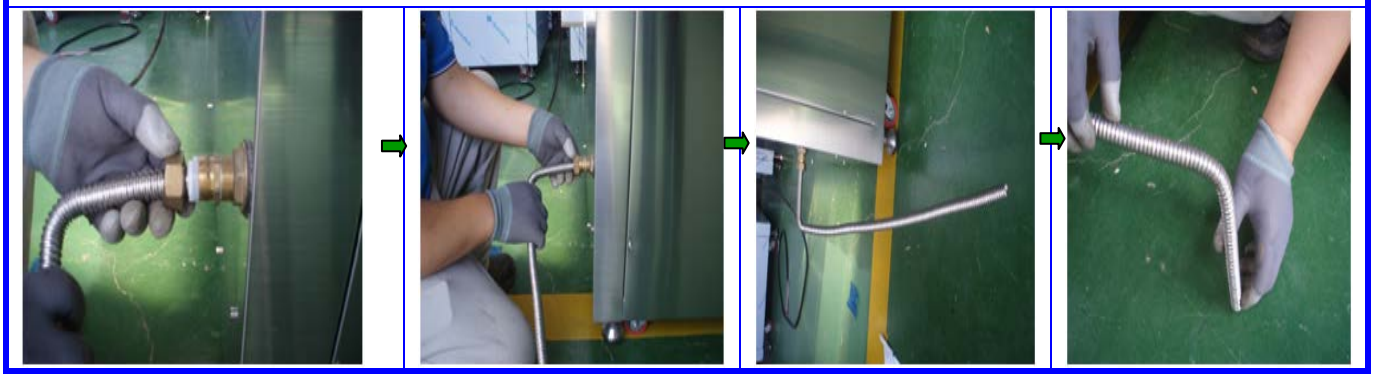
3. Drain Connection

- Connect the condensed water pipe to the drain.

Discharging Condensed Water

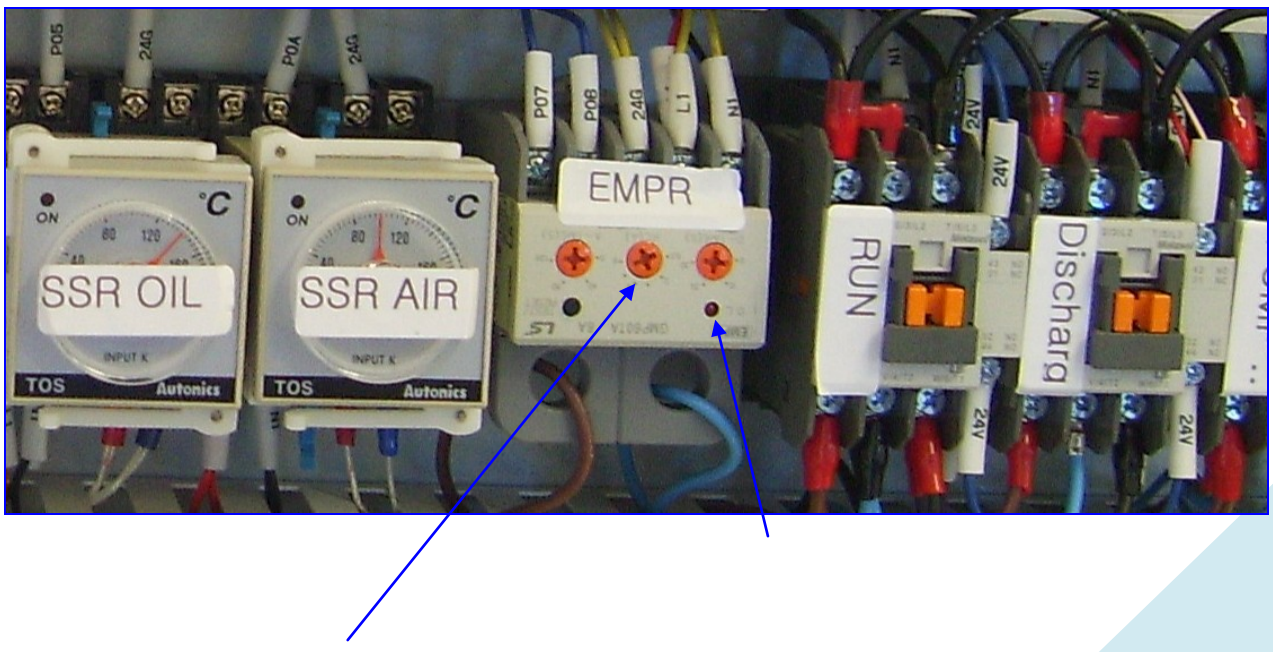


Connect to the drain and seal the connected parts in order to prevent odor from the drain



4. Overload Setting (EMPR Setting)

EMPR Setting (Overload Setting) may differ depending on local electricity.
After RUN the machine, if the machine stops operating in a short time, check EMPR setting and follow below instruction; but if the machine is operating normally, DO NOT change the setting.



1. When you power ON, and RUN the machine, the red light may be blinking.
This means that the overload setting is too low for your local electricity setting.

2. Solution: Turn the middle screw to Max; clockwise direction

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1) Then, while the machine is running, turn the middle screw to the anti-clockwise direction slowly until the red light on the EMPR is blinking.

2) At the point of the red light is blinking, turn the middle screw to the clockwise direction a little bit until the red light is not blinking; Normally, from the point of red light blinking, 20% up setting is the optimal setting. For example, the red light blinking point is 4, 4.8 is optimal setting.

Part 5: *MAINTENANCE & REPAIR GUIDE*

1. Troubleshooting

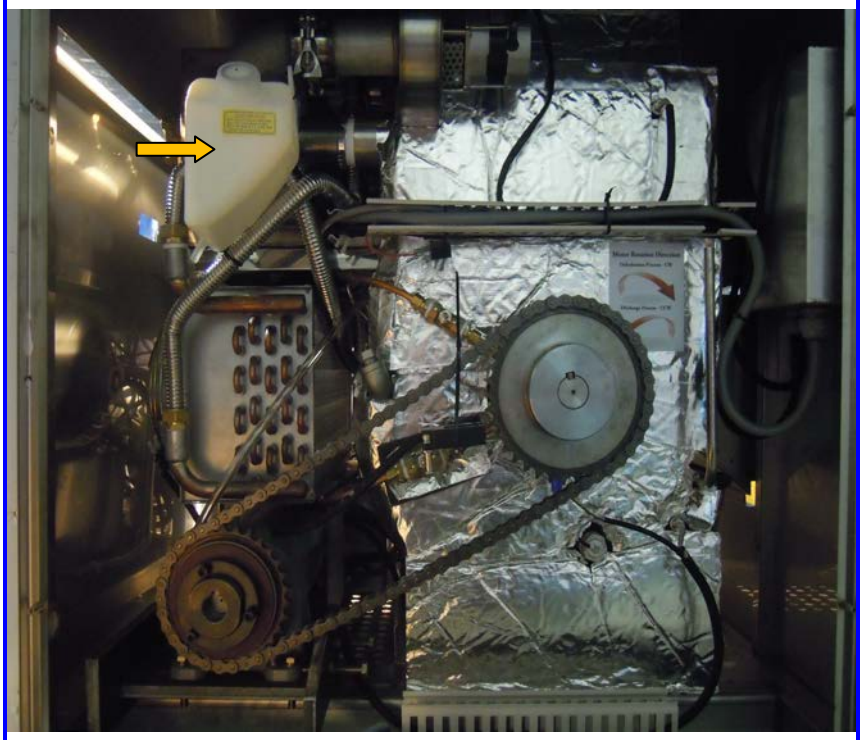
- The dehydration system is equipped with an anti-jamming function that senses motor overloading and will reverse the motor direction back and forth until the foreign object is dislodged and falls to the bottom to be discharged at the end of the process. However, if the motor overload reversing of the paddles does not dislodge the foreign object, the machine will stop processing and turn off and the food waste will not be totally dehydrated and sometimes look like mud. Make sure the machine is off and check to ensure no objects are obstructing any moving parts. If a foreign object is located, remove and restart machine by turning the Power Switch ON and Press the RUN Button to resume operation.

- During prolonged periods of inactivity (multiple days), clean the internal chamber of the machine with water. For prolonged periods of inactivity, it is suggested that the internal chamber be filled with water (approximately 10 – 20 gallons, depending on the size of the machine) and run for a complete cycle.

Malfunction	Cause	Solution
RUN Button Does Not Function	An Electric Short due to water on Switch Panel	Remove Water on Switch Panel with a Dry Cloth
	An Electric Short due to water on the Door Sensor	Remove Water with Dry Cloth
Machine Not Running	Power Switch OFF / Equipment not Plugged in / Outlet Malfunction	Power Switch On / Check Plug & Outlet
Excessive Noise	Metal, Spoon, Fork, Animal Bones	Stop Operating and Remove Objects
Dried Waste is Black and is Stuck to the Inner Drum	Temperature Setting is too High	Decrease Temperature Setting
Not Mixing or Discharging	Lumping of Food Wastes	Insert Hot Water and Run the Machine
Noise When Discharging	Remnants on the Inner Drum	Remove Remnants
Dried Waste is not Entirely Dried	Too Much Rice, Noodles or Starches Temperature Setting too Low	Add Vegetable Components Increase Temperature Setting
Mixing Impeller is Broken	Large Objects Impeding Operation	Replacement of Impeller
Circuit Breaker Malfunction	The Load of a Circuit Breaker is Low	Adjusting the Load
Static Electricity	Water in Electric Panel or Motor	Keep water away from the Electrical Panel or Motor – replace if necessary
Display Temperature Does Not Reach the Temperature Setting	Heater Disconnected	Check Heater Ampere
Delay of Discharging	Stuck of Dried Waste on Discharging Impeller (middle)	Remove Stocked Dried Waste on Impeller
Failure of Moisture Sensor	Dried Waste Stuck on the Left or the Right Side Sensor	Remove Stocked Dried Waste (Do Not Touch Sensor)
Machine Stops During Cycle	Overload of Motor due to Foreign objects or Excessive Capacity	Remove Objects. Decrease Capacity. Push Reset Button

2. Coolant Refill

- Periodically check the Coolant level by inspecting the tank level indicator [per month].
- Use the Coolant [-15℃ ~ -20℃] mixed with water: Mixing ratio Coolant 6: Water 4 [or 7:4]



Spare Coolant Tank

Always keep the coolant level above the LOW level indicator. If the coolant level is below the LOW level, add the coolant up to the HIGH level.

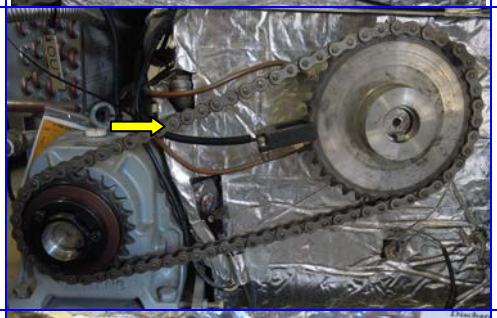
3. Bearing & Retainer Replacement

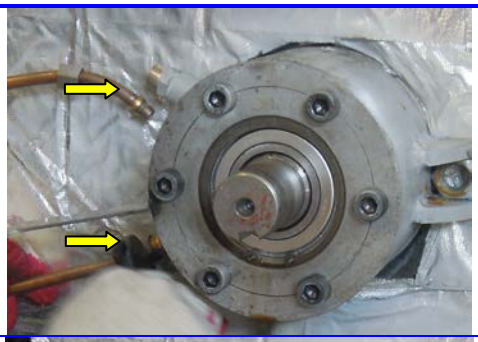
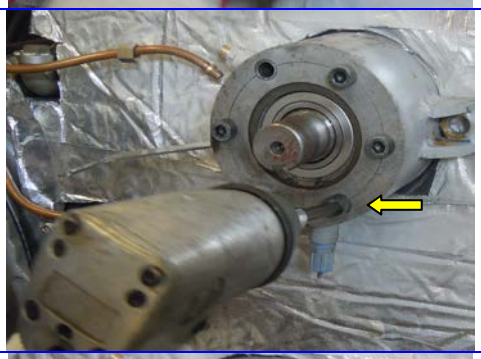
When Bearing Warning LED is ON on the Switch Panel, replace Bearings & Retainers.
The Bearing Leaking sensor is activated even with one drop of leakage, so it is not necessary to immediately replace the Retainers.
The machine can be operated for a few months from the time when the Bearing Warning LED is ON.

➢ Caution: when replacing bearings & retainers, replace them one side by one side.

☐ Bearing Replacement

➢ Use Wrench, Gear Puller, Air Impact Wrench (Spanner), Bolt, Monkey Spanner, Knife, Silicon.

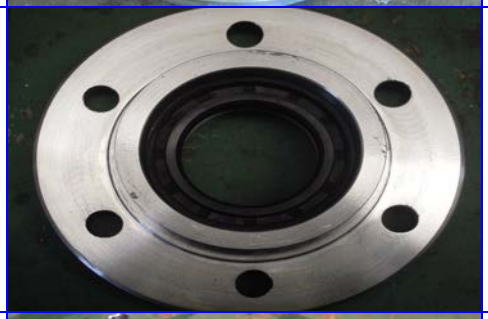
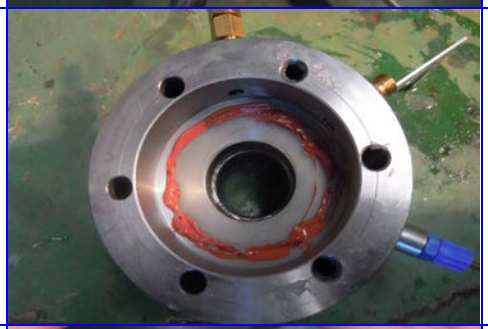
Left Side (Chain Side) Retainer Replacement		
3-1		**Close the Bearing Coolant Valves to prevent Coolant leakage during Replacement**
3-2		**Remove Torque Limiter Sensor**
3-3		**Disassemble Chain** **Refer to 5.9 Chain Replacement**
3-4		**Unscrew Bolt**
3-5		**Pull out Chain Gear** If necessary, Use Gear Puller.

3-6		**Disconnect Bearing Cooling Pipes from the Bearing Housing**
3-7		**Unscrew Bearing Housing Bolts** Unscrew the bolts by using an air impact wrench.
3-8		**Tighten the bolt to allow pulling out the Bearing Housing**
3-9		**Disassemble the Retainer Housing from the Bearing Housing**
3-10		**Disassembled Retainer Housing**
3-11		**Pull out the Teflon from the Retainer Housing. This Teflon may be remained on the Shaft; if so, you don't have to take it out.**

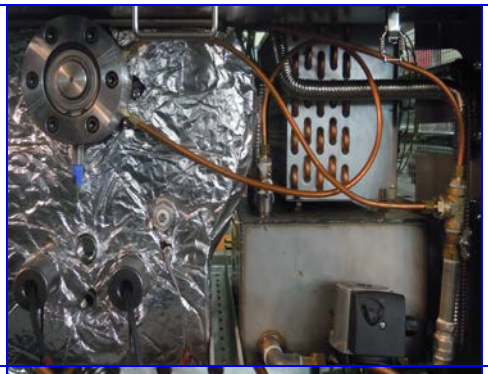
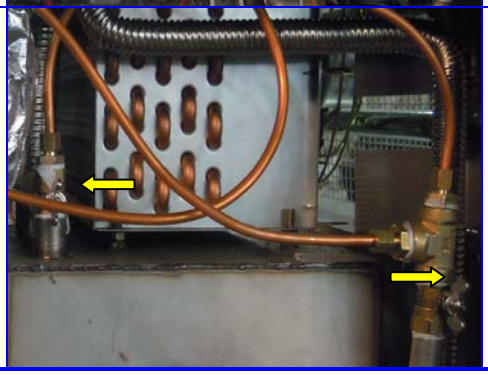
3-12		**The Teflon is remained on the Shaft.**
3-13		**Take out retainer from the Retainer Housing**
3-14		
3-15		**Take out O-Ring from the Bearing Housing**
3-16		**Take out Silicon Pad and Clean it for re-use.** **This Silicon Pad is used for 2016 model.**
3-17		**Take out the Bearing from the Bearing Housing**
3-18		**Remove Silicon on the Housing** Remove silicon on the surface of the housing by using a knife

☐ Retainer Replacement

- Use Retainer, Jack, Grease, Wrench, Air Impact Wrench or Spanner, Silicon, Loctite Bond

3-19		**Insert new Retainer in the Retainer Housing**
3-20		**New Retainer Inserted**
3-21		**Apply High Temperature Silicon on the Retainer Housing**
3-22		**Place the Cleaned Silicon Pad.** **This Silicon Pad is used for 2016 models.**
3-23		**Apply Silicon on the Bearing Housing**
3-24		**Assemble Retainer Housing & Bearing Housing**

3-25		**Assemble Retainer Housing & Bearing Housing**
3-26		**Apply Silicon on the surface of the Retainer Housing.**
3-27		**Apply Grease on the Shaft**
3-28		**Apply Grease on the Retainer inside of Inside of Retainer Housing**
3-29		**Assemble Housings into the Shaft** After applying grease, put the Housing into the Shaft.
3-30		**Check inside of the drum whether Retainer Housing is correctly inserted.**

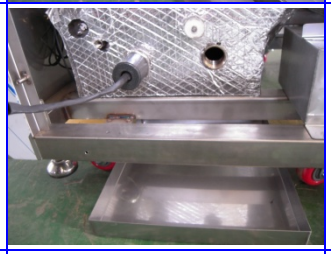
3-31		**Fasten Bolts into the Housing** Fasten Bolts by using a hand first, and fasten them again by using an impact wrench.
Right Side Retainer Replacement		
3-32		
3-33		**Close Bearing Coolant Valves to prevent leakage of Coolant** **Follow the same instruction for the Chain Side Replacement** **After re-assemble the housing, make sure to OPEN the Bearing Coolant Valves**

4. Moisture Sensor Replacement

4-1		**Remove Teflon Socket** Pull out Teflon Socket by using Vise Grip.
4-2		**Apply Silicon on the Socket** Apply one line of silicon on the screw thread of the Teflon socket.
4-3		**Fasten the Socket** After fastening into the center of the Hexagon Headed Bolt 6mm x 60ℓ, insert into the hole of the socket

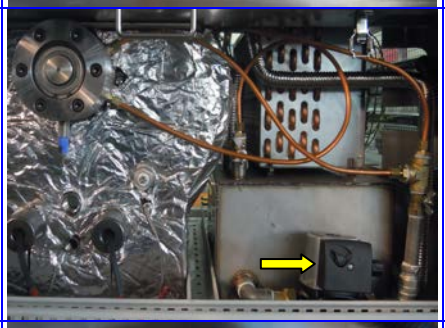
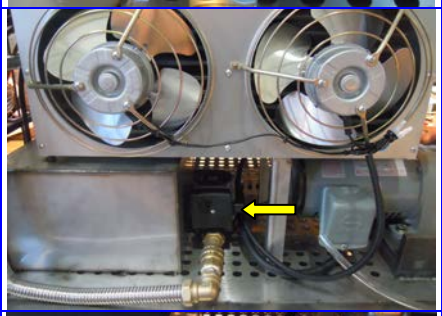
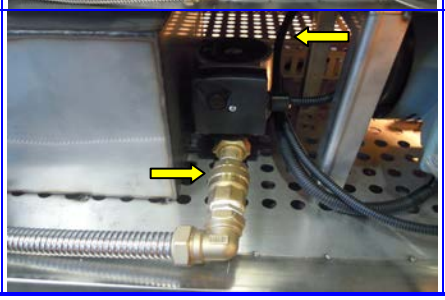
5. Heater Replacement

- Caution: If you disassemble the Heater, Heating Oil will flow out (approx. 1 liter). Thus, a bucket should be placed underneath of the machine before the heater is disassembled. Refill new heating oil after the replacement of the heater.
- Use Tape, Teflon Tape, Spanner

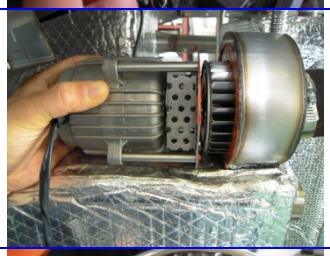
5-1		**Seal all Heating Tank Pipe** When replacing the Heater, if the pipe is NOT sealed, heating oil will be leaking due to the lack of air pressure of the tank.
5-2		**Prepare a New Heater** Bind Teflon tape on the screw thread of the new heater.
5-3		**Disassemble the Old Heater** Disassemble the Heater by using 55mm Spanner
5-4		**Replace Heater** After removing the old heater, insert the new heater into the socket.
5-5		**Fix the Heater** Fix the heater by using a spanner.
5-6		**Remove the Seal on the Heating Pipe** By removing the seal on the heating pipe, eliminate air pressure of the heating oil tank.
5-7		**Check the Heating Oil Level** Check the heating oil level by opening the heating oil inlet cap.

6. Circulating Pump Replacement

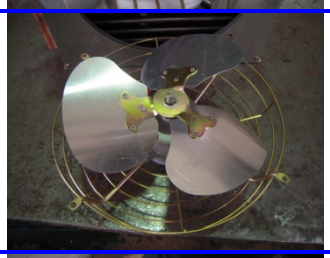
There are 2 Pumps

1. Replace the Pump on the Right Side		
		**Close the Pump Valve in order to prevent the leakage of coolant**
6-1		**Place a flat bucket at the bottom of the pump because coolant will fall out when disassemble the pump**
6-2		**Disassemble In & Out Valve Socket** Disassemble Pleated Pipe Valve Socket by using a Spanner Separate the Circulating Pump **Re-assemble the new pump in reverse order.** **After assemble new Pump, open the valve**
2. Replace the Pump on the Back Side		
		**Close the Pump Valve in order to prevent the leakage of coolant**
6-3		**Place a flat bucket at the bottom of the pump because coolant will fall out when disassemble the pump**
6-4		**Disassemble Pleated Pipe Valve Socket** Disassemble Pleated Pipe Valve Socket by using a Spanner (In Line, Out line). Separate the Circulating Pump **Re-assemble the new pump in reverse order.** **After assemble new Pump, open the valve**

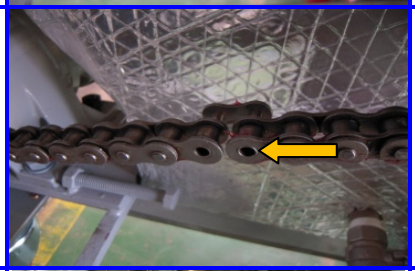
7. Blower Replacement

7-1		**Unscrew the fixed piece by using a driver**
7-2		**Pull out the Blower Motor** Remover Silicon by using a knife.
7-3		**Apply Silicon when assembling back**

8. Fan Motor Replacement

8-1		**Disassemble Fan Cover**
8-2		**Take out the old Fan Motor** Only Motor can be replaced.
8-3		**Install a New Motor**

9. Chain Replacement

9-1		**Disassemble Side and Back-Side Cover**
9-2		**Remove Pins from Chain**
9-3		**Disassemble Chain Link Plate**
9-4		**Pull out the Chain**
9-5		**Unscrew Bolts on the Motor**
9-6		**Fastening the Bolt can be adjusted the chain tension on the Motor**

10. Proximity Sensor Replacement

10-1		**Unscrew sensor bolt**
10-2		**Pull out the sensor and cut off the sensor line.**
10-3		**Connect the sensor wire with the same color**
10-4		**Insert the sensor and screw the bolts** **Leave 2mm gap**

11. Parts List

Parts	HGF-250ML	HGF-320ML	HGF-700ML	HGF-900ML
MOTOR	0.4kw x 1/90rpm	0.75kw x 1/90rpm	1.5kw x 1/90rpm	2.2kw x 1/90rpm
SPROCKET	RS50-35T*15T	RS60-35T*15T	RS80-35T*17T	RS80-35T*17T
OIL HEATER	1.5kw x 650ℓ (2EA)	3.0kw x 650ℓ (2EA)	3.0kw x 650ℓ (4EA)	3.0kw x 650ℓ (6EA)
AIR HEATER	1.0kw x 400 ℓ	1.0kw x 400 ℓ	1.0kw x 400 ℓ	1.0kw x 400 ℓ*2ea
OIL SEAL	Viton 12T x 45 x 65	Viton 12T x 45 x 65	Viton 12T x48 x 68	Viton 12T x80 x100
BEARING	6208ZZ	6208ZZ	6209ZZ	6015
PLC	XBC-DR40SU	XBC-DR40SU	XBC-DR40SU	XBC-DR40SU
CHAIN	#50	#60	#80	#80
PUMP	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS
OIL	SK-600	SK-600	SK-600	SK-600
COOLANT	DS EG Sol 101(23ℓ)	DS EG Sol 101(30ℓ)	DS EG Sol 101(35ℓ)	DS EG Sol 101(50ℓ)
COOLING FAN	(Ø225 x 30w) X 2 SETS	(Ø225 x 30w) X 2 SETS	(Ø300 x 66w) X 2 SETS	(Ø350 x100w) X 2 SETS
BLOWER	30W	30W	50W(30W)	30WX 2 SETS
WHEEL	Wi-80S	Wi-80S	Wi-100S	Wi-100S
TEMP SENSOR	K-TYPE 6.4*50L*1/4	K-TYPE 6.4*50L*1/4	K-TYPE 6.4*50L*1/4	K-TYPE 6.4*50L*1/4
PROXIMITY SWITCH	BNS-250	BNS-250	BNS-250	BNS-250

12. Parts Inspection & Maintenance

Regular Check up and Inspection - Drive (Operating) Part
I : Inspection, R: Replacement, C : Cleaning

Parts	1month period	6month period	12month period	24month period
Motor		I	I	I / R
Bearing		I	I / R	R
Oil-Seal		I	I / R	R
Chain		I	I / R	I / R
Door Rubber		I	I / R	
Discharge gate Rubber		I	I / R	R
Moisture Sensor		I / C	I / R	I / R
Heater		I	I / R	R
Therm Oil		I	I / R	R
Heat Exchanger		I	I	I / R (36Months)
Condenser		I / C	I / C	I / R
Coolant		I / R	I / R	I / R
Circulation Pump		I	I	I / R (36Months)
Blower		I	I	I / R (36Months)
PLC Control Panel		I	I	I / R
Proximity Sensor (Discharge & Input Door)		I	I / R	R
Switch Controller		I	I / R	R
Lamps		I	I / R	R