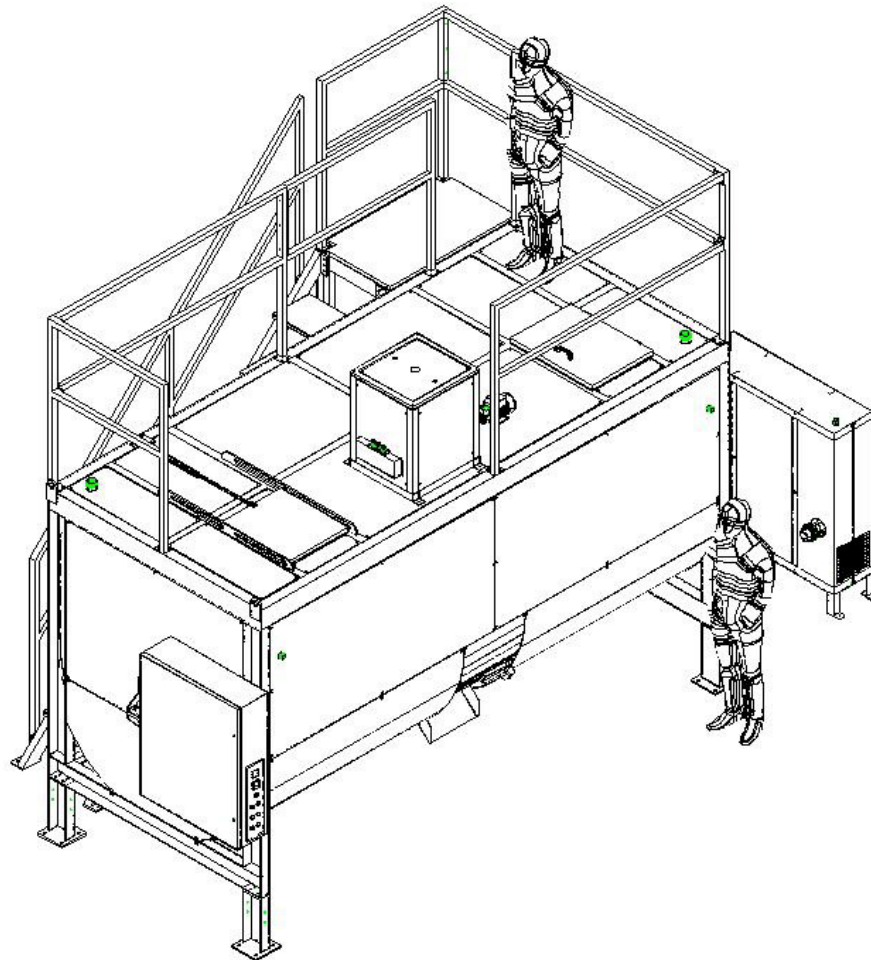




USER MANUAL
FOR
24HRS RAPID COMPOSTING MACHINE
BCM-5000
Patent Pending Number PI2018700916



PREPARED BY: JOSEPH WONG

REVISION: 00

DATED: 1 MARCH 2020

CONTENT

Index	Description	Page
01	Use Of Manual	3
02	General Safety Precaution	4
	02-01 High Voltage/ Hot Surface / Refer Manual	4
	02-02 High Voltage	5
	02-03 Moving Parts	6
	02-04 Power Supply Requirement Tag	7
	02-05 Machine Tag	8
	02-06 Water Inlet (Cooling Coil Reservoir)	9
	02-07 Hot Surface	10
03	Product Description	11
04	Product Layout	12
	04-01 Machine Layout	12
	04-02 Control Panel Layout	12
	04-03 Electrical Panel Layout	14
05	Part List	17
06	Part's Location	22
07	Installation & Adjustment	35
08	Standard Operation Procedure	39
	08-01 Input Materials Preparation	39
	08-02 CAUTION	40
	08-03 Machine Operation	41
	08-04 Compost Discharge Process	43
	08-05 Default Process	44
	08-06 Parameter Settings	45
	08-07 2 Hrs Run	47
	08-08 LED Indication	47
	08-09 Manual Mode - Servicing	49
09	Maintenance & Schedule	51
10	Storage and Transport	51
11	Fault and Repairing	52
	11-01 Trouble Shooting	52
	11-02 Dismantling Process	54
	11-03 Main Electrical Circuit	60
	11-04 Condensing Unit Electrical Circuit	67
12	Attachment	70
	12.01 CE certification	71
	12.02 MSDS for GEC's Composting Powder	73
	12.03 References for NPK Level for different materials	80
	12.04 Reference for C:N level	87
13	The End	88

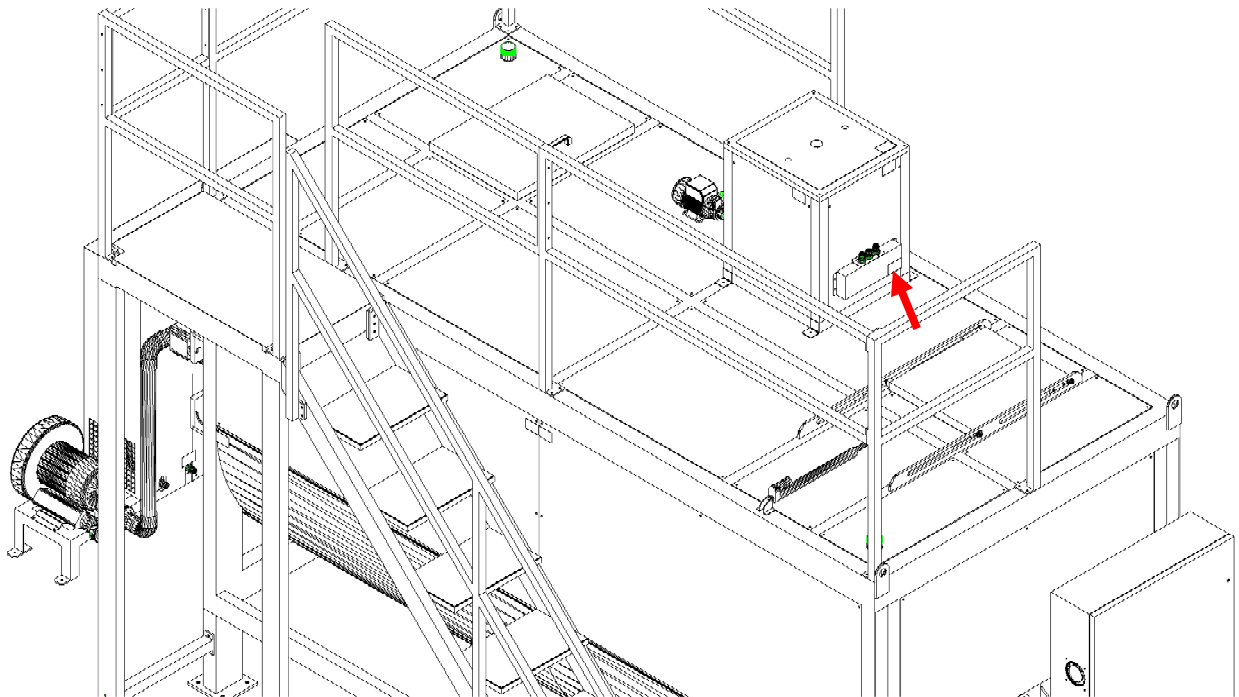
The purpose of this manual is to illustrate the technical details of the machine, the know-how of operating, the maintenance procedure, trouble shooting and repair and the set up procedure.

This manual will serve as guidance to the whole operation of the machine but in the case of serious breakdown, it is advisable to contact the company's technical stuff for assistant.

For the parameter setting of the machine for various materials input, the technical data provided by this manual will only serve as guidance. To gain maximum result from the machine, trial and test run should be done in order to get the correct parameter.

2.0 GENERAL SAFETY PRECAUTION

2.1 High Voltage/ Hot Surface / Refer Manual

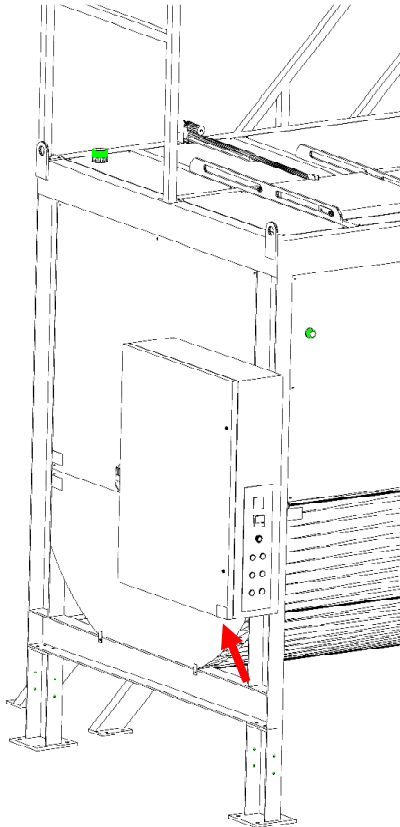


Location (RED ARROW)

Caution mark (1) located at bottom right of back of oil heater cover.

Caution

Please lock out and tag out the machine before the cover is open as the internal may have high temperature surface and high voltage connection. Any mishap happen may cause serious injuries or death.



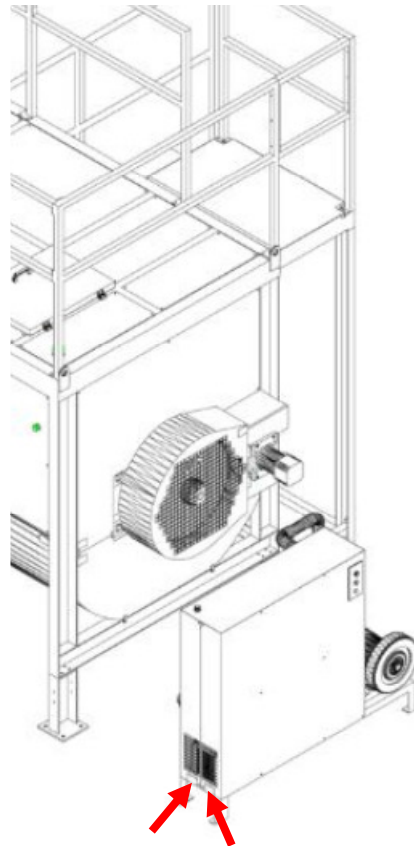
Location (RED ARROW)

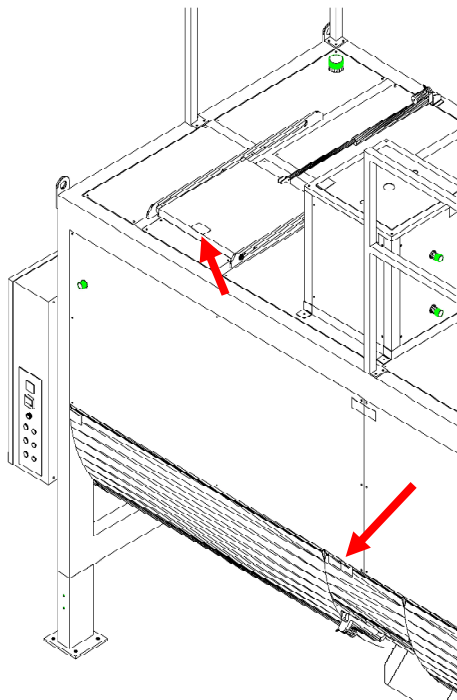
Caution mark located at bottom right corner of the control box door.

2 x Caution mark located at bottom corner of the side panel of condensing unit.

Caution

Please lock out and tag out the machine before the cover is open as the internal may have high temperature surface and high voltage connection. Any mishap happen may cause serious injuries or death.





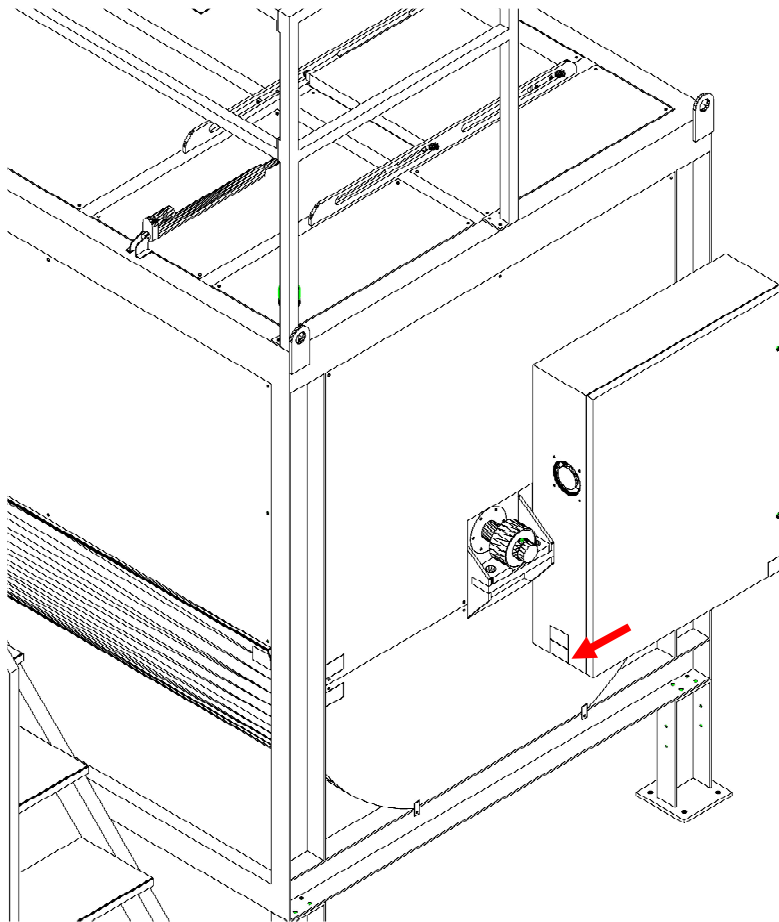
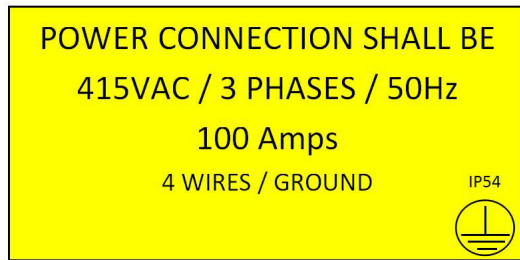
Location (RED ARROW)

Caution mark located at front top of the inlet door.

Caution mark located at the top left corner of the bottom front cover.

Caution

Please do not put your hand near to moving parts as this may cause serious injuries. Please ensure that the machine is lock out and tag out if any maintenance job is needed on the area.



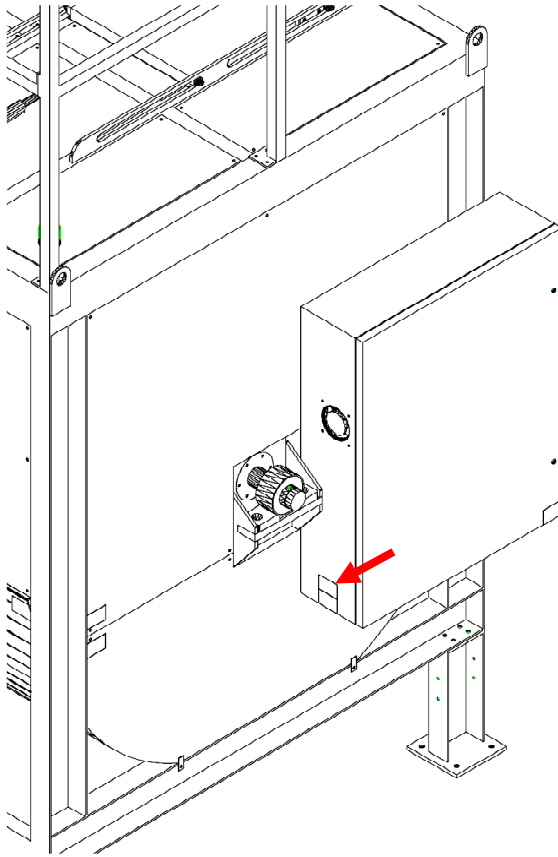
Location (RED ARROW)

Caution mark located at bottom side of the back of control box.

Caution

Please ensure that the machine is connected to a power source that met the specification stated on the tag. Incorrect power rating may cause the machine to be malfunction, causing damages to the electrical components and possibly causing fire.

2.5 Machine Tag

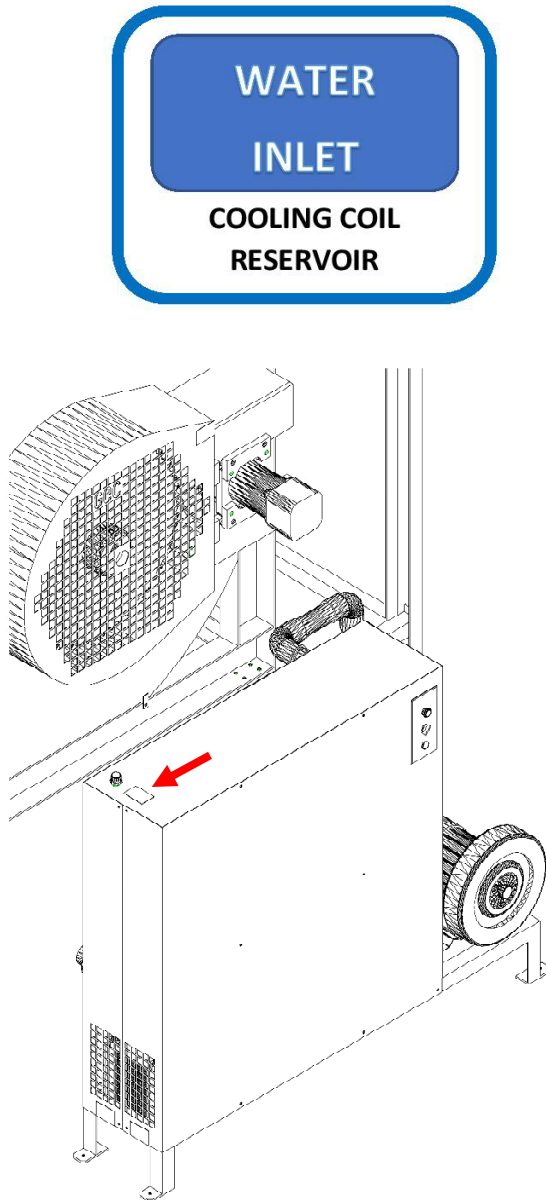


Location (RED ARROW)

Caution mark located at bottom side of the back of control box.

Caution

Please ensure that the machine tag is intact at the allocated area for identification and warranty purposes.

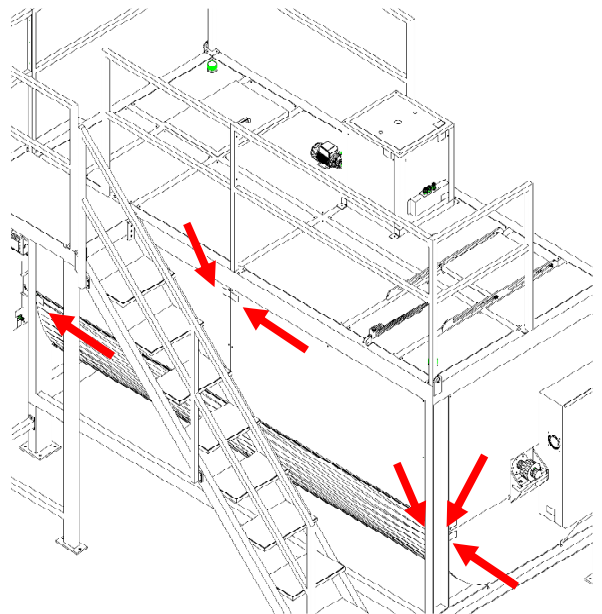
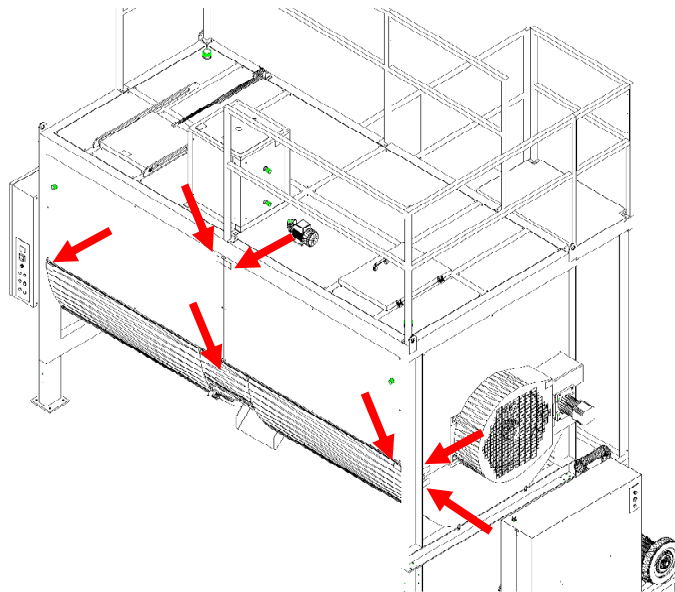


Location (RED ARROW)

Water Inlet (Cooling Coil Reservoir) located at top front side of the condensing unit.

Caution

Please ensure that the water level for the cooling coil reservoir is at sufficient level all the time to ensure that the condensation process worked at maximum level. Low water level may also cause the water pump to burn.



Location (RED ARROW)

5 x Cautious mark located at front side of the machine.

2 x Cautious mark located at the left side of the machine.

4 x Cautious mark located at the rear side of the machine.

2 x Cautious mark located at the right side of the machine.

Caution

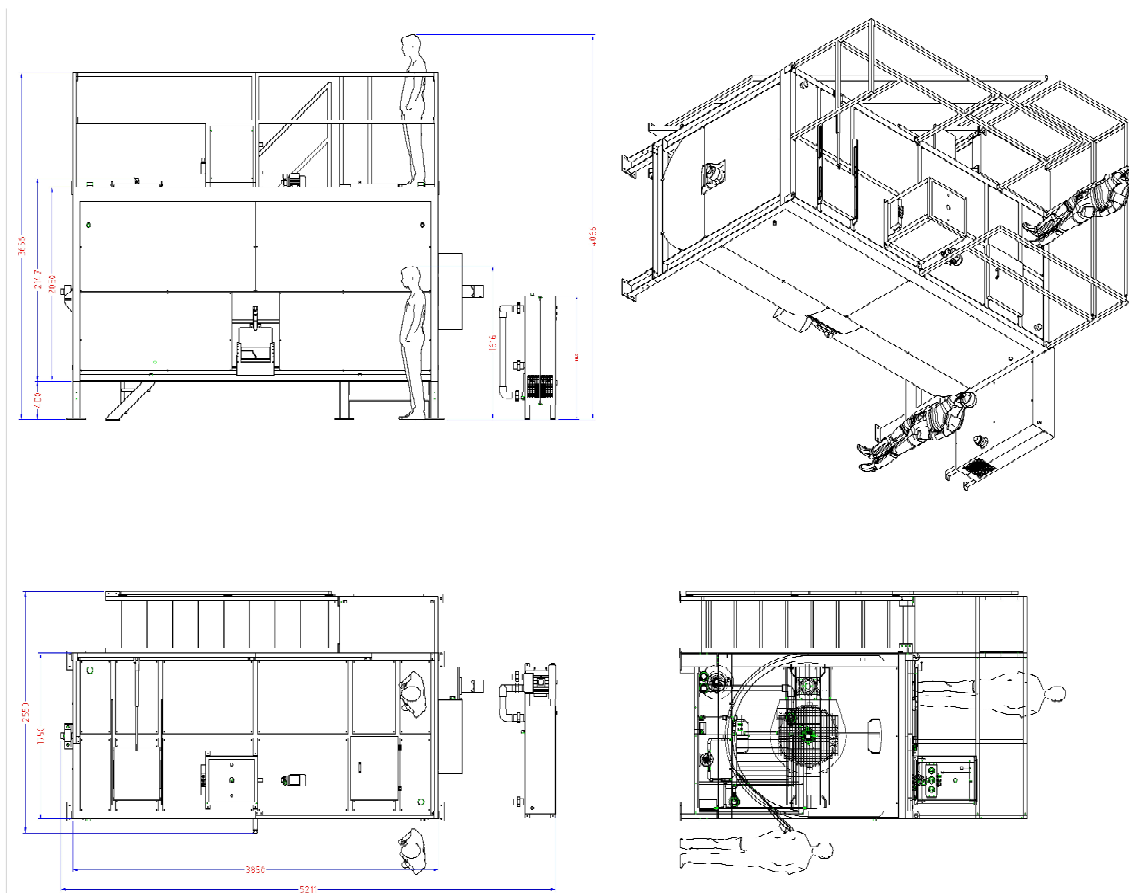
Do not put your hand close to this area as the temperature is around 50°C - 70°C and it may cause serious burn.

3.0 PRODUCT DESCRIPTION

3.1	Machine Description		24 Hours Rapid Composting Machine
3.2	Model		BCM-5000
3.3	Capacity		8500 Lites
3.4	Maximum Load		5000 Kgs
3.5	Dimension	(W)	175 cm (255 cm include Ladder)
		(L)	385 cm (521 cm include condensing unit)
		(H)	205 cm (366 cm include footing and railing)
3.6	Weight		2000 Kgs approx.
3.7	Power Rating	(V)	415 v / 50 Hz
		Phase	3
		(A)	100 Amps
		Wire	4 + Ground
3.8	Water Proof Standard		IP 54
3.9	Quality Standard		Machinery Device Directive - 2006/42/CE

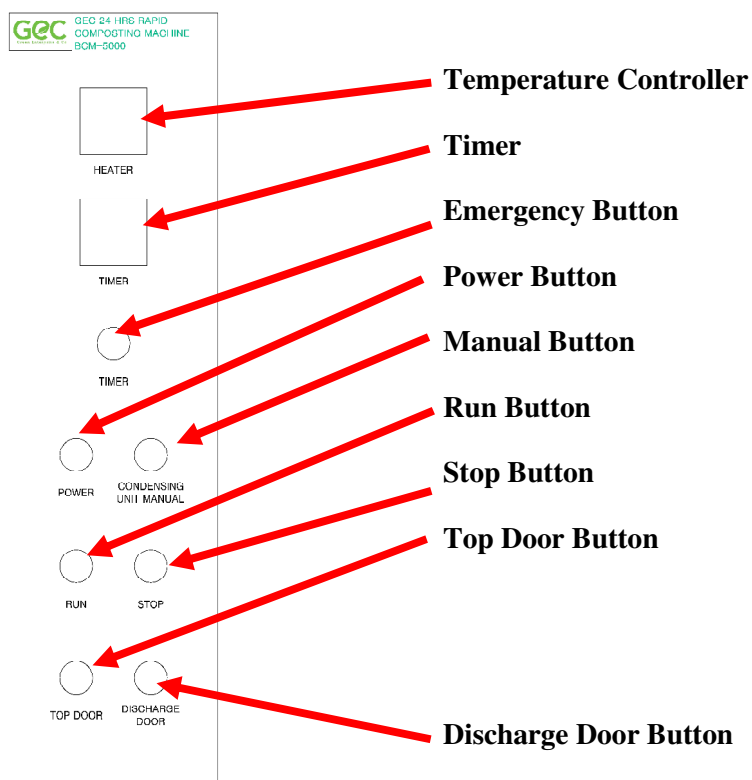
4.0 PRODUCT LAYOUT

4.1 Machine Layout

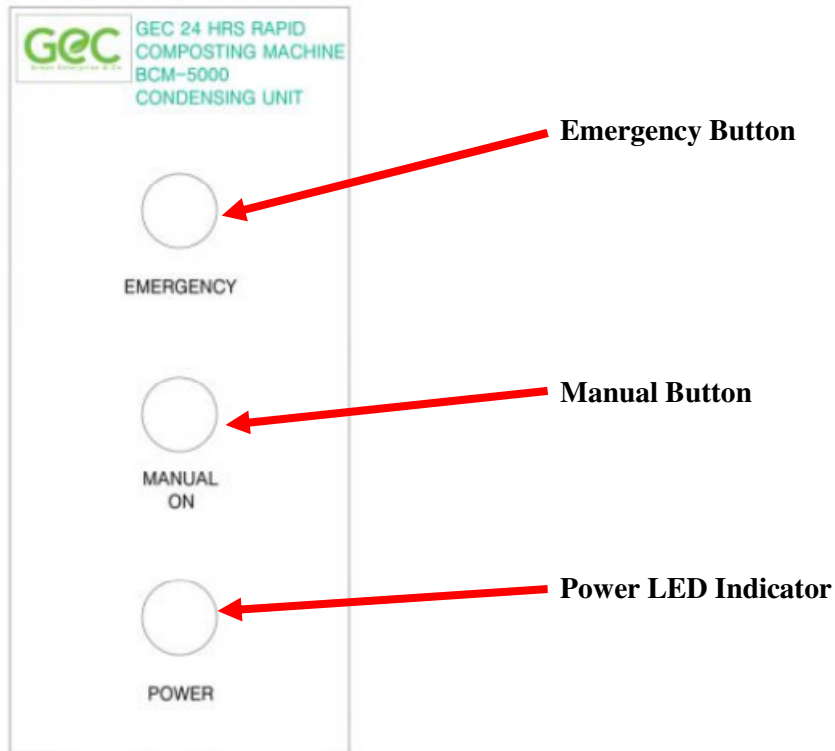


4.2 Control Panel Layout

4.2.1 Main Control Panel

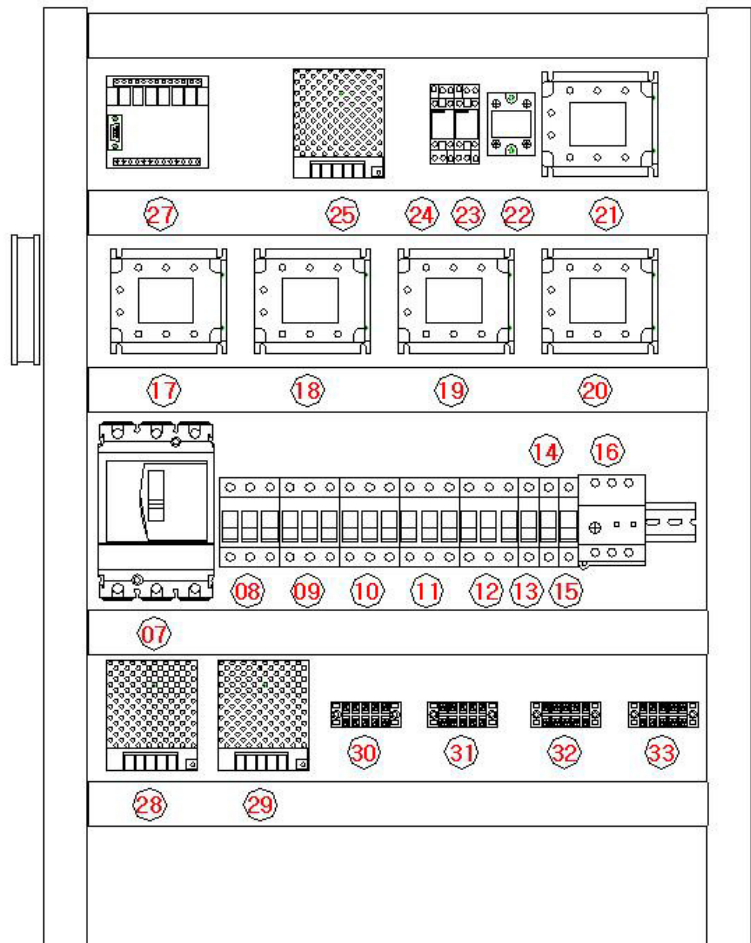
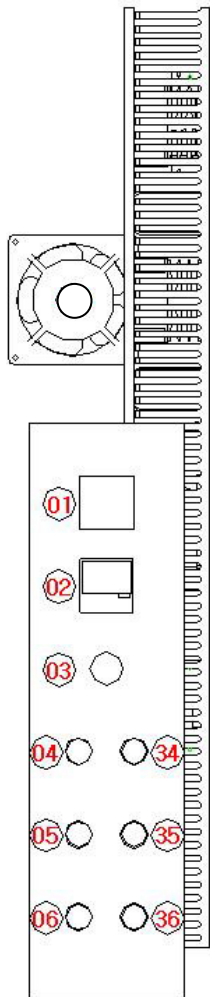


4.2.2 Condensing Unit Panel



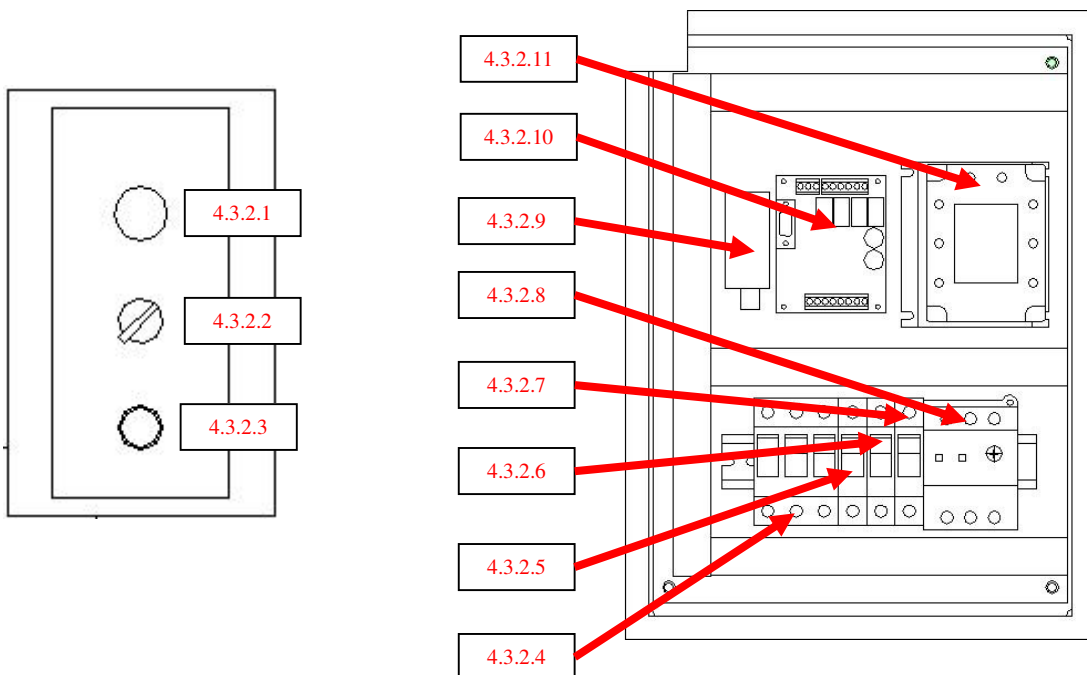
4.3	Electrical Panel Layout		
4.3.1	Main Control Board		
	Part Number	Description	Qty
4.3.1.1	REX-100	Temperature Controller	1 PC
4.3.1.2	XBGHPG-130	Timer	1 PC
4.3.1.3	22MM	Emergency Button	1 PC
4.3.1.4	22MM	Self Lock Push Button, Power	1 PC
4.3.1.5	22MM	Momentary Push Button, Run	1 PC
4.3.1.6	22MM	Self Lock Push Button, Top Door	1 PC
4.3.1.7	100A 4P	MCCB	1 PC
4.3.1.8	40A 3P	MCB, Heater 1	1 PC
4.3.1.9	40A 3P	MCB, Heater 2	1 PC
4.3.1.10	40A 3P	MCB, Heater 3	1 PC
4.3.1.11	16A 3P	MCB, Hydraulic Power Pack	1 PC
4.3.1.12	16A 3P	MCB, Condensing Unit	1 PC
4.3.1.13	6A 1P	MCB, Power Supply (25)	1 PC
4.3.1.14	6A 1P	MCB, Power Supply (28 & 29)	1 PC
4.3.1.15	6A 1P	MCB, Others Component	1 PC
4.3.1.16		Overload Relay	1 PC
4.3.1.17	40A 3P	SSR, Heater 1	1 PC
4.3.1.18	40A 3P	SSR, Heater 2	1 PC
4.3.1.19	40A 3P	SSR, Heater 3	1 PC
4.3.1.20	10A 3P	SSR, Hydraulic Power Pack	1 PC
4.3.1.21	10A 3P	SSR, Condensing Unit	1 PC
4.3.1.22	10A 1P	SSR, Others Component	1 PC
4.3.1.23	MY2N	Relay, Top Door	1 PC
4.3.1.24	MY2N	Relay, Discharge Door	1 PC
4.3.1.25	24V 25W	Power Supply, Main	1 PC
4.3.1.27	24MT	Control Board	1 PC
4.3.1.28	24V 25W	Power Supply, Top Door	1 PC

4.3.1.29	24V 25W	Power Supply, Discharge Door	1	PC
4.3.1.30	TB-15 6P	Terminal Block	1	PC
4.3.1.31	TB-15 6P	Terminal Block	1	PC
4.3.1.32	TB-15 6P	Terminal Block	1	PC
4.3.1.33	TB-15 6P	Terminal Block	1	PC
4.3.1.34	22MM	Self Lock Push Button, Manual	1	PC
4.3.1.35	22MM	Momentary Push Button, Stop	1	PC
4.3.1.36	22MM	Self Lock Push Button, Discharge Door	1	PC



4.3.2 Condensing Unit Control Board

	Part Number	Description	Qty
4.3.2.1	22MM	Emergency Button	1 PC
4.3.2.2	22MM	Momentary Push Button	1 PC
4.3.2.3	22MM	LED Indicator Light	1 PC
4.3.2.4	16A 3P	MCB	1 PC
4.3.2.5	16A 3P	MCB	1 PC
4.3.2.6	16A 3P	MCB	1 PC
4.3.2.7	6A 1P	MCB	1 PC
4.3.2.8		Overload Relay	1 PC
4.3.2.9	24V 15W	Power Supply	1 PC
4.3.2.10	10MT	Control Board	1 PC
4.3.2.11	40A 3P	SSR	1 PC
4.3.2.12	AH0607 220V	Cooling Coil Fan	1 PC
4.3.2.13	280W	Water Circulation Pump	1 PC
4.3.2.14	2G	Ozone Generator	1 PC
4.3.2.15	2200W, 415V	Blower	1 PC



5.0	PART LIST		
	Part Number	Description	Qty
5.1	202310-00-01-01	Tank	1 PC
5.2	202310-00-01-02	Oil Jacket	2 PCS
5.3	202310-00-01-03	Structure	1 PC
5.4	202310-00-01-04	Seal Holder	2 PCS
5.5	202310-00-01-05	Seal Cap	2 PCS
5.6	202310-00-01-06	Seal Holder	2 PCS
5.7	202310-00-01-07	Bearing Mount	2 PCS
5.8	202310-00-01-08	Bearing Side Mount	4 PCS
5.9	202310-00-01-09	Shaft	1 PC
5.10	202310-00-02-10	Bottom Clamp	10 PCS
5.11	202310-00-02-11	Top Clamp	10 PCS
5.12	202310-00-02-12	Stand	10 PCS
5.13	202310-00-02-13	Mixer	10 PCS
5.14	202310-00-02-14	Motor Mount	2 PCS
5.15	202310-00-02-15	Stiffener	4 PCS
5.16	202310-00-02-16	Motor Mount	1L / 1R PC
5.17	202310-00-02-17	Motor Mount	2 PCS
5.18	202310-00-02-18	Tension Block	2 PCS
5.19	202310-00-03-19	Chain Cover	1 PC
5.20	202310-00-03-20	Inner Top L	1 PC
5.21	202310-00-03-21	Inner Top R	1 PC
5.22	202310-00-03-22	Inner Top LF	1 PC
5.23	202310-00-03-23	Inner Top RF	1 PC
5.24	202310-00-03-24	Door Frame	1 PC
5.25	202310-00-03-25	Door Frame	1 PC
5.26	202310-00-03-26	Outer Top	2 PCS
5.27	202310-00-03-27	Outer Top	2 PCS

	Part Number	Description	Qty
5.28	202310-00-04-28	Outer Top	2 PCS
5.29	202310-00-04-29	Outer Top	4 PCS
5.30	202310-00-04-30	Outer Top	2 PCS
5.31	202310-00-04-31	Outer Top	1 PC
5.32	202310-00-04-32	Railing	1 PC
5.33	202310-00-04-33	Railing	1 PC
5.34	202310-00-04-34	Railing	1 PC
5.35	202310-00-04-35	Railing	1 PC
5.36	202310-00-04-36	Railing	1 PC
5.37	202310-00-05-37	Railing	1 PC
5.38	202310-00-05-38	Railing	1 PC
5.39	202310-00-05-39	Railing	1 PC
5.40	202310-00-05-40	Platform	1 PC
5.41	202310-00-05-41	Ladder	1 PC
5.42	202310-00-05-42	Tie Bar	1 PC
5.43	202310-00-05-43	Support Column	4 PCS
5.44	202310-00-05-44	Platform Column	1 PC
5.45	202310-00-05-45	FRP Ladder Step	8 PCS
5.46	202310-00-06-46	FRP Platform	1 PC
5.47	202310-00-06-47	Discharge Frame	1 PC
5.48	202310-00-06-48	Door Frame	1 PC
5.49	202310-00-06-49	Discharge Door	1 PC
5.50	202310-00-06-50	Door Guide	2 PCS
5.51	202310-00-06-51	Chute	1 PC
5.52	202310-00-06-52	Pusher Mount	2 PCS
5.53	202310-00-06-53	Mounting	1 PC
5.54	202310-00-06-54	Pusher Holder	1 PC
5.55	202310-00-07-55	Support	2 PCS

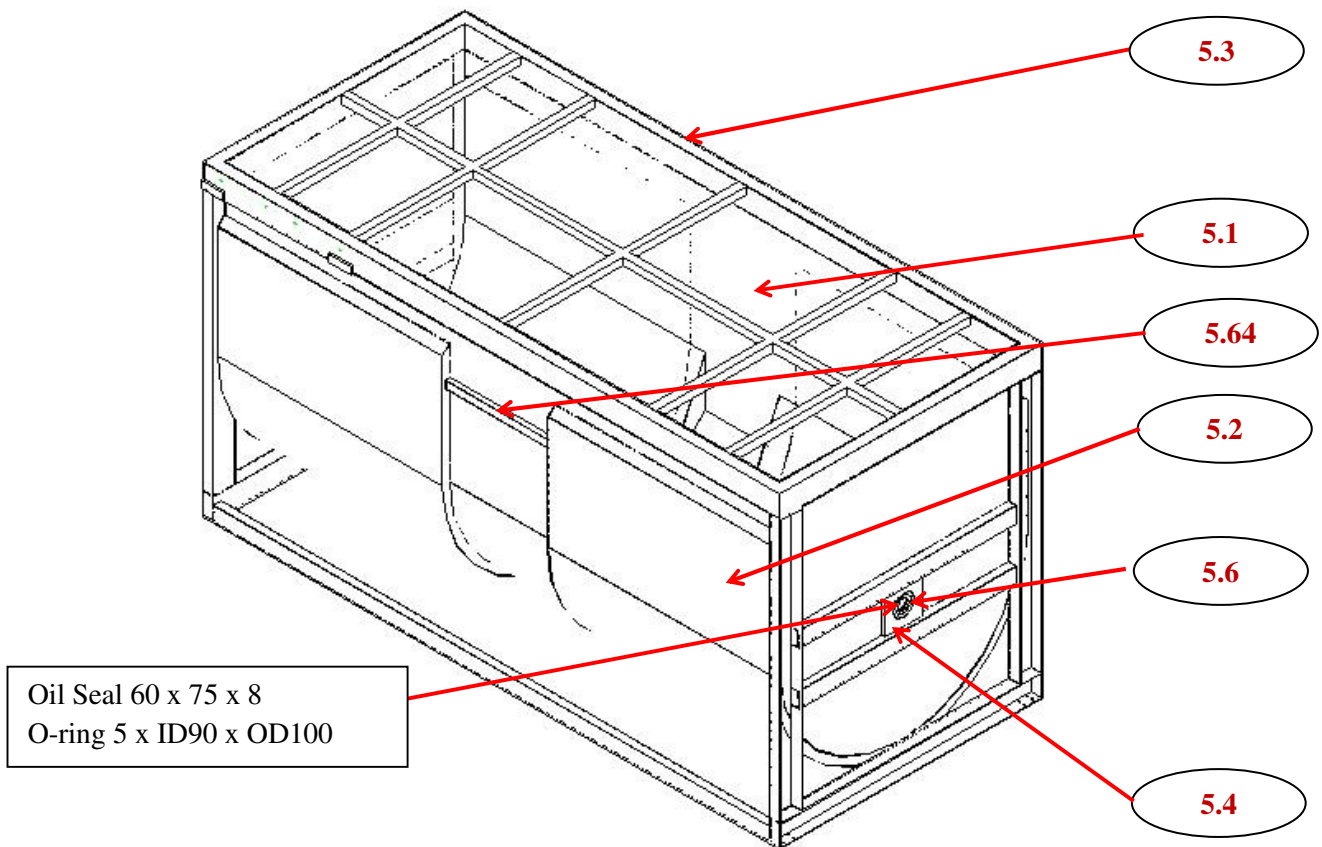
	Part Number	Description	Qty
5.56	202310-00-07-56	Pusher Holder	2 PCS
5.57	202310-00-07-57	Screw Mount	4 PCS
5.58	202310-00-07-58	Shim	4 PCS
5.59	202310-00-07-59	Rail	2 PCS
5.60	202310-00-07-60	Guide Block	4 PCS
5.61	202310-00-07-61	Pusher Mount	2 PCS
5.62	202310-00-07-62	Pusher Mount	1L / 1R PC
5.63	202310-00-07-63	Man Hole Door	1 PC
5.64	202310-00-08-64	Oil Jacket Join	1 PC
5.65	202310-00-08-65	Front Cover	1L / 1R PC
5.66	202310-00-08-66	Rear Cover	2 PCS
5.67	202310-00-08-67	Bottom Cover	1L / 1R PC
5.68	202310-00-08-68	Bottom Cover	2 PCS
5.69	202310-00-08-69	Bottom Cover	1L / 1R PC
5.70	202310-00-08-70	Side Cover	1 PC
5.71	202310-00-08-71	Side Cover	1 PC
5.72	202310-00-08-72	Side Cover	1 PC
5.73	202310-00-09-73	Side Cover	1 PC
5.74	202310-00-09-74	Bottom Cover	1 PC
5.75	202310-00-09-75	Machine Hook	4 PCS
5.76	202310-00-09-76	Drive Sprocket	1 PC
5.77	202310-00-09-77	Motor Sprocket	1 PC
5.78	202310-00-09-78	Inlet Door	1 PC
5.79	202310-00-09-79	Nut Plate	57 PCS
5.80	202310-00-09-80	Nut Plate	6 PCS
5.81	202310-00-09-81	Nut Plate	2 PCS
5.82	202310-00-10-82	Nut Plate	4 PCS
5.83	202310-00-10-83	Nut Plate	42 PCS

	Part Number	Description	Qty	
5.84	202310-00-10-84	Nut Plate	12	PCS
5.85	202310-00-10-85	Nut Plate	2	PCS
5.86	202310-00-10-86	Nut Plate	2	PCS
5.87	202310-00-15-87	FRP Top	1	PC
5.88	202310-00-15-88	FRP Top	1	PC
5.89	202310-00-15-89	FRP Top	1	PC
5.90	202310-00-15-90	FRP Top	1	PC
5.91	202310-00-15-91	FRP Top	1	PC
5.92	202310-00-15-92	FRP Top	1	PC
5.93	202316-00-01-01	Tank	1	PC
5.94	202316-00-01-02	Tank Cover	1	PC
5.95	202316-00-01-03	Base	1	PC
5.96	202316-00-01-04	Stand	4	PCS
5.97	202316-00-01-05	Top Frame	1	PC
5.98	202316-00-01-06	Side Cover	1	PC
5.99	202316-00-01-07	Side Cover	1	PC
5.100	202316-00-01-08	Side Cover	2	PCS
5.101	202316-00-01-09	Top Cover	1	PC
5.102	202316-00-02-10	Wiring Cap	1	PC
5.103	202316-00-02-11	Cable Gland Holder	1	PC
5.104	202316-00-02-12	Mounting	4	PCS
5.105	202316-00-02-13	Bottom Cover	1	PC
5.106	202317-00-01-01	Base	1	PC
5.107	202317-00-01-02	Stand	2L / 2R	PC
5.108	202317-00-01-03	Top Base	1	PC
5.109	202317-00-01-04	Clamp	4	PCS
5.110	202317-00-01-05	Top Frame	1	PC
5.111	202317-00-01-06	Side Cover	1	PC

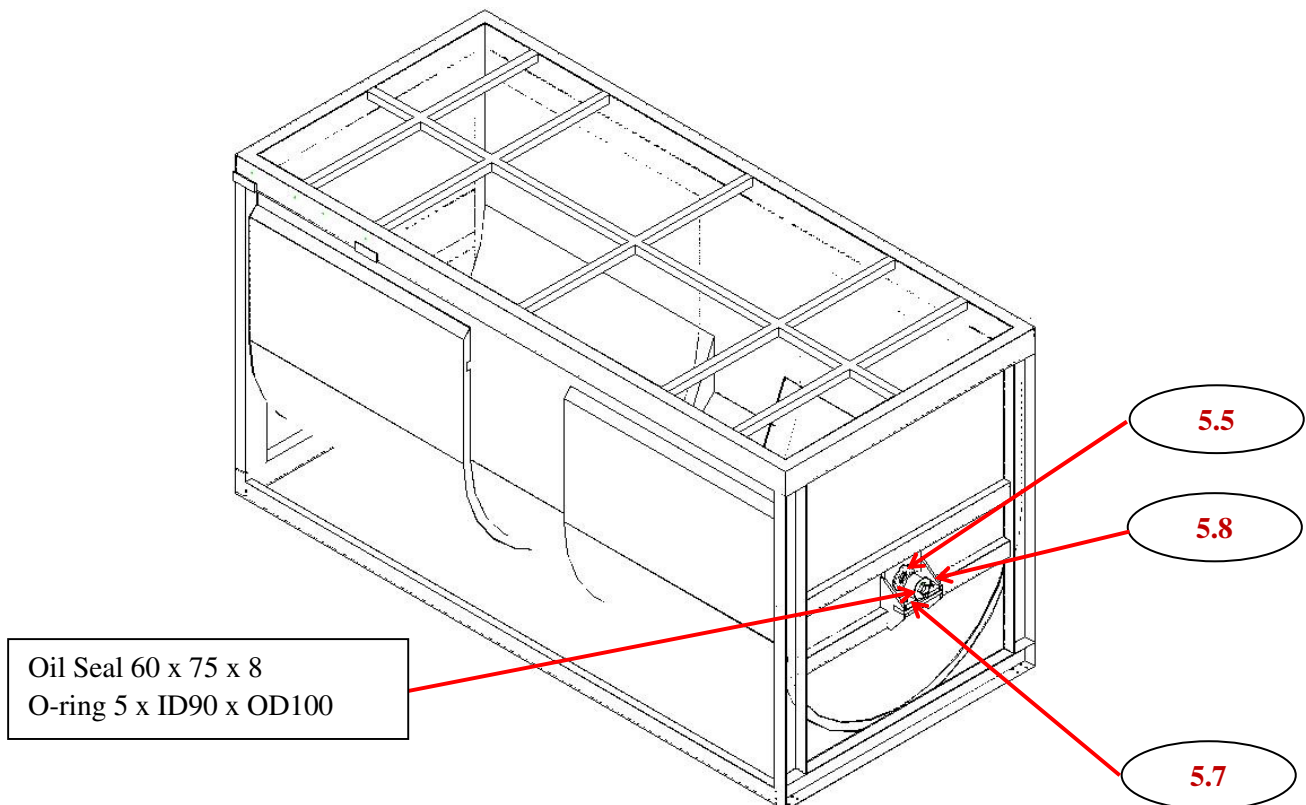
	Part Number	Description	Qty
5.112	202317-00-01-07	Side Cover	1 PC
5.113	202317-00-01-08	PVC Pipe	1 PC
5.114	202317-00-01-09	PVC Pipe	1 PC
5.115	202317-00-02-10	Pipe Holder	1 PC
5.116	202317-00-02-11	Control Box	1 PC
5.117	202317-00-02-12	Mounting Plate	1 PC
5.118	202317-00-02-13	Mount Plate	1 PC
5.119	202317-00-02-14	Panel Mount	1 PC
5.120	202317-00-02-15	Panel	1 PC

6.0 PARTS' LOCATION

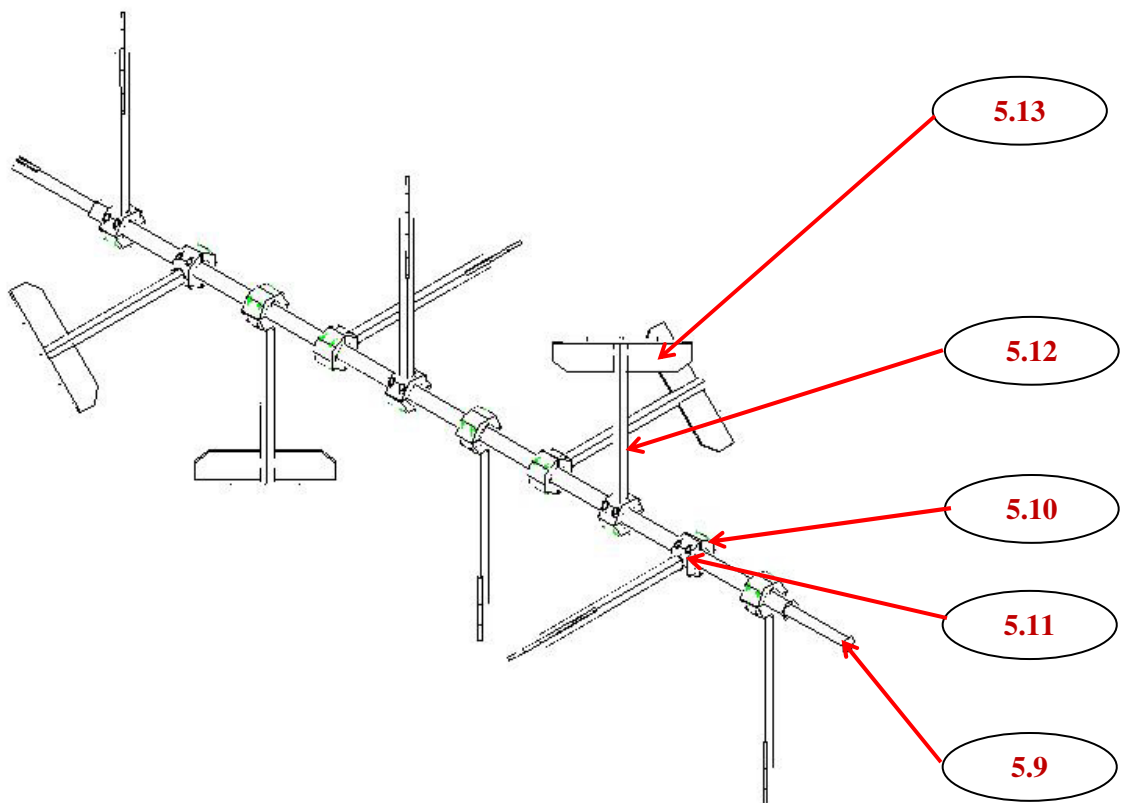
6.1 Figure 1



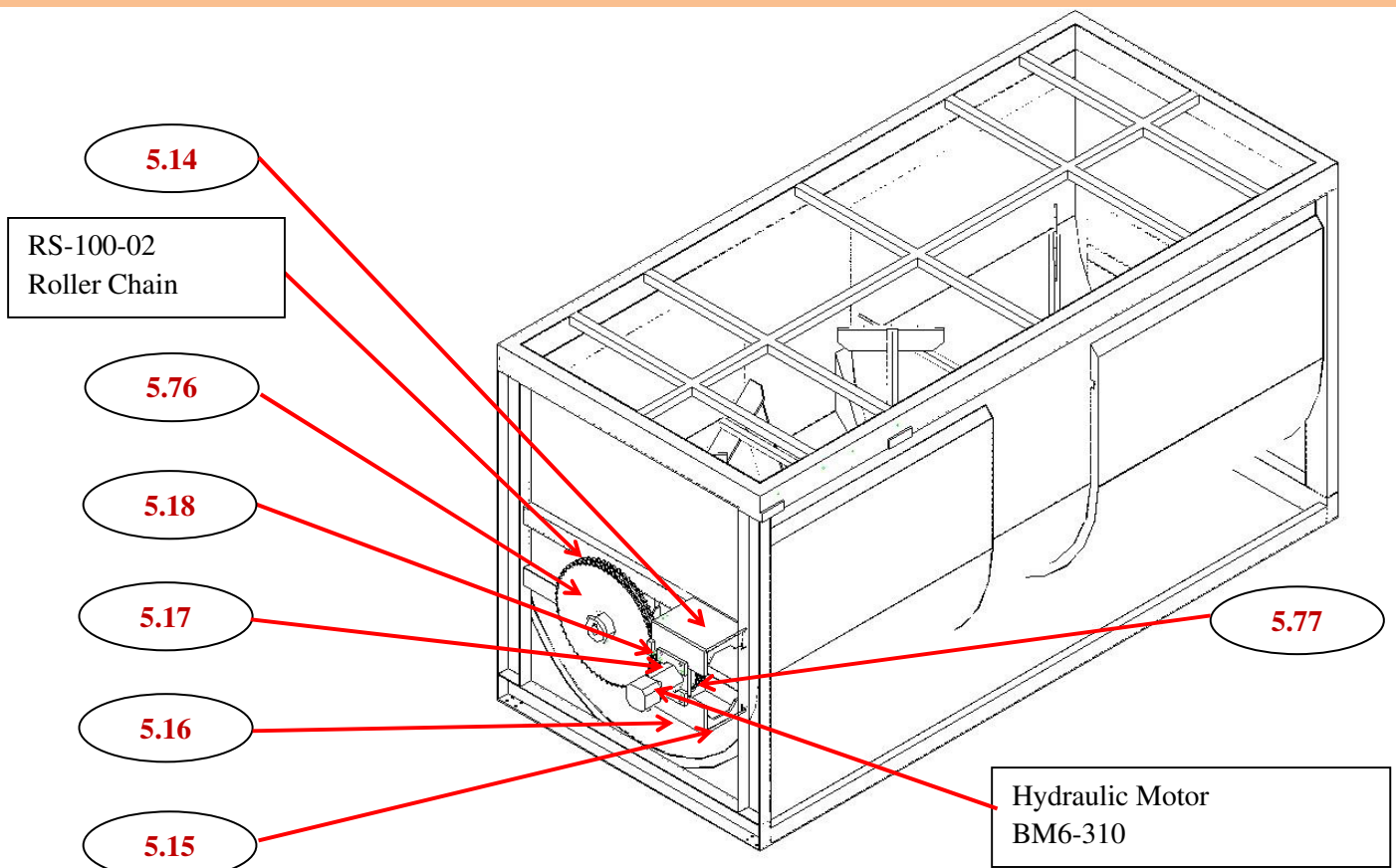
6.2 Figure 2



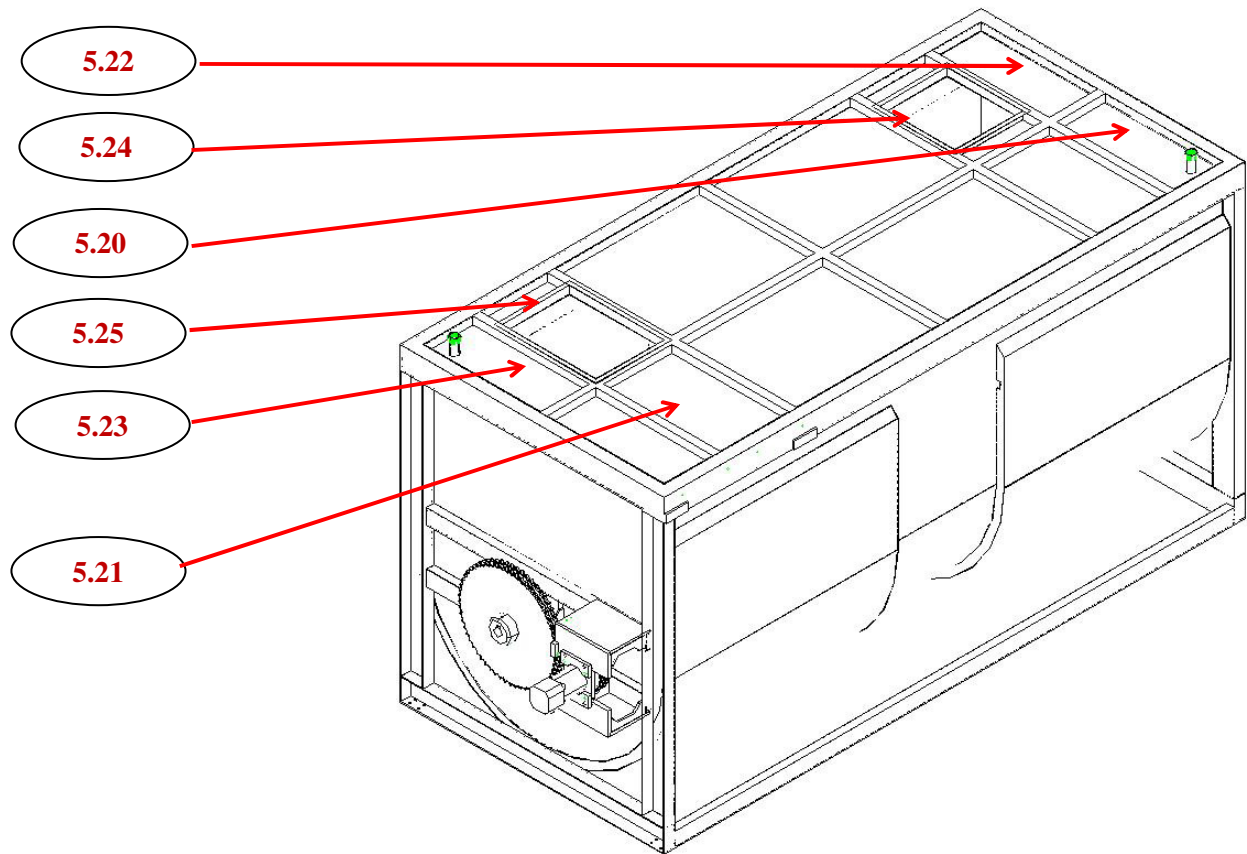
6.3 Figure 3



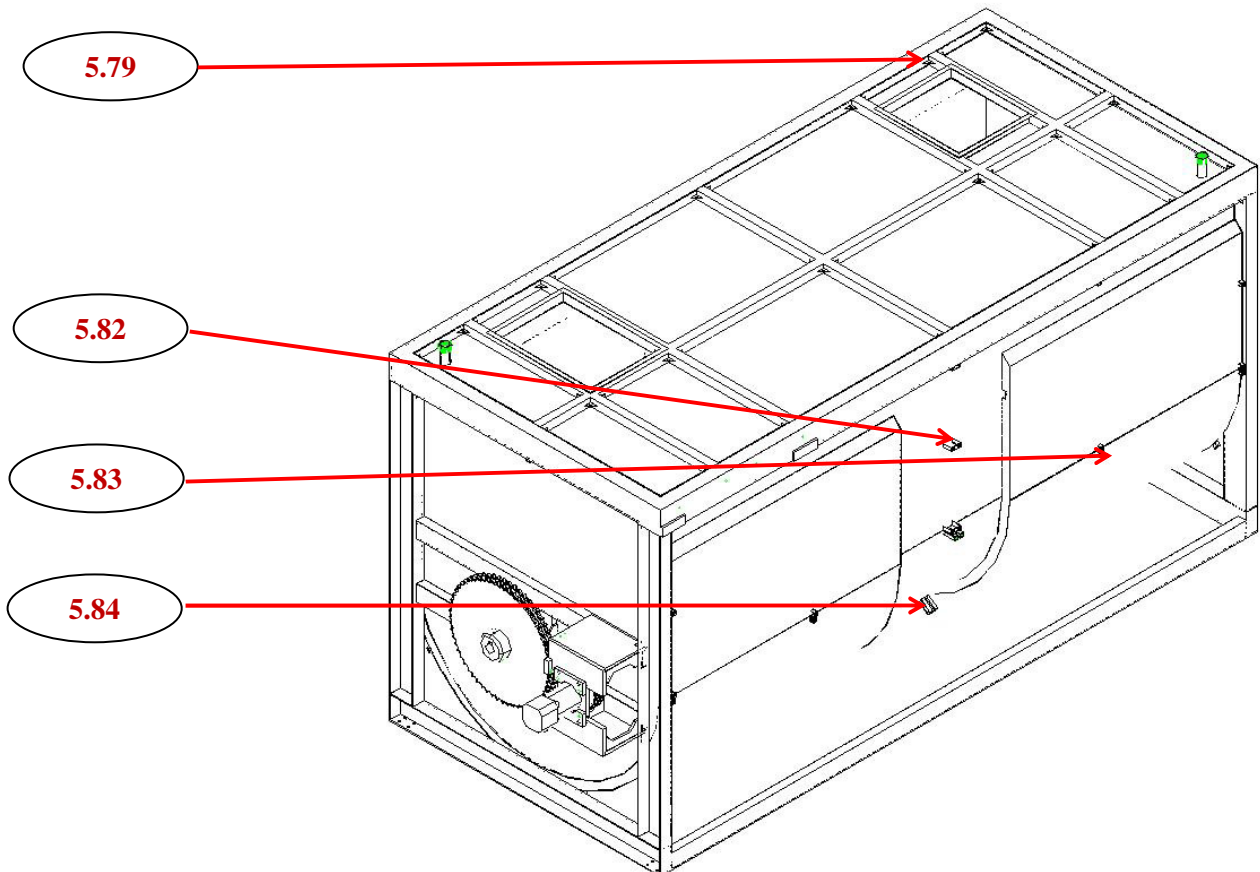
6.4 Figure 4



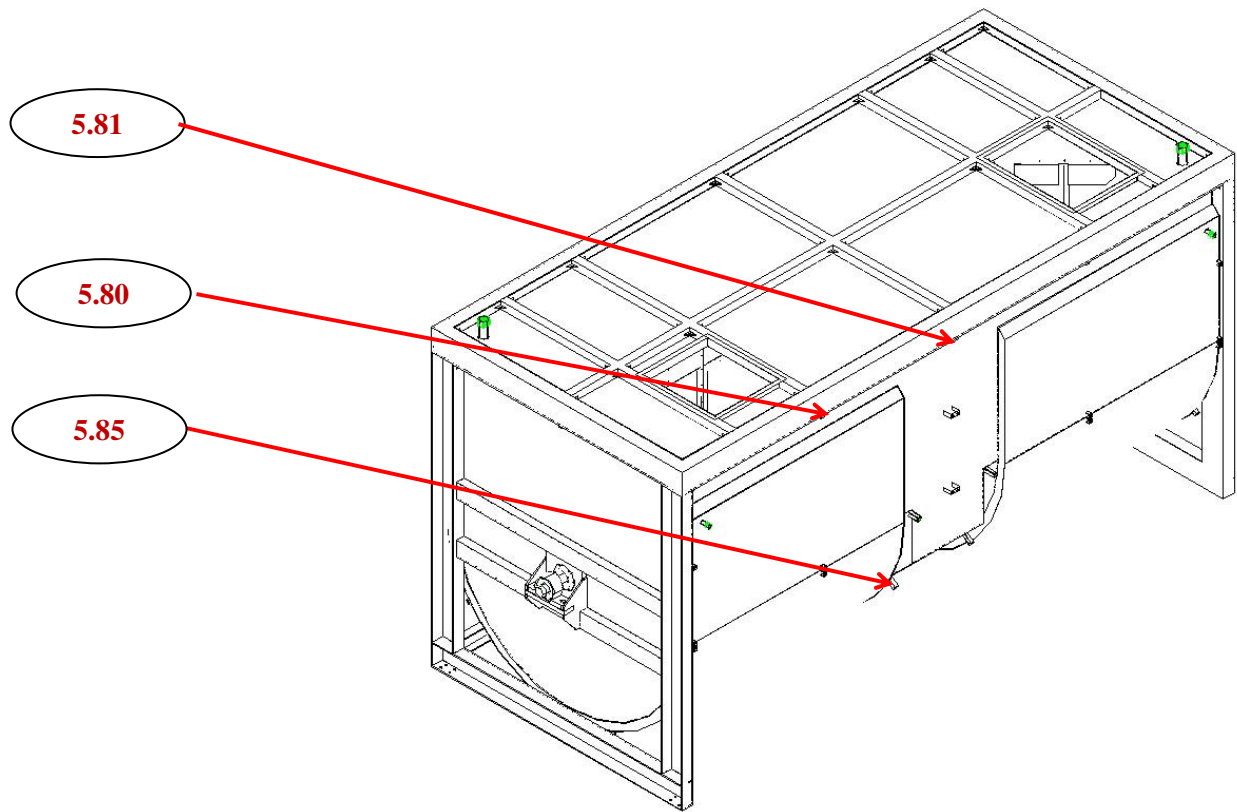
6.6 Figure 5



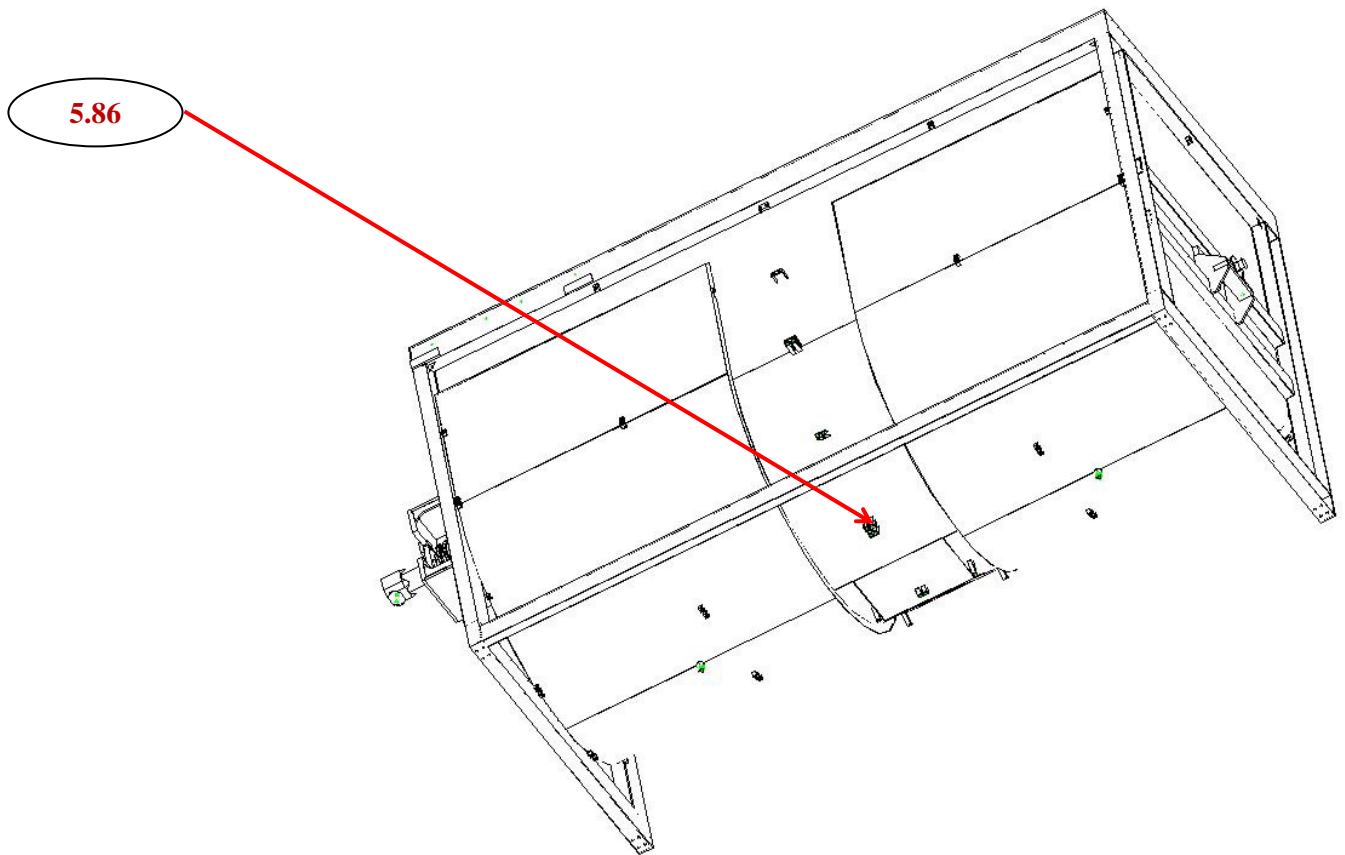
6.6 Figure 6



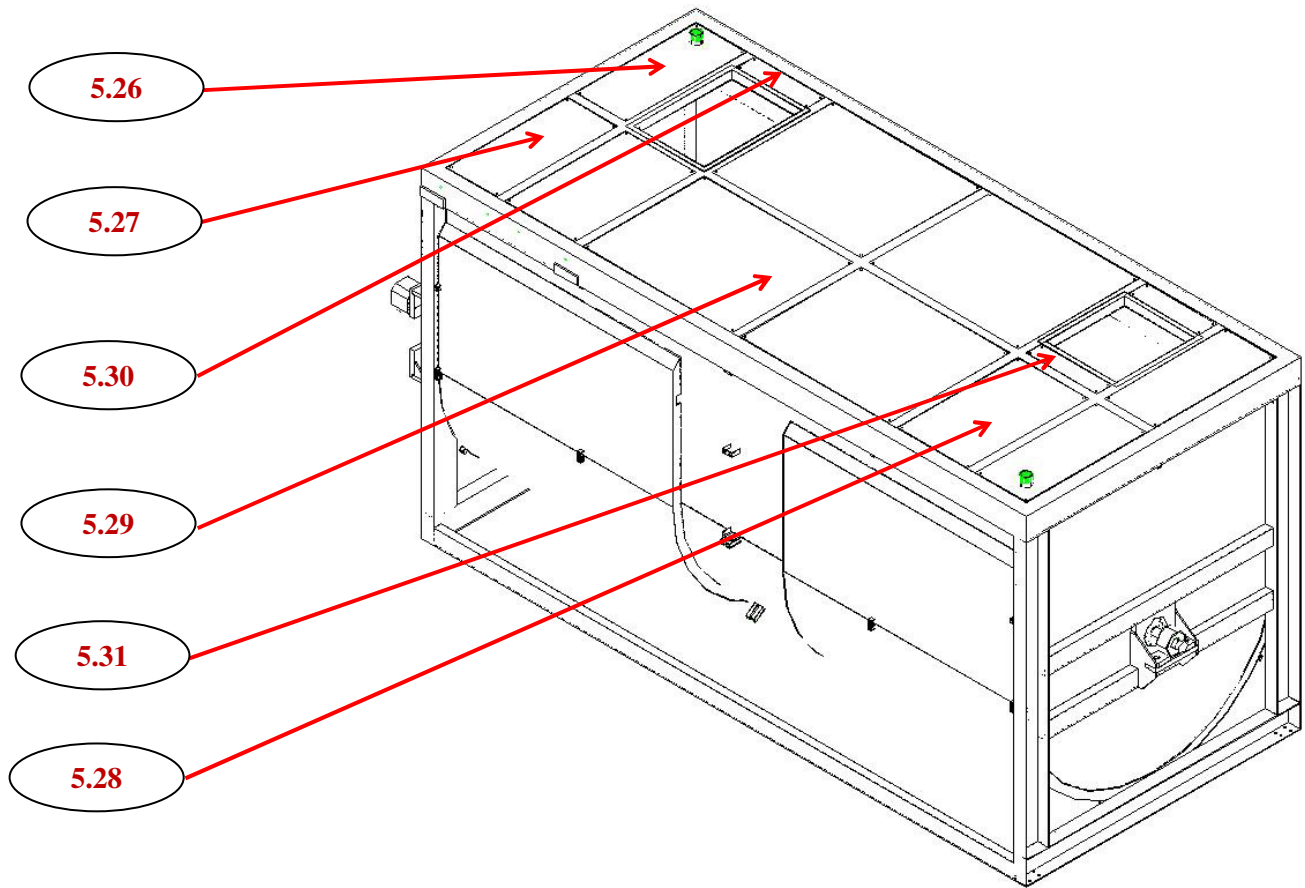
6.7 Figure 7



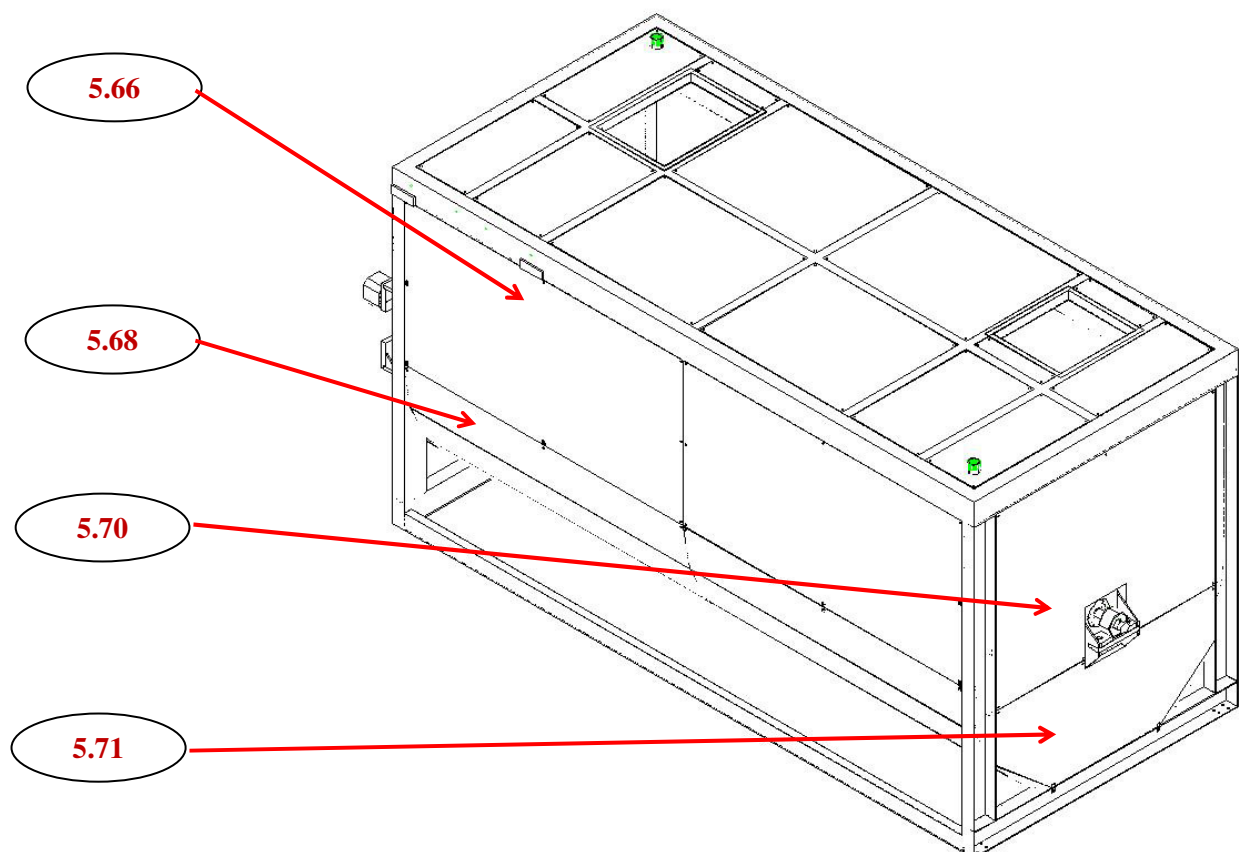
6.8 Figure 8



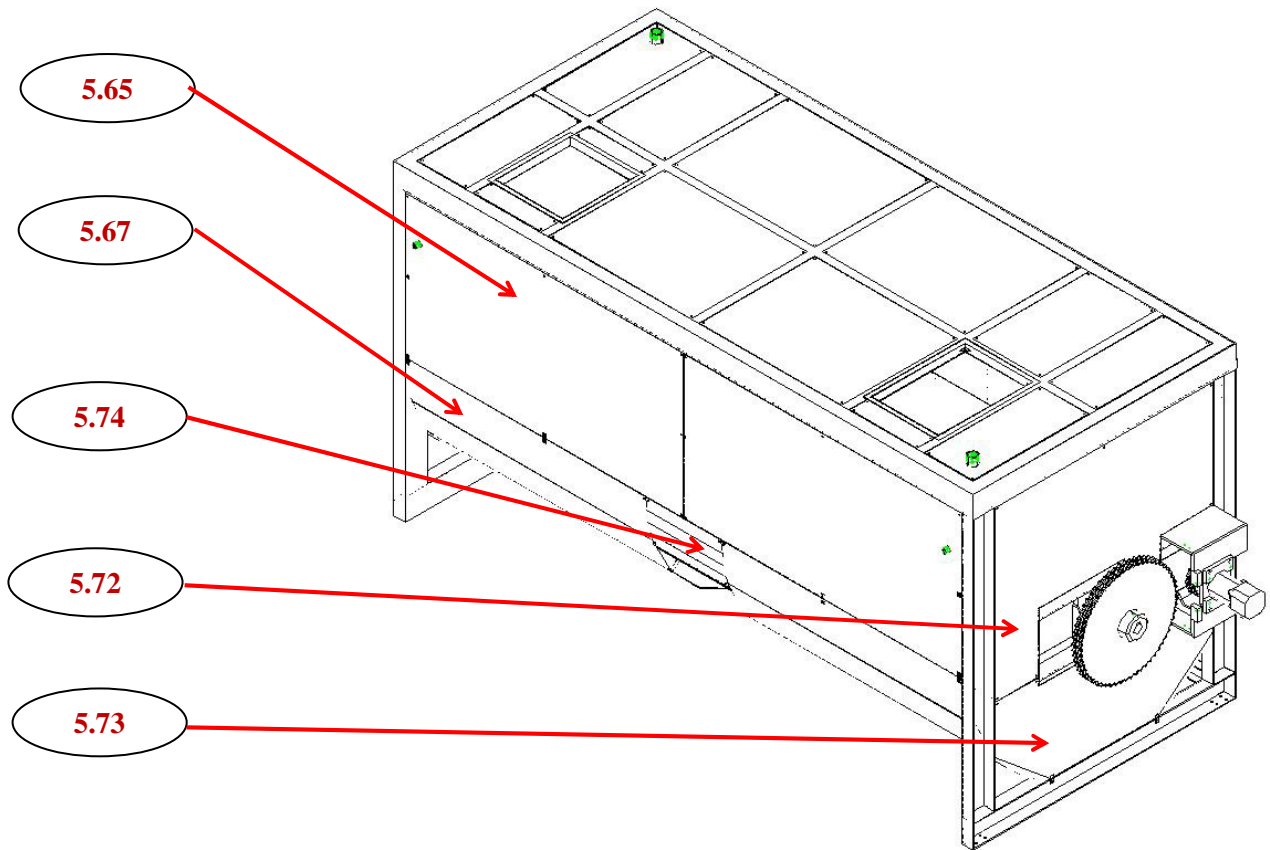
6.9 Figure 9



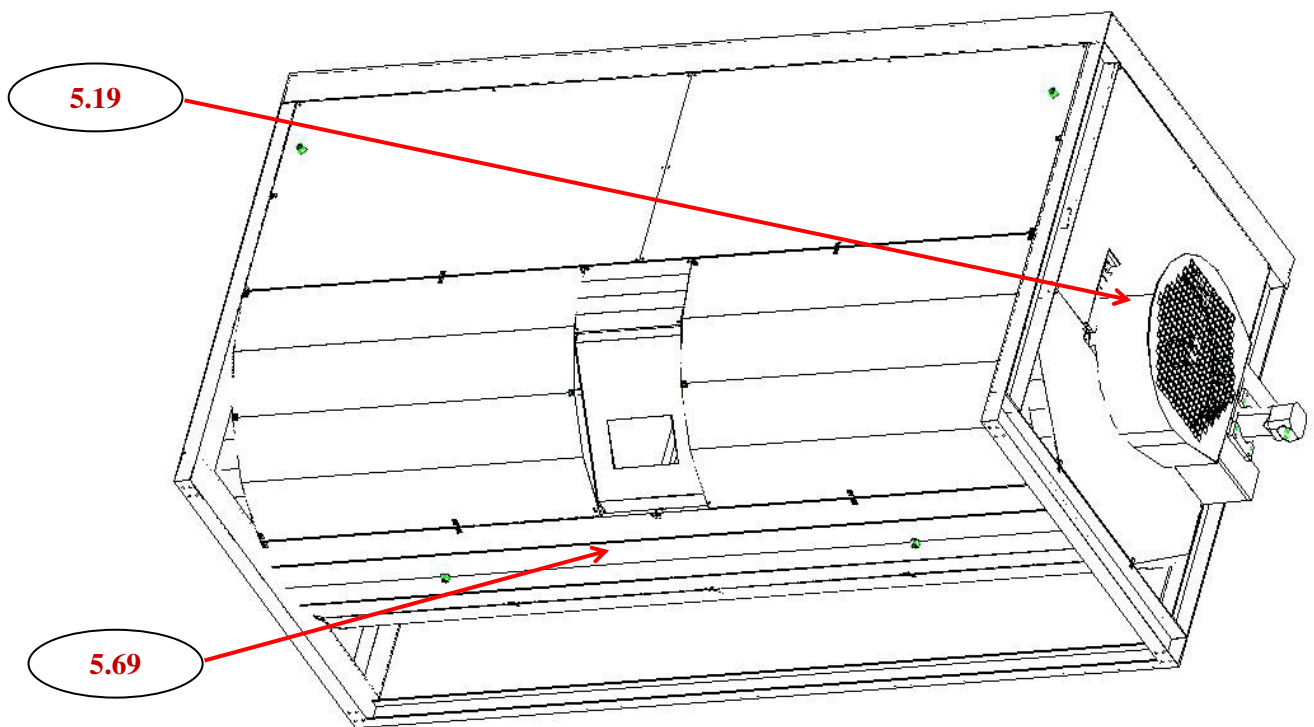
6.10 Figure 10



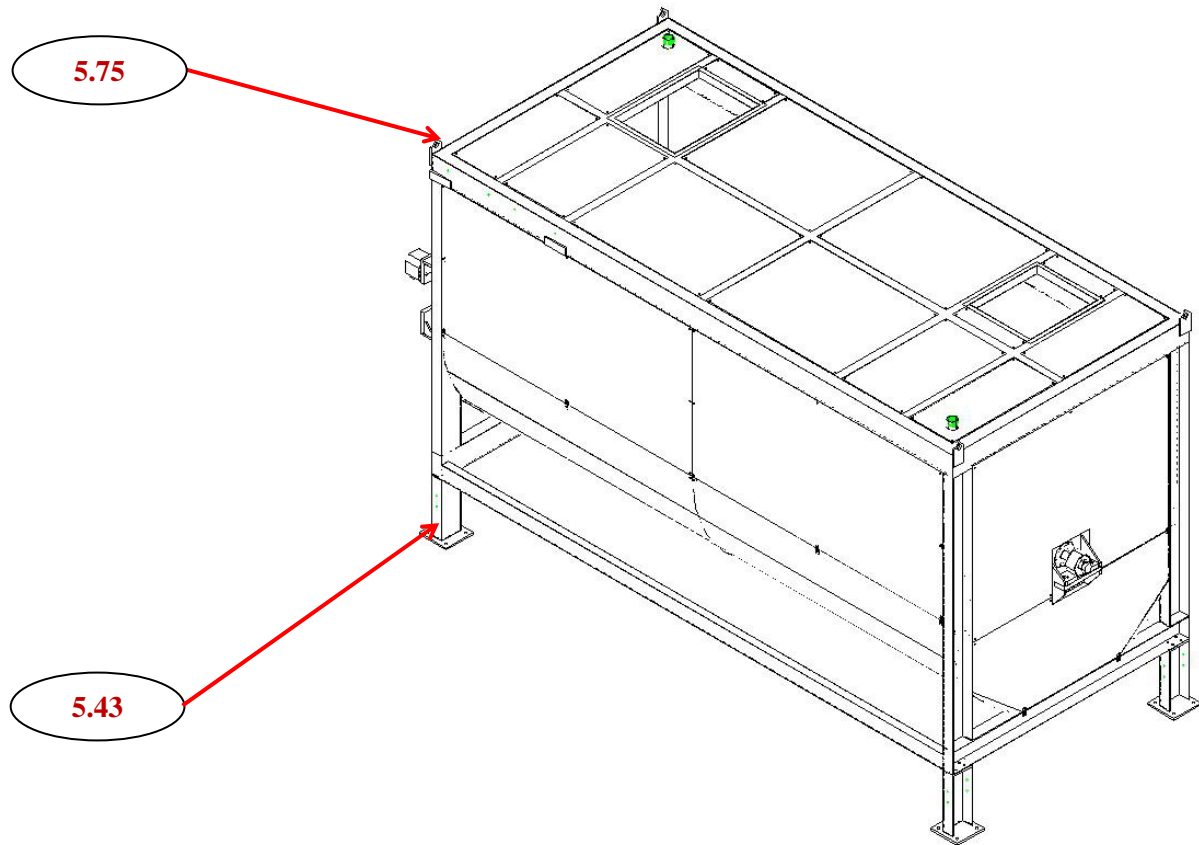
6.11 Figure 11



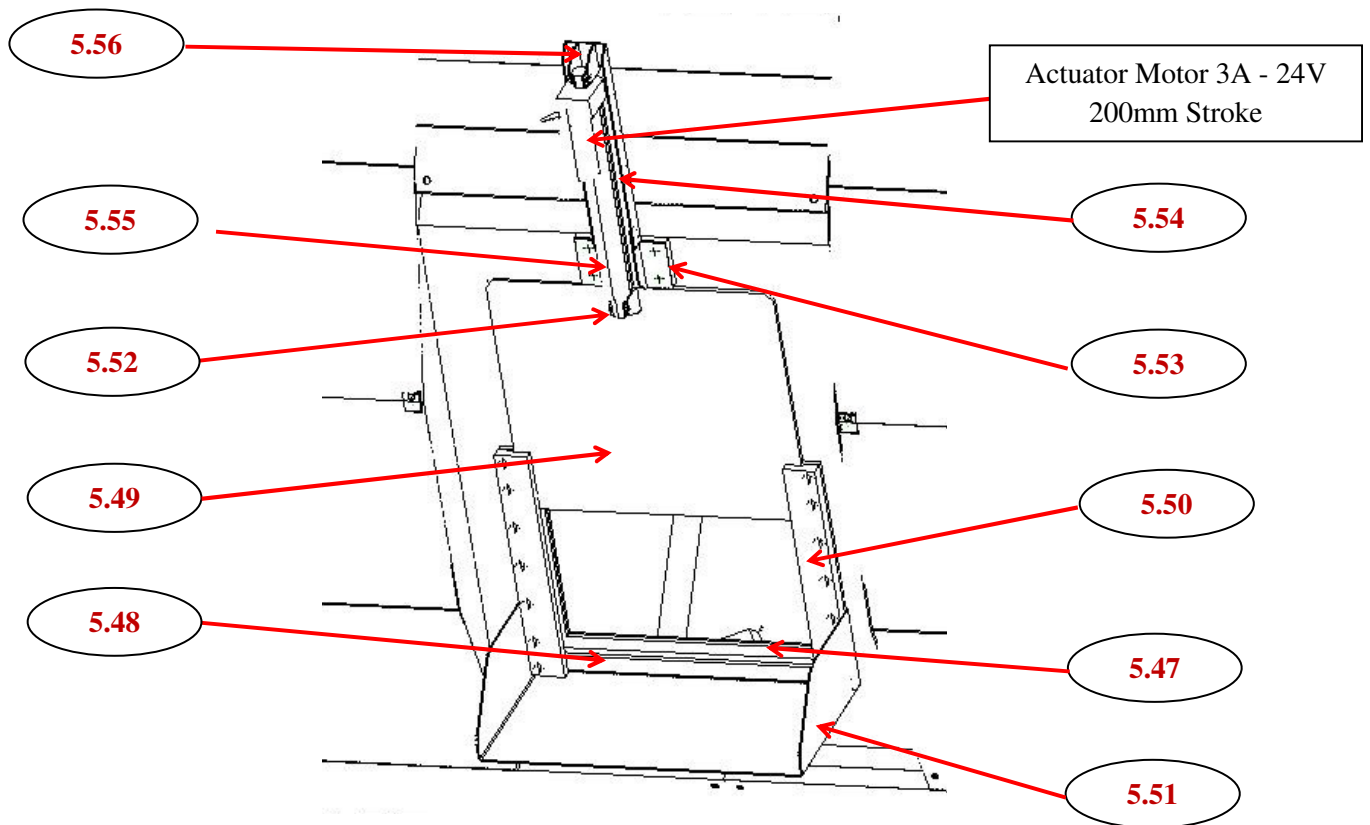
6.12 Figure 12



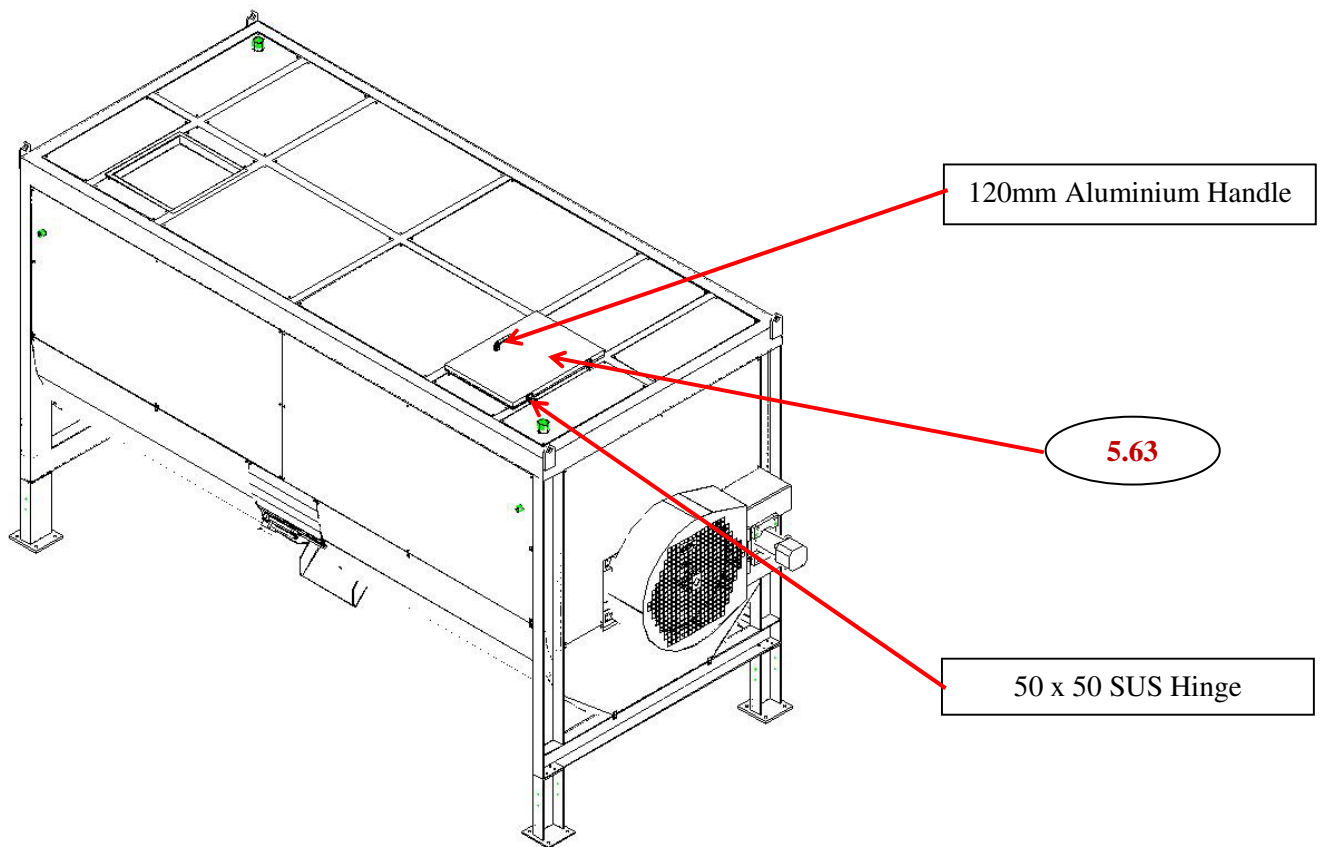
6.13 Figure 13



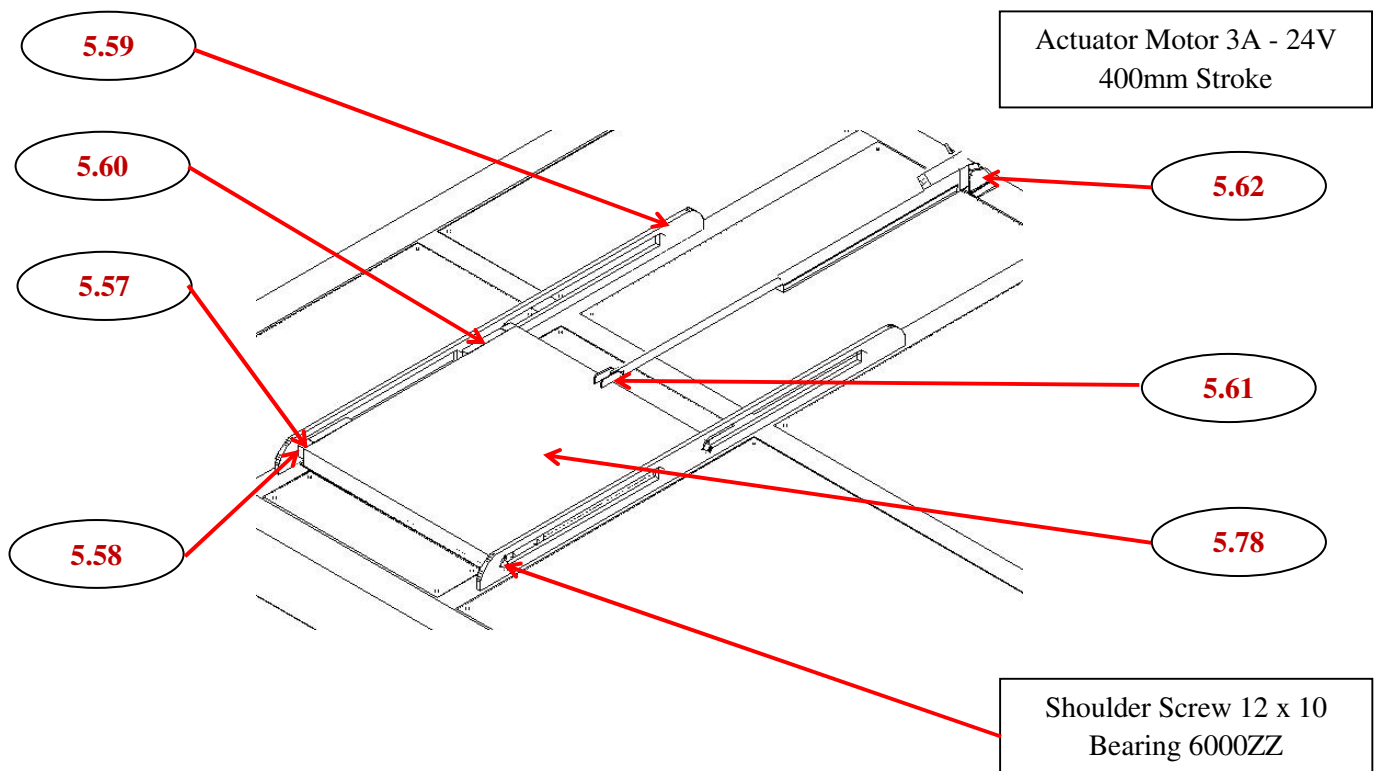
6.14 Figure 14

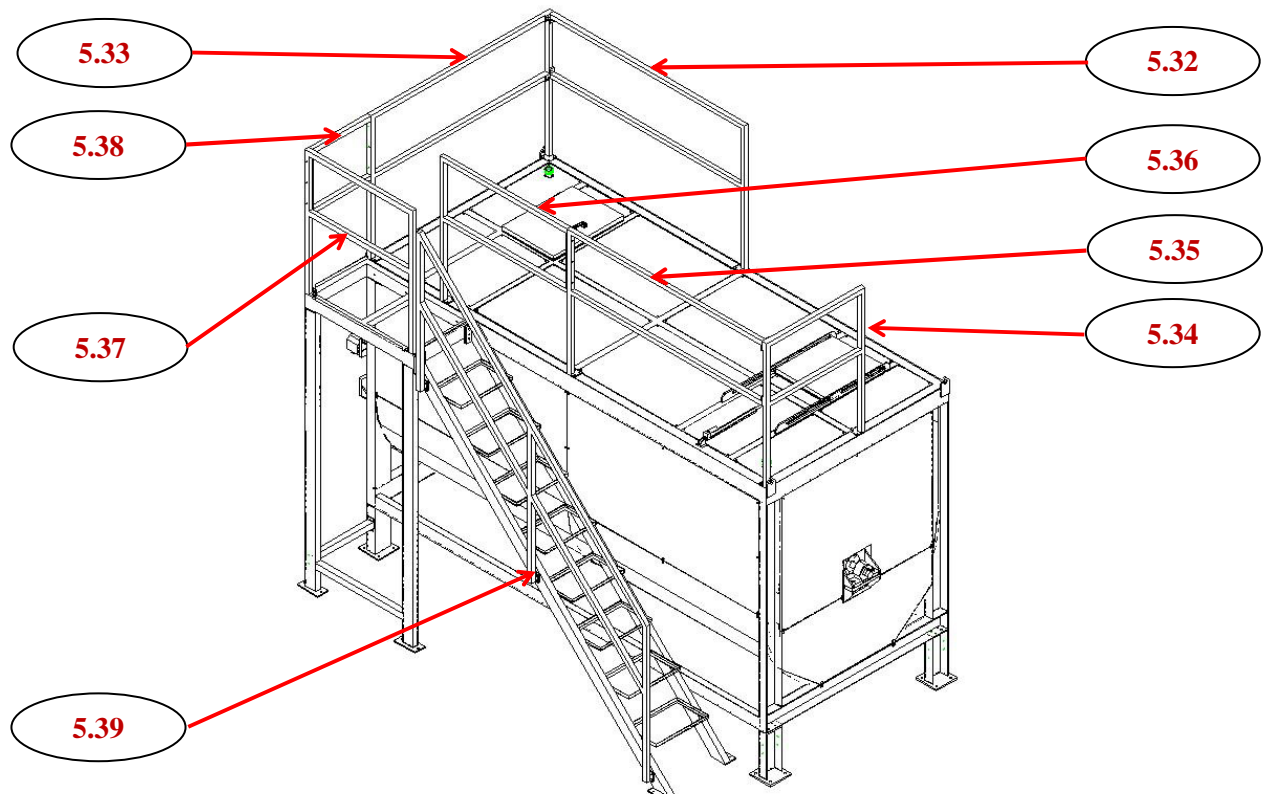
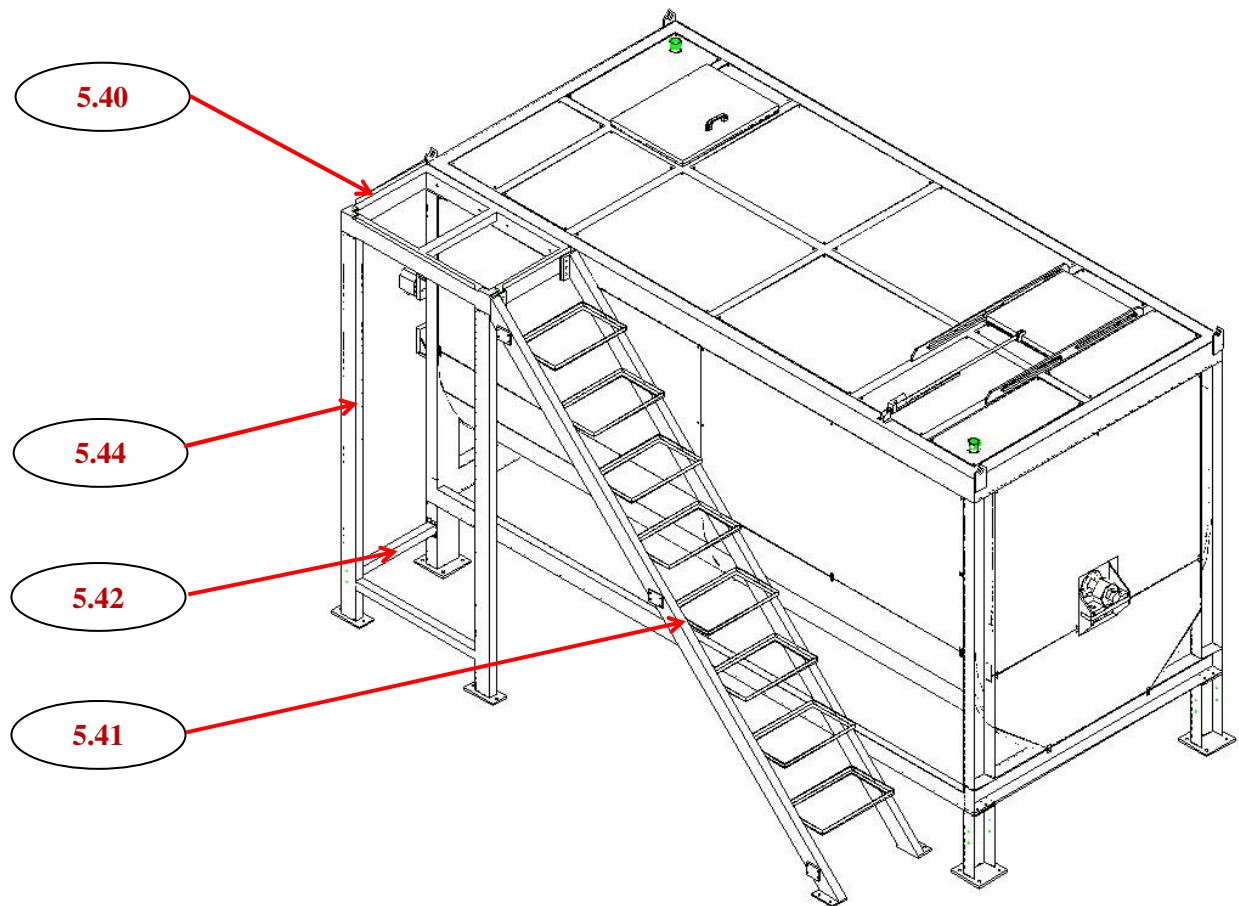


6.15 Figure 15

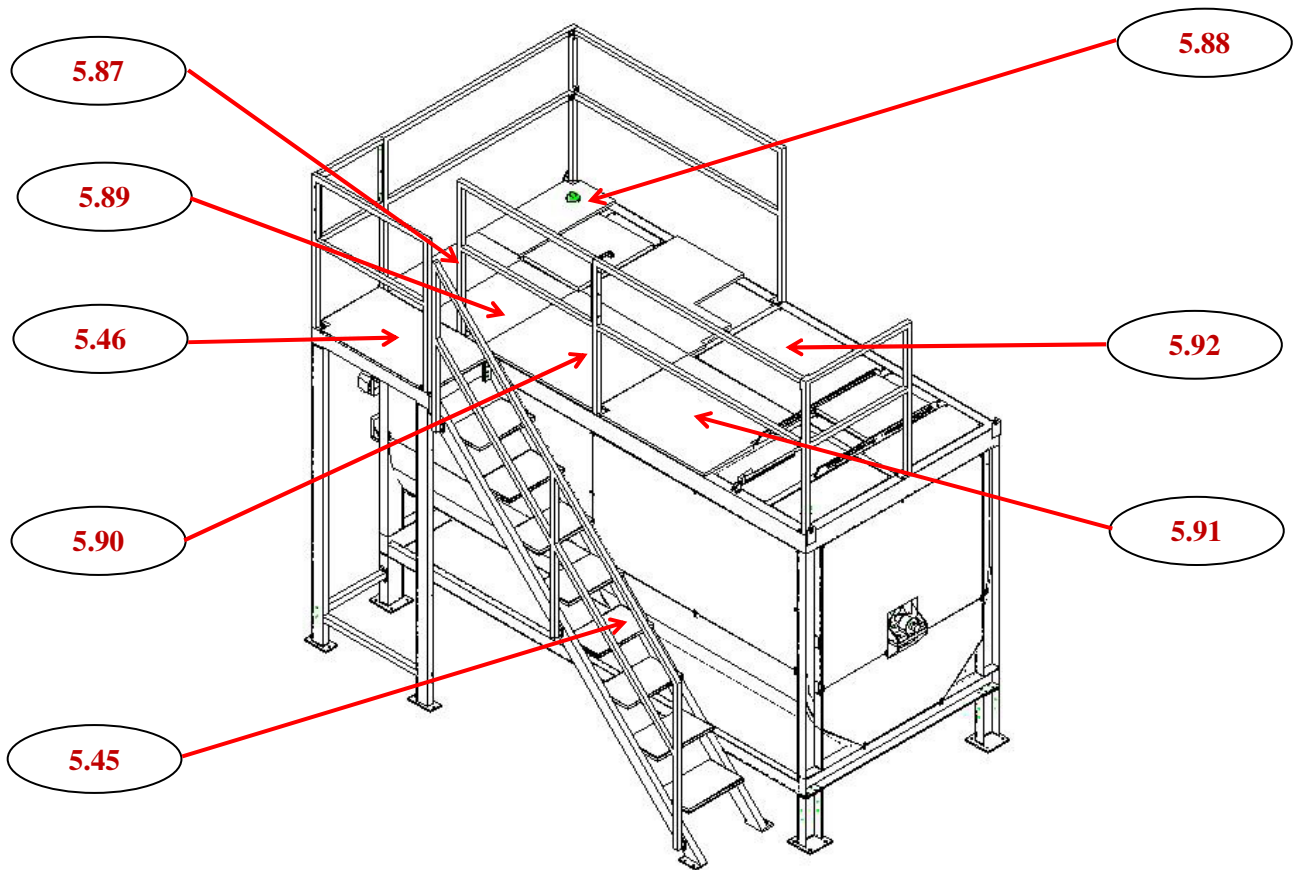


6.16 Figure 16

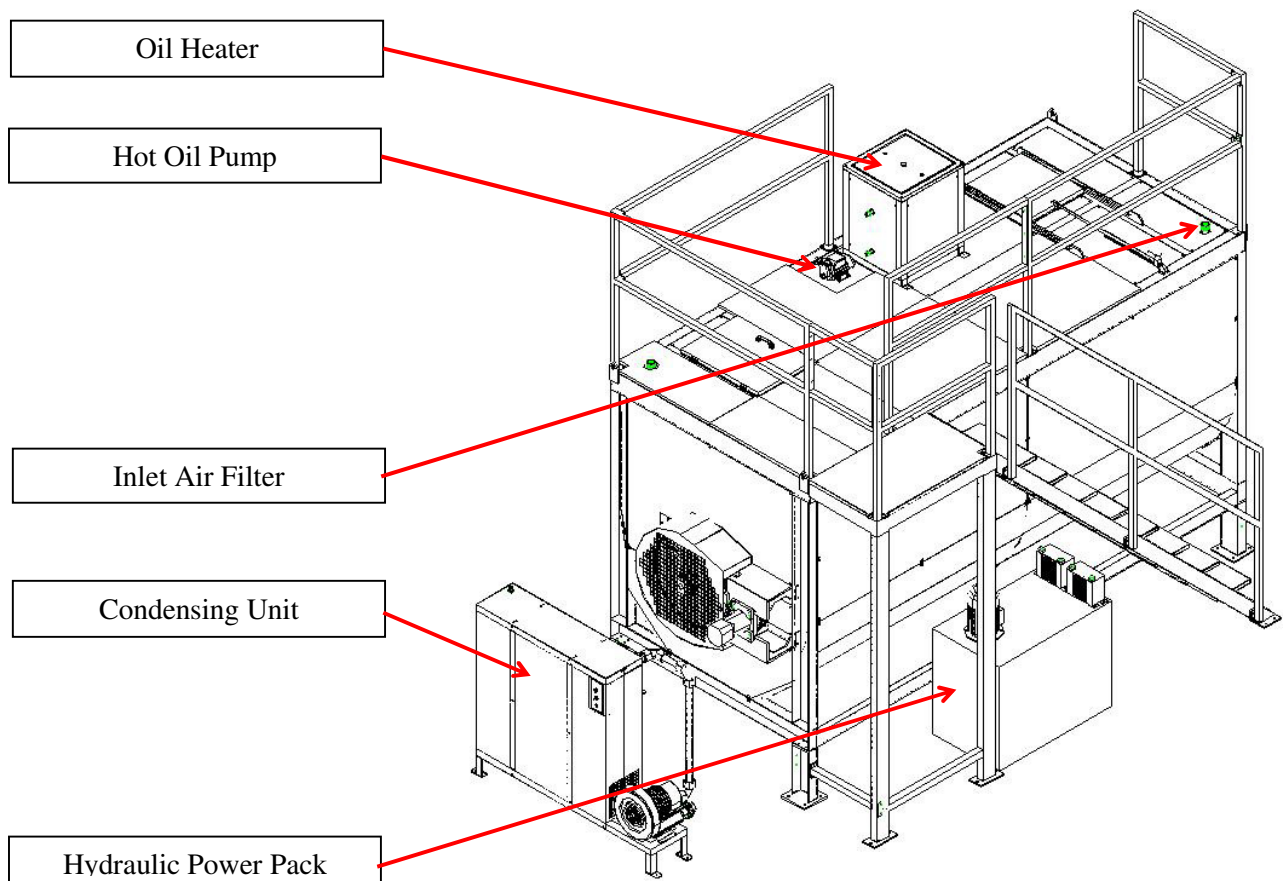




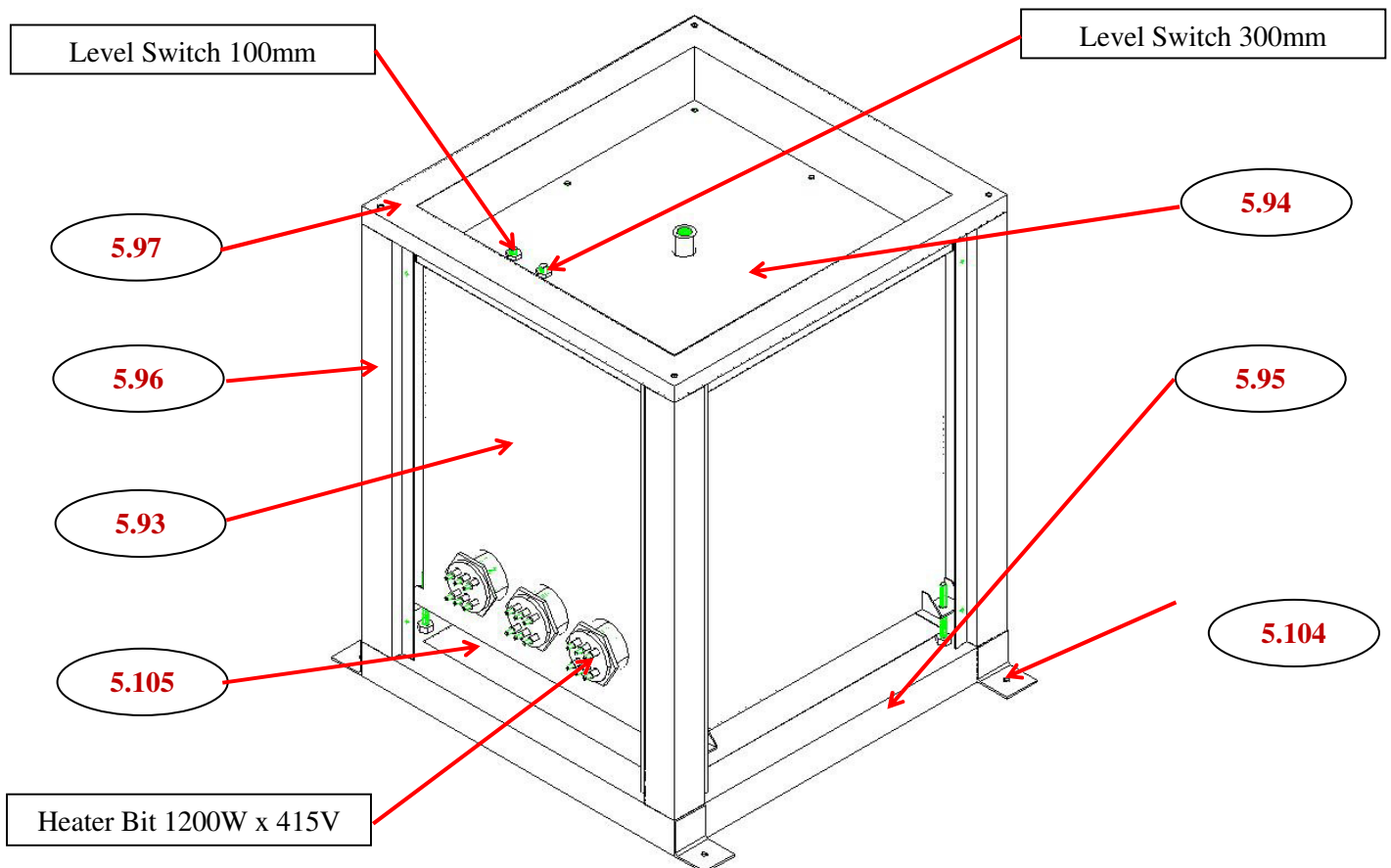
6.19 Figure 19



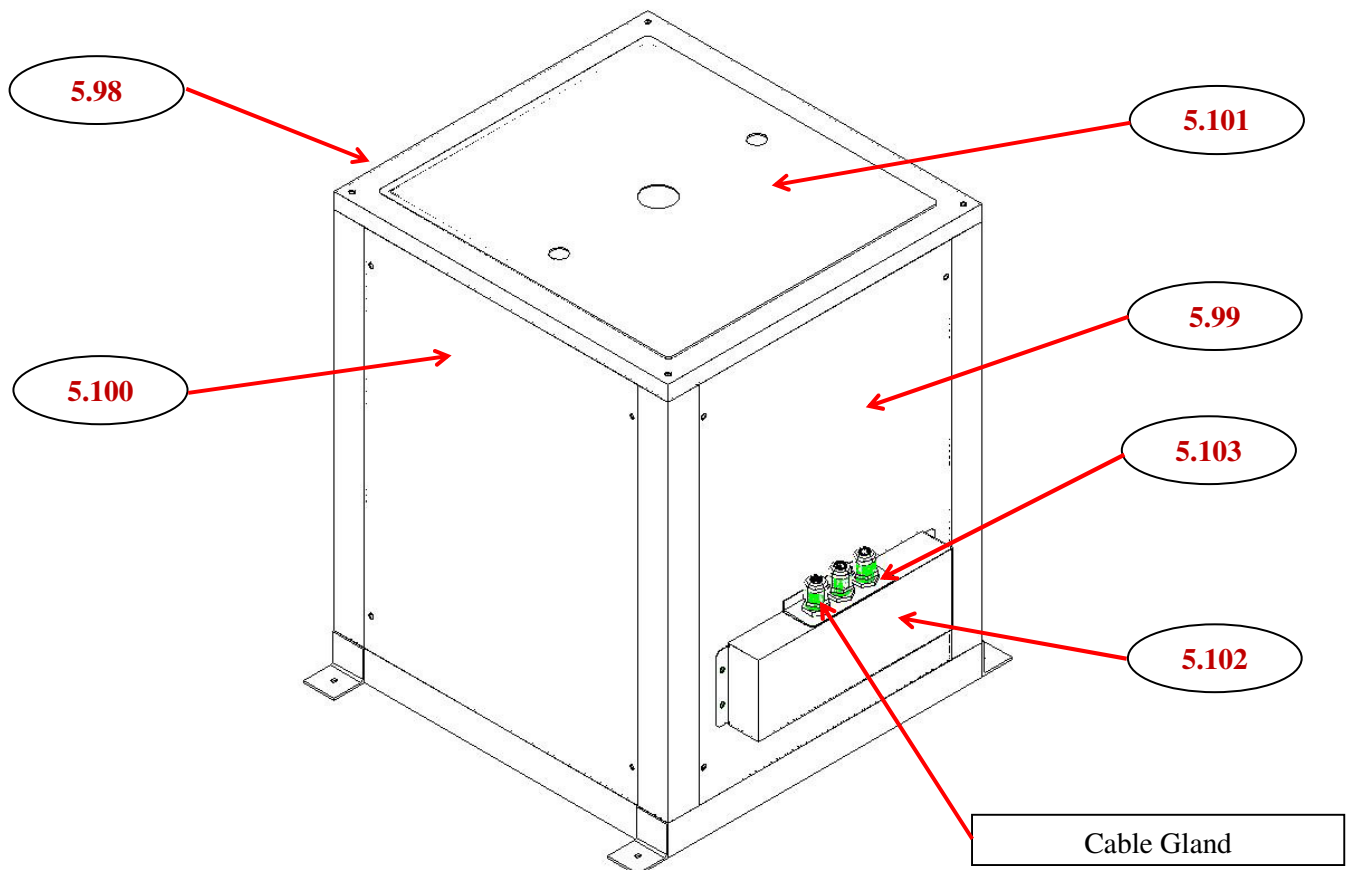
6.20 Figure 20



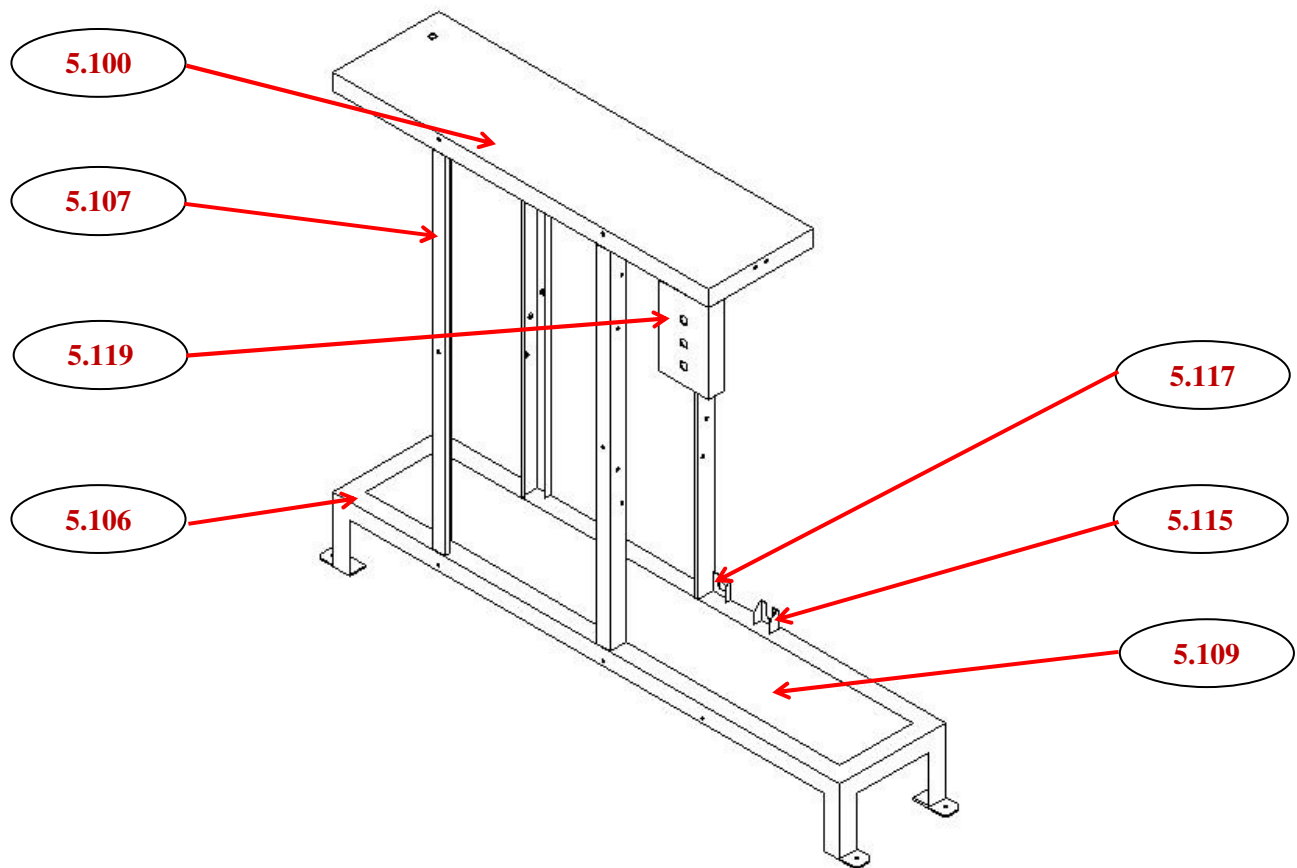
6.21 Figure 21



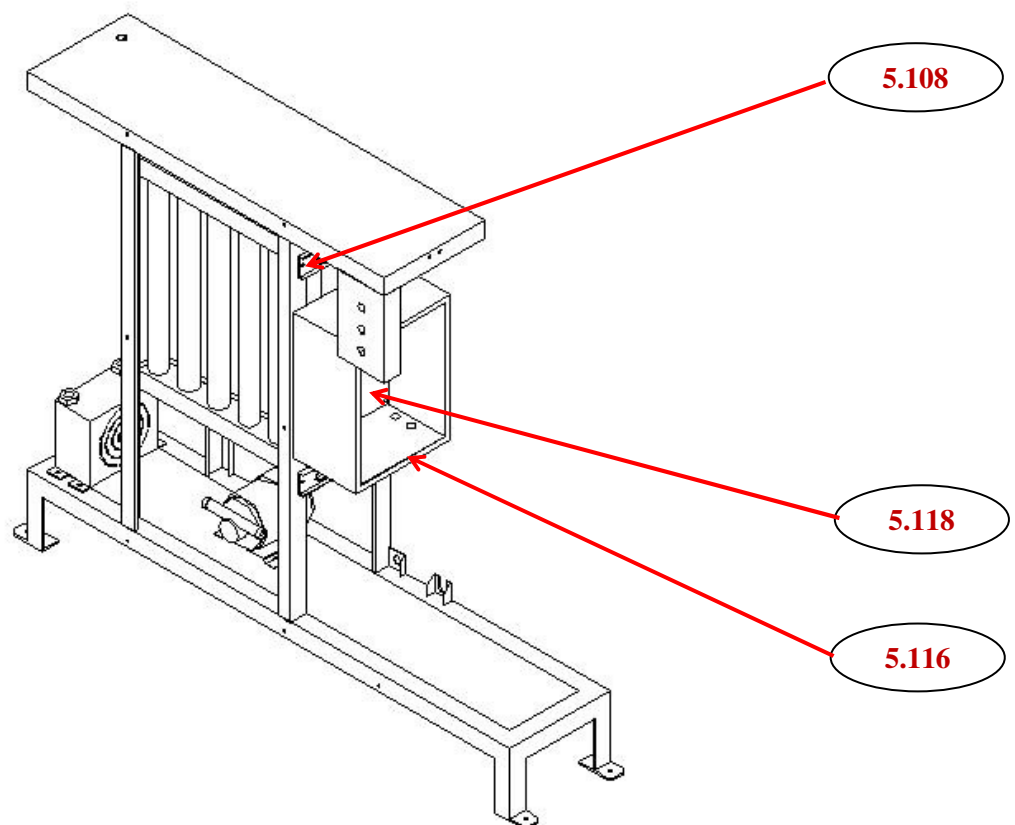
6.22 Figure 22

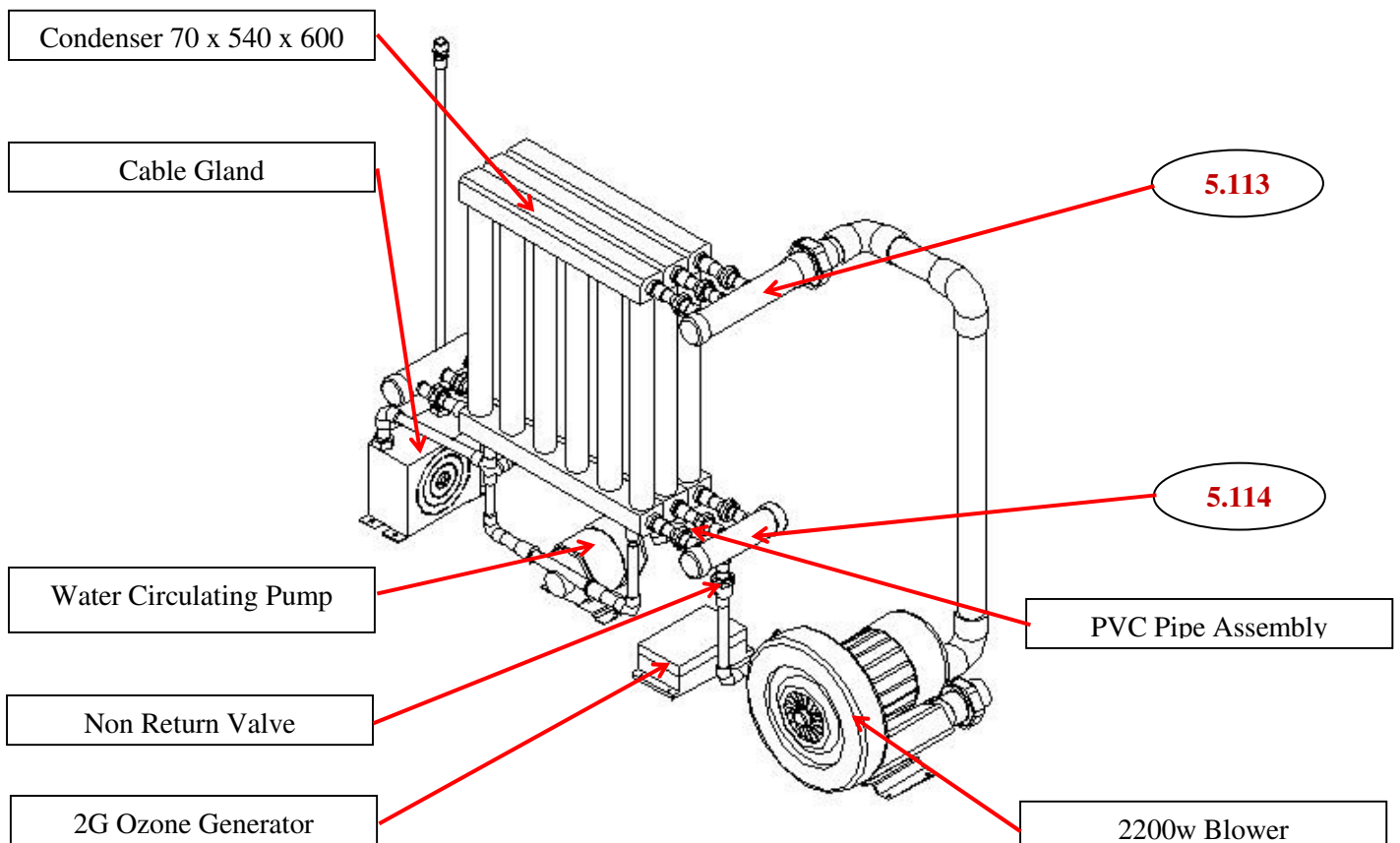
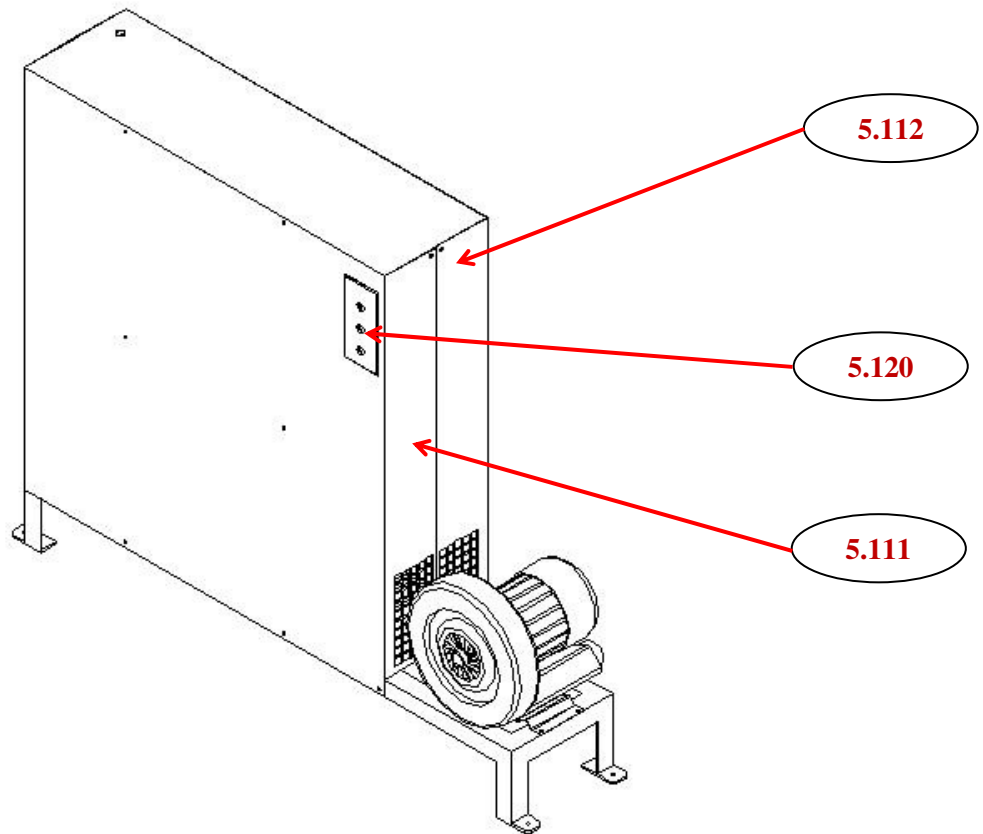


6.23 Figure 23



6.24 Figure 24





7.0 INSTALLATION & ADJUSTMENT

7.1 Machine will be packed in 20ft shipping container.



7.2 Unpack the machine from the shipping container. (Please ensure that no damages were done to the machine)

7.3 Packing List

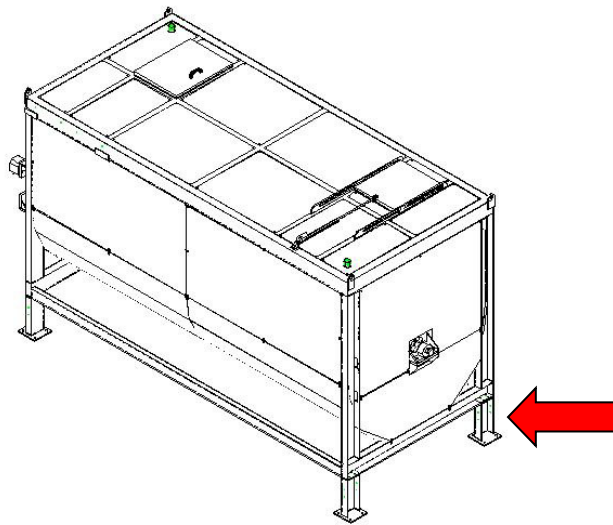
7.3.1	Composting Machine	1 Unit
7.3.2	Railing	1 Lot
7.3.3	Ladder	1 Lot
7.3.4	FRP Flooring	1 Lot
7.3.5	Oil Heater & Oil Circulating Pump	1 Set
7.3.6	Condensing Unit	1 Set
7.3.7	Piping	1 Lot
7.3.8	Composting Powder	1 Lot

7.4 Move machine to the allocated area.

7.4.1	Floor Space	4000mm x 8000mm x 6000mm(H) Approx.
7.4.2	Reinforced Flooring	Concrete Grade Shall Be G30. Allowable soil bearing is assumed to be 100kN/m².
7.4.3	Fastener Spec	All connection bolts, nuts, spring washer and anchor bolts that are to be used for member connection shall conform to BS 3692. All nuts and bolts shall be of hexagonal shape.

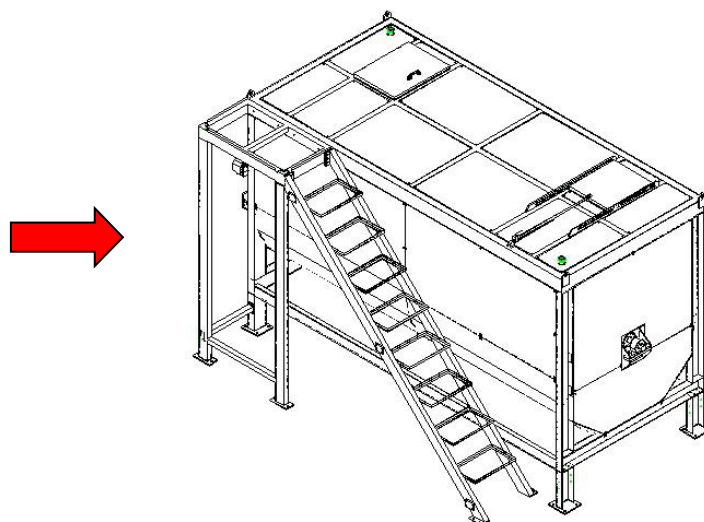
7.5 Installation procedure:

7.5.1 Assemble the support column to the machine.

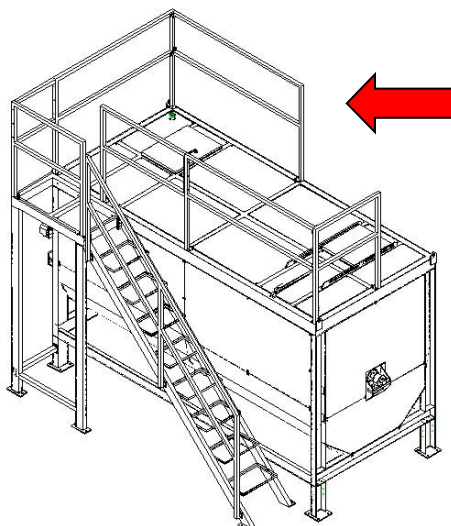


7.5.2 Mounted the unit to the reinforced flooring with anchor bolts.

7.5.3 Assemble the rear platform and ladder.

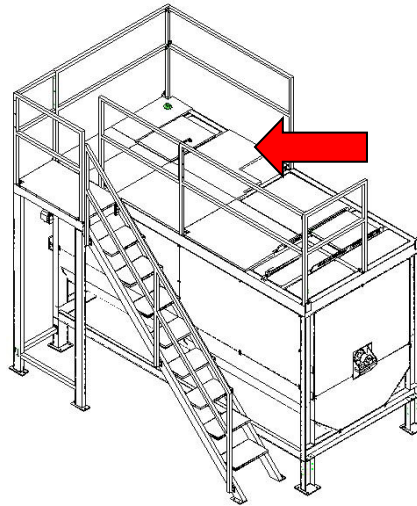


7.5.4 Assemble all railings.

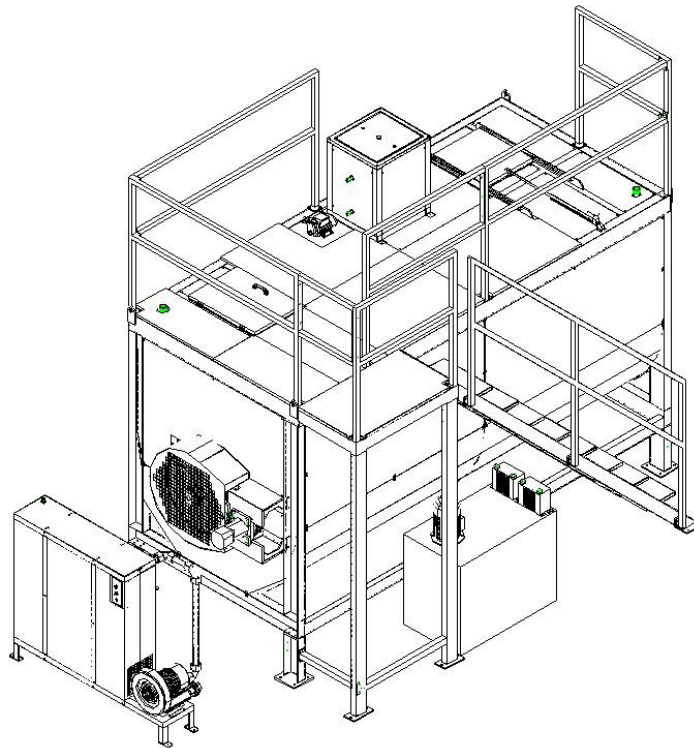


7.5.5

Assemble all FRP floor panel.



Assemble others component : Oil Heater, Oil Circulating Pump, Condensing Unit, Hydraulic Power Pack, Inlet Air Filter and Piping Assembly.



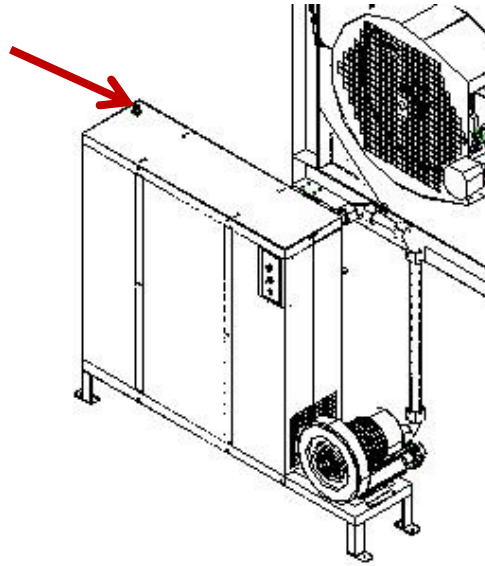
7.6 Plug up the machine to the power source.

- 415 V
- 100 Amps
- 3 Phase
- 4 Wire
- Ground wire

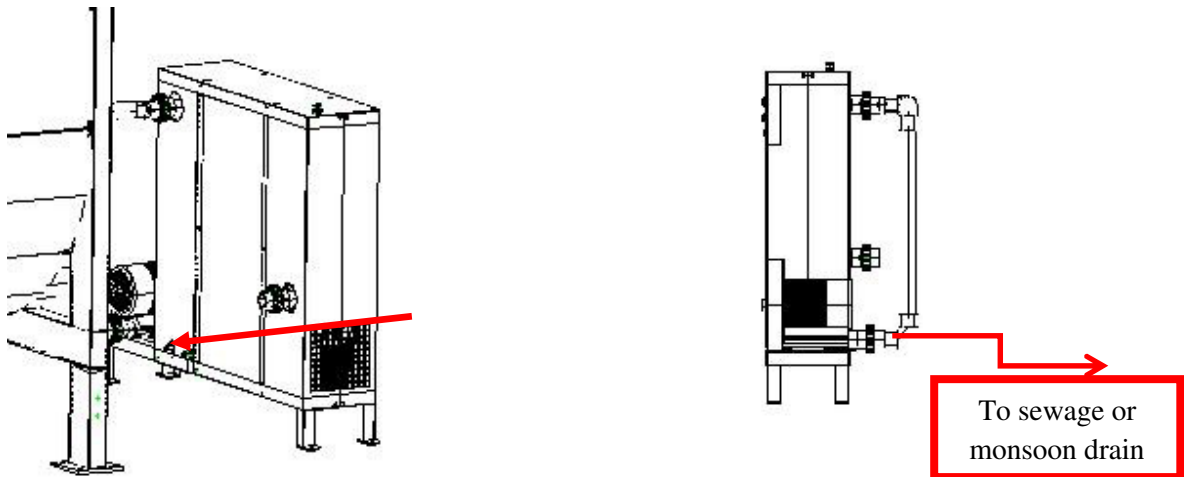
7.7 Before the machine is power on, check the following item.

Open the control box door and check for loose components and loose connection. This is to ensure that the electrical components work perfectly, ensure not short circuit and current leakage. It is important that no serious injuries or death cause by the electrical leakages. Open the Top Hatch to ensure that the Mixer is intact and no loose moving parts.

- Top up water for the cooling coil reservoir system.



7.8 Installing Exhaust pipe.



Please join the exhaust pipe (**red arrow**) to the sewage pipe or to the monsoon drain. The extension should not higher than the machine's exhaust pipe height.

7.9 Power on the machine.

7.10 Check the rotation of the mixer [motor to run at clock wise]. Change the incoming phase wire to ensure that the motor run at correct direction.

7.11 Factory Default Setting

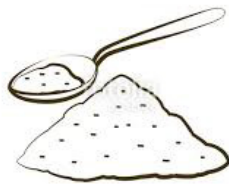
- Heater Temperature (Temperature Controller REX-C100, 95°C)
- Machine Run Time (Timer XGHPG-140-B is 10Hrs on Timer 1, 12Hrs on Timer 2 and 2Hrs on Timer 3)

8.0 STANDARD OPERATION PROCEDURE

8.1 Input Materials Preparation



Kitchen Waste



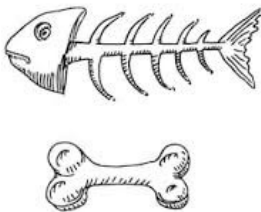
Starches



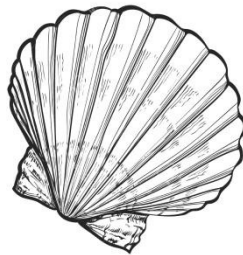
Coffee Ground



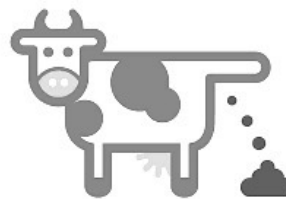
Meat



Fish & Bone



Shell



Animal Manure



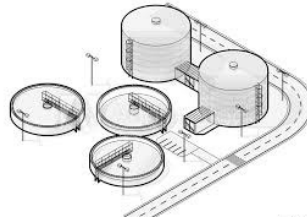
Wood Chip & Sawdust



Dry Leaves & Branches



Grass Clipping & Straw



Waste Water Sludge



**Bio Degradable
Packaging**

8.1.1 This machine is able to process all organic materials.

- Wet waste from kitchen and wet market.
- Garden waste.
- Manure.
- Industries Organic Waste.
- Waste Water Sludge
- Sludge from grease trap
- Waste/ Scrap paper and carton
- Fat, oil and fat (FOG). *Longer process time needed*
- Bio-degradable packaging materials. *Longer process time needed*

- 8.1.2 The machine will not be able to process inorganic product such as:
- Metal
 - Plastic
 - Glass
 - Fabric
 - Syntactic Rubber
 - Fossil Oil Products
- 8.1.3 All materials to be processed by the machine will need to be prepared:
- All materials need to be shredded into particle with a size of 3-5mm in diameter.
 - Shredded materials need to wash with water to clear out excessive oil.
 - Materials shall be dripped dry.
- 8.1.4 All materials to be processed by the machine should have a moisture level of 50 %-80 %.
- 8.1.5 Water may be added to increase the moisture level if need.
- 8.1.6 Saw dust or dry compost produced can be used to lower the moisture level of materials if it is too high.
- 8.1.7 All materials loaded for composting must grind to smaller size (3mm in diameter) to give maximum result.
- 8.1.8 All materials must be rinsed off excessive FOG & salt and drip dry before is loaded into the machine.

8.2 CAUTION

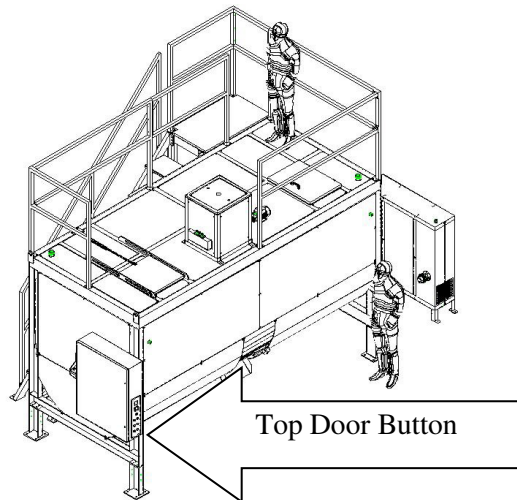
Please do not run **COPRA** in this machine as copra may cause spontaneous combustion during our process.



Copra (or khobara) is the dried meat or kernel of the **coconut**, which is the fruit of the **coconut palm** (*Cocos nucifera*). **Coconut oil** is extracted from copra, making it an important agricultural commodity for many coconut-producing countries. It also yields de-fatted coconut cake after oil extraction, which is mainly used as **feed** for livestock.

8.3 Machine Operation

8.3.1 Press the Top Door Button to open the inlet door.



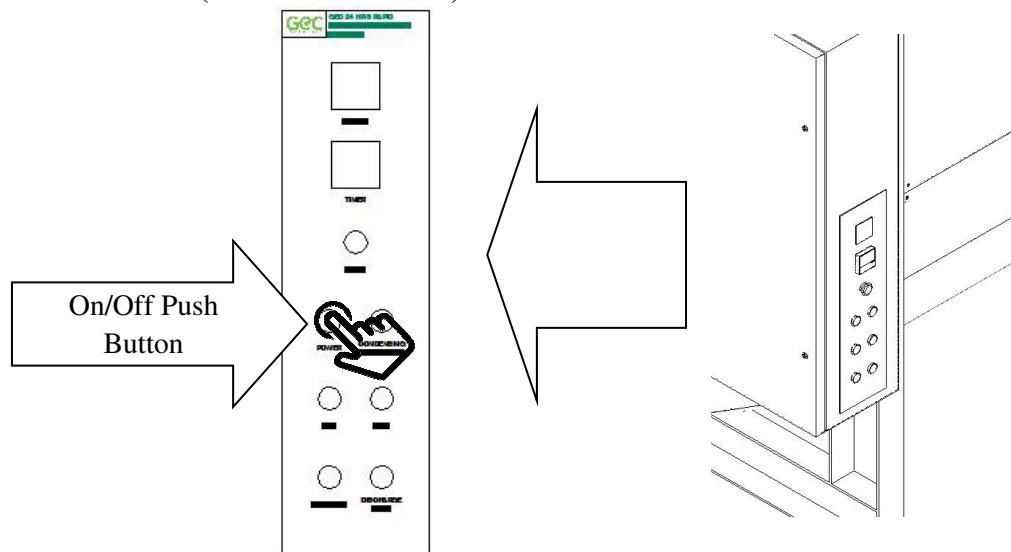
8.3.1 Pour in the prepared mixture into the machine (refer Para 7.1).

8.3.2 The mixture loaded into the machine shall at the level just cover the mixer. Excessive loading may broke the mixer.

8.3.3 * First/Initial Run*, Add in 100 kilogram of GEC's Composting Powder into the chamber.

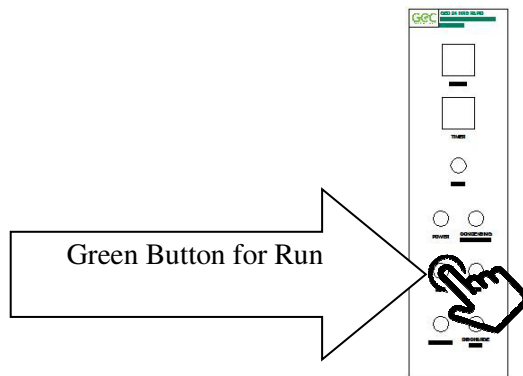
8.3.4 Closed the inlet door by releasing the Top Door Button .

8.3.5 Switch on the machine. (Power Push Button)

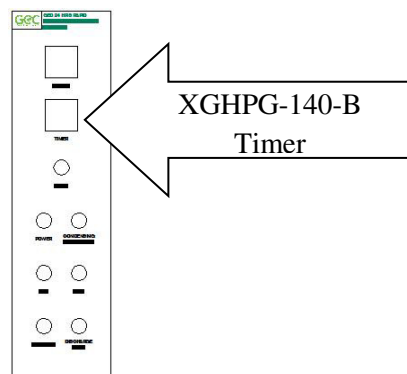


8.3.6 Allow the machine to boot up for 30 seconds.

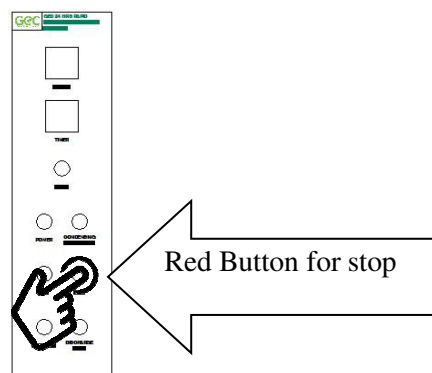
8.3.7 Press the run button. (Green Push Button)



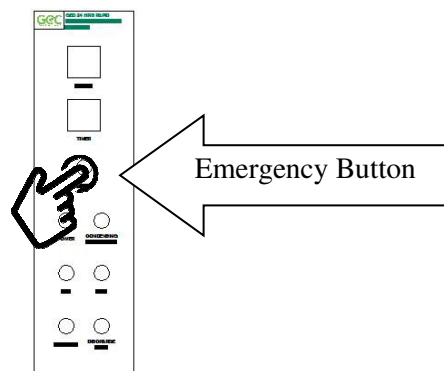
8.3.8 The machine will automatically shut down after the machine completed the cycle time set in the XGHPG-140-B Timer. (Refer Para 7.11)



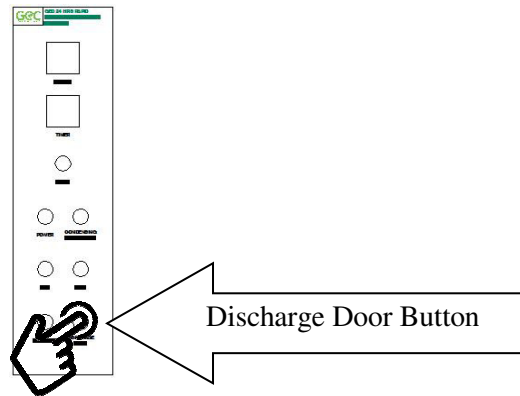
8.3.9 During the operation of the machine, you may stop the machine by press the stop button. (Red Push Button). Once this button is engaged, the machine will be reset.



8.3.10 In case of emergency, you may push the emergency button. Upon release of the emergency button, the machine will resume operation without resetting the machine.



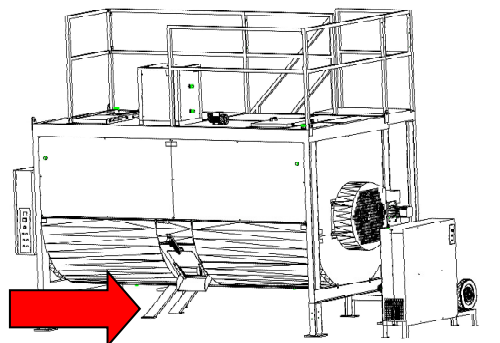
- 8.3.11** After completion of full operation cycle, you may discharge the machine by pressing the discharge door button.



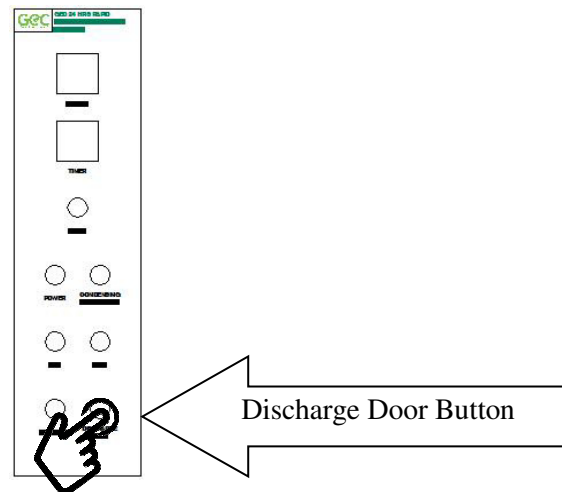
- 8.3.12** The end product from the process is an immature compost and it shall be kept in a dry storage area for a natural cooling down period of 48Hrs to 72Hrs.
- 8.3.13** After the cooling down period, check the temperature and Ph Level of the compost.
- 8.3.14** The temperature of the compost should not exceed 55°C. If it exceeds the required temperature, the compost shall be kept further to cool down the temperature.
- 8.3.15** Recondition the compost with lime stone powder or Bio-char powder to achieve the desire Ph Level.
- 8.3.16** Left 10% of the compost produced in the chamber to prepare for the next production run.
- 8.3.17** The GEC's composting powder shall need to be replenished every 12 months.

8.4 Compost Discharge Process

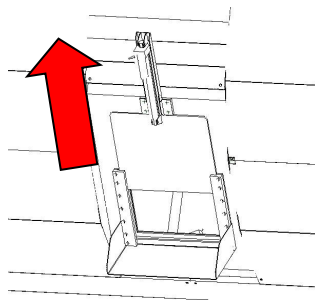
- 8.4.1** After completion of 24 hour cycle, Put a bin or a unloading conveyor in front of the machine, under the chute.



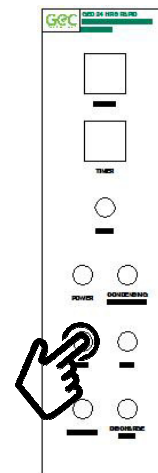
8.4.2 Push the Discharge Door Button.



8.4.3 Discharge door will open after the Discharge Door Button is engaged.



8.4.4 Press the run button for auto discharge.



8.4.5 After complete discharge, press the stop.

8.4.6 Before close the discharge door, ensure that the surrounding area is clean and free of residues.

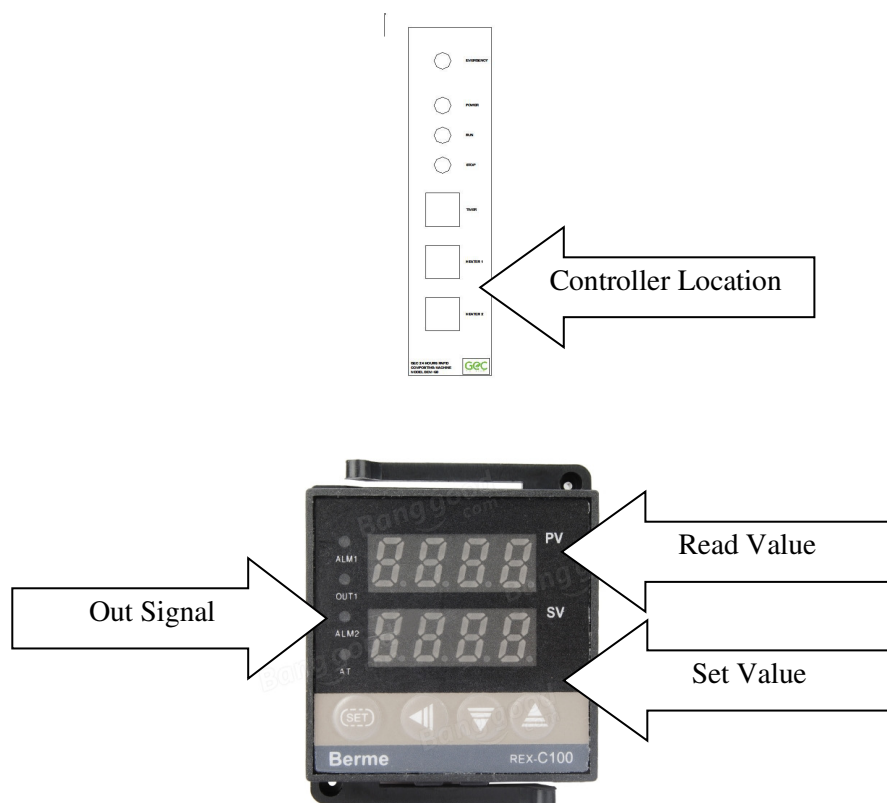
Release the Discharge Door Button to close the discharge door.

8.5 Default Process

8.5.1	Heating Process	-	First 12 Hours
8.5.2	Dehydration Process	-	Last 2 Hours
8.5.3	Total Machine Run Time	-	24 Hours

8.6 Parameter Setting

8.6.1 REX-C100 Temperature Controller (Heating Temperature)

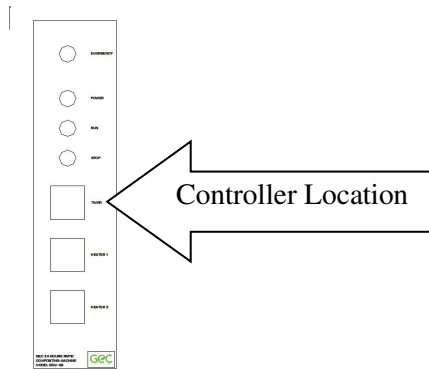


**Press the left arrow key to start setting
SV value will be blinking.
Use the left, up and down button to do setting.**

**After setting completed.
Press the set button for confirmation.**

- Factory Default Setting is 95°C.
- Signal Out indicator in green show the controller is instructing the heater to run.
- For advance setting, please refer to the attached operation manual for the controller.

8.6.2 XGHPG-140-B Timer (Heater timing & Machine Run Time)



Press the run button and hold during the whole setting sequence.

Press the set key to start setting

Timer Sequence 1 will appear

Timer value will be blinking

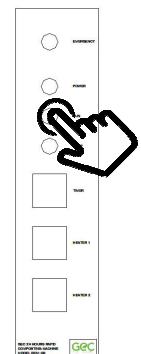
Use the left & up button to do setting.

After completed setting for each sequence, press set button to confirm.

Timer Sequence will go to the next sequence.

Complete all 3 Timer sequence.

Release the run button and then press the stop button to complete the whole sequence.



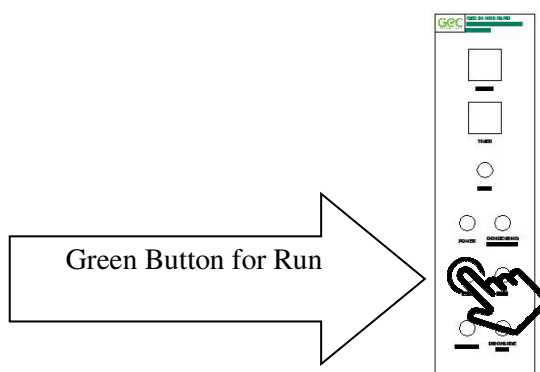
- Factory Default Setting is 12Hrs for T1, 10Hr for T2 and 2Hrs for T3.

- For advance setting, please refer to the attached operation manual for the controller.

8.7 2 Hours Run

8.7.1 In order to load the machine for multiple times before the full production run of 24 Hours, the machine is programmed to be able to run short sequence of 2 hours to sterilize the into waste to cut down the order problem and reduce bio hazard.

8.7.2 Press the run button (Green Push Button) for 10 seconds until the green light is blinking.



8.7.3 The machine will stop automatically after 2 hours.

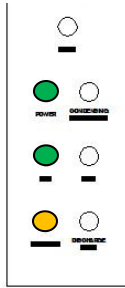
8.7.4 After the sequence completion, open the top door to load new waste. Run the short sequence run (para 8.7.2).

8.7.5 After fully loaded the machine, you may run the full 24 hours run (para 8.3.7) to complete the fermentation process.

8.8 LED Indication

8.8.1	Main Panel	Machine Condition
	Power LED - ON Run LED - Off Stop LED - On	Machine Power On Machine on standby
8.8.2	Main Panel	Machine Condition
	Power LED - ON Run LED - On Stop LED - Off	Machine Power On Machine Running
8.8.3	Main Panel	Machine Condition
	Power LED - ON Run LED - Blinking Stop LED - Off	Machine Power On Machine Running on 2 hrs process

8.8.4



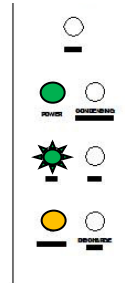
Main Panel

Power LED - ON
Run LED - ON
Top Door LED - ON

Machine Condition

Machine Power On
Machine Running with top door open

8.8.5



Main Panel

Power LED - ON
Run LED - Blinking
Top Door LED - ON

Machine Condition

Machine Power On
Machine Running on 2 hrs process with top door open

8.8.6



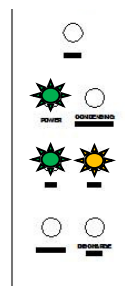
Main Panel

Power LED - ON
Run LED - Blinking
Stop LED - Blinking

Machine Condition

Machine Power On
Motor trip

8.8.7



Main Panel

Power LED - Blinking
Run LED - Blinking
Stop LED - Blinking

Machine Condition

Emergency Button engaged

8.8.8



Main Panel

Power LED - On
Stop LED - On
Discharge Door LED - On

Machine Condition

Machine Power On
Motor Standby
Discharge Door Open

8.8.9



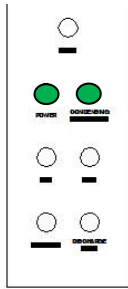
Main Panel

Power LED - On
Stop LED - On
Top Door LED - On

Machine Condition

Machine Power On
Motor Standby
Top Door Open

8.8.10



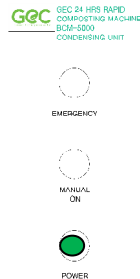
Main Panel

Power LED - On
Manual LED - On

Machine Condition

Machine Power On
Machine Manual Mode
Run Condensing Unit **ONLY**

8.8.11



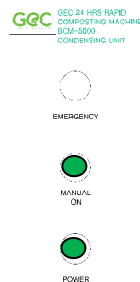
Condensing Unit Panel

Power LED - On
Manual LED - Off

Condensing Unit Condition

Condensing Unit Power On
Condensing Unit Run

8.8.12



Condensing Unit Panel

Power LED - On
Manual LED - On

Condensing Unit Condition

Condensing Unit Power On
Machine Manual Mode
Blower Run **ONLY**

8.8.13



Condensing Unit Panel

Power LED - On
Manual LED - Blinking

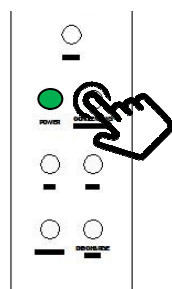
Condensing Unit Condition

Emergency Button Engaged

8.9 Manual Mode - Servicing

For the purpose of servicing of parts or repair work taken place inside the chamber. The machine **MUST BE TURN INTO MANUAL MODE**. During manual mode, condensing unit will be running where polluted air will be drawn out from the chamber and allowing fresh air to go inside the chamber. Second this function also interlock with the run mode where machine will be lock down down to prevent any moving motion and heating activities.

8.9.1



Go to Main Panel.
Power on the machine.
Press the manual button.

8.9.2



**Go to Condensing Unit Panel.
Press the manual button.**



- 8.9.3 Machine will run in manual mode where whole machine will be lock down and only the blower in condensing unit is running.
- 8.9.4 After completion of servicing or repair work, disengage the manual button on both the Condensing Unit Panel and Main Panel.
- 8.9.5 **Cautious. Without releasing the manual button on the Condensing Unit, the condensing system will not be working properly.**
- 8.9.6 It is advise to install a portable blower fan to supply fresh air to the chamber as an additional requirement for servicing, maintenance and repair work done inside the chamber.

9.0 MAINTENANCE AND SCHEDULE

No	Maintenance Description	Maintenance Job	Schedule
1	Mixer	Check for broken mixer	After every run
2	Air Filter (Outside Mixer Chamber)	Clean with water and dry before fit back into position (Para 10.2.10, Page 34)	Weekly
3	Power Roller Chain	Check for tensioning	Monthly
4	Mechanical Parts	Ensure all fasteners are properly tighten	Monthly
5	Electrical Connection	Ensure all connections are properly tighten	Monthly
6	Power Roller Chain	Greasing/ Oiling	Monthly
7	Flange Bearing UCP212	Greasing	Monthly
8	Viton Seal	Check for leakage	Monthly
9	Chamber Wall	Check for leakage	Monthly
10	Air Filter (Outside Mixer Chamber)	Replace new filter	Yearly
11	Viton Seal	Replace new seal	Yearly
12	Water Cooling Reservoir System	Top up water (Para 7.7, Page 38)	Monthly

10.0 OPERATION AREA, STORAGE AND TRANSPORT

- 10.1** The machine shall operate under shed with ambient temperature not less than 20°C.
- 10.2** For storage purposes, the machine shall need to be kept under shed with temperature between -10°C to 75°C and moisture level control between 35%-65%.
- 10.3** To relocate the machine, the castor wheel mounted below the machine will help the machine to move freely provided it is fully purged and cleaned. The loaded weight may break the castor and damaged the structure of the machine during relocation.
- 10.4** In the case of transporting the machine, the machine shall wrap and secure before it is transported.

11.0 MACHINE FAULT AND REPAIRING

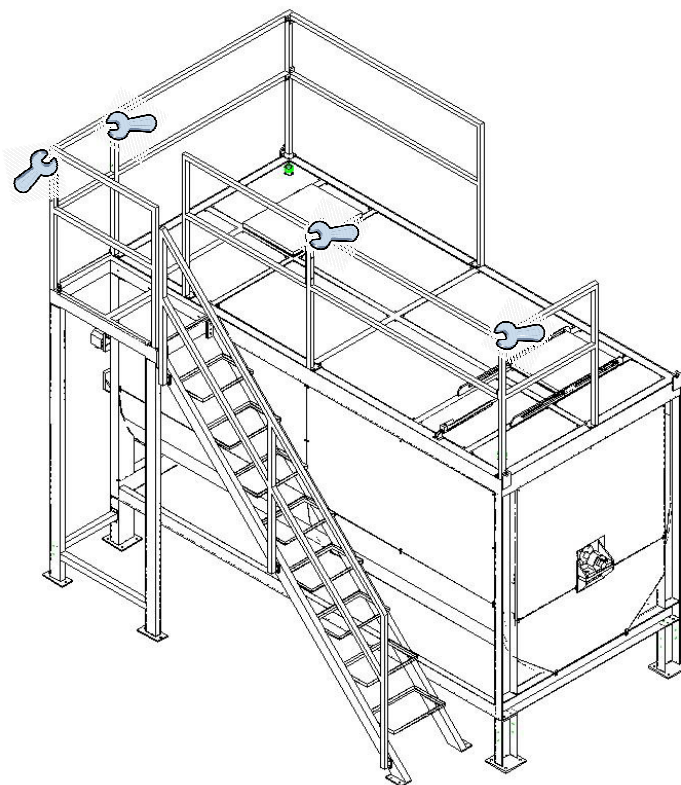
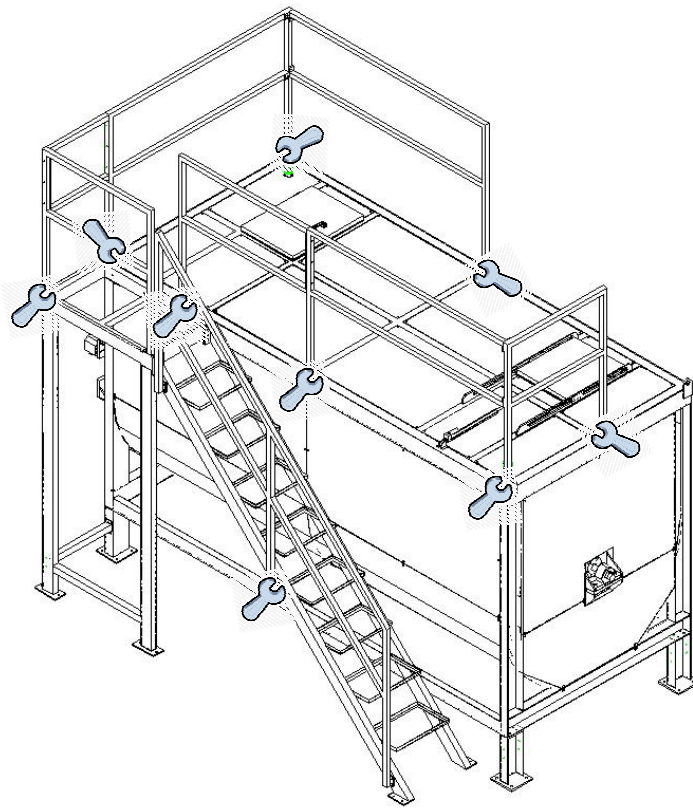
11.1 Trouble Shooting

No	Problem	Potential Cause	
1	Hydraulic motor stop to run	a	The emergency button is engaged
		b	The Hydraulic Power Pack electrical connection is loose
		c	The Hydraulic Power Pack's motor is burned
		d	The Controller Board is not functioning
		e	The Hydraulic Motor faulty
		f	Hydraulic Pipe leaked
2	The Whirlpool Pump stop to run	a	The emergency button is engaged
		b	The pump's electrical connection loosed
		c	The pump burned
		d	The Controller Board is not functioning
3	Machine cannot heat up	a	The heater burned
		b	The SSR burned
		c	The thermocouple burned
		d	The temperature controller burned
		e	The setting of the temperature controller is incorrect
		f	The setting of XGHPG-140-B Timer is incorrect
		g	The PLC Controller is not functioning
4	Controller Board could not boot up	a	The 24v power supply burned
		b	The Controller Board is burned
5	Timer XGHPG-140-B does not allow to do setting	a	Refer Operation Manual of XGHPG-140-B to do the Setting
		b	The Timer burned
6	Machine do not run when push run button	a	The manual button is engaged
		b	The manual button is engaged
		c	The Controller board burned

No	Problem	Potential Cause
7	Air flow of the machine is low or non	<ul style="list-style-type: none"> a The air filter outside the mixer chamber is clogged b The air piping system is clogged c The whirlpool pump burned
8	Machine trip	<ul style="list-style-type: none"> a Main motor trip b Whirlpool pump trip c Heater burned d Wire insulation damaged causing electrical leakage e One of the components in the control box burned

11.2 Dismantling Procedure

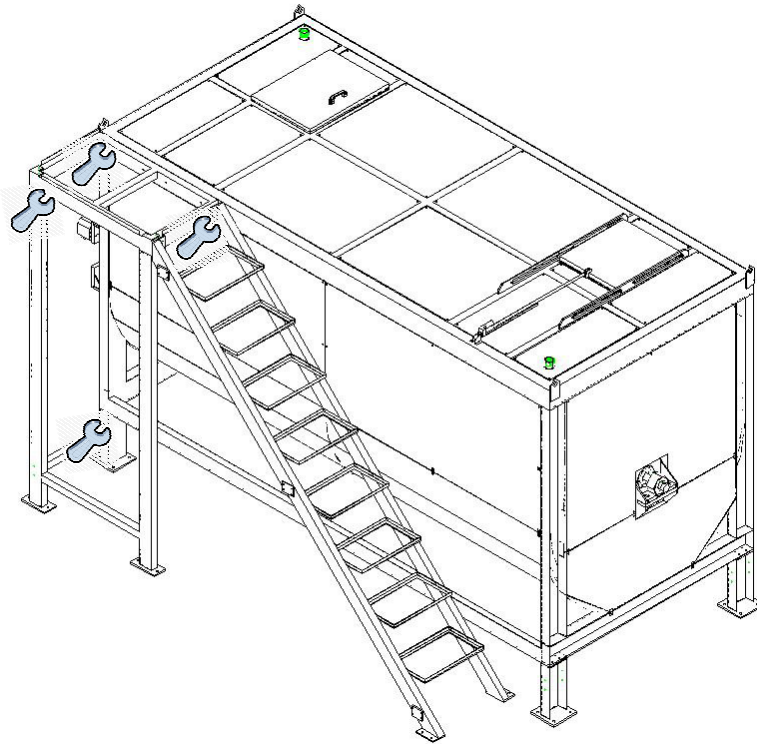
11.2.1 Top Railing



Dismantle 30 number of M6 bolts on railing footing to dismantle the railing from machine the top cover.

**Dismantle 11 number of M6 bolts on railing tie bar to dismantle the railing assembly.
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.**

11.2.2 Ladder and Platform



Dismantle 4 number of M6 bolts to open the tie bar.

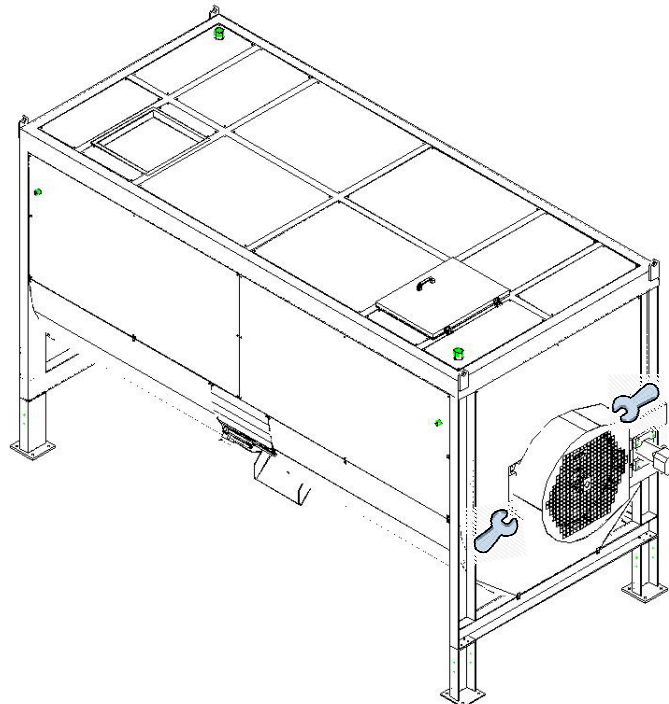
Dismantle 4 number of M6 bolts to open the Platform Support Column.

Dismantle 4 number of M10 bolts to open the Platform from the machine.

Dismantle 6 number of M10 bolts to open the Ladder from the Platform.

Please ensure that appropriate wrench or spanner used to avoid damages on the bolt

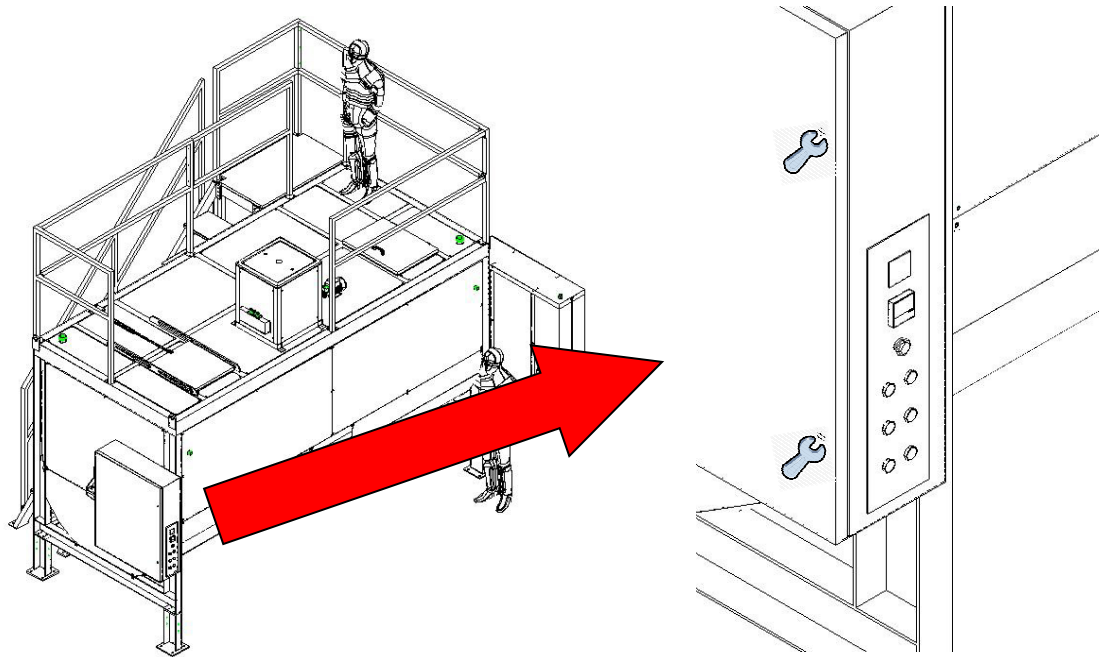
11.2.3 Chain Cover



Dismantle 8 number of M6 bolts to open the Chain Cover.

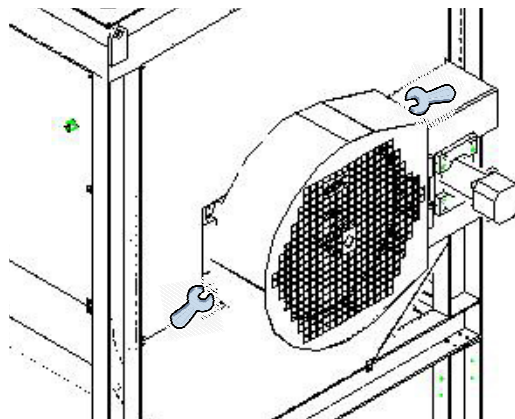
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.

11.2.4 Control Box Door



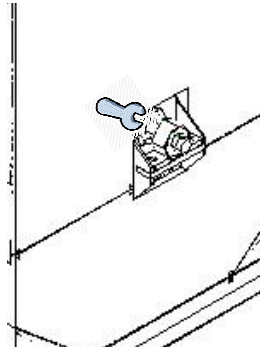
Dismantle 2 number of lock to open side door to access to Control Panel.

11.2.5 Drive Area



Dismantle 8 number of M6 bolts to open the Chain Cover.
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.

11.2.6 Dismantling Bearing & replacing Viton Seal at control panel side



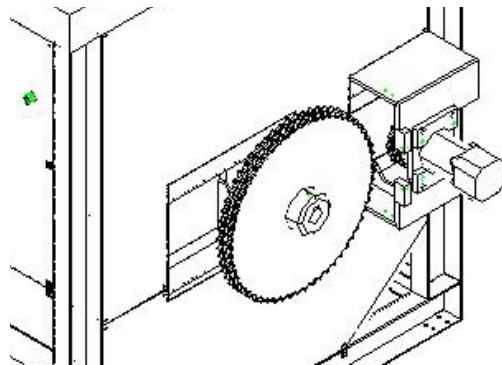
Dismantle 2 number of M16 nuts to dismantle the bearing.

Use a bearing puller to dismantle the bearing.

Dismantle 6 numbers of M6 Bolts to dismantle the seal cap.

Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.

11.2.7 Dismantling Bearing & replacing Viton Seal at drive area



Dismantle the roller chain (disengage the connection link).

Dismantle the sprocket (unlock the set screw and use a puller to disengage the sprocket).

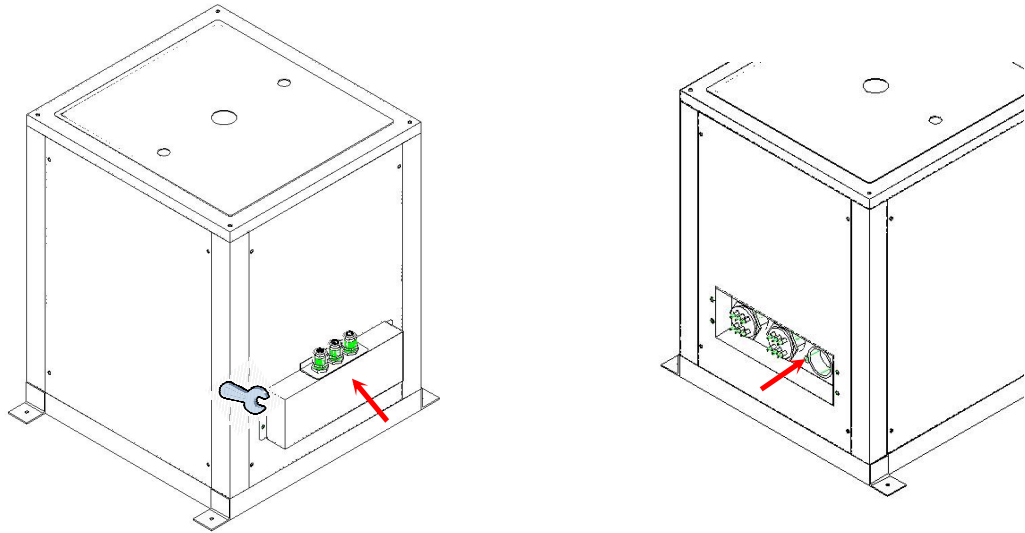
Dismantle 2 number of M16 nuts to dismantle the bearing.

Use a bearing puller to dismantle the bearing.

Dismantle 6 numbers of M6 Bolts to dismantle the seal cap.

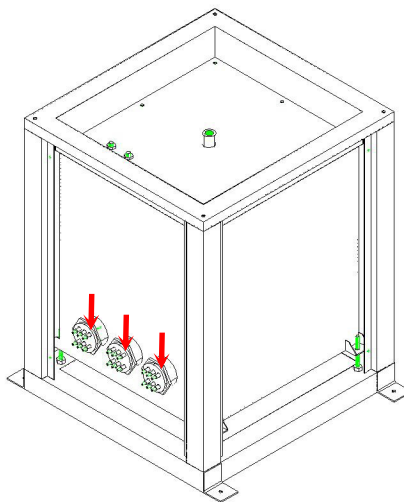
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.

11.2.8 Access to Thermocouple



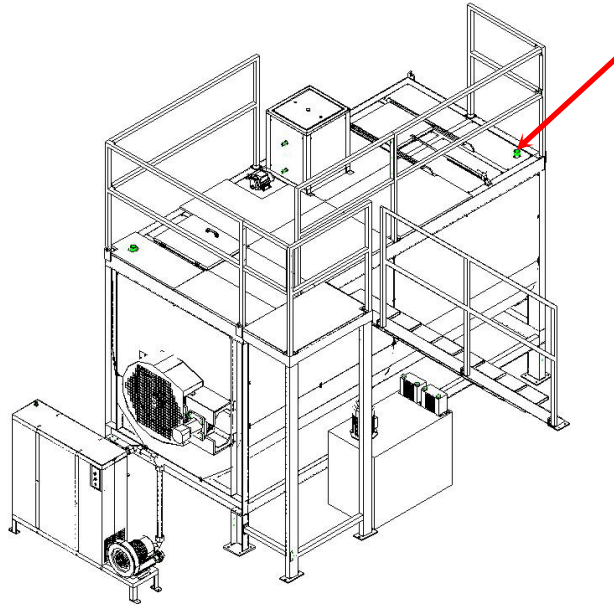
**Dismantle 4 number of M6 Bolts to open the Wiring Cap on the Oil heater.
Thermocouple are mounted at the middle of the heater.**

11.2.9 Access to heater



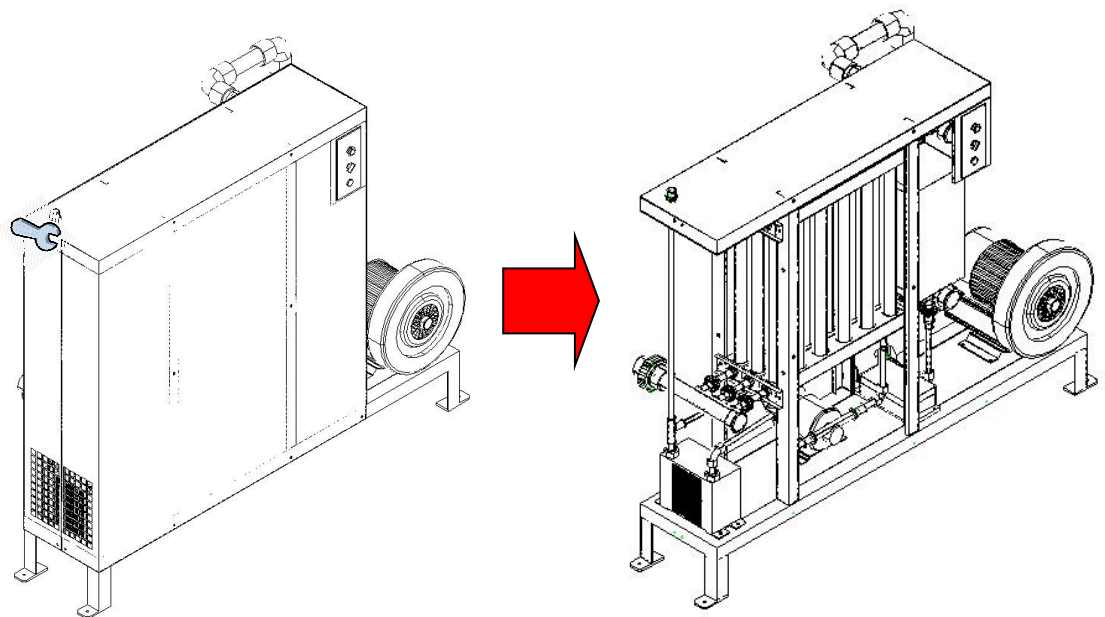
**Dismantle 4 number of M6 Bolts to open the Wiring Cap on the Oil heater.
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.**

11.2.10 Access to Filter



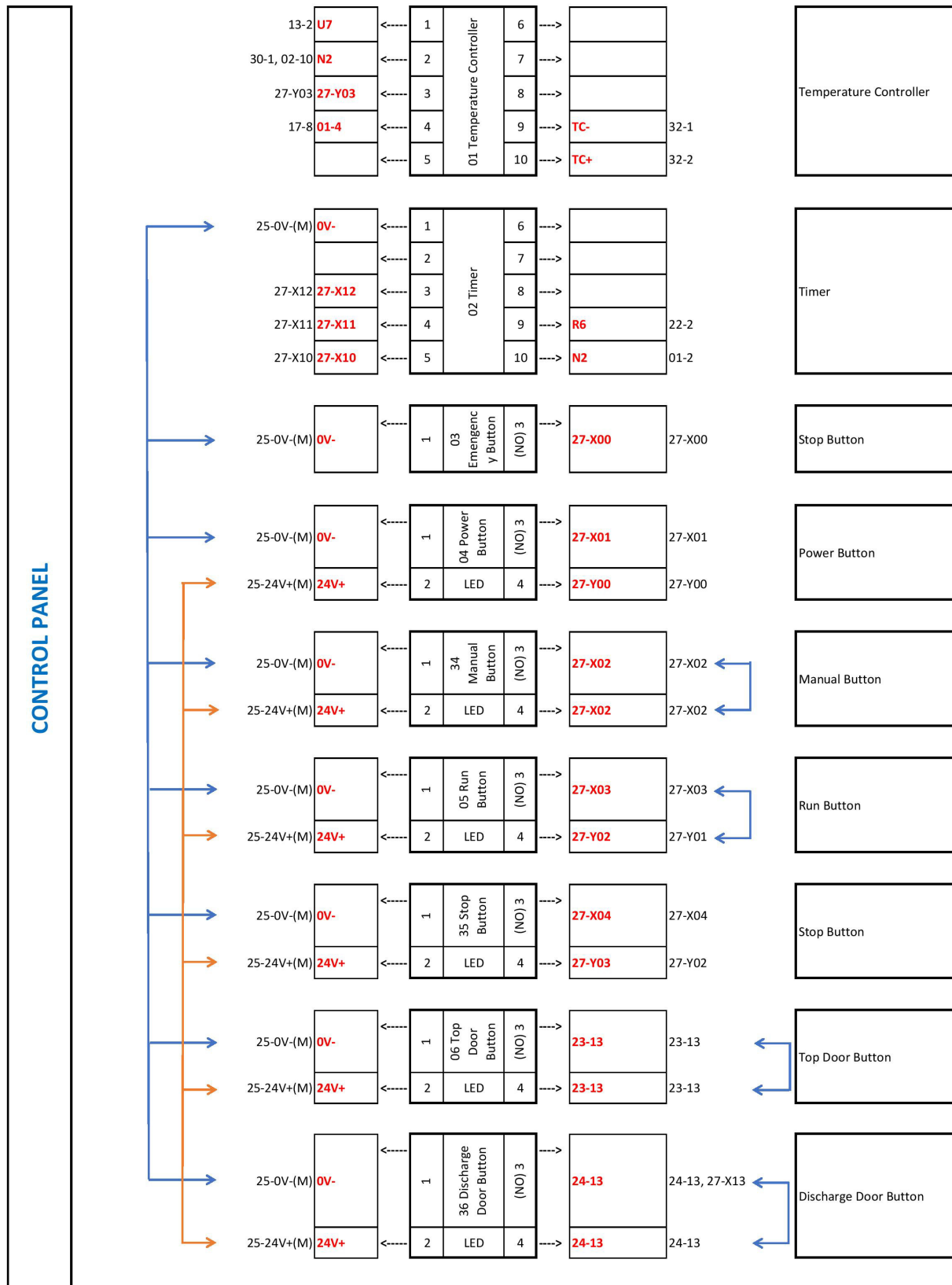
Air Filter at the top corner of the machine.

11.2.10 Access to Component for Condensing Unit



Dismantle 22 number of M6 Bolts to open the side cover on the Condensing Unit.

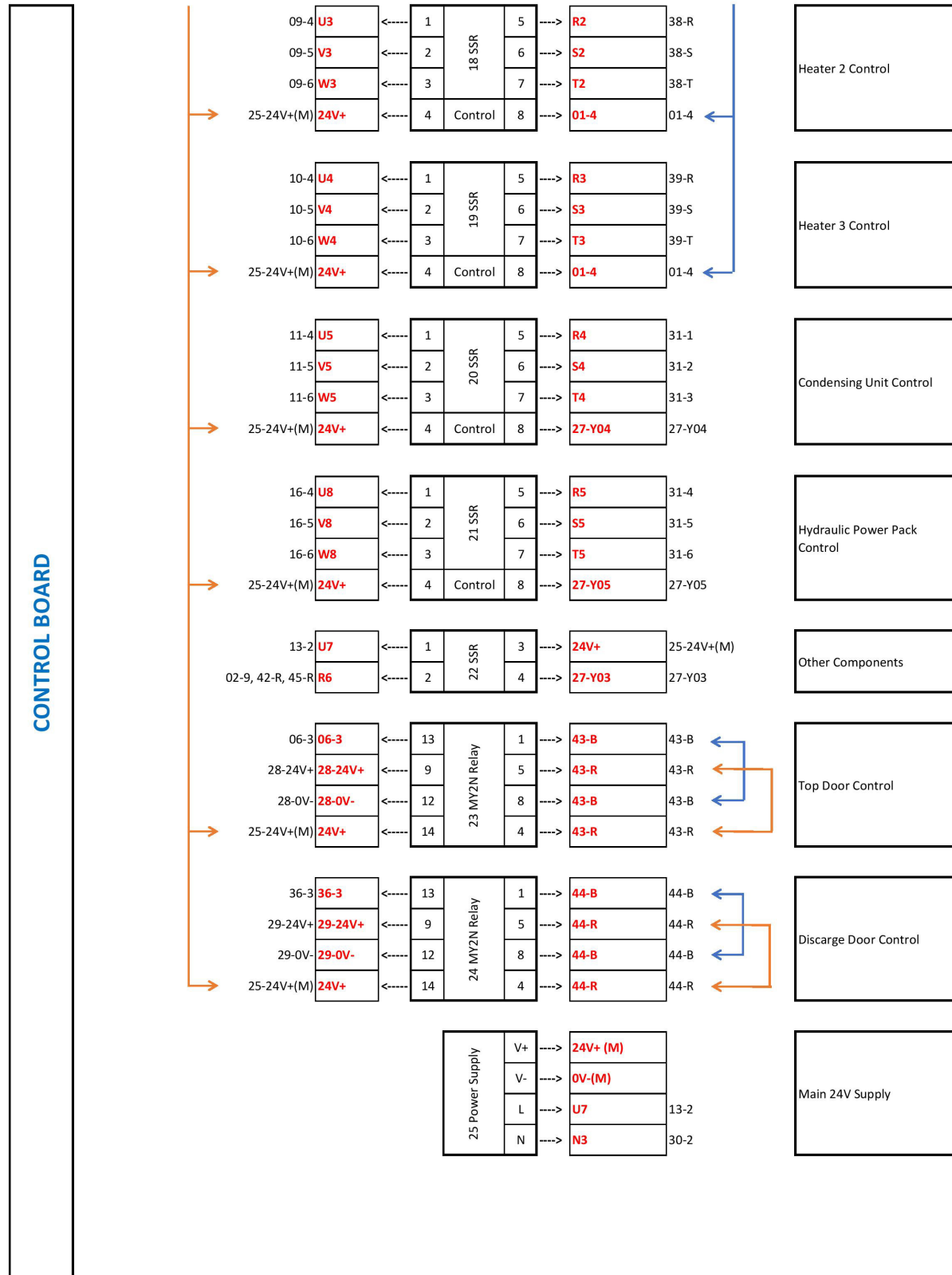
BCM-5000 MAIN ELECTRICAL DIAGRAM



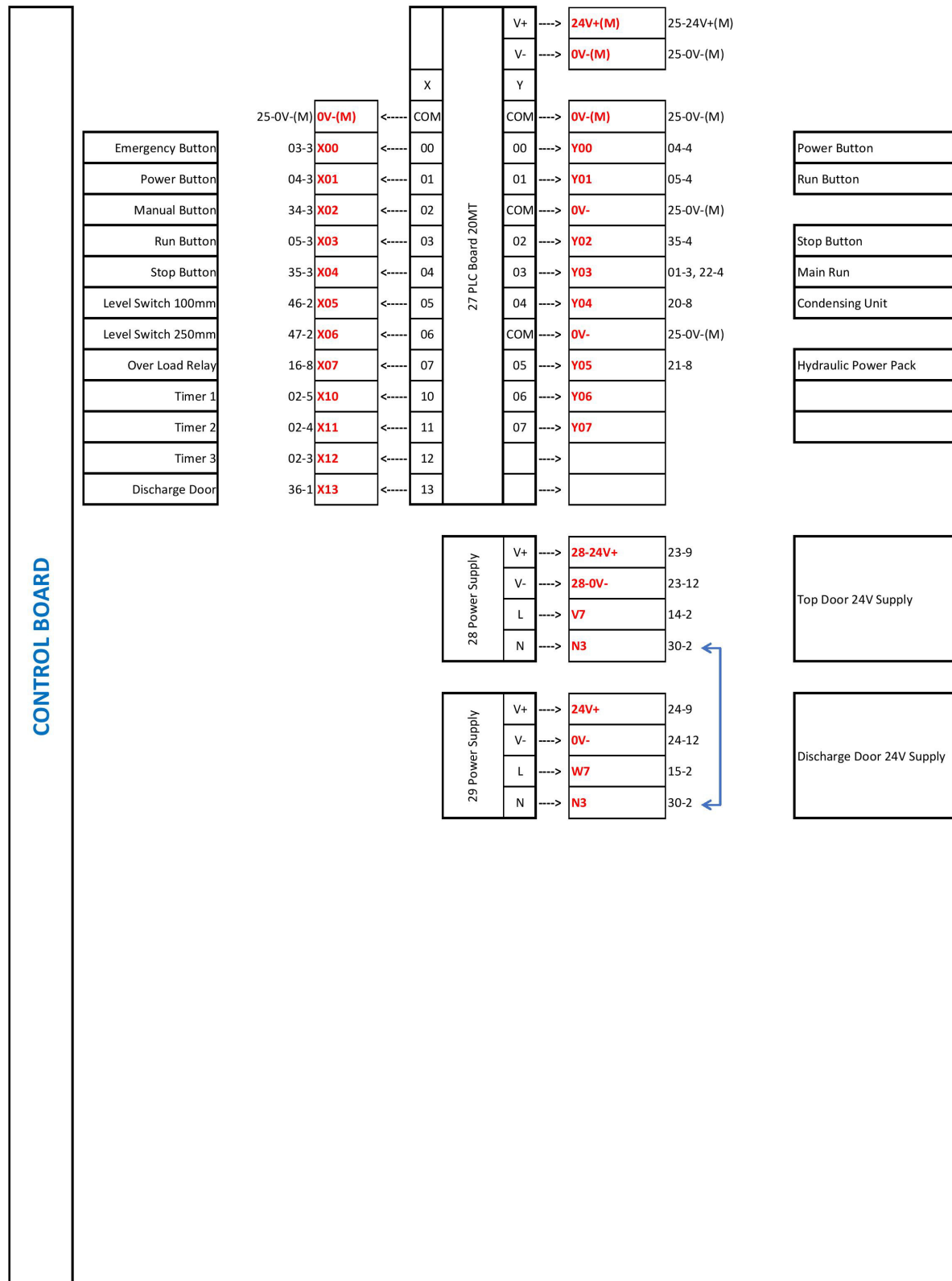
BCM-5000 MAIN ELECTRICAL DIAGRAM



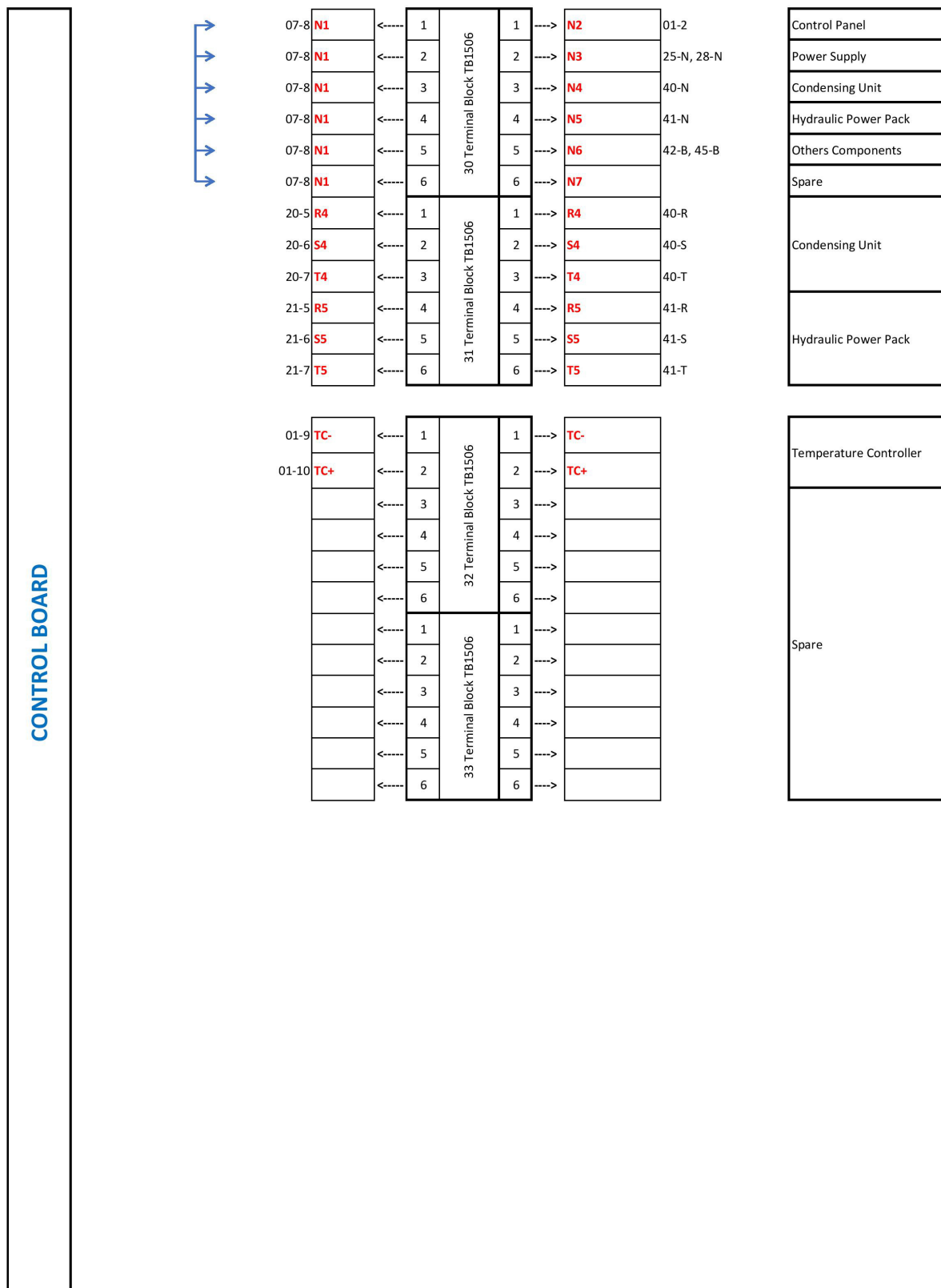
BCM-5000 MAIN ELECTRICAL DIAGRAM



BCM-5000 MAIN ELECTRICAL DIAGRAM

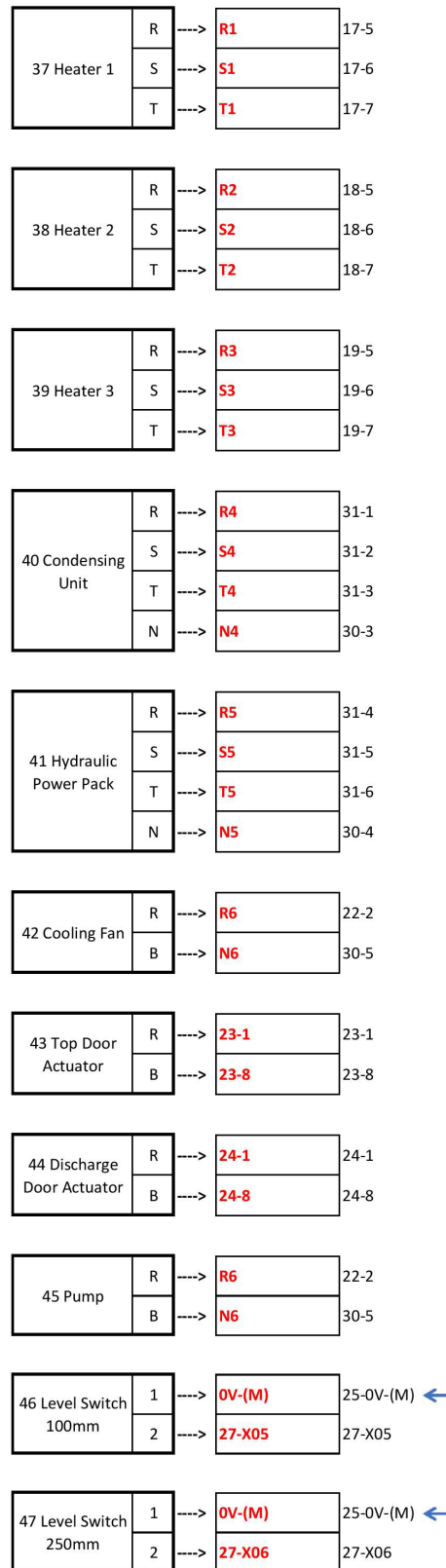


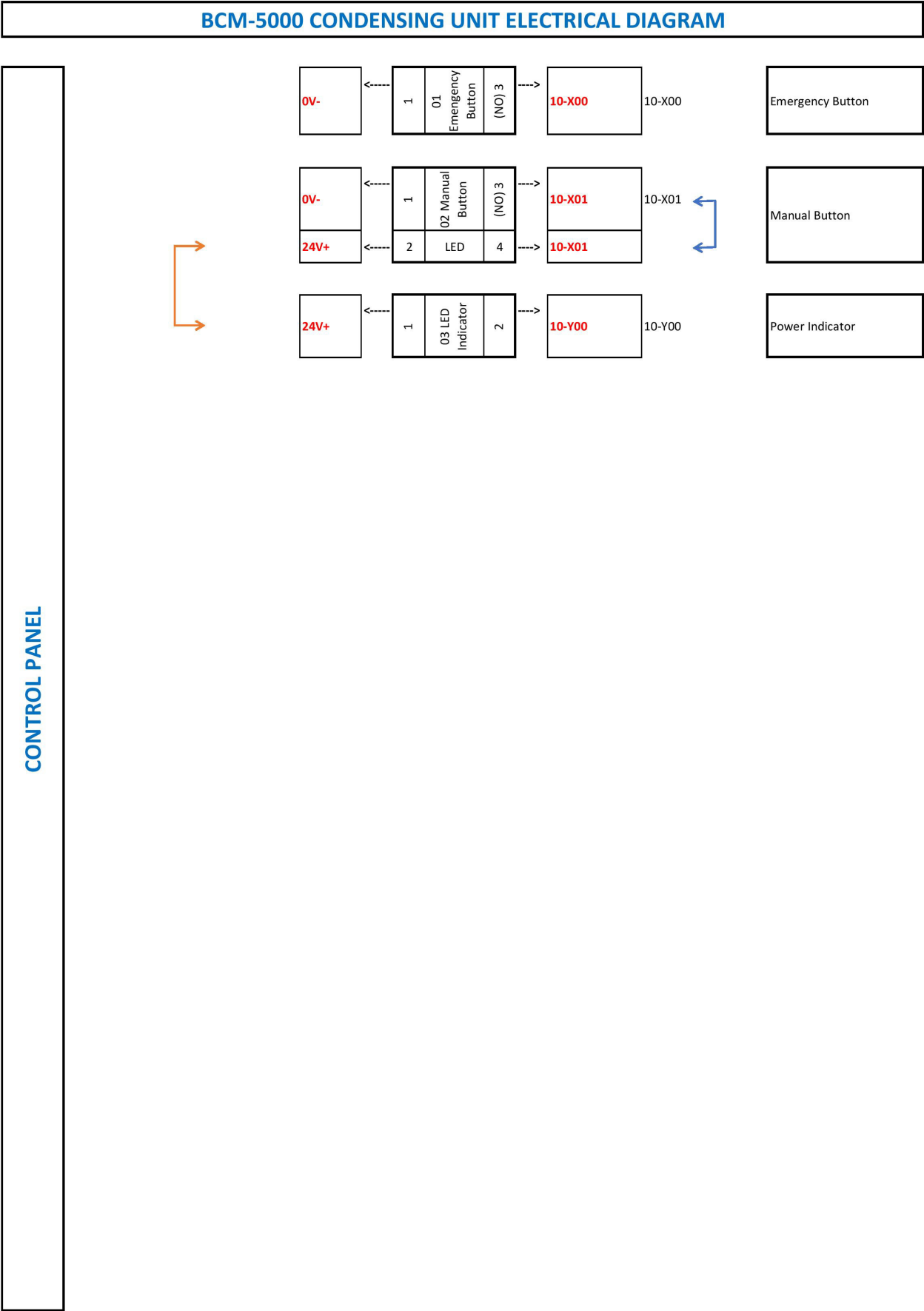
BCM-5000 MAIN ELECTRICAL DIAGRAM



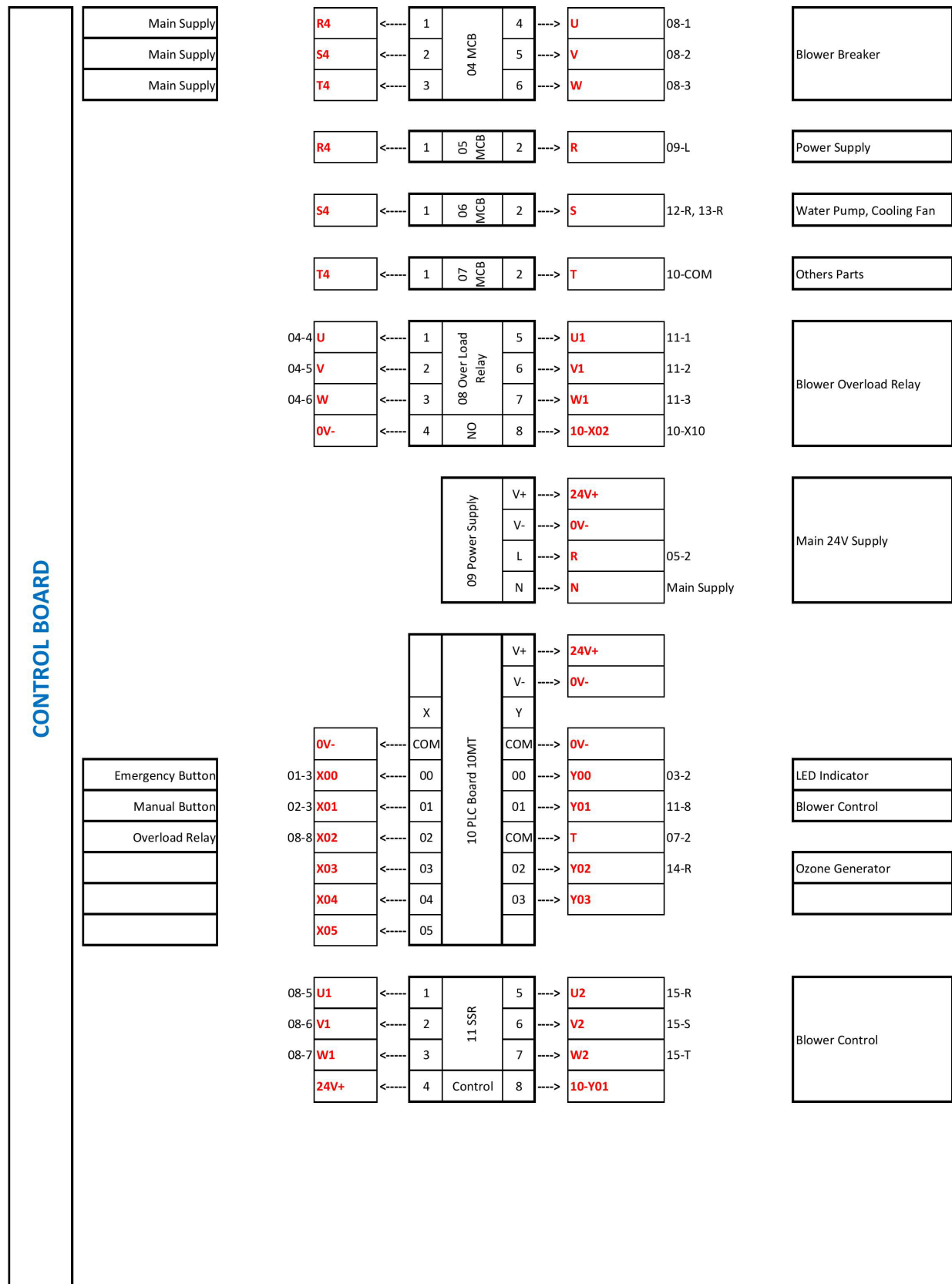
BCM-5000 MAIN ELECTRICAL DIAGRAM

COMPONENTS



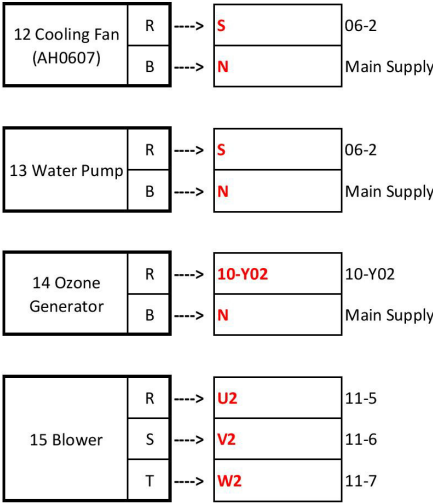


BCM-5000 CONDENSING UNIT ELECTRICAL DIAGRAM



BCM-5000 CONDENSING UNIT ELECTRICAL DIAGRAM

COMPONENTS



12.0 ATTACHMENT

12.1 CE certification

12.2 MSDS for GEC's Composting Powder

12.3 References for NPK Level for different materials

12.4 Reference for C:N level

CERTIFICATE OF REGISTRATION



The Governing Board of
Progressive International Certifications Limited hereby grant to:

GEC Integration Sdn Bhd

Address : 18, Jalan Kalui, Seberang Jaya 13700 Perai, Penang, Malaysia

Is in compliance with
Machinery Device Directive - 2006/42/EC

For the following product
**24 Hour Waste Compost Machines/Systems Such as Selling natural,
environmentally safe, treatment methods and machines.
Details as per Supplement 0001**

In accordance with
TCF No. CE/01

The present certificate exclusively refers to the product above identified, in accordance to TCF submitted in PICL. Any
Changes or modification implemented on the mentioned product will not be covered by this certificate.

Registration No.: PICL/CE/1217/8341

Certificate Issue Date: 04.12.2017

1st Surveillance: 12.2018

2nd Surveillance: 12.2019

Certificate Expire Date: 04.12.2020



Head of Certificate



This Certificate of Registration is granted subject to the Regulations approved by the Board.
PROGRESSIVE INTERNATIONAL CERTIFICATIONS LTD.
Office 4, 219, Kensington High Street, Kensington, London, W8 6BD, England.
E-mail: info@picluk.com, Website: www.picluk.com
For current validity of this certificate. Please visit our website

USE OF ACCREDITATION MARK INDICATES ACCREDITATION IN RESPECT OF THE ACTIVITIES COVERED BY
ACCREDITATION INSTITUTE ASSESMENT BODY (EUROPE) CERTIFICATION NUMBER 001



PROGRESSIVE INTERNATIONAL CERTIFICATIONS LTD.

Office 4, 219, Kensington High Street, Kensington, London, W8 6BD, England.

E-mail: info@picuk.com, Website: www.picuk.com

For current validity of this certificate. Please visit our website

Supplement 001

**Attachment for certificate no. PICL/CE/1217/8341 dated 04.12.2017 for
of following Product (s)/product Category (ies):-**

Product List:-

1 kg -	24 Hour Waste Compost Machine
5 kg –	24 Hour Waste Compost Machine
15 kg –	24 Hour Waste Compost Machine
50 kg –	24 Hour Waste Compost Machine
100 kg –	24 Hour Waste Compost Machine
200 kg –	24 Hour Waste Compost Machine
300 kg –	24 Hour Waste Compost Machine
500 kg –	24 Hour Waste Compost Machine
1000 kg –	24 Hour Waste Compost Machine
2000 kg –	24 Hour Waste Compost Machine
3000 kg –	24 Hour Waste Compost Machine
4000 kg –	24 Hour Waste Compost Machine
5000 kg –	24 Hour Waste Compost Machine
10 ton –	24 Hour Waste Compost System
15 ton –	24 Hour Waste Compost System
20 ton –	24 Hour Waste Compost System
25 ton –	24 Hour Waste Compost System
30 ton –	24 Hour Waste Compost System
40 ton –	24 Hour Waste Compost System
50 ton –	24 Hour Waste Compost System

GEC INTEGRATION SDN BHD

MATERIAL SAFETY DATA SHEET

Not classified as hazardous according to criteria of the American standards.

1. IDENTIFICATION

Product Name	COMPOSTING POWDER
Other Name	N/A
Chemical name	Bacterial Blend
Product Use	Use as additive for Strata Biogreen Composting Machine and Assisted Fermentation Vessel
Company Name	Strata-Biogreen
Address	See Below
Phone	See Below

GEC Integration Sdn Bhd
18, Jalan Kalui, Seberang Jaya,
13700 Perai, Penang Malaysia
Phone: +60125080559
Mial.gecsb@gmail.com



GEC INTEGRATION SDN BHD

2. HAZARD IDENTIFICATION

Hazard Classification	Not Classified as Hazardous According to American Standards All non toxic
Dangerous Goods	Not Classified as Dangerous Good According to The Criteria of The American Standards
Signs And Symptoms Of Acute Overexposure	See Below
Irritation	Non Irritant to Skin or Eyes
Antidote	Treat Symptomatically
16 Cfr Rating	Non-Toxic
NFPA Rating	(NFPA 704) Health 0 Fire 0
Flash Point	N/A
Auto-Ignition Temperature	N/A
Extinguishing Media	N/A
Fire Fighting Protection	N/A
Unusual Fire Hazards	N/A

3. COMPOSITION INFORMATIONS ON INGREDIENTS

Ingredient: C Tlv: Hazards	Contains no hazardous materials. All non toxic
Dot Hazard Class	No DOT Regulated
Appearance	Brown Powder
Hazardous Polymerization	Will Not Occur

GEC Integration Sdn Bhd
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13700 Perai, Penang Malaysia
Phone: +60125080559
Mial.gecsb@gmail.com



GEC INTEGRATION SDN BHD

4. FIRST AID MEASURES

Signs And Symptoms Of Acute Overexposure	No Adverse Effects Have Been Found
Advise To Doctor	Treat Symptomatically
Inhalation	Normal Use Should Not Cause Irritation. If Reaction occurs, Remove to Fresh Air and Consult Your Physician.
Ingestion	Product Is Not To Be Taken Internally. If This Occurs Do Not Induce Vomiting, Rinse Mouth And Drink 1 Or 2 Large Glasses Of Water And Seek Medical Attention.
Skin	Normal Use Should Not Cause Irritation. Wash Skin With Soap And Water After Contact with Product. If Irritation Occurs, Consult Your Physician.
Eyes	If Product Contacts Eye Area, Flush with Water for 15 Minutes.
First Aid Facilities	Fresh Water To Drink Or To Rinse Where Affected

5. FIRE FIGHTING MEASURES

Extinguishing Media	N/A Use Appropriate Media Depending On The Source Of Fire
Flammable limits	N/A
Unusual Fire Hazards	None
Hazard From Combustible Products	If Involved In A Major Fire, This Product Does Not Emit Toxic Fumes, including Carbon Monoxide, Dioxide or Oxides of Sulfur
Precautions For Fire Fighters	Precautions Appropriate to The Source of Fire
Special Fire Provisions	None
Personal Protection	Use as Directed

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18, Jalan Kalui, Seberang Jaya,
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Mial.gecsb@gmail.com



GEC INTEGRATION SDN BHD

6. ACCIDENTAL RELEASE MEASURES

Release Or Spill Procedures	In The Event of a Spill or Leak, Dispose of Waste In Compliance With The Local Regulations
Emergency Procedure	Slippery When Spills. Clean up Spills Immediately To Avoid Further Accident. Spills may be Softly Brushed up.when Handling Large Spills, Wear Safety Boots, Safety Glasses and Gloves
Disposals	Dispose of Waste by Sending to Landfill, or in Accordance with the Local Regulations

7. HANDLING AND STORAGE.

Storage	Avoid Extreme Heat, Store In A Cool Dry Place, Do Not Freeze. Store In Original Container. Shelf Life : 2 Years
Handling	This Product Is Intended to Use as Treatment of Waste Water.
Other Precautions	Good Housekeeping Procedures. Container Disposal : Do Not Reuse Container. When Empty Dispose of in Accordance with Local Laws And Ordinances.

GEC Integration Sdn Bhd
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Mial.gecsb@gmail.com



GEC INTEGRATION SDN BHD

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Standards	None Established For This Product
Biological Limits	None Allocated
Engineering Controls	No Special Engineering Controls Required
Personal Protective Equipments	Protect Eyes with Splash Proof Glasses. Protect Skin with Rubber Gloves and Apron. When Handling in Bulk, Observe Good Industrial Hygiene Practice. No Other Protection Required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Hazardous Polymerization	N/A
Appearance	Beige Powder
pH	N/A
Flash Point	N/A
Flammable Limits	Non Flammable Non Combustible
Auto-Ignition Temperature	N/A
Solubility In Water	Emulsifiable
Chemical Family	Bacteria Blend
Specific Gravity	.885
Boiling Point	310°F
Evaporation Rate	< 1 %
Vapor Density	0.012

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Mial.gecsb@gmail.com



GEC INTEGRATION SDN BHD

10. STABILITY AND REACTIVITY.

Chemical Stability	Non Chemical Product. Stable Product. Observe The Conditions Required For Storage And Handling
Conditions To Avoid	Extreme Heat or cold Strong Acids and Bases
Incompatibility	Not Compatible with Strong Acids
Hazardous Decomposition Products	N/A
Hazardous Polymerization	N/A

11. TOXICOLOGICAL INFORMATION.

Health Hazard Information :	See Below
<u>Effects Of Overexposure</u>	No Adverse Effects Have Been Found
Ingestion	If Taken Internally May Be Harmful, Consult A Physician.
Skin	Prolonged Contact May Irritate Skin.
Eyes	No Adverse Effects Have Been Found
Toxicity Data	No Toxicity Data Available

12. ECOLOGICAL INFORMATION.

Ecotoxicity	Non Toxic. No Data Available
Persistent And Degradability	100 % Bio-Degradable
Mobility	No Data Available

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Mial.gecsb@gmail.com



GEC INTEGRATION SDN BHD

13. DISPOSAL CONSIDERATIONS.

Waste Disposal	Normally Suitable for Disposal at Approved Waste Site
Legislation	Dispose of in Accordance with Local Regulations

14. TRANSPORT INFORMATION ;

Proper Shipping Name	None Allocated
Class And Subsidiary Risk	None Allocated
Packing Group	None Allocated
Special Precautions	None Allocated
Hazard Chemical Code	None Allocated

15. OTHER INFORMATION.

Contact Point	Jeffrey Tober
Title	Technical Consultant
Phone	+1 888.594.5329
After Office Hours	Same
Shelf Life Of Product	2 Years Under Required Conditions

The information contained in this Material Safety Data Sheet is believed to be accurate and reliable ; however GEC Integration Sdn Bhd shall not be liable for any inaccuracy in the information or for any loss, injury or damage, whatsoever arising from the use of this product as conditions and methods of use are beyond our control. Users should read this Material Safety Data Sheet and evaluate the information in the context of how the user intends to use and handle this product in the workplace, including the use of this product with other products.

Date of issue : 15th of January 2016.

GEC Integration Sdn Bhd
18, Jalan Kalui, Seberang Jaya,
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Mial.gecsb@gmail.com



12.3 References for NPK Level for different materials

Alfalfa Pellets (3-1-2) avg release 40g/sq ft

Corn Gluten (6-0-0) avg release 15g/sq ft

Compost (1-1-1) slow release 125g/sq ft

Bird guano (10-3-1 variable) fast release 25g/sq ft

Cow manure (2-0-0 variable) avg release 60g/sq ft

Horse manure (5-2.5-6 variable) avg release 20g/sq ft

Soybean meal (6-1.5-2) avg release 20g/sq ft

Worm castings (1-0-0) slow release 150g/sq ft

Kelp (1-0.2-2) fast release 15g/sq ft

Insect manure (4-3-2) fast release 35g/sq ft

Fish emulsion (5-2-2 liquid) fast release 1ml/sq ft

Cottonseed meal (6-2-2) avg release 20g/sq ft

Bone meal (2-11-0) slow release 25g/sq ft

Blood meal (12-0-0) fast release 10g/sq ft

Alfalfa Hay: 2.45/05/2.1

Apple Fruit: 0.05/0.02/0.1

Apple Leaves: 1.0/0.15/0.4

Apple Pomace: 0.2/0.02/0.15

Apple skins(ash) : 0/3.0/11/74

Banana Residues (ash): 1.75/0.75/0.5

Barley (grain): 0/0/0.5

Barley (straw): 0/0/1.0

Basalt Rock: 0/0/1.5

Bat Guano: 5.0-8.0/4.0-5.0/1.0

Beans, garden(seed and hull): 0.25/0.08/03

Beet Wastes: 0.4/0.4/0.7-4.1

Blood meal: 15.0/0/0

Bone Black: 1.5/0/0

References for NPK Level for different materials (cont'l)

Bonemeal (raw): 3.3-4.1/21.0/0.2

Bonemeal (steamed): 1.6-2.5/21.0/0.2

Brewery Wastes (wet): 1.0/0.5/0.05

Buckwheat straw: 0/0/2.0

Cantaloupe Rinds (ash): 0/9.77/12.0

Castor pomace: 4.0-6.6/1.0-2.0/1.0-2.0

Cattail reeds and water lily stems: 2.0/0.8/3.4

Cattail Seed: 0.98/0.25/0.1

Cattle Manure (fresh): 0.29/0.25/0.1

Cherry Leaves: 0.6/0/0.7

Chicken Manure (fresh): 1.6/1.0-1.5/0.6-1.0

Clover: 2/0/0/0 (also contains calcium)

Cocoa Shell Dust: 1.0/1.5/1.7

Coffee Grounds: 2.0/0.36/0.67

Corn (grain): 1.65/0.65/0.4

Corn (green forage): 0.4/0.13/0.33

Corn cobs: 0/0/2.0

Corn Silage: 0.42/0/0

Cornstalks: 0.75/0/0.8

Cottonseed hulls (ash): 0/8.7/23.9

Cottonseed Meal: 7.0/2.0-3.0/1.8

Cotton Wastes (factory): 1.32/0.45/0.36

Cowpea Hay: 3.0/0/2.3

Cowpeas (green forage): 0.45/0.12/0.45

Cowpeas (seed): 3.1/1.0/1.2

Crabgrass (green): 0.66/0.19/0.71

Crabs (dried, ground): 10.0/0/0

Crabs (fresh): 5.0/3.6/0.2

References for NPK Level for different materials (cont'l)

Cucumber Skins (ash): 0/11.28/27.2

Dried Blood: 10.0-14.0/1.0-5.0/0

Duck Manure (fresh): 1.12/1.44/0.6

Eggs: 2.25/0.4/0.15

Eggshells: 1.19/0.38/0.14

Feathers: 15.3/0/0

Felt Wastes: 14.0/0/1.0

Field Beans (seed): 4.0/1.2/1.3

Field Beans (shells): 1.7/0.3/1.3

Fish (dried, ground): 8.0/7.0/0

Fish Scraps (fresh): 6.5/3.75/0

Gluten Meal: 6.4/0/0

Granite Dust: 0/0/3.0-5.5

Grapefruit Skins (ash): 0/3.6/30.6

Grape Leaves: 0.45/0.1/0.4

Grape Pomace: 1.0/0.07/0.3

Grass (imature): 1.0/0/1.2

Greensand: 0/1.5/7.0

Hair: 14/0/0/0

Hoof and Horn Meal: 12.5/2.0/0

Horse Manure (fresh): 0.44/0.35/0.3

Incinerator Ash: 0.24/5.15/2.33

Kentucky Bluegrass (green): 0.66/0.19/0.71

Kentucky Bluegrass (hay): 1.2/0.4/2.0

Leather Dust: 11.0/0/0

Lemon Culls: 0.15/0.06/0.26

Lemon Skins (ash): 06.33/1.0

Lobster Refuse: 4.5/3.5/0

References for NPK Level for different materials (cont'l)

Milk: 0.5/0.3/0.18

Millet Hay: 1.2/0/3.2

Molasses Residue

(From alcohol manufacture): 0.7/0/5.32

Molasses Waste

(From Sugar refining): 0/0/3.0-4.0

Mud (fresh water): 1.37/0.26/0.22

Mud (harbour): 0.99/0.77/0.05

Mud (salt): 0.4/0/0

Mussels: 1.0/0.12/0.13

Nutshells: 2.5/0/0

Oak Leaves: 0.8/0.35/0.2

Oats (grain): 2.0/0.8/0.6

Oats (green fodder): 0.49/0/0

Oat straw: 0/0/1.5

Olive Pomace: 1.15/0.78/1.3

Orange Culls: 0.2/0.13/0.21

Orange Skins: 0/3.0/27.0

Oyster Shells: 0.36/0/0

Peach Leaves: 0.9/0.15/0.6

Pea forage: 1.5-2.5/0/1.4

Peanuts (seed/kernals): 3.6/0.7/0.45

Peanut Shells: 3.6/0.15/0.5

Pea Pods (ash): 0/3.0/9.0

Pea (vines): 0.25/0/0.7

Pear Leaves: 0.7/0/0.4

Pigeon manure (fresh): 4.19/2.24/1.0

Pigweed (rough): 0.6/0.1/0

References for NPK Level for different materials (cont'l)

Pine Needles: 0.5/0.12/0.03

Potato Skins (ash): 0/5.18/27.5

Potaote Tubers: 0.35/0.15/2.5

Potatoe Vines (dried): 0.6/0.16/1.6

Prune Refuse: 0.18/0.07/0.31

Pumpkins (fresh): 0.16/0.07/0.26

Rabbitbrush (ash): 0/0/13.04

Rabbit Manure: 2.4/1.4/0.6

Ragweed: 0.76/0.26/0

Rapeseed meal: 0/1.0=2.0/1.0=3.0

Raspberry leaves: 1.45/0/0.6

Red clover hay: 2.1/0.6/2.1

Redrop Hay: 1.2/0.35/1.0

Rock and Mussel Deposits

From Ocean: 0.22/0.09/1.78

Roses (flowers): 0.3/0.1/0.4

Rye Straw: 0/0/1.0

Salt March Hay: 1.1/0.25/0.75

Sardine Scrap: 8.0/7.1/0

Seaweed (dried): 1.1-1.5/0.75/4.9 (Seaweed is loaded with micronutrients including: Boron, Iodine, Magnesium and so on.)

Seaweed (fresh): 0.2-0.4/0/0

Sheep and Goat Manure (fresh): 0.55/0.6/0.3

Shoddy and Felt: 8.0/0/0

Shrimp Heads (dried): 7.8/4.2/0

Shrimp Wastes: 2.9/10.0/0

Siftings From Oyster Shell Mounds: 0.36/10.38/0.09

Silk Mill Wastes: 8.0/1.14/1.0

Silkworm Cocoons: 10.0/1.82/1.08

References for NPK Level for different materials (cont'l)

Sludge: 2.0/1.9/0.3

Sludge (activated): 5.0/2.5-4.0/0.6

Smokehouse/Firepit Ash: 0/0/4.96

Sorghum Straw: 0/0/1.0

Soybean Hay: 1.5-3.0/0/1.2-2.3

Starfish: 1.8/0.2/0.25

String Beans (strings and stems, ash): 0/4.99/18.0

Sugar Wastes (raw): 2.0/8.0/0

Sweet Potatoes: 0.25/0.1/0.5

Swine Manure (fresh): 0.6/0.45/0.5

Tanbark Ash: 0/0.34/3.8

Tanbark Ash (spent): 0/1.75/2.0

Tankage: 3.0-11.0/2.0-5.0/0

Tea Grounds: 4.15/0.62/0.4

Timothy Hay: 1.2/0.55/1.4

Tobacco Leaves: 4.0/0.5/6.0

Tobacco Stems: 2.5-3.7/0.6-0.9/4.5-7.0

Tomatoe Fruit: 0.2/0.07/0.35..Hot compost kill seed.

Tomatoe Leaves: 0.35/0.1/0.4

Tomatoe Stalks: 0.35/0.1/0.5

Tung Oil Pumace: 6.1/0/0

Vetch Hay: 2.8/0/2.3

Waste Silt: 9.5/0/0

Wheat Bran: 2.4/2.9/1.6

Wheat (grain): 2.0/0.85/0.5

Wheat Straw: 0.5/0.15/0.8

White Clover (Green): 0.5/0.2/0.3

Winter Rye Hay: 0/0/1.0

References for NPK Level for different materials (cont'l)

Wood Ash: 0/1.0-2.0/6.0-10.0 (A note on Wood ash: Wood Ash can contain chemicals that could harm plants and also carcinogens so, they should be composted in moderation)

Wool Wastes: 3.5-6.0/2.0-4.0/1.0-3.

12.4 References of C:N level for difference base materials:

Material	C:N
ASHES, WOOD	25:1
CARDBOARD, SHREDDDED	350:1
CORNS STALK	75:1
FRUIT WASTE	35:1
LEAVES	60:1
NEWSPAPERS, SHREDDDED	175:1
PEANUT SHELL	35:1
PINE NEEDLES	80:1
SAWDUST	325:1
STRAW	75:1
WOOD CHIPS	400:1
ALFALFA	12:1
CLOVER	23:1
COFFEE GROUND	20:1
FOOD WASTE	20:1
GARDEN WASTE	30:1
GRASS CLIPPING	20:1
HAY	25:1
MANURES	15:1
SEAWEED	19:1
VEGETABLES SCRAP	25:1
WEEDS	30:1

THE END