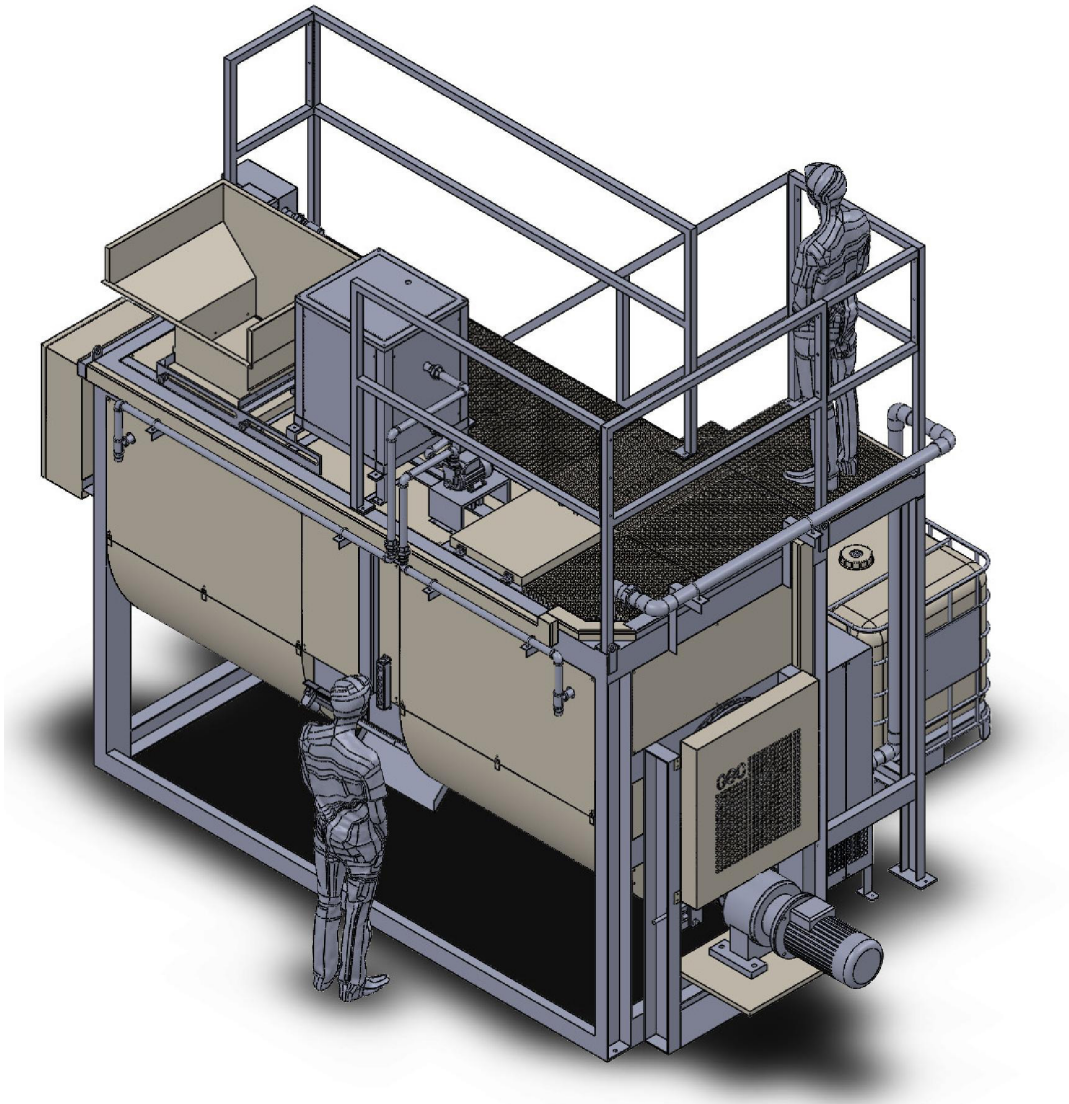




USER MANUAL
FOR
24HRS BIO REMEDIATION MACHINE
BRM-5000
Patent Pending Number PI2018700916



PREPARED BY: JOSEPH WONG
REVISION: 00
DATED: 1 MARCH 2021

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1.0 USE OF MANUAL

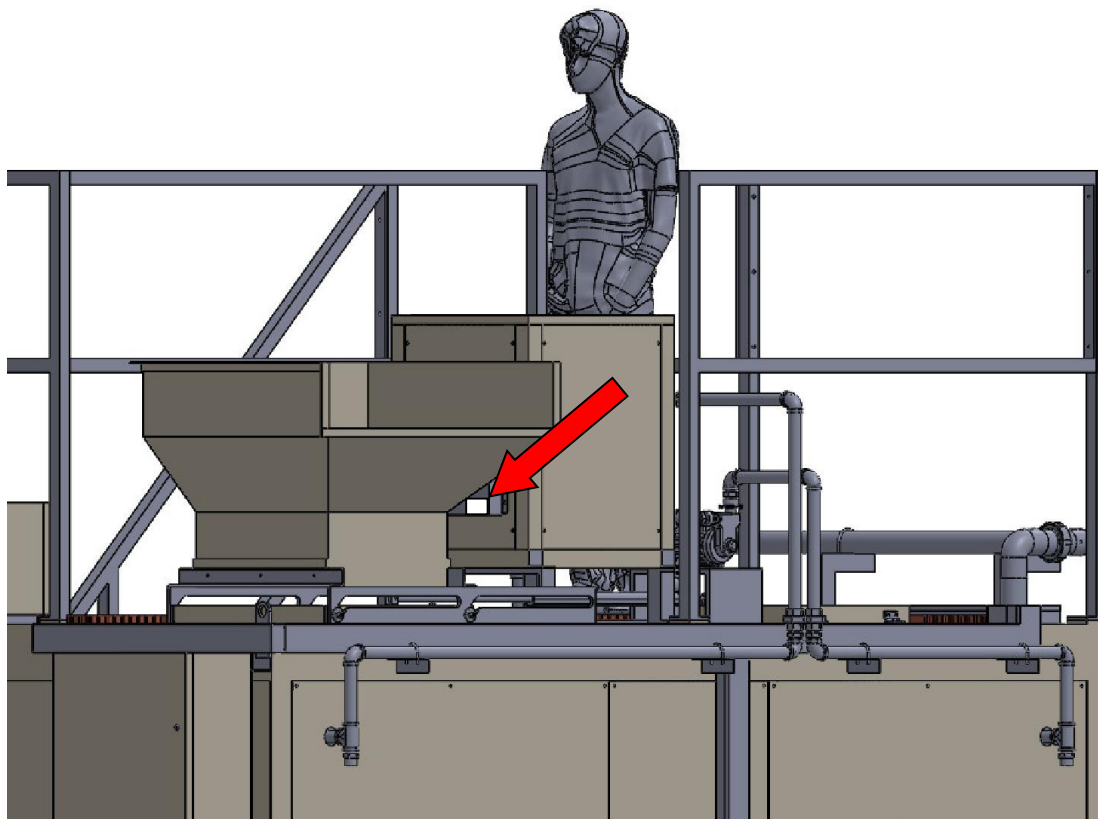
The purpose of this manual is to illustrate the technical details of the machine, the know-how of operating, the maintenance procedure, trouble shooting and repair and the set up procedure.

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

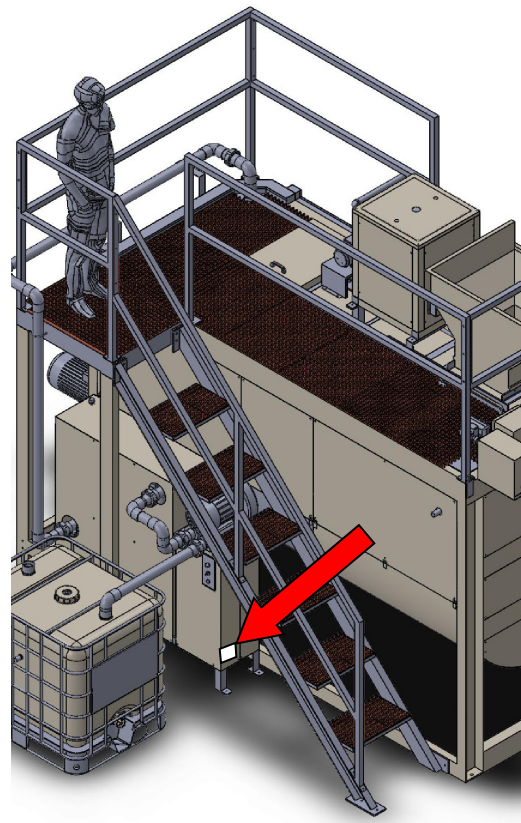
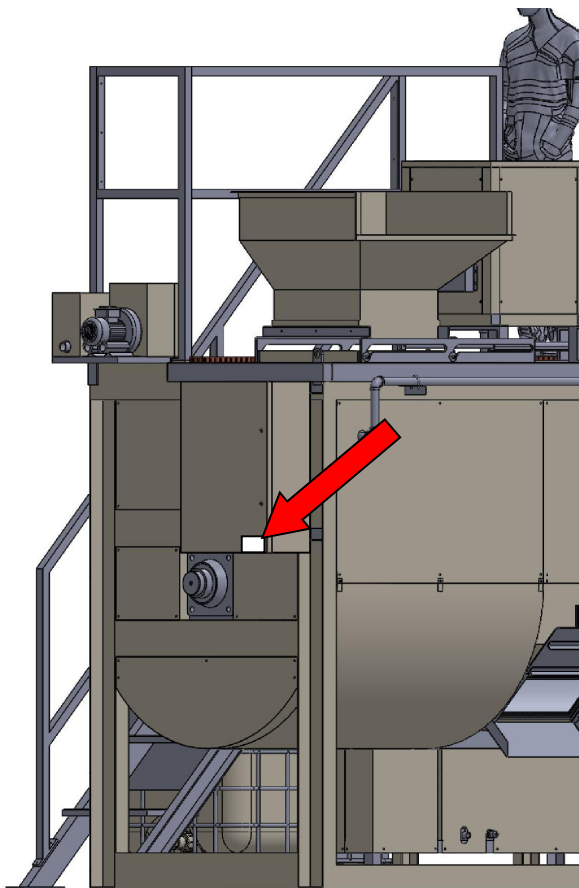


Location (RED ARROW)

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.



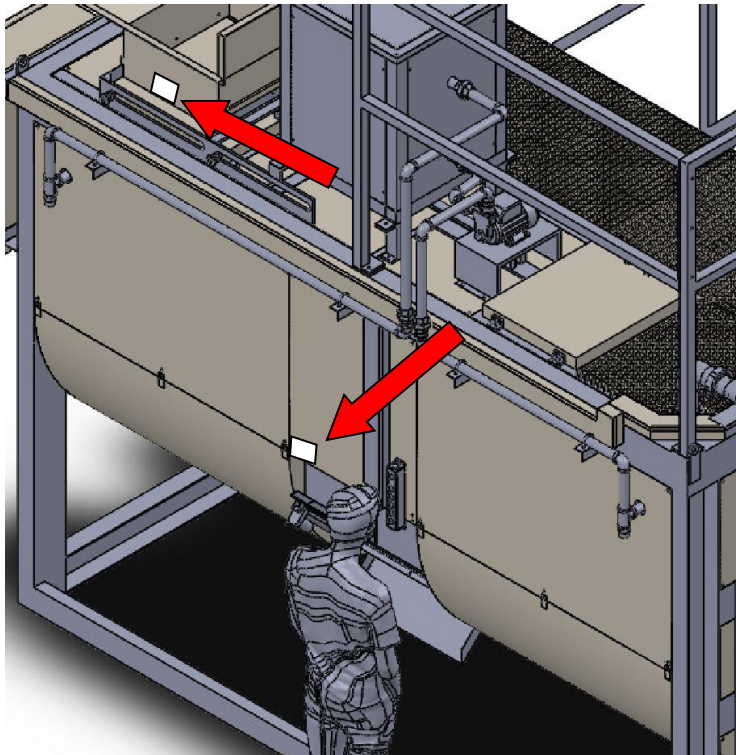
Location (RED ARROW)

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.



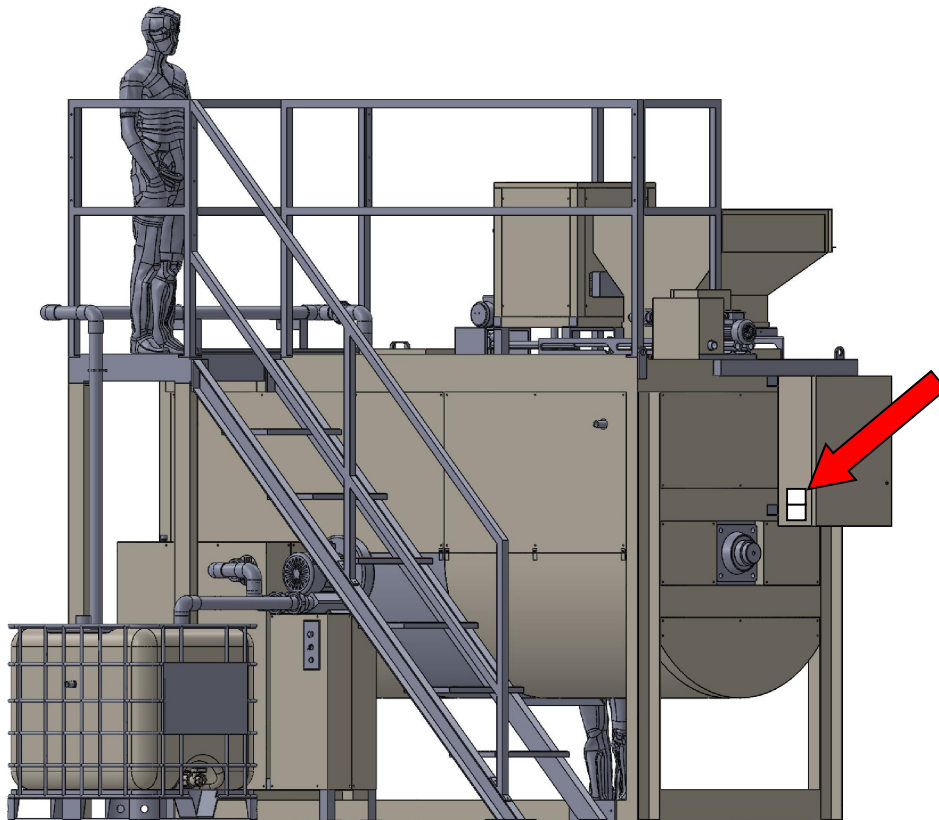
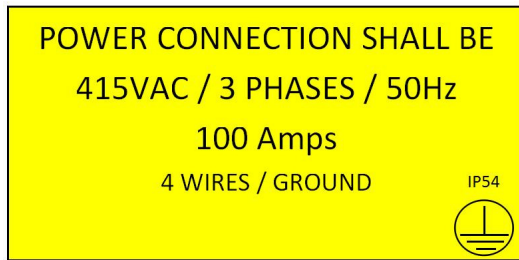
Location **(RED ARROW)**

Caution mark located at front top of the inlet door.

Caution mark located at the front of the Inlet Chute.

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.



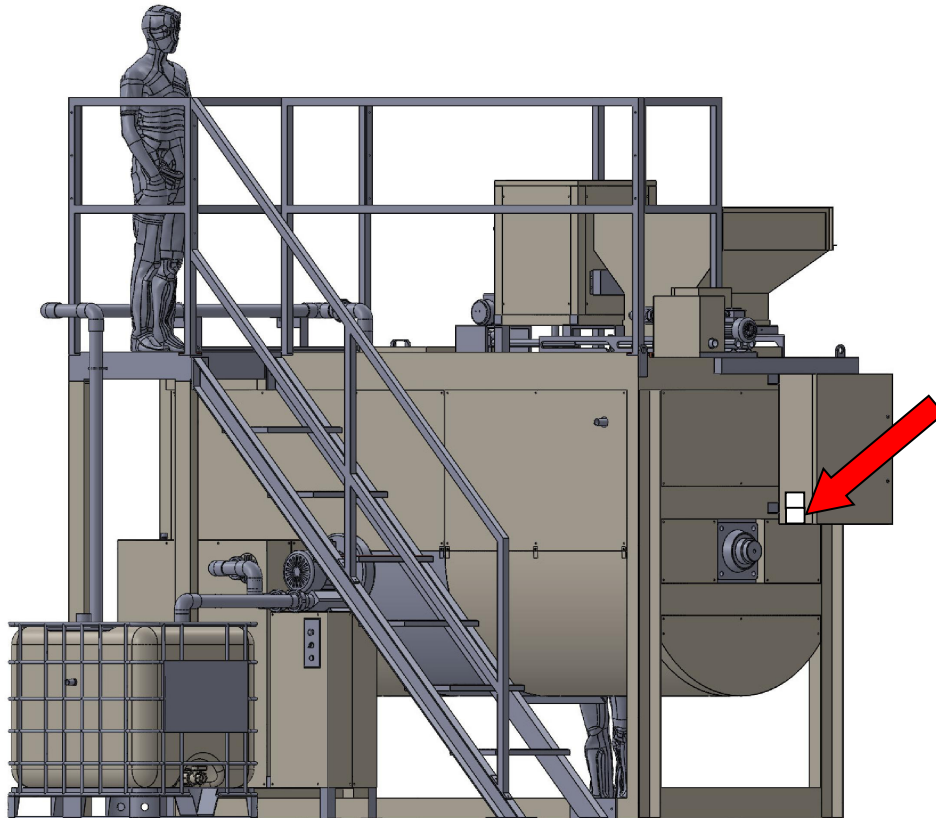
Location (RED ARROW)

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

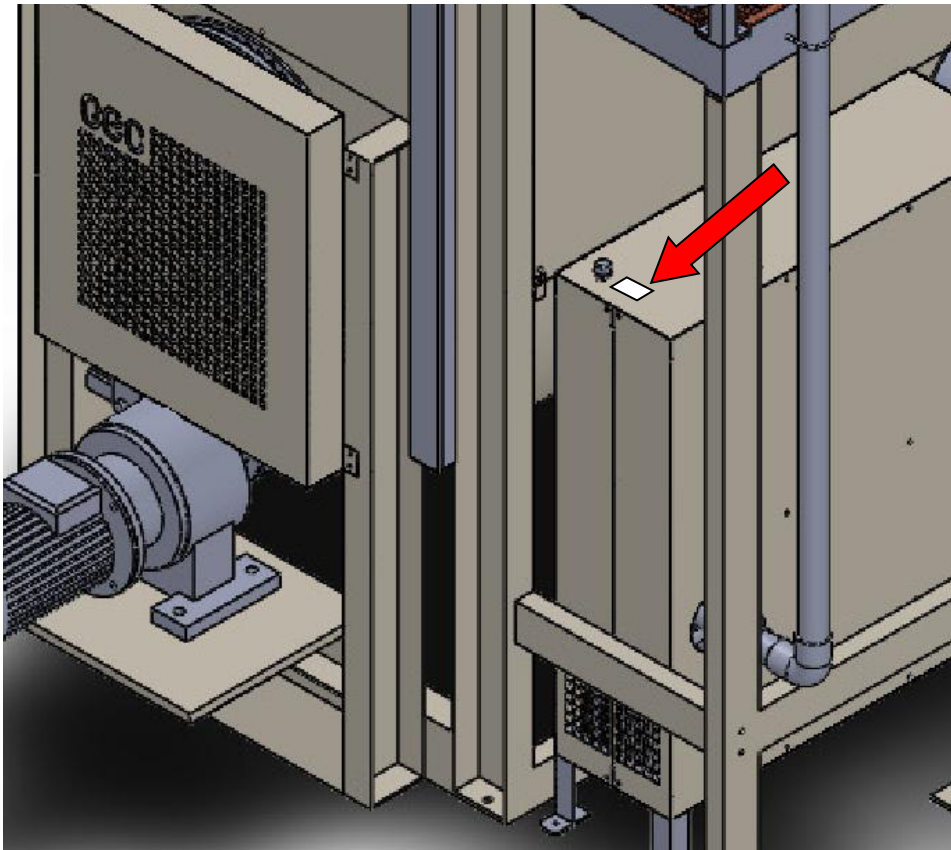
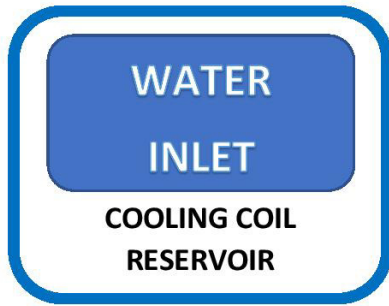


Location (RED ARROW)

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.

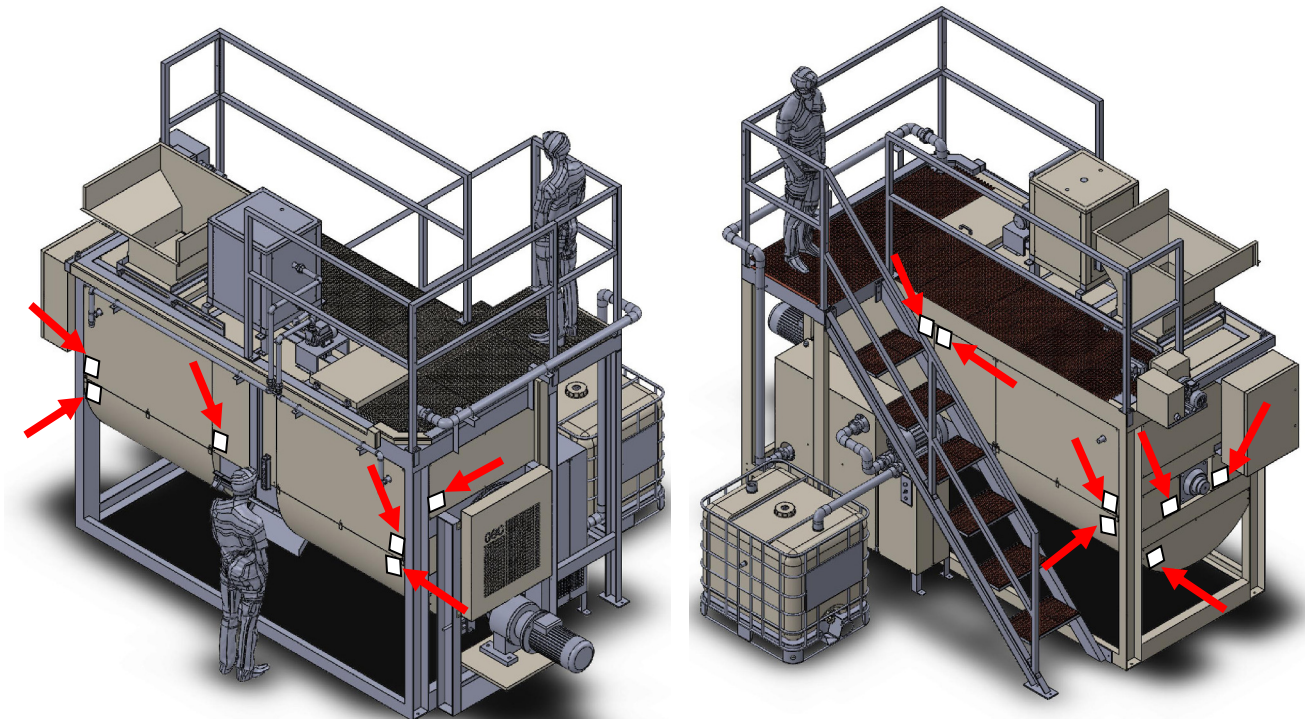


Location **(RED ARROW)**

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.

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

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

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

Caution

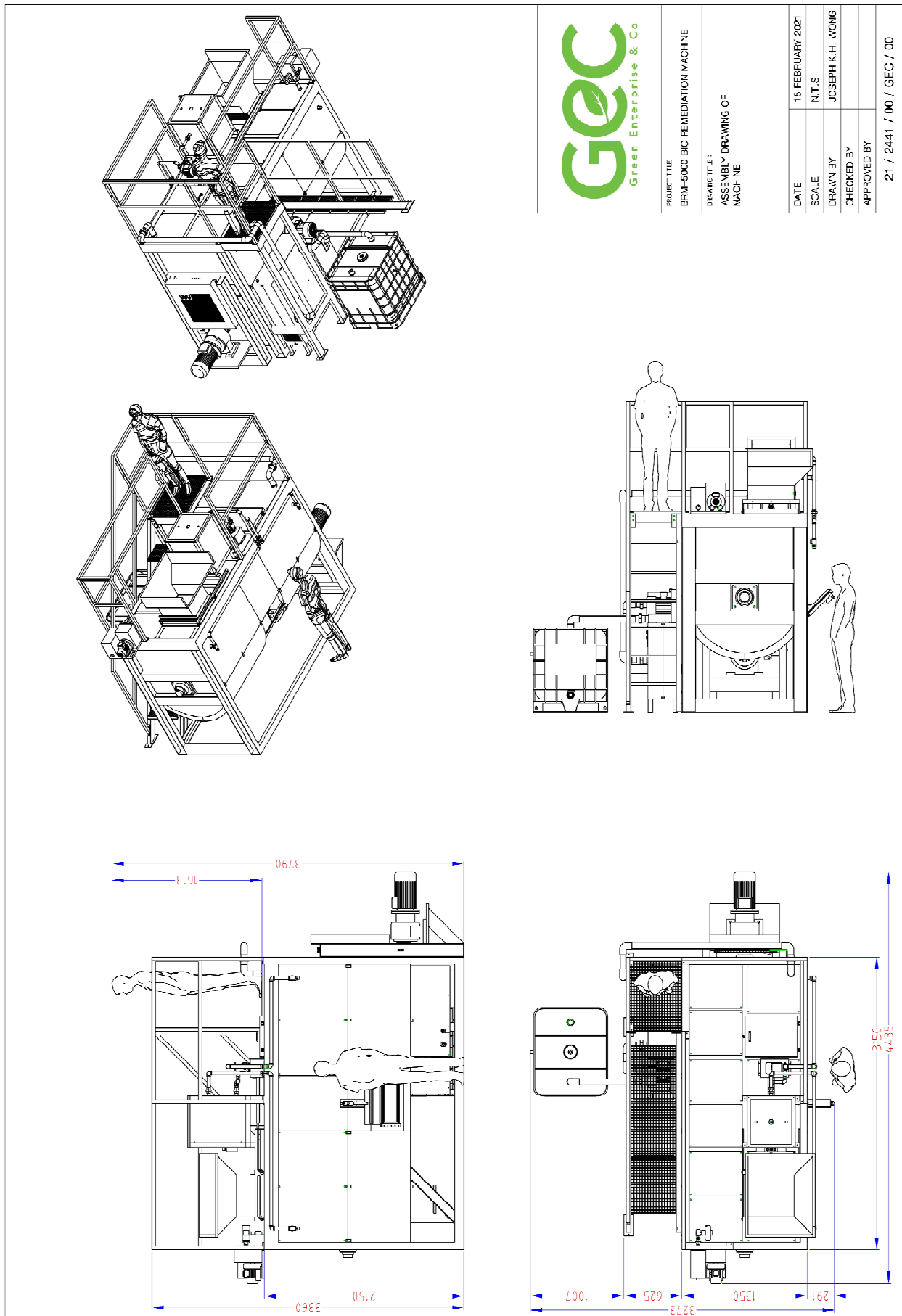
Do not put your hand close to this area as the temperature is around 50°C - 70°C and it may cause serious burn.

3.0 PRODUCT DESCRIPTION

| | | | |
|------------|-----------------------------|--------------|--|
| 3.1 | Machine Description | | 24 Hours Rapid Composting Machine |
| 3.2 | Model | | BRM-5000 |
| 3.3 | Capacity | | 3500 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 |

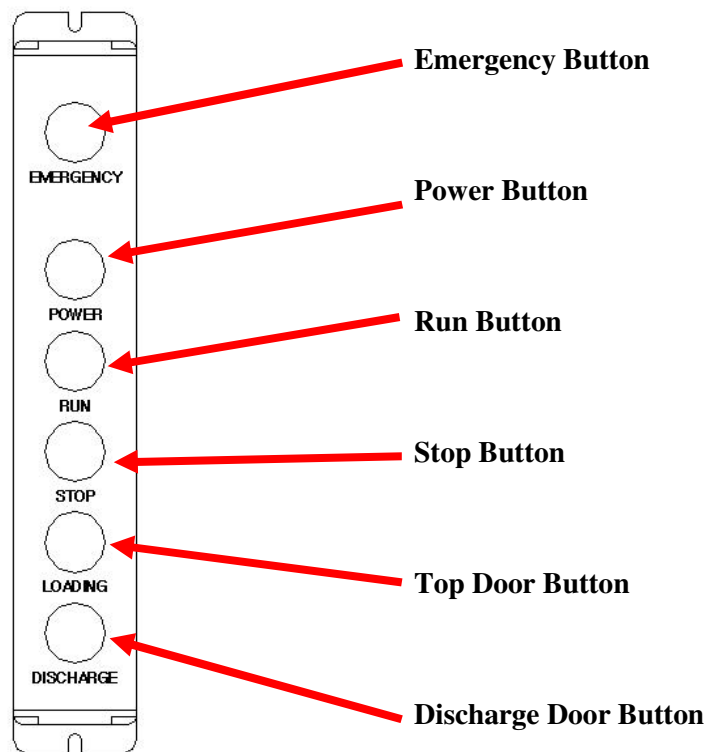
4.0 PRODUCT LAYOUT

4.1 Machine Layout

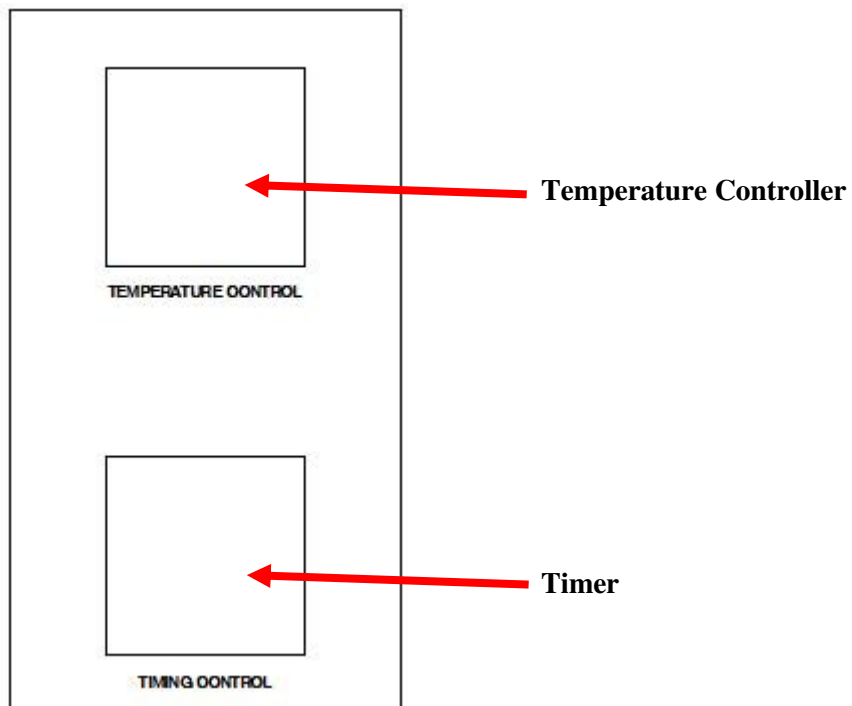


4.2 Control Panel Layout

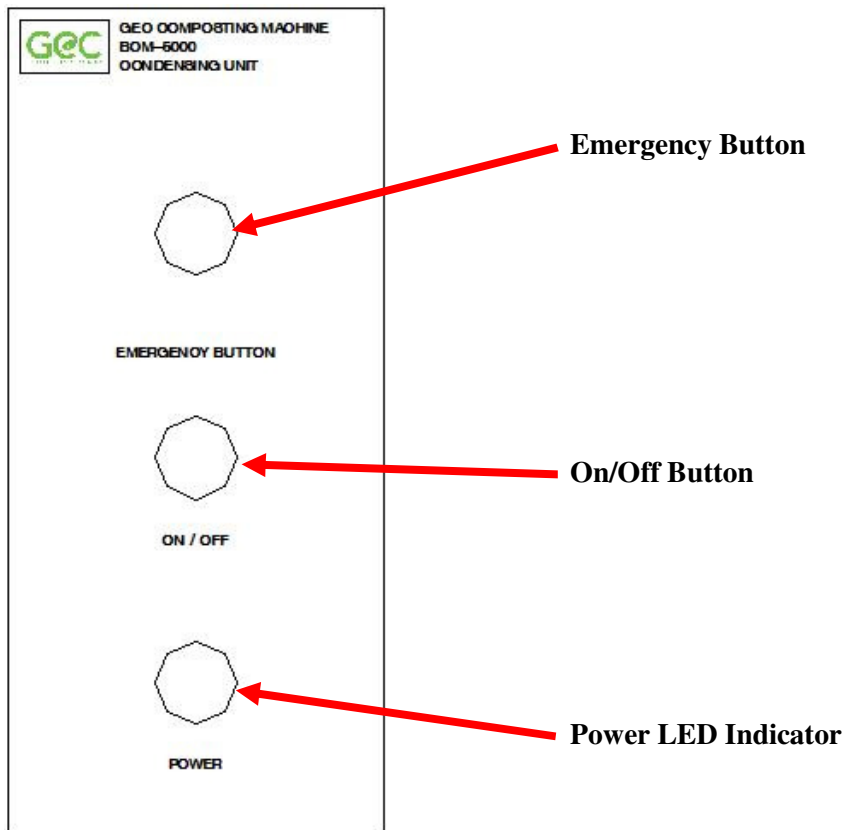
4.2.1 Main Control Panel



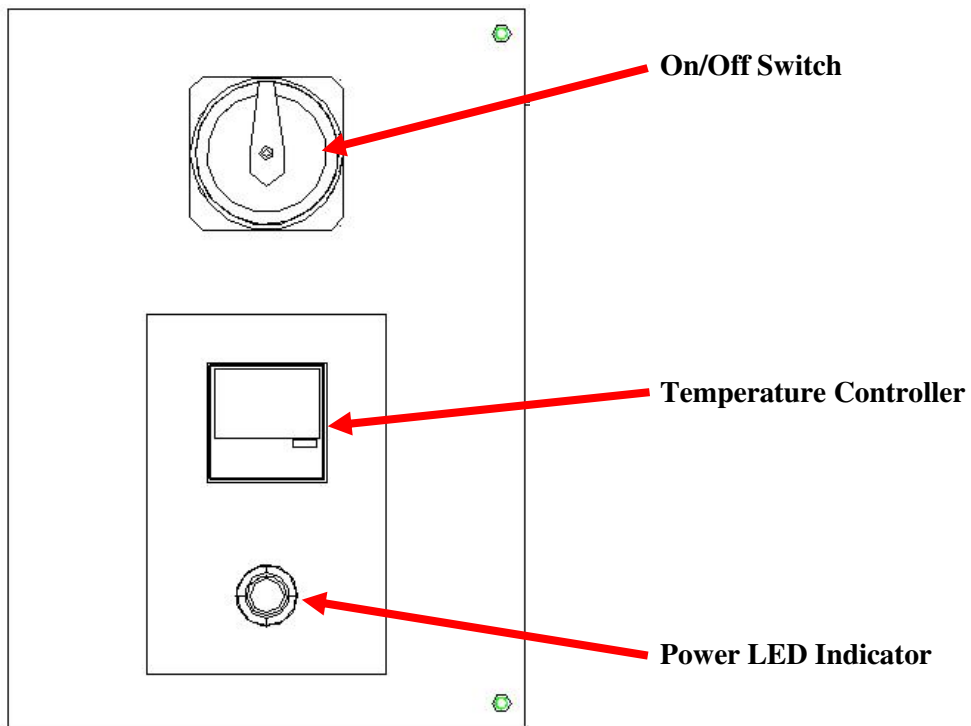
4.2.2 Main Controller Panel



4.2.3 Condensing Unit Panel

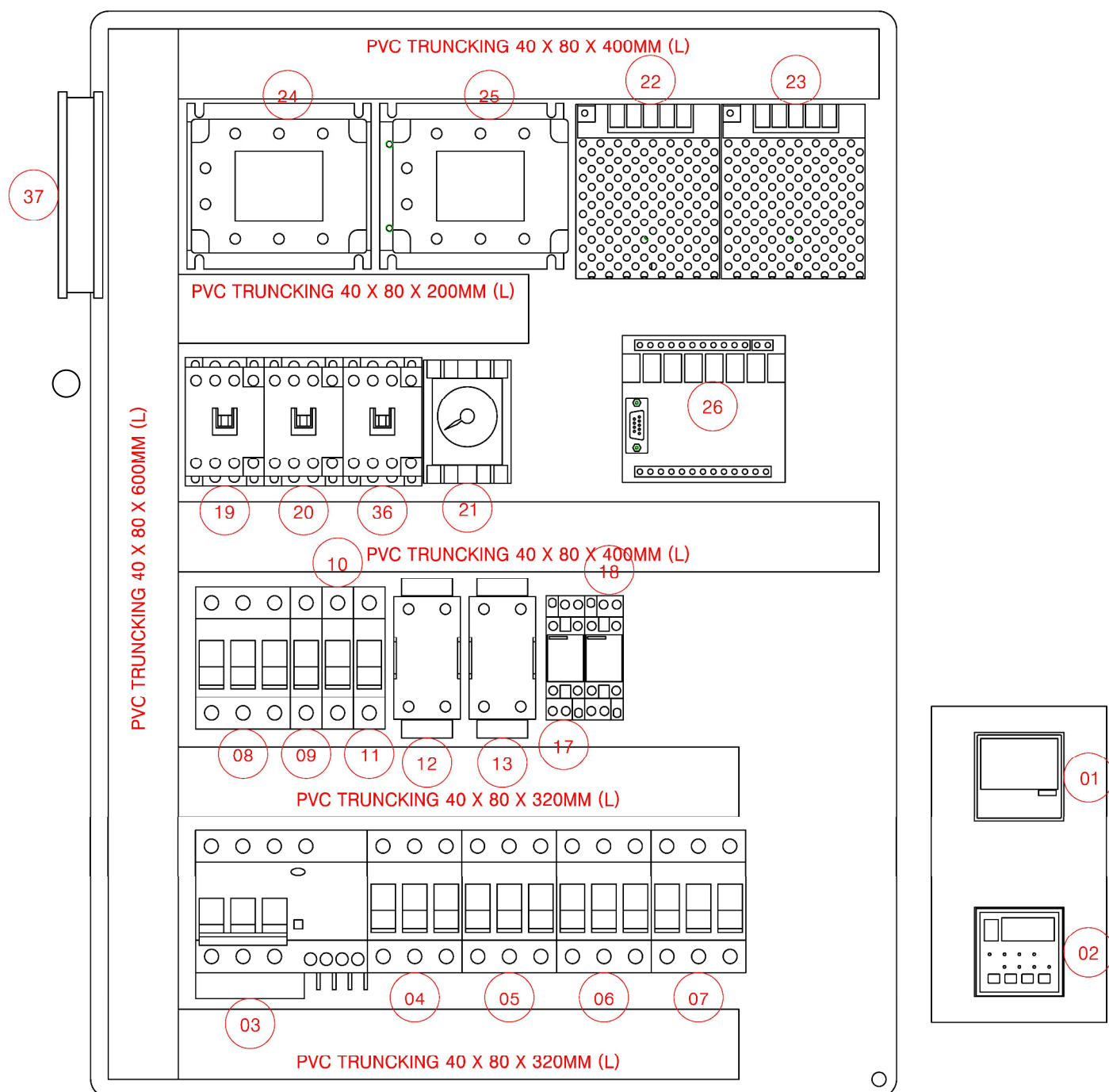


4.2.4 Hot Air Blower Panel

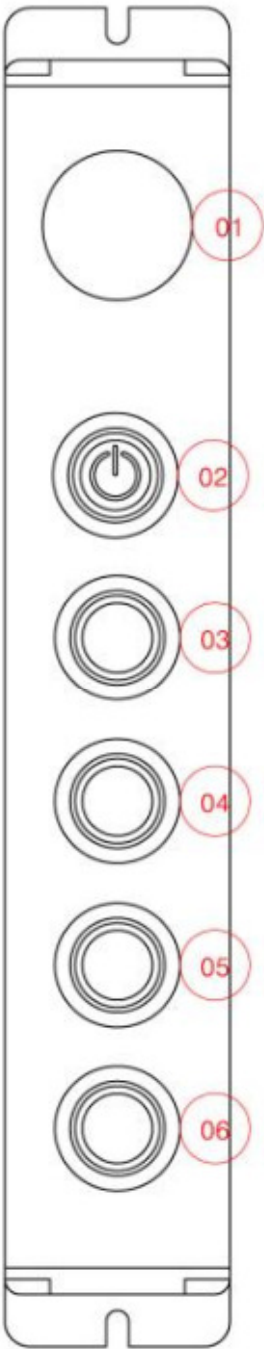


| | | | |
|--------------|--------------------------------|----------------------------------|------------|
| 4.3 | Electrical Panel Layout | | |
| 4.3.1 | Main Control Board | | |
| | Part Number | Description | Qty |
| 4.3.1.1 | REX-100 | Temperature Controller | 1 PC |
| 4.3.1.2 | XGHP48 | Timer | 1 PC |
| 4.3.1.3 | 415V/100A/4P | ELCB | 1 PC |
| 4.3.1.4 | 25A/3P | MCB | 1 PC |
| 4.3.1.5 | 25A/3P | MCB | 1 PC |
| 4.3.1.6 | 25A/3P | MCB | 1 PC |
| 4.3.1.7 | 25A/3P | MCB | 1 PC |
| 4.3.1.8 | 25A/3P | MCB | 1 PC |
| 4.3.1.9 | 10A/1P | MCB | 1 PC |
| 4.3.1.10 | 10A/1P | MCB | 1 PC |
| 4.3.1.11 | 10A/1P | MCB | 1 PC |
| 4.3.1.12 | 10A/1P | MCB | 1 PC |
| 4.3.1.13 | 10A/1P | MCB | 1 PC |
| 4.3.1.14 | 10A/1P | SSR | 1 PC |
| 4.3.1.15 | 10A/1P | SSR | 1 PC |
| 4.3.1.16 | MY2N/24VDC | Relay | 1 PC |
| 4.3.1.17 | MY2N/24VDC | Relay | 1 PC |
| 4.3.1.18 | 25A/3P | Contactor, Overload Relay 14-18A | 1 PC |
| 4.3.1.19 | 25A/3P | Contactor | 1 PC |
| 4.3.1.20 | AH3-1 | Timer | 1 PC |
| 4.3.1.21 | 25W/24VDC | Power Supply | 1 PC |
| 4.3.1.22 | 25W/24VDC | Power Supply | 1 PC |
| 4.3.1.23 | 25A/3P | SSR | 1 PC |
| 4.3.1.24 | 25A/3P | SSR | 1 PC |
| 4.3.1.25 | 20MR | Control Board | 1 PC |
| 4.3.1.27 | 300W/220V | Oil Pump | 1 PC |
| 4.3.1.28 | 250MM | Door Actuator | 1 PC |

| | Part Number | Description | Qty |
|----------|----------------|---------------|------|
| 4.3.1.29 | 500MM | Door Actuator | 1 PC |
| 4.3.1.36 | 25A/3P | Contactor | 1 PC |
| 4.3.1.37 | 120 X 120 X 25 | Cooling Fan | 1 PC |

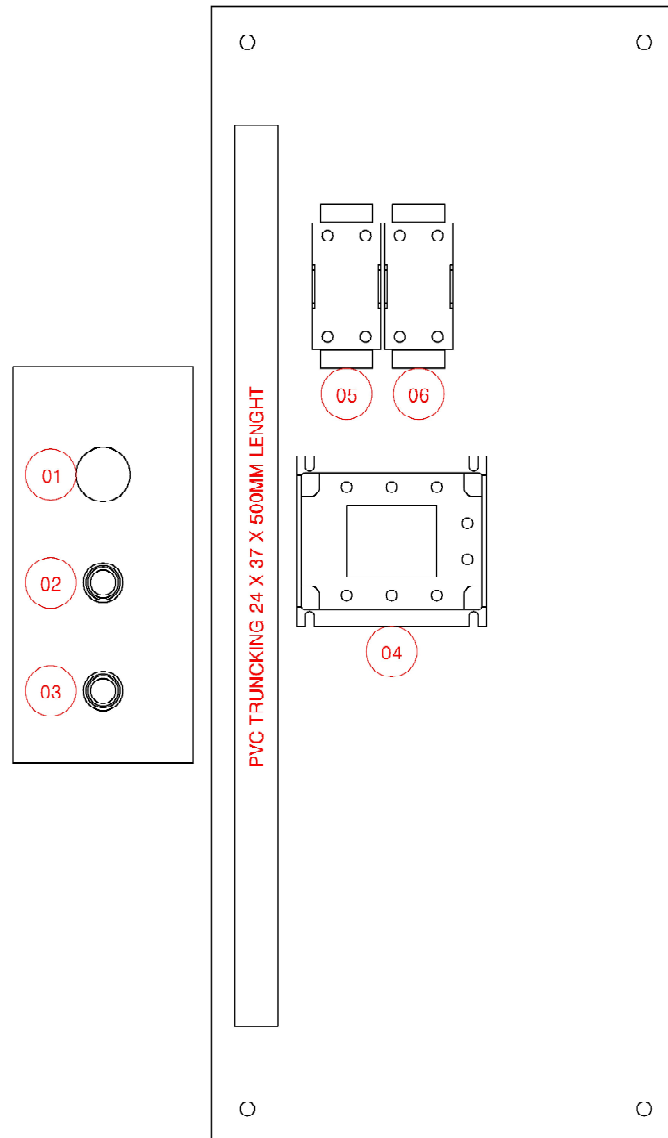


| 4.3.2 Main Controller Panel | | | |
|-----------------------------|-------------|-----------------------------|------|
| | Part Number | Description | Qty |
| 4.3.2.1 | Ø22MM | Emergency Button | 1 PC |
| 4.3.2.2 | Ø22MM | Self Lock Power Push Button | 1 PC |
| 4.3.2.3 | Ø22MM | Momentary Push Button | 1 PC |
| 4.3.2.4 | Ø22MM | Momentary Push Button | 1 PC |
| 4.3.2.5 | Ø22MM | Self Lock Push Button | 1 PC |
| 4.3.2.6 | Ø22MM | Self Lock Push Button | 1 PC |



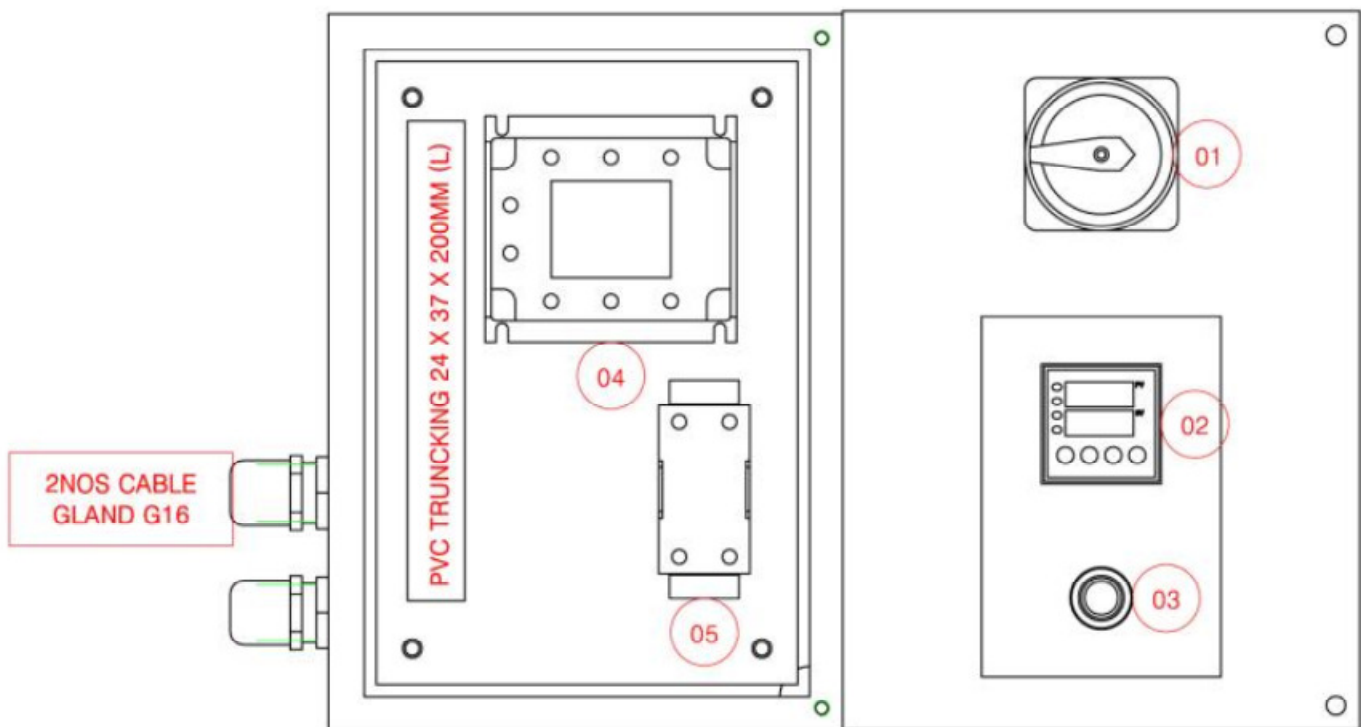
4.3.3 Condensing Unit Control Board

| | Part Number | Description | Qty |
|---------|----------------|-----------------------------|------|
| 4.3.3.1 | Ø22MM | Emergency Button | 1 PC |
| 4.3.3.2 | Ø22MM | Self Lock Power Push Button | 1 PC |
| 4.3.3.3 | Ø22MM/24VDC | LED Indicator Light | 1 PC |
| 4.3.3.4 | 10A/3P | SSR | 1 PC |
| 4.3.3.5 | 10A/1P | SSR | 1 PC |
| 4.3.3.6 | 10A/1P | SSR | 1 PC |
| 4.3.3.7 | 2200W/3P/380V | Vacuum Pump | 1 PC |
| 4.3.3.8 | 2000MG/H, 220V | Ozone Generator | 1 PC |
| 4.3.3.9 | 280W, 220V | Water Pump | 1 PC |



4.3.4 Condensing Unit Control Board

| | | | | |
|---------|-----------------|------------------------|---|----|
| 4.3.4.1 | SFD11-20/4P/20A | Rotary Switch | 1 | PC |
| 4.3.4.2 | REX-C100 | Temperature Controller | 1 | PC |
| 4.3.4.3 | Ø22MM/24VDC | LED Indicator Light | 1 | PC |
| 4.3.4.4 | 10A/3P | SSR | 1 | PC |
| 4.3.4.5 | 10A/1P | SSR | 1 | PC |
| 4.3.4.6 | 212444-00-01-01 | Heater 1KW | 1 | PC |
| 4.3.4.7 | 212444-00-01-01 | Heater 1KW | 1 | PC |
| 4.3.4.7 | 212444-00-01-01 | Heater 1KW | 1 | PC |
| 4.3.4.7 | 120W/220V | Vacuum Pump | 1 | PC |



| 5.0 | PART LIST | | | |
|----------------|-----------------|------------------|---------|-----|
| | Part Number | Description | Qty | |
| Main Structure | | | | |
| 5.1 | 212441-00-01-01 | Structure | 1 | PC |
| 5.2 | 212441-00-01-02 | Tank | 1 | PC |
| 5.3 | 212441-00-01-03 | Oil Jacket | 1L / 1R | PC |
| 5.4 | 212441-00-01-04 | Oil Jacket Link | 1 | PC |
| 5.5 | 212441-00-01-05 | Bearing Holder | 2 | PCS |
| 5.6 | 212441-00-01-06 | Seal Holder | 2 | PCS |
| 5.7 | 212441-00-01-07 | Seal Holder | 2 | PCS |
| 5.8 | 212441-00-01-08 | Shaft | 1 | PC |
| 5.9 | 212441-00-01-09 | Motor Mount | 1 | PC |
| 5.10 | 212441-00-02-10 | Main Sprocket | 1 | PC |
| 5.11 | 212441-00-02-11 | Motor Sprocket | 1 | PC |
| 5.12 | 212441-00-02-12 | Tension Sprocket | 1 | PC |
| 5.13 | 212441-00-02-13 | Top Clamp | 8 | PCS |
| 5.14 | 212441-00-02-14 | Bottom Clamp | 8 | PCS |
| 5.15 | 212441-00-02-15 | Stand | 8 | PCS |
| 5.16 | 212441-00-02-16 | Mixer | 8 | PCS |
| 5.17 | 212441-00-02-17 | Front Outlet | 1 | PC |
| 5.18 | 212441-00-02-18 | Outlet Frame | 1 | PC |
| 5.19 | 212441-00-03-19 | Outlet Frame | 1 | PC |
| 5.20 | 212441-00-03-20 | Shim | 2 | PCS |
| 5.21 | 212441-00-03-21 | Sliding Guide | 2 | PCS |
| 5.22 | 212441-00-03-22 | Mount Plate | 2 | PCS |
| 5.23 | 212441-00-03-23 | Outlet Door | 1 | PC |
| 5.24 | 212441-00-03-24 | Mounting | 1 | PC |
| 5.25 | 212441-00-03-25 | Side Mount | 2 | PCS |
| 5.26 | 212441-00-03-26 | Front Mount | 1 | PC |

| | Part Number | Description | Qty | |
|------|-----------------|--------------------|-----|-----|
| 5.27 | 212441-00-03-27 | Bottom Mount | 1 | PC |
| 5.28 | 212441-00-04-28 | Pivot | 1 | PC |
| 5.29 | 212441-00-04-29 | Pivot | 1 | PC |
| 5.30 | 212441-00-04-30 | Top Frame | 1 | PC |
| 5.31 | 212441-00-04-31 | Corner Mount | 44 | PCS |
| 5.32 | 212441-00-04-32 | Inner Top Panel RL | 1 | PC |
| 5.33 | 212441-00-04-33 | Inner Top Panel RM | 2 | PCS |
| 5.34 | 212441-00-04-34 | Inner Top Panel RM | 4 | PCS |
| 5.35 | 212441-00-04-35 | Inner Top Panel RR | 1 | PC |
| 5.36 | 212441-00-04-36 | Inner Top Panel FL | 1 | PC |
| 5.37 | 212441-00-05-37 | Inner Top Panel FM | 1 | PC |
| 5.38 | 212441-00-05-38 | Inner Top Panel FR | 1 | PC |
| 5.39 | 212441-00-05-39 | Outer Top Panel RL | 1 | PC |
| 5.40 | 212441-00-05-40 | Outer Top Panel FM | 3 | PCS |
| 5.41 | 212441-00-05-41 | Outer Top Panel RM | 4 | PCS |
| 5.42 | 212441-00-05-42 | Outer Top Panel FL | 1 | PC |
| 5.43 | 212441-00-05-43 | Outer Top Panel FM | 1 | PC |
| 5.44 | 212441-00-05-44 | Outer Top Panel FR | 1 | PC |
| 5.45 | 212441-00-05-45 | Manhole | 1 | PC |
| 5.46 | 212441-00-06-46 | Mounting | 4 | PCS |
| 5.47 | 212441-00-06-47 | Shim | 8 | PCS |
| 5.48 | 212441-00-06-48 | Rail | 2 | PCS |
| 5.49 | 212441-00-06-49 | Pivot | 1 | PC |
| 5.50 | 212441-00-06-50 | Pivot | 1 | PC |
| 5.51 | 212441-00-06-51 | Loading Door | 1 | PC |
| 5.52 | 212441-00-06-52 | Cover | 2 | PCS |
| 5.53 | 212441-00-06-53 | Cover | 2 | PCS |
| 5.54 | 212441-00-06-54 | Cover | 2 | PCS |

| | Part Number | Description | Qty |
|------|-----------------|-----------------|--------|
| 5.55 | 212441-00-07-55 | Bottom Cover | 4 PCS |
| 5.56 | 212441-00-07-56 | Bottom Cover | 2 PCS |
| 5.57 | 212441-00-07-57 | Mounting | 26 PCS |
| 5.58 | 212441-00-07-58 | Mounting | 2 PCS |
| 5.59 | 212441-00-07-59 | Mounting | 20 PCS |
| 5.60 | 212441-00-07-60 | Platform | 1 PC |
| 5.61 | 212441-00-07-61 | Stand | 1 PC |
| 5.62 | 212441-00-07-62 | Tie Bar | 1 PC |
| 5.63 | 212441-00-07-63 | Ladder | 1 PC |
| 5.64 | 212441-00-08-64 | Railing | 1 PC |
| 5.65 | 212441-00-08-65 | Railing | 1 PC |
| 5.66 | 212441-00-08-66 | Railing | 1 PC |
| 5.67 | 212441-00-08-67 | Railing | 1 PC |
| 5.68 | 212441-00-08-68 | Railing | 1 PC |
| 5.69 | 212441-00-08-69 | Railing | 1 PC |
| 5.70 | 212441-00-08-70 | Railing | 1 PC |
| 5.71 | 212441-00-08-71 | Tensioner Pivot | 1 PC |
| 5.72 | 212441-00-08-72 | Pivot | 1 PC |
| 5.73 | 212441-00-09-73 | Pivot Pin | 1 PC |
| 5.74 | 212441-00-09-74 | Tensioner Pivot | 1 PC |
| 5.75 | 212441-00-09-75 | Sprocket Shaft | 1 PC |
| 5.76 | 212441-00-09-76 | Shim | 2 PCS |
| 5.77 | 212441-00-09-77 | Safety Cover | 1 PC |
| 5.78 | 212441-00-09-78 | Side Panel | 2 PCS |
| 5.79 | 212441-00-09-79 | Side Panel | 2 PCS |
| 5.80 | 212441-00-09-80 | Side Panel | 2 PCS |
| 5.81 | 212441-00-09-81 | Side Panel | 2 PCS |
| 5.82 | 212441-00-10-82 | Side Panel | 2 PCS |

| | Part Number | Description | Qty |
|-------------------|-----------------|----------------|-------|
| 5.83 | 212441-00-10-83 | Panel Mount | 4 PCS |
| 5.84 | 212441-00-10-84 | Panel Mount | 4 PCS |
| 5.85 | 212441-00-10-85 | Panel Mount | 8 PCS |
| 5.86 | 212441-00-10-86 | Panel Mount | 4 PCS |
| 5.87 | 212441-00-10-87 | Pipe Rack | 2 PCS |
| 5.88 | 212441-00-10-88 | Pipe Rack | 4 PCS |
| 5.89 | 212441-00-10-89 | Chute | 1 PC |
| 5.90 | 212441-00-10-90 | Machine Hook | 4 PCS |
| 5.91 | 212441-00-11-91 | FRP 1 | 8 PCS |
| 5.92 | 212441-00-11-92 | FRP 2 | 1 PC |
| 5.93 | 212441-00-11-93 | FRP 3 | 1 PC |
| 5.94 | 212441-00-11-94 | FRP 4 | 1 PC |
| 5.95 | 212441-00-11-95 | FRP 5 | 1 PC |
| 5.96 | 212441-00-11-96 | FRP 6 | 2 PCS |
| 5.97 | 212441-00-11-97 | FRP 7 | 1 PC |
| 5.98 | 212441-00-11-98 | FRP 8 | 1 PC |
| 5.99 | 212441-00-11-99 | Loading Chute | 1 SET |
| 5.100 | 212441-00-12-00 | Chute Mount | 2 PCS |
| 5.101 | 212441-00-12-01 | Boiler Mount | 1 SET |
| 5.102 | 212441-00-12-02 | Boiler Mount | 2 SET |
| 5.103 | 212441-00-12-03 | Pump Mount | 1 PC |
| 5.104 | 212441-00-12-04 | Hot Air Pipe | 1 PC |
| 5.105 | 212441-00-12-05 | Hot Air Pipe | 1 PC |
| 5.106 | 212441-00-12-06 | Tensioner Stub | 1 PC |
| Oil Boiler | | | |
| 5.107 | 212442-00-01-01 | Tank | 1 PC |
| 5.108 | 212442-00-01-02 | Tank Cover | 1 PC |
| 5.109 | 212442-00-01-03 | Base | 1 PC |

| | Part Number | Description | Qty |
|------------------------|-----------------|--------------------|------------|
| 5.110 | 212442-00-01-04 | Stand | 4 PCS |
| 5.111 | 212442-00-01-05 | Top Frame | 1 PC |
| 5.112 | 212442-00-01-06 | Side Cover | 1 PC |
| 5.113 | 212442-00-01-07 | Side Cover | 1 PC |
| 5.114 | 212442-00-01-08 | Side Cover | 2 PCS |
| 5.115 | 212442-00-01-09 | Top Cover | 1 PC |
| 5.116 | 212442-00-02-10 | Wiring Cap | 1 PC |
| 5.117 | 212442-00-02-11 | Cable Gland Holder | 1 PC |
| 5.118 | 212442-00-02-12 | Mounting | 4 PCS |
| 5.119 | 212442-00-02-13 | Bottom Plate | 1 PC |
| Condensing Unit | | | |
| 5.120 | 212443-00-01-01 | Base | 1 PC |
| 5.121 | 212443-00-01-02 | Stand | 2L / 2R PC |
| 5.122 | 212443-00-01-03 | Top Base | 1 PC |
| 5.123 | 212443-00-01-04 | Clamp | 4 PCS |
| 5.124 | 212443-00-01-05 | Top Frame | 1 PC |
| 5.125 | 212443-00-01-06 | Side Cover | 1 PC |
| 5.126 | 212443-00-01-07 | Side Cover | 1 PC |
| 5.127 | 212443-00-01-08 | PVC Pipe | 2 PCS |
| 5.128 | 212443-00-01-09 | PVC Pipe | 1 PC |
| 5.129 | 212443-00-02-10 | Pipe Holder | 1 PC |
| 5.130 | 212443-00-02-11 | Rear Panel | 1 PC |
| 5.131 | 212443-00-02-12 | Control Mount | 1 PC |
| 5.132 | 212443-00-02-13 | Mount Plate | 1 PC |
| 5.133 | 212443-00-02-14 | Panel Mount | 1 PC |
| 5.134 | 212443-00-02-15 | Panel | 1 PC |
| 5.135 | 212443-00-02-16 | Top Panel | 1 PC |
| 5.136 | 212443-00-02-17 | Side Panel | 1 PC |

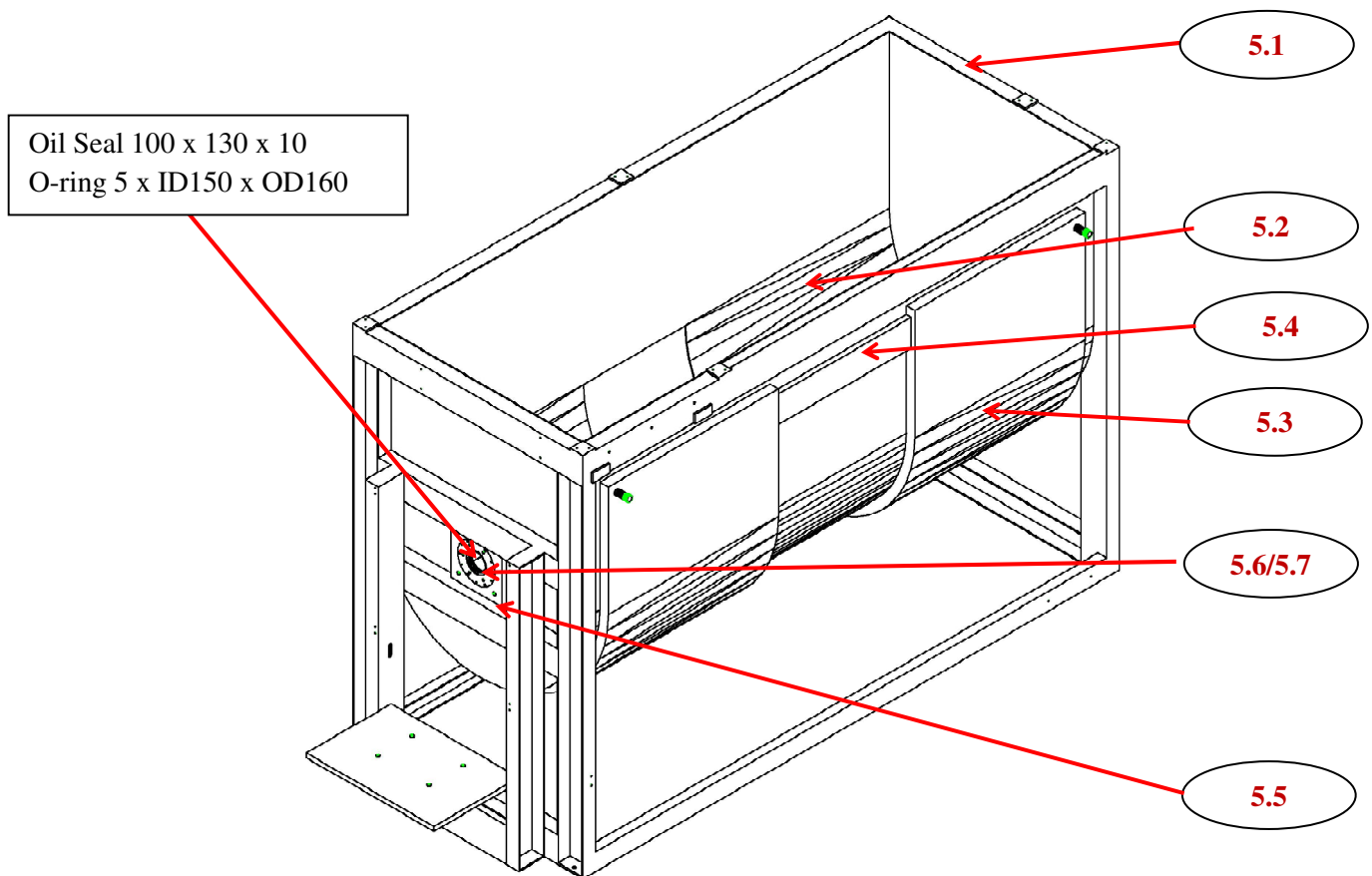
| | Part Number | Description | Qty |
|-----------------------|-----------------|------------------|--------|
| 5.137 | 212443-00-02-18 | Side Panel | 1 PC |
| 5.138 | 212443-00-03-19 | Pipe Mount | 2 PCS |
| 5.139 | 212443-00-03-20 | Pipe Mount | 4 PCS |
| Hot Air Blower | | | |
| 5.140 | 212444-00-01-01 | Heater 1KW | 3 PCS |
| 5.141 | 212444-00-01-02 | Heater Mount | 1 PC |
| 5.142 | 212444-00-01-03 | Heater Chamber | 1 PC |
| 5.143 | 212444-00-01-04 | Base | 1 PC |
| 5.144 | 212444-00-01-05 | Base Mount | 1 PC |
| 5.145 | 212444-00-01-06 | Side Cover | 1 PC |
| 5.146 | 212444-00-01-07 | Side Cover | 1 PC |
| 5.147 | 212444-00-01-08 | Top Cover | 1 PC |
| 5.148 | 212444-00-01-09 | Control Box | 1 PC |
| 5.149 | 212444-00-02-10 | Control Box Door | 1 PC |
| 5.150 | 212444-00-02-11 | Control Mount | 1 PC |
| 5.151 | 212444-00-02-12 | Panel | 1 PC |
| Oil Piping | | | |
| 5.152 | DN25 | GI T Join | 2 PCS |
| 5.153 | DN25 | GI Elbow | 10 PCS |
| 5.154 | DN25 | GI Union Join | 4 PCS |
| 5.155 | DN25 | GI Nipple | 7 PCS |
| 5.156 | DN25 X 82MM | GI Pipe 1 | 1 PC |
| 5.157 | DN25 X 915MM | GI Pipe 2 | 1 PC |
| 5.158 | DN25 X 347MM | GI Pipe 3 | 1 PC |
| 5.159 | DN25 X 274MM | GI Pipe 4 | 1 PC |
| 5.160 | DN25 X 915MM | GI Pipe 5 | 1 PC |
| 5.161 | DN25 X 554MM | GI Pipe 6 | 1 PC |
| 5.162 | DN25 X 435MM | GI Pipe 7 | 1 PC |

| Part Number | | Description | Qty | |
|-----------------|---------------|----------------------------|-----|-----|
| 5.163 | DN25 X 150MM | GI Pipe 8 | 1 | PC |
| 5.164 | DN25 X 110MM | GI Pipe 9 | 1 | PC |
| Air Piping | | | | |
| 5.165 | DN50 | PVC Elbow | 2 | PCS |
| 5.166 | DN50 | PVC Union Join | 10 | PCS |
| 5.167 | DN50 | PVC Female Adaptor | 4 | PCS |
| 5.168 | DN50 X 90MM | PVC Pipe 1 | 1 | PC |
| 5.169 | DN50 X 1670MM | PVC Pipe 2 | 1 | PC |
| 5.170 | DN50 X 190MM | PVC Pipe 3 | 1 | PC |
| 5.171 | DN50 X 1660MM | PVC Pipe 4 | 1 | PC |
| 5.172 | DN50 X 40MM | PVC Pipe 5 | 2 | PCS |
| Water Scrubber | | | | |
| 5.173 | DN50 | PVC Elbow | 1 | PC |
| 5.174 | DN50 | PVC Female Adaptor | 2 | PCS |
| 5.175 | DN50 | PVC Male Adaptor | 2 | PCS |
| 5.176 | DN15 | PVC Female Adaptor | 1 | PC |
| 5.177 | DN15 | PVC Male Adaptor | 1 | PC |
| 5.178 | DN15 | PVC Elbow | 1 | PC |
| 5.179 | DN50 X 642MM | PVC Pipe 1 | 1 | PC |
| 5.180 | DN50 X 30MM | PVC Pipe 2 | 1 | PC |
| 5.181 | DN50 X 470MM | PVC Pipe 3 | 1 | PC |
| 5.182 | DN15 X 150MM | PVC Pipe 4 | 1 | PC |
| 5.183 | DN15 X 30MM | PVC Pipe 5 | 1 | PC |
| 5.184 | 1000 Liters | IBC Tank | 1 | PC |
| Electrical Part | | | | |
| 5.185 | 900MM | White Trunking 50 x 75 - 1 | 1 | PC |
| 5.186 | 2850MM | White Trunking 50 x 75 - 2 | 1 | PC |
| 5.187 | 1800MM | White Trunking 50 x 75 - 3 | 1 | PC |

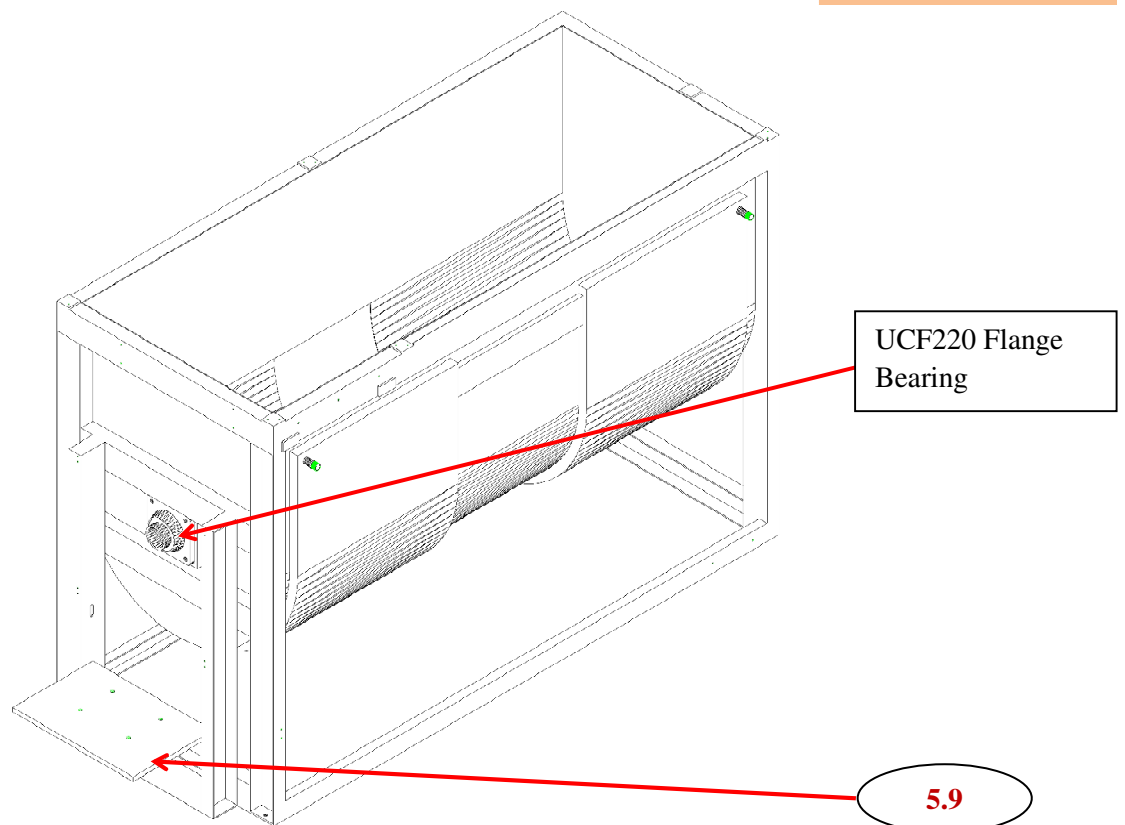
| | Part Number | Description | Qty |
|-------|--------------|----------------------------|-------|
| 5.188 | 75MM | White Trunking 50 x 75 - 4 | 1 PC |
| 5.189 | 199MM | White Trunking 50 x 75 - 5 | 1 PC |
| 5.190 | 249MM | White Trunking 50 x 75 - 6 | 1 PC |
| 5.191 | 1100MM | White Trunking 50 x 75 - 7 | 1 PC |
| 5.192 | 1400MM | White Trunking 50 x 75 - 8 | 1 PC |
| 5.193 | 212448-00-01 | Switch Panel | 1 PC |
| 5.194 | 212448-00-02 | Control Box | 1 PC |
| 5.195 | 212448-00-03 | Box Mounting | 2 PCS |
| 5.196 | 212448-00-04 | Panel | 1 PC |

6.0 PARTS' LOCATION

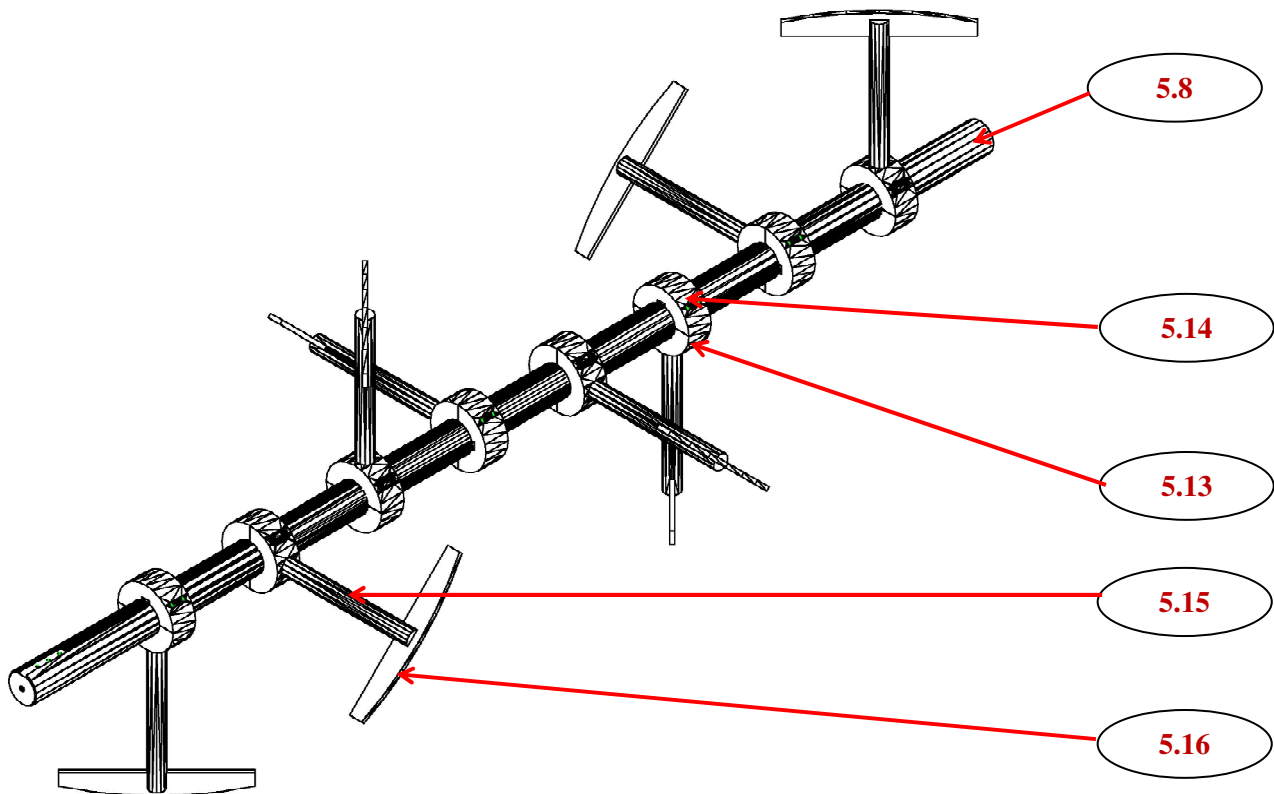
6.1 Figure 1



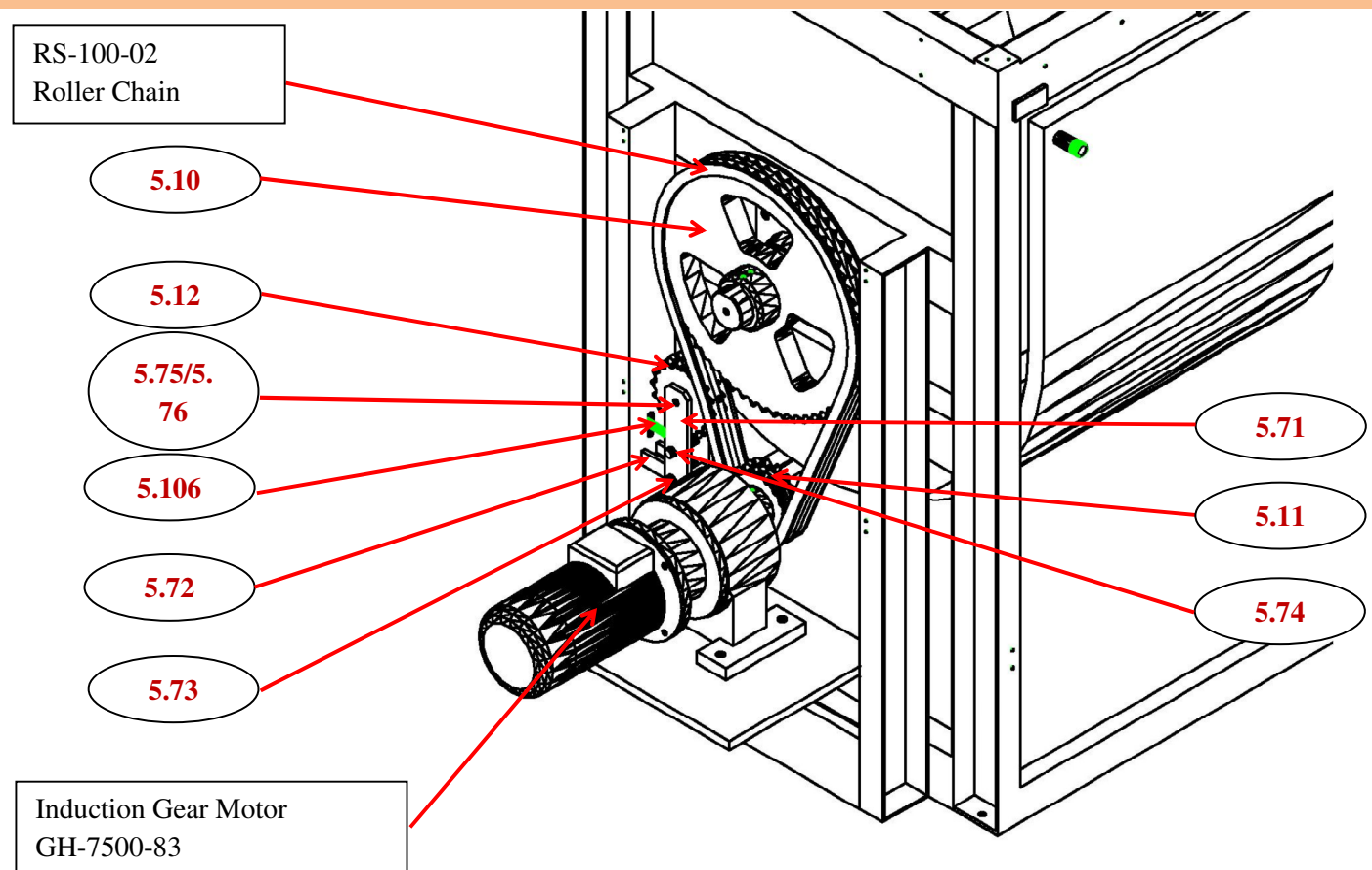
6.2 Figure 2



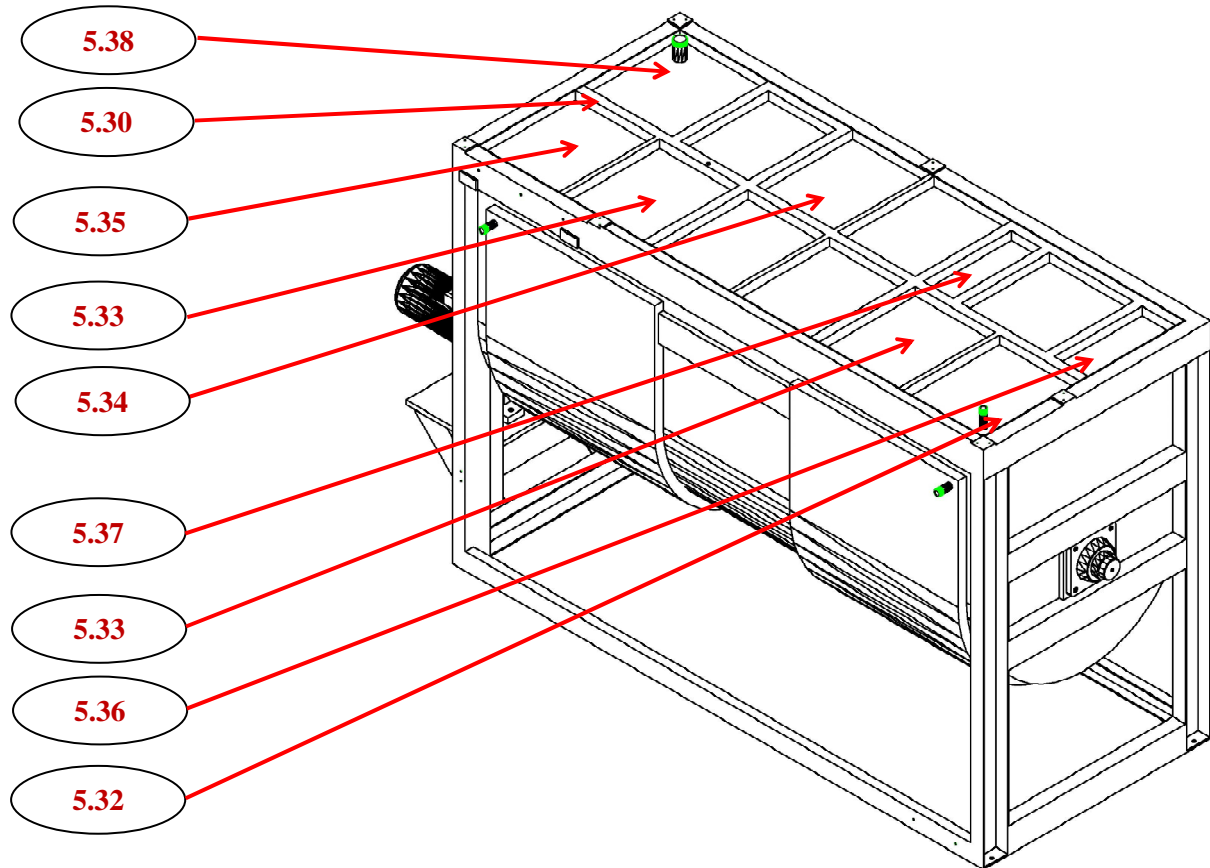
6.3 Figure 3



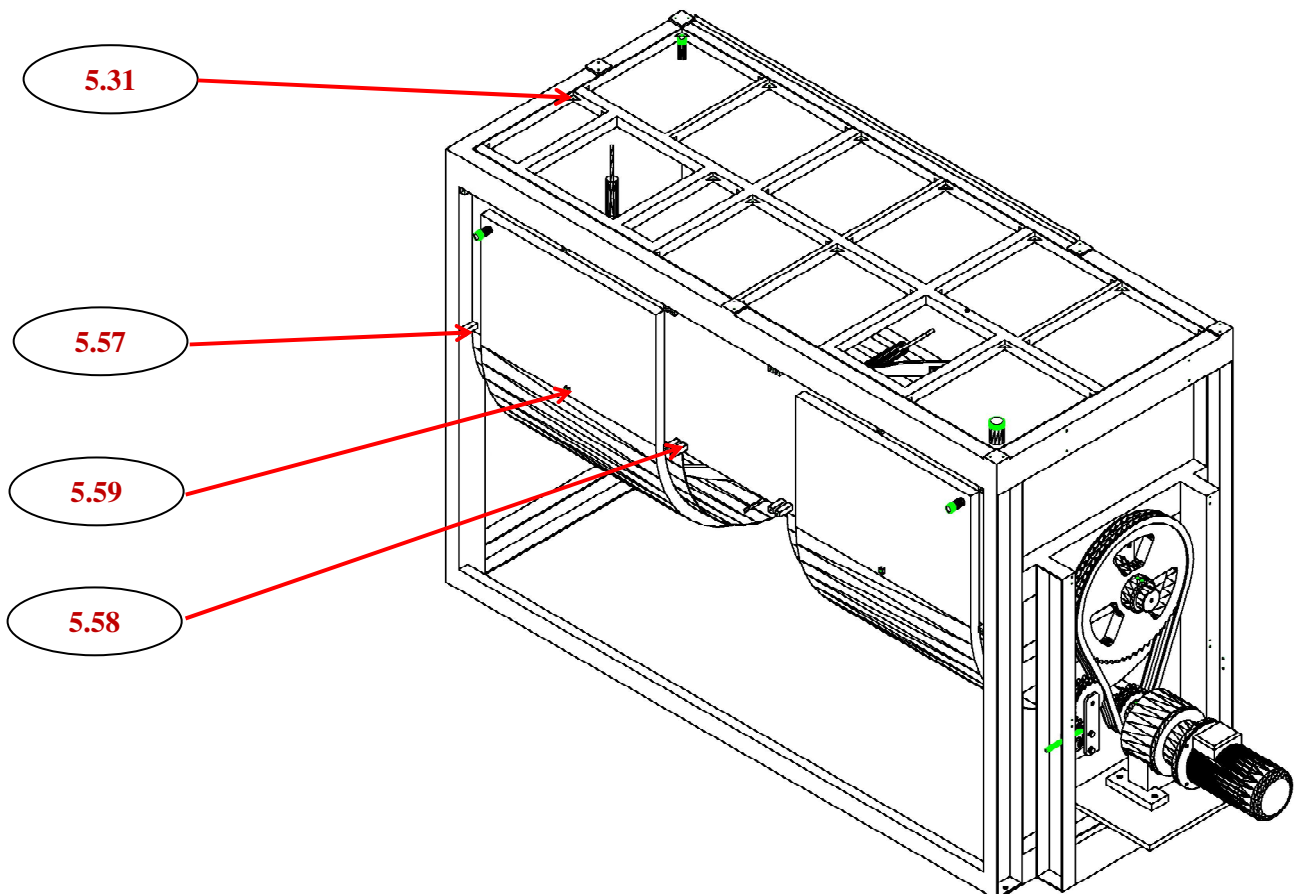
6.4 Figure 4



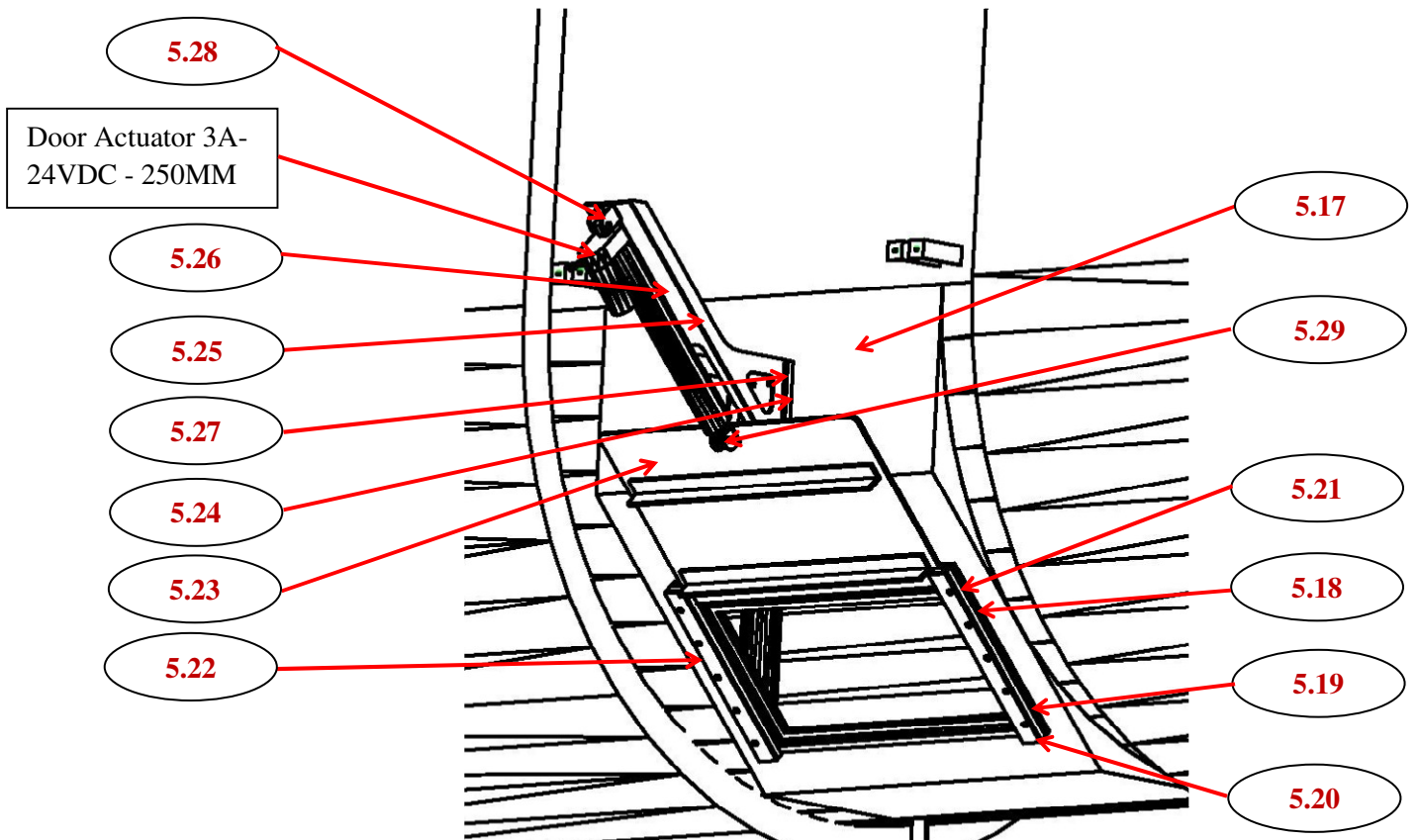
6.6 Figure 5



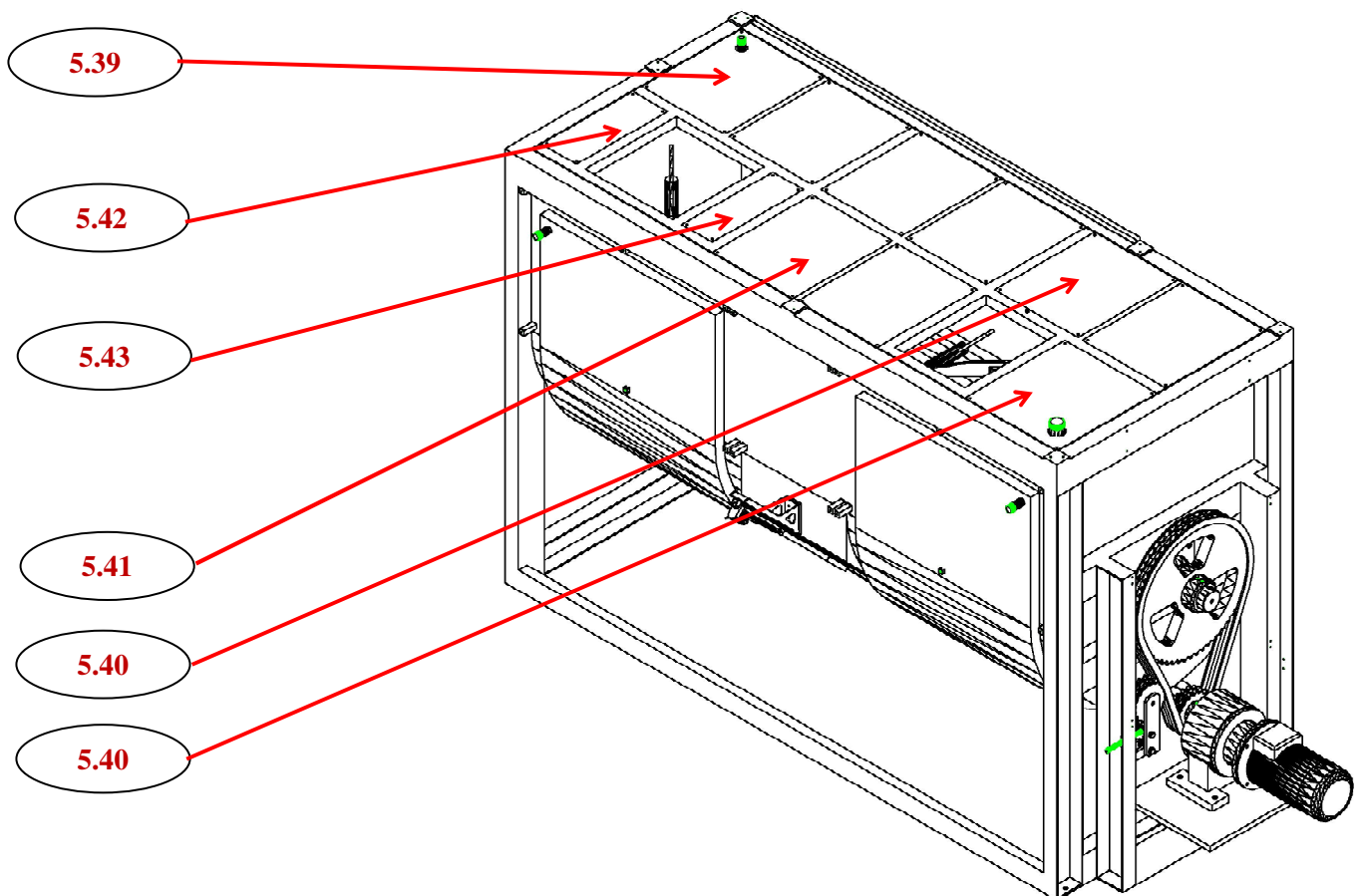
6.6 Figure 6



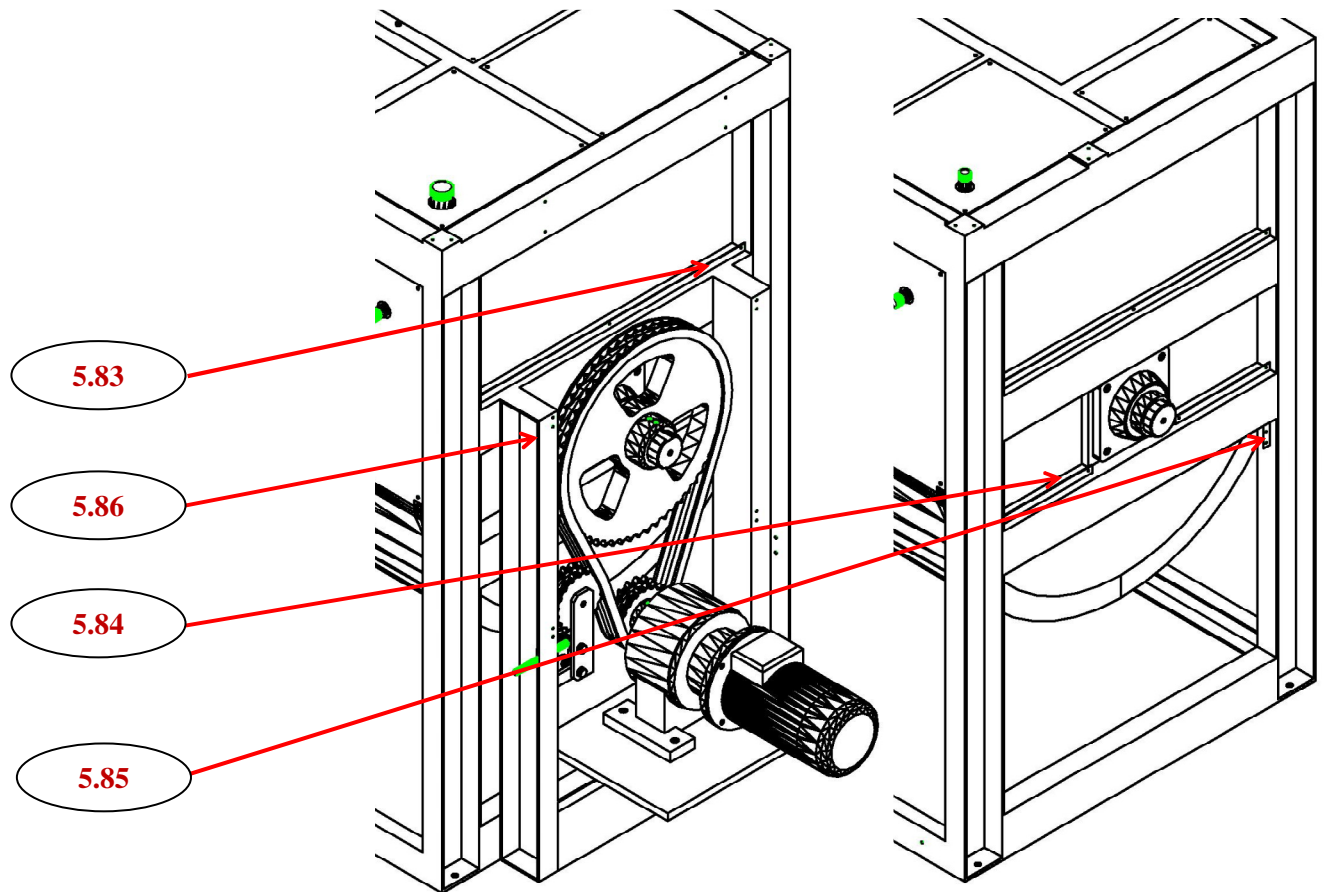
6.7 Figure 7



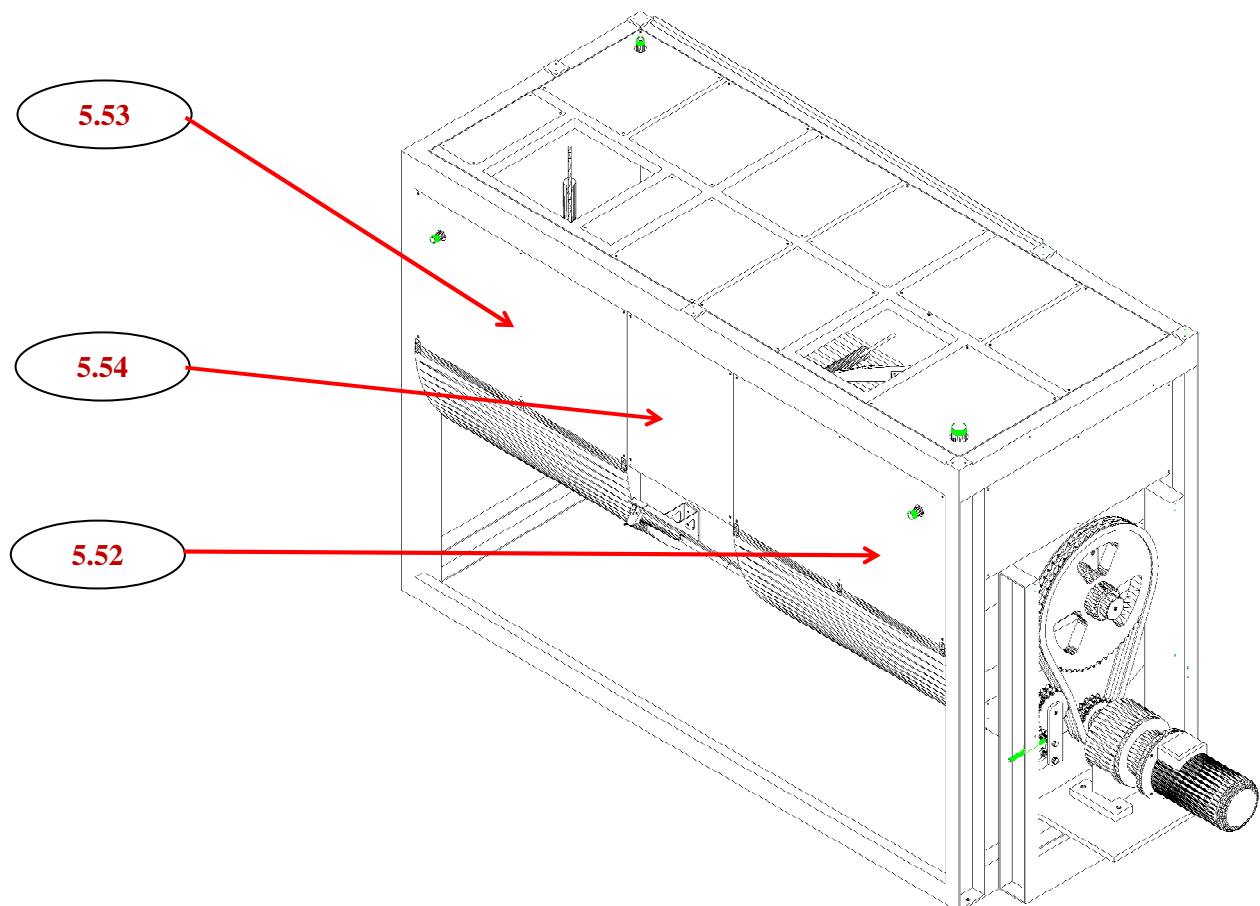
6.8 Figure 8

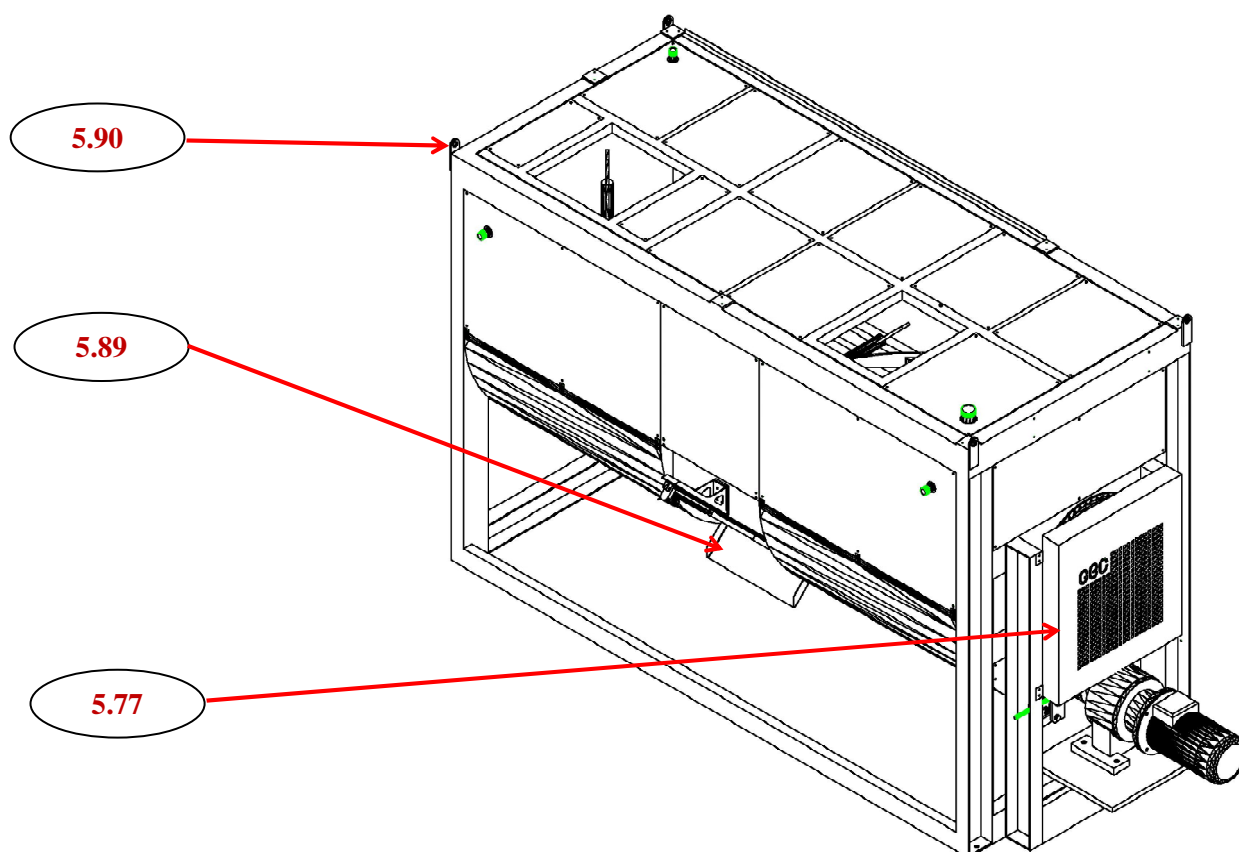
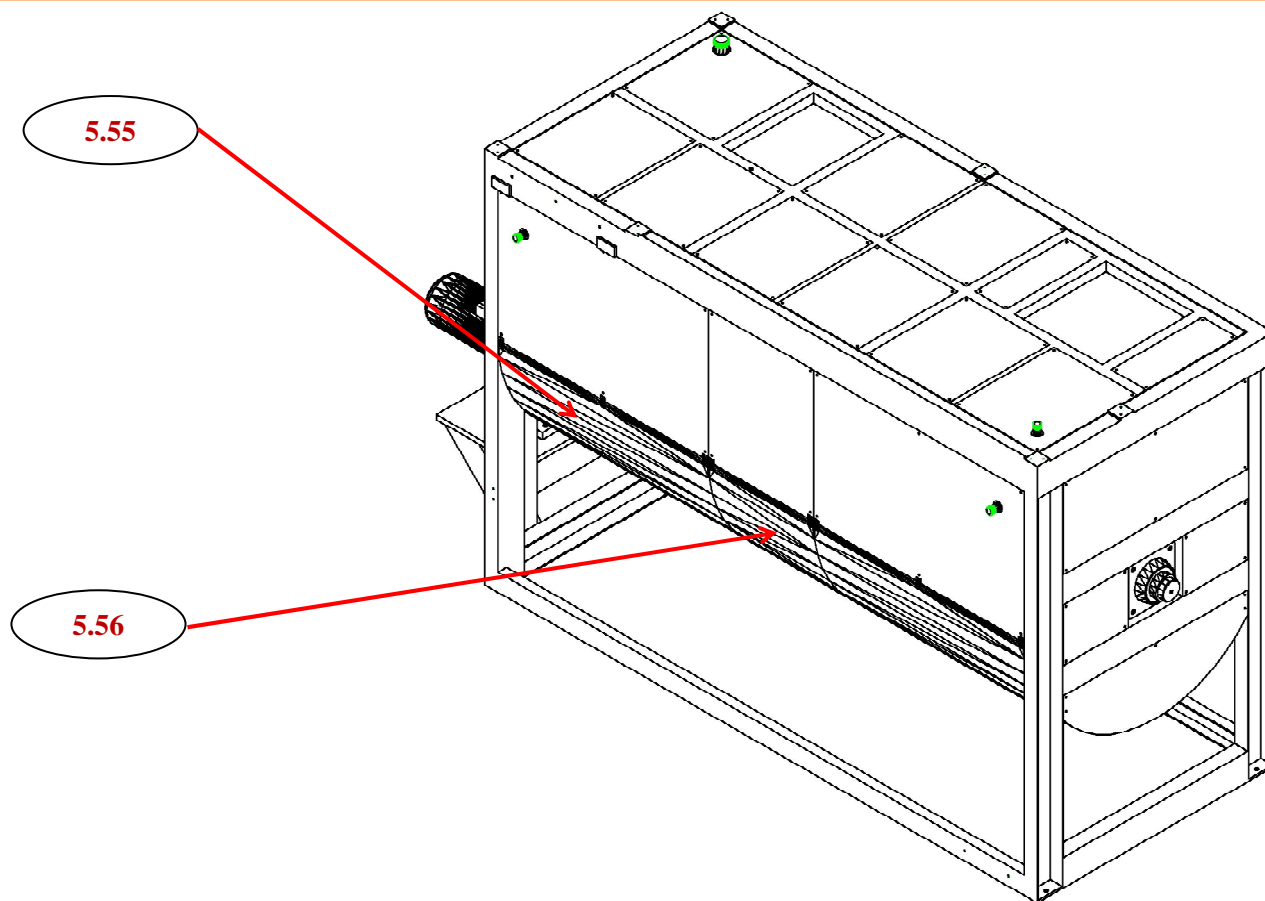


6.9 Figure 9

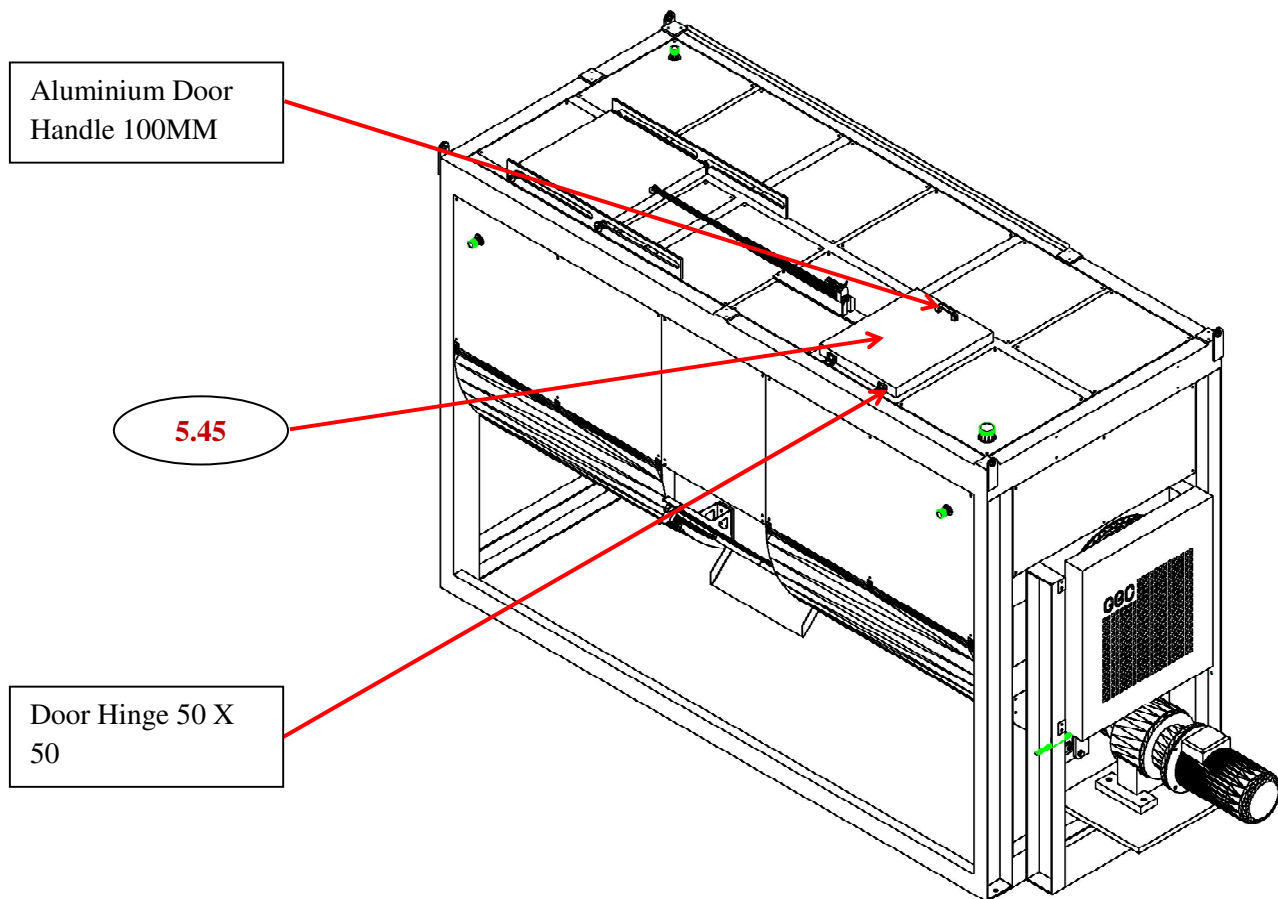


6.10 Figure 10

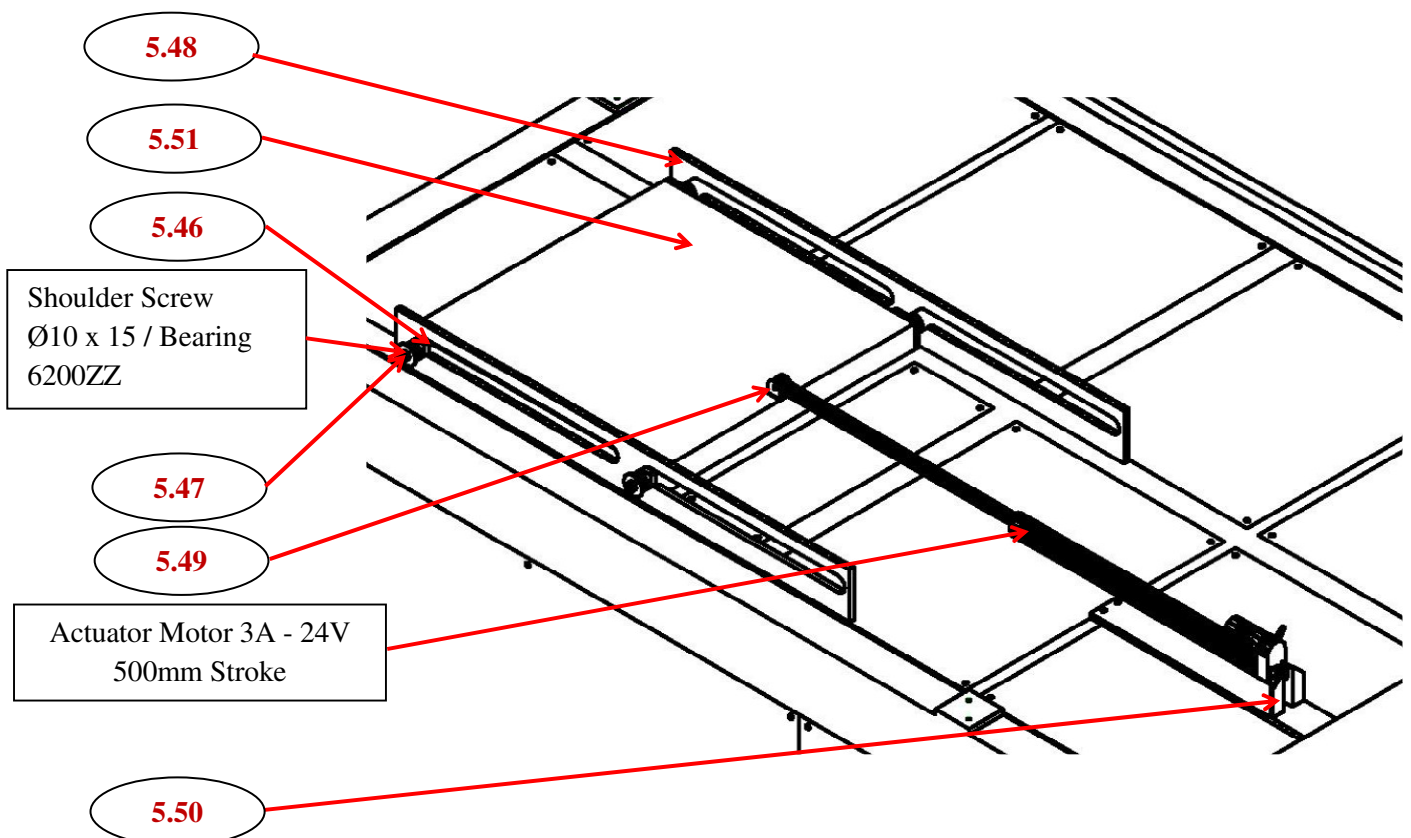




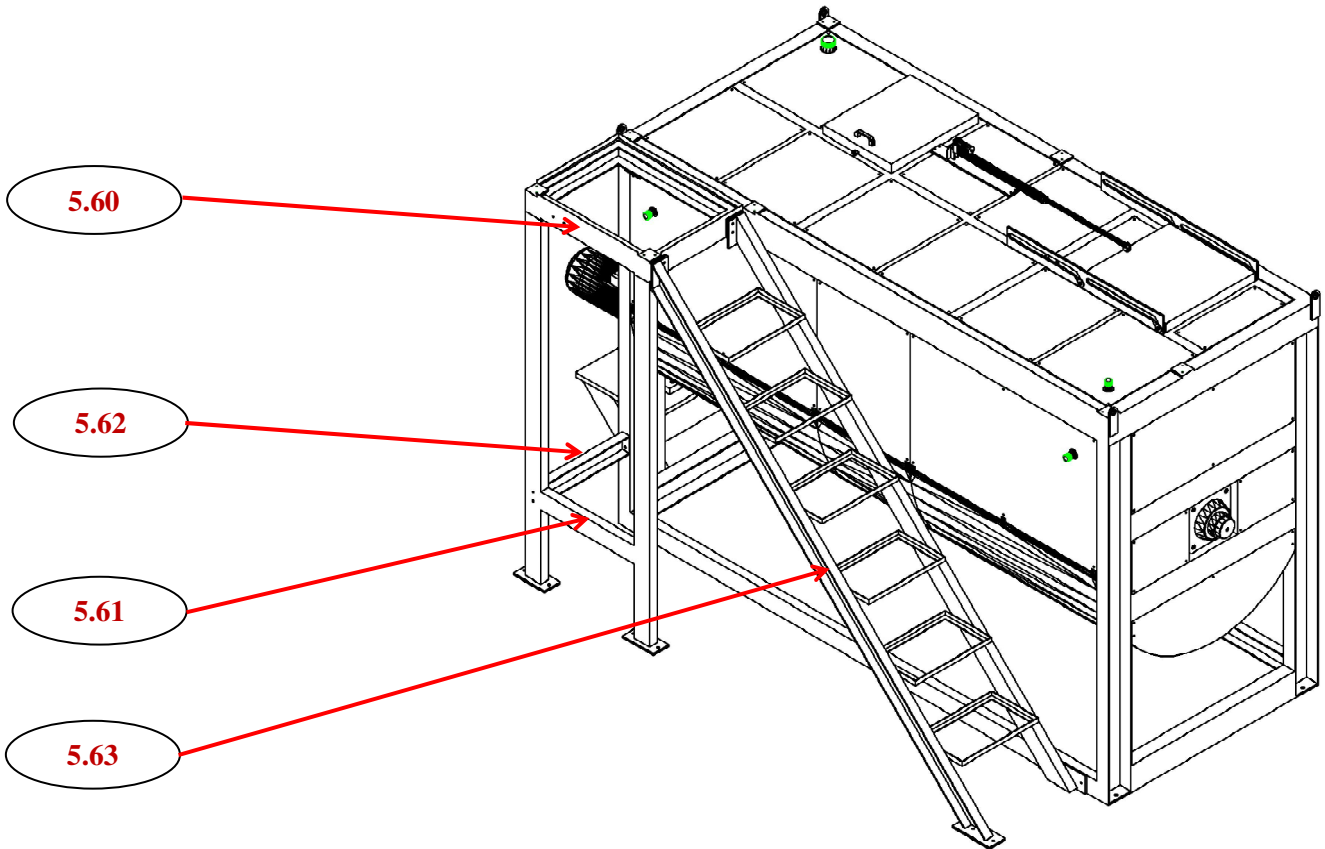
6.13 Figure 13



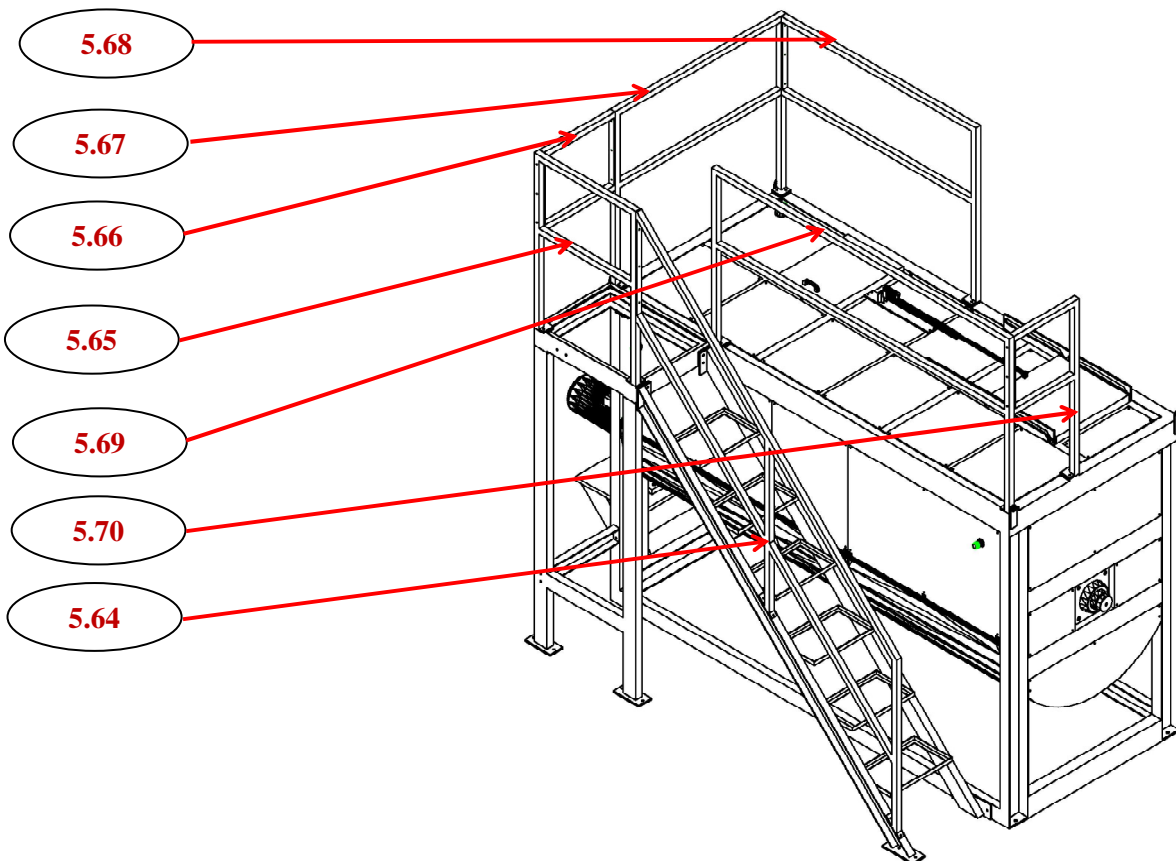
6.14 Figure 14



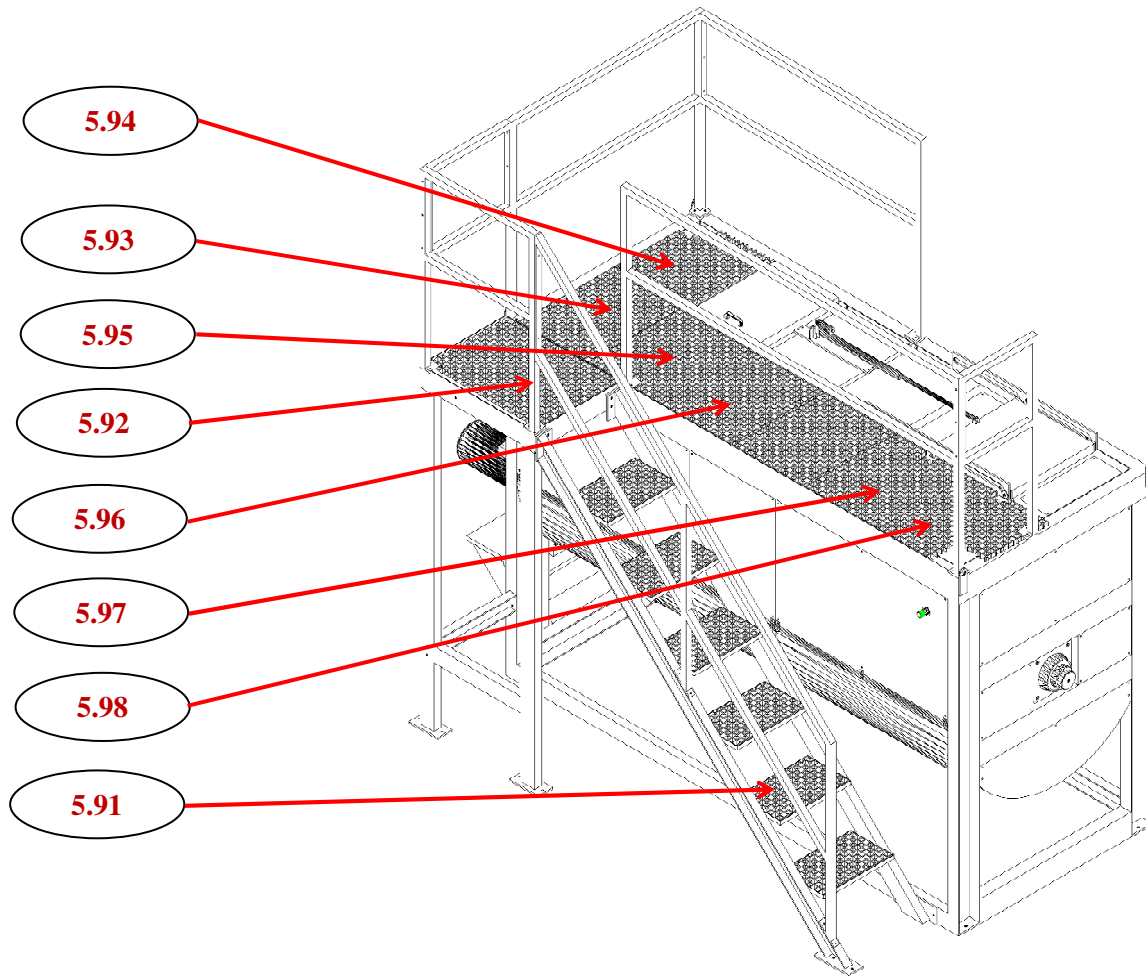
6.15 Figure 15



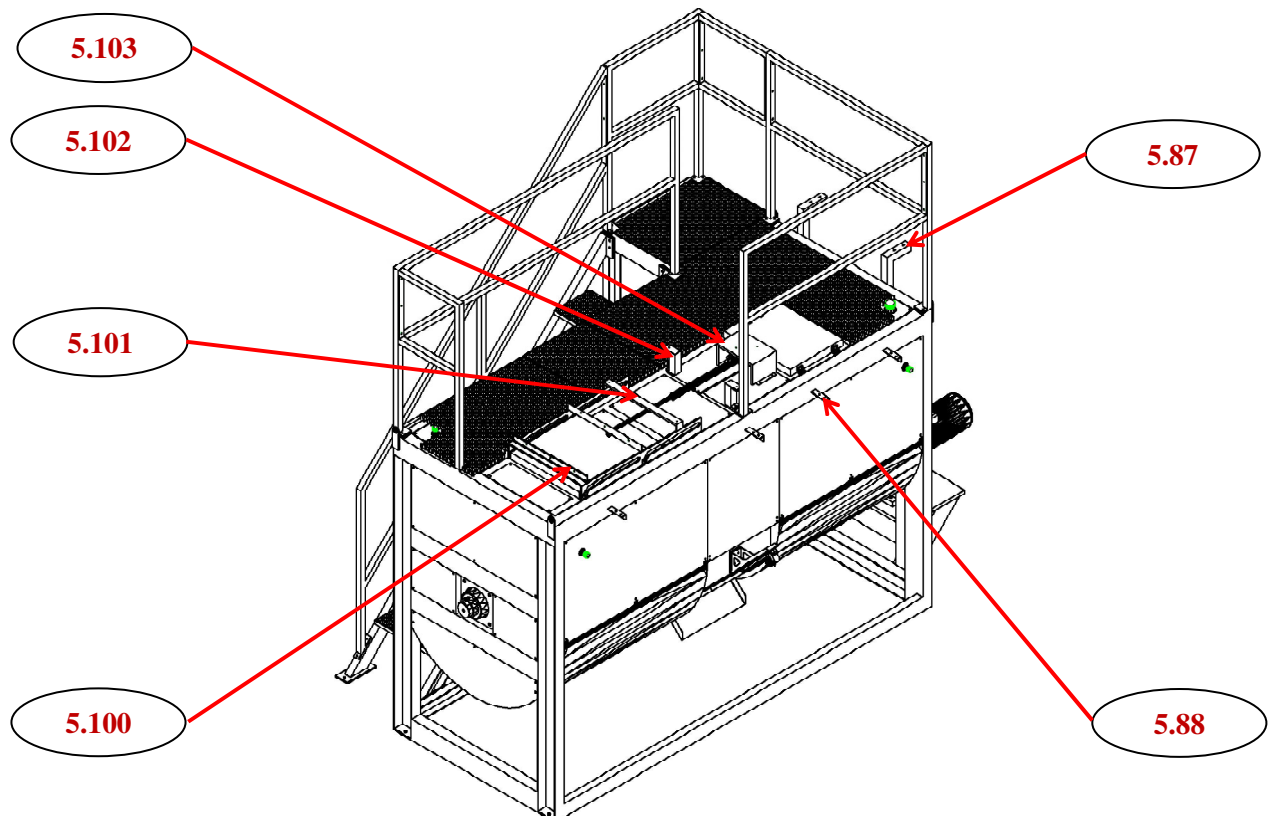
6.16 Figure 16



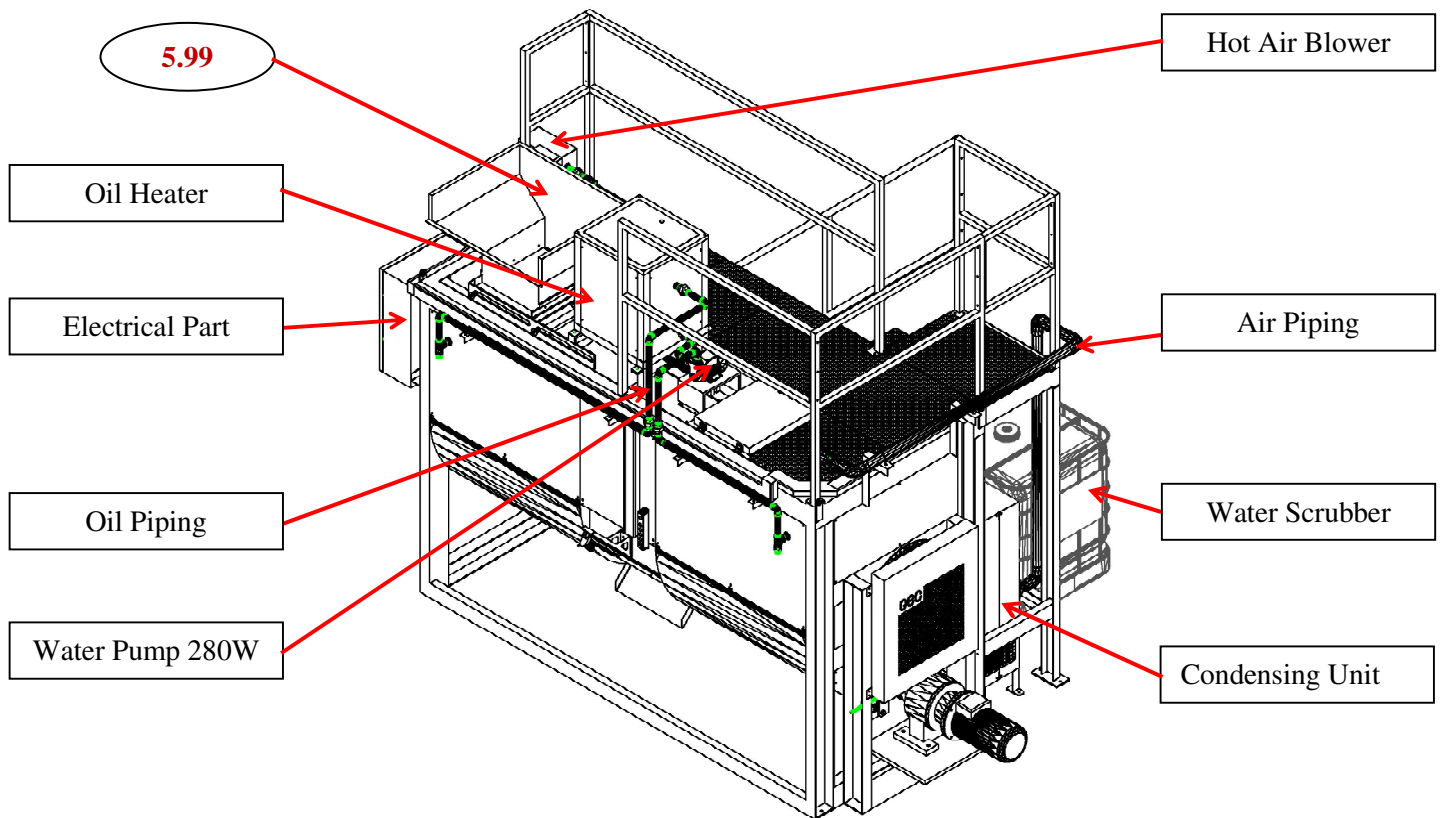
6.17 Figure 17



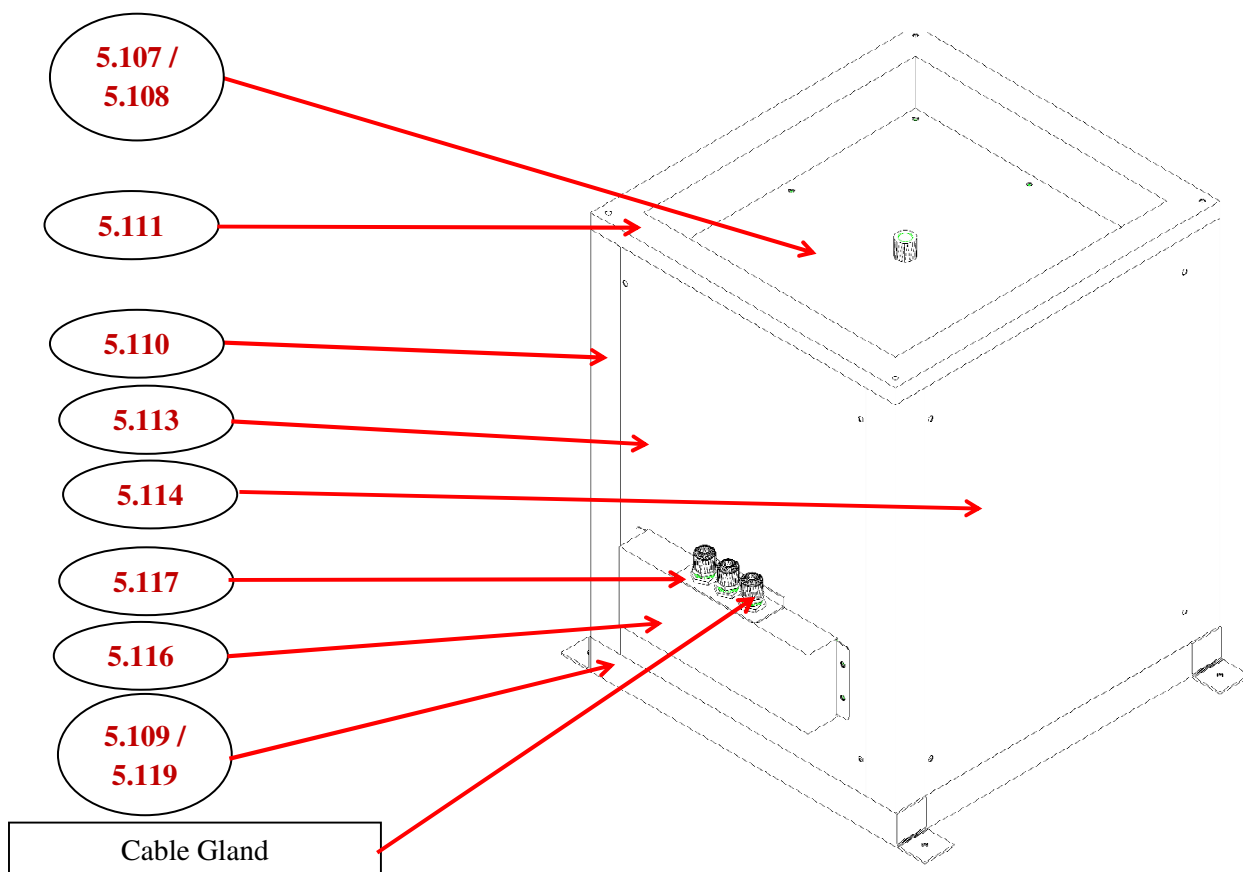
6.18 Figure 18

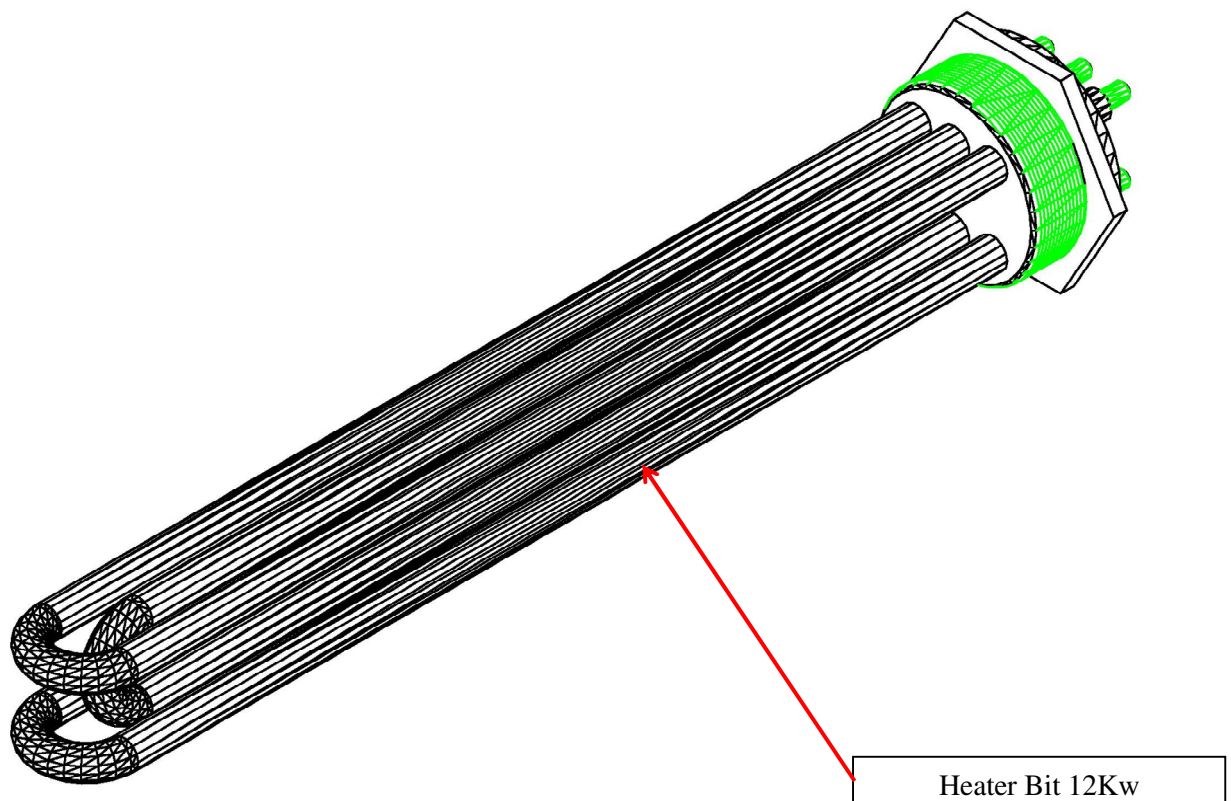
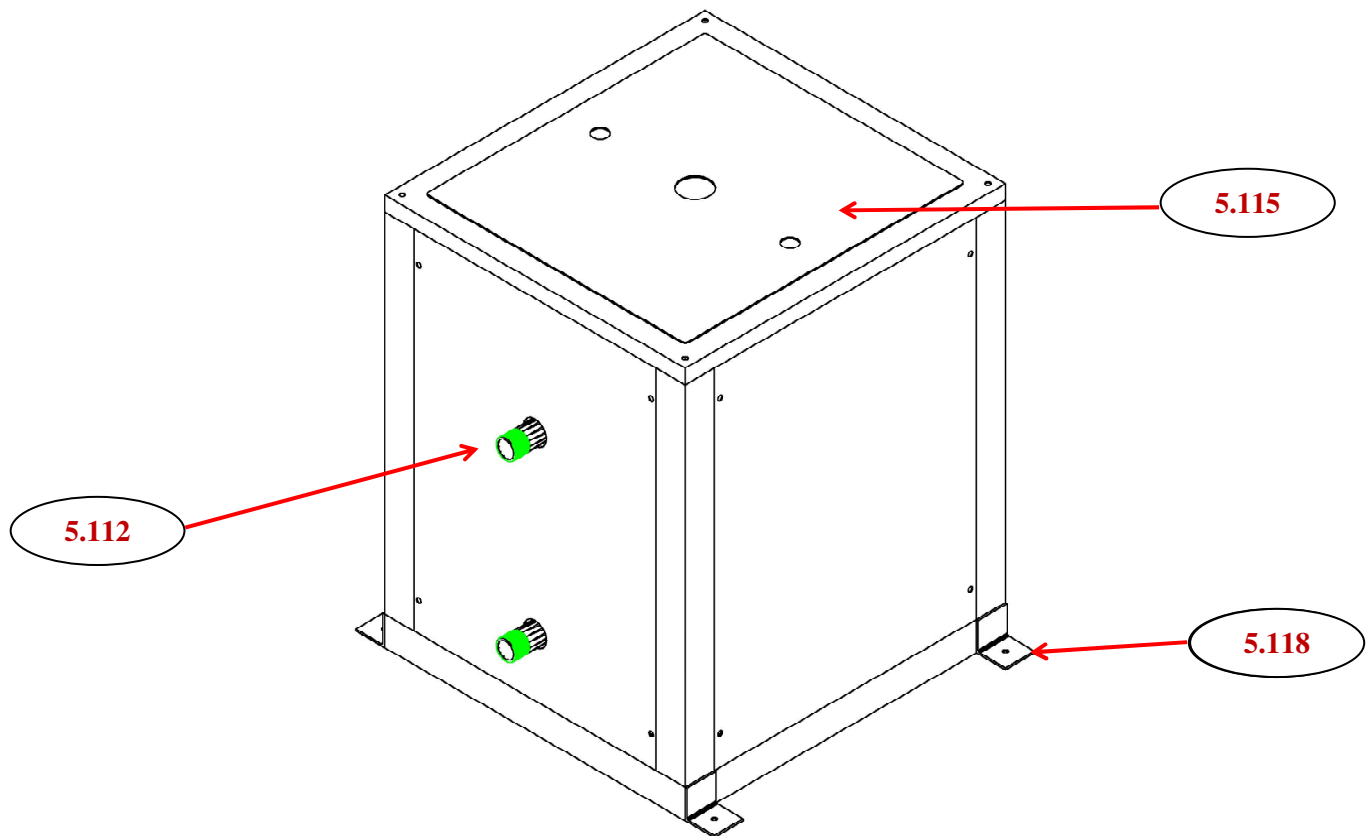


6.19 Figure 19

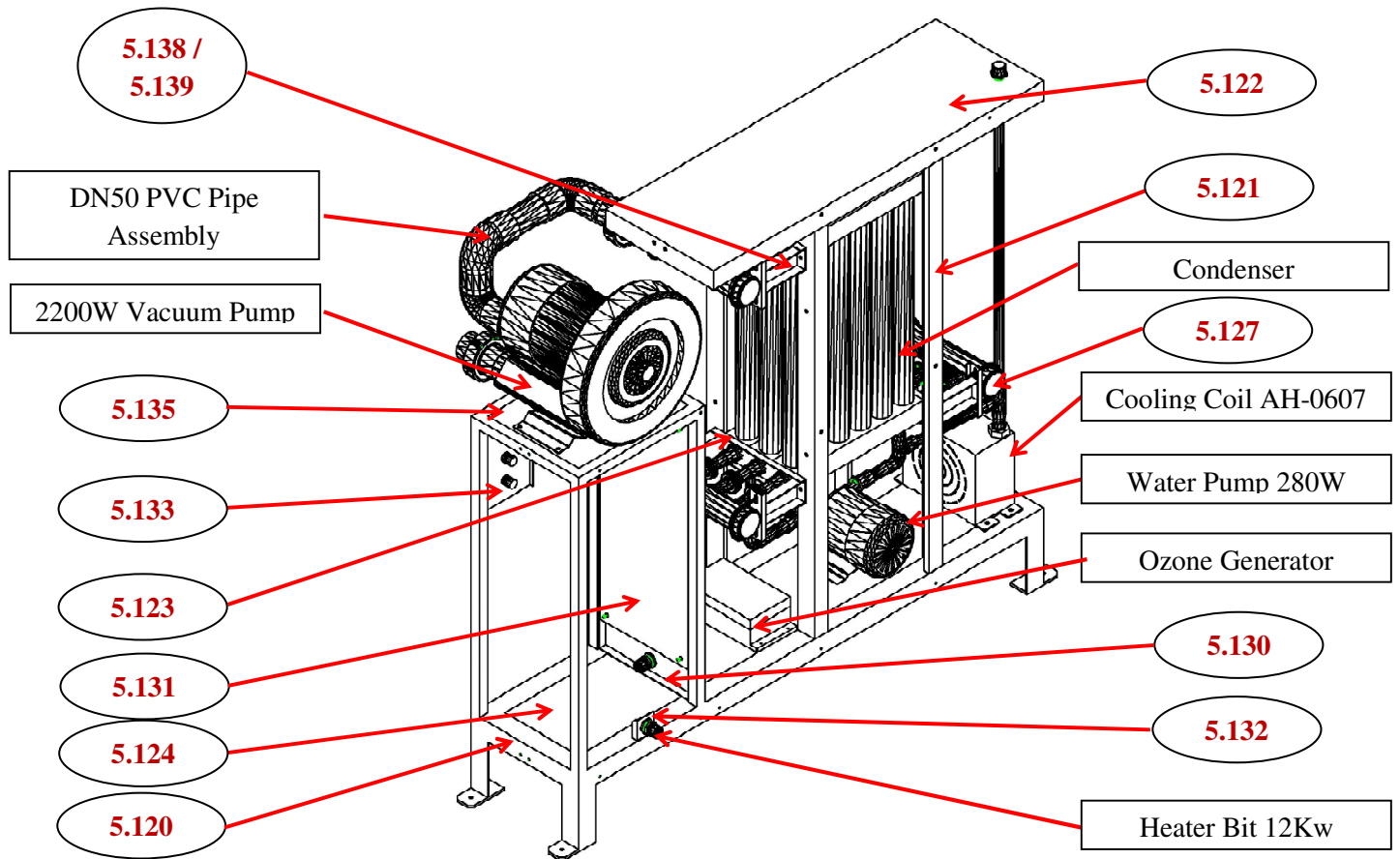


6.20 Figure 20

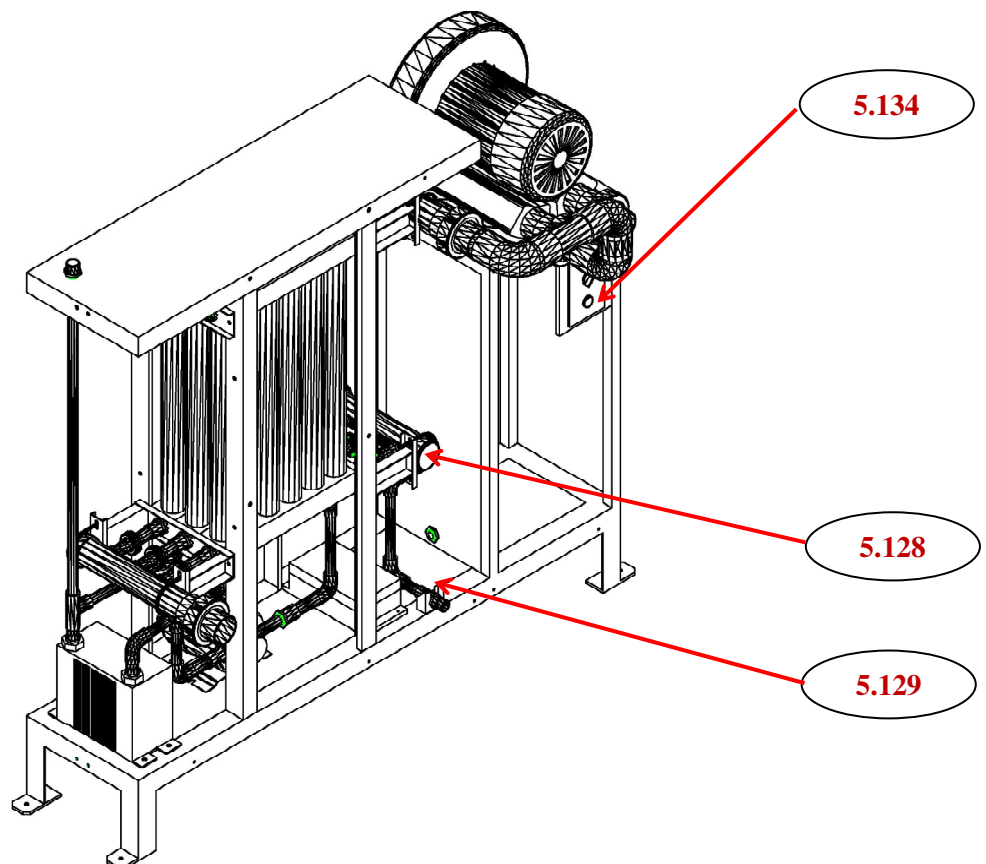


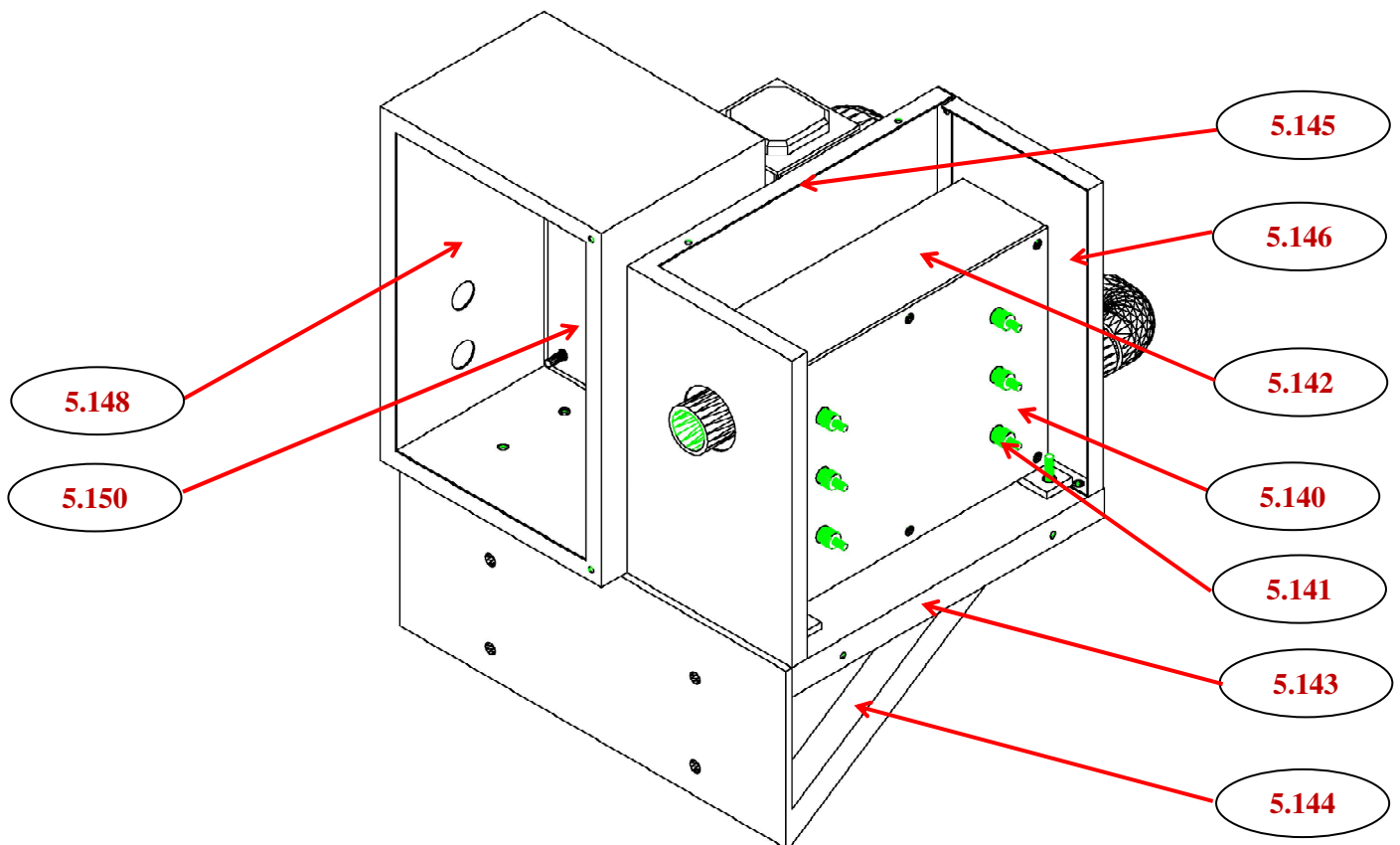
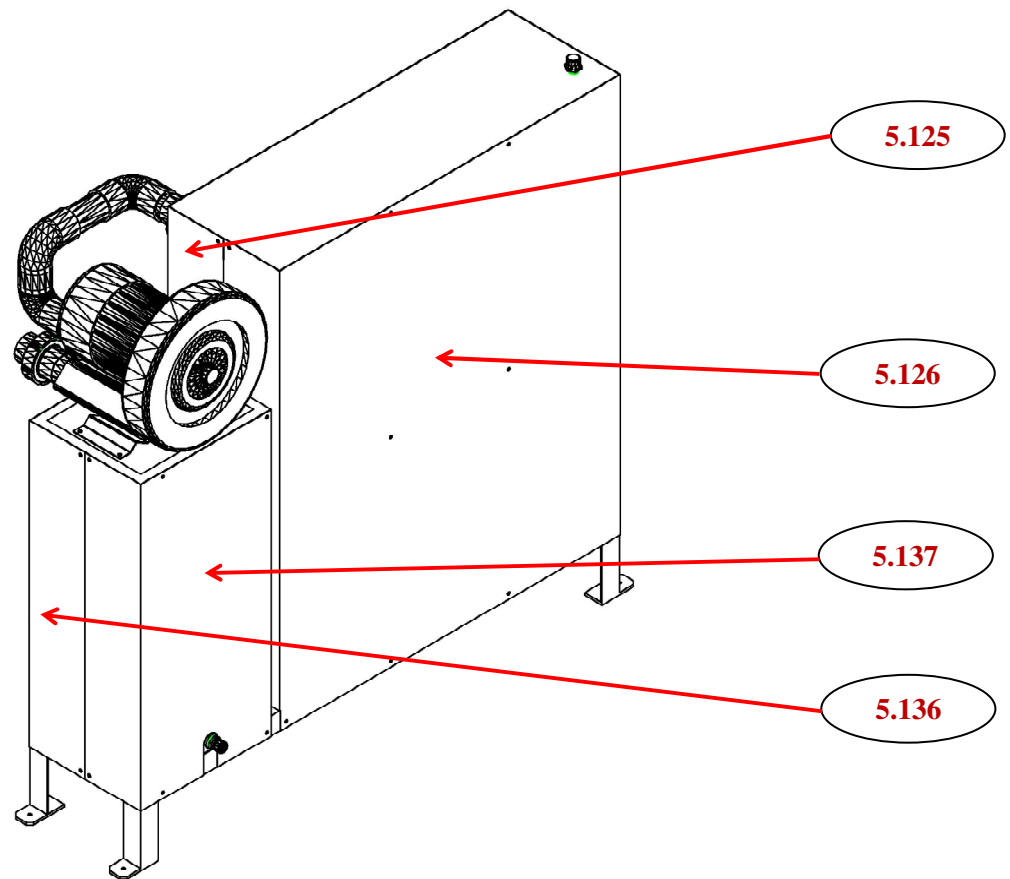


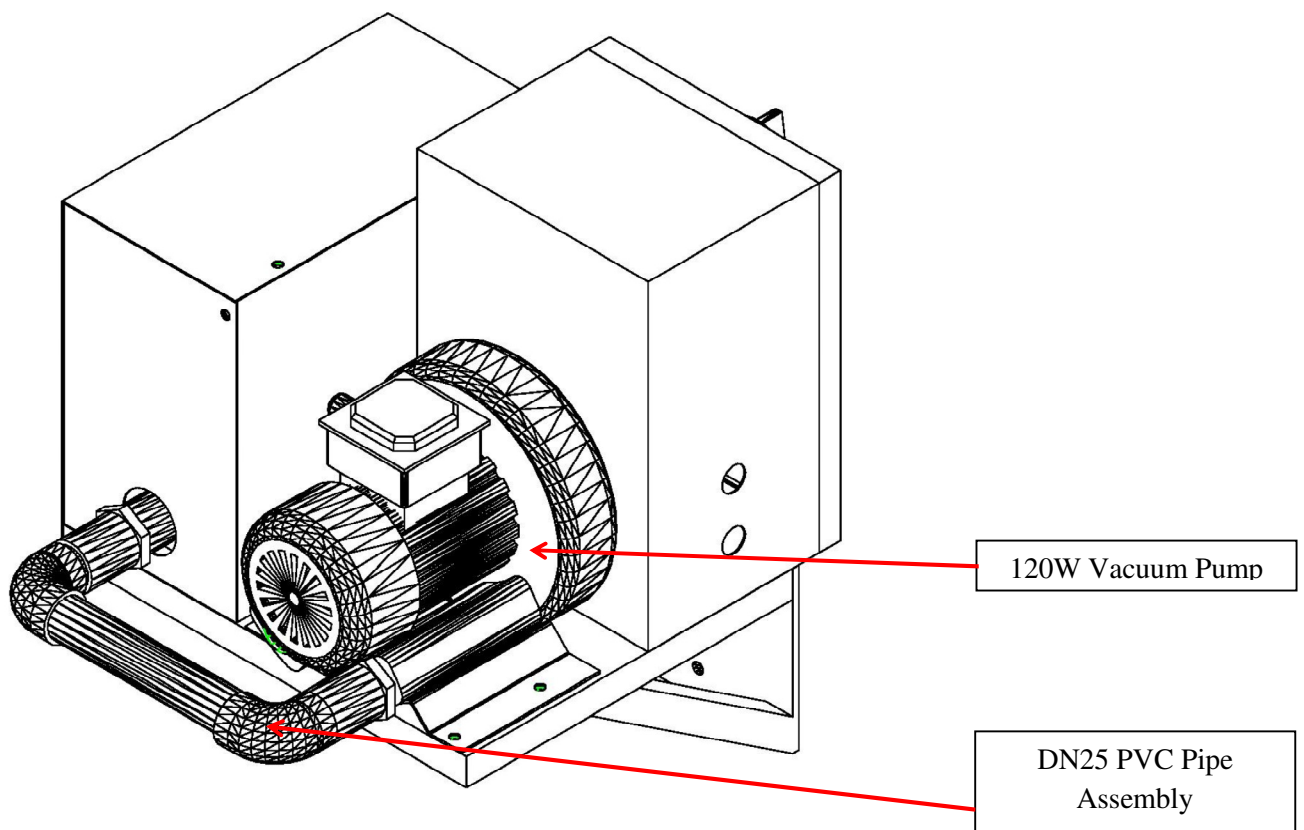
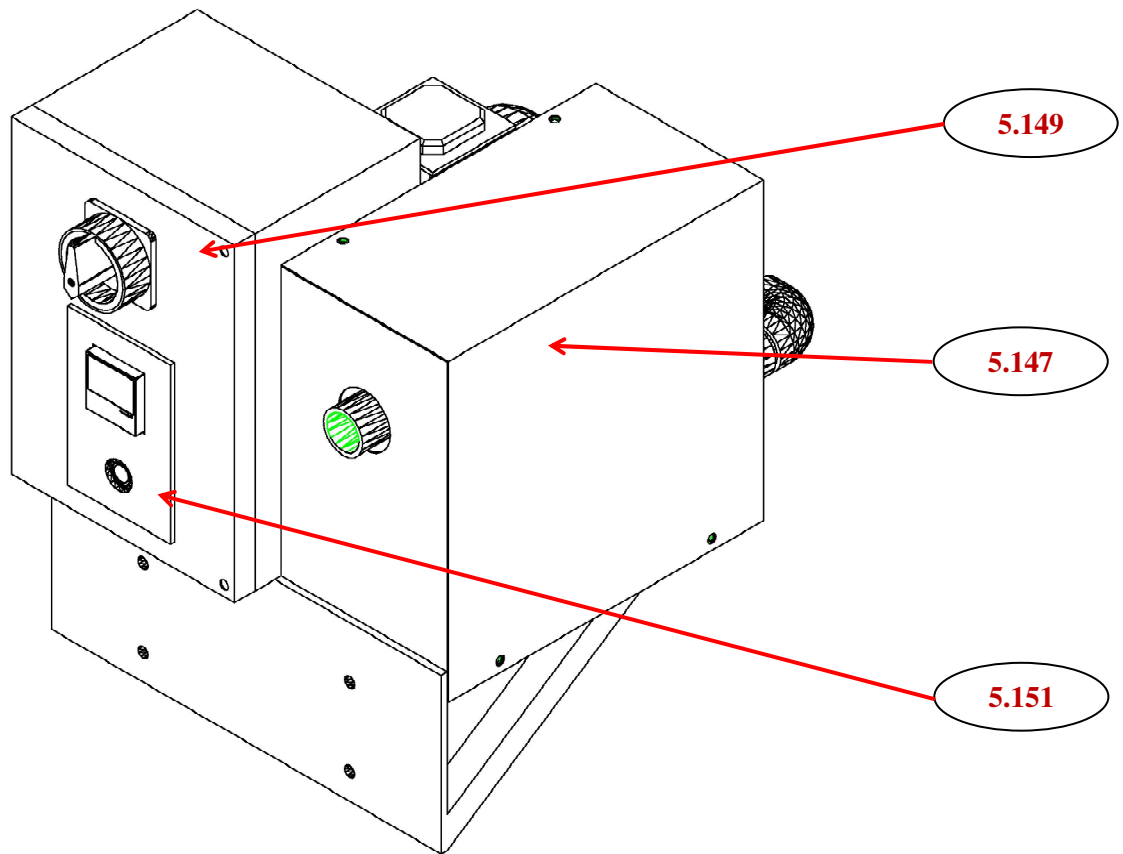
6.23 Figure 23



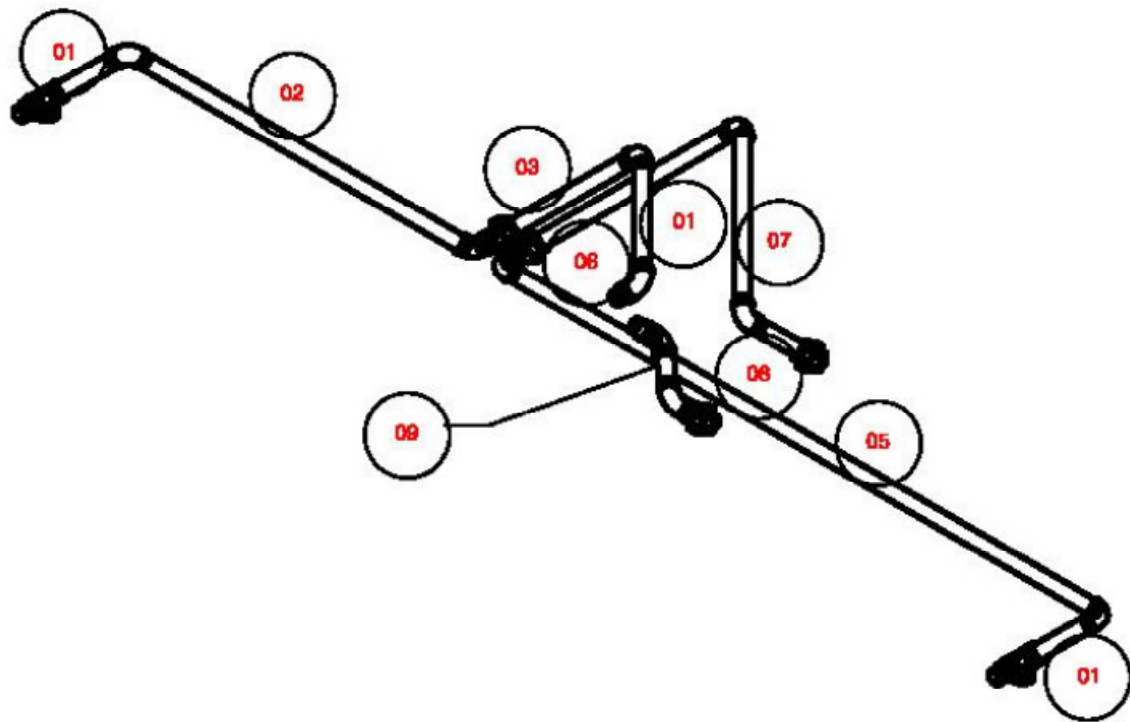
6.24 Figure 24



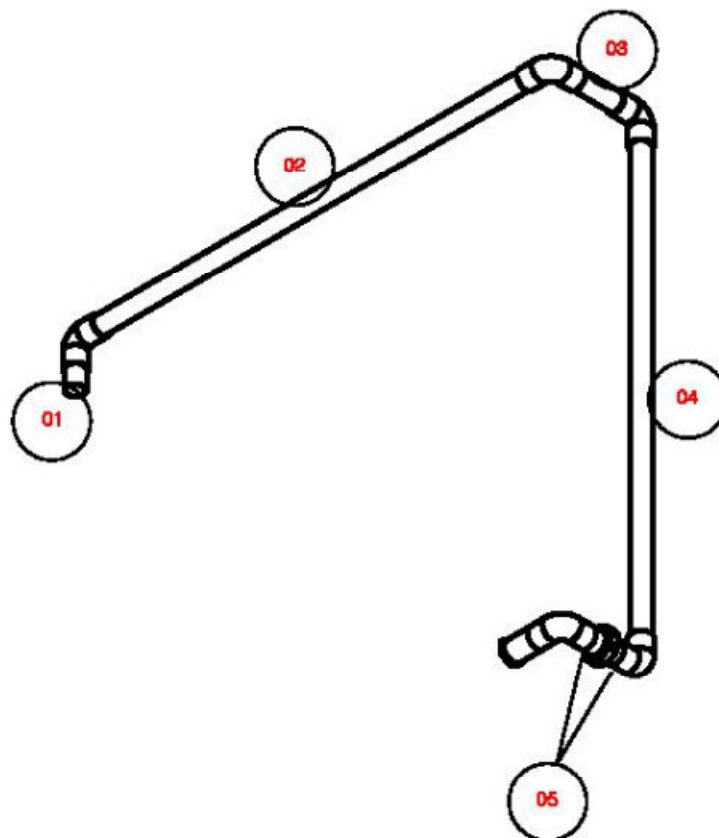




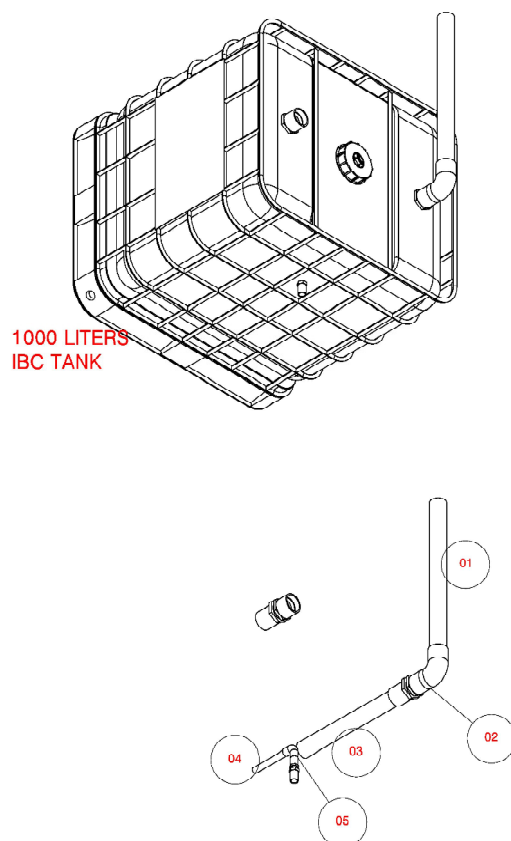
6.29 Figure 29 (Oil Piping)



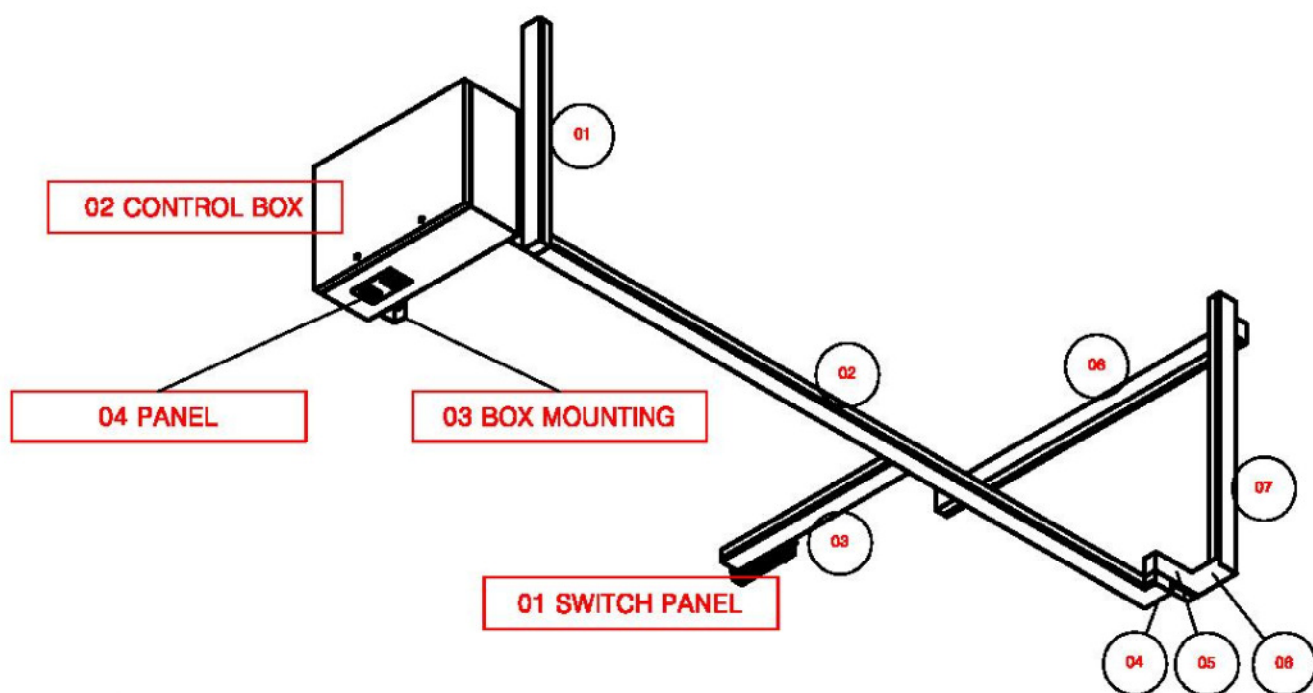
6.30 Figure 30 (Air Piping)



6.31 Figure 31 (Water Scrubber)



6.32 Figure 32 (Electrical Part)



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 & Hot Air Blower | 1 Set |
| 7.3.7 | Piping | 1 Lot |
| 7.3.8 | Composting Powder | 1 Lot |

7.4 Move machine to the allocated area.

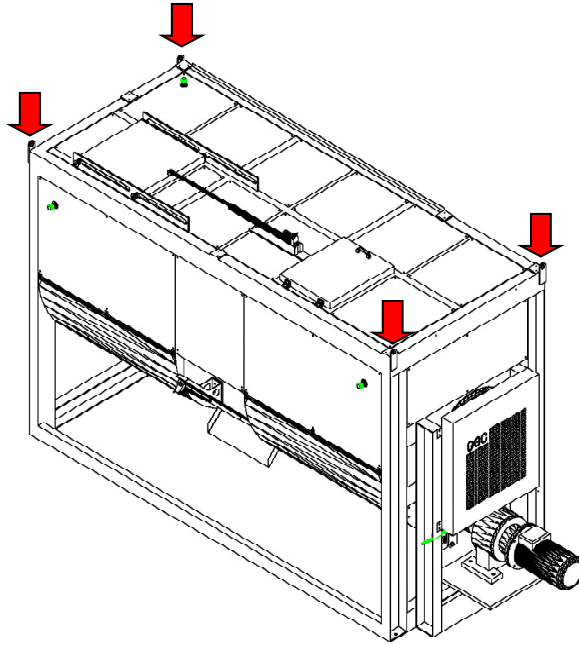
| | | |
|--------------|----------------------------|---|
| 7.4.1 | Floor Space | 4000mm x 8000mm x 6000mm(H) Approx. |
| 7.4.2 | Reinforced Flooring | Concrete Grade Shall Be G30. Allowable soil bearing is assumed to be 100kN/m². |
| 7.4.3 | Fastener Spec | All connection bolts, nuts, spring washer 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. |

7.4.4

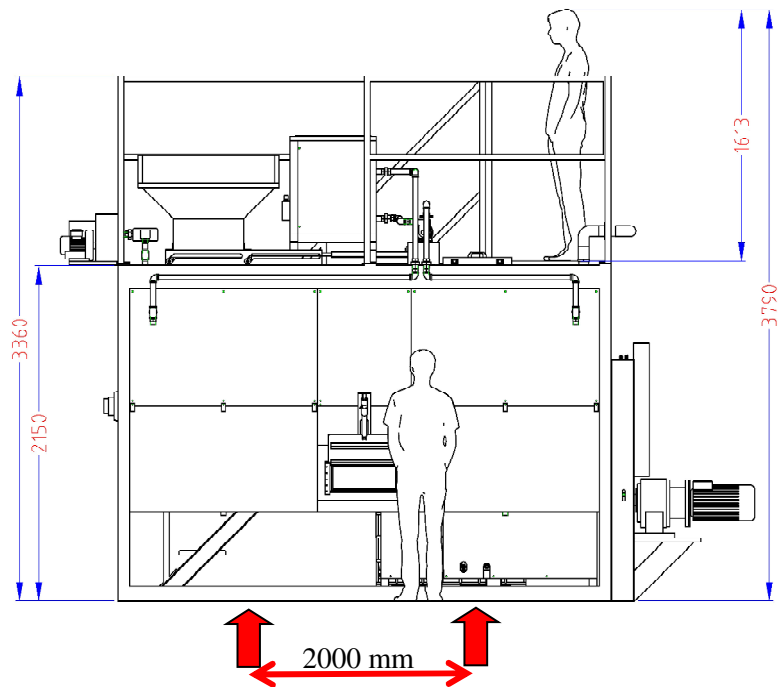
Machine to be move to allocated area in two ways:

7.4.4.1 By using crane (Minimum Lifting Capacity 10 Metric Tones)

Use the Machine Hook at 4 top edges of machine.

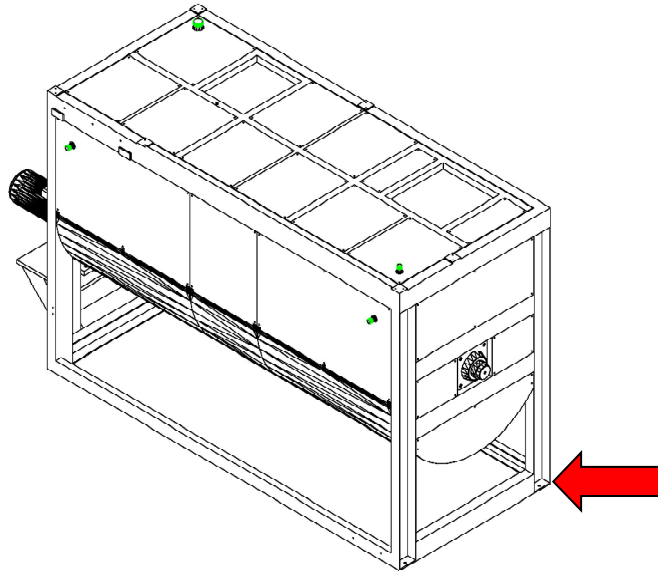


7.4.4.2 By using forklift (Minimum Lifting Capacity 10 Metric Tones and fork length to be minimum 2000mm)

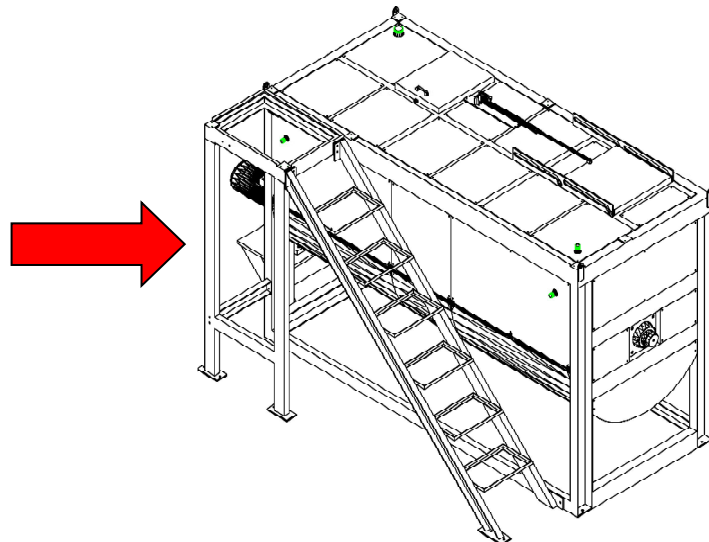


7.5 Installation procedure:

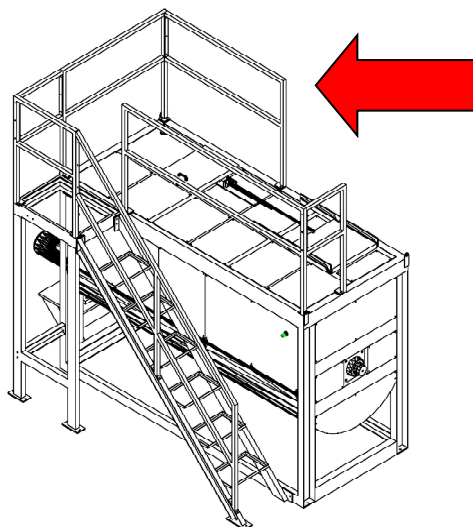
7.5.1 Mounted the unit to the reinforced flooring with 4nos 1/2" anchor bolts.



7.5.2 Assemble the rear platform and ladder M10 Bolts Assembly.

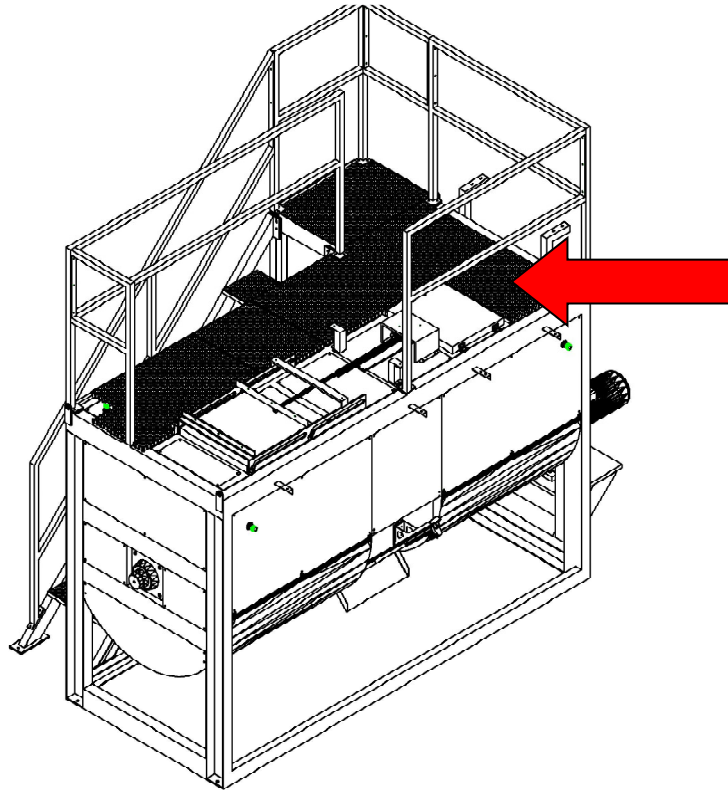


7.5.3 Assemble all railings with M8 Bolt Assembly.



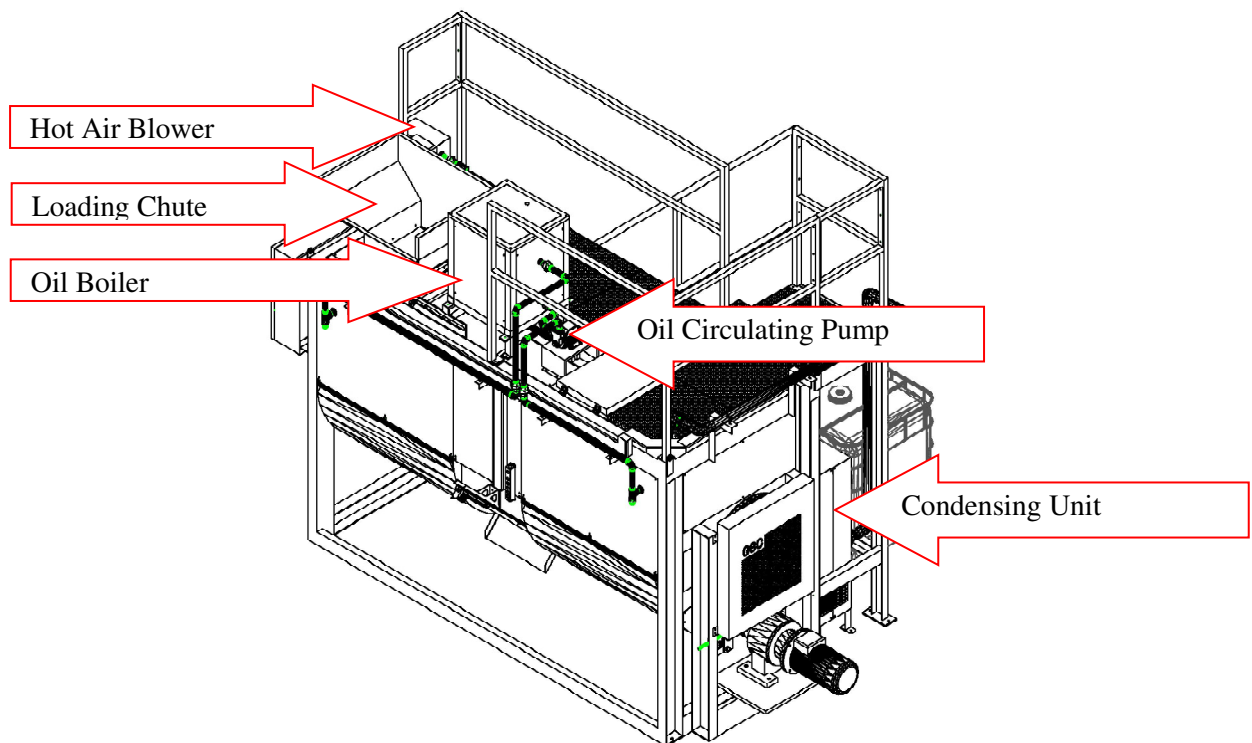
7.5.4

Assemble and lay all FRP floor panel.

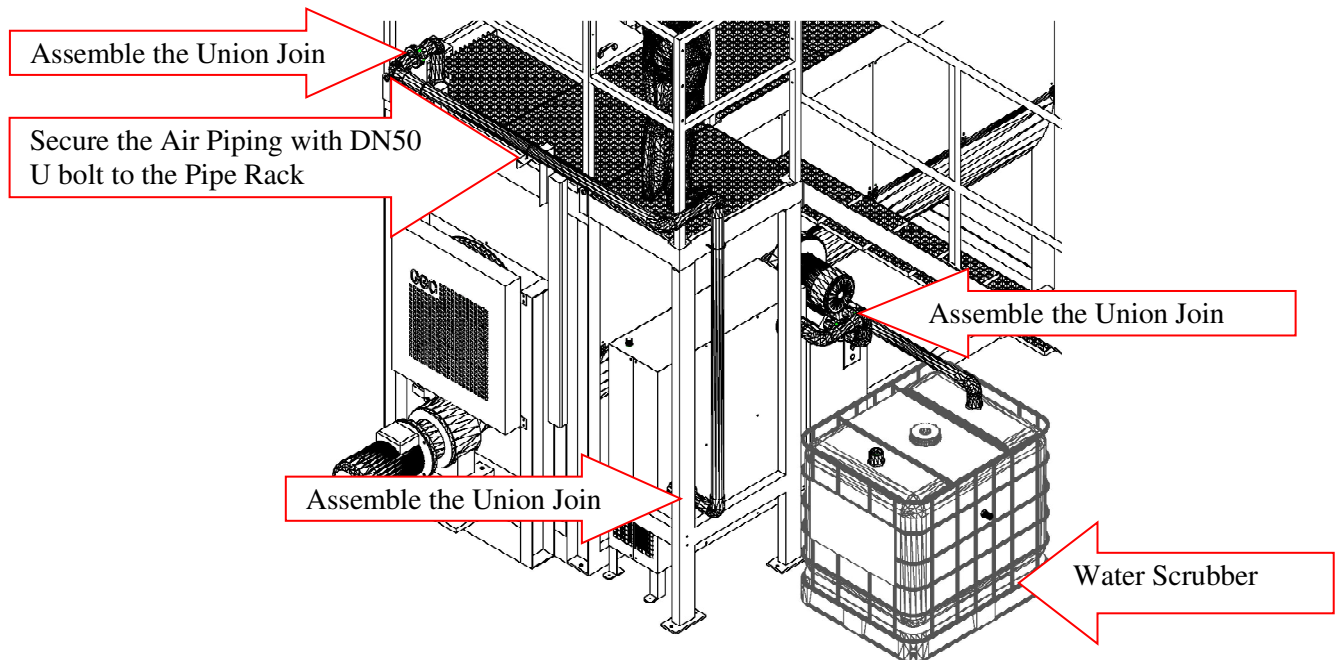


7.5.5

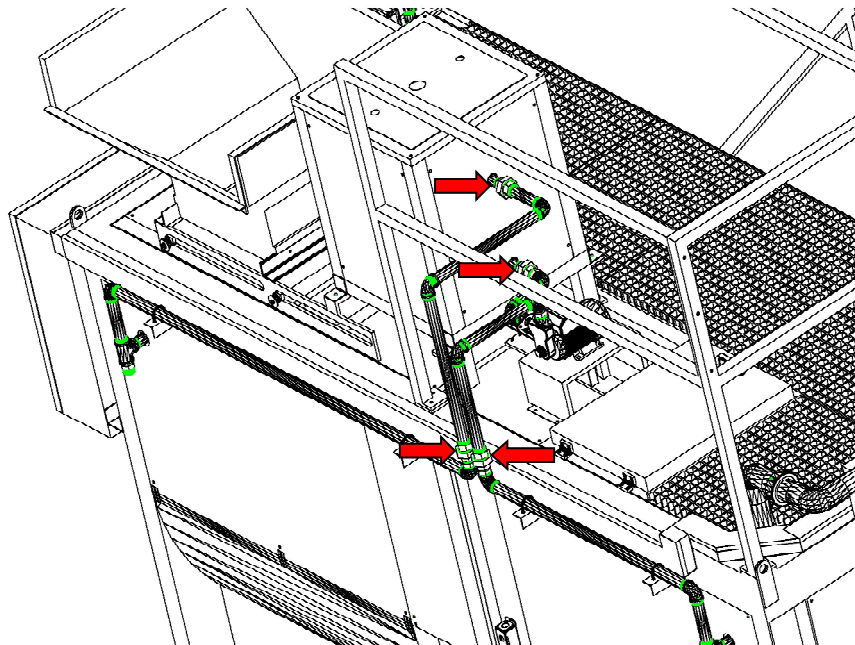
Assemble others component : Loading Chute, Oil Boiler, Oil Circulating Pump, Condensing Unit and Hot Air Blower.



Assemble Air Piping Assembly and Water Scrubber.

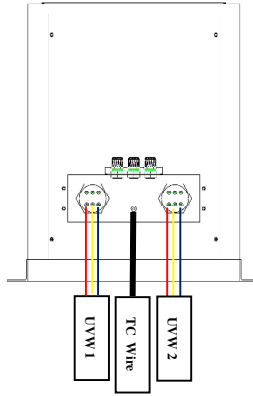


Assemble Oil Piping Assembly by using 4NOS DN25 Union Join. (Red Arrow)

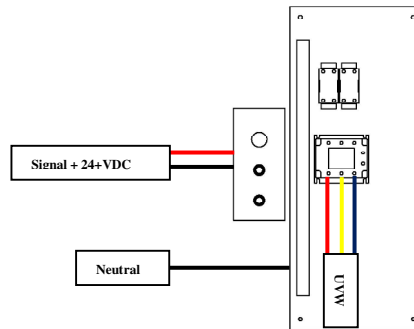


7.5.6

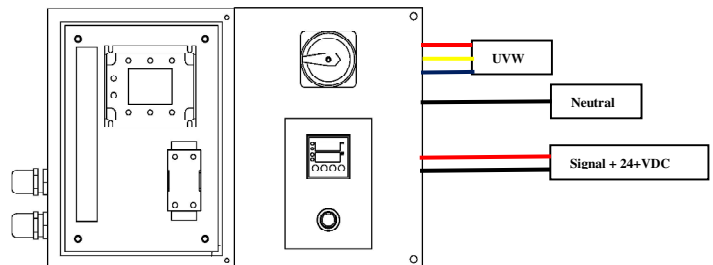
Plug up the following components :
Oil Boiler - UVW - 2 sets + 1 set Thermocouple wire



Condensing Unit - UVW + Neutral + 1 set 24VDC control signal



Hot Air Blower - UVW + Neutral + 1 set 24VDC Control Signale



Oil Circulating Pump - Single Phase (2 wire + Ground)

7.6 Plug up the machine to the power source.

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

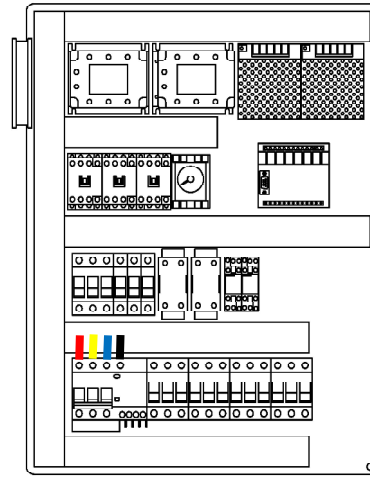
 U (Phase)

 V (Phase)

 W (Phase)

 Neutral

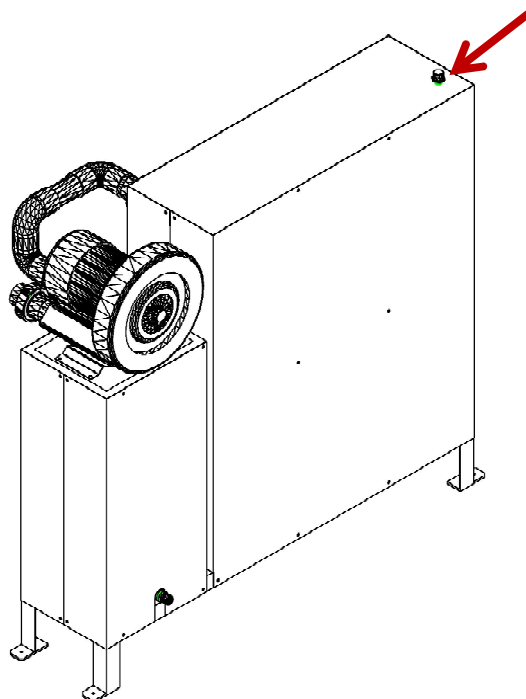
- Ground wire



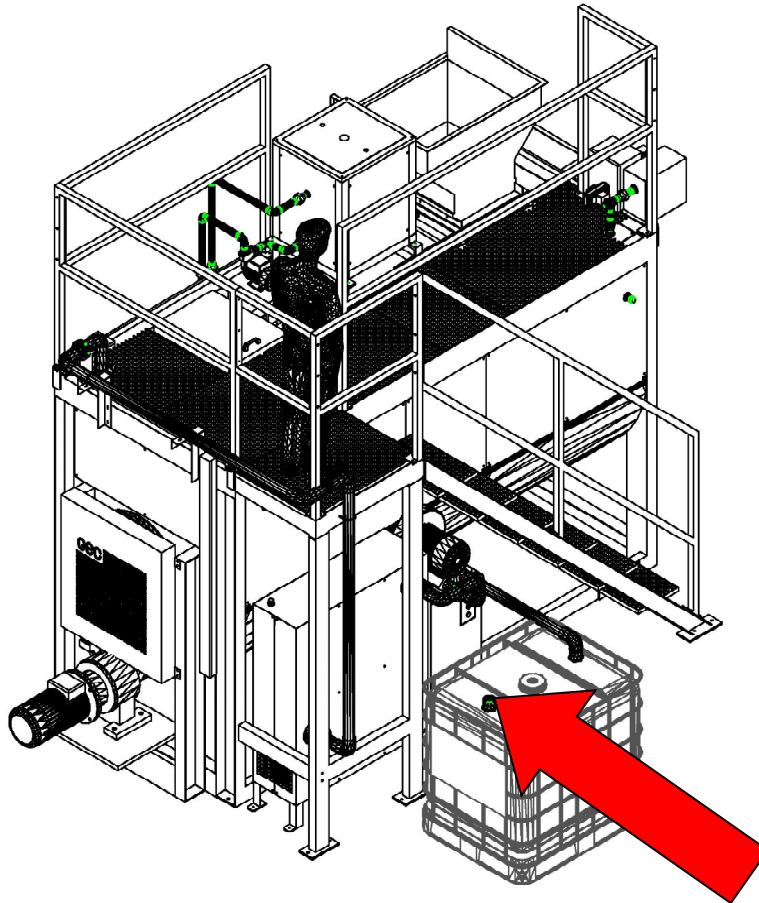
7.7 Before the machine is power on, check the following item.

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.

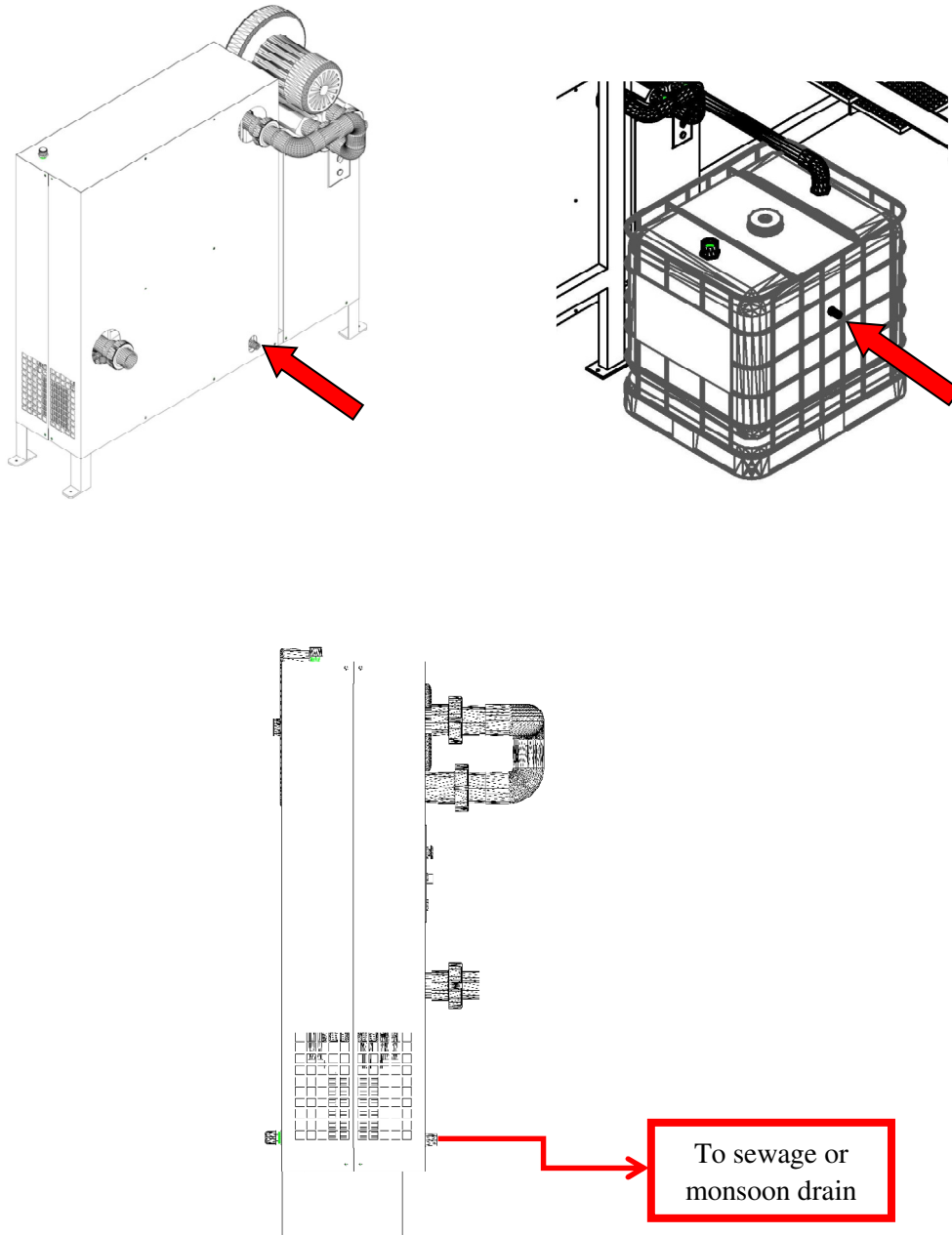


7.8 Installing Hot Air Exhaust pipe.



Please join the hot air exhaust pipe (red arrow) to the roof of building.

7.9 Installing Water overflow Exhaust pipe.



Please join the water overflow 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.

7.10 Power on the machine.

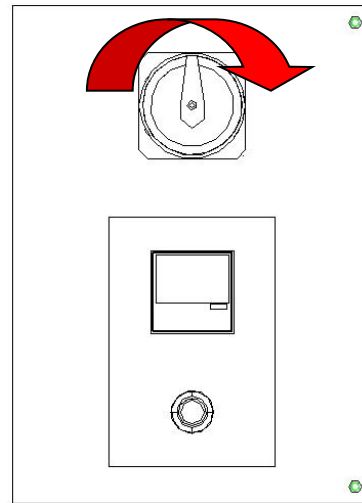
7.11 Check the rotation of the mixer [motor to run at clock wise]. Change the incoming phase wire to ensure that the motor run at correct direction.

7.12 Factory Default Setting

- Heater Temperature (Temperature Controller REX-C100, 95°C)
- Machine Run Time (Timer XHPG48 is 10Hrs on Timer 1, 12Hrs on Timer 2 and 2Hrs on Timer 3)
- Hot Air Blower Temperature Setting 100°C

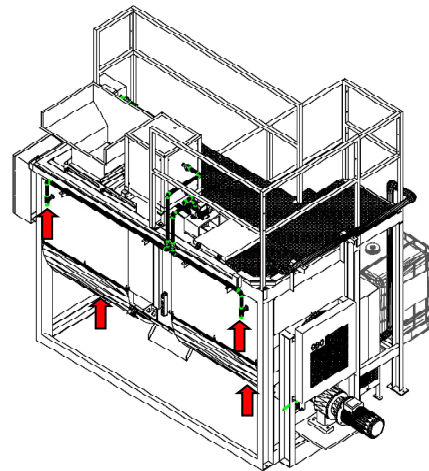
7.13 Switch of the Hot Air Blower.

Once the machine running running,
The indicator on Temperature Controller
will be on and the power LED will be on.
The factory default setting for the hot air
Blower is 100°C.

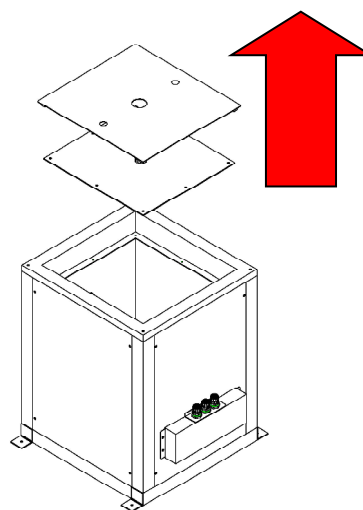


7.14 Filling approx. 500 Litres of Heating Oil to Oil Boiler and Oil Jacket.

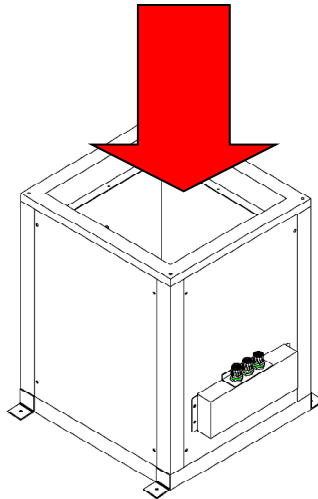
Ensure all hand valve (**Red Arrow**) is close tightly
before filling the boiler and oil jacket.



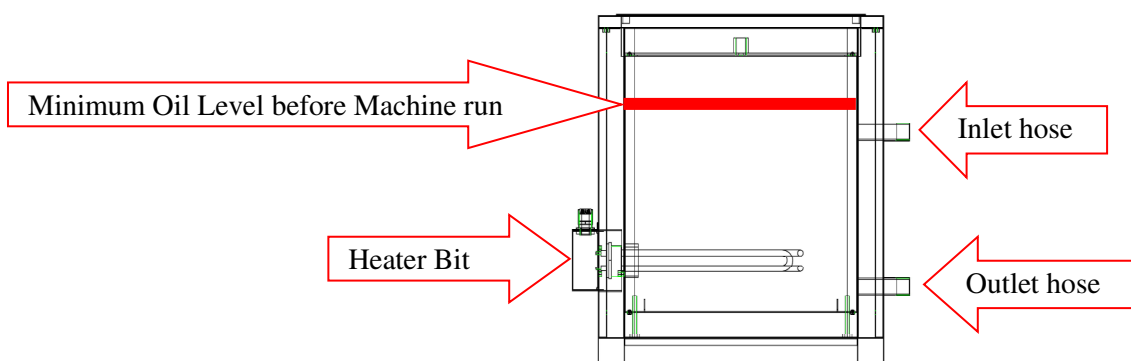
7.15 Open the top cover of Oil Boiler.



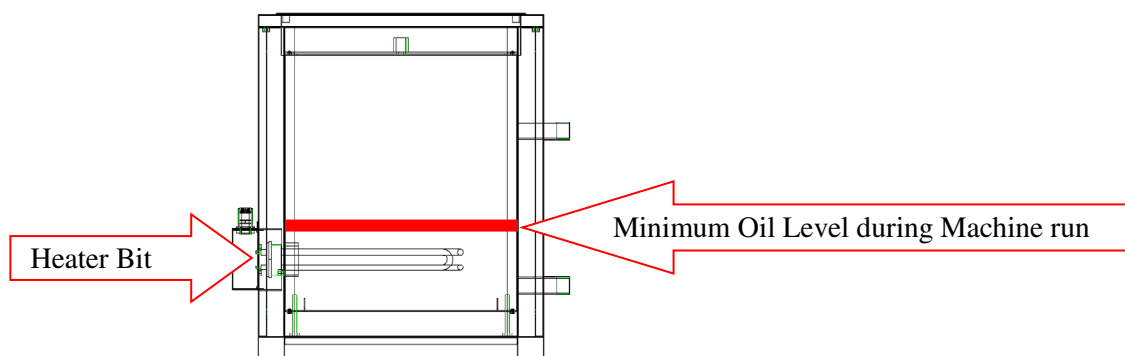
7.16 Fill Heating Oil thru the top of Oil Boiler.



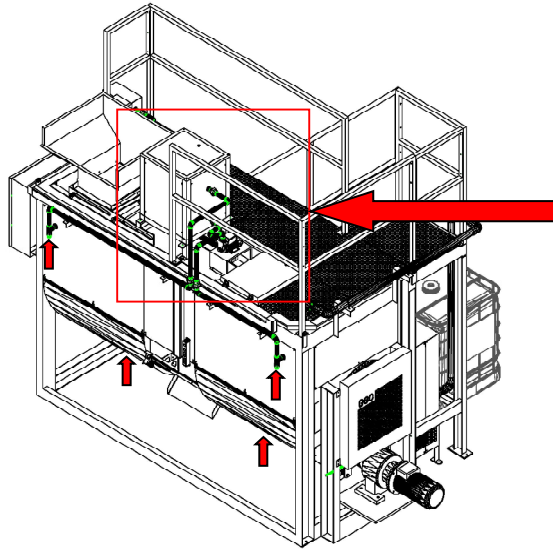
7.17 Heating Oil level filled must above the Inlet Hose (indicated per drawing) before machine run.



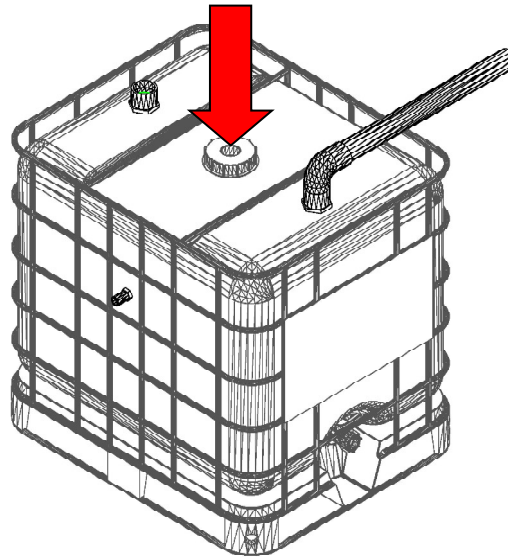
7.18 Heating Oil level filled must above the Heater Bit (indicated per drawing) during machine run.



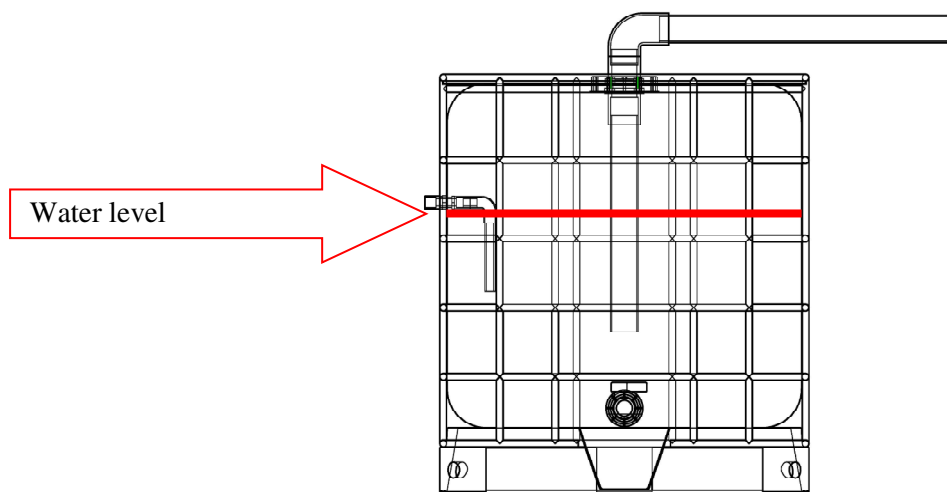
- 7.19 After Heating oil filled, check for oil leakage on all the joins, hand valve Boiler and oil jacket.
(Red Arrow)



- 7.20 Open the cap (Red Arrow) and fill water to the Water Scrubber.



Fill water up to the indicated level.

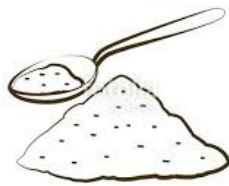


8.0 STANDARD OPERATION PROCEDURE

8.1 Input Materials Preparation



Kitchen Waste



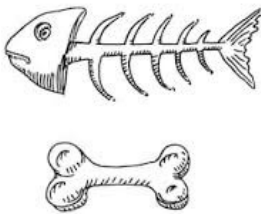
Starches



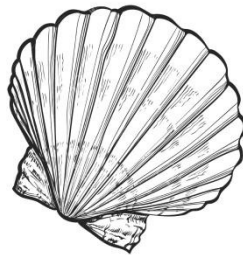
Coffee Ground



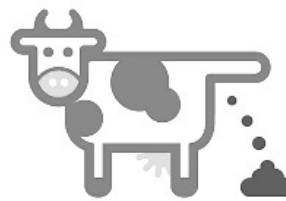
Meat



Fish & Bone



Shell



Animal Manure



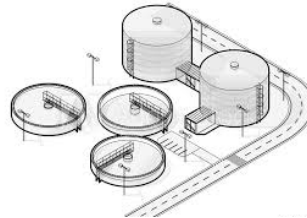
Wood Chip & Sawdust



Dry Leaves & Branches



Grass Clipping & Straw



Waste Water Sludge



**Bio Degradable
Packaging**

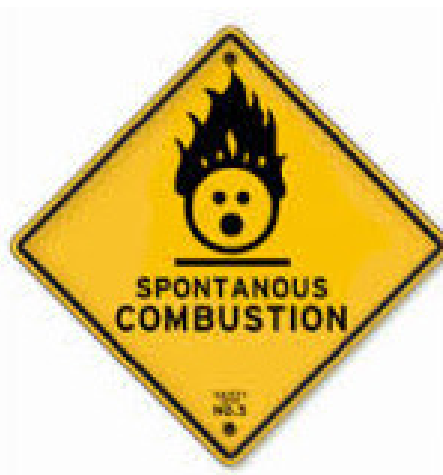
8.1.1 This machine is able to process all organic materials.

- 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

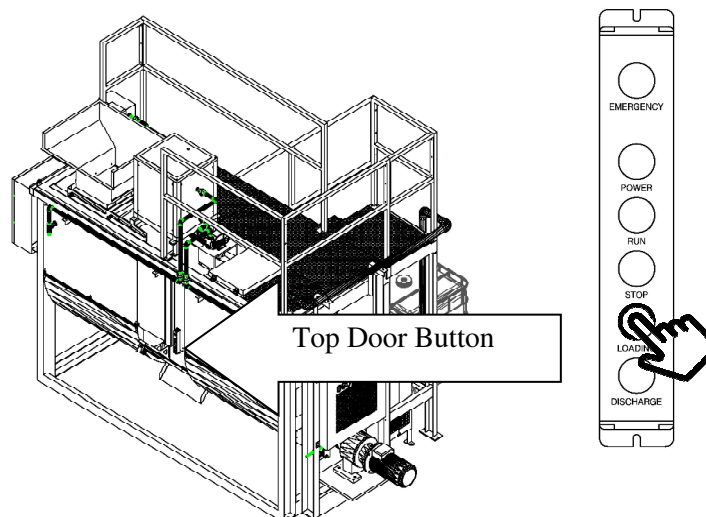
Please do not run **COPRA** in this machine as copra may cause spontaneous combustion during our process.



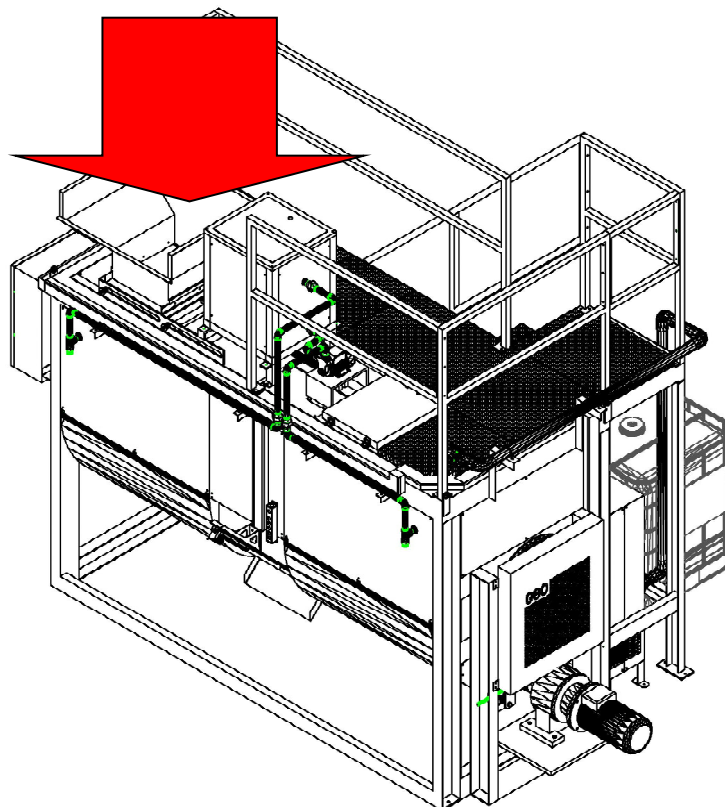
Copra (or khobara) is the dried meat or kernel of the **coconut**, which is the fruit of the **coconut palm** (*Cocos nucifera*). **Coconut oil** is extracted from copra, making it an important agricultural commodity for many coconut-producing countries. It also yields de-fatted coconut cake after oil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

8.3 Machine Operation

8.3.1 Press the Loading Button to open the loading door.



8.3.1 Load the prepared mixture into the machine (refer Para 8.1) by using a inclined conveyor, forklift or bulldozer.

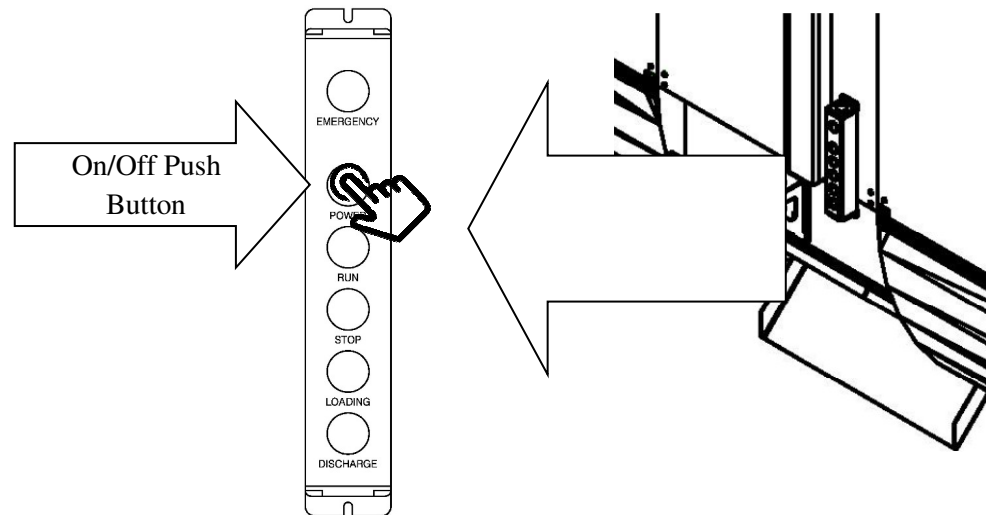


8.3.2 The mixture loaded into the machine shall at the level just cover the mixer. Excessive loading may broke the mixer.

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

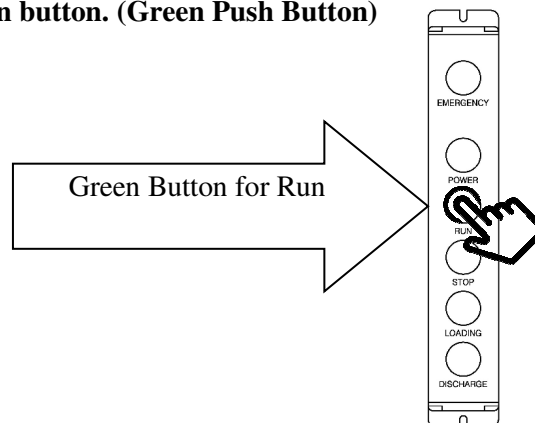
8.3.4 Closed the loading door by releasing the Loading Button .

8.3.5 Switch on the machine. (Power Push Button)

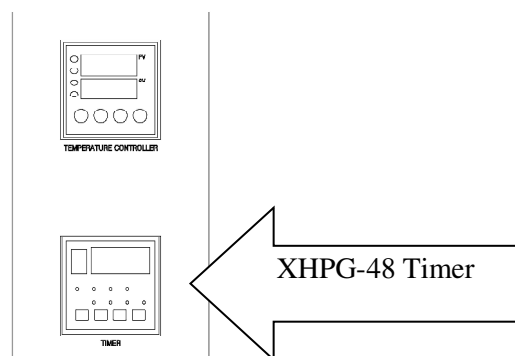


8.3.6 Allow the machine to boot up for 30 seconds.

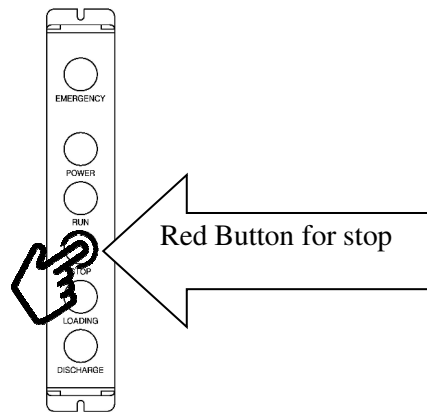
8.3.7 Press the run button. (Green Push Button)



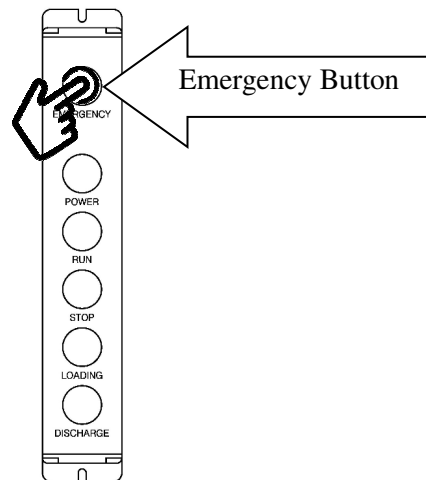
8.3.8 The machine will automatically shut down after the machine completed the cycle time set in the XHPG-48 Timer. (Refer Para 7.12)



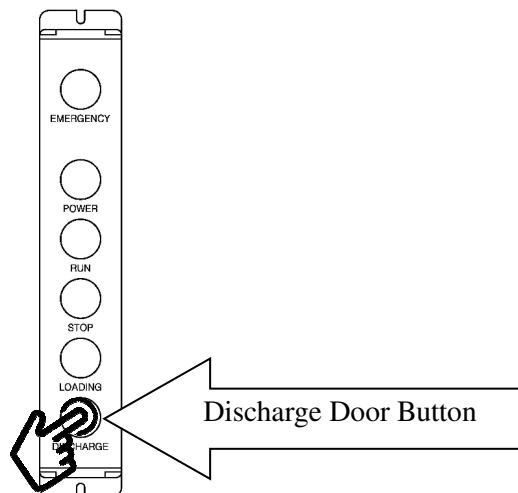
- 8.3.9** During the operation of the machine, you may stop the machine by press the stop button. (Red Push Button). Once this button is engaged, the machine will be reset.



- 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.

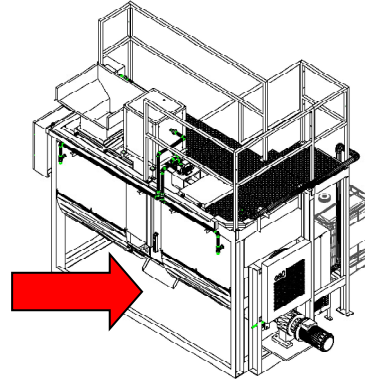


- 8.3.12** The end product from the process is an immature compost and it shall be kept in a dry storage area for a natural cooling down period of 48Hrs to 72Hrs.
- 8.3.13** After the cooling down period, check the temperature and Ph Level of the compost.
- 8.3.14** The temperature of the compost should not exceed 55°C. If it exceeds the required temperature, the compost shall be kept further to cool down the temperature.

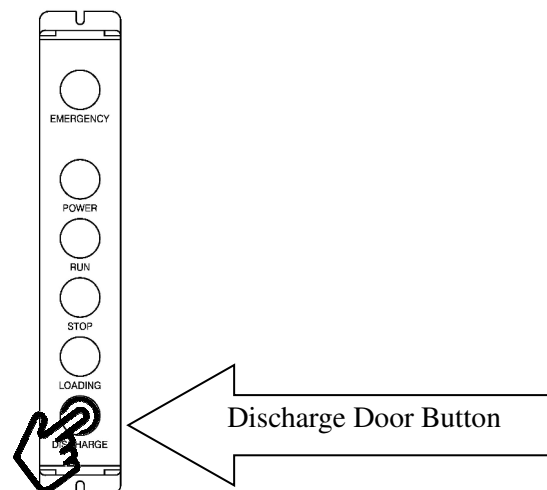
- 8.3.15 Recondition the compost with lime stone powder or Bio-char powder to achieve the desire Ph Level.
- 8.3.16 Left 10% of the compost produced in the chamber to prepare for the next production run.
- 8.3.17 The GEC's composting powder shall need to be replenished every 12 months.

8.4 Compost Discharge Process

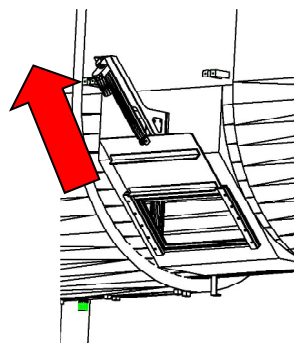
- 8.4.1 After completion of 24 hour cycle, Put a bin or a unloading conveyor in front of the machine, under the chute.



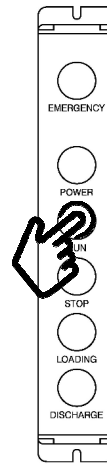
- 8.4.2 Push the Discharge Door Button.



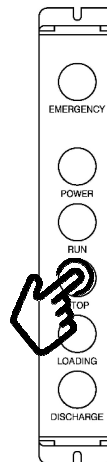
- 8.4.3 Discharge door will open after the Discharge Door Button is engaged.



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.

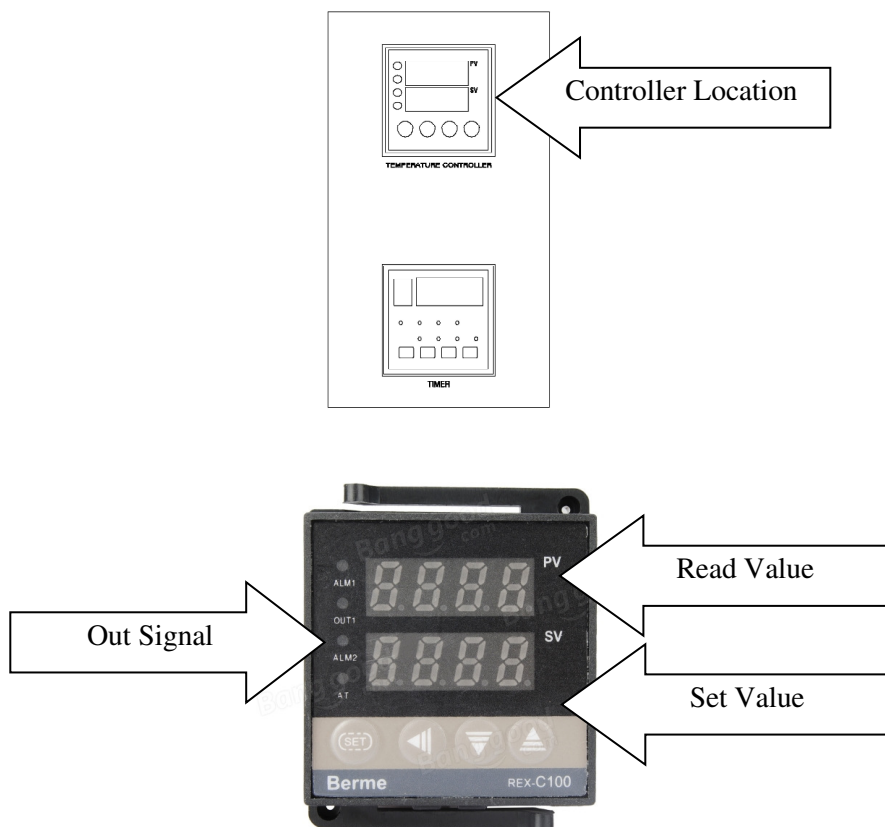
Release the Discharge Door Button to close the discharge door.

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)

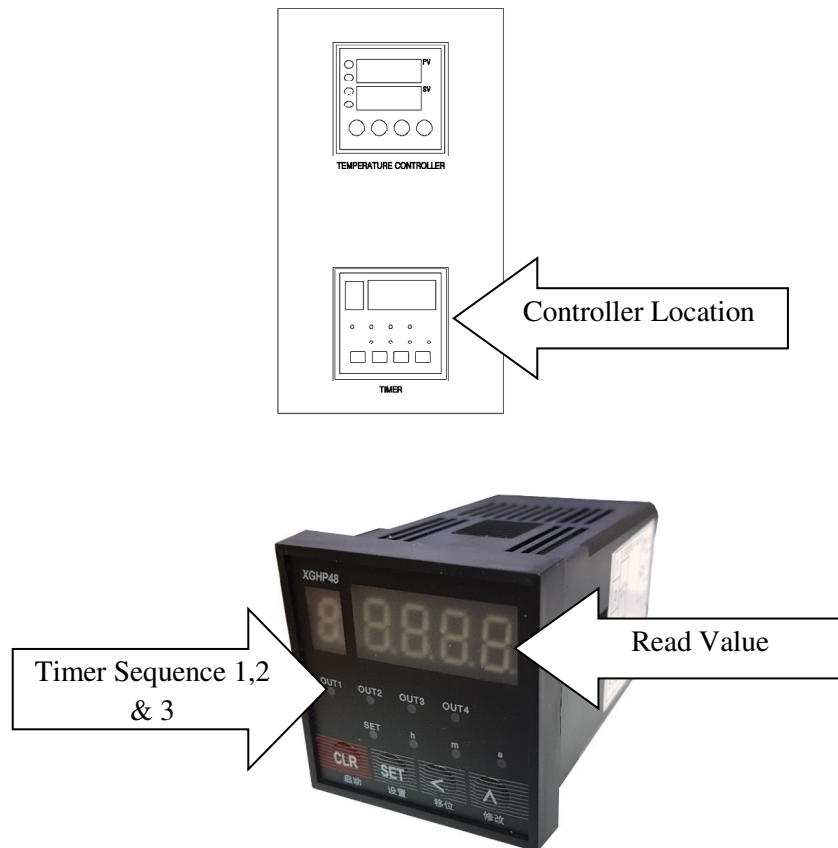


**Press the left arrow key to start setting
SV value will be blinking.
Use the left, up and down button to do setting.**

**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 XHPG-48 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.

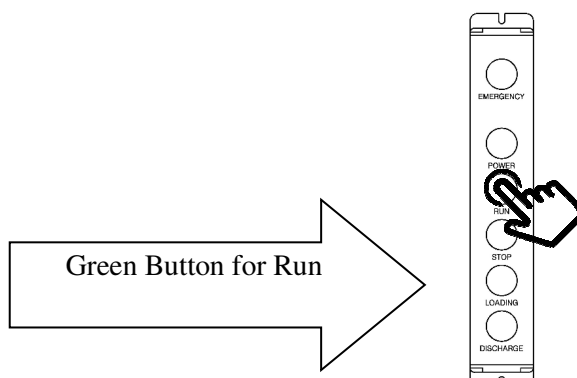
- Factory Default Setting is 12Hrs for T1, 10Hr for T2 and 2Hrs for T3.

- 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.

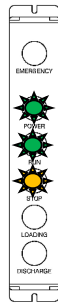
8.7.4 After the sequence completion, open the top door to load new waste. Run the short sequence run (para 8.7.2).

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



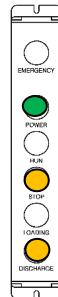
Main Panel

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

Machine Condition

Emergency Button engaged

8.8.5



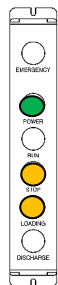
Main Panel

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

Machine Condition

Machine Power On
Motor Standby
Discharge Door Open
Air Heater and Condensing Unit off

8.8.6



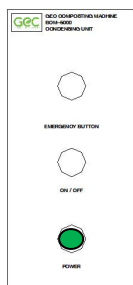
Main Panel

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

Machine Condition

Machine Power On
Motor Standby
Loading Door Open
Air Heater and Condensing Unit off

8.8.7



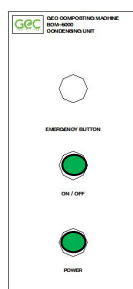
Condensing Unit Panel

Power LED - On
LED - Off

Condensing Unit Condition

Condensing Unit Power On
Condensing Unit Stop Running

8.8.8



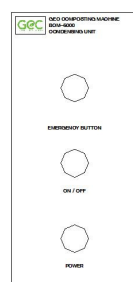
Condensing Unit Panel

Power LED - On
On/Off LED - On

Condensing Unit Condition

Condensing Unit Power On
Condensing Unit Running

8.8.9



Condensing Unit Panel

Power LED - Off
On/Off LED - Off

Condensing Unit Condition

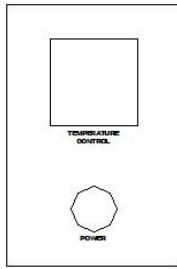
Emergency Button Engaged

8.8.10

Hot Air Blower Panel

Hot Air Blower Condition

Hot Air Blower Running



Power LED - On

9.0 MAINTENANCE AND SCHEDULE

| No | Maintenance Description | Maintenance Job | Schedule |
|-----------|---------------------------------------|---|------------------------|
| 1 | Mixer | Check for broken mixer | After every run |
| 2 | Heating Oil | Check for oil level (refer para 7.17 & 7.18) | After every run |
| 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 UCF220 | Greasing | Monthly |
| 8 | Viton Seal | Check for leakage | Monthly |
| 9 | Chamber Wall | Check for leakage | Monthly |
| 10 | Viton Seal | Replace new seal | Yearly |
| 11 | Water Cooling Reservoir System | Top up water (Para 7.7, Page 48) | 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 machine must be unplug and with the water scrubber, condensing unit, ladder and platform to be uninstalled.**
- 10.4 Move the machine by using crane or forklift (refer para 7.4.4).**
- 10.5 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 | |
| 11.1.1 | Motor stop to run | a | The emergency button is engaged |
| | | b | The Hydraulic Power Pack electrical connection is loose |
| | | c | The motor is burned |
| | | d | The Controller Board is not functioning |
| | | e | Electrical circuit failure (refer para 11.1.12) |
| 11.1.2 | 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 |
| | | e | Electrical circuit failure (refer para 11.1.12) |
| 11.1.3 | 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 XHPG-48 Timer is incorrect |
| | | g | The PLC Controller is not functioning |
| | | h | Electrical circuit failure (refer para 11.1.12) |
| 11.1.4 | Controller Board could not boot up | a | The 24v power supply burned |
| | | b | The Controller Board is burned |
| | | c | Electrical circuit failure (refer para 11.1.12) |
| 11.1.5 | Timer XHPG-48 does not allow to do setting | a | Refer Operation Manual of XHPG-48 to do the Setting |
| | | b | The Timer burned |
| | | c | Electrical circuit failure (refer para 11.1.12) |
| 11.1.6 | Machine do not run when push run button | a | The run button is damaged. |
| | | b | The Emergency button is engaged. |
| | | c | The Controller board burned |

| No | Problem | Potential Cause |
|---------|---------------------------------------|---|
| 11.1.7 | Air flow of the machine is low or non | d Electrical circuit failure (refer para 11.1.12) |
| | | a The air piping system is clogged |
| | | b The vacuum pump burned |
| | | c Electrical circuit failure (refer para 11.1.12) |
| 11.1.8 | Loading Door not functioning | a The door actuator burned |
| | | b The mechanical parts broken |
| | | c Electrical circuit failure (refer para 11.1.12) |
| 11.1.9 | Discharge Door not functioning | a The door actuator burned |
| | | b The mechanical parts broken |
| | | c Electrical circuit failure (refer para 11.1.12) |
| 11.1.10 | Hot Air Blower not functioning | a The Temperature Controller burned |
| | | b The heater burned |
| | | c Electrical circuit failure (refer para 11.1.12) |
| 11.1.11 | Machine trip | a Main motor trip |
| | | b Vacuum pump trip (Hot Air Blower & Condensing Unit) |
| | | c Heater burned (Oil Boiler & Hot Air Boiler) |
| | | d Water pump trip |
| | | e Oil pump trip |
| | | f Wire insulation damaged causing electrical leakage |
| | | g One of the components in the control box burned |
| | | h Electrical circuit failure (refer para 11.1.12) |

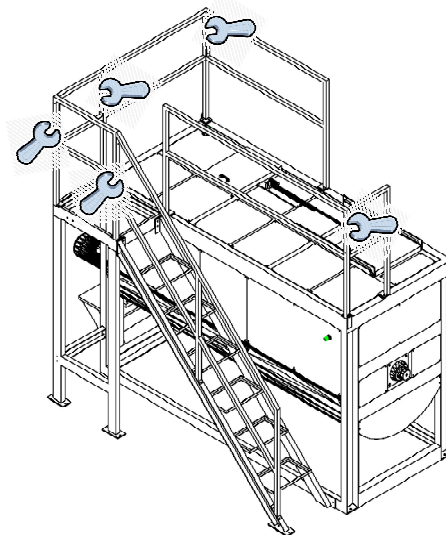
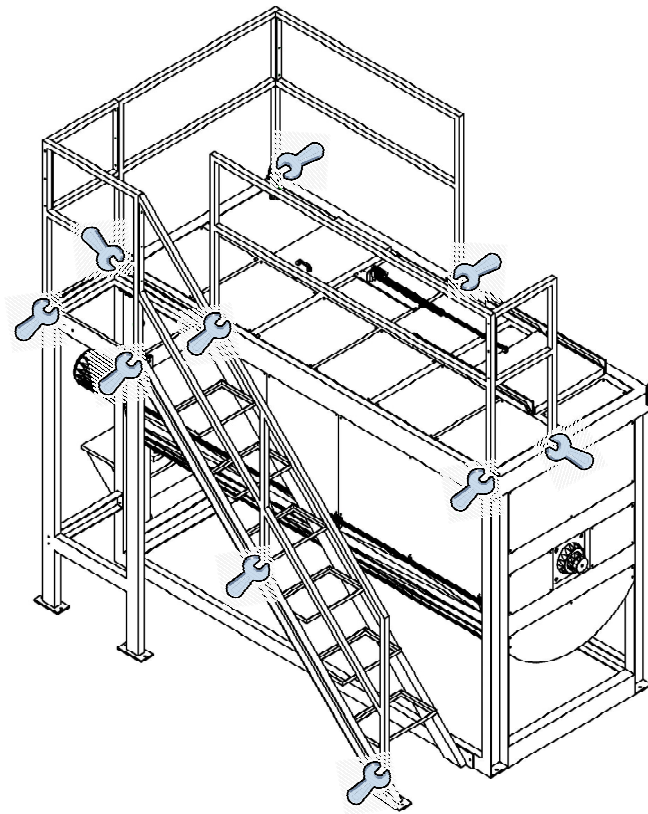
11.1.12 Electrical Circuit failure

| | | Check for Component failure | | | | | | |
|-------|------------------|-----------------------------|-----------|------------------------------|--------------------|---------------------|--|--|
| Panel | Emergency Button | 03 ELCB | 09 MCB | 01 Emergency button | 22 Power Supply | 26 Control Board | | |
| Panel | Power Button | 03 ELCB | 09 MCB | 02 Power Self Lock button | 22 Power Supply | 26 Control Board | | |
| Panel | Power Button | 03 ELCB | 09 MCB | 03 Momentary Push button | 22 Power Supply | 26 Control Board | | |
| Panel | Run Button | 03 ELCB | 09 MCB | 04 Momentary Push button | 22 Power Supply | 26 Control Board | | |
| Panel | Stop Button | 03 ELCB | 09 MCB | 05 Momentary Push button | 22 Power Supply | 26 Control Board | | |
| Panel | Loading Button | 03 ELCB | 09 MCB | 06 Self Lock Push button | 22 Power Supply | 26 Control Board | | |

| | | Check for Component failure | | | | | | |
|-----------------|------------------------|---------------------------------|-----------------------|--------------------------------|------------------------|------------------------|-----------------------|-------------|
| Panel | Discharge Button | 03 ELCB | 09 MCB | 07 Self Lock Push button | 22 Power Supply | 26 Control Board | | |
| Control Box | Temperature Controller | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 11 MCB | | |
| Control Box | Timer | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 11 MCB | 12 SSR | |
| Machine | Motor | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 04 MCB | 19/20/21 Contactor | 22 Timer |
| Machine | Loading Door | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 17 Relay | | |
| Machine | Discharge Door | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 18 Relay | | |
| Machine | Oil Boiler | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 05/06 MCB | 24/25 SSR | |
| Machine | Condensing Unit | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 07 MCB | | |
| Condensing Unit | Vacuum Pump | C1 Emergency Button | C2 Power Button | C4 SSR | | | | |
| Condensing Unit | Ozone Generator | C1 Emergency Button | C2 Power Button | C5 SSR | | | | |
| Condensing Unit | Water Pump | C1 Emergency Button | C2 Power Button | C6 SSR | | | | |
| Machine | Hot Air Blower | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 08 MCB | | |
| Hot Air Blower | Heater | H2 Temperature Controller | H4 SSR | | | | | |
| Hot Air Blower | Vacuum Pump | H5 SSR | | | | | | |
| Machine | Oil Pump | 03 ELCB | 09 MCB | 22 Power Supply | 26 Control Board | 10 MCB | 13 SSR | |

11.2 Dismantling Procedure

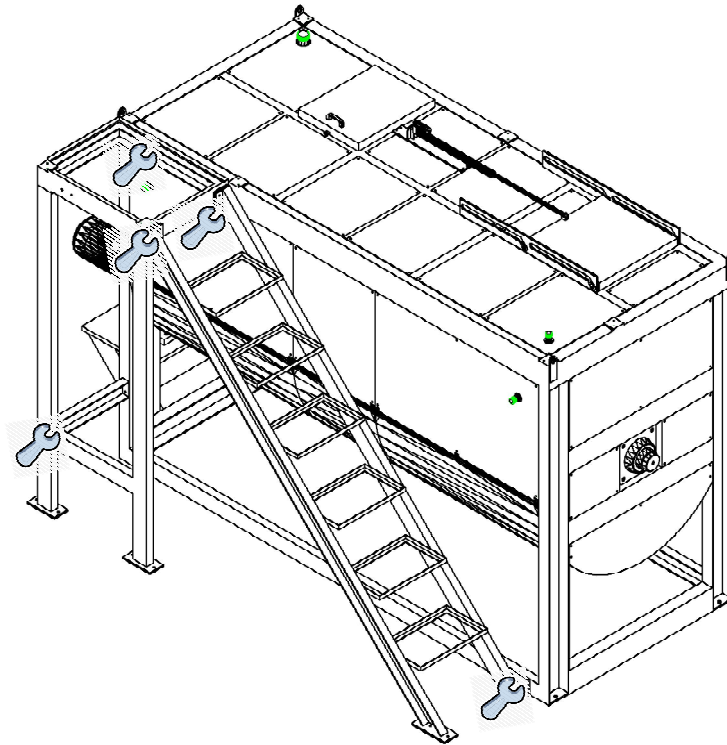
11.2.1 Top Railing



Dismantle 20 number of M8 bolts on railing footing to dismantle the railing from machine the top cover.

**Dismantle 15 number of M8 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 M10 bolts to open the tie bar.

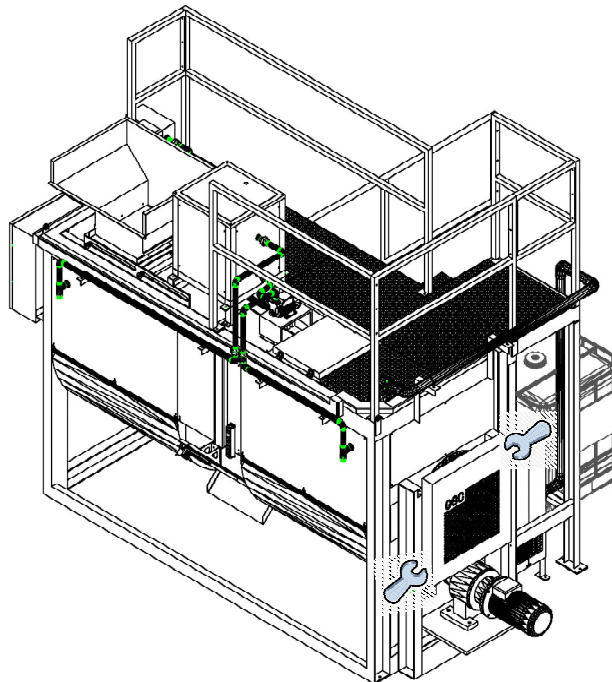
Dismantle 4 number of M8 bolts to open the Platform Support Column.

Dismantle 3 number of M10 bolts to open the Platform from the machine.

Dismantle 8 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

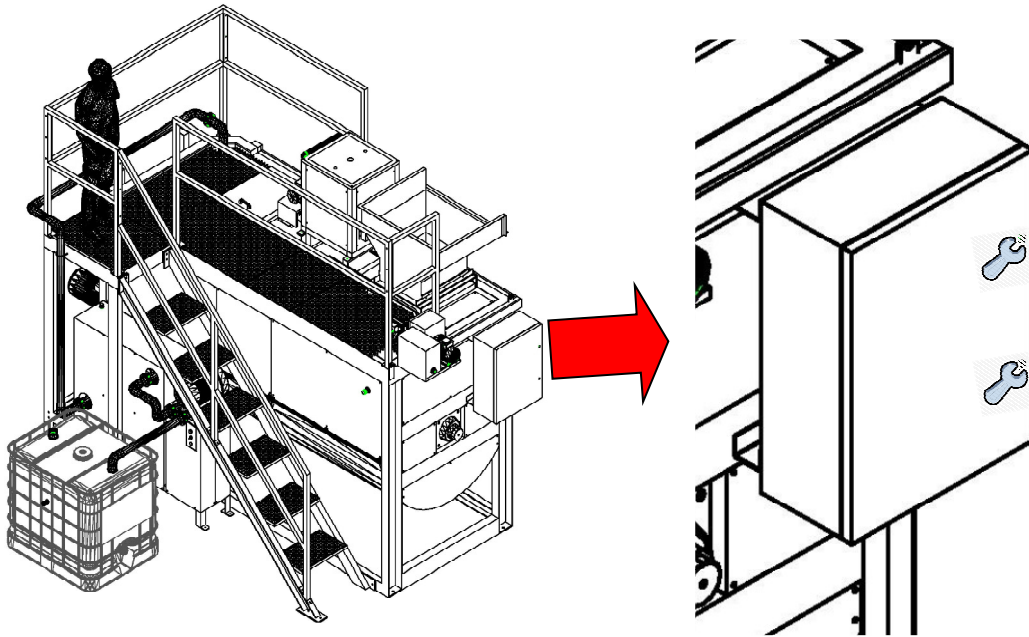
11.2.3 Chain Cover



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

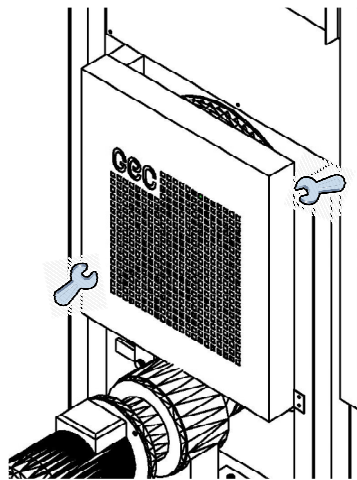
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.

11.2.4 Control Box Door



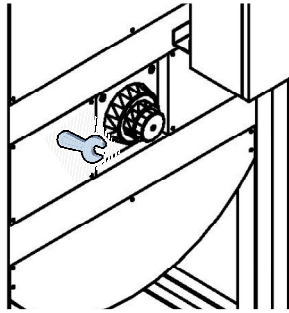
Dismantle 2 number of lock to open side door to access to Control Panel.

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



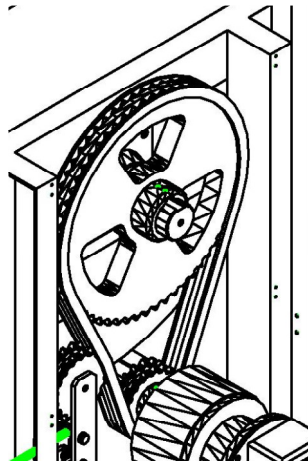
Dismantle 2 number of M20 nuts to dismantle the bearing.

Use a bearing puller to dismantle the bearing.

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

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).

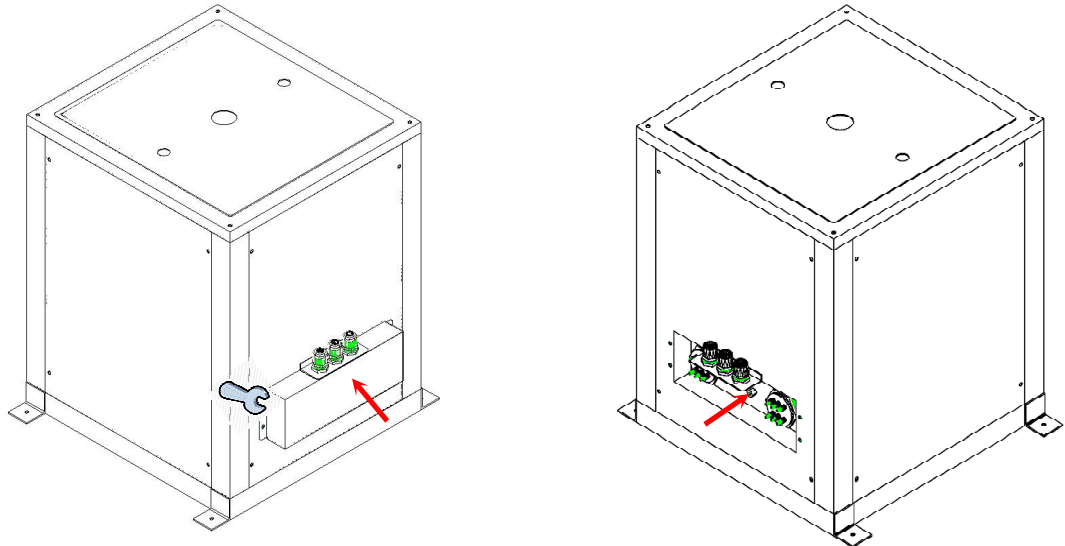
Dismantle 4 number of M20 nuts to dismantle the bearing.

Use a bearing puller to dismantle the bearing.

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

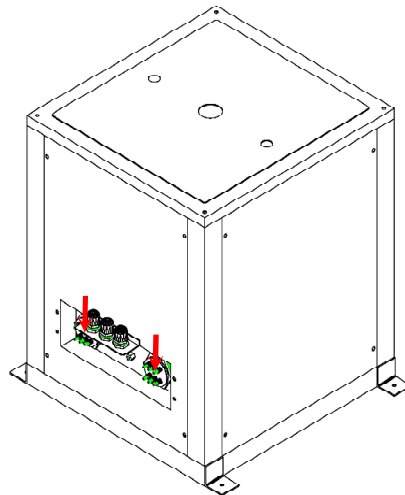
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.

11.2.8 Access to Thermocouple



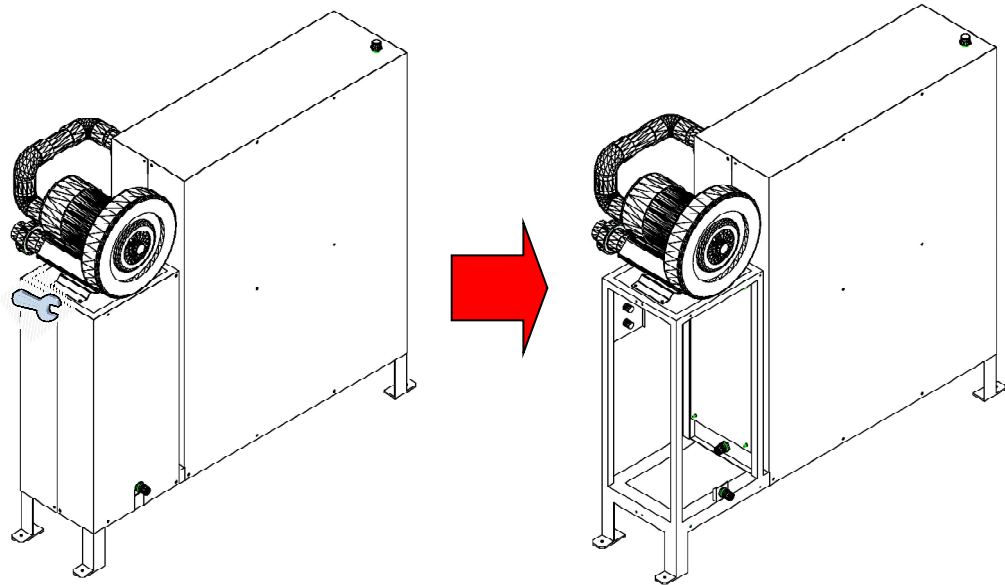
**Dismantle 4 number of M6 Bolts to open the Wiring Cap on the Oil heater.
Thermocouple are mounted at the middle of the heater.**

11.2.9 Access to heater



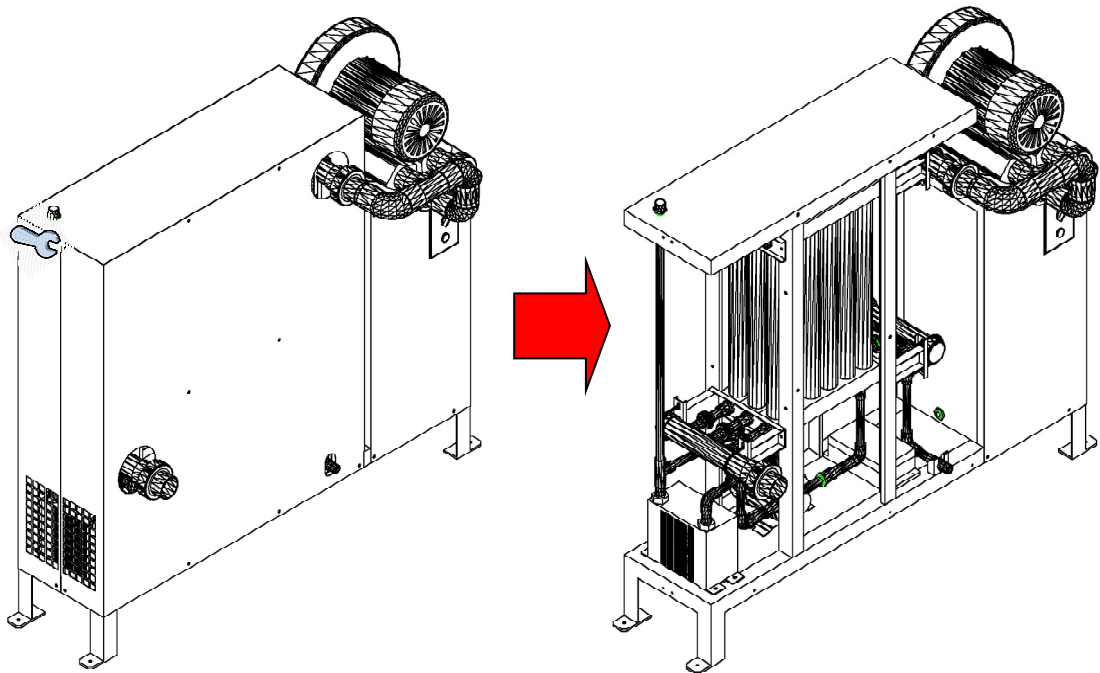
**Dismantle 4 number of M6 Bolts to open the Wiring Cap on the Oil heater.
Please ensure that appropriate wrench or spanner used to avoid damages on the bolt.**

11.2.10 Access to Control Board for Condensing Unit



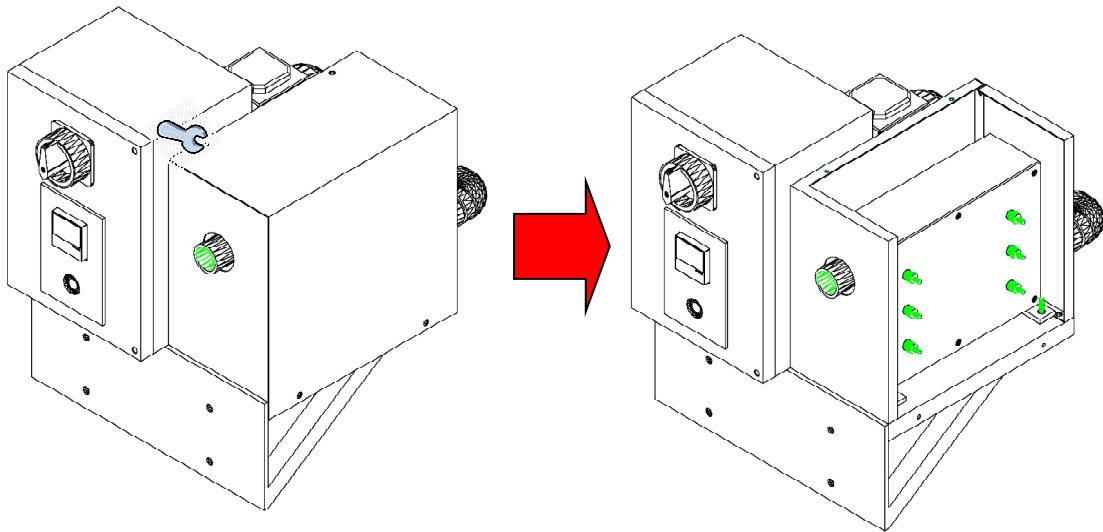
Dismantle 12 number of M6 Bolts to open the side cover on the Condensing Unit.

11.2.10 Access to Component for Condensing Unit



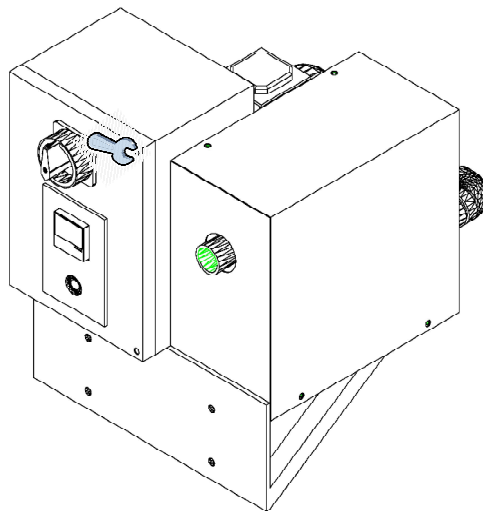
Dismantle 18 number of M6 Bolts to open the side cover on the Condensing Unit.

11.2.11 Access to Heater for Hot Air Blower



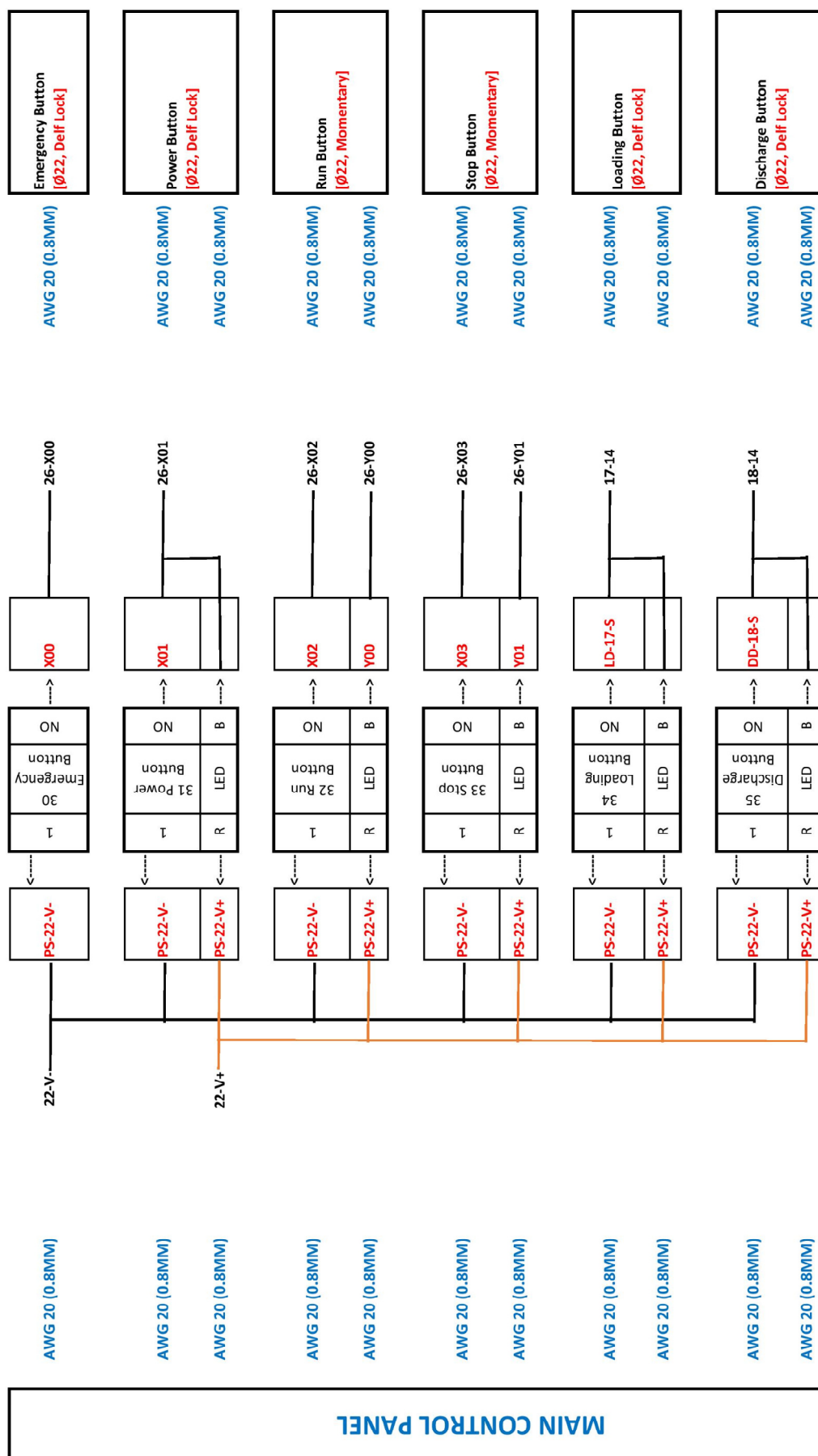
Dismantle 4 number of M6 Bolts to open the side cover on the Hot Air Blower.

11.2.12 Access to Control Panel for Hot Air Blower

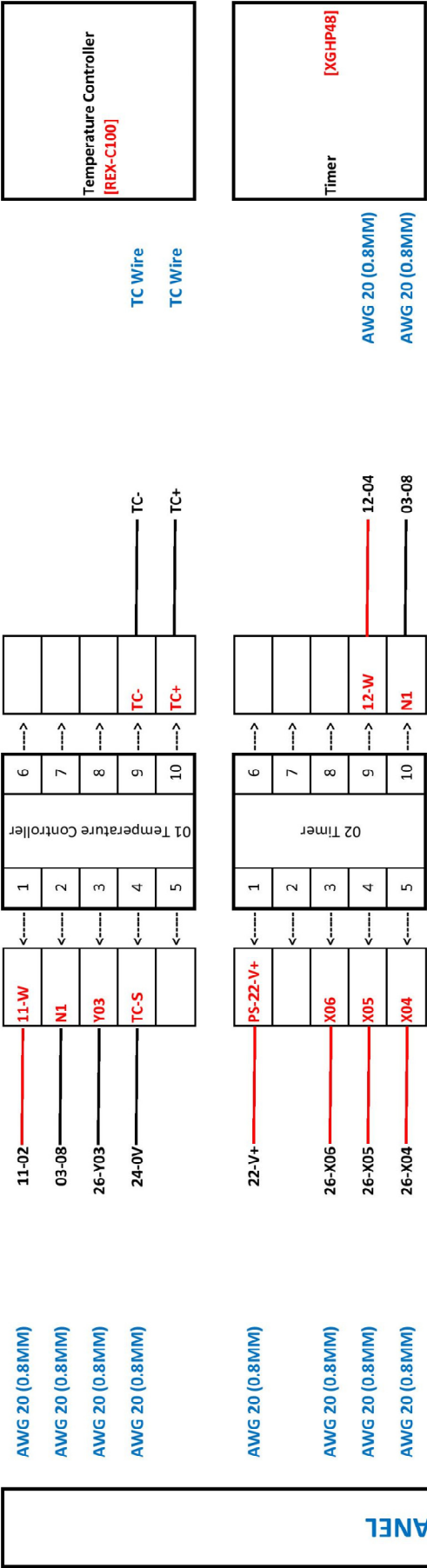


Dismantle 2 number of M6 Bolts to open the door of control box on the Hot Air Blower.

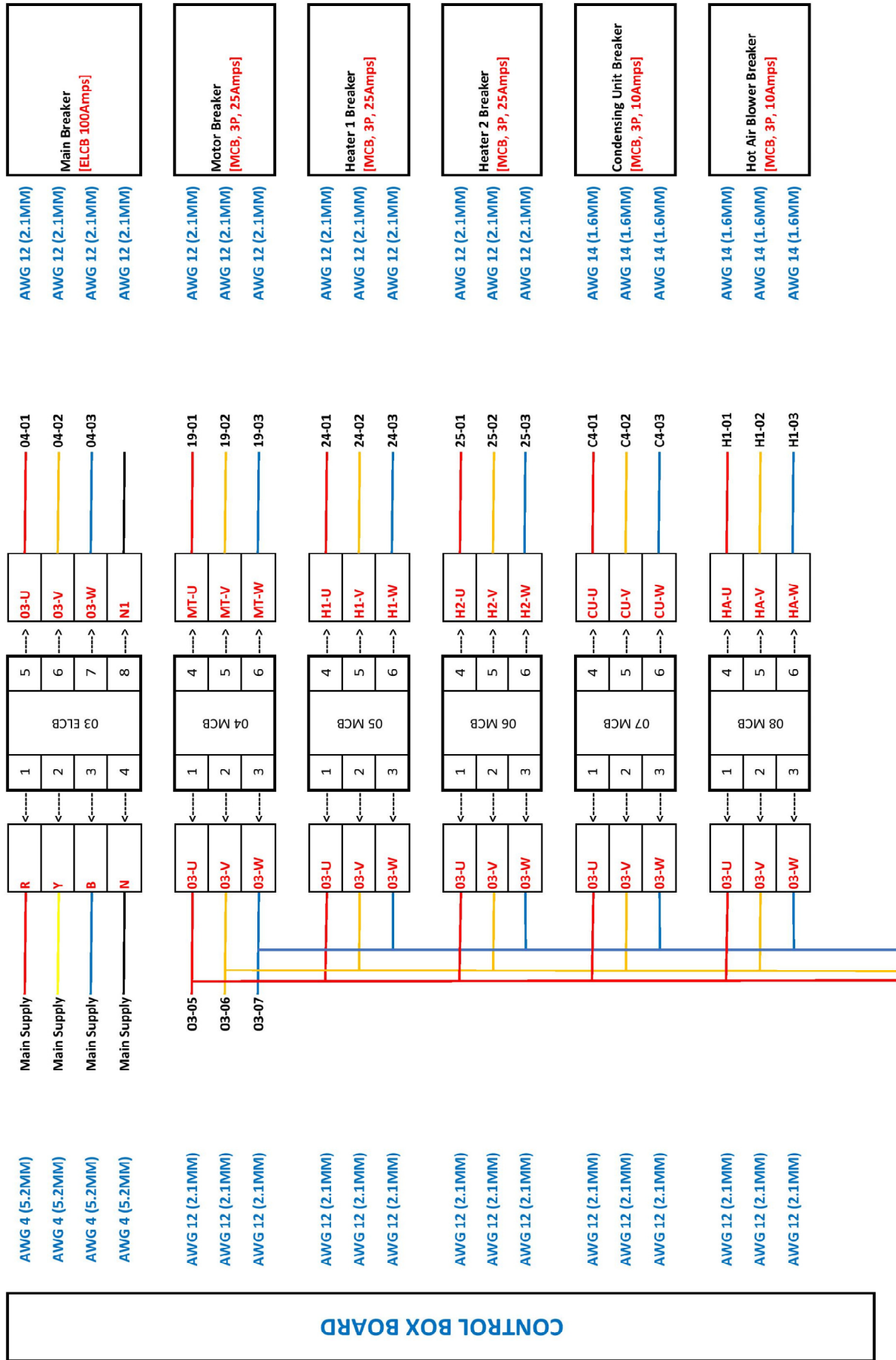
BRM-5000 ELECTRICAL



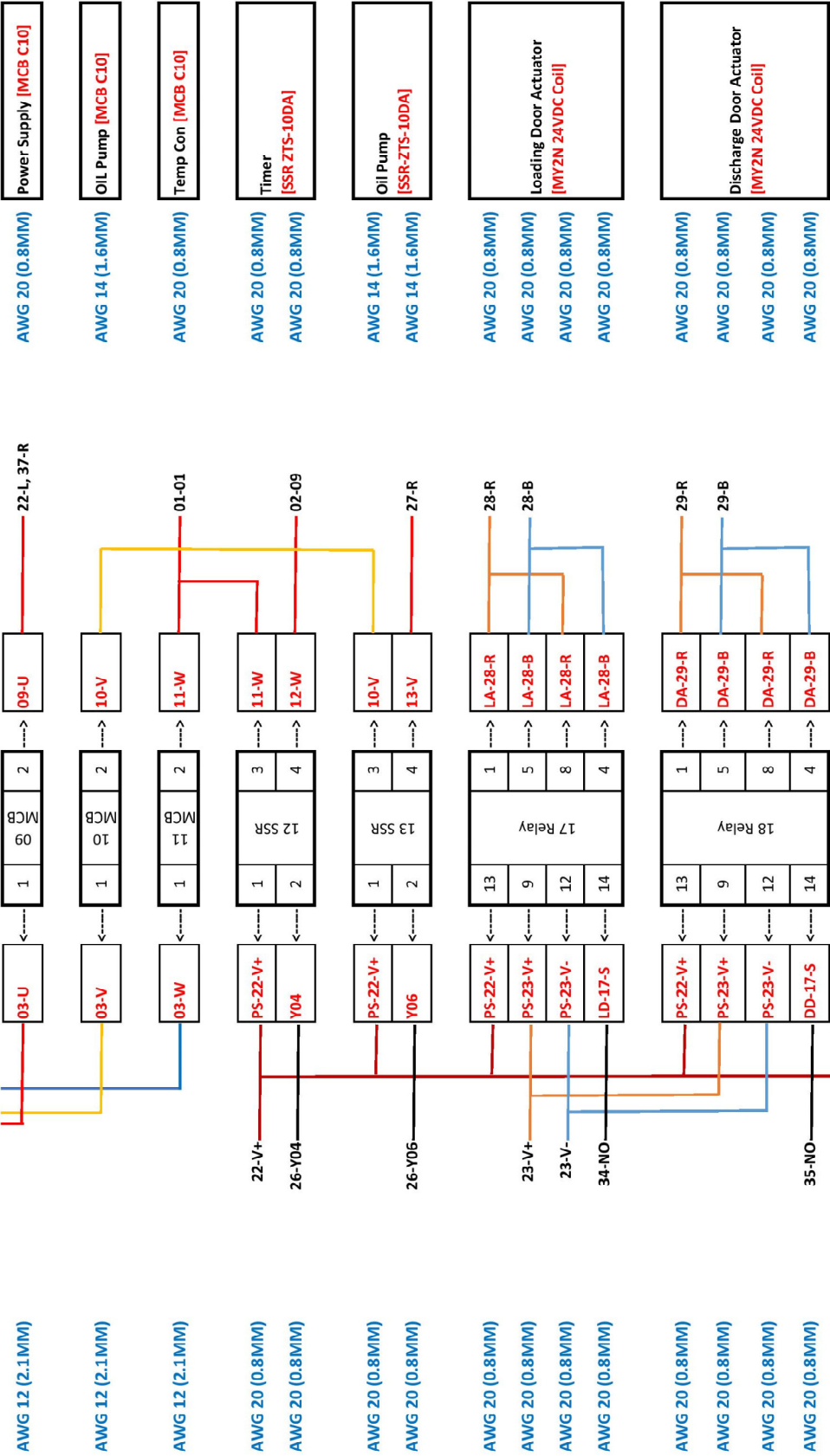
BRM-5000 ELECTRICAL

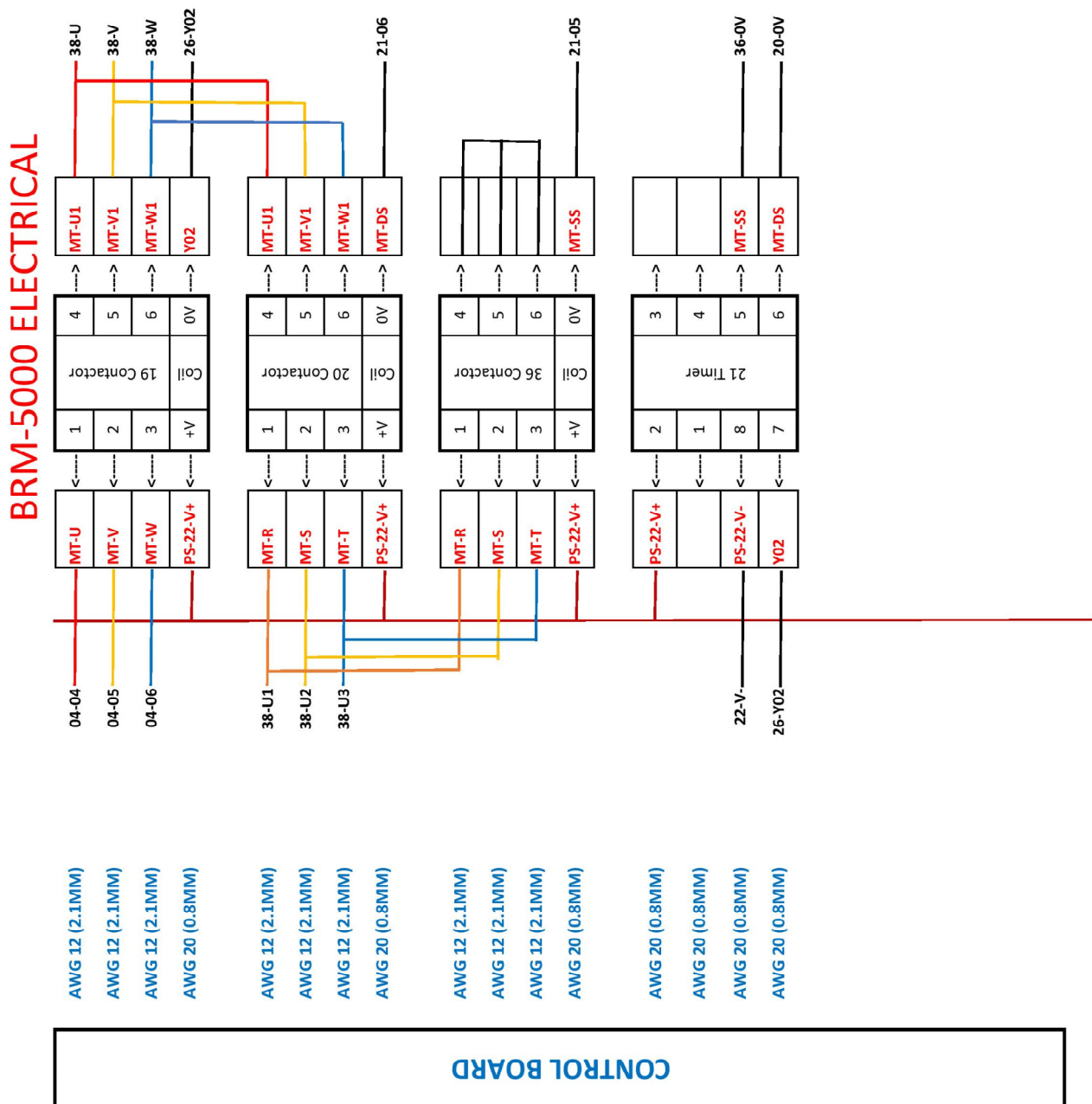


BRM-5000 ELECTRICAL

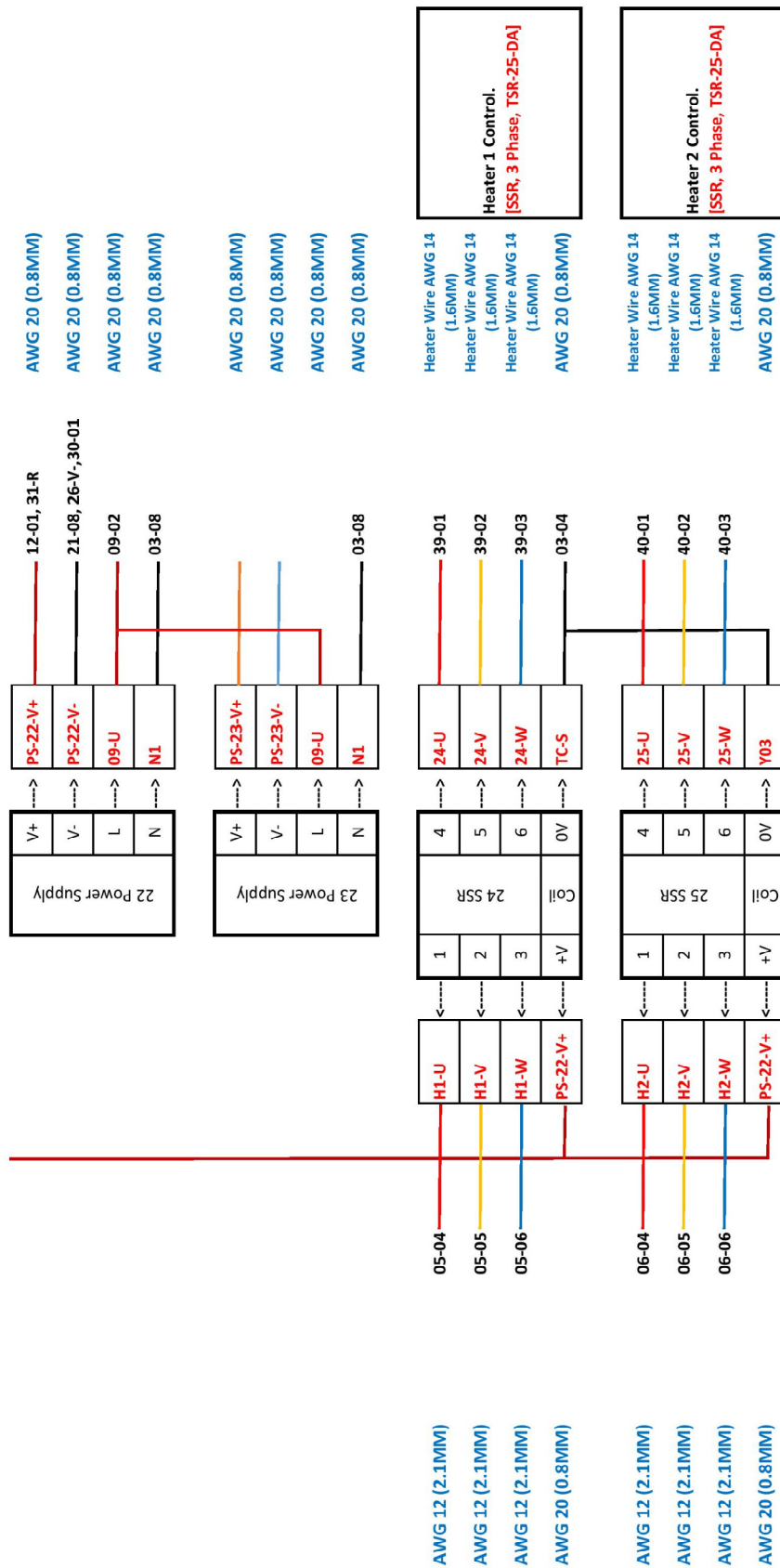


Main Electrical Circuit (Cont'l)



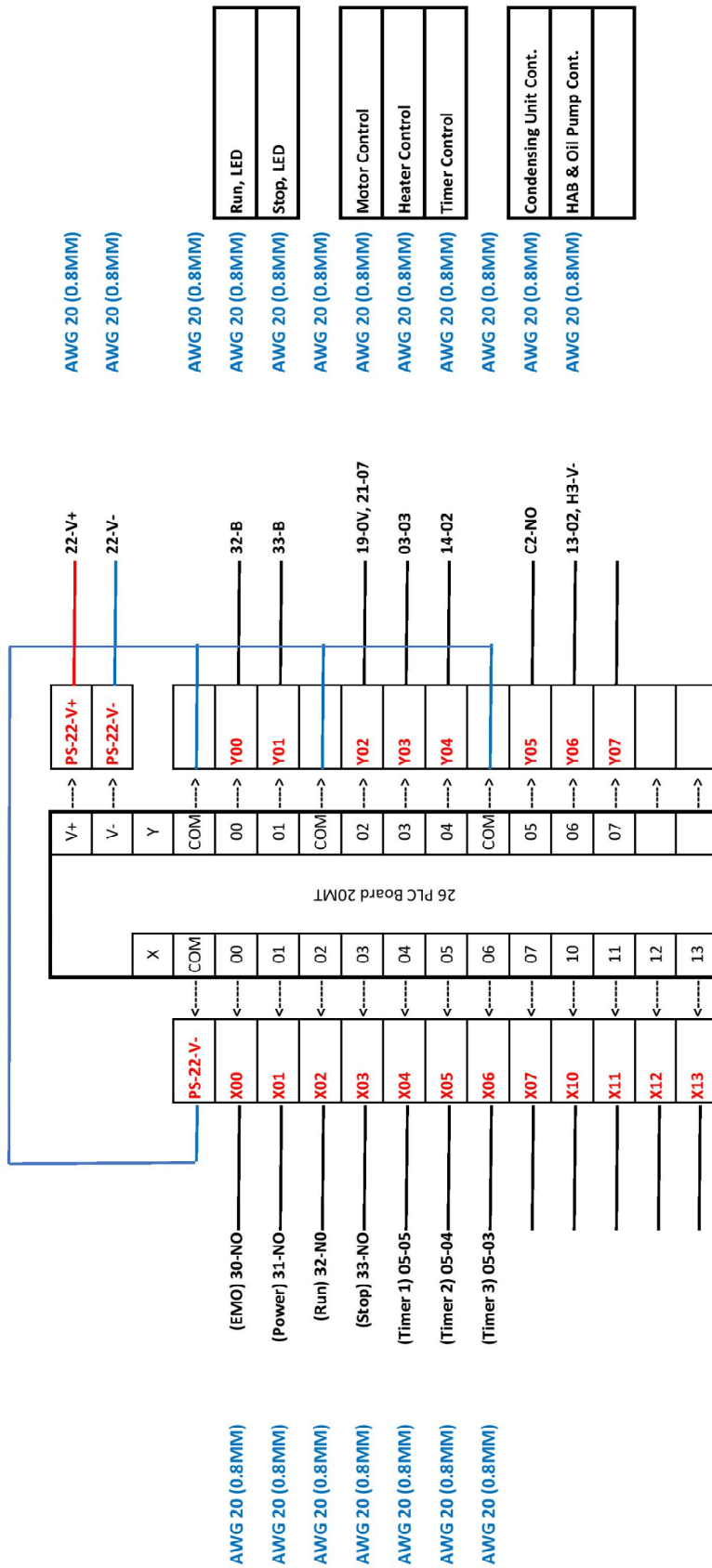


BRM-5000 ELECTRICAL

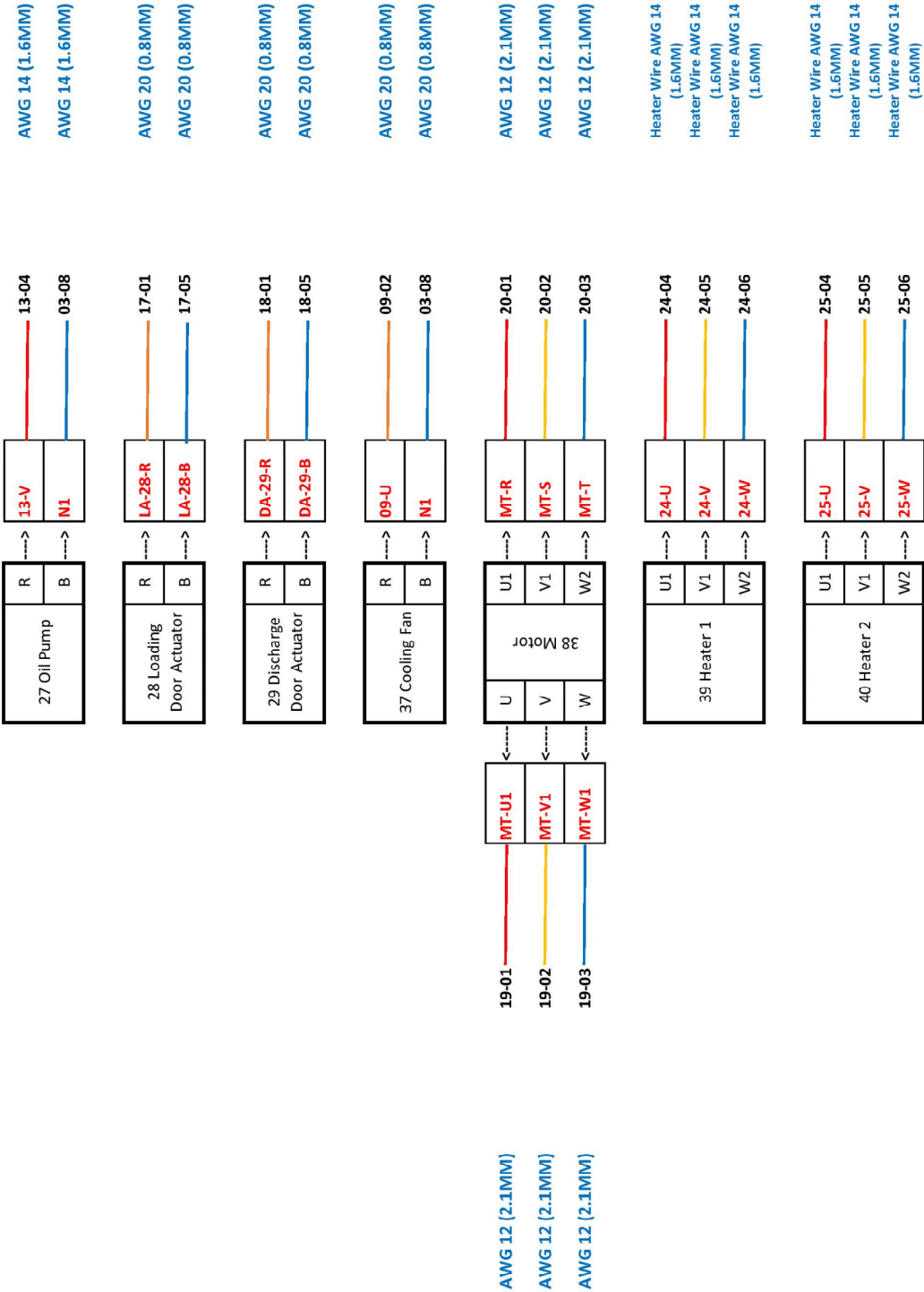


BRM-5000 ELECTRICAL

CONTROL BOARD



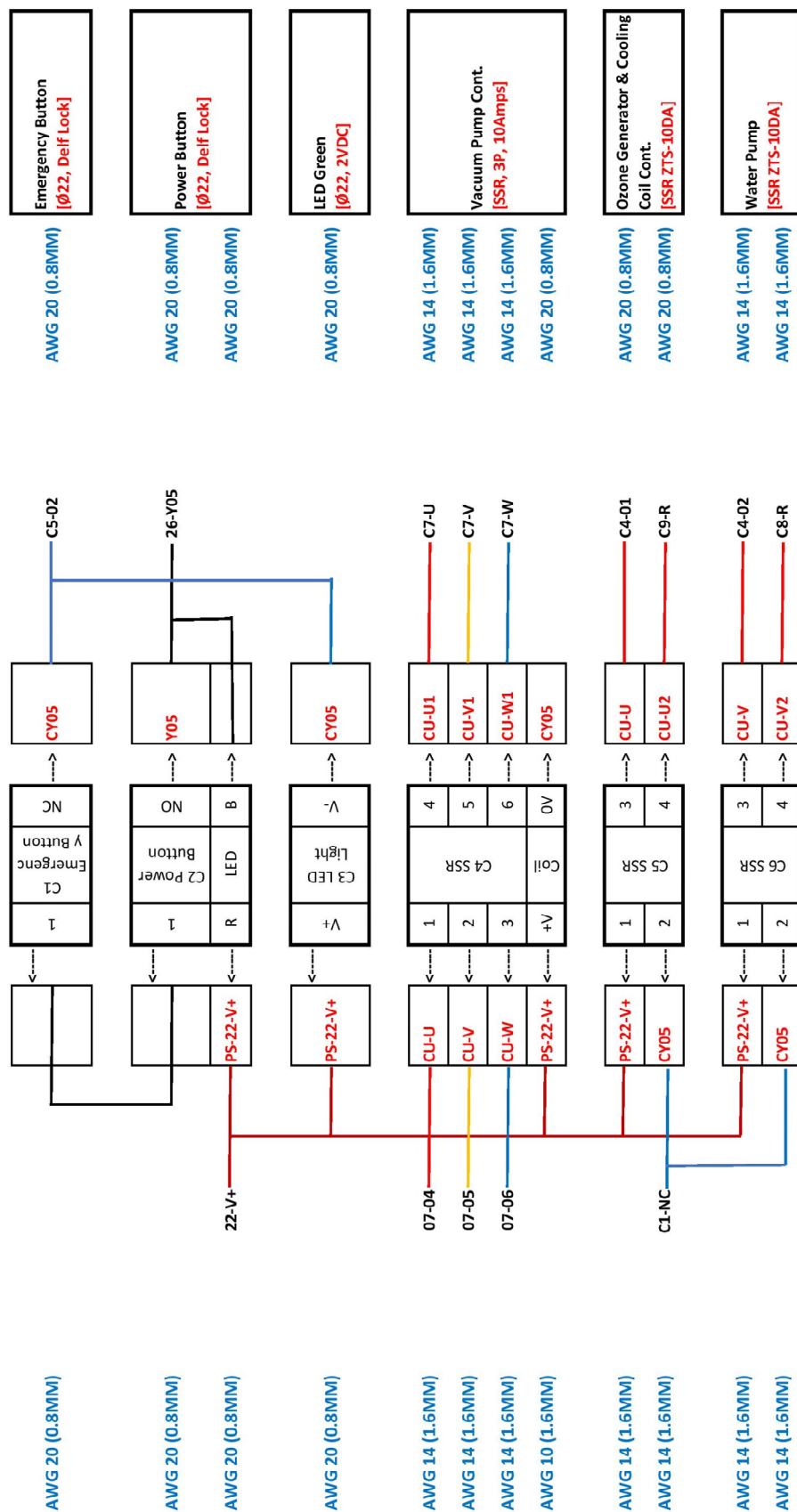
BRM-5000 ELECTRICAL

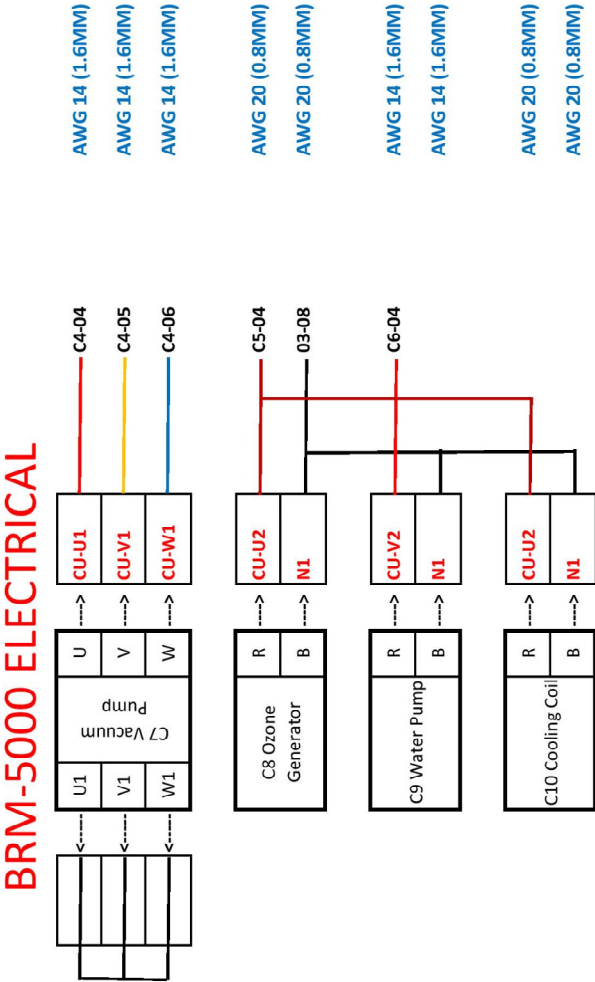


COMPONENTS

11.4 Condensing Unit Electrical Circuit (Cont'd)

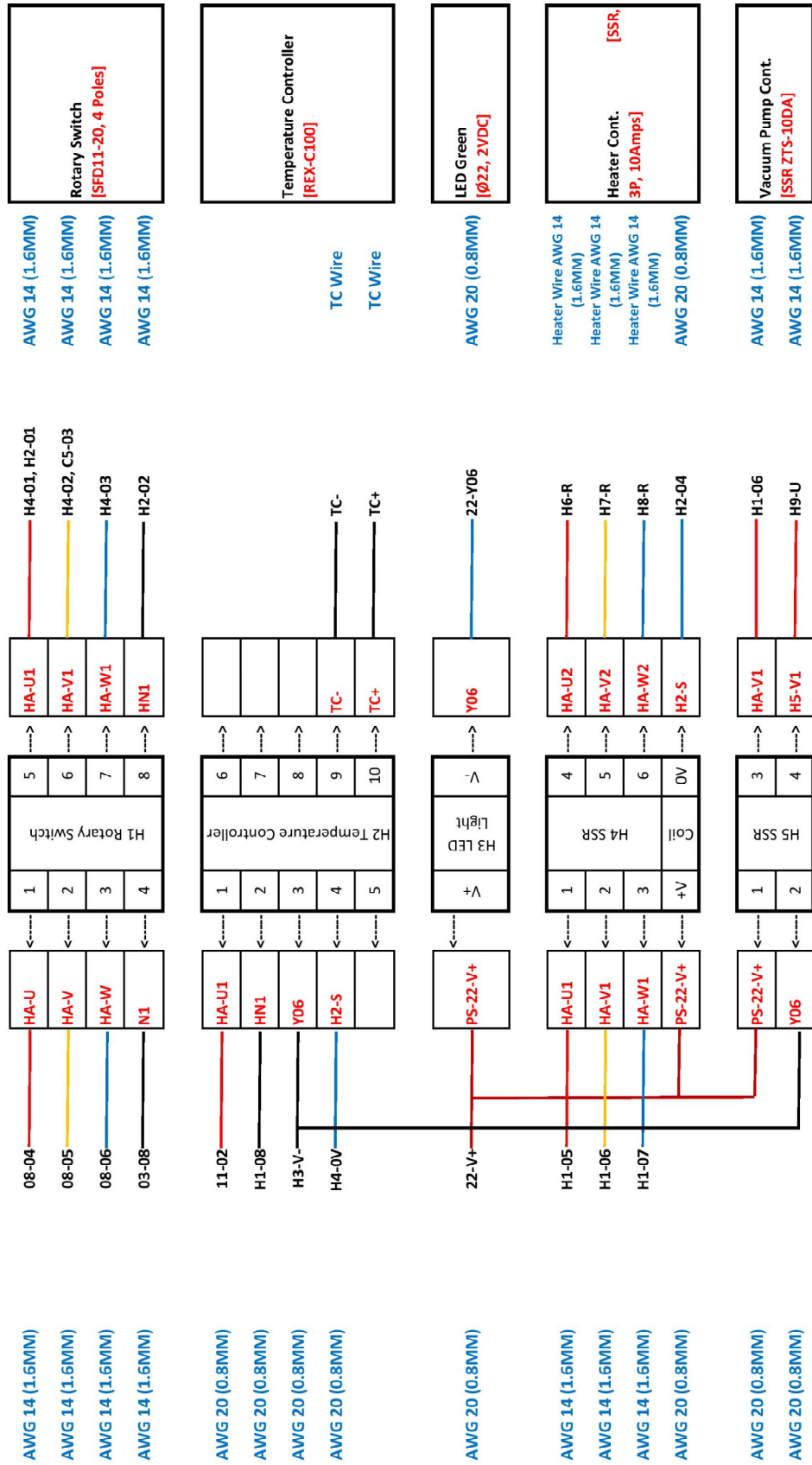
BRM-5000 ELECTRICAL



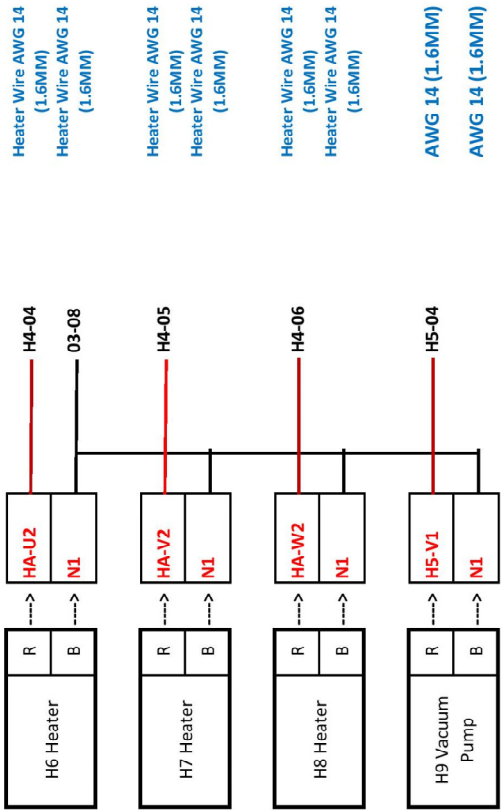


CONDENSING UNIT COMPONENTS

BRM-5000 ELECTRICAL



BRM-5000 ELECTRICAL



CONDENSING UNIT 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 COMPLIANCE



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

GEC INTEGRATION SDN BHD

ADDRESS :- 2980-02, KOMPLEKS CHAI LENG, JALAN BARU, 13700 PRAI,
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/0221/3632

Certificate Issue Date: 06.02.2021

1st Surveillance: 02.2022

2nd Surveillance: 02.2023

Certificate Expire Date: 05.02.2024

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 004



CERTIFICATE OF COMPLIANCE



PROGRESSIVE

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

ANNEXURE: I LIST OF PRODUCTS

| SR. No | PRODUCT RANGE | PRODUCT NAME |
|--------|---------------|-------------------------------|
| 1 | 1 KG | 24 HOUR WASTE COMPOST MACHINE |
| 2 | 5 KG | 24 HOUR WASTE COMPOST MACHINE |
| 3 | 15 KG | 24 HOUR WASTE COMPOST MACHINE |
| 4 | 100 KG | 24 HOUR WASTE COMPOST MACHINE |
| 5 | 200 KG | 24 HOUR WASTE COMPOST MACHINE |
| 6 | 300 KG | 24 HOUR WASTE COMPOST MACHINE |
| 7 | 500 KG | 24 HOUR WASTE COMPOST MACHINE |
| 8 | 1000 KG | 24 HOUR WASTE COMPOST MACHINE |
| 9 | 2000 KG | 24 HOUR WASTE COMPOST MACHINE |
| 10 | 3000 KG | 24 HOUR WASTE COMPOST MACHINE |
| 11 | 4000 KG | 24 HOUR WASTE COMPOST MACHINE |
| 12 | 5000 KG | 24 HOUR WASTE COMPOST MACHINE |
| 13 | 10 Ton | 24 HOUR WASTE COMPOST SYSTEM |
| 14 | 15 Ton | 24 HOUR WASTE COMPOST SYSTEM |
| 15 | 20 Ton | 24 HOUR WASTE COMPOST SYSTEM |
| 16 | 25 Ton | 24 HOUR WASTE COMPOST SYSTEM |

PAGE 1 OF 2

Registration No.: PICL/CE/0221/3632

Certificate Issue Date: 06.02.2021

1st Surveillance: 02.2022

2nd Surveillance: 02.2023

Certificate Expire Date: 05.02.2024

Head of Certificate



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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 004

CERTIFICATE OF COMPLIANCE



PROGRESSIVE

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

ANNEXURE: I LIST OF PRODUCTS

| SR. No | PRODUCT RANGE | PRODUCT NAME |
|--------|---------------|---------------------------------|
| 1 | 30 Ton | 24 HOUR WASTE COMPOST SYSTEM |
| 2 | 40 Ton | 24 HOUR WASTE COMPOST MACHINE |
| 3 | 50 Ton | 24 HOUR WASTE COMPOST MACHINE |
| 4 | 1000 KG | 24 HOUR BIO REMEDIATION MACHINE |
| 5 | 2000 KG | 24 HOUR BIO REMEDIATION MACHINE |
| 6 | 3000 KG | 24 HOUR BIO REMEDIATION MACHINE |
| 7 | 4000 KG | 24 HOUR BIO REMEDIATION MACHINE |
| 8 | 5000 KG | 24 HOUR BIO REMEDIATION MACHINE |
| 9 | 500 KG | BIO CHAR MACHINE |
| 10 | 1000 KG | BIO CHAR MACHINE |
| 11 | 2000 KG | BIO CHAR MACHINE |
| 12 | 500 KG | 24 HOUR WASTE COMPOST MACHINE |
| 13 | 1000 KG | 24 HOUR WASTE COMPOST SYSTEM |
| 14 | 2000 KG | 24 HOUR WASTE COMPOST SYSTEM |
| 15 | | TROLLEY SANITIZING MACHINE |
| 16 | | SANITIZING SPRAY BOOTH |
| 17 | | OZONE GENERATOR |

PAGE 2 OF 2

Registration No.: PICL/CE/0221/3632

Certificate Issue Date: 06.02.2021

1st Surveillance: 02.2022

2nd Surveillance: 02.2023

Certificate Expire Date: 05.02.2024

Head of Certificate



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USE OF ACCREDITATION MARK INDICATES ACCREDITATION IN RESPECT OF THE ACTIVITIES COVERED BY
ACCREDITATION INSTITUTE ASSESSMENT BODY (EUROPE) CERTIFICATION NUMBER 004

MATERIAL SAFETY DATA SHEET

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

1.0 IDENTIFICATION

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

2.0 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 |

3.0 COMPOSITION INFORMATION 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 |



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13700 Prai, Penang, Malaysia.
Phone: +60125080559
mail.gecsb@gmail.com

Page 1 of 4

MATERIAL SAFETY DATA SHEET

4.0 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 |

5.0 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 |

6.0 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 |

7.0 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. |



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Phone: +60125080559
mail.gecsb@gmail.com

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MATERIAL SAFETY DATA SHEET

8.0 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. |

9.0 PHYSICAL AND CHIMICAL 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 |

10.0 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 |

11.0 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 |



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Phone: +60125080559
mail.gecsb@gmail.com

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MATERIAL SAFETY DATA SHEET

12.0 ECOLOGICAL INFORMATION

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

13.0 DISPOSAL CONSIDERATIONS

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

14.0 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 |

15.0 OTHER INFORMATION

| | |
|-----------------------|-----------------------------------|
| Contact Point | Joseph Wong |
| Title | Technical Consultant |
| Phone | +6012 508 0559 |
| 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 2021.



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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, SHREDDED | 350:1 |
| CORNS STALK | 75:1 |
| FRUIT WASTE | 35:1 |
| LEAVES | 60:1 |
| NEWSPAPERS, SHREDDED | 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