

ENVIRO Asher

Model: R840-1T

Vaporized System



About EnviroAsher Model R840-1T

EnviroAsher is a compact machine that offers a more eco-friendly and cost-efficient way to dispose garbage compared to incinerators and landfills. This is because the machine does not require fuel such as diesel, petrol, and gas to operate. It relies on advanced technology to decompose garbage, thus significantly cut down on carbon dioxide emission.

This model – R840-1T is specifically designed to discharge only harmless water vapour, instead of smoke. The visibility of the water vapour can be further reduced with the installation of an optional condenser unit.



Fast Pyrolysis Plasma

EnviroAsher utilises a patented technology called Fast Pyrolysis Plasma. In simple words, pyrolysis means the decomposition of organic materials at high temperature in the absence of oxygen.

This technology was first invented by a German scientist in 1956 with the highest temperature recorded being 400 °C. Through our research and development, we managed to raise the temperature up to 1300 °C (for model R840-1T), without using a single drop of fuel.

This model has 24 sets of plasma reactors to generate artificial plasma, which is responsible for breaking down the rubbish without the need of fire. In essence, the machine ‘bakes’ the rubbish at high temperature and turning it into ash.

Types of Rubbish

EnviroAsher can decompose any domestic rubbish that is heading towards the landfill, including plastics, tyres, asbestos, and PVC. However, there are 4 types of rubbish that cannot be decomposed, which are:

- Metal
- Glass
- Concrete
- Ceramic

These rubbishes will remain in the ash tray at the end of decomposition and can be reused and recycled. Therefore, segregation of rubbish is not needed as it does not affect the operation.

For instance, decomposing a tyre will produce only a small amount of ash and steel wire. The ash can be repurposed and reused while the steel wire can be recycled.



To achieve maximum efficiency, the moisture level of rubbish should be kept below 50%, otherwise the time needed to decompose the rubbish will be prolonged. As such, we suggest that wet and dry rubbish should be placed in alternate layers to optimise the process.

Depending on the moisture level of the rubbish, 1 load of rubbish will take between 45 minutes to 1 hour to decompose. This model can decompose up to 200kg of rubbish at one time. In other words, the machine can decompose over 4.0 tons of rubbish in a day.

End Product

After decomposition, only 4% of rubbish will remain as ash. For instance, if we dispose 1000kg of rubbish using the machine, only 40kg of ash will be produced.

The ash can be repurposed into making:

- Bricks
- Construction materials
- Road pavements
- Fertiliser
- Soil conditioner

The toxic-free ash has also been tested by using Toxicity Characteristic Leaching Procedure (TCLP). This process determines whether there are hazardous elements present in a waste. The result is fully complied with the standard of Environmental Protection Agency (EPA).



Maintenance

Under normal usage, the filters will have to be changed every 2 months. Instead of going to the landfills, the used filters can be fed into the machine to be decomposed.

Please refer to the user manual for the complete maintenance procedure.

Filtration System

We go the extra mile to ensure the emission is fully complied with the US EPA standard. With our tried-and-tested filtration system in place, the machine can filter out:

1. Oil

Decomposition of plastic waste will produce oil because plastics are derived from fossil fuel. Hence, multiple oil traps have been installed in the machine to effectively remove oil.

2. Dioxin and Furan

These chemical substances are carcinogenic and can cause serious health damage to humans. They are often produced in conventional incinerators because of:

- retention of oxygen
- low processing temperature
- imperfect combustion

Since EnviroAsher 'blocks' oxygen intake with plasma reactors and operates at high temperature without combustion, the production of these chemical substances is suppressed to the minimum level and destroyed.

Moreover, these chemical substances will be decomposed by the oxidation process happening in the reactor chamber.

3. Fine Particulate Matter 2.5

These fine particles are less than 2.5 micrometres in diameter and can penetrate deeply into our lungs and impair our lung function. They are absorbed and filtered out by the activated carbon in the filtration system.

4. Heavy Metal

Decomposition of rubbish will produce acidic and toxic gas. Hence, ENVIROAsher is fitted with 2 wet scrubber tanks to:

- filter out carbon by products in the gas
- neutralise the acidic water caused by acidic gas

As such, Nanogreen solution, with the PH value of 13.8, is added into the water in the scrubber tanks to remove heavy metals and neutralise the acidity.

5. Odour and colour

Specially formulated filtration media will ensure the emission is odourless and colourless. Instead of thick black smoke, the machine will produce lightly visible water vapour and toxic-free smoke.

Technical specifications

General Information

Daily capacity: 4.0 tons
Throughput: 160-200kg /hour
Waste segregation: Not required
Temperature range: 350°C - 1300°C
Untreatable waste: Glass, metal, concrete, ceramic
Compliance: US Environmental Protection Agency (EPA)

Structural Measurement

Weight: 6000kg
Chamber volume: 2.6m³
Door opening: W100cm x H50cm
Ashtray door: W122cm x H30cm
Dimension: L416cm x W184cm x H226cm

Building Material

Exterior: 6mm mild steel
Interior: 10mm³ 316L SS
Refractory lining: 150mm

Consumption

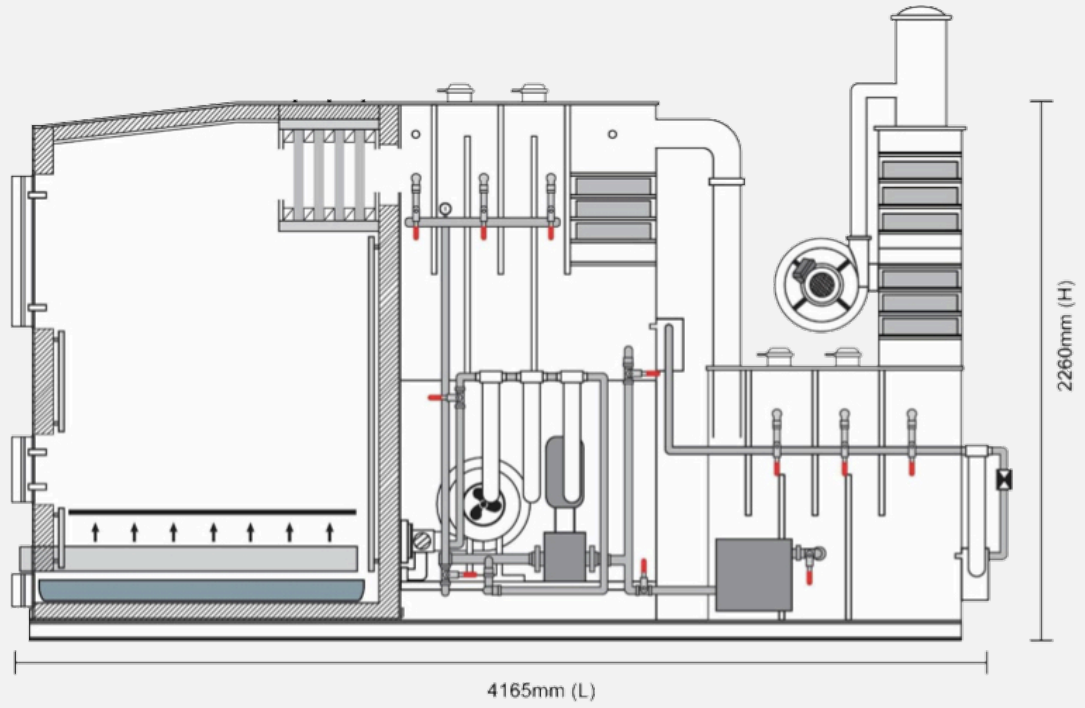
Fuel: NIL
Electricity: 12kW/hour
Water: 2.5 litre/hour

Warranty

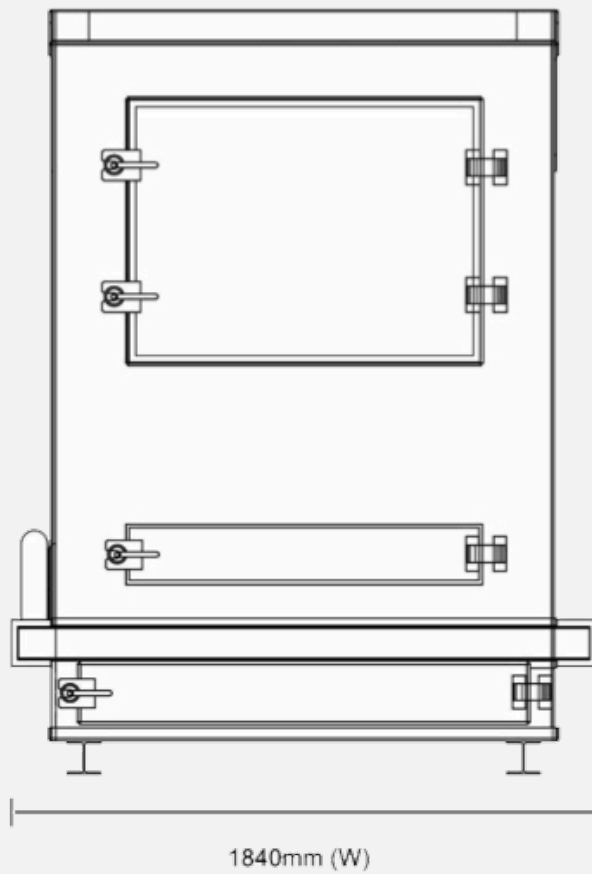
Machine body: 10 years
Electrical Components: 1 year
(blower fan, exhaust fan, water pump)

Machine Drawing for Model R840-1T

Side



Front



Compliance



EXOVA, United Kingdom



SGS, Switzerland



PONY, China



CRL, Philippines



SUCOFINDO

SUCOFINDO, Indonesia



SIRIM

SIRIM, Malaysia



myCO₂, Malaysia