



European Patent: 1153902

HOW THE ROCKET® WORKS

The Rocket® is an In-Vessel Composter that provides a safe and hygienic way to control a natural biological process. All bio-degradable material will eventually break down into a compost product if left for long enough and given the right conditions.

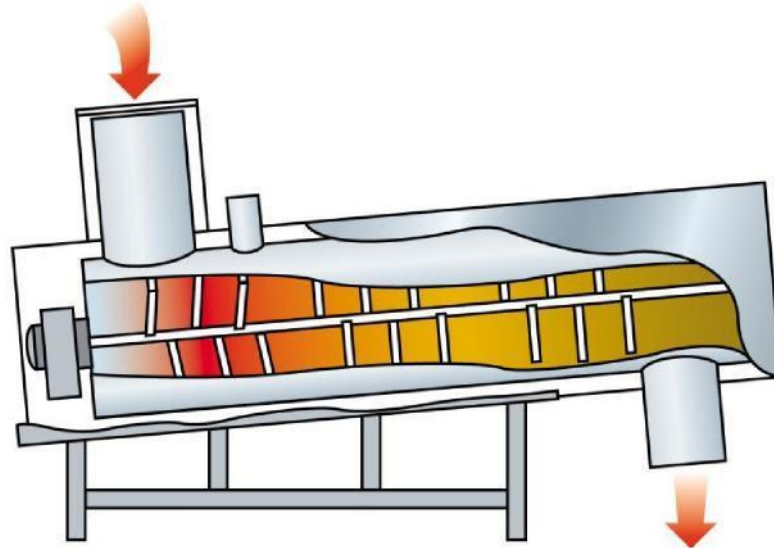
The Rocket® speeds up this process to produce a high quality composted product in around 14 days.

THE RIGHT CONDITIONS

Every biological process is dependent upon the prevailing environmental conditions. Composting is no different. **The Rocket®** enhances the biological process by allowing for complete control over aeration, moisture and temperature, the elements essential for the growth of micro-organisms that effectively process material from waste to compost.

AERATION

Blades attached to the internal shaft turned by the motor, aerate the material. The motor is controlled by a timer factory set to rotate every hour for a regulated time. This cycle can be altered enabling **TPL** engineers to fine-tune the process to suit specific input material.

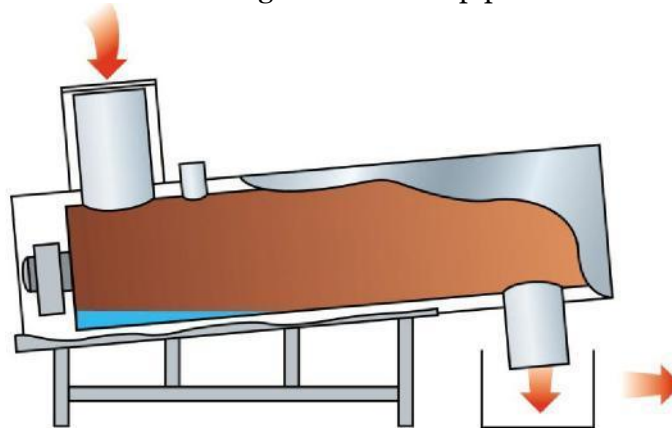




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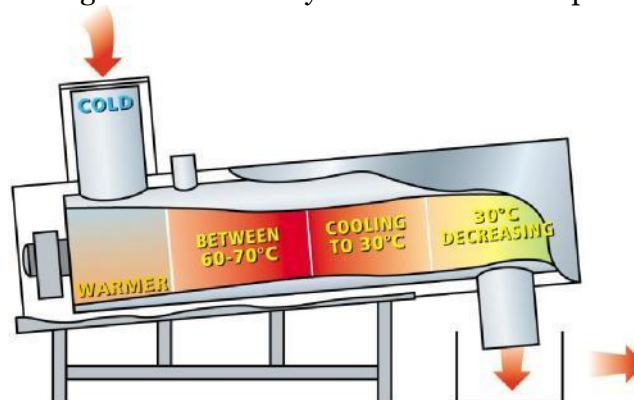
MOISTURE

Moisture is controlled by the angle of **The Rocket**[®] and the leachate drain. A moist environment is required in the first stages to enhance the efficiency of the process. A moisture content level of 65% is ideal and the angle of **The Rocket**[®] helps achieve this by allowing a small pool of liquid to form in the bottom corner. Additional water can be poured into the system if material is too dry and excess water can be drained through the leachate pipe.



TEMPERATURE

The internal temperature of **The Rocket**[®] is controlled by a factory set thermostat which controls the thermostatic heat blanket. During normal working conditions the temperature inside **The Rocket**[®] should be maintained between 60°C and 70°C. This ensures ABPR compliance and sustains the micro-organisms necessary for effective decomposition.





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THE ROCKET®-SCIENCE

There are four stages to the treatment of food and organic waste which are fully controlled by **The Rocket®** Composter, speeding it up to produce a high quality composted product in around 14 days.

STAGE 1 – MESOPHYLLIC

At ambient temperatures fungi, bacteria and actinomycetes are required to begin the decomposition process. The soft tissue of the decaying organic matter supports growth of nematodes and enchytraeids. These in turn attract and become food for the next level of consumers – collembolans eat fungi, ptiliids feed on fungal spores, nematodes, protozoa and rotifers feed on bacteria.

STAGE 2 -THERMOPHYLLIC

Energy liberated during this conversion causes a rise in temperature to between 45°C and 90°C and at this higher temperature a specialised flora of bacteria, fungi and actinomycetes continue the decomposition process. It is then that organic degradation is rapid and pathogens, fly larvae and weed seeds are destroyed. This stage is further enhanced and maintained by **The Rocket®** temperature control system.

STAGE 3 -COOLING

As thermophillic activity declines and temperatures fall to 30°C – 40°C another series of organisms capable of growth at ambient temperature continue the composting process through to the final stage.

STAGE 4 –EXTERNAL MATURATION

At the maturation stage a fourth series of organisms exist to enable the nitrifying process to complete producing nitrites and nitrates, the latter an essential element for plant growth.

The resultant compost, when properly made, is a brown, crumbly, soil like substance which contains all the elements and trace elements necessary for plant growth. Its structure is ideal for plant root generation and it has excellent moisture and oxygen retaining properties. Compost contains many beneficial micro-organisms that actively support plant health, minimising the need for insecticides and fungicides.



Import and Trade Of Eco Garden Supplies
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OPTIMUM CONDITIONS FOR ACTIVE COMPOSTING

Good composting can be compared to baking a cake. When you have the right ingredients in the right quantities and subject them to the right temperatures there is little that can go wrong...unless someone opens the oven door!

In terms of composting, we have a list of ingredients:

- Air
- Water
- Carbon
- Nitrogen

Air is supplied to the mixture by the rotation of the internal shaft's blades. The food waste and woodchip supply the moisture. This can be monitored by the operator to ensure input material is not too dry or too wet. The carbon and nitrogen elements are provided by the food waste and the woodchip.

Material will begin to compost effectively in **The Rocket®** with the following mix of ingredients:

Carbon and Nitrogen mixed at a ratio of 20:1 – 30:1 Moisture at 57% – 67% by weight

Oxygen at 6% – 21% in aerobic strata

Mix these ingredients together at a temperature of 32°C – 60°C for 14 days in **The Rocket®** and you will achieve a great composted product ready for maturation before using as part of your landscape maintenance program. The pH levels of the composted product should be neutral at 7pH but can be anything from 6pH to 8pH.