

LFC®

Biodigesters



Features

- Digests food waste at your facility
- Process is continuous — load at any time
- All waste is converted to water — machine never needs emptying
- Discharge from machine is safe to enter sewage system
- Aerobic digestion ensures no smells
- Can be installed in kitchen or work area
- Simple operation — can be used by existing staff
- Color touch screen interface
- Weight of waste is continuously monitored and recorded
- Screen displays statistics on usage and amount of waste
- Automatic doors on larger machines controlled by NFC card that can categorize the source or type of waste
- Incorporates comprehensive diagnostics and service schedules
- Connects to the LFC Cloud so statistics and diagnostics can be monitored remotely
- All stainless steel construction
- Three year warranty (subject to terms)

Benefits

- Greatly reduces costs to dispose of food waste
- Significantly reduces carbon footprint of business
- Diversion from landfill to comply with regulations
- LFC Cloud ensures Power Knot can support you easily
- Reduces size, quantity, and smells of trash bins
- Eliminates flies and rodents that may be attracted to garbage bins containing waste food
- Improves operations and saves time and injuries of employees carrying trash outdoors
- Weigh and dispose of waste food in one machine
- Multiple models available ensures correct size for any facility
- Waste food does not go to landfill where it creates methane and smells
- Automatic door requires less effort for staff and prevents unauthorized use
- Easily report CO₂ equivalent diverted from landfill
- Key element in making a facility have zero waste, especially when the food waste can be known by type or source
- Payback is typically 6 to 24 months

Applications

- Hotels and resorts
- Corporate and university cafeterias
- Restaurants and highway service centers
- Theme parks, convention centers, and stadia
- Hospitals and nursing homes
- Military canteens
- Shopping malls and retail outlets
- Bakeries and caterers
- Supermarkets and food distribution centers
- Cruise ships, oil tankers, and yachts
- Island properties and remote camps
- Prisons and correctional facilities

Description

The LFC biodigester is a fully enclosed automatic composting machine that disposes of food matter continuously.

You can add food waste at any time and only decomposed food is discharged into the waste water.

Water is injected into the machine to maintain equilibrium for the microorganisms to rapidly decompose the waste and to flush decomposed material out of the machine. A rotating arm inside the machine slowly churns the food waste to constantly mix the old food, new food, oxygen, and microorganisms to enhance decomposition.

The LFC biodigester can be thought of as a stainless steel stomach in which the microorganisms are digesting the organic material.

How It Works

The LFC biodigester uses a series of processes in which microorganisms break down biodegradable material in the presence of oxygen. The LFC environment, with our proprietary mixture of microbes and enzymes, accelerates the digestion of most food products within 24 hours. The output is grey water that is environmentally safe. You can discharge this down the drain or use it to enrich your landscape.

The LFC biodigester is a practical alternative to the traditional disposal of food waste. Anything you can



eat, including fruits, vegetables, meat, fish, cheese, bread, rice, and noodles can go into the LFC biodigester. The machine can digest both raw and cooked foods. The process is totally green because it uses no chemicals.

As one of Earth's oldest processes, composting is the most effective means of stabilizing and converting biodegradable waste. The food waste is not being chopped but it is decomposed to such a degree that it becomes a liquid and can exit the machine only through a fine mesh screen. The rich by-product is therefore safe and replenishes nature.

Simple Operation

The LFC biodigester is constantly digesting the waste and you can add food waste at any time. Simply open the door, throw it in, and close the door. In this way, you can view the LFC biodigester as a bottomless bucket.

A bright LED (and the color of the text on the display) indicates green, orange, or red to let an operator know when the machine can accept more waste.

The LFC motor won't run while the door is open for safety. Your operation can be streamlined because large bins and plastic bags are no longer needed to hold food waste. Instead, smaller bins are used that help avoid injuries to employees.



Configuration

All configuration, indications, reports, and statistics are available through the color touch screen.

The operator doesn't need to use the touch screen and for most applications the default settings work well.

You can adjust the configuration optimally for your particular waste and the LFC biodigester automatically transitions to an intelligent inactive state on days when the machine is not being used.

All configurable parameters are protected by password.



Total Data

	Waste		Door opened
	lb	kg	
Today	145	2	
This week	970	27	
This month	2,313	180	
This year	34,741	1,406	

Next

Exit

What Can Go in the LFC Biodigester



Fruit



Vegetables



Banana and skin



Fruit without stones



Nuts



Meat



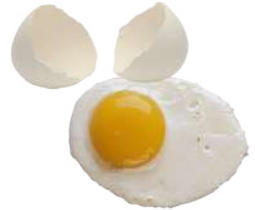
Fish and bone



Crustacean



Stew (when cool)



Egg and eggshell



Bread



Noodles



Cheese



Pineapple heads (cut)



Corn

Weighing the Amount of Waste

Load cells on each LFC corner accurately weigh the amount of food waste in the LFC biodigester, the amount that is ingested, and the amount that is digested. This data is automatically stored and reported graphically and numerically.

You can view statistics in US or SI units and display the date and time in several formats.

Saving the Planet

When food waste is discarded in a landfill, it degrades as an anaerobic process (in the absence of oxygen). This decomposition produces methane (CH_4) which is 84 times worse for the atmosphere than carbon dioxide (CO_2).

The effect of this on global warming is huge, contributing about 5% of the world's total greenhouse gasses. Further, the decomposition smells and can cause health problems. Discarding 100 kg (220 lb) of food waste per day causes the equivalent of 153 tonne of CO_2e per year to be sent to the atmosphere.



The decomposition in the LFC drum is an aerobic process (in the presence of oxygen). This produces CO_2 and water in a natural manner that is accelerated in the machine.

This natural process is carbon neutral because the carbon was taken from the atmosphere to produce the food in the first place.

The LFC electricity usage is minimal. So if you use an LFC biodigester the CO_2e is reduced to 2 tonne per year.



Capacity

The amount of food that can be digested depends on the type of food, the frequency with which it is added to the machine, and the duration of the working day. The nominal capacity of a machine is based on a mixture of raw and cooked food as may be found in a typical restaurant added over a 13 hour to 16 hour working day. The upper ranges of capacities in the table below assume that you add food waste that is easily digestible over a 24 hour working day. Cooked rice, pasta, or bread are some of the foods that are rapidly digested and if added in equal portions throughout the day then

Available Models

	LFC-25	LFC-50	LFC-70	LFC-100	LFC-200	LFC-300	LFC-500	LFC-1000	LFC-2000
Daily capacity, kg	9–75	17–150	25–210	35–300	70–600	100–900	175–1500	350–3000	700–6000
Daily capacity, lb	20–165	38–330	55–460	80–660	150–1320	220–2000	380–3300	770–6600	1540–13200
Size, cm: w x d height	59 x 59 93	90 x 68 89	95 x 73 95	113 x 76 99	150 x 88 131	156 x 109 154	194 x 121 170	261 x 145 185	323 x 183 253
Size, in: w x d height	23 x 23 37	35 x 27 35	38 x 29 38	45 x 30 39	59 x 35 52	61 x 43 61	76 x 48 67	103 x 57 73	127 x 72 100
Maximum power	180 W	380 W	380 W	720 W	1.0 kW	2.0 kW	2.8 kW	4.9 kW	4.9 kW
Energy per day	0.8 kWh	1.9 kWh	1.9 kWh	3.8 kWh	6.6 kWh	12 kWh	17 kWh	29 kWh	29 kWh

the capacities can be more than those listed.

Any LFC biodigester will work with about 30% of its nominal capacity on average. We do not recommend specifying an LFC biodigester where it will receive less than the minimum values on average shown in the table.

Installation

The LFC installation is usually inside the area where the food is prepared or it can be placed outside under a suitable protective cover. The machine has castors so it can be rolled into position. The feet on the load cells are then lowered onto the supplied rubber pads that help to reduce vibrations and noise.

The LFC biodigester requires hot and cold water input and a drain for the output. The machine requires electricity: LFC biodigesters are compatible with worldwide ac power sources.



Diagnostics

Most LFC biodigesters have more than 50 sensors to indicate the health of the machine. Service schedules are also incorporated into the software. These ensure the machine is operating correctly and assist in the solving of any issues.

Connection to the LFC Cloud

The LFC Ethernet port connects the LFC biodigester automatically to a cloud server. The LFC biodigester securely sends data about its operation and that data is retained for five years.

The data includes the amount of food waste digested hourly, daily, weekly, monthly, and yearly; the number of times the door is opened in these periods; and the amount of CO₂ diverted from the landfill during these periods. If you have multiple machines, you can aggregate the data into a single report.

When you connect your LFC biodigester to the LFC Cloud, this may increase your warranty (depending on model).

See the LFC Cloud data sheet for more information.



Service and Support

With the LFC Cloud, Power Knot is able to monitor the status of your LFC biodigester and assist you remotely with any issues that may occur. All of the diagnostics data is uploaded to the LFC Cloud so that we can quickly assist you wherever your machine is located.

Locally sold, serviced, and supported by:



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