BIGHANNA™ composter

TECHNICAL INFORMATION

SIMPLE AND SAFE COMPOSTING

Food waste is loaded at the front of Big Hanna Composter and compost is automatically discharged to the rear. Big Hanna Composter is manufactured in stainless steel and is, of course, CE-marked.

OUTDOORS / INDOORS

Big Hanna Composter can be installed indoors as well as outdoors. When installed outdoors there must be a roof over the Big Hanna Composter to make feeding and servicing more convenient and protecting the machine from the elements.

LOW NOISE LEVELS

Big Hanna rotates on an average 1-2 minutes every 1-2 hours. Fan runs constantly at a low airflow giving a noise level of 45-55 dB depending on the installation site. When the shredder (optional equipment on model T60 and T120) is working for 2 minutes per feed the noise level is 60-85 dB depending on the type of waste material.

OPTIONAL EQUIPMENT

For Big Hanna Composter models T60 and T120 a hopper fed inlet could sometimes facilitate the handling of the food waste. As an option a shredder can be fitted together with this inlet. Bin lift for 80 litre specified bins is optional on model T240 and T480. Logging of temperatures and monitoring via cable is available for models T60-T480.

READ MORE IN SEPARATE BROCHURES:

Hanna Bin lift
Hanna Biofilter
Drainage Trolleys
Mechanical Dewatering

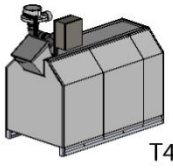
FLOOR

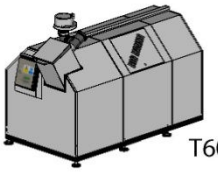
We recommend a washable concrete floor especially for the larger, heavier models.

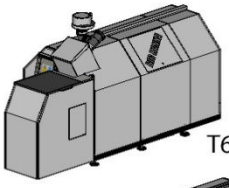
LOCKABLE SWITCH

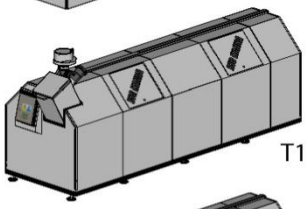
CE-mark requires that the wire delivering main power supply to the mounting enclosure must have a lockable switch. This is not enclosed at delivery but must be installed for safety reasons.

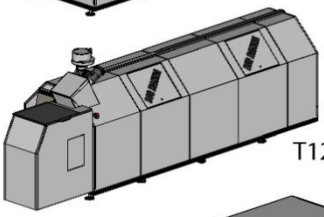
THE DIFFERENT MODELS

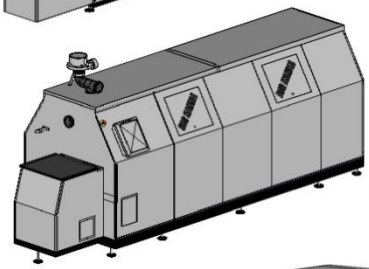

T40

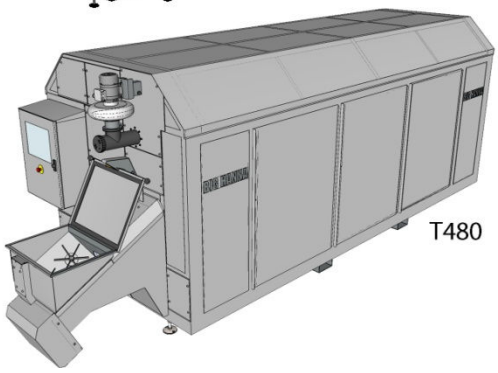

T60


T60_40L(S)


T120


T120_40L(S)


T240


T480


MODEL T240

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TECHNICAL INFORMATION

Model	T40	T60	T120	T240	T480
Capacity					
Kg/day	10-15	20-35	40-70	55-170	115-340
Kg/week	75-100	150-250	300-500	400-1200	800-2400
Tons/annum	4-5	8-13	16-26	21-62	41-124
Number of households	25-35	55-70	90-135	130-300	275-650
Equipment					
Temperature sensors	-	3	3	4	10
Optional logging program	-	✓	✓	✓	✓
Optional hopper fed 40L inlet (in-conveyor)	-	✓	✓	-	-
Optional shredder	-	✓	✓	-	-
Optional bin lift	-	-	-	✓	✓
Inspection door(s) on hood	-	1	2	2	2
Access door(s) in to cylinder	1	1	2	2	2
Visual digital display	-	✓	✓	✓	✓
Measurements					
Length (mm)	1 935	2 320	3 820	4 800	6 408
Width (mm)	880	1 080	1 080	1 400	2 000
Height (mm)	1 470	1 550	1 550	2 070	2 195
Volume cylinder (m^3)	0,61	1,07	2	4	8
Weight empty (kg)	200	440	720	1200	3 400
Weight empty incl shredder/inlet(kg)	-	490	770	-	-
Max weight full incl shredder/inlet (kg)	540	1100	1900	3500	9 000
Number of feet on machine	4	6	8	11	10
Connection to ventilation (mm)	Ø110	Ø110	Ø110	Ø110	Ø110
Connection for drainage – T240, T480 and 40L hopper (mm)	-	Ø 75/ Ø110	Ø 75/ Ø110	Ø 75/ Ø110	Ø 75/Ø110
Height inlet (mm)	ca 1 000	ca 1 200	ca 1 200	ca 1 000	ca 1 000
Inlet measurements (mm)	285 x 295	285 x 295	285 x 295	490 x 590	490 x 590
Volume hopper fed inlet	-	40 l	40 l	80 l	80 l
Height under outlet (mm)	600	590	590	630	970
Electrical supply*)					
Power supply	240 V	400 V	400 V	400V	400V
Ampere	10 A	10 A	10 A	16 A	16 A
Ampere incl 40L hopper fed inlet (inconveyor)	-	10 A	10 A	-	-
Ampere incl 40L hopper fed inlet incl shredder	-	16 A	16 A	-	-
Phases	1	3	3	3	3
Cable	3	5	5	5	5
Motor composter kW	0,12	0,37	0,37	1,1	0,55
Fan kW	0,04	0,04	0,04	0,04	0,37
In-conveyor kW (40L & 80Lhopper fed inlet)	-	0,55	0,55	0,55	0,55
Shredder kW	-	3	3	-	-
Heater kW	0,5	0,5	0,5	0,5	1
Total kW	0,66	0,91	0,91	2,19	2,47
Total kW incl 40L hopper fed inlet and shredder	-	4,46	4,46	-	-
Energy consumption **)					
Total kWh/day standard model	1,01	1,11	1,11	1,53	2,35
Total kWh/day incl 40L hopper fed inlet and shredder	-	1,38	1,66	-	-

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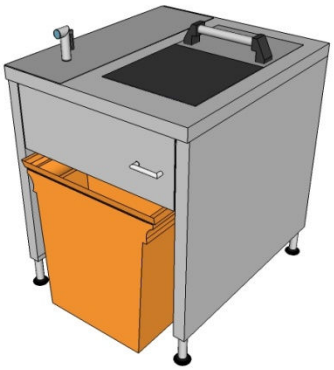
CAPACITY CATERING

The waste material from restaurants often contains large volumes of similar types of material. This can lower the capacity of Big Hanna Composter as a 'balanced diet' is very useful for an optimum throughput. Food waste from restaurants also tends to be fresher than from housing and this can slow down the onset of the biological process. Prior to ordering we recommend that the food waste from the kitchen is weighed for one week. This should then be compared with number of meals served for this week in order to see what a "normal" amount of food waste per week is.

MACERATOR COMBINED WITH DEWATERER

There are macerators in combination with a pulper available that reduces the initial volume of wet food waste by approx 80% before being fed in to the Big Hanna Composter. Contact our sales staff to discuss this option!



CAPACITY IN COMBINATION WITH DEWATERER

Model	T40	T60	T120	T240	T480
Max kg/week	160	400	800	1 900	3 800

DRAINAGE TROLLEYS

For canteens we can offer a trolley to facilitate the drainage and handling of the food waste.

CAPACITY / HOUSING

Households in residential districts will produce an average of 4-5 kg of organic waste material per week. Households in apartment buildings produce an average of 2-3 kg of organic waste material per week. These figures will vary according to the demography of the population. Many residential areas will also provide green waste which the Big Hanna Composter can also process.

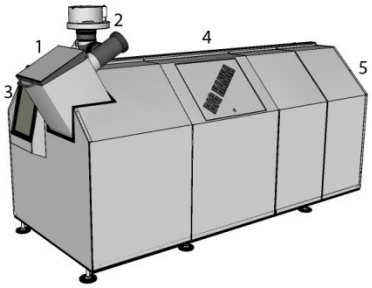
STARTING UP

It can take anything from 8-12 weeks for the machine to get up and running with a healthy biological process and producing compost. In the initial stages of the startup period more wood pellets/sawdust needs to be added and less food waste than later on. It is a good idea to continue with your regular food disposal system during this initial period whilst Big Hanna´s capacity builds up.

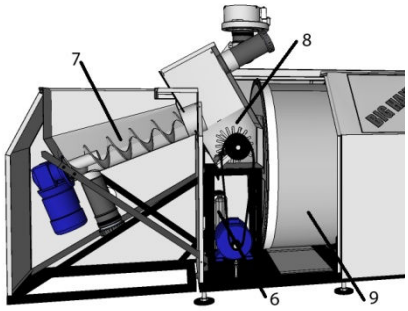
TIME IN CYLINDER

Keeping all material in the cylinder for 8-10 weeks ensures that the compost is safe to use, free from odour and pathogens. In that time the reduction of the food waste is up to 90%.

THE DIFFERENT PARTS



1. Inlet
2. Fan
3. Digital display
4. Inspection door
5. Automatic emptying



6. Heater under hood
7. Hopper fed inlet with in-conveyor (optional)
8. Shredder (optional)
9. Rotating cylinder

√ **Big Hanna** reduces the food waste with up to 90%
√ **Big Hanna** cylinder is made in stainless steel.

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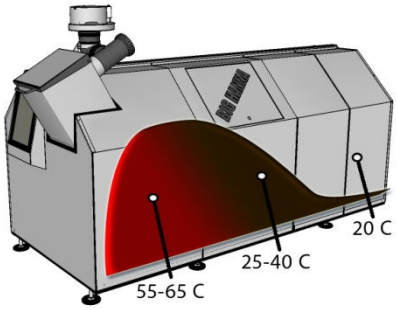
TEMPERATURE SENSORS

Model T60, T120, T240 and T480 are equipped with temperature sensors. The temperature is measured at minimum three locations in the cylinder, the front, middle and back.

The temperature is shown in the digital display at all times showing the current temperature. These measurements should only be considered to be indicative since the heat zone could be in between two measuring points.



Naturally the compost must still be inspected on a regular basis since the temperature is only one of many parameters needed to obtain a good biological process. When the biological process has settled in the cylinder the temperature curve should be as shown in this drawing below.

The food waste is put into the inlet and the temperature rises and the thermophilic phase begins. At normal input the 'hot zone' with temperatures reaching 50-65°C should be situated at the front of the cylinder.

The digital display can be connected to a PC and the temperature in the cylinder can be logged and the process controlled from the PC.

MAINTENANCE

The time it takes to feed the machine is dependent on the size of the machine, what kind of bins you use, size of the bins and how you feed Big Hanna Composter. Usually the maintenance each week takes about 30 minutes plus the time for sifting the compost.

CHECK-UP 2-3 TIMES/WEEK (5-10 MIN)

- ✓ See to it that air is passing freely
- ✓ Clean the ventilation filter if necessary
- ✓ Check the biological process
- ✓ Add absorbing material

CHECK-UP ONCE A WEEK (10-15 MIN)

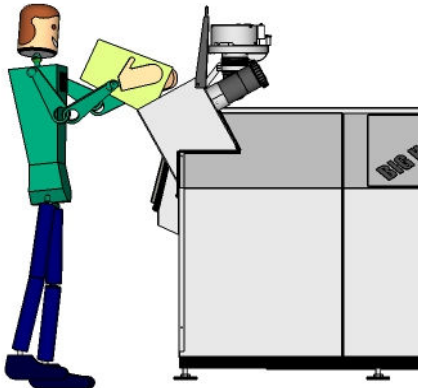
- ✓ Check the compost
- ✓ Check fan and operating motor

WHEN NEEDED

- ✓ Change plastic bag
- ✓ Screen the material

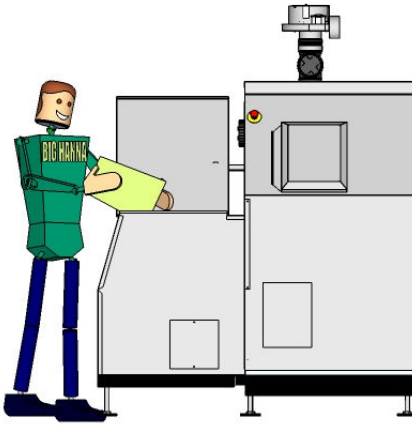
FEEDING

The inlet on Big Hanna Composter model T40-T120 looks like in the picture below. The height is ca 1 m for model T40 and ca 1,17 m for models T60 and T120 (Big Hanna supports allow for slight adjustment of height). In housing areas, the tenants often put the food waste into the Big Hanna Composter by themselves.



HOPPER FED INLET

In restaurants or catering kitchens the feeding of the machine is usually done by the kitchen staff or caretaker. Each kitchen's waste handling is different and many factors should be considered such as which individual will be responsible for Big Hanna Composter, what type of bins can we collect our waste in and how can we drain food waste of excess wetness? A 40 litre hopper fed inlet is optional on model T60 and T120. The models T240 and T480 are equipped with a 80L hopper fed inlet as standard in order to handle the larger volume of food waste.



SHREDDER

A shredder can be installed in between the in-conveyor and the cylinder on models T60 and T120 only. The shredder cuts the material and increases the capacity of the Big Hanna Composter. The shredder is made of very durable high grade steel.

CLEANING

It is very important to keep the area around the Big Hanna Composter clean to have a hygienic installation site. If food waste is spilled on the floor there will, undoubtedly be a problem with smell. In restaurants we especially recommend that water (hot water if possible) is available for cleaning buckets and keeping the machine tidy.

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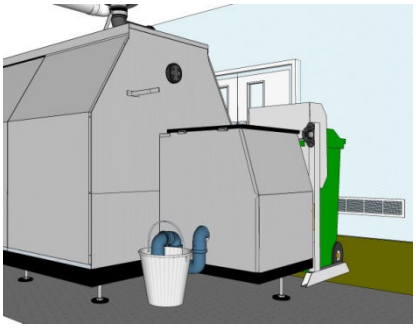
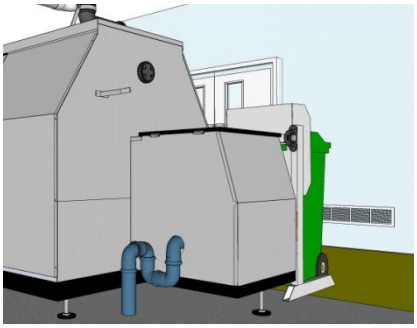
WATER FROM THE INLET HOPPER

The inlet hopper (40 L or 80 L) has a 75/110 mm connection that can be connected to sewage or emptied in to a bucket.

The Big Hanna Composter in the picture below has a connection from the inlet hopper to the sewage. It is good to have a lid on the pipe so that it can be cleared easily (not visible in picture).



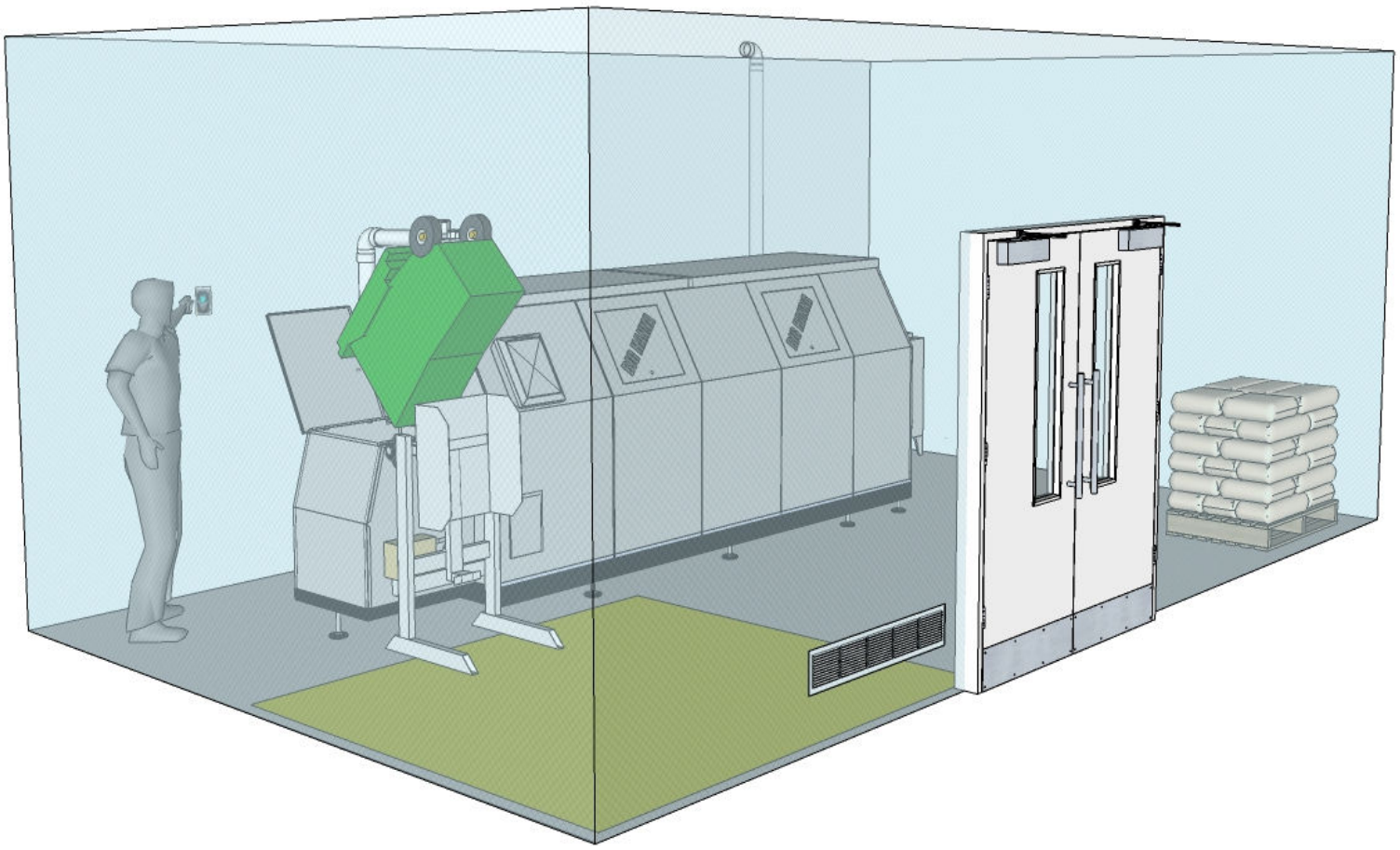


LEGAL REGULATIONS

There are in some regions, countries or sites specific local regulations regarding food waste, treating food waste on site, licence requirements for handling waste, connecting to sewage or for storage of compost etc. The Big Hanna Composter must be used in accordance with local regulations. Contact your local council to get information about any local regulations.

HANNA BIN LIFT

As an option there is a bin lift available for 80L bins. See picture at the bottom of this page.



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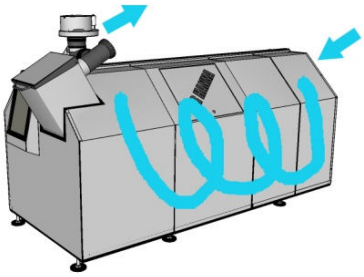
AIR / ODOR

One of key issues in obtaining a well functioning composting process is aeration. In order to lead the exhaust gas and smell away from the cylinder

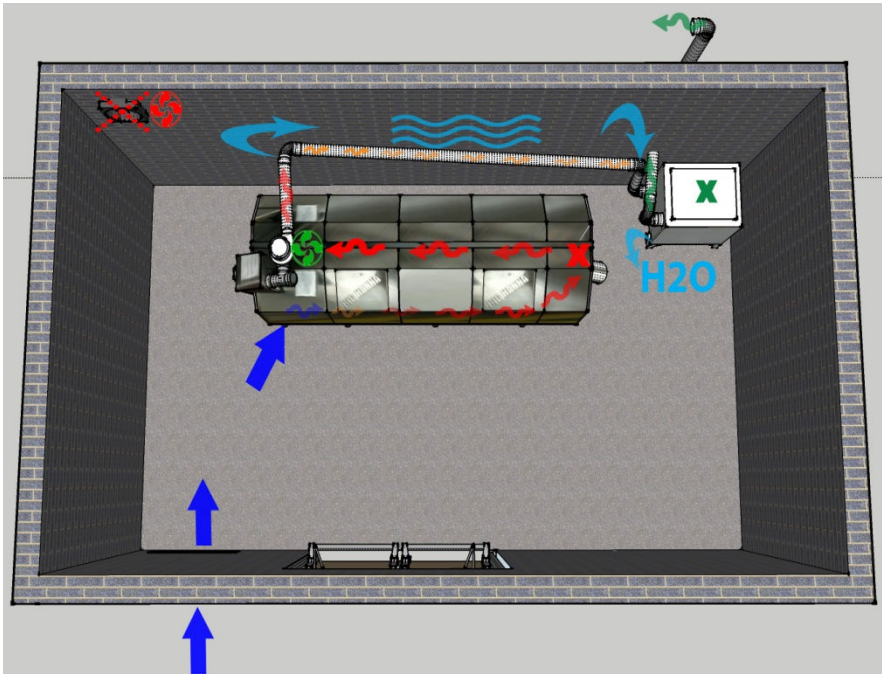


and the room where the composter is installed, the fan creates a negative pressure inside the cylinder. The air is transported from the room (or open air) where the Big Hanna Composter is installed into the front of the hood. The air is then drawn in between the hood and the cylinder and further into the cylinder at the rear gable. From the cylinder the air is then sucked by the fan through the front gable and it must then be led from the fan. Note that the plastic bag on the outlet pipe must be well attached to make the ventilation in the biological process work.

To minimize smell in the room where the Big Hanna Composter is installed the smell is led to the sewage, into a bio filter or above the roof. If the room where installation is made is forcibly ventilated, existing ventilation ought to be shut off since the composter continuously draws air out of the room and a competing evacuation might counteract the ventilation of the composter and pull the exhaust air back into the room.

Airflow from the fan on the Big Hanna Composter is 0,085m3/s or 305m3/h. The exhaust air is led from the fan by 110 mm sewage pipes. The total length of the ventilation pipe is not recommended to exceed 15 m with a maximum of four 90° angles from fan to outlet. The fan's capacity is equipped to handle this resistance in airflow.

When adding more angles or longer ventilation pipes the aeration of the material inside the composter may not be sufficient resulting in a poor biological process.



VENTILATION TO OPEN-AIR

Where the Big Hanna composter is installed in a free open space the ventilation can be installed with the outlet over the rooftops. If this is the case the outlet must have a net or a small cover on top of the ventilation pipe.

Considering that the waste stream may include large amounts of meat and fish waste, which generally increase odors, the outlet must be set at least 50 cm above the roof of the building so that odors can disperse in the wind. When ventilation to open air is used the piping should always fall towards the Big Hanna composter and a condensation trap be installed.

VENTILATION IN TO SEWAGE

Note! Local regulations may apply! Check with the local authority before connecting into sewer!

In an existing soil pipe there usually is negative pressure and therefore it is possible to install ventilation with a longer distance than recommended above. A trained professional must examine each specific case. Where the negative pressure is very strong the ventilation distance can be very long.

A draining well that is connected to the same pipe as the ventilation of the composter can sometimes dry up and exhaust gases are pushed up from the well. In order to avoid this we recommend to put some corn-oil in the water seal. The fan is transporting warm moist saturated air out from the Big Hanna composter. Then the temperature where the Big Hanna Composter is installed is cold condensed water will accumulate in the ventilation pipe. The piping extracting the exhaust air should be installed so that there is a fall allowing condensation to run into the sewage as well.

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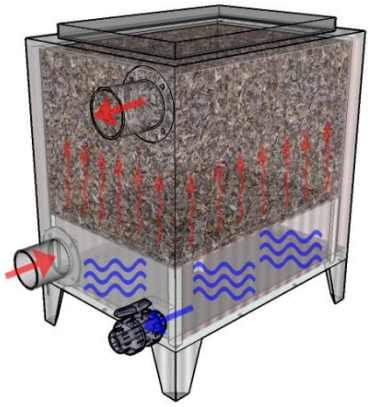
HANNA BIOFILTER

The Hanna biofilter provides an option when connection to sewage is not possible but there is a necessity to quell odors, for example when the Big Hanna Composter is sited in built up areas. The Hanna biofilter ensures that there is a significant reduction of the smell from the airflow that is led outdoors. This is a preferred option to an outlet over the rooftops (ventilation to open air) without a biofilter. The air is pushed into the biofilter and filtered through bark and the smell is reduced. More information can be found in a separate brochure.



ABSORBENT MATERIAL

The biological process in the Big Hanna Composter needs absorbing material. The absorbing material is usually added in the form of wood pellets which efficiently soaks up excess moisture. They are also carbon rich thereby contributing to the balance of the biological process. Pellets is short for "pelletized sawdust" which is produced in order to be used as fuel. The pellets will swell to about 3 times their size so the volume of pellets needed for Big Hanna is much lower than if using sawdust. Sawdust can also be used in the Big Hanna Composter as well as other absorbent material.

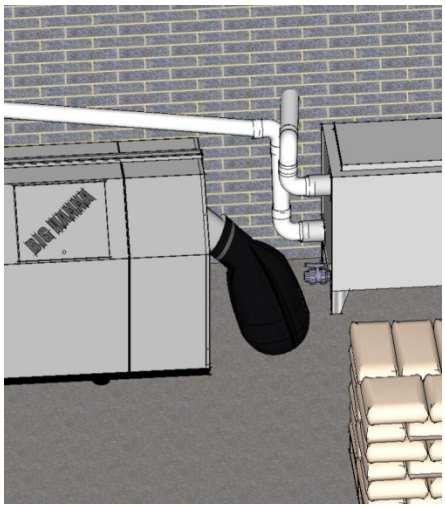
Absorbent Material
Household waste: 6% by weight
Restaurant waste: 10-20% by weight

LEACHATE

Normally there is no leachate whatsoever from the machine or biological process. If there is any leakage near the machine there is something wrong. There could be a problem with the biological process and/or with a seal/gasket. The most common problem is lack of absorbent material.

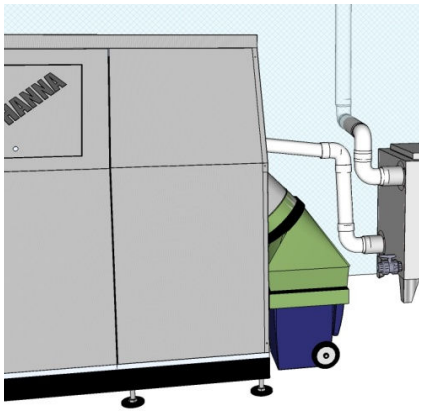
AUTOMATIC EMPTYING

The Big Hanna cylinder is always 60-70% full and the automatic emtpying is done little by little on each anticlockwise rotation of the cylinder. Big Hanna Composter empties the compost directly into a plastic bag that is attached on the outlet pipe or in to a bin. When the bag is full, it is replaced with a new bag and the compost is taken away to a maturation bay. Normally the bag/bin is emptied once or twice a week.



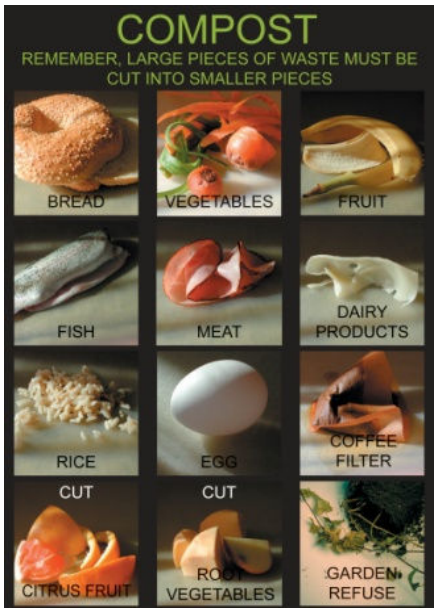
OUTLET COVER

The space between the bin and the outlet on Big Hanna Composter must be sealed tight so that no cold air is drawn into the composter, with the risk of cooling and disturbing the composting process. In order to get a good biological process we strongly recommend using an outlet cover when using a bin instead of a bag. Outlet covers are delivered with models T240 and T480.



INFORMATION

In housing areas, each home owner/tenant receives a leaflet on what to put in the Big Hanna Composter and what not to put in it. A poster like this below should also be placed near the Big Hanna Composter.



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SIFTING THE COMPOST

Even in the best managed kitchens ´foreign bodies' such as bottle tops, plastic, forks etc will enter into the food waste. In addition bones will not bio-degrade though they will be cleaned of all putrescable material. It is therefore recommended that the compost is "screened" through a wire or metal mesh after exiting from the Big Hanna.

STORING THE COMPOST

The compost from a Big Hanna Composter will be more mature if it is stored in a maturation bay. In between gardening seasons, it is recommended that the compost is stored in a maturation bay rather than in plastic bags.

USING THE COMPOST

By mixing one part compost with 5 parts loamy soil the compost is ready for application. Alternatively you can store the compost directly on the ground allowing worms and micro flora to work their way into it, making it even better and more mature.

SIZE OF MATURATION BAY

For Big Hanna Composter models T40-120, two or three bays of 1x1 m are needed. For a Big Hanna Composter model T240, two or three bays of 2x2 m are needed. For a Big Hanna Composter model T480, three or four bays of 2x2 m are needed.

TEMPORARY STORAGE INDOORS

OUTDOORS ON THE GROUND

This represents a simplified solution – two different sections on the ground. Each bay measures about 2x3 m. In each section, a pile of compost lies directly on the ground so that worms and microflora can enter the compost and improve maturation.
A roof is prefered since this prevents rain to drain the compost from nutrients.

OUTDOORS WITH A ROOF

A housing company built these maturation bays taking care of the compost from 314 apartments.

The finished compost is put on the mesh and sifted.

The compost can easily be accessed with a mini loader.