

# BIGHANNA™

## TECHNICAL INFO

# composter

### SIMPLE AND SAFE COMPOSTING

Food waste is loaded at the front of Big Hanna and compost is automatically discharged to the rear. Big Hanna is manufactured in stainless steel and is, of course, CE-marked. All moving parts are protected by the hood.

### OPTION - SHREDDER

Mainly restaurants prefer to have a shredder option. The shredder can be mounted after the installation of the machine. This solution with a lock-on system gives us the opportunity to offer customers to buy a shredder unit after the machine is already installed. Read more about the shredder in a separate brochure.

### OTHER OPTIONAL EQUIPMENT

Bin lift for 80 litre standard bins is optional on model T240. Logging of temperatures and monitoring via modem is available for models T60-T240. Read more about these options in separate brochures.

### OUTDOORS / INDOORS

Big Hanna can be installed indoors as well as outdoors. When installed outdoors we recommend that there is a roof over the machine to make feeding and servicing more pleasant.

### NOISE

Big Hanna rotates on an average 1-2 minutes every 1-2 hours. There is not much sound from the machine even when it is rotating. When a shredder unit is installed the noise level can be higher depending on what is put into the shredder.

### LOCKABLE SWITCH

CE-mark requires:

Model T40: lockable switch:  
230 V, 10 A, 1 phase

Model T60, T75, T120:  
lockable switch:  
400 V, 10 A, 3 phases

Model T240: lockable switch:  
400 V, 16 A, 3 phases



MODEL T40



MODEL T60

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Model	Capacity kg / week	Number of households
T40	75-100 kg	15-35
T60	150-250 kg	55-70
T75	225-325 kg	70-90
T120	300-500 kg	90-135
T240	400-1400 kg	135-300

### CAPACITY / RESTAURANTS AND CATERING FACILITIES

The waste material from restaurants often contains large volumes of similar types of material. This can lower the capacity of Big Hanna 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.

### DRAINAGE OF WATER / RESTAURANTS AND CATERING FACILITIES

Waste material from restaurants often contains a large amount of water. All material should if possible be drained from water. If a lot of soup, sauce etc is put into Big Hanna it is necessary to add more absorbent material i.e. wood pellets. If the moisture content is too high this will effect the biological process. The material can be drained by using simple bins with holes.

### 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 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 start up 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.

### TEMPERATURE SENSORS

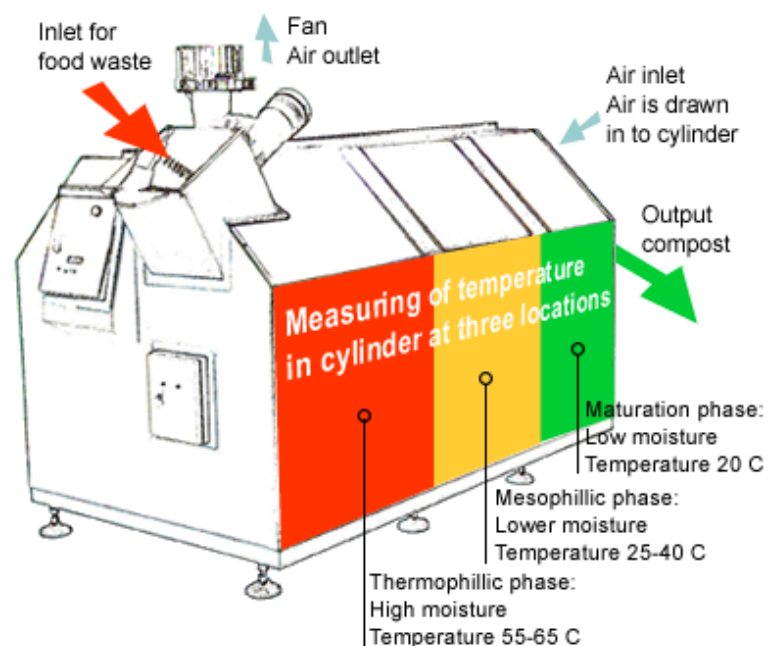
Model T60, T75, T120 and T240 are equipped with temperature sensors.

The temperature is measured at 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 heatzone 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. It is also possible to attach a monitoring system from which the temperatures can be monitored by connecting to the machine via a modem. More information about these options are available in separate brochures.



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#### 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. Each kitchen's waste handling is different and many factors should be considered such as which individual will be responsible for Big Hanna, what type of bins can we collect our waste in and how can we drain food waste of excess wetness?

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

- ✓ See to it that air is passing freely
- ✓ Clean the net cone if necessary
- ✓ Check smell and heat through the inletpipe
- ✓ 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 model T40-T120 look like in the picture below. The inlet on model T240 is only 1 m in height and 80 liter in volume.



#### INSPECTION DOORS

Big Hanna has one or two inspection doors, depending on model, where you can check the biological process inside the machine.



#### ABSORBENT MATERIAL

The biological process in 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 about 3 times their size so the volume of Pellets needed for Big Hanna is much lower than using sawdust. Sawdust can also be used in Big Hanna Composter as well as other absorbent material.

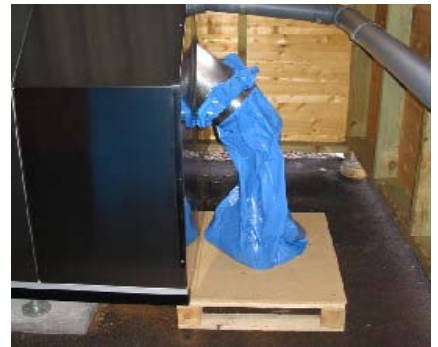
Household waste	10 volume-%
Waste mostly from fruit and vegetables	5 volume-%
Restaurant waste	20 volume-%

#### TIME IN CYLINDER

Keeping all material in the cylinder in 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%.

#### AUTOMATIC EMPTYING

Big Hanna is emptying the compost directly into a plastic bag that is attached on the outletpipe. When the bag is full it is replaced with a new bag and the compost is transported off site.



#### SIFTING THE MATERIAL

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 putrescible material. It is therefore recommended that the compost is "screened" through a wire or metal mesh after exiting from the Big Hanna.



#### 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 microflora to work their way into it, making it even better and more mature.

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### AIR / SMELL

One of key issues in obtaining a well functioning compost 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 composter is installed at the front 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 minimise smell in the room where the Big Hanna is installed the smell is led to the sewage, into a bio filter or above the roof.

### AVOID COMPETING EVACUATION

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 gas back into the room.

### LENGTH OF THE PIPES

Airflow from fan is  $0,085\text{m}^3/\text{s}$  or  $305\text{m}^3/\text{h}$ . 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. In the existing soil pipe there usually are negative pressure and therefore it is possible to install ventilation with longer distance than recommended above.

### VENTILATION IN TO SEWAGE

In existing soil pipe there usually is negative pressure and therefore it is possible to install ventilation with longer distance than recommended above. Trained professional must examine each specific case. Where the negative pressure is very good 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 is pressed 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 moisture saturated air out from the composter. When the air is cold in the ventilation pipe automatically there will be condensation water. - the condensation water together with the air from the fan must both pass to the main sewage system where you have the negative pressure. The connection to the sewage should be done so there is no risk for a water seal anywhere in the PP-pipes or in the sewage system.

### HANNA BIOFILTER

The Hanna biofilter ensures that there is no smell in the airflow that is led outdoors. This is a preferred option to an outlet over the rooftops. The air is pushed into the biofilter and filtered through bark and the smell is reduced significantly. More information can be found in a separate brochure.

### VENTILATION IN THE OPEN-AIR

Where the 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 be prepared with a net or a small cover on top of the ventilation pipe. Considering that large amounts of animal waste sometimes is put into the composter and this generally creates bad smell the outlet must be set at least 50 cm over the roof of the house to make sure that the wind will take the smell away. When you install ventilation in the open you always

must install the ventilation pipes with fall towards the composter. Condensation-trap must always be installed.

- Big Hanna
- ✓ Reduces the food waste with up to 90%
- ✓ Cylinder and fan in stainless steel.

### CLEANING

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

### INFORMATION

In housing areas each houseowner/tenant receives a leaflet on what to put in the Big Hanna and what not to put in. A poster like this below will also be placed near the machine



### WARRANTY

Machine warranty is one year.

### CONTACT ENGLAND & WALES

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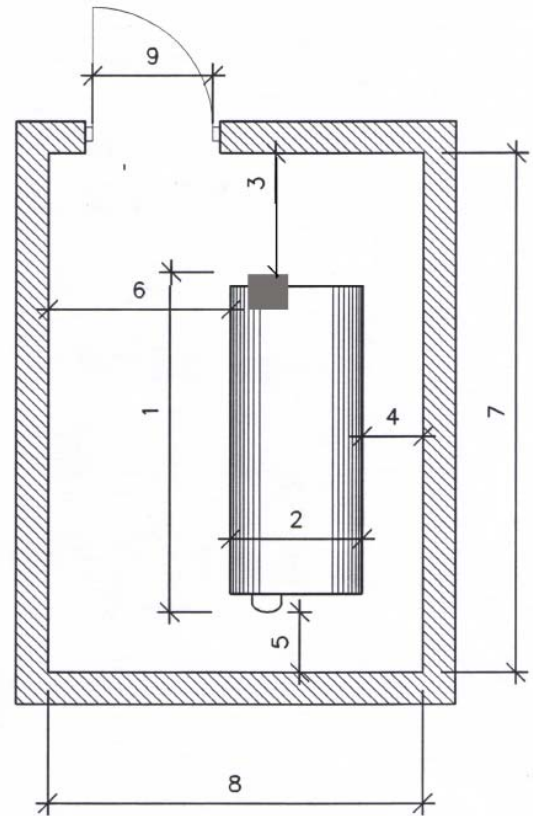
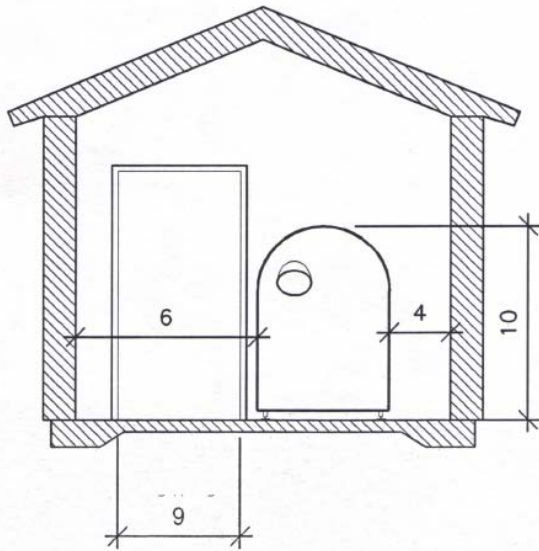
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### MEASUREMENTS (MM)

The measurements below are a recommendation when installing a Big Hanna indoors.

When installing a Hanna Biofilter together with the machine see separate measurements and instructions in the Hanna Biofilter brochure.



DESCRIPTION	T40	T60	T75	T120	T240
1. Length - Big Hanna	1 995	2 400	2 900	3 900	5 300
2. Width - Big Hanna	885	1 080	1 080	1 080	1 400
3. Recommended measurement from wall to front of Composter	700	700	700	700	700
4. Recommended minimum measurement from side of Composter with no inspection doors to wall	500	500	500	500	500
5. Recommended measurement from wall to back of Composter (outlet pipe)	700	700	700	700	700
6. Space required for service and removing the hood	1 000	1 000	1 000	1 000	1 500
7. Recommendation of total length for installing the Composter including space for service and maintenance	3 395	3 800	4 300	5 300	6 700
8. Recommendation of total width for installing Composter including space for service and maintenance	2 385	2 580	2 580	2 580	3 400
9. Minimum measurement for the door	900	1 100	1 100	1 100	1 500
10. Height - Big Hanna	1 515	1 550	1 550	1 550	1 800

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	T40	T60	T75	T120	T240
<b>CAPACITY</b>					
Kg/day	10-14	20-35	30-45	40-70	85-200
Kg/week	75-100	150-250	225-325	300-500	400-1400
Tons/annum	4-5	8-13	12-17	16-26	21-73
Number of households	25-35	55-70	70-90	90-135	130-300
<b>EQUIPMENT</b>					
Temperature sensors	No	3	3	3	4
Optional logging program	No	Yes	Yes	Yes	Yes
Optional surveillance program	No	Yes	Yes	Yes	Yes
Optional shredder	No	Yes	Yes	Yes	No
Optional bin lift	No	No	No	No	Yes
Inspection door(s) on hood	No	1	1	2	2
Access door(s) in to cylinder	1	1	1	2	2
Visual digital display	No	Yes	Yes	Yes	Yes
Automatic output in to	Bag	Bag	Bag	Bag	Bin
<b>MEASUREMENTS</b>					
Length (mm)	1995	2400	2900	3900	5300
Width (mm)	885	1080	1080	1080	1400
Height (mm)	1515	1550	1550	1550	1800
Volume cylinder (m <sup>3</sup> )	0,61	1,07	1,30	2,00	4,00
Weight empty (kg)	200	440	550	720	
Weight empty incl shredder (kg)	-	490	600	770	-
Max weight full incl shredder (kg)	540	1100	1200	1900	
Number of feet on machine	4	6	6	8	10
Connection to ventilation (mm)	Ø110	Ø110	Ø110	Ø110	Ø110
Connection for drainage (mm)	-	-	-	-	Ø 76?
Height inlet (mm)		ca 1200	ca 1200	ca 1200	1000
Inlet measurements (mm)	285 x 295	285 x 295	285 x 295	285 x 295	
Shredder inlet	-	6 litre	6 litre	6 litre	-
Hopper inlet	-	-	-	-	80 litre
<b>ELECTRICAL SUPPLY</b>					
Power supply	240 V	400 V	400 V	400 V	400V
Ampere	10 A	10 A	10 A	10 A	16 A
Phases	1	3	3	3	3
Cable	3 wire	5 wire	5 wire	5 wire	5 wire
Motor composter kW	0,12	0,55	0,55	0,55	1,1
Fan kW	0,04	0,04	0,04	0,04	0,04
Input kW	-	-	-	-	0,55
Output kW	-	-	-	-	0,37
Heater kW	1,20	1,20	1,20	1,20	2,0
Total kW	1,66	2,09	2,09	2,09	4,1
Shredder when installed	-	3,00	3,00	3,00	-
Total kW incl Shredder	-	5,09	5,09	5,09	-
<b>EL CONSUMPTION *)</b>					
Total kW/24 hours no shredder	0,26	0,43	0,43	0,43	1,29
Total incl heater **)	0,26	0,43	0,43	0,43	
Total incl heater ***)	1,22	1,39	1,39	1,39	
Total incl heater ****)	29,06	29,23	29,23	29,23	
Shredder	-	0,39	0,51	0,78	-

\*) Energy consumption is calculated on a runtime of 1 minute and wait time of 1 hour when the fan runs at 20% during the wait time.

\*\*) Installation indoors or outdoors in warm weather, heater is not in use.

\*\*\*) Installation outdoors in cold weather with good biological process inside cylinder which heats the air during wait time.

\*\*\*\*) Installation outdoors in cold weather with bad biological process, heater is on full effect 24 hours/day.

[www.bighanna.co.uk](http://www.bighanna.co.uk)