Big Dutchman®

CompoTower

Vertical, enclosed, high-quality composter for poultry manure
– fast, simple and environmentally sound –

CompoTower

A complete and space-saving system that comes ready to be connected

CompoTower is an innovative composting system in an enclosed vertical tank made from stainless steel that requires very little space. CompoTower is characterised by the following main features:

- easy handling;
- short composting times;
- easy and fast commissioning.

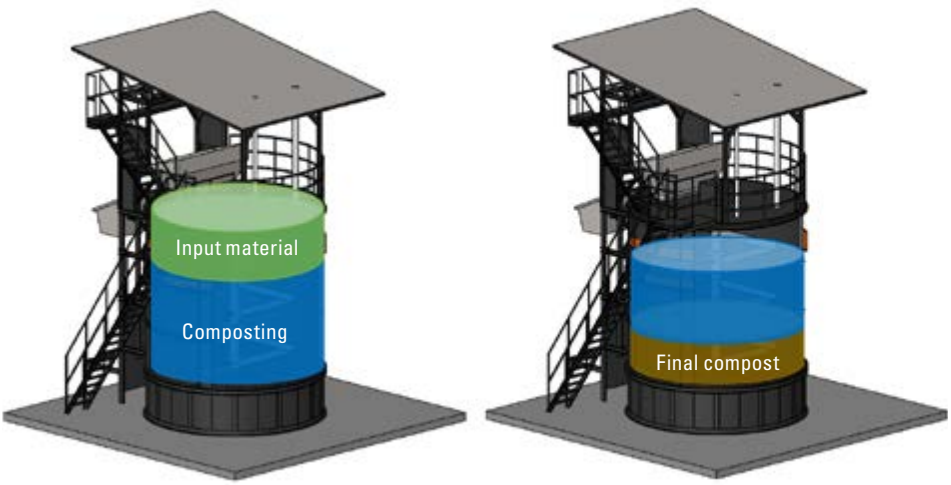
During the composting process, microorganisms degrade organic material, such as dry poultry manure, in an aerobic environment. The higher the dry matter (DM) content of the input material, the shorter the material's composting time in CompoTower. The final product is a valuable organic fertiliser that has good plant availability. It can be used for general soil improvement in horticulture and agriculture.
Let our experts give you comprehensive advice on CompoTower.

CompoTower with connected air scrubber

ADVANTAGES

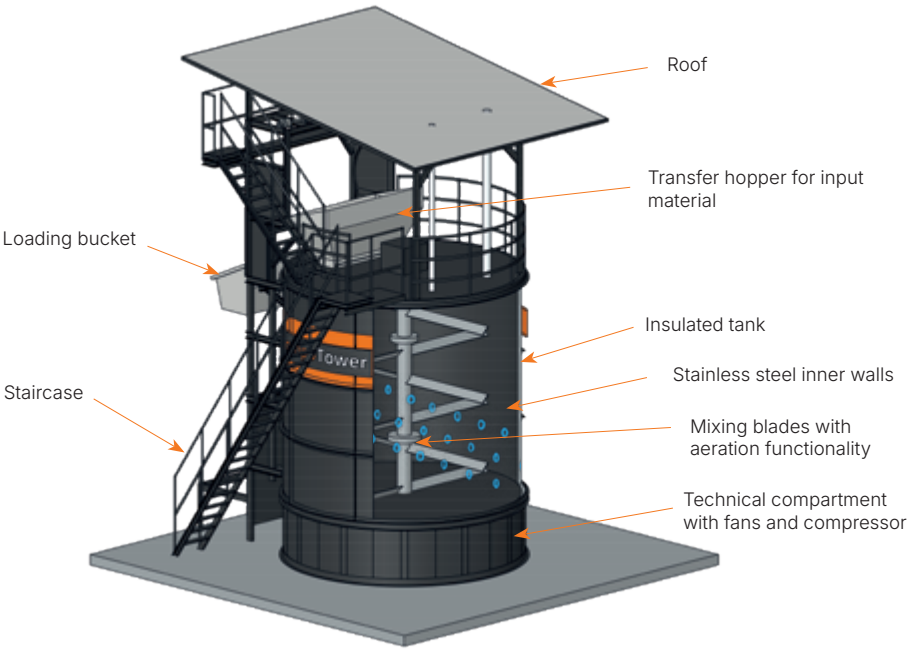
- ✔ continuous composting process;
- ✔ short composting time in the tank;
- ✔ compact design with a high input capacity;
- ✔ very stable and robust construction;
- ✔ high-quality materials with a long service life;
- ✔ outdoor use with low space requirements (5 x 6 m bottom plate, without air scrubber);
- ✔ easily fitted into the farm layout;
- ✔ insulated tank with stainless steel inner walls;
- ✔ enclosed system that produces little odour and dust;
- ✔ optional connection to an air scrubber.

Continuous composting process



The composting time and the amount composted depend on the type and dry matter content of the input material.
The drier the material, the faster it is composted.
The optimum dry matter content is between 40 per cent and 45 per cent.

Structure and functional principle

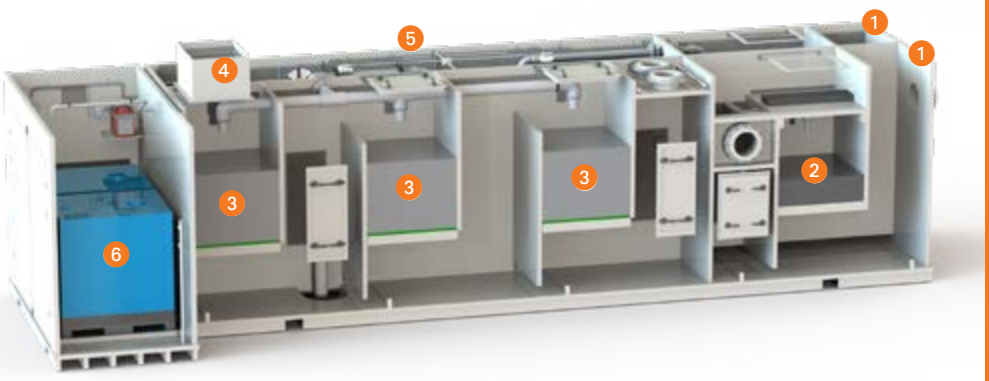


The loading bucket delivers the input material into the transfer hopper at the top of the CompoTower system. From here, the material drops into the tank, where it is chopped by the mixing blades, homogenised and aerated. Depending on the size of the CompoTower system, up to four fans continuously push compressed fresh air into the material, thus adding the oxygen required for aerobic degradation. This starts the composting process. Sensors continuously measure the temperature in the compost. After a specific composting time that depends on the material to be composted and its dry matter content, the compost can be removed from the lower part of CompoTower.

Two-stage air scrubber for significant emission reductions

Since emissions (dust, ammonia, odour) are usually normal by-products of the composting process, the use of an air scrubber is recommended in certain locations. One scrubber can clean the exhaust air from up to two CompoTower systems, depending on their capacities.

The chemical air scrubber developed specifically for CompoTower comes ready to be connected, keeping installation requirements to an absolute minimum. The air scrubber is available in two sizes (standard and XL) and delivered either directly mounted on a truck, or in a 40-foot high-cube container. All required technology is already installed; even the acid container has an individual compartment in the scrubber.



ADVANTAGES

- ✔ high separation rates: more than 99 % of ammonia and more than 90 % of dust;
- ✔ one air scrubber for up to two CompoTower systems;
- ✔ complete system that is ready to be connected: low installation requirements and costs;
- ✔ fully automatic control of the scrubber;
- ✔ delivery in a 40-foot container;
- ✔ individual placement: connection through ducts of the correct size.

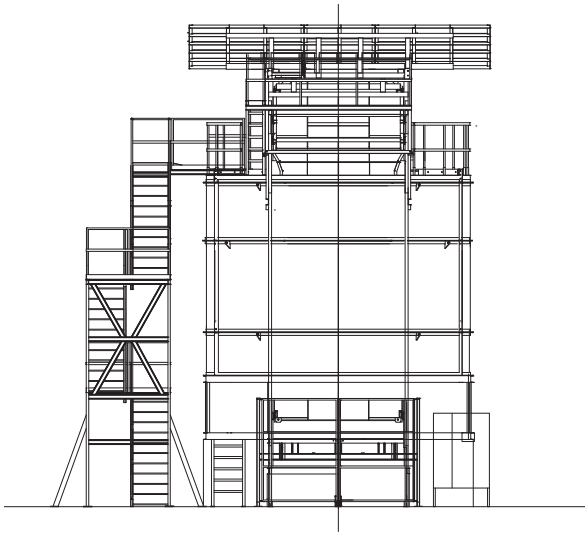
How the chemical air scrubber works

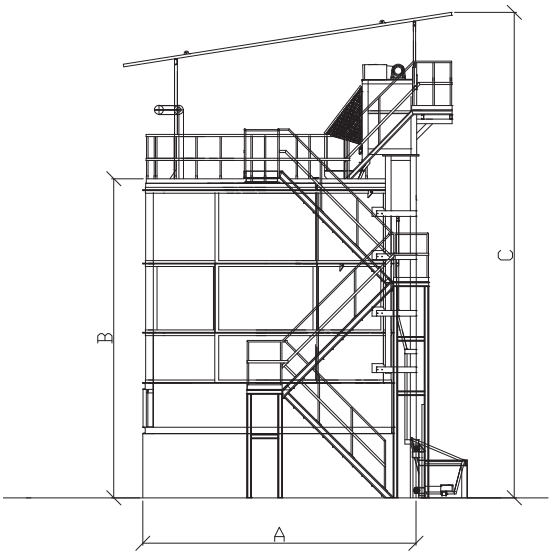
The exhaust air and some surrounding air are drawn into the scrubber (effect of dilution) through two ducts in the gable (for up to two CompoTower systems, depending on their size) 1. This air mixture then flows through a filter package consisting of hexagonal plastic cells 2. The filter package is sprayed with water from above for dust separation. The now pre-cleaned air flows through three more filter packages 3 to separate ammonia.

Water containing sulfuric acid is sprinkled onto these filter packages from above, binding mainly ammonia but also odorous substances. The process water recirculates until its contamination reaches a certain level. A sensor that measures the conductivity checks the nitrogen content in the process water. On reaching a specific concentration, some of the process water is drained into a waste water tank and replaced by fresh water.

The pH value of the process water is also checked and controlled automatically. A droplet separator 4 closes the scrubber at the top.
The entire control system is installed in the technical compartment 5. A compartment for the acid container 6 is also included.

Dimensions and technical data of CompoTower





Type		BD 40	BD 60	BD 90	BD 100	BD 140	BD 200
Tank volume	m³	39	56	86	96	132	192
Loading bucket volume	m³	up to 1.2	up to 1.2	up to 1.2	up to 1.7	up to 1.7	up to 1.7
Filling capacity	t/day	up to 6.5	up to 8.5	up to 13.5	up to 15	up to 19.2	up to 28
Electrical connection							
• 380 V/3-phase/50 Hz	kW/h	14.88	20.88	33.88	33.88	52.63	65.78
• 380 V/3-phase/60 Hz	kW/h	19.80	23.60	42.60	42.60	65.00	81.80
• 220 V/3-phase/60 Hz	kW/h	19.80	23.60	42.60	42.60	65.00	81.80
Dimensions (A x B x C)	m	4.50x4.06x7.48	4.50x5.30x8.71	5.50x5.44x8.76	5.67x5.65x8.94	6.50x5.98x9.30	7.72x6.04x9.30

Composting time and amount of compost as a function of the input material's DM content

DM content [%]	BD 40		BD 60		BD 90		BD 100		BD 140		BD 200	
	Process time [days]	Capacity [t/day]	Process time [days]	Capacity [t/day]	Process time [days]	Capacity [t/day]	Process time [days]	Capacity [t/day]	Process time [days]	Capacity [t/day]	Process time [days]	Capacity [t/day]
25	12.5	3.8	12.5	5	12.5	7.5	12	8.5	12.5	11	12.5	16
30	11	4.5	11	6	11	9	11	10	11	12.7	11	18.5
35	8	6	8	8	8	12	8	13	8	16.5	8	24
40	7	6.2	7	8.3	7	12.5	7	14	7	18	7	26
45	6	6.5	6	8.5	6	13.5	6	15	6	19.2	6	28

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Technical details subject to change. en 4/2026