



Big Dutchman®



OptiSec

Accurate and Reliable High Capacity
Manure Drying System

OPTISEC – DRIES FRESH MANURE FROM LAYER HOUSES AND FERMENTATION SUBSTRATES FROM BIOGAS PLANTS

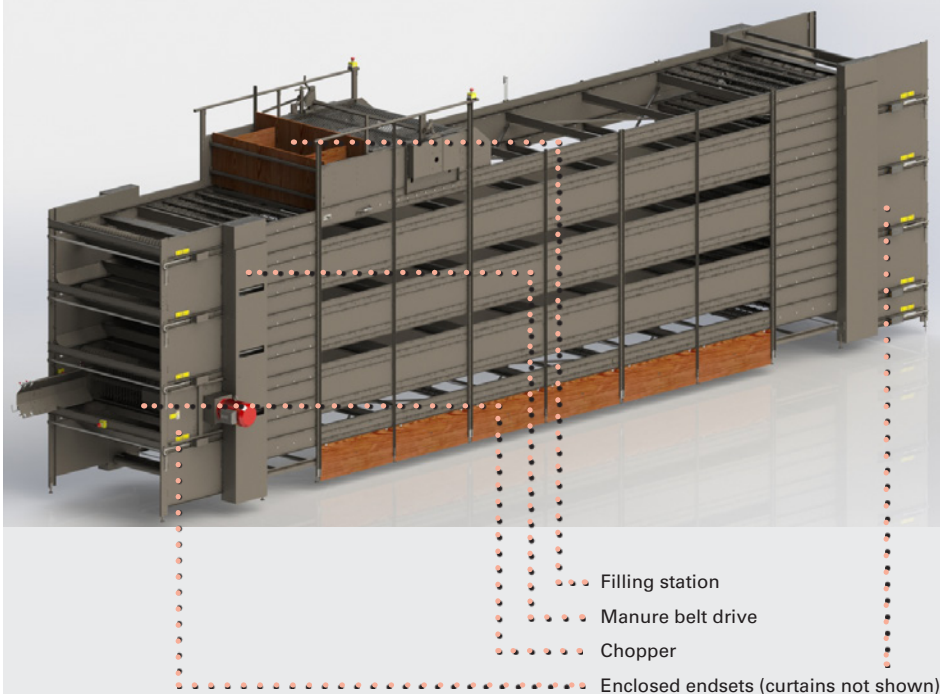
OptiSec is a manure belt-drying tunnel providing optimum drying of fresh or pre-dried manure from cage and aviary laying systems. The OptiSec is able to achieve a moisture content of 10%, creating ideal conditions for safe storage or further marketing of the manure.

OptiSec is available in 4 to 14 tiers, and is characterized by its large capacity, which is achieved by its large width of 1.75m. Depending on your individual requirements, every manure belt-drying tunnel is designed according to the number of hens, and the amount of accumulated manure. One belt drying tunnel can handle up to 200,000 birds.

HOW IT WORKS

When the manure removal process begins, the fresh manure is transported by the conveyor belts from the barn to the belt-drying tunnel. Once it reaches the belt-drying tunnel, the manure is transported directly into the dosing station. The quantity of manure is measured by electronic load cells, which coordinate the speeds of both the manure belts inside the barn, and the drying belts.

A uniform layer of manure is then spread onto the top most drying belt by the two counter-rotating augers. When the manure reaches the end of the topmost belt it automatically drops down onto the next conveyor belt, and the transport continues until the filling is finished, which can be filled in an hour.



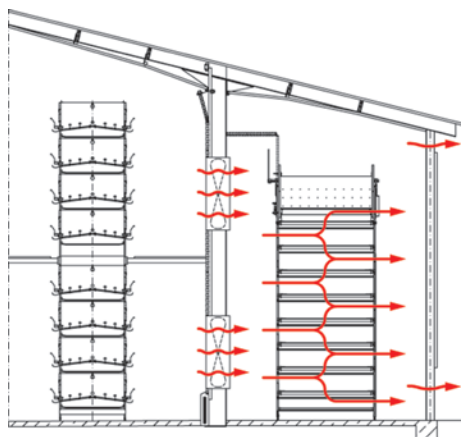
VENTILATION CONCEPT OF THE TUNNEL

For the drying process, warm exhaust air is pushed into the pressure corridor at four cubic meters per hour and bird. The air passes through all tiers of the drying tunnel from one side to the other along its entire length.

The perforated manure drying-belts ensure that the warm air passes over the manure and directly through it, allowing it to achieve dry matter contents of 80 to 90%.



Pressure corridor with a positive pressure of approx 0.1 inches WC



Air exit side

LOADING THE TUNNEL WITH FRESH MANURE OVER THE DOSING STATION

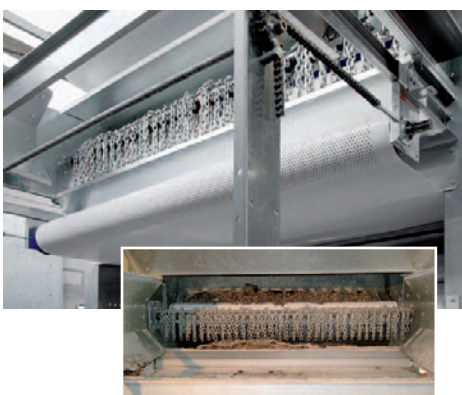


The dosing station is installed in the topmost tier of the drying tunnel. The quantity of manure, speed of the belts, and the two distributing spirals are coordinated, ensuring a very even distribution of manure on the drying belts, resulting in very consistently dried manure.

- No additional tier is required, allowing the tunnel size to be reduced by one tier-size
- No additional belt drive is required
- Extra wide belt (70") for higher capacity
- System can be filled in one hour



CHOPPER



The chopper consists of a rotating shaft, which is equipped with chain links of approximately 20cm length. The chain links chop up the manure chunks before they are fully dried, allowing manure to be dried more evenly. The chopper should be installed in a place where the manure has already reached a good degree of drying.

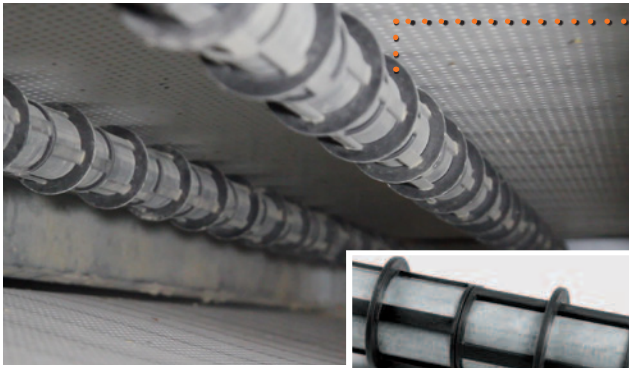
- The drive unit is installed on the outside, which protects it from dirt and facilitates maintenance
- Two easy-to-open doors facilitate cleaning and maintenance

XHD MANURE BELT DRIVE AND WORM REDIRECTION



The XHD manure belt drive features a new pressure unit, making for an improved power transmission. This way the 1.75m wide belts filled with fresh manure can be pulled without any problems.

The belts are redirected by a worm with both-way direction. It ensures that dust and manure rests are removed from the belts by being transported to both sides for a trouble-free redirection of the manure belt.



PATENTED ROLLER BEARER

The patented roller bearer consists of a galvanized tube onto which plastic rolls are fitted. These roller bearers keep the belt from touching the roller, resulting in a roller that will last longer, and manure which dries more thoroughly. With the roller bearers in place, air is allowed to pass through the manure, and the manure is able to dry more evenly.

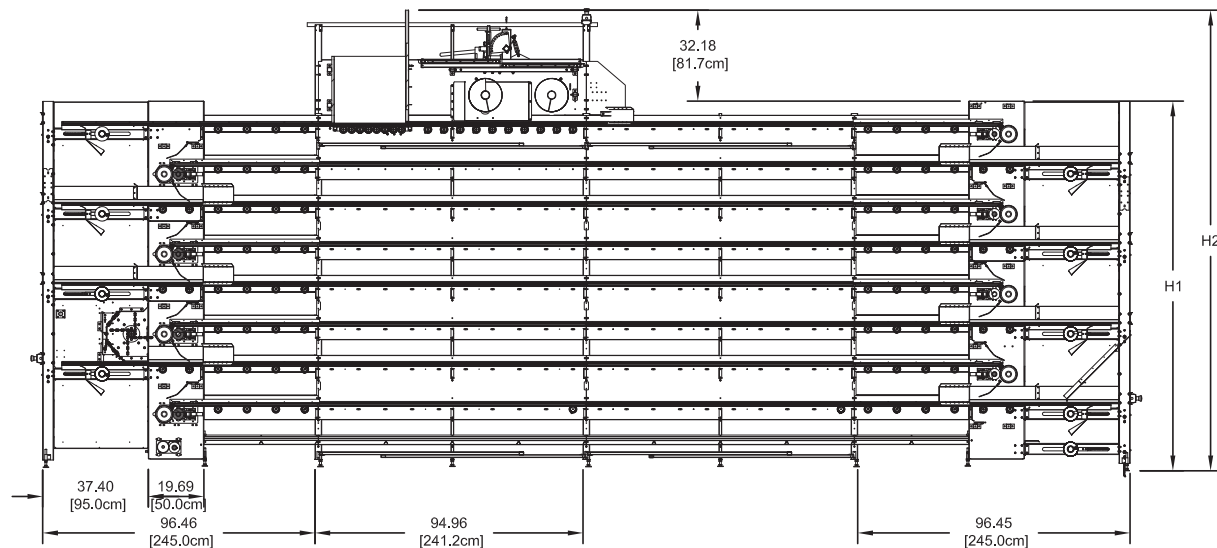
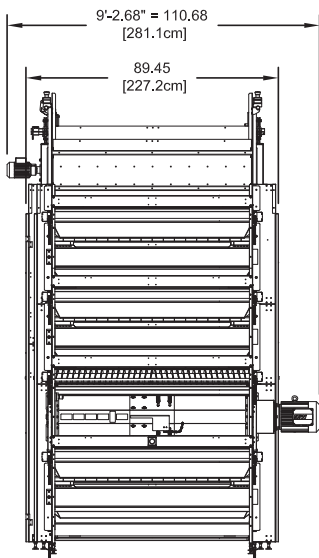


Patented roller bearers for good air circulation and smooth running



SUSPENDED FLAP, PERFORATED MANURE DRYING-BELTS, AND ONE NON-PERFORATED MANURE DRYING-BELT

- In case of an emergency, a suspended flap with safety function immediately switches off the system, and the flap also serves as dust protection.
- Perforated manure belts in all but the bottom tier allows for a better drying of manure.
- Below the bottom tier, an additional non-perforated manure belt is installed, which collects dust and small particles that might drop down from the other tiers. When the dry manure is removed, the non-perforated belt is cleaned, keeping the floor clean.



Tiers	4	6	8	10	12	14
Section height H1 (inches)	74.13	102.5	130.83	159.17	187.52	215.87
Height total H2 (inches)	106.5	134.84	163.19	191.54	219.88	248.23



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Details are subject to change: 1/2015