



Big Dutchman®



OptiSec

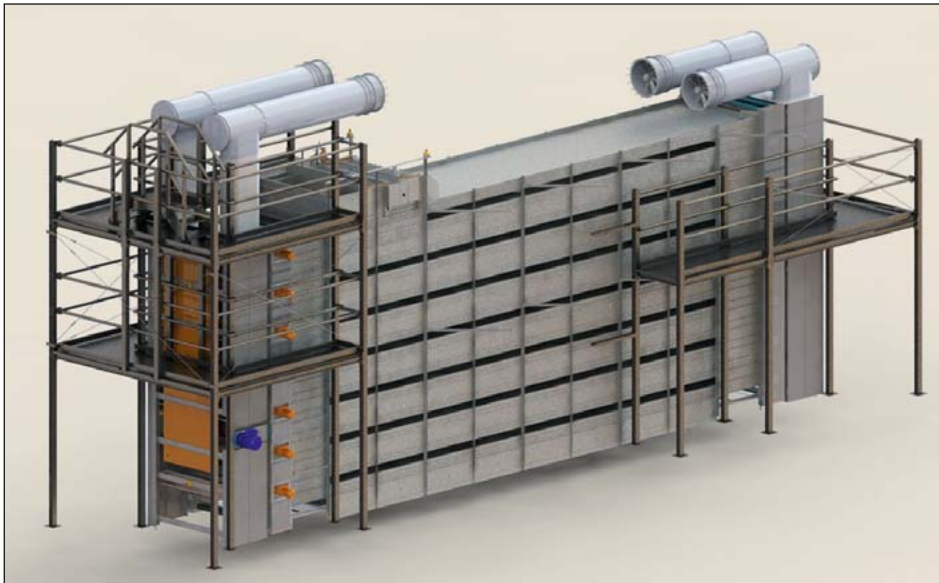
High-capacity manure drying tunnel
for a maximum dry matter content

OptiSec – optimal drying of fresh manure from poultry houses and fermentation substrates from biogas plants

OptiSec is a manure drying tunnel from Big Dutchman which was developed for optimum drying of fresh or pre-dried manure from cage systems and aviaries. Dry matter contents of up to 90% are possible. This creates ideal conditions for safe storage and further processing options.

OptiSec is available with 4 to 14 tiers and is characterised by its large intake capacity, which is achieved thanks to its large belt width of 1.78 m. Depending on the size of the farm, every tunnel is planned based on the amount of accumulating manure. One belt-drying tunnel can be used to dry

the manure from up to 200,000 laying hens. It is also possible to use OptiSec for drying of fermentation substrates from biogas plants or separated solids from liquid manure. Let our experts advise you to find the best solution for your individual requirements.



OptiSec with 14 tiers and dust extraction (optional)

How it works

When the manure removal process is started, the fresh manure (min. 30 % dry matter content) is transported from the barn to the filling station of the drying tunnel. The amount of manure put on the manure belt is determined by weight measured by electronic load cells. The load cells coordinate the speeds of both the manure belts inside the barn and the belts of the drying tunnel. Two counter-rotating augers then spread a uniform layer of manure onto the topmost drying belt and subsequent belts until the filling process is finished. An emergency stop on every tier ensures that no major damage occurs in case of malfunctioning.

Tunnel ventilation concept

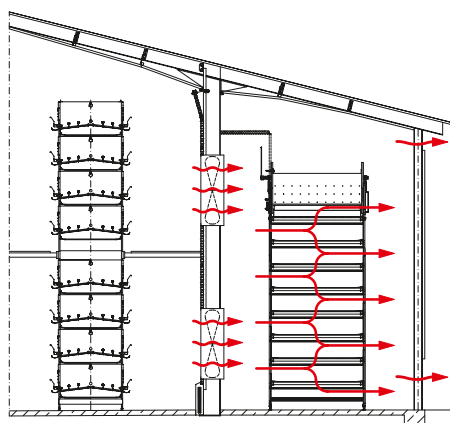
For the drying process, warm exhaust air is pushed into the pressure corridor at up to 4 m³/h and bird. In the corridor, the air passes through all tiers of the drying

tunnel from one side to the other along its entire length. The perforated manure belts ensure that the warm air passes not only over the manure but passes through the

manure, which makes for considerably better manure drying. The result is a dry matter content of up to 90 %!



Pressure corridor with a positive pressure of approx. 25 Pa



Air exit side

Feeding the tunnel with fresh manure by means of the filling station

The filling station is integrated into the top tier of the manure drying tunnel. This economic solution has the following advantages:

- ✓ no additional tier required, which means that the tunnel height can be reduced by one tier;
- ✓ no additional manure belt drive required.

The quantity of manure arriving, the speed of the belts and the speed of the two distribution augers are well coordinated, thus ensuring an even distribution of the fresh manure on the drying belts. This is one of the main prerequisites for a uniform drying process.



Chopper

The chopper consists of a fast rotating shaft, which is equipped with chain links of approximately 20 cm length. They chop up the manure chunks before they are fully dried, which makes for considerably more uniform manure 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.



Manure belt drive and idler

The manure belt drive features a new pressure unit, which makes for an improved power transmission. This allows pulling of the 1.78 m wide belts loaded with fresh manure.

The manure belts are perforated and thus ensure an optimal drying of the manure. The manure belts are redirected by means of an auger with both-sided conveying direction. It ensures that dust and manure are transported to both sides onto the next

level for a trouble-free redirection of the manure belt.

Beneath the bottom tier, an additional solid belt without perforations is installed, which collects small particles and dust from all tiers. When the dry manure is removed, the solid belt is also cleaned so that the floor beneath the tunnel remains clean.



Belt roller

The belt roller consists of a galvanized tube onto which plastic rolls are fitted. The rolls are formed in such a way that the manure belt rests on the roller in certain places only. The manure belt perforations are therefore not covered by the rollers which ensures sufficient circulation of air also in this area.

In addition, less force is needed to pull the belt.



Control of the OptiSec drying tunnel

The OptiSec control ensures the functional and operational reliability of the entire system.



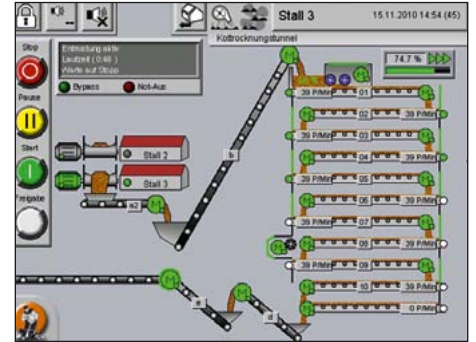
Control cabinet with amacs module »OptiSec manure drying tunnel«

It can be operated as stand-alone control or as modular control of the amacs controller. For this purpose a separate base unit is installed in a separate control cabinet. The farm manager can then view and monitor the operating data on the graphic display. All data can also optionally be transferred to an external PC. Thus allowing for a comfortable remote enquiry at any time.

All recorded data can also be moved to longterm storage. The following parameters can be controlled:

- ✓ up to 5 manure cross belts;
- ✓ tunnel belts of up to 14 tiers;
- ✓ tunnel belts with or without frequency converter;
- ✓ speed monitoring by means of sensors on each tier;

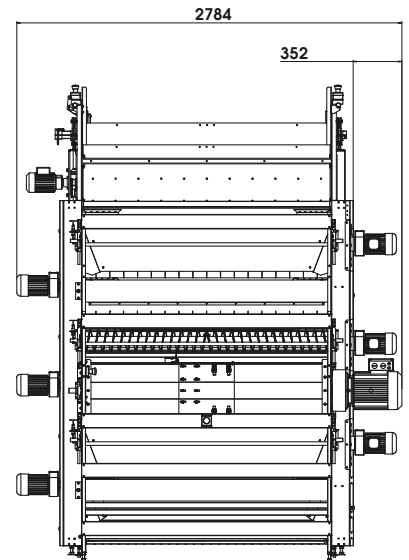
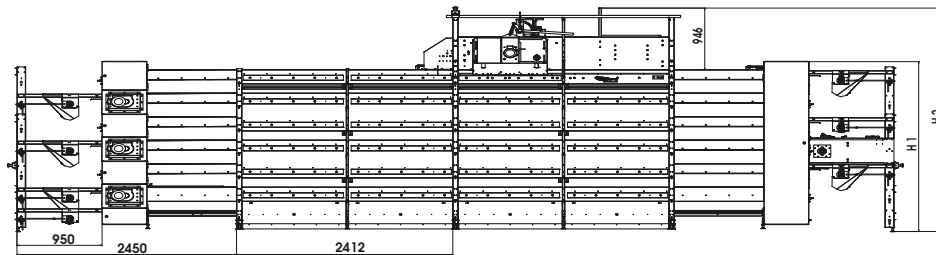
- ✓ special transfer belt from the manure cross belts to the incline conveyor (optional).



Operation at the touch screen

Technical specifications

Tiers	4	6	8	10	12	14
Section height H1 (mm)	1883	2603	3323	4043	4763	5483
Height total H2 (mm)	2705	3425	4145	4865	5585	6305



Big Dutchman

Germany:
Big Dutchman International GmbH
 Postfach 1163 · 49360 Vechta
 Tel. +49(0)4447 801-0 · Fax -237
 big@bigdutchman.de
 www.bigdutchman.de

USA: Big Dutchman, Inc.
 Tel. +1 616 392 5981 · bigd@bigdutchmanusa.com
 www.bigdutchmanusa.com

Brasil: Big Dutchman (Brasil) Ltda.
 Tel. +55 16 2108 5310 · bigdutchmanbrasil@bigdutchman.com.br
 www.bigdutchman.com.br

Russia: 000 "Big Dutchman"
 Tel. +7 495 2295 171 · ikotov@bigdutchman.ru · www.bigdutchman.ru

Asia/Pacific region: BD Agriculture (Malaysia) Sdn. Bhd.
 Tel. +60 3 33 61 5555 · bdasia@bigdutchman.com · www.bigdutchman.com

China: Big Dutchman (Tianjin) Livestock Equipment Co., Ltd.
 Tel. +86 10 6476 1888 · bdcnsales@bigdutchman.com
 www.bigdutchman.cn