



Big Dutchman

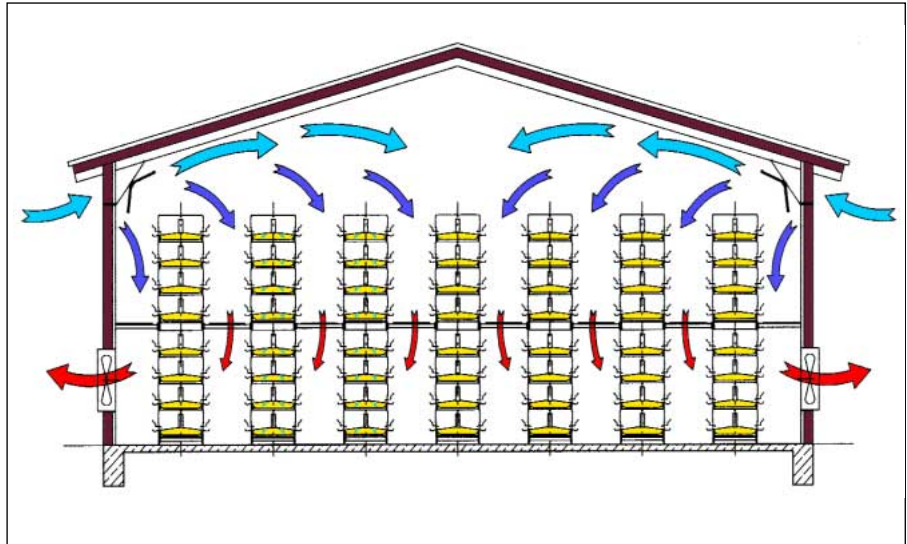
EUROVENT



The ventilated laying battery for exceptional bird performance with dry manure production

EUROVENT – a concept for the future

The name EUROVENT stands for optimum bird and laying performance as well as outstanding installation quality. Big Dutchman delivered the first manure belt battery in 1980 and since that time, millions of hens around the world have laid and are laying their eggs in EUROVENT manure belt batteries. Big Dutchman, however, is not content with this level of achievement. Our technicians are constantly striving to improve, in some cases, small details which produce significant improvements.



Concept for air flow in an 8-tier house with EUROVENT laying battery

A better management system = more cost-efficient production

unit construction system = *simple assembly of 3 to 8 tiers*

intermediate ceiling for more than 5 tiers = *easy management and observation of the flock*

each bird can easily reach two drinking nipples

solid, smooth cage partitions = *protect the hens' plumage and promote quiet in the house*

all sheet metal parts are galvanised and the location of the nipples prevents corrosion

entire cage front is a sliding grate which opens easily = *moving birds in and out becomes simple and more humane*

flat-shape stepping rail = *encourages egg-laying at the trough, ie. short roll-away distance, hardly any cracked eggs; no manure in the lower cages, and hens are prevented from eating eggs*

triangular post shape = *eggs roll away unhindered*

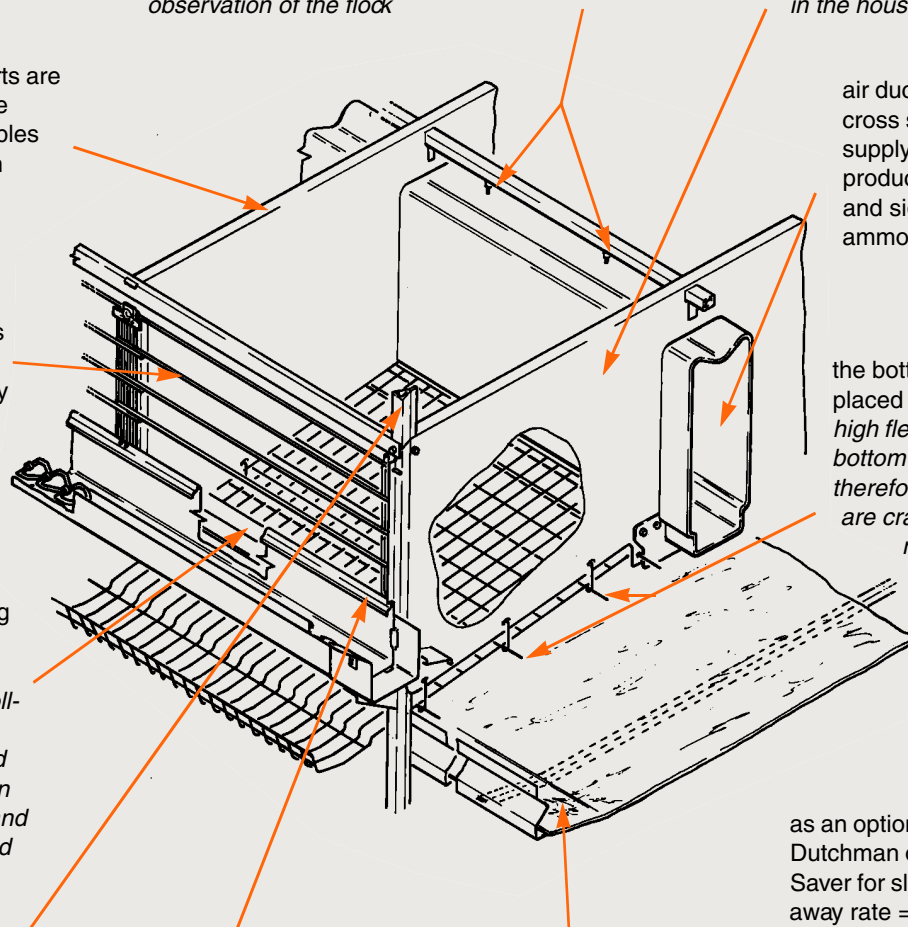
deep feed through with inner rim = *minimum feed losses*

trough-shaped manure belt = *manure cannot drop into the installation, maximum efficiency during transfer of manure to the cross belt*

air duct with very large cross section for fresh air supply to the birds, production of dry manure and significantly reduced ammonia emissions

the bottom wire mesh is placed on tension wires = *high flexibility of the bottom wire mesh and, therefore, hardly any eggs are cracked (detailed test results are available)*

as an optional extra Big Dutchman offers an Egg Saver for slowing the roll-away rate = *an additional precaution for even smoother egg transport*



EUROVENT stands for:

- significantly better house air;
- improved laying performance – up to 1 kg more egg mass per hen a year;
- enhanced feed conversion;
- 40% less cracked and broken eggs;
- clean eggs;
- healthy hens, 50% lower mortality rate;
- manure with up to 60% dry matter which can be conveniently spread and stored.

Feed supply – consumption is the decisive factor

The Big Dutchman feeding system with the CHAMPION feed chain has proved itself for over half a century as a reliable and durable feeding system. With a speed of 12 m/min (36 m/min is available as an option) feed is distributed fast and evenly to all tiers of the battery. The feed chain is driven with one drive per circuit without additional transfer elements = high efficiency, low maintenance requirements. For extreme lengths (> 250 m) two drives are used.

Only with the Big Dutchman feeding system can you apply the patented CONTROLLED FEEDING system. This consists of three stages which can be installed sequentially:

1. weighing silo;
2. weighing cage;
3. MC 33 feeding computer.

The feed ratios are adapted to the actual needs of the hens, avoiding overfeeding.



The CHAMPION feed chain distributes feed evenly, reliably and fast



The integral connection between the auger and the CASCADE feed column prevents contamination with vermin and dust

Water supply – the safe system for hens

In EUROVENT laying batteries, the stainless steel nipples are situated on the rear wall of the cage. This position causes the hens to leave their feeding place to drink. Each bird is allowed sufficient space to feed. The large air duct in the upper area serves as a collecting channel for splash water, contributing to dry manure.

The required water pressure is maintained by means of a float reservoir or a ball tank (optional).



V-shaped channel integrated into the air duct



Water reservoir

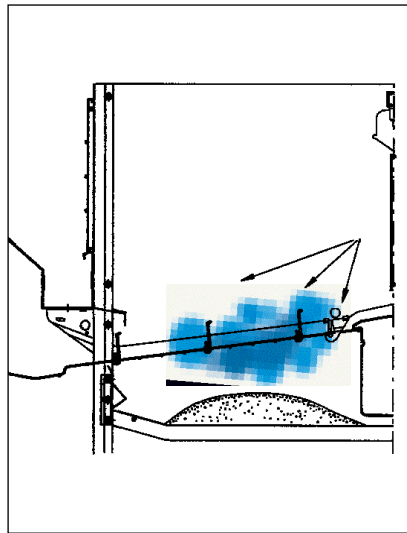


Ball tank – for flushing the nipple pipes

Air supply – fresh air for the birds and to dry manure

The reduction of ammonia in the house air and a significant reduction of odour problems are essential for environmentally acceptable agricultural systems.

The ventilated manure belt battery solves environmental problems. Rapid drying of manure in the battery virtually eliminates organic changes in the manure. This reduces ammonia emission.



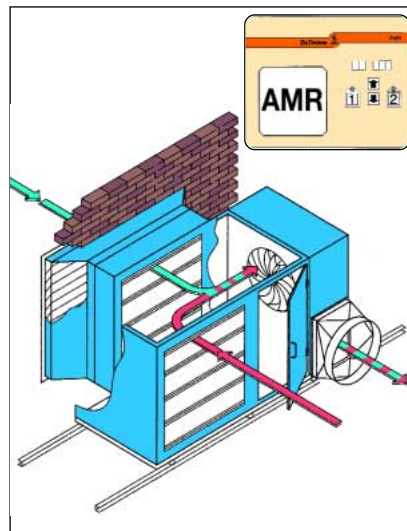
Manure ventilation in a Big Dutchman cage

A study by an Environmental Institute demonstrated that emissions and odour release are 3 to 5 times less than with traditional liquid manure installations. The air duct in the EUROVENT laying battery is the only fresh air supply in winter, i.e. because of this, birds cannot be exposed to draughts. In summer each hen is provided with sufficient oxygen even in extreme temperatures. This ensures optimum hen performance.

How does manure belt ventilation work?

Before the fresh air reaches the hens in the house, it is warmed in the air mixer. For some installations a heat exchanger can be supplied. The pre-warmed air is channelled through ducts and blown over the manure and into cages through strategically positioned air holes.

When manure belt ventilation is the subject, the question of correct air rates and energy costs always arises.



Operation of the air mixer

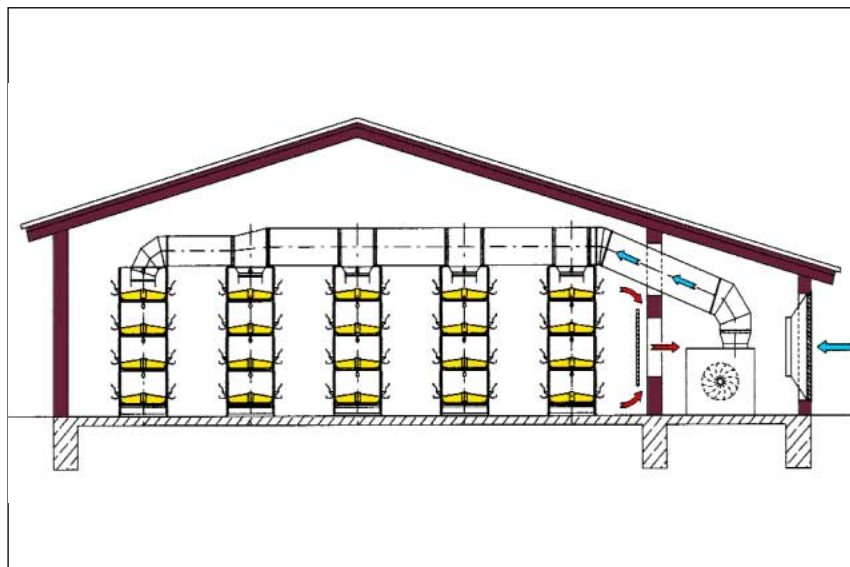
We usually recommend operating at an air rate of approx. 0.5 m³/h per bird. Energy consumption will be only 2.0 kWh/bird per year. This value can be reduced to 1.25 kWh/bird per year, by simply reducing the operating time:

- in summer to 12 h/day and
- in winter to 16 h/day.

It is essential to maintain a high stocking density in the house, to install a high level of building insulation and optimum house ventilation to achieve high rates of manure drying.

Advantages

- fresh air supply to all hens;
- uniform temperatures are achieved within the entire house (in each row and tier), independent of the outside temperatures;
- hardly any ammonia or odour emissions;
- significant reduction in fly population;
- lower energy costs.



Simple and efficient use of the air mixer

Manure disposal – easy with dry manure

Manure is a by-product of egg production. It has to be disposed of by the farmer or even better, be recycled. Manure from a EURO-VENT laying battery has a dry matter content of up to 60%, depending on climate and the design of the installation.

Advantages

- the storage room requirement is only half that required for slurry;
- dry manure is crumbly and has a nutrient content 5 times higher than slurry;
- dry manure can be spread evenly on fields using a plate-and-flicker distributor;
- the dry matter content can be increased to a maximum of 80% in the storage area – the manure can be used on fields at the required time;
- dry manure can be transported over long distances (up to 300 km) cost effectively;
- in many regions the dry manure system is recognised as environmentally beneficial and is a prerequisite for a permit to build new houses.



Demonstration of manure removal



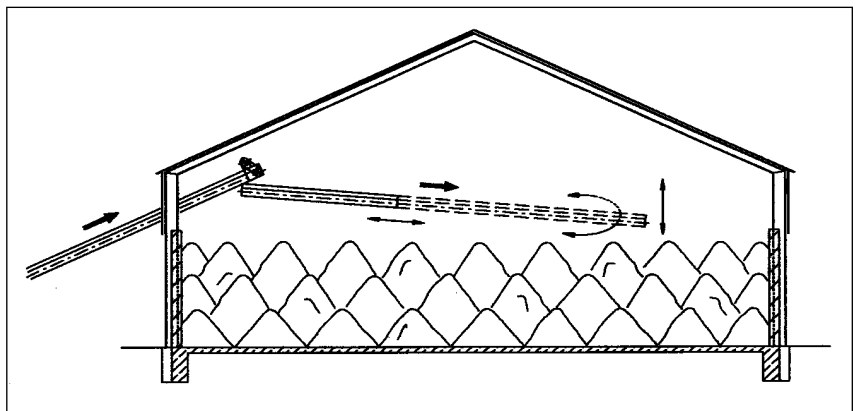
Dry manure is spread evenly using a plate-and-flicker distributor



Manure is loaded on trucks



Simple manure store: allowing the moisture content to be further reduced



Diagrammatic sketch of a manure store with distribution system

How does the manure removal work?

Continuously welded PP belts (polypropylene) collect the manure from under the cages. It can be stored and ventilated in place for an interim period of up to 5 days. The manure is then transported from all tiers to a cross conveyor which runs from the house into the manure store.

The manure may also be transported directly onto a vehicle using a belt.

The manure scrapers clean belts on each tier. All scrapers are centrally operated by means of a lever. A double manure belt scraper is available as an option from Big Dutchman for even more thorough cleaning.



A double manure belt scraper ensures even more thorough cleaning of the manure belt

Technical data

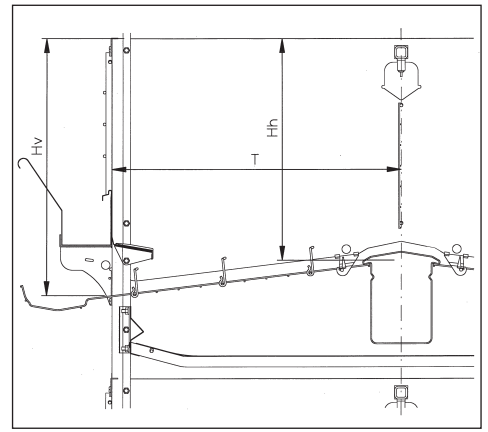
Cage dimensions

Battery type		EV 500/500a/ 500AV	EV 550AV
Width (B)	mm	603	603
Depth (T)	mm	500	550
Front height (Hv)	mm	445	445
Rear height (Hh)	mm	385	380
Height front grate	mm	220	220
Cage area	cm ²	3015	3315
Bottom wire			
– wire mesh			1 x 1.5"
– slope			7° = 12 %
– wire diameter	mm		2.05 / 2.45

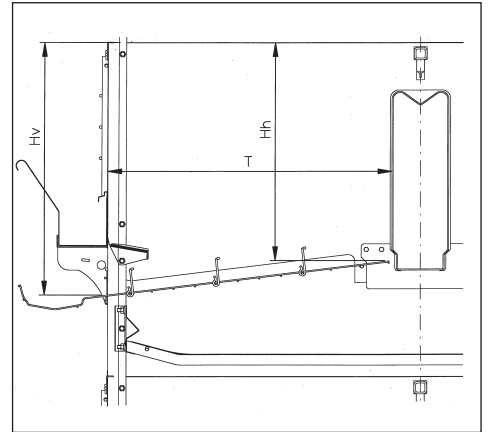
Battery dimensions

Battery type		EV 450AV/ 500/500a		EV 500AV		EV 550AV	
Total width	mm	1320		1420		1520	
Number of tiers		3	4	5	6	7	8
Total height*	mm	1960	2550	3140	3930	4520	5110
Height cat-walk*	mm	–	–	–	2095	2685	2685

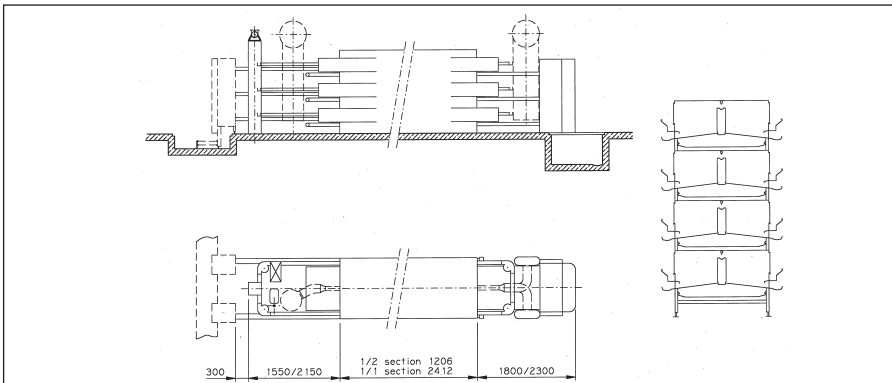
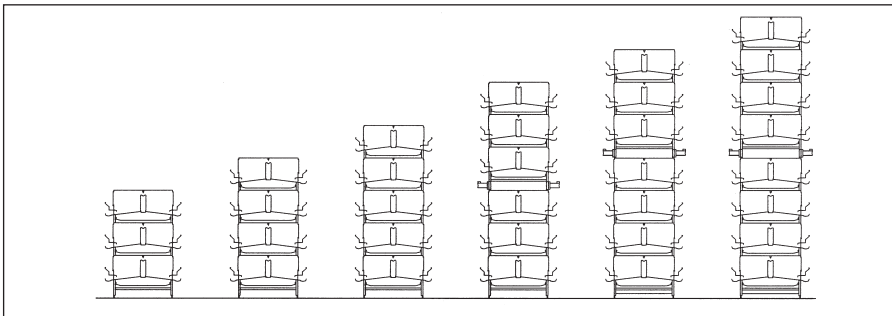
* Height compensation of ±30 mm = possible adjustment of 60 mm
Section length: 2412 mm; distance between tiers: 590 mm



Cage cross section EUROVENT 500a



Cage cross section EUROVENT 500AV/550AV



Our recommendation:

The better the individual components of a laying unit (such as the battery, house ventilation, egg collection, manure storage etc.) complement each other, the better the total result. Please let our experts advise you on all possibilities Big Dutchman offers in connection with successful poultry management.



Big Dutchman

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