



# Big Dutchman®



## **Egg Collection Systems**

Flexible, efficient and gentle on the eggs

# Egg collection systems – an investment that pays off!

Egg collection systems play an important role in successful layer and breeder management, both with floor and cage production. This is mainly due to the following reasons:

- ✓ reduced time and labour costs;
  - ✓ optimum egg quality, i.e. cleaner eggs, few cracked eggs;
  - ✓ accurate count of the total number of eggs produced per tier, row or house.
- Big Dutchman egg collection systems meet even the highest requirements:

- ✓ gentle transport of the eggs;
- ✓ high functional reliability;
- ✓ easy handling.

Based on the farm size and layout as well as the individual customer's requirements, there are different egg collection systems available. Our product range includes elevators and lift systems as well as curve, rod and vertical conveyors, table drive systems and manual collection tables.

Before an egg collection system is

installed, the following questions should be taken into consideration:

- ✓ Are there uneven ground levels on the farm or are the houses built at different elevation?
- ✓ How large is the capacity of the packer or grader?
- ✓ Should the eggs be collected separately from each flock or simultaneously?

Let our experts advise you to find the best solution for your individual requirements.

## EGG COLLECTION SYSTEMS FOR CAGE PRODUCTION

### ST elevator

Ideal for short systems, reliable egg transport

The ST (standard) elevator transfers eggs onto the elevator chain in a set pattern. This is to ensure that no eggs are transferred onto already occupied steps. If a barn houses birds of different age groups, ST elevators can also be used to collect eggs per row or per flock. In order to match the conveying capacity and the

laying performance, we recommend separately actuating egg belts and elevator chains.

With the ST elevator, dosing wheels transport the eggs onto the elevator chain, from where they are moved downwards to the lower sliding grille. The chain turns here and then transports the

eggs upwards to the desired height, where they are transferred onto the cross belt. The transfer can be carried out at any height; the standard height, however, is 2.10 m (Q 210) to guarantee a clearance height of 1.95 m. If a manual collection table is installed, the transfer height lies at 80 cm (Q 80).



### Advantages

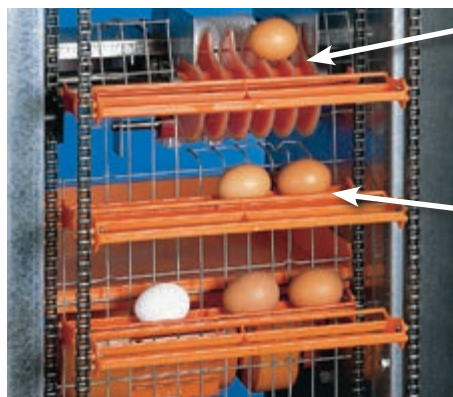
- ✓ large collection capacity of up to 16,500 eggs per hour and per elevator\*;
- ✓ easy access to all cage rows; the cross collection is not an obstruction;
- ✓ less space required in the end set area;
- ✓ suitable for all cage types.

\* depending on the system type, the egg belt width and the speed of the longitudinal belt

### Advanced technology and reliability



Egg transfer onto the cross belt with finger wheel (optional) prevents eggs coming from the elevator from colliding with eggs already on the cross belt



The patented two-component dosing wheel with a plastic core is framed by a soft and flexible lip that helps to prevent hair-line cracked eggs

The steps of the elevator chain, with additional safety braces made of plastic, are light and flexible  
→ safe transfer from the dosing wheel  
→ soft acceptance of the eggs, no damage

# EggCellent

## Large collection capacity, only minimum maintenance requirements

The EggCellent elevator designed by Big Dutchman is characterised by its large collection capacity and requires only minimum system adjustments. Of course it also provides everything necessary for a safe egg transport. From the longitudinal belt, the eggs are conveyed onto a rod conveyor, from where they are then transferred onto the elevator chain. This process does not require any additional dosing units: a deflector helps to distribute the eggs over the entire width of the elevator chain.

In order to match the conveying capacity and the laying performance, we recommend separately actuating egg belts and elevator chains.



Every tier conveys the eggs onto an individual section of the rod conveyor and elevator chain; deflectors ensure that the eggs are distributed evenly on the elevator chain

Safe transfer from the elevator chain (patent pending) to the cross belt



## Advantages

- ✓ large collection capacity of up to 19,000 eggs per hour and per elevator\*;
- ✓ simultaneous collection from up to eight tiers;
- ✓ no dosing units necessary, i.e. maintenance requirements are at a minimum;

- ✓ rod conveyors have a cleaning function so that eggs without shell and dirt do not reach the elevator chain;
- ✓ easy access to all cage rows, no obstruction because of the cross collection;

- ✓ suitable for all cage types;
- ✓ simple assembly and adjustment.

\* depending on the system type, the egg belt width and the speed of the longitudinal belt

# Lift system

## Only one egg transfer, little space required in the end set area

The lift system collects the eggs per tier and simultaneously from all rows. The main feature of the lift system is that the cross conveyor moves to the individual tiers to collect the eggs. Once it has collected the eggs from all tiers, the lift moves into its parking position. The lift

system is a good and economic solution especially for small units or individual houses, and when the eggs are not collected per flock. The eggs are transported very gently as only one transfer is involved between the longitudinal belt and the cross belt.

To allow the operator to match the conveying capacity with the performance of the egg grader, a frequency regulator should be installed. This ensures that the longitudinal belt speed of 4 m/min can be controlled between 25 and 60 Hz.

### Advantages

- ✓ smooth egg transport as there is only one transfer from the longitudinal belt to the cross belt;
- ✓ easy access to all rows because the lift system moves into a parking position after egg collection is completed, i.e. the cross collection is no obstruction;
- ✓ little space required in the end set area;
- ✓ the lift system can be combined with any cross collection of any width.



Egg transfer from longitudinal belt to cross belt

Due to the specially designed control system, the longitudinal belts can be reversed just before the cross collection moves to the next tier. Eggs located in the critical area of the transfer are thus moved into a safe position. The lift system can be connected to rod or curve conveyors with a width of 350, 500 or 750 mm. Differences in height are compensated by means of a telescopic unit.



Cross collection in parking position

## EGG CROSS COLLECTION FOR CAGE AND FLOOR PRODUCTION

### Curve conveyors

#### Custom-made egg cross transport

Different farm layouts as well as differences in height often require individual solutions for egg transport. Curve conveyors are commonly used as cross collection because, thanks to their flexibility, they can be adapted to any type of layout.

The core part of each curve conveyor is a galvanized or plastic-coated chain that consists of two hardened outer chains with weld-on cross bars. The cross bars of the standard conveyor chain are all on the same level so that the eggs are transferred to the chain smoothly and do

not accumulate along the inner radius of the curve.

The distance between the cross bars allows for an ascending gradient of up to 20°. Standard bends of 180°, 90° and 45° are available to create curves. The conveying capacity is determined by the conveying speed and the effective width of the curve conveyor. When using elevator and lift systems, deflectors reduce this effective width by 100-120 mm in the transfer area. The following values can be achieved with different conveyor widths at a conveying speed of 7 m/min:



Width	Conveying capacity elevator/lift
350 mm	34,000 eggs/h
500 mm	50,000 eggs/h
750 mm	80,000 eggs/h

# EGG COLLECTION SYSTEMS FOR ALTERNATIVE EGG PRODUCTION

Alternative egg production as well as broiler breeder management, where single- or double-level laying nests are used, require a completely different egg collection system.

We can offer you many different options for egg collection systems in alternative

management systems. Whether eggs need to be collected from multiple levels or whether the nests are offset, Big Dutchman has the right system for you, including vertical conveyors and rod conveyors, elevators and lift systems. If eggs are to be collected manually, we

recommend using manual collection tables. Table drives, on the other hand, are especially well suited for single-level double nests. Thanks to the lack of egg transfer points, there is no loss in quality.

## EggTrax

### Egg belt drive – gentle egg transfer from the longitudinal belt to the connected conveyor

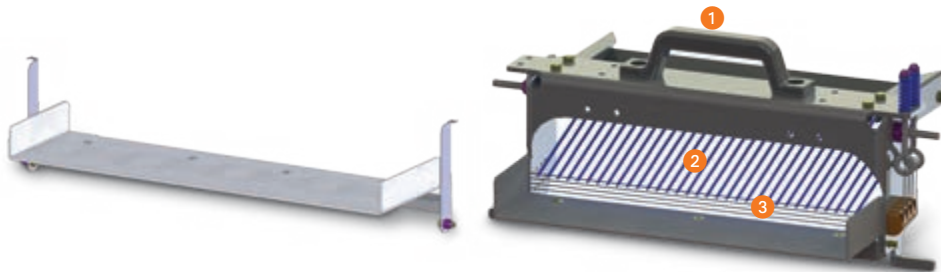


The EggTrax egg belt drive transfers the eggs gently from the longitudinal egg belt (nest) to any connected egg collection system.

The reinforced drive unit operates at a speed of 2.6 m/min and is available for different egg belt widths: 245, 350, 400 and 500 mm.

The newly developed transfer unit has the following advantages:

- 1 the unit can be removed single-handedly, thus facilitating cleaning with a high-pressure cleaner;
- 2 anti-crack fingers provide a light pressure on the eggs, which ensures a controlled transfer to the cross belt;
- 3 tension-adjustable wire threads guarantee a smooth transfer of the eggs while simultaneously allowing feathers, dust and eggs without shell to fall down between the threads.



Standard transfer unit

Transfer unit with tension-adjustable wire threads made of stainless steel (optional)

## Vertical conveyors

### Space-saving, for off-set nest arrangement



Vertical conveyors are the standard solution whenever there is little space between the nests and the cross collection. They operate at a gradient of 50° and are available in two widths: 350 and 500 mm. Vertical conveyors are powered by a separate drive unit for a more flexible collection speed. We recommend frequency-regulating the longitudinal egg belt (optional).

## Rod conveyors

Flexible and economic egg transport



Rod conveyors are often used in alternative egg production to connect the nest with the cross collection. They can only be used in straight direction. The rods are made of small, stabilised plastic tubes that are connected by a roller chain on both ends. The distance between the rods is small enough that even smaller eggs cannot fall through, despite possible gradients of up to 25°.

## Lift system

Only one egg transfer, space-saving solution



We recommend using the lift system for multi-level nests. Eggs are collected simultaneously per level in all rows. The lift system is an egg collection unit specially designed for gentle egg transport as there is only one transfer point. The production system is fully accessible because once all eggs have been collected, the lift moves into its parking position which can be at a height of more than 2 m. Another advantage is that the lift requires only little space in the end set area. Lifts can automatically collect eggs mislaid in the system, so-called "system eggs".

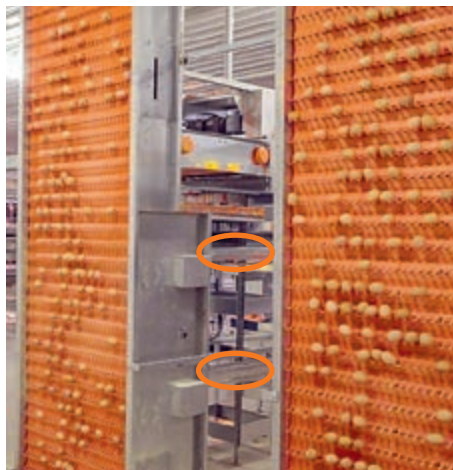
For increased hygiene, the lift should be installed in the service room.

## EC elevator with and without system egg collection

Space-saving, large collection capacity



EC elevator in a multi-level house



EC elevator with integrated system egg collection

The EC elevator is able to collect large numbers of eggs. Especially in multi-level houses (up to three levels), the elevator may be equipped with an extra wide elevator chain and is thus an efficient egg collection system: it does not require much space and collects up to 15,000 eggs per hour. A new feature is the option for "system egg collection": the elevator can simultaneously collect eggs mislaid in the system. All belts either run into the elevator in parallel or system eggs are collected separately.

# EggSort

## The table drive for a gentle egg collection

EggSort ensures maximum smoothness during egg collection because there are virtually no transfer points. The longitudinal egg belt runs over the table which means that no additional drive units are needed.

- ✓ ideally suited for the manual collection of eggs;
- ✓ standard drive speed: 2.6 m/min,

- optionally VarioSpeed;
- ✓ available for different egg belt widths (2 x 200, 245, 400 and 500 mm);
- ✓ an integrated egg belt brush keeps the egg belts clean;
- ✓ robust and completely galvanized design for a long service life.



Manual collection table

Simple manual collection tables (without drive) are mainly used for small units or if several houses are planned but not yet finished. If this is the case, a manual collection table is installed until it can be replaced by a cross collection.



Divided longitudinal egg belt with triangle-shaped holes  
→ high number of holes leads to very clean eggs  
→ three-point bearing ensures egg stability on the belt

## USEFUL ACCESSORIES

### Ultrasound cleaning unit for curve conveyors

For more hygiene during egg transport, stationary and mobile versions available

Big Dutchman offers two cleaning units, both available as stationary and mobile version, to clean the entire curve conveyor's chain reliably from dirt and thus from bacteria, salmonellae or fungi. Both units use the ultrasound technology, in combination with hot water and a special cleaning agent. The compact

cleaning unit can clean up to 200 m of chain before the basin has to be refilled, while the larger unit cleans chain sections of up to 600 m. Depending on the degree of contamination, multiple repetitions may become necessary.



Compact cleaning unit – requires little space and no deflection unit above the conveyor



Cleaning unit – for a conveyor width of up to 750 mm

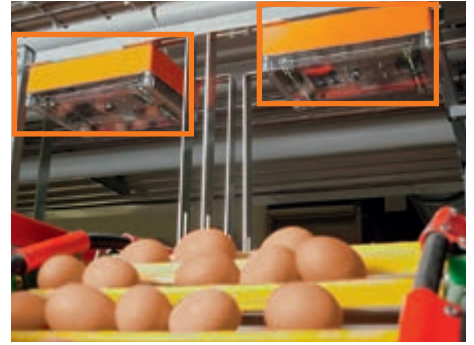
# EggCam

## High counting accuracy



EggCam 140 at the longitudinal egg belt

The Big Dutchman egg counting system records every single egg. This is possible thanks to an innovative camera technology with image processing integrated in the sensor. EggCam “sees” one entire part of the conveying path with high resolution and is thus able to recognise every single egg. EggCam can be installed either at the longitudinal egg belt in every tier or at the cross belt. The camera works on up to 14 cm wide fabric or rod belts in cage systems and on up to 35 cm wide rod conveyors in floor production. The Big Dutchman product range includes further egg counting systems. Let our experts help you find the perfect solution for your individual requirements.



EggCam 350 at a vertical conveyor



EggCam 140 at the egg cross belt, covering a width of up to 14 cm

## Advantages

- ✓ accurate recording of all eggs;
- ✓ EggCam also works reliably in the dark due to infrared light;
- ✓ the operator can easily retrieve and analyse the data of all installed EggCams in real time when using the amacs management system.

## Digital EggFlow

### Fully-automatic control of the egg flow all the way to the packer at maximum grading capacity

When using Digital EggFlow, the egg belt speed can be controlled based on the total number of eggs coming from the different houses. This makes it possible to optimally utilise the connected graders and packers. Digital EggFlow offers you the following advantages:

- ✓ graders and packers are continuously loaded at full capacity;
- ✓ ideal egg quality thanks to a smooth and gentle transport of the eggs (option);
- ✓ automatic start of the belts in the morning; the egg flow stops directly at the packer;
- ✓ collection groups can be planned one day in advance;
- ✓ egg collection is completed simultaneously in all houses that belong to the same collection group – at maximum filling rates;
- ✓ Digital EggFlow allows synchronising up to five cross belts for up to four packers/graders.



Optimum utilisation of the grader at all times



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