



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 in floor and in cage production. This is mainly due to the following reasons:

- ✓ they save time and labour costs;
- ✓ production of optimum egg quality, i.e. clean eggs, fewer cracked eggs;
- ✓ accurate count of the total number of laid eggs per tier, row and house.

Big Dutchman egg collection systems meet even the highest requirements:

- ✓ gentle egg transportation;
- ✓ highly reliable;
- ✓ easy to operate.

Based on the farm size, the house design and individual customer requirements there are different egg collection systems available. This includes elevators, lift systems, curve-, rod- and vertical conveyors, multi-tier collection systems as well as 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 and are the houses built at different elevations?
- ✓ How large is the capacity of the packer and sorting system ?
- ✓ Do you intend collecting the eggs separately for each flock or simultaneously?

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

Egg collection systems for cage production



EggCellent

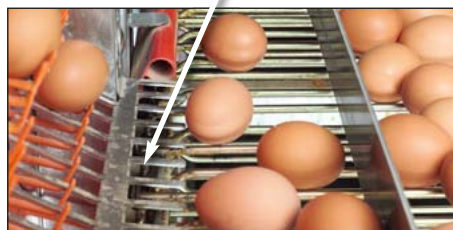
Large collection capacity, reliable egg transport

The newly developed elevator EggCellent from Big Dutchman has a large collection capacity and provides everything that is needed for the safe transportation of eggs. From the longitudinal belt the eggs are conveyed onto a rod conveyor from where they are then transferred onto the entire width of the elevator conveyor chain. All this is done without the need for an extra dosing unit as the eggs are distributed along the elevator chain by means of a deflector.



every tier conveys onto an individual section of the rod conveyor and elevator chain; deflectors ensure an optimum distribution of the eggs on the elevator chain

safe transfer from the elevator chain to the cross belt



Advantages

- ✓ large collection capacity → one elevator can collect up to 19,000 eggs per hour;
- ✓ no dosing units required → only minimum maintenance requirements;
- ✓ a rod conveyor, between the longitudinal belt and elevator chain, ensures wind eggs and dirt particles are removed before they get to the elevator chain;
- ✓ the special, patent-pending, elevator chain ensures gentle transportation of the eggs to the transfer unit of the cross belt.

Elevator ST

Large collection capacity, reliable egg transportation

With the Elevator ST (Standard) eggs are transferred onto the elevator chain in a set pattern. This is to ensure that no eggs are transferred onto already occupied steps. Up to 8 tiers can be collected simultaneously.

If the house is occupied with birds of different age groups, the Elevators ST can also be used to collect eggs per row or per flock. In order to ideally adapt the conveyor performance to the laying performance, we recommend actuating egg belts and elevator chains separately.

With the Elevator ST, the eggs are transported onto the elevator chain by means of dosing wheels. The elevator chain transports the eggs downwards to the lower sliding grille where the chain turns and then transports the eggs upwards up

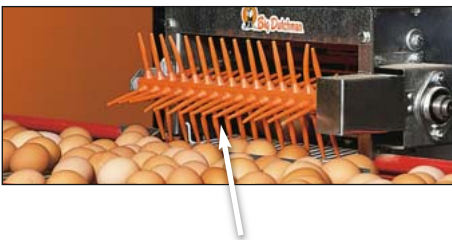
to the desired height, where they are transferred onto the cross belt. The transfer can be carried out at any height, the standard height, however, is 2.10 m or 82.7" (Q 210) to ensure a clearance height of 1.95 m (76.8"). If a manual collection table is installed, the transfer height lies at 80 cm or 31.5" (Q 80).



Advantages

- ✓ large collection capacity → one elevator can collect up to 16,500 eggs per hour;
- ✓ simultaneous collection of up to 8 tiers;
- ✓ all cage rows are freely accessible → no obstruction because of cross collection;
- ✓ less space required in the end-set area;
- ✓ suitable for all cage types.

Advanced technology and reliability



Egg transfer onto cross belt with finger wheel (optional) → prevents a collision of eggs coming from the elevator with eggs on the cross collection.



Patented 2-component dosing wheel with a core part of plastic framed by a soft and flexible lip helps to prevent hairline-cracked eggs

Steps of elevator chain with additional safety braces made of plastic are light and flexible
→ safe transfer from the dosing wheel
→ soft acceptance of the eggs, reduced damage
→ smaller egg surface in contact with the bars to reduce contamination



Lift system

Only one egg transfer

The lift system collects the eggs 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 the eggs from all tiers are collected the lift is raised to its stand-by 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 egg transport is very gentle as only one transfer is involved from the longitudinal belt to the cross belt.

In order to allow the operator to adapt the conveying capacity to the performance of the egg grader, a frequency regulator

should be installed. This ensures that it is possible to regulate the speed of the longitudinal belt of 4 m/min (13.1 ft/min) between 25 and 60 Hz.

Advantages

- ✓ smooth egg transport as there is only one transfer from longitudinal to cross belt → low share of cracked and hairline-cracked eggs;
- ✓ free access to all rows as the lift system is moved up to its stand-by position after the collection is finished → the cross collection system does not obstruct inspection rounds or placement and removal of birds;
- ✓ less space required in the end-set area;
- ✓ can be combined with every cross collection of any width.



Cross collection in stand-by position

Due to the specially designed Big Dutchman 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 can thus be moved to a safe position.

The Big Dutchman lift system can be connected to a rod or curve conveyor with a width of 350, 500 or 750 mm (13.8", 19.7" or 29.5").

Differences in height are overcome by means of a telescopic unit which is delivered together with a levelling unit and joints.



Egg transfer from longitudinal belt to cross belt

MultiTier

Large collection capacity and only one egg transfer

MultiTier is especially well suited for large units as it collects the eggs from all rows and all tiers simultaneously.

There is only one transfer from the longitudinal collection to the cross collection which ensures gentle transportation of the eggs. Moreover, this transfer has to be adjusted only once, namely during the assembly, thus ensuring a uniform egg quality throughout production.

The V-shaped cross channel is designed for good distribution of the eggs, as they hardly touch the channel sides. The perforated bottom ensures smooth belt transportation plus reduces the required driving power.

If the eggs are collected per flock, the longitudinal belts are operated with a speed of 4 m/min (13.1 ft/min). If eggs

from different houses are collected simultaneously the longitudinal belt speed can be adjusted between 6 and 90 Hz by means of a frequency regulator (optional feature).

In a MultiTier collection system (200 mm; 7.9" width) curve conveyors (250 mm; 9.8" width) transport the eggs from the different tiers to the operating level of the grader or packer using the shortest possible route.

With this system, it is, however, rather difficult to access the rows.



Advantages

- ✓ simple and reliable technical construction;
- ✓ large collection capacity, well suited even for very large egg graders;
- ✓ gentle egg transportation;
- ✓ economic solution for large units;
- ✓ low maintenance requirements;
- ✓ well suited for long transport distances (up to 200 m; 7.9" per drive unit).

Curve conveyors

Custom-made egg cross transportation

Different house designs as well as differences in height often require customized individual solutions for egg transportation.

The conveying capacity is determined by the conveying speed and the effective width of the curve conveyor. With MultiTier it is possible to utilize the entire width of the curve conveyor. With elevator and lift system, deflectors reduce the effective width by 100-120 mm (3.9-4.7") in the transfer area. With a conveying speed of 6.5 m/min (21.3 ft/min) the following results can be achieved with different conveyor widths:

Width	Conveying capacity	
	MultiTier	Elevator/Lift
200 mm (7.9")	24000 eggs/h	
350 mm (13.8")	34000 eggs/h	
500 mm (19.7")	50000 eggs/h	
750 mm (29.5")	80000 eggs/h	



Egg collection systems for floor production

In alternative egg production and also in broiler breeder management, where one or two-tier laying nests are used a completely different egg collection system is required.

For aviaries with off-set nest arrangement, vertical conveyors, rod and curve conveyors are available. Elevators and lift systems are mainly designed for the col-

lection of several tiers; they can also be used in floor production.

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-tier double nests. There are no egg transfer points and therefore no loss in quality.

Under the name of EGGO, Big Dutchman has compiled different egg collection units. These economic and space-saving solutions are mainly used in houses with manure pit and two-tier double nests.



Vertical conveyors

Space-saving, for off-set nest arrangement

Vertical conveyors are the standard solution whenever there is little space between the nest and the cross collection. They operate with a gradient of 50° and are available in two widths – 350 and 500 mm (13.8 and 19.7”). The vertical conveyor is powered by a separate drive unit for greater flexibility of the collection speed. We recommend frequency regulation of the longitudinal egg belts (optional).

Rod and curve conveyors

Flexible egg transport

Rod conveyors are often used in alternative layer production as a connection from the nest to the cross collection.

Curve conveyors on the other hand are often used as cross collection because, thanks to their flexibility, they can be adapted to any type of house design.

The core part is the galvanized, plastic-coated chain which consists of two hard-

ened outer chains with weld-on cross bars. At the standard conveying chain the cross bars are arranged on the same level. This means:

- ✓ smooth transfer of the eggs to the conveying chain;
- ✓ no accumulation of eggs along the inner radius of the curve.

The distance between the cross bars

allows for an ascending gradient of up to 20°. Standard curve sections are available for installation of 180°, 90° and 45° bends. The required standing height can be achieved by means of height-adjustable posts. The conveying chain is protected by a red safety profile on both sides.



Lift

Only one egg transfer

The lift system can be used for multi-level nests. Eggs are collected simultaneously per tier in all rows. The lift system is an egg collection unit specially designed for a gentle egg transportation as there is only one egg transfer. The production unit is fully accessible because once the egg collection is finished, the lift is moved up to its stand-by position which can be at a height of > 2 m (78.7"). Another advantage is that it requires only little space in the end-set area.



Table drive and manual collection table without drive

Manual egg collection

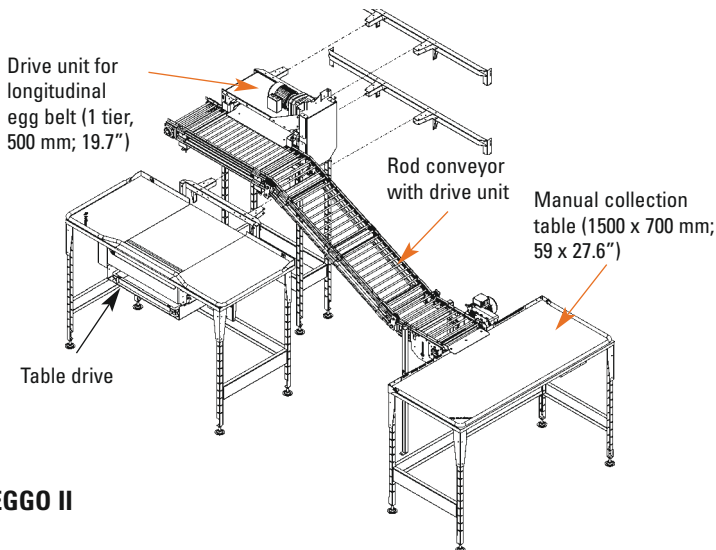
Table drives are designed for maximum smoothness during egg collection because there are virtually no transfer points. The longitudinal egg belt runs over the table which also means that no additional drive units are needed.

Manual collection tables (without drive) are mainly used for small units or if several houses are planned but not finished yet. In this case a manual collection table is used until it can be replaced by a cross collection with farm packer.



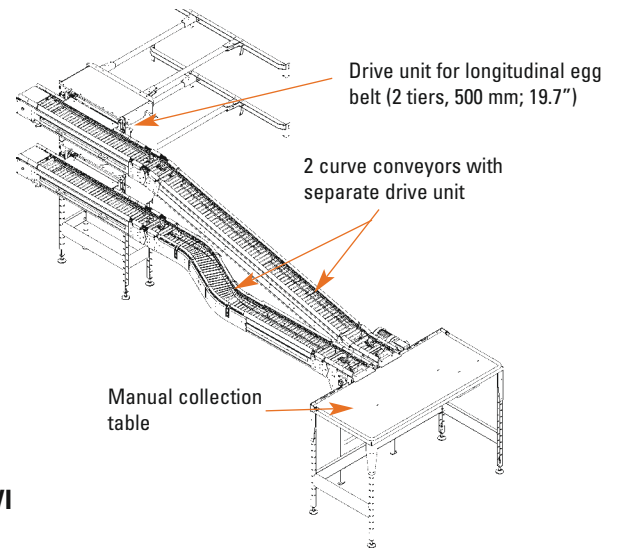
EGGO

Compact egg collection units for two-tier double nests



EGGO II

EGGO II is designed for manual collection. The eggs are collected per nest tier at a manual collection table. The collection can be carried out either to the left or to the right hand side. Both collection sites can be adjusted in height.



EGGO VI

EGGO VI can be used both with a manual collection table and with a farm packer as the 400 mm (15.7") wide curve conveyors can be directly connected to a farm packer.

Innovative management systems for collecting eggs



EggCam High counting accuracy

The brand-new counting system from Big Dutchman records every egg. This is possible by an innovative camera technology with image processing integrated in the sensor. EggCam overlooks a complete area of the conveying path in high resolution and is thus able to record every single egg.

EggCam can be installed at the longitudinal egg belt on every tier or at the cross belt. It works on up to 14 cm (5.5") wide

fabric or rod belts in cage systems and on up to 35 cm (13.8") wide rod conveyors in floor production.

The Big Dutchman product range includes additional egg counting systems. Let our experts help you to find the perfect solution for your individual requirements.

Advantages

- ✓ accurate recording of all eggs;
- ✓ with the **amacs** management system the operator can easily retrieve and analyze the data of all installed Egg-Cams in real-time;
- ✓ with infrared light EggCam also works reliably in the dark.



Digital EggFlow For reducing collecting times

Digital EggFlow is a module of the **amacs** management system which allows regulating the speed of the egg belts based on the number of eggs from all connected houses to optimize the utilization of the connected grader or farm packer.

With Digital EggFlow:

- ✓ the belts are automatically started in the morning until the first eggs reach the packer, then the belts stop until work at the packer starts;
- ✓ sensors control the cross belts infinitely variable (optional);

- ✓ the egg collection of all houses pertaining to a collection group finishes at the same time – at a maximum filling ratio;
- ✓ the eggs of the next collection group are directly transported to the cross belt. There are no waiting times when the collection starts in the morning or half-empty belts throughout the collection.



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