Big Dutchman®

Egg collection systems

Flexible, efficient and gentle on the eggs

Egg collection systems that are safe and efficient

Egg collection systems are an integral part of the equipment in layer and breeder houses. Why? Because time savings, low labour costs, excellent egg quality and the accurate recording of all eggs produced are essential. Big Dutchman egg collection systems meet even higher requirements:

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

Based on the farm size and layout as well as the individual customer's requirements, Big Dutchman offers different options for egg collection. The 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 selected, the following questions should be considered:

- Are there uneven ground levels on the farm or are the houses arranged in an offset layout?
- How large is the capacity of the packer or grader?
- Should the eggs be collected separately from each flock or simultaneously?

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

EGG COLLECTION SYSTEMS FOR CAGE-FREE EGG PRODUCTION

Houses for alternative layer management and broiler breeder houses are often equipped with single-level or double-level laying nests. For such nests, the downstream egg collection system must meet specific requirements. 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. Table drives, on the other hand, are especially well-suited for single-level double nests in smaller houses.

EggTrax

Egg belt drive: gentle egg transfer from the nest to the connected conveyor belt

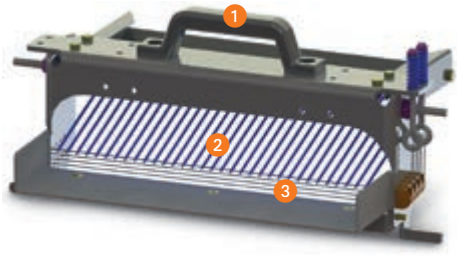
The EggTrax egg belt drive transfers the eggs gently from the nest to any connected egg collection system.
The reinforced drive unit operates at a speed of 2.6 m/min and is available for different egg belt widths: 245 mm, 350 mm, 400 mm and 500 mm.
EggTrax has the following advantages:

1. the unit can be removed, thus facilitating cleaning with a high-pressure washer;
2. anti-crack "fingers" provide a light pressure on the eggs, which ensures a controlled transfer to the cross belt;
3. stainless steel tension wires guarantee a smooth transfer of the eggs while simultaneously allowing feathers, dust and soft-shelled eggs to fall down between them.

In addition to EggTrax, Big Dutchman's product range also includes a standard transfer unit.

Standard egg belt drive

EggTrax (optional)



Rod conveyor

Cost-efficient egg transport

Rod conveyors connect the nest with the downstream cross collection system. They can only be used in a straight line.
The rods are made from small, stabilised plastic tubes that are connected by a roller chain on both ends. The distance between the rods is small enough for safe egg transport, even when bridging ascending or descending gradients of up to 25°.

Vertical conveyor

Ideal for offset nest arrangements

Vertical conveyors are mainly used when nests are arranged in an offset layout, for example with Big Dutchman's NATURA Nova aviaries, when there is little space between the nests and the cross collection system, or when obstacles need to be circumvented. They operate at ascending or descending gradients of 50° and are available in two widths: 350 mm and 500 mm. Vertical conveyors are powered by a separate drive unit for a more flexible collection speed. Big Dutchman recommends frequency-regulating the longitudinal egg belts (optional).

Lift system

Only one egg transfer

Lift systems can be used for nests with multiple levels. Eggs are collected simultaneously per level in all rows. The lift system transports eggs especially gently 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 also automatically collect eggs mislaid in the system, so-called "system eggs".
For improved hygiene, lifts should be installed in the service room.

EC elevator

Space-saving option, 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 can 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 gentle egg collection

EggSort ensures maximum smoothness during egg transport 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 mm, 245 mm, 350 mm, 400 mm and 500 mm);
- ✔ integrated egg belt brush for clean egg belts;
- ✔ robust and fully galvanised design.

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.

EGG COLLECTION SYSTEMS FOR CAGE PRODUCTION

EggSmart

The elevator for secure egg transport that requires little space in the end set area

EggSmart is an elevator from Big Dutchman that transports eggs from the longitudinal belts to the elevator chain and then onto the cross belt. It needs very little space in the end set area. The eggs are first transferred from the longitudinal egg belt to a very short rod conveyor, from where deflectors distribute them onto the entire width of the elevator chain. No additional distribution units are required. The well-proven Big Dutchman transfer unit then transfers the eggs from the patented elevator chain to the cross belt.

ADVANTAGES

- ✔ collection capacity of up to 9 000 eggs per hour;
- ✔ simultaneous collection of eggs from up to four tiers;
- ✔ little space required in the end set area;
- ✔ no distribution units, i.e. minimum maintenance and adjustment requirements;
- ✔ easy access to all cage rows, no obstructions because of the cross collection;
- ✔ rod conveyor with cleaning function so dirt and soft-shelled eggs do not reach the elevator chain;
- ✔ suitable for all cage types;
- ✔ simple installation.

Egg transfer to a very short rod conveyor

EggCellent

Large collection capacity, high functionality, minimum maintenance requirements

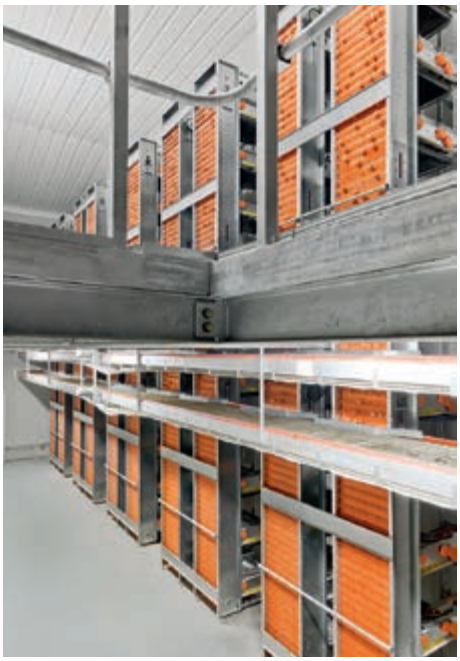
The EggCellent elevator, designed by Big Dutchman, is characterised by its large collection capacity and requires only minimum system adjustments. Of course, it also provides everything necessary for safe egg transport.

This means that the eggs are first transferred from the longitudinal egg belt to a rod conveyor, from where deflectors distribute them onto the entire width of the elevator chain. No additional distribution units are required.

To match the conveying capacity and the laying performance, egg belts and elevator chains are actuated separately.

Every tier has its own sector on the rod conveyor and the elevator chain. Deflectors ensure an optimal distribution of the eggs on the elevator chain.

Safe transfer from the elevator chain to the cross belt



ADVANTAGES

- ✔ high collection capacity of up to 19000 eggs per hour*;
- ✔ simultaneous collection of eggs from up to eight tiers;
- ✔ no distribution units, i.e. minimum maintenance requirements;
- ✔ rod conveyor with cleaning function so dirt and soft-shelled eggs do not reach the elevator chain;
- ✔ easy access to all cage rows, no obstructions because of the cross collection;
- ✔ suitable for all cage types;
- ✔ simple installation and adjustment.

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

Curve conveyors

Custom-made egg cross transport

Different farm layouts as well as differences in height often require individual solutions for egg transport. In these cases, curve conveyors are the right choice because they are very flexible and can be adapted to any type of layout.
The core part of each curve conveyor is a galvanised or plastic-coated conveyor chain that consists of two hardened outer chains with welded-on cross bars on the same level. The eggs are thus transferred gently to the chain and do not accumulate along the inner radius of the curve. The distance between the cross bars allows for ascending gradients 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 mm to 120 mm in the transfer area. The following maximum 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

USEFUL ACCESSORIES

Ultrasound cleaning unit for curve conveyors

For greater hygiene during egg transport; stationary and mobile versions available

Big Dutchman offers two cleaning units, both available as stationary and mobile versions, to clean reliably the entire curve conveyor's chain from dirt and thus from bacteria, salmonellae and fungi. Both units use 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 maximum conveyor width of 750 mm

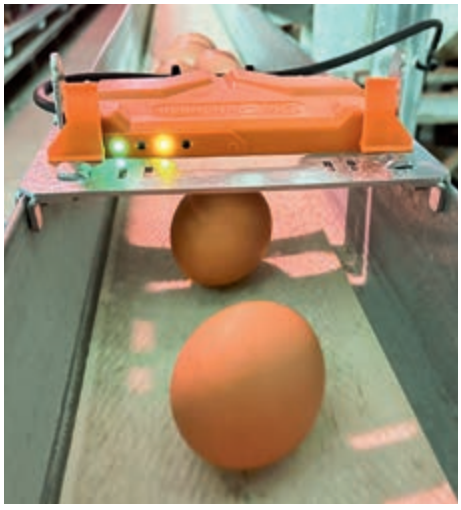
EggScan 120 and EggCam 3D

High counting accuracy, simple installation

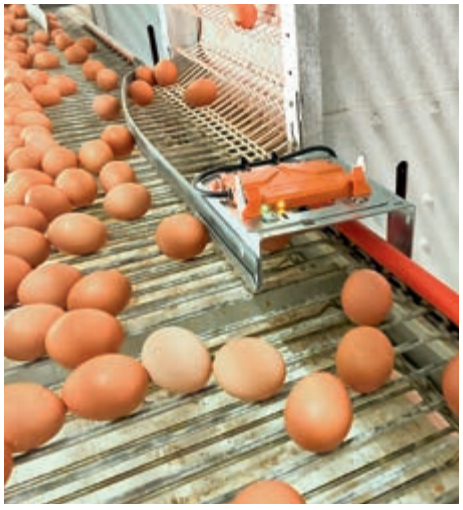
Do you still count the eggs you produce manually? Then you know how time-consuming and also how inaccurate this process can be. With the **EggScan 120** and **EggCam 3D** egg counting systems, this task is a thing of the past.
Big Dutchman offers two innovative solutions which count your eggs fully automatically. Your ViperTouch or amacs controller transmit the counted data to the cloud-based management system, BFN Fusion. You can then view your egg numbers in tables or diagrams on the PC, smartphone or tablet, analyse them and compare them to reference curves from your breeder company. This provides you with a comprehensive overview of your production so you can take immediate countermeasures in case of declining egg numbers.

Graph showing the laying performance and more parameters

EggScan 120 has a scanning width of 120 mm (4.7") and is thus ideal for narrow belts. This egg counter can be installed very easily above the longitudinal egg belt in every tier of a cage system, or above the cross belt. It is easy to integrate into the counter network using a "press & ready" plug. The egg numbers are displayed on the ViperTouch controller or on the amacs FarmController.



EggScan 120 above the longitudinal egg belt in a cage system



EggScan 120 above the cross belt

EggCam 3D is installed mainly above the egg cross belt, for belt widths of 350 mm, 500 mm and 750 mm. For some aviary types, EggCam 3D can even be installed directly behind the nest, i.e. in front of the egg belt drive.
The hardware consists of a 3D camera with image analysis technology. A bracket for use above longitudinal or cross belts is also included in delivery. Users who do not work with ViperTouch or amacs can view the counted results on a website provided by EggCam 3D.

Installation above both longitudinal belts of a NATURA Step XL aviary, directly behind the nest

EggCam 3D above the cross belt

Advantages of EggScan 120 and EggCam 3D

- ✔ very accurate recording of all eggs on longitudinal and cross belts;
- ✔ both egg counters also work reliably in the dark due to the use of infrared light;
- ✔ all data of the installed counters can be retrieved, analysed and compared with reference curves from breeding companies using ViperTouch or amacs;
- ✔ easy cleaning of the optical system;
- ✔ easy updates;
- ✔ robust technology, protection rating IP 69K (EggScan 120) or IP 67 (EggCam 3D).

Digital EggFlow

Fully-automatic control of the egg flow all the way to the grader at maximum capacity

When using Digital EggFlow, the egg belt speed is controlled so that the egg flow matches the capacity of the grader or packer in an ideal way and across all houses. Digital EggFlow offers the following advantages:

- ✔ graders and packers are continuously loaded at full capacity for significantly shorter collection times;
- ✔ ideal egg quality thanks to a smooth and gentle transport of the eggs;
- ✔ belts start automatically in the morning and the flow of eggs stops in front of the packer or grader to prevent delays at the beginning of collection;
- ✔ 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;
- ✔ the eggs from the next collection group are transported to the cross belt subsequently;
- ✔ Digital EggFlow allows the synchronisation of up to ten cross belts for up to four graders/packers;
- ✔ better planning in advance due to higher transparency of the processes at the packer.

Optimum utilisation of the grader at all times ...

... to save time and significantly increase efficiency.

Egg collection control all the way to the packer

Full overview and control on the control cabinet's touch screen

Customers swear by these extensions: As an option, Big Dutchman can offer you the *stepless cross belt control*. Accumulating eggs at the transfer point between cross belt and grader/packer are detected by sensors.

Frequency transformers then adjust the speed of the longitudinal and cross belts automatically. Additionally, you will see *location-specific alarm messages* about:

- egg accumulations at all egg transfer points;
- emergency stops;
- stops due to chain break;
- motor alarms for each drive.

Europe, Middle East & Africa:
Big Dutchman International GmbH
P.O. Box 1163 · 49360 Vechta, Germany
Phone +49 (0) 4447 801 0
big@bigdutchman.de
www.bigdutchman.de

USA: Big Dutchman, Inc.
Phone +1 616 582 4000 · bigd@bigdutchmanusa.com
www.bigdutchmanusa.com

Brazil: Big Dutchman (Brasil) Ltda.
Phone +55 16 2108 5300 · bdbr@bigdutchman.com.br
www.bigdutchman.com.br

Russia: OOO "Big Dutchman"
Phone +7 495 229 5161 · big@bigdutchman.ru · www.bigdutchman.ru

Asia/Pacific: BD Agriculture (Malaysia) Sdn. Bhd.
Phone +60 3 334 83 555 · bdasia@bigdutchman.com
www.bigdutchman.com

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

Technical details subject to change. en 2/2025