Big Dutchman®

NATURA Step & NATURA Step XL

Welfare-friendly aviary systems
for organic, free range and barn egg production

NATURA Step & NATURA Step XL

The stepped aviaries that are well-accepted by the hens and easy to access

Big Dutchman has more than 35 years experience with (cage-free) aviary systems: an advantage that is consistently used for customer benefit.
The NATURA aviary system was designed with a focus on bird welfare, without compromising functionality and efficiency, which are very important to egg producers. The laying hens easily find their way around NATURA aviaries, can exhibit their natural behaviour and lay their eggs in optimally designed nests.
The **"Step" concept** has proved its worth for more than 20 years. However, this does not prevent Big Dutchman from further developing and optimising the concept. In collaboration with customers, Big Dutchman constantly works on improving NATURA Step. Development is also influenced by a permanent exchange with eminent breeding companies so Big Dutchman designers can take into account the progress with laying breeds. Big Dutchman considers not only the aviary itself, but also looks at such important factors as the best lighting concept for ideal light distribution and the appropriate ventilation system. NATURA Step and NATURA Step XL are versatile systems. Whether you want to produce barn eggs or free range eggs, are planning conventional or organic egg production, a large or a smaller house: the NATURA Step aviary systems from Big Dutchman are always the right choice for welfare-friendly and successful egg production.

Organic layers in the welfare-friendly NATURA Step aviary

Important features of NATURA Step and NATURA Step XL

- ✔ tiers of different widths create a stepped design in which all functional areas are easy to reach, especially the integrated nest level;
- ✔ both the staff and the birds can easily access the aviary; nest inspection is made simple;
- ✔ nipple drinkers directly in front of the nest increase nest acceptance;
- ✔ the required nest surface area can be adjusted according to the stocking density by combining separate sections in different ways;
- ✔ the back wall can be disengaged at the nest entrance for thorough cleaning of the nest after each batch;
- ✔ eggs mislaid in the system (system eggs) can be collected automatically (optional);
- ✔ a large usable area ensures good utilisation of the house surface, especially with NATURA Step XL;
- ✔ two manure belt levels guarantee that most of the manure is transported out of the house, decreasing the ammonia content in the air and improving hygienic conditions;
- ✔ the aviary is fully functional even as a single row;
- ✔ the entire house floor surface is used as a scratching area;
- ✔ a version with an air duct is available as an option.

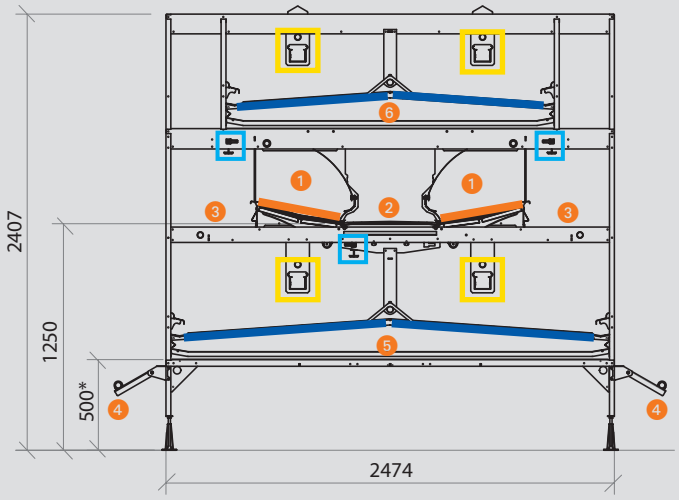
Integrated "hop and turn" plate

The integrated "hop and turn" plate is an important advantage of the two aviary types NATURA Step and NATURA Step XL.
Hop and turn:

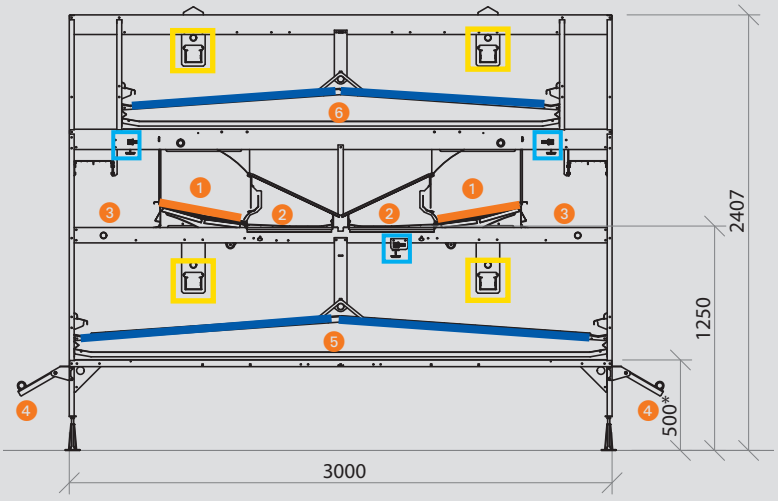
- ✔ makes moving between the tiers easier for the hens;
- ✔ can be used both in lengthwise and crosswise position;
- ✔ does not interfere with nest inspection.

Cross sections and arrangement of the individual elements

NATURA Step 24-18

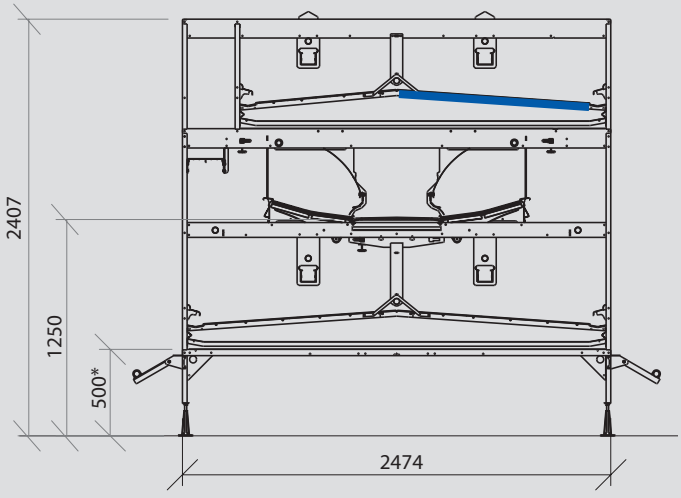


NATURA Step XL 30-24



STEPPED ON BOTH SIDES FOR MAXIMUM BIRD MOVEMENT

NATURA Step 24-21



STEPPED ON ONE SIDE FOR ADDITIONAL USABLE AREA

Key

1. Nest
2. Longitudinal egg belt
3. Wire flooring in front of nest
4. Approach perch
5. First manure belt level
6. Second manure belt level

The different areas of activity are arranged in a way that encourages the hens to move around in the aviary.

- Nest surface area
- Water
- Feed
- Usable area

Possible options

- Integrated “hop and turn” plates
- Additional approach perches
- Ramps for going up and down
- Air duct
- Additional feed lines
- Additional perches
- * Also available with a height of 650 mm below the aviary
- NATURA Step XL is also available with the 8 cm deeper HD nest version and two egg belts of 450 mm or 400 mm width

All dimensions in mm

Foot

The newly developed, fully plastic-coated post feet are stable, corrosion-free and easy to clean.

Sheet metal perch

Due to their shape, the sheet metal perches from Big Dutchman offer the hens a secure foothold, with greater safety and increased comfort when perching. The perches are much-used by the birds, so they need to be very durable. With a Zn-Al-Mg alloy, Big Dutchman guarantees a high corrosion protection and ammonia resistance in this area.

Top tier serving as a resting zone with two feed lines in a NATURA Step system

Resting zone

The top level is used as a resting zone. Equipped with both feed lines and perches, it is possible to install additional feed lines as an option, depending on the stocking density. The accumulating manure drops onto the manure belt below and can be dried by means of a central air duct, as an optional feature.

Colony nest in the NATURA Step XL aviary

Colony nest

Both aviary systems come with the Big Dutchman colony nest. The nest is easy to enter, has a soft insert and a divided tilting floor, increasing nest acceptance. Dirty or cracked eggs are very rare.
Before the tilting floor closes the nest at night, all eggs roll off backwards onto the egg belt. The hens cannot roost in the nest, which reduces soiling while improving nest hygiene.

Lower tier in the NATURA Step aviary with feed and water supply

Lower tier

The lower tier has a drinker line and two feed lines, where the hens can eat without being disturbed. The FlexLED tube lamp illuminates the aviary system with even, flicker-free light. The accumulating manure drops onto the manure belt below and can be dried by means of a central air duct (optional).

Pullets three weeks after moving in

Scratching area

The hens can use the entire house floor as a scratching area. The FlexLED tube lamp illuminates the area below the aviary with even and flicker-free light. Hens therefore lose interest in laying their eggs here.
A litter reduction system removes excess litter automatically, if desired, significantly reducing the amount of dust.

Egg collection with a vertical conveyor and automatic system egg collection by means of an elevator

Egg collection

Big Dutchman can offer many different options for egg collection, including vertical conveyors and rod conveyors, elevators and lift systems.
Vertical conveyors are often used when there is little space between the nest and the cross collection. Elevators, on the other hand, are a good choice for two-level houses or when collecting system eggs automatically, since the eggs will then have to be collected from two tiers.

Manual system egg collection

Automatic system egg collection

System egg collection

Due to the slight gradient of the wire floor, eggs mislaid in the system (system eggs) roll under the sheet metal perch. They remain safely under this perch until they are collected manually.
As an option, Big Dutchman offers an automatic system for collection of these eggs.

Central, 500 mm wide longitudinal egg belt in the NATURA Step aviary

Central longitudinal egg belt

The perforated, 500 mm wide egg belt with its high proportion of holes ensures that eggs stay clean and have a stable position on the belt. A special gap (optional feature for NATURA Step) allows the hens to poke their heads out of the nest should it become overcrowded.

Two separate longitudinal egg belts ensure that the eggs are transported safely in the NATURA Step XL aviary

Two longitudinal egg belts

NATURA Step XL is equipped with two longitudinal egg belts. In combination with the 8 cm deeper Colony HD nest, Big Dutchman recommends two egg belts with a width of 400 mm each. The Colony 2+ nest allows the use of 450 mm wide egg belts.
The extended nest back wall also covers the egg channel. This protects the eggs against dust and dirt from the returning manure belt.

EggTrax egg belt drive

The EggTrax transfer unit transfers the eggs gently and safely 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.
EggTrax has the following advantages:

- ✔ the integrated egg belt brush keeps the egg belts clean;
- ✔ the transfer unit can be removed single-handedly and be cleaned with a high-pressure washer;
- ✔ tension-adjustable stainless steel wires guarantee a smooth transfer of the eggs while simultaneously allowing feathers, dust and soft-shelled eggs to fall down between the wires;
- ✔ anti-crack "fingers" ensure a controlled transfer of the eggs to the cross belt.

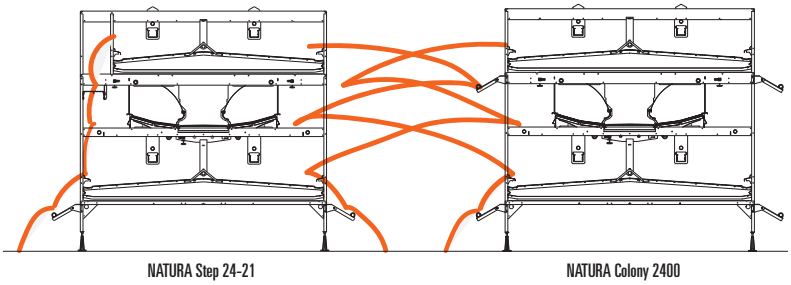
Standard egg belt drive

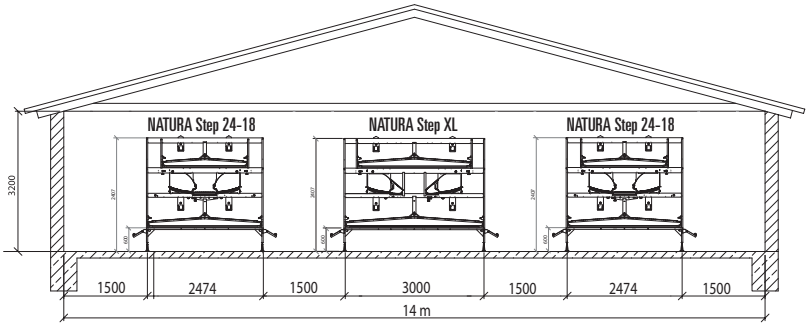
Transfer unit with tension-adjustable wires made of stainless steel (optional)

Egg belt drive for divided egg belt

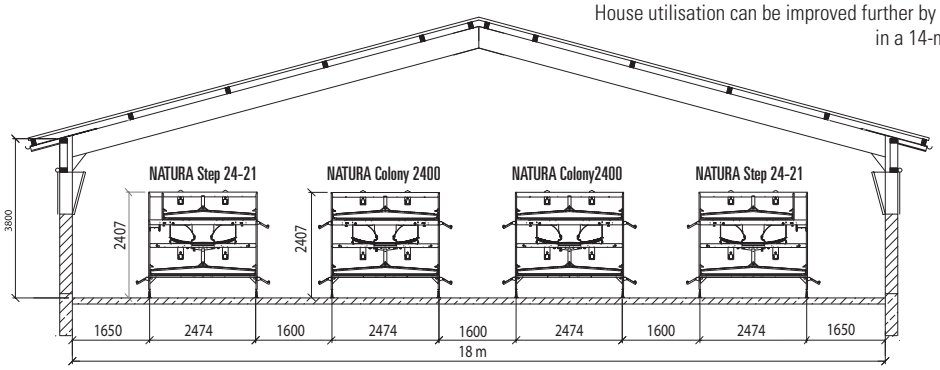
Optimal utilisation of the house by combining Big Dutchman aviary systems

If you are most interested in a high stocking density, the NATURA Step, NATURA Step XL and NATURA Colony 2400 aviary systems, which come from the same product family, can be combined.
NATURA Colony 2400 has two manure belt levels of the same width. Installing additional perches helps the hens to move easily from one tier to the next and to access the NATURA Colony row when coming from the NATURA Step or NATURA Step XL aviary.





House utilisation can be improved further by combining NATURA Step 24-18 and NATURA Step XL in a 14-metre-wide house



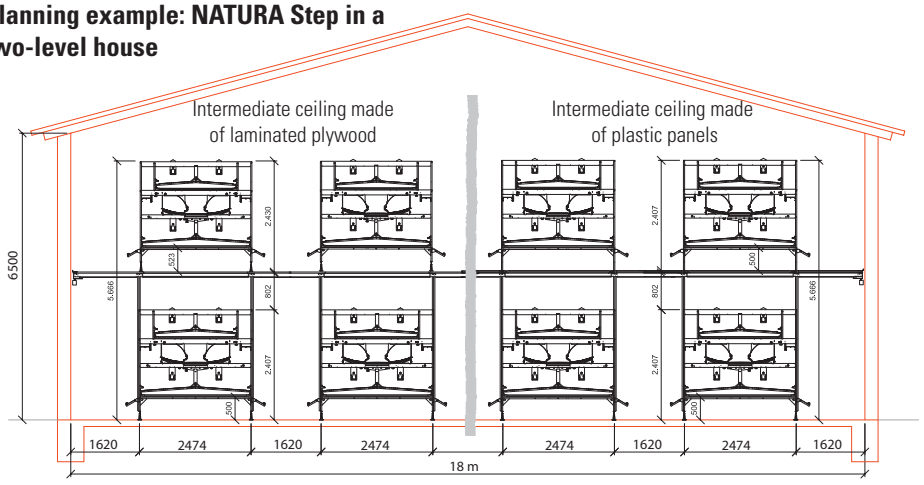
House utilisation can be improved further by combining NATURA Step 24-21 and NATURA Colony 2400 in an 18-metre-wide house

Raising the aviary system by a maximum of 150 mm facilitates bird inspection as well as cleaning after each batch, and also makes it easier to illuminate the scratching area below the system if the house's height allows this.

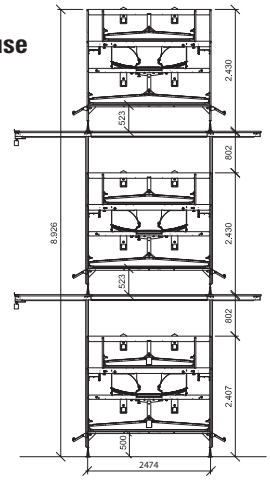
Multi-level house with intermediate ceiling

NATURA Step and NATURA Step XL are well-suited for use in multi-level houses. Big Dutchman can also offer the aviaries with integrated intermediate ceilings. These ceilings can be made of laminated plywood or plastic panels. The entire house surface area on all levels is then available as usable area. The two Big Dutchman intermediate ceiling types do not require additional longitudinal supports, so the airflow under the ceiling is improved because there are no obstructions. Two- and three-level houses are already a Big Dutchman standard. Four levels are possible upon request.

Planning example: NATURA Step in a two-level house



Cross section three-level house



The smooth, white surface of the plastic panels' underside allows fresh air to flow crosswise through the house without obstructions

Advantages of the plastic ceiling

- ✔ the panels are made of polypropylene and therefore absolutely resistant to water, i.e. wet cleaning with a high-pressure washer is no problem;
- ✔ the panels are manufactured with the required dimensions, saving time during assembly because no cutting is necessary on site;
- ✔ the white underside ensures a more even light distribution in the lower level;
- ✔ the plastic panels are fully sealed to prevent liquid from entering during cleaning, improving hygiene.

Winter garden: gradual transition from the house to the free range

A winter garden or cold scratching area is a roofed range separated by wind protection netting. This area protects the layers from bad weather, e.g. storms and rain. The litter should be suitable for scratching. Additional enrichment material such as boxes for dust bathing or perches are also an option. Pop holes allow the hens to move from the house into the winter garden and beyond to the range.

Winter garden: equipped with separating doors for organic egg production

- ✔ the layers can use the roofed winter garden as an additional scratching area when the weather is bad;
- ✔ a concrete floor stops nutrients from entering the soil uncontrolled;
- ✔ the winter garden can be cleaned easily and thoroughly after each batch for improved hygiene.

The correct lighting concept for optimal light distribution in the house

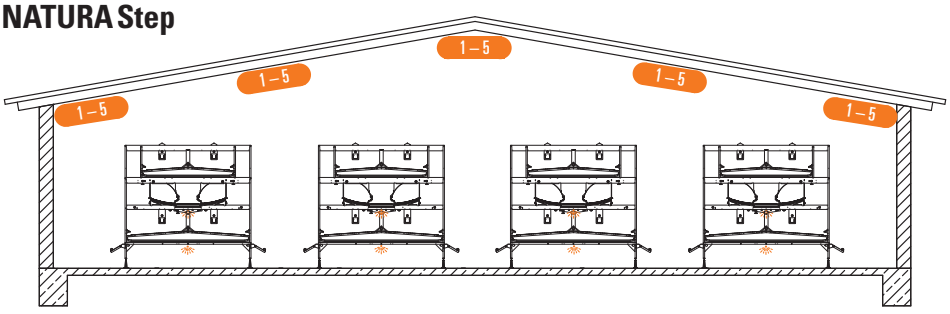
A customised lighting program for the house significantly contributes to successful egg production. Big Dutchman therefore recommends using energy-saving LED lamps, which work together when controlled by a lighting program.
The following LED lamps, dimmable from 0 to 100 per cent, are available as aisle lighting:

1. moisture-proof LED lamp, installed crosswise
2. FlexLED HO tube lamp, installed lengthwise
3. AuroraLED panel light, optionally available with different LED boards, installed crosswise
4. OneLite/DuoLite lamp, optionally available with different LED boards
5. FlexLED bulb as an ideal replacement for your conventional light bulbs

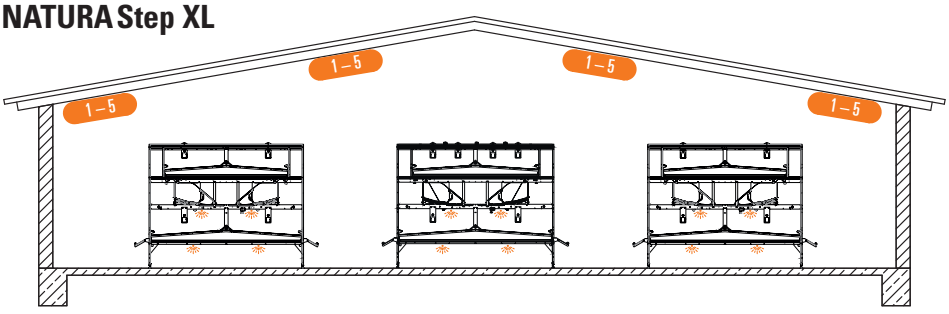
The Big Dutchman tube lamp FlexLED is a good option for lighting in the aviary:

6. FlexLED, optionally available with different LED boards

NATURA Step



NATURA Step XL



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