Big Dutchman®

Broiler Breeder Management

Secure and efficient production of hatching eggs

Broiler breeder management – convincing and complete solutions for the secure production of hatching eggs

The correct housing concept, ideal housing equipment and the required expert knowledge are prerequisites for modern and successful broiler breeder management. Big Dutchman is your competent partner and provides an extensive product range as well as the necessary know-how!

Central components of the housing equipment include:

- ✔ the correct feeding and drinking system for males and females
- ✔ a precise feed weighing system
- ✔ the ideal nest including a manure pit
- ✔ the optimum egg collection system

Our experts will be glad to assist you so a convincing and complete solution which will provide ideal conditions for healthy hens and cocks, a high fertility rate and a stable laying performance are guaranteed.

HOUSING CONCEPT

The management of broiler breeders requires a very specific housing system and feeding technology, as the birds are bred for rapid growth and thus genetically determined to gain weight instead of producing many eggs. This requires that neither males nor females may become too heavy to ensure that constantly high laying performances as well as fertility rates are achieved during the laying period.

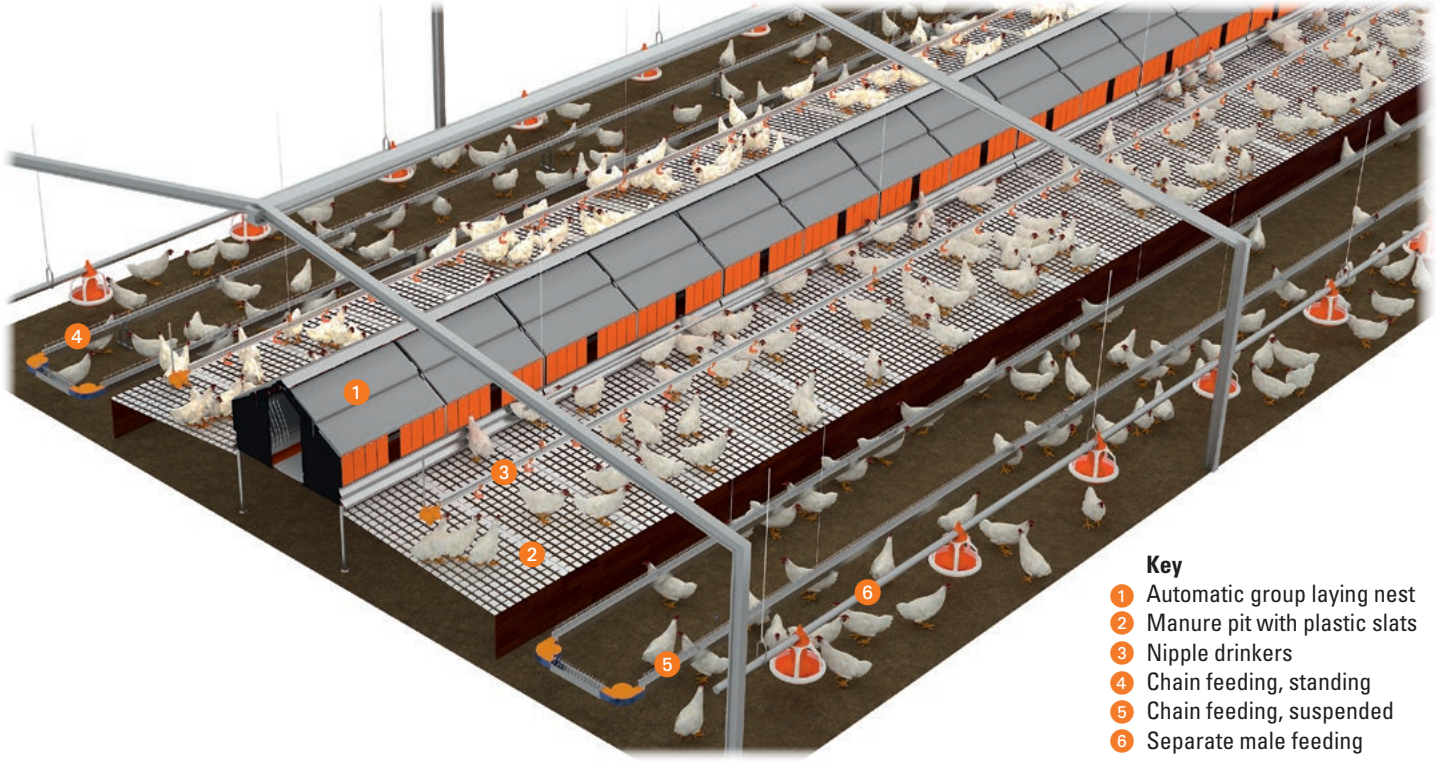
The housing equipment (feeding, drinking, nests, manure pit) and the ideal position of each component significantly contribute to the successful production of hatching eggs. The following items are especially important:

- ✔ the correct feeding concept
- ✔ easy access to the nest
- ✔ ample freedom of movement
- ✔ the correct size and height of the manure pit
- ✔ short rolling-off distances and gentle transport of the eggs
- ✔ the use of high-quality materials for optimum hygiene

Depending on the selected components – chain or pan feeding, single or group laying nests, etc. – there are different housing concepts which have proven their worth in practice.

Central position of nest and manure pit

Positioning nest and manure pit centrally in the house is a common concept for broiler breeder houses in Europe. A drinker line is installed above each manure pit, approx. 60 cm in front of the nest. Either suspended or standing chain feeding lines are mounted on the left and the right of the manure pit. Depending on the width of the house, an additional circuit can be included above the manure pit. The males should be fed separately near the long side of the house.



Key

1. Automatic group laying nest
2. Manure pit with plastic slats
3. Nipple drinkers
4. Chain feeding, standing
5. Chain feeding, suspended
6. Separate male feeding

Lateral position of nest and manure pit

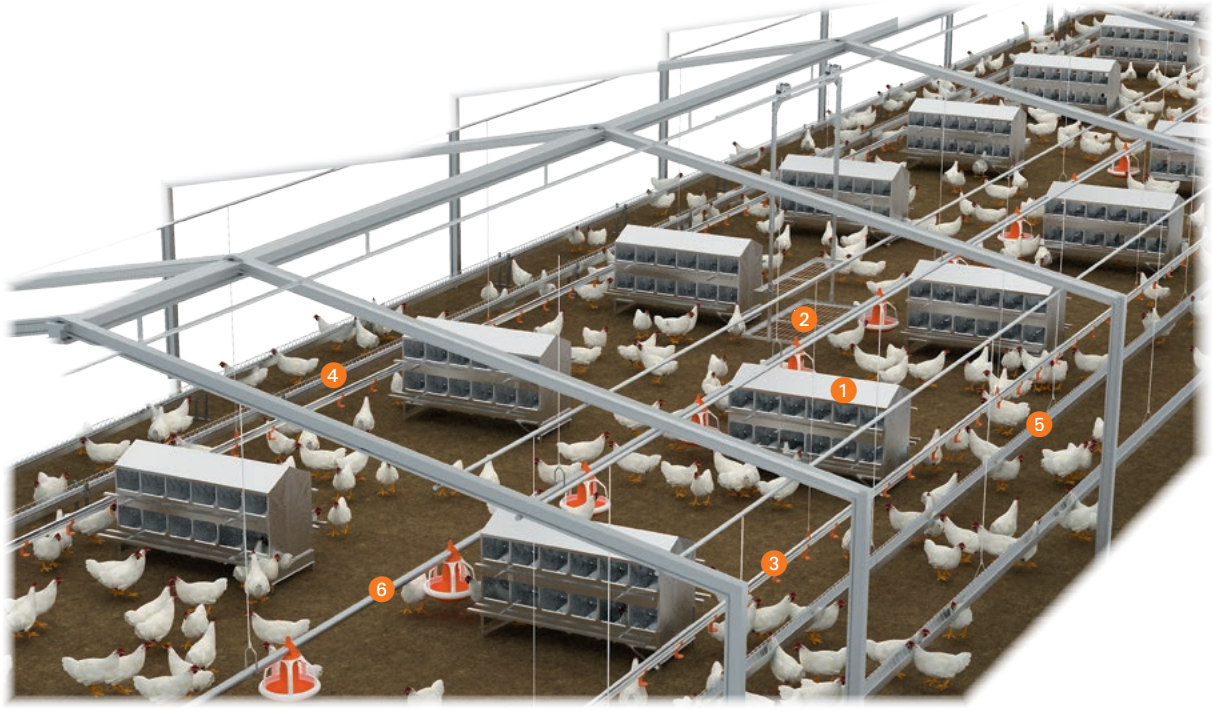
Positioning nest and manure pit at both long sides of the house is a common concept for broiler breeder houses in Northern and South America as well as Asia. A drinker line as well as suspended or standing chain feeding lines are installed above the manure pit. The ReproMatic pan feeding system is another possible alternative. Males are fed in the centre of the house on the litter.

Key

1. Automatic single laying nest with two lateral egg belts
2. Automatic single laying nest with one central egg belt
3. Manure pit with plastic slats
4. Nipple drinkers
5. Chain feeding, suspended
6. Pan feeding, suspended
7. Separate male feeding
8. Weighed day feed silo

Hand gathering nest without manure pit

Hand gathering nests without manure pit are a great option especially for smaller houses. Nipple drinkers and chain feeding lines (suspended or standing) are installed at both long sides of the house. If males are fed separately, their feeding and drinking systems can be situated centrally between the nest rows, where the track-and-carry system for the hatching eggs is also installed.



Key

1. Hand gathering nest
2. Track-and-carry system for eggs
3. Nipple drinkers
4. Chain feeding, standing
5. Chain feeding, suspended
6. Separate male feeding

Chain feeding with the Champion feed chain

Conveying speed of 36 m/min

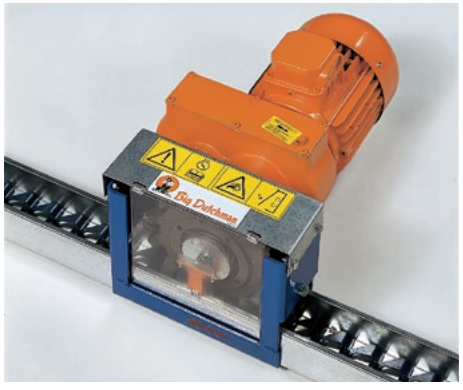
In the poultry industry, a new era dawned in 1938 when Big Dutchman introduced the world's first automatic chain feeding system. Thanks to its robust and simple principle, this feeding system has proved itself a million times over. The basic concept – feed hopper, drive unit, corner, trough and the CHAMPION feed chain – has remained unchanged. The entire system, however, is continuously being improved and adapted to today's requirements for modern broiler breeder management. This particularly includes a high conveying speed of up to 36 m/min and an even distribution of the feed inside the trough.
A controlled feeding of broiler breeders can only be carried out successfully with such a rapid feeding system.

First automatic chain feeding system in 1938 in the USA

Advantages

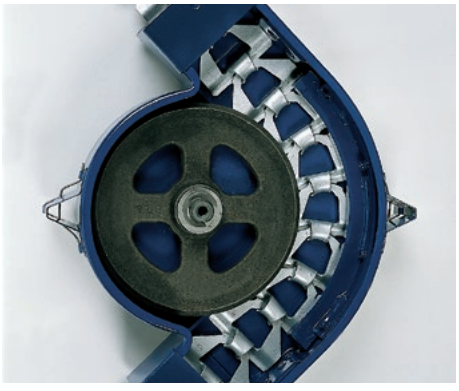
- ✔ high conveying speed –> rapid and even feed distribution in the whole house;
- ✔ high conveying capacity –> 1.5 t/h;
- ✔ suspended chain feeding system can be raised after the feeding –> more room for the birds;
- ✔ easy and thorough cleaning after each batch;
- ✔ low maintenance requirements;
- ✔ robust system, long service life.

Important components of the chain feeding system



Drive unit

- ✔ chain speed: 36 m/min;
- ✔ motor output: 1.1 / 1.5 or 2.2 kW depending on the chain length;
- ✔ one- or two-line design;
- ✔ simple height adjustment for the standing version.



90° corner

- ✔ hardened guide rail;
- ✔ plastic bearing which needs no lubrication;
- ✔ solid housing with detachable cover;
- ✔ high functional reliability, minimum wear and tear, easy to maintain.

Feed trough with grill

- ✔ suspended or standing version;
- ✔ feed grill available in many different versions;
- ✔ minimum feed losses;
- ✔ trough coupler ensures a perfectly straight feed line.

View of a broiler breeder house during feeding: suspended chain feeding system

View of an ecological house for broiler breeders during feeding: standing chain feeding system

Reference values for the use of chain feeding:

Stocking density (birds/m$^{2)}$:	4.5 - 6.5
Type of feeding:	controlled
No. of birds/m of trough:	13
cm of trough side/bird:	15
Feed demand/bird/day in g:	130 - 185 g

- A circuit should take no longer than 3 to 5 minutes for controlled feeding.
- For 36 m/min drives, we recommend a time control with seconds program.
- For each additional corner, the maximum chain length must be reduced by 12.50 m.
- For single-phase motors and for chain feeding in the litter area, reduce the maximum chain length by 30 %.

ReproMatic and FluxxBreeder

The pan feeding system for broiler breeders

ReproMatic is a pan feeding system exclusively intended for broiler breeders by Big Dutchman and combines chain and pan feeding systems. An open feed channel with chain is used to convey the feed. The birds eat at the FluxxBreeder feed pan, specifically developed and equipped with 16 feeding spaces. The integrated volume reducer allows the dispensing of small feed quantities so that all pans of one circuit can be filled quickly and simultaneously.

FluxxBreeder feed pan

Distribution of feed in the FluxxBreeder pan

View of a broiler breeder house: use of the pan feeding system ReproMatic

Circular arrangement of hens around the pan with 16 feeding spaces

FluxxBreeder can also be connected to an Auger-matic pipe by means of an adapter

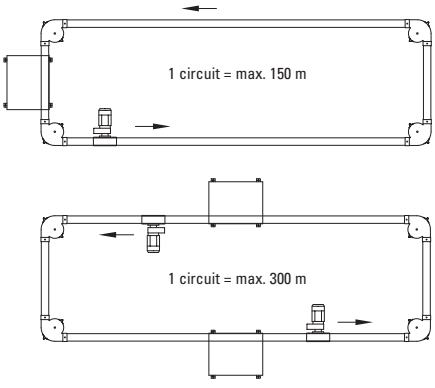
Advantages

- ✔ circular arrangement of hens around the pan, i.e. 50 % more birds per running metre of feeding system compared to a linear trough;
- ✔ special »female only« FO grill allows for setting of 11 different feeding window widths, an additional level ring for 4 feeding window heights
  –> 44 setting options
  –> good access to feed for day-old chicks in day-old-to-death production
  –> ideally suited for all breeds
  –> males have no access to the feed;
- ✔ flat pan dish allows for an ideal distribution of feed inside the pan;
- ✔ ideal illumination of the pan thanks to openings in the pan top ensures that hens can easily see the feed;
- ✔ elevated feed channel and rotatable pan provide the birds with ample freedom of movement;
- ✔ high conveying capacity of 2 t/h;
- ✔ open feed channel facilitates feed control, maintenance and cleaning.

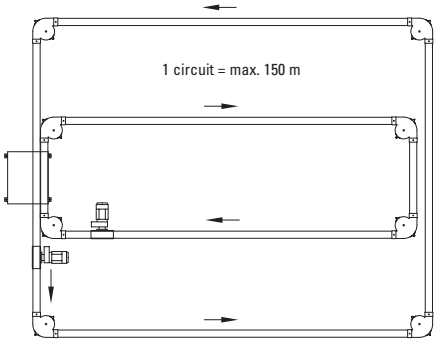
The advantages of this feeding system are discussed in a separate leaflet.

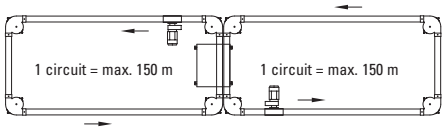
Planning instructions for the correct installation of a chain and pan feeding system

1 line – 1 direction



2 lines – 2 directions





Type of feed hopper	MPF Mini / RPM 1 line	MPF Mini / RPM 2 lines	MPF 1 line	MPF 2 lines
Feed hopper* (litres)	50	70	110	150
Extension MPF* (litres)	-	-	258	305
Extension Mini* (litres)	240	240	-	-
Stands	○	○	●	●

* 100 litres amount to approx. 65 kg of feed ● Standard equipment ○ Special equipment

Separate male feeding
with MalePan

The correct feeding of males is very important for a high fertility rate and good chick quality. Separately feeding males guarantees that all males receive the specified amount of feed. To ensure that all males are provided with a balanced amount of nutrients, it is also possible to use special feed recipes.
A conveying tube with auger (Augermatic) transports the feed to the pans. The feed lines are raised until the hens cannot reach the pans.

MalePan (Ø 330 mm)
- ✔ 5-arm grill
- ✔ ideal for 5 to 9 males
- ✔ with or without feed shut-off
- ✔ fixed, stable connection to the pipe

MalePan Plus (Ø 330 mm)
- ✔ with sectional dish
- ✔ volume reducer inside the pan –> rapid, simultaneous and even filling of all pans

Nipple drinkers
made of stainless steel: Top Nipple or 100 ml screw nipple

The Big Dutchman range of products for broiler breeders includes the Top Nipple and the 100 ml screw nipple. Approximately ten birds should be calculated per nipple. The single-arm drip cup collects all splash water without hindering the birds from drinking.
If the drinker lines are suspended, an anti-roost unit is always used. A double anti-roost wire effectively prevents the birds from perching on the drinker line. The drinker line should be positioned in front of the nest.

NEST AND MANURE PIT

With Relax, Colony 2+, NXB and a hand gathering nest, we can provide the ideal nest for any need.The following requirements should be considered:

- ✔ high nest acceptance;
- ✔ high hygienic standard;
- ✔ short rolling-off distances and gentle transport of the eggs;
- ✔ easy nest and egg belt control;
- ✔ hens have to be prevented from sleeping or brooding inside the nest.

The corresponding manure pit with plastic slats improves hygiene in the house as a large percentage of the droppings is produced and stored here.

Relax

The group laying nest with divided roof and nest locking mechanism

Relax is a group laying nest which has been newly developed by Big Dutchman especially for broiler breeders.
The back wall automatically closes the nest after the laying period. This ensures that the nest remains clean and that the hens do not brood there.
The almost screwless snap-on system allows for quick and easy assembly.

Easy-to-open divided nest roof

Simple egg belt monitoring

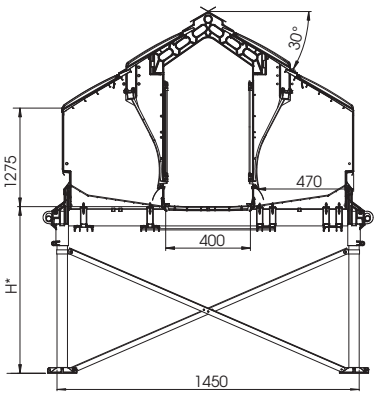
Daily nest control by simply opening the nest roof, also feasible centrally via a winch

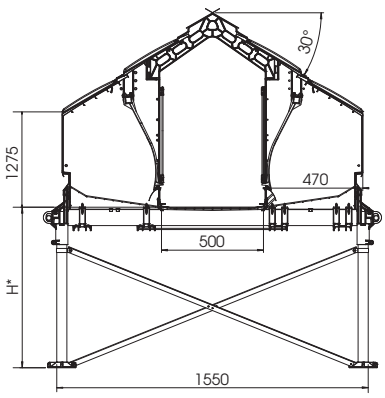
Advantages

- ✔ use of high-quality materials, perforated nest insert made of plastic –> high nest acceptance;
- ✔ nest depth of 47 cm –> eggs have a short rolling-off distance;
- ✔ clever, wood-free nest design –> for optimal hygiene and cleaning;
- ✔ divided and very light nest roof –> for optimal monitoring of nest and egg belt;
- ✔ solid nest legs made of plastic –> no danger of corrosion;
- ✔ egg channel is available in two widths: 400 or 500 mm or with divided egg belt (2 x 200 mm).

Type	400	500
Length (m)	2.41	2.41
Width (m)	1.45	1.55
Total height (m)	1.76	1.79
Nest length/compartment (m)	1.20	1.20
Depth of nest insert (cm)	46.8	46.8
Nest depth in the bird area (cm)	47	47
Egg belt width (mm)	400	500
No. of birds/nest		
- light breeds	240	240
- heavy breeds	220	220

H* available in any required height





Colony 2+

The group laying nest with tilting floor

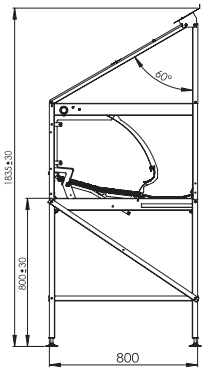
Colony 2+ is a nest also suitable for broiler breeders and characterised by its divided tilting floor. Before the nest is closed at night, all eggs can roll off backwards onto the egg belt. This prevents eggs from remaining in the nest and locks out hens trying to sleep in the nest. Moreover, the daily dust drops off the nest insert, increasing nest hygiene.

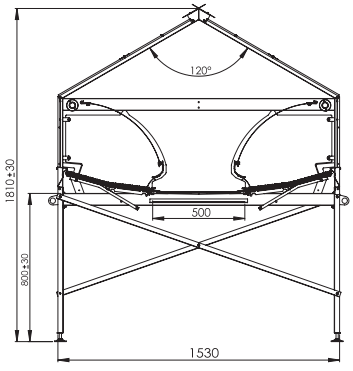
The tilting nest floor automatically closes the nest for the night – hens ready to brood have to leave the nest

Advantages

- ✔ use of high-quality materials, perforated nest insert made of plastic –> high nest acceptance;
- ✔ tilting nest floor closes the nest for the night –> the daily dirt drops off the nest insert while the nest itself remains clean;
- ✔ nest depth of 53 cm;
- ✔ clever, wood-free nest design –> for optimum hygiene and cleaning;
- ✔ hinged roof of nest –> for optimal monitoring of nest and egg belt;
- ✔ width of the egg channel: 500 mm;
- ✔ available as wall nest or double nest.

Colony 2+	Wall nest	Double nest
Length (m)	2.41	2.41
Width (m)	0.80	1.53
Total height (m)	1.85	1.82
Length of nest/compartment (m)	1.20	1.20
Depth of nest insert (cm)	46.8	46.8
Depth of nest in the bird area (cm)	53	53
Egg belt width (mm)	245	500
No. of birds/nest		
- light breeds	120	240
- heavy breeds	110	220





NXB

The automatic single laying nest with locking mechanism

View of a house with NXB nest and lateral manure pit

NXB is a single laying nest for broiler breeders. Each hen can use a separate nest hole to lay her eggs without being disturbed. The partitions between the holes are made of plastic and can be opened subsequently. The perforated nest insert is self-cleaning and easy to assemble and disassemble. The nest roof is made of metal and allows for easy access to the egg belt for monitoring purposes. A locking tube closes all nest holes for the night, ensuring that the hens cannot brood inside the nest.

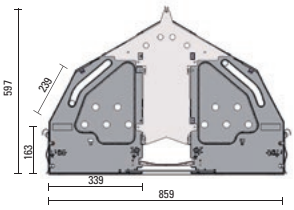
NXB nest with plastic partitions

NXB	Type 1	Type 2
Length/section (m)	2.44	2.44
Total height (mm)	597	544
Nest depth (mm)	339	339
Nest hole width (mm)		
- 10 nest holes	244	244
- 9 nest holes	271	271
- 8 nest holes	304	304
Nest hole height (mm)	239	216
Entrance height (mm)	163.5	188

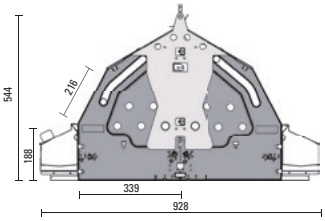
Depending on the breed, a stocking density of up to 5.5 birds per nest hole should be planned.

Advantages

- ✔ automatic single laying nest with 10, 9 or 8 nest holes per side;
- ✔ perforated nest inserts made of plastic –> high nest acceptance;
- ✔ NXB is available in three different widths –> suitable for all breeds;
- ✔ roof can be opened easily –> for optimal egg belt inspection;
- ✔ nest floor and substructure are zinc aluminium coated –> high protection against corrosion;
- ✔ nest can be winched up by a central suspension system for servicing between batches –> thorough cleaning.



Type 1: with one central egg belt



Type 2: with two lateral egg belts

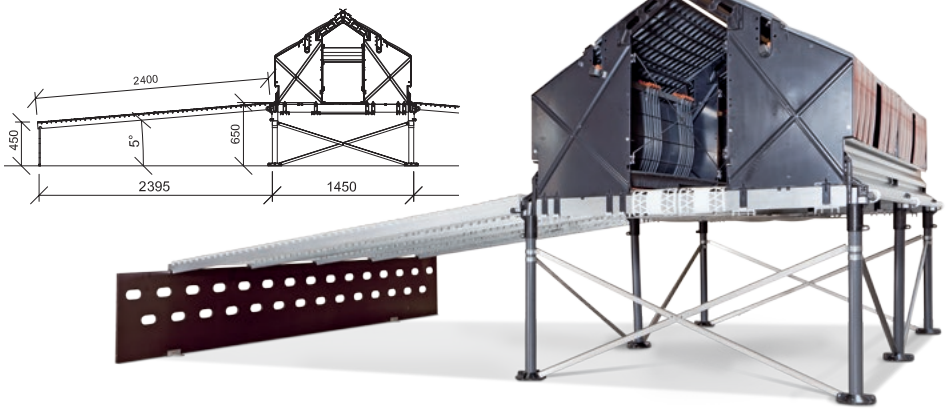
Manure pit with plastic slats

Flexible setting up, an option for each house type

To improve the hygiene inside the house, part of the house should be used as manure pit and equipped with slats (where possible made of plastic). While the birds are inside the house, droppings can be stored and removed after each batch.

The correct design (width and height) of the manure pit is especially important to make sure that the hens can easily reach the nest when they leave the litter area via the manure pit.

Recommended values from practical use:
- jump height: 450 to 550 mm
- angle: 5°



Manure pit with manure belt in an ecological broiler house

The plastic slat especially developed by Big Dutchman has the following advantages:

- ✔ comfortable and soft, anti-slip
  –> secure foothold for the birds, fertilisation is possible
  –> healthy feet
- ✔ no sharp edges or corners
  –> no danger of injury
  –> no chest bruises
- ✔ integrated perch in the shape of a double bar –> maximum comfort when sitting
- ✔ very small surface, similar to wire flooring
  –> optimum manure penetration
  –> slats stay clean throughout the batch
- ✔ no contact surface between the slats
  –> prevention of hotbeds for mites and other vermin
  –> simple and thorough cleaning
- ✔ quick and easy assembly

EGG COLLECTION

EggSort

The table drive for a gentle egg collection

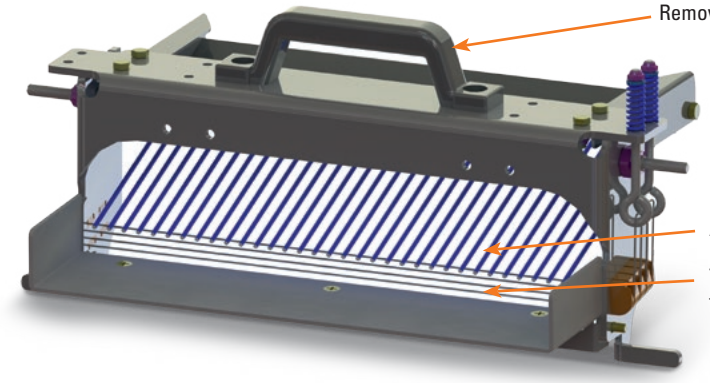
EggSort ensures maximum smoothness during egg collection because there are virtually no transfer points. The longitudinal egg belt runs over the table which also means that no additional drive units are needed.

- ✔ 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);
- ✔ integrated egg belt brush ensures clean egg belts;
- ✔ robust and completely galvanized design –> long service life.

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

EggTrax

Reinforced egg belt drive – smooth transfer of eggs from the longitudinal to the cross belt



EggTrax ensures a safe and smooth transfer of the eggs from the longitudinal to the cross belt. 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:

- ✔ tensible wire threads (optional) ensure a smooth transfer of the eggs while simultaneously allowing feathers, dust and eggs without shell to fall down between the threads;
- ✔ anti-crack fingers provide a light pressure on the eggs, thus ensuring a controlled transfer to the cross belt;
- ✔ an integrated egg belt brush cleans the belts;
- ✔ the unit can be removed single-handedly, thus facilitating cleaning with a high-pressure cleaner.

FEED WEIGHING

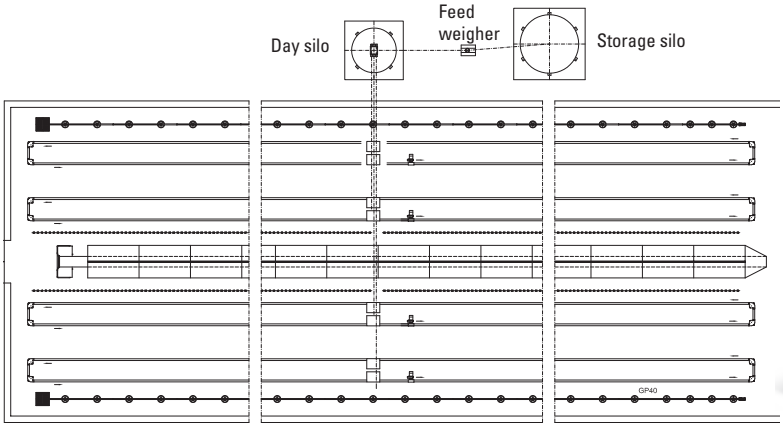
Controlled feeding is a significant factor in broiler breeder management. The birds receive a sufficient daily feed ration which optimally meets their needs but ensures that they do not get too heavy. Feed must thus be weighed very precisely. To accomplish this there are different concepts available from Big Dutchman.

Autolimit feed weigher

The required daily feed quantity can be set at the Autolimit feed weigher (mechanical or electronic version) and is then filled into the weighing container (1250 l or 1850 l).

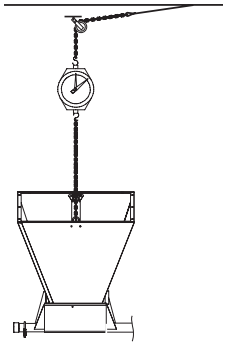
Day feed silo with feed weigher FW 99

Where a day feed silo is used, the largest daily feed quantities should be considered when planning the silo's size (180 g/bird and day). Additionally, the capacities of the FlexVey augers (0.5 to 4.5 t/h) and of the feed weigher FW 99 (2 to 7 t/h) should correspond with this quantity and each other.



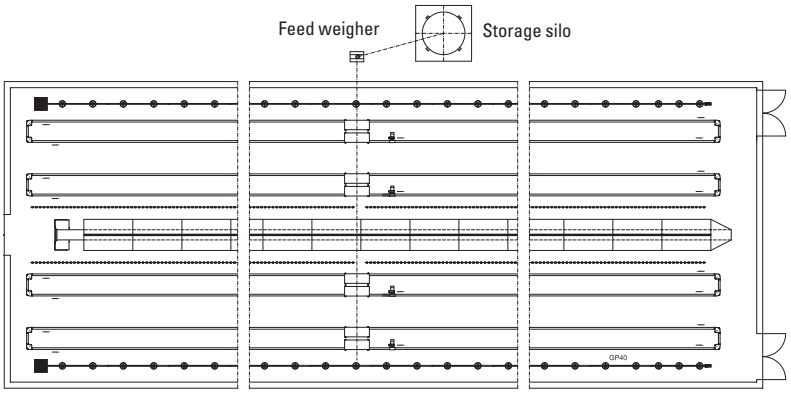
Dial-type crane scale

A simple but secure way of weighing feed for separate male feeding is the use of a mechanical scale with sensor.



Target feeding with feed weigher and valve

For target feeding, the weighed feed quantity is metered into the feed hoppers via valves.



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Technical details subject to change. en 11/2013