Big Dutchman®

UniVent

The manure belt system for laying hens
– excellent egg quality, high degree of automation, ideal material quality –

UniVent

The manure belt battery for secure, efficient, and therefore successful egg production

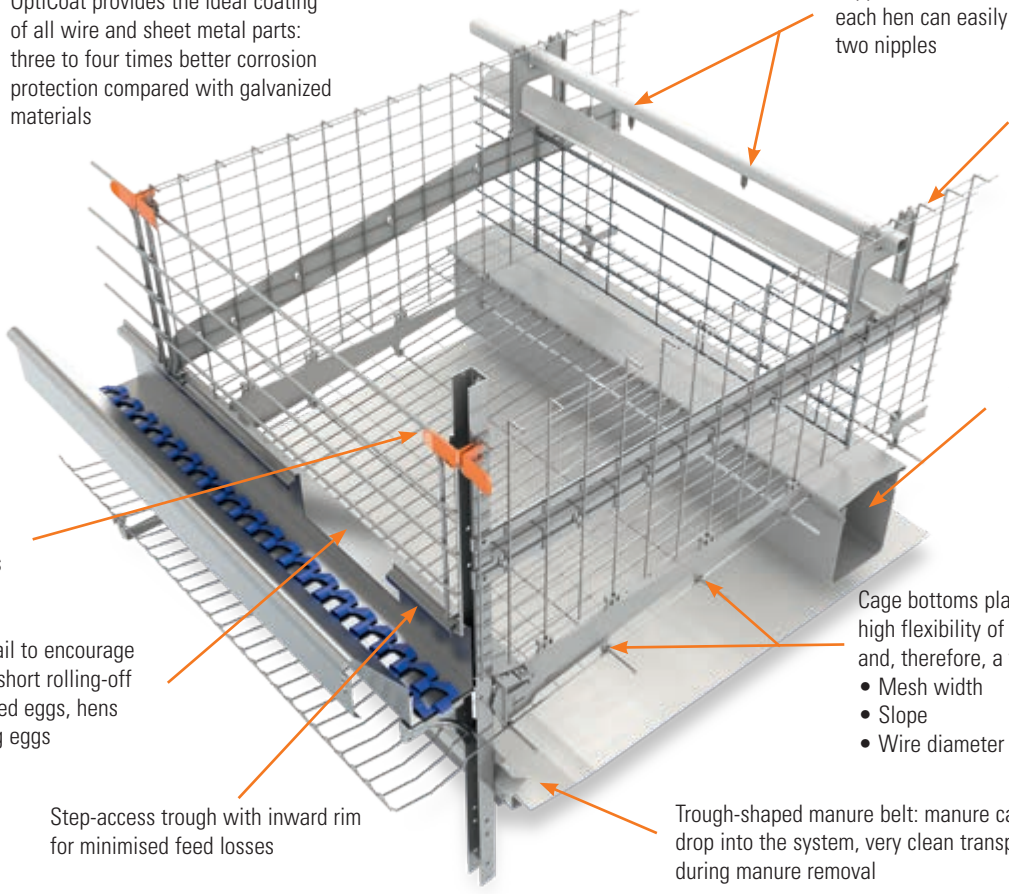
The UniVent layer cage system from Big Dutchman meets customers' high demands regarding bird health, laying performance and environmental factors in the most ideal way.

This technically mature system is characterised by a very long service life due to the use of high-quality materials, excellent functional reliability and a high degree of automation.

UniVent is a trademark for quality and customer satisfaction and has been for decades.

IMPORTANT FEATURES OF THE UNIVENT CAGE

OptiCoat provides the ideal coating of all wire and sheet metal parts: three to four times better corrosion protection compared with galvanized materials



Nipple drinkers with V-channel: each hen can easily reach at least two nipples

Edged grids create a larger supporting surface for the returning manure belt: no risk of damage

Air duct (optional) to produce dry manure: significant reduction of ammonia emissions

Easy-to-open cage front thanks to a sliding grid: moving birds in and out is no problem

Flat-shaped, plastic footrail to encourage egg laying at the trough: short rolling-off distances, very few cracked eggs, hens are prevented from eating eggs

Cage bottoms placed on tension wires: high flexibility of the cage bottoms and, therefore, a very high egg quality

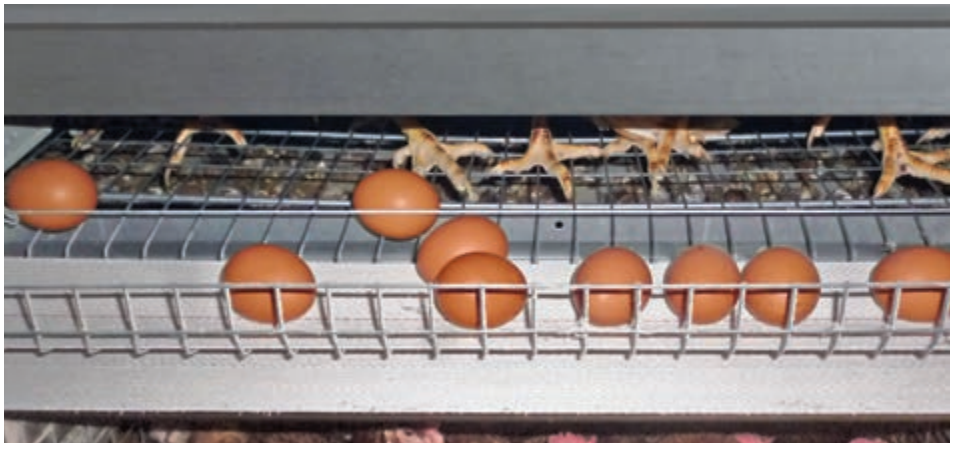
- Mesh width 1 x 1.5"
- Slope 7° = 12 %
- Wire diameter 2.05 mm

Step-access trough with inward rim for minimised feed losses

Trough-shaped manure belt: manure cannot drop into the system, very clean transport during manure removal

EFFECTIVE TECHNICAL ACCESSORIES

High egg quality due to the special BD cage bottom suspension and BD EggSaver



EggSaver in lowered position, carefully slowing down the eggs

Extensive testing has shown that the special Big Dutchman suspension for cage bottoms makes the floor of the UniVent cage very elastic: eggs roll quickly but smoothly to the egg channel. This reduces the risk of hairline cracks and dirt to a minimum.
EggSaver slows down the eggs when they roll from the cage onto the longitudinal egg belt. To this end, a thin wire is installed parallel to the egg belt. This wire is raised and lowered at certain intervals during the laying period, improving egg quality.

Inspection cart: easy bird inspection

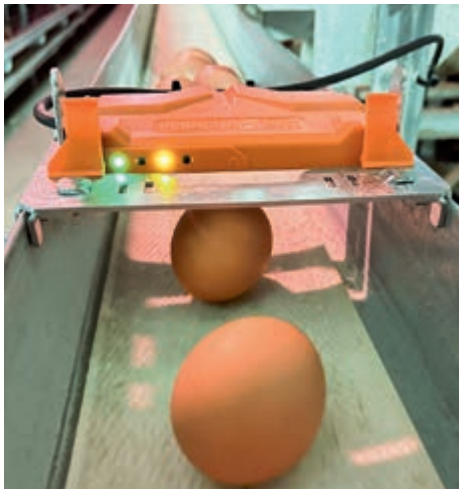
UV 600-plus: the plus in height improves ventilation and thus creates a better environment in the house

For UV 600-plus, the front and rear cage height have been increased by 50 mm. In warm climates, especially, this additional height ensures a much better air exchange in all tiers of the system. Additionally, the hens' combs no longer touch the upper manure belt, improving bird welfare.

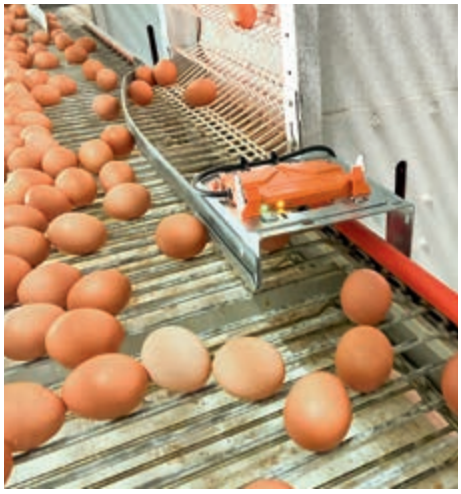
The Big Dutchman inspection cart is the ideal aid for inspecting your birds. It also facilitates moving hens in and out of the upper tiers. The height of the inspection cart can be adjusted as required. The cart runs on both the step-access feed trough and on the house floor. It is easy to stop in any position using the brake.

EggScan 120: high counting accuracy, simple and fast installation and calibration

The EggScan 120 egg counter offered by Big Dutchman records every egg with an accuracy of up to 99.8 per cent.
EggScan 120 has a scanning width of 120 mm (4.7") and is thus ideal for smaller belts. The egg counter can be installed both at the longitudinal egg belt in every tier or at the cross belt. It is easy to integrate into the counter network using a "press & ready" plug. Updates can be installed remotely.



EggScan 120 at the longitudinal egg belt



EggScan 120 at the cross belt

ADVANTAGES

- ✔ very accurate recording of all eggs on longitudinal and cross belts;
- ✔ works reliably in the dark due to infrared light;
- ✔ all data of the installed EggScan counters can be retrieved and compared with reference curves from breeding companies using ViperTouch or amacs;
- ✔ the optical system is easy to clean by removing the counter from the bracket without tools;
- ✔ robust technology, protection rating IP 69K.

THE ADVANTAGES OF UNIVENT AT A GLANCE

- ✔ the proven UniVent system is the perfect basis for profitable, high-quality egg production:
  - –> mature technology
  - –> high laying performance
  - –> clean eggs
  - –> minimum percentage of cracked eggs
  - –> healthy hens, low mortality rate
  - –> good feed conversion
- ✔ high functional reliability of all supply and removal systems (feed, water, egg belts, manure);
- ✔ stable design;
- ✔ trouble-free assembly from three to twelve tiers with catwalks;
- ✔ the entire cage front is easily opened thanks to a sliding grid: welfare-friendly moving in and out of the birds;
- ✔ OptiCoat protects against corrosion, thus increasing the system's service life;
- ✔ the cage bottoms have a mesh size of 1" x 1.5" and a slope of only 12 % or 7° and rest on tension wires, which ensures excellent egg quality;
- ✔ manure belt ventilation (optional) dries the manure optimally, thus keeping ammonia emissions low and producing spreadable and storage-stable dry manure.

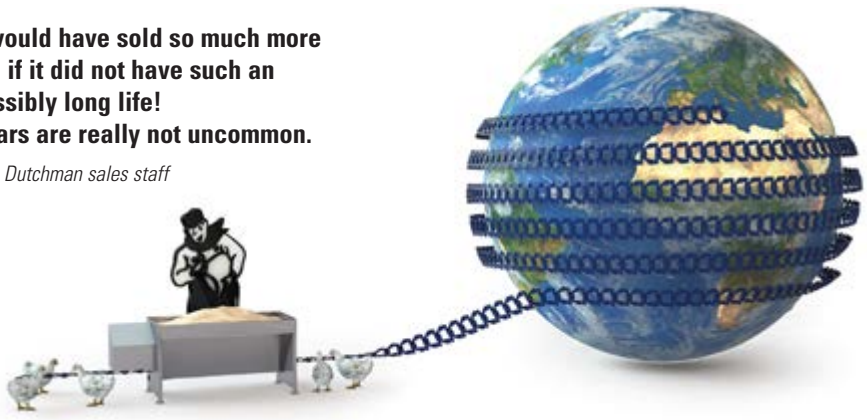
Feed supply

Reliable and uniform with the Big Dutchman feeding systems

Approximately 200,000 km of the Big Dutchman feed chain have currently been sold. A chain of this length would literally be long enough to loop around our planet five times! Rising sales figures worldwide prove the chain's high quality and exceptional reliability. Customers appreciate this quality, so there is no reason to change the chain's material and design, despite remaining the same for the past 85 years.

"We would have sold so much more chain if it did not have such an impossibly long life! 30 years are really not uncommon.

The Big Dutchman sales staff



The world's leading feeding system!

Feed column with cascade design prevents feed bridging

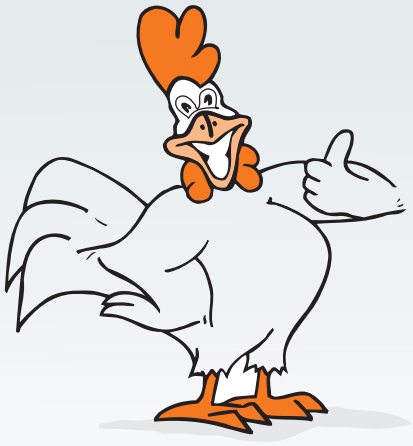
The Big Dutchman chain feeding system can be used universally: in cage systems for layer breeders, for pullets – from the very first day – and for layers, for broiler breeders kept on the floor and also in alternative egg production systems.
The chain feeder transports the feed smoothly to the birds without separating the individual ingredients. The CHAMPION feed chain is moved by just one drive per feed circuit.

–> high efficiency
–> no additional transfer elements
–> the CASCADE feed column ensures secure feed flow to all troughs, requires little space and is easy to clean.

The chain safely conveys the feed to the birds

ADVANTAGES OF THE BIG DUTCHMAN CHAIN FEEDING SYSTEM

- ✔ different conveying speeds from 12 m/min to 18 m/min;
- ✔ high conveying capacity of up to 1.5 t/h;
- ✔ any type of feed can be used, e.g. mash, pellets and crumbles;
- ✔ the feed is distributed uniformly and reliably, i.e. all birds receive the same amount and quality of feed, with minimum feed losses;
- ✔ the feed level in the trough can easily be adjusted with the feed level slide;
- ✔ the shape of the trough guarantees sufficient space for all birds: feed intake without stress;
- ✔ cost-efficient feeding system;
- ✔ simple, thorough cleaning;
- ✔ low labour and maintenance requirements;
- ✔ robust system, long service life.



Only the original chain guarantees unsurpassed quality – recognise it easily thanks to the engraving!

FC-V: the Big Dutchman feed cart

The Big Dutchman FC-V feeding system consists of a pulled feed cart in combination with a V-shaped trough. It is ideally suited for all cage systems consisting of up to six tiers without catwalk, and up to ten tiers with catwalk. The laying hens receive feed reliably and evenly. Feed wastage is not an issue with this feeding system. It is also a very cost-efficient and energy-saving system because it only requires one motor for up to six tiers.

Feed distribution

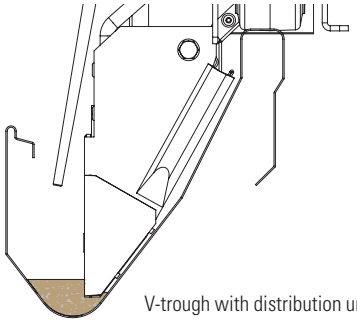
The FC-V feed cart is pulled along the entire row by a wire rope. It is supported by the troughs in each tier, so its weight is distributed evenly on all tiers. The troughs' high stability ensures that you can step on them.
The feed hopper with distribution unit for each tier is 70 cm wide and can hold at least 37 kg of feed. There is still sufficient space for the birds even when the feed cart moves along the cage front. After dispensing, the feed is pushed into the centre of the trough, towards the birds. Feed is always dispensed in both running directions of the cart. The quantity to be dispensed can be adjusted very easily at the hopper. A vane in the end set automatically pushes the feed back into the bird area.

Even feed dispensing

Feed vane in the end set

The V-shaped trough has the following advantages:

- ✔ very even feed distribution so that every hen receives the same quantity and quality of feed;
- ✔ high reliability of the dispensing system;
- ✔ very stable and step-access trough;
- ✔ no contact between metal parts of feed trough and distribution unit.



V-trough with distribution unit

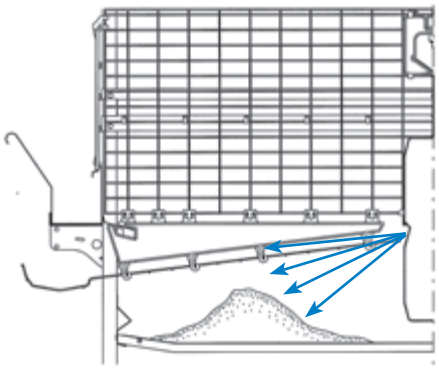
IMPORTANT FEATURES

- ✔ only one 0.18 kW gear motor is required for up to six tiers without catwalk;
- ✔ easy handling;
- ✔ the feed cart runs very quietly and smoothly;
- ✔ the V-trough ensures accurate feed dispensing, especially for small quantities;
- ✔ automatic alignment with the trough for perfect dispensing results;
- ✔ sliding surfaces in the trough are made of plastic for a high functional reliability;
- ✔ feed is dispensed in both running directions of the cart;
- ✔ low maintenance requirements;
- ✔ modular design for fast installation.

Manure drying with air duct or AirPaddle

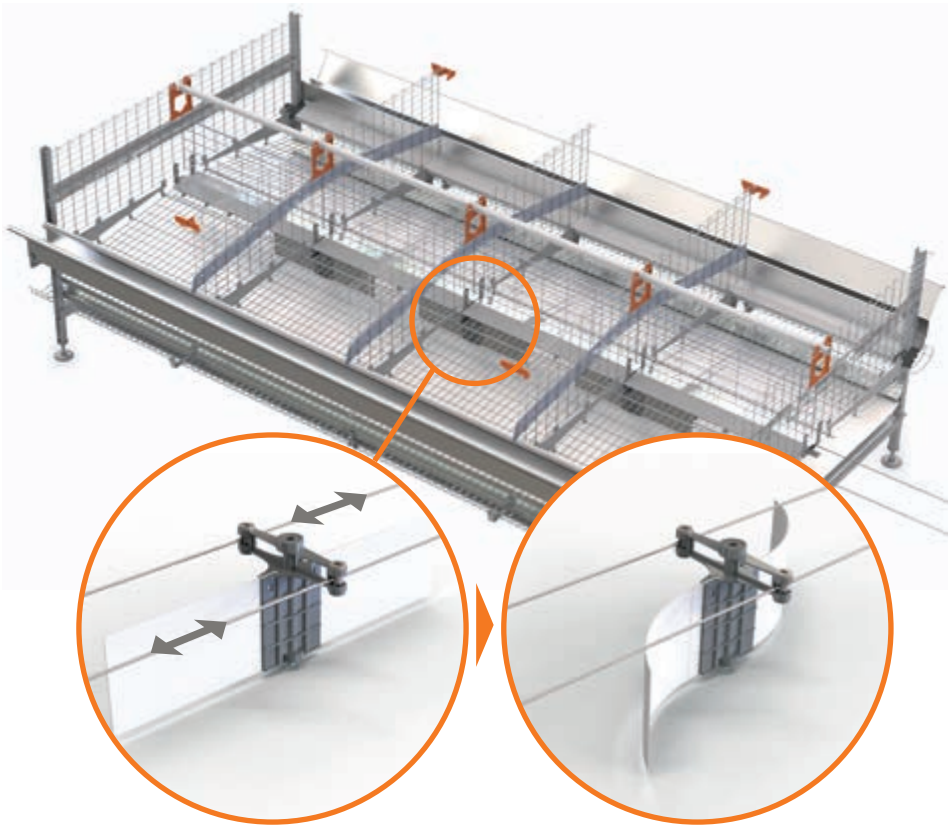
Low ammonia emissions to the environment, energy-saving manure drying

In addition to a tried and tested system for manure drying, the air duct, Big Dutchman has developed a new manure drying option for the proven UniVent manure belt system: AirPaddle. AirPaddle is installed beneath the bird area, directly above the manure belt. It can be easily accessed at any time and is a simple, but very effective, manure drying system.
Using both systems simultaneously dries the manure quickly and effectively:
–> fewer problems with flies in the house;
–> significantly lower ammonia concentration in the house.
When using an air duct in colder climates, the incoming air can be pre-heated by an air mixer or heat exchanger:
–> the hens benefit from an optimum environment at all times;
–> optimal conditions for a high laying performance in all seasons.



How AirPaddle works

The new Big Dutchman paddle system creates the air movement necessary for manure drying in a very energy-efficient manner. Two traction cables rotate paddles made from flexible plastic strips. The paddles oscillate 1.5 times per second. This movement, combined with the plastic strip's flexibility, create a constant airflow across the entire width of the manure belt. The air is drawn in laterally from the aisle and trough area. The manure thus dries thoroughly over the entire surface of the manure belt.



ADVANTAGES

- ✔ fully mechanical system that works without needing any type of fan so is very energy-saving;
- ✔ significant reduction of ammonia emissions to the environment;
- ✔ efficient use of warm air already inside the house for manure drying;
- ✔ no space lost at bird level because AirPaddle is installed below the cage bottoms;
- ✔ easy and thorough cleaning after each batch;
- ✔ low system weight for even greater energy savings;
- ✔ paddles made mostly from plastic: no corrosion, long service life;
- ✔ simple maintenance: individual parts are easy to replace, if necessary;
- ✔ cost-efficient system.

UniVent with AirPaddle

AMBA: manure removal with belts

Automatic Manure Belt Adjustment for optimal running during manure removal

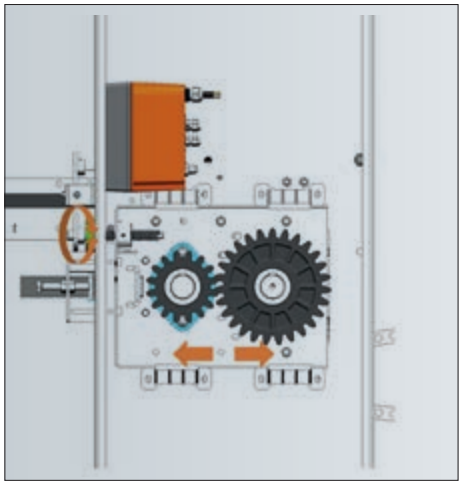
Using manure belts reduces ammonia emissions and thus contributes to an improved climate in the house and to the birds' health.

Manure belt end set with scrapers and central adjustment

Intervals between manure removals should, therefore, be as short as possible.
In the past, however, manure belts had to be constantly monitored during operation, sometimes requiring repeated adjustment even by experienced staff. For this reason, manure was frequently not removed as often as it should have been. With its automatic manure belt adjustment system, AMBA, Big Dutchman offers a solution that saves time and ensures operation without interruptions.
Light sensors, positioned to the right and to the left of the manure belt, monitor how the belts run. If a belt does not run straight, the sensors transmit a signal to the AMBA motor. The motor automatically re-adjusts the belt to stop it from deviating.
During manure removal, the manure from all tiers drops onto a cross belt. From there, it can be transported to a manure store, for example. Manure belt scrapers efficiently clean the belts in each tier. The PVC manure curtain closes the system neatly so manure can be removed without raising dust.
To clean dust and feathers from the returning belt, the Big Dutchman manure belt idler unit can be supplied either with a V-scraper (standard) or with an additional cleaning auger (optional).
Incidentally, OptiCoat protects the entire end set against corrosion.

Light sensors monitor the belts

Manure belt idler roller with cleaning auger (option), removes dust and feathers from the returning belt



Special adjustment unit for straight belt running

Stand-alone controller 103

amacs controller

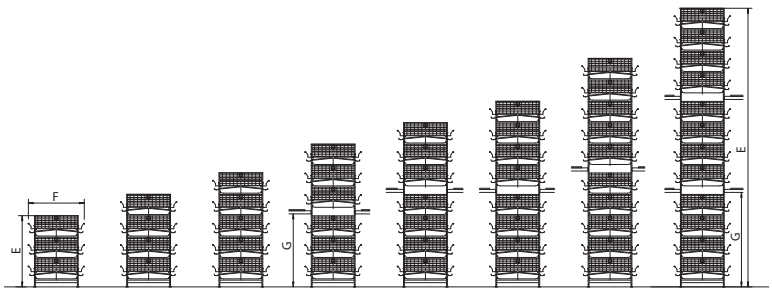
ADVANTAGES

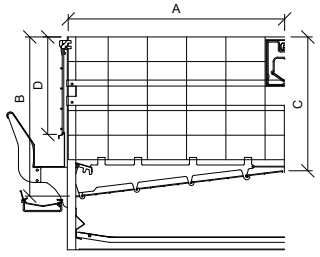
- ✔ self-regulating, straight running of the belts during manure removal ensures high process reliability;
- ✔ manual adjustment of the belts is no longer required, saving much time;
- ✔ automatic detection of the load on the manure belt indicates when manure must be removed;
- ✔ the bus-compatible motor can communicate with the amacs farm computer for a high degree of automation;
- ✔ longer service life of the entire manure belt drive;
- ✔ retrofitting possible for all BD manure belt drives.

Technical data and planning instructions

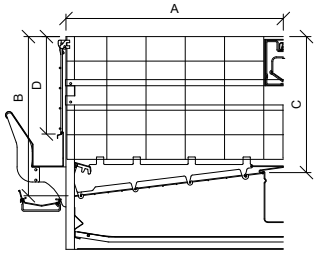
Cage dimensions/type		UV 600 UV 600a	UV 600A	UV 639	UV 600-plus UV 600a-plus	UV 788 UV 788a
Cage depth (A)	mm	600	600	639	600	788
Cage width	mm	603	603	603	603	743
Front height (B)	mm	445	445	445	496	540
Rear height (C)	mm	375	375	371	421	442
Cage front height (D)	mm	230	230	230	283	292
Cage surface area	cm^2	3618	3618	3853	3618	5855
System width (F)	mm	1540	1640	1620	1540	1916

System dimensions/tiers			3	4	5	6	7	8	10	12
Total height (E)	UV 600	mm	1960	2550	3140	3930	4520	5110	6290	7670
	UV 600-plus	mm	2110	2750	3390	4230	4870	5510		
	UV 639	mm	1960	2550	3140	3930	4520	5110	6290	7670
	UV 788	mm	2240	2910	3580	4450	5120	5790		
Catwalk height (G)	UV 600	mm				2010	2600	2600	3190	2600
	UV 600-plus	mm				2160	2800	2800		
	UV 639	mm				2010	2600	2600	3190	2600
	UV 788	mm				2260	2930	2930		





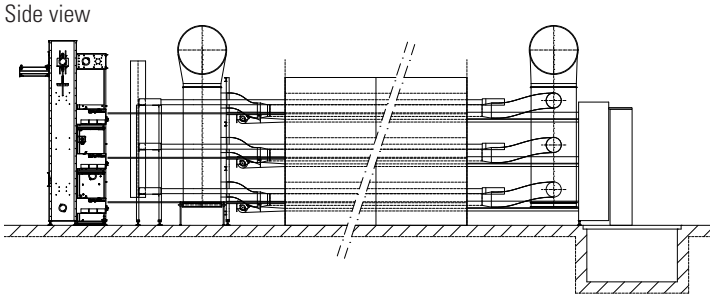
Cage cross section: UV 600, 600-plus, 639, 788 without air duct



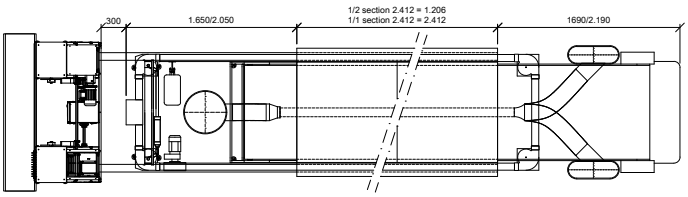
Cage cross section: UV 600a, 600a-plus, 788a with small air duct

Planning example for a UV 600A system

Side view



Top view



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Technical details subject to change. en 4/2025