

Climate and Farm Management for broilers

Climate for growth

For more than 40 years, SKOV has been developing and manufacturing ventilation systems and farm management systems for pig and poultry producers around the world, and we are known for being the world's leading system supplier. This means we must constantly strive to develop and manufacture products that ensure optimum conditions in livestock houses for the benefit of both animals and humans.

Innovative quality supplier

A substantial part of SKOV's sales goes to product development – both for the development of new products and the improvement of existing systems and components. We have 85 skilled employees working in our development departments in Denmark and Malaysia. Our products

are developed in close collaboration with our innovative customers and business partners, who provide their input and feedback so that we can deliver the solutions that the market demands. One of the reasons that SKOV's systems are known for high operational reliability, long service life and high efficiency is that major emphasis is placed on checking the quality of our products before they are delivered to the customer. We quality test all our products under the climactic conditions in which they will operate, and are also certified in accordance with standard DS/EN ISO9001:2008.

Global and close at hand

SKOV's head office is in Denmark, and the company is represented internationally by sales departments, distributors and ser-

vice technicians. SKOV has a subsidiary in Bangkok, Thailand, which employs 40 people and which ensures our Asian customers have well-functioning ventilation and farm management systems as well as competent service. SKOV's systems are installed all over the world, and our systems can be adapted to all climatic conditions.

We sell both directly to the producer and via our many collaboration partners. We have an extensive network of distributors so our customers can receive help and advice regardless of geographical location.

A ventilation and farm management system is an important investment, which is why we also strive to advise customers in their choice of system. We ensure we fit and commission the system as well as in-

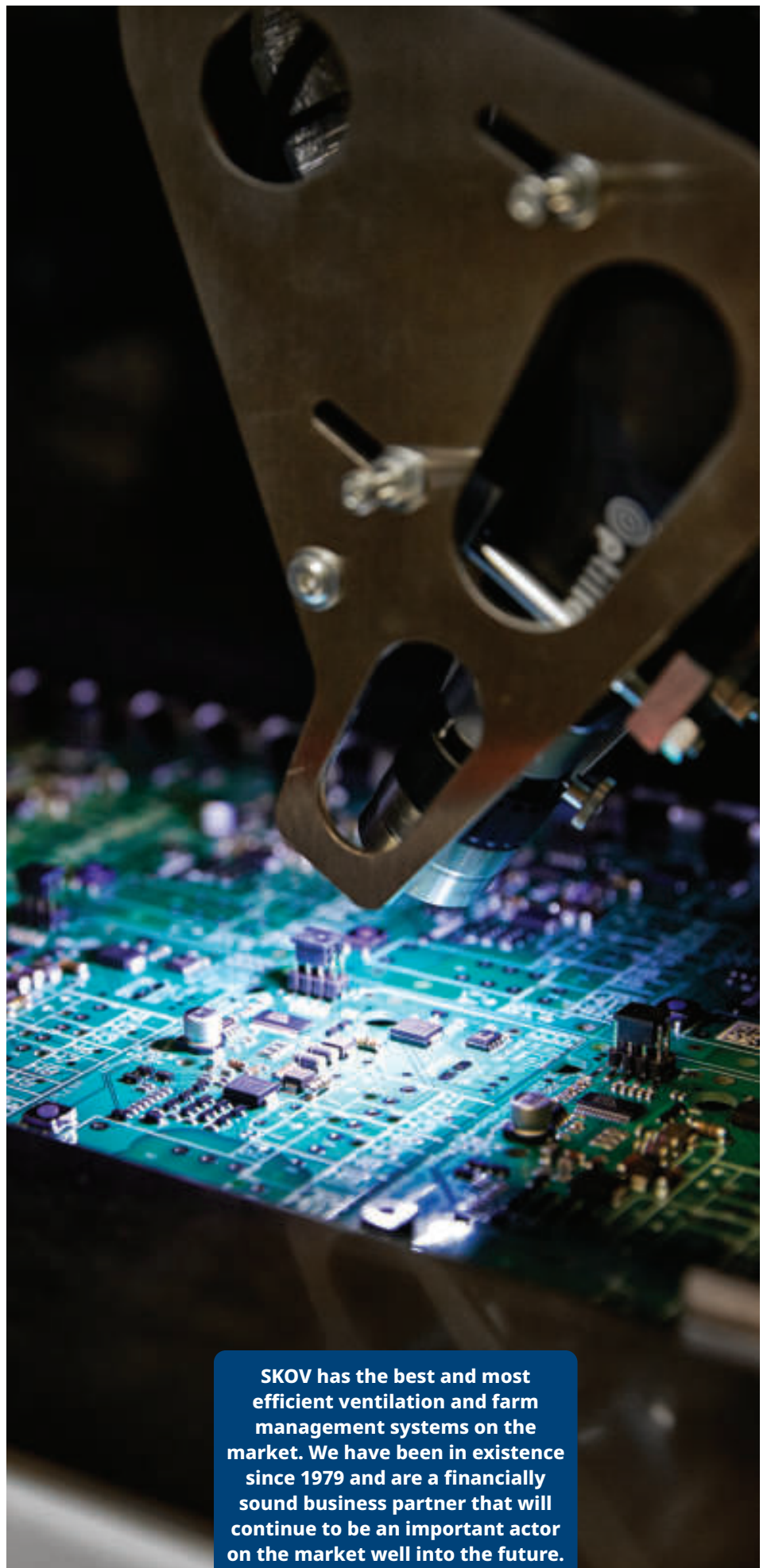


struct the staff on the farm in the best use of the system. We have our own specialists in animal husbandry who ensure that the animals in the livestock house have the best possible conditions.

Energy-conscious system supplier

SKOV is aware of its responsibilities, and therefore there is considerable focus on ensuring that the systems not only create optimum conditions for animals and people in the livestock house, but also consume as little energy as possible for the benefit of the surrounding environment. Through the years, we have developed systems and components which reduce power consumption substantially for the benefit of the producer without compromising on the animals' well-being.

SKOV has the best and most efficient ventilation and farm management systems on the market. We have been in existence since 1979 and are a financially sound business partner that will continue to be an important actor on the market well into the future.



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Project management

SKOV's project management department handles the technical side of the sales, and transforms the customer's ideas and wishes into concrete system solutions, in close collaboration with the customer and other collaborative partners.



Logistics center

Satisfied customers and business partners are some of the cornerstones for a healthy business, which is why SKOV places great importance on timely and correct delivery. Our logistics center ensures that all deliveries from SKOV are delivered as agreed, regardless of where in the world the customer may be.



R&D department

The agricultural sector is in constant development, which is why the development of new systems and products adapted to the farmer's needs is so important. Our R&D department works both with mechanical design, development of software and hardware, and collaborates with universities and research centers specialising in the field of agriculture.



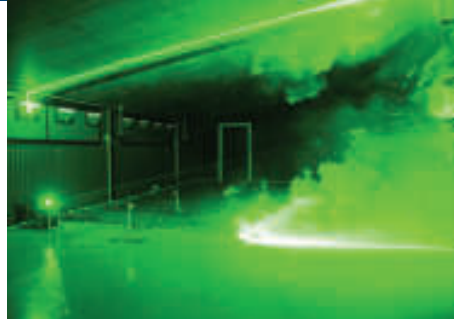
SKOV Denmark

SKOV's head office is located in Denmark, where it was established back in 1979 by Scandinavia's largest egg producer, which had already been developing, selling and supplying ventilation for many years. The company has expanded over the years, and is today one of the world's leading suppliers of ventilation and farm management systems.



Production

All SKOV's climate controllers are produced in Glyngoere, where an efficient and modern electronics production ensures products of high quality.



Test center

SKOV is known for supplying products and solutions of the highest quality. We quality test our products, and new products are always put through a rigorous round of testing, both in our test center and in livestock houses prior to launch.



Academy

SKOV Academy is a professional training centre, whose primary purpose is to train customers and dealers, as well as SKOV's own personnel.



Warehouse

From our warehouse in Glyngoere, Denmark, we can provide service to customers across the entire world on a daily basis. We have many of our products in stock and can therefore guarantee a speedy delivery.



Customer Center

Even if SKOV's customers are spread across the entire world, they are assured expert service in our customer centres, which support our customers in many different languages and ensure a professional handling of orders.



Service

Regardless of whether the livestock house is located in or outside of Denmark, you are assured a speedy and expert service – either in the form of SKOV's own service personnel or through our many business partners.

SKOV worldwide

To fulfill customer requirements and their needs for a well-functioning system, it is important to know the conditions under which the system must be installed. This requires a thorough knowledge of the local conditions, including climate, legislation, building styles, etc.; at the same time, it is also an advantage to be close to the project.

Furthermore, the customer should have access to advice from SKOV, and be able to enter into discussions, at all times, which is why we have built an extensive network of distributors and service partners to cover all time zones.



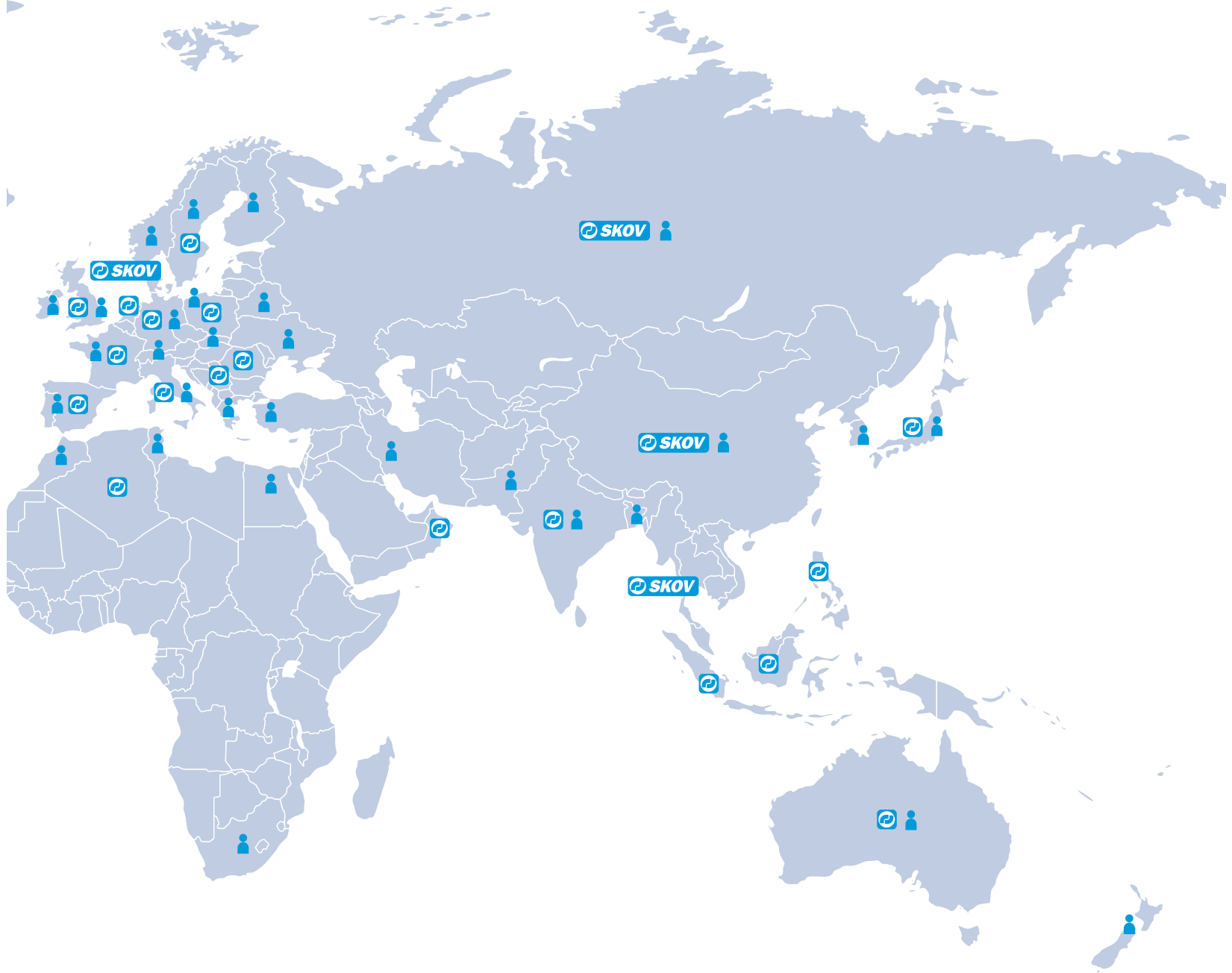
SKOV's head offices
in Denmark, USA, Russia, Thailand, and China



SKOV's sales offices



SKOV distributors





SKOV Ventilation systems

"We work for optimum conditions for animals, people, and the environment. Our systems can be adapted to all types of buildings and are reliable and efficient under all climatic conditions".

- Leo Østergaard, CEO, SKOV A/S



In order for the animals in the livestock house to perform optimally, it is crucial that the livestock house climate is adapted to their needs. Regardless of the size, design, and location of the livestock house, SKOV has a solution to create optimum conditions in the house - for both animals and people.

Why is ventilation important?

In modern agriculture, it is necessary to constantly optimize and streamline the production to be able to deliver the best results. In order for the animals to perform optimally, there are some requirements in their surrounding environment which must be met. The livestock house climate is one of the most important factors for the animals' well-being, and there are major requirements in terms of the ventilation system which must ensure the correct temperature, air quality, and air humidity.

During cold periods, ventilation is used to create a healthy livestock house climate and thereby keep undesirable gas types to a minimum. The air which is sucked in is cold and must not reach the animals without being mixed with the warmed air in the livestock house. The ventilation system mixes the air, so that the temperature is correct in the area occupied by the animals, and the animals are not exposed

to bothersome draughts. In warm periods the ventilation system removes the animals' excess heat and sucks air into the house to create a cooling effect by ensuring air movement around the animals. A correct climate is crucial for a stable, high gain, and a producer that ensures that his livestock has the correct climate minimizes disease risk. Likewise, the correct climate will ensure the correct and ideal utilization of the livestock house.

Regardless of the size, layout, and location of the livestock house, SKOV has a solution for creating optimum conditions in the house - both for the animals and the people tending them. SKOV's professional technicians dimension the ventilation system so that it is adapted to the individual production facility and in a way that ensures the lowest possible energy consumption at the same time.

Basic elements of the ventilation system

The animals must never be exposed to draft nuisances, and the ventilation must be uniform throughout the livestock house. The air must therefore be taken in at the correct height, direction, quantity and at the correct speed. Correct climate control requires a climate computer to ensure that the air inlets and outlets are set correctly in relation to one another. In order for the climate controller and air inlets and outlets to operate perfectly, it is crucial that the interlinking between them is stable and correct. Products which are incorporated into a SKOV ventilation system have mainly been developed and manufactured at SKOV in Denmark. All products have been developed and designed in relation to one another, so our customers receive a reliable and efficient ventilation system which guarantees a perfect climate for the animals and employees in the livestock house.



Low Power Ventilation (LPV) System

SKOV's LPV system is a classic negative pressure system used for ventilation of poultry production facilities. The system has been developed for temperate regions of the world and can be adapted to most livestock buildings.

Components of the LPV system

As a rule, an LPV system consists of the following four elements:

- Air intake
- Air outlet
- Controller
- Interlinking

Air inlet

In an LPV system, the fresh air is supplied through wall, ceiling, or roof inlets. During cold periods, fresh air is mixed with the house air before it reaches the area occupied by the animals.

In warm periods, the air is taken in the same way, but is sucked into the livestock house at a higher speed. This results in air circulation around the birds, and they are cooled without perceiving the increased air circulation as a draught.

Air outlet

The air outlet of an LPV system is conducted through exhaust units, which have been developed for high output with low power consumption. The exhaust units are aerodynamic, and the exhaust unit and fan are optimized as a unit.

The exhaust units are adjusted in accordance with SKOV's regulation principle Dynamic MultiStep®, which reduces the power consumption substantially.

Climate control

The LPV system is controlled by SKOV's house computer. These computers contain all necessary functions and ensure efficient and precise control of the climate in the livestock house. The computers are designed on a modular principle and are easy to operate.

Interlinking

The system's open-close function is handled by an actuator, which comes with a complete mounting set. The efficiency and precision of the entire system depends on sturdy and reliable interlinking.



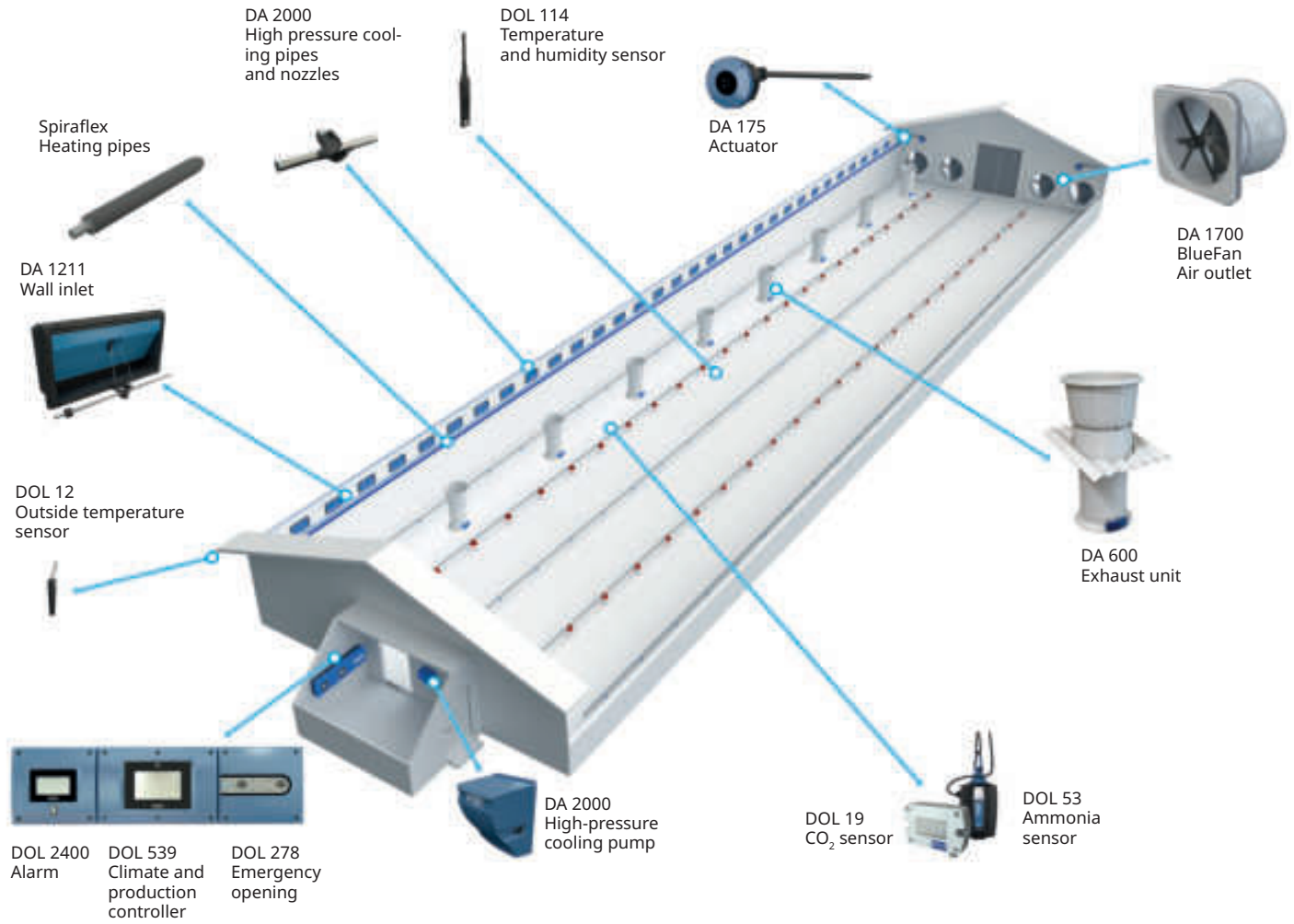
The LPV system can be supplemented with the following:

- Alarm & emergency opening
- Cooling & heating
- Farm Management

SKOV's LPV system

- Optimal climate all year round
- Correct control of air direction, volume and velocity
- The exhaust units are aerodynamic, and the exhaust unit and fan are optimized as a unit.
- Low Power Consumption
- Integrated emergency ventilation





Tunnel ventilation

In the tropical regions of the world the heat is constant; it is therefore important to be able to lower the temperature in the livestock house. With SKOV's Tunnel ventilation, the correct temperature in the livestock house is ensured, despite the high temperatures outside.

Components of the Tunnel ventilation system

As a rule, a tunnel system consists of the following four elements:

- Air intake
- Air outlet
- Controller
- Interlinking

Air inlet

The air intake in a Tunnel ventilation system is located in the sides or the gable at one end of the building and is lined with cooling pads. There are different types of air intake available, which are installed in connection with pads or high-pressure cooling, so the incoming air is cooled down.

Air outlet

At the opposite end of the tunnel opening there are large gable fans to create a cooling air current (chill effect) along the longitudinal direction of the livestock house. Depending on air humidity, it is possible to substantially lower the temperature perceived by the animals.

Climate controller

The Tunnel ventilation is regulated by a controller, which enables a number of functions and is easy to operate. The computer ensures efficient and accurate climate control, allowing for optimal production despite high outside temperatures. The computer controls the ventilation system based on the temperature perceived by the animals.

Interlinking

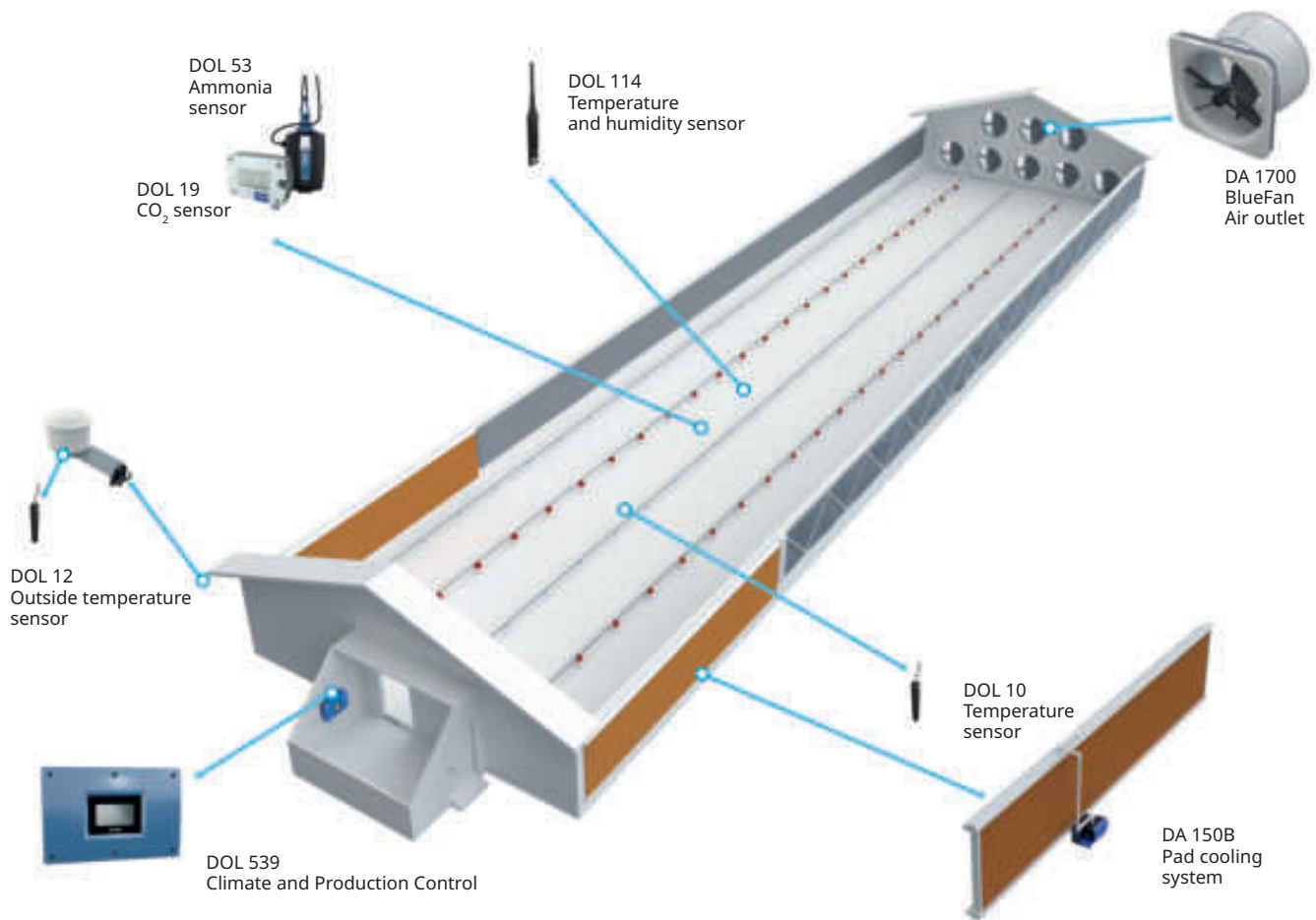
The system's open-close function is handled by an actuator, which comes with a complete mounting set. The efficiency and precision of the entire system depends on sturdy and reliable interlinking.



The tunnel ventilation can be supplemented with the following:

- Alarm & emergency opening
- Cooling & heating
- Farm Management





SKOV's Tunnel system

- Low initial costs
- Cooling through air velocity and cooling system
- Effectively removes excess heat and undesirable gases
- Efficient and manageable

Combi-Tunnel ventilation

SKOV's Combi-Tunnel system is a negative pressure system used in poultry production facilities in tropical and subtropical regions of the world, where there are considerable fluctuation of temperatures on both a daily and seasonal basis.

Components of the Combi-Tunnel ventilation system

The Combi-Tunnel ventilation system consists of the following four elements:

- Air intake
- Air outlet
- Controller
- Interlinking

Air inlet

In cold periods, fresh air is supplied through wall inlets, which direct the fresh air towards the ceiling. The fresh air is mixed with the air in the livestock house before it reaches the animal zone. As an alternative to the wall inlets, ceiling inlets can be used.

In warm periods, the air is sucked into the livestock house using a tunnel door at one end of the house. Tunnel doors are available in a number of different types,

and are installed in connection with pads or high-pressure cooling.

Air outlet

In cold periods, the air outlet of the Combi-Tunnel ventilation system is conducted through exhaust units, which have been developed so they have a high output with low power consumption. The exhaust units are aerodynamic, and the exhaust unit and fan are optimized as a unit. The exhaust units can be fitted in the wall and ceiling or side-mounted in combination with other wall fans.

The exhaust units are regulated according to the SKOV regulation principle Dynamic MultiStep®, which reduces energy consumption significantly.

At high outside temperatures, the air is extracted by large gable fans which are placed opposite the tunnel opening with cooling pads. This creates a cool air current (chill effect) along the longitudinal direction of the livestock house, which can lower the temperature in the house by up to 10-25°C.



Climate controller

The Combi-Tunnel ventilation system is controlled by SKOV's climate controller. The controllers contain a wide variety of functions and ensure efficient and accurate control of the climate in the livestock house. Climate controllers are designed on a modular principle and easy to operate.

Interlinking

The system's open-close function is handled by an actuator, which comes with a complete mounting set. The efficiency and precision of the entire system depends on sturdy and reliable interlinking.

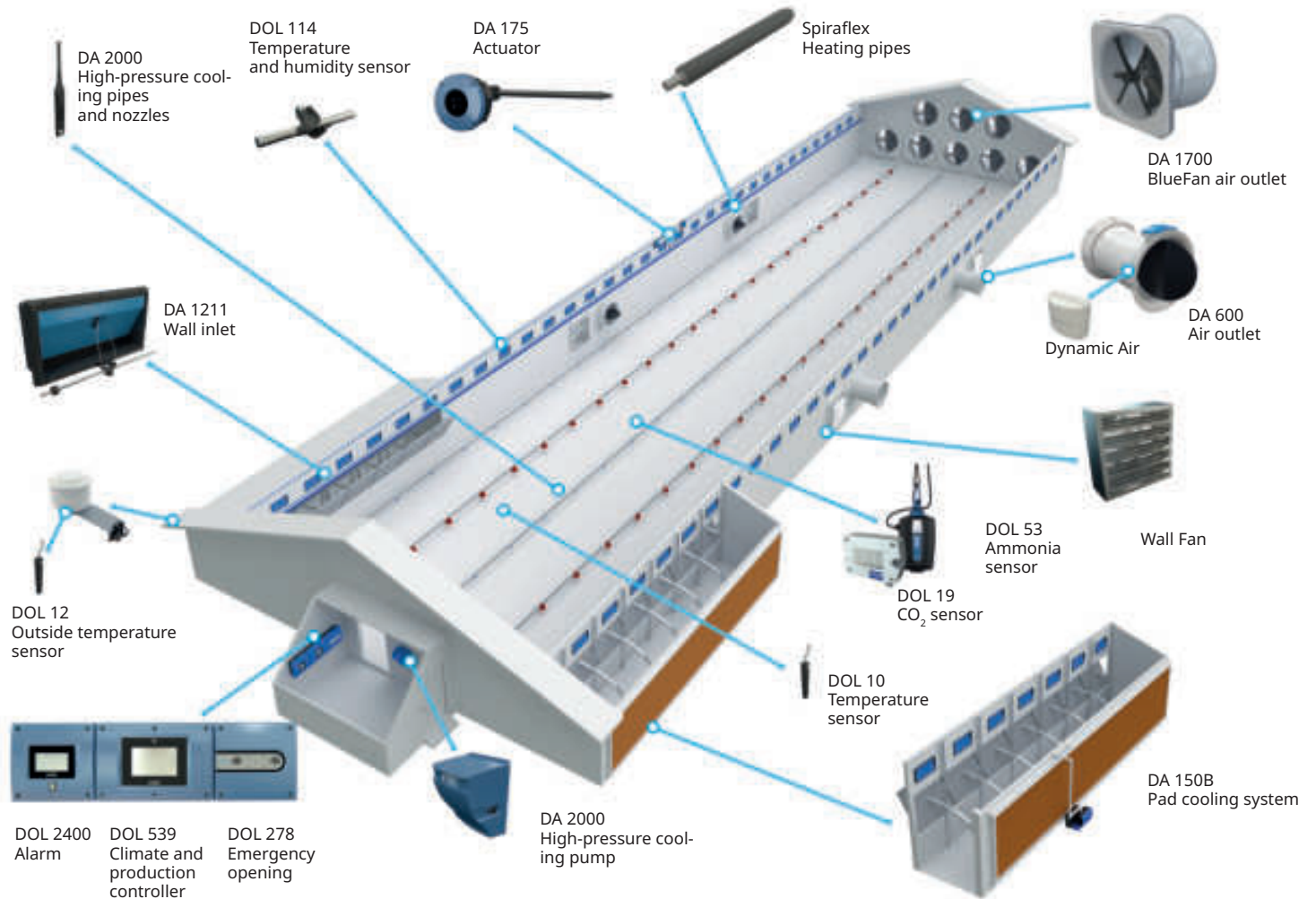
The Combi-Tunnel ventilation system can be supplemented with the following:

- Alarm & emergency opening
- Cooling & heating
- Farm Management



SKOV's Combi-Tunnel ventilation system

- Optimum climate without excess heat
- Needs-driven control of air direction, volume, and velocity
- Cooling effect through air velocity and cooling system during hot periods
- Minimum risk of draught nuisances during cold periods
- Reliable and efficient control





Welfare and productivity with SKOV's cooling systems

In those parts of the world where the outside temperature can exceed 30 °C it may be necessary to use cooling in the livestock house so that the house temperature is not inappropriately high. Depending on the age of the birds and the type of production, the animals are affected to a greater or lesser degree if the house temperature is too high. This has a negative impact on productivity, including reduced feed intake, and can ultimately lead to increased mortality due to heat stress. The negative implications can be reduced significantly through the use of cooling.

SKOV offers two types of cooling - high-pressure cooling or pad cooling.

Great emphasis is attached to quality and flexibility when developing SKOV cooling products. Quality is ensured by using very reliable components with a long service life.

High-pressure cooling in an LPV system

An LPV system uses high-pressure cooling, which adds atomized water particles to the air in the livestock house. The water particles evaporate in the warm air of the

livestock house, which in turn cools the air. High-pressure cooling therefore makes it possible to reduce the temperature in the house by 2-10°C. The reduction can be achieved without negative consequences for animals and litter due to increased air humidity.

High-pressure cooling is very flexible, as it is constructed from standard components that can be easily adapted to the individual livestock house.

High-pressure cooling in Tunnel mode

High-pressure cooling is also suitable for use in Tunnel ventilation systems in areas with relatively low air humidity. Here the cooling pads are removed and high-pressure nozzles are mounted on pipes in the Rack & Pinion opening. It is possible to install high-pressure cooling in steps to meet the cooling and humidity requirements.

Pump unit – complete with filters

The pump forms the basis for an efficient cooling system.

The pump unit is delivered complete, ready for connection of power and water. Effective filters ensure a reliable system with longevity. Furthermore, the pump can be equipped with an additional phosphate filter and electronic lime decomposer for optimum reduction of lime and minerals in the water.

Piping system

Only stainless steel, acid-resistant pipes and joints with high longevity and long life are used. The holes for the nozzles are made using special punch pliers after pipe assembly. The nozzles in the patented FlexClamp nozzle holders can be placed anywhere, allowing for optimal positioning next to the air inlet.

Nozzles

The patented nozzles are equipped with a filter in front of each nozzle head to reduce the risk of clogging. Furthermore, the nozzle heads come with an anti-lime coating, which further reduces problems with lime scale in the nozzle head. All nozzles are fitted with an anti-drip valve.

Automatic control

Control of the cooling system is done automatically via the climate controller of the livestock house.

High pressure system – more than cooling

A high-pressure system has more functions than cooling of the air in the livestock house.

Humidification

A high-pressure system can also be used for humidification of the livestock house. The system can be used to raise the humidity level in the livestock house during certain periods, and the humidification can also reduce dust problems in the house. Correct humidification can remedy these problems for the benefit of animals and people.

Soaking

Between batches, the high-pressure system can be used for soaking the livestock house. With the ventilation disconnected, the dense mist of water particles will quickly soak debris on various surfaces. Cleaning is therefore quicker and easier.



Lower the temperature with cooling pads

Pad cooling is used in connection with SKOV Combi-Tunnel and Tunnel systems. Cooling happens when the air is taken in through the pads, which are kept moist by recirculation of the water. The air passes through these pads and is cooled when absorbing water vapour.

Gutter system with integrated water tank

There is no need for a separate water tank in connection with cooling pads. The tank is built into the lower gutter and is thus an integrated part of the gutter system.

The pipe trickling the pads is an integrated part of the upper gutter. Water is supplied directly without the use of the special distributing pads that are used in many other systems.





Efficient heating system

A good livestock house climate is important for the animals' well-being, health and productivity. Heating is part of the total climate solution. Like cooling and ventilation, heating is a crucial parameter for creating the best possible livestock house climate with a high level of productivity.

The climate in the livestock house, where temperature and relative air humidity are the most important factors, is of major importance for the feed conversion, gain, stress, infection risk, etc.

It is necessary to ventilate and supply heat to the house in order to control the climate, including temperature, humidity, and CO₂.

SKOV provides ventilation solutions in which heating is an integrated part of the overall solution.

Effective room heating

Heating systems from SKOV are based on supply and circulation of hot water. The SKOV heating components are of very high quality and they are well suited for harsh house environments.

Spiraflex finned tubes provide an efficient and economical heating of the air in the house. The Spiraflex tube's heat emission per meter is much greater than a smooth tube can deliver.

The tubes are mounted below the air intake. The finned tubes emit heat (convection) to the surrounding air. The air gets lighter, rises and carries the cold air from the inlets further into the house, ensuring circulation of the air. The positioning helps provide correct ventilation with optimum mixing of cold air from the outside and heated housing air so that the broilers are not exposed to cold air downdraughts.

Heating - a prerequisite for a good litter

In order to give the broilers and the litter the best possible start, it is important to heat the livestock house for a prolonged period of time before stocking the broilers. This is essential in climate areas where it is cool/cold. The air temperature can be raised within a few hours; however, it may take a long time for the walls and floor to be heated. For the same reason, it is a good idea not to let the heat out of the house between the batches.

The small broilers are completely dependent on the ambient air temperature and the basis for good production results are formed during the first week after stocking. Therefore, it is a good investment to ensure optimum climatic conditions from the point of stocking.

Floor heating is well suited for heating of the house prior to broilers being stocked, but floor heating is not recommended as the only heat source in the livestock house. It takes a relatively long time to adjust the temperature in the house either up or down by means of floor heating and it can be difficult to reach the set point temperature in the livestock house shortly afterwards. With Spiraflex finned tubes, it is possible to raise the temperature rather quickly in order to improve the distribution of the birds throughout the house.



SKOV's efficient and fast-reacting heating system ensures the optimum livestock house climate.



Direct heating

As a supplement or alternative to SKOV's water-based heating system, SKOV offers high-quality hot-air blowers for direct heating. Direct heating is when heat generation takes place by direct, open burn-

ing inside the house itself. Hot-air blowers are quickly responding and powerful heat sources that are effective for heating and drying livestock houses after cleaning.





SKOV's production controller for broilers

Production control

Delivering the best results demands the ability to monitor production continuously and take corrective actions if it takes an unanticipated course.

SKOV's production controller has production modules adapted to broilers with functions that enable systematic monitoring and effective control of production.

Production control for broiler producers

Common to these production modules is the fact that they can monitor animals' daily gain, feed intake, feed conversion ratio (FCR), water and feed consumption ratio, and mortality.

Systematic monitoring of the above will provide an image of broiler productivity and an indication of any problems in the house, such as disease outbreak or improper climate, as the food and water intake of the animals' changes.

Monitoring serves no purpose if no action can be taken to address the situations observed. The production controller provides the producer the possibility to use recorded data to control his production.

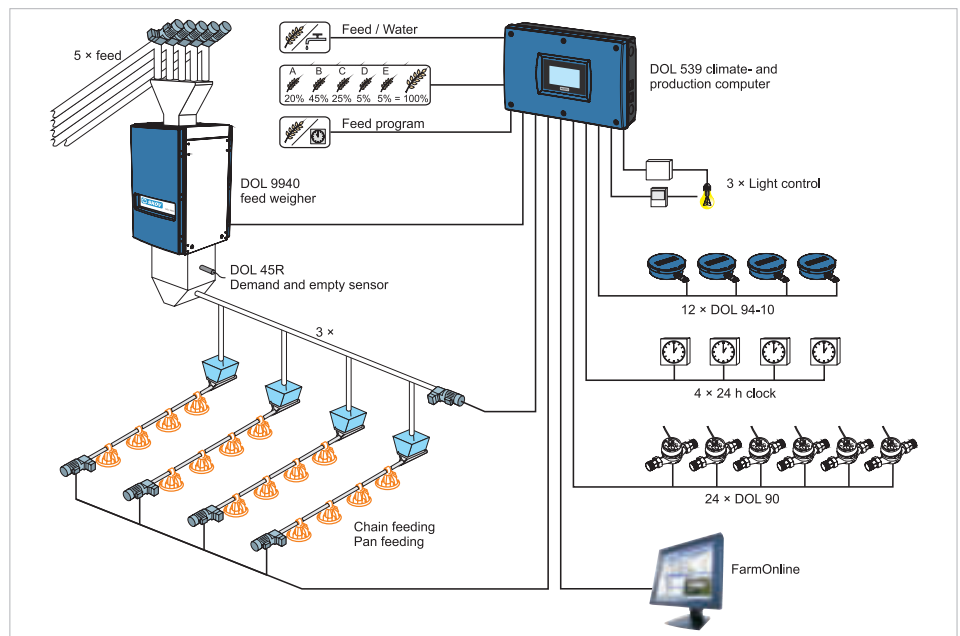
Advanced feeding technology

Feed is the most cost-intensive factor in production, and at the same time one of the most important to optimize productivity and gain.

Feeding is controlled by an advanced program that can distribute up to five different

ent feed components and deliver to two houses. The program records volumes of feed used and generates an alarm if a silo is empty.

The controller works together with SKOV's feed weigher, which is known for its high accuracy and great reliability.



Integration possibilities with SKOV's DOL 535/539 in a broiler production facility

DOL 539 includes:

- 10" screen
- Adaptive user interface
- Easy navigation
- Agile control

Modern technology

Once you have full control over production, you are in the best position to be able to optimize it. SKOV's controllers offer the latest technology. Combined with a user-friendly control panel, you get easy, agile control.



Recording of water consumption

Changes in water consumption can indicate outbreak of disease, but can also be an indication of water waste, increased temperature in the house, or poor feed.

In cases of disease outbreak or increased temperature in the house, the animals' water intake will increase. The water intake of the broilers will also increase - and they will eat less - if there are problems with the feed, such as excessively high levels of salt or fat content.

Water consumption is measured by a water meter and saved by the controller, which continuously calculates relevant key figures.

Weighing of poultry

It is of particular importance to broiler producers to know the weight of the animals in order to monitor and control their productivity. SKOV has several types of poultry weighers, all known for their high accuracy and longevity.

Light control increases productivity

Being able to control animal behaviour means providing them the right amount of light in the right places at the right times. The production controller has a built-in light program that can handle up to 16 light periods per day. The program can be adjusted to all conditions and also has a dimmer function. Proper light control promotes production, as it controls animals' feed and water intake along with their circadian rhythm.

Production functions for broilers

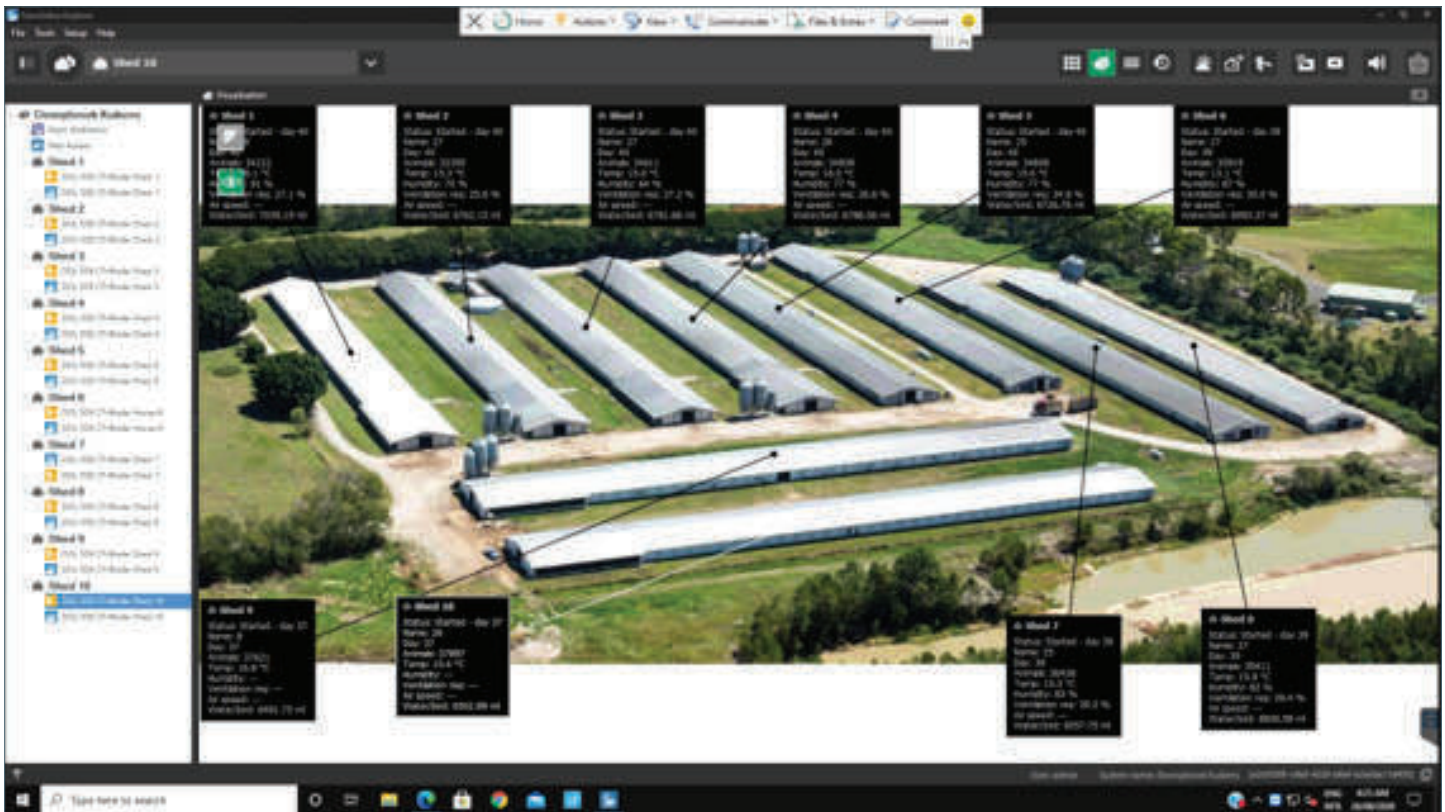
- Feed control:
 - pan feeding
 - chain feeding
- Feed programs for filling and feeding
- Electronic silo weighing with two feed demand sensors
- 5 silos
- Water control
- Water consumption monitoring
- Light control with light program and dimmer
- Automatic and manual broiler weighing
- Recording of animals
- 5 feed components
- Feed mixing (drum scale)
- Feed consumption monitoring
- Calculation and display of FCR and PEF
- Calculation and display of feed and water per animal





SKOV

Farm Management



Intelligent and user-friendly farm management

For the ever-larger broiler producers with production on sites scattered over a large geographical area, ensuring a complete overview of the farms is essential.

With FarmOnline®, data is collected between controllers and PC automatically, which results in higher data validity and more time to tend to the animals. This also means that the producer can react immediately to alarms, for instance by changing the controller setup via FarmOnline®.

In case of an alarm, the broiler producer can intervene quickly and in a qualified way. Immediate action will ensure the well-being of the broilers, as well as reduce or even prevent financial losses altogether.

User-friendly and intuitive

Today's production controllers are advanced, with numerous settings and options. With FarmOnline®, any deviation from the planned strategy is clearly displayed, making it easy for the producer to ensure that all the livestock houses follow the planned strategy.

FarmOnline® can import the producer's own photos and drawings of the farm and sections, ensuring high graphic recognition. So-called hotspots can be added to the overviews to show the key values for inside temperatures, alarm status, etc.

By adding graphical features for all levels (farm, livestock house), the producer can easily navigate around and gain an overview, allowing rapid and accurate identification of deviations.

The FarmOnline® system makes it possible to have a list in table form of key values, alarms, and house status for the entire farm. The producer chooses which values shall be included in the overview function.

Easy data extraction

With FarmOnline®, the producer can select specific key values for temperature, humidity, ventilation, cooling, heating, and production and have them displayed in a clear graphic interface, from which settings can also be changed.

The efficient climate history function of FarmOnline® enables data history for up to five years. Several search criteria enable requested data to be graphically presented.

FarmOnline® optimizes broiler production

For broiler producers it is possible to gather an array of production data using FarmOnline®, which presents data in a comprehensive graphic format that allows a rapid overview and possibility for in-depth analysis of production.

It is possible to view certain data for, among other things, mortality, weight and feed intake, which makes it possible to compare individual batches with one another and with previous batches.

Keep an eye on the livestock house from your smartphone

Using SKOV's FarmOnline® app for smartphones, the producer can gain access to all his controllers – no matter where in the world they are. This enables the producer to see climate and production data and alarms, thereby minimizing the risk of losses in case of a system breakdown. SKOV's mobile app can be download free for Android and iOS, giving access to changing controller settings.

Management for large business units



SKOV's FarmOnline+ gives complete overview of a farm, making further growth and development of your business possible. Production results can be compared from head office by farm and livestock herds. That provides a unique opportunity to monitor measures implemented.

SKOV's FarmOnline+ also gives a clear overview of which farms are performing best. The data gained can be used to optimize results on other farms. You can also export data to other programs, and share it with feed suppliers and vets, for example.



The ideal tool for efficient farm management

- Benchmarking between farms
- Clear overview of KPIs
- Data export and sharing, e.g. with feed suppliers and vets
- Copy setup from high-performing farms



SKOV Components

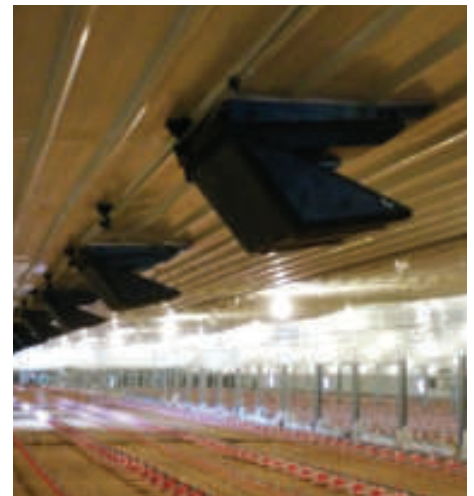
Air intake



1



2



3



1



2



3

Air outlet



1



2

Interlinking



3

Product Characteristics

1 DA 1200/1211/1911 Wall inlet

- For embedding in concrete walls or installation in lightweight exterior walls
- An air direction baffle directs the air jet in an optimum direction towards the ceiling
- A baffle plate neutralizes the outside wind action in narrow livestock houses
- A metal band-reinforced shutter makes the inlet shut tightly
- An insulated shutter counteracts condensation
- Quick and easy cleaning
- Light trap solutions for poultry production

2 DA 3800

- All-purpose air intake for large houses
- Correct minimum ventilation
- High-performance and excellent chill effect in hot periods
- AFC (Advanced Flow Control) good pressure stability throughout the ventilation area
- Built-in air direction baffle
- High performance – fewer inlets

3 DA 1540 Ceiling Inlet

- The option of high output at a low air velocity
- The high capacity of the inlet can be utilized optimally, also at low and medium ventilation.
- Easy installation of high-pressure cooling
- An insulated shutter counteracts condensation
- Quick and easy cleaning with high-pressure cleaner

1 Rack & Pinion

- Open/Close function of tunnel opening
- Powerful and stable system
- Sturdy and tight closing mechanism

2 DA17K Tunnel inlet

- Less opening range in the livestock house and thus well suited for cage houses
- Well-insulated and airtight
- Fewer construction and installation costs
- Sturdy and easy to clean
- Precise control of air current due to adjustable flaps
- Available with both semi- and highly-insulated flaps

3 Tunnel Door Light

- Manufactured from plastic, which can handle the harsh livestock housing environment
- The flexible flange can be adjusted from 10-25 mm, which makes it possible to use local suppliers of tunnel doors
- Easy to install

1 DA 600/920 Exhaust unit

- Aerodynamic design
- Dynamic Air – improved minimum ventilation and optimized heat consumption
- A smooth and dirt-repellent surface, which stands high-pressure cleaning
- Impact-proof material
- Is adapted to the individual building as regards roof pitch, color, side/ridge installation, attic, etc.
- Installation in ridge, side of roof or in the wall
- Environmental module increasing the air discharge height
- Recyclable plastic materials

2 DA 1700/BF 50 BlueFan

- Low Power Consumption
- Silent flap function
- Easy installation and cleaning
- Full range of accessories
- Higher performance – fewer units needed
- Long lifetime – plastic frame and fan blades
- Plastic and stainless steel – no rust or corrosion

3 DA 175 Actuator

- Is installed with direct pull on the inlets, which ensures a simple and reliable installation
- Available in a 24V version, to allow for an emergency opening through DOL 278A
- LED lights, which show the operating status of the actuator with color coding

Interlinking

- Complete mounting set (washers, wires, screws, brackets, pulleys, etc.)

Controller



1



2



3

Alarm & emergency opening



1



2

Heating



1



2

Product Characteristics

1 DOL 539 Climate and Production Controller

- Temperature-, humidity, and ventilation control according to animal age
- Dynamic MultiStep®
- PID regulation
- LAN Ethernet to FarmOnline®
- Can mix up to 5 feed components.
- Recording of water consumption, stocked and depopulated birds
- Log files for alarms and operation
- Light control
- Weighing function for broilers presents data concerning gain and deviation in relation to the average weight

NB: Also available as a climate controller (DOL 534) or production controller (DOL 535).

2 Climate sensor

- Used for atmospheric measurements
- Robust
- Easy to install and use
- The range includes sensors which can measure:
 - Temperature
 - Air humidity
 - CO₂ concentrations
 - Ammonia
 - Light
- All climate sensors can withstand the harsh livestock house environment

3 Capacitive sensor

- Broad selection of capacitive sensors
- Controls feed supply
- Can also be used on virtually all materials: metal, wood, plastic, paper, etc.
- High precision
- Design adapted to the purpose of the sensor: drop tube, smooth and flat sensors, and threaded sensors.

1 DOL 2400 Alarm

- GSM modem in all units
- Possibility of modem installation for landlines
- Monitoring of temperature, air humidity, silo level, water consumption, etc.
- Advanced temperature monitoring with outside temperature control
- Can activate backup ventilation or another system in case of alarm
- Available with or without finger print scanner
- Up to 20 inputs and outputs

2 DOL 278 Temperature-Controlled Emergency Opening

- Opens the ventilation system in case of a technical or power failure or an operational error, depending on the excess temperature
- Easy to operate
- Separate temperature sensor
- Works independently of the climate controller, thus doubling the level of safety for most possibilities of error
- Also available as an ON/OFF emergency opening unit

1 Spiraflex Finned Tubes

- Precise heat regulation
- Fully-welded finned tubes ensuring a high, documented heat output
- The finned tube is hot-dip galvanised
- Easy to install with coupler without the use of special-purpose tools
- Mounting with stainless bracket
- Even supply of heat

2 Blow heater

- Minimum maintenance, and stands high-pressure cleaning
- Robust stainless steel construction
- Separate BCU (burner control) for monitoring and control
- Error indication with LEDs
- Automatic restart (3 attempts)
- Compact housing, protection class IP54

Cooling

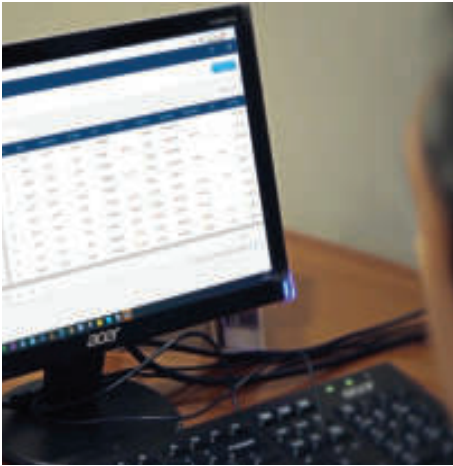


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Management



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Product Characteristics

1 High-Pressure Cooling

- Lowers the temperature in the livestock house without affecting the air humidity negatively
- Stainless steel, acid-proof pipes and joints with a high degree of durability and a long service life
- Flexible system, where the nozzles are mounted after pipe assembly
- Additional functions:
 - Soaking
 - Humidification
 - Dust binding

Can be used as an alternative to pad cooling in tunnel mode.

2 Pad cooling

- Complete gutter system with integrated water reservoir
- The air is passed through the pads, which are constantly irrigated. This cools the air
- Can be adapted to practically all types of livestock houses
- Quick and easy installation
- Pump with built-in filter - cleans the water
- Quick and easy cleaning

1 FarmOnline® Management

- Live monitoring of an unlimited number of productions the world over via the internet
- Clear data overview – in the form of graphs or tables
- Detailed alarm log, history and analysis
- FarmOnline® app for smartphones
- Data from several houses can be collected centrally at a head office, and data can be used to benchmark the individual farms against one another
- Possible to change the settings in the production
- Production data

2 Hardware

- LAN and WLAN components, which can withstand the livestock house environment
- SKOV's components ensure a secure network connection
- SKOV is happy to install and deploy the network so that it works properly



Feed weighers



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Animal Weighers



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Product Characteristics

1 DOL 99 and 99-2 Feed weigher

- Stand-alone weigher with a control unit that calculates and saves values for weighed feed quantities
- Can distribute one or two components

DOL 99B Feed weigher

- Integrates with DOL 539/535
- Can dose up to five components
- All data input and output takes place through DOL 535/539
- The total weighed quantity of feed and the quantity at periodic, 24-hour, and batch levels can be read on the production computer.
- Both feed weighers can handle feed portions between 10-30 kg.

2 DOL 9940 Feed weigher

- Can handle up to 40 kg feed per weighing
- Equipped with control unit calculating and storing the values concerning weighed feed quantities
- Controlled by SKOV production controller
- Can dose up to five components
- All data input and output takes place through DOL 535/539
- The total volume of feed weighed and quantity at periodic, 24-hour and batch levels can be read on the production computer

3 DOL 90 Water meter

- Accurate measurement of water consumption
- Can be easily connected to all water systems
- Dial indicating counter for easy reading
- Available in three versions, depending on water flow

1 DOL 94 Poultry Weigher

- Primarily used for broilers
- Data transfer to DOL 535/539
- Weighing poultry up to 10 kg
- Data concerning, for example, the animals' average weight, weight distribution, number of weighings, and gain
- Possibility to set a correction factor and ignore weighings (feeding)
- The weigher's mechanical construction is specially adapted to the poultry house environment

2 DOL 98S-20 Poultry weigher

- Used for poultry with high slaughter weight
- Data concerning, for example, the animals' average weight, weight distribution, number of weighings, and gain
- Possibility to set a correction factor and ignore weighings (feeding)
- Stands high-pressure cleaning



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