



LPV Poultry

Saves energy and contributes to increased productivity



Climate for Growth



SKOV - Climate for Growth

For more than 40 years, SKOV systems and components have provided optimum climatic conditions for animals in order for them to thrive and to ensure the highest possible productivity level. Every day, SKOV ventilation systems ventilate millions of animals all over the world.

SKOV ventilation systems are installed in all parts of the world and we have systems that match all the various climatic conditions. We create a climate for growth, no matter where our customers and partners conduct their business.

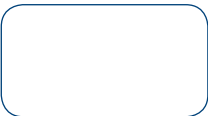
The Objective of Ventilation

Great demands are made on the climate system in the livestock house to ensure accurate adjustment of temperature, air humidity and air velocity in order to create optimum conditions. Birds of highly improved breeds combined with a high stocking density require a climate of precise adjustment.

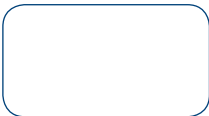
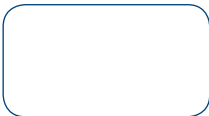
If the air humidity rises, the birds will sense a higher temperature even though it remains unchanged. Likewise, low humidity can make the birds feel a lower temperature even though it has not been lowered.

The opposite applies to air velocity. If it is increased, the birds will sense a lower temperature even though it remains unchanged.

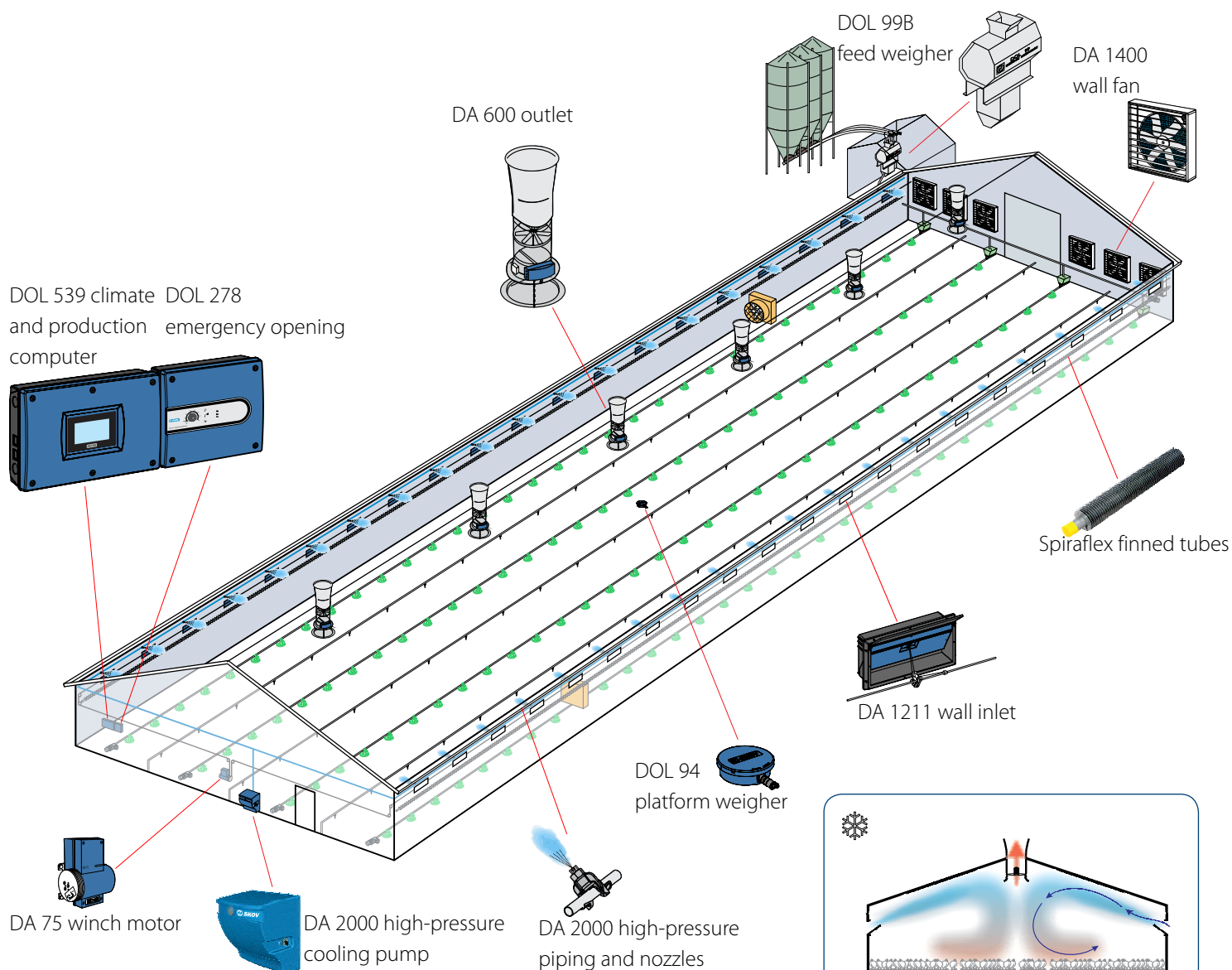
There is only one correct temperature – if it is not maintained, optimum productivity cannot be attained.



A World of Customised Solutions



The Structure of an LPV System



LPV Negative Pressure Ventilation

LPV (Low **P**ower **V**entilation) with wall or ceiling inlets is a classic negative pressure system to be used in temperate regions of the world.

An LPV System Consists of:

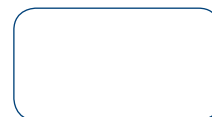
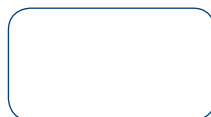
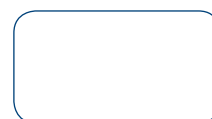
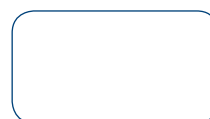
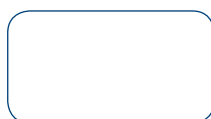
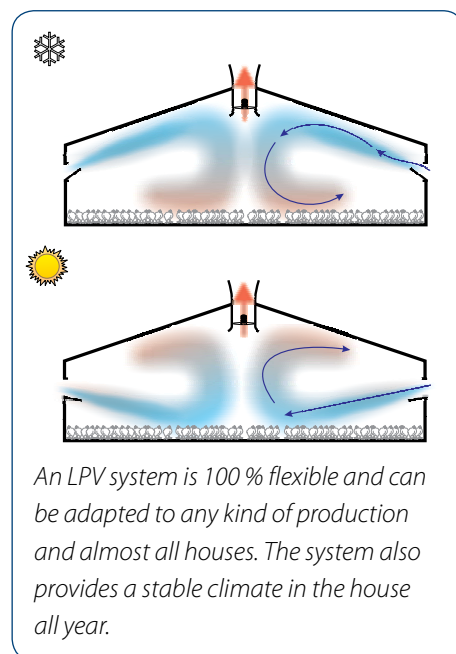
Air inlet - fresh air is directed into the house either through DA 1200/DA 1911 wall inlets or DA 1500 ceiling inlets. The DA 50 roof inlet is used on some markets.

Air outlet - through the DA 600/920 outlet and DB 1400 wall fans.

Climate control - DOL 534/539 ensures efficient and accurate climate control.

Interlinking - DA 75 winch motor complete with a mounting kit.

The system can be supplemented by **alarm and emergency opening, high-pressure cooling, heating** and **FarmOnline®**.



An LPV System Consists of...

Air Intake

Irrespective of size, layout and location of the house, SKOV has a solution for supplying the house with fresh air. The correct volume of air must enter at the right height, have the right direction and the right velocity.



Both DA 1200/1211/1911 and DA 1500 are provided with Advanced Inlet Control, which improves the effectiveness of air jets entering - especially during winter. For instance, only every fourth inlet opens when the air requirement is low. This means that the air is concentrated in a few but intense air jets, ensuring optimum conditions in the house. Advanced Inlet Control is a SKOV patent.

DA 1200/1211/1911 Wall Inlet

DA 1200/1211/1911 is a series of wall inlets for building into concrete walls or fixing to the inside of light-weight walls.

DA 1200/1211/1911 Characteristics

- An air direction plate directs the air jet in an optimum direction along the ceiling
- A shutter reinforced by a metal band ensures that the inlet shuts tightly
- Insulated shutter counteracts condensation
- Quick and easy to clean with a high-pressure cleaner
- Available with a light trap and fine mesh
- Possible to mount a light trap on DA 1211.

DA 1500 Ceiling Inlet

The DA 1500 ceiling inlet is a universal air inlet designed especially for installation in ceilings. It is designed to provide optimum air direction under all conditions.



DA 1500 Characteristics

- Possibility of high output at low air velocity
- Optimum utilisation of the high output capacity of the inlet, even at low and medium ventilation
- Simple to install high-pressure cooling
- Insulated shutter counteracts condensation
- Quick and easy to clean with a high-pressure cleaner

DA 50 Roof Inlet

Thanks to air split baffles, it is possible to combine a high output with low air velocity in the animal zone during cold periods, thus protecting the animals against draught. During the warm periods, when the cooling effect of the air velocity is required, the DA 50 roof inlet provides a high output with high air velocity at full opening.



DA 50 Characteristics

- A newly developed parallel motion system ensures that the distribution unit is opened uniformly all the way round the unit
- The 100 % stepless regulation of the gap ensures a correct air jet range
- The flexible duct series can be mounted in all types of houses.

Air Outlet

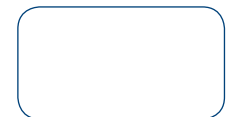
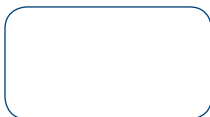
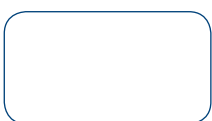
When establishing the air outlet, it is important to ensure a large air output at low power consumption. With this in mind, most SKOV ventilation systems are regulated according to the MultiStep® principle.

The climate computer controls one fan continuously from 0 to 100 %, while the rest of the fans in the house are activated as required. Each time an extra fan is activated, the continuously controlled fan restarts from zero per cent. Furthermore, MultiStep® ensures a more pressure stable and less wind sensitive ventilation system.

Compared to a conventional SKOV negative pressure system, MultiStep® results in annual power savings of up to 60 % in typical poultry houses. Furthermore, up to 20 % savings on heating can be achieved.

DA 600/920 Outlet

DA 600/920 is designed in such a way that the fan inside the outlet offers the highest possible air performance at the lowest possible power consumption. This is achieved without diminishing the pressure stability of the outlet. The DA 600/920 outlet can be adapted to the individual building as regards roof pitch, colour, side/ridge installation, attic, etc.





DA 600/920 Characteristics

- Aerodynamic design - high output at low power consumption
- Smooth and dirt-repellent surface, which stands high-pressure cleaning
- Impact-proof material
- Installation in ridge, side of roof or in the wall
- Environmental module which increases the air discharge height
- Recyclable plastic

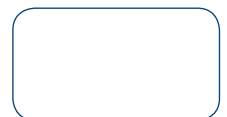
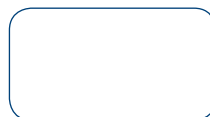
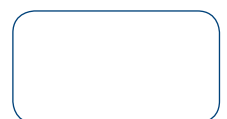
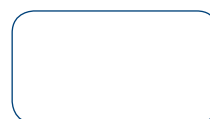
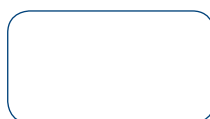
Wall Fans

The wall fans are perfect when extra capacity is needed in a conventional LPV system. When the requirement for air exceeds a certain level, one or more of the wall fans can be activated to supplement the exhaust units.



Wall Fan Characteristics

- The fan housing is made of galvanized steel plate
- Self-cleaning fan blades
- Tolerates high-pressure cleaning
- Louvre prevents unintended opening in windy weather
- Louvre shuts tight when the fan is not in operation, thus preventing false air intake
- The insulated cover prevents dust and moisture from entering when the fan is not in operation, e.g. during winter
- Light trap provides a high level of light dimming and a low pressure loss



An LPV System Consists of...

Climate Control

DOL 534/539 has a large graphic display which also serves as a touch screen for navigation in the menu options of the house computer. The menus are simple and logically designed and the system includes optional selection of personal shortcuts on the front page. Functions used daily are at the top level of the menu structure. DOL 534 is a climate computer while DOL 539 is a combined climate and production computer.

DOL 534/539 Climate Functions

DOL 534/539 handles an impressive number of functions which enable automation and control of the production, e.g.:

- Control of temperature, humidity and ventilation in relation to the age of the animals
- MultiStep®
- Control according to the "real air" principle
- Cycle ventilation at minimum ventilation
- High-pressure cooling
- Log files for alarm and operation

- Alarm for irregular water consumption
- Catching function
- Trend curves
- Frost protection of empty house
- Transfer of data to FarmOnline® via 100 Mbit LAN Ethernet.

Interlinking

Mounting sets with all the necessary parts, including washers, wires, screws, fittings, pulleys, etc., are supplied together with the necessary components, subsystems and systems. It is important to link all parts of the ventilation system correctly in order to ensure optimum system performance.

DA 75 Winch Motor

DA 75A is a series of very sturdy and compact winch motors, designed especially to control inlets in ventilation systems.

DA 75 Characteristics

- Can operate up to 128 wall inlets
- Change-over switch for manual control
- 24 V version can be used for emergency opening
- Mechanical override of emergency opening



Alarm System

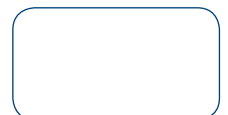
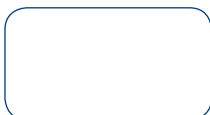
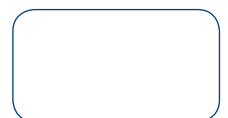
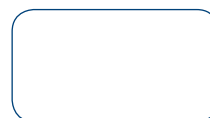
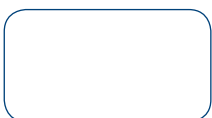
In mechanically ventilated houses, there is a risk that the animals will suffer harm if ventilation fails. An alarm system ensures that ventilation is quickly restored.

DOL 2200 Alarm System

DOL 2200 is a flexible and reliable fail-safe alarm system, which can be adjusted to the current production quickly and easily.

DOL 2200 Characteristics

- Alarm through a local alarm or telephone
- Built-in fixed-line or GSM module
- Can monitor the temperature in ten sections
- Extension module - ten extra alarm inputs
- Overview via graphic display
- Voice alarm - voice message
- Compensation for high outside temperature



Emergency Opening

When stocking density is high, an alarm call is seldom sufficient in case of a ventilation failure - simply because a ventilation failure requires immediate action. SKOV offers two kinds of emergency opening - temperature-controlled and ON/OFF.

DOL 278 Temperature-controlled Emergency Opening

Together with the SKOV climate computer, the DOL 278 is an independent emergency opening system for opening the ventilation system in case of a power or technical failure or an operational error, depending on the excess temperature. The limit for emergency opening is set using the adjustment knob. The emergency opening is also available in an ON/OFF version, which opens the ventilation system completely in case of a ventilation failure.

High-pressure Cooling

Broilers in modern production systems are sensitive to high temperatures. If the outside temperature exceeds 30 °C, it may have serious consequences for the productivity and the well-being of the birds (heat stress).

Even though the air supply is kept at a high level, high outside temperatures exceeding 30 °C will result in a lower daily gain and an increased mortality rate among the broilers. These negative effects on the productivity can be reduced considerably if the housing temperature can be reduced by 2-10 °C. This reduction can be obtained by using high-pressure cooling.

DA 2000 High-pressure Cooling

In high-pressure cooling systems, at-



omised water particles are added to the house air. The water particles evaporate in the heated house air, thus cooling the air. If high-pressure cooling is set correctly, the temperature can be reduced by 2-10 °C.

The nozzle is fitted in the patented **Flex-Clamp** nozzle clip and is therefore easy to attach to and remove from the pipe.

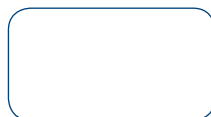
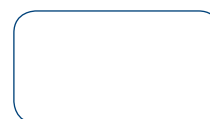
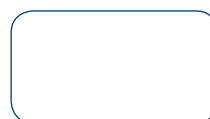
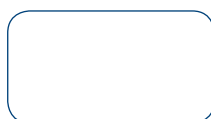
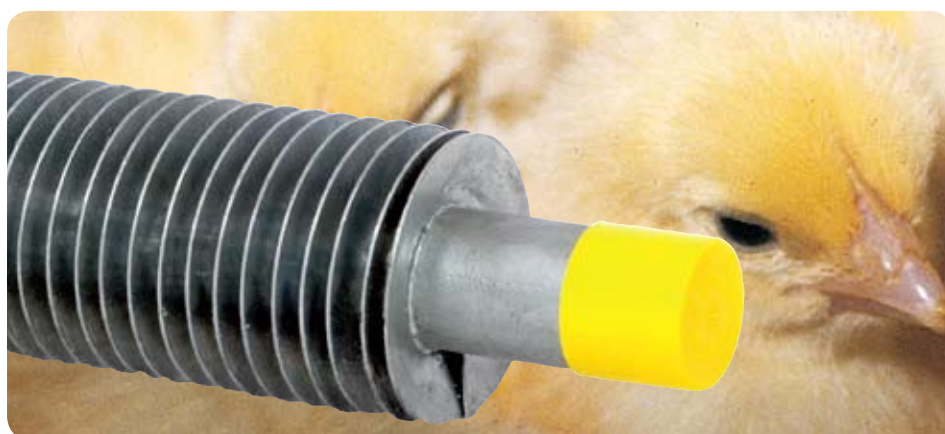
A high-pressure system can also be used for humidification as well as dust binding.

Heating

SKOV heating components are of a very high quality and they are well suited for a harsh house environment.

With Spiraflex finned tubes for heating of houses, you get an efficient, quickly responding heating system which provides perfect climatic conditions for the animals. Spiraflex finned tubes, which are made of steel (boiler tube quality), are all-welded ensuring a high, documented heat output.

In addition, we offer complete shunts for regulation of room and underfloor heating. The shunts ensure optimum regulation of temperatures in relation to power consumption under all conditions. This provides the best possible production environment in the house.



FarmOnline® Management

Access to Data at the Right Time and Place

FarmOnline® is a management tool developed by SKOV for use by still larger pig and poultry farms. The system ensures the producer the highest possible yield from his production facility. FarmOnline® provides central monitoring of several house computers and presents the collected data graphically.

Climate

Once the producer has become familiar with the various overview screens, the climate screen makes it possible to go deeper into the climatic control function. Selected key values for temperature, humidity, cooling, heating and ventilation are displayed using clear graphic elements in which settings can be changed immedi-

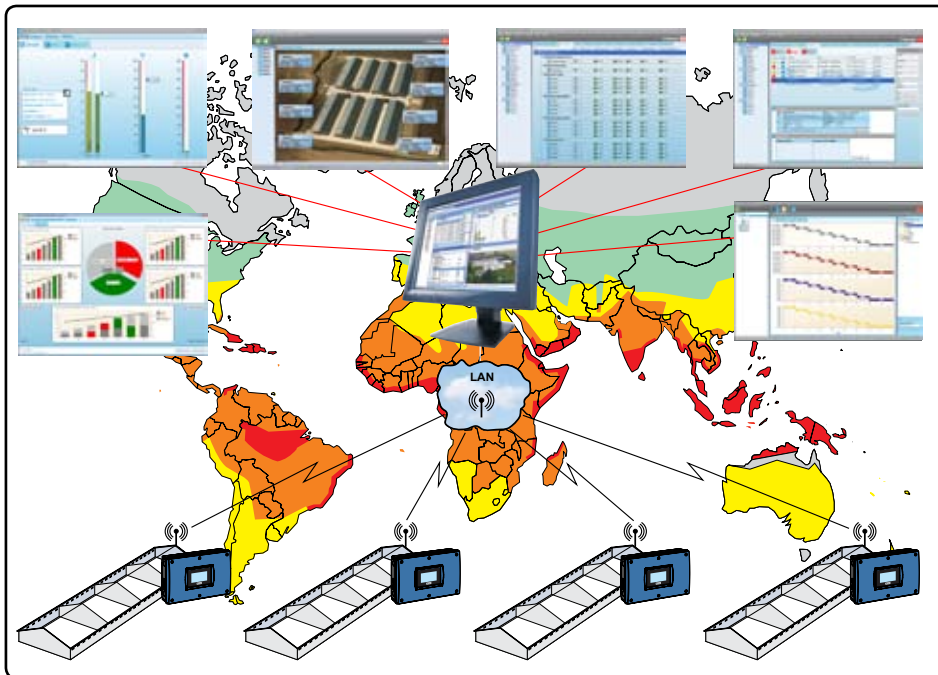
ately. The efficient Climate History function of FarmOnline® enables data storage for up to five years.

Broiler Production

FarmOnline® presents a lot of production data from the broiler production in clear graphic elements which provide the user with a quick overview and the possibility of making in-depth analyses. Displaying both current and historic data of mortality, weight and feed consumption, FarmOnline enables you to follow the development of the individual batches as well as to make comparisons across batches, references and previous batches.

FarmOnline® Characteristics

- Live connection to house computers - through 100 Mbit LAN Ethernet
- Remote control and monitoring of house computers
- Fast data overview – graphically or in a tabular form
- Detailed alarm log, history and analysis
- Assessment of productivity in relation to references
- Analysis of historic data
- Communication via FarmOnline® WebLink to older house computers
- Optimised user interface integrating use of icons and graphic elements
- Access through the Enterprise module to an unlimited number of farms all over the world



SKOV's new generation of house computers is LAN-based and has direct access to FarmOnline®

Management Module

The Farm Online® Management module helps the producer ensure that all house controllers at all farms run with the planned settings and strategies. Deviations are clearly shown, and the producer can therefore make sure that controllers are set as expected.



FarmOnline



act



innovate



cooperate



SKOV supplies climate and production management systems for animal production all over the world. Our solutions are technologically advanced, user-friendly and tailored to meet individual customer needs.

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