



Climate and Farm Management for pigs



Climate for growth

For more than 40 years, SKOV has developed and manufactured ventilation systems and farm management systems for pig and poultry producers the world over and we are known for being one of the world's best system suppliers. This obliges us to work constantly to develop and manufacture products which ensure optimum conditions in the livestock house for the benefit of animals and people.

Innovative quality supplier

A substantial share of SKOV's turnover is spent on product development – both

for the development of new products and the improvement of existing systems and components. We have 65 skilled employees who work in our development departments in Denmark and Malaysia. Our products are developed in close cooperation with our innovative customers and cooperation partners, who provide input and feedback so we can provide what the market is looking for. One of the reasons why SKOV's systems are known for their high reliability, a long service life and great efficiency is that great importance is attached to checking the products' quality before they reach

the customer. We test the quality of all our products under the climatic conditions in which they will operate and they are also certified in accordance with the standard DS/EN ISO9001:2008.

Global and close at hand

SKOV's head office is located in Denmark and the company is represented internationally with sales departments, dealers and service personnel. SKOV has a subsidiary in Bangkok, Thailand, which employs 20 people and which ensures our Asian customers have well-functioning ventilation systems and competent



service. SKOV's ventilation systems are installed all over the world and our systems can be adapted to all climatic conditions.

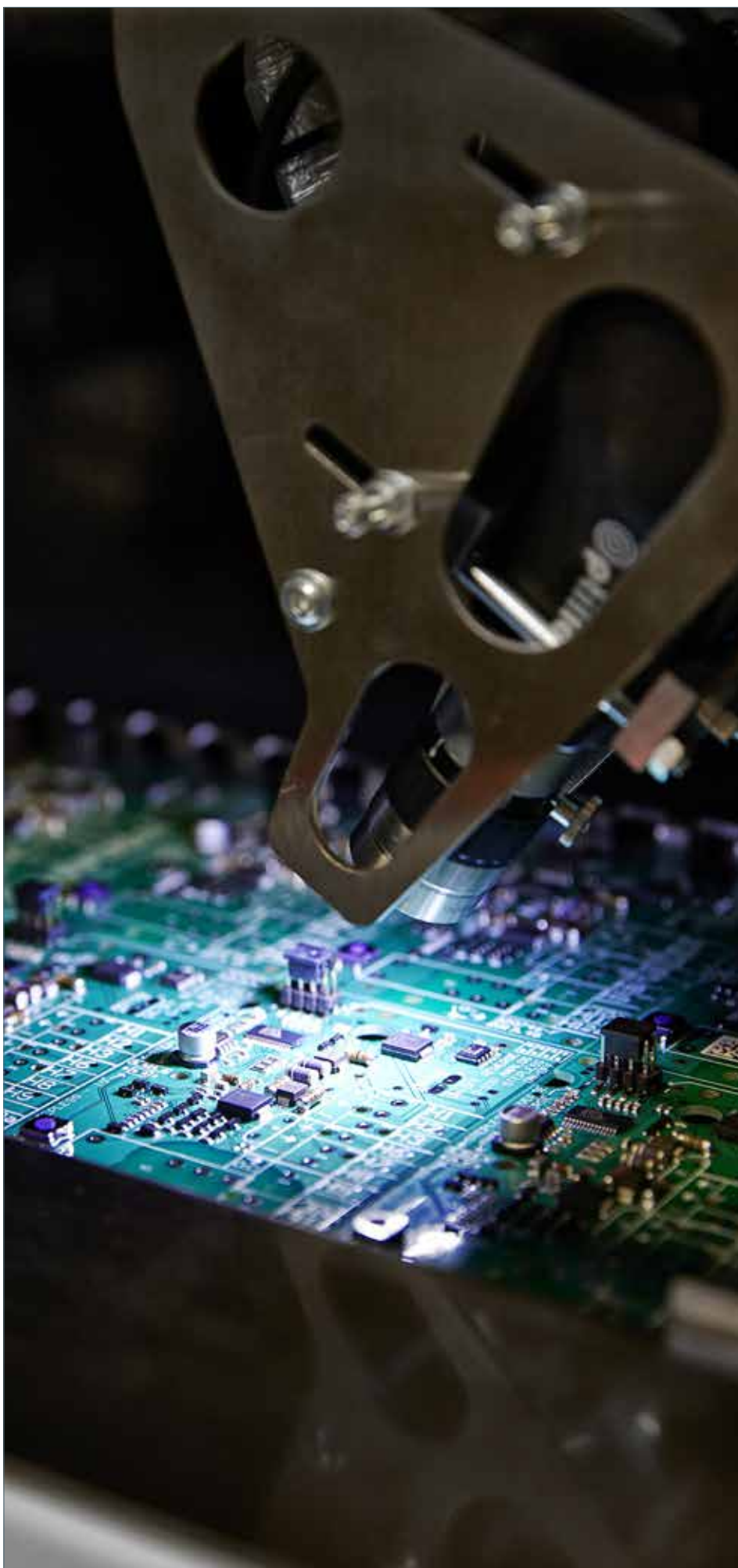
We sell both direct to the producer and also via our many collaboration partners. We have an extensive network of dealers so our customers can receive help and advice regardless of geographical location.

A ventilation system is an important investment and therefore we also aim to advise customers in their choice of ventilation system. We ensure we fit and commission the system and instruct the staff on the farm in the best use of the ventilation 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 substantially reduce power consumption for the benefit of the producer without compromising on the animals' conditions.

SKOV has the best and most efficient ventilation systems on the market. We have been in existence for more than 40 years and we are a financially-sound collaboration partner which in the future as well will be an important factor on the market.



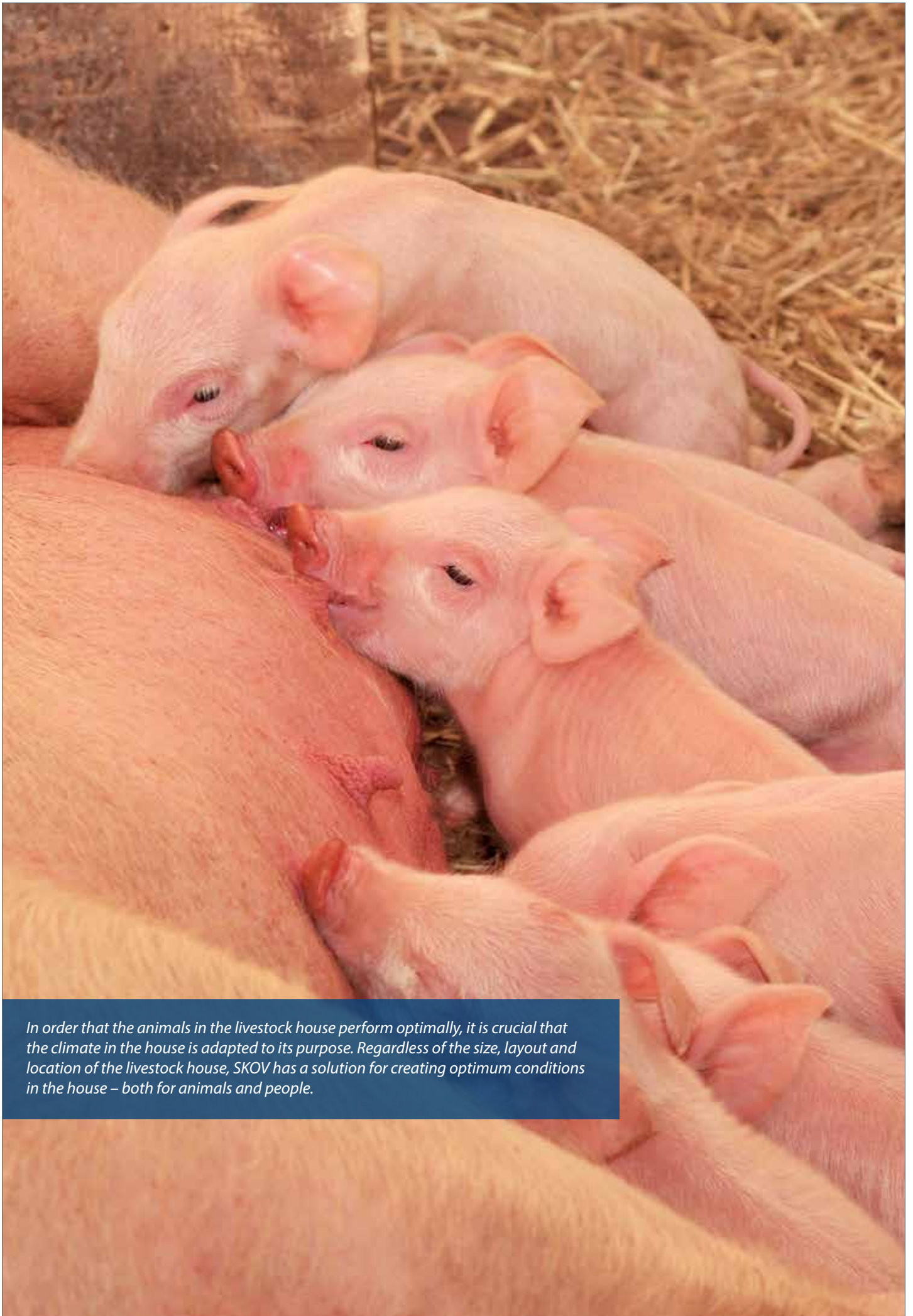


SKOV ventilation systems



"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"

- Jørgen Yde Jensen, Managing Director, SKOV A/S



In order that the animals in the livestock house perform optimally, it is crucial that the climate in the house is adapted to its purpose. Regardless of the size, layout and location of the livestock house, SKOV has a solution for creating optimum conditions in the house – both for animals and people.

Why is ventilation important?

In modern agriculture, it is necessary to constantly optimise and render the production more efficient to be able to deliver the best results. In order for the animals to perform optimally, there are some requirements which your surrounding environment must meet. 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, regardless of what climatic conditions the livestock house is located in.

During cold periods, ventilation is used to create a healthy climate in the house 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 it is at the correct temperature in the animal zone and the animals do not experience draught nuisances. In warm periods the

ventilation system removes the animals' excess heat and it sucks in air to create a cooling effect by ensuring airflows around the animals.

A producer who ensures his livestock enjoys the correct climate minimises the risk of diseases and will have livestock with stable, high daily gain. Likewise, the correct climate will ensure the correct and ideal utilisation 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 animals and people. SKOV's professional technicians design the ventilation system so that it is adapted to the individual livestock house which at the same time ensures the lowest energy consumption as possible.

Basic elements of the ventilation system

To create the perfect climate in the livestock house, it is necessary to be able

to supply fresh air, to extract the air in the house and to create the optimum temperatures based on the breed and age of the animals. The animals must never experience draught 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. In order to control the air correctly, a climate computer is required which ensures that the air inlets and air outlets are set correctly in relation to one another. In order that the climate computer and air inlets and air outlets operate perfectly, it is crucial that the connection 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

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

The components of the LPV system

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

- air intake
- air outlet
- controller
- interlinking

Air intake

In an LPV system, the fresh air is supplied with wall inlets, type DA 1200/1211/1911 or ceiling inlet DA1540. In cold periods, the fresh air is directed towards the ceiling and mixed with the air in the livestock house before it reaches the animal zone.

In warm periods, the air is taken in the same way, but is sucked into the livestock house at a higher speed. This creates the air circulation around the animals and it stays cool without the increased air circulation being perceived as a draught.

Air outlet

The air outlet in a SKOV LPV system is handled by DA 600 or DA 920 exhaust units, which have both been developed so they have a high output with low power consumption. The chimney exhaust units are aerodynamic just as the exhaust unit and fan are optimised as a unit.

The exhaust units are adjusted in accordance with SKOV's adjustment principles MultiStep® and Dynamic MultiStep®, which substantially reduce the power consumption.

Climate control

The LPV system is controlled by SKOV's DOL 234F house computer. The computer contains all necessary functions and ensures efficient and precise control of the climate in the livestock house. DOL 234F is modular and easy to operate.

Interlinking

The open-close function of the system is handled by the winch motor DA 75, which is supplied with a complete mounting set. The effectiveness and precision of the entire system depends on a robust and reliable interlinking.



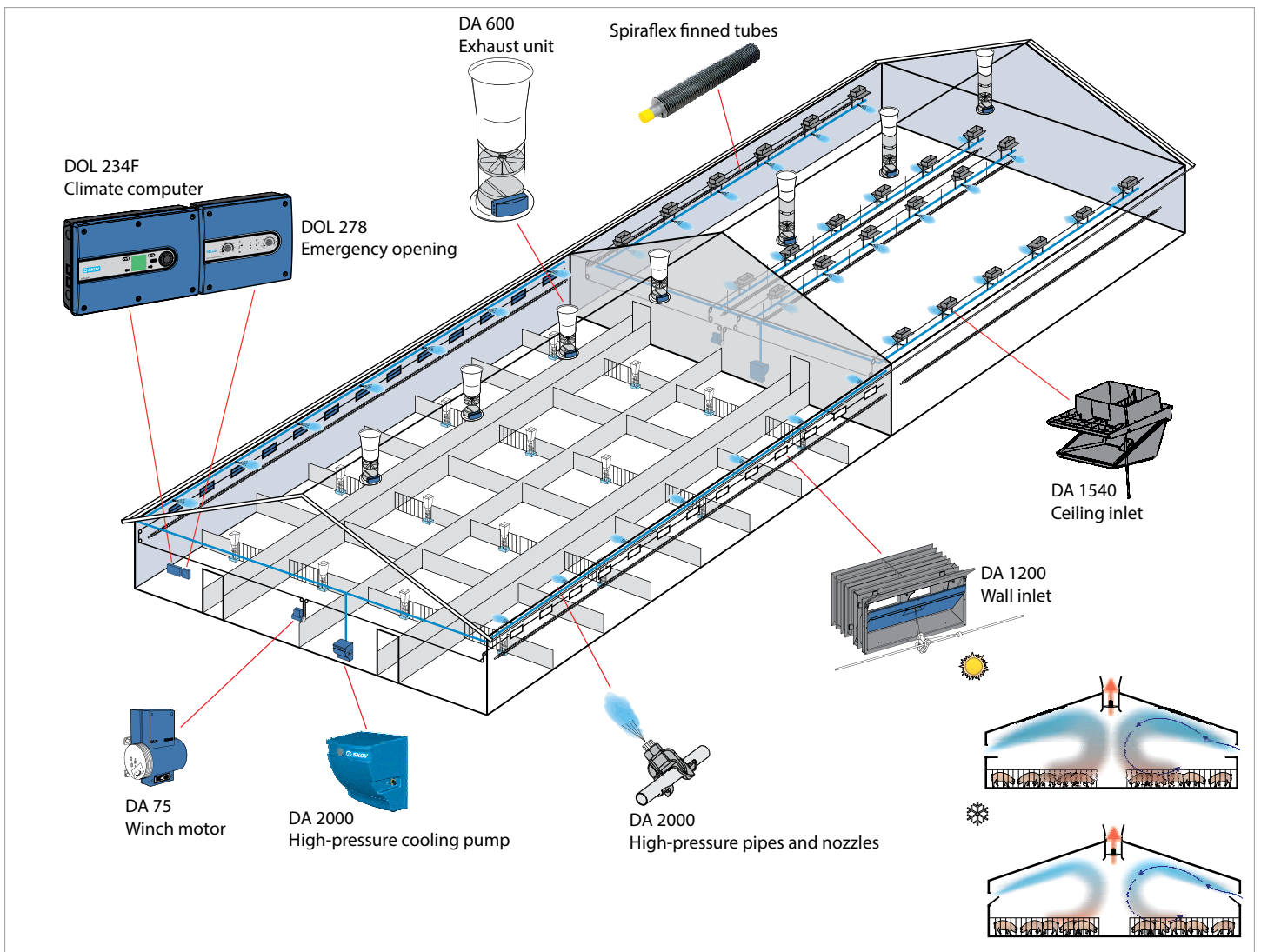
The LPV system can be supplemented with the following:

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

SKOV's LPV system

- Stable climate all the year round
- Optimum control of air direction, quantity and air velocity
- Reliable climate controller which is easy to operate
- Low power consumption
- Integrated emergency ventilation





Combi-Diffuse ventilation

In livestock buildings in the temperate zone, ventilation can be provided with Combi-Diffuse ventilation which is a negative pressure system for pig production.

The components of the Combi-Diffuse system

As a rule, a Combi-Diffuse system consists of the following four elements:

- air intake
- air outlet
- controller
- interlinking

Air intake

In a Combi-Diffuse system, the air intake is conducted through the ceiling, which is made of special ceiling plates which have an open surface structure. The open surface structure ensures a low speed when the air enters the livestock house, and thereby minimises the risk of draught nuisances in the animals' zone in cold periods.

To ensure that the pigs are cooled sufficiently during hot periods, the air intake

is supplemented with DA 1800 ceiling inlet. Other types of inlet can be used as an alternative.

Air outlet

The air outlet in a Combi-Diffuse system is handled by DA 600 or DA 920 exhaust units, which have both been developed so they have a high output with low power consumption. The exhaust units are aerodynamic just as the exhaust unit and fan are optimised as a unit. The exhaust units are adjusted in accordance with SKOV's adjustment principles MultiStep® and Dynamic MultiStep®, which substantially reduce the power consumption.

Climate control

SKOV's DOL 234F climate computer controls the temperature, humidity and ventilation in relation to the pigs in the livestock house. The computer is modular and can be adapted to the individual production.

Interlinking

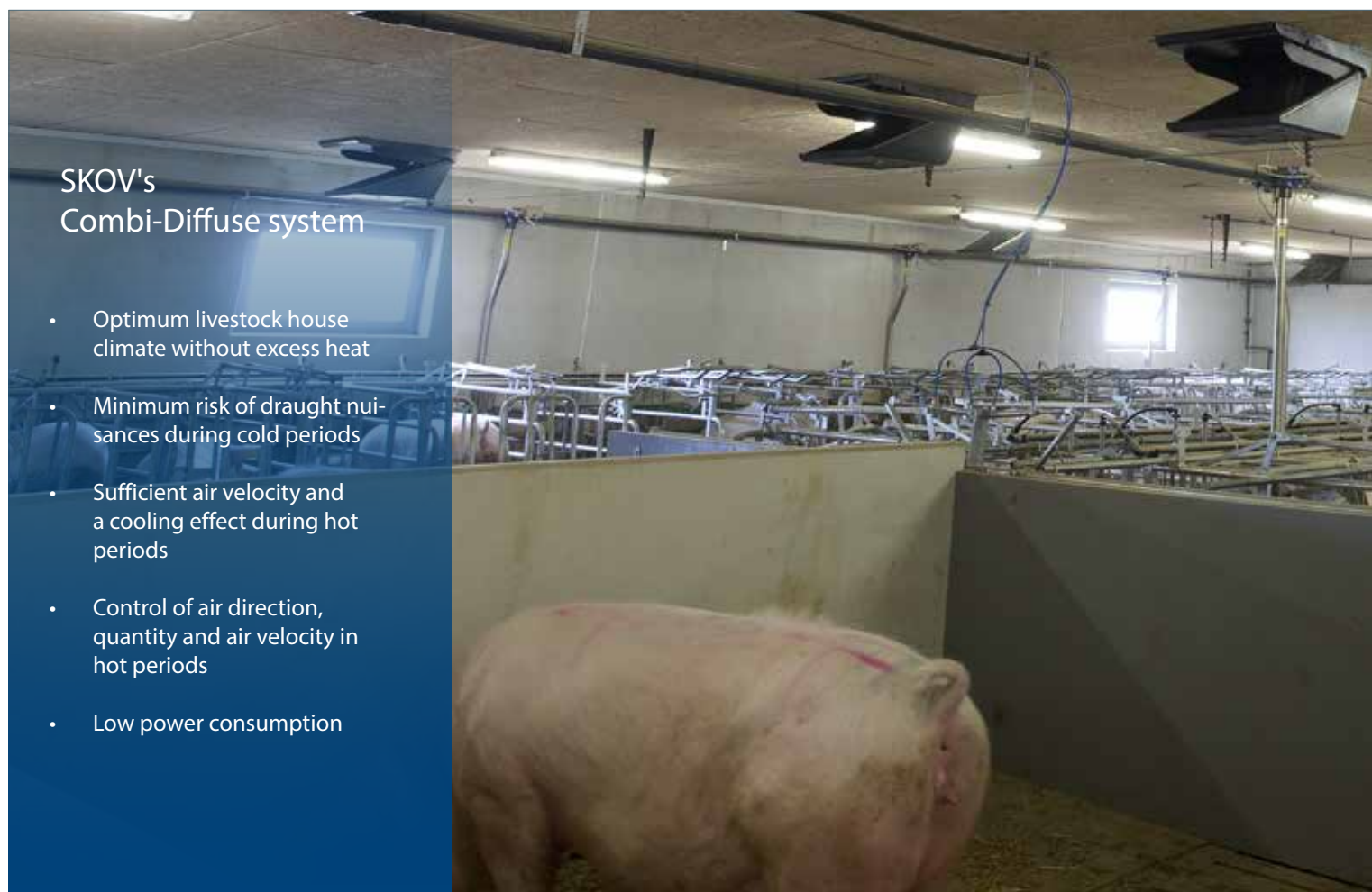
The open-close function of the system is handled by the winch motor DA 75,



which is supplied with a complete mounting set. The effectiveness and precision of the entire system depends on a robust and reliable interlinking.

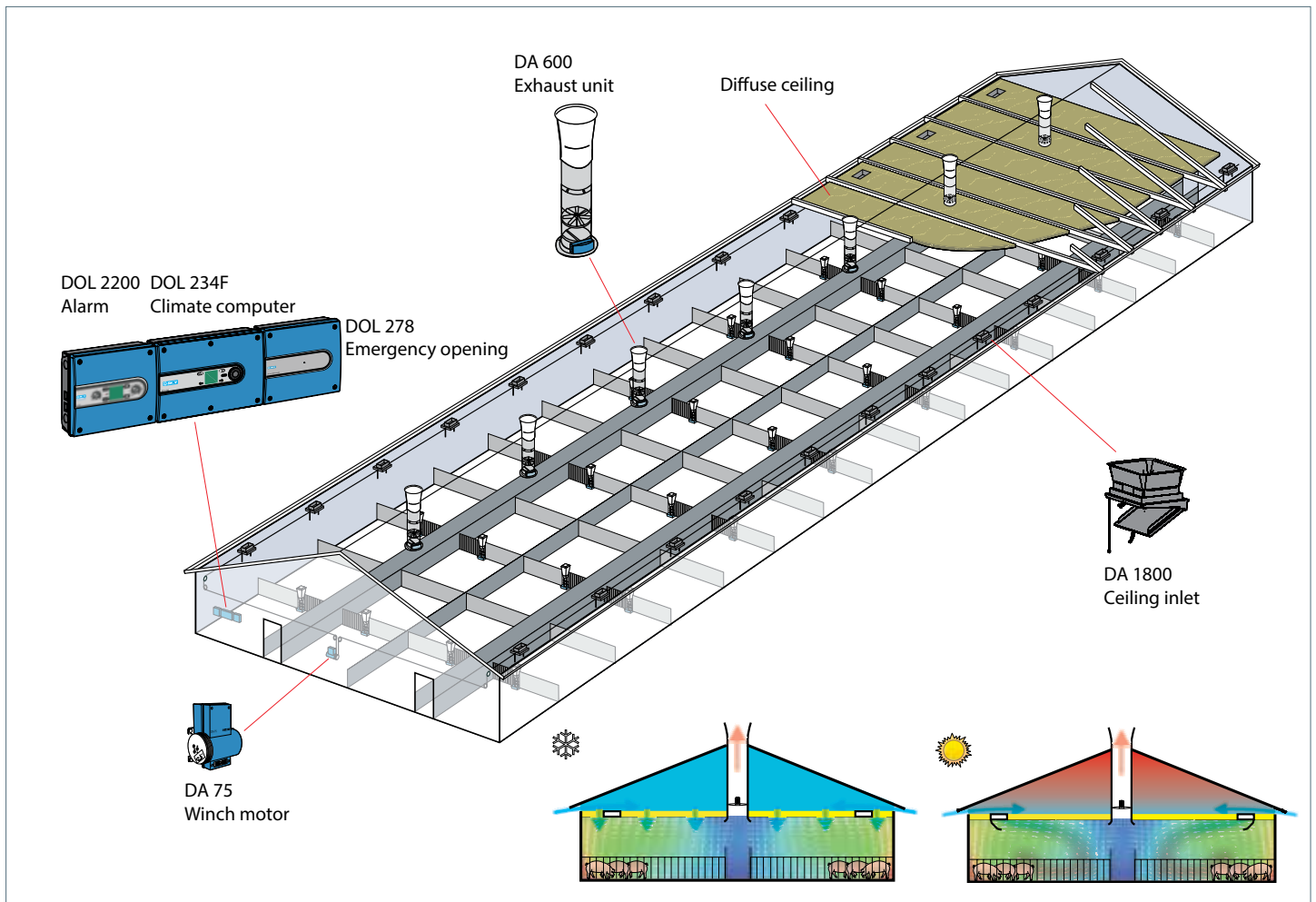
The Combi-Diffuse system can be supplemented with the following:

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



SKOV's Combi-Diffuse system

- Optimum livestock house climate without excess heat
- Minimum risk of draught nuisances during cold periods
- Sufficient air velocity and a cooling effect during hot periods
- Control of air direction, quantity and air velocity in hot periods
- Low power consumption



Equal pressure ventilation

Equal pressure ventilation can be used for all forms of pig production in the temperate regions of the world and is especially well-suited for monoblock livestock houses or areas where the livestock house is exposed to strong winds. Fresh air enters the livestock house through roof inlets, and air is let out through exhaust units in the roof.

Fans in both the air intake and outlet ensure circulation of air into and out of the livestock house. The result is neutral pressure (equal pressure) so that the livestock house is ventilated correctly.

The components of equal pressure system

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

- air intake
- air outlet
- controller
- Interlinking

Air intake

Fresh air is taken in via the DA 40A air supply unit, which allows perfect

distribution of the air in the livestock house thanks to individually adjustable nozzles.

Air outlet

The air outlet in an equal pressure system is handled by DA 600 or DA 920 exhaust units, which have both been developed so they have a high output with low power consumption. The exhaust units are aerodynamic, likewise the exhaust unit and fan are optimised as a unit.

The exhaust units are adjusted in accordance with SKOV's adjustment principles MultiStep® and Dynamic MultiStep®, which substantially reduce the power consumption.

Climate control

SKOV's DOL 234F climate computer controls the temperature, humidity and ventilation in relation to the livestock in the house. The computer is modular and can be adapted to the individual production.

Interlinking

The open-close function of the system is

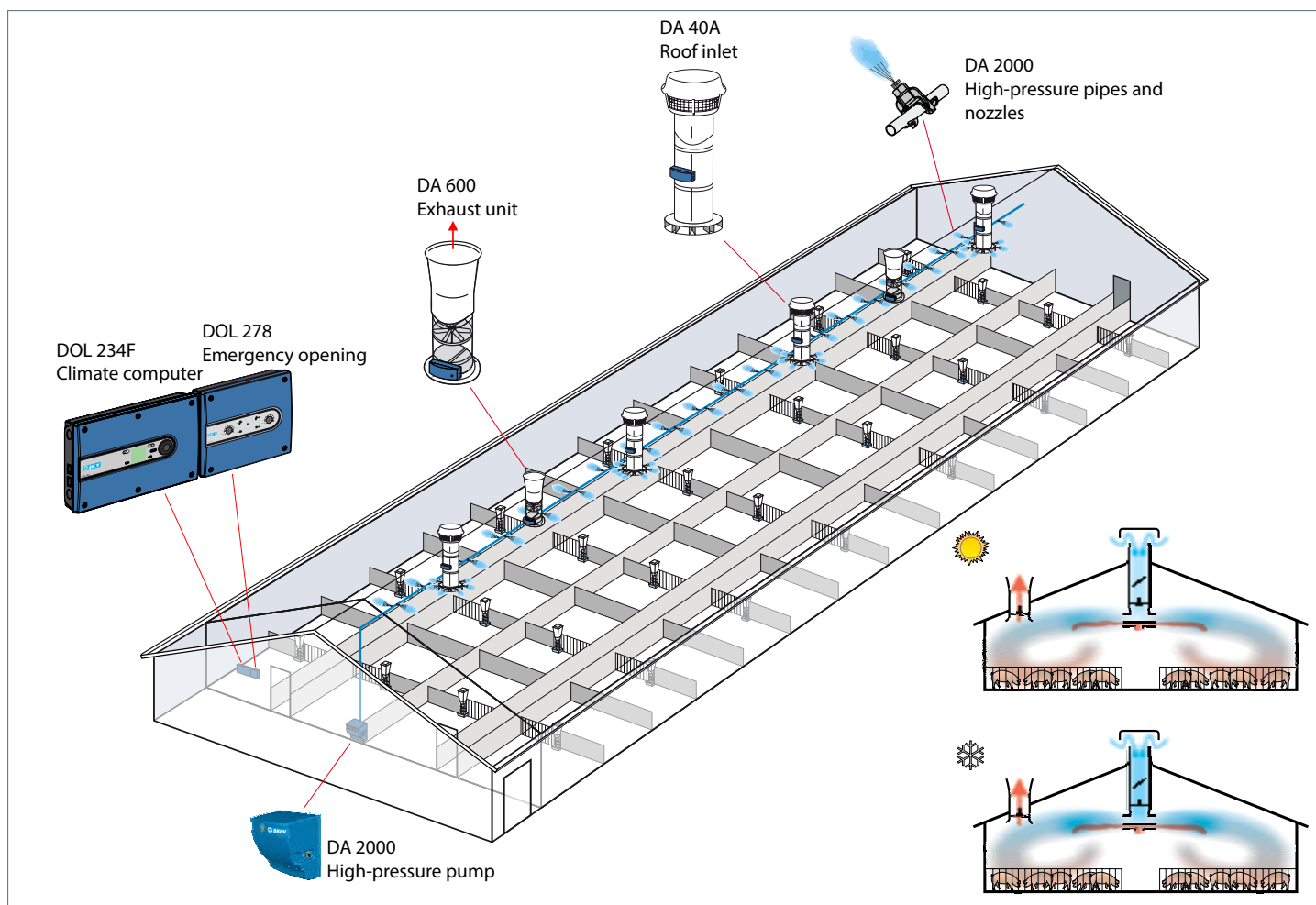


handled by the winch motor DA 75, which is supplied with a complete mounting set. The effectiveness and precision of the entire system depends on a robust and reliable interlinking.

The equal pressure system can be supplemented with the following:

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





SKOV's equal pressure system

- Perfect air distribution in the livestock house
- Constant, neutral pressure in the livestock house, which ensures uniform ventilation
- Sufficient air velocity and a cooling effect during hot periods
- Powerful and robust air supply unit

Combi-Tunnel ventilation

SKOV's Combi-Tunnel system is a negative pressure system which is used in pig production in those tropical and subtropical areas of the world where there are considerable temperature fluctuations on both a daily and seasonal basis.

The components of the Combi-Tunnel system

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

- air intake
- air outlet
- controller
- interlinking

Air intake

In cold periods, the fresh air is supplied with the wall inlets DA1200/1211/1911, 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. In warm periods, the air is sucked into the livestock house using a tunnel door at one end of the house. The tunnel doors come in two variations: Rack & Pinion and Tunnel Door Light. Pads or high-pressure cool-

ing are used for air cooling.

Air outlet

In cold periods, the air in the Combi-Tunnel system is extracted by means of DA 600 or DA 920 exhaust units, which have both been developed so they have a high output with low power consumption. The exhaust units are aerodynamic just as the exhaust unit and fan are optimised 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 in accordance with SKOV's regulation principles MultiStep® and Dynamic MultiStep®, which substantially reduce the power consumption. With high outside temperatures, the air is extracted by large gable fans which are placed opposite the tunnel opening which is lined with cooling pads. This creates a flow of cool air (chill effect) along the livestock house, which can lower the temperature in the house by up to 25°C.

Climate control

The Combi-Tunnel system is controlled



by SKOV's DOL 534 house computer. The computer contains a range of functions and ensures efficient and precise control of the climate in the livestock house. The house computer is modular and easy to operate.

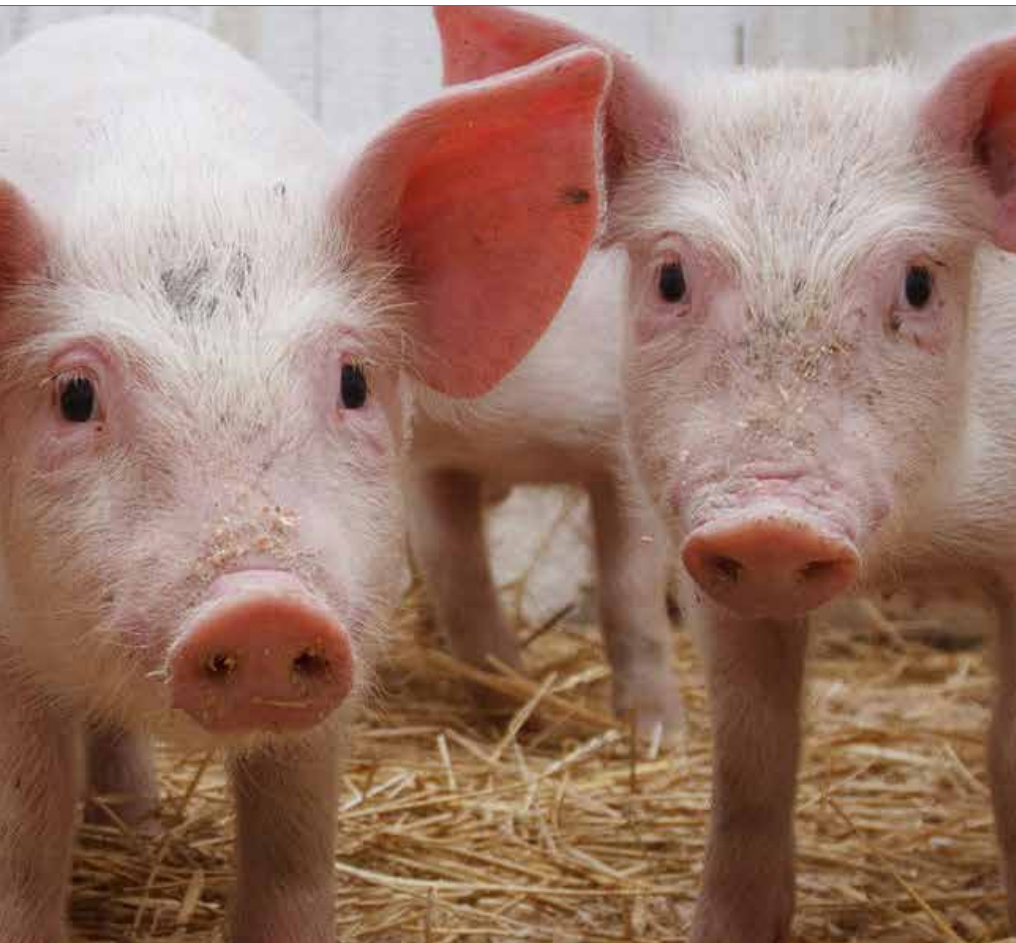
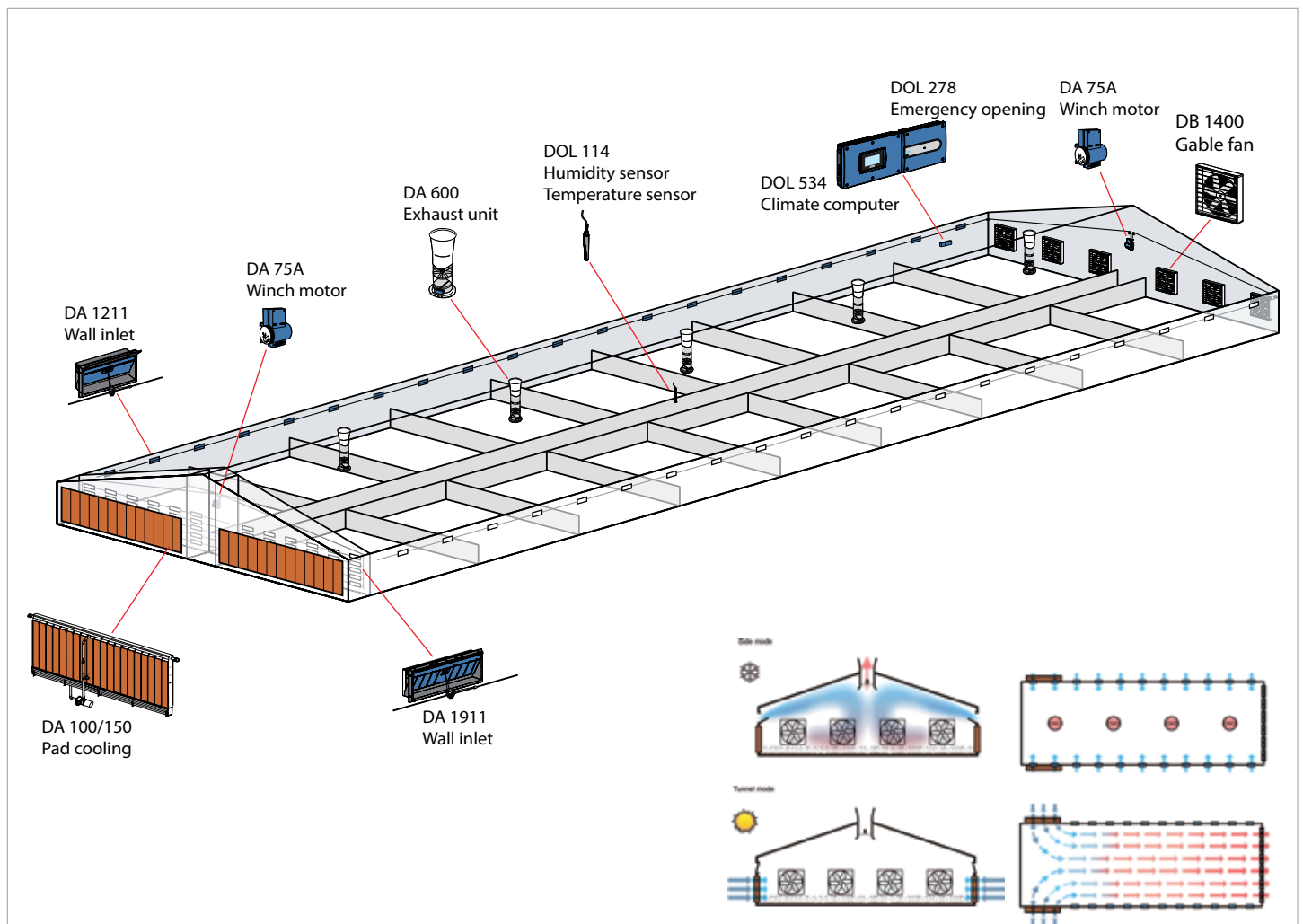
Interlinking

The open-close function of the system is handled by the winch motor DA 75, which is supplied with a complete mounting set. The effectiveness and precision of the entire system depends on a robust and reliable interlinking.

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

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





SKOV's Combi-Tunnel system

- Stable climate all the year round
- Optimum control of air direction, quantity and air velocity
- Secure climate control which is easy to operate
- Low power consumption
- Integrated emergency ventilation



Welfare and productivity with SKOV's cooling systems

High-pressure cooling

Pigs in modern production facilities are sensitive to high temperatures, which is why it is essential to be able to cool them during hot periods. Even in hot periods, when there is already high air output in the livestock house, high-pressure cooling is still relevant. Practice shows that with outside temperatures exceeding 30°C, there will be substantially lower daily gain and increased mortality in pigs. Pigs start to exercise a change in defecation behaviour when the temperature in the livestock house reaches 24-26°C. They start wallowing on the solid floor. If the temperature in the livestock house exceeds 25-27°C, there is a tendency for the litter sizes to be smaller and poorer sperm quality among boars.

Atomised water particles are therefore added to the housing air by means of high-pressure cooling. The water particles evaporate in the heated housing air, thus cooling the air. If high-pressure cooling is set correctly, the temperature can be reduced by up to 10°C.

Quality and flexibility

Great importance was attached to quality and flexibility when SKOV high-pressure cooling was being developed. The quality is guaranteed by using very reliable components with a long service life. Built with standard components, this system is flexible and easy to adapt to a specific livestock house.

Pump unit - complete with filters

The pump forms the basis for an efficient cooling system. The pump unit is supplied in three sizes (from 5 to 22 litres per minute) ready to be connected to electricity and water. Efficient filters guarantee a reliable system with a long service life. The pump is equipped with filters as standard - these remove 95-98% of the particles from the water (1 micron). The pump can also be equipped with extra phosphate filters and electronic calcium decomposer for optimum reduction of calcium and minerals in the water.

Piping system

Only stainless steel and acid-proof pipes with a high degree of durability and a long service life can be used. Holes for nozzles can be made with special tongs after the pipe assembly. The nozzles in the patented nozzle support, FlexClamp, can thus be placed where you like, which gives the option of optimum location over the air inlet.

Nozzles

The patented nozzles are equipped with a filter in front of each nozzle head, which reduces the risk of limescale. The nozzle heads can also be supplied with an anti-limescale fitting, which further reduces problems with limescale in the nozzle head. All nozzles are fitted with an antidrip valve.

More than just cooling

A high-pressure system has many functions in addition to cooling the housing air.

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.

Humidification, dust binding and improved working environment

The high-pressure system can also be used for both humidification and dust binding, where an adjustment of these factors will improve the environment in the livestock house.

The working environment in the livestock house can also be improved using high-pressure cooling. SKOV's climate control contains a working environment function. The function increases both ventilation and the activity of high-pressure cooling at those times when there are staff in the livestock house, so that dust and gases in the housing air are reduced at the same time as the temperature is lowered.



Lower the temperature with cooling pads

Pad cooling is used in connection with SKOV Combi-Tunnel and Tunnel systems. Cooling is performed by the air intake being made 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

In contrast to other systems, there is no need for a separate water tank in connection with DA 150B pad cooling. The tank is built into the lower gutter and is thus an integrated part of the gutter system.

The tube which irrigates 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 = good livestock house climate

A good livestock house climate is important for the animals' well-being, health and productivity. Heating is part of the total climate solution and in line with cooling and ventilation. The climate in the livestock house, where the temperature and relative air humidity are the most important factors, is essential for feed conversion, daily gain, stress, infection risk, etc. It is necessary to ventilate and supply heat to the livestock house in order to control the climate, including temperature, humidity and CO₂. For heating the livestock house it is important to establish an effective and quickly responding heating system which ensures the animals have an optimum climate in the livestock house.

Floor heating and room heating

Floor heating should not be used as room heating as it may give rise to wallowing in the pens. The room heating must be located between the air inlet and the animals. The most efficient way to supply heat to the livestock house is by means of Spiraflex finned tubes that have a large surface area, use little water and are effectively cooled. Room heating is controlled by the SKOV climate computer which also controls the ventilation system and the regulation of both systems is based on the same climate

sensor.

It is not recommended that floor heating is used as room heating, e.g. by establishing floor heating with a separate controller under the covering and another controller for the heating of the floor area between the covering and the slatted floor. The pigs will not lie in this area and it gives rise to wallowing.

Clean and dry pens

The livestock house must not just be clean. A dry section is just as important before the weaners are stocked in the newly cleaned livestock house. The most important reason for applying heating in the pig house is that a thorough drying of the house is rendered possible. It is thus important that there is sufficient heating capacity for drying of the livestock house. Of course, it is best to also supply heat for a period of time after stocking. This applies to both weaners and pigs of 30kg.

The first few days

In Denmark, we have the greatest temperature fluctuations between October and May and this is when there is the greatest heat requirement. Therefore, the floor heating should be running at maximum capacity when the weaners are stocked. After stocking, especially

during the first few days, it is important to observe the pigs, their lying behaviour and their state of health.

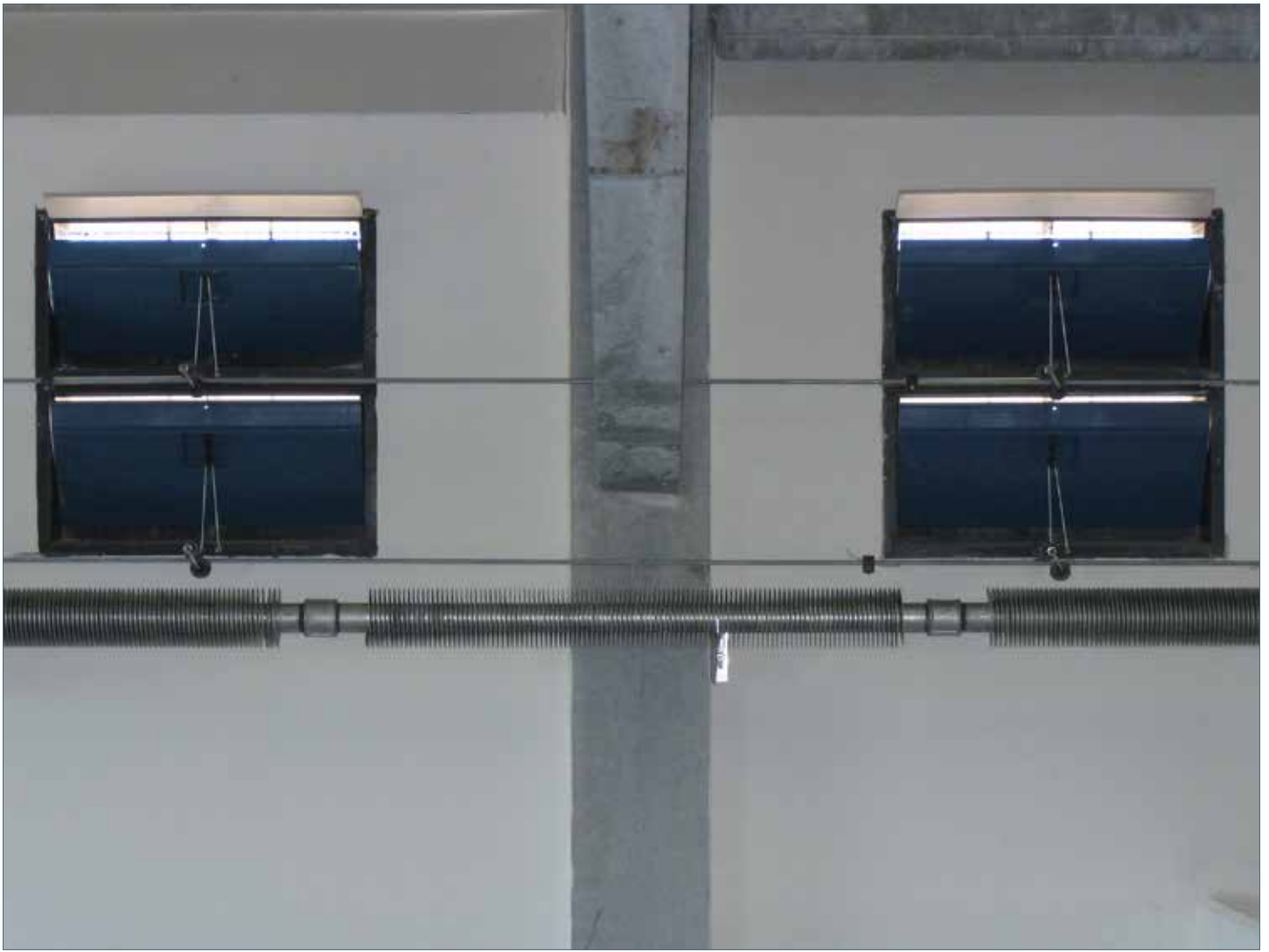
When the floor heating should be switched off varies a lot from house to house. Most often, the floor heating is switched off after 12-14 days but this should be done after careful consideration. The floor heating is manually adjustable but it can also work automatically by means of SKOV climate computers. A number of days is entered and the temperature course is factored in so the temperature is continuously falling until the heating is switched off.

Porkers and gestation sections

It may be a good idea to include heating in finisher sections so that the good climate can be retained during the growth period of the pigs. Heating was not previously integrated in gestation sections but in connection with group housing and lower stocking density, we now recommend including heating in these sections. In farrowing and weaner



SKOV's efficient and quickly responding heating system ensures an optimum climate in the livestock house.



sections, it is often floor heating which is used and it is obvious that heating should be integrated in quarantine and recovery sections so that optimum regulation of the climate is possible.

SKOV heating system

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

With SKOV's finned tubes for heating livestock houses, you get an efficient, quickly responding heating system which provides perfect climatic conditions for the animals. Finned tubes - made of steel (boiler tube quality) - are all-welded and thus ensure a documented high heat output. In addition, SKOV offers complete shunts for regulating room and floor heating, respectively. The shunts ensure optimum regulation of temperatures in relation to energy consumption under all conditions, thus creating the best possible production environment in the livestock house.






Young Female Unit



Weaner Unit

SKOV Farm Management



 **Farrowing House**

 **Service/Gestation Unit**



Using icons and graphic elements to a great extent, FarmOnline® provides the user with a quick overview of the current display and navigation to the essential data in a given situation.

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

FarmOnline® can be used together with house computers in an existing network and SKOV's new generation of house computers features integrated LAN Ethernet. So there is no need to collect data between house computers and PCs, which results in greater data validity, and the pig producer has more time to look after the animals. It also means that the producer can respond to alarms immediately, for example by changing the setting in the house computer via FarmOnline®. In case of an alarm, the pig producer can intervene quickly and in a qualified way. Immediate action will ensure the welfare of the animals as well as reduce or even prevent financial losses all together.

User-friendly and intuitive

Today's house controls 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® is able to import the producer's own photos and drawings of the farm and sections, ensuring high graphic

recognisability in the program. So-called hotspots can be added to the outline views to show the key values for inside temperatures, alarm status etc. Adding graphic features for all levels (farm, livestock house, section) will facilitate navigation in the program, ensuring the pig producer can quickly monitor conditions and obtain an accurate localisation of deviations.

The FarmOnline® system provides the option of obtaining a list in tabular form of key values and the alarm and livestock house status for the entire farm and for the individual sections. The producer chooses which values shall be included in the overview function.

Extract data easily

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

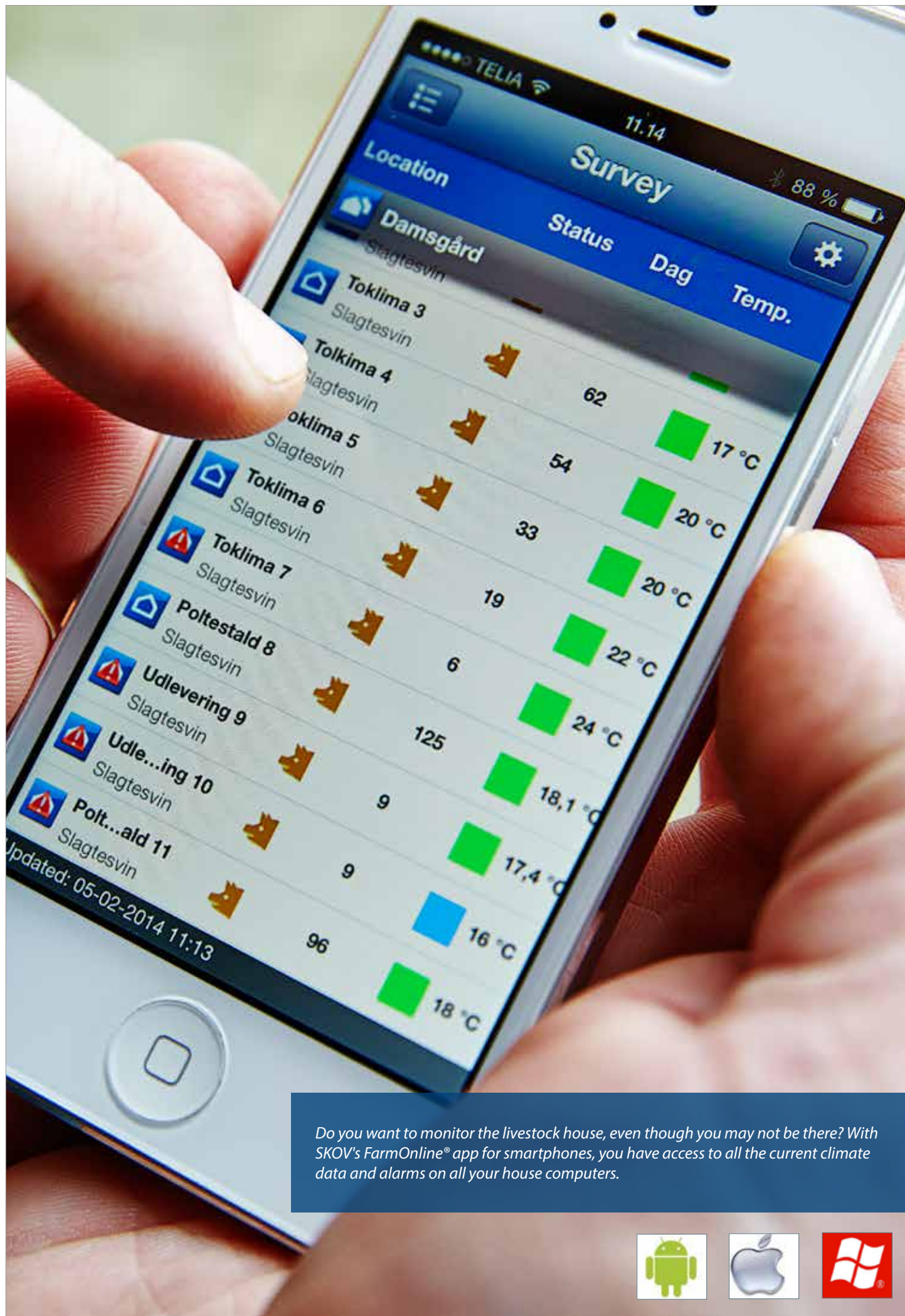
The efficient climate history function of FarmOnline® enables data storage for up to five years. Several search criteria enable requested data to be extracted and indicated in the form of graphs.

FarmWatch gives you peace of mind

FarmWatch is used for the production of finishers and makes it possible to monitor water consumption continually in finisher houses. FarmWatch records the water consumption every hour, and deviations from normal consumption are notified by a text message and an alarm displayed on the climate computer. Immediate action means that the animals can be treated quicker and this often means that diseases can be identified and treated with less effort.

Keep an eye on the livestock house from your smartphone

Internet access is all you require to access all your house computers with SKOV's FarmOnline® app for smartphones – no matter where in the world the computers are. This enables the producer to see climate data and alarm, thereby minimising the risk of losses in case of a system breakdown. SKOV's mobile app can be downloaded free of charge to Android, iPhone and Windows Phone.

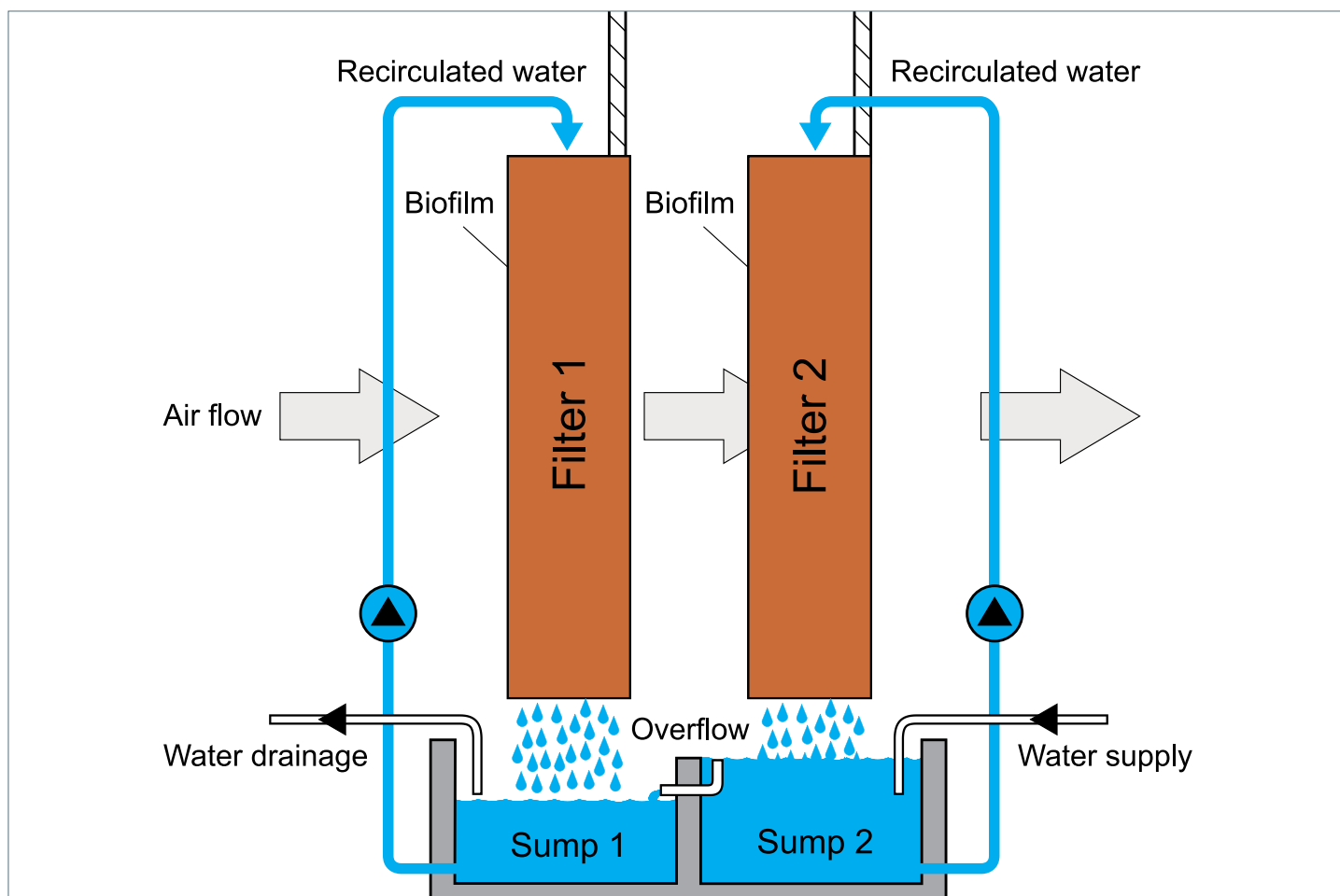


Do you want to monitor the livestock house, even though you may not be there? With SKOV's FarmOnline® app for smartphones, you have access to all the current climate data and alarms on all your house computers.





Farm AirClean



Farm AirClean reduces odour nuisance effectively and the system cleans the air based on biological principles.

Farm AirClean is a system for biological air cleaning. The system is based solely on biological air cleaning principles. These biological principles are effective in reducing odours, ammonia and dust.

Convincing test results

Thorough testing of the system has shown that the ammonia content of the outgoing air is reduced to 1 ppm and that the pig smell is eliminated. Furthermore, the dust content is reduced by up to 90%.

Modular or by the metre

The Farm AirClean systems can be divided into two groups: BIO Module and BIO Flex. BIO Module is a modular system whereas BIO Flex was developed based on the 'air cleaning by the metre' principle. All units are fitted with an automatic filter washer.





SKOV components



Air intake



1



2



3



1

Air outlet



1



2

Product characteristics

1 DA 1200/1211/1911 Wall inlet

- For building into concrete walls or fixing in walls of light construction
- An air direction baffle directs the air jet in an optimum direction towards the ceiling
- A baffle plate neutralises 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

2 DA 1540 Ceiling Inlet

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

3 DA 40A Roof inlet

- Easy to assemble and reliable
- The best possible air distribution
- Not sensitive to wind action
- Equipped with 12 individually adjustable nozzles
- Perfect air distribution
- Reduced risk of draught nuisances
- Insulated materials which counteract condensation

1 Rack & Pinion

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

1 DA 600/920 Exhaust unit

- Aerodynamic design
- Dynamic Air – improved minimum ventilation and optimised 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, colour, 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 Wall fans

- High performance level for the investment
- Fan housing, fan blade and louvre gate made of galvanised steel
- Quality control of each motor
- Centrifugal clutch for controlled open and close function on the louvre gate
- Option of attaching light traps
- Easy to clean
- Louvre gate closes tightly when the fan is not running

Interlinking



1



2

Controller



1



2



3

Alarm & emergency opening



1



2

Product characteristics

1 DA 75 Winch motor

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

2 Mounting set

- Complete mounting kit (washers, wires, screws, fittings, pulleys, etc.)
- Correct fitting ensures a reliable and optimal ventilation system

1 DOL 234F Climate computer

- Control of temperature, humidity and ventilation in relation to the age of the pigs
- MultiStep® and Dynamic MultiStep®
- Underfloor extraction and floor heating
- High-pressure cooling and spraying
- Cycle ventilation at minimum ventilation
- Log files for alarm and operation
- Alarm for irregular water consumption
- Direct transfer of data to FarmOnline® via 100 Mbit LAN Ethernet

2 DOL 534 Climate computer

- Used in Combi-Tunnel systems
- Control of temperature, humidity and ventilation in relation to the age of the pigs
- MultiStep® and Dynamic MultiStep®
- Underfloor extraction and floor heating
- High-pressure cooling and spraying
- Cycle ventilation at minimum ventilation
- Log files for alarms and operation
- Alarm for irregular water consumption
- Direct transfer of data to FarmOnline® via 100 Mbit LAN Ethernet

3 Humidity sensor

- Used for atmospheric measurements
- Robust
- Easy to install and use
- The range includes sensors which can measure:
 - temperature
 - air humidity
- All climate sensors can withstand the aggressive livestock house environment

1 DOL 2200 Alarm

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

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 computer, thus doubling the level of safety for most possibilities of error
- Also available as an ON/OFF emergency opening unit

Heating



1



2

Cooling



1



2



Product characteristics

1 Spiraflex finned tubes

- Regulation of temperature in a few hours
- All-welded finned tubes ensuring a high, documented heat output
- The finned tube is hot-dip galvanised
- Available with thread for standard plumbing fittings
- Mounting with stainless brackets
- Even supply of heat

2 Blow heater

- Minimum maintenance, and stands high-pressure cleaning
- Robust stainless steel construction
- Electronic ignition and monitoring with a BCU (burner control unit)
- Error indication with LEDs
- Automatic restart (3x) (gas)
- Compact housing, protection class IP54
- Gas valves with 2x protection class A

1 DA 2000 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 can be mounted after pipe assembly
- Additional functions:
 - soaking
 - disinfection
 - humidification
 - dust binding

2 Pad cooling

- Complete gutter system with integrated water reservoir
- The air is directed through the pads which are being continuously sprinkled - this way the air is cooled
- 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



Management



1



2

Air cleaning



1



2



Product characteristics

1 FarmOnline® Management

- Live monitoring of an unlimited number of livestock house computers the world over via the internet
- Clear data overview - in graphical or tabular form
- 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 livestock house computer
- Water recordings

2 Hardware

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

1 Farm AirClean - BIO Module

- Biological air cleaning
- Modular principle
- 10,000 to 40,000m³ air per hour
- The smell of pig is eliminated
- The ammonia content of the outgoing air from the livestock house is reduced to 1 ppm
- The dust content in the outgoing air is reduced by 95%
- Wall, central and decentralised extraction
- Washing robot

2 Farm AirClean - BIO Flex

- Biological air cleaning
- Great flexibility - length of the system ranging from 2 to 50 metres
- Capacity up to 360,000m³/hour with the same controller
- The smell of pig is eliminated
- The ammonia content of the outgoing air from the livestock house is reduced down to 1 ppm
- The dust content in the outgoing air is reduced by 95%
- Wall, central and decentralised extraction
- Washing robot



SKOV A/S
Hedelund 4 • DK-7870 Roslev
T: (+45) 7217 5555

SKOV Asia Ltd.
PB Tower • TH-10110 Bangkok
T: (+66) 2 382 3031-2

www.skov.com

Dealer



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