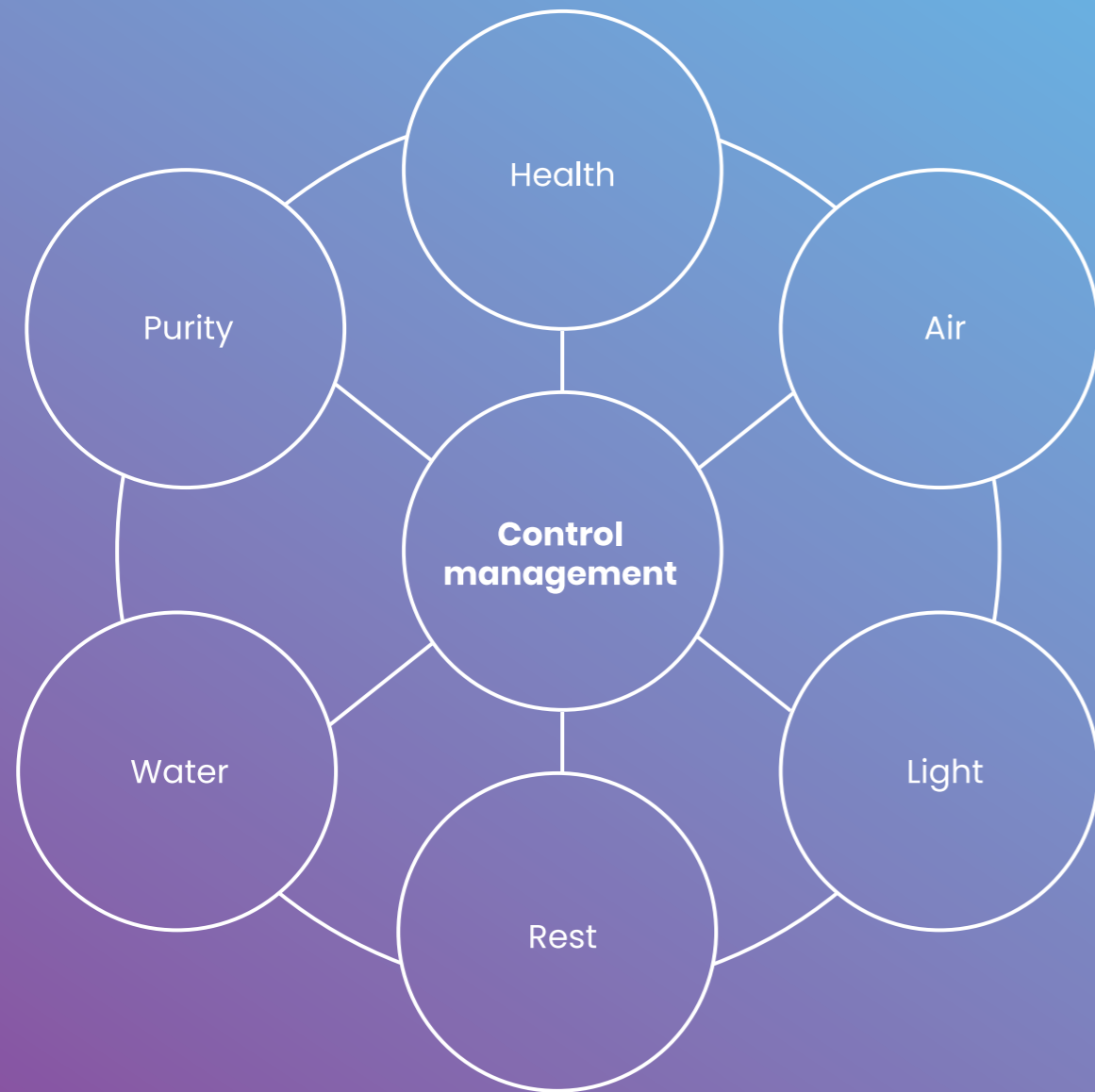




ERSTA

Solution for cattle breeding

ERSTA



Solution for cattle breeding

OUR VISION AND MISSION IS TO CREATE A SUSTAINABLE FUTURE FOR AGRICULTURE.

We are the Czech and Slovak leaders in barn technologies and cattle farming automation. Since the start, we have known that we wanted to build a different kind of agricultural business - a progressive one. That is why we are constantly following global trends and market development; we keep trying new things, and we never stop learning. We are not afraid of change, and we innovate our practices.

1700 happy customers	50 employees
2 generations of owners	1400 installed machines

Our key business partner is Lely, a Dutch company, which chose us as their exclusive importer for the Czech Republic and Slovakia in 2003. Lely's comprehensive conception of automation gave us a huge head start and allowed us to dominate these markets.

We are a family firm and a tight-knit team. We want our people to feel good at work and love their jobs, and we try to do our best for them. In 2023, we moved our company headquarters to a modern venue in Chlebov u Soběslavi, which was built not only to be sustainable but also to be comfortable for our employees.

We fulfil our customers' every wish. Our customers and business partners are always our top priority. We build our business on mutually satisfying relationships. Our clients always know they can fully rely on us, We organise the biggest conference on cattle farming automation in Europe.



The Czech Republic in the context of economy and history

Farming and agriculture have a deep historical tradition in the Czech Republic, forming an inseparable part of the Czech economy and cultural heritage.

The Czech Republic is a Central European state which gained independence on 01 January 1993 after the division of Czechoslovakia. We are a member state of the European Union, the North Atlantic Treaty Organisation (NATO), the UN and other international organisations. The Czech economy has a high GDP, low unemployment, and strong export orientation.

Indoor farming in the Czech Republic in the past and present

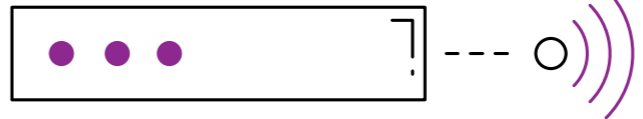
The historical roots of agriculture and indoor farming in the Czech territory go far back. Our ancestors have made self-sufficiency supported by livestock farming a priority since the Middle Ages. The Industrial Revolution brought mechanisation and modernisation into agriculture, allowing for the establishment of large-scale farms and more efficient indoor farming. In the 20th century, cattle and pig farming developed further thanks to technological innovation and improved welfare standards.

Today, indoor farming is one of the most modern and dynamic agricultural sectors in the Czech Republic, focusing on innovation, animal welfare, and improving sustainability. Progressive farms are automating many routine operational tasks and focusing on further farming development.

Cattle farming By 31/12/2002, 1,39 heads of cattle, including 356 thousand milked cattle



1 SMART MANAGEMENT



CONTROL UNIT ERSTA SMART

At the heart of all our systems, we have the **ERSTA control unit**, which receives data from all sensors. The unit evaluates the data in real-time and modifies system settings based on the results. At the same time, it actively manages individual barn features, like the roll-up curtain sides, skylight roof vent, ventilators, foggers, and lights.

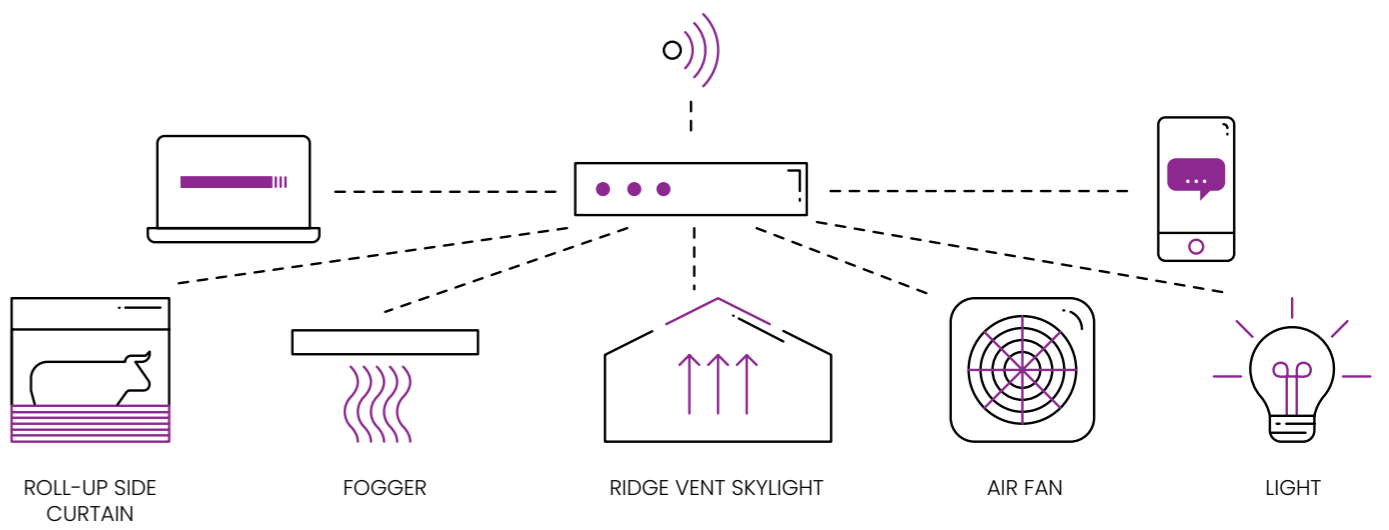
This maintains a balanced barn microclimate throughout the day in any weather while adapting the light cycle to the animals' current needs.

Welfare cattle farming depends on maintaining an optimal barn microclimate, as animals that feel comfortable physically and mentally are healthier and more productive. Human error is the most common cause of a deteriorating microclimate or light cycle fluctuations.

ERSTA tato rizika řeší. Kontinuálně reguluje mikroklima i světlo ve stájích tak, aby byly všechny sledované hodnoty v pořádku. Vše potřebné si jednoduše nastavíte a díky nepřetržitému monitoringu máte mikroklima i osvětlení trvale pod kontrolou.

KEY ERSTA UNIT PARAMETERS

- 1. Advanced sensor system**
 - The ERSTA control unit is connected to a complex sensor system. The sensors measure humidity, temperature, wind speed, lighting intensity and ammonia and CO2 concentrations.
 - They are placed in the barn's interior and exterior, making the monitoring extremely accurate.
- 2. Smart management and evaluation**
 - ERSTA manages system features, including roll-up curtain sides, the skylight roof vent, ventilators, and lights.
 - It automatically collects data and analyses the current microclimate status.
- 3. Flexible management regimes**
 - Primarily, ERSTA uses an automatic regime that allows it to continuously optimise your barn conditions, but you can also manually customise its system.
- 4. Maintaining a healthy microclimate 24/7**
 - The system constantly reacts to dynamic microclimate and lighting changes, day and night.
- 5. Easy interconnection with other barn technologies**
 - The system is variable, and you can connect other systems, including manure scrapers, pumps, bedding systems, etc.
 - These additional technologies also include remote control, tracking and diagnostics.



ROLL-UP SIDE CURTAIN

FOGGER

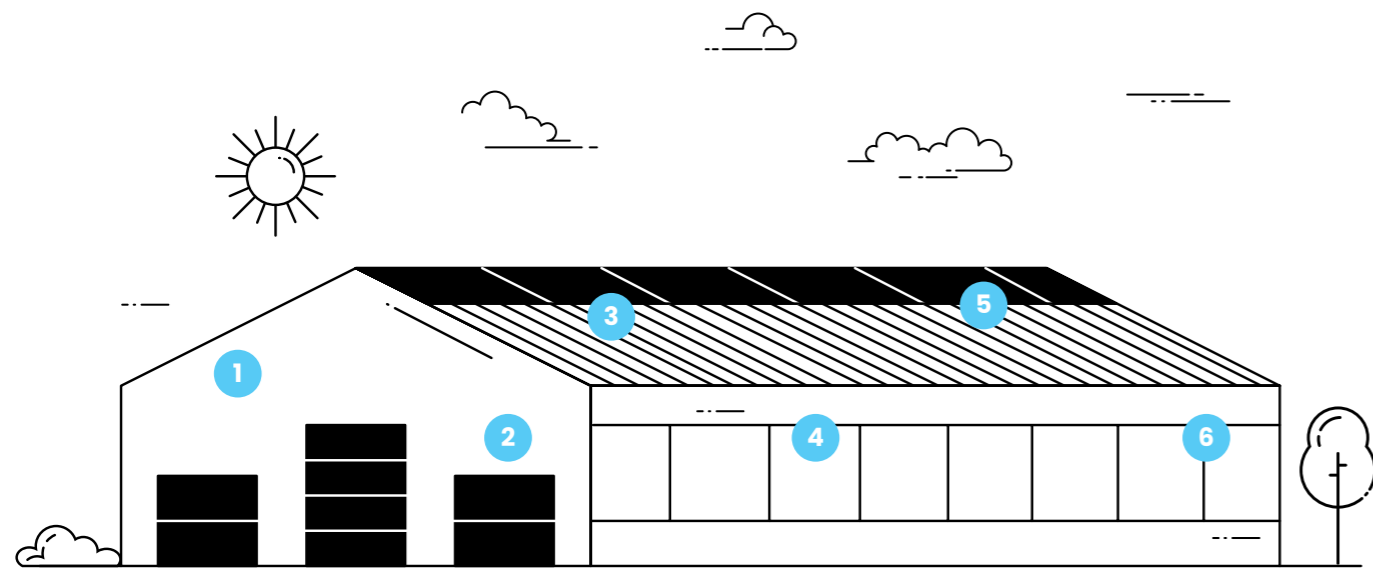
RIDGE VENT SKYLIGHT

AIR FAN

LIGHT

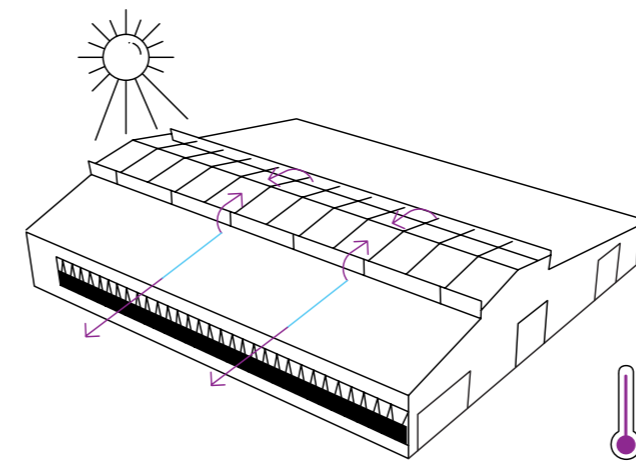
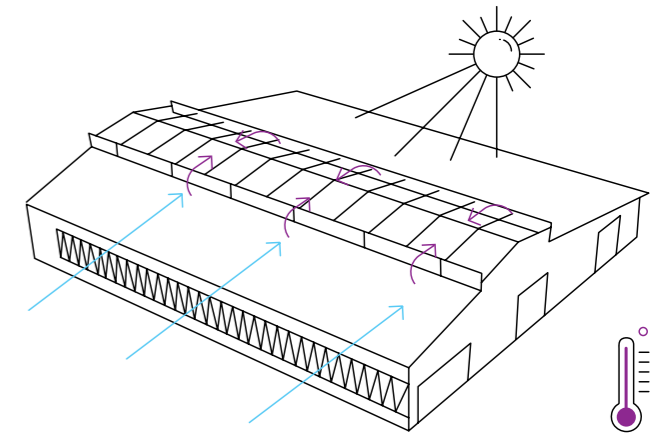
WHAT CAN YOU MEASURE WITH OUR SENSORS

1. Air temperature
2. Air humidity
3. Lighting intensity
4. Ammonia (NH₃) and carbon dioxide (CO₂) levels
5. Sunlight intensity
6. Wind speed



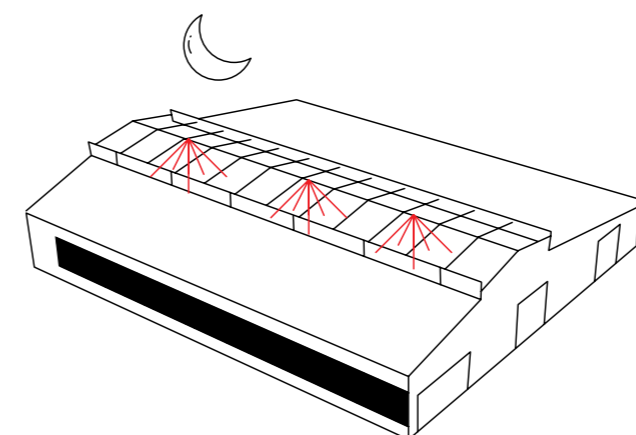
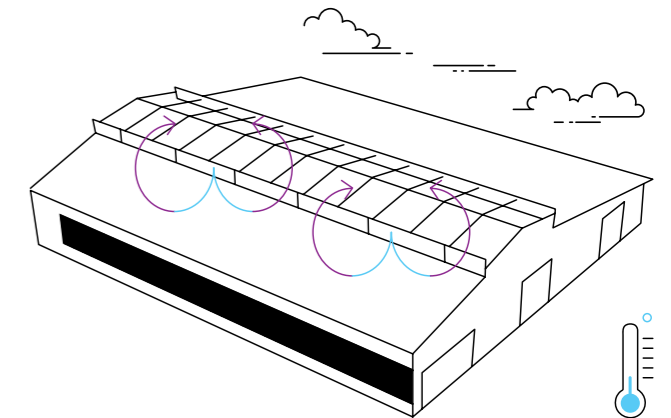
HOW ERSTA WORKS

- The sensors automatically control side curtains and ventilators.
- If the temperature outside is lower than in the barn, the ventilators suck in air from the outside into the barn, cooling it through the skylight while also lowering ammonia and CO₂ levels in the barn.



- The roll-up curtain sides are open.
- The ventilators are running, cooling the air in the barn while also lowering ammonia and CO₂ levels.
- Goal: Lowering the cows' heat stress level.

- In winter, the curtains are mostly closed, and the ventilators are working, lowering ammonia and CO₂ levels in the barn.
- In strong wind, the curtains automatically only close on the windward side or are closed fully.



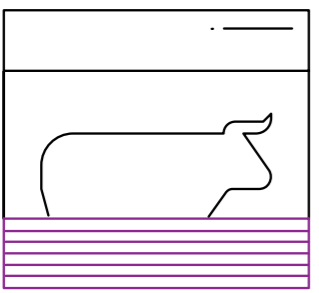
- To establish a day-night cycle for the cow's organism, we offer two lighting levels. Cows profit the most from 16 hours of 200 lux lighting and an 8-hour dark period. During the night period, lighting is provided by an integrated red LED light

2 AIR

Barns need an optimal air environment. The barn microclimate consists of **physical, chemical and biological factors**.

Physical factors include air temperature, humidity and airflow. We also analyse environmental cooling effects, sunlight, and lighting intensity. The **chemical microclimate factors** comprise the gases produced by stabled cows, most importantly methane, carbon dioxide, ammonia, and hydrogen sulphide. The last pillar of the microclimate consists of biological factors, such as dust or microorganisms in the air.

The ERSTA system can shape your microclimate to be ideal for your cows.



ROLL-UP SIDE CURTAINS

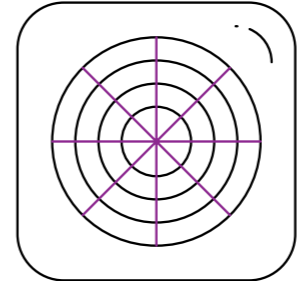
Ammonia naturally also accumulates in the barn in winter, when barns tend to stay closed. But ventilation does not always need to be active - natural ventilation is also ensured by the roll-up side curtains.

The ERSTA control unit automatically controls curtain movements.

We supply two curtain lengths - 60 m for one section and 100 m for two sections. Both types can be moved with only one engine.

The opening height is up to 425 cm, and the curtains can be opened automatically (by electricity) or manually (by crank).

They are made of a woven PVC fabric with customisable colour, fabric weight and light transmittance. The material makes the curtains easy to weld.

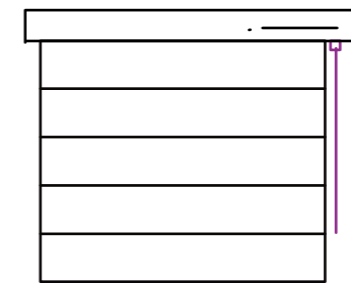


VENTILATORS ERSTA FRESH

Cows start experiencing heat stress when the air temperature exceeds 20 °C. At 22 °C, milk production can drop by up to 10 %.

On windless days when the air barely moves, natural ventilation is not enough. That's why we offer ventilator fans, which can get the air in the barn flowing horizontally, partially mitigating heat stress.

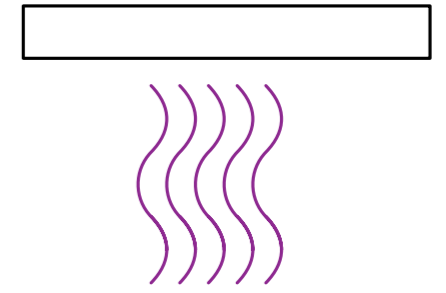
We offer horizontal, vertical, and large barn fans.



ROLL-UP BARN DOORS

In the past, barns used to rely on double wing doors, which were not easy to manipulate. Modern roll-up doors are ideal and can also play a part in barn ventilation. The controls can either be manual, using a lever or chain gearbox, or the doors can be connected to the control unit for automated door control.

Our doors are always custom-made to fit your construction aperture, and you can choose your material. We generally use draught-proofing netting, which is combinable with transparent canvas upon request.



FOGGERS ERSTA FOG

With climate change, the number of extremely hot days is climbing, prolonging the period when cows suffer from heat stress.

High-pressure nozzles ensure optimum fogging, allowing the cows to cool down. This eliminates heat stress and allows the cows to ingest more feed, maintaining their productivity.

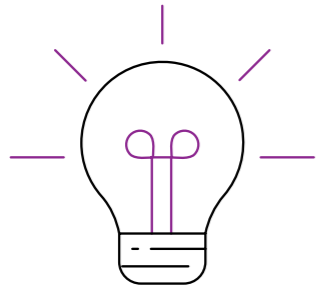
The cooling effect for the air and the animals is provided by fogging, not spraying, meaning the bedding stays dry. Fogging control can be connected with the ERSTA management system, which collects data from sensors, evaluates them in real-time and then automatically turns the foggers on or off.

System description and benefits

- High-pressure water-based air cooling.
- Barns can be divided into zones.
- Special high-pressure nozzles for cold water.
- Automatic humidity and temperature control.

3 LIGHT

Natural and artificial light significantly impacts cows' lives – their production, reproduction, feed intake and general behaviour. At many farms, lighting conditions are suboptimal. At noon, production barns should not be dimly lit, and they should definitely not be almost dark in winter.



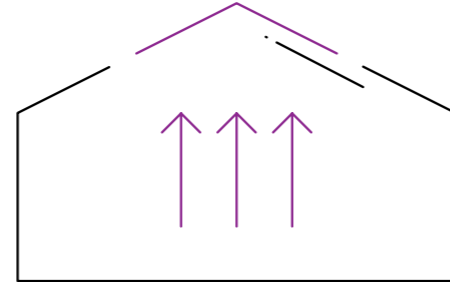
LIGHTS ERSTA FOTON

Additional lighting of production barns is usually done manually, meaning it is up to employees when they turn the lights on or off. When barns are insufficiently lit, this can cause major problems, especially in the autumn and winter, when natural light intensity changes significantly during the day.

Automating light cycle management ensures optimal lighting for your animals at any time of day.

Key light system parameters

- High light flow ensures sufficient lighting at all times
- You can install lights in 2 rows thanks to a wide beam angle
- Combined with red night lighting for quality sleep of your herd
- High efficiency 195 lm/W, saving energy
- The control unit turns lights off and on automatically and smoothly



RIDGE VENT SKYLIGHT ERSTA SKY

Choosing the correct skylight width can save energy costs.

Integrating the skylight roof vent adds both passive ventilation and more light to the barn.

Optimal air circulation using aerodynamic elements and external flow support minimises the need for fans. Making the skylight wide enough provides natural light for the barn, significantly saving energy. The skylight roof vent plays a key part in the barn's air exchange, improving the animals' general welfare.

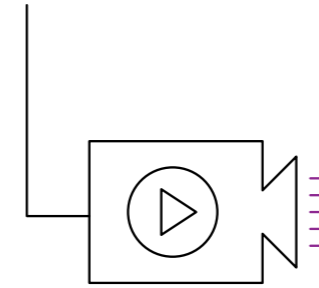
The system is variable and can be adapted to almost all barn types, regardless of shape, roof slope, or roofing.

The skylight roof vent width can be up to 3.5 m, with no length limitations. The structural support ensures a high degree of stability and durability even with intense gusts of wind or heavy snow cover.

The covering is made of long-lasting cellular polycarbonate with a 2UV filter.

4 HEALTH

Hoof infections can be extremely painful for cows, impacting their general welfare. Cows with hoof infections have trouble moving and accessing feed. Lower feed intake means lower milk production, and treating infection means additional costs. That makes prevention essential.



THERMAL CAMERAS ERSTA TIC

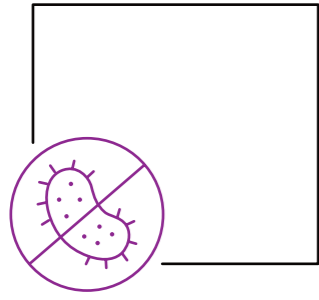
Our unique thermal camera system allows for continuous non-contact monitoring of cows' hooves, alerting you in time to any concerning changes in hoof surfaces.

Thermal cameras automatically and continuously monitor cows' hoof health without any contact, measuring hoof surface temperature while cows are walking. An increase in temperature signals an infection much earlier than symptoms, such as limping, occur.



Key light system parameters

- Autonomous and non-stop herd monitoring
- The system identifies affected cows in the early stages of the infection, preventing developing problems and losses
- Lower costs for treating sick cows
- The system is fully automated, not requiring any further data analysis by the operator.
- The monitoring does not disturb or restrict the cows.
- The system can easily be interconnected with your existing barn technologies.
- A Czech product with an interface in Czech.
- We provide follow-up maintenance and calibration in an accredited calibration lab.
- Dramatically decreased measurement time demands.
- Minimised false positive rate compared to manual measurements or simple pseudo-automated systems.



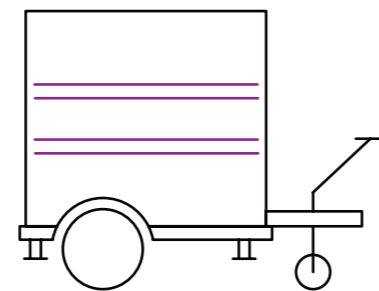
HYGIENE AND DISINFECTANT MAT

Healthy feet are essential for cows' general health and welfare. Sick cows are less productive and fertile. That is why we created an automated hoof care concept.

The device comprises a hygiene mat, automatic pump, and control system. The mat contains disinfectants and cleaning products and is generally placed at the milking parlour exit. For five days a week, the mat is injected with a MS AutoHoofClean solution; for the remaining two, it is replaced by a disinfectant.

Key mat parameters

- 24/7 hoof care.
- o Decrease in labour costs and operation requirements.
- o Lower veterinary care costs.
- o Easy to install in all operations.
- o Automatic solution refills.
- o Solutions optimised to ensure cow skin pH remains neutral.
- o Eco-friendly solutions containing natural extracts.
- o No stress for cows when passing over the mat.

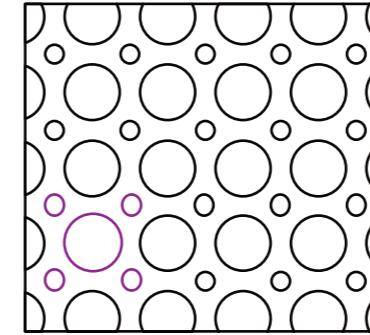
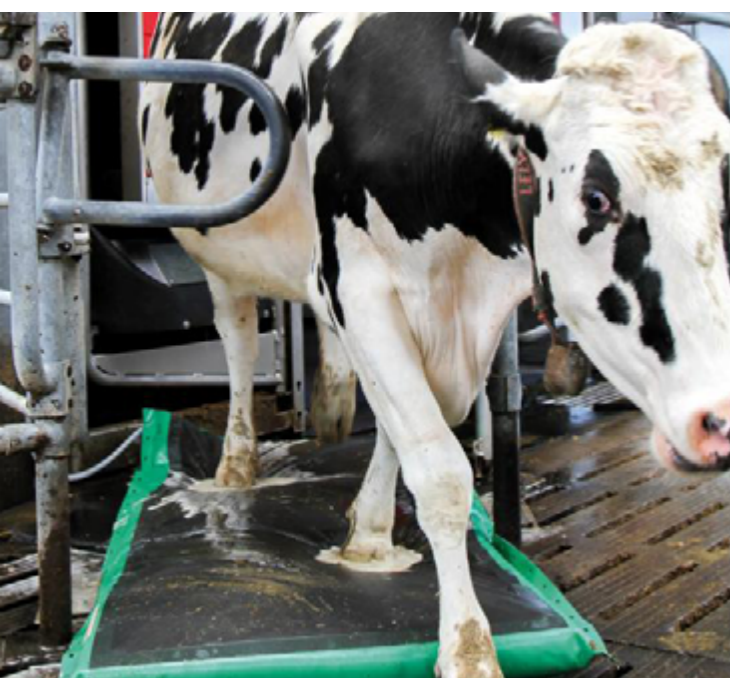


HOOF TRIMMING CHUTE

The chute is a safe holding space for cows waiting for veterinary checks or other touches. We also provide chutes with hoof-trimming equipment or chutes for smaller cow breeds.

Key chute parameters

- Easy to operate.
- Higher safety standards for cow touches.
- Simplifying the process for livestock specialists and veterinarians.
- Animal-friendly holding.
- Lacquered or galvanised surfaces.



RUBBER FLOORING

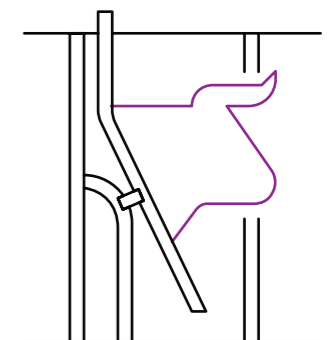
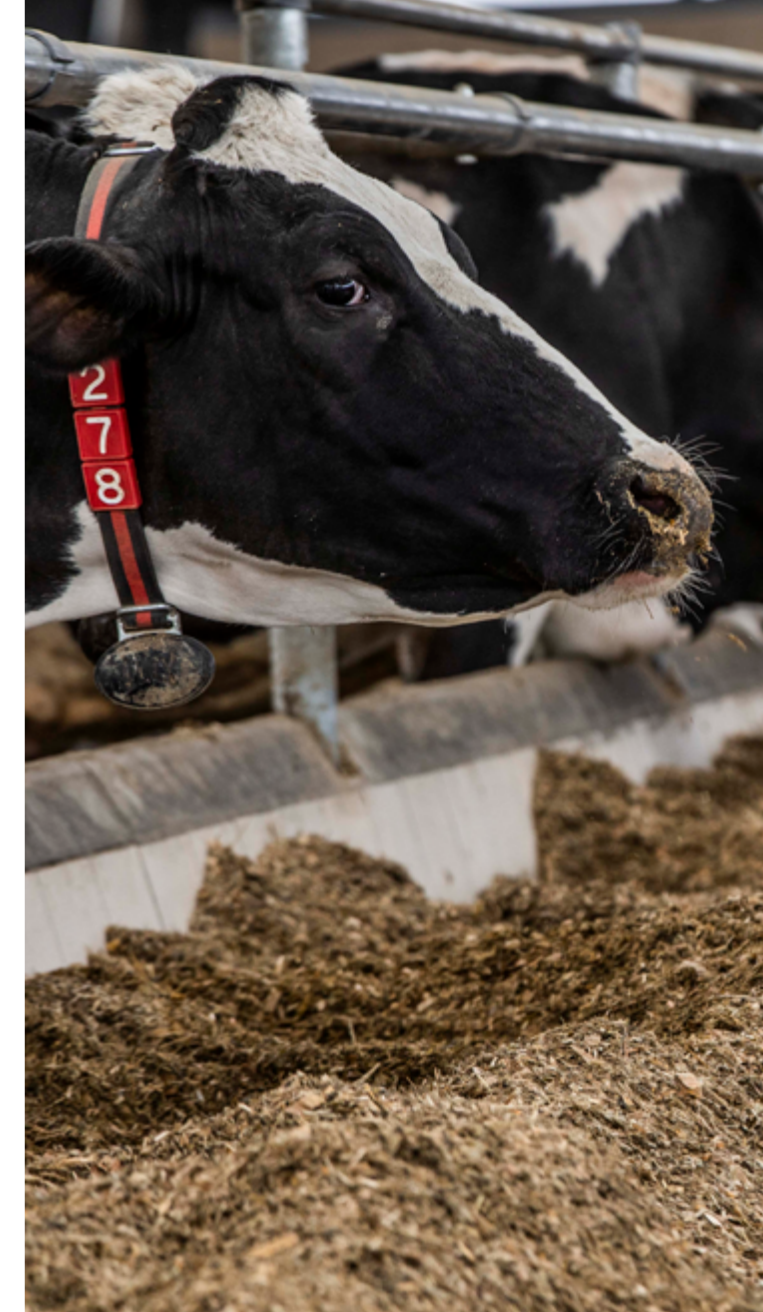
Rubber floors are becoming increasingly popular for dairy cattle barns - they are flexible, anti-slip and provide good insulation. The soft surface provides more comfort for cows when walking and resting, as cows are less prone to joint damage or chills.

Recent studies have shown that rubber flooring has many advantages compared to concrete floors: Animals display more natural behaviours (making it easier to detect when they are in the rut), there are fewer injuries related to slipping, and higher welfare means higher yields.

Rubber floors are usually laid in the feeding areas, manure corridors, and other passages. They can also be used in milking parlour waiting areas. We provide flooring in the form of plates, tiles, or mats. They can be put together like a jigsaw puzzle, with most sides being locked in to stop pieces from sliding.

Key rubber flooring parameters

- Easy to install and deinstall.
- Easy to maintain.
- Chemically stable and flame-retardant rubber.
- Oil-resistant material that also provides thermal insulation.
- 17 % fewer limb problems for cows.
- Up to a 20 % drop in culling.
- Minimising slipping injuries.
- Higher cow productivity.



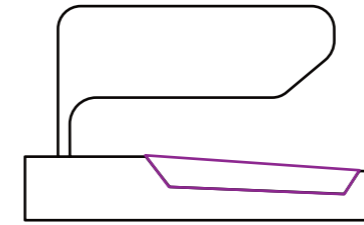
HEADLOCKS

Neck locks **make cow touches much faster and simpler.** Our cow neck locks are made from durable hot-dipped galvanised material. Neck locks for feed tables serve as a supplement to the standard headlock. The lock can be quickly and safely released even in adverse situations.

5 REST

Relaxing represents one of the key pillars of **welfare**. Mature cows spend most of the day resting, with stabled cows spending up to 12 hours a day lying down while ruminating. Their general comfort has a significant impact on milk production. Cows that cannot lie comfortably yield less milk and may start limping.

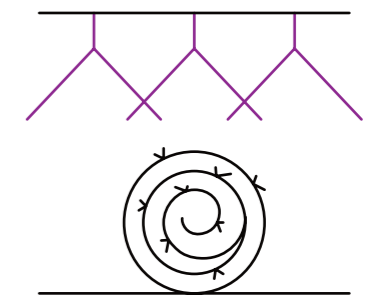
Modern barns must have enough free stalls, which need to be spacious, dry, and comfortable. There are also high demands on bedding. Our rest programme provides not only lie-down stalls or mattresses but also a bedding system.



LIE-DOWN STALLS

Lie-down stalls allow cows to lie comfortably and get up easily while positioning them to keep the stalls cleaner. **Correctly structured stalls** keep animals clean and lower the risk of udder infections.

The stalls consist of the bed and the side rails. Stall rails can be provided for all cow categories, from calves to heifers and dairy cows. They are suitable for newly built and renovated barns. Stall beds can either have deep bedding or soft mattresses.



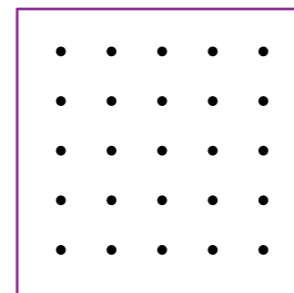
BEDDING SYSTEM

Bedding quality and regular and timely bedding exchange have a profound effect on how clean and happy your cows are. Our automatic bedding system ensures a **continuous influx of fresh straw** into barns. You can install them not only at cattle farms but also at pig farms.

The robot separates, chops and grinds straw. The consumption of processed straw is **up to 66 % lower** than with long straw. The system uses a dust filter, minimising the amount of dust during spreading. You can easily set the bedding volume based on your cows' needs.

Key system parameters

- Straw consumption down by up to 66 %.
- Almost no dust during bedding, thanks to a filter.
- Less work for farmhands.
- Less straw = less storage space needed.
- Fit for round and rectangular bales.



BARN MATTRESSES

A comfortable mattress for free stalls plays a major role in the life of a cow. The right mattress has traits similar to natural pasture. Cows can have a firm surface underfoot without sinking. Mattresses are durable, resistant to water condensation, and extremely long-lasting. They are made of inorganic materials, preventing the spread of bacteria. The mattress surface is **ideal for various bedding types**, from chopped straw to sawdust.

Key mattress parameters

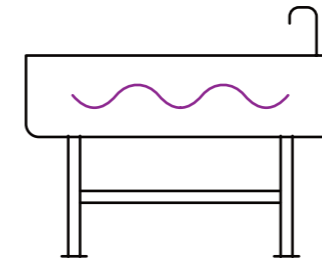
- Easy to install in existing stalls.
- No visible screws or seams.
- Similar to a natural pasture.
- Flexible, lowering the risk of injury even for heavy cows.
- Suitable for sawdust and chopped wheat.
- Lower bedding consumption; the mattress is comfortable on its own.
- Lower risk of limping and minor injuries.
- Easier to maintain a high hygiene standard.



6 WATER

Like oxygen, water is the prerequisite for life on Earth. Nothing would exist without water – not even dairy farms. Cows should always have access to fresh water, but that is still not the norm at many farms, especially in the summer. However, cow milk is roughly 87 % water.

In indoor cattle farming, we monitor the amount of water, the feed ration composition, ambient temperature, and water temperature. All these factors have a significant impact on milk production. If the cows have trouble accessing water and do not drink enough, milk yields go down.

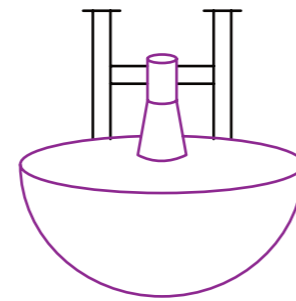


DRINKING TROUGHS

Drinking troughs provide a sufficient water supply for stabled cows by regulating the water flow and ensuring an ideal water level for drinking. They also allow you to check easily whether the water inflow is adequately fast and the outflow is regular enough. Our troughs are made from galvanised metal and stainless steel to be corrosion-resistant. They can withstand extreme conditions up to -20°C but are generally only used indoors.

We provide the following types of troughs:

1. Fixed troughs with heated heating cables.
2. Tilt-over troughs with low-wattage electric heating.
3. Fixed troughs with central hot water heating.



DRINKERS

Drinkers make water intake easier for cows – both in areas where they are only rarely (such as the calving pens or separation areas) and in frequently accessed areas, such as the barns and pastures.

We provide several drinker types:

1. **Tongue drinkers:** The cow presses a mechanism with its tongue, pouring water into the bowl.
2. **Bowl and pipe-valve drinkers:** The cow presses the valve to the side with its tongue, pouring water into the bowl.
3. **Float drinkers:** The water level is maintained by a handy float.
4. **Ball-valve drinkers:** Large-scale drinkers ideal for up to 60 cows. They can be used outdoors at the pasture and are easy to maintain. We also provide them in smaller versions.

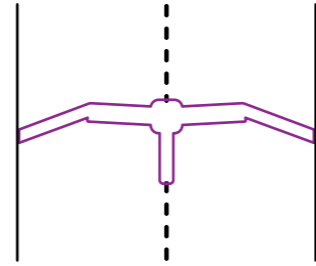


7 PURITY

All cows need **good hygiene** for healthy development and life. Barn cleanness is as significant for the health and fitness of dairy cows as a suitable microclimate or light, and it has a direct effect on total milk production.

If a cow walks in excrement all day, its hoof health deteriorates, negatively impacting its walking comfort and draining its strength and energy to access the milking robot. That increases the danger of udder infection, leading to a vicious circle.

A tidy farm and clean surroundings are a credit to any good manager, but there is often no time to clean up in the bustle of daily life. Things you don't do today will snowball by tomorrow, taking up twice as much time. That's why automating **manure management** is a good call. And we will help you.



MANURE SCRAPERS

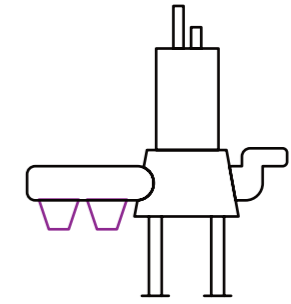
Manure scrapers are practical and effective helpers for removing manure. You can customise the scraper width according to your needs and combine the scraper with drains easily. We offer hydraulic, rope, and chain manure scrapers. Suitable for bedded and bedding-free stables. What is the difference between folding scrapers and scraping systems?

Scraping system

- The system consists of horizontal rows of flaps, which remain closed while the scraper moves forward, pushing manure forward.
- When moving backwards, the flaps lift automatically, leaving the manure behind.
- This scraper is ideal for regular manure removal in longer barns where manure needs to be shifted systematically.

Folding scraper

- It consists of two scrapers dragged by rope winches.
- When moving forward, the scrapers open into a V, gathering manure in front of them.
- When moving backwards, the scrapers close, efficiently shifting manure to a selected location.
- This scraper is best for any space where you need to collect and transport manure to a specific destination, especially in smaller barns.

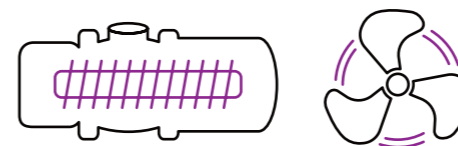


SLURRY SEPARATORS

Raw slurry is bad for the environment. If you use it unprocessed in your fields, the strong smell will disturb your neighbours, and it can pollute groundwater with nitrates. It also causes a loss of nitrogen naturally present in the soil.

Slurry separators make it easy to separate solid and liquid manure. The dry matter is ideal as a fertiliser but can also be dried, pressed and sold. A new, progressive use of dry matter is for plastic bedding for more sustainable welfare farming.

Separated residual water can be used for irrigation or fertilisation. This water contains 20 % less nitrates than raw slurry and is much easier to pump.



SLURRY PUMPS AND MIXERS

Use our high-quality slurry pumps and mixers to facilitate more environmentally friendly final slurry processing.

Slurry pumps are installed directly into the sump, pumping homogenised faeces with 10-15 % dry matter. You can select pumps with submersible motors or motors above the sump surface.

Slurry mixers mix up the sediment at the bottom of the pump and crust on the surface. The well-mixed sump contents can be simply pumped into a slurry tanker and sprayed over the field. No sludge collects at the bottom, meaning there is no need for dredging.



ERSTA

Smart systems for happier animals in your barn

animals in your barn

We developed ERSTA based on our years of experience with indoor cattle farming, focusing mainly on ensuring **maximum welfare for your cows** and the best possible conditions for milk production and cow reproduction. We also automated everyday tasks that employees often make mistakes in.

The ERSTA system combines several technologies that continuously ensure a **healthy microclimate and lighting** in the barn. We also added **automatic hoof monitoring**, which can efficiently prevent infections and losses.

Our systems will give you control over having a suitable microclimate and lighting in your barn at all times. **Automation also significantly cuts energy costs in the barn.**

We launched ERSTA in 2021 and quickly found our first customers who knew our main priority was helping their business thrive and trusted they could always rely on us.

We pride ourselves on building mutually beneficial relationships, and we are glad when our customers' businesses are doing well, thanks to our services and technologies.



Selling and installing our systems and products is "just" the beginning of our business relationships. We are always happy to provide expert advice and professional servicing.

We are the number one in **barn technologies and operational automation in cattle farming** in the Czech Republic and Slovakia. Since the start, we have known that we wanted to build a different kind of agricultural business - a progressive one. That's why we always try to keep track of global trends and market development, keep trying new things, and never stop learning. We are not afraid of change, and we innovate our practices.

We believe that **the future of indoor cattle farming** is inseparably tied to automation. Are you ready for a change? We have the technologies you need and can show you the way.

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