

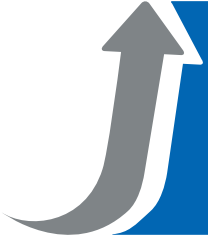


GEMINI *Up*

Exclusive Design - Better Results.



Level *Up* your performance with our unique solution for any herd size.



GEMINI UP SINGLE BOX

Discover the Exclusivity in SAC's Design!

ONE UNIT, SORT CAPABLE

UNIQUE IN SIMPLICITY

The Gemini UP single box milking robot is a 2-in-1 self-contained unit and, as a result, is quick and easy to install.

UNIQUE IN EFFICIENCY

It has an efficient, small footprint, one integrated machine room and unique in-box selection options. It therefore offers an unrivalled automatic milking solution for every farm type.

UNIQUE IN SELECTION

Cow flow is smooth and easy with the Gemini UP single box. The integrated selection process means there is no need for extra fencing and gates.

***Reach your performance goals
with our exclusive design.***



DIMENSIONS

Length: 17,22 ft (5,25 m)

Width: 6.56 ft (2.00 m)

Height: 7.87 ft (2.4 m)

Weight: 4188 lbs (1900 kg)

GEMINI UP DOUBLE BOX

Double UP Your Performance with SAC!

MILKING 2 COWS SIDE BY SIDE IN 1 BOX



UNIQUE DOUBLE BOX DESIGN

The Gemini UP double box robot is a compact milking robot equipped with two stalls, side-by-side. It has one robot arm that milks two cows simultaneously between the rear legs.

UNIQUE TWO COW MILKING

Milking 2 cows with one arm, increases profitability and offers you a faster return on investment.

UNIQUE SOCIAL ASPECT FOR COWS

The double box also has a very important social aspect: since one cow will attract another into the box, the cows are motivated to enter the robot. Moreover, when two cows can stand next to one another and look out on the cowshed via the open frame, they feel as if they are still with the herd.

***Reach your performance goals
with our exclusive design.***

DIMENSIONS

Length: 18.67 ft (5.69 m)

Width: 8.33 ft (2.54 m)

Height: 7.87 ft (2.4 m)

Weight: 5732 lbs (2600 kg)

Learn About the Milking Experience of Felix and Zita Hegner's dairy



A visit at Felix and Zita Hegner's dairy farm

Felix and Zita Hegner run a dairy farm in the Swiss district Zug. In addition to 55 dairy cows, they also operate a agricultural contracting business. Farm owner Felix already relied on modern, large-scale milking technology when he built his barn in 2003. For this reason, he trusts in our milking technology, and in his dealer for more than 20 years.

The decision process:

For Felix, the decision to use robotic milking was a drawn-out process. After all, it was important for him for more flexibility and automation to be brought to the farm and yet not to compromise on milking, milking technology and animal health.

«I wanted to make sure the cows receive the same amount of attention in the robot as they get from us in the milking parlour.»



Together with his dealer, he developed a robot concept to integrate his new robot perfectly into his existing barn.

A New Gemini UP Installation

Happy Cows, Happy Farmer



The transition from parlour to robot

For more than 20 years, the Hegner family milked their cows in a 2x5 herringbone milking parlour. In 2022, they planned to update the barn and the milking system. It was important to them to ensure that the robot would fit perfectly into the old building and that no major reconstruction work would be necessary. It was also important to them that they could automatically separate the animals at the robot.

«The Gemini UP was the only robot that was able to satisfy this requirement. It allows us to use the space in the barn in the best possible way.»



Focus on milking

The Hegner family lives for farming and for their cows. Therefore, it was very important to them that milking be as gently, quickly and completely as possible, even on the robot. Felix Hegner has already seen the difference of the right dimensions, settings as well as the right routines when milking in the herringbone milking parlour in 2003. Having many cows with high milk flows, he also focused on these criteria when choosing the perfect milking robot. Just a few days after starting with robotic milking, the average milk flow has reached 2.8 kg per minute, and the robot has been very well appreciated by the cows.



Flexibility and free time

Of course, it was also important to the family to be more flexible and to be able to reduce their working hours because of the robot. However, they see the same effect with their cows.

"After all, the cows are no longer standing in the waiting yard for two hours a day, but can lie down or eat. That's also reflected in animal welfare and animal health."

"When I walk through the barn in the morning, I am in a great mood. Because the cows are lying down, eating and are satisfied. So what else could you ask for?!"

For all the best practices for Optimal Milking



The SAC milking robot is built on over 80 years of experience in best milking practices. Our robotic system follows the same tried-and-true method as conventional milking. Every detail is accounted for to deliver the best milk harvest.

1



Milking from behind

Our unique rear attachment approach creates a milking experience that is similar to that of a side-by-side parlour. This cow-focused approach provides direct benefits to milking, animal welfare and protecting the system. In the Gemini UP cows are relaxed, comfortable and free from the visual distraction of arm movement. This encourages frequent and fast milking and keeps each cow in her normal routine.

2



Optimal udder preparation, cow focus

The whole preparation process lasts 60 to 90 seconds, which is the time a cow needs to have an optimal oxytocin release and ideal milk let-down. Under these conditions you will achieve maximum milk flow.

3



High performance milking capability

The Gemini UP is designed for today's high-yield producing cows. Our equipment easily manages high volumes of milk resulting in excellent teat health and milking performance.

The milking machine should remove the available milk from the cow's udder gently, quickly and completely.

The founder of our milking systems, would be proud that his philosophy of milking has proven to be timeless and applies to today's automatic milking systems.

SAC is Focused on Milking

Gently - Quickly - Completely

4



Continuous milk flow

The unique milk path from the Gemini UP provides unrestricted vacuum and milkflow. This results in shorter milking times, healthier cows, and greater profitability for the dairymen.

5



Individual quarter health

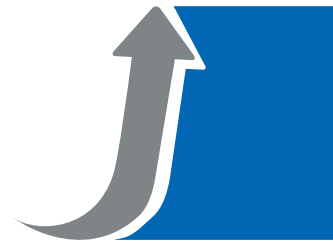
Focused on the latest health metrics, milk from each individual teat is screened and analysed. This data is available to all of the dairymen's mobile devices in real time, providing him with the critical insights on milk quality and cow health. This enhanced communication leads to better follow up and herd health management.



Cow #28 from Coverview Farm located in Riverview, NB Canada

**Gemini-UP
best milking practices
lead to
optimized milking results**

For all the best practices of Clean-in-Place Hygiene



SAC Hygiene practices are renowned for their performance and preservation of equipment hygiene. Our engineered Circulation Cleaning approach eliminates the challenges associated with long-distance cleaning.



Cleaning any system

Our engineered Circulation Cleaning approach eliminates the challenges associated with long-distance cleaning. Through better technology and improved milking efficiencies, you can produce more milk using less resources.

Efficient Cleaning - Circulation cleaning involves creating a continuous flow of the cleaning solution throughout the entire system. This allows for a more thorough and even distribution of the cleaning agents, resulting in a more effective cleaning.

Removal of Stubborn Deposits - Circulation cleaning is useful for removing stubborn deposits, such as mineral scales, sludge, or biofilms, that may accumulate over time. The continuous flow helps to break down and dislodge these deposits, improving system performance.

Suitable for Complex Systems - Circulation cleaning pushes the solution through all pathways and is well-suited for systems with multiple branches, bends, and complex configurations.

Energy & water savings

Our engineered circulation cleaning approach results in lower temperature and water volume requirements. Saving dairymen operational costs without sacrificing system hygiene.

We have to take into account that we are a cheese dairy and therefore have high demands on milk quality. In the meantime, we can confirm that this also works with a milking robot. General cleanliness is mandatory and the hygiene requirements must also be met by the robot.

Christoph Fatzer, Switzerland



SAC is focused on cleaning

Animal & Equipment Hygiene



Animal hygiene

Gentle on teats, tough on bacteria, SAC has pre-dip and post-dips formulated to maintain and protect healthy teats. Here again, SAC offers you many years of experience in excellent animal hygiene to harvest high-quality milk in robotic milking systems.

Concentrated detergents

Using concentrated products is an environmentally friendly approach to use. It allows the usage of smaller container sizes which in turns saves on shipping costs. Concentrates also save water by not having to use to blend in prior to shipment. Concentrates also save you space in your utility room as you won't have multiple oversized drums on hand.

High Cow Satisfaction. Gemini UP provides a
Comfortable Environment





Open view, happier and social cow

Through the open frame of the Gemini UP, the cow has an unobstructed view and therefore feels like she is still among the herd. This experience is even more enhanced in a double box system where cows stand freely but are still next to each other.



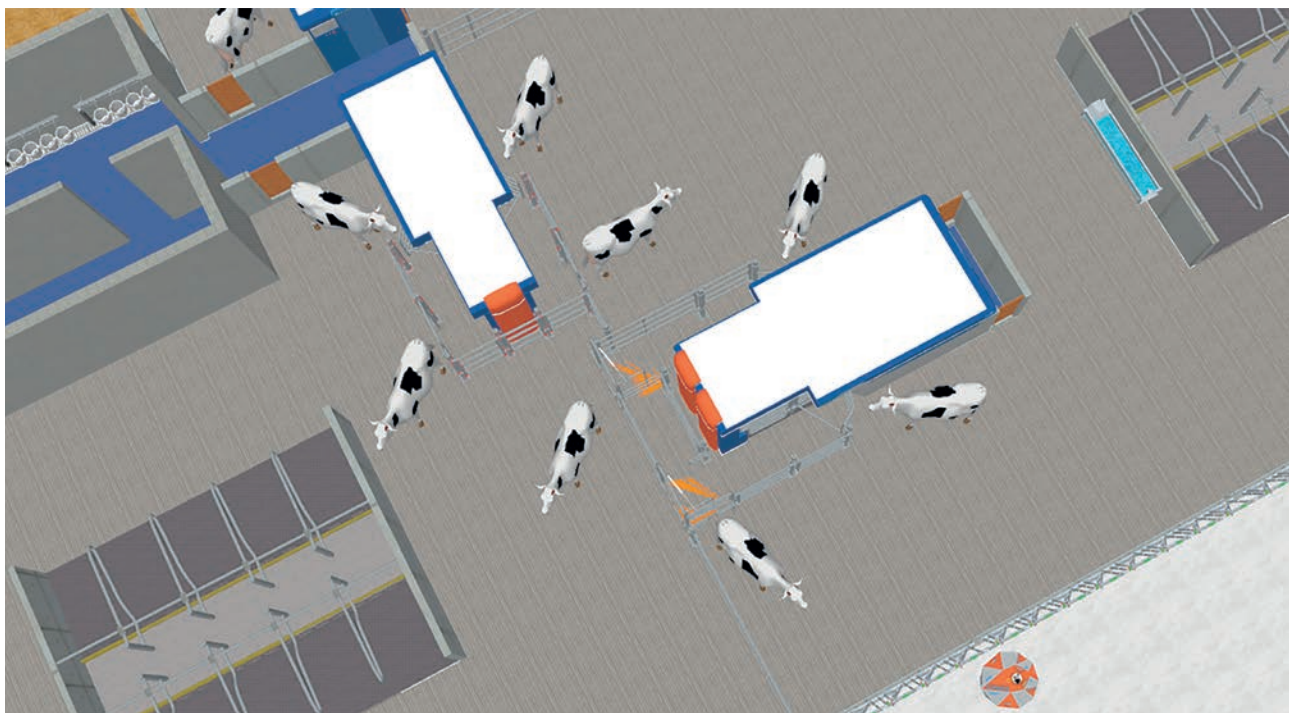
Size of the box, she has plenty of room

The Gemini UP is based on our previous Gemini model. It has new modifications and improvements. With a change of the gate style, there is now 15% more room for the cow within the stall position. She has more room which adds to her overall level of comfort.



Optimal walking routes and throughput

The cow is able to set her own rhythm. With the enhanced comfort features she will visit the box more often resulting in more frequent milking sessions.



Learn About the Milking Experience of Edelweisz Dairy



GEMINI ROBOTIC SYSTEM

Marijn van Aart, his wife and three young daughters farm in Flevoland, Netherlands. They were early adopters of the Gemini robot system being one of the very first to purchase in 2011. Van Aart shared, "It has been an adventure to see the robots grow over time. Since the beginning we have been really satisfied about how the robot performed and the support we got. We knew we were starting with a 'brand new' machine and not all the features we see now were available at the beginning. But with all the technicians they did a lot of work to get up to the standard where we are now.."

"Recently, we got asked if we wanted to go to an upgrade to the Gemini UP as well as be one of the first adopters again to go for another adventure."

THE GEMINI UP IS A 2-IN-1 SELF-CONTAINED ROBOT UNIT

The Gemini UP is a 2-in-1 self-contained unit and, as a result, is quick and easy to install. "We thought it would be pretty tough taking an old robot out and putting a new one in, but together (himself and dealership) we did all the preparation," he explained. The last cow milked was at 8:00 in the morning and around 8:00 in the evening they completed the first main cleaning and were ready to start milking again. "It had very little impact on our farm. It turned out really good. We expected to have several days where, okay, if it is milking the first cows in its life since it has been redesigned you might expect some troubles. But it was pretty much plug and play. We put it into place and it started milking the way we expected it to milk."

COW'S REACTION

"The design of the robot hasn't been changed a lot in a way that the cow is still part of the herd. So as soon as she walks in the robots, she can look around, she can see what's going on left of her and right of her, which makes the cow really calm which makes it attractive for a cow to walk in. We see it on new heifers who are fresh calved. They walk in really easy, and we can sort out with the single box to a straw pen. It's makes life really easy for me as a farmer. We swapped the robots, but the cows walked in like nothing has been changed," van Aart related.

EDELWEISZ DAIRY V.O.F.

- Location:** Flevoland, Netherlands
- Owner:** Marijn van Aart
- Cows:** 100; Jersey and Holstein
- Avg. Production:** 10.080 ltr/cow/year
- Avg. Butterfat:** 5.4%
- Avg. Protein:** 3.9%



SAC Makes for a Calm and Productive Barn Still Very Proud of Our Choice



OTHER ADVANTAGES WITH THE GEMINI UP

When asked about what other results or advantages that he has seen with the start up of the Gemini UP on his farm, van Aart said, "The first thing I've noticed is that it has been much more silent in the barn. The vacuum pump is taken out of the robot itself and is placed in a separate machine room. That makes it more comfortable to work in the barn and to be close around the robot."

"another thing we were really suprised about: the huge cut of energy consumption and water consumption. We reduced quite a bit on the electrical bill every month so that's a good advantage."

He then went on to share about the changes to the milk path. "What we noticed at the first milking is that the robot has an updated milking path. Also the milk lines from cow until receiver have more capacity. A lot of restrictions have been taken out, which means the lines are not obstructed anymore. For example, all the lines are now individually connected to the milk receiver starting from the teats. Cows are milked out much quicker than before. The milk yield is higher and the vacuum is more stable.

Van Aart also likes how the Gemini UP vision detection system can accommodate his mixed breed herd. "The robots can milk either Jerseys or Holsteins without any adjustments we have to make on the robots."

WOULD CHOOSE GEMINI AGAIN

"Gemini is a fine robot with good milking technology and with a fresh approach to the very practice of robot milking. If we had to do it all again, we would once again end up with a robot - and once again a Gemini robot."

Empower your dairy work flow with

Gemini UP Robot Technology



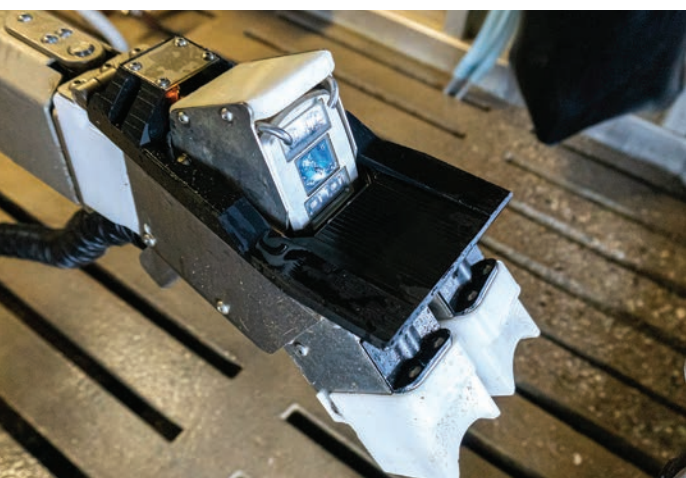
FETCH TWO CUPS AT ONCE

The Gemini UP robots are equipped with a unique dual attachment functionality; an intelligently designed mechanical head that allows the robot arm to fetch two cups at once resulting in efficient arm movement. By reducing the arm movement, this dual attachment increases the cow throughput and maximises box performance.



SAC ADVANCED INTERFACE

The software technology in the Gemini UP system is extremely user-friendly. The user has multiple ways to access and manage information: smartphone, tablet, desktop computers as well as at the robot itself via a multifunctional touchscreen. Both the PC and the touchscreen are equipped with powerful processors to automate functions and access key data.



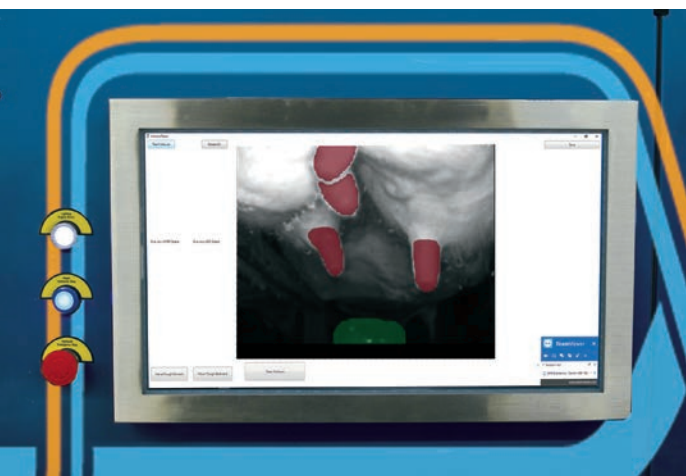
TIME-OF-FLIGHT CAMERA

The camera's time-of-flight technology can determine the exact position of the individual teats. This very advanced new technology has given our milking robots superior attachment results. As it approaches, it conducts a 3D analysis of the teats, identifying the location more accurately. The waterproof stainless-steel 3D camera has a flat surface for easy cleaning.



UPGRADEABLE VIA EQUIPMENT AND SOFTWARE

The SAC milking unit is easily upgradeable via equipment and software. Since technological evolution in robot milking has sped up exponentially, you as a forward-thinking dairy farmer can easily follow up on the latest innovations in your existing robot. This is not the norm in the industry and is quite an advantage.



ENHANCED VISION TECHNOLOGY

Gemini UP attaches cows fast and accurate thanks to machine learning technology implementation. This break-thru technology now looks at udder imagery gathered from a wide range of cows and has allowed Gemini UP's attachment and ultimately the throughput to rise-up to the next level for your dairy.



DUAL
ATTACHMENT



ADVANCED
INTERFACE



TIME-OF-FLIGHT
CAMERA



TEAT
TEACH



UPGRADEABLE
FEATURES



USER-FRIENDLY MILK MONITORING



HEALTH
MONITORING



USER-FRIENDLY, EASY TO OPERATE BY ANYONE

SAC's complete robot is easy to operate. As it is quite user-friendly, you can easily hand over the management to another operator, saving yourself a great deal of time. Do you need extra time to focus on something else? Would you like to spend time with your family or to enjoy a relaxing holiday? Don't worry, when you need time for other things, you can hand over your dairy operation to almost anyone.

Dairy Room Controller

- UNIQUE
- ADVANCED
- FUTURE PROOF
- MODULAR



GEMINI Up



GEMINI Up
«PLUS» milkline system



GEMINI Up-MAX
Herd Milking



Buffer Tank



Cooling Tank

Empower your herd with Flexible and Smart Selection

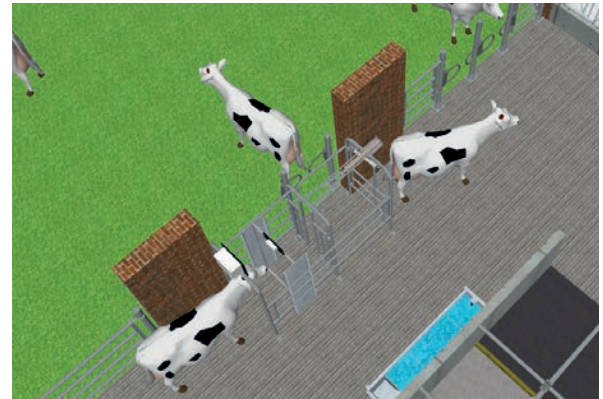


WHEREVER YOU WANT YOUR COWS TO GO, the SAC selection engine offers almost endless possibilities which are both physically and cow data driven. You can come up with numerous selection gates and various data criteria such as time, calendar, alarms, general cow information, etc.



SMOOTH AND EASY COW FLOW

The integration of the selection options means that there is no need for extra fencing and gates. The milking robot is equipped with inputs and outputs on both sides, allowing cow selection to take place in the milking station.



MULTIPLE WAY SELECTION OPTION: GRAZING COMPATIBLE

The SAC milking robot offers great possibilities to farms that wish to stimulate pasturing. Thanks to its integrated selection system, no extra fencing or selection gates are needed and the cows keep an open view. For dairy farms that have their robot installed further away from the gate to the grazing paddock, we offer the possibility to install an extra selection gate.



Gaining a better health snapshot of your cows

Cow Activity & Health Monitoring

EMPOWER YOUR GEMINI UP ROBOT SYSTEM with the cow activity and health monitoring solution that SAC can offer. With this solution you are able to give your cows the individual attention they deserve.



HEAT DETECTION

The SAC neck tag provides extremely accurate heat detection. Your data is available at any time and includes a display of optimum insemination time.



EATING, RUMINATION AND INACTIVE TIME MONITORING

Three unique behavioural measurements that when combined provide optimum health monitoring.



ISO IDENTIFICATION

Animals are identified in the robot and also in the sorting and feeding stations. This offers you one multi-purpose solution.



MOBILE ACCESS

Coupled with the SAC Profarm phone app, data is accessible anywhere and in realtime. This results in the ability to catch cows with health problems sooner and treat them accordingly. Moreover, the increasingly accurate insemination rates will quickly offer a return on investment.



LOCALISATION

On top of above features the system can be expanded with the localisation option. Find cows that need to be fetched, checked, treated or inseminated. It accurately shows and follows the real-time position of individual or multiple cows on your barn map with one click on your PC, tablet or smart-phone.



Overall Benefits

- **BETTER FERTILITY RESULTS**
- **IMPROVED HEALTH**
- **EASY MANAGEMENT**
- **MORE PROFIT**

**Keep levelling UP
your dairy farm
with additional SAC
products.**



Feed Pusher

Reduce labour costs and positively impact milk production. Full consumption of feed rations increases milk yield, according to the Journal of Animal Science. The Feed pusher keeps feed to the cows and allows her to eat at any time of the day.



Cow Brush

The SAC Cow Brush will improve your cow's health and well-being and consequently her productivity. The SAC Cow Brush is designed and engineered in such a way, that parasites and other vermin are brushed away from the places the cow isn't able to reach herself.



 **SERVICE
STAR**

by 

**SERVICE-STAR is a program for
the regular preventive maintenance
of your system.**



The aim is to ensure the optimal consistent functioning of your SAC system over a long period of time. For exceptional reliability, your machine is maintained according to SAC procedures.

Maintenance in accordance with SAC recommendations:

In addition to the optimal functioning of your installation, your SAC representative will schedule maintenance interventions on your behalf in compliance with SAC recommendations.

Economical:

Choose Service-Star and you will receive significant discounts and guaranteed prices.

A clear overview of your investment schedule:

This maintenance program will allow you to budget the cost of milking for an improved long-term forecast.

SERVICE-STAR: a tailor-made program

To optimally meet your needs, we offer 4 different formulas:

Service-Star: milking machine maintenance and liner replacement

Service-Star Plus: Service-Star & planning of detergent requirements (cleaning product ranges)

Service-Star Pro: Service-Star Plus & planning of udder hygiene requirements

Sani-Star: planning of detergent and udder hygiene requirements

SAC Cares for the Cows

GEMINI UP



The solution
for every barn
layout



The solution for
every farm size



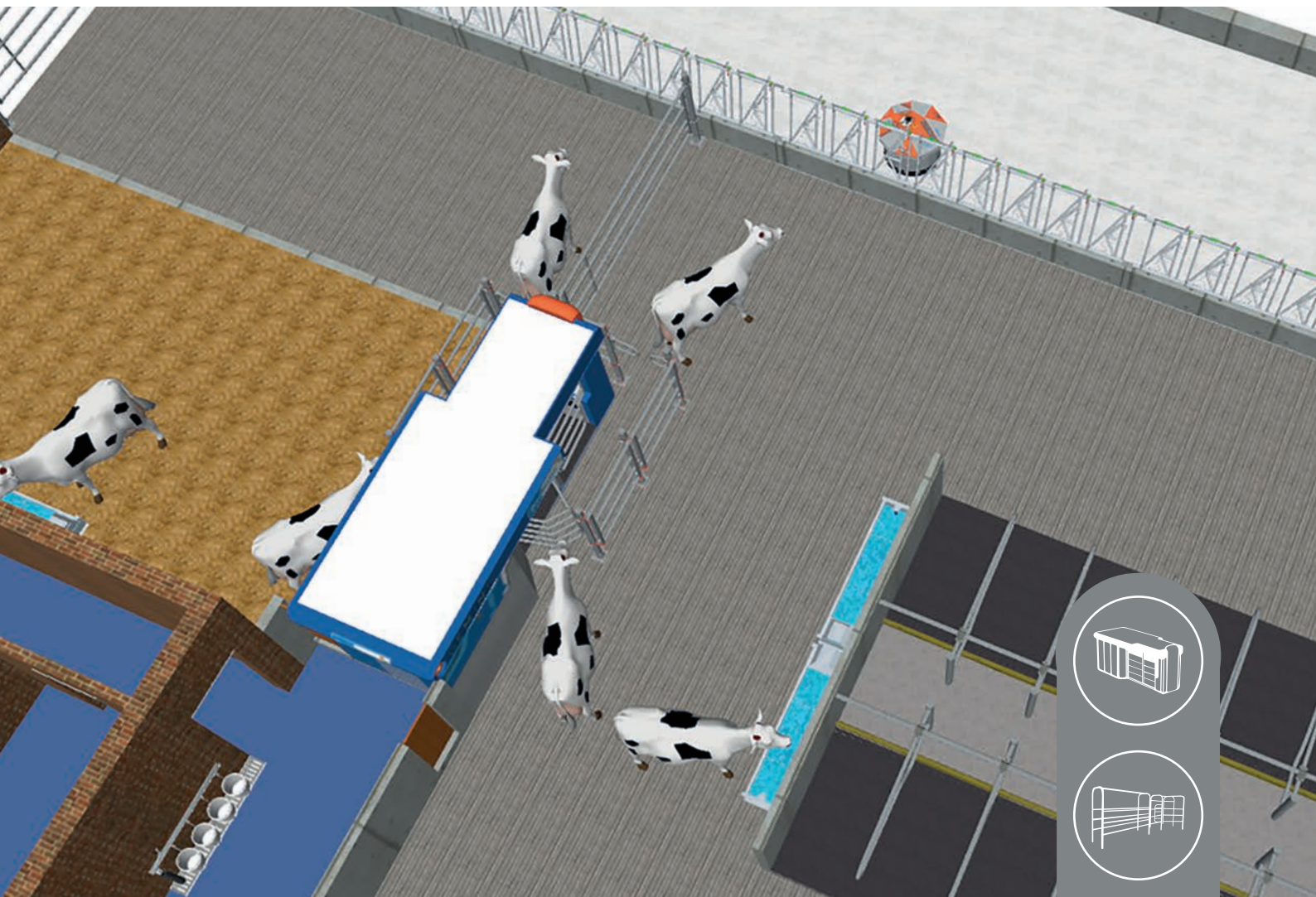
Accommodating
the best
behavior and
routines

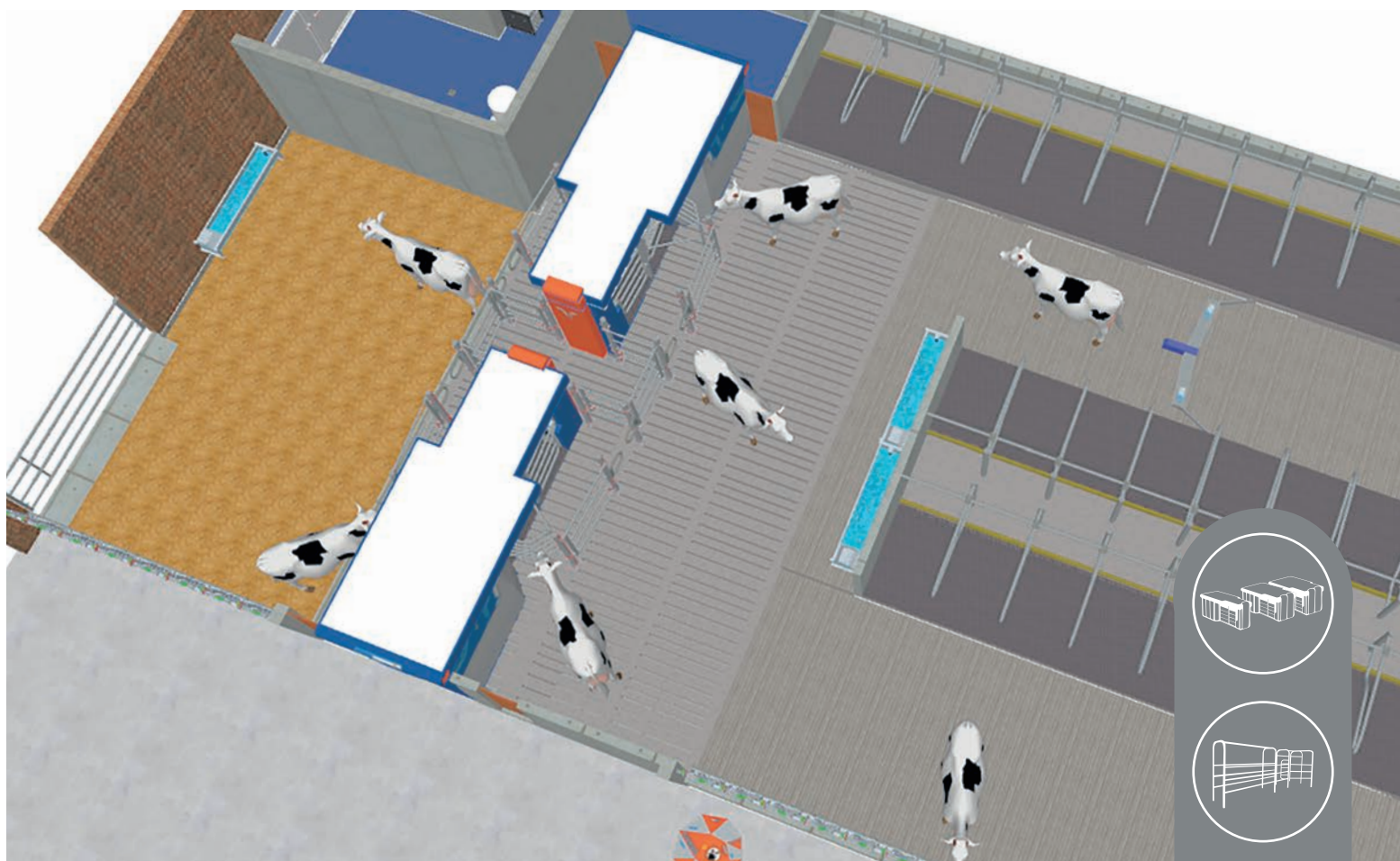
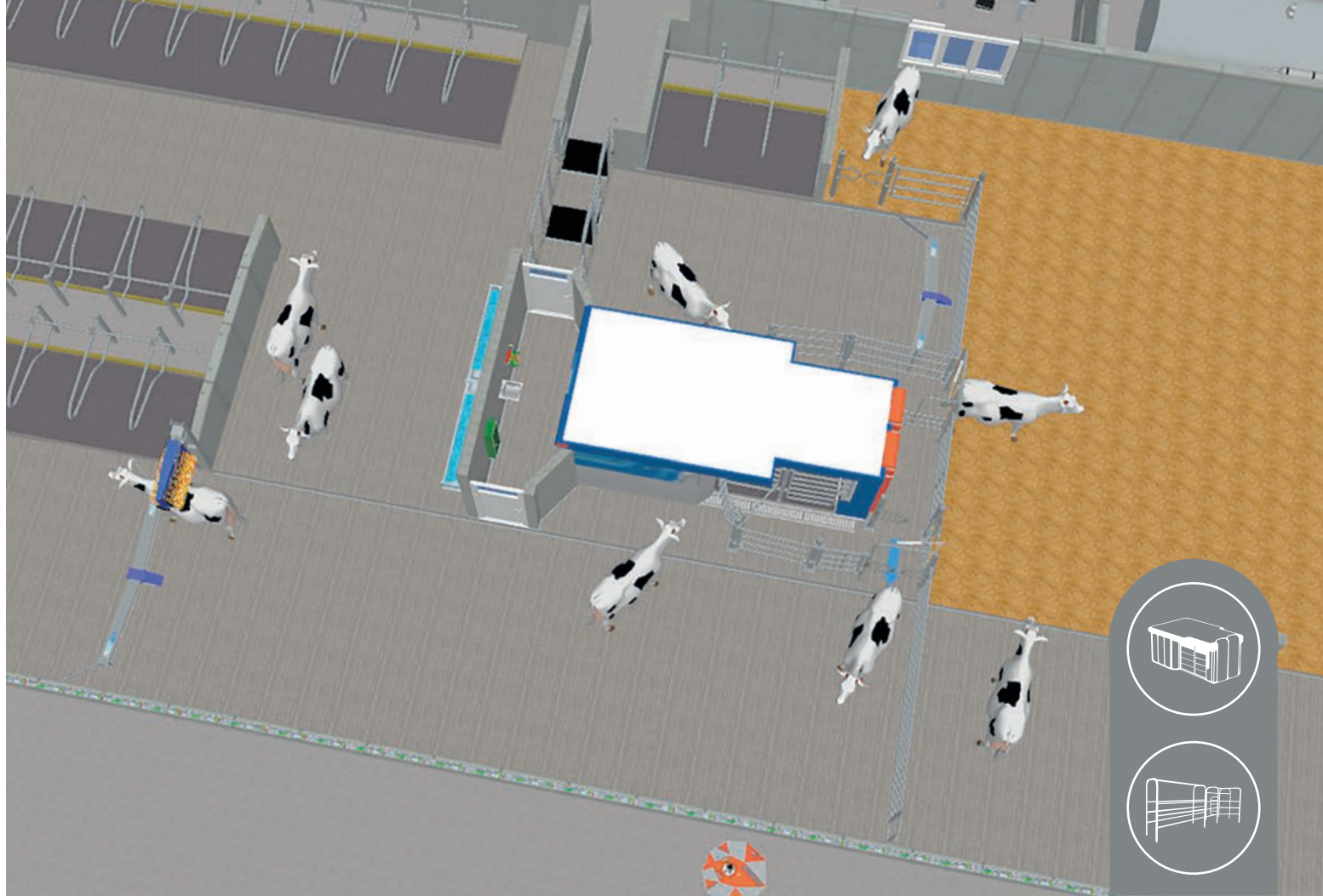


Minimized
building costs



Flexible
solutions for
better results





SAC Cares for the Cows

GEMINI UP - PLUS Milkline System



Independent
Central milkline
system



Can connect
"unlimited"
number of
Robots



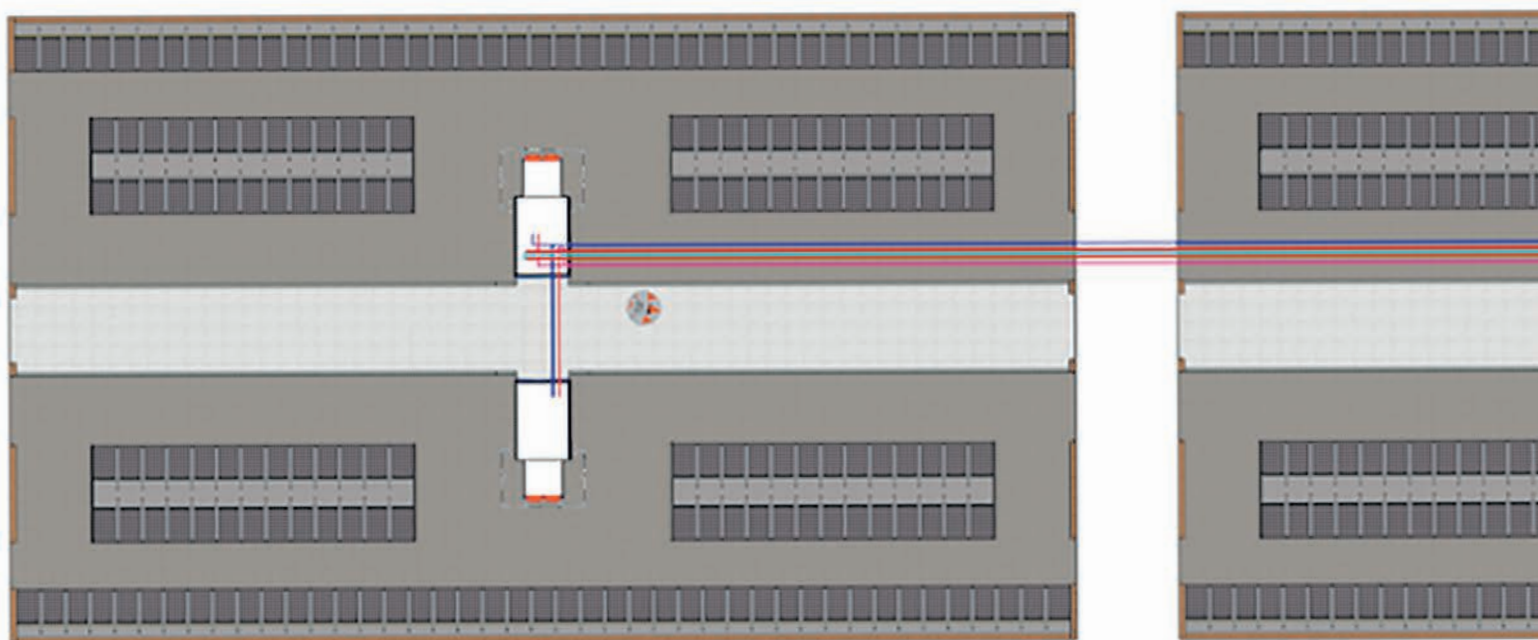
No interruption
of processes at
the individual
robots

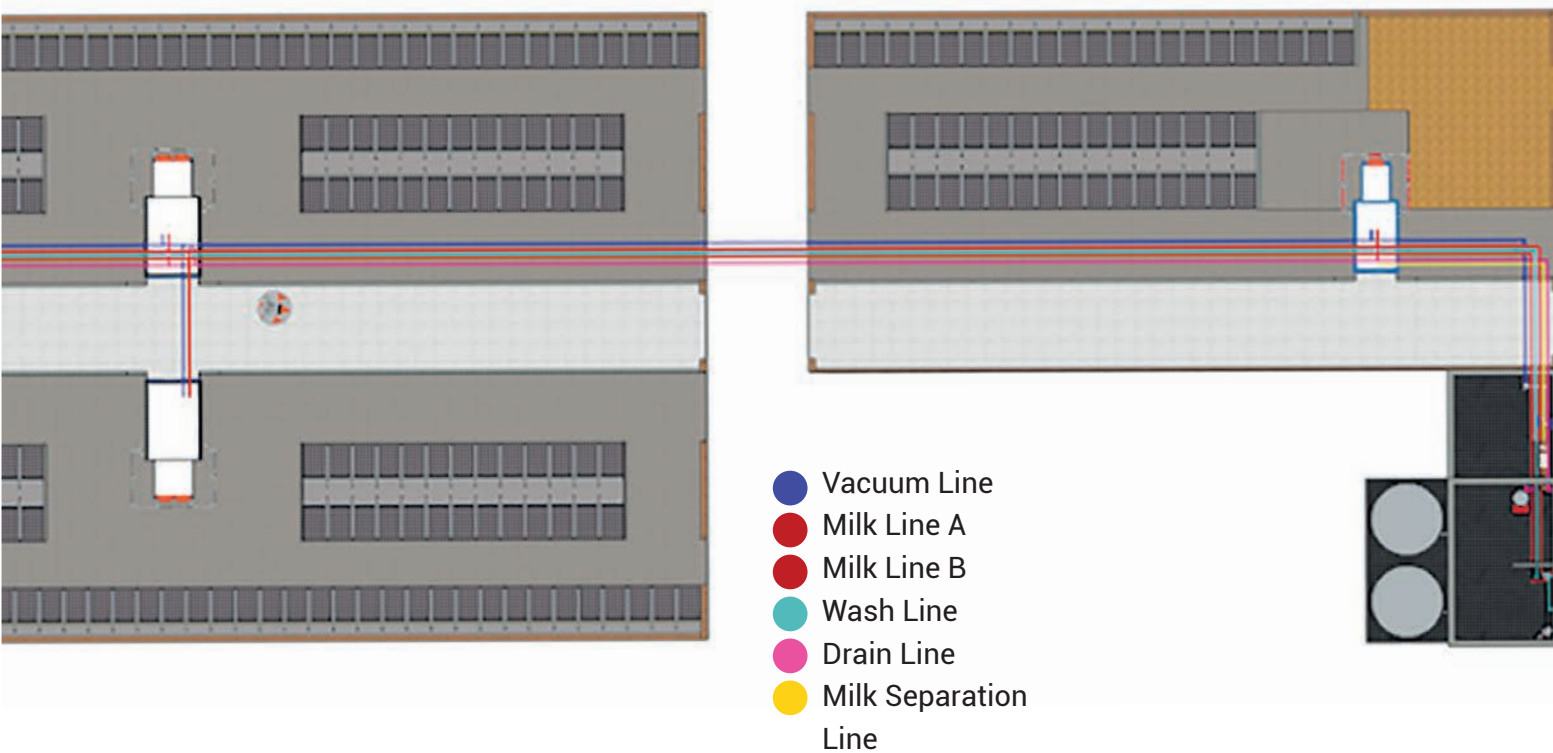
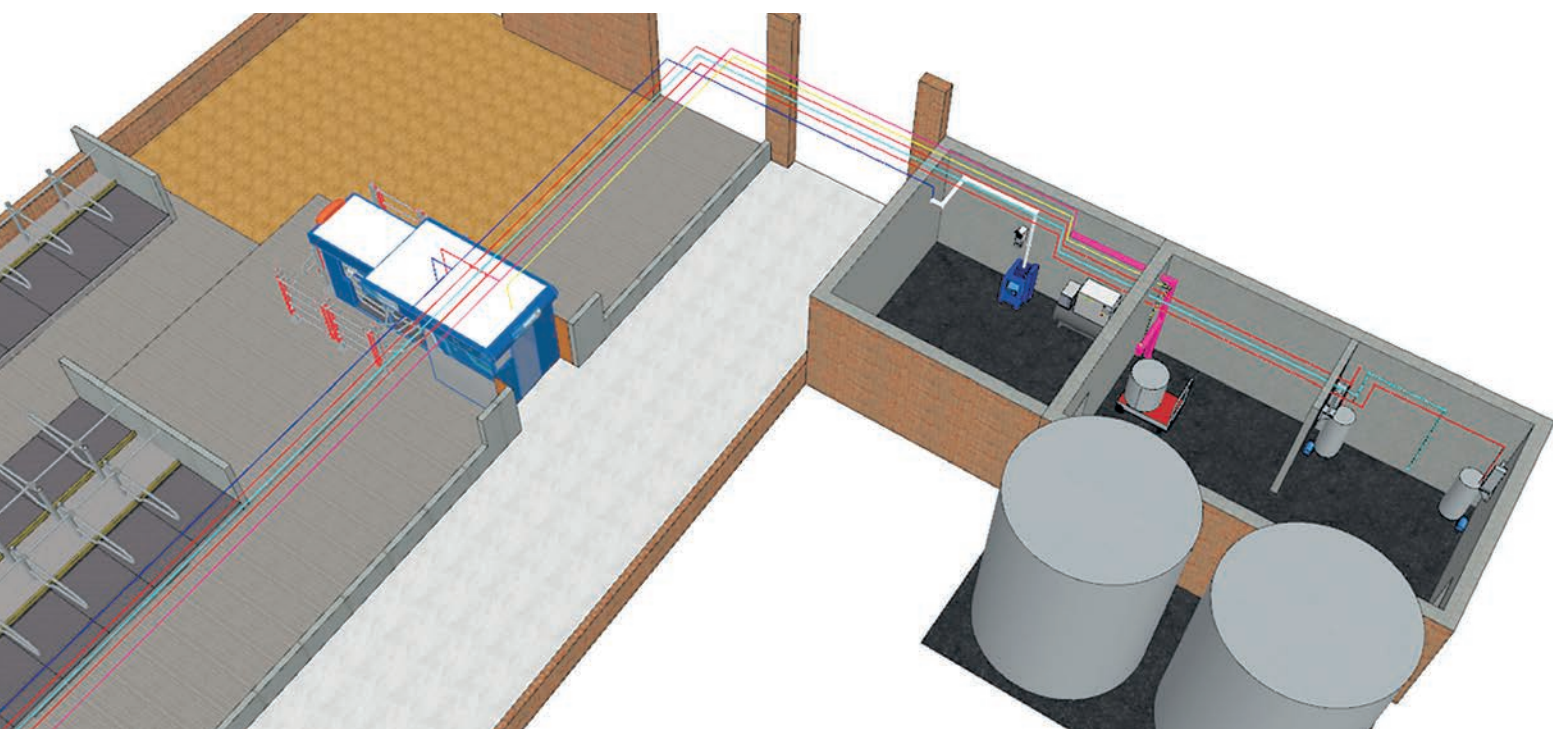


To secure
the best milk
quality in
large(-r) robotic
farms



For milk lines
> 70 meters







SAC Cares for the Cows

GEMINI UP - MAX Herd Milking



Group of cows are guided at fixed times to the robotic parlour



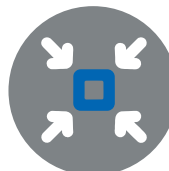
The fully automated milking process requires only minimal staff



The standard efficient daily (barn) routines stay unchanged

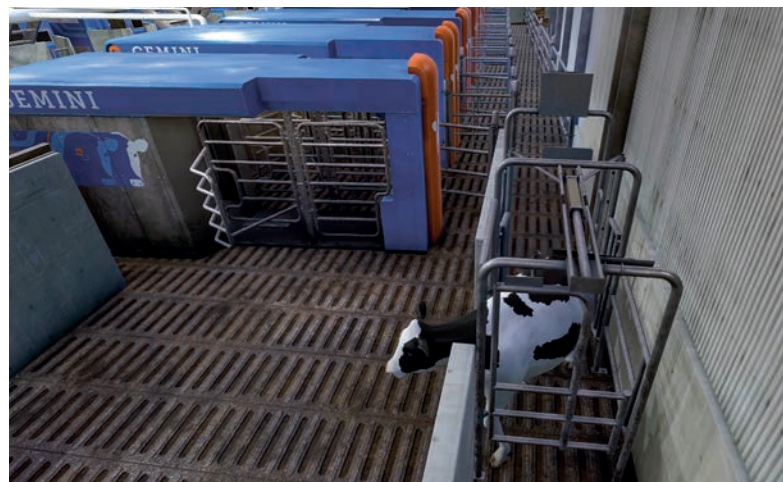


Guaranteed milking of all cows at fixed intervals for maximum results



Centralized milkhous, short milk-, water-, electricity- and feed lines





A healthy dairy farming life.

SAC, milking experts since 1938

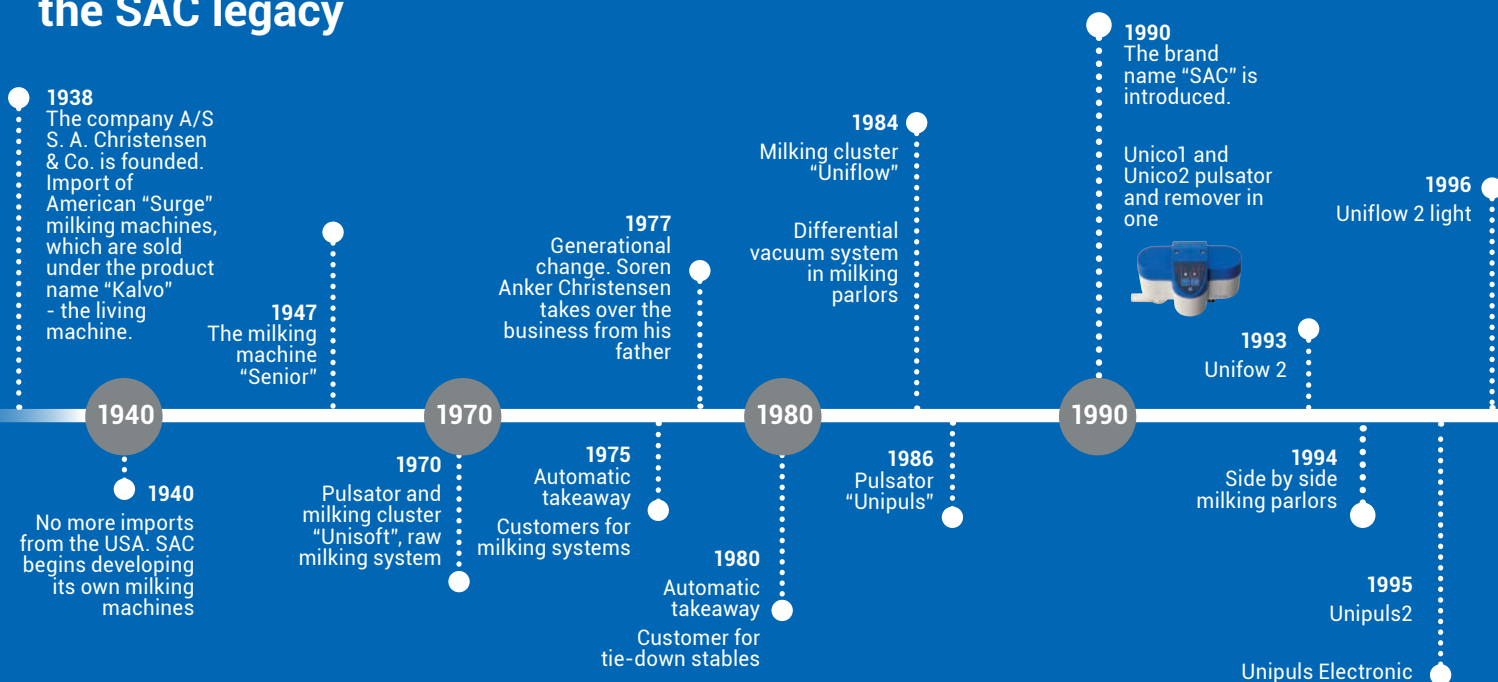
With a quick glance at the timeline, you can already see the enormous development SAC has undergone since its establishment in 1938. Over the years, the company has evolved from a family business, with its roots in Denmark, to a global player in milking technology and automation. Today, SAC is one of the few milking equipment manufacturers in the world market with a full range of milking equipment and related products.

Steen Christensen starts as an importer of Kalvo hanging milking buckets, which he imports from the USA to Denmark. The birth of SAC. When war starts in Europe in 1940, and importing from the USA becomes impossible, Steen Christensen starts developing his own milking machine.

All this resulting in the first milking machine designed and developed by Steen Christensen in 1947. This milking machine is given the brand name SENIOR. After this first milking machine, developments continues. Steen Christensen came up with his own pulsator UNISOFT, followed by automatic take-offs for all kinds of parlours and also the clusters themselves continued to be a point of development. Several products have been developed such as the UNIFLOW, the UNIFLOW light, and today we have already arrived at the UNIFLOW 4, which exists in several variants.

Besides the development of traditional milking systems, a lot of work is being done on robotic milking. In 2006, the first FUTURELINE milking robot, developed by SAC, was launched on the market. This

the SAC legacy

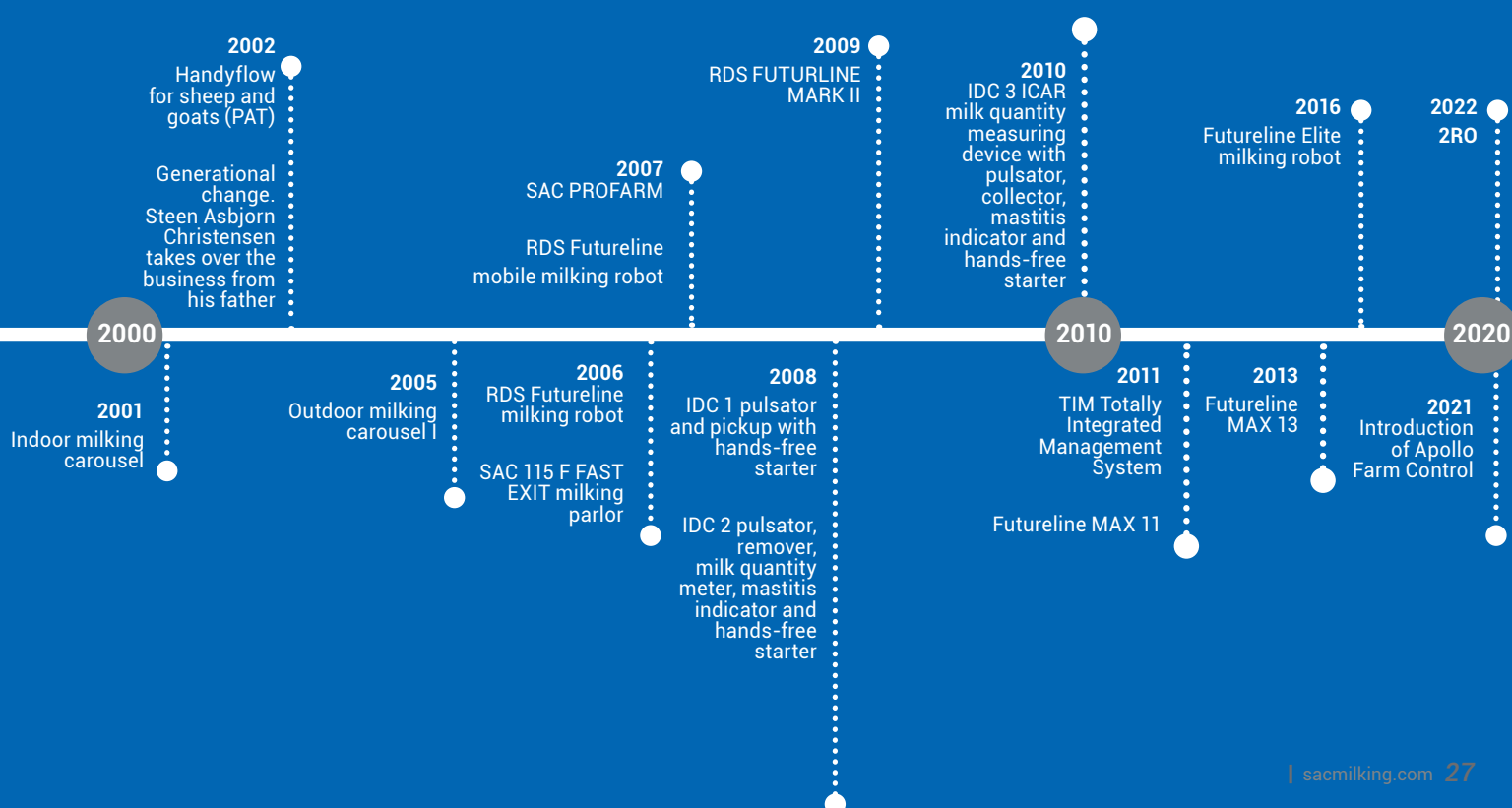


is succeeded by the FUTURELINE MARK 2 and the FUTURELINE MAX, introduced in 2011. In early 2022, SAC will introduce the GEMINI powered by SAC. A new way of milking, between the hind legs. Good for the cow and the machine. And so we end up with our latest innovation: The Gemini UP.

Developed with an eye on the highest quality. Indeed, SAC has always benefited from the early emphasis on high standards of milking technology in the Nordic countries. As early as 1967, they started the Nordic Recommendations For Milking Machines. A standard that led to the first ISO Standards

The fact that SAC has always actively participated in this process with personnel and research, means that SAC milking machines always meet the latest international requirements and that we are always aware during development that this high quality is essential. In order to put a good product on the market that can compete.

And to all this, we largely owe our SAC motto: 'if you can do better for the cow, the milk and the milker, then do it.'



**SAC**

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