GEA Farm Technologies

MI ONE

The Multibox-System

GEA Milking & Cooling | WestfaliaSurge

GEA Farm Technologies – The right choice.

Contents

Introduction

When you think about milking cows, beside economic and milk quality issues another aspect will directly jump into your mind: An extremely static time schedule and the necessity to be present at least twice a day to manually attach milking clusters. This brochure was written to point out a different way of thinking how to milk cows. By the use of our milking robot "MI*one*", you will gain a maximum level of flexibility – both for the development of your farm as well as for your personal time management. Based on excellent thought-through barn concepts and the use of mature technology you're able to build a state-of-the-art milking centre on your farm. As cows will determine their own milking schedule, you are left with more flexibility and time for herd management or other tasks, which usually are further down your to-do list. In this respect, the proven technology of GEA Farm Technologies offers high milk quality combined with the optimum comfort for your cows.

The central aspects:
- The primary choice of cow traffic concept
- A sophisticated barn layout: individually tailored to meet your needs

The Milk Centre concept:
- All important functional areas surrounding the MI*one*

Expandability:
- Your farm is growing? The MI*one* grows with it

The modular multibox principle:
- 1 to 5 box installations by adding further modules to existing installations

Intelligent barn concept! Why?

A dairy herd does not permanently contain only healthy and milkable cows, it also includes dry cows, fresh milking cows, heifers as well as temporarily sick and treated animals. It is these "special needs cows" in particular which require special care and cause an extraordinary amount of work.

This likewise applies to automatic milking systems and to conventional milking. In addition, traditional work routines as practiced for years in conventional milking systems will change with the use of a milking robot.

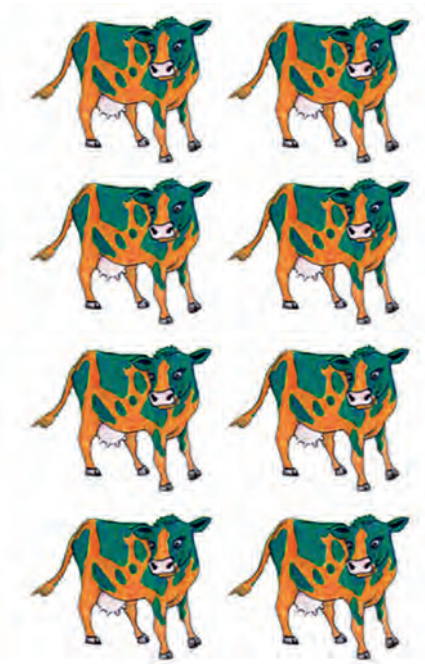
Therefore, managing the "special needs cows" should be the primary focus when planning a dairy for robotic milking.

GEA Farm Technologies has the ability to present the perfect solution for your business by offering the MI*one* combined with intelligent barn concepts!

It doesn't matter if automatic or conventional milking…
…20% of the cows create 80% of the work!

Lots of work

Reduced work



"special needs cows"

"standard cows"

The Barn Concept

If you are thinking to invest in a milking robot, you are already aware of all the advantages that an automatic milking system can offer. But at the same time, you should also keep in mind that this move means much more than simply replace your conventional milking parlour by a milking robot.

To convert your business into a robotic dairy farm it is indispensable to

- clearly define your targets upfront
- analyze all working routines in your current operation if they will suit within the new system as well
- develop a new barn concept based on the existing equipment.

GEA Farm Technologies will be happy to support and consult you how to realize your ideas and will accompany through the entire conversion process.

Defining targets

All day long excellent food, fresh water and a comfortable, clean free stall area - from the viewpoint of the cow, the requirements are quickly and easily defined. For you as the manager of a dairy farm, the economic and optimized production of high-quality milk is more likely the focus.

Analyse processes

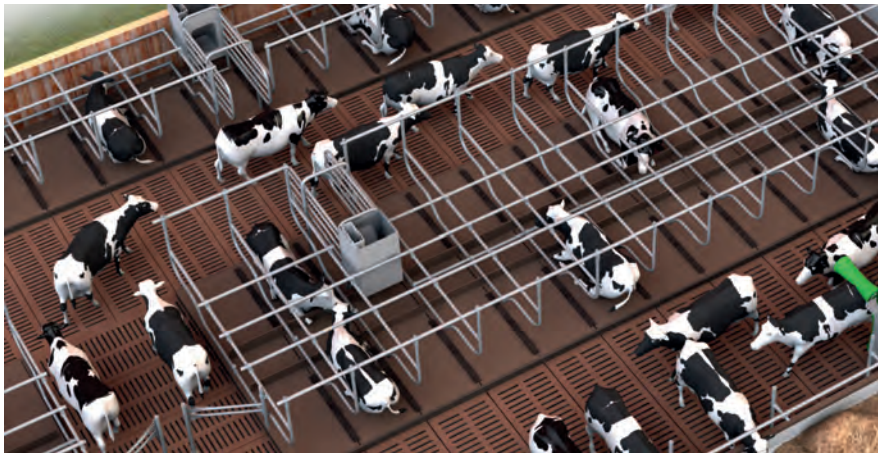
If you're planning to integrate an automatic milking system into your farm, other processes, e.g. feeding strategy, will most probably also require adjustment or optimisation. To achieve the maximum results, it may also prove necessary to modify the entire production process.

Developing the barn concept

There are various concepts for barn layouts. Each has its advantages and disadvantages and they are not all suitable for use on every farm. Both planning of the overall barn layout as well as the intelligent sectioning of the interior areas are part of a well thought-though barn concept. The following areas should be taken into consideration to achieve a cow-friendly barn concept:

- Lying areas
- Feeding area(s)
- Holding pen
- Selection and treatment area
- Calving area

Tip: Sufficient space for at least 10% of the herd should be allowed for the selection and calving areas. The central idea of the GEA Farm Technologies barn concept is the best integration of the technology into the overall system and the optimized fit for cows' natural behavior.




MI ONE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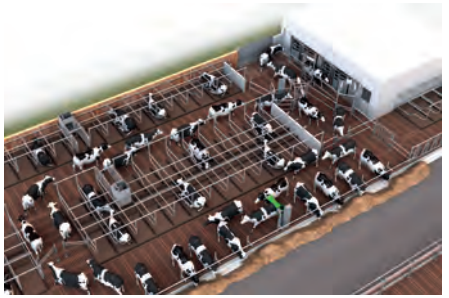
The Milking Centre

In contrast to decentralized solutions, with individual milking boxes in which the focus is solely on the milking of "normal cows", for GEA Farm Technologies the concept of the milking centre is the focus, so that the operator is able to optimize his work with the entire dairy herd. The Multi-box-System MI*one* is ideally suited for this and can be perfectly integrated. Hence the milking centre is more than just a location in which the cows are milked: it is a working area, that concentrates all necessary functions and equipment at a single point.

The milking centre includes:

- the core: the robot,
- cooling system and tank,
- a holding pen,
- a selection and treatment area,
- a calving area,
- the herd manager's office,
- the technology room.



Tip: The milking centre concept can be implemented in most old buildings with appropriate planning.

The core:
The milk robot "MI*one*" as a Multibox-System

Existing single box systems have a decisive disadvantage: they are not designed for growth.
Medium and large size farms, who see their chances for the future in the consistent growth of the herd, are being poorly advised if they are recommended a single box system. If you do not want to sacrifice your future business prospects to the limitations of the technology, the solution is a system that you can match to the operating circumstances and which can grown with them.

The obvious advantages of the "Milking Centre with Multibox-System" can be seen in the following aspects:

- expandable capacity,
- easy integration into existing barn lay outs
- reduced costs in comparison with multiple individual boxes,
- flexible work organisation,
- reduction in working time through optimised overall concept.

Expandable capacity

The milking robot MI*one* can be bought as a single box system and expanded to a Multibox-System with up to 5 milking boxes. The possibilities for the long-term development of your farm are considered right from the system planning phase. Thus you can decide on an increase in capacity at any time, by simply adding a further milking box. The milking centre with Multibox-System has clear advantages in comparison with existing single box systems:

- In the milking centre concept, the space for expansion is already considered.
- The addition of further milk boxes is achieved by simple flanging on to the existing system. The new milk box(es) will be mounted and connected to the end of the existing MI*one*.

Costs and economy

The milk centre from GEA Farm Technologies can be integrated in various barn concepts and can also be installed in old buildings. The milking box is supplied pre-assembled and is thus almost ready for use; only the connections must be laid. Whoever is planning for growth, will learn to value the Multibox-System that grows with them:

- In comparison with existing single box systems, the multibox milking robot MI*one* offers the highest capacity for the investment cost.
- Per cow or milking
  - lower capital expenditure, because high-quality tech nology is only procured once,
  - Reduced maintenance costs in comparison to several single box systems because less sensitive technology is used.

1 Box-System

3 Box-System

2 Box-System

The number of cows which can be milked per day and box is not dependant on technology alone. There are multiple other factors which will significantly influence the throughput e.g. number of milkings per cow/day which should be achieved. For that reason it is more logical to determine the capacity of a system by using of the number of milkings. As a rule of thumb, 140 – 170 milkings/box/day can be used to evaluate the required number of boxes and the maximum capacity of the system.

- Better use of resources, because up to 5 boxes
  – are supplied by a single vacuum pump, one PC, one wash system and one application arm,
  – can be operated with one milk filter,
- Energy is used more efficiently.
- The difficult part of the installation is executed with the installation of the first milking box.
- Only when a further 5 boxes are required, must a further robot be integrated in the system.

The economy of the Multibox-System is based, to a large extent, on the improved loading of the technology used and the efficient use of energy. The expansion of a Multibox-System is much simpler that the procurement of an entire single box.

Is your farm growing? The MIone grows with it!

5 Box-System

4 Box-System

Flexible work organization

- The compact arrangement of all important areas means that animals, which were previously stalled separately, are now more easily integrated in the work flow.
- All data are collected on a central PC and provided as clearly laid out information.
- Office work takes place in the midst of the herd.
- So that you don't have to be constantly on-site:
  Important information and unexpected events are relayed to you by mobile phone. Thus you are always aware of processes your robot is executing and can react accordingly.
- You can yourself specify which messages are important to you and should be automatically displayed on your mobile phone.

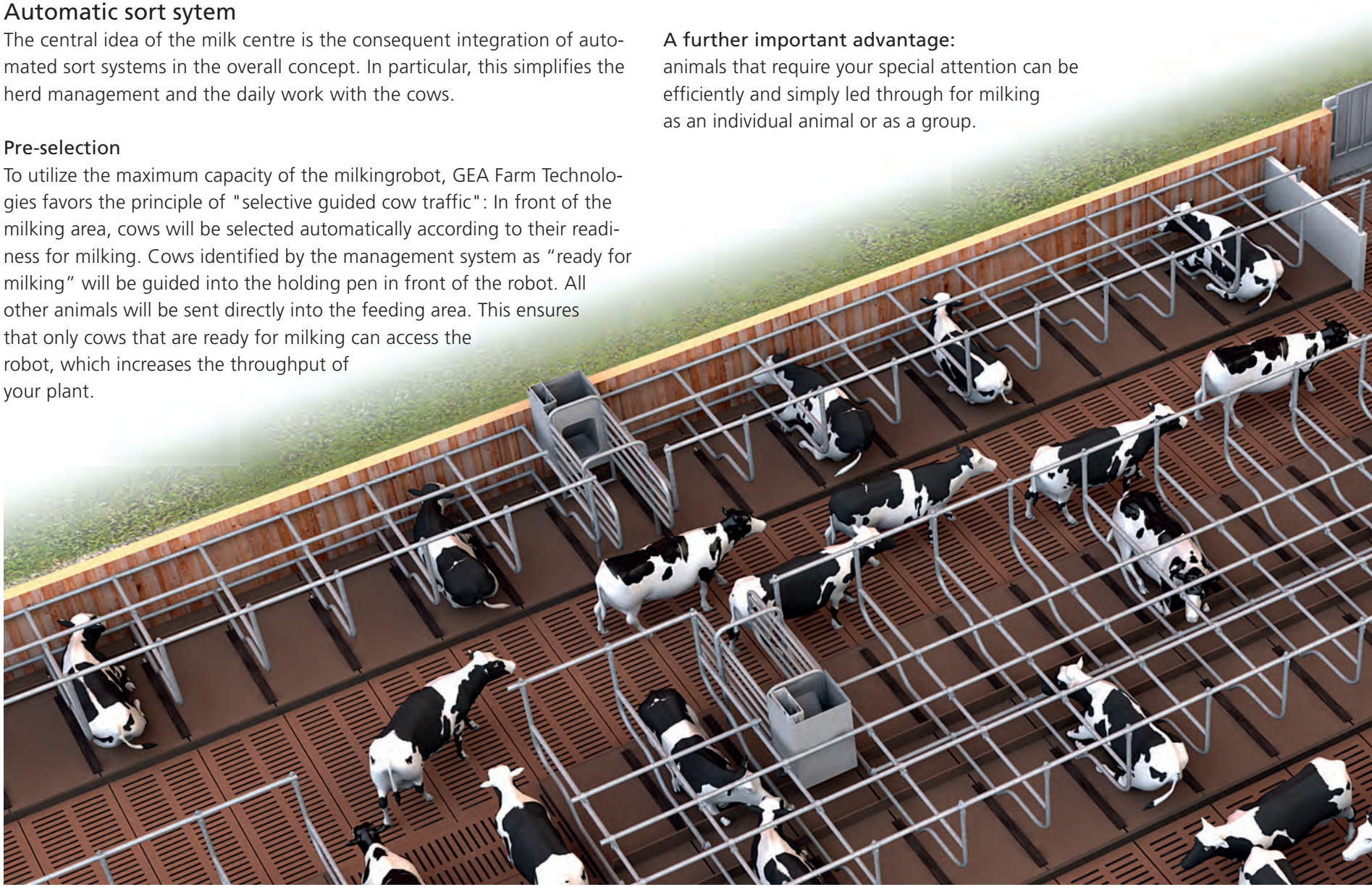
Automatic sort sytem

The central idea of the milk centre is the consequent integration of automated sort systems in the overall concept. In particular, this simplifies the herd management and the daily work with the cows.

Pre-selection

To utilize the maximum capacity of the milkingrobot, GEA Farm Technologies favors the principle of "selective guided cow traffic": In front of the milking area, cows will be selected automatically according to their readiness for milking. Cows identified by the management system as "ready for milking" will be guided into the holding pen in front of the robot. All other animals will be sent directly into the feeding area. This ensures that only cows that are ready for milking can access the robot, which increases the throughput of your plant.

A further important advantage:
animals that require your special attention can be efficiently and simply led through for milking as an individual animal or as a group.



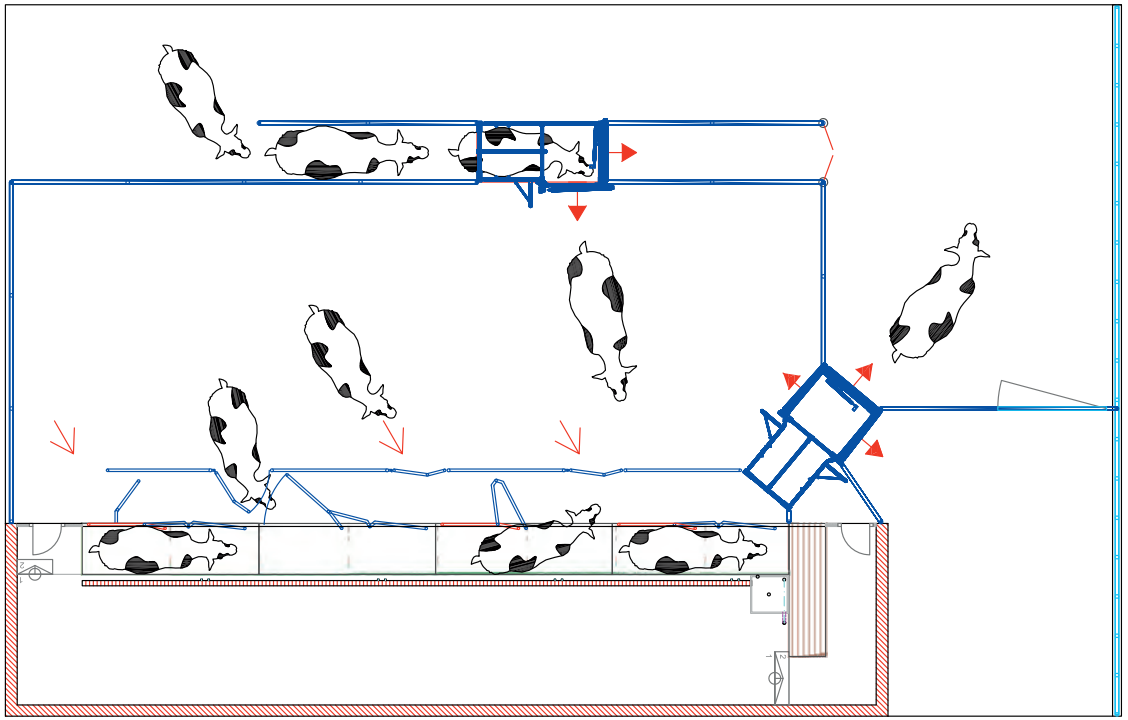
The holding area can be operated in two different ways:

Guided Exit

Prior to the actual milking box accesses, there is a driving passageway. The gates to the driving passageway are switched in parallel with the gates to the milking boxes. Animals that are exiting from the milking box are thus guided directly to the eating area or optionally to an additional selection, in which the animals are sorted into various barn areas.

This offers various advantages:

- Already milked animals cannot direct access a milking box for a second time and thus temporarily block the box for animals that are ready for milking.
- Milked animals do not cross over with the animals to be milked in the holding area.
- The capacity of the holding area is available solely for cows that are ready for milking.
- The possibility of an additional selection directly after the robot is provided.

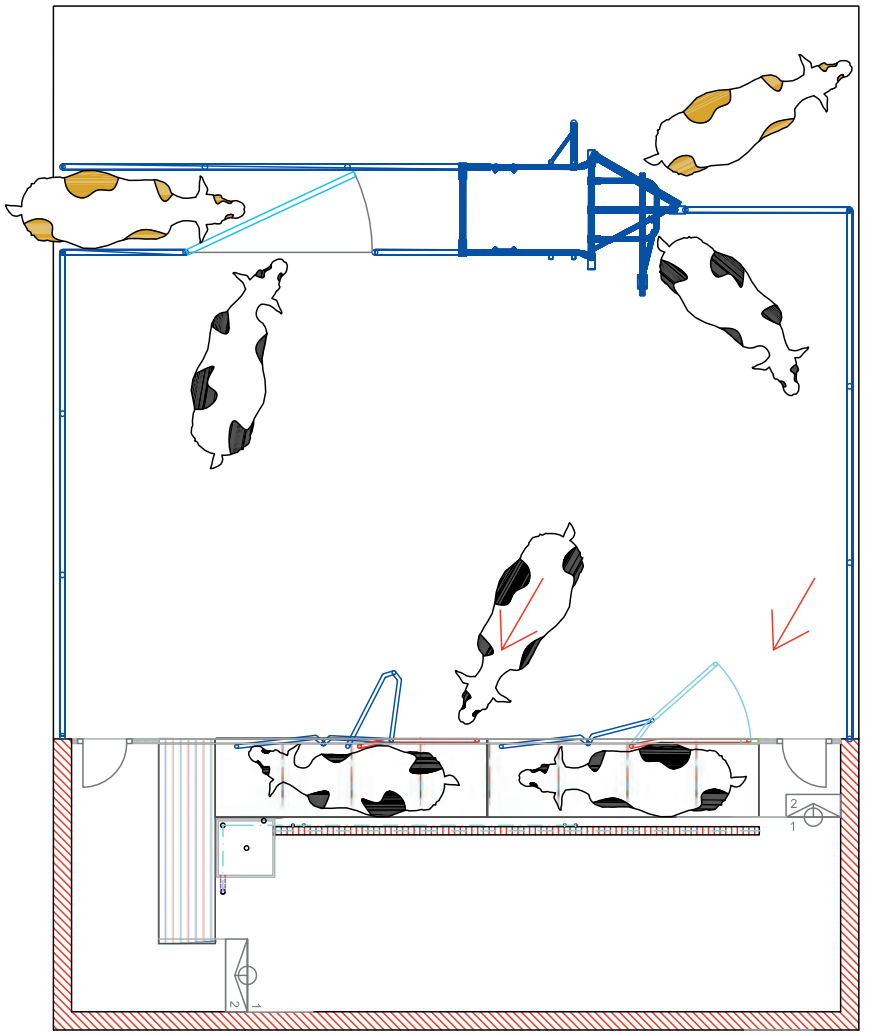


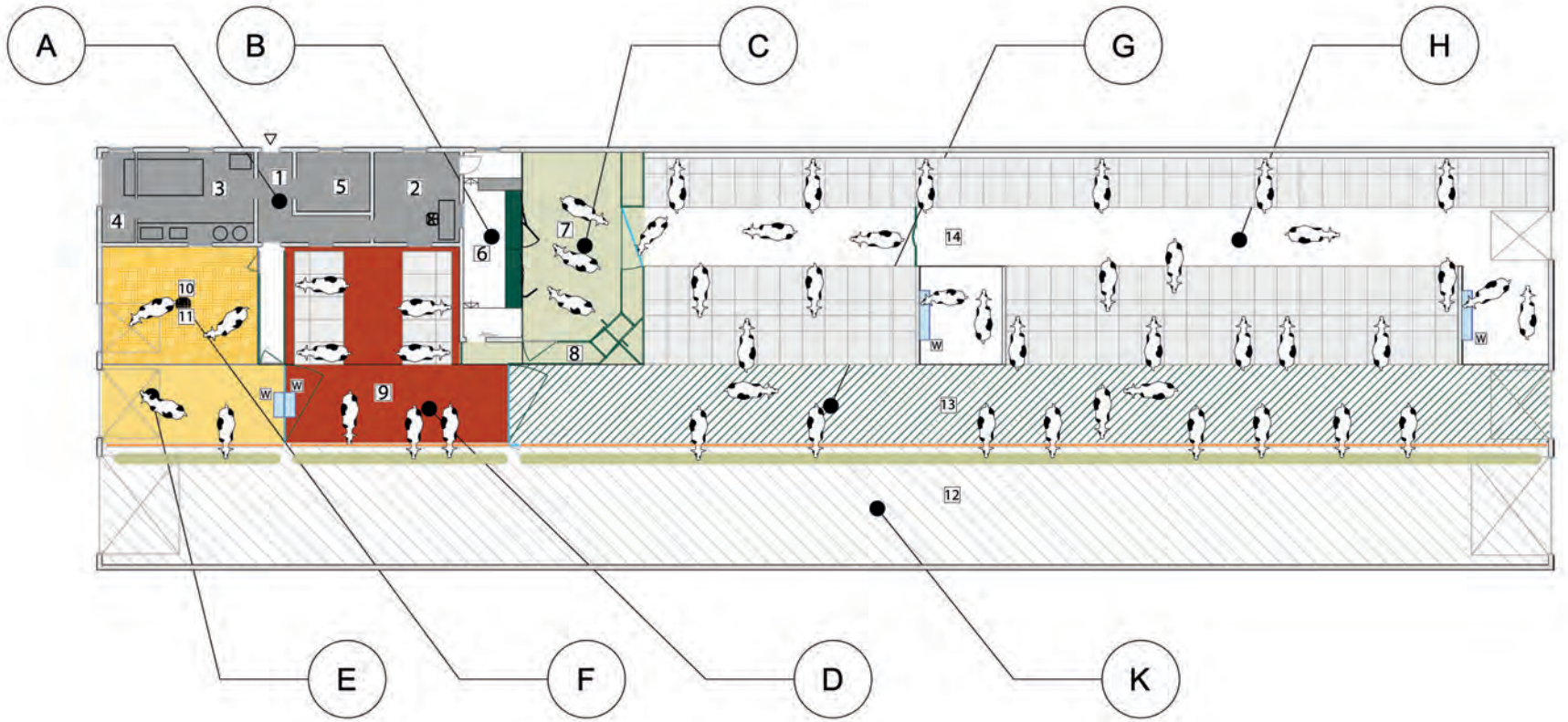
Free Exit

In contrast to the Guided Exit, there is NO driving passageway in front of the robot.

Cows which have already been milked will leave the holding pen through the pre selection to get back into their determined barn area. This means the Pre selection can be used as a post selection at the same time. This option is of particular interest to farms in which for building layout reasons, a direct integrated additional selection in the milking centre cannot be realized.

Advantage: reduced construction effort and cost!





Example barn of a 2 box installation

The milk centre concept for all dairy sizes:
All important technical components are centralized and easy to reach for the operator. Special Needs cows close to the MI*one*.

1 lock
2 office
3 technical room
4 milk tank room
5 storage
6 M*Ione*
7 holding area
8 selection alley
9 selection area
10 special needs area
11 calving
12 feed alley
13 feed passageway
14 walking passageway
W Water trough
A office/technology/milk tank
B MI*one* multibox system
C holding area
D selection area
E special need area
F calving
G feeding area
H rest area
K feed alley


Herde
Kuh
System
Box
Alarme
Optionen
Einstellungen
Produktion
Besuche
Gemelke
Kuh auswählen
Allgemeine Einstellungen
Kuh melken
Manuelles Ansetzen
Kuh selektieren
Kurzreinigung
Kein Weidegang
Auslaßsperre
Gewöhnter
Milch abtrennen wenn hoher L.
Kein Dippen (R)
Milchweg
Milchtank
Kuhlänge
klein (210)
Milch abtrennen wenn schlecht
Ort
GEA
System: Verbunden
Datensicherung: geplant 11.09.2010 01:30:00
Freitag, 10. September 2010 01:42:40

Milking and Technology – Step by Step

According to the principle of selectively guided cow traffic, preselection ensures that only cows that are ready for milking are allowed to pass through to the robot. All other cows are guided directly to the feeding area. This guarantees optimum loading of the system.

How it works

The cow enters a free milking box and stands comfortably on a floor that is covered with rubber mats. The cow is identified via a Responder or Res-counter (additional activity measurement) and its data is requested from the computer. The robot shifts the feeding basin based on the individual animal data and in so doing matches the box length to the size of the animal ("automatic indexing"), so that the cow is correctly positioned for the application arm. Now the individually calculated feed quantity is precisely allocated in small portions.

The milking box

The milk box is a rugged and durable construction designed for long-term usage. It is not an enclosed confining cabin but rather stands out because of its open design. The pneumatic entry and exit gates have been developed to offer cows a wide opening to allowing for a comfortable entrance and exit. Moreover the open design of the opposed milking side offers best access and view of the animals for the operator when required.

Choice:

- Two versions for animal identification
  – neck identification, optional with activity measurement
  – leg identification with activity measurement

automatic indexing:

When the cow is first milked, a one-off data entry is made. Thereafter the box is matched to the individual cow size through the displaceable feed basin at every milking session.

The essential advantages

- Smooth entering and exiting of the box for cows
- Good accessibility of cows for the operator
- high cow comfort

Identification:

- Offers the optimal possibility of a neck based activity measurement

Indexieren:

- Easy positioning of the cow

Tip: A pit in front of the milking box provides the operator with convenient access to his animals in a manner similar to that in a milking parlour.

The attachment process

The attachment process is defined as identifying and attaching the teat cups to cow's teats.

In this respect, a differentiation is made between three sequential process steps:

- positioning of the milk-rack,
- locating of the teats,
- the actual application of the teat cups.

Positioning of the milk-rack

Each milking box is equipped with its own individual milk-rack. All milking boxes utilize the same, electrically processed robot actuator

How it works: The application robot travels in front of the milking box, picks up the milk-rack and positions in beneath the udder.

Teat finding process

With the latest and unique teat finding technology from GEA Farm Technologies, the teat positions are detected quickly and unambiguously. At the heart of the system is a camera secured to the application arm.

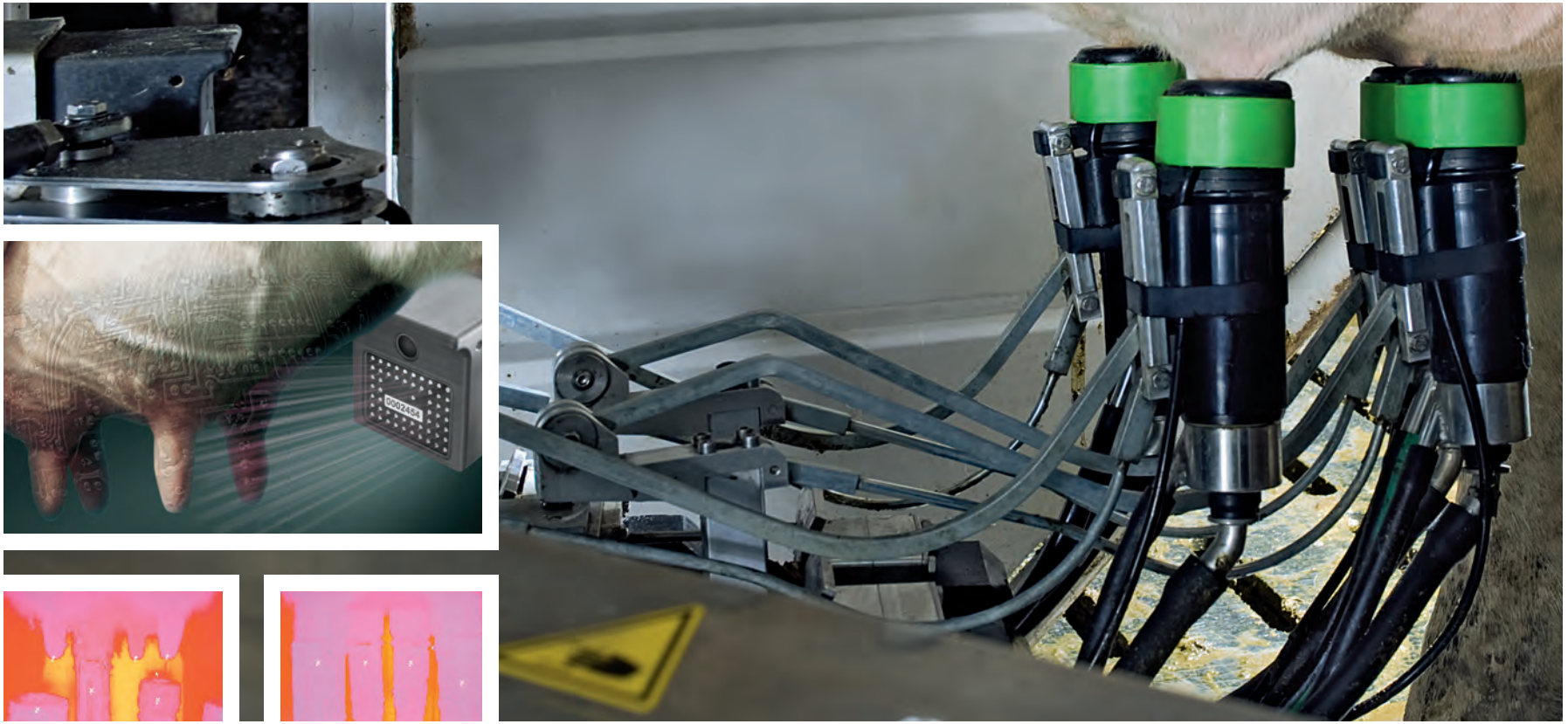
How it works

The camera detects the shape and position of the individual teats and simultaneously the position of the teat cups. The coordinates of the teats and teat cups are coordinated relative to each other and thus supply the necessary information for the exact application of the teat cups.

Details (standard)

The camera

- collection and real time processing of 3D information for teat finding process .
- Recording of the entire udder geometry and teat cups
- Opposite to existing, laser-based systems, the camera is not affected by external light sources (e.g. sunlight).



Teat cup attachement

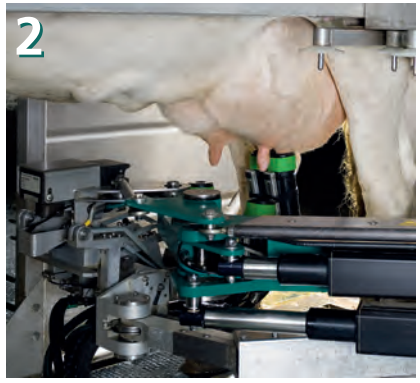
The milk-rack is characterized by very effective teat cup guidance during application. In addition, it guarantees best milk hose and cluster positioning, comparable to support arms in conventional milking parlours.

How it works

Camera-controlled, the milk-rack with the teat cups is positioned beneath the udder. Teats are identified by processing 3-D real time information and the cups are pneumatically raised and attached. The teat cups sit, flexibly mounted, even during milking within the milk-rack. Therefore, in case a teat cup came off it never can get in contact with the ground.

The features

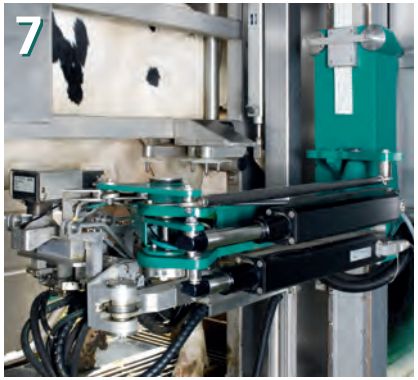
- Attachment
  - The robot arm does not remain beneath the cow after attachment.
  - The milk-rack supports each individual teat cup during application and milking.
  - The milk hoses are guided almost in line with the stomach of the cow, which guarantees best positioning and prevents rotation of the teat cups.



The essential advantages

- Teat location
  - No rotating laser or ultrasonic sensor is required beneath the udder
  - Reliable teat finding process
  - During milking the camera does not remain beneath the animal.
- Attachment
  - Time saving - because teats are cleaned directly inside the cups during attachment no extra time for teat rinsing is required.
  - The special milk rack design prevents teat cups from dropping to the ground at any time.
  - The design of the milk-rack allows enough flexibility and at the same time prevents "climbing" teat cups.

Moreover: the design of the milk-rack also allows the trouble-free manual application to the cows.

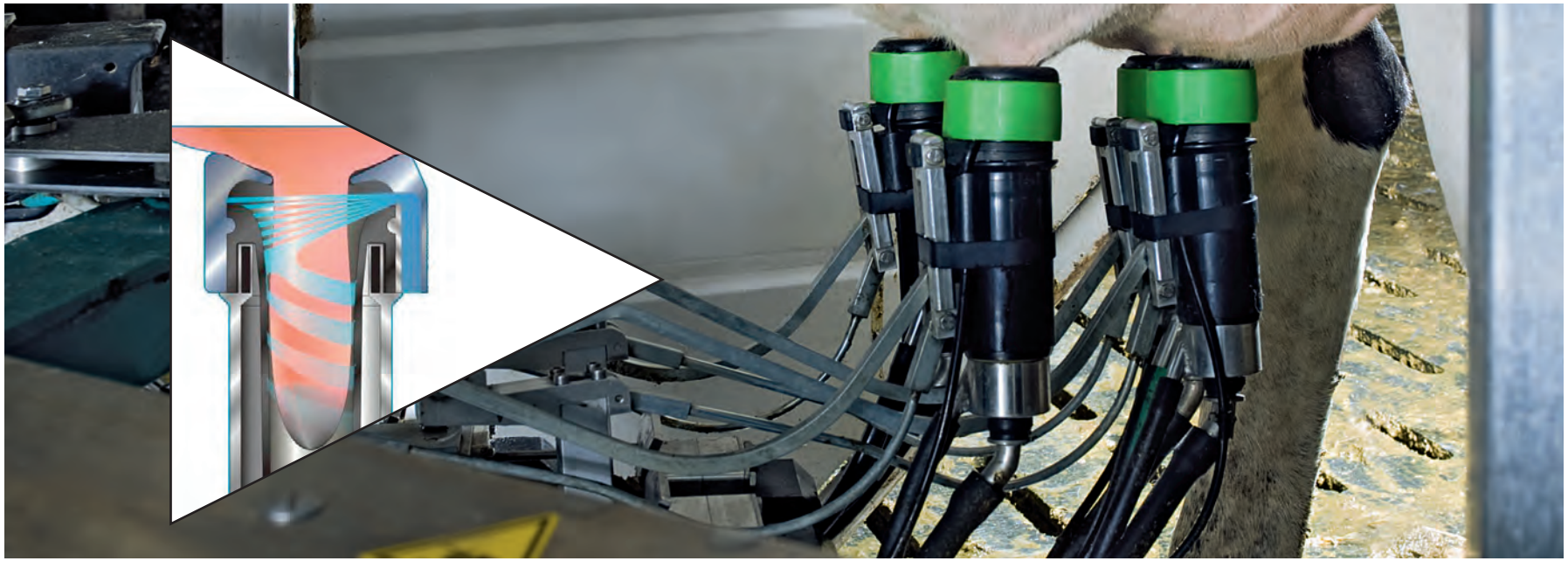


Milking

The milking process, including the work steps teat cleaning, pre-milking, stimulation, milking and detachment starts directly after the attachment of the teat cups. Consequently, the actuator along with the teat finding system is only required for attachment, which results in an extremely efficient and time-saving milking cycle.
The system supports individual quarter milk flow monitoring and detachment.

How it works

During teat cleaning each individual teat is gently cleaned for 15 seconds using water then finally allowed to dry in an air flow. Pre-milking takes place simultaneously, equally gently: the first milk jets are reliably separated with the rinse water and discarded. Permanent online milk quality control for each individual quarter for conductivity (and optionally: for colour) accompanies the entire milking time. Suspicious milk can be reliably detected and if desired - quarter wise - separated and drained. Animal individual stimulation, using Stimopuls technology, takes place directly after teat cleaning. When milking the flow rate is quarter wise monitored and the milk yield will be measured with maximum accuracy based on the proven DemaTron milk measurement system. After completion of milking, the data are transfered to the management computer.



The features

- Cleaning of teats directly inside the teat cup.
- Cow individual stimulation possible
- Pulsation with proven technology.
- Conductivity measurement and (optional colour measurement) allow the reliable detection of suspicious milk.
- Milk separation by quarter is also available as an option which allows to discard a treated quarter while collecting the milk from the other quarters for calf feeding.

The essential advantages

- With the attachment of the teat cups, all works steps (teat cleaning, pre-milking, stimulation and milking) can be executed at once. This saves time and ensures a smooth milking process.
- The separate cleaning of each teat in "its own" teat cup ensures there is no risk of cross-contamination between the quarters.
- ICAR milk yield measurement based on proven GEA Farm Technologies components
- The use of reliable valve technology ensures safe, trouble-free separation of waste milk.

Tip: As an option an ICAR approved milk sampler is available for use with the MI*one*.

The Teat Cup detachment

The detachment point is defined by the milk flow.

How it works

Quarter-individual sensors for permanent milk flow monitoring. If for a specific quarter the preset threshold of the milk flow (removal threshold) falls below a certain adjustable level and after a waiting time has elapsed, the system switches off the vacuum supply to the corresponding teat cup. The teat cups fall smoothly from the teats under gravity and drop back into their holders. They cannot fall onto the ground. Alternatively the detachment point can be determined by the total milk flow whereby all teat cups will be removed at the same time.

Tip: you can select which method fits most for your herd.

The features

- Individual quarter milk flow detection: Detachment method adjustable quarter-by-quarter or based on total milk flow
- Integrated over-milking protection
- Different adjustable thresholds for teat cup detachement of cow groups
- Teat cups are not removed at an angle from the cow, but fall smoothly, vertically down

The essential advantages

- Proven ICAR milk yield measurement
- Teat cups cannot touch the ground

Milk quality and milk transport

The milk line system and the type of milk transport can also influence milk quality.

How it works

The Multibox-concept allows to shorten the required milk transport line to a minimum– similar as in a milking parlor. The milk line is already pre-mounted in the factory and thus only the concentrate silo and the connection to the milk tank need to be installed on-site by our experienced service technicians. Compressed air ensures that residual milk can be removed from the milk transport line to prevent that milk remains in the line over a longer time period.

The features

- Stainless steel milk line and receivers
- Short milk lines ensure the shortest possible distance for the milk into the bulk tank
- integrated double milk filter allows filter change at any time of the day Pre-cooler can be integrated in the milk transport system as an option.

The essential advantages

- Stainless steel lines are easy to clean
- The short, lines
  – provide the essential requirements for gentle milk transport.
  – reduce the risk of bacterial grow.
  – less turbulences in the milk.
  Result: Gentle treatment of fat molecules.
- Less residual milk in the line because of short milk ways
- BackFlush and short cleanings for enhanced hygiene.

Tip: Milk filters can be used as an indication of barn hygiene.

Rinsing and Cleaning

Three different cleaning processes are available:

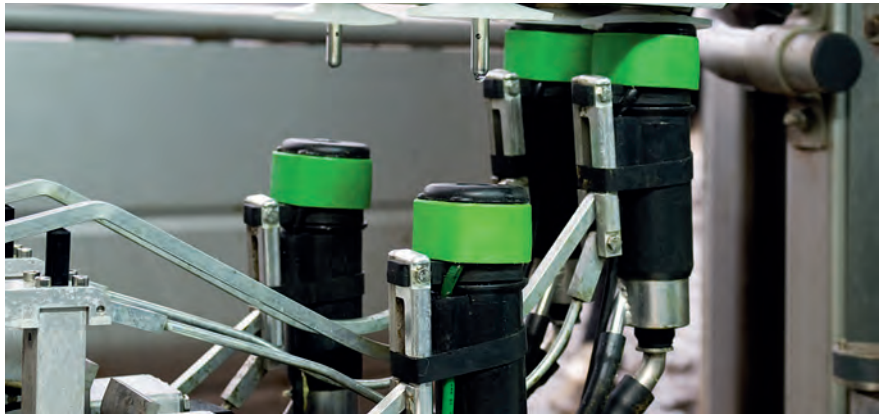
- BackFlush – automatic after every milking
- Short cleaning – separate box wash, multiple criterias adjustable
- Main or system wash – recommendation: at least twice per day.

How it works

With the so-called "**BackFlush**", each of the individual teat cups is rinsed directly with water after each milking. In this way the teat cups remain clean and a possible risk of infection from cow to cow is reduced to a minimum. The "**Short cleaning**" with lukewarm water takes place per box and lasts approximately 4 minutes. Rinse interval and duration can be individually adjusted.

The program of the main or "**system wash**" lasts for a total of 25 minutes and involves

- Pre-rinsing with lukewarm water,
- Main-rinse with hot water and detergent,
- After-rinse with cold water.



The features

- The water tank is located close to the milking units
  – This leads to a fast water supply for all milk transfering parts at the required temperature.
- Cleaning is controlled centrally, even in a Multibox-System. It is not necessary to synchronize several robots.
- 3-phase rinsing: 25 min total wash time for best hygiene results.
- Water circulation at a consistent water temperature
- Individual box wash after milking an adjustable number of cows, after a certain time interval w/o milking or after a specific individual cow

The essential advantages

Backflush function

- intermediate rinsing of the teat cups after each milking

Box rinsing

- Selective box wash while the rest of the system is still in milking operation

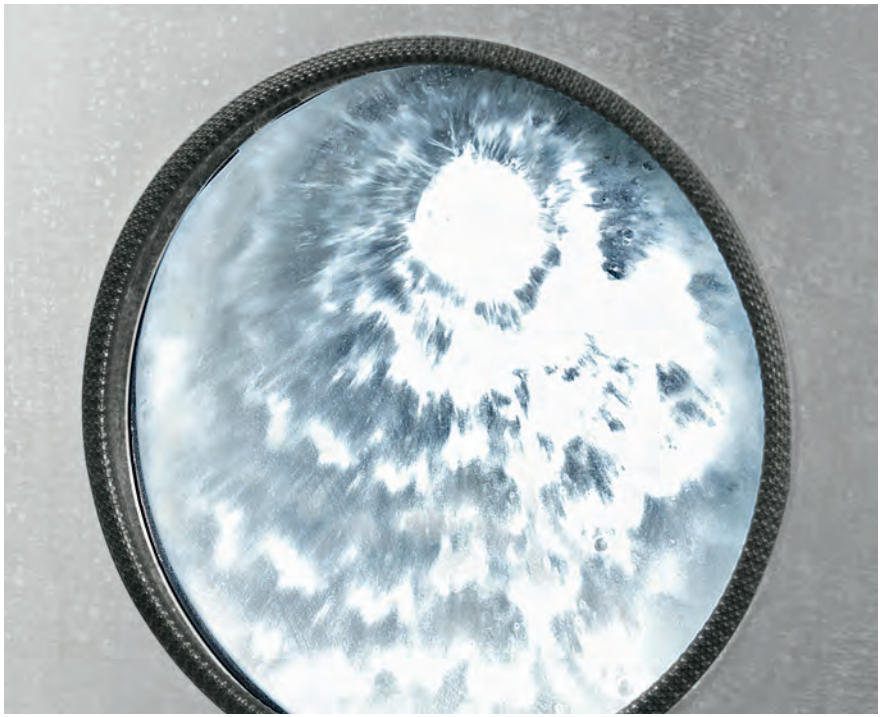
Main wash

- Efficient and reliable rinsing ensures the milk quality

And moreover...

Without an efficient vacuum supply nothing works. Therefore GEA Farm Technologies relies on high quality, reliable pumping technology: long-lasting, dependable and low-noise.
The extremely efficient vacuum control principle used is called VOD (Vacuum On Demand). In contrast to existing systems, the vacuum is only provided in accordance with the VOD principle, when it is needed.

Saving energy and with it hard cash.



Hygiene

SensoSpray 50 – the smooth revolution

Iodine free dipping agent for a quick and long-lasting teat disinfection. Intelligent ingredients for an optimized combination of disinfection and teat care.

Advantages:

- Especially designed for spray systems
- Maximum concentration of skin care and disinfection ingrediants
- No risk of corrosion for stainless steel components

Tip: Dipping agents with iodine can even corrode stainless steel.

CircoTop AFM/SFM – with tailwind to quality milk production

Alkaline and acidic cleaner for milking and milk cooling technology. Profit from a germ free, deposit resolving and reliable foam reduced cleaning of the whole system to secure your milk quality.

Advantages.

- Reliable, residue-free cleaning and disinfection of all milk transferring parts

Tip: suitable for all water conditions and hardness grades.

Milk storage

The milking robot is able to ensure high milk quality in all phases. To maintain this quality, quick and sufficient cooling is indispensable. As a provider for total solutions GEA Farm Technologies offers all options to cool and store your quality milk:

Pre-cooler

For efficient milk cooling a pre-cooler can be integrated into the milk transport system. This will allow the milk to cool on its way to the tank.

Tank connection

Adequate valve and process technology to connect your MI*one* with a milk tank. Moreover the connection to older tanks or tanks from other manufactures can be achieved .

Bulk Tank

Tanks especially designed for the MI*one* with an integrated control for optimized cooling and storage of the valuable raw milk.

Buffer tank inclusive valve and control technology

Offers the opportunity to temporarily store the milk when emptying and cleaning the main tank without interrupting the milking process of the MI*one*.

The features

- Connection of the robots to the cooling tank via 3-way valve (communication via programmable PLC in the tank control unit or an external control box)
- Automatic cooling start when there is a temperature change in the tank of 0.3°C. Additional time-controlled cooling start when using pre-cooling.
- Use of a constant pressure valve prevents ice formation with small milk quantities.
- An easy to understand work cycle during milk collection prevents waiting times and errors. The robot is stopped, the tank emptied and cleaning started by manual switching. After cleaning, the robot automatically restarts milking.

The essential advantages

- Efficient storage and cooling of the milk
- Extended utiliszation time of the MI*one* by the use of a buffer tank
- Multitude tank connections will allow farm individual solutions for your business
- Optional tank connection for top filling or bottom filling

Notes: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Herd management

When using a milking robot, computer aided herd management is an indispensable tool. This is because most farmers will not see their cows in the same regular frequency as in a conventional parlor system. For that reason a fixed element of herd management has to be the collection and evaluation of data which will help to efficiently manage your cows. A significant amount of this information is automatically provided by your MI*one* e.g. Action lists and working schedules, performance reports etc.

The MI*one* will provide you exact data, which are displayed directly at the RDM (Robot Data Management) Touch Screen or optionally being transferred and synchronized with the Herd Management Software DairyPlan C21 for further and more detailed evaluations.

In the standard setup, MI*one* delivers the following important data:

- Milkings per day
- Milkings per animal
- Milk yield per animal
- Milk yield per milking
- Quarter individual conductivity and (optional) colour
- Milking time and duration
- Concentrate intake per animal
- System performance
- Technical and cow alarms
- System check

As an option GEA Farm Technologies can offer additional technologies to provide enhanced information, e.g. activity sensors Rescounter II for automated heat detection in combination with DairyPlan C 21.

Cow Selection

The collected data not only allow a general overview about the herd, but furthermore it provides a focused observation so that work with individual animals is facilitated. If you like you are supported by the option of automated sort systems. Two variants are available within our concept:

- Additional selection directly integrated in the exit area from the Multibox-System
- Additional selection in the area surrounding the Multibox-System

Both variants allow automated sorting of animals which requires your attention and facilitate the management of the special needs cows. The particular animals which should be sorted can be specified by the operator and pre-defined via the herd management system.

Feeding

The accurate and correct feeding of high yielding cows is very complex. This is valid for conventional milking and the same is equally true when using an automatic milking system. Essentially, when using a milking robot it is important to find the correct balance between the basic ration and concentrate to allow highest dry matter intake.

Hints regarding concentrate feeding with milking robots:

To attract a milking robot to cows concentrate has to be offered whereby a minimum of at least 350g to 500 g per milking visit should be dispensed. The maximum should be in the region of 2 kg concentrate per visit. The amount of concentrate is limited on one hand because of the physiological tolerance and on the other hand because of the time period in which the cows have to eat the concentrate ration during the milking process. Dependent on the frequency of milking, the amount of concentrate quantity is therefore limited in the robot to 6-8 kg per animal per day.

Tip: The MI*one* is not intended to be a replacement for a concentrate feeder.

Tip: to determine the correct feeding strategy you should contact your nutritionist before the start up of the robot system.

The GEA Farm Technologies concept provides the option of feeding cows in groups according to their milk yield. Depending on the homogeneity of the herd it can be recommendable to establish at least two feeding groups:

- High yielding cows
- Lower yielding cows

Access to pasture and milking robots

To summarize: When pasture is available near to the barn, you can send cows out to pasture as normal and simultaneously continue milking in the barn as normal. To also ensure that during pasture periods cows are milked frequently enough, an optional pasture selection system can be installed. The system then only lets those animals out to pasture whose next milking time does not fall below a time interval specified by the operator. With access to pasture, there is another advantage of the Multibox-System: If cows enter the barn area in large groups from pasture, this can easily result in a milking jam leading up to the robot. This is much more quickly reduced with a Multibox-System than in comparison with a single box.

Cleanliness

If cows are automatically milked, it is especially important to keep the cows lying areas clean.

Prerequisite for clean animals in the milking box is therefore:

- A sufficient number and adequately dimensioned free stalls
- Clean and dry litter or bedding material

Tip: So that as little dirt adheres as possible, the udders should always be shorn.

Animal health

Directly with the start of the barn conception and the milk centre planning, the aspect of animal health and welfare should be focused. When you decided for a semi – selective cow traffic concept GEA Farm Technologies recommends to guide cows from the rest area via the MI*one* to the feeding area, following the principle "Resting/Milking/Feeding".

Tip: If cows lie down directly after milking, there is an increased risk of mastitis.

A significant aspect of animal health is however, the robot itself. After a short time period you will soon start to recognize how calmly the cows will behave when milked in the MI*one*. Reason for that:

- The cows can determine their own milking rhythm.
- The robot always carries out the same working routine during milking.
- The robot always makes the same movements and noises and will never get impatient.

Regular and recurring routines during milking and enough space in the barn will significantly reduce the stress level of your cows with lots of positive side effects.

Labor time

When switching from conventional to automatic milking in most cases the outlook of labor reduction is one of the key reasons for that decision and can be supported by figures: With an optimized barn concept, a 30% or even more time saving per cow and year is achievable with the use of a robotic system compared to most conventional milk production.
Today, most dairy producers which want to milk cows with an automatic milking system make their decision because they

- want to increase the size of the farm but retaining the same labor capacity, to stay competitive.
- want to get rid of fixed milking schedules to gain more flexibility for their daily work and will also allow them to focus on more important tasks such as herd management.
- want to have the freedom for more family time.

Tip: Even with an automated milking system it is most important to be regular present in the barn observing your cows.

Notes:


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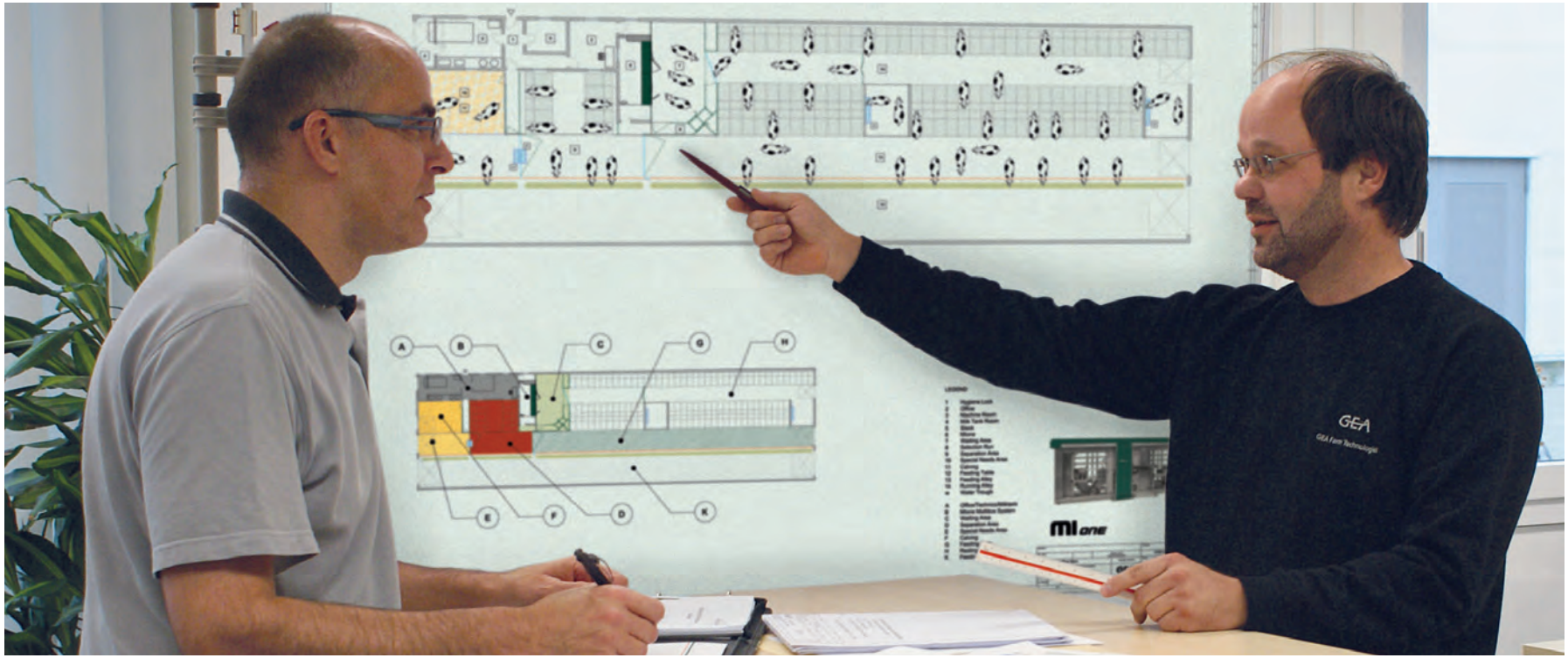
Support right from the very beginning.

There is a large pool of standards and installation plans to help you along. We can also design customized solutions on our CAD system. You will be able to immediately see the result of your ideas in detailed drawings, regardless of the size of the installation.

DairyDesignService:
On-site consultancy is extremely important to us! Above all, you will profit from the experience of our Worldwide network of excellent dairy design experts. Our support will not end with the completion of the installation. Furthermore we will provide detailed instructions which will allow you to use the system to its full potential.

Customer satisfaction is one of our most important goals:
With the DairyDesign Group from GEA Farm Technologies we are able to provide you with an optimal planning of your facility. If you're satisfied, we have done our job properly! Our service will guarantee that your goals and ideas can be turned into reality.



Always by your side

With your decision to purchase a system from GEA Farm Technologies, you automatically invest in competence for consultancy, distribution and service because of the close worldwide network of service and distribution partners for milking, cooling and barn technology.
We will accompany the entire process beginning with the support for the Dairy Design up to the start-up of your system.

Many years of experience and excellently qualified service technicians will ensure that your system is ready for use 24/7.

The suitable maintenance contract:

A milking robot has to operate day and night, 365 days yearly- and this for many years. Summed up, this amounts to more than 8500 operating hours – per year! Ensuring the reliability of operation, GEA Farm Technologies dealers can offer a range of various maintenance contracts.

You can trust GEA Farm Technologies day and night!

MI*one* at a glance

Control unit
- Manual milking
- Additional feed
- Manual indexing
- Animal information

3 D camera and electrical operated actuator

Comfortable milk stall

One milk rack per stall

Dipping device (optional)


Pneumatic Entrance /
Exit gates
Concentrate dispenser
Optional neck or
leg identification
Touchscreen
Quarter-individual
conductivity measurement
Milk yield measurement
Milk separation
Milk pump
Color sensor (optional)
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GEA Farm Technologies
WestfaliaSurge
Double milk filter
Calf milk separation
Milk receiver