



# LELY DAIRY EQUIPMENT

Barn, milk and feeding solutions



Create the future for your dairy farm



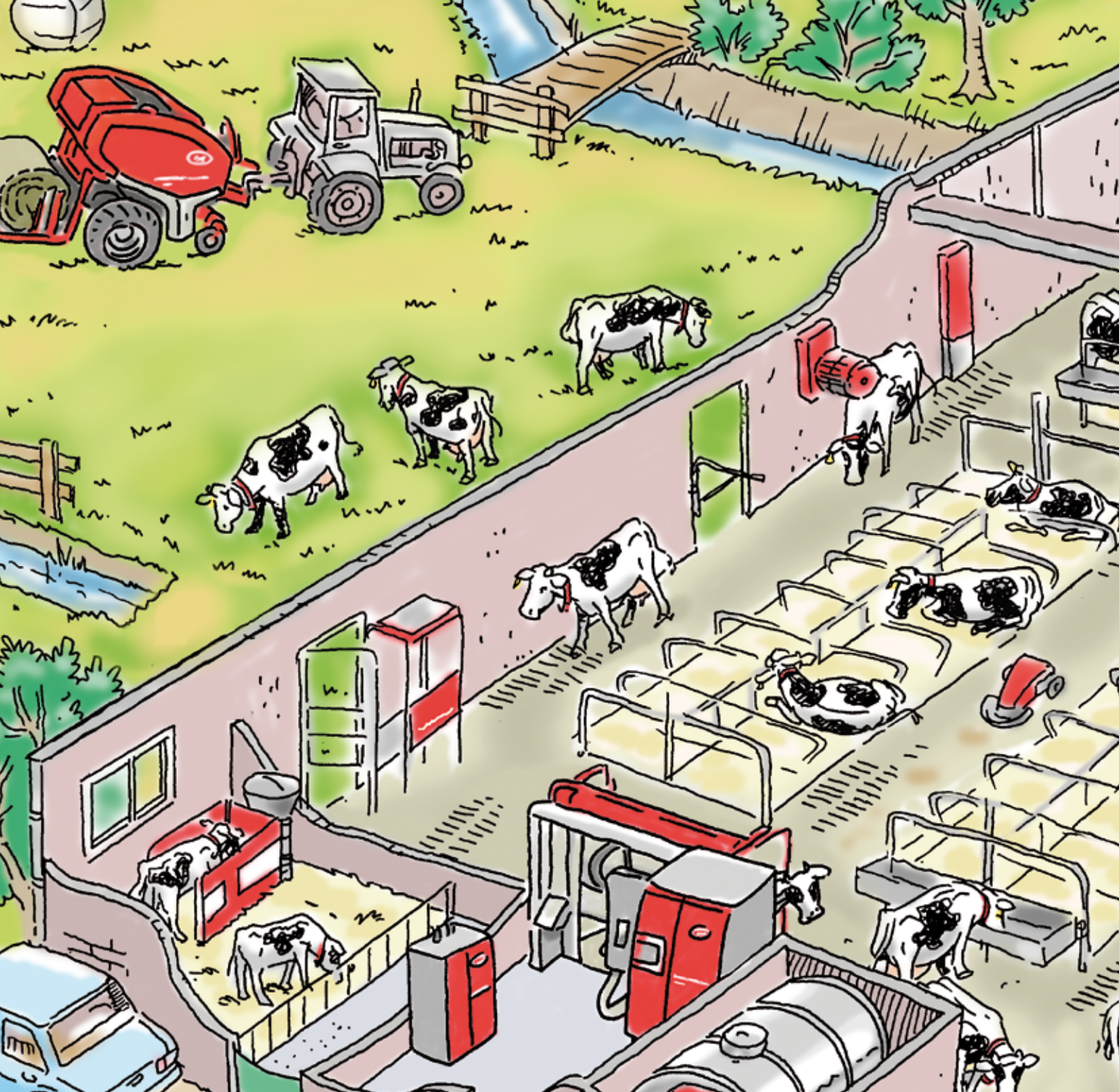
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*innovators in agriculture*

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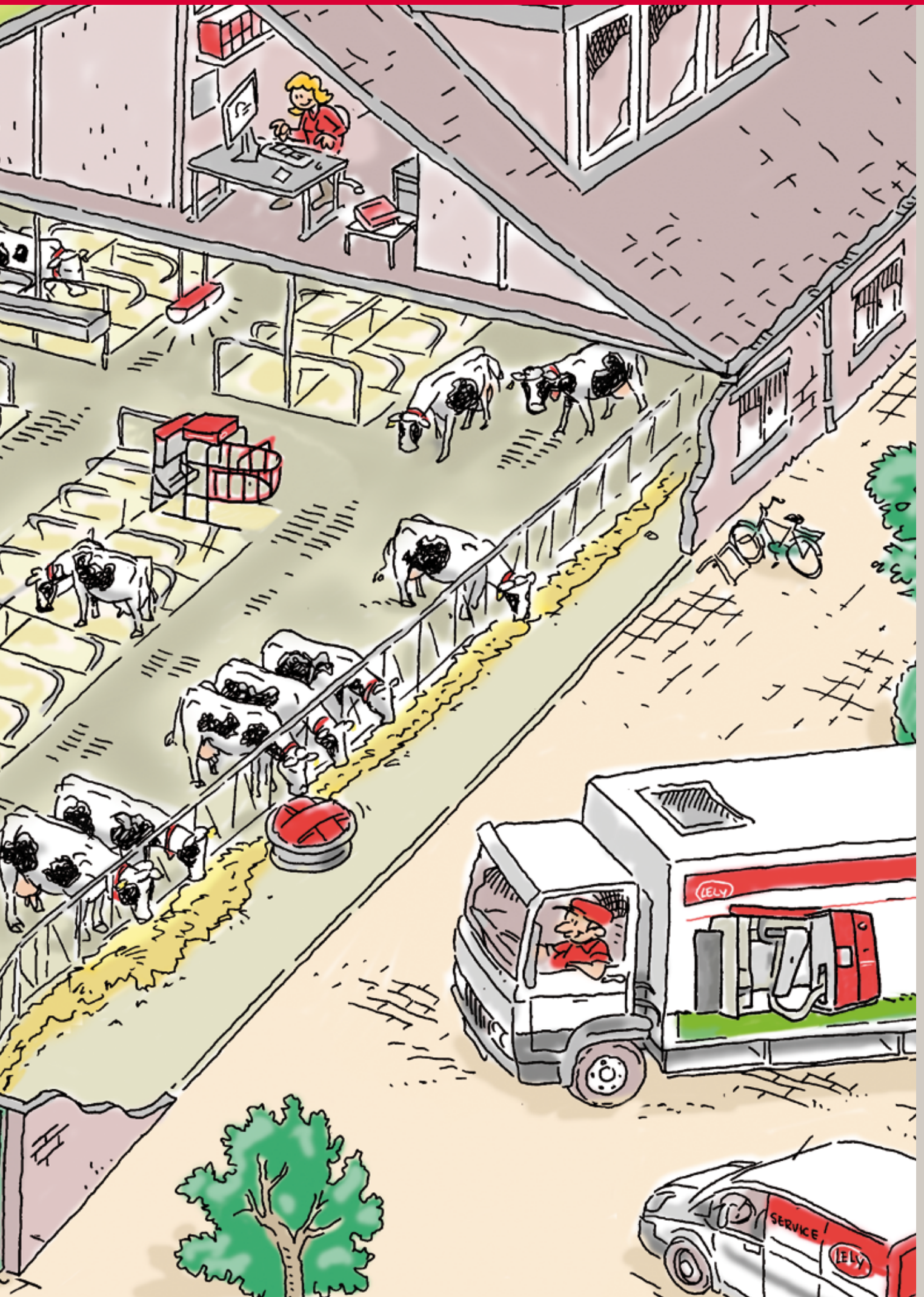
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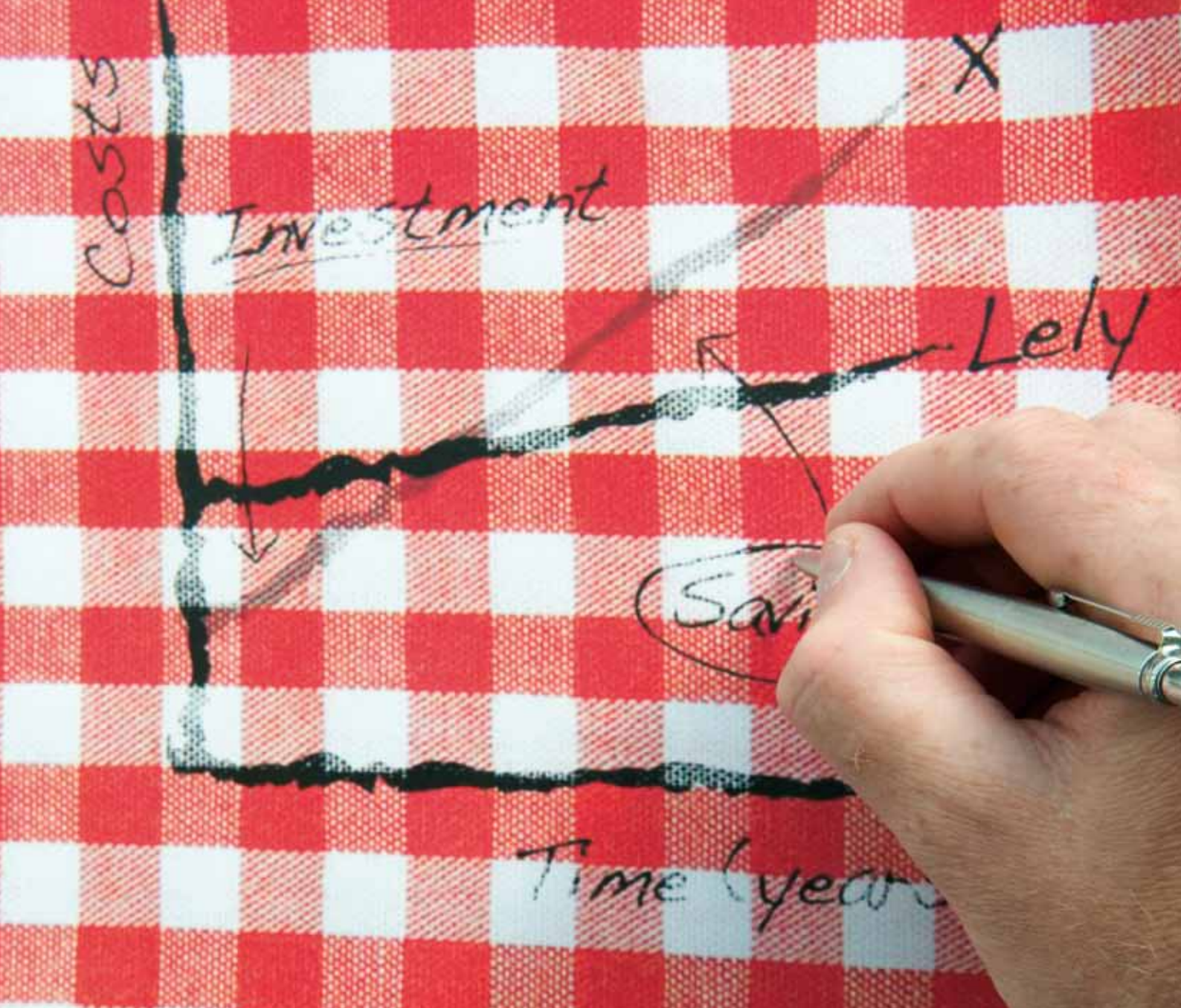


## We are committed to helping you create the future for your dairy farm

Since the founding of Lely, innovation has always been our passion. Innovation in providing the best products and the best service, all aimed at improving the life of today's modern dairy farmers. Every day we are busy improving our products so that tomorrow, too, we can live up to your expectations.







## Why opt for Lely?

Every day we strive to think out new solutions for your challenges in dairy farming. We listen carefully to the things that are on your mind. This allows us to create concepts that are a great help to you as a dairy farmer. In our factories, these concepts are turned into first-class, reliable and sustainable products, always designed with respect for the farmer, the animals and our environment.



## The cow is key

Lely's objectives are not primarily focused on automating operations. We are making efforts to build a well-conceived concept around the cow (i.e. the starting point). A perfect example of that strategy is the so-called I-flow concept of the Astronaut A4 robot, which ensures an easy access entrance and exit for cows. Another example: the robot arm. It remains underneath the cows allowing for a quiet and peaceful milking time and resulting in cows producing more milk and healthier udders. This was our starting point for product development in the past and it will remain that way in the future for many years.

## Together we can make a difference

Our corporate slogan "Live Life Lely" stands for our core values: committed people, innovation, independence and respect.

Respect means we aim to manage the social and environmental impacts that our products and services may have. We acknowledge our responsibility with respect to sustainable developments within the agricultural sector. Consequently, producing sustainable products which leave a minimal footprint in our environment are becoming an essential part of our modern life.

## We offer you the lowest cost of ownership

When considering an investment, whether it is a milking robot or consumables, please do not just look at the initial cost of investment, but also at all costs in the years to come! Thanks to our focus – throughout product development – on reliability and durability we offer you a range of products

with the highest trade-in value, ensuring the lowest energy and water consumption, as well as limited service requirements.

## Because we want you to rely on us

Thorough checking of the quality of all materials used is a crucial aspect of production. Therefore all incoming parts are checked for proper size and material quality. This ensures quality characteristics for all components. In addition, the majority of our products will be tested for key operational functionality before leaving the factory. In practice, proper operation and service are just as important as efficient product development and accurate manufacturing. Therefore, Lely invests a great deal in training our service people. Our certified service engineers – unique in the dairy sector – are available 24 hours a day/7 days a week. In addition, we have experts in farm management, which can help you achieve maximum results with your herd.

## Freedom to enjoy your social life

Originally from a farming background, we know what it is like to wake up early in the morning. To spend hours in the barn, day in, day out, managing your herd in the most optimal way. It is the motivation behind our product development; to ease your workload during the daily routine and to take your dairy operation to new heights of consistency, economy and efficiency, while respecting animal welfare as well as the environment. We understand that better machines, help you to be more productive and we understand that if routine activities are taken over by reliable solutions, you have more time to enjoy a fulfilled life.

***SMARTER,  
FASTER,  
STRONGER!***



## Smarter, faster, stronger!

Three powerful statements saying exactly why Lely machines stand out from their competitors. Innovative thinking by our engineers often results in surprisingly effective solutions for making our products even more efficient. Durability and ease of operation are always key to these efforts. Therefore, we at Lely quite rightly say: “We are the innovators in agriculture”. Our unremitting efforts are aimed at improving the farmers’ social and financial wellbeing.



## Smarter

Lely Astronaut automatic milking system – The size and movements of the cow are monitored with a revolutionary 3D camera. This system also makes the arm move with the cow offering an unrivalled reach, regardless of the size of the cow. For more information go to page 12.

Lely Qwes activity collars measure the duration and intensity instead of just steps – an early indication of cow's heat. The Lely Qwes-HR collars provide additional functionality by measuring the cow's rumination activity – an early indication of the cow's health and can be linked with the cows' heats. For more information go to page 19.

Lely L4C – Well distributed lighting inside the barn – including an optimal time schedule – increases milk production by 6 to 10% and increases forage intake. For more information go to page 58.



## Faster

Lely Nautilus milktank – The Lely Nautilus is specially designed for use in combination with the Lely Astronaut Robotic milking system. Cleaning procedures are fast and the cooling capacity is attuned to the volume of milk present in the tank. For more information go to page 22.

Lely Calm calf feeder – Calves can still meet their natural behaviour and drink throughout the day, in a controlled way, while labour is reduced to the minimum. As a result calves grow faster and healthier. For more information go to page 44.

Lely MQC – Lely was the very first to introduce a system to detect – and separate – colostrums, milk containing blood as well as substandard milk. This advanced system checks milk colour, conductivity and flow to ensure maximum control of milk quality. Through the optional Lely MQC-C system Lely can even check somatic cell counts at quarter level on-line. For more information go to page 15.



## Stronger

Lely Discovery barn cleaner – The rugged construction and neat design guarantee a long life span as well as low maintenance. For more information go to page 52.

Lely Astronaut automatic milking system – Offering you advanced durable milking practice at the most competitive price. For more information go to page 12.

Lely Juno feed pusher – A powerful heavy machine making it possible to push roughage up to a height of 65 cm and a width of 200 cm. For more information go to page 32.





## Milking Equipment

The most labour-intensive activity at a dairy farm is the milking process. It is also the core activity, as milk production has a direct effect on your profitability. We are the true originators of robotic milking and since 1992 the Astronaut robotic milking system has provided substantial financial and lifestyle benefits for dairy farmers. This has never been an excuse for us to rest on our laurels. To the contrary, innovation continues, using specific know-how from our dedicated people at Lely and feedback from our customers, and has resulted in an impressive range of products. All our 'milking equipment' is developed to assist the farmer in optimizing all essential factors around the milking process.

**Lely Astronaut A4 automatic milking system**

Just like all our dairy solutions, the Lely Astronaut A4 milking robot has been developed from a clear-cut starting point: the cow. Page 12.



**LELY ASTRONAUT A4**

**Lely T4C – Time for Cows management system**

This smart system allows you to spend your valuable time on the cows that really require your attention. Page 18.



**LELY T4C**

**Lely Nautilus milktank**

No compromises are made; the cooling process starts as soon as the first drop of milk arrives in the milk tank. Page 22.



**LELY NAUTILUS**

**Milking Hygiene – clean on the inside and outside**

Being part of the food supply chain is a great responsibility, therefore Lely has developed a special range of cleaning products for milking equipment. Page 24.



**MILKING HYGIENE**

**Caring – comprehensive udder care**

A range of high quality udder care products that are based on years of experience from a world leading company. Page 28.



**CARING**



## Lely Astronaut A4 automatic milking system – the natural way of milking

Milking is a routine job that needs to be executed with the highest quality and consistency. With the Lely Astronaut it's as though you have hired the most consistent, reliable employee imaginable – and he's ready to work 24/7 for years to come!

## Benefit as farmer

Being one of the main operations on your dairy farm – milking – is taken care of by a Lely Astronaut A4 robot, you now have the time to enjoy a better lifestyle. Organizing your working day the way you like it allows you to be more flexible and no longer have to stick to fixed milking times. The time saved can now be allocated to monitoring your herd and to optimize all the essential decision making factors that go into making your farm a more profitable business. Two decades of robotic milking have made it clear to our customers that by allowing the cow to make her own decisions, both comfort and productivity are optimized. The cows make their own choice for either resting, being milked or fed, ensuring maximum performance for all cows across the herd. Cow production increases of more than 10% are common after the installation of a Lely Astronaut robotic milking system. Especially heifers which benefit from more milkings per day. Even at the larger farms, labour productivity can increase to 1.2 million kg of milk per year per employee (fte).

## Why opt for the Lely Astronaut milking robot?

Dairy farmers who allow their cows to move freely in the barn achieve the best results. Just like human beings, cows do not like to be pushed around. Due to Lely's free cow traffic concept, your cows can eat, drink, rest and be milked in the Lely Astronaut robot throughout the day, while all data can be viewed at the touch of a button using the T4C management programme. If you decide on a Lely 24 hour/7 days a week milking robot, you will enjoy the peace of mind that comes with our 24 hour/7 days on farm support network. Lely is the only one that is able to offer you a fully-fledged service contract, based on a pay-per-kg milk basis. Lely Astronauts stand out from their competitors. Durability and ease of operation are always key to high performance with the unique Lely Astronaut arm. The procedure of pre-treatment and cleaning, total freedom for the cow in the box, as well as revolutionary breakthroughs in milking technique are all included in the most advanced milking technology currently available in the market place; the Lely Astronaut A4. We boast many years of practical experience and excellent results on both large and small dairy farms.



Freedom for you.



The cow is key.



Highest milk quality assured.

## The Lely Astronaut arm – muscles and brains!

Since 1992 Lely has proven its concept of the robust robot arm; the arm remains underneath the cow and controls the entire milking process. The robustness of the arm ensures that even if the cow should stand on it, this does not cause any damage. In the event that teat cups are kicked off, they will be reconnected in a matter of seconds without contamination. We ensure the fastest possible teat attachment as well as full control of the whole milking process, with all functional components situated as closely as possible to the teat cups.

## Lely Astronaut A4 box – walking straight ahead is more natural

A revolutionary feature of the Lely Astronaut A4 is the walkthrough design of the milking stall called the I-flow concept. As practice and research shows cows are not really capable of making tight turns. Allowing the cow to walk straight in and out of the box eliminates any unnecessary discomfort. The cow friendly design allows for continuous interaction with the rest of the herd thus eliminating unnecessary stress. With its unique innovations we have further increased the capacity of the Astronaut, ensuring it to be an unbeatable concept and allowing you to maximize your output.

## Lely brushes – designed for more than cleaning

The brushes will remove the dirt and manure, located on the teat. It is the only cleaning system that cleans the area around the teats where teat cups may come in contact, as well as the bottom of the udder close to the teat. The brushes also provide a quick and most effective tactile stimulation, which is important for the cow's necessary release of the hormone oxytocin. Better stimulation will improve the connection time, the milk speed and therefore the robot capacity.

## Lely retractable feeding trough – encouragement to leave the cow box

By removing the feed trough in front of the cow after milking, she is 'encouraged' to exit the box earlier, since there is nothing restricting her path and she can't get more feed. A faster exit allows for a quicker entrance for the next cow. Although this advantage may look minimal, gaining five seconds per milking can easily result in 15 minutes per day or one extra cow.

### The Lely Astronaut arm

A well proven concept; the unique arm remains underneath the cow and controls the entire milking process.



### Optimal brush cleaning

The only available premilking cleaning system that is disinfected with a chlorine-free detergent between every cow milked, preventing cross contamination.



## The Lely 4Effect – tailor-made per quarter

It is perfectly clear that cows differ from one another. Each cow prefers different settings to ensure optimal milking. The Lely 4Effect pulsator is the first revolutionary breakthrough in milking technology over the past 30 years, because vacuum and pulsation settings can be adjusted at quarter level. This ensures a truly individual treatment of the cow and, hence, 'tailor-made milking'. This effect is optimized by the position of the pulsation system, which is safely hidden in the arm and positioned as closely as possible to the udder. This results in optimal milk speed per quarter, shorter milk times, lower dead milking times per teat and an increase of the robot capacity.

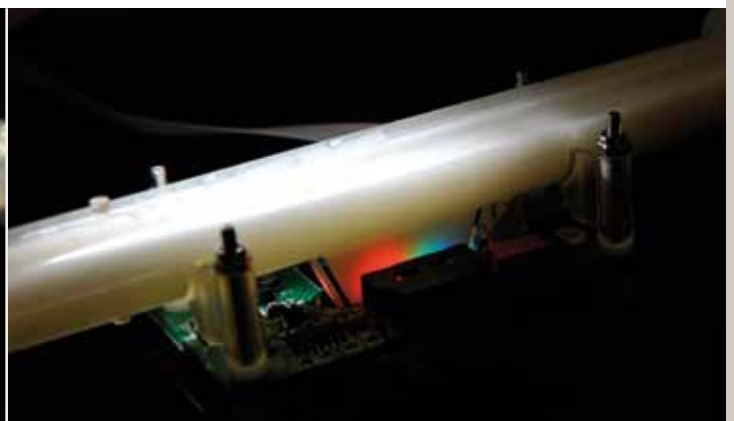
## Lely MQC and Lely MQC-C – milk as a flow of information

Animal wellbeing and an excellent milk quality are keys to successful robotic milking. The more information we can retrieve from changes in the milk quality, the easier it is for dairy farmers to

identify cows with potential problems. That's why Lely started working on measuring milk quality right from the start and the company has maintained its position as a leading manufacturer, making this cutting edge technology available to farmers worldwide.

Lely MQC measures essential parameters such as: fat and protein, conductivity, milk colour, milk time per quarter and dead milk time. Lely MQC-C also measures the somatic cell count per quarter during each milking; samples from each individual quarter are analyzed. At the end of each milking, the information is directly available in your T4C management system.

Lely is the first to offer a standard in-line fat and protein measuring system. Every milking, fat, protein and lactose are analysed allowing you to monitor herd performance. The result is healthier cows which leads to lower costs due to maximum productivity and lower veterinary costs.



In case substandard or undesirable milk is detected, it will be automatically separated.

## Lely T4C management program – time for your cows

T4C is an indispensable tool to manage your herd. Information is presented to you in the shape of hard and fast management information. One of the extra's that goes with T4C is the possibility to use DLM (dynamic feeding module) and the RM (Reproduction Module) to optimize your herd performance. Both programmes are unique in the market place! For more information, see page 18-21.

## Plug-and-play – milking from the first day

Installing a Lely Astronaut robotic milking system is simple and easy. Since the Astronaut is a complete system, only the milk line and water and energy connections need to be installed before the robot can start. If you decide to move the robot, this can also be done so easily.

## Lely Taurus – reconditioned Lely milking robots

Once a robot is traded in through Lely Taurus, it is factory upgraded and sold including a one year guarantee.



## Marsh – extended risk management

All dairy farmers are exposed to the risk of damage and loss resulting from technical failures or external factors. Some small actions may have considerable consequences, such as expensive repairs. A standard insurance does not cover all costs you could incur. For this purpose, a tailor-made insurance especially for the users of the Lely Astronaut milking robot is developed. This all-risk insurance includes a number of combined insurances covering most frequent risks. This insurance will complement the service contracts of Lely and can only be taken out in combination with such a contract.



Time for Cows (Lely T4C) presents information to you in the shape of hard and fast management information.



**Dimensions and weight Robot Unit:**

- Height: 237 cm (93.31 inch).
- Length: 334 cm (131.50 inch).
- Width: 227 cm (89.37 inch).
  - Arm extended: approx. 198 cm (77.95 inch).
  - Arm retracted: approx. 180 cm (70.87 inch).
- Weight: approx. 650 kg (1433 lb).

**Dimensions and weight Central Unit:**

- Height: 206 cm (81.10 inch).
- Length: 123 cm (48.43 inch).
- Width: 102 cm (40.16 inch).
- Weight: approx. 320 kg (705.5 lb).

**Key benefits**

- Flexibility to manage your dairy.
- Freedom to enjoy your social life.
- Most efficient use of your labour.
- Freedom for cows.
- Increased production.
- A solid investment.
- Most advanced technique available.

**Users say:**

"It gives me real peace of mind to be able to monitor literally each and every cow in the herd."  
The Netherlands

"Our cows became used to the Lely Astronaut milking robot even quicker than I was! The production has risen and our herd is remarkably calmer than before."  
France



## Lely T4C management programme – time for your cows

As a farmer you know that you need to observe your cows to actually check their health. The Lely Astronaut provides you this information via T4C. Every event, from birth till the day the cow leaves the farm, is stored in the Lely T4C program. It provides specific farm information to control the herd. Prevention is better than cure, but early detection is the next best thing! Time for Cows (Lely T4C) facilitates effective management by exception.

## Fertility – monitor her breeding cycle

Fertility is known as a major time consumer and has a large influence on the economical results of a farm. Reliable detection of cows in heat (oestrus) is a key factor for successful breeding in herds and commonly accepted as the single most important factor for reproductive improvement in most of the dairy farms.

## Reproduction Module – follow the performance

The fertility status of the herd can be monitored with the special Reproduction Module in T4C. This module shows the reproduction status and the results from the past. This way you can manage the herd's reproduction and easily find the points for improvement.

Based on the activity of the cow and the history generated, the heat is automatically registered. A cow is marked automatically pregnant by the absence of a clear heat-activity increase after insemination. Pregnancy checks by the veterinarian are no longer needed. This saves both time and money.

## Management on the spot

The E-link Manager allows you full access to T4C to manage your herd through the milking robot.

Lely also provides the possibility to use a PDA module that makes it possible to input data into T4C at any place and any time, in or outside the barn.

## Lely Qwes health and reproduction monitoring – the power of knowledge

Lely has developed a unique tool to determine health problems and heat at the earliest stage.

The Lely Qwes-systems provide unparalleled accuracy for 24/7 monitoring of cow reproductive and health status.



### Users say:

"I trust Qwes heat-detection and health monitoring better than my own eyes."

Denmark

### Key benefits

- Insemination at correct time.
- Optimal reproduction.
- Reduce calving interval.
- Earliest signs about potential health problems.

## Accurate cow activity measuring

The Lely Qwes-H system is a collar mounted cow identification and activity sensor. Activity levels are measured by a sophisticated acceleration sensor which measures movement duration and intensity instead of just steps. The Lely Qwes-HR provides additional functionality by measuring the cow's rumination activity – an early indication of the cow's health. Both systems monitor cows' activity in two hour time blocks and thus provide a highly accurate high-resolution view on an individual cow's behaviour. The tag is attached to the upper part of the cow's neck with a strap and weight in a way that prevents false movements and protects the tag from mechanical damage. The strap and buckle are designed for convenient attachment and removal, enabling easy transfer of the tags among cows if needed. The Lely Qwes-HR tag includes an acceleration sensor, specially tuned rumination microphone, a microprocessor and memory. The tag records a general activity index and analyzes the vocal signals to calculate rumination time.

The tag creates an activity index, allowing you to inseminate at the correct time. Therefore reproduction is optimized, the calving interval is minimized and semen costs are significantly reduced.

Changes in rumination are the earliest signs that can provide warning about potential problems. The earlier a farmer can obtain information about a potential health problem, the cheaper it will be to deal with the problem. Also the effect on a cow's performance and general herd appetite can be measured. Rumination activity can also provide an incomparable insight into the effectiveness of veterinarian treatment. In addition, the system automatically alerts of low activity cows, often an early indication of suspected illnesses and potential lameness.

## Dynamic feeding

The T4C management program gives you the opportunity to reduce your feed cost because of higher feed efficiency. With the optional dynamic feeding module (DLM), the system automatically changes feed allocations per cow based on optimum cost benefit ratio. You can avail yourself of unique resources enabling you to maximize your profits; this is no longer about the cows producing most milk but rather about the cows yielding the best economic results.

Dynamic feeding uses the individual feed efficiency of an animal by recording how an animal responds in milk yield to a specific amount of concentrates. By also taking into account the milk return (kg of milk and solids), costs of concentrates, costs of roughages and dry matter intake, the system searches the economically optimal amount of concentrates fed at which profits are maximised.

## Dynamic milking

Dynamic milking allows cows to be milked more often when necessary and less frequently when possible. By increasing or decreasing the interval between two milkings and measuring the milk yield at the next milking, the optimal interval for each cow is determined continuously. This calculation takes place within the set boundaries allowing a minimum and maximum number of milkings per day. By also taking into account milking speed, treatment time per milking and milk return (kg of milk and solids), robot output – and hence financial return per robot – is increased.





## Lely Nautilus milk cooling tank – because you care for premium milk quality

Nautilus milk cooling tanks are specially designed for use in combination with the Lely Astronaut robotic milking system. The Nautilus is highly reliable, simple to clean and economical to use. Above all it gives you the ultimate solution for easy control and monitoring of the whole process from milking the cow to storing and cooling, all in one integrated system, thus providing maximum safety.



## Cooling as of the first drop

With the Lely Nautilus milk cooling tanks we offer advanced reliability and hygiene which are key factors for high quality milk. The Lely Nautilus is specially designed for use in combination with the Lely Astronaut robotic milking system.

## Downtime negligible

Downtime of the robot for cleaning the tank is reduced to the absolute minimum. The flexible cleaning system gives you guaranteed superb hygiene. Smart detail: after cleaning, the milk tank will automatically start up the cooling process.

## Uncompromised quality

No compromises are made; the cooling process starts as soon as the first drop of milk arrives in the milk tank and ice formation is prevented. The cooling capacity of the Nautilus tank is attuned to the volume of milk present in the tank. Obviously, only the best materials are used for the Nautilus tank. The 360° rotating spray heads are unique and the best on the market. As Lely cares for the environment, the best refrigerant available R134, a cooling gas, is used. Due to the welded rings of the evaporator, the lifetime of the evaporator is longer and the flow of the cooling gas is optimized. Further more low electricity and water consumption make the Nautilus milk cooling tank economical to run.

## Totally in control

The Nautilus tank only has one simple-to-use control system. The control unit regulates and monitors the Lely Nautilus milk cooling tank, controlling the cleaning of the tank, the cooling of the milk and agitation. Your mobile phone is supervising the milk quality directly. Moreover, as the milk cooling tank is integrated to Lely's T4C management programme it stores historical data regarding cooling and cleaning temperatures for traceability purposes.

## Users say:

"The best cooling and communication with the Lely milking robot."  
Sweden

## Key benefits

- Communication from tank control to mobile phone.
- Automatic start-up of the milk tank after cleaning.
- Cooling adjusted to volume.
- Excellent cleaning due to unique spray head.
- Environment friendly.
- Traceability of historical data.
- Highly economical to run.
- Easy to operate.

## Specifications

Lely Nautilus milk cooling tanks are available in sizes ranging from 4,000 to 30,000 litres. Models from 4,000 to 8,000 litres are available with either integrated or separate cooling units. Larger milk cooling tanks are delivered with separate cooling.

To further customize your Lely Nautilus milk cooling tank there is also available:

- Heater for the cleaning water.
- Manual milk volume measuring.
- Heat recovery system for cooling gas and warming water.

To ensure good milk quality and economic operation it is very important to optimise the size of the tank and the condensing unit, please contact your local Lely Center facility for more information.



## Milking Hygiene – clean on the inside and outside

Forming part of the food chain is a great responsibility and care for a clean environment is a must. In cooperation with Ecolab, world leader in hygiene solutions for the food industry, Lely has developed its own line of cleaning products. The Lely Astri range is based on reliable and tailor-made solutions which interlink seamlessly with the well-balanced system of the Astronaut milking robot. The entire product range meets biocidal regulations for food safety and environment. All products are 100% biologically degradable.



## Automatic cleaning cycles

When commissioning a new Lely Astronaut milking robot, the service mechanic structures your Lely Astri products in the process. Every day, the Lely Astronaut milking robot carries out two automatic cleaning operations using Lely Astri-Lin plus one with Lely Astri-Cid. Both products can be used for all waste water systems on dairy farms. Reca Alcalin and Acid have been specially developed for the (Nautilus) milk cooling tank. To make sure you keep qualified for full warranty on your Lely Astronaut milking robot, it is important that you use cleaning agents according to Lely's specifications (i.e. chlorine-free). When in doubt, please contact your Lely advisor. All cleaning agents of the Lely Astri line have been totally tested and approved by Lely.

## Clear indication

The Lely Astronaut milking robot generates an alarm as soon as the Chemical container with Lely Astri-Lin or Lely Astri-Cid are empty. Lely advises the Lely Astri range because it meets all technical specifications as well as prevailing legislation and keeping Hygiene quality to a maximum.



### Lely Astri-L brush cleaner

Lely Astri-L has been specially developed for cleaning the teats and reducing microbiological stress on the brushes and rollers that are used for pre-cleaning in the Astronaut robot. This product is exceptionally active within a short time thanks to the special volatile substances that penetrate thoroughly into the brushes. The product does not cause damage to either robot or brushes.

Benefits of the Lely Astri-L brush cleaner: in between the milkings, the pre-treatment brushes are cleaned with Lely Astri-L. This ensures optimal results in terms of milk quality, not only in regards to bacterial counts but in terms of butyric acids as well. Lely Astri-L does not leave any harmful residues behind (its individual ingredients have been FDA-approved) and – provided the advised concentration is used – does not irritate the teats. Your Lely warranty is subject to the sole use of chlorine-free cleaning agents such as the Lely Astri range of cleaning agents and udder care.

Lely Astri-L is supplied in a clearly recognisable green container with a capacity of 21 kg.

### Users say:

“A true benefit: the service people are always punctually on time and my products are always available. All in all: they are available and reliable.”  
The Netherlands



**Lely Foam Unit**

The combination of a Lely Foam Unit and Lely Astri-B guarantees a unique hygiene solution for all external parts of the milking robot plus robot room, excluding the X-link. A clean robot room is less attractive for bacteria and flies. The foam also penetrates into the areas that are usually hard to access. Lely Astri-B effectively removes organic dirt (e.g. manure, feed and milk residues) as well as anorganic deposits (e.g. lime and iron), is chlorine-free and prevents corrosion, provided the recommended concentration is used.

The Lely Foam Unit operates at a low standard farm water pressure.

A low pressure is necessary for the following reasons:

- A low pressure provides no risks for the electrical system.
- At a high pressure, the dirt is merely displaced. There is no damp formation.

The Lely Foam Unit operates more cost-effectively than a high pressure cleaner, does not need a power source or compressed air and can be easily handled and installed.

Lely Astri-B is supplied in 22 kg cans.



**Lely Peroxide test**

The Lely Peroxide test has been developed to measure the concentration of Lely Astri-L on the Lely brushes to make sure that you use Lely Astri-L in the correct concentration.

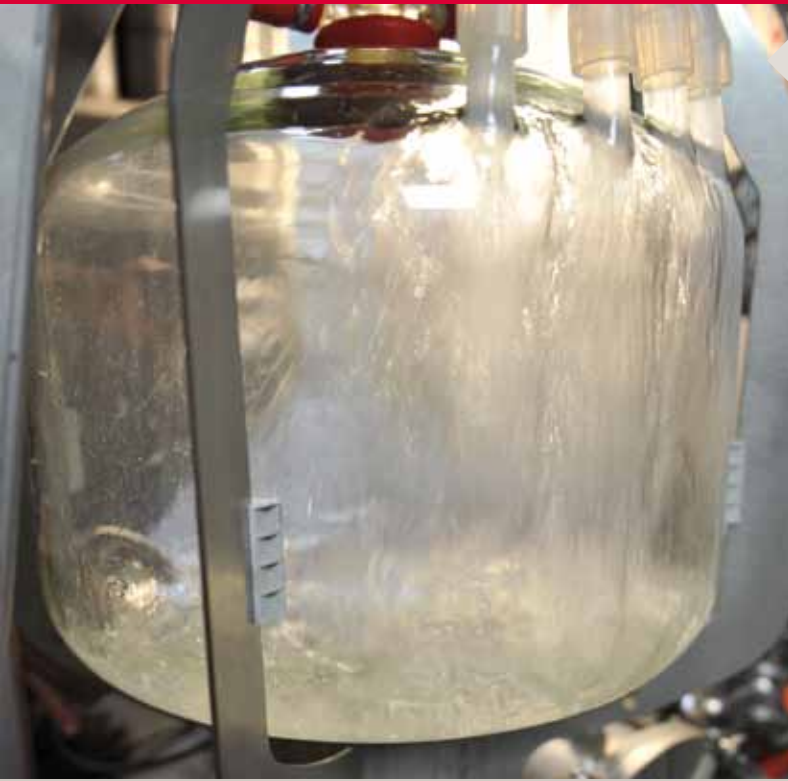
Lely Peroxide test is supplied in a tube of 100 test strips.

**Lely Astri-Cell**

Lely Astri-Cell is a fluid for measuring the somatic cell count in the milk by means of the MQC-C sensor system of the Astronaut milking robot. This sensor system measures the SCC of each quarter for each individual milking. The test in MQC-C is based on the insights of the CMT testing method, known as the California Mastitis Test. Adding Lely Astri-Cell to the MQC system provides accurate information about the somatic cell count of the milk and, hence, an indication of milk quality and udder health. The product contains a carefully selected and developed capillary substance with unique properties and ensures a reliable chemical reaction with the cell walls of the leukocytes (white blood cells).

Lely Astri-Cell is supplied in the form of a concentrated product (1 litre).





#### Lely Astri-Cid acid cleaner

Lely Astri-Cid is a fluid cleaning agent on an acid basis which has been specifically developed for the main cleaning process in the Lely Astronaut robot. The product is composed of special, highly active acids for removing anorganic dirt such as lime and milk-stone.

This is crucial to the prevention of corrosion of the Lely MQC (Milk Quality Control System), i.e. the heart of the Lely Astronaut milking robot. Lely Astri-Cid does not have a negative impact on rubber joints and silicone; in addition it has excellent properties to reduce the bacterial count.

Lely Astri-Cid is supplied in a clearly recognisable red container with a capacity of 24 kg.

#### Lely Astri-Lin cleaning agent

Lely Astri-Lin is a fluid, concentrated, chlorine-free heat cleaning agent on an alkaline basis which has been specifically developed for the main cleaning process in the Lely Astronaut robot. This product has excellent cleaning properties to remove milk fat as well as protein. This cleaning agent has been extensively tested for the Lely Astronaut robot and does not harm the machine.

The main benefit of this product is that it is chlorine-free. Products containing chlorine cause damage to stainless steel as well as corrosion of the boiler of the Lely Astronaut milking robot. Tests have shown that corrosion causes damage to the boiler, which eventually leads to leakage.

- Lely Astri-Lin is a chlorine-free product.
- Lely Astri-Lin has a very high pH value and, hence, ensures very effective cleaning.

Lely Astri-Lin is supplied in recognizable blue cans which contain 25 kg detergent.

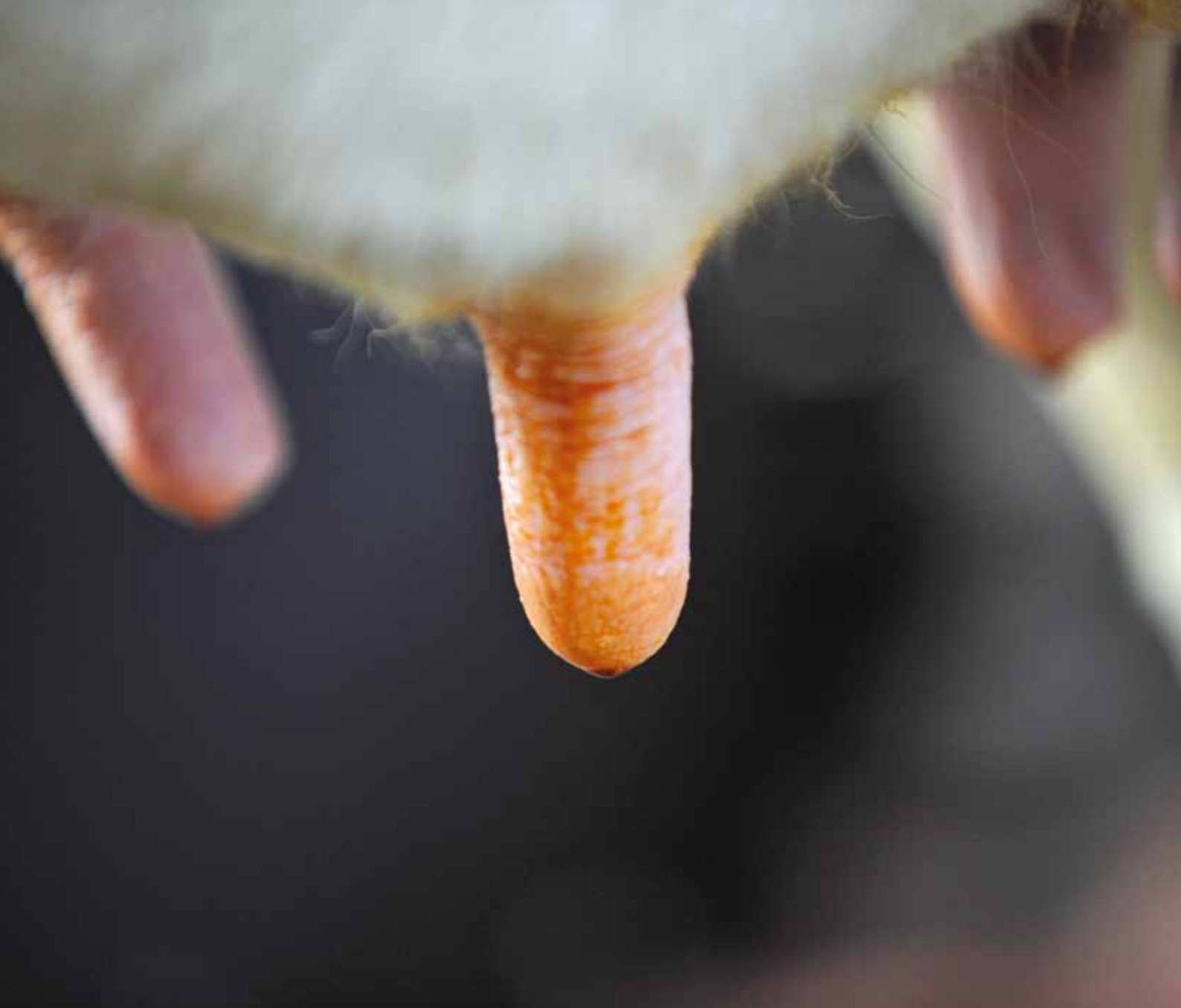


#### Lely Astri-TDS laser lens cleaner

Lely Astri-TDS is a fluid cleaning agent on an acid basis for external cleaning of the electronic lens as well as the caps of the laser detector in the Lely Astronaut milking robot. If the lens of the laser is not cleaned, it takes longer before the teats are detected, which reduces the output of the Lely Astronaut robot. Lely Astri-TDS removes deposits of hard water, urine, milk-stone and iron from the laser lenses. This product has been extensively tested on the robot's specific material.

Lely Astri-TDS is supplied in 1 litre bottles.





## Caring – comprehensive udder care

Caring stands for a range of high-grade udder care products, based upon many years of experience. Your Lely Center organisation will be happy to provide advice on the best udder spray for your specific situation so that good udder health within your herd is assured. Together with its partners, Lely has developed special udder spray products which can be used for the Lely Astronaut robot and which fit in with the conditions on your dairy farm. Please contact your local Lely Center for more information about udder hygiene and the comprehensive product range.

**Lely Astri-IO udder care**

Lely Astri-IO udder care has been developed especially for the Lely Astronaut milking robot. The spray has been composed of High quality Skin Conditioners and is based upon PVP iodine so this highly active product ensures good teat condition. Lely Astri-IO ensures proper protection of the teat canal after milking. This is due to the exceptionally high grade content of protective and skin-care ingredients making sure that the skin remains smooth and in excellent condition. The product stimulates and supports the natural regulation of moisture and fat by the skin.

Lely Astri-IO is supplied in blue containers with a capacity of 57 kg.

**Lely Astri-Din udder care**

The Lely Astri-Din udder care agent – on a lactic acid basis – has been specifically developed for the Lely Astronaut milking robot. Lactic acid has proven to be a highly effective substance for eliminating cross contamination. Lely Astri-Din provides excellent protection of the teat canal and ensures additional care elements – such as glycerin and sorbitol – which maintain and support the natural regulation of moisture and fat of the skin. Lactic Acid has well-nigh the same pH value as the teat skin and ensures outstanding cosmetic effectiveness. It protects the skin against all weather conditions and the mechanical strain of milking.

Lely Astri-Din is supplied in blue containers with a capacity of 59 kg.





## Feeding Equipment

Costs of feed are among the most important cost factors in cattle farming and therefore feeding efficiency is of paramount importance. Optimal yields can be achieved by ensuring the correct output of cows (kg milk fat and milk protein, longevity, animal health etc.). It is generally known that frequent feeding leads to an increased milk production and has a positive effect on cows' health. Lely automation provides means to further optimise production, cow health as well as feeding efficiency. In addition, you – as a dairy farmer – can save time and operate more flexibly. Lely has developed unique concepts for feeding which contribute towards improvement of the financial and social wellbeing of dairy farmers.

### Lely Juno robotic feed pusher

The Lely Juno feed pusher makes it possible to push feed to the feed fence all through the day and night. Due to the continuous supply of feed, cows' feed intake increases, the animals become more active and milk yields will increase as a result. Page 32.



LELY JUNO

### Lely Cosmix feeder

Due to the Cosmix feeder station it is possible to feed all individual cows according to their needs. The correct quantity, every day and at any time! Page 38.



LELY COSMIX

### Lely Grazeway selection box

The Lely Grazeway selection box is the simplest and most effective solution with easy installation. Page 42.



LELY GRAZEWAY

### Lely Calm automated calf feeder

The Lely Calm ensures automatic feeding of the correct quantity of milk – with a perfect temperature and composition – spread across the day. This results in healthier calves, improved growth, increased feeding efficiency as well as saving on labour. Page 44.



LELY CALM

### Lely Caltive concept

Coupled to the Lely Calm automated calf feeder, Lely has launched the Lely Caltive concept, an extremely well-balanced calf feeding programme which starts and boosts calf growth to a maximum level. Page 48.



LELY CALTIVE



## Lely Juno feed pusher – sufficient roughage at the feed fence all the time

The Lely Juno feed pusher contributes to the welfare of your herd by providing the cows constantly with fresh feed at the feeding fence. The cows have a better roughage intake; production will increase, while the herd is calmer and more active. Labour is often a limiting factor in trying to provide cows with fresh feed 24/7. The Lely Juno feed pusher pushes the feed towards the fence as often as required without disturbing the cows.





The flexibility of the different routing possibilities ensures feeding can be evenly spread around the clock and that feed is available for all cows at all times.

### More time, freedom and flexibility

The Lely Juno will save you a lot of valuable time and gives you the flexibility and freedom to devote your energy to other tasks, knowing all the time that your cows are being taken care of in the best way possible. Assuming a round takes only ten minutes; the Lely Juno will save you at least 183 hours or in other words 22 (eight-hour) working days annually!

### Minimal energy consumption

The Lely Juno is exceptionally energy-friendly and has a positive effect on CO<sub>2</sub> emission. On a yearly basis, a tractor or shovel uses ten times as much energy and emits approximately four times as much CO<sub>2</sub>.

### Increased feeding efficiency

The Lely Juno stimulates the cows to come to the feed fence. This results in an increased intake of dry matter as well as less wastage of roughage. Consequently, low ranking cows too, have ample access to the forage. Thanks to this increased feed intake, milk yields will increase. Thus, you retrieve more value from your roughage, combined with an increased feed efficiency. The Lely Juno ensures that roughage with a consistent quality is pushed to the feed fence, day and night. The combination of the Lely Juno feed pusher and the Lely Astronaut milking robot guarantees a further improvement of cows' visiting behaviour.

### Getting to work straight away

The Lely Juno moves automatically down the feeding alley by following the feeding fence. The Lely Juno is an easy to install, stand-alone machine which requires no additional facilities or modifications to your barn, and makes it suitable for all types of farms. The built-in ultrasound sensor ensures that the feed pusher follows the feeding fence at pre-determined distances. The farmer programmes these distances using the E-link, starting at a wide distance to the fence and gradually moving closer to the fence on subsequent trips. The programming is only done once, when the pusher is installed.

### Key benefits

- 24/7 operation.
- Increased forage intake.
- Higher milk yield.
- Equal quality ratio available day and night.
- More peace in the herd.
- More balanced use of the Lely Astronaut robotic milking system.
- Cost saving.
- Labour saving and greater flexibility.
- Energy-friendly plus a limiting effect on CO<sub>2</sub> emission.



**Ultrasound sensor**  
Ensures that the feed pusher follows the feeding fence at pre-determined distances.



**Collision detector**  
Ensures the feed pusher stops immediately if it encounters an obstacle.



**Inductive device sensor**  
Ensures the unit follows the pre-programmed routes accurately.

**Rotatable surface**  
Pushes the feed towards the feeding fence.





**E-link**

Programming device. Programming is only done once, when the Juno is installed.



**Concrete block**

The main frame that gives the feed pusher the required mass to push the forage over the set distance.



**High level sensor**

This sensor allows even smoother navigation alongside all different types of feed fences.



Specifications

Take the following points into account before installing the feed pusher:

Diameter (cm)	156
Height (cm)	106
Weight (kg)	575
Pushing blade height (cm)	60
Driven by	electric motor (2)
Wheels	3
Travel speed (m/min)	12
Batteries	1
Voltage (V)	12
Capacity (Ah)	55
Determination of direction of motion	gyroscope and ultrasound
Determination of distance travelled	sensors on rear wheels and an inductive sensor
Number of programmable routes	16
Route programming	using manual controlling unit (E-link)
Direction calibration points	metal strips start/end near charging station
Maximum width of feed (cm)	200
Maximum height of feed (cm)	65
Can start a route	every 30 minutes



## Features

The lower part of the Lely Juno starts rotating when pushing the feed towards the feeding fence while the vehicle moves in a straight line. The main frame of the unit is formed by a heavy concrete block that gives the feed pusher the required mass to push the forage over the set distance. The Lely Juno is suitable for all level and paved feeding alleys, can follow different types of feeding fences and is able to push feed piles as high as 65 cm. The Lely Juno is a battery-operated vehicle, equipped with an energy friendly electric motor.

## Accurate routes

The charging station functions as the starting point of each run and is mounted at a convenient place in the feeding alley. The Lely Juno features an inductive device sensor, which ensures the unit follows the pre-programmed routes accurately. This sensor detects the pre-installed metal strip near the charging station which marks the end of the route and guides the Juno to the charging station.





## Barn specifications

### Feeding alley

- Solid, level concrete floor.
- Minimum of 200 cm + width of feed.
- Limited slope.

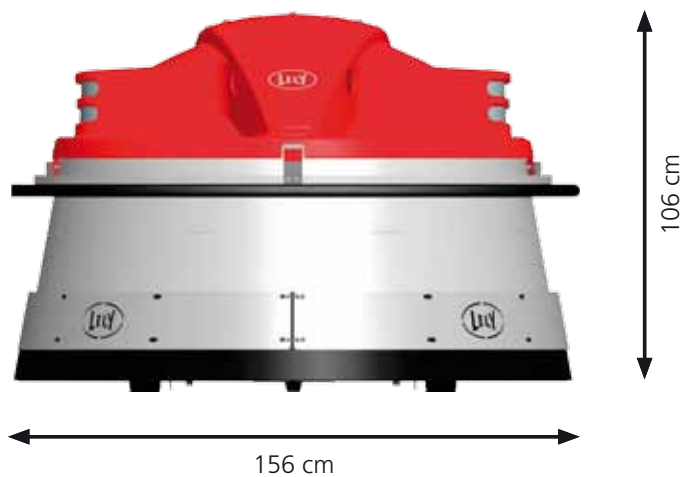
### Feeding fence

- A horizontal bar at a height of between 80 to 150 cm\* (measured from the floor of the feeding alley).
- Vertical bars with maximum intervals of 60 cm.
- Locking head, horizontal pipe, parallel, U type were tested.

\*) In combination with an optional high level sensor



Charging station.



## Users say:

“Now my low ranked cows always have access to good quality forage.”  
Canada

“Working with the Lely Juno saves me attention cows every morning. With a herd of 120 cows, I went from seven to four attention cows.”  
Finland

“There is more peace and quiet in the herd.”  
The Netherlands

“It’s just 15 minutes each time, but I’m so happy I can skip the last round around 23.00 hours.”  
The Netherlands

“With two cows per feed place the demand for constant feed availability is high. The Lely Juno feed pusher is the solution.”  
Japan



## Lely Cosmix feeder – if cows deserve a little more

Feeding cows individually is an acceptable way of managing the body condition score. By managing the supply of concentrate in this way, you will maximise general health, milk yield and fertility of your cows and improve milk/feed efficiency.

## Cost effective feeding

The Lely Cosmix feeder provides accurate information about the additional concentrate feed and the intake of cows. Additional concentrate feeders are used to balance the ration for low and high yielding cows, or to distribute extra feed types to cows that require it. The Lely Cosmix is fully compatible with Lely's Astronaut milking robots and is connected to Lely's T4C management program. It allows regular concentrate feeding parallel to the concentrates supplied in the milking robot, stimulating a stable rumen pH. Moreover, it allows you to regulate the feeding based on milking times resulting in a higher stimulation of cows to visit the robot more often. Cows are not allocated any concentrate through the Cosmix when they need to be milked. Once milked the allocation will continue.

## Balanced per cow

When a cow enters the Lely Cosmix, she is identified through her neck or leg identification tag. Because each animal's daily ration is continuously calculated, the Lely Cosmix will immediately assess if the cow should eat, and how much. No feed is wasted, because feed is dispensed according to her eating speed.

## Additional concentrate for your dry cows as well!

Dry cows are often placed in a calving barn or straw pen during the last transitional weeks before calving. These cows cannot be fed in the robot but it is of paramount importance that they receive sufficient concentrate. Therefore, it is ideal to install an additional Cosmix feed station here.

The Lely Cosmix is robust and reliable, consisting of stainless steel and durable materials, provides you a long-lasting solution for individual feeding on your farm.

## Feeding minor feed quantities with increased precision

The feed is dispensed into specially shaped feed troughs. This allows you to feed very small portions with increased precision. Another feature is that the dispensing position avoids the risk of moulding and cake wastage is reduced to a minimum.



### Users say:

"Lely Cosmix offers my best cows, just the little extra they require."  
Denmark



### Key benefits

- Well balanced concentrate supply.
- Improves robot visit frequency.
- Stimulating stable rumen pH.
- Integrated in the T4C network.
- Individual feeding.
- Feeding tuned with robot milking intervals.
- Durable and long-lasting.

## Attractive options

The Lely Cosmix feeder comes with one feed type as standard. It can however be fitted with a further three feed types as an optional. The four feedtype dispensers are then neatly built-in one next to another.

Another option: control of the feed augers by the Lely Cosmix. This is cost-effective because no additional sensors are needed to start and stop the augers.

A feed detection sensor can also be installed as an option. This sensor detects the presence of feed in the hopper. If none is detected, an alarm will be generated.

## Lely Cosmix P – feeding even more cows

Since the cows can take their feed in a protected environment, the Lely Cosmix P provides the possibility to dispense larger portions – or feed at a faster rate – without the animals being chased away. Consequently, total feeding capacity is doubled.

## Lely Cosmix P – feed detection sensor

The Lely Cosmix P comes with a feed detection sensor as standard to detect the presence of feed. If no feed is detected, an alarm will be generated. This, generated alarm, gives an early warning that bridging has occurred in the hopper, or the supply auger is broken. In extreme cases it may be that the main feed bin is empty.

### Lely Cosmix P – integrated protection gate

The Lely Cosmix P is fitted with a unique protection gate (M-box). The design and shape of this gate is such that other cows cannot trouble the cow standing in the feeder station. Research has shown that a concentrate station with a protective gate reduces aggression within the herd. More importantly, the risk is reduced of a cow being chased away from the feeder station by a higher ranking cow. The Cosmix P reduces competition and avoids stress and injuries, e.g. of the udders.





## Lely Cosmix S – flexibly adjustable side gates

The Lely Cosmix S has adjustable side gates. This allows you to adapt the system to your herd or barn situation allowing for even greater flexibility.

## Lely Cosmix M – the mobile concentrate station

The fluctuating availability and quality of grass throughout the seasons always is an unreliable factor for pasture grazing in the dairy farming business. In spring time, there is usually an abundance of high-grade grass but during the summer and winter the performance of the animals is usually affected. The mobile concentrate feeder Lely Cosmix M, working on solar energy, dispenses extra concentrates to grazing cows, day and night.

## Lely Cosmix M – better steering at cow level

The Lely Cosmix M is very labour efficient. There is no need to provide additional feed in the field every day. Adjusting the concentrate rations to individual cows can take place with much more precision. Large or small rations can be spread across the day, which is much better for the rumen function. You also rule out both overfeeding and underfeeding of concentrates.



Feeding Equipment



## Specifications

Voltage	Cosmix S (24 V or 230 V) Cosmix P (230 V) Cosmix M (solar power)
Recognition	Qwes H, Qwes HR, Qwes ID, Qwes leg, Qwes act, Qwes I



## Lely Grazeway selection box – offering your cows a choice

Pasture grazing and automatic milking go very much hand in hand. Lely likes to stimulate cows to go outside, so we have developed the Lely Grazeway selection box as a tool for you to handle grazing efficiently.

## Freedom to choose

The Lely Grazeway selection box gives you the opportunity to combine automatic milking with optimal grazing. Before the cow leaves for the pasture, she is recognized at the Grazeway to determine if she is still to be milked or is allowed out to graze. The Grazeway offers you full control of grazing.

## Optimal grazing with a robot

The Lely Grazeway is installed at the end of the exit point of the barn, where the cows go to the pasture. While entering the open selection box, the cow is recognised by its neck or leg responder. Selection criteria are set through the T4C management programme in order to make use of the Lely Grazeway as a truly flexible grazing tool.

## Paddock grazing

A-B-grazing: The Lely Grazeway offers you the ease of selecting different paddocks on a time related schedule. Cows will automatically be sent to the next paddock after a set time period.

## Easy to install and operate

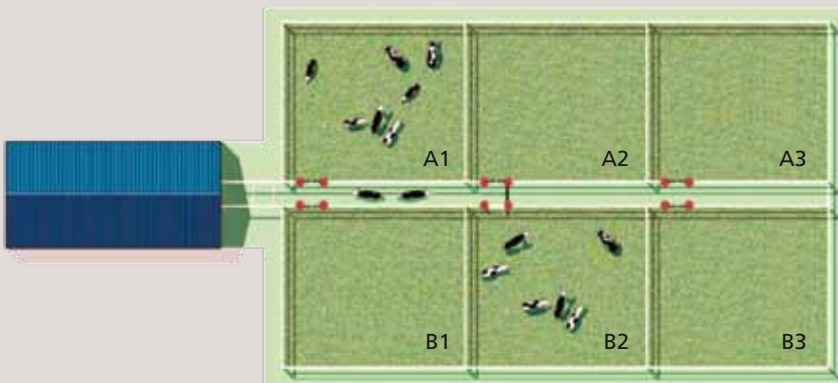
Due to the double gate system, cows are always guided to the right place, even when they are following close to each other. The galvanised steel selection box is a pneumatically operated system, just like the Lely Astronaut milking robot. The Grazeway is compatible with the same compressor and steering device of the milking robot. Besides selecting for grazing, the Lely Grazeway is also used for cow selection inside the barn. Here it can select special production groups at different locations away from the robot, or it can select cows that need special treatments. The Lely Grazeway selection box is the simplest and most effective solution with the quickest installation.

## Key benefits

- Efficient management of grazing.
- Pneumatic operation.
- Double gate system.

## Specifications

Amount of separation directions	3
Recognition	Qwes H, Qwes HR, Qwes ID, Qwes leg, Qwes act
Grazing systems	paddock grazing, 100% grazing
Pneumatic selection system	



Selection of different paddocks e.g. the A-B grazing system.





## Lely Calm automatic calf feeder – peace of mind to rearing

Anyone in pursuit of a sustainable cow with a high lifetime production must first optimize the rearing of young cattle. The Lely Calm automatic calf feeder guarantees the optimal growth and development of these young animals. Calves can still enjoy their natural behaviour and drink whenever they want, in a controlled way, while labour is reduced to the minimum. After all, today's calves are tomorrow's high performance cows.

## Rearing without stress

When a calf drinks from its mother, it usually drinks adequate portions spread over the day. However, in today's dairy farming when a calf is fed manually, this is restricted to once or twice a day. This is why Lely introduced the Lely Calm automatic calf feeder, which supplies the correct portion and concentration of feed spread over the day, resembling the natural behaviour of the calf. The Calm calf feeder offers the calves an outstanding start, while giving labour savings and many economic benefits. The accurate and small portions spread over the day substantially enhance the development of the digestive organs of the calf. Calves are weaned gently by gradually reducing their milk portions. Slowly reducing the milk yield will ensure that the calves automatically increase their intake of roughage. The optional Caltive concentrate feeder together with Lely Caltive Concentrate will further improve the weaning process. The quicker and the more your calves will learn to eat concentrate the less they will get milk. The concept will save more expensive milk powder and speed up the weaning process by turning your

calves quicker to ruminants. Monitoring your calves only takes a few minutes per day with the Calm calf feeder. The Lely Calm is an absolute must for each dairy farm that puts animal welfare at the top of its priority list.

The Lely Calm is the perfect way of preparing for a milk producing life with a milking robot. The animals learn from a young age to get their milk; this makes them assertive and, above all, they become accustomed to automatic feeders and all the noises that they make. The dairy farmer will profit from this when a heifer walks into an automatic milking system for the first time.

A Lely Calm automatic calf feeder will pay for itself by means of healthier calves, increased growth, increased feed efficiency and labour savings. A Lely Calm offers labour-savings of 60 to 70%; it will pay for itself in three years. The Calm calf feeder is a reliable calf feeder with minimal maintenance.



### Users say:

"It's just a joy to rear calves on a Lely calf feeder and it fits well into my daily routine."  
New Zealand

"I am not running myself ragged anymore. The unit is easy to clean and the calves love it!"  
UK

## A la carte

As soon as a calf enters a milk station, it is recognised by its electronic transponder and, according to the calf's feeding plan, the Lely Calm calf feeder decides if it is allowed to drink, and how much. A minimum and maximum portion of milk per visit can be set for each calf, then the calf feeder will automatically determine the ration per calf. If the calf is indeed allowed to drink, the calf feeder immediately prepares a fresh portion of milk at the predetermined temperature.

## Hygiene

The Lely Calm cleans itself automatically resulting in better machine hygiene and can be improved further by installing extra options such as the fly protection screen or anti-moisture element.

## Perfect overview

The Calm calf feeder gives you the flexibility to check the performance of the calves whenever you want. The hand held terminal of the Calm has a large display. With several function keys, fast buttons and records you can quickly find or change information. The Lely Calm can be connected to Lely's T4C advanced management programme, giving you a clear overview and ease of control of all your calves through your PC. It also allows you to generate reports and graphs of milk rations per calf. You can choose for feeding only fresh milk, only powder milk or a combination of both.

## Lely offers two Calm feeder models:

	calves	drinking stations	milk powder
Lely Calm			
Compact+	50	1-2	35 kg
Vario+	120	1-4	35 kg/50 kg



## Key benefits

- Time saving.
- Quicker growth rate.
- Better rumen development.
- Labour flexibility.
- Individual calf management.
- Stable and exact milk temperature.
- Flexible feeding schedules.
- Weaning without stress.
- Suitable for all farm sizes.

For further information we kindly refer to our series of knowledge brochure Successful calf rearing.





## Lely Caltive Concept – for the best start

Installation, maintenance, adjustments, calibration, rearing advice and a complete assortment of calf milk and calf concentrates have been bundled – together with the Lely Calm automatic calf feeder – in one single concept; the Lely Caltive concept. Calves need to grow in such a way that they achieve optimal growth and ruminal development within 8 weeks. Carefully balanced feeding assures better development of the rumen papillae in the early weeks ensuring better development and calf growth.



## Lely Caltive Booster

Lely Caltive Booster is composed of dead yeast cells, Mannan Oligosaccharides (MOS) plus a mixture of ethereal oils and herb blends.

- It improves the immunity of the calf.
- It helps to decrease damage of the intestinal wall mainly caused by E.coli and salmonella.
- It stimulates the rumen bacteria and the development of the rumen papillae resulting in better and quicker growth of the young animal.

## Lely Caltive Milk

Lely Caltive Milk contains a high percentage of selected whey proteins and probiotics.

- Whey proteins are highly digestible and stimulate feed intake.
- The probiotics improve both immunity and health of the calf.
- The milk replacer ensures optimal growth and development resulting in healthy and active calves.

## Lely Caltive Concentrates

Lely Caltive Concentrates is a completely new type of concentrate. Quite soon, young calves will prefer the concentrates above the milk, because of the proper fragrance and flavour, the presence of Mannan Oligosaccharides (MOS), dead yeast cells and a high amount of hemicelluloses (= highly digestible cellulose).

- It ensures development of the rumen papillae at a very young age.
- The hemicelluloses are taking care of a balanced, safe rumen development.
- The concentrates take care of optimal growth and development mainly as a result of increased feed intake.

## Lely Caltive concentrate feeder

Three feeding places allow for easy access to the feeder and with the lid opening on top, the feeder can be refilled easily. The turn button on top of the feeder allows dose settings to be easily adjusted to the level that keeps feed fresh. Clearly, concentrate intake is stimulated resulting in optimum rumen development.





## Barn Equipment

Lely stands for an animal friendly environment in a barn, yet very practical to work with. In all our product development cow comfort is key. Healthy cows produce more milk... Find out in this chapter how Lely Barn Equipment is especially designed to contribute to animal welfare and to the welfare of you as a farmer.

### Lely Discovery barn cleaner

The results of the use of a Discovery: less manure in the cubicles, cleaner hoofs and tails as well as udders, which results in a peaceful and quiet herd and prevents hoof and udder illnesses. Page 52.

### Lely Luna cow brush

The Lely Luna ensures maximum comfort for the cow and a long lifetime of the brush. Page 56.

### Lely L4C – Light for Cows

Due to the combination of a light sensor and the network plus its settings, you can operate a fully automated system that guarantees optimal light distribution without any additional labour. Page 58.

### Lely Walkway automatic foot-bath

The Lely Walkway for optimal hoof health combined with maximising the ease of operation Page 62.

### Lely Treatment Box

The Lely Treatment Box ensures that you can perform any conceivable treatment of your cows. In a safe and professional manner. Page 63.

### Lely Commodus cubicle

The true animal friendly cubicle for the highest comfort and good accessibility for lying down: the Lely Commodus cubicle. Page 64.

### Lely Compedes soft bed

The Lely Compedes soft bed provides your cows comfort and allows her to perform natural behaviour which will improve milk production. Page 66.

#### LELY DISCOVERY



#### LELY LUNA



#### LELY L4C



#### LELY WALKWAY



#### LELY TREATMENT BOX



#### LELY COMMODUS



#### LELY COMPEDES





## Lely Discovery – your personal house keeper

Lely provides an intelligent solution for barn cleaning, which meets the growing need of dairy farmers for optimum hygiene in cow housing. The Lely Discovery mobile barn cleaner features robot technology. Its flexibility and thoroughness ensure that the cow housing floor is kept as clean as possible. This guarantees maximum cow comfort and optimal hygiene.

## Sense and simplicity

The Discovery mobile barn cleaner is a battery-driven vehicle. At installation, you use the E-link remote control to pre-programme the routing to be followed by the Discovery. Routings are flexible so that you have the option to ensure more intensive cleaning of some areas in the barn during certain hours of the day, like behind the cubicles.

## When the duty is done

After cleaning up the barn the Discovery returns to the charging station. This charging station is fitted at a convenient point in the barn and also functions as the starting point of each cleaning route.

## Always on track

No sensors are needed under or inside the slatted floors. The built in ultrasound sensor ensures that the Discovery follows the walls at a pre-determined distance. A special element of the design of the Discovery barn cleaner is the so-called ring at the front. This feature prevents the device from being blocked. In addition, the ring ensures proper following of walls as well as steering clear of obstacles. The built in gyroscope enables the Discovery to keep track of its position at all times.

## Wet supply for better grip

The Discovery 90SW model, equipped with water spray, improves the cleaning results of the Lely Discovery mobile barn cleaner. It is known that in certain circumstances like a dry environment, in low cow occupied barns, barns with wide walking alleys and in well ventilated barns, a thin layer of dry manure may be formed on top of the slatted floor. This layer makes the floor slippery. By spraying water, just in front of the scraper, the floor is cleaned better and does not become slippery.



The built-in ultrasound sensor ensures that the Discovery follows the walls at a pre-determined distance.



A special element of the design of the Discovery barn cleaner is the so-called ring at the front. The ring ensures proper following of walls as well as steering clear of obstacles.



The flexible blade fitted underneath the Discovery pushes the manure through the openings of the slatted floor.

The Lely Discovery 90SW at its water supply station.





The Lely Discovery mobile barn cleaner moves across the barn without any noticeable disturbance to the cows.

## Key benefits

- Compact dimensions.
- Passes easily underneath segregation gates.
- Intelligent cleaning without cow disturbance.
- Easy to install and maintain.
- Economically cost-effective.
- Optimum cow comfort and hygiene.
- Flexible routing.
- 24/7 cleaning.
- Round design: can easily pass obstacles.
- Option to spray water for better grip.

## Constantly dry and clean

By using the Lely Discovery mobile barn cleaner you clean the manure alleys in your cow housing as often as you please, so that you create a floor for your cows that is constantly clean and dry. Manual cleaning is an intensive and none too pleasant job, and keeps the floor dry and clean for just a short time. Conventional systems are an obstacle, they require extensive maintenance and do not clean the passage ways.

## More comfort for cows

The results of the use of a Discovery are immediately noticeable: less manure in the cubicles, cleaner claws, tail as well as udders, which results in peace and quiet in the herd and prevents claw and udder illnesses. As cows are more comfortable to express natural behaviour on clean and dry floors, you can detect heat at an earlier stage.

Good animal health is essential for overall cow performance and optimum cow housing hygiene is an absolute must for maintaining good animal health. From this point of view, the Discovery mobile barn cleaner is a valuable and economically justified investment. All in all, the Discovery mobile barn cleaner provides flexibility and is the solution for keeping your cow housing clean – 24 hours a day/7 days a week.

Users say:

“This small and smart device hits every spot and keeps the environment of my cows hygienic, even better than I did.”  
Belgium

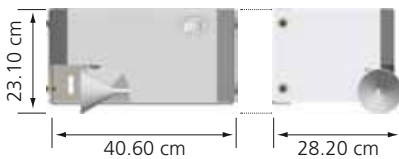
“Cleaning the barn always used to be a ‘last-minute-job’. Now, it’s done during the whole day, without any hassle.”  
Switzerland



charging station



water supply station



Discovery 90S



Discovery 90SW



Specifications

	Discovery 90S	Discovery 90SW
Weight (kg)	300	340
Empowered by	2 electric motors	2 electric motors
Adjustable travel speed	9-18 m/min	9-18 m/min
Voltage gel battery	Gel battery 12 Volt	Gel battery 12 Volt
Determination of direction	Free spinning horizontal guiding wheel, gyroscope and ultrasound	Free spinning horizontal guiding wheel, gyroscope and ultrasound
Floor	Slatted floor with max. 3 degrees of slope*	Slatted floor with max. 3 degrees of slope*
Capacity	ca. 240 cows	ca. 240 cows
Minimum height of cubicle floor	12.50 cm as a minimum	12.50 cm as a minimum
Content water tank	-	30 litres
Number of nozzle's	-	2

\*) the Lely Discovery can also keep short closed floors clean (5 m length max.)



## Lely Luna – taking care of your ladies

The Lely Luna cow brush offers optimum comfort for your cows. Cow comfort and hygiene are important issues in a barn. The Lely Luna cow brush is developed to groom your cows, enabling them to get rid of dust and itches. The cows love the brush and will go there several times a day for sheer pleasure.





## Optimum cow comfort

There is no doubt that good cow comfort results in a happier, healthier and more productive herd. The Lely Luna cow brush contributes to this by providing cows healthy and shiny coats, stimulating the blood circulation which results in a quieter herd.

## Clever technology

Due to its smart design the Lely Luna cow brush is driven by touch and rotates the opposite direction once the cow pushes it. This ensures maximum comfort for the cow and a long lifetime of the brush. As the brush has two directions of rotation the bristles will keep their shape longer than those that have only one. In addition, the minimum of moving parts makes it low maintenance. The Luna cow brush has spirally positioned bristles of variable thickness for maximum comfort. The Lely Luna cow brush is delivered as one part and can easily be installed on a post or against the wall.

## Users say:

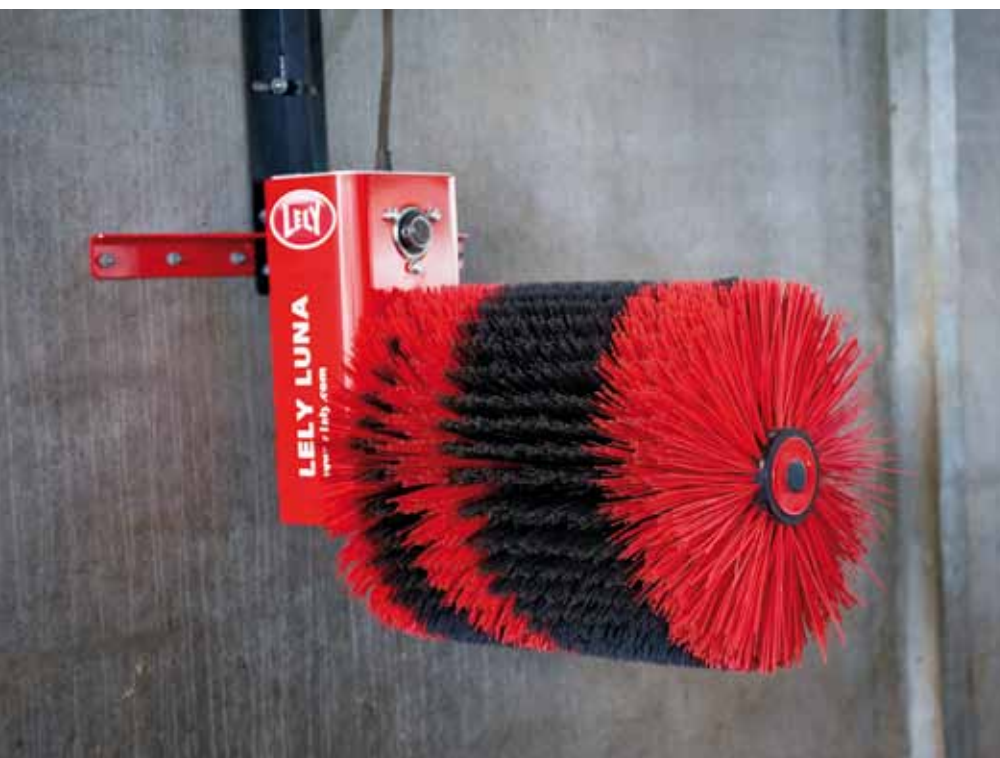
"What's the harm of spoiling your ladies every now and then?"  
USA

## Key benefits

- Quieter herd.
- Durable.
- Maximum cow comfort.
- Low energy consumption.
- Stimulates blood circulation.
- Clean and healthy skin.
- Easy to install.
- Maintenance free.
- Equipped with overrun safety protection.

## Specifications

The Lely Luna cow brush can be easily installed on the standard fixation posts of 2", 2½", 3" and 2", and on square '6 and 8' posts. The Luna cow brush is also available with a wall mounting set. The cow brush is available for both 230 V and 115 V electrical installation. To ensure optimum safety, the Luna cow brush is fitted with an overrun safety protection.





## Lely L4C – more than light

Lely L4C – Light for Cows, is much more than just a number of lights to light your barn; it is an altogether different approach to barn lighting. This new system – the first of its kind – has been developed to ensure optimum light distribution in the barn, using specially designed lamp units. Thus, the system ensures optimum light levels throughout the barn while keeping energy consumption as low as possible.

## Increase your milk production

Proper lighting in barns ensures optimum cow performance.

Well distributed lighting inside the barn – including an optimal time schedule – may increase milk production by 6 to 10% and increases forage intake. Lely offers a highly affordable option to ensure cows can benefit from the lighting conditions that are standard for most of today's state-of-the-art barns. And there is more to this excellent option: L4C is a controlled barn lighting system, which also provides the facility of an advanced and custom-made lighting plan.

## Choose a light and bright barn

Cows are sensitive animals and their day-and-night rhythm is of paramount importance. Specific light levels are necessary to impact the difference between the night-and-day rhythms on the cow's body. In barns there is usually not enough light, especially in winter time, to reach a natural light level. With correct lighting control, cows benefit most from a light intensity between 150 and 200 lux during a 16 hour period, combined with an eight hour dark period. In the summer season, the natural light level may often be sufficient in itself, although lighting control may – even in summer time – provide benefits on cloudy, darker days. Due to the combination of a light sensor and the network plus its settings, you can operate a fully automated system that guarantees optimal light distribution without any additional labour.

## Individual light plan

Thanks to the lighting plan, an optimum lighting programme can be set up to ensure perfect light distribution using a minimum number of lamp units. All lamp units are made of outstandingly high-grade and sustainable material with maximum life span. Lely L4C adjusts its lighting schedule to the programme installed, and takes into account outside light levels so the lights will only burn when strictly necessary. Due to the unique fact that each lamp unit has its own node box, connected to a network, the individual lights have their own lighting programme according to their place in the barn.

## Attention to every cow

Not only your dairy cows, but your young stock and dry cows will also benefit from optimal light distribution. In the set-up of the lighting programme, these special groups have been given particular attention. This is because young stock and dry cows prefer a different light distribution, which is easily – and automatically – managed through the L4C lighting programme.

## Key benefits

- Increased milk production.
- Fully automated.
- Energy saving.
- Improved animal wellbeing.
- Increased intakes.
- Integrated night lights possible.



## Minimal light exposure

	Lux	Light hours
Milking cows	> 150	± 16
Dry cows	> 150	± 8



## Users say:

"It's easy; more light, more milk."  
Switzerland

"Totally automated system, or hand-operated, depends on what I like best. With every application that I require."  
Norway

## Durable light at night

Red light is not visible for cows, so excellent to light the barn during the 8 hours dark period. This enables doing control rounds and other work in the barn without disturbing the cows during their necessary dark period. The L4C lamp units have an optional integrated LED night light "Light 4 Cows LED". Integrated night light saves installation costs for additional night lamps. LED lights are low on energy usage and last longer.

## A lamp for every situation

A minimum of 150 lux\* is needed to ensure optimal cow performance. Within the L4C programme this level can be reached through two different options: **1** metal-halide lamps or **2** high-pressure sodium lamps. In both types of lamp units, 400W lights are used.

A third option is the **3** metal-halide 250W version. This light level does not have any effect on the milk production of cows and therefore this option is very suitable for calves or dry cows.

The fourth option, night light is added to the barn by means of **4** ALNL night lights or night light is integrated in the 400W lamp. Cows cannot see red light, but it can be spotted by the human eye. This type of light makes it possible for the dairy farmer to enter the barn and monitor his animals without disturbing them.

\*) 1 lux = 1 lumen/m<sup>2</sup> (lux (lx) unit of apparent light intensity, lumen (lm) unit of perceived power of light).



**1** and **3** : Metal Halide 400W (comes also in a 250W version).

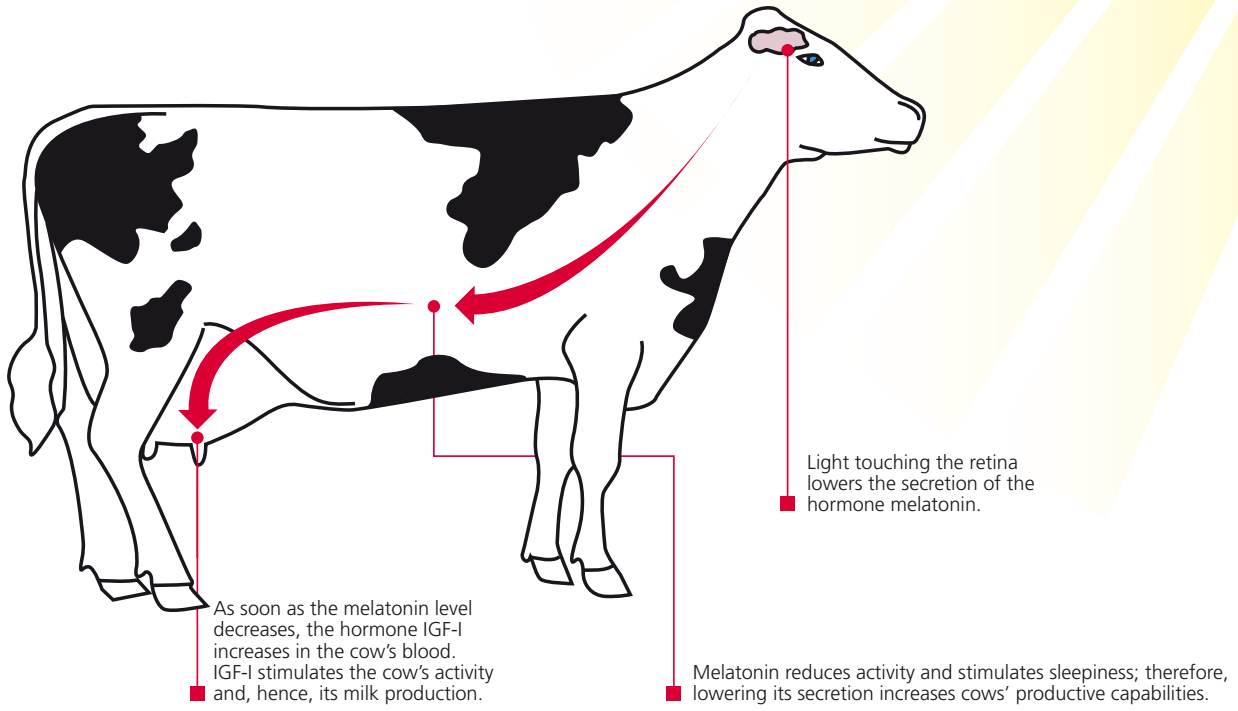


**2** : High pressure sodium lamps 400W.

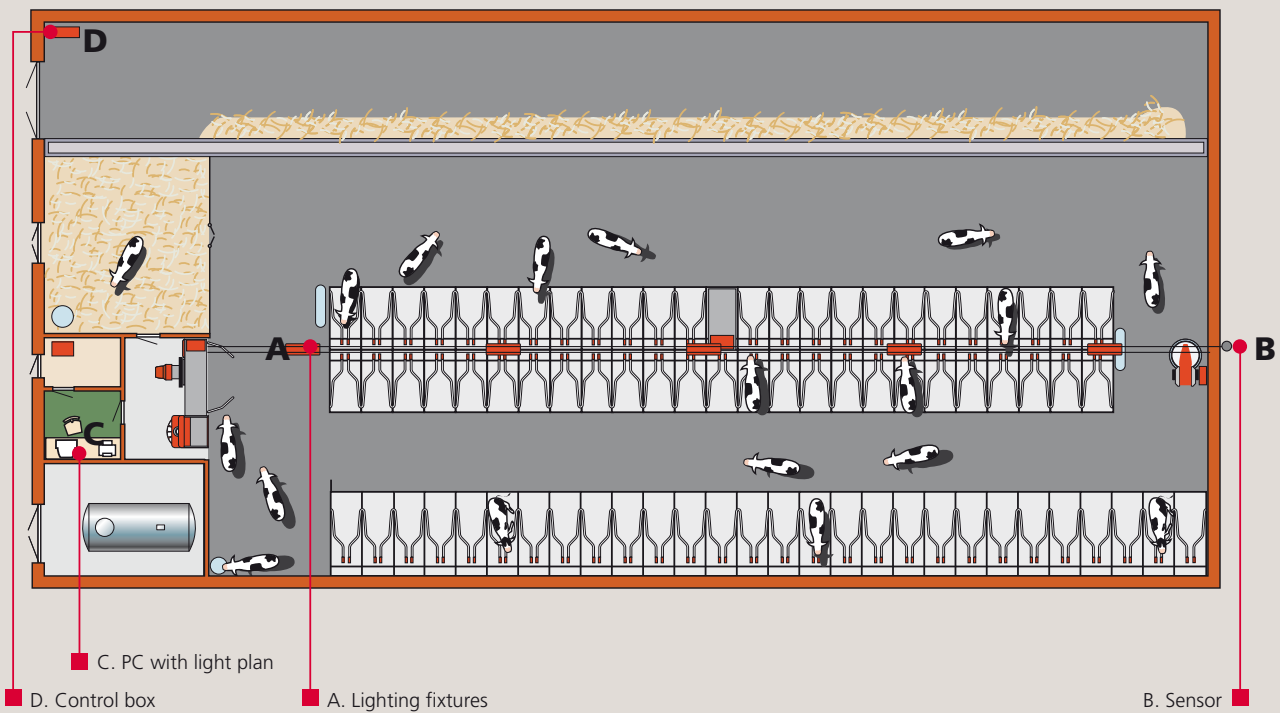


**4** : Night lights.

How light stimulates the milk production.



Plan of a barn with a Lely L4C lighting system.





## Key benefits

- Prepare the footbath by pressing one button.
- No disturbance of cow traffic.
- The bath stays clean.
- Easy to control.
- Clean and refill of the bath by pressing one button.

## Lely Walkway automatic foot bath

Good hoof health is essential for optimal visiting behaviour to the milking robot. To improve hoof health and minimise movement problems, foot baths are essential.

The Lely Walkway hoof care foot bath is extremely user-friendly thanks to the automatic water and chemical fill (two different chemicals in the right concentration), and the automatic emptying and cleaning system.

The hoof care foot bath guarantees:

- Minimum work; the system is activated at the press of a button.
- No dirty foot baths; dirty foot baths have the potential to increase claw problems within the herd.
- Free passage; after automatic cleaning the foot bath is placed in the rest position, enabling the cows to pass through freely.

## Specifications

Weight (kg)	455
Height (cm)	232
Length (cm)	230
Width (cm)	105
Capacity water reservoir (litre)	230
Capacity bath (litre)	180
Length bath (cm)	200
Required power (VAC)	220



## Lely Treatment Box – controlled and safe treatment of your cows

This unique treatment box has been developed with the ultimate goal that one single person should be able to put a cow in place for treatment in just one minute. It ensures a unique work site enabling you to perform any conceivable cow treatment in an easy, professional and safe manner.

This box has been designed to perform all cow treatments whereby the cow remains standing including hoof care, udder care, injections, oral flushings, applying of ear tags as well as various kinds of abdominal surgery.

The treatment box has been developed by the renowned manufacturer of professional hoof care boxes, Wopa, in close consultation with veterinary specialists Vetvice, both from the Netherlands. For enhanced ease of control, the box can be operated by an electrical control.





## Lely Commodus cubicle – provides cows with the maximum animal welfare

Animal welfare, comfort and healthy, productive cows are strongly interlinked factors. Cubicles that offer the highest comfort and a good accessibility for lying down are being used more frequently for longer periods, which has a positive impact on the milk production. Lely has completely redesigned the cubicle concept and created an animal-friendly cubicle, the Lely Commodus cubicle.



## Flexibility in every way

The Commodus cubicle guides cows easily into their places and provides them with the maximum possible comfort. Due to the flexible fixing of the cubicles, the Lely Commodus cubicle will not hurt cows when impacted. The flexible fixing will also soften the impact when a cow is rising up from an awkward position. The Commodus cubicle is a guiding cubicle rather than a fixed cubicle. This intelligent concept also enables a cow to adopt a lying position that is nearly as free as in the field. There are no side bars that could press on the cow's back and the front part of the cubicle leaves plenty of space for the head, which is necessary when lying down or standing up.

## The best characteristics in respect of animal welfare

The Lely Commodus cubicle is very quick and easy to install. Commodus cubicles can also be quickly removed without tools. Lely Commodus cubicles are installed together with a rounded, long-lasting, flexible brisket board. The brisket board will not hinder the cow in any way, but will guide her to lie in the right place. The cow can also easily put its front legs over the brisket board without hurting itself. Because of the raised position of the cubicle dividers, the distribution of bedding material, such as straw and sawdust and cleaning the cubicles is much easier than with traditional stalls. Mattresses are also easier to change or install with the modular brisket board construction. The Lely Commodus cubicle offers the best characteristics in respect of animal welfare, comfort, accessibility and hygiene.

## Key benefits

- High cow comfort.
- Cows completely free.
- Easy installation.
- Adjustable.
- Flexible.
- Positive influence on milk production.

## Specifications

Width stall divider	Adjustable from minimum 102 cm
Weight stall divider	16.60 kg
Bedding	Mattress, deep bedding (sand, sawdust etc.), rubber





## Lely Compedes soft bed – your natural bedding

In modern farming, cow comfort is a keyword. Therefore a barn should represent a natural environment for the cows. The comfort of the Lely Compedes soft bed provides the cow her freedom of laying without stress, and allows her to perform natural behaviour which will improve milk production. With the Lely Compedes soft bed you choose a well tested long lasting product which has already been used on farms for many years.

## Specifications

The special foamed plastic underlay out of polyurethane (thickness 20 mm) installed loosely on the animal house floor is surrounded by the solid rubber mat from all sides. The rear area of the mat features knobs and webs on the underside, which cover a width of ca. 25 cm. For this reason, the mat has a gradient of ca. 1.5% in this rear area.



## Improves hoof health

Hoof health will improve as more comfortable bedding will contribute to less stress on the hoofs and joints. In addition cows will enjoy the grip and soft surface to stand up and lay down as on a natural way.

## For new and existing barns

The Lely Compedes soft bed is a unique cow mattress, specially developed for the modern farmer and consists of a strong rubber mat with an integrated foam-underlayment. The waterproof, non porous top layer in combination with the foam underlay results in a high comfort level, huge applicability and easy way of installation and cleaning. Due to its clever design it will fit in new barns as well as in renovation projects. The Compedes soft bed is easy to clean and has a unique liquid barrier resulting in lower bedding maintenance costs and a substantial increase in hygiene.

## Easy installation and maintenance

The instructions of installation are detailed and understandable. Installation is easy and can be carried out by the farmer. The mats are installed side by side and fixed on the head side with three bolts at determined places. They can be reused because removal does not cause any damage. No maintenance is required for the mats to remain comfortable.



## Dimensions

- Thickness: 32 mm.
- Length: 183 cm.
- Widths: 110, 115, 120 and 125 cm.



Lely Compedes soft bed is DLG tested.



## Customer services

Outstanding service at Lely is focused on understanding and responding well to our customers' needs. Through our local Lely Center distribution network, we offer you preventive maintenance, advisory services and 24/7 emergency service. Our expertly trained, highly experienced and well-equipped service technicians are with you in next to no time whenever you need assistance. Of course, the same working principle applies to parts service. Through our Lely Finance program, we offer you the opportunity for flexible financing of our products meeting your individual needs.

## Lely service

If you opt for a Lely product you will enjoy the peace of mind that comes with our unique support system. Page 70.

## Lely Original wear parts

Extensive testing and durability that meet our quality objectives, is what you get when opting for the original Lely wear parts. Page 72.

## Lely Finance

Through our Lely Finance program we provide customers around the world with the most suitable finance solutions to help them become owners of Lely equipment. Page 74.

### LELY SERVICE



### LELY ORIGINAL WEAR PARTS



### LELY FINANCE





## Lely service – you can rely on us

If you opt for a Lely product you will enjoy the peace of mind that comes with our unique support system. Dedicated specialists at our local affiliates – Lely Center facilities – will get to know you and your concerns. They will provide valuable assistance, local knowledge, quick response in case of interruptions and extensive expertise on all Lely dairy equipment.



## Lely Center concept – dedicated and educated

We like to keep the Lely organisation as lean and mean as possible, with a continued main focus on research and development of new concepts for you as a dairy farmer. As opposed to other distribution models, the Lely Group has developed the Lely Center concept in order to secure the availability of professional sales and service for Lely products in local areas worldwide. All across our Lely Center facilities we continuously strive to optimize our performance. We ensure all our service engineers remain up-to-date on the newest techniques; each year they are trained and tested on their actual knowledge as set-out out by our Lely Academy.

Our certified service engineers are available 24 hours a day/7 days a week. In our think global, act local philosophy our Lely Center facilities are situated close to the dairy farmers in their region. This ideal starting point enables them to provide dairy farmers with a comprehensive range of high tech and innovative Lely products and services that are tailored to their specific needs. Our expert consultants with hands-on experience stand for optimisation of the performance of your herd, making sure you get the optimal benefit out of our products and services. Our passion for innovation does not stop at the technical features of our products, but continues far beyond that point to cover all practical and management aspects on your dairy farm.

## Users say:

“I do not only choose their products, but I also choose for the most reliable 24/7 service of Lely.”  
Australia

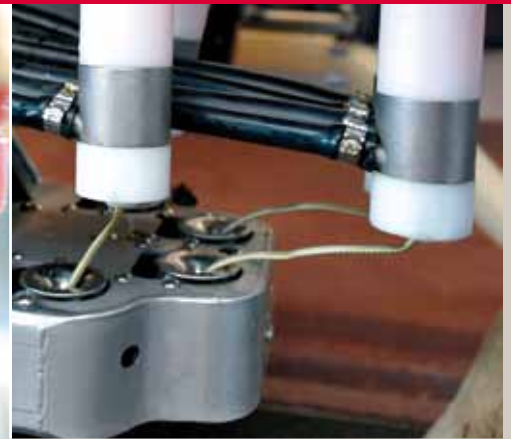
“It’s easy to see that these service-engineers are certified.”  
Ireland



## Lely Original – quality mark for Lely parts

To increase the hygiene, prevent unplanned breakdowns and unforeseen cost of the Lely Astronaut robot, it is important to change main wear parts frequently. A range of Lely Original wear parts has been developed especially for the Lely Astronaut robot. This range of products can be replaced easily by you without requiring the help of a technician. Lely teatliners and Lely brushes have been tested extensively under the effects of use of Astri cleaning products. This ensures the quality of the wear parts and thus your robot.





## Lely Consumable Box

A Lely Consumable Box contains the most relevant wear parts that should be kept at hand at any time at your farm. This box contains wear parts that should be replaced at least once a year to guarantee the highest hygiene-level. The Lely Consumable box is available for A4, A3 and A2 Astronaut robots.

Teat liners	Lely advises to change silicon teatliners after 10,000 milkings. Replace the teatliners in time to prevent leakage and the possibility of udder infections. Teatliners are available in different sizes.
Milk filters	Lely recommends changing the filters three times a day during each cleaning cycle.
Teat cup ropes	Replace the ropes once a year.
Cleaning brushes	The Lely brush features different red/white bristle types in a spiral shape to ensure stimulation and cleaning. Check the brushes regularly and replace them at least once a year.
Silicon duplo-tubes	The duplo-tubes are one of the transporters of the milk. Hygiene within the tubes is crucial for a good milk quality; change your tubes at least once a year.
Shut-off sleeves cartridge*	Maintenance and replacement of vacuum sleeves becomes mere child's play thanks to a newly developed pulsator.

\*) Only for Lely Astronaut A4.

Lely Original parts can also be ordered separately whenever you need them. In addition Lely offers a range of other original wear parts.



## Users say:

"In combination with the 24/7 service and the quality we all know from Lely, my systems are always up-to-date and reliable."  
Spain



## Lely Finance – capital starts a business and keeps it growing

Our knowledgeable industry specialists are ready to provide you with the finance products and services you need to meet your business goals and keep you competitive. Lely Finance offers you the ability to acquire the most innovative dairy equipment using an affordable finance solution.

## Flexible financing

We offer many financial solutions to best fit your operational needs and cash flow. Lely Finance offers you the ability to pay for the use of the equipment, usually with one advanced payment as your down payment. That means you can get your equipment now and minimize your start-up expenses. Lely Finance can also finance your purchase if you desire to own the equipment. We offer various fixed terms, payments, and payment structures.

## Financial lease

If you want to own your Lely equipment, but are looking for a way to spread the investment over multiple payments for a longer period of time, choose for financial lease. At the end of the contract, you will have full ownership of the dairy equipment. Using financial lease, the equipment will appear on your own balance sheet for depreciation purposes.

## Operational lease

If you are looking for significant cash flow savings, are not interested in ownership of your Lely equipment, and want to obtain the latest technology, choose operational lease. When the contract ends, you can choose to either renew the contract and upgrade to the latest model available, extend the existing contract or buy the equipment you have had in use. Using operational lease, the dairy equipment does not appear on your balance sheet.

## Differences at a glance

	Financial lease	Operational lease
Legal title	You	Lely Finance
Economic title	You	Lely Finance
Tax benefits	No	Yes
Balance sheet	Yes	No
Writing off payments	You	Lely Finance
Depreciation risk	You	Lely Finance
Ownership after contract	You	Optional

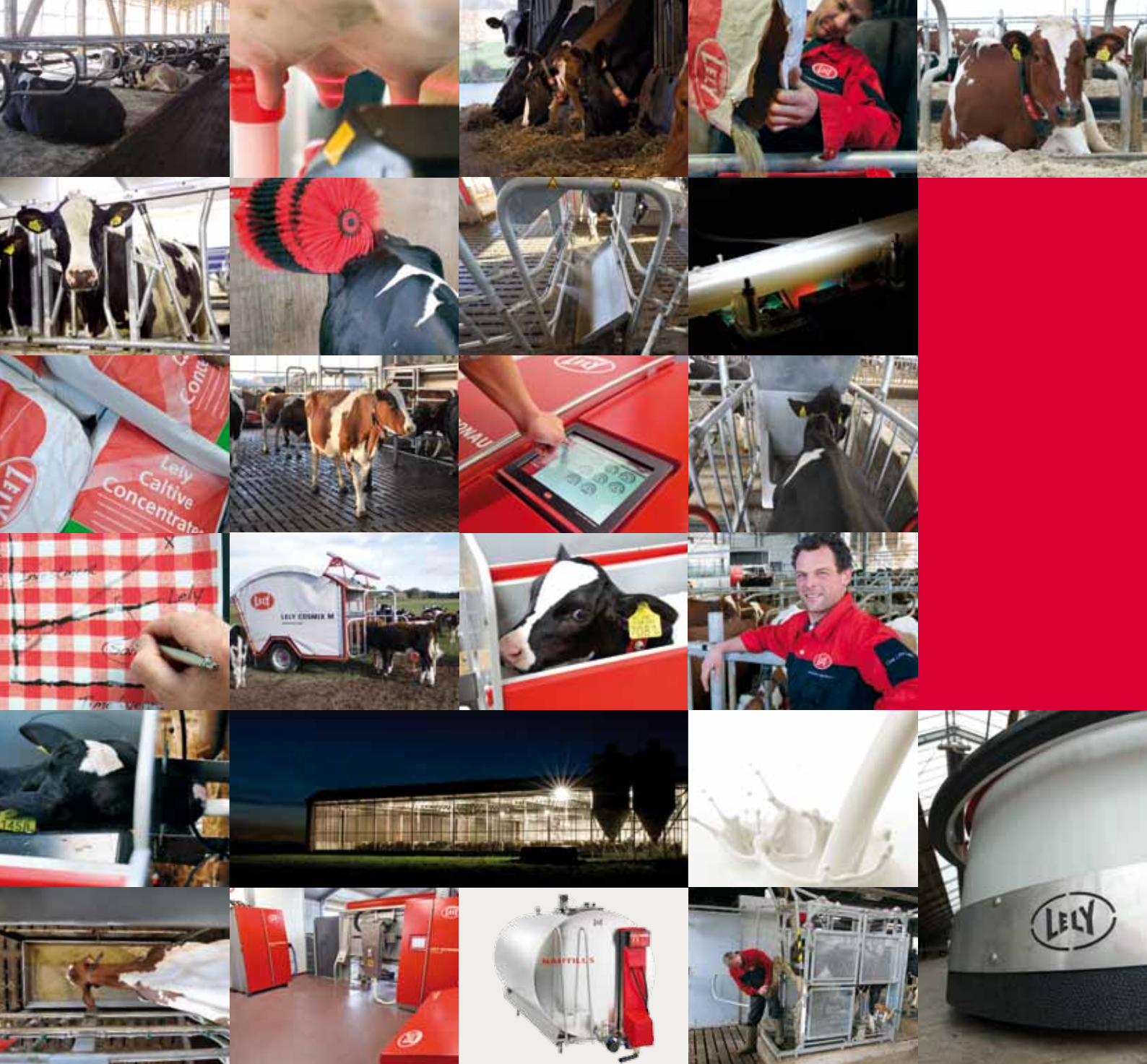
## Key benefits

- Low monthly payments.
- Tax advantages.
- Off balance sheet financing.
- Always the choice for the latest technology.
- 100% financing.
- Conservation of capital.
- Fixed payments.
- Preserves credit.
- Flexibility.
- Purchase and renewal options.

## Users say:

“Knowing exactly what your costs are up to, and being able to work efficiently.”  
Denmark

“It is great to work with the thought that I’m able to update every 5 year with the latest high technology equipment.”  
USA



Your Lely distributor

LHQ.B99011.ENB

Lely really cares for the environment.

[www.lely.com](http://www.lely.com)