

Stay ahead of your **future**



Astronaut A5 Next
automatic milking system





Stay ahead of your **future**

“After testing the Astronaut A5 Next in recent months, I can say that Lely summarises all available innovations in this machine. It’s absolutely recommendable.”

Manuel Lugli, Mantova, Italy

As a dairy farmer, you make a living doing what you love most. On the other hand, consumer sentiment about farming is changing. This change creates opportunities for forward-thinking farmers who work with full transparency and use data to strengthen their story.

While previous generations also had to comply with increasingly stringent regulations, current and future generations will have to work fully transparently to produce food in the most sustainable way with greater attention to animal welfare.

Lely’s mission is rooted in this new reality. Revolutionising farm efficiency by automating repetitive tasks on dairy farms. We enable you to be more in control, ensure sustainable practices, meet consumer expectations and prepare your operation for the next generation.

Built on our automation tradition of more than 30 years, Lely continues to push the boundaries of what’s possible in dairy farming. Our advanced farm management software delivers extensive decision support enabling you to manage your costs and respond to calls for transparency – all of which contribute to your competitive edge.

With this new Astronaut A5 Next we think beyond just tomorrow. You and your farm will be prepared more than ever for future challenges and opportunities.

Why choose the Astronaut A5 Next?

Because we build on more than 30 years of experience in dairy automation, over 50,000 installed robots and use insights from thousands of dairy farmers from more than 40 countries.

This experience gives us a leading edge in automatic milking systems, providing significant performance returns for dairy farms worldwide.

Experienced in cow autonomy and comfort

The Astronaut is based on the principles of free cow traffic, allowing cows to act more natural and make their own choices. Thanks to the unique I-Flow concept and the spacious design of the cow box, cows feel more at ease when visiting the Lely Astronaut, which in turn optimises productivity.

Experienced in ease of use

The Astronaut is built for cows and people, its intuitive user interface makes automatic milking easy to understand for everybody. The optional automatic milk filter takes convenience to the next level.

Experienced in reliability

Three decades of experience and farmers' insights helped us to improve the Astronaut's reliability in every new edition. This can be seen in its robustness but experienced through the new operating system. This provides reliability through resilience, adaptability and protection.

Experienced in return on investment

When developing and testing a new edition of the Lely Astronaut, we pay a lot of attention to the total cost of ownership. In addition, we continuously monitor water and energy consumption, as well as the serviceability of components and systems. To optimize the lifespan of the robot, we only use high-quality components.



Newest improvements

Completely new operating system

A completely renewed nerve system brings heightened resilience, adaptability, and digital protection. [Page 21](#)

Improved pre-treatment brush unit

Gentle, efficient cleaning and stimulation for milk secretion. [Page 12-13](#)

Revolutionary teat detection system

TDS2+ connects like a farmer, combining the focus of the laser with the wide view of the camera. [Page 12-13](#)

88%

of Astronaut users worldwide are satisfied or very satisfied with their robot*

We never stop innovating

Proven innovations

The hybrid arm

Its silence and accuracy make the robot more human and cow-friendly.

I-flow

For optimal visit behavior. The cow can walk straight in and stay within the comfort of the herd. [Page 12-13](#)

Horizon

Lely's state-of-the-art management software. Decision support at your fingertips. [Page 18-19](#)

New and improved options

New Automatic Milk Filter

Automates the task of changing the filter socks, easy to clean and maintain. [Page 14-15](#)

New Eartag ID

Introducing Eartag ID as the entry level identification solution for enhanced flexibility. [Page 12-13](#)

New Milk for Use

Easier, cleaner, more gentle and safer handling of separated milk. [Page 14-15](#)

Enhance your craftsmanship

Your farm is a unique ecosystem, and you understand its complexity better than anyone else. The same goes for your cows – their habits, preferences, and individual nuances are second nature to you. That's precisely what you can expect from an automatic milking system: it's not only about efficiency, it's about mirroring your instincts and actions.

The Astronaut A5 Next leverages cutting-edge technological advancements in both hardware and software, to enhance rather than replace the craftsmanship of today's dairy farmers. Specially designed around four key principles: freedom of choice for your cows, individual treatment based on real-time data, a consistent milking experience and focus on health for each individual cow.

An investment that pays off by partly eliminating variables such as labour, and with predictable running costs, the Astronaut supports financial stability. Moreover, better cow health and welfare – a key outcome of automation – can lead to a lower herd replacement rate as well as the potential for increased sales of surplus heifers.

Four pillars to unlock each **cow's potential**

1 Offer each cow freedom of choice

Cows experience the least stress and are therefore most productive when they can dictate their own rhythm.

The Astronaut approach:

- 'Free cow traffic': each cow chooses when she visits the milking robot
- I-flow design: easy and natural access to the milking robot
- Natural behavior: easier to spot unnatural behavioral patterns

2 Treat each cow individually

The milking approach should be adjusted to each cow's individual needs as they change over time.

The Astronaut approach:

- Sensor and camera technology: real-time monitoring.
- Lactation-based milking intervals: access is allowed/restricted depending on the cow's energy needs.
- Data-driven support: automatic notification of quality deviations.
- Automatic routing via Horizon enabling easy individual cow management.



3 Create a consistent milking experience

Cows don't like surprises. They feel most relaxed when they are familiar with the process.

The Astronaut approach:

- Predictable sequence of events: from teat stimulation to the post-treatment spray.
- Uniform treatment: each pre-treatment is performed in an identical manner every time.
- Familiar: cows quickly embrace the Astronaut as part of their everyday routine.

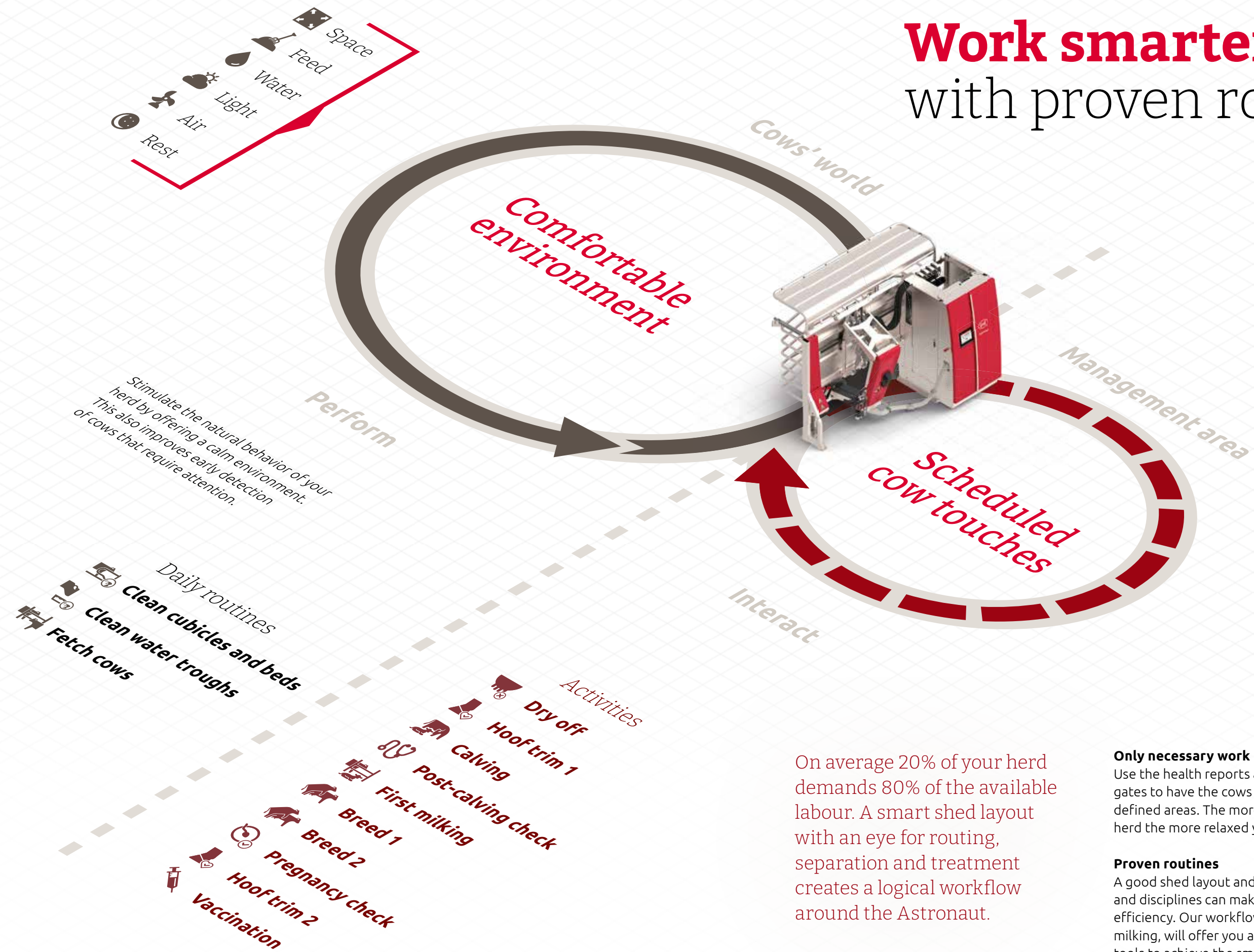
4 Prioritise each cow's health

Close monitoring minimises risks and supports fast action to prevent or treat health issues.

The Astronaut approach:

- Good udder health: automated brush cleaning and tailored quarter milking.
- Early warning: a solid combination of cow and milk data indicates potential health risks.
- Task-based decision-making: real-time health tasks are generated if a cow requires attention.
- Analysis of treatment effect.

Work smarter with proven routines



On average 20% of your herd demands 80% of the available labour. A smart shed layout with an eye for routing, separation and treatment creates a logical workflow around the Astronaut.

Only necessary work in the herd

Use the health reports and the separation gates to have the cows waiting for you in the defined areas. The more you stay out of the herd the more relaxed your cows will be.

Proven routines

A good shed layout and well-thought-out routines and disciplines can make a big difference to labour efficiency. Our workflows, developed for robotic milking, will offer you and your employees the tools to achieve the smartest way possible.

The art of milking

Perfecting the process

The milking process is a balance between optimising milk production and maintaining cow health and well-being. At Lely, we believe the key to successful milking lies in considering the individual characteristics of each cow. The Astronaut design – based on more than 30 years of insights – offers each cow a consistent, customised milking experience.

The number of milkings per cow per day in an Astronaut is

3.2
on average*



Cow enters Astronaut >

Brushing >

Connecting >

> Milking >

Spraying >

Cow leaves Astronaut

Lactation-centric milking

For each individual cow at every milking, the Astronaut determines the milking interval based on the data stored in the Horizon management software. Whether it's the pre-milking stage, milking itself, or teat stimulation, the system collects data about the cow's udder and teat position.

Cow-specific stimulation

The pre-treatment optimiser (PTO) uses data acquired by the Astronauts' numerous sensors to automatically adjust the teat stimulation settings in line with each cow's individual needs. PTO helps to reduce delayed milk ejection (bimodality) which compromises the cow's comfort and/or udder health.

Cow comfort

A vision-based positioning camera (TDS2+), laser technology and our teat detection system position the robot arm smoothly, supporting 'first-time-right' cup connection. Data about each cow's udder and teat position during every cow visit.

Minimising milk loss

Pre-milking often results in small amounts of milk being discarded. However, the speed at which milk is released can vary significantly between cows, and even between quarters of the same cow. To prevent waste, only a small, controlled amount of milk (9 ml per quarter) is discarded.

Safeguarding udder health

To ensure udder health, maintaining stable vacuum levels at the teat end is crucial. The Astronaut achieves this by using two separate vacuum circuits and a buffer in the arm, which help stabilise the vacuum, ensuring the cow is milked comfortably and efficiently.

Milk quality

The quality of the milk is checked at quarter level by the in-line Astronaut milk quality control for flow, colour, temperature, lactose level, fat/protein ratio and conductivity. To collect accurate data, the measurements are taken as close to the udder as possible.

Controlled milk flow

Continuous quarter-level monitoring offers optimal control over the milking process. When the milk flow of a quarter drops below a target level, the teat cup is gently and quickly removed.

Safety and efficiency

If a cow accidentally kicks off a teat cup, that milk line is closed quickly, and the cup is retracted with less risk of it contacting the floor. If needed, the cup is reconnected and milking continues.

Herd hygiene

After milking, the system automatically sprays the cow's teats with an udder care product, such as Lely Quaress. Before the next cow is milked, the teat cups are cleaned with water, or the optional Pura steam cleaning system for enhanced hygiene.

Art of milking video

Take a closer look at the art of milking



* Based on anonymized statistics from Lely Horizon, December 2024.



Dutch Astronaut farms
achieve on average

2,734 kg

higher lifetime production
per cow compared to
an aggregate of other
automatic milking systems*

What's new?



Eartag ID

The entry level identification

- Seamless affordable identification solution
- Strategic growth with monitoring integration

Designed for **cow autonomy** **and comfort**

Autonomy is known to improve the well-being of cows. Our approach to automation – called ‘free cow traffic’ – allows cows to decide when they eat, drink, rest, or are milked. This freedom significantly improves their well-being, creating a calm, productive herd.

Easy and natural access with I-Flow

The Astronaut's I-Flow concept is designed with cow comfort in mind. The cows enter the milking unit naturally, with no need to navigate sharp corners. The simple, straight-line design in and out of the milking box minimises stress and makes milking a seamless part of their daily routine.

Close to the herd, close to nature

The milking unit itself is spacious, ensuring the cow feels comfortable and unconfined during the milking process. The open design of the cow box also ensures that the cow never feels trapped or isolated, reducing stress and creating a more relaxed atmosphere in the barn.

Comfortable milking

The Astronaut A5 Next moves synchronously with the cow, ensuring smooth and accurate connections even with many cows that have irregular teat positions. The robot arm is quiet, fast and decisive. Together with the 3D camera the Astronaut enhances connection performance, alleviating stress for both the cow and the farmer.

Different types for different needs

Lely provides a diverse selection of silicone and rubber teat liners. By consistently using the right liners, the system helps safeguard teat health, reducing the risk of mastitis and improving overall welfare and milk yield.



TDS2+ teat detection system

Your extra set of eyes

- Improved connection performance through laser-camera combination
- Ready for future innovations in comprehensive monitoring



Pre-treatment Brush

The important first touch

- Gentle, efficient, silent and tactile stimulation for milk let down
- Improved cleanliness and serviceability
- Brushed teats and udder
- Efficient with low energy, water and detergent usage

9.1/10*

Average user-friendliness
score



Easy to operate to make your life easier

Unlocking the potential of the system is easy, even with minimal experience. The intuitive user interface easily navigates you through menus, functionalities and settings. But there's more...

Swift first milking

Milking a fresh cow is now easier than ever. With all essential functions displayed on one screen, the robotic arm simply positions itself close to the udder. It connects to the cow's teats, initiating the milking process.

Real time data access

With a quick glimpse you see which cow is being milked and what her status is; see how all quarters are performing. It only takes one touch to control routing or changing milk destination.

Next level efficiency

The Astronaut is developed with efficiency in mind. Its energy-efficient design helps reduce the cost of milking and supports sustainability goals.

Additionally, the automated system reduces the need for manual intervention, allowing farmers to save time and improve overall farm efficiency.

Peace of mind

Our solutions offer you peace of mind by reducing repetitive tasks. For example, the new optional automatic milk filter automates the task of changing the filter socks three times a day, a task that often slips a farmer's mind amid the unpredictability of daily farm life.

Easily accessible

The Astronaut is designed to offer easy access to all parts. The design of the Central Unit offers more space, reduces service time and makes it easier to position the chemicals required for cleaning.



Milk for Use milk separation

- Improved fly protection.
- Easy to use and clean, transparent buckets.
- Helps to maintain the quality of colostrum.



Automatic Milk Filter

- Automates the task of changing the filter socks, 3x per day.
- Provides insights in flush performance.



Lely Technician Diagnostic Assistant – service tool

- Remote technical performance monitoring
- Smarter and faster service support

What's new?



“I really love my job!”

Alessandra, herd manager at Lugli farm,
Mantova, Italy

Embrace the proven routine

Automated milking slots in your day-to-day routine offer you greater flexibility, more efficiency and a better work-life balance.

When the Astronaut takes over the repetitive process of milking, this allows you to allocate your expertise where it is needed most, spending time with individual cows. Insights from Lely Horizon ensure the link between you and your animals by putting the right information at your fingertips. That way you can make decisions, plan activities and increase your efficiency.

Letting go pays off

Equally important, the Astronaut allows cows to dictate their own rhythm of resting, feeding and being milked. Cows that have more freedom to express their natural behavior are known to be more relaxed. It creates a calm atmosphere in the barn that makes your cows flourish.

More control, more profitability

New routines give you more control over your dairy farm so that you can steer it towards more profitability.

With the support of Lely Horizon, you can centralise most of your key indicators and keep a grip on them. In the current economic times, can you really afford to ignore the benefits of automated milking any longer?

A day in the life of Alessandra

Lugli Farm, Italy

Wednesday evening 6:00 pm (5 minutes)

- Cows that require attention are automatically routed to the management area. It's 'dry-off day' tomorrow, and this evening one cow shows the first signs of heat.

Thursday morning 7:30 am (15 minutes)

- Alessandra checks on the shed, ensuring everything is in order.
- Lely Horizon tasks are reviewed for attention cows.
- Three cows are fetched for milking, and the cubicles are scraped out.
- The robot is quickly cleaned.
- Two attention cows are monitored.

8:00 am (50 minutes)

- Fresh feed is provided for the cows.
- Fresh bedding is spread in the cubicles.
- The calves are fed.

9:00 am (10 minutes):

- Check the cows that were routed earlier today and treat them for drying-off and insemination.

Afternoon and Evening 4:30 pm (60 minutes)

- Check Lely Horizon tasks again, back in the shed.
- Fetch three more cows for milking.
- Clean the cubicles and treat any cows needing attention in the management area.
- Review Horizon for the next day and feed the calves.

10:00 pm (15 minutes):

- A final check in the barn to ensure everything is in order before the day ends.

The Astronaut allows them to focus on more critical matters, like herd health, farm management, and spending time with family.

Lely Horizon

Decision support at your fingertips

The Astronaut
harvests more than
100+
valuable data points
per milking

Lely's farm management system, Horizon, revolutionises the connection between dairy farmers and their cows. It provides you with the tools you need to stay in control of your herd and milking process 24/7. By leveraging Lely robots and Horizon together, you will know what is happening at your farm, understand why, and receive proactive support to optimize your farm, giving you more control over your herd than ever before.

Data-driven milking

With Horizon, you control milk quality, milking completeness, and cow performance. Customise milking schedules and feed access based on lactation data. Peak-lactation cows can be milked up to 4 times daily for optimal production. Adjust settings independently or with your Farm Management Support advisor.

Always up to date

Horizon ensures you have continuous access to vital farm information. Tasks, reports, and alerts are readily available on your smartphone, making it easy to stay informed even when you're not on the farm. The system operates around the clock, monitoring and collecting data to provide actionable insights, making it your digital, personal assistant.

Simple and straightforward control

The user-friendly software is used by over 25,000 farmers worldwide. Horizon offers personalisation

options, such as setting key performance indicators (KPIs) and farm tasks on the dashboard, allowing you to always have quick access to the information most important to you. Define user roles to ensure data security and confidentiality.

Health treatment

Health management becomes more efficient with Horizon. Utilise an international disease database for informed treatment plans and ensure accurate administration and registration. Monitor withdrawal periods to prevent treated animals' products from entering the food chain.

Optimise cow interaction

Minimise unnecessary cow touches with Horizon's guidance. Task-based working and strategic routing streamline workflows for calving, start-up, health treatments, insemination, hoof trimming, and dry-off. Save time and labour while ensuring a smooth workflow.

More control than ever before

Health management

Horizon helps you identify which cows need attention and assists with health-related decision-making through task-based notifications and treatment insights.

Cow performance

Optimise the performance of each cow, supported by Horizon, with insights through key performance indicators (KPIs), widgets, reports, and analysis. Horizon continuously monitors

each cow's performance, supporting finding improvements in overall cow performance.

Reproduction management

Horizon offers in-depth insights into the reproductive health of your herd. By continuously monitoring cows, it predicts and highlights reproductive opportunities, ensuring cows are inseminated at the optimal time for conception, supporting you to achieve the best breeding strategy.



Continuously **improve** your results

The Astronaut automatic milking system is the result of 30 years of learning. We analysed millions of cows and listened to hundreds of farmers. We combined these findings with our knowledge of successful milking principles and proven practices.

Focus on results

Our focus is on achieving tangible results and delivering multitasking at its best. Each milking session enhances future milkings, as your Astronaut learns from data from thousands of farms worldwide. This allows you to consistently grow and improve your farm's performance.

Connect to improvement

We want to make sure you stay aligned with the changing needs of your business. With every software update,

your milking experience keeps pace with the ever-changing landscape of the dairy world. Stay ahead of the future – never fall behind.

Clear & actionable insights

The more data we have, the more accurately we can assess the likelihood of illness and provide you with clear, actionable insights. The Lely Horizon farm management software offers a wealth of information about the health of your cows. When a cow falls ill, you'll receive prompt notifications along with performance figures and recommended actions.

Gradual growth

Expanding a dairy farm can be planned and implemented over time. When done gradually, it remains manageable in terms of financing and labour efficiency.

Milking robots perfectly support gradual growth. Simply because milk capacity and investment can grow in line with the growth of the herd. This prevents the huge investments of a milking parlour and a waiting area, in order to have sufficient milk capacity at a later stage.

Future-ready with new operating system

In today's dynamic landscape, advancements and new functionalities are delivered remotely, while you stay in full control of your farm, with minimal noticeable changes. The upgraded operating system brings higher resilience, adapting to the rapid technological developments in the industry.

You profit from the benefits of industry progress and seamlessly incorporated functionalities that align with your needs. Including additional digital protection with Lely Hub* to help shield your operation from unwanted digital guests.

Thanks to its new operating system, the Astronaut is more than ready to match future technological developments. Now, that is what we mean by staying ahead of your future.

*Lely Hub is a dedicated secure server, subject to availability in your region.



Address **your focus areas** with our approach

You know what is best for your farm. When you combine your knowledge with our experience we team up to fulfil your farming desires. Let us support you in finding the best value-added solutions.



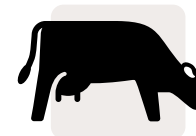
Focus on feeding

Feed represents one of the largest costs on a dairy farm. It's crucial to provide the right nutrition based on each cow's individual needs to optimise milk production. By focusing on feed efficiency, you can influence a cow's potential while managing feed costs.



Focus on udder health

Provides clear insights into udder health, helping you detect issues early and act before costly treatments are necessary. This proactive approach not only improves milk quality but also reduces the risk of infections and other health problems.



Focus on reproduction

Successful dairy farms rely on consistent reproduction to maintain herd numbers. With precision reproductive management, you can easily spot cows in heat and inseminate them at the optimal moment. This will improve your conception rate and help you maximise lifetime milk production for each cow.



Focus on hoof health

Healthy hooves are essential for a cow's mobility and overall well-being. Good hoof health allows cows to move freely, rest, feed, and use milking robots without discomfort. Lely provides the tools and insights you need to monitor and improve hoof health, ensuring your herd remains healthy and productive.

First things first

Whatever your focus is right now, your Lely Center is ready to support you with practical advice and solutions. Our local milking experts are here to answer your questions and help you implement changes that will benefit your farm.

Your local Lely Center

Partner in farming excellence

Our local Lely Center experts understand the journey you are about to go on, and they are there to support you every step of the way, from seamless installation of your new robot to ongoing maintenance and strategic advice.

A shared journey

Transitioning to automatic milking is a significant step. Lely has successfully guided tens of thousands of farmers worldwide through this process. Our dedicated team of local experts offers support before, during, and after the installation of your Astronaut A5 Next, providing the necessary training and advice to help ensure you get the most from your investment.

Choose your level of support

Through your Lely Center, you gain access to 24/7 technical support from certified Lely technicians. Various service levels are available, allowing you to choose the level of support that best suits your personal and your farm's needs.

Tailored strategic advice

In addition to technical support, your Lely Center offers Farm Management Support, helping you achieve your long-term business goals. Our farm management advisors provide tailored advice to improve herd health and well-being, productivity, and cost-efficiency, ensuring that your farm continues to thrive.

Local expertise backed by a global network

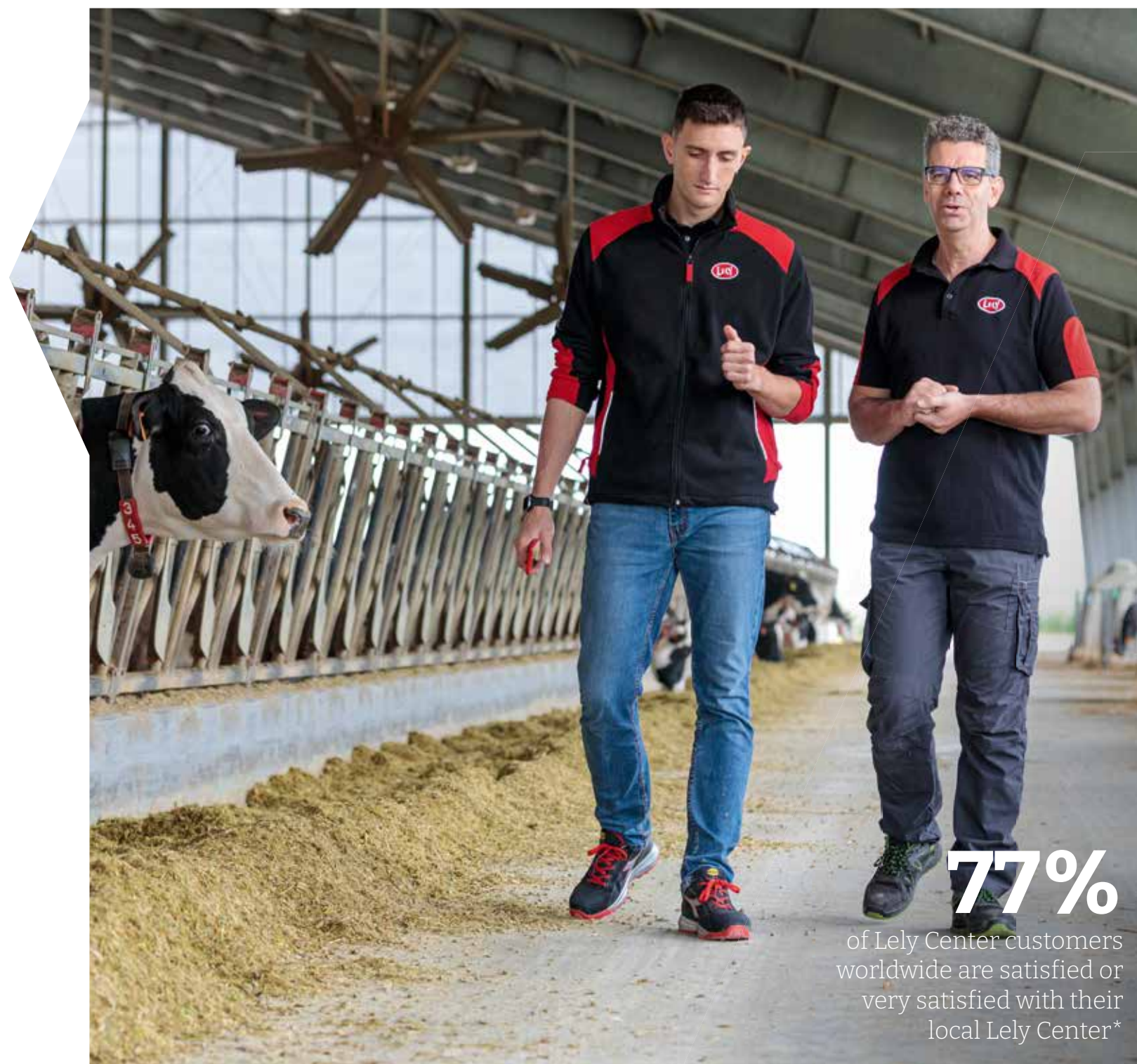
The dedicated teams at your local Lely Center combine their own experience in dairy automation with knowledge from our global network, all the way to our head office in the Netherlands.

Peace of mind

Farming is a demanding job, and peace of mind is crucial. You want to be able to rely on employees, machinery and a steady partner in servicing and providing support for your equipment. It is good to know that behind your Astronaut is an organisation you can trust.

Consumables to support daily farming

To complement your Astronaut, we offer a wide range of consumables and wear parts specifically designed for the Astronaut to enhance cow health and well-being, safeguard milk quality, and help extend the lifespan of your Lely equipment.



Our pillars of **Service and Support**

1. Guidance & Start-up Support

Your local Lely Center provides expert guidance to ensure a smooth transition to automated milking.

- Dedicated team of experts
- Local knowledge and language
- Comprehensive farmer training

2. Performance & Maintenance

Certified Lely technicians and advisors provide support to ensure optimal system performance and maximum uptime.

- Certified Lely technicians
- 24/7 access to technical support
- Extensive maintenance and consumables services

3. Management Support

Lely's tailored strategies help farmers make informed decisions and optimise their operations for long-term success.

- Tailored advice
- Local expertise with global insights
- Data-driven farm management solutions

“We stay ahead of
our future with
the Lely Astronaut”

Contact your **local
milking experts**



Major steps like this start with a thorough and smart plan. Contact your local Lely experts to discuss important details such as: the robot setup, cow identification, your external partners and the current cow data.

The QR code will lead you to your local dairy experts in just a few steps. **We look forward to seeing you so that we can move your dairy farm forward together.**





Bright farming is yours by choice



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