

**The benefits of
frequent feeding**

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Increased feed frequency has a positive effect on animal health, fertility and production.

**Customised rations
for each group**

06

Feeding according to the stage in life of the animal brings many benefits.

**Better feeding thanks
to automation**

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Automatic feeding has a positive influence on feed efficiency for dairy and beef cattle.

Lely Vector



*Automatic feeding
is ready for you*

www.lely.com



"I can now spend more time on other activities at the farm."

Fabio Cantù
Zevio, Italy

"I have been using the Vector for over a year and save up to three hours a day on feeding my livestock. The Vector loads and doses the ration more accurately and feeds more often. My beef cattle are calmer and growth rates have improved now that the feed is fresher and tastier. We also save a lot on fuel costs. Before the purchase I had my doubts about the reliability but the system has worked perfectly from the very first day."

Your feeding strategy has a significant impact on your results

More frequent feeding and feed pushing really pays off. It stimulates frequent feed consumption throughout both day and night, resulting in an improved feed intake. This has a positive effect on animal health, fertility, production and also on your finances.

The intake of a large quantity of rapidly fermentable feed causes an extreme drop in pH levels, which can cause sub clinical rumen acidosis. Rumen acidosis damages the rumen wall. The forage can pass through the rumen too quickly, as the bacteria that ferment the raw fibres are inactive if the pH level is too low, resulting in poor digestion of roughage.

The ideal scenario is for cows to eat 10 to 14 smaller portions every 24 hours. This will maintain proper and stable pH levels, ensuring optimal fodder usage. Increasing the both the feed frequency and feed pushing frequency will encourage cows to visit the feed fence more often.

Offering smaller portions reduces the possibility of cows selecting feed, which also has a positive effect on pH stability in the rumen. In addition, it means more frequent consumption of fresh and tasty feed at the feed fence.

Automating this repetitive work enables you to regularly feed and push feed. This makes your daily routine more flexible, the feeding process more efficient, and your business more successful.

Smart feeding works

"Competition at the feeding fence has changed completely because the cows know that fresh feed is available 24 hours a day."

Claas Tiedemann, Germany

Both you and your cows benefit from more frequent feeding

Always fresh feed at the feed fence

Milk production of cows is closely tied to how healthy they are, and being able to eat 10 to 14 times a day is a basic requirement for good health. That is why frequent feeding is so important. In addition, supplying feed more frequently means the feed is always fresh and tasty, reducing selection and increasing feed intake.

Optimal feed intake

If there is always fresh feed at the feed fence, a cow can decide for herself when she wants to eat. Every animal will receive fresh feed, including cows lower in rank, who may otherwise eat less feed more quickly due to possible aggression at the feed fence. Frequent ingestion of fresh feed is good for the rumen. It makes a cow more active, and it increases milk production.

Feeding at the right time

More frequent feeding is not about regular feeding at fixed times. It is about providing feed at the right time based on the eating rate, so that there is never too much or too little feed at the feed fence.

The eating rate can vary because of unusual eating habits or grazing, for example. Cows with the option to graze outside will eat less at the feed fence. Adjusting the time of feeding results in less rest feed and loss of taste.

Good for rumen health

Frequent feeding leads to a stable pH level in the rumen and good rumen health. A cow gets more than half of its energy requirements from fatty acids left over from fermented carbohydrates. If the pH level in the rumen is low, these micro-organisms become ineffective. Multiple, smaller meals per day keep pH levels stable, which means cows use the feed they eat more efficiently.

Good for healthy hooves

Frequent feeding also has a positive effect on hoof health. Since feed is literally within reach for all cows, they no longer need to stretch for their feed. This lowers the pressure on their front hooves and necks. When there is a limited feed supply, lower ranking cows are often chased away, causing them to make sharp turns which also put extra pressure on their hooves.

More frequent visits to the milking robot

Feeding more frequently stimulates the cows' activity levels. If a milking robot is used, cows will visit it more often.

7.28 litres

There are other contributing factors to milk production, such as ration calculations and genetics.

(Source: Dohme, 2008)

Research among 47 herds shows that milk production can vary by up to 13 litres of milk per cow per day. 56% of this variation can be directly attributed to factors such as feed frequency, feed pushing, length of feed fence etc.





**+ 92%
Lifetime
production**

Extra lifetime production
when a cow calves at
23 months instead of
27 months.

(Source: Van Amburgh, 2000)

Youngstock

The faster a calf grows to the ideal weight, the faster she is ready for insemination and milk production. By more frequently providing calves with fresh feed, tailored to their needs, roughage ingestion increases and these young animals quickly develop into strong cows. Research has shown that calves fed with fresh, tailored feed, several times a day, can be inseminated 4 to 6 weeks earlier than conventionally fed calves.

Customised rations for each group

Feeding according to needs benefits all types of cattle, both dairy and beef. In addition, each animal has its own feed requirements, depending on its stage in life.



Beef cattle

The benefits of frequently feeding calves also apply to those reared for beef. Compared to conventional feeding, calves reared for meat also gain weight faster if they are fed more frequently. As a result, meat production significantly increases, and costs for rearing and fattening calves decrease. Beef farmers will also benefit from more frequent feeding.



Lactating cows

Once a calf has grown into a lactating cow, its energy needs change, as ingesting dry matter becomes particularly important for milk production. More frequent feeding means cows always have feed at the feed fence, which keeps the feed tasty: smaller portions at the feed fence prevent oxidation, heating, and cows selecting feed. Tasty fresh feed increases roughage ingestion and provides the energy required for high milk production.



Dry cows

Feeding dry cows is one of the most important parts of a feeding strategy, as nutrition during this stage is vital for the next lactation phase. The capacity to ingest dry matter in the transition period determines the ingestion of dry matter at the beginning of the next lactation, which directly influences cow health and milk production. Feeding more often keeps dry matter ingestion constant and maximises ingestion capacity.



Your local milking and feeding experts

The Lely Center in your area is your local partner in farm automation. Over the years, Lely has built a comprehensive network of specialists. These experts combine their experience in automation with local knowledge. Their main goal is to help you receive all the benefits that your Lely equipment has to offer.

Peace of mind

Peace of mind is vital throughout day-to-day activities. This means being able to rely on employees, machinery and a steady partner in service and support. It is good to know that behind your Lely Vector is an organisation you can trust.

Certified service technicians

You will have full access to Lely's certified technicians through your local Lely Center. They ensure a perfect installation, set the desired routes and provide the right service for a long and trouble-free lifespan.

Regional knowledge and experience

You can also rely on knowledge, help and support from the Farm Management Advisors of your local Lely Center. They ensure that your Vector plays its role in optimising productivity and profitability of your farm.

Livestock is in our blood

Many of our employees have farming backgrounds, so they understand the issues faced by livestock farms. They also undergo training and tests to make sure they are reliable experts who can support both new and existing customers. Thanks to their extensive experience with other systems in the area, local service technicians and consultants have all the facts at their fingertips.

Most experience in automating dairy farming

We are the market leader when it comes to automating dairy farming. We also have extensive experience with automatic feeding and feed pushing. In 2008, we introduced the Lely Juno feed pusher, and in 2021 the 1000th Lely Vector automatic feed system was sold. We have used all the knowledge we acquired over the years on automatic feeding to perfect the Lely Vector.

Automatic feeding is ready for you

The Lely Vector takes automatic feeding to the next level. An evolution that features everything we have learned since it was introduced in 2012. We have looked at cattle and listened to our customers. We relied on proven principles, but improved a large part of the system. The combination of proven principles of automatic feeding and our focus on animal health, reliability and cost efficiency has resulted in an automatic feeding system that is ready for you.

More durable

The Lely Vector MFR is now even more durable as we have used alternative materials for essential parts. For example, the bin and auger are made entirely of stainless steel.

More service-friendly

The design has been made more service-friendly in many aspects. The drive and electrical components have been made more accessible. This makes the system faster and easier to maintain.

Safer

The bumper is galvanised and has been completely redesigned for extra safety and less risk of damage.

More animal-friendly

Improved knife distribution and the auger's constant rotational speed creates a more consistently mixed and balanced ration. A magnet has also been added to the MFR, which removes metal particles from the feed.





Better feeding thanks to automation

More frequent feeding is good for cow health, fertility and milk production, and it also improves feed efficiency because the cows get more out of their feed. Automatic feeding with the Lely Vector feeding system goes one step further, and offers a number of benefits.

Low operating costs

Compared to conventional feeding systems, the Lely Vector is very efficient when it comes to energy costs. You save on fuel costs, because you will no longer need the tractor otherwise needed to control the feed wagon. Customers save up to 5,500 litres of diesel per year.



Save 5,500 liters of fuel

Compared to feeding with a tractor.

Flexible use

The Lely Vector is developed for all kinds of feed and barn designs, and if you have cattle in various barns on your yard, the automatic feeding system can drive between them independently. The Lely Horizon software for the Vector allows you to easily adapt rations and groups.



Save 416 hours per year on average

Compared to feeding once-a-day with multiple times feed pushing.

Save time

Every day you save valuable time, because you no longer have to do the feeding yourself. Right from the moment when the Lely Vector takes over, your daily schedule becomes more flexible. On average, our dairy customers save about 8 hours per week. Beef farmers save even more time. You can use this time on other important matters that need your attention. On your farm or in your private life.

Precision feeding

Automatic feeding offers you assurance that every group of animals will receive the right amount of the right feed. The specific needs of each group can be addressed by entering the composition of the ration per group in the management software. This increases the feed intake, which means you get more out of your animals. You also improve the feed efficiency compared with conventional feeding.

Feeding in controlled doses

The Lely Vector is also ideal when controlled dosing is essential. It is possible to limit the opening of the dosing door during installation for a more precise dosing. This is an added value in particular when feeding veal calves or beef cattle, which receive a ration with short feed types. You can also adjust the amount of feed per pen, so that the Vector feeds beef cattle exactly according to their requirements.

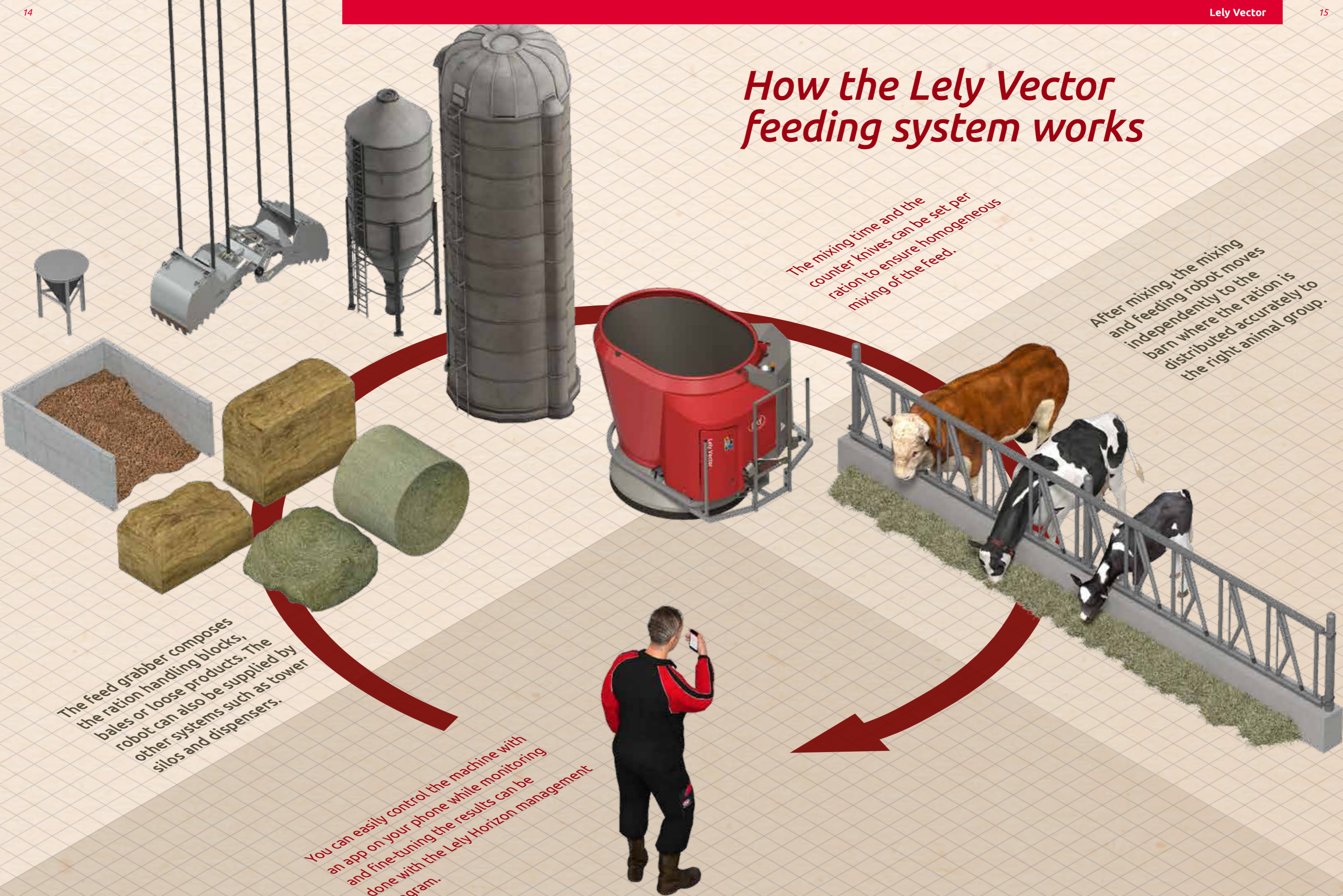
How the Lely Vector feeding system works

The feed grabber composes the ration handling blocks, bales or loose products. The robot can also be supplied by other systems such as tower silos and dispensers.

You can easily control the machine with an app on your phone while monitoring and fine-tuning the results can be done with the Lely Horizon management program.

The mixing time and the counter knives can be set per ration to ensure homogeneous mixing of the feed.

After mixing, the mixing and feeding robot moves independently to the barn where the ration is distributed accurately to the right animal group.





Proven flexibility

The Lely Vector offers unprecedented flexibility. Any feeding strategy can be implemented, whether feeding is preferred several times a day, required in varying rations or differs for groups of cows. An effective feeding strategy will improve both cow health and production.

How the feed kitchen works

The feed kitchen is the room where the feed is stored, selected, picked up, and loaded into the mixing and feeding robot. The crane assembly with feed grabber installed in the feed kitchen moves back and forth above the feed, and picks it up as required. In the feed kitchen, the various types of feed can be easily separated and supplemented. There is also space for a mineral dispenser or additives, if these have to be added to the ration.

Depending on weather conditions and the size of the feed kitchen, you can store up to 3 days of feed. The feed kitchen has enough space for any desired feed strategy, and can be extended as a farm grows.

Lely Technical Service Support consultants give advice on how to convert existing areas in livestock farms into feed kitchens.



3 days
The average amount of days
between filling the feed
kitchen.

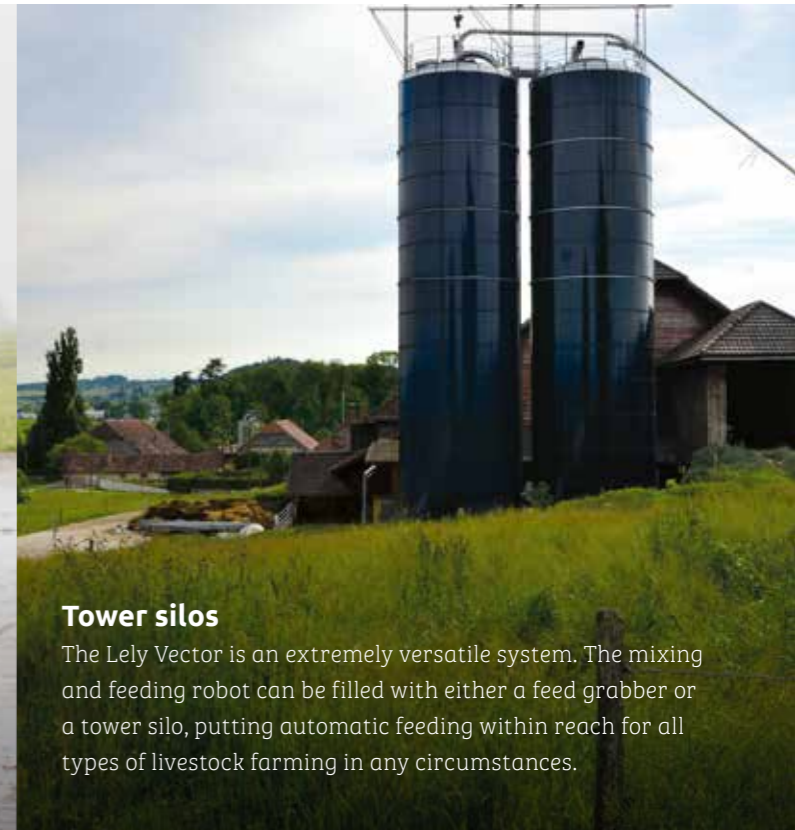
Lely BC silage cutter

The Lely BC silage cutter is a proven solution for filling the feed kitchen. The cutting capacity of the silage cutter is high, and thanks to the packing depth the Lely BC can easily place feed in the feed kitchen.

The silage cutter's blades maximise the cutting capacity of both dry feed and solid silage, and can cut both round and square blocks. The Lely BC can adapt itself to requirements at any moment, irrespective of how compact the feed might be.



"The Lely BC 180 XL cuts large blocks, improving feed quality. The feed kitchen needs to be filled less often. That saves time and money."



Tower silos

The Lely Vector is an extremely versatile system. The mixing and feeding robot can be filled with either a feed grabber or a tower silo, putting automatic feeding within reach for all types of livestock farming in any circumstances.



Precision grabber

A crane assembly with feed grabber is installed in the feed kitchen before the Lely Vector is used. It automatically moves to the right block of silage or feed needed to weigh and mix the right ration. The feed grabber scans the height of the feed with a laser to grab from the highest point. Self-learning management software helps the grabber determine the depth the feed grabber needs extend to pick up the desired weight.

Perfectly mixed

Because the feed grabber grabs a different type of feed with every movement, the ingredients are already substantially mixed in the mixing and feeding robot. This reduces the time and energy needed to mix thoroughly. The mixing time and the counter blade can be set per ration to ensure homogeneous mixing of the feed.

Feed augers for short feed

Beef cattle are mainly fed short feed, so the Vector can be equipped with a short feed auger and a second dosing arm. This ensures the even distribution of feed per metre, which is essential for preparing beef cattle rations.

98%

The achievable accuracy
of loading feed with the
Vector system





Based on intake

The system knows when and where feed is needed.



Transporting the feed to the right location

After mixing, the mixing and feeding robot moves independently to the barn where the rations are distributed in controlled doses. In the barn, the feeding robot follows the feed fence or wall. Outside the barn, the system finds its way by following metal strips on the floor. Regardless of the weather, the Vector drives independently from place to place to supply every cow with fresh feed.



Opening and closing doors

The climate is important for all types of livestock farms, whether it concerns dairy cattle, beef cattle or veal calves. To keep the climate in the barn optimal, the Vector can open various electric doors via Bluetooth or louvered doors and flaps via a push set.



Feed pushing, measuring and feeding

During feed pushing, the Vector measures the amount of feed in front of the feed fence with a feed height sensor. If the average feed height drops below a pre-set level, the Vector loads the required rations and delivers it to the location in need of fresh feed. Feeding based on feed heights instead of feeding times prevents excessive or insufficient feed in front of the feed fence.



Simple check

The Lely Vector can be controlled with the easy-to-use Lely Control app, which is linked via Bluetooth. You can install the app on one or more smartphones.



More feeding insights

Automatic feeding with the Lely Vector gives you more insight into the efficiency of your feeding strategy. The Lely Horizon management system indicates average feed intake on cow and group level.

Making the right decisions

Lely Horizon is the world's first complete farm management system for milking and feeding, among other features. It provides farmers real-time insight into their farming operations. Lely Horizon also generates data for monitoring the herd, and analyses the feed data. Horizon is therefore a useful tool in helping you make the right decisions based on your input, milk and feed analysis.

Feeding strategy

Using the clear reports and milk production forecasts in Lely Horizon as a basis, you can determine a new feeding strategy together with your feeding advisor. Important indicators to take into account include forage levels, digestibility, and the performance of your herd. The reports help you assess feed efficiency and feed management, which is useful input when discussing and planning the feeding strategy with employees or advisors.

Daily use

In combination with Lely Control, Horizon gives you control over all kinds of aspects; feed management, setting and creating rations, filling the feed kitchen, and changing the routes taken

by the mixing and feeding robot. Key performance indicators (KPIs) and widgets provide real-time insight into the dry matter intake and different feed quantities for the various groups in the herd. This enables you to optimise your feeding strategy on the basis of the most up-to-date data.

Feed efficiency reports

The management software can also create feed efficiency reports. This option is only available to those with a Lely Astronaut automatic milking system. The reports provide a clear picture of the relationship between the recommended, offered, and actually consumed ration and milk production. It puts you in a position to manage milk production, feed efficiency, and margin per individual cow.

The right ration for each group

It's easy to set the right ration for each group in Horizon. It means you can easily move cows between groups without changing the basic ration settings. In addition, you can select the right ration for the right group at at your farm with a couple of clicks.

Feeding tables for beef cattle

The development of beef cattle is aimed at weight gains. The daily ration has to be adjusted accordingly. With the Lely Vector, entering a feeding plan per group of beef cattle is simple. If a group of animals switches to a different ration, the Lely Vector adjusts the ration and gives the animals the right feed in the right dose.



The right steps at the right time

Switching from conventional feeding to automatic feeding with the Lely Vector is a big step, as it means putting this repetitive daily work in the hands of a robot and the software controlling it. That is not a decision to be taken lightly, something we totally understand at Lely. To help you, we have developed a standard step-by-step plan to support you in the start-up phase.

Based on our experience with farm automation, Lely Farm Management Support has developed guidelines and protocols which will gradually get you up to speed.

During this learning phase, we give you the right information at the right time, covering all the relevant topics one by one. You can also follow a training course if you wish. In this way, we minimise stress, and work together on ensuring a smooth transition to automatic feeding.

After each visit, you will receive a digital report and associated fact cards. This allows you to review the action points and information at your own pace.

Management

We kick off by introducing Farm Management Support. What can we expect from each other during the following 6 months? What are your personal goals and commercial goals? We discuss topics such as animal health, feeding, and routines on your farm in combination with automatic feeding.

Horizon and preparation

We introduce you to the structure of Lely Horizon: the associated management software. For example, setting up the feed kitchen and rations, and settings for feeding. We also go through the commissioning day, and discuss the preparations needed in chronological order.

Final check

When the commissioning time and date have been determined, we check together whether all the preparations have been made, and discuss any questions. Then we're ready to go.

Commissioning day

Together we perform a final check, go through the routines for the feeding robot, and start feeding.

Managing the Lely Vector

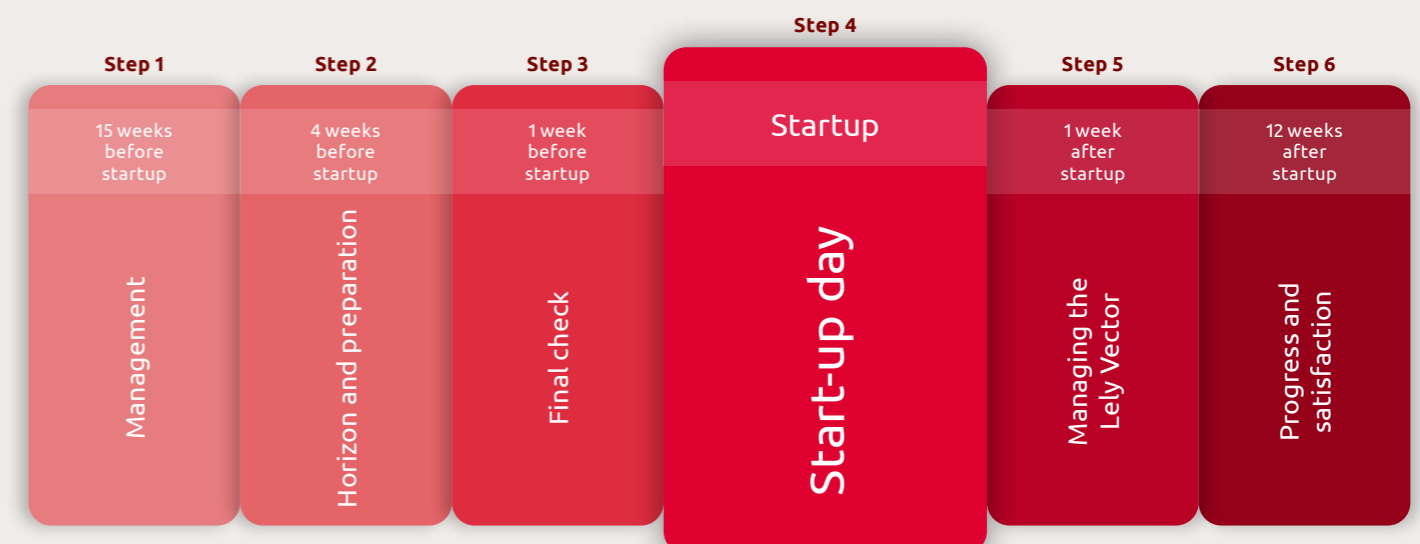
Cows get used to the Vector quickly. Together, we fine-tune the Horizon software so that everything works optimally, and go through all the routines again.


Progress and satisfaction

We do a roundup on the farm, check Horizon, and discuss the current status. We also review all your routines and the tools available. We ask you: are you satisfied, have we achieved our goals, and do you have any questions?

Optimisation

After the commissioning period, we take the next step. We contact you to work together on optimising your farm with a service support level of your preference.



A man with grey hair and a blue t-shirt stands in a large barn. In the background, a red Lely Vector feed pusher is visible, pushing feed along a long trough. The barn has a high, vaulted wooden ceiling and large windows on the left side.

"My weight gains have really improved since I started to feed the herd more frequently."

Fabio Cantù, Italy

Smart feeding works with the Lely Vector

Frequent feeding and feed pushing, throughout the day and night, stimulates the dry matter intake of the herd. This optimises rumen health, feed efficiency and productivity. By automating this recurring work, you make your life easier, your production more efficient and your business more successful.

Learn more about smart feeding at www.lely.com/feeding

Bright farming is yours by choice

Start smart feeding with your local Lely Center

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