

**Increase animal health**

Regular cleaning of the floor keeps feet, udders and tails cleaner.

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**Lely Discovery 90 S and SW**

Manure scraper for slatted barn floors.

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**Lely Discovery 120 Collector**

Manure collector for solid and combined barn floors.

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# Barn floor cleaning

Lely Discovery



*Improved cow health thanks to excellent barn hygiene*

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



*“Our cows tended to jump over the scrapers and get their legs dirty. With the Discovery, it's easy to see their feet and legs are much cleaner.”*

**Etienne Simon**  
Saint-Germain-en-Coglès, France

“We decided to replace our scrapers with a Discovery when we noticed the cows tended to jump over the scraper and get their front and back legs dirty every time it passed by. We knew dirty feet meant dirty stalls. With the Discovery, it's easy to see the cows' feet and legs are much cleaner. Their back legs only get a bit dirty as they drop their manure, but the front legs remain really clean and dry.”

## ***Healthier cows from the ground up***

A clean barn results in cleaner feet, tails and udders. Less manure in the stalls means fewer hygiene-related foot and udder infections and promotes the natural, healthy behavior of your cows. This makes it easier to detect when cows are in heat, allowing you to reduce the calving interval. Healthy feet and udders make a significant financial contribution to a dairy farm.

Regular cleaning of the floor inhibits the growth of bacteria and keeps feet, udders and tails cleaner. This increases foot health and contributes to the overall productivity of your herd.

With the very latest technology, the Lely Discovery mobile barn cleaners keep your barn floor clean automatically, day and night. Our robots are fully automated and reach every single part of your barn, improving the hygiene of the floor, stalls and animals.

***The way to dairy.™***



# The importance of a clean barn floor

Healthy dairy cattle offer optimum productivity, require less attention and are a pleasure to work with. It is a frustrating fact that mastitis, reduced fertility and foot health issues still count as the top-three reasons for culling on dairy farms. A clean barn floor keeps feet, legs, udders and tails cleaner and helps inhibit the growth of bacteria. This reduces hygiene-related feet and udder health issues.

### Udder health

Mastitis is a common udder health issue caused by bacteria penetrating the udder and leading to infection. Good hygiene inhibits the growth of infection-causing bacteria, and a clean floor keeps cows from bringing manure into stalls. Cleaner tails and udders mean a lower chance for infection.

### Fertility

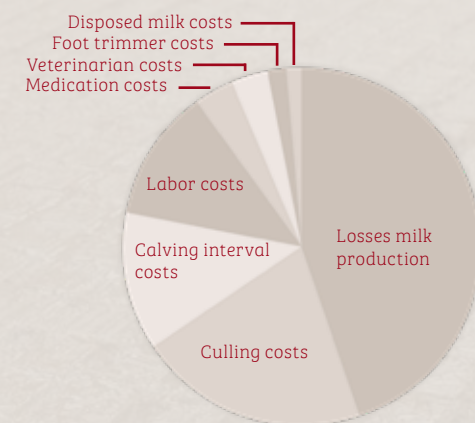
Cows are more comfortable to express their natural behavior when their feet are healthy, and the floor is not slippery. This makes it easier for you to detect cows that are in heat, allowing you to reduce the calving interval.

### Foot health

Healthy feet are important for a cow to be able to move freely and do as she pleases: rest, eat, drink or go for milking. Many dairy farmers underestimate the prevalence of foot health issues in their cows. Research shows that dairy farmers spot only 25% of infectious foot disorders among their herd (Jessica Fabian, 2012). This is one of the reasons that inadequate measures are often taken. It is estimated that 80% of dairy farms will suffer with foot disorders over the course of an average year, resulting in lame cows and the associated economic losses.

### Healthy feet prevent costs and losses

Research from Cornell University has shown that 20% of cows on an average dairy farm suffer reduced locomotion, with losses estimated between \$280 and \$425 per cow. As a result, foot health issues are among the top-three costliest dairy cattle diseases along with mastitis and reduced fertility. While some of these costs come from the treatment of the foot, there are also indirect costs like reduced conception rate, higher veterinary costs and increased pressure on herd replacement rates.



### The average costs per cow per year of hoof disorders is \$5,900

- \$2,630 Losses milk production
- \$1,258 Culling costs
- \$728 Inter calving interval costs
- \$700 Labor costs
- \$224 Disposed milk costs
- \$186 Foot trimmer costs
- \$93 Veterinarian costs
- \$81 Medication costs

*"Lely takes time  
to explain it all."*

Severin Batzill  
Schlier, Germany

# The dairy automation experts in your region

Your local Lely Center is a partner in dairy automation you can rely on. Over the years, Lely has built a comprehensive network of specialists, combining experience in dairy automation with local knowledge. Their main goal is to help you get all the benefits from your Lely equipment.

## Peace of mind

Peace of mind is critical to your business operation. This means being able to rely on employees, machinery and a consistent partner in service and support. It's good to know that behind your Lely Discovery, there is an organization you can trust.

## Certified 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 optimal service for a long and trouble-free life span.

## Regional knowledge & experience

You can also rely on knowledge, help and support from the Farm Management Support advisors at your local Lely Center. They ensure that your Lely Discovery plays its role in optimizing productivity and profitability of your farm.

## Dairy farming is in our blood

Many of Lely's staff members come from a farming background themselves. They understand how farms work and are trained and tested on their knowledge. They offer reliability and expertise to assist both new and existing customers. Your local experts have knowledge and insights gained from similar projects in your region, so you can always rely on the most up-to-date advice.

## Most experienced in dairy automation

Lely is the market leader in dairy automation. In regards to automatic barn cleaning, they have gained more than 10 years of experience. They used all this knowledge to develop the current generation of Lely Discovery mobile barn cleaners.



## *Lely Discovery 90 S and SW*

Manual cleaning is an intensive and unpleasant job, keeping the floor dry and clean for just a short time before having to be repeated. Conventional systems are an obstacle, requiring extensive maintenance, and fail to clean the cross alleys. That is why we developed the Lely Discovery 90 S and SW mobile barn cleaners for slatted floors.



### **Full control**

A robot might be working in your barn, but you remain in charge of the routes and cleaning frequency. Many farmers choose to set cleaning times around the feeding routine. This helps to ensure cows are not disturbed by the passage of the robot. You may also choose to clean high-traffic areas more frequently for a consistently clean and dry floor.

### **How it works**

The Lely Discovery 90 mobile barn cleaners are battery-driven vehicles. After installation, your Lely Center will program the required routes for your barn. With an app on your phone, you can schedule the routes according to your preferences. After finishing a route, the Lely Discovery returns to the charging station, and this charging station also functions as the starting point of each cleaning round.



### **Smart design**

The Lely Discovery 90 keeps your barn floor clean 24/7. This fully automated manure robot reaches every single part of your barn, improving hygiene as it does so. The curved ring at the front prevents the machine from becoming blocked while ensuring proper routing around walls. The compact design allows the Lely Discovery 90 to drive under any separation gates to clean a larger part of the barn.

### **How it navigates**

The manure robot operates without chains, cables or sensors below or inside your floor. The built-in ultrasound sensor ensures that the Lely Discovery 90 follows walls and fences at a pre-determined distance. A built-in gyroscope enables the Lely Discovery 90 to keep track of its position at all times.

### **Spraying water for a better cleaning result**

The Lely Discovery 90 SW model is equipped with a water nozzle to improve the results of barn floor cleaning. A thin layer of dry manure can form in certain circumstances like a dry environment, low occupancy barns or barns with wide walking alleys. This thin layer can make the floor slippery. By spraying water just in front of the scraper, the floor is cleaned more thoroughly and does not become slippery.





## *Lely Discovery 120 Collector*

Manual scraping is very time-consuming, and rope or chain scrapers come with many disadvantages. The chains and corner pulleys are obstacles in the walkways, waiting areas aren't being cleaned and each time the manure scraper goes by, the cows are up to their dew claws in manure. That is why Lely developed the Lely Discovery 120 Collector, a revolutionary manure robot designed to clean solid barn floors.



### **Collecting manure instead of scraping**

Rather than pushing the manure forward, the Collector uses a vacuum pump to collect the manure in its tank. This gives a better cleaning result in comparison with traditional scraper systems.



### **Water for a cleaner result and additional grip**

The Collector can spray water from both the front and the back of the machine. Spraying from the front results in better manure intake, and spraying from the back leaves behind a wet floor for additional grip.



### **No obstacles and maximum flexibility**

The Collector navigates independently using built-in sensors. Additionally, no cables, corner pulleys or raised passages are required, which is the case when using a manure scraper.

### Navigation technology

The unique combination of two ultrasonic sensors, the gyroscope and advanced software technology ensures reliable navigation at all times. The machine is able to follow its programmed routes without any additional modifications to the barn.

### Operate by smartphone

You can operate the Collector with an app on your smartphone. The Lely Control app works wirelessly through Bluetooth, which means that every smartphone in the barn can be used to control the machine.



### Optimal maneuverability

The Collector has a straight front for more precise cleaning around corners. The back of the machine has a rounded shape to maximize the cleaning surface while turning. Since the machine can perform this action without driving backwards, the manure is collected at the front, keeping the floor behind clean.

# The working principle

Instead of scraping or pushing, the Lely Discovery 120 Collector collects the manure and brings it to a dump station.

### Starting a route

The Collector starts every route from the charging station. The routes and time schedule of the cleaning program can be easily adjusted to the daily rhythm of the farm and the cows.



### Filling water

If the water-spray system is enabled, the Collector first drives to the water station to fill two water bladders in the manure tank. Once the water containers are filled, the Collector follows the route that is set for that specific time.

### Spraying water

A nozzle at the front sprays water to dissolve the slippery layer and clean the floor more thoroughly. A nozzle at the back sprays water to keep the floor wet and less slippery. This prevents rapid adhesion of manure. As the manure tank gets filled the volume of the water bladder decreases, freeing up more space for manure making for a compact machine. Cows can easily move around the Collector without disruption. The Collector can also drive underneath separation gates.

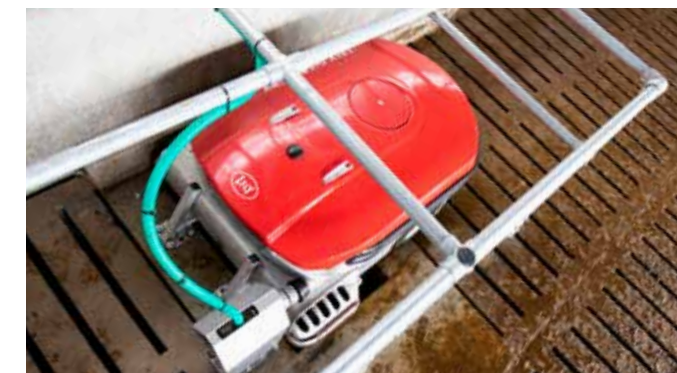


### Collecting manure

A vacuum pump is connected to the tank and generates a vacuum, which sucks the manure from the floor. When the manure tank is full, a top-level sensor turns off the vacuum and water pump. The vacuum in the tank keeps the manure inside while the Collector drives to a dump station.

### Dumping manure

After entering the dump station, an aeration valve opens to release the vacuum. In two minutes, all manure floats from the tank into the dump pit. The aeration valve also drains the condensed water from the vacuum system. After leaving the dump station, the aeration valve closes, the vacuum and water pump turn on, and the Collector continues its route.



### Finishing a route

Every route ends at the charging station and the Collector starts to charge while waiting for the next route in its time schedule.

*"With the Discovery, it's easy to see the cows' feet and legs are much cleaner."*

*Etienne Simon  
Saint-Germain-en-Coglès, France*

## *A cleaner floor results in healthier cows*

A clean barn results in cleaner feet, tails and udders. Less manure in the stalls means fewer hygiene-related foot and udder infections and promotes the natural, healthy behavior of your cows. This allows you to detect cows in heat more efficiently.

Traditional manure scrapers come with many disadvantages. The chains and corner pulleys are obstacles in the walkways, waiting areas aren't being cleaned and each time the manure scraper goes by the cows are up to their dew claws in manure. That is why Lely developed the Discovery and Discovery Collector range.

*The way to dairy.™*

*Improve the hygiene with your Lely Center*



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