

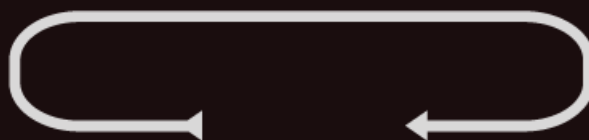
Moving Floor Concept

– a cornerstone in the modern barn



Increased profitability

by increased hygiene



MOVING FLOOR CONCEPT

www.movingfloor.se



We are committed to improving the animal hygiene

We are automating an area within the barn that has not until now been automated - the area where the animals lay down. Many other areas have already been automated.

"Automatically cleaning the laying areas for animals is the cornerstone that has been missing in the completely automatized barn."

Look at what the robot has done to milking or what the scrapers have done to manure removal. Automatically cleaning the laying areas for animals is the cornerstone that has been missing in the completely automatized barn.

We are convinced that automation is the best way to get the best results, nevertheless the most cost-effective solution. We will keep on working with unique and patented products to improve the animal hygiene.

"We are convinced that automation is the best way to get the best results."

Peg Söderberg,
Managing Director Moving Floor AB



Gnues on the savannas

What does Moving Floor and gnues have in common? Gnues in the wild live in big herds of thousands of animals, still diseases are quite rare.

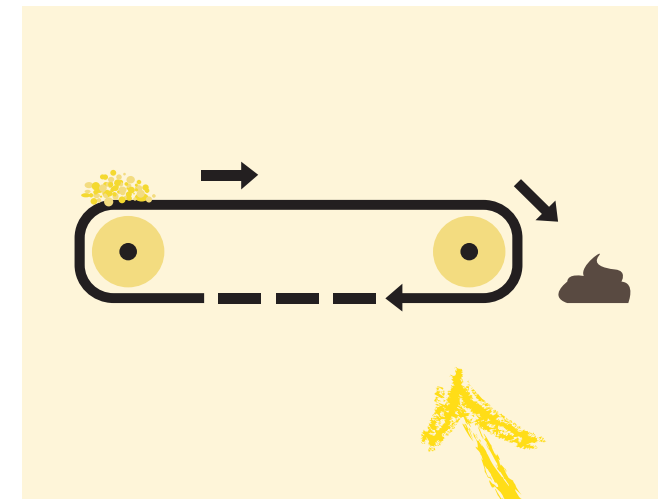
When we bring thousands of animals together in barns diseases are a recurring problem. Why is that? The gnues continuously move away from their manure as they graze the vast savannas.

The answer is movement

As we bring thousands of animals together in today's modern barns we cannot overlook nature and natural behaviours without having consequences. Animals in the wild move away from their manure. With Moving Floor we can recreate that movement within the barn.

Less use of antibiotics

We think that everyone can agree on that the use of antibiotics should be as low as possible. Preventive measures are key factors in keeping animals healthy. Moving Floor is committed to providing a high level of hygiene and decreasing the use of antibiotics.



What area in the barn has not until now been mechanized?

Feeding	Milking
Walk ways	Laying areas

What is Moving Floor?

Moving Floor is an endless conveyor which rotates, is scraped off in one end and refilled with bedding in the opposite end. A simple idea of keeping animals on moving surfaces for;

- Clean and healthy animals
- Reduction of labor
- Increased profitability

Either the animals clean by themselves or we make sure the cleaning is done automatically. The idea is to remove the manure from the barn within two hours, in order to minimize ammonia emissions within the building.

A new industry standard!

Profitable

What would it cost you to clean out for your animals 12-15 times per day? All Moving Floor products provide a high value function to a low price. The Moving Floor products are far from just laying areas and fences - the products mean labour reduction while at the same time providing a constantly clean area for the animals. By calculating your operational costs you will most likely find Moving Floor to be a profitable choice.

For all farm sizes

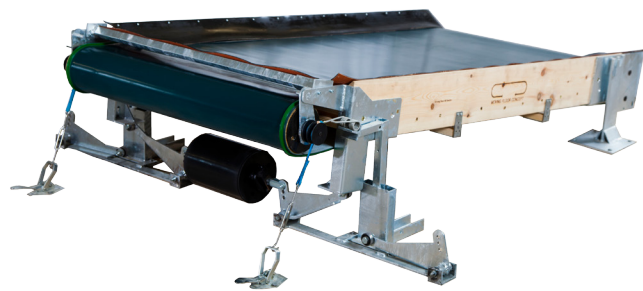
Each and every Moving Floor product is a stand-alone unit that is quickly and easily installed in either old or new barns. The units are engineered to fit all farms, from the smallest to the very big ones because of the module system. No matter size of farm big economical savings can be made.

Durable

As maintenance-free as possible. This is one of our mottos. That is why the Moving Floor products are made by standard components. Should you need a spare part your reseller will be of service or you will receive an express shipment to your farm. No expensive service routines have to be paid every year.

Moving Floor Concept for cattle

Product overview



Moving Floor Cubicle

Moving Floor Cubicle is automatically cleaned between each cow in an ingeniously simple way. The cubicles are made in different sizes and can be used both to young animals and adult animals. Read more on page 14.



Moving Floor Bedding Dispenser

Moving Floor Bedding Dispenser automatically distributes different kinds of bedding in chosen intervals. The machine is installed on the existing loops in the barn. Read more on page 18.

This is how we recommend you to use Moving Floor.

	Cubicle	Bedding Dispenser
Young cattle from 5 months	✗	✗
Adult cattle	✗	✗
Conventional barns that needs automatic bedding		✗
Conventional barns that need automatic cleaning	✗	



" My cows choose the Moving Floor Cubicles before the conventional cubicles with rubber mats"

Jonna Silvin, milkproducer, Sweden

Labor reduction

Clean and healthy animals

Increased profitability

What can Moving Floor Concept contribute with?

Labor reduction

Moving Floor products mean a significant labor reduction. The cubicle is automatically cleaned in between every cow and the Bedding Dispenser distributes bedding in programmed intervals. It leaves you with the ever so important task - monitoring your animals.

Healthy animals

Innumerable cleanings make sure the animals are always clean - a good basis for keeping them healthy.

Lowered ammonia levels

Emissions of ammonia from the manure handling is quite significant, affecting the animals, the humans and the environment in total. Research made on Moving Floor for pigs have proved the Moving Floor Concept to be very efficient when it comes to lowering the ammonia emissions within the barn. Reductions up to 90% were made, averaging a level of 1 ppm ammonia. These results state the importance of a quick manure removal from the barn.

Low energy consumption

Moving Floor Cubicle is driven only by the weight of the cow, no energy is added. The Bedding Dispenser has an energy consumption of 0,54 W/cow/day.

Less antibiotics

The cleaner the healthier. Yes, so it seems. Farmers with Moving Floor Concept talk about not having to treat their animals the way they used to without Moving Floor.

Less mastitis

The majority of the illnesses are caused by the cow's environment. Tests show that continuous cleaning reduces bacteria growth and can prevent disease.



Cubicle: 0 energy added

Bedding Dispenser : 0,54 W / cow/ day.

They know that hygiene pays off

The island of Andöya, a couple of hours drive from Harstad in the north of Norway, is the home to Kari and Einar Åbergjord. Their farm is situated on a hillside with a marvelously beautiful view of the mountains, the sea and the so called "fjords". The couple took over the farm in 2007 from Einar's parents and today house both milking cows and sheep. The farm has 24 cows in a freestall. During 2013 mastitis was an recurring problem and a veterinarian was contacted to get the necessary advice. The vet noted that the cubicles were mostly likely what caused the problem. Infected cows were leaking milk and contaminating the cubi-

among the cows. The couple thought about the situation - where would they find time to clean the cubicles more often? The solution was Moving Floor self-cleaning cubicles which they installed in March 2014. As the installation was done in intervals the Åbergjord's could note that the cows chose Moving Floor Cubicles before conventional cubicles. Reason probably being the thicker latex mattress in Moving Floor. Today all of the cows lay on Moving Floor cubicles and the couple can state "Since we started using Moving Floor with peat bedding we have significantly improved the animal health".



Kari and Einar Åbergjord

"We have significantly improved the udder health with Moving Floor Cubicles."

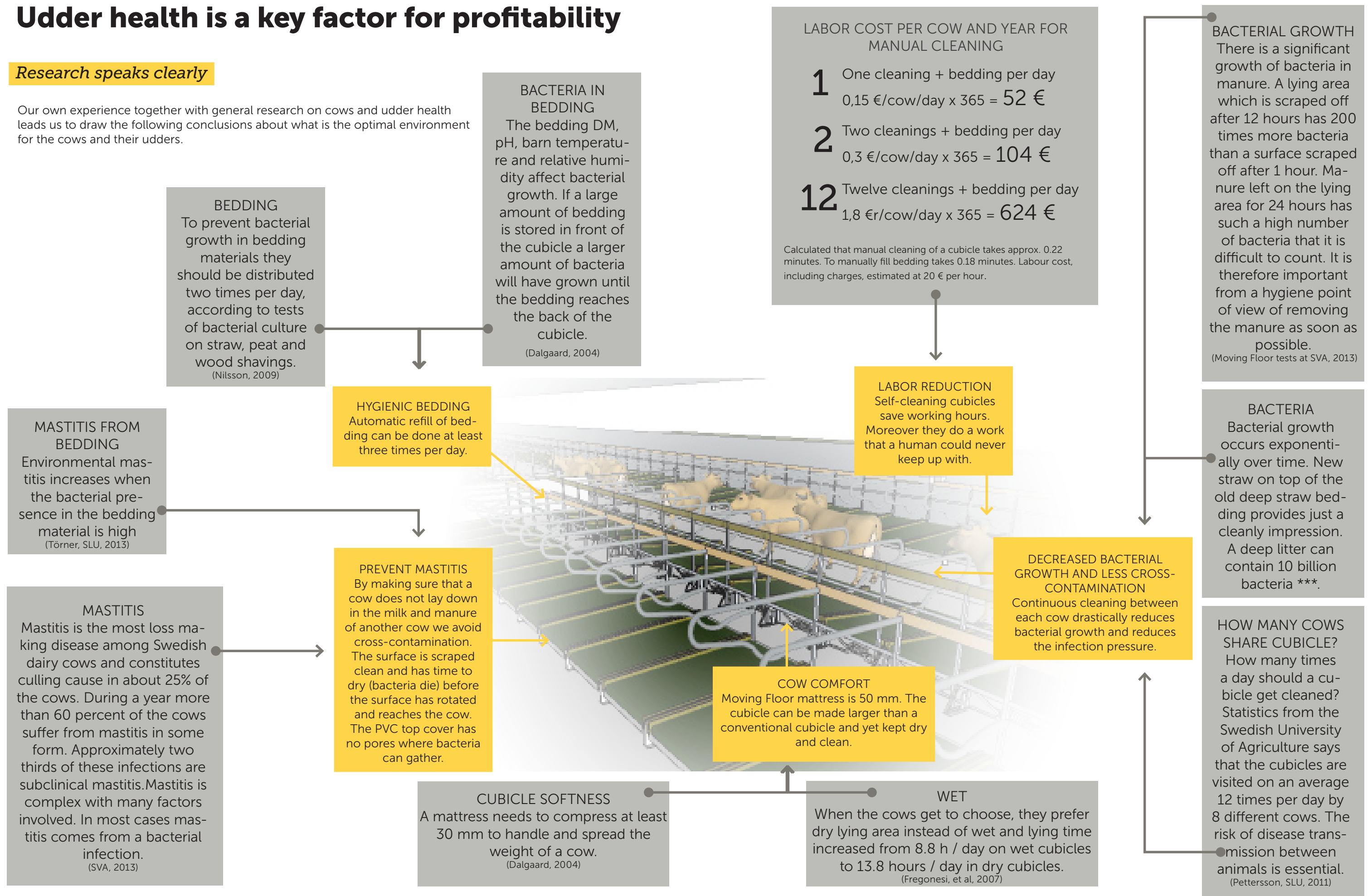


Moving Floor Cubicles with peat bedding

Udder health is a key factor for profitability

Research speaks clearly

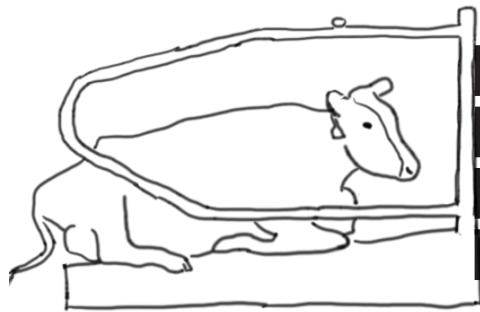
Our own experience together with general research on cows and udder health leads us to draw the following conclusions about what is the optimal environment for the cows and their udders.



Big difference between the systems

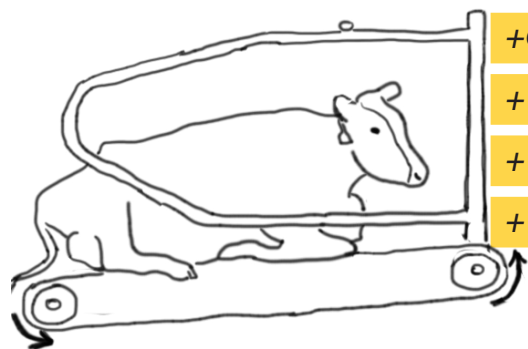
To provide optimum cow environment

Conventional cubicle



- Often visibly clean but actually unclean environment
- Risk of cross-contamination between cows
- Labor intensive system
- Limited space for the cow in order to keep cubicle "clean"

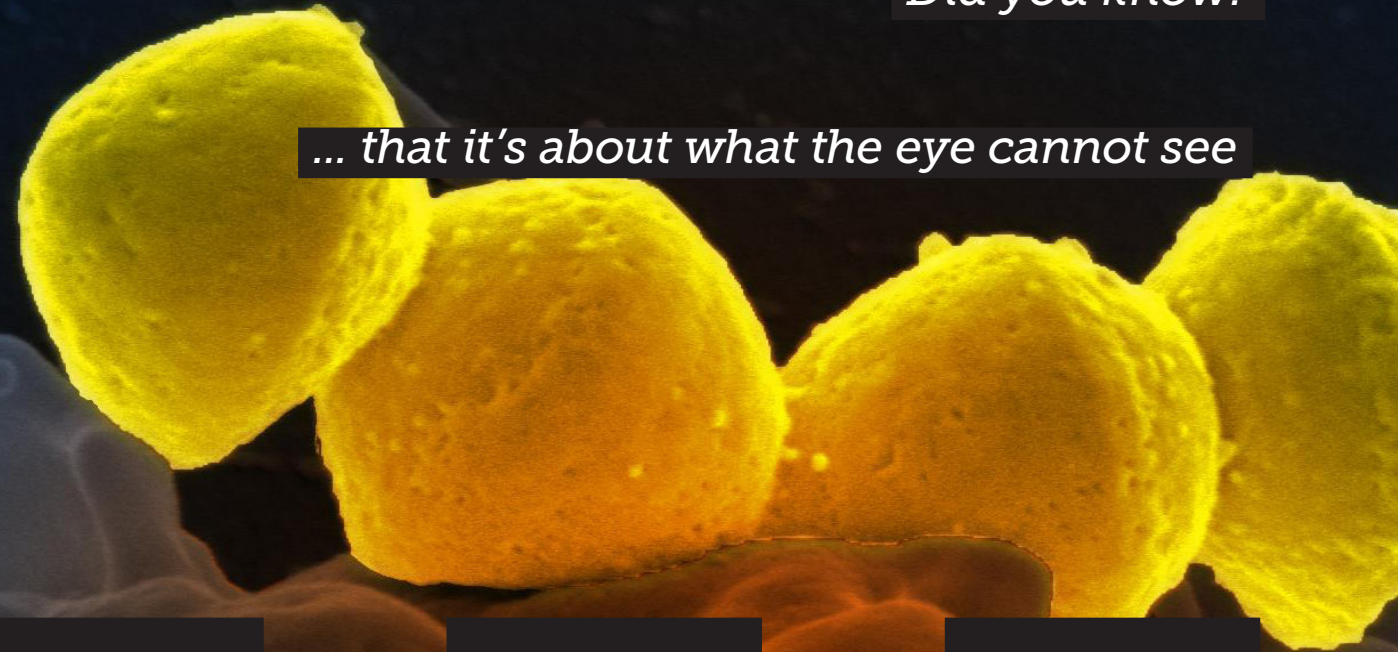
Moving Floor



- + Clean and dry environment
- + Reduction of bacteria and improved udder health
- + Substantial labor savings
- + Increased space for the cow without compromising hygiene

Did you know?

... that it's about what the eye cannot see



AUREUS
Staphylococcus aureus causes approx 25 to 40% of all mastitis and these are also the most loss making and difficult to treat. (Intervacc, 2012)

SPORES
Simulations show that decreased barn hygiene, with dirtier cows at milking, lead to a 3-5 fold higher spore content in tank milk compared with good barn hygiene. (SVA, 2012)

BACTERIA
Bacteria consist of 90% water and can not reproduce in 30-40% humidity. At 30% humidity bacteria die. Bacteria often gather in the pores and porous materials. (Weintraub, KI, 2012)

Test: bacteria growth

Manure was put on a Moving Floor cubicle and two conventional cubicles. Moving Floor Cubicle was cleaned after one hour, one conventional cubicle was cleaned manually after 12 hours and the third and last cubicle was not cleaned at all. 24 hours after starting the test we measured the growth of bacteria on all surfaces. The result is seen below. The test shows the importance of manure being quickly scraped off, if not the bacteria will grow exponentially.

Moving Floor Cubicle, cleaned one time per hour

0 times bacteria growth

Conventional cubicle, cleaned twice per day

200 times bacteria growth

Konventionellt liggbås som rengörs 1 gång per dygn

XXX to high bacteria content: to be measured

Different way of building barns

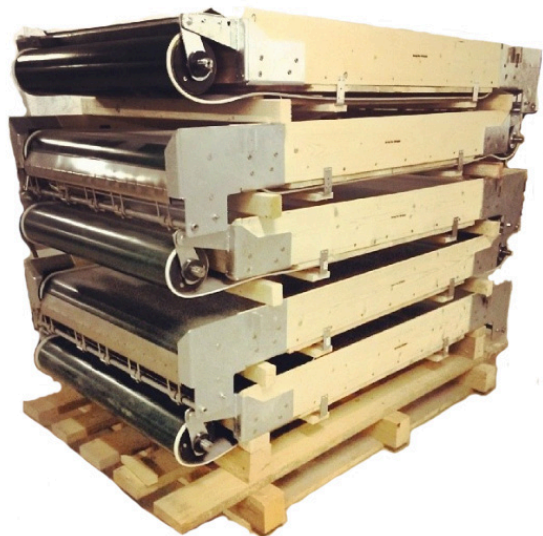
The products consist mainly of standard components and are delivered flat-packed to minimize shipping costs.

The fact that the products are more or less "furniture" changes the way to build a barn. In most cases, a simplification of the construction process can be made, for example only a flat floor is needed.

Moving Floor's products are delivered either semi-mounted or flat-packed ready to be assembled on site. The products consist mainly of standard components and delivered flat-packed to minimize shipping costs. In this way we can offer products of high value at a low price.

Simple and easy installation

Moving Floor is installed quickly and easily in most barns, thanks to its modular concept and adjustable legs that can be adapted to the floor.



Prefabricated cubicles at delivery



Cubicles are put side by side and bolted to the floor

A new industry standard improves profitability

What area in the barn has not until now been mechanized?



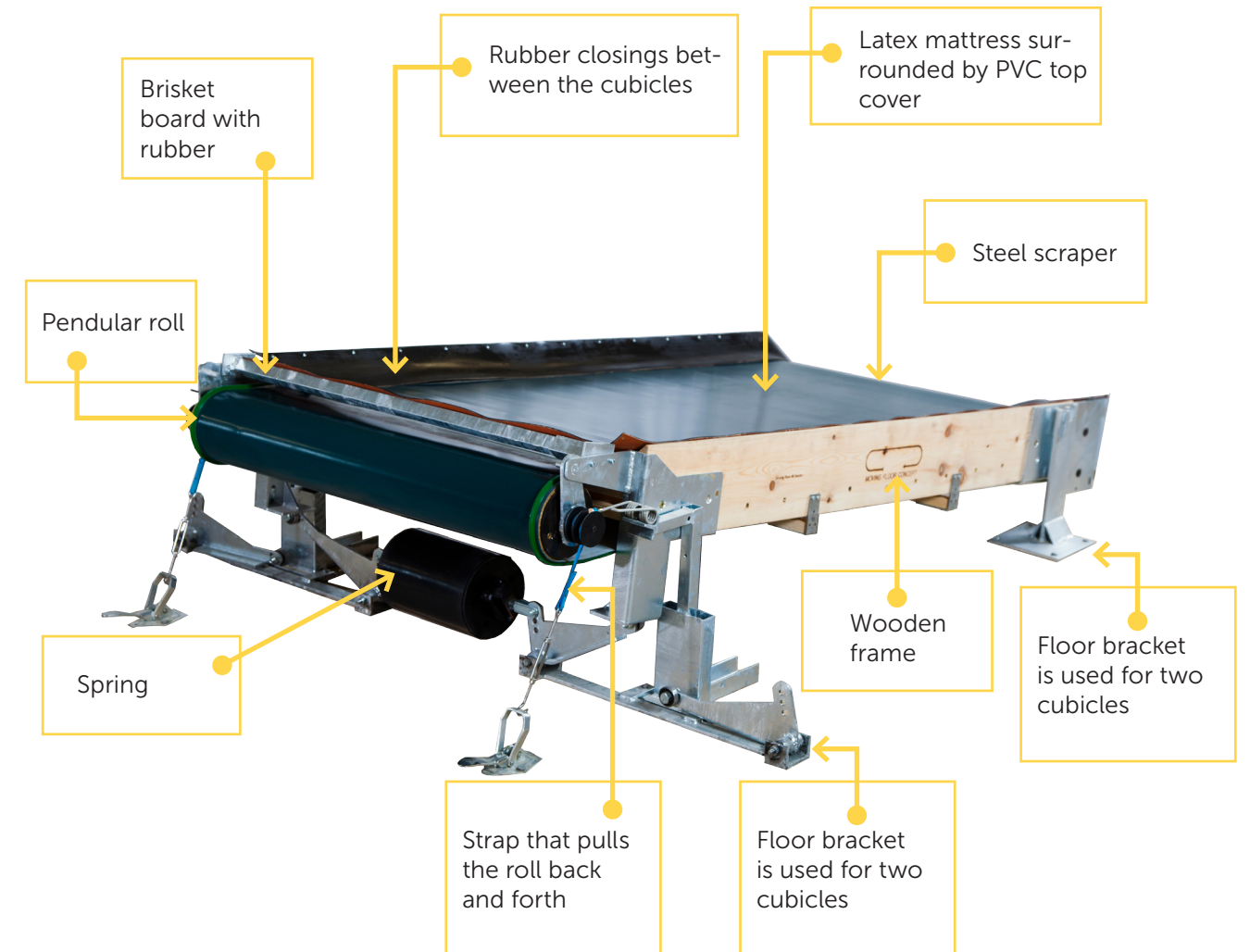
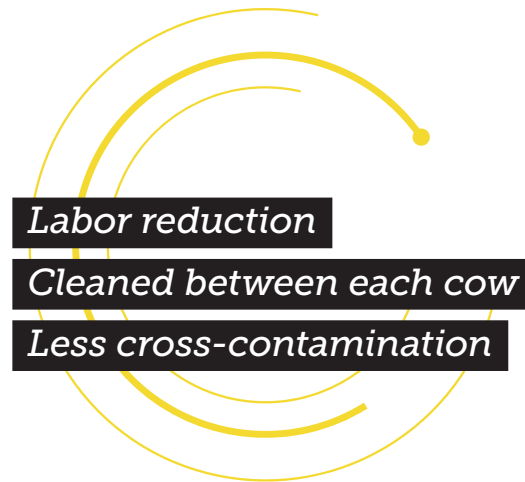
Moving Floor Cubicle

Moving Floor Cubicle is a self-cleaning cubicle for cows only driven by the weight of the cow. When the cow lays down her weight is gathered and as she steps off the cubicle the top cover rotates and is scraped off. No motor, no energy added - only mechanical movements.

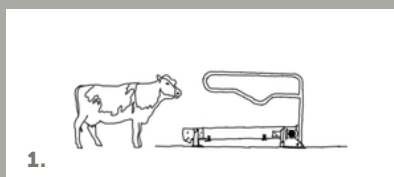
The self-cleaning cubicles can be varied in size depending on animal size. The materials used for top cover and mattress may also be varied. Regardless of cubicle size and materials chosen the cubicle will always be cleaned in between each cow. Hence the laying area can be increased in favor of the cow comfort and the cow's natural motion behaviour, without it affecting the cleanliness of the cubicle.

Moving Floor self-cleaning cubicle should be combined with the Moving Floor Bedding Dispenser for an optimal result. The Bedding Dispenser brings out bedding very accurately and at chosen intervals. In this way we ensure that the cubicle is always clean and has a clean layer of bedding for the cow to lay down on.

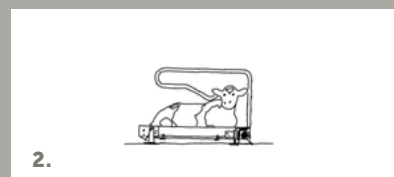
Imagine cleaning out each cubicle manually in between every cow. Practically it is impossible, but with the Moving Floor Cubicle technique this can now be done automatically..



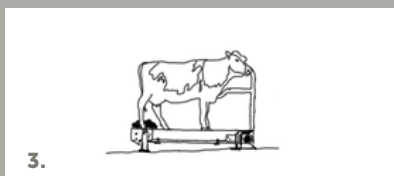
This is how Moving Floor Cubicle works:



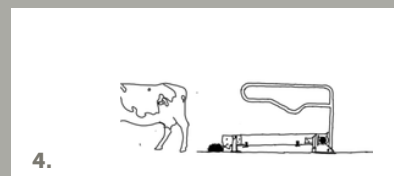
The cow steps on to the leaning cubicle.



Her weight presses down the front of the cubicle. A spring is compressed.



The back of the cubicle is contaminated with manure and/or leaking milk.



The cow steps off, the energy gathered in the spring is used to mechanically rotate and scrape off the top cover.

Quick facts

External dimensions

	Model 1250	Model 1200	Model 900
Length:	2300 mm	2200 mm	2000 mm
Width:	1250 mm	1200 mm	900 mm
Height:	260 mm	260 mm	260 mm

Material

Mattress: 50 mm Latex
 Top cover: 2,5 mm PVC

Drive/cleaning

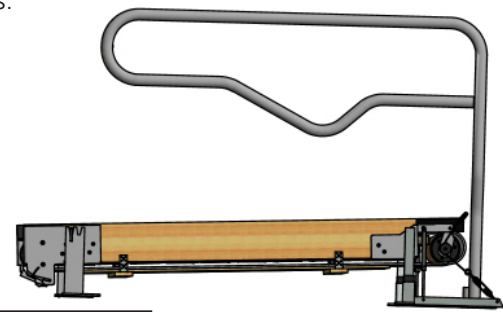
Only the weight of the cow drives the cubicle and cleans it.

Installing Moving Floor Cubicle

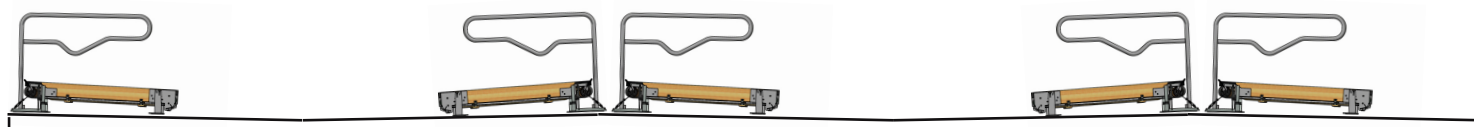
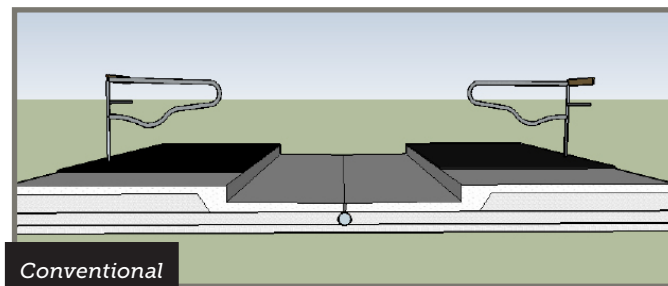
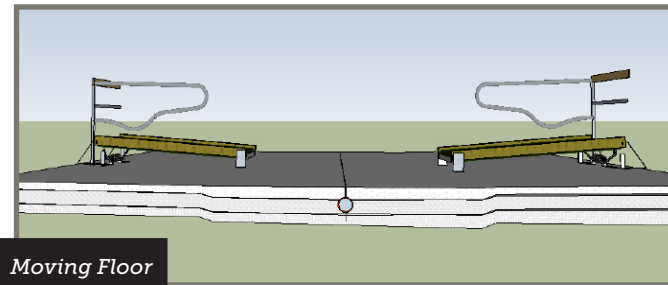
1. Simplified floor construction

To install the Moving Floor cubicles, we recommend to make a concrete flooring with 1-2% slope toward the center of the manure channel from the front of the cubicle.

A general 30 % saving in concrete quantity can be done. As well as savings in moulds and moulding works.



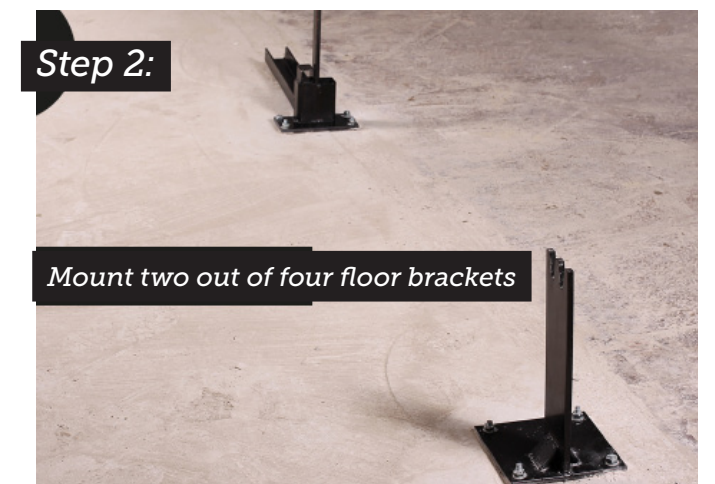
The Cubicle



A simple floor profile with 1.5% slope can be molded in one step for installation of cubicles

2. Installation

The floor brackets are bolted to the floor and the cubicles are hooked on the brackets. Simple and easy installation.



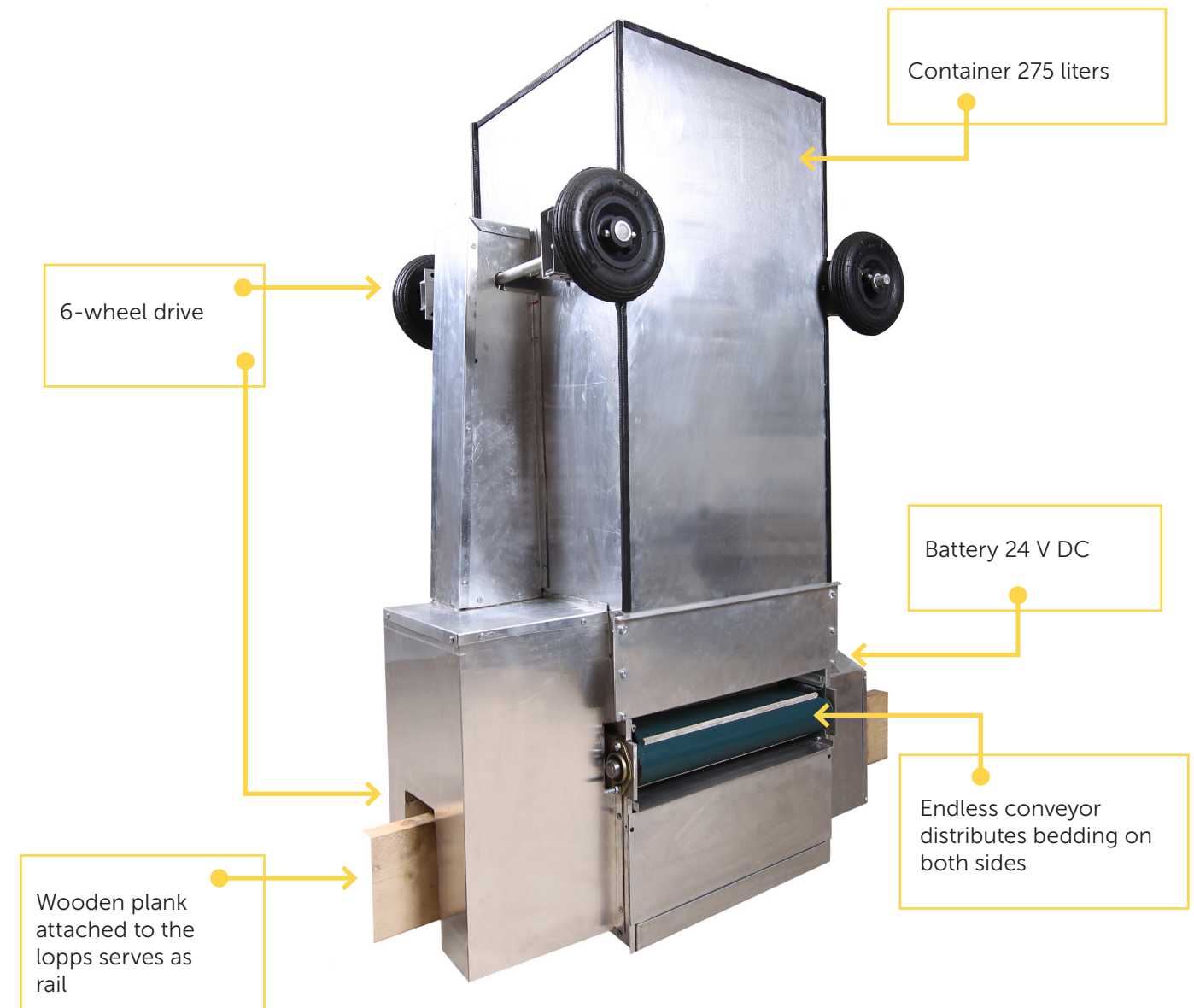
Contact Moving Floor
to receive a proposal

Moving Floor Bedding Dispenser

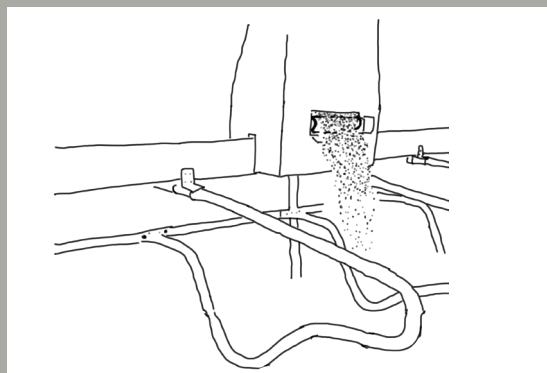
The Moving Floor Bedding Dispenser provides a great relief to the usually hard work of distributing bedding in the freestall barns. The Bedding Dispenser can bring out very accurate amounts of bedding at programmed intervals.

The patented ingenious drive allows the Bedding Dispenser to run through the barn easily. The bottom wheels of the Bedding Dispenser drives it on top of the cubicle loops. The upper wheels allow the unit to pass over walkways in the barn. For a completely automatic system the Moving Floor Bedding Dispenser should be installed together with the Moving Floor Cubicle.

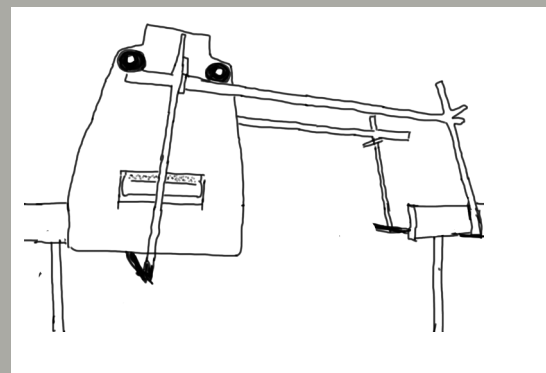
The Moving Floor Cubicle Concept ensures that the cubicles are always cleaned in between every cow and that each cow has a clean layer of bedding to lay down on. A high level of hygiene while at the same time providing a big labour reduction.



This is how Moving Floor Bedding Dispenser works:



A wooden plank is attached on the loops as a rail. The installation is done easily and cost effectively.



A frame is attached so that the Bedding Dispenser, with its upper wheels, can run over walkways.

Quick facts

Measurements

Length: 1000 mm
 Width: 500 mm
 Height: 1500 mm
 Weight: 50 kgs
 Volume container: 275 l

Installation

Installation can be done in combination with Moving Floor Cubicles or in existing barns with conventional cubicles.

Drive

Battery: 24 V DC
 Drive unit: Electric motor, 60 W

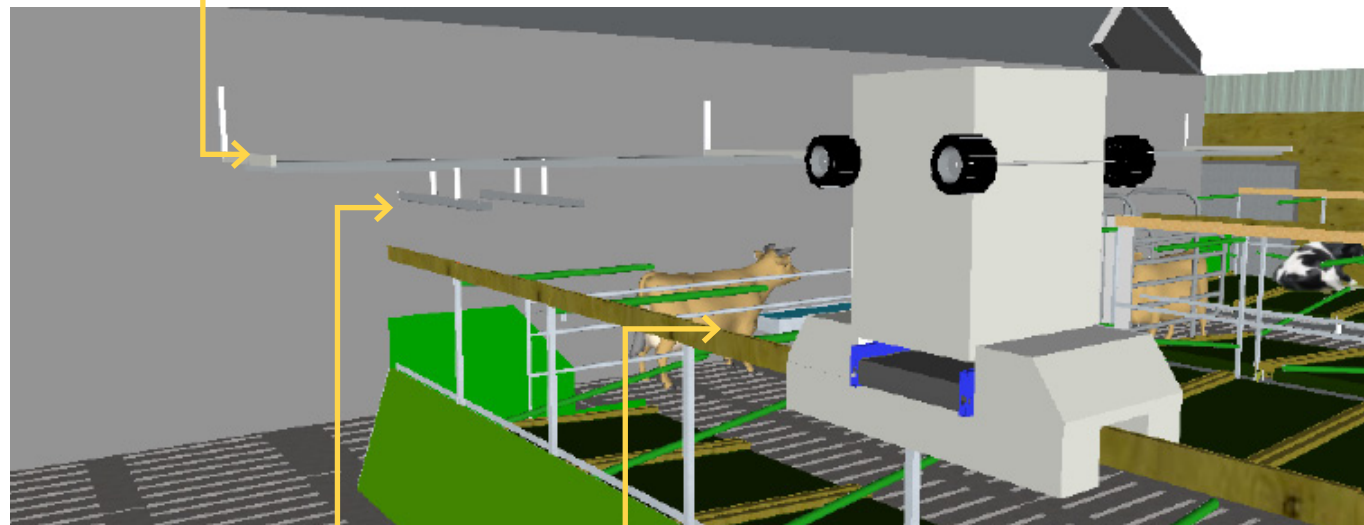
Material

Container: Aluminium
 Endless conveyor: PVC
 Rail: Wooden plank 228x45mm

Installing Moving Floor Bedding Dispenser

1. Installation

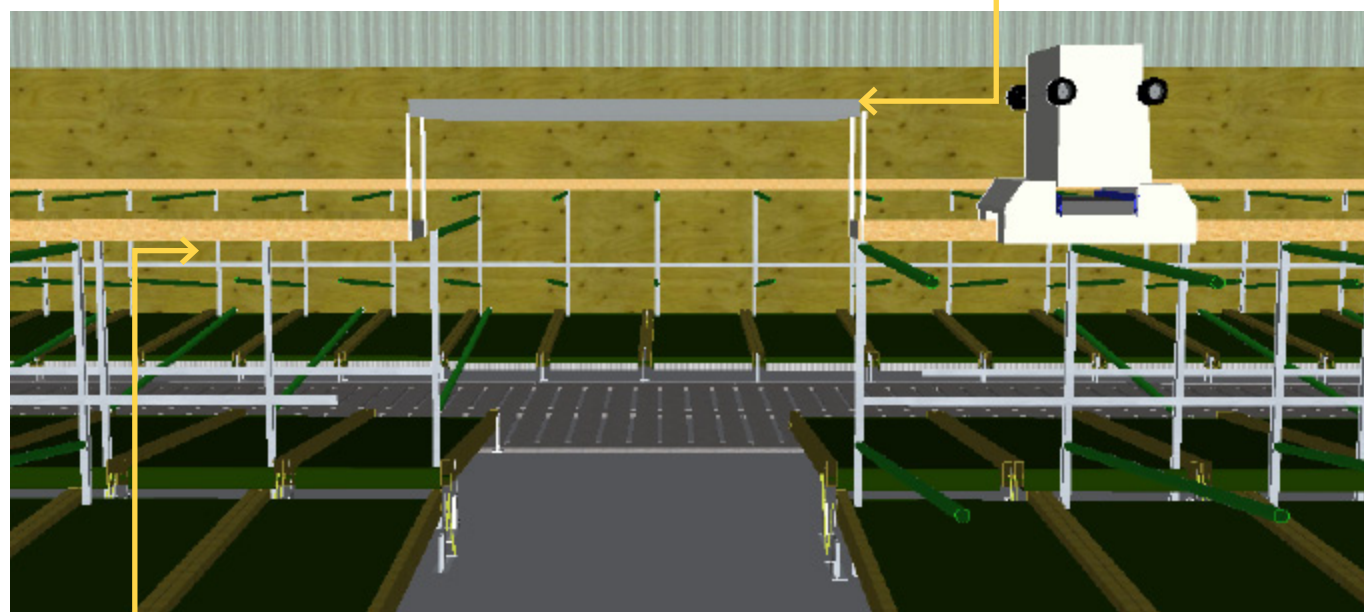
A frame - either wall mounted or attached to the loops - with a cradle transports the Bedding Dispenser sideways to the next row of cubicles



The upper wheels of the Bedding Dispenser rolls on to the cradle

A wooden plank is attached to the loops and serves as a rail

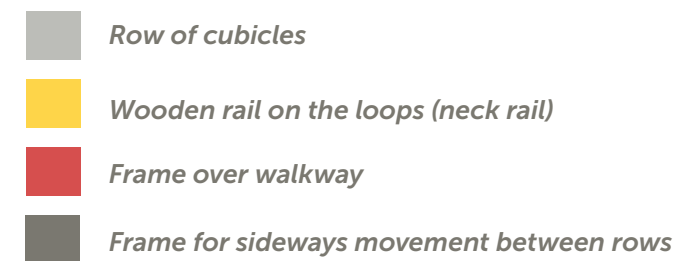
A frame over walkways allows the Bedding Dispenser to use its upper wheels to cross



The wooden plank can serve as a neck rail

2. Layout

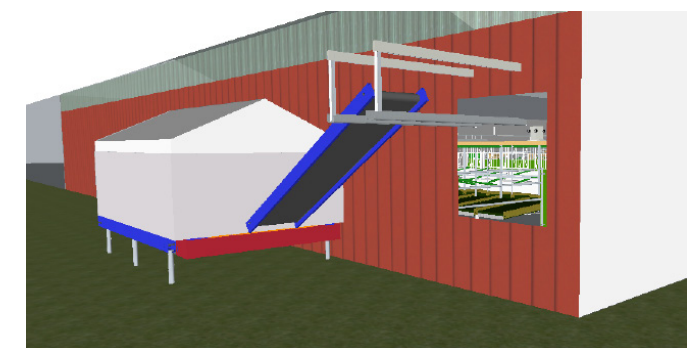
The layout shows how the Bedding Dispenser moves in the barn - along the rows of cubicles as well as sideways in the barn on the frame.



OBSERVE! The Bedding Dispenser can in most cases not pass by feeding stations. Plan the placement of feeding stations accordingly

3. Refill

In programmed intervals the Bedding Dispenser stops at each cubicle to distribute programmed amount of bedding. As the machine is emptied with bedding it will go to get refilled and then start off where it left. There are different solutions as to how the machine is refilled with bedding.



Bedding can be refilled in several ways. A storage with a convertible roof (the picture) and a conveyor belt can refill the Bedding Dispenser. The storage is then filled with bedding by a front loader.

Experiences of Moving Floor



The cows choose Moving Floor before conventional cubicles



Jonna Silvin, third generation at the family farm in Gothen, Sweden

The cows like Moving Floor

Jonna Silvin and her family runs a dairy farm on Gotland. About 60 cows are milked on a robot since a few years back when the old barn was extended with a freestall section. Jonna's farm has been the test farm for Moving Floor's cubicles, and is the farm with the longest experience of the cubicles. Moving Floor Cubicles are installed in a section where the cows can choose between conventional cubicles and Moving Floor. It is obvious that the cows choose to lay down in Moving Floor Cubicles and not in the conventional cubicles with a rubber mattress. The cows can even form a waiting line if all the Moving Floor Cubicles are occupied.

“When the cows can choose between Moving Floor Cubicles and conventional cubicles with rubber mats they choose Moving Floor. I suppose it is because the cubicles are softer and more spacious.”



Kari and Einar Åbergsjord on Andøya, Norway

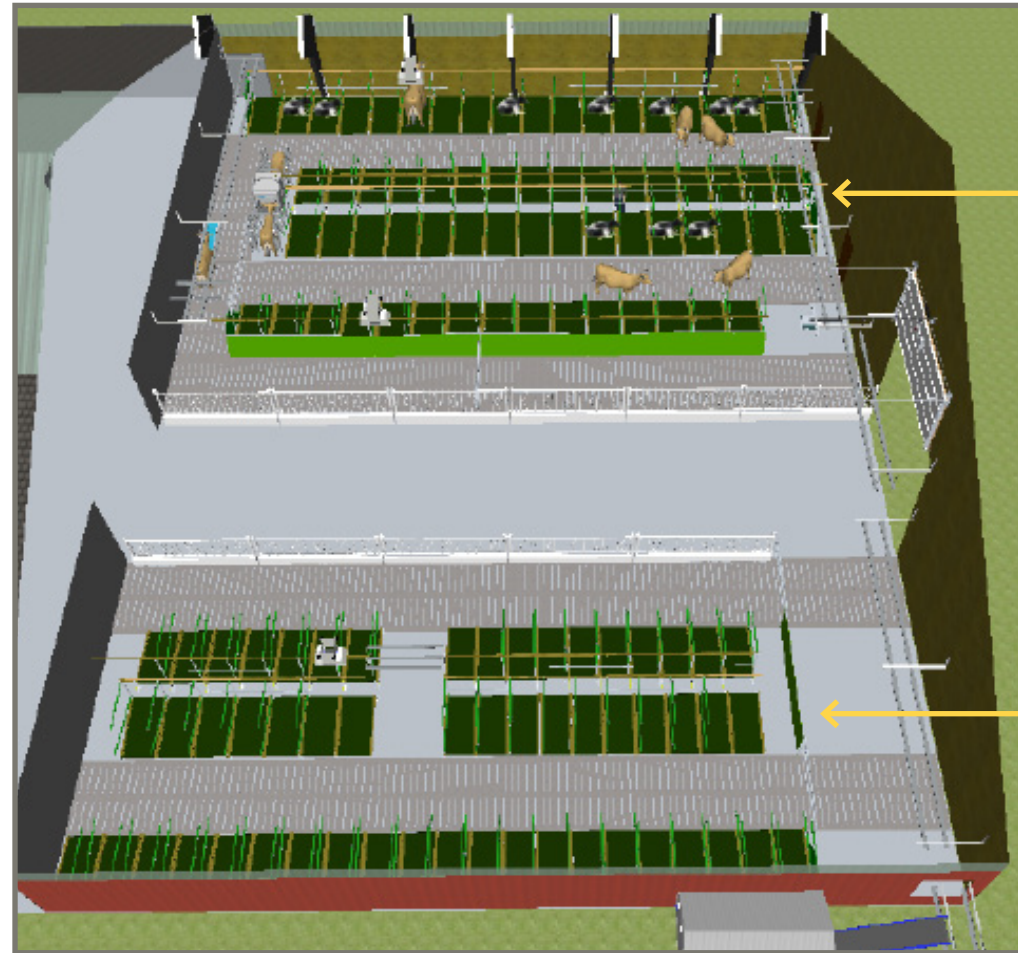
Less mastitis

Kari and Einar Åberg Earth on Andøya outside Harstad had problems with the udder health of their cows. The cubicles were contaminated with milk leakage and was a source of cross-contamination among the cows. No matter how much time the couple spent in the stable, they could not ensure that all the cubicles were cleaned in between every cow. The solution was to install self-cleaning cubicles from Moving Floor.

“We have significantly improved the udder health with Moving Floor.”

Layouts

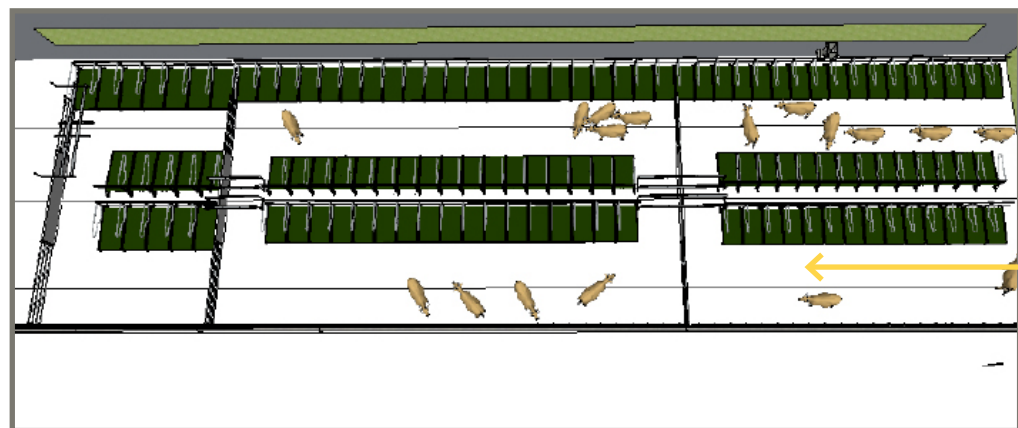
Examples of layouts



Section of a barn,
65 cow places

Heifer area, 55
places

Cow and heifer section in barn with slatted flooring

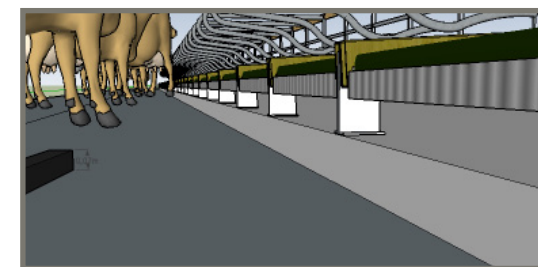


Alley with manure
scraper

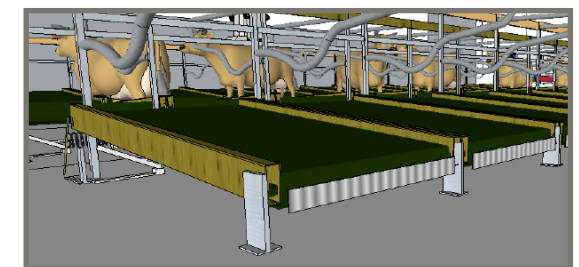
Heifer barn with scraper alleys, 117 places.



Combine with manure scrapers



The cubicle can be put on top of an existing concrete cubicle provided that the step for the cow is not too high. We recommend maximum 100 mm high concrete edge.



The cubicle can also be mounted on a flat, slightly sloped floor.

All drafts are proposals on how installations can be made. Errors and discrepancies can occur.

Example of installations



Cubicles with peat bedding. Installed with slatted flooring.



Bedding Dispenser runs on wooden rail



Bedding Dispenser passes over walkways



Cubicles installed in existing barn with scraper alley. Concrete edge 100 mm.

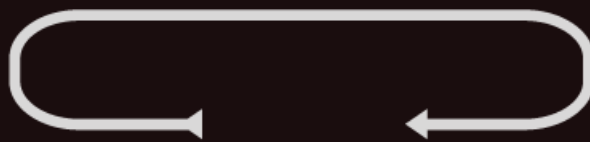


Installation in uninsulated barn

Moving Floor Concept

An new industry standard

improves profitability



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