DeLaval Cow Comfort Line
Enhance your profits
– with cow comfort solutions
Dear milk producer,
As you will see from this brochure, DeLaval treats cow comfort seriously. The basics of cow comfort are simple. Happy calves turn into happy heifers and cows that yield more milk.

In order to achieve these goals, cow comfort solutions help you to optimize your barn and increase the productivity of your herd, and thus to improve the economics of your milk production.

To provide you with the necessary tools, our DeLaval team of experts has compiled complete cow comfort solutions that can be easily integrated into existing installations. Obviously DeLaval can also help you in the design of new barns, providing advice on optimal cow traffic and the right cow comfort solutions. That is why there is a chapter on the planning and functionality of a well designed, cow comfortable barn.

The featured solutions have all been developed with attention to the animals’ wellbeing as well as the ease of use which you expect from our products as a professional user. In the DeLaval cow comfort line, you will find a detailed and well thought-through concept of selected products to fit your and your cow’s needs and expectations.

I am proud to show you the full DeLaval cow comfort assortment and hope that it will help you in making the right choices for the future.

Best Regards
Tim Nicolaï
Vice President Business Area Aftermarket & Services
Talking about cow comfort is talking about a lot of different opinions on this issue. But what is real cow comfort? How can it be judged? And maybe even more importantly, how can it contribute to profitable dairy farming? Recently researchers and producers have put more attention on creating a comfortable environment for dairy cows and their replacements. Observation and experience show that cows housed in a comfortable environment produce more milk and generally live healthier, longer lives.

Read more about:

DeLaval cow comfort approach
More comfort, more milk

Cows should have it all – plenty of quality feed and water, fresh air, a soft, clean resting surface and sound footing. That’s real cow comfort. Cows should behave naturally and stand or lie down easily.

You can find out more about the DeLaval cow comfort approach in our booklet Efficient Cow Comfort, which is available in different languages. There you will find a lot of in-depth information about cows and cow comfort including different research, tests and suggestions for your farm.

To help you to assess cow comfort on your farm, we use the DeLaval cow comfort approach to guide you in the most structured manner. DeLaval uses three main criteria to judge cow comfort, as seen in the reference points of the DeLaval cow comfort triangle.

More comfort, more milk
DeLaval cow comfort approach

Animal signs

Performance: Cows should perform comfortably with minimal stress. An unbalanced walk or a curved back could indicate lameness or digestion problems.

Condition: Cow condition tells you a lot about the rations you have fed the cow. Cows that are too fat or too skinny will not produce to their full potential. Use the body condition score to assess condition.

Temperature: A cow should have a temperature of 38 to 39°C. Cold ears might indicate milk fever or blood circulation problems.

Legs: Heel erosion or skinned heels are mainly caused by problems with bedding or bedding materials, incorrectly adjusted barn equipment and/or hoof infection.

Ruminating: A cow should ruminate for seven to ten hours per day, ruminating 40 to 70 times on a cud. Taking less time indicates inadequate rations.

Rumen: The rumen should be filled with feed. The left side of the stomach should protrude. If you press your fist into the rumen it should contract firmly about 10 to 12 times within five minutes.

Alert: A healthy cow looks alert and powerful, with a glossy skin and a full stomach.

Neck: A swollen neck is mainly caused by a feed fence being too low or incorrectly adjusted barn equipment.

Hooves: Healthy cows stand straight and still while eating. Tipping or walking with lame gait are signs of poor hoof health, from bad rations, poor floors or lack of hoof treatment.

Udder: To assess udder health, look carefully at the teats after milking. Good teats are flexible and naturally coloured. Poor udder health can be caused by hygiene problems, poor milking equipment installation or inadequate feed rations.

Manure: Should not be too thick or thin and should never have undigested particles in it.

Breathing: Normal breathing ranges from 10 to 30 breaths a minute for a cow. Faster breathing indicates heat stress or pain and fever.

What are animal signs? A cow gives signals all the time about her welfare and health. She does this by behaviour, attitude, body language and body condition. You can use these cow signs to optimize your results. Start by looking carefully, searching for causes, and translating the answers into positive action to benefit your cows and ultimately your dairy business. Train yourself to observe, evaluate, and find solutions.

Body condition score

What is a body condition score? An evaluation of body condition can help in understanding the past nutritional status of the cow, the reasons for good or poor milk production and reproductive performance, and the challenges to come. A cow’s body condition is an indication of how much energy it has stored for future use. Body condition scoring was developed to help farmers and nutritionists assess and track body condition more definitively. You can read more on body condition scoring in DeLaval Efficient Cow Comfort or go to www.delaval.com, click on dairy knowledge and then efficient cow comfort.

Body condition

<table>
<thead>
<tr>
<th>Body condition score</th>
<th>Vertebrae at the middle of the back</th>
<th>Rear view (cross section) of the hook bones</th>
<th>Side view of the line between the hook and pin bones</th>
<th>Cavity between tail head and pin bone</th>
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</thead>
<tbody>
<tr>
<td>1. Severe under-conditioning</td>
<td></td>
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<tr>
<td>2. Frame obvious</td>
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<td>3. Frame and covering well balanced</td>
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<tr>
<td>4. Frame not as visible as covering</td>
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<tr>
<td>5. Severe over-conditioning</td>
<td></td>
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</table>


Source: Hulsen, Jan, Cow Signals, VetVice.
DeLaval cow comfort approach

Locomotion score

A locomotion score is a qualitative index of a cow’s ability to walk normally. It is visually scored on a scale of 1 to 5, whereby a score of 1 reflects a cow that walks normally and a score of 5 reflects a cow that is three-legged lame. A locomotion score can be visually assessed in only a few seconds per cow. Generally, locomotion scores of 2 and 3 are considered to represent sub-clinically lame cows; locomotion scores of 4 and 5 represent those cows that are clinically lame. A score higher than 1 does not indicate why a cow’s gait is affected, merely that she is showing some degree of gait abnormality.

1. Normal with flat back
Cow stands and walks with a level back. Gait is normal.

2. Mildly lame
Cow stands with a level back, but develops an arched back to walk. Normal gait.

3. Moderately lame
Arched back is evident while standing and walking. Walks with a short lame stride.

4. Lame
Arched back is always evident and gait is one deliberate step at a time. Cow favours one or more legs/hooves.

5. Severely lame
A three-legged cow which demonstrates an inability or extreme reluctance to bear weight on one or more limbs/hooves.

Regularly collected locomotion score profiles can provide a running index of the extent of lameness and give valuable information on how to manage lameness in the herd.

Source (adapted from): Steven L. Berry, DVM, MPVM; Univ. of Davis, CA, and Zinpro® Corporation 1997, in J Hulsen, Cow Signals.
DeLaval cow comfort line

DeLaval has a complete assortment of cow comfort solutions on offer to provide your cows with a comfortable, healthy and productive life. Before we launch our solutions on the market we make sure that they will meet the high demands you, as a farmer, have for quality, cow conformability and robustness. As we know how important animal welfare, herd health and cow comfort are for running a profitable dairy business, we have established and developed this complete cow comfort assortment for virtually every type of cow.

Read more about:
The optimal solutions, combined
Dairy farm planning services from DeLaval

Planning and designing complete dairy farms is a service DeLaval offers as part of our full range of dairy farm solutions. DeLaval supports all markets, through local DeLaval companies, with planning advice and layout drawings for dairy farms, as well as with associated services such as consultancy and in some markets with dairy farming advisory expertise.

DeLaval Global Customer Project Support team is located at the DeLaval International headquarters in Sweden and supports a network of project management offices spread all over the world. The team consists of experts and senior personnel with years of experience in the planning and design of dairy farms around the globe. When working with DeLaval in dairy farm planning, you can be confident that our design will be fully integrated with all the solutions appropriate for your local climatic conditions and milk production requirements.

DeLaval Global Customer Project Support works with advanced simulation tools to calculate herd size and input and output volumes on the farm, as well as for economic simulations. In-depth analysis of milking capacities, cow traffic and the logistics of feed, manure and water management, will result in a complete solution adapted to your individual needs. Projects are designed with the latest CAD technology in 3D which enables us to visualize our solutions for better understanding and communication with you, our customer. Because we have this functionality in-house we can assure you that our design is fully adapted to all the DeLaval solutions in all fields – from milking and manure handling to barn stalling and cow comfort.

Our Global Customer Project Design team is always on hand to support you with planning and design to develop a plan to your local needs.

Read more about:
For a complete offering
Focus on each segment
Dairy farm planning services from DeLaval
Focus on each segment

Different farms around the world have different demands on what a farm should look like when a project is completed. DeLaval has defined four customer groups to enable full support and knowledge per segment. The segments are defined as loose housing, stanchion, heavy duty and grassland systems. In grassland systems, cows are usually not housed, but stay on pasture. In our cow comfort approach, cows that are in a grassland system with housing will fit one of the three other segments, adapted according to the conditions.

Farm planning stanchion barns
The stanchion barn system represents a huge number of farms around the world. However, due to new requirements and measurements many of these barns need to be adapted, or completely rebuilt. DeLaval can help you to rebuild, or to adapt your stanchion barn to a modern standard which meets these new demands.

Farm planning loose housing barns
Loose housing systems are built in a large variety of ways around the world. The bottom line for all of them is that the cow walks to water, feed, parlour and cubicles. This creates a lot of possibilities for developing a new loose housing system for you. And our experience combined with your ideas will provide the best possible solution for your needs.

Farm planning heavy duty barns
Large numbers of cows and rapid farm development put a lot of pressure on your farm planning. Heavy duty farms are those busy milking for at least 12 hours per day. Most of these farms double in size every three years, demanding a strategy to build up the farm. DeLaval has already developed enormous farms with strategic plans many of which are still being executed. How can we help you with your strategy?
DeLaval cubicles

For cows to rise up or lie down, the resting area must provide freedom for vertical, forward and lateral movement without obstruction, injury or fear. A cow rising up needs freedom to lunge forward, bob its head up and down, and stride forward. A cow resting also needs freedom to lunge forward and bob its head. DeLaval has a wide range of cubicles for free-stall systems and they are designed for use with all age groups to ensure a perfect resting area.

Read more about:
Thinking out of the box
DeLaval cubicle divider CC1800
DeLaval cubicle divider CFH2
DeLaval cubicle divider CFH3
DeLaval short stand TUF20
DeLaval barn stalling accessories

DeLaval cubicles
Thinking out of the box

There are many different stall designs, most of which will work well. It is very important to observe the cows’ reactions to stalls. Don’t just get out the tape measure. Watch cows get up and down in the stalls. Cows should get up the same way in a stall as they would outside on pasture. Cows need to bob their heads down and forward so that they can shift their weight from their back legs in order to get up. In a stall, cows can either bob forward or to the side. It is difficult to give specific measurements for cubicles because of the size differences between dairy breeds.

Source (adapted from): Anon. Housing design for cattle, DACC.
DeLaval cubicle divider CC1800
Comfort on a high level

Designed for optimum cow comfort and function, DeLaval cubicle divider CC1800 is suitable for calves, young stock and high yielding cows. The spacious area at the front of the cubicle means the cow has plenty of room for natural movement when she lies down or stands up. This puts the cow at ease in the cubicle.

DeLaval CC1800 is a unique cubicle divider, both floor mounted and free hanging, so that a comfort mattress like DeLaval M35R and a brisket board can easily be installed with no extra fixation posts. With DeLaval CC1800, the cow is guided to lie down straight in the stall so that the stall and the cow are kept clean. DeLaval CC1800 is available in four different sizes, from calf to large dairy cow sizes, and the divider can be used to build up single and double rows. Besides the brisket board DeLaval recommends the combination with the flexible neck band.

Built to last - each divider is shaped from a single length of 2 inch steel pipe to cope with heavy stresses, and all parts including fittings are hot galvanized for durability. It will keep your cows comfortably secure for many years. The front pipe can be exchanged for a flexible PE band. The double row construction offers a large head space between cubicles and also provides for walking space in front of the cubicles.

DeLaval cubicle divider CFH2
Robust and reliable

Designed for good cow comfort, robustness and reliability, the large open area at the front of the DeLaval cubicle divider CFH2 gives the cow plenty of space for natural behaviour when rising up and lying down. The open design also makes it easy to increase her lying comfort by installing mattresses or mats. A deep-straw bedding system can also be used with this cubicle.

The DeLaval CFH2 is a free-hanging cubicle divider, available in four sizes for calves, young stock, heifers and dairy cows. All sizes are easy to install and the same divider can be used for both single and double rows. The high positioning of the front pipe gives additional space, both straight ahead and sideways, for cows rising.

The DeLaval CFH2 is normally installed on two 2 inch front pipes, fitted on 70 mm x 70 mm posts at every second cubicle. Each of the four cubicle sizes is designed to handle the forces likely during housing of a particular sized animal. It is therefore crucial to base your chosen cubicle size on the size of the animal you will be housing.
DeLaval cubicle divider CFH3
For all ages

Designed for good cow comfort, robustness and reliability, the large open area at the front of the cubicle gives the cow plenty of space for natural behaviour when rising up and down. The open design also makes it easy to increase her lying comfort by installing mattresses or mats. A deep-straw bedding system can also be used with this cubicle.

The DeLaval cubicle divider CFH3 is a free-hanging cubicle available in four sizes for calves, young stock, heifers and dairy cows. All these sizes are easy to install and the same divider can be used for both single and double rows. The high positioning of the lowest front pipe gives additional space, both straight and sideways, for lunging.

The DeLaval CFH3 is installed on horizontal front pipes, size dependent on young or mature cow sizes. The front pipes are installed on posts to give a free lunging area for proper cow comfort. It is also possible to install DeLaval CFH3 on 2 inch front pipes fitted on 80 x 80 mm posts at every second cubicle. The divider itself is made from 2 inch pipe with a clamp for a 3.80 cm (1½ inch) neck pipe. DeLaval CFH3 can also be installed directly on the posts, providing a long lunging area.

DeLaval short stand TUF20
Flexible stand with many advantages

The design of the DeLaval short stand TUF20 provides a clear floor surface to simplify cleaning. It is also easier to milk a clean cow and clean udders promote good hygiene – with less workload. The DeLaval short stand TUF20 creates an excellent environment for each animal, with an adjustable front so that you can adapt it to any cow size.

The strong, safe design of the DeLaval TUF20 makes it a durable solution and because all parts are hot galvanized after production, it will be protected well into the future. It is easy to install and a high capacity built-in water supply means each cow’s water needs are efficiently met.

Stand planning should always include partitions. Long partitions are used when the stand will not be used for milking. These partitions can be connected to both existing posts and the posts for DeLaval TUF20. The partition leg is shaped to give maximum comfort when the cow is lying down. When milking is part of the stall’s function, short dividers are used to give each cow its own stand. The water supply is integrated with a 3.80 cm (1½ inch) hot galvanized pipe and is easy to install with its kit for connection to the water bowl.

DeLaval short stand TUF20 has a locking mechanism to simplify milking during the pasture period. Each cow is individually and automatically locked after entering the stand. After milking a control unit simultaneously releases all the cows in the same row.
DeLaval barn stalling accessories
The key to total comfort

Signing in for cow comfort also means taking care of details. Besides choosing the right bedding material and cubicle dividers it is very important that you guide the cows in the right way without the risk of obstructions, injury or fear.

DeLaval flexible neck and front band
The flexible cubicle band is a soft way to guide the cow in the cubicle. Due to the material flexibility of this solution, the cows feel more comfortable and rise up once. The same flexible band can be used at the front to prevent cows from exiting the cubicle at the front end.

DeLaval brisket board BB120 & BB100
A soft, plastic arch with gentle curves allows the cow to step forward on rising, extend their legs naturally when lying down, without moving too far forward in the stall. Made in durable polypropylene, it is light weight, easy to handle and simple to install as a stand alone between the cubicle dividers (BB100) or as a continuous brisket board behind the post (BB120).

Accessories for TUF20
The DeLaval short stand TUF20 has an adjustable front that makes it possible to adjust to cow size. The front is also equipped with cross connected halters that ensure that the cow will have enough freedom of movement for natural behaviour, such as lying and rising up easily, reaching for the water bowl or licking her body, and in particular reaching her back. The halter should be wide and easy to be as gentle as possible for the cow and it should always be connected in a ring or shackle to prevent wear and tear on the stalling material.
DeLaval cow mats and mattresses

Promote natural cow behaviour and well-being

Modern dairy cows lead an up-and-down life. Up about 16 times per day to walk, to eat, to drink or to be milked. Then down again to rest and ruminate. This is their natural behaviour and lying down is the key to it all. Therefore ensuring a cow is comfortable during this process can have a significant effect on health and productivity.

When a heavy cow lies down the impact of her front knees on the cubicle floor is enormous. She puts about two thirds of her bodyweight on her front knees, meaning around 350 kg drop freely to the floor from a height of 25 to 30 centimetres. On a hard surface this can cause so much suffering that a cow will remain standing for far too long, or be in so much discomfort that getting up is equally painful. Either way, the cow’s feed intake and utilisation will suffer badly.

DeLaval cow mats and mattresses however, absorb the shock of lying down, protecting the cow’s knees from pain and injury and creating comfortable conditions. Furthermore, the cow mats and mattresses promote natural activity and rest, to improve the way cows ingest and utilize feed or water intake, which results in higher milk yield and related profit.

Read more about:
Promote natural behaviour and well-being
DeLaval cow rubber mat assortment
DeLaval cow mat assortment
DeLaval cow mattresses assortment
DeLaval cow rubber mat assortment
Improved mats for better hygiene and comfort

Like humans, cows need to maintain characteristic behavioural patterns and be comfortable to act naturally each day. DeLaval rubber mats keep your cows comfortable when they are lying down or rising up. Whether they are kept in a stanchion barn or loose housing barn, these mats help cows to continue behaving naturally while producing high quality milk yield. The top surface of DeLaval rubber mats has our unique triangle pattern, to give each stand or cubicle a non-slip, hygienic surface. Regular use of straw, sawdust or DeLaval bedding treatment will help to keep these mats dry too.

DeLaval cow mat RM15
This soft rubber mat is designed for use in tied-up stands. The channels on the underside provide drainage and elasticity. The mat encourages cows to stand during defecation and urination.

DeLaval cow mat RM21S
Designed for tied-up stands but also applicable for loose-housing, this 21mm thick mat is produced from high quality rubber with virgin rubber for extra comfort and softness. The cone shaped studs underneath absorb shocks and allow water drainage in all directions. The sloped back facilitates urine drainage. The patent-protected top surface design provides good drainage and makes the mat dryer and easier to clean.

DeLaval cow mat RM30F
This 30 mm thick first-class rubber mat is designed to keep your cows comfortable when rising up or lying down in tied-up stands or loose house cubicles. It features high quality rubber foam that is inserted into the front part of the underside to provide extra softness and shock absorption. Another feature on the underside is the durable stud design making it comfortable for your cows. DeLaval cow mat RM30F has a built-in slope at the back end to facilitate urine drainage. The DeLaval unique triangle pattern on the top surface ensures a non-slippery, easy-to-clean surface.

DeLaval cow mat CM20
Millions of trapped air bubbles make up over 80 percent of the DeLaval cow mat CM. Working in a similar way to a modern running shoe, these bubbles absorb the heavy load put on knees when cows lie down. The rest of the mat is made of EVA which meets the same standards required for children’s toys. It contains no recycled or crumbled rubber because that compresses and loses its power to absorb pressure. DeLaval CM mats are non-adsorbent, and are therefore easy to keep dry and clean. All cow mats in the DeLaval CM range provide great comfort.

DeLaval cow mat CM25
This mat contains 25 percent more material than DeLaval CM20, for even greater shock absorption and a longer life. DeLaval CM25 is khaki-green and 25 mm thick.

DeLaval pen mat PM30P
This water-proofed pen mat is specifically designed to make the surfaces of calf and maternity pens comfortable. The all-around puzzled, 30 mm thick mat is based on EVA mat technology, using extra thick and durable material for painless lying down and rising. It offers an anti-slip surface and quick installation.
DeLaval cow mattresses assortment
More comfort, better hygiene, higher output

Let your cows enjoy pasture softness in the barn. Encourage their natural behaviour and watch the well-being of your herd and finances improve.

A dairy cow puts most of her weight on her knees as she lies down. If that pressure causes pain, she will remain standing. But if your cow stands for too long, her natural behaviour will be disturbed: she will eat and drink less and her feed utilisation will suffer. This will result in less milk.

Cows experience well-being when they can rest at least 12 hours a day and can get up whenever they need to. When cows behave naturally, blood circulates properly, they are less stressed, their digestion works better and they produce more milk. Optimal cycles of rising and lying also help the recovery of foot lesions.

DeLaval cow mattress M40R
The DeLaval cow mattress M40R is designed to encourage your cows to lie down and get up easily, so that they can behave as naturally as if they were out in the pasture. The 8-mm-thick top-cover features an easy-to-clean surface for improved hygiene and less veterinary costs. The specially developed foam underneath the mat is durable and elastic to resting place. The top-cover together with the foam gives you a soft, strong and seamless mattress solution.

DeLaval cow mattress M45S
The premium DeLaval M45S provides your cows with a smooth, non-slippery surface. This ensures comfort, stability and confident footing for ease of lying down and standing up. And, thanks to the seamless, waterproof top cover, which is resistant to manure, urine, milk acids, UV light and micro organisms, the M45S offers significant cubicle hygiene.
DeLaval manure handling systems

Efficient manure handling supports better milking hygiene and livestock welfare. It improves the barn atmosphere by reducing levels of ammonia and nitrous gases and has a significant impact on hoof health and fly control. A properly designed and managed manure system preserves the fertiliser value of manure wastes. It also helps reduce any leakage to rivers, lakes and ground-water.

Read more about:
Cleaning
Collection
Treatment
Transfer
Storage
Spreading solutions

Manure planning, products and service

A complete manure system is composed of several subsystems:

- Cleaning
- Collection
- Treatment
- Transfer
- Storage
- Spreading

Planning for stanchion barns
New requirements and measurements mean that many stanchion barns around the world need to be adapted, or completely new barns built. DeLaval can help you to rebuild, or to adapt your stanchion barn to a modern level of manure handling which meets these new demands.

Planning for loose housing barns
All over the world, loose housing systems are built in many different ways. The bottom line for all of them is that the cow walks to water, feed, parlour and cubicles. This creates a lot of possibilities for developing a new loose housing system for you as a customer. Our experience and your ideas will bring the best possible solution for your barn’s manure handling needs. Big installations with high numbers of cows and very rapid farm development put a lot of pressure on your farm planning. Some farms may double in size every three years, which demands clear planning and strategy. DeLaval develops huge farms with strategic plans that are still being executed.

Manure as an asset
Profitable manure handling begins with a properly designed and managed manure system. It will save countless hours of labour and the right equipment is low on energy consumption and maintenance. The payback for efficient manure handling includes better hygiene and livestock welfare. It improves the barn environment by reducing levels of ammonia and nitrous gases and has a significant impact on hoof health and fly control. When you consider the total cost of poor hygiene, it is easy to see how a cleaner barn can contribute to farm profitability.

Choosing a system for your barn
Relevant criteria includes the number of cows, barn layout, number of alleys, length of alleys, type of manure, bedding type, manure processing system, cleaning routine, floor surface and your own preferences. DeLaval offers complete systems for all types of farms, including scrapers, pumps, gutter cleaners and presses providing effective and reliable methods for handling solid, semi-solid, sand laden or liquid manure on slatted or concrete floors, with or without rubber coverage.
Types of manure

Our manure systems are specifically designed to best handle each type of manure.

About manure
Manure consistency is determined by factors including the kind of animal, feeding intensity, type and amount of bedding material (sand, sawdust or straw) and climate conditions along with other factors such as wastewater from the parlour:

- slurry manure with up to 10% dry matter content
- semi-solid manure with 10 to 20% dry matter content
- solid manure with more than 20% dry matter content

Importance of a system approach
Once you know the type of manure, you can start building the appropriate handling system. Every component works together to maximise the system’s overall profitability for your farm. A system approach also gives you flexibility. For example, you can plan system capacity for the future, as your herd grows, and it is easier to comply with storage regulations and spreading periods.

Cleaning

The first step in cow comfort

DeLaval cleaning systems are the first step in profitable manure handling. You get plenty of power and cleaning, but not at the cost of your cows.

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Proper cleaning pays off
Scraping the manure away as soon as possible reduces the risk of hoof disease and udder contamination as well as nitrogen losses. Good cleaning routines contribute to cleaner, healthier cows for higher milk production and quality.

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DeLaval cable scrapers and drive unit systems work tirelessly and silently for the comfort of cows and workers alike. Their strength and capacity mean effortless cleaning of up to 4 alleys simultaneously. Which enables high cleaning frequency during the day.

The drive's highly effective direct power transmission makes minimal demands on power consumption, maintenance and associated costs. A thick steel cable pulls the scraper, so there are no mechanical parts in the manure and it gives extreme strength.

1. Delaval alley cleaner cable ACC
Tough on manure, kind on hoofs and tails. The new generation cable scraper is even better at handling slurry and semi-solid manure and has improved cow-friendly features. The new design includes a cable tensioner, which saves you time and money.

2. Straight blades
Scrapers come with the choice of either straight blades or V blades. Straight blades offer a simply efficient scraper to clean away all types of manure and bedding. Depending on the kind of scraper, blades can cover alley widths from 1.2 to 5.2 metres. Blades are adaptable to the type of barn flooring: concrete, rubber, slatted or slopped floors. They are made of steel or plastic – plastic blades are designed to run better on rubber flooring. Besides cow-comfort features, they also take into consideration your needs and conveniently fold into a narrow shape, for example to let a tractor pass by in the alley.

3. V blades
This blade design is ideal for large volumes of manure, especially with straw bedding. The V formation gathers the manure cleanly and keeps pushing big loads forward, without spilling any back into the clean alley.

4. DeLaval alley cable drive ACD70/100/180
The ACD drive unit range offers maximum reliability with robust components and simple state of the art technology. The largest model, ACD 180, is able to cover 180 metres of alley in one stroke. Drum technology and a heavy gearbox enable these drive units to pull enormous loads. Energy consumption is kept to a minimum with efficient 1.1 kW motors enabling very frequent scraping at a low cost.

5. DeLaval alley cable drive 120C
The ACD120C is a well-proven cable alley cleaning system which is wall mounted to allow compact installation in barns with limited space. It cleans short alleys and long ones up to 120 metres. The two end cable drive units give maximum flexibility to operate on single and double alleys and the two 0.55 kW motors keep running costs low.

6. Basic CB
A simple control box allows easy and programmable operation, while providing a diligent cow safety system. According to your instructions, a control box manages the entire scraper system for you. Automation saves your time and puts you in control of your cleaning routines. There are programs for customised scraping cycles, intelligent obstacle detection and current monitoring to prevent motor overload.

7. Common boxes PR-BR1-BR2
Control boxes for cable scraper systems range from basic models to the premium control box. Depending on the model chosen, you may program start up times, cleaning frequencies and actions to be taken if an obstacle is detected in the alley. Added functionality comes with multiple or very long alleys running more than one scraper at a time.
Hydraulic scraper cleaning solution
Flexible and powerfull

The hydraulic scraper cylinder is specially designed for manure removal in barns and is connected to a drawbar that moves back and forth, moving the scraper in steps, at a safe low speed.

DeLaval hydraulic scrapers are made for tough conditions. They are flexible, compact solutions capable of handling large volumes, as well as very wide alleys.

The robust design of all components gives extra high capacity and a long lifetime.

1. DeLaval alley cleaner hydraulic ACH
Big on performance, low on maintenance. It does the dirty work all day long without needing your attention and is designed to update DM and DML systems. The cow-friendly features and cleaning ability are boosted with the smooth performance of a hydraulic drive unit. It keeps alleys clean and dry, without stressing your cows.

2. DeLaval solid manure scraper DW and DWV
Robustly constructed with an animal-friendly design, DeLaval solid manure scraper DW and DWV can handle solid manure with long straw and liquid manure. Floating blades and side wings provide excellent cleaning for optimal animal hygiene. A heavy-duty central body with the step mechanism makes operation safe.

3. DeLaval slurry scraper on slats DMS
The DeLaval slurry scraper DMS is the hydraulic solution that cleans manure from slats. It makes the floor extremely clean and is perfect for use with the DeLaval voluntary milking system VMS.

4. DeLaval cow safety system
This safety system controls and supervises the scraper for you – automatically stopping if it detects unfamiliar obstacles, like an injured cow lying down. The system stops, checks twice if the obstacle still remains and if so, the scraper changes to another non-cleaned alley. The system also provides flexible use with automatic start and stop, plus a free choice of parking site without using a position indicator in the alleys.

5. Hydraulic power pack
Hard-working power packs have a quiet motor, high capacity pump, filter and hydraulic valve. Range of motors from 2.2 to 5.5 kW and pumps delivering 8 to 27 l/m.

6. DeLaval control box PH
DeLaval PH is the most advanced model for controlling DeLaval hydraulic gutter and alley manure removal systems. It can handle either one power pack with four electric valves, or two power packs with two electric valves. A timer allows all power packs to be started and shut off automatically. However, manual start-up is still possible.

7. DeLaval control box BH1
This is the basic control box in the DeLaval assortment, designed to control hydraulic gutter and alley manure removal systems. It is suitable for systems with a single power pack, where one hydraulic cylinder, or a group of cylinders, run in parallel or serially. The control box requires manual start and shut-off and supervised operation.

8. DeLaval control box BH2
DeLaval BH2 offers semi-automatic control of hydraulic gutter and alley manure removal systems. This control box can handle up to four cylinders, or groups of cylinders, running in parallel or serially. Every cylinder, or cylinder group, is started manually and can be shut off either manually or automatically by using the end switch.
Chain scraper cleaning solution
Low maintenance solution

This hard-working system has no weak links.

DeLaval alley chain drive AKD80/140
Based on chain drive technology, this solution provides a strong, simple cleaning system. It combines the advantages of a wear-resistant chain with very versatile installation that covers different alley lengths and cross channel positioning. The drive unit is the heart of this gentle, hard-working system that effortlessly takes care of heavy loads. It can be installed in a number of places in the barn, giving you many layout options.

The belt drive provides gentle start up and enables the use of a 1.5 kW standard motor with low energy consumption. A high-load gearbox, chain tensioner device and pocket type chain sprocket ensure long running and low maintenance. Two models are available. One with a maximum stroke length of 80 metres and maximum chain length of 180 metres. The other goes even further, with a maximum stroke length of 140 metres and a maximum chain length of 300 metres.

<table>
<thead>
<tr>
<th>AKD80</th>
<th>AKD140</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum chain length</td>
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</tr>
<tr>
<td>Maximum stroke length</td>
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</tr>
<tr>
<td>Operation speed</td>
<td>2.1 m/min</td>
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<tr>
<td>Motor consumption</td>
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</tr>
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</table>

DeLaval robot scraper RS420S
In every alley, in every corner, it cleans expertly and intelligently.

Right size and capacity
DeLaval robot scraper RS420S is made big and strong to clean in one, wide sweep and withstand any knocks along the way. Its size allows a big motor for frequent and long operation: typical drive time is more than 60% of the day.

Right navigation
Floor-mounted transponders guide the robot along the route and proximity sensors continually monitor its position. This dual navigation ensures the robot won’t get lost or trapped along the way. It gives frequent feedback on its exact position and deploys cow safety procedures or obstacle navigation when necessary.

Internet control
DeLaval robot scraper on slats RS420S offers you the freedom to program exactly where and how often you want your barn cleaned. There is no limit to the number of routes. You can set up the precise cleaning schedule via the internet and have your robot report to its own internet log.

At home in your slatted floor barn DeLaval robot scraper on slats RS420S is popular in slatted floor barns because its sophisticated automation helps contribute to a profitably managed farm. It can handle complex layouts and even simplifies barn planning because there is no need to focus on fixed manure scraper requirements.

The robot scraper operates quietly at a gentle pace of four to five metres per minute, which is ideal in loose housing barns. It is cow friendly, yet tough enough to withstand any knocks and keep on cleaning. The system also includes a controller with a clear interface and the charging station. For a more hygienic barn.

Technical data
- Kick-resistant design
- Wide alley cleaning (free ride)
- Dual navigation (transponders and proximity sensors)
- Internet control
- Automatic cleaning log
- Two 24 V high-capacity batteries
- Two low-consumption motors
- Adjustable scraper (130 – 190 cm)
Cleaning slatted floors and manure channels.

1. DeLaval rope scraper RSS
This rope driven scraper is intended for scraping cow slurry on slatted floors. It is equipped with two exchangeable rubber blades and has a slight angle so it runs smoothly on slats. The scraper covers alley widths between 1600 mm to 4200 mm and the maximum alley length is 80 m with two alleys.

Technical data
• Maximum stroke length: 1 & 2 alleys (80 m), 3 alleys (30 m)
• Alley width: 1.6 – 4.2 m
• Transporting speed: 4 – 5 m/min
• Motor capacity: 0.37 kW

2. DeLaval rope-driven scraper ELIN
This is a high-capacity scraper system with the ability to handle up to 80 metre long manure channels. DeLaval rope-driven scraper EL consists of two drive units which work alternately and operate the scraper via a nylon rope. The drive unit is built on a heavy-duty frame, which allows the motor and rope drum installation to be situated above floor level.

3. Control unit for DeLaval rope scraper RSS
This control box can handle one set of drive units for the cable scraper on slats (RSS). Included is a cow safety system that stops the scraper if it gets stuck. In addition, a timer has been built in which can be programmed to start the scraper automatically.

Technical data
• Alley width: 1.0 – 2.8 m
• Transporting speed: 6.5 – 20 m/min
• Motor capacity: 1.5 kW
• Scraper height: 200 mm

Collection
Stanchion barn and cross channel solution

Well-proven, efficient transport systems for gutters and cross channels with minimum operation time, maximum volume handling and a long life.

<table>
<thead>
<tr>
<th></th>
<th>HR</th>
<th>CC370</th>
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</thead>
<tbody>
<tr>
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<td></td>
<td></td>
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<tr>
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<tr>
<td>Stanchion</td>
<td>✓</td>
<td>✓</td>
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<td>Manure types</td>
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</tr>
<tr>
<td>Semi-solid</td>
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<td>x</td>
</tr>
<tr>
<td>Sand</td>
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<td>✓</td>
</tr>
<tr>
<td>Max operation length (m)</td>
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<td>70</td>
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This reliable scraper system for gutters and cross channel operates with a hydraulic aggregate. The power unit drives a cylinder back and forth pulling the scrapers along the complete length of the gutter. The gutter-wide scrapers transport the manure and fold themselves automatically in the reverse mode.

The system has been developed for high installation flexibility for different barn layouts. HR, HRC, HRS scraper versions are adapted for wide, narrow, deep or shallow gutters as well as under slatted floors.

DeLaval gutter cleaners are intended for transporting of manure in gutters with a cylinder. The hydraulic cylinder is mounted so that the manure is transported with a pushing piston rod.

The key component in the gutter and channel system is the MSC2000. It also cleans under the drawbar so the whole channel width is cleaned. The animal-friendly, safety orientated design features angled cut scrapers with no sharp edges.

DeLaval HR Collects manure in open gutters with a minimum depth of 190 mm. The hydraulic cylinder is fastened in the cross channel which makes installation simple.

1. DeLaval HRB For open gutters with a depth of 120 to 230 mm. The hydraulic cylinder is placed in a galvanized box which is embedded in concrete, close to the cross channel.

2. DeLaval HRC Collects manure in gutters with a minimum depth of 300 mm, i.e. cross channels.

DeLaval HRS Collects manure under slatted floors with a minimum free space of at least 300 mm.

The cable cross channel scraper CCS70 is developed to transport semi-solid and sand laden manure long distances to a reception pit. The 70 metre stroke enables extensive coverage and is especially suited for big operations with loose housing.

This cable driven system uses the ACD70 drive unit to pull a high capacity scraper box which moves the manure to a reception pit. This system enables easy installation with only two end-wheels for the guiding of the cable and the drive unit.
Treatment
Advanced manure handling

Treatment gives efficient volume management, rationalises sand laden handling and controls the impact of phosphorus. It makes spreading as fertilizer easier, lowers transport costs and reduces storage odour.

Conditioning and separation
Manure goes in; solids and liquids come out. A simple principle, yet the benefits are highly significant. On the one hand you get recycled solid matter in the form of organics and the other an enhanced concentration of nutrients in the liquid part, which is readily pumped and easy to transport. Liquid occupies a smaller volume, thus increasing existing storage capacity. Solids are easily stackable and remain stable when stored. They can be used for further treatment in composting and bedding recovery. Separating solids from liquids also gives you less odour, lower nitrogen loss and also lower greenhouse gas emissions.

System approach for sand laden manure
A loose housing barn with sand laden manure could have an alley scraper system with a cross channel scraper leading to a reception pit with a sand liquid pump and a manure separator with the remaining effluent going to a lagoon. Note that all components are specialised in handling sand laden manure and work together to bring about significant advantages. By separating sand from the organics, it is possible to manage the use of manure as a fertilizer without spreading sand on the fields. This means reduced wear on spreading equipment. It is also possible to reuse the liquid in a flush system.

Transfer
Solution for manure transport to the storage place

DeLaval hard-working pumps are expertly engineered for rugged dependability and minimum maintenance.

<table>
<thead>
<tr>
<th>Housing</th>
<th>ESP11-19</th>
<th>EP400-500</th>
<th>SP480</th>
<th>SLP180</th>
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<th>KP</th>
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<th>SP480</th>
<th>SLP180</th>
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<th>K3</th>
<th>KP</th>
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<td></td>
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<tr>
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<td>✅</td>
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<table>
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<th>Energy type</th>
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<th>K3</th>
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<td>x</td>
<td>x</td>
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<tr>
<td>Hydraulic</td>
<td>✅</td>
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<td>x</td>
<td>x</td>
<td>✅</td>
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</tbody>
</table>
DeLaval slurry pumps are designed for mixing and pumping liquid manure in all kinds of applications. These include use in a mixing pit, transferring to a main store, recirculation and loading slurry spreaders. Reliable, easy to operate and service, you have a choice of lengths and electric motor power options, so these pumps can be set up to your exact needs. Options include: different mixer heads, various installations including in a pump pit, underground connection to a pipe system and much more.

1 - 2. DeLaval electric pump EP400 and EP500 are high capacity vertical pumps built to tackle the toughest liquid manure, vertical wall pits. If you have a large volume of manure in a vertical wall pit and need to transport manure to main storage or fill up a manure tank or spreader quickly, this pump is the one you should choose.

**Features**

The EP400 agitates up to 5600 litres / minute, while the EP 500 can shift up to 9400 litres / minute, depending on motor size and manure consistency. You have a choice of lengths and electric motor power options, so these pumps can be set up to your exact needs. Standard equipment includes agitation nozzles that rotate 270 degrees and a dependable triple-sealed, oil-filled lower bearing.

DeLaval also offers a selection of 15.24 to 20.32 cm (6 to 8 inch) valves and fittings for building your complete manure transfer plumbing system.

**DeLaval EP400 and EP500 features**

- Hard wearing design
- Oil filled lower bearing assembly
- Hydraulic or manual control
- 1.8 to 4 metres long

**Advantages**

DeLaval electric pump EP400 and EP500 agitate and pump out large dairy manure reception pits with minimum hassle. Their high capacity enables pits to be pumped out very quickly, ideal for loading a manure spreader, or in other situations where speed is important. These high quality pumps are expertly engineered for rugged dependability and minimum maintenance.

3. DeLaval slurry pump ESP

The electric DeLaval slurry pump ESP is designed for efficient mixing and pumping of liquid manure in all kinds of applications. Available with 11, 15 or 18.5 kW motors – these pumps fit various optional stands and holders. DeLaval slurry pump ESP has no belts so noise and vibration levels are low. The unit is easy to adjust for better chopping action and it offers more than 8600 cuttings per minute.

**Technical data**

<table>
<thead>
<tr>
<th>DeLaval EP400 406 mm impeller</th>
<th>DeLaval EP500 508 mm impeller</th>
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<tr>
<td>Choose electric motor:</td>
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</tr>
<tr>
<td>• 15 kW</td>
<td>• 37 kW</td>
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<tr>
<td>• 25 kW</td>
<td>• 55 kW</td>
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<tr>
<td>• 30 kW</td>
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</tbody>
</table>

DeLaval hydraulic pumps transfer manure over a distance. Strong and reliable, it has the hydraulic power to steadily and relatively quietly pump manure over hundreds of metres.

**Different models cater to slurry, solid and semi-solid manure.** There is even a sand liquid pump to transfer sand-embedded manure long distances with low power requirements. The versatility of DeLaval hydraulic pumps gives you a full selection of outlet and pipe options so the system can be fully tailored to your requirements and your buildings.

1. DeLaval slurry pump SP480

DeLaval transfer pump SP480 is a hydraulic piston pump, designed to pump liquid manure from barn to storage. If you have to transfer manure a long distance, choose this solution. Typical system used in reception pits up to 3 metres (10 feet) deep, with DeLaval propeller agitator PA to chop and homogenize the manure before and during pumping. Designed to pump liquid manure from barn to storage up to a maximum distance of 350 metres. The DeLaval SP480 is strong, reliable and relatively quiet. Though the pump needs liquid manure to work well, the system can be designed for use with bedded manure if a water return line from the main storage pit is included in the system.

2. DeLaval sand liquid pump SLP180

Transfers semi-solid manure with short or sand bedding up to 180 metres. DeLaval SLP180 is always mounted in a dry pit. This may be beside a reception pit with a suction tube through the wall or the pump can be equipped with a hopper inlet for use with cross-gutter cleaners.

3. DeLaval semi-solid manure pump SMP60

DeLaval semi-solid manure pump system is an ideal solution for handling a wide range of manures in dairy operations in an efficient manner, automatically pumping manure to a dedicated collection pit up to 60 metres from the barn. The low-maintenance system design is installed almost completely underground, requiring minimum space.
Transfer

Hydraulic transfer presses

The hydraulic gutter cleaners are prolonged with presses to transfer the manure to the storage place. The presses are hydraulically driven and installed in concrete for powerful operation and capacities. The K3 press installation handles slurry and semi-solid manure and can transport slurry up to 60 metres and move the liquid six metres up into the storage facility. KP presses can take care of solid manure and are suitable where the straw or bedding content in the manure is high.

1. DeLaval manure press K3
   DeLaval manure press K3000 is a hydraulically operated press system designed for handling slurry and solid manure. A DeLaval manure press K3 installation can transport slurry up to 60 meters and move the liquid six meters up into the storage facility.

   **Advantages**
   The powerful press system is designed to handle solid manure with normal straw content and transportation of slurry from a cross channel into a storage facility.

   **Technical data**
   - Connection to pipe (mm): Ø 400
   - Pipe system for slurry: max. 60m
   - Lifting of slurry to storage facility: max. 6m

2. DeLaval manure press KP
   DeLaval manure press KP is a powerful, hydraulically operated system. It is characterised by the conic shaped press drum that gives the system extra pressing power. This drum and the press hatch make DeLaval manure press KP suitable for locations where the straw or bedding content of the manure is high, or where general conditions are very tough.

   **Advantages**
   DeLaval manure press KP is intended for pressing solid manure. Usage of chopped straw is recommended at a maximum rate of five kilograms per cow and day.

   **Technical data**
   - Connection to pipe (mm): Ø 400
   - Pipe system for solid manure: max.12m

Storage, agitation and loading

You need the right kind of equipment at the storage pit to help profitably treat manure for a fertilizer application and to handle large volumes quickly.

**Tractor pumps**
DeLaval tractor pumps help you in the final stages of a profitable manure system. These are easy-to-handle low pressure centrifugal pumps, for a bigger pump pit or when there is a lack of electrical power. The pump is assembled to a lifting frame attached to a tractor.

**Lagoon pumps**
DeLaval lagoon pumps are used in open liquid manure storage pits with straight or sloped walls. With just one pump, you can pump out different types, sizes and depths of pits. It mixes all types of manure: liquids or semi-liquids up to 10% dry matter and loads tanks quickly.
Storage, agitation and loading
DeLaval lagoon and tractor pumps

The outstanding performance of DeLaval lagoon pump TP65 and TP65H enables you to:
• agitate liquid manure in any vertical or sloped wall manure storage underground pit.
• pump out the manure and load tanks quickly, with up to 19 000 litre per minute capacity.

1. DeLaval lagoon pump TP65 is trailer mounted, providing good stability for working in sloped wall storage pits. Adjustable twin stabilizer legs and wide stance tyres counterbalance the sideways thrust of the agitation nozzle. DeLaval lagoon pump TP65H is a tractor pump with a three point hitch. Its short length – 5.5 or 7.5 metres – makes it extremely manoeuvrable. Hydraulic controls for the horizontal and vertical nozzle movement and the agitate/fill valve, and for the TP65 trailer, are easily operated from the tractor seat. The unique double jointed drive shaft provides maximum performance in pumping angles of up to 60°.

2. DeLaval slurry pump TP270 is a tractor driven, low pressure, centrifugal and easy-to-handle manure pump. It is designed for efficient manure handling in a bigger pump pit or when there is a lack of electrical power. The pump is assembled on a lifting frame that is attached to a tractor. One handle raises and lowers the agitator nozzle while the other handle turns the nozzle. Both handles are accessible from the safety platform. The smooth bends in the mixer head give top mixing performance and a 280° jetter control gives high mixing flexibility. The cutter ring combines with the pump impeller to give 7500 chopping actions per minute. The galvanised body and housing are highly durable. The robust, heavy-duty gearbox stands extreme loads while a powerful coupling between the gearbox and shaft evens out peak loads.

3. DeLaval slurry pump TP360
The design makes it possible to use the pump at different angles, which makes TP360 very suitable for use over the gate in dung cellars as well as outdoor stores and lagoons. Power demand 60 HP/44 kW.

Spreading

Faster and easier spreading comes from having a strong, steerable manure tank. Equally at home on the field or the road, these tanks are both top spreaders and efficient manure transports.

DeLaval manure tanks are specially designed to make every aspect of spreading more efficient: from loading to transport to spreading to cleaning. Tank volumes range from 21500 to a massive 36300 litres and are manure injection ready with in-tank agitation. After you’re done, you’ll also appreciate that your tank is easy to clean and service.

Steerable tanks make the difference
Whether taking your tank over hilly ground or at speed on the road, you’ll find it manoeuvrable and stable. The tank’s steering system and balanced loading also reduces tyre wear, lessens the strain on axles and hubs, reduces field damage and improves safety on the road. All tanks have high duty components, independent left and right wheel hydraulic suspension, high load brakes and many special features.

Modular tank design
A long working life is aided by the heavy wheel linkage, independent left and right wheels on hydraulic suspension, the extra thick elbow and the strong level-lift kit used with injectors.

<table>
<thead>
<tr>
<th>MT 21500</th>
<th>MT 23400</th>
<th>MT 28000</th>
<th>MT 36300</th>
</tr>
</thead>
<tbody>
<tr>
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<td>28000</td>
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<tr>
<td>Number of wheels</td>
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<td>Heavy duty brakes</td>
<td>2</td>
<td>2 or 4</td>
<td>4</td>
</tr>
<tr>
<td>Mini tractor power flat terrain*</td>
<td>180 HP</td>
<td>180 HP</td>
<td>180 HP</td>
</tr>
<tr>
<td>Mini tractor power high speed</td>
<td>180 HP</td>
<td>180 HP</td>
<td>250 HP</td>
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<tr>
<td>Mini tractor power hilly terrain*</td>
<td>175 HP</td>
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<tr>
<td>Micro tractor power flat terrain*</td>
<td>180 HP</td>
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<tr>
<td>Micro tractor power high speed</td>
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<tr>
<td>Micro tractor power hilly terrain*</td>
<td>180 HP</td>
<td>200 HP</td>
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</tr>
</tbody>
</table>

*Indicative value to be checked locally

Safety is never taken lightly with high load brakes and mechanical steering that works even at high speeds. The swing open door also facilitates cleaning or service. The tanks come in a range of sizes: eight wheels carry 36300 litres, six wheels 28000 and 23400 litres, four wheels 21500 litres.

Injectors
All tanks come readymade to add an injector unit. The injector-tank system has a lift mechanism that makes road transport easier and injection more efficient. An injector unit is easy to pull and makes injection quick and simple, along with all the significant environmental benefits.
DeLaval feed fences

Cows spend around four hours per day at the feeding table. To help ensure good feed intake, it is crucial that animals are comfortable while eating. Our quality barn equipment is designed for the comfort of your cows and follows animal welfare recommendations. DeLaval helps you plan your barn according to the latest recommendations, providing a complete range of feed fences to meet the needs of your herd.

Read more about:
For a higher feed intake
DeLaval feed fence HL10 and HLS10
DeLaval feed fence HL30
DeLaval feed fence HL40 and HLS40
DeLaval feed fence DS
DeLaval feed fence FT50
DeLaval feed fence FF60

DeLaval feed fences
For a higher feed intake

Feed intake should increase when the cow has a comfortable eating position at the manger or water trough. The right space between the cow and her feed together with a tilted panel can give greater comfort and feed intake. Headlocks also benefit herd health management. High producing cows need to eat fresh feed about 12 times a day, and cows want to eat in comfort, with feed available whenever they want to eat. This is why DeLaval promotes 24 hour access to feed, and enough space to eat in comfort.

Free space and free access to feed are key to success. Enough space per cow at the feeding table is the basic requirement. If you make compromises here you will face over crowding and slug feeding – with your cows eating fewer and larger meals all at once. This reduces total feed intake and fresh cows and heifers in particular will suffer.

Measurements are important, especially the height of the feeding table, width of the feed space and the neck width.

What more? It is important that you find the complete solution for your barn: DeLaval also offers rubber coverage to ensure that you have a dry, soft, non slippery floor in the feed alley. DeLaval feed fences stand for safety and comfort. That means the feed fences are very silent, and cows are not disturbed.

We also offer you protection alternatives to simplify keeping your feeding table clean and hygienic – to round off the complete comfort solution for your feeding area.
DeLaval feed fence HL10 and HLS10
Offering a flexible comfort solution

DeLaval feed fence HL10 has a head-lock unit as its base. This flexible feed fence is screwed together, so it is fully adjustable to suit the size of your cows and the width of the eating place. DeLaval HL10 can be fitted in a straight or leaning position and it can easily be installed in existing barns or maternity pens.

The head-lock is strongly constructed with a locking pipe and double bearings. Rubber bumpers on the locking pipe and high-grade PVC parts on the locking mechanism provide silent operation. A group control unit makes it easy to handle the DeLaval HL10, and the fence also has an in-lock position so cows can be individually released with one touch of a finger to ensure no injuries. The animals cannot unlock themselves.

Accessories for DeLaval HL10 include transponder protection and a calf safety device which is used when the calf and mother are together.

DeLaval HL10 is available in four different models, for different sized animals. The two largest sizes are for adult cows: for cows up to 145 cm, and for cows standing higher than 145 cm. The third model is designed for young stock. The smallest size is adapted for goats but can also be used for calves. The neck width can be adjusted from 22 to 26 cm. Additional bracing allows different sized eating places for cows at the feed table. Each headlock is screwed to an upper and lower 1½ inch horizontal pipe, fixed to 2½ inch or 70 x 70 mm posts, with 300 cm maximum distance between the posts. Feed fence height is 86 cm.

DeLaval safety feed fence HLS10
Based upon the HL10 feed fence, the DeLaval HLS10 is a robust, reliable and safe feed fence with a special safety feature. This allows cows to be released from the top and base of the headlock, or to free themselves if necessary.

DeLaval feed fence HLS10
Offering a flexible comfort solution

DeLaval feed fence HL30
Total feed table comfort

DeLaval feed fence HL30 makes it easy for the animal to come into the front. This solution fits extremely well for animals with big heads or horns. Headlocks make it easier to identify animals efficiently, to do check-ups and treatments safely. This feed fence has a good catching performance because the lock mechanism operates smoothly.

It features galvanized pipes, a self-locking mechanism on the lower bar, a single or group locking device, PVC catches to reduce noise, and is ear tag or transponder friendly with anti-snag protection. It has a locked-in position so stock can be released individually with a simple touch of the finger and no injuries, and the animals cannot unlock themselves.

DeLaval HL30 feed fence is available as a two, three or four headlock segment with neck widths of 650 mm, 700 mm and 750 mm. Headlock frame height is 800 mm and the recommended installation height is 500 mm to 620 mm above alley level, according to cow size.

DeLaval HL30 has a strong 5 mm thick, square pipe frame. The locking pipe has double bearings for strength and rubber bumpers for silent function. Mount on 2 ½ inch or 70 x 70 mm posts.

A leaning or angled position is standard for DeLaval HL30, for good cow comfort. A leaning or angled feed fence will cause less pressure on the cow’s chest when she tries to reach the feed. This also means that the cow will not push as much as with a straight feed fence, since she has less contact to push her chest on. This also results in better claw health for her front feet as she will not use her claws to get a grip for pushing. All in all a simple, but comfortable solution for good cow comfort!
DeLaval feed fence HL40 and HLS40
Robust and cow friendly

Designed for optimum cow comfort and function, the new DeLaval feed fence HL40 is a welded self-locking feed fence with built-in locking mechanism. The segments are delivered pre-mounted which ensures fast and easy installation on the farm.

A unique detail of DeLaval HL40 is the fitting of the pivoting pipe. It creates a very strong connection in an animal friendly way. In free position the pivoting pipe will not touch any locking device; this gives a silent feed fence and minimal wear. In locking position the pivoting pipe will be blocked when it comes into a vertical position as the animal enters the feed fence. To prevent any problems with a neck band when the animals have transponders, all versions of DeLaval HL40 are provided with transponder protection.

The group control unit can handle up to 30 openings and has two positions (free and in-locking position).

DeLaval HL40 is built up systematically, with the same feed fence in different sizes to fit the age and size of your animals. Segments come in up to 300 and 600 cm lengths and are available in feeding widths of 50, 60, 65, 68, 70 and 75 cm, for young stock to dairy cows. DeLaval feed fence HL40 has an upper square pipe 70 x 70 x 3 mm and a lower 2 inch pipe to provide a strong frame, with one inch filling pipes used between the frames. Total feed fence height is 930 mm for all segments.

DeLaval feed fence HLS40

Based on the HL40 feed fence, but featuring an extra safety lock and unlock mechanism. It also features an adjustable neck space to suit the size of your cows. Segments come in up to 300 and 600 cm lengths and are available in feeding widths of 50, 60, 65, 68, 70 and 75 cm, for young stock to dairy cows. DeLaval feed fence HLS40 has an upper square pipe 70 x 70 x 3 mm and a lower 2 inch pipe to provide a strong frame, with one inch filling pipes used between the frames. Total feed fence height is 930 mm for all segments.

DeLaval feed fence DS

Reduce your feeding waste

The DeLaval feed fence DS is a strong, durable and low noise solution in our feed fence range. DeLaval DS is specially designed to help prevent waste, to prevent feed stuff being spilled into the alleys. The diagonal design encourages cows not to toss feedstuff into the alley, so there will be less feed wasted, with less feedstuff in the alley and in the manure.

The DeLaval feed fence DS is screwed together and features galvanized pipes plus an adjustable neck space to suit the size of your cows. This is an advantage as both the height and the cow space can easily be adjusted to suit different animal sizes and ages. Since there are no moving parts, the DeLaval feed fence is very silent. The feed fence is designed so that cows have permanent access to feed, but cannot slip through the fence. In addition, the chosen materials and cross beams make the feed fence very strong and durable.

Diagonal shaped pipes screw mounted on horizontal upper and lower 1½ inch pipes ensure the durability of the DeLaval feed fence DS. The neck width is adjustable from 30 cm and onwards to suit your animals perfectly. The feed fence can be fixed to 2½ inch or 70 x 70 mm posts plus existing wooden posts and installed in a straight or leaning position. The height of the feed fence is 87 cm with a maximum distance of 300 cm between the posts.

This brings the other big advantage of this feed fence. The height of DeLaval feed fence DS is the same as DeLaval feed fence HL10, so it is very easy to combine the two feed fences. This combination can be an ideal solution where you want to use a selection gate. This will give selected cows access to the separate room, preferably with the DeLaval HL10 installed so cows can be locked in for checking. The non-selected cows will have free access to feed stuff through the DeLaval feed fence DS as there is no need to lock them in this situation. This combination of fences can also be a good option for maternity pens.
DeLaval feed fence FT50
Comfort increases feed intake

The DeLaval feed fence FT50 is a simple solution with one or two horizontal, 2 inch pipes installed on the posts providing optimum comfort without any obstacles. The upper horizontal pipe is always extended 25 cm in the direction of the feed table, to give the cow a good eating position and easier access to the feed table, without pushing against the pipe.

The DeLaval FT50 has an animal and user friendly design with a smooth, strong connection for the 6 metre long lengths of 2 inch pipe. These can be joined to create an endless feed fence – or at least to the length you need.

The installation height of the pipes must be adapted to the animal’s size. The feed fence is height adjustable for different animal sizes and fittings are available to mount the pipes to different posts: round 2½ inch, 70 x 70 mm or wooden posts.

The DeLaval feed fence FT50 is an easy to adjust feed fence since it is mounted on single posts. This makes it easy to adjust after some years if cows in the herd have grown bigger. Another advantage is that this system accommodates all herd sizes, from young stock to lactating cows. The DeLaval FT50 is easy to upgrade from young stock to lactating cows, or the other way around.

DeLaval feed fence FF60
Even more flexibility

DeLaval feed fence FF60
The FF60, which can be installed quickly is the smart low-investment feed fence setup.

The new DeLaval feed fence FF60 is a unique combination of flexible feed fence plus locking feature for cattle to make treatments easier and safer. Its attractive investment level offers a fence setup which is easy to plan and install.

These advantages make DeLaval feed fence FF60 the perfect match for upgrading existing barn buildings to the latest standard.
The production potential of today’s dairy cows is very high and still increasing. That’s why feed and feeding strategies are becoming more and more important. It is well known that the amount of milk produced is highly influenced by the amount and quality of the feed given to the cow.

As the cow normally experiences a shortage of nutrients in early lactation, it is important to feed the cow a well balanced diet and maximise the dry matter intake. An unbalanced diet increases the risk of metabolic disturbances and weight loss, which reduce milk yield. Healthy, adequately fed cows will make the transition from dry period to peak more easily.

The cow is a ruminant with four stomachs, the largest of which is the rumen. Together with the reticulum, it has a total volume of approximately 150 to 200 litres. In this digestive system there are billions of micro-organisms. They help the cow to digest and utilise nutrients in the feed. To achieve good feed utilisation, and a high milk yield, the micro-organisms have to have optimal conditions. Feeding a cow involves feeding the bacteria in her rumen. Feeding more times a day will keep the cows active. They will be pushed to eat, drink water, and then rest in their cubicle.

Total feed costs account for almost a quarter of European dairy farm expenses (see above). Feed is a substantial cost on all dairy farms. So to maximise feeding efficiency and get the most benefit from your feeding strategy, it pays to take care with the feeding environment. It is not just what you feed, but how you feed it, and where.

Your feeding and nutrition strategy should be supported by the physical environment:
- space: there should be enough room at the feeding table for all the cows to come and eat at the same time. Only in systems where the food is permanently available and the cows have a different rhythm (like an automatic milking system) is it possible to have less space than cows at the fence;
- air: good ventilation is required to ensure fresh air and good air circulation;
- comfort: shade or shelter, rubber flooring for standing, easy-to-clean hygienic feeding table surface, and a well-designed feed fence all add to cow comfort.

The production potential of today’s dairy cows is very high and still increasing. That's why feed and feeding strategies are becoming more and more important. It is well known that the amount of milk produced is highly influenced by the amount and quality of the feed given to the cow.
Cows kept in a barn should behave in the same way as they do on pasture. They should walk with long and confident steps, keep their head straight up and be able to stand on three legs without pain or fear.

If your floors are not in good condition, your cows will not be comfortable. Cows will not be relaxed if floors are too slippery – they will be fearful of walking around. Surfaces that are too hard and rough put unnecessary pressure on the hooves. This can cause increased claw growth which will in turn create even more pressure. All this may lead to lameness, uncomfortable cows with problems, and a decrease in milk production.

Analysis of cow culling data (source: www.milkproduction.com) shows that 20 to 25 percent of all culling is due to increasing hoof problems. The cost of this lameness is estimated at 60 to 250 Euro per cow per year, with milk production reduced by between 60 – 360 litres.

Cows will walk painlessly and fearlessly on soft, stable ground. Comfortable walking promotes natural cow behaviour for walking, resting, eating and drinking, and results in more movement. Increased movement means easier heat detection and an improved fertilization hit-rate, as well as more access to feed for a higher milk yield. Natural movement also means natural hoof development and fewer related veterinary costs.
**DeLaval rubber coverage**

*For confident cow movement*

Providing comfortable, slip-resistant surfaces for cows to walk on facilitates normal cow behaviour. When allowed a choice, cows often prefer to stand or walk on a rubber surface rather than on concrete. Installing rubber floor coverage in your barn, or in the milking parlour and the waiting area, can improve the daily routine of eating, drinking, walking and resting. Rubber coverage on a solid or slatted floor will encourage confident walking and comfortable standing.

**DeLaval alley coverage R18P**

This is the rubber floor mat for open alleys. It is easy to install this flexible interlocking puzzle mat into any open spaces: alleys, parlours or waiting areas. It comes in a range of standard sizes, with single segments which fit together – very easy to handle. The interlocking segments can be installed in sections in any open alleys, and it is simple to change the mats, to remove or replace an individual section if needed.

When it is used on alleys cleared by manure scrapers DeLaval R18P is fitted to each side of the central scraper mechanism. The alley coverage for these half alleys can be in standard sizes from 1 to 2.4 metres wide, or made to fit a wider space if needed. This open alley coverage, has proven to be resilient and reliable in more than 15 years of market tests.

**Application area**

DeLaval rubber coverage can be used in barn alleys and in combination with our manure scraper assortment. Use it in the waiting area, milking parlour, and the feeding station. DeLaval rubber coverage is now also available for rotaries.

**DeLaval slatted floor coverage SFC-F and SFC-S**

The durable DeLaval SFC-F and SFC-S are suitable for a wide range of slatted floors. They have DLG approval. The mats are made in high quality rubber and self-wedged to the floor – the cow friendly coverage needs no screws, has no sharp edges. Different widths to fit different sized slats are available in standard sizes, all two metres long, and each mat covers two slats and one gap. It is easy to replace any individual sections if needed. DeLaval SFC-F is the solution for slatted floors cleaned by robot or conventional manure scrapers, while the slightly curved surface of DeLaval SFC-S provides coverage to optimize drainage on slatted floors without manure scrapers.

**Good grip and good drainage**

Made in high quality rubber and wedged securely in place, the flat DeLaval slatted floor coverage SFC-F is easy to clean with robot or conventional manure scrapers. The sloped DeLaval slatted floor coverage SFC-S is the solution for areas not cleaned by manure scrapers, as the slightly curved surface slopes towards the gaps between the slats for good drainage. The patterned surface of both the flat and the sloped floor coverage has a dual purpose. It provides a good grip for hooves while encouraging liquids to drain away promptly, for a drier, cleaner surface. The grooved base works two ways too, increasing surface comfort and softness while allowing water to flow through.

**Flexible and easy to install**

The durable rubber coverage is suitable for a wide range of slatted floors. The two metre long mats each cover two slats and one gap. Because DeLaval slatted floor coverage is held in place by its own wedges, it doesn’t need any fixative. The cow friendly coverage needs no screws, has no sharp edges. The self-fixing mats are very easy to install and can be fitted into many different sized spaces. It is easy to replace any individual sections if needed.

**Prompt delivery**

When you decide your cows would benefit from more comfortable footing, you won’t want to wait months for the solution. With DeLaval slatted floor coverage you don’t have to. Standard sizes are available for immediate delivery.
The quality of floors, in terms of shape, hardness, friction and hygiene is of great importance for the health of cow feet and legs. Standing a long time in a waiting area, frequent milking, long feeding times and long walking distances on concrete floors, can all contribute to excessive wear and overburdening of the hooves.

An ideal floor must be hygienic, comfortable to walk on and have an even, slip-resistant surface without being too abrasive. The floors must be simple to construct, durable, easy to manage and maintain. Concrete has long been the most common material for floors in confined animal systems, but a softer and more resilient material like rubber is a good alternative now. The use of modified mastic asphalt seemed very promising, but it is very heat sensitive to apply. Application problems can cause mastic asphalt to release the stones in the asphalt too easily, increasing lameness and hoof problems. In the meantime, management solutions that facilitate cow traffic and reduce excessive involuntary standing and walking on concrete floors must be encouraged. When allowed a choice, cows often prefer to stand on a rubber surface rather than concrete. Consider installing rubber mats to improve the daily routine of eating, drinking, walking and resting. In barns with worn out concrete, consider installing rubber coverage to prevent hoof problems. Besides the barn, the waiting area and parlour are very common places to put rubber coverage as the cows regularly spend time standing there.

A trial in Wisconsin has shown that installation of rubber flooring improved reproduction results compared to controls. This improvement should generate substantial additional income as a result of increased milk flow and decreased culling of open animals. Rubber flooring also appeared to impact locomotion scores and decrease levels of lameness, producing a positive outcome on reproduction, on locomotion, and potentially on long term cow health and longevity.

Efficient cow comfort
Rubber flooring

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DeLaval water troughs and bowls

More water means more milk

Milk is almost 90 percent water, so it is not surprising that a cow’s water intake has a major effect on her milk production. The equation is straight forward. When you provide a good water supply, cows drink more, eat more and thus produce more milk.

Read more about:

DeLaval water troughs
DeLaval water bowls
DeLaval water troughs for large herds
DeLaval pasture troughs

It sounds simple, but the amounts of water involved are significant. One kilo of dry matter intake utilises up to five litres of water. Cows need at least three litres of water to produce one litre of milk. This means that high yielding cows need more than 150 litres of fresh water every day! Meeting this need is an essential task for every dairy farmer.

Make drinking easy and convenient
Cows like to drink fast – up to 25 litres of water per minute. If they can’t, their water intake may fall off and their milk yield could suffer: a 40 percent reduction in water intake can cut milk production by 25 percent.

Cows like to drink when they eat and just after milking. They also prefer a large, calm drinking surface from which they can drink quickly and without stress. Such natural drinking behaviour promotes further eating, even more drinking and higher milk yields.

We understand your cows’ needs
DeLaval water supply products meet your cows’ physiological and social drinking requirements. Our bowls and troughs provide easy, convenient access to water, in stanchion barns, loose housing barns and pastures. Cows can drink as much as they want and as quickly as they want without having to wait. The water they drink should also be hygienic and tasty.

DeLaval bowls and troughs minimize microbial growth and hinder dirt pollution. This also makes them very easy to keep clean, so you save valuable time. Our durable, well-proven water supply range provides years of reliable, trouble-free operation which you’ll appreciate as much as your cows do.
DeLaval water troughs
Provide safe drinking water

Hygiene, capacity and accessibility are critical factors when supplying water in a loose housing environment. We use either PVC or stainless steel in our hygienic, impact resistant and durable water troughs, together with a high capacity water valve. DeLaval water troughs are designed for easy cow access to facilitate comfortable and undisturbed drinking.

DeLaval tip tank ST150, ST200 and ST250
DeLaval ST150, ST200 and ST250 are high water capacity tip tanks with a large, calm drinking surface from which animals can drink quickly. Instead of maintaining a deep water level, they have a high capacity float for fast, high volume fresh water supply. These tanks come in wall or floor mounted versions, 1.5 m, 2 m and 2.5 m long and are made of stainless steel. Suitable for ST150 20-30 cows, ST200 25-40 and ST250 35-50.

DeLaval water trough T400
A tip tank for the loose-housing barn which can be either wall or floor mounted on its special bracket. Built in tough, impact-resistant polyethylene, the trough’s double wall provides extra insulation to help prevent freezing. A built-in tip handle makes it easy to empty. Suitable for 80 cows.

DeLaval water trough T80
The DeLaval T80 can be wall or floor mounted. Built in tough, impact-resistant polyethylene, the trough’s double walls provide extra insulation and help prevent freezing. Its float and valve system is located at the back of the tank in the centre, for easy water accessibility. It comes with a built-in tip handle so emptying is easy. Suitable for 40 cows.

DeLaval tip tank T80 XL
This extra-large tank is made in tough, impact-resistant polyethylene. The double-walls provide extra insulation and help prevent freezing. The float and valve system is located centrally at the back of the tank, for easy accessibility to water. The tank comes with a built-in tip handle for easy emptying. Capacity for 70 dairy cows. DeLaval T80 XL can be wall or floor mounted.

1. DeLaval water trough S28
The ideal solution for the loose-housing barn, it helps ensure constant access to fresh water, supplying up to 28 litres/min. Suitable for up to 20 cows.

2. DeLaval water trough SC1/DC2
These heated troughs – for loose housing and pasture – are available in two versions: the single chamber, SC1, for up to 25 dairy and 60 beef cows; the double chamber, DC2, for up to 50 dairy and 100 cows. Rounded corners prevent livestock abuse while ensuring animal safety. Simple to clean and maintain: easily removed drainage plugs; quick release d-clips and snap rings; accessible valve and stainless steel hatch. Freezing is prevented thanks to heaters and insulated valve cavity.

3. DeLaval water trough PT11
This heated water trough is dimensioned for single-stall placement and for up to 10 cows. The rounded corners help prevent livestock abuse while ensuring animal safety. The unit can be wall or floor mounted. DeLaval PT11 is corrosion-resistant and has been designed for low maintenance. The trough is made in food-grade polyethylene that is impact resistant and recyclable. Good access to electrical components provides ease of maintenance. Comes equipped with a submersible heater.

4. DeLaval water trough P80
P80 is made of UV resistant, high quality polyethylene material and has two rounded drinking points. Due to its special rounded shape it allows two cows to drink at the same time. Suitable for 20-30 cows.

5. DeLaval energy free waterer
This waterer has 8.9 centimeters (3.5 inches) of insulation to prevent water freezing during winter and to keep it fresh during hot summer months. Designed to prevent dirt from polluting the water, these sturdy units are available in one or two holed versions. The two holed version contains 22 gallons of water and can supply up to 70 cows.
DeLaval water bowls
Meet water demand in stanchion barns

Water bowls are the obvious choice for supplying water in stanchion barns. Their large drinking surfaces and high flow rates satisfy a cow’s natural drinking preferences. We recommend one bowl per cow to reduce stress and increase water intake. All these bowls hinder dirt build-up and are easy to clean. The unique, patented volume valve delivers a gentle, non-splash, large volume flow and it is available for most models.

DeLaval water bowls C20
DeLaval C20 is a premium quality bowl for high yielding cows requiring large volumes of water. Its easily operated volume valve delivers up to 20 litres/minute. The acid-proof enamel gives a smooth, hygienic and long-life surface.

DeLaval water bowl C5
DeLaval C5 is for heifers and calves. This basic, value-for-money bowl supplies five litres/minute which is sufficient for these animals. The black-coated enamel is easy to keep clean.

DeLaval water bowl C10
DeLaval C10 is an acid-proof enamel bowl with a capacity of 10 litres/minute.

DeLaval water bowl C10
DeLaval C10 is a standard, all-purpose water bowl which slots in between DeLaval C20 and DeLaval C5. DeLaval water bowl C5 is a smaller bowl for calves and heifers. DeLaval water bowl C10 is an acid-proof enamel bowl with a capacity of 10 litres/minute.

DeLaval water bowl C20
DeLaval C20 is a premium quality bowl for high yielding cows requiring large volumes of water. Its easily operated volume valve delivers up to 20 litres/minute. Acid-proof enamel gives a smooth, hygienic and long-life surface.

DeLaval water bowl S22
DeLaval S22 is another premium, long-lasting stainless steel product with an outstanding capacity of up to 22 litres/minute. The bowl features built-in spillage protection and its large surface area promotes increased water intake.
When you provide a proper fresh water supply, cows drink more, eat more and produce more milk. But just providing water is not enough to encourage the cow to drink as much water as possible. Several factors influence water intake.

Accessibility of water
When cows are fed a TMR (total mixed ration) 1, 2, 4 or 8 times/day, peak water consumption coincides with peak feed intake. If given the opportunity, cows will consume feed and water alternately. Therefore water should be readily accessible and in close proximity to feed.

Space
Three to four metres is needed around the water trough to reduce pushing and shoving. This is important for submissive cows to be able to drink without fear of being pushed away from the water supply by dominant cows.

Temperature
Opinions differ about the best temperature for drinking water for the highest milk yield. Most researchers say that the optimal temperature for drinking water for cows is between 15°C and 17°C. At this temperature the cows will maximise water intake.

Cleanliness
Don’t forget that the simple act of cleaning water tanks at least once a day can have an impact on milk production. Cows like to drink clean, fresh water. They are even more sensitive than people are to poor quality water. As you walk by a water tank, ask yourself if you would drink that water. If the answer is “no”, the tank needs to be cleaned.

Quality
Water quality can be compromised by high levels of bacteria, chemicals, organic matter and minerals. It is recommended that water be analysed at least once a year regardless of perceived problems. Maintain good records of water analysis from year to year so that you can prove when contamination occurred, if necessary.

All should work perfectly together to achieve the highest water intake since inadequate water consumption reduces feed intake and milk production.
DeLaval ventilation solutions
Comfortable climate for relaxed cows

Ventilation of any dairy housing structure, whether it is a newborn calf barn or a lactating cow barn, is very important. Emphasis is placed on fresh air. Dairy cows need a constant source of fresh, clean air to achieve their production potential. High moisture levels, manure gases, pathogens and dust concentrations present in unventilated or poorly ventilated structures, create an adverse environment for animals. Stale air also adversely affects milk production and milk quality.

Read more about:
Mechanical ventilation
Natural ventilation
Ventilation solutions

The dairy’s ventilation system should prevent high humidity in winter and heat build-up in summer.

Proper ventilation consists of exchanging barn air with fresh outside air uniformly throughout the structure. The required rate of air exchange depends on a number of variables, including the conditions of the outside air (temperature and moisture level), animal population and density. A properly designed and managed system results in shelter air that is nearly equal in quality to the outside air on a year round basis. The shelter air’s concentrations of manure gases, dust and pathogens should be low and the relative humidity should be about the same level as that of the outside air.

DeLaval offers a complete range of solutions for both mechanical and natural ventilation, to provide the well ventilated conditions your cows need for optimal health and productivity throughout the changing seasons.
Mechanical ventilation
For an optimal barn and waiting area climate

Today’s top producing dairy cows need an optimal indoor climate throughout the year, to maintain high production levels. DeLaval introduces a new and highly effective dairy fan to meet this requirement.

Temperatures can easily rise above acceptable levels for cows housed in confined spaces, particularly in the summertime. Heat stress will decrease a cow’s level of milk production. Once the temperature rises above 22 °C, cows start reducing their feed intake.

DeLaval dairy fan DF1300
The DeLaval dairy fan DF1300 solution can ventilate an entire dairy cow housing facility. This means fresh corners, an equalised internal climate and reduced amounts of annoying flies around the cows. The 130 cm fan provides optimal ventilation by moving 48 500 m³/h of air. This easy-to-use fan has a low noise level to help keep your cows calm, in a relaxed environment.

DeLaval dairy fan DF710
This 71 cm fan generates 16 400 m³/h of fresh air around your animals, to prevent heat stress. It can be installed in the holding area, along the feeding tables, over the cubicle side rows in big barns and in barns with low ceilings. DeLaval DF710 also reduces the levels of flies, moisture and ammonia in the building.

DeLaval thermal control TC1
DeLaval thermal control TC1 is the mastermind behind DeLaval dairy fans. The intelligent unit optimises cow comfort and gives you better control over your milk production. It does this by accounting for the barn’s present temperature, the past 24 hour accumulated temperature plus relative humidity and the air speed from the dairy fans.

DeLaval dairy fan DF1250
This can ventilate an entire dairy cow housing facility. The 125 cm fan moves 34 000 m³/h and accurately directs airflow towards your cows when installed at a height of 2.7 m and an angle of between 10° and 15°. It is easy to install, use and maintain, and it operates with little noise.

Barn system controller BSC
DeLaval barn system controller BSC automatically helps to ensure the optimum environment within the barn at all times of the day and night and in all weather conditions. This dedicated dairy controller can be linked to DeLaval barn systems such as ventilation, illumination and cow cooling within the barn.

The climate inside the barn is monitored and regulated to give the ideal temperature humidity index (THI), a calculation based on average temperatures and humidity levels.

Fans and illumination solutions can be activated by sensor or timer, as required.
Natural ventilation
Optimizes productivity

Natural ventilation uses natural air movement to continuously exchange air in your dairy barn. Properly designed, well sited and well managed, naturally ventilated barns can provide an excellent environment for dairy cows. Wind and thermal buoyancy deliver fresh air, circulate it freely through the barn, and remove stale air. In your naturally ventilated barn, it is important to provide protection from the sun in summer, and from wind and moisture in winter, while ensuring that all your animals receive adequate fresh air.

DeLaval ventilation curtain CRAW
The unique design of DeLaval ventilation curtain CRAW enables the curtain fabric to stay tight in all positions from fully open to completely shut and reduces premature fabric deterioration. This cost-effective, extremely durable curtain can be installed on new or existing buildings in sizes from 1.22 m to 3.05 m (4 to 10 ft). It comes with stainless steel and wind support and can have a plastic birdscreen.

DeLaval ventilation curtain CBRU
This durable roll-up curtain opens from the bottom to eliminate the need for lift cables and pulleys. DeLaval ventilation curtain CBRU can be installed on new or existing buildings in sizes from 1.22 m to 3.05 m (4 to 10 ft). It has an aluminium bottom roller tube and aluminium curtain top track. It comes with stainless steel and nylon hardware, wind support, and can have a plastic birdscreen.

Ventilation solutions
For an optimal parlour climate

Cows and operators have to feel comfortable during milking. Air exchange is one of two requirements for proper ventilation - providing oxygen replenishment, heat and ammonia removal – with the other requirement being effective air circulation.

A well ventilated milking parlour without bad odours and flies means calmer cows, less tail wagging, fewer cluster kick-offs and less milker irritation.

DeLaval parlour fan PV600
The DeLaval parlour fan PV600 is ceiling mounted in milking parlours to provide good air circulation. It also creates a wind speed which flies dislike and will avoid. This fan can be used in manual mode or it can be upgraded with an automated speed control, to adjust fan speed in response to measured actual temperature, for an environment not too cold or too warm.

DeLaval chimney C1
This solution increases the speed of air extraction, improving removal of respiratory contaminants. There is little or no opportunity for down-drafting if a damper is installed. It is manufactured from corrosion-proof materials and insulated to eliminate condensation. The 153 cm (60 inch) transparent cap illuminates while giving protection from direct sunshine, rain or snow.

DeLaval parlour curtain PCR
This is the perfect solution for operator comfort in the milking parlour. A divider curtain can be installed to help keep warm air in the parlour area between milkings. The custom sized DeLaval parlour curtain PCR can increase heat savings in your milking centre, eliminating drafts while providing separation from the main barn area.
The effects of heat stress on dairy cattle physiology and productivity have been well established. The normal body temperature of a dairy cow is about 38.5°C. When temperatures exceed about 22°C cows begin to show signs of heat stress. There are a number of indicators that cows are suffering from hot weather. These include:

• Body temperature >39°C
• Panting >80 breaths per minute
• Reduced activity
• Reduced feed intake >10-15%
• Reduced milk yield – down by 10 to 20%, or more

When the cow’s heat load lasts for a long time, the effect on milk production will occur at a lower temperature than 22°C. Milk yield can decrease by about 10 percent at 20°C. In this case, it is the effect on the cow of the past 24 hours of accumulated temperature and humidity levels that determines her level of milk production. For this reason, researchers have created a monitoring tool called the Temperature and Humidity Index for the last 24 hours (THI24h). As long as this index stays below 68, the cow feels comfortable. Studies have shown that heat stress during late gestation reduces calf birth weight and subsequent milk production. Dry cows provided with shade gave birth to heavier calves and produced more milk than cows not provided with shade.

Reduced milk yield and reproductive rate are economic losses to dairy producers. A number of steps can be taken to minimise the effects of heat stress. However, the methods of minimising heat stress should be appropriate to the climate of the dairy. Cow comfort should be a priority. Access to cool, clean drinking water and providing shade in the holding pen and housing area, should be the first priorities. The second priority should be to provide proper ventilation in the barn and milking parlour.

Efficient cow comfort

Ventilation

Source: DeLaval 2006; Efficient Cow Comfort (adapted from Dunham, D. et al, Coping with summer weather).

Stages of cow heat stress in relation to temperature and relative humidity.

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DeLaval hoof care solutions

The health of hooves and legs is crucially important to dairy performance. Cows spend most of their time eating, drinking, and ruminating, which is central to producing milk. Ensuring a cow has the ability to stand up and lie down without pain and walk naturally will significantly affect the cow’s well being and also the amount of milk she produces.

Read more about:
Prevention is better than cure
DeLaval hoof care solutions
DeLaval hoof care solutions

Lameness means losses

Hoof bathing is commonly used by dairy producers for hoof hygiene and hoof health. Used properly, it will be an effective part of your dairy operation’s hoof care program. But it can be difficult to maintain foot baths properly due to time, labour, treatment products and manure. Poorly maintained baths can spread diseases from hoof to hoof and ineffective hoof bathing does not prevent or reduce hoof diseases. Heavy soil loads prevent products from working. Treatment product overdosing can be costly too, wasting chemicals and compromising worker safety.

DeLaval footbath
The grass-coloured DeLaval portable footbath is impact proof, chemical proof, cold resistant, anti-slip and easy to place in the cow’s path without the need for digging. We recommend using this footbath with 4Hooves or DeLaval hoofcare DA.

DeLaval footbath AFB1000
This automated hoof bath minimises manual labour: Program it to your requirements and it will automatically fill, dose, flush and replenish. This overcomes the risk of poorly maintained footbaths. Customise this bath to fit your operation’s schedules. You can use one or two footbaths simultaneously, to maximise system cleaning and filling. This also gives you the flexibility to use rotational hoof care routines.

DeLaval SprayCare box
3 treatments in 1. This automated system can spray your cows’ udders post-milking, clean and spray their rear hooves, and spray their backs. You just choose the treatment regime your cows need. Using DeLaval SprayCare box in combination with DeLaval post-milking teat sprays and hoof care solutions gives you a hygienic, labour-saving and effective approach for keeping your herd health status high.

DeLaval hoof cleaner HC40
A gentle detergent for hooves. An economical concentrated solution to be diluted with water. This solution can be sprayed or used in a hoof bath immediately before the sanitising bath and the chemical has a much better chance to be effective. Pre-cleaning helps to remove soil and debris and improves contact between the hoof bath solution and cow hoof and claw. Sanitize frequently, five times a week, once a day. Effective manure moving equipment for cleaner dry alleys, cubicles and lying areas helps to maintain healthy hooves. Hooves should stay clean and dry.

DeLaval hoofcare DA
The DeLaval hoofcare DA is a patented, environmentally safe and concentrated hoof care solution for regular hoof bathing or spraying. The innovative and highly effective DeLaval DA formula is a blend of quaternary ammonium compounds and acids but it doesn’t contain antibiotics, formaldehyde or heavy metals.

DeLaval PVC footbath
The grass-coloured DeLaval portable footbath is impact proof, chemical proof, cold resistant, anti-slip and easy to place in the cow’s path without the need for digging. We recommend using this footbath with 4Hooves or DeLaval hoofcare DA.

A good idea, and so simple: clean hooves
First clean, then sanitise. Use a pre-cleaner in a hoof cleaning bath immediately before the sanitising bath and the chemical has a much better chance to be effective. Pre-cleaning helps to remove soil and debris and improves contact between the hoof bath solution and cow hoof and claw. Sanitize frequently, five times a week, once a day. Effective manure moving equipment for cleaner dry alleys, cubicles and lying areas helps to maintain healthy hooves. Hooves should stay clean and dry.

4Hooves
Effective disinfectant for good hoofcare. Free of heavy metals, antibiotics and formaldehyde. This patented, concentrated, ‘quat’ based solution performs as well as copper sulphate. You need 2L in a 200 litre hoof bath and this is effective for 200 cows. The diluted solution is not harmful for the environment and operator. It can be used in combination with other equipment (DeLaval footbath AFB1000 and DeLaval SprayCare box).

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The health of hooves and legs is of crucial importance in dairy farming, for productivity, cow life expectancy, production economy and for cow comfort. Lameness is an animal welfare issue, as well as an economic matter.

Many factors can cause lameness, such as an infectious disease, injury, a low fibre diet or nerve damage at calving time. Genetics, conformation, housing systems, management, hygiene and hoof trimming also affect hoof health. Lame cows that do not respond to treatment spend increasingly long periods of time lying down. Their milk production declines through reduced food and water intake. If a lame cow cannot be cured, culling is the only option: premature culling is one of the high costs of lameness.

The best way to prevent lameness is with careful herd observation, early diagnosis and prompt treatment. Early identification of problem cows followed by appropriate action can prevent severe lameness, improve mobility in a moderately lame cow and increase her productive lifetime.

**Prevention**
- Select breeding stock for good hooves and legs.
- Feed cows rations that contain adequate fibre and minerals.
- Divide the grain ration into three or more feedings per day to prevent laminitis.
- Keep yards, laneways and pastures free of areas that are wet and muddy so that you can prevent the spread of infection.
- Trim hooves at least once per year; two times per year is recommended.
- Prevent lameness due to nerve damage at calving time through good judgment, proper and careful use of calf pullers and early consideration of caesarean section.
- Increase resting time.
- Proper and dry (rubber) flooring.
- Use a footbath frequently.

**Resting to prevent lameness**
Increased time spent lying down in a clean dry comfortable stall reduces time spent in concrete alleyways and keeps hooves cleaner and drier. Cattle housed in wet, manure contaminated conditions are more likely to suffer infectious diseases of the foot, such as interdigital necrobacillosis (foot rot), heel horn erosion (HHE) and papillomatous digital dermatitis (heel warts; PDD).
Increasing light levels in your barn is an important part of today’s dairy management. Improve cow comfort, productivity and herd health by flicking a switch. Is it that simple? Almost. More of the right kind of light will encourage your lactating cows to produce more milk, particularly at times of the year when natural light levels are low. Ask your DeLaval dealer to help you calculate the lighting system you need for your size of barn. Control your lighting for maximum benefit with the DeLaval lighting system designed to suit you.

Read more about:
More light equals more milk
DeLaval farm light FL250F/FL400F
Control box for farm DeLaval farm lights FL250F/400F
DeLaval farm light FL250F/FL400F
Milk production controlled by your light switch

Long daylight periods have a very positive influence on milk yield, fertility and your herd’s health. Establishing long daylight periods for best results means providing 16 hours of daylight of 180 lux brightness and eight hours of darkness, on a 24 hour basis. DeLaval offers you the opportunity to control your barn lighting at this optimum level, with DeLaval farm light FL250F and FL400F.

Why does extended daylight increase milk production? Much published research has shown that long daylight periods boost milk production, but how does this work? It has to do with the pineal gland. In most mammals the pineal gland is controlled by the amount of light hitting the eyes each day: by the intensity and the duration of this light period.

A “light signal” is sent from the eyes to the hypothalamus, and from there to the pineal gland. Low light stimulates a pineal secretion which includes the substance melatonin. Increased light exposure reduces the amount of melatonin synthesis. Why is melatonin so important? In lactating dairy cows, short days with less light cause increased melatonin production. This reduces appetite and production levels as well as cow activity. Reducing melatonin by increasing light intensity to an average of 180 lux, increases cow activity. Increasing light levels to reduce melatonin also stimulates the liver to increase the production of IGF-1 (insulin-like growth factor-1). More IGF-1 boosts milk production.

Light and its impact on milk production
DeLaval cow brushes

Brushing up on cow comfort can easily be achieved by providing a cow brush for your herd. Our understanding of the importance of enabling cows to brush themselves has increased in recent years. Cow brushing stimulates healthy blood circulation and promotes cow welfare.

Read more about:
Brushing up on cow comfort
DeLaval cow brushes
DeLaval cow brushes
From stationary to swinging

When you make the decision to install cow brushes for your herd, DeLaval can offer you a choice of products. DeLaval can supply stationary, nonelectric brushes as well as brushes operated by electricity. Both stationary and moving brushes are very easy to install and can be mounted on posts or on a wall. Properly installed brushes at the right spot in the barn may well have a positive influence on your cow traffic.

DeLaval swinging cow brush SCB
The unique swinging cow brush which starts to rotate on contact, is a revolution in cow care and cow comfort. Rotating at an animal friendly speed this unique brush swings freely in all directions, smoothly up, over and alongside the cow to provide comfort all around.

DeLaval stationary cow brush B1
Features a robust stationary design that provides high quality comfort in loose housing barns. A steel frame with friction spring and eight strong brushes provides maximum comfort and durability.

Efficient cow comfort
Grooming – DeLaval swinging cow brush SCB

When you provide cows with a good grooming device, they use it – and the beneficial results are clear. Self-grooming cows using DeLaval swinging cow brush SCB are healthier and more productive. This result is proven by research: DeLaval SCB has been tested and found to be a winner, in scientific and practical research studies.

More milk, less mastitis
A Cornell University study1 shows that dairy cows using the DeLaval swinging cow brush SCB register higher milk production and fewer cases of clinical mastitis. The six month study compared two groups of cows housed in pens using the swinging cow brush to the two reference groups kept in identical pens but without DeLaval SCB. There were approximately 100 cows in each group. Installation of DeLaval SCB resulted in an immediate increase in cow grooming behavior. Farm workers noticed instantly the frequent, intense use of the brushes and the eagerness of the cows to use them.

The research team found that second lactation cows using DeLaval SCB showed a significant and increasing difference in daily milk production of up to +1kg per day. A second major finding was the significant drop in clinical mastitis cases (over 30%) among second and older lactation cows housed in pens with a DeLaval SCB present.

Ranked first – best in test
Now a new study on cow brushes published by German magazine d兹 agrarmagazin/primus rind, in a special print insert in Issue 11, 2010, ranks DeLaval swinging cow brush SCB as the number one cow brush. Eight different cow grooming brushes were tested in an in-situ test from August 2008 to April 2009. The two stage test observed four groups of cows with 30 cows in each. This test supported the Cornell result, of enthusiastic cow grooming with this brush – the DeLaval swinging cow brush SCB had by far the most full grooming cycles per day. The d兹 focus was on cow behaviour. The brushes were tested against a range of criteria, including usage, brushing while rotating, and how the cows made contact with the brush. DeLaval swinging cow brush SCB top scored on almost all criteria. The fact that this brush keeps rotating as long as the cow keeps using it is a strong point, and that it reaches and grooms most of the cow’s body.

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Testimonial
“The DeLaval swinging cow brush SCB provided a favorite pastime for the cows in this herd. It was fun to watch their interaction with this grooming device. The added benefit of increased production and reduced clinical mastitis makes me think that every farmer should utilize the cow brush to make the cows and themselves a bit happier.”
Ynte H. Schukken, Professor of Herd Health at Cornell University, USA

1 The research was conducted by the Quality Milk Production Services of Cornell University (Ithaca, New York) and Sprucehaven Farm and Research Center (Scipio Springs, New York); pub. August 2009. http://www.milkproduction.com/Library/Articles/1 The research was conducted by the Quality Milk Production Services of Cornell University (Ithaca, New York) and Sprucehaven Farm and Research Center (Scipio Springs, New York); pub. August 2009. http://www.milkproduction.com/Library/Articles/Cow_comfort_effects_on_milk_production_and_mastitis_field_study.html
DeLaval surface protection

Help your surface fight back

Heavy cow traffic, aggressive liquids and ingredients in feedstuffs can put a high demand on surfaces around the farm. With long term wear and tear on hardworking surfaces, standards of comfort and safety may deteriorate while the cleaning workload increases.

DeLaval is very aware of the potential for wear and tear in areas like the parlour, milk room and feeding table. To help solve the problem of worn out surfaces, we offer you a number of possibilities for safe and comfortable surfaces which are easy to clean. DeLaval surface protection solutions can be applied in new or existing barns, with very short installation times. All solutions will help you to extend the building’s lifetime, and improve hygiene and cleanliness in your daily milk production spaces.

DeLaval surface coating
This is a seamless two component resin which will brighten up surfaces. Combined with strong quartz sand in several colours, it provides non-slip hard-wearing floor coverage on which cows can walk in safety and comfort. The smooth feeding table application serves cows with a bacteria-free and acid-resistant feeding place. Fast and efficient to clean, it provides a nicer working place for you and a more hygienic environment for your cows. It can also be applied as a highly chemical resistant wall paint.

DeLaval feeding table coverage
Worn out feeding tables can easily and almost instantly be restored to hygienic feeding places with the durable DeLaval feeding table coverage. Simply install it between two feeding periods – very little preparation is needed – for a convenient, hygienic and easy-to-clean feed table.

DeLaval wall protection panels
Walls can have a hard time in the harsh environment in the barn. Milk, urine and manure together with heavy cleaning equipment can damage walls, resulting in unhygienic surfaces. With DeLaval wall protection panels you can regain easy-to-clean walls. The panels can be installed easily, with almost no preparation.
DeLaval surface coating
For safe, durable and hygienic surfaces

DeLaval surface coating protects your dairy operations, providing a non-slip, hard wearing surface for best safety for you and your cows. DeLaval surface coating protects surfaces from aggressive acids and detergents, and on feeding tables provides long-lasting durable protection for best feeding results. DeLaval surface coating is an easy-to-clean solution, responding well to the high pressure cleaning needed to maintain a hygienic environment.

Minimise cow stress and injuries
Parlour floors and walls are under constant pressure.Cow traffic, lactic acid, manure, detergents and high pressure cleaning all take their toll. Even a tough concrete floor becomes worn and slippery, a hazard for cows and milkers. A surface covered with DeLaval surface coating is hygienic, easy to clean and improves safety, reducing falls and overall stress for you and your cows.

Maintain your feed quality naturally
Feed represents around 40 percent of milk production costs. A feeding table is highly exposed to the silage acids which damage concrete surfaces, providing a breeding ground for bacteria. A surface covered with DeLaval surface coating protects the feed table, preserving feed quality, feed intake, cow productivity and ultimately your profit.

Meet the standards required for milk rooms
DeLaval surface coating comprises a primer, a two-component epoxy and high quality quartz sand to withstand daily mechanical and chemical attack on a dairy farm. The top coat completes long-lasting surfaces that will remain non-slippery, even when wet. DeLaval surface coating is the ideal solution for your milk room where safe, hygienic and seamless surfaces are required.

DeLaval feeding table cover FTC
For quality feed and high performance

Cows like to eat from a smooth, clean surface. But keeping feeding tables in excellent condition can be difficult. Now DeLaval offers a unique solution so you can quickly change a degraded flat feeding table surface into a smooth, easy to clean, hygienic feeding place. The DeLaval feeding table cover FTC is a food-grade approved product in natural green, and it’s lickable. It is acid and alkaline resistant so it stays smooth. This limits potential feed contamination, and makes DeLaval FTC very easy to keep clean.

Reduced germs and bacteria for better cow health
Unprotected, acid destroyed concrete feeding places are contaminated with millions of germs and bacteria. This can cause cow health problems and reduce milk production. Field experience on farms has shown that cows prefer to eat from clean, hygienic and germ free feeding places, like that provided by this feeding table cover.

For quality feed and high performance
It is easy to keep DeLaval FTC clean. This helps to maintain feed quality, encouraging cows to eat more: and higher feed intake increases milk production. Silage slides on the smooth surface – instead of sticking to concrete – enabling easier and faster push back, and the unique aluminium profile holds the cover firmly in place.

Withstands heavy loads
Unique patented BI-Orientation® technology makes the feeding table cover three times more resistant than other plastic surfaces. DeLaval FTC withstands the heavy load of tractor and feed wagon. It can be installed on any kind of flat surface, ready to use straight after installation – no curing time needed.
Walls in parlours, milk rooms, food storage rooms and the barn are exposed to aggressive conditions and can deteriorate quickly. A hygienic environment helps improve and maintain milk quality and gives your working place a nice atmosphere. The smooth surface of DeLaval wall protection panel WPP provides for fast, efficient, easy cleaning, especially with a high-pressure cleaner.

**DeLaval wall protection panel WPP**

**Fast change into a new atmosphere**

Hygienic and easy-to-clean walls
DeLaval wall protection panel WPP is produced in 100 percent high quality PVC and available in two sizes and two colours. These panels are resistant to the acid and alkaline detergents used on farms. The smooth surface inhibits the growth of bacteria or germs. The walls are washable, and cope well with high pressure cleaning.

Unique properties and clever systems
The panels are resistant to shocks from animals and tools. Choose blue or white panels complete with different accessories for corners, edges and floor connections. The panels are easily attached by long lasting special glue and/or specially designed colour co-ordinated screws.

The multi-functional solution for new or renovated walls
The durable DeLaval wall protection panel WPP can be quickly mounted directly onto brick, concrete or wooden walls. It transforms old dark rooms into clean, fresh, bright, hygienic spaces – and you can perform this enhancement all by yourself!
Providing the right cow traffic patterns as well as maintaining different groups in your barn is very important for efficient and labour friendly day-to-day operations. In particular your routines must be efficient and well thought through. Since this is so important, and every barn has its own design, DeLaval offers you different gates and partitions to help improve the efficiency of your daily operations.

Planning cow traffic routes is a crucial part of the design of a new milking facility. Clearly simple, easy, open routing will speed up cow flow. It will also reduce the risk of a milker upsetting the cows just before milking – remember that adrenaline release in the cow interrupts the oxytocin-based milk let-down response.

With the right barn design as well as help from well-positioned gates and partitions, you can control cow traffic in a very easy way, guiding each cow to where you want her to be.

Maintaining separate groups of cows in the barn is facilitated by careful positioning of gates and partitions. A flexible system is needed to select and manage groups on criteria such as age, stage of lactation, dry cows, or different breeds. This system can also be useful for managing other animals.

Besides the good management of these different groups, you will want to be able to enter such a group easily without having to climb over the gates and/or fence. DeLaval can help you here too, with our flexible system of partitions and gates.

Read more about:
Optimize cow traffic flow
DeLaval gates and partitions
DeLaval gates and partitions
Strong and safe pens

DeLaval offers a wide range of partitions and gates, so you can choose what will best fit your requirements. You will get the most benefit from these simple systems if you consider where you would like to use the gates, and for what purpose, when you are designing your barn. They can be installed in different areas, giving you some flexibility in using the gates as part of your herd management; and they can be repositioned as needed, for instance for herd expansion. These gates and partitions are fit for many different situations.

DeLaval lifting gate
This gate provides the farmer with an easy way to guide cows or make temporary groups at milking time. The beam can be turned up to 360 degrees around the post, just position it at the required angle to guide the cows where needed. The telescopic pipe is easy to adjust to differing widths of alleys or crossovers from 2.4 m up to 4 m wide.

DeLaval door protection DP900
Light and easy-to-use, designed to protect doors and windows. DeLaval DP900 can also be used as partition walls for calves up to six months old. The 900 mm high fence has 1¼ inch upper and lower horizontal pipes, filled with 12 mm rods. Component system gates come in one, three, four, five and six metre versions, with optional fittings for walls or posts.

DeLaval telescopic gates
These are good for easy grouping of animals in a loose housing barn. The telescopic gates have either two or three horizontal 2 inch or 1½ inch pipes. Two-pipes are available from 1.4 m up to 5 m; three-pipes from 2 m up to 7.5 m, and three-pipes can be ordered with or without manhole. Wall and/or post fittings not included.