

# Cool cows produce more milk

## DeLaval barn ventilation systems



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It's no secret that cool and comfortable cows produce more milk; they eat more and produce more. But when the temperature rises above 22°C, cows begin to experience heat stress. This can reduce not only appetite and milk yield, but also pregnancy rates and calf birth weight. An effective ventilation system can reduce heat stress, increase yield, and prevent ammonia gas build up in your barn. But there's a lot more to ventilation than just fans.

Increased yield must be balanced with the energy it costs to achieve it. An effective ventilation system needs to not only cool your cows, but do it energy efficiently. DeLaval provides a range of integrated fan and control systems that let you achieve both.

## Clear the air

Nature's answer to heat and humidity is a cool breeze. But in a barn environment, nature needs a helping hand. As every barn is different, DeLaval offers a range of purpose-built dairy fans in different sizes, blade configurations and power levels to suit different barn layouts. These range from small dairy fans for barns with low ceilings, to state-of-the-art high-capacity fans.

### DeLaval Dairy Fan DDF1200

The unique frame design of the DeLaval Dairy Farm DDF1200 helps to push air-stream further, achieving a greater cooling effect with less energy than conventional fans. The highly efficient IE3 electrical motors, coupled with the ability to alter blade configurations to suit different airflow requirements, deliver the optimum balance between efficiency and performance. The durable, corrosion-resistant fan is both easy to install and easy to maintain.



## Regulate your costs

To keep energy costs down, fans should only be on when they need to be. That's why DeLaval recommends using a variable speed drive to regulate fan performance to suit conditions. Variable speed drives adjust the motor input frequency and voltage of electric engines to achieve the optimal RPM to suit temperature conditions.

The DeLaval inverter SFS0.75 with TKR-1 controller is a no-nonsense inverter that enables individual fans to be automatically activated at preset levels when a nominated temperature is reached. It can also be integrated with the DeLaval Barn System Controller.

### DeLaval variable speed drive NFO

To control multiple fans and achieve optimal effectiveness, the DeLaval variable speed drive NFO uses temperature and humidity sensors to adjust fan performance to suit real time conditions. This means it can reduce energy costs by up to 70%, quickly paying for itself. By incorporating Natural Field Orientation (NFO) technology, DeLaval NFO can deliver great results without the noise levels or electromagnetic interference associated with other drives. This also means it can be installed easily without expensive shielding cables and can be located wherever suits best.



## Take control of your barn

For the best results, you need your ventilation system and other barn systems to work as one. DeLaval barn system controller BSC lets you control your barn's environment automatically from a single controller.

As well as ventilation and cow cooling for maximum cow comfort, DeLaval barn system controller lets you automate manure handling to maintain a hygienic environment, and lighting schedules to maximize milk production. By continuously monitoring environmental conditions and continuously adapting system performance to suit, DeLaval barn system controller helps to reduce energy costs as well as the time you need to spend in the barn.



### The full-line supplier

As the only provider of complete solutions to the dairy industry we are in the unique position to be able to offer a single controller for all your barn systems. We know that every part of our systems work together, because we designed them to work together.



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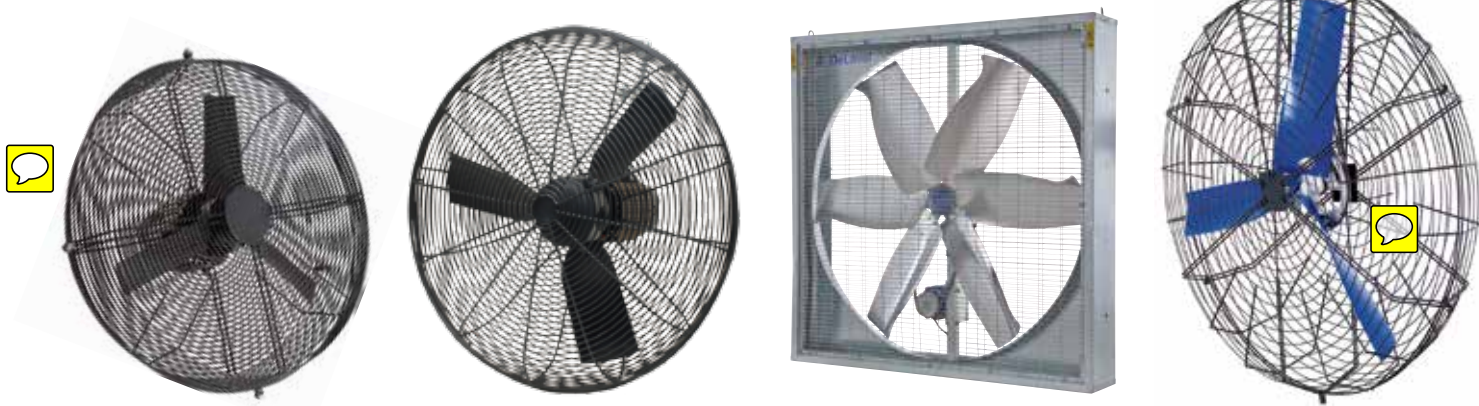
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## Find the right fans for your barn

A cool and comfortable barn environment is important for both your cows and your staff. DeLaval supplies ventilation solutions that can operate standalone or that can be programmed to automatically control your barn environment 24 hours a day, 7 days a week, 365 days a year.



### Fan technical data

Fan model	Propeller diameter	Voltage/frequency	Amperage	Power consumption	Motor protection class	Noise level	Fan speed	Max capacity at 0 Pa	Specific efficiency	Weight	NFO compliant
DF500	500 mm	400 V / 50 Hz	0.8 A	0.3 kW	IP 55	58 dB(A) at 7 m	1400 RPM	7 050 m³/h	41.1 W / 1 000m³/h	14.7 kg	✓
DF710	710 mm	400 V / 50 Hz	1.4 A	0.5 kW	IP 55	59 dB(A) at 7 m	915 RPM	13 800 m³/h	30.5 W / 1 000 m³/h	21.1 kg	✓
DF1250	1 250 mm	400 V / 50 Hz	2.0 A	0.75 kW	IP 55	68 dB(A) at 5 m	439 RPM	34 000 m³/h	39.1 W / 1 000 m³/h	45 kg	✓
DF1300	1284 mm	400 V / 50 Hz	2.6 A	1.3 kW	IP 55	67 dB(A) at 7 m	515 RPM	48 500 m³/h	26.9 W / 1 000 m³/h	39.3 kg	✓


### NFO output data

Output rating (kW)	NFO 2.2kW	NFO 3.0kW	NFO 4.0kW	NFO 5.5kW
Motor output				
Continuous rating (A)	4.9 A	11 A	8.8 A	11.1 A
Maximum rating (A)	5.8 A	13.3 A	10.5 A	13.3 A

### Power supply

**NFO 2.2kW; 4.0kW; 5.5kW:**  
 3x380-440V AC +/-10%;  
 50/60Hz +/-10%  
**NFO 3.0kW:** 3x200-240V AC  
 +/-10%; 50/60Hz +/-10%  
 Always refer to data on the motor plate for correct wiring

### Override crossover switch

You need a crossover switch to connect the NFO to the fans. Crossover switch  kW also allows you to override the NFO and drive the fans manually should this be necessary.

### Maximum number of fans per NFO

Fan model	NFO 2.2kW	NFO 3.0kW	NFO 4.0kW	NFO 5.5kW
DF500	7	10	13	16
DF710	4	5	7	9
DF1250	2	3	5	6
DF1300	2	2	3	4

### Controls 24 NFO drives

With Amplifier HLV10 the signal from DeLaval BSC can be distributed to up to 24 DeLaval NFO drives. When run in manual mode, you are able to manually adjust the speed of the fans.

It is possible to combine different types of fan attached to one NFO if:  
 - the motors have the same RPM  
 - as long as the cumulated amperage does not exceed the maximum rating of respective NFO