

The barn climate is the determining factor!

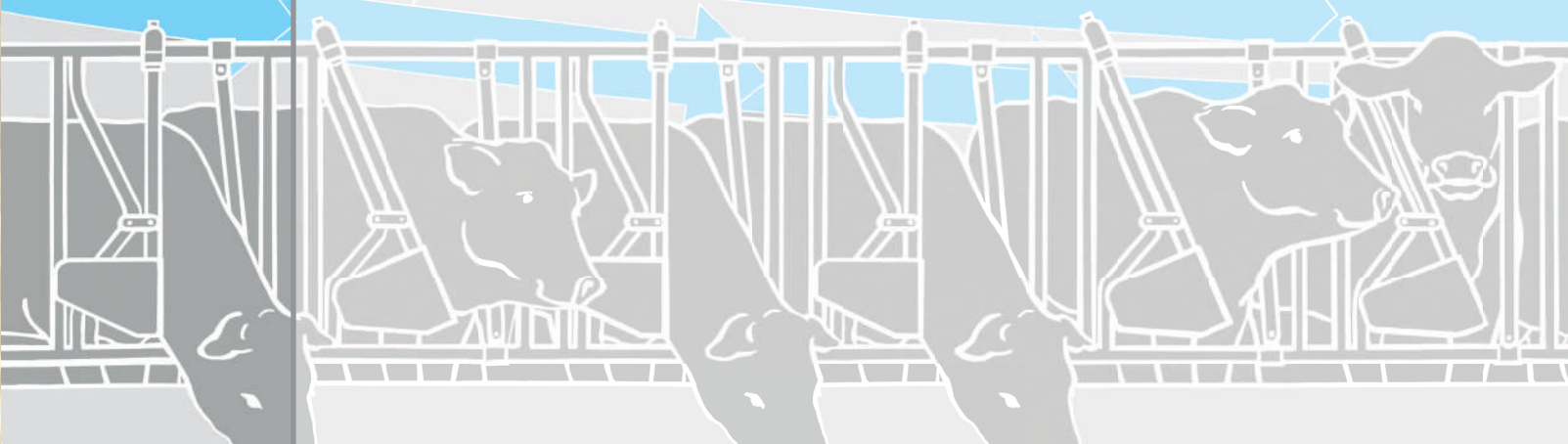


Preventing heat stress with fans is the best technical and economic option!



Dairy cattle ventilation systems

The ABBIFAN 140-XXP-1 now equipped with EC DC motor for extremely low power consumption and at an affordable price!





Latest motor technology now also applied in ABBI-FAN fans.

The ABBI-FAN 140-XXP-1 is one of ABBI-AEROTECH's newly developed fans for dairy barns.

This fan is by far more energy efficient than most larger axial fans on the market.

High air output and very low power consumption!

A sophisticated suspension system automatically ensures that the running fan is correctly positioned. The **ABBI-FAN 140-XXP-1** fan is equipped **with a permanent magnetic motor** and accompanying electronic controls. That means that a very high yield is achieved, which increases still further as the number of revolutions falls. In practice, savings of 30-70% in comparison with existing motors are measured. The motor is significantly quieter, has a longer service life and requires less maintenance. Each motor is driven by an **electronic voltage control**, built into a separate compartment mounted below the motor. A simple 0-10V controller is enough for automatic control of the fan.

The **propeller** is also newly developed and consists of 3 propeller blades made of polypropylene glycol (PPG) material, which is durable and realises high air volumes.

A payback period of one year is practically feasible, depending on the duration of use.

Heat stress

Year after year, heat stress leads to a decrease in milk production. When high temperatures are combined with high humidity, it can be difficult for a cow to lose heat. This results in less feed intake and lower milk yield.

Mechanical ventilation

Natural ventilation is a good way to vent cattle barns. However, on hot days with temperatures above 20°C, cows start having trouble to lose heat and additional air movement must be provided!

This improves the heat release of the animals and thus reduces the risk of heat stress.

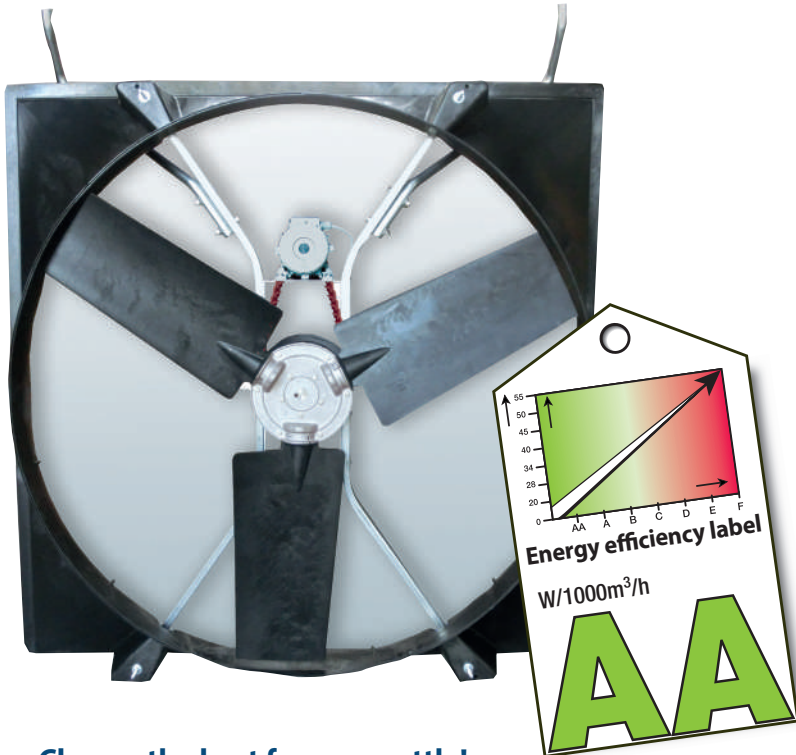
It is important to start ventilating early; low air velocities already suffice to reduce the lead-up to heat stress and as temperatures rise, the air velocity is increased proportionally.

Placement of the fans Longitudinal ventilation

Tests have shown that the best results are achieved when the fans are placed both above the cubicles and above the walkway at the feed fence. This maximises their effectiveness.

To this end, the **ABBI-FAN 140-XXP-1** fans are mounted at a height of at least 2.70 m and at intervals of 14 to 15 m.

This allows for an air velocity of 2.5 m/sec to be achieved, which is necessary during really hot days! No protective grilles are required at this height. They are furthermore easy to install, even at a



Choose the best for your cattle!

Prevent heat stress in your cattle

ABBI-FAN 140-X fans are the best option for providing the necessary cooling:

- additional air movement for the animals
- stimulates heat release
- prevents heat stress
- maintains milk production levels
- stimulates feed intake
- less fly nuisance (blue tongue)
- dryer cubicles
- feed stays fresh longer
- reduces mastitis
- better conception rate
- low investment costs

ABBI-FAN 140-XXP:

- 20% more air
- Durable materials
- 40-70% energy saving
- Sophisticated construction
- Competitive price/quality ratio
- Simple installation

later stage, if necessary. The front must always be equipped with a protective grille if a misting ring is to be installed.

The position of the fans is usually automatically set to a downward angle of approx. 17 degrees when operating at full speed.

Cross ventilation

It is also important to provide for enough fresh air. In modern cattle barns with open sides and a gutter height of 4.20 m, the fans can also be mounted on the side walls, so that fresh outdoor air is blown directly over the animals.

This is known as cross ventilation. It is advisable to mount the fans on the shadow side if possible. The distance between them is then about 7 metres.

**Heat release is stimulated.
Feed intake and milk production levels are maintained.**

Control equipment

Because every fan has an electronic voltage controller, a 0-10V signal is sufficient to control the motor speed. This can be done manually with a simple potentiometer or automatically by the DCC temperature controller or a controller with a 0-10V output signal. This facility also makes it attractive to install a controller for small installations.

Additional cooling

One way to realise additional cooling at higher temperatures is by installing a misting system on the fans. A separate misting system only works well in combination with fans, taking into account that the humidity must not be too high.

High-pressure (70 bar) spray nozzles can be mounted on the fan's protective grille in a ring shape and with a timer or a special controller (**DCC-Touch**) with a humidity sensor can be set to regularly spray atomised water.

The very fine droplets evaporate very quickly and can lower the air temperature by approx. 3 to 5°C.

Soaking

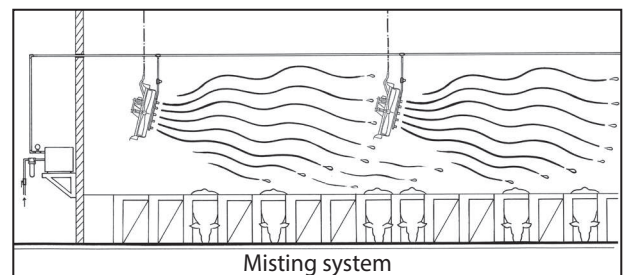
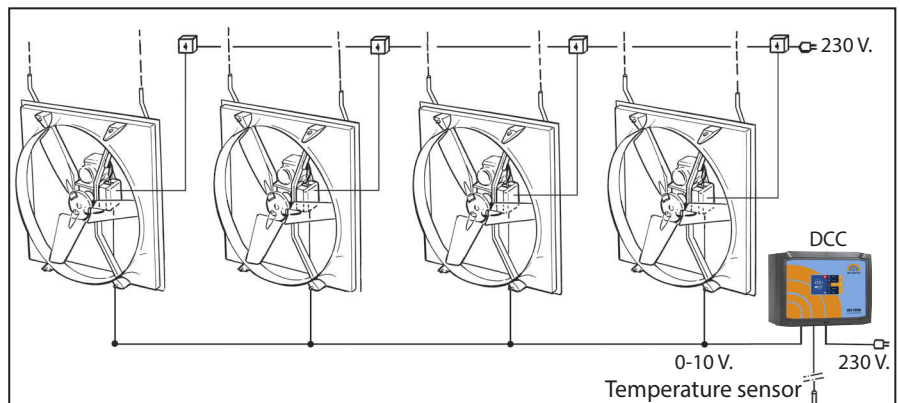
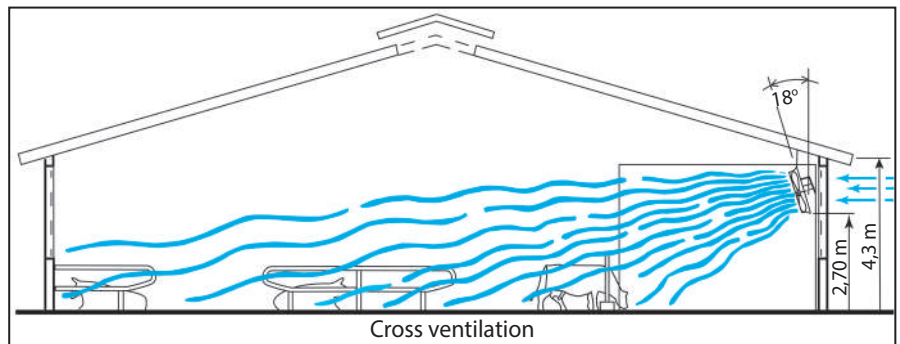
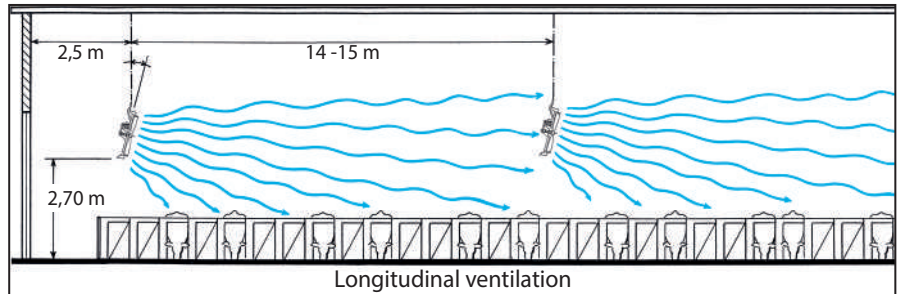
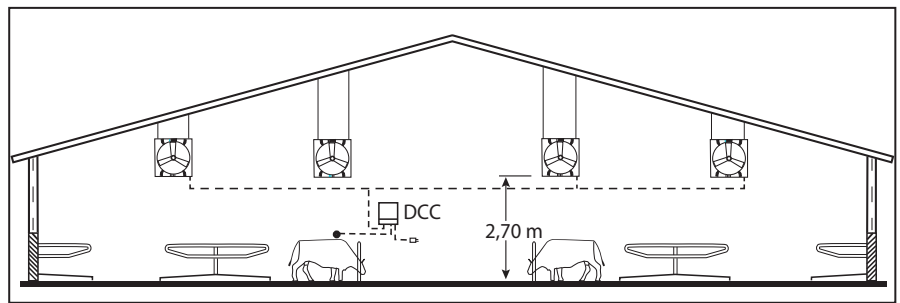
Special spray nozzles producing coarse droplets can also be installed at the feed fence and at the return from the milking parlour. These flat spray nozzles spray the water on the backs of the cows at 180 degrees, while the time (in seconds) is adjusted to the local conditions.

The nozzles must be mounted in such a way that no water enters the cubicles and that only the upper portion of the backs gets wet.

Additional heat is released in combination with fans.

Waiting area

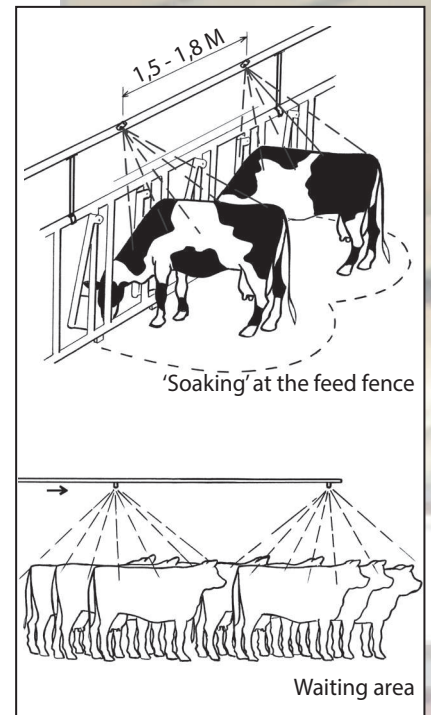
Fixed pipes with spray nozzles can be used in the waiting area to carry out the so-called soaking. This should always be done in combination with fans. The waiting area is where most stress occurs.



Tunnel ventilation

Fans can also be placed in the front end to draw fresh air through the stable using cooling panels in the opposite wall. This system, the so-called tunnel ventilation system, can achieve temperature reductions of 8 to 12°C! The investment is higher, but the results can be better controlled.

The ABBIFAN 140-XXP-1 fan reduces energy costs, operates on 230VAC and is easy to install.

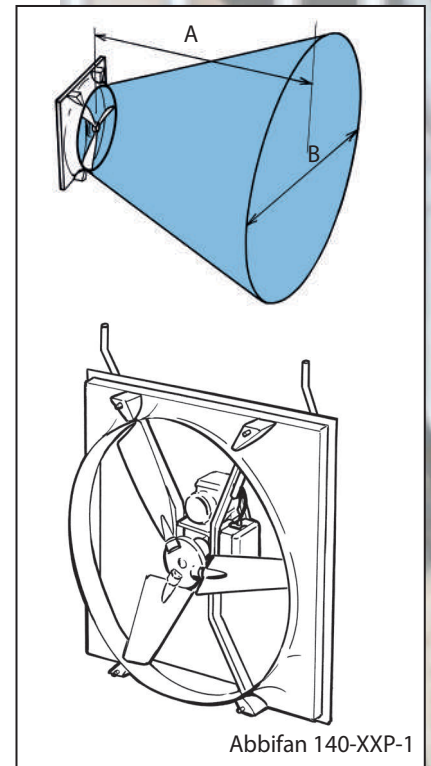


Technical data:

Model: Abbifan 140-XXP-1		Throw length and width		
Propeller diam.	1219 mm	Throw length A metres	Air velocity m/sec.	Throw width B metres
Voltage	230 V / 50 Hz	3	7.3	2
Motor speed	512 rpm	6	4.9	5
Weight	48 kg	12	2.8	10
Dimensions	147x35x144cm	15	2.2	10
Energy efficiency label	A	18	1.8	10
Dimensions of box	150x43x150cm			
Motor capacity	max. 0,75 kW			

Energy consumption:						Savings %
Model: 140-XG-1 (standard) 400V			Model: 140-XXP-1 (new) 230V			
RPM	Watt	A	RPM	Watt	A	
511	878	1,65	511	625	2.7	-28%
501	822	1.64	501	590	2.56	-28%
457	772	1.95	457	467	2.04	-39%
375	634	2.27	375	273	1.4	-57%
292	505	2.16	292	149	0.69	-70.5%

Heat stress: *New studies show that the increase in milk production also increases stress sensitivity and that this can start at temperatures as low as 22°C. The THI Index is a good indicator of heat stress. At a value below 68, no effects can be observed on a cow's milk production, health and reproduction.*



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