



# Big Dutchman®



## **Wall Fans**

High air performance and low energy consumption

# Wall fans – the right solution for every type of barn!

The wall fans offered by Big Dutchman are very versatile, due to the following characteristics:

- ✓ high air performance
- ✓ low power consumption
- ✓ low maintenance costs

- ✓ corrosion resistance
- ✓ rigidity

As Big Dutchman can offer a wide range of different fan types, the requirements of any house can be met, and fans can be selected to fit the respective ventilation concept.

Please let our experts advise you to find the ideal fan for your house!

## Axial fans

### Excellent adjustability, low power consumption

Axial fans are ideally suited for incorporation into walls. Their frame has an aerodynamic shape and is made of stable plastic or corrosion-resistant metal. The blades are made of aluminium in a moulded diecasting process and are exceptionally efficient.

Big Dutchman differentiates between FC, FF and FN fans, based on the shape of the blades. The serrated blades of the FF and FN fans imitate the wings of an owl during its silent

flight (bionics). FF and FN fans therefore consume even less power; they are extremely resistant to pressure and operate at a low noise level.

### Advantages

- ✓ excellent adjustability;
- ✓ low energy consumption, especially by the FF and FN fans;
- ✓ low noise level;
- ✓ quick and easy assembly;
- ✓ high corrosion resistance;
- ✓ long service life.



Fan of the FC series



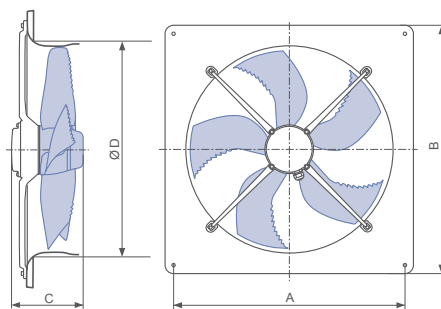
Fan of the FF series



Fan of the FN series

## Dimensions of the axial fans

Type	A	B in mm	C	D
FC035	435	485	177	375
FC040	490	540	211	466
FC045	535	575	211	515
FC050	615	655	221	566
FF056	675	725	218	589
FC063	750	805	218	686
FC071	810	850	272	765
FN080	910	970	319	870
FF091	1010	1070	261	1020



A wire mesh guard is required if the fan is installed in an accessible location.



The PVC shutters adjust automatically and close when the fan stops.

# Technical data of the axial fans

## Description details

<b>FC035-4EQ</b>	FC = standard fan	035 = impeller diameter (cm)	E = single-phase	
<b>FF063-6DQ</b>	FF = sickle-shaped fan	4 = 4-pole; 6 = 6-pole	D = three-phase	Q = wall installation
<b>FN091-6DQ</b>	FN = sickle-shaped fan			

## 1 ~ 230 V, 50 Hz

	<b>FC035-4EQ</b>	<b>FC040-4EQ</b>	<b>FC045-4EQ</b>	<b>FC050-4EQ</b>	<b>FF056-6EQ</b>	<b>FF063-6EQ</b>	<b>FC071-6EQ</b>	<b>FN080-6EQ</b>	<b>FF091-6EQ</b>
<b>Code no.</b>	60-47-9135	60-47-9141	60-47-9146	60-47-9152	60-47-9158	60-47-7904	60-47-9171	60-47-9181	60-47-7908
<b>Power consumption (watts)</b>	160	260	380	510	400	520	890	1300	940
<b>Nominal current (amperes)</b>	0.8	1.2	1.9	2.3	1.9	2.5	4.1	6.2	4.2
<b>Noise level (dB(A))*</b>	44	49	53	51	49	46	54	59	49

## 3 ~ 400 V, 50 Hz

	<b>FC045-4DQ</b>	<b>FC050-4DQ</b>	<b>FC056-6DQ</b>	<b>FF063-6DQ</b>	<b>FC071-6DQ</b>	<b>FC080-6DQ</b>	<b>FF091-6DQ</b>	<b>FN091-6DQ</b>
<b>Code no.</b>	60-47-9646	60-47-9651	60-47-9656	60-47-7905	60-47-9671	60-47-9680	60-47-7909	60-50-0216
<b>Power consumption (watts)</b>	360	530	360	540	890	1350	920	1950
<b>Nominal current (amperes)</b>	0.8	1.1	0.7	1.3	1.8	2.7	1.9	4.0
<b>Noise level (dB(A))*</b>	53	53	48	46	55	55	50	53

\* at a distance of 7 m

## Air performance data

### 1 ~ 230 V, 50 Hz: air flow rate (m³/h) / spec. fan power (W/1000 m³/h)

Type/negative pressure	<b>0 Pa</b>	<b>10 Pa</b>	<b>20 Pa</b>	<b>30 Pa</b>	<b>40 Pa</b>	<b>50 Pa</b>	<b>60 Pa</b>
<b>FC035-4EQ</b>	3470 / 45.5	3320 / 48.8	3180 / 51.8	3050 / 54.7	2920 / 58.2	2780 / 61.1	2530 / 67.3
<b>FC040-4EQ</b>	4660 / 46.1	4540 / 48.0	4410 / 51.0	4290 / 52.9	4160 / 55.7	4010 / 58.6	3850 / 62.3
<b>FC045-4EQ</b>	6350 / 53.5	6260 / 55.9	6160 / 56.0	6040 / 61.5	5830 / 65.1	5570 / 69.1	5370 / 73.1
<b>FC050-4EQ</b>	7990 / 53.8	7800 / 56.4	7620 / 58.4	7430 / 61.2	7240 / 63.5	7030 / 68.2	6800 / 71.3
<b>FF056-6EQ</b>	9470 / 41.1	9210 / 42.8	8910 / 44.9	8600 / 47.0	8220 / 49.8	7840 / 52.2	7230 / 56.7
<b>FF063-6EQ</b>	12110 / 40.4	11700 / 42.7	11280 / 45.2	10830 / 47.5	10350 / 50.2	9810 / 53.0	9100 / 57.1
<b>FC071-6EQ</b>	16080 / 44.1	15650 / 46.6	15180 / 49.4	14670 / 53.1	14130 / 56.2	13560 / 60.1	13020 / 62.9
<b>FN080-6EQ</b>	19630 / 50.1	19250 / 52.9	18860 / 55.1	18360 / 57.7	17850 / 60.5	17310 / 64.1	16770 / 67.6
<b>FF091-6EQ</b>	22760 / 38.4	21660 / 41.1	20600 / 43.6	19590 / 46.4	18460 / 49.5	17460 / 52.9	16470 / 56.1

### 3 ~ 400 V, 50 Hz: air flow rate (m³/h) / spec. fan power (W/1000 m³/h)

Type/negative pressure	<b>0 Pa</b>	<b>10 Pa</b>	<b>20 Pa</b>	<b>30 Pa</b>	<b>40 Pa</b>	<b>50 Pa</b>	<b>60 Pa</b>
<b>FC045-4DQ</b>	6330 / 50.5	6200 / 51.6	6070 / 52.7	5920 / 54.5	5760 / 56.4	5580 / 59.1	5400 / 62.9
<b>FC050-4DQ</b>	8400 / 47.6	8230 / 50.7	8050 / 52.4	7890 / 54.5	7720 / 56.9	7530 / 59.7	7330 / 62.7
<b>FC056-6DQ</b>	8780 / 36.2	8450 / 38.4	8130 / 41.2	7770 / 43.7	7400 / 47.0	7000 / 50.2	6280 / 57.3
<b>FF063-6DQ</b>	12300 / 38.6	11920 / 41.1	11550 / 43.3	11160 / 45.7	10740 / 49.3	10250 / 51.7	9690 / 54.7
<b>FC071-6DQ</b>	16520 / 45.4	16110 / 47.1	15690 / 49.7	15250 / 52.4	14790 / 55.1	14300 / 57.3	13780 / 60.2
<b>FC080-6DQ</b>	23060 / 52.0	22670 / 53.8	22270 / 55.9	21740 / 58.6	21190 / 61.3	20640 / 63.4	20080 / 65.7
<b>FF091-6DQ</b>	23450 / 35.4	22640 / 37.5	21810 / 40.1	20990 / 42.4	19950 / 45.1	18960 / 47.9	18010 / 50.5
<b>FN091-6DQ</b>	27430 / 49.9	26850 / 51.9	26280 / 55.1	25680 / 57.8	25030 / 60.7	24380 / 63.9	23740 / 68.6

The motors are fabricated according to minimum protection rating IP 54.  
Fans with other voltages and frequencies are available upon request.

# AirMaster V130 and VC130

## High air performance, low costs

AirMaster fans of the V130/VC130 series are mostly mounted in the gable for tunnel ventilation. Their metal housing has a long-lasting zinc-aluminium coating. The specially shaped blades are made of glass-fibre reinforced plastic. Air guide-rails on every blade ensure a high air performance combined with a low resistance and thus low energy consumption. The air flow opens the shutters, which are then kept open by means of a balancing weight. When the fan stops, the shutters close automatically and are locked magnetically. The V-belt pulley is made of aluminium and is manufactured as one piece

together with the blade hub by diecasting. The V-belt is pre-tensioned, i.e. a belt tensioner is not necessary.

We use high-quality IE3 motors with a large voltage range (motor protection IP 55). The motors are completely closed; a separate cooling fan is not necessary. This means that there is no danger of dust entering the motor, protecting it from overheating.



Electric motor without cooling fan  
→ well-protected against dust  
→ no overheating



Specially shaped blades made of glass-fibre reinforced plastic with air guide-rails for optimum air performance

All four corners are equipped with plastic covers  
→ no dirt corners  
→ good hygiene

Central V-belt pulley made of aluminium with pre-tensioned V-belt  
→ no belt tensioner necessary



Diagonal braces improve stability

Air flow opens the shutters  
→ a centrifugal system is not necessary

Stable connection between hub and blade  
→ copes well with high loads

Fan with 3 blades

Fans with cone require even less power while also having a higher air performance. They

need slightly more space in the gable.

## Advantages

- ✓ optimised aerodynamics at the air admission and air exit sides for a high air performance;
- ✓ specially shaped blades ensure optimum operation, thus reducing electricity costs;
- ✓ low noise level;
- ✓ the air flow pressure opens the shutters, which stay open thanks to balancing weights, i.e. there is little air resistance;
- ✓ stable and robust design;
- ✓ easy to install without external assistance.

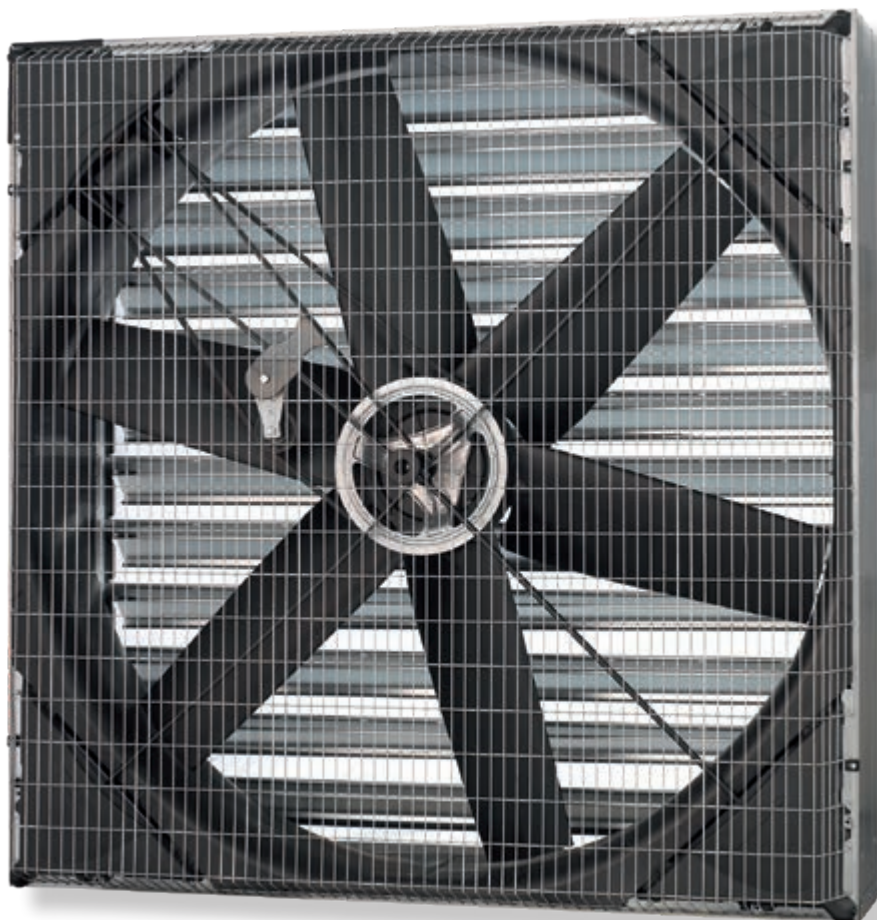


VC130 – AirMaster with cone

# AirMaster V140 and VC140

## Very high air performance, high stability

The AirMaster V140 and VC140 fans produce a high air flow rate where there is much resistance. They are therefore a good choice in barns with tunnel ventilation if the housing equipment causes high resistance and thus makes an unobstructed air flow impossible. The V140 and the VC140 fans meet the same exacting requirements regarding quality of the material, aerodynamics and workmanship as the V130/VC130 fans. This includes, among other characteristics, that the fan is operated by a high-quality and powerful IE3 motor which is well-protected against dust. The connection between the hub and the six blades is very stable and ensures secure running of the fan, even at a negative pressure of 100 Pa or higher. The air flow opens the shutters, similar to the V130/VC130. The shutters are then kept open by means of a balancing weight. When the fan stops, the shutters close and are locked magnetically.



## Technical data of the AirMaster V130, VC130, V140 and VC140 fans: 3 ~ 400 V, 50 Hz

### Description details

**V130-3-1.5 PS**

V = fan without cone

130/140 = impeller diameter

3/6 = number of blades

**VC 140-6-2.0 PS**

VC = fan with cone

1.5/2.0 = motor voltage

	V130-3 1.0 PS E15	V130-3-1.5 PS E15	VC130-3-1.0 PS E15	VC130-3-1.5 PS E15	V140-6-2.0 PS E15	VC140-6-2.0 PS E15
<b>Code no.</b>	60-25-4549	60-25-4541	60-25-4558	60-25-4556	60-25-5100	60-25-5650
<b>Power consumption (watts)</b>	1100	1600	1100	1550	1550	1500
<b>Nominal current (amperes)</b>	2.2	3.0	2.3	2.9	3.2	3.1
<b>Noise level (dB(A))*</b>	61	64	61	64	63	66

\* at a distance of 7 m

### Air flow rate (m³/h) / spec. fan power (W/1000 m³/h)

Type/negative pressure	0 Pa	20 Pa	30 Pa	40 Pa	60 Pa	80 Pa	100 Pa
<b>V130-3-1.0 PS</b>	40400 / 27.5	36100 / 32.4	33100 / 35.8	29900 / 40.2			
<b>V130-3-1.5 PS</b>	46700 / 34.5	42600 / 39.1	40700 / 41.0	38300 / 44.1	31900 / 53.4		
<b>VC130-3-1.0 PS</b>	44500 / 24.6	40400 / 28.6	37800 / 31.5	35400 / 34.1			
<b>VC130-3-1.5 PS</b>	50700 / 30.7	47000 / 34.8	45000 / 37.0	42600 / 40.1	37800 / 46.1		
<b>V140-6-2.0 PS</b>	46200 / 33.4	43700 / 37.9	42400 / 40.8	41000 / 43.8	37600 / 50.4	34100 / 58.9	29500 / 69.5
<b>VC140-6-2.0 PS</b>	47900 / 31.1	45400 / 35.9	44100 / 38.4	42800 / 40.8	39800 / 46.8	35600 / 55.5	30800 / 65.7

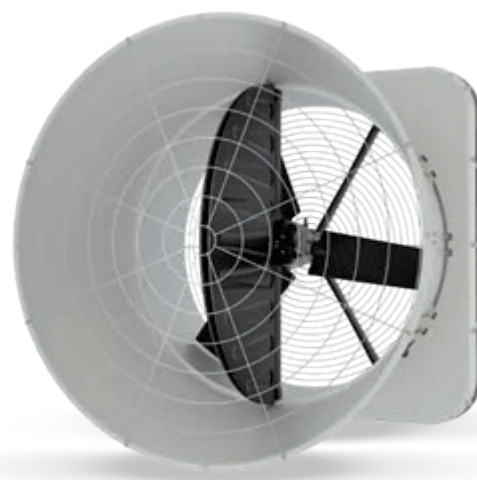
Fans with other voltages and frequencies are available upon request.

# AirMaster Blue 170C

## High air performance, high energy efficiency

Big Dutchman has developed the next generation of fans: **AirMaster Blue 170C**. AirMaster Blue 170C has four outstanding characteristics:

- ✓ very high air performance
- ✓ minimum energy consumption
- ✓ optimized aerodynamic design
- ✓ resistance against corrosion



As the AirMaster Blue 170C fan is very resistant to pressure, it is the perfect choice for long houses with tunnel ventilation. Combined with the Dynamic MultiStep exhaust air principle, Big Dutchman customers thus have a significant advantage in terms of profitability.



## Components of AirMaster Blue 170C

- |   |  |   |
|---|--|---|
| 1 Light trap (optional): available in two versions (black, brown) | 4 Housing: optimized aerodynamic design                                    | 7 Motorized shutter: an emergency opening connection is possible, very airtight |
| 2 Insulation cover (optional): easy to install                    | 5 Wall cover (optional)  | 8 Cone: aerodynamic shape   |
| 3 Wire mesh guard   | 6 Motor with impeller: direct drive, energy-saving motor, easy to maintain | 9 Wire mesh guard   |

## Advantages

- ✓ high air performance and pressure resistance ensure that the fan is well-suited for tunnel ventilation in long houses;
- ✓ currently the most energy-efficient solution for ventilating livestock buildings in combination with the Dynamic Multi-Step exhaust air principle;
- ✓ extremely low noise level;
- ✓ motorized shutter closes the fan airtight;
- ✓ an important emergency opening system can be connected;
- ✓ direct drive and a very stable connection between hub and blades for easy maintenance;
- ✓ high-quality materials: the fan is made of high-quality plastic and stainless steel, preventing corrosion;
- ✓ protection rating IP 65;
- ✓ unassembled upon delivery for a low shipping volume and thus lower transport costs.

# AirMaster Blue 170C fan, 3 ~ 400 V: air flow rate and spec. fan power

Type/negative pressure	Code no.	0 Pa	20 Pa	40 Pa	60 Pa	80 Pa	100 Pa
<b>BD-Blue 170C-4</b> (50/60 Hz) — spec. fan power in W/1000 m <sup>3</sup> /h	60-25-3703	47 100 13	41 500 18	35 000 24			
<b>BD Blue 170C-5</b> (50/60 Hz) — spec. fan power in W/1000 m <sup>3</sup> /h	60-25-3708	55 700 18	51 000 23	45 800 28	40 100 35	34 500 42	
<b>BD Blue 170C-6</b> (50/60 Hz) — spec. fan power in W/1000 m <sup>3</sup> /h	60-25-3711	65 800 25	61 700 30	57 800 35	53 300 41	48 600 47	43 200 58
<b>BD Blue 170C on/off</b> (50 Hz) — spec. fan power in W/1000 m <sup>3</sup> /h	60-25-3714	59 600 27	56 300 32	52 400 37	48 200 43	43 700 50	39 200 57
The speed of all adjustable AirMaster Blue 170C fans can be reduced significantly: a great potential for saving energy!							
<b>BD Blue 170C-4/-5/-6</b> (50/60 Hz) — spec. fan power in W/1000 m <sup>3</sup> /h		33 000 6	24 900 11	22 000 21			

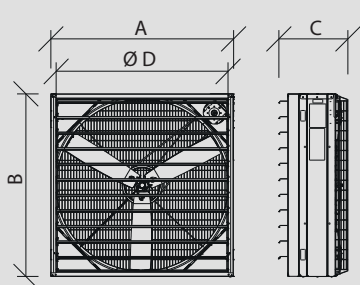
Fans with other voltages and frequencies are available upon request.

Extensive testing of the BESS (Bioenvironmental and Structural Systems) Laboratory of the University of Illinois, USA, confirms efficiency and quality of the new AirMaster Blue 170C fan.

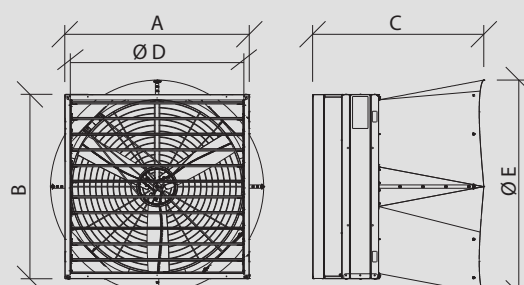


## Dimensions of the AirMaster fans

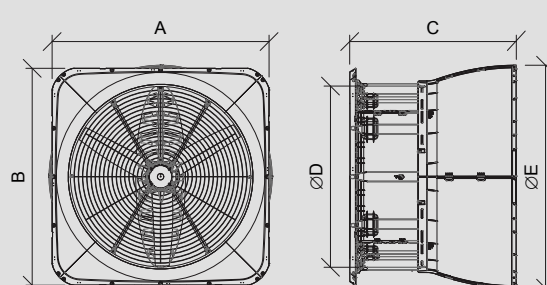
V130, V140



VC130, VC140



AirMaster Blue 170C



Type	A	B	C	D	E
	in mm				
V130	1380	1380	522	1284	
VC130	1380	1380	1275	1284	1600
V140	1480	1480	548	1375	
VC140	1480	1480	1340	1375	1660
170C	1700	1700	1256	1397	1750

The fans must be equipped with a wire mesh guard on the shutter side where they are installed at a height of less than 2.70 m and accessible for persons.

## Light traps for AirMaster V130, V140 and AirMaster Blue 170C fans

Big Dutchman can offer the ideal light trap for any application and fan:

- ✓ the amount of light passing through the fan is reduced to a minimum;
- ✓ the light trap segments have an aerodynamic shape and are made of high-quality plastic, which makes them extremely durable and easy to clean;
- ✓ the air performance is only reduced very slightly.



LF50 light trap for V130

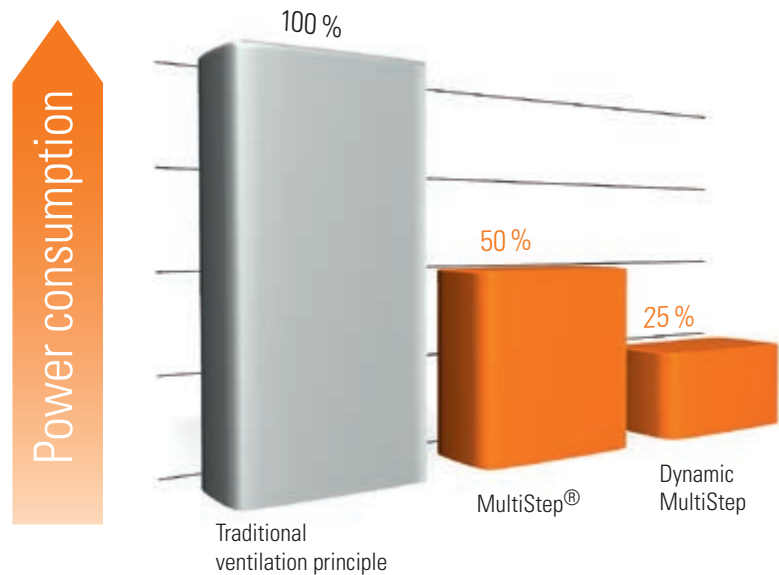


Performacs for V130 and V140

## Dynamic MultiStep

### The exhaust air principle for increased energy savings in combination with AirMaster Blue 170C

The enhanced version of our well-proven MultiStep® principle is called "Dynamic MultiStep". This principle can save even more energy, especially when combined with the new and adjustable AirMaster Blue 170C fan. Instead of starting additional fans at 100 percent speed, the fans begin working as early as at 50 percent (depending on the required pressure resistance). Only after all fans have been started one after another at 50 percent is their speed increased simultaneously to 100 percent when the ventilation demand requires this. Compared to the already very energy-efficient MultiStep solution, the power consumption of the new Dynamic MultiStep exhaust air principle is another 50 percent lower! A climate computer is responsible for controlling this system.

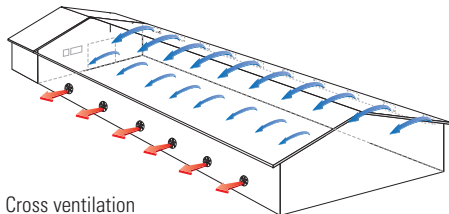


## Standard ventilation principles

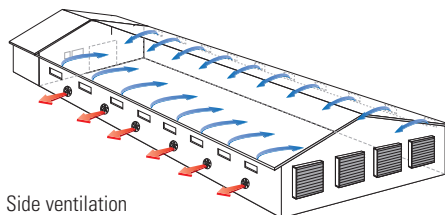
For cross and side ventilation, axial fans are often the best choice. For longitudinal ventilation in long barns and for tunnel ventilation, AirMaster fans are recommended. Their air performance is larger, allowing them to draw

air longitudinally and at a high speed through the house. CombiTunnel ventilation is best used in climate zones with large temperature fluctuations (summer/winter or day/night temperatures).

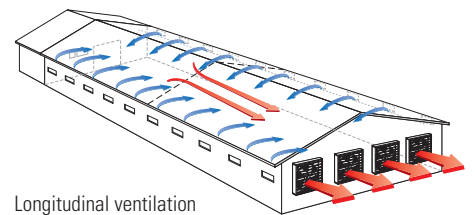
If exhaust air is extracted via individual chimneys in the roof, AirMaster fans in the gable can be switched on for additional ventilation on hot summer days.



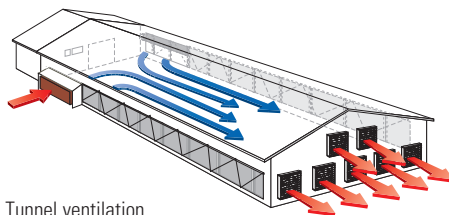
Cross ventilation



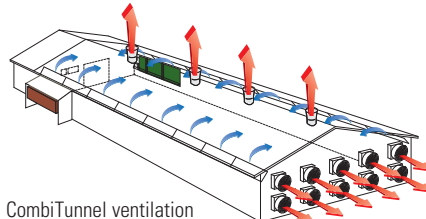
Side ventilation



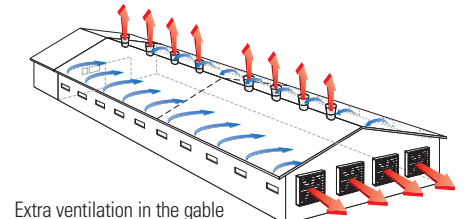
Longitudinal ventilation



Tunnel ventilation



CombiTunnel ventilation



Extra ventilation in the gable



# Big Dutchman

#### Europe, Middle East & Africa:

**Big Dutchman International GmbH**

P.O. Box 1163 - 49360 Vechta, Germany

Tel. +49(0)447 801-0 · Fax -237

big@bigdutchman.de · www.bigdutchman.de

#### USA: Big Dutchman, Inc.

Tel. +1 616 392 5981 · bigd@bigdutchmanusa.com

www.bigdutchmanusa.com

#### Brazil: Big Dutchman (Brasil) Ltda.

Tel. +55 16 2108 5300 · bdbbr@bigdutchman.com.br

www.bigdutchman.com.br

#### Russia: 000 "Big Dutchman"

Tel. +7 495 229 5161 · big@bigdutchman.ru · www.bigdutchman.ru

#### Asia/Pacific: BD Agriculture (Malaysia) Sdn. Bhd.

Tel. +60 3 334 83 555 · bdasia@bigdutchman.com · www.bigdutchman.com

#### China: Big Dutchman (Tianjin) Livestock Equipment Co., Ltd.

Tel. +86 10 6476 1888 · bdcnsales@bigdutchman.com

www.bigdutchman.cn