Fresh air supply systems
Optimum fresh air supply for every type of poultry production
**Fresh air supply systems – we have the best solution for every type of poultry house**

To ensure the best possible fresh air supply for your poultry house, Big Dutchman provides a wide range of different air supply systems. Depending on the structural conditions of the house and your ventilation requirements – negative pressure, positive pressure or equal pressure ventilation – the following systems can be used:
- ✔️ wall or ceiling inlets
- ✔️ fresh air supply chimneys FAC and Fumus
- ✔️ baffle and split baffle
- ✔️ large air inlets for longitudinal ventilation

Let our experts advise you to find the perfect solution for your poultry production.

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**Wall and ceiling inlets for uniform fresh air supply**

**CL 1200, CL 1211 F and CL 1200 B/F**

Air inlets for installation in the wall

Wall inlets are well-suited for use in poultry houses. The CL 1200 inlet is designed to be embedded in thick wall structures, such as brick, while the flange inlets CL 1211 F and CL 1200 B/F are especially suited for thin walls which use material such as insulated aluminium panel.

This type of inlet consists of recyclable, shock-proof, non-deformable, UV-stabilized plastic and can easily be cleaned with a pressure washer. The insulated inlet flap is kept in a closed position by means of rust-proof steel springs which seal the building airtight. The inlet flap can be opened by downward pull. This allows the producer to precisely regulate the inlet opening during each season. The cold fresh air enters the barn from above and mixes with warm house air before it reaches the birds.

By means of the corresponding control set, the fresh air inlets can either be opened all at once or individually.

Thanks to the patented differentiation, the producer can select by means of a simple adjustment on each inlet which inlets are to be opened first and which inlets are to be opened later. If the number of opened inlets is reduced, especially during the cold season or during the heating period, the remaining inlets can be opened farther which makes for more stable airflows.

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**Distribution of air inside a building when using wall inlets in a broiler house**

![Diagram showing air flow at low and high outside temperature]

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CL 1200 – multi-purpose wall inlet
CL 1211 F – flange inlet for sandwich panels
CL 1200 B/F – cost-effective flange inlet
**Net guard**
The CL 1200 series can be equipped with a self-supporting plastic net which clicks onto the inlet from the outside. The CL Flex inlets can be equipped with a Galfan-coated wire net which can also be fixed to the inlet from the outside. A net guard prevents birds and other small animals from entering the barn through the inlet.

**Air deflector**
The air deflector is mounted to the upper edge of the inlet and enables precise direction of the incoming air flow, especially in cold weather. The direction of the air flow can be adjusted individually for each building by changing the angle between the deflector and wall.

**Spacer**
Spacers are used when tension rods have to be guided around posts along the house wall. The maximum distance to the wall is 24 cm (one spacer per inlet).

**Light protection CL 1200 and light protection cover CL Flex**
If special light programs are used, it is necessary to completely obscure the house during the dark phase. For this purpose Big Dutchman offers a special light protection for the inlets of the CL 1200 series. For the CL Flex inlets, a light protection cover is available. Both types of protection can provide light reduction of 99.9% with only little loss in air performance thanks to the optimal aerodynamic design.

**Selected accessories with great effect:**

1. **Net guard**
The CL 1200 series can be equipped with a self-supporting plastic net which clicks onto the inlet from the outside. The CL Flex inlets can be equipped with a Galfan-coated wire net which can also be fixed to the inlet from the outside. A net guard prevents birds and other small animals from entering the barn through the inlet.

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CL 1500 and CL 1800-N
Ceiling inlets for fresh air supply through the roof

CL 1500 and CL 1800-N are multi-purpose ceiling inlets for installation in the ceiling up to a roof slope of 15°. They are made of recyclable, shock-proof, non-deformable, UV-stabilized plastic. Fresh air is guided into the house over the ceiling.

The insulated inlet flap of the CL 1500 is kept in closed position by means of rust-proof steel springs. The inlet flap opens and steers the flow of the incoming fresh air by downward pull. The air flow is always guided along the ceiling, no matter if the inlet is only slightly or fully open. This is done to avoid draught in the bird area. By means of the corresponding control set, the fresh air inlets can either be opened all at once or individually.

The CL 1800-N opens by means of a balance weight and is often used for additional summer ventilation in poultry houses.

If a ceiling has a certain thickness > 110 mm (for example if mineral wool is used) and/or to enhance the performance of the ceiling inlets, an optional inlet funnel is available for both ceiling inlets.

Distribution of air in an aviary house and in a rearing house when using ceiling inlets
Air flow rates of wall and ceiling inlets (m³/h) fully open

<table>
<thead>
<tr>
<th>Type</th>
<th>CL 1211 F</th>
<th>CL 1200 B/F</th>
<th>CL 1220</th>
<th>CL 1224</th>
<th>CL 1229</th>
<th>CL 1233</th>
<th>with light protection*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code no.</td>
<td>60-44-3111</td>
<td>60-44-3112*</td>
<td>60-44-3140</td>
<td>60-44-3144</td>
<td>60-44-3149</td>
<td>60-44-3153</td>
<td>60-44-3064</td>
</tr>
<tr>
<td>-10 Pa</td>
<td>1 000</td>
<td>1 000</td>
<td>1 200</td>
<td>1 250</td>
<td>1 280</td>
<td>1 350</td>
<td>990</td>
</tr>
<tr>
<td>-20 Pa</td>
<td>1 450</td>
<td>1 450</td>
<td>1 700</td>
<td>1 750</td>
<td>1 800</td>
<td>1 940</td>
<td>1 420</td>
</tr>
<tr>
<td>-30 Pa</td>
<td>1 700</td>
<td>1 700</td>
<td>2 050</td>
<td>2 120</td>
<td>2 170</td>
<td>2 300</td>
<td>1 680</td>
</tr>
<tr>
<td>-40 Pa</td>
<td>2 000</td>
<td>2 000</td>
<td>2 400</td>
<td>2 490</td>
<td>2 550</td>
<td>2 700</td>
<td>2 000</td>
</tr>
</tbody>
</table>

* with light protection installed, all wall inlets of the CL 1200 series have the same air flow rates

<table>
<thead>
<tr>
<th>Type</th>
<th>CL 2400 Flex</th>
<th>CL 3000 Flex</th>
<th>CL 3400 Flex</th>
<th>CL 3800 Flex</th>
<th>CL 4600 Flex</th>
<th>CL 1500</th>
<th>CL 1800-N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code no.</td>
<td>60-25-0024</td>
<td>60-25-0030</td>
<td>60-25-0034</td>
<td>60-25-0040</td>
<td>60-25-0045</td>
<td>60-40-1321</td>
<td>60-40-1322</td>
</tr>
<tr>
<td>-10 Pa</td>
<td>2 400</td>
<td>3 000</td>
<td>3 400</td>
<td>3 800</td>
<td>4 600</td>
<td>1 200</td>
<td>1 400*</td>
</tr>
<tr>
<td>-20 Pa</td>
<td>3 350</td>
<td>4 200</td>
<td>4 800</td>
<td>5 350</td>
<td>6 500</td>
<td>1 700</td>
<td>2 000*</td>
</tr>
<tr>
<td>-30 Pa</td>
<td>4 150</td>
<td>5 250</td>
<td>5 950</td>
<td>6 650</td>
<td>8 000</td>
<td>2 100</td>
<td>2 450*</td>
</tr>
<tr>
<td>-40 Pa</td>
<td>4 800</td>
<td>6 050</td>
<td>6 900</td>
<td>7 700</td>
<td>9 300</td>
<td>2 400</td>
<td>2 850*</td>
</tr>
</tbody>
</table>

* with inlet funnel; code no. 60-40-1323

Dimensions and installation of wall and ceiling inlets

The installation height of the wall inlets depends on the type of building and production method and has to be planned individually for each project. The wall inlets are designed to provide customized air rates for individual requirements.
The FAC can be equipped with an optional recirculation unit. The recirculation fan creates a supporting layer of air which takes up the cold fresh air and mixes it with warm air to provide an even more uniform distribution of fresh air (especially in the winter time).

The FAC supplies fresh air through the ceiling with a high air rate. The fresh air distributor at the lower end of the FAC has an 8-pocket structure which evenly distributes the fresh air inside the house thus creating a stable air jet even in the case of minimum ventilation. In the winter time, individual pockets can be closed by means of flaps.

If the FAC is equipped with a fan (optional) inside the chimney, it can also be used for equal pressure ventilation. The FAC is available with the following diameters: 650, 730, 820, 920 mm.

FAC
Fresh air chimney for negative pressure ventilation

The FAC supplies fresh air through the ceiling with a high air rate. The fresh air distributor at the lower end of the FAC has an 8-pocket structure which evenly distributes the fresh air inside the house thus creating a stable air jet even in the case of minimum ventilation. In the winter time, individual pockets can be closed by means of flaps.

If the FAC is equipped with a fan (optional) inside the chimney, it can also be used for equal pressure ventilation. The FAC is available with the following diameters: 650, 730, 820, 920 mm.

FAC with recirculation unit

The FAC can be equipped with an optional recirculation unit. The recirculation fan creates a supporting layer of air which takes up the cold fresh air and mixes it with warm air to provide an even more uniform distribution of fresh air (especially in the winter time).

Air flow inside an aviary house with FAC
As opposed to the FAC, Fumus is always equipped with a fan in the lower part of the chimney. It sucks in and pushes the fresh air into the barn via the fresh air distributor. The amount of air entering the barn is regulated by means of a butterfly valve above the fan. Depending on the position of the butterfly valve anywhere between 100 % fresh air (vertical position) and 100 % circulating air (horizontal position) can enter the house. Between these positions a certain amount of fresh air is mixed with house air which is sucked in through the 10 cm wide opening at the chimney. This means that, based on the ventilation requirements, the barn can be supplied with fresh air, mixed air or circulating air.

In case of minimum ventilation (during cold weather) Fumus an also be operated with equal pressure or slight positive pressure.

Fumus is available with the following diameters: 650, 730 or 820 mm.

**Principle of operation fresh air, mixed air and circulating air with Fumus**

**Fresh air**
When the butterfly valve is fully open the fan sucks in 100 % fresh air and guides it into the barn.

**Mixed air**
When the butterfly valve is neither fully open nor fully closed, the fan sucks in fresh air and house air. The pre-heated air is then pushed into the barn.

**Circulating air**
The butterfly valve inside the fresh air chimney is closed and the fan constantly pushes house air back into the barn by means of the distributor.

**Air performance (m³/h) when maximally open**

<table>
<thead>
<tr>
<th>Type FAC</th>
<th>650 mm</th>
<th>730 mm</th>
<th>820 mm</th>
<th>920 mm</th>
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</thead>
<tbody>
<tr>
<td>-10 Pa</td>
<td>4,460</td>
<td>6,020</td>
<td>7,120</td>
<td>8,180</td>
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<td>-20 Pa</td>
<td>6,450</td>
<td>8,690</td>
<td>10,020</td>
<td>11,820</td>
</tr>
<tr>
<td>-30 Pa</td>
<td>8,100</td>
<td>10,450</td>
<td>11,740</td>
<td>14,790</td>
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<tr>
<td>-40 Pa</td>
<td>9,430</td>
<td>12,330</td>
<td>13,890</td>
<td>17,140</td>
</tr>
<tr>
<td>-50 Pa</td>
<td>10,410</td>
<td>14,010</td>
<td>15,460</td>
<td>18,950</td>
</tr>
<tr>
<td>-60 Pa</td>
<td>11,860</td>
<td>14,870</td>
<td>16,910</td>
<td>19,960</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type Fumus</th>
<th>650 mm</th>
<th>730 mm</th>
<th>820 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan</td>
<td>FC 063-8DT rev.</td>
<td>FC 071-8DT rev.</td>
<td>FC 080-8DT rev.</td>
</tr>
<tr>
<td>Performance</td>
<td>230 Watt</td>
<td>320 Watt</td>
<td>530 Watt</td>
</tr>
<tr>
<td>+ 5 Pa</td>
<td>2,980</td>
<td>3,300</td>
<td>5,700</td>
</tr>
<tr>
<td>± 0 Pa</td>
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<td>-20 Pa</td>
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<td>-30 Pa</td>
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<tr>
<td>-40 Pa</td>
<td>9,540</td>
<td>11,460</td>
<td>14,580</td>
</tr>
</tbody>
</table>
Fresh air supply for cages and enriched colony systems

**Baffle and split baffle**

**High ventilation rates**

For many years, baffle and split baffle systems have been considered reliable and well-working fresh air systems which are especially well suited for cage houses with their traditionally rather high ventilation rates.

The entire system is made of polyurethane HR-foam plates with aluminium coating on both sides. The baffles are opened and closed by means of a servomotor.

We recommend using a split baffle system if no extra longitudinal ventilation is installed for the summer and/or for houses with 6 to 12 tiers.

**Fresh air enters the house at bird level along the entire side wall.**

Large air inlets for additional longitudinal ventilation

**MultiFlex, MultiVent and SMT 50**

**Additional fresh air supply in the summer**

**Use of split baffle**

**MultiFlex – use of several inlets in groups**

**MultiVent – multi-purpose inlet**

**SMT 50 – motor-powered shutters**

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