

Horizontal ventilation and ventilation tubes

Fans for use in greenhouses

Modern agriculture is unthinkable without greenhouses. They make it possible to harvest crops independently of the seasons. But plants only thrive in them when the air supply and distribution are perfectly regulated. EC fans from ebm-papst are ideal for this task.

If you want a good harvest, you need ideal conditions for the plants to grow. As such, it is crucial to ensure uniform climatic conditions and optimal support for plant photosynthesis throughout the entire greenhouse. There are two ways to achieve this, which can be used together if required: horizontal ventilation to circulate the air above the plants, and tube ventilation from below to supply conditioned air.

An all-round talent based on refrigeration technology

AxiCool axial fans from ebm-papst are used for the horizontal air circulation system – products that were originally designed for use in refrigeration technology. Due to their guide vanes, the fans feature high air throw and enable precise control of the air flow. The fans are mounted on routes in the greenhouse at defined intervals. The housing is white so as to reflect as much sunlight as possible. In order to meet service life requirements, the AxiCool fans have been specifically equipped for use in very humid greenhouses. The plastic components are made from UV-resistant material, which is also easy to clean.

A true innovation: ventilation from below

A particularly innovative method is the use of ventilation tubes from below. Energy-efficient, high-pressure centrifugal or axial fans from ebm-papst are used to implement this solution. The usually conditioned air is supplied using a perforated tube. This tube is positioned below the plants, thereby providing an optimal supply of CO₂ to the undersides of the leaves. The axial fans draw in air from the greenhouse's air preparation room and force it into the tube and through the holes past the plants toward the ceiling, where it is then directed back into the intake air flow. The result is a defined circuit of air flow. The fans' excellent performance allows for particularly long tubes, which can be used in large greenhouse installations, for example.

Energy saving made easy

The fans for both methods are powered by energy-saving EC motors. The efficiency of these motors far exceeds the requirements of efficiency class IE4. With this solution, ebm-papst is further expanding the potential applications of its EC technology.

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Picture 1: AxiCool fans with guide vanes on the outlet side are used for horizontal ventilation. They have white housings to reflect as much of the incident light (important for plant growth) as possible.



Picture 2: High-pressure axial fans for tube ventilation that supplies the plants with CO₂ from below.

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Picture 3: With ventilation tubes, the air is supplied underneath the plants, providing an optimum supply of CO₂ to the undersides of their leaves.

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About ebm-papst

The ebm-papst Group, a family-run company headquartered in Mulfingen, Germany, is the world's leading manufacturer of fans and motors. Since the technology company was founded in 1963, it has continuously set the global industry standard. With over 20,000 products in its range, ebm-papst provides the best energy-efficient, intelligent solution for virtually every ventilation or drive engineering task.

In fiscal year 2018/19, industry leader ebm-papst generated revenues of 2.18 billion euros. It employs over 15,000 people at 28 production sites (e.g. in Germany, China and the US) and in 48 sales offices worldwide. Fans and motors from the world market leader are used in most industries, including ventilation, air conditioning and refrigeration, household appliances, heating, automotive and drive engineering.

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