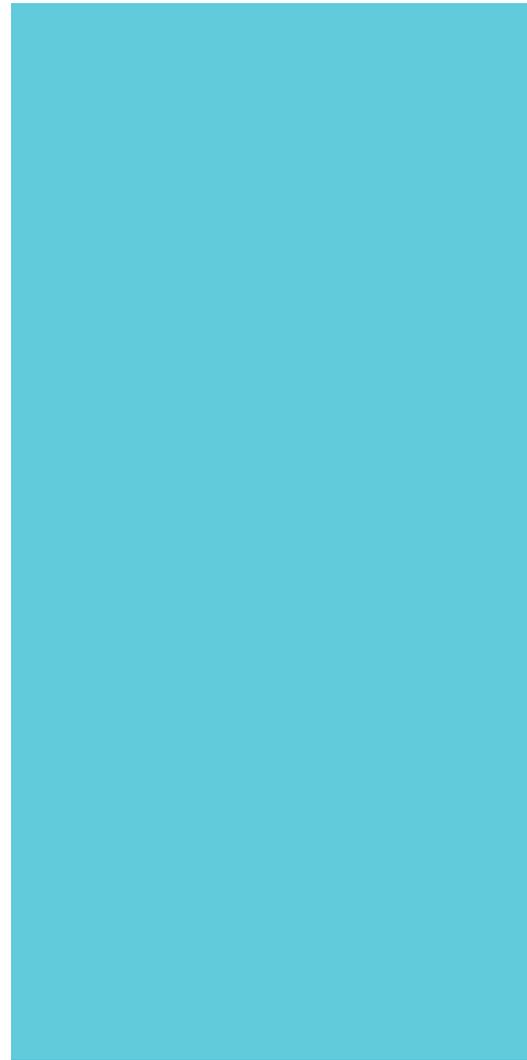


Heating

Blowers and fans
setting new standards



Technologies and ideas for heating

Commitment to people and possibilities



The change in climate and its severe effects on our environment is one of the big problems we are all faced with now. The Kyoto Protocol, surely one of the most important environmental treaties, justly emphasises the importance of climate protection, especially the reduction of CO₂ emissions. Replacing outdated heaters by using innovative and eco-friendly technologies still offers a high potential for CO₂ reduction.

In close co-operation with the leading manufacturers of heaters and heating units, we strive to make modern heating technology more effective, more economical and more eco-friendly. Most of our customers approach us in the early stages of their developments and have direct access to our engineers in R&D, who then think their way into the task at hand and come up with optimal solutions based on their experience, their skills and our wide and extensive basic programme. This way, our customers get blower solutions that take into account all operation and ambient conditions of the specific application, with performance, size and economy as quantities determining the specific optimum.

The perfect match

Demands on blowers for modern heating units are constantly going up. The challenge is to provide the required air flows efficiently and quietly for all types of units, be they conventional or condensing boilers and heaters, fired by gas or oil, floor-standing or wall-mounted, with 10 kW or 300 kW calorific output, and this in all possible operational modes. Only understanding the overall system and coming up with the perfect match between motor technology, aerodynamics and electronics can result in top performance.



In our test labs, nothing is left undone to make sure our products generate only a minimum of noise.

And this is exactly where our core competences lie: we have high-quality, reliable and sophisticated products for innovative appliances.

Flue gas blowers for conventional heating systems are centrifugal fans with forward curved impellers and AC shaded pole motors. Here, there is higher demand on temperature resistance and minimal noise, and so the motors are decoupled from the blower unit both thermally and acoustically. In conjunction with other technical features, such as cooling vane, bearing systems suitable for high temperatures and relevant coil structure, all demands for this type of application can be met. Pressure sensors

and impulse transmitters for control functions are also possible.

For condensing systems, special blowers with backward curved impellers and motors in EC technology are needed. Our proven expertise in electronics makes running these motors and communicating with the burner control unit a simple task. Combined with our know-how in aerodynamics, our blower solutions are optimal and meet even the most demanding specifications as to air flow, pressure, low acoustics, size and service life in a very economic way.

Innovation is our tradition

Actively shaping the future of heating technology. This is our standard and our commitment at ebm-papst, formerly ebm, PAPST and mvl, three companies with a tradition of setting a lot in motion in this field. Our products are pioneering and highly reliable solutions, such as the first tangential blowers for electric storage heaters, or the first EC centrifugal blowers for the new modulating gas heaters. And so we gladly meet the challenge of developing future solutions in co-operation with you!

Quality without a compromise

Throughout the world, the name ebm-papst is known and trusted. This trust is not only based on our excellent development capacity, but mainly on our quality standard that is absolutely unrivalled. All our efforts are documented in a comprehensive quality management system, both for products and services. Being certified as complying with the tough requirements of the international standards **DIN EN ISO 9001**, as well as **ISO/TS 16949-2** and **DIN EN ISO 14001** in some locations, is just one seal of approval for our incessant strife to provide only the best quality products and services.

ebm-papst gas blowers

With more than 10 basic designs, matching electronics interfaces for all boiler and gas control units, a large number of flange variants both pressure and suction side, and many more possible electrical and mechanical adaptations, we are in a position to offer you always just the right blower for your individual gas- or oil-fired heaters and many other applications.



ebm-papst flue gas blowers

For gas heaters in conventional systems with atmospheric burner, centrifugal blowers are needed in the flue to discharge the exhaust gas in a controlled way and irrespective of building type. There is a number of lines available with different housing materials, motors and impellers in order to meet the high demands as to performance, temperature resistance and acoustics economically.



ebm-papst tangential blowers

Depending on the unit design, electric storage heaters have different requirements when it comes to the blowers to be used. Tangential blowers are low in height and provide a wide air outlet and low flow rates. For other types, centrifugal blowers are used. Either way, we have an unrivalled range of products for you to choose from to generate the required warm air quietly and economically.

Technical data Gas blowers	
Voltage:	115 VAC, 230 VAC, 24 VDC
Frequency:	50/60 Hz
Air flow:	50 – 1,500 m³/h
Max. pressure increase:	up to 4,000 Pa
Power input:	20 – 820 W

Technical data Flue gas blowers and tangential blowers	
Voltage:	100 – 400 VAC, 24 VDC
Frequency:	50/60 Hz
Air flow:	18 – 420 m³/h
Max. pressure increase:	8 bis 420 Pa
Power input:	5 – 92 W

Solutions for gas condensing systems

Setting and further developing trends

From the start, we have given special attention to modern gas condensing systems with their lower pollution emission and their significantly higher fuel utilization capacity. In 1989, we were the first to supply EC centrifugal blowers for gas condensing systems and are still market leader in this field with our comprehensive range of blowers. Still, nothing is ever so good it cannot be improved upon! Our proven expertise and knowledge of the various system designs of all the most important manufacturers enables us to make substantial contributions for further improvements and new developments.

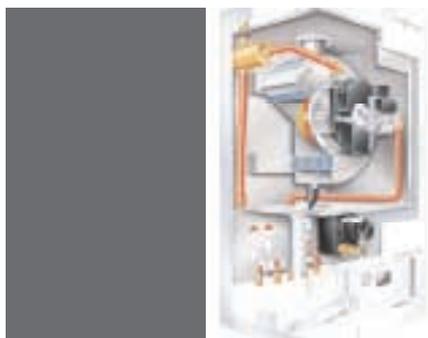
Simply a must: the optimal mixing ratio

For an optimal combustion process with gas condensing units, it is important to exactly maintain the ideal gas-air ratio in order to keep pollution emission low. In order to safeguard this in modulating operation with all operational modes and all external conditions, controllable blowers with steep pressure-air flow characteristics and high maximal pressures are needed. Our ebm-papst EC centrifugal blowers meet these demands perfectly.

Again, our core competences – drive technology, electronics and aerodynamics – are a perfect match and have an ideal effect: As drive motors, proven EC motors in internal- or external-rotor motor design are available, and their speeds, which are independent from the line frequency, generate the high pressures specific to each unit. From the rotor materials to bearing and winding structure, we can put our extensive expertise as one of the most important manufacturers of small motors at your disposal. The electronics to commutate and process system signals for open or closed loop speed control are integrated and can be adapted to all boiler and gas valve controls commonly available on the market.

The blower unit contains a plastic impeller with backward curved blades and is anti-static, pentane-proof and fine-balanced for special requirements. The housing is, in most cases, die-cast aluminium with special seals in the housing parts and the shaft duct in order to guarantee gas tightness. Special specifications as to suction and exhaust geometry, pressure relief piece etc. can, of course, be met.

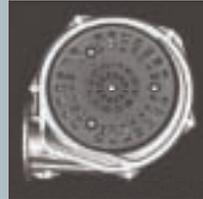
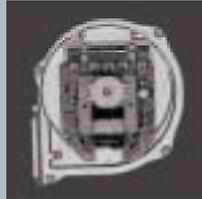
Our comprehensive product range also offers suitable solutions for the specific requirements in oil condensing systems with boiler-integrated or secondary heat-exchange surfaces.



Exemplary: solutions for Viessmann

In Viessmann gas condensing units our compact and intelligent ebm-papst EC gas blowers and their MatriX burner and gas valve form a compact functional unit. Using a new testing scheme here at ebm-papst, the blowers are pre-set ex-works for various and different end units, and thus the time our customer has to spend on setting them is drastically reduced.

*Our gas blowers – ideal
for use in modern heating
appliances and systems*



*Modern gas-condensing systems:
of benefit for man and nature*

New trends – actively helped along and shaped by ebm-papst

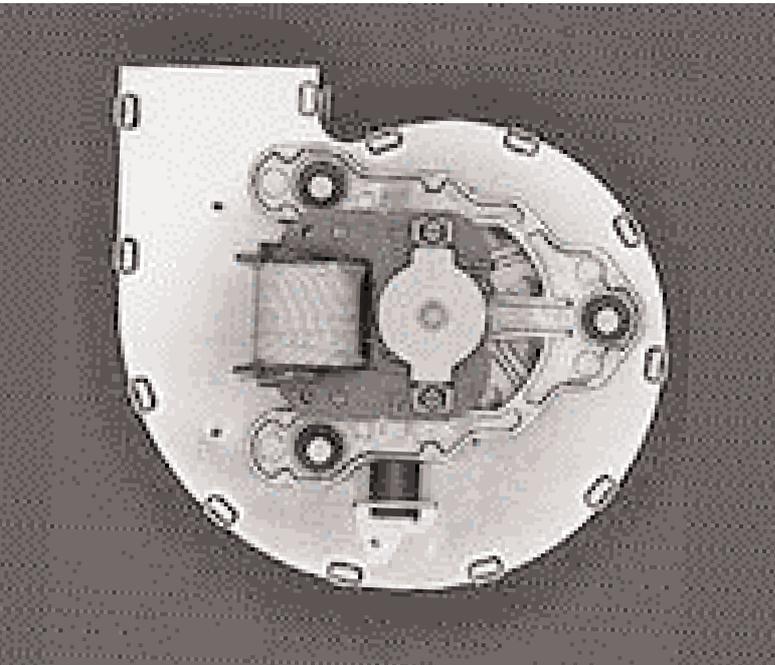
When it comes to control, there is a trend away from the conventional pneumatic compound to an electronic compound. Whereas the minimum pressure required for the pneumatic control of the gas valve, together with the specified modulation capacity, often makes power-wise over-dimensioned blowers the only option, the electric control allows smaller and cheaper blower solutions. The exhaust gas quality is the correcting variable and is collected via lambda probe, ionisation electrode or CO₂ probe and is electronically assessed. Then, the gas supply is adapted to the established situation via an electrically controlled gas valve. This way, it is possible to match the blower design exclusively to the burner or boiler specifications as to pressure and airflow. Our customers profit from our know-how and know they can expect us to come up with ideas for a new approach to their problem and to offer them the blower that suits their application best.

ebm-papst gas blowers for gas condensing systems

- most comprehensive product range for all capacities
- meeting the toughest specifications as to acoustics and service life
- electronics interfaces for all unit-specific requirements
- numerous mechanical variants as to suction or exhaust flange, pressure sensor, connection plug, etc.
- highest level of quality, certified to and complying with international standards

The whole world of heating

*ebm-papst tangential blowers:
guaranteeing maximal performance
at minimal noise*



Flue gas blowers for conventional gas burners and boilers

Conventional gas heating systems place special demands on the temperature stability of a blower. Whereas the combustion air is sucked into the atmospheric burner without blower support, the handling of the hot exhaust gases – up to 250°C in some cases – is reliably done by our specially designed ebm-papst centrifugal blowers. The motors, mostly AC shaded pole motors, are mounted outside the hot exhaust gas flow and are thermally and acoustically decoupled from the blower unit. Depending on the specification, the housings are either made of die-cast aluminium or sheet metal with sheet steel or aluminium impellers featuring forward curved blades inside.

Thanks to our extensive experience in high-temperature bearing technology and the aerodynamic know-how you can expect from a market leader, even toughest demands on service life, acoustics and economy can easily be met in this field of application.

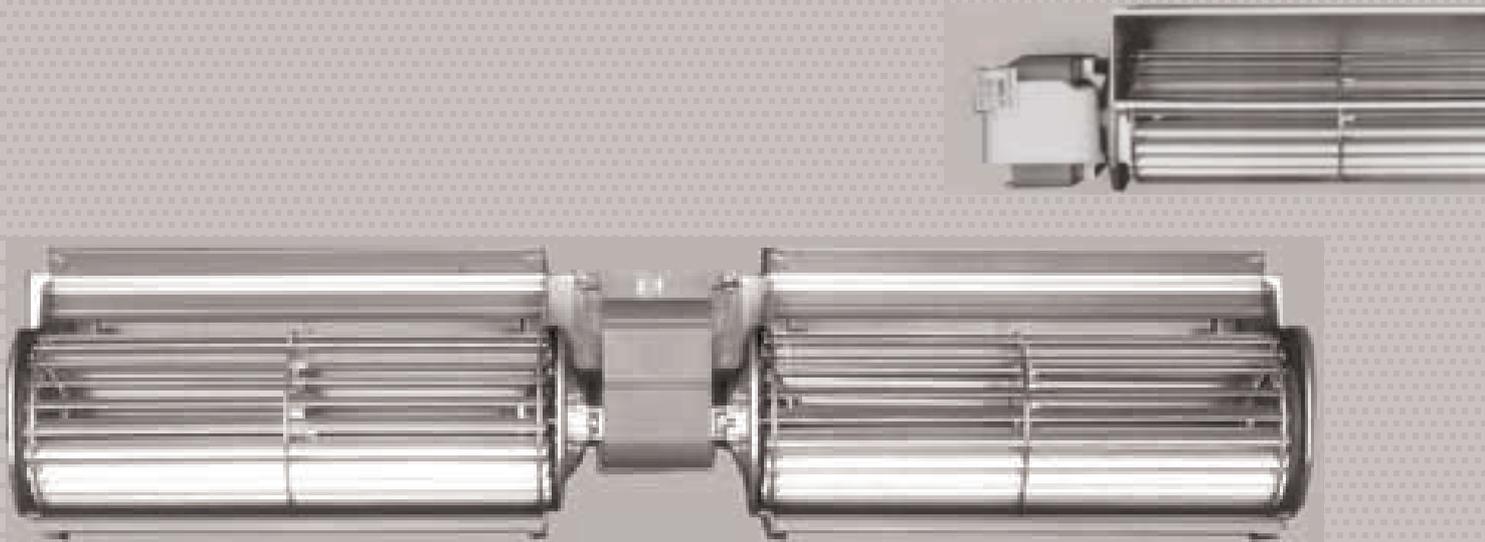
Tangential and centrifugal blowers for storage heaters

Since 1963 we have been offering tangential blowers for electric storage heaters and have become market leader in this segment. Our ebm-papst tangential blowers excel at high airflows at relatively low back pressures, they have very favourable acoustics and are unrivalled in their long service life. The small ratio of the impeller diameter (40–65 mm) to the impeller length (up to 2 x 300 mm) results in a very flat and long structure often required in these units. The low and very wide air outlet facilitates high air density at low flow rates. Depending on the application, blowers with asymmetrical shaded pole motor, capacitor motor or EC motor are available.

There are also conventional centrifugal blowers used in such units. Their high maximum pressure at low speeds and the small dimensions offer optimal solutions for ever smaller and more compact appliances.

Our range – new possibilities for you!

More ideas and more know-how for heating. Undoubtedly, this is the segment we are experts in, as our product range traditionally focuses on heating. And so there is hardly an application ebm-papst does not have a solution for – ready and available! Whether for gas- or fuel-fired heaters, solid-fuel burners, electric fireplaces, fuel cells, electric storage heaters and boilers, fan heaters, mobile heat generators or heating pumps – simply ask to find out how our range can help you with your individual challenge!



Solutions for electric chimney ovens and fireplaces

Here, too, tangential blowers are used to support the convection of warm air. They are often arranged in such a way as to suck in the air in the room at the top front of the appliance. Once inside, the air is heated up as it passes along contact areas on the sides and the back of the appliance before it gets blown back into the room at the bottom.

Motors and fans for solid-fuel systems

As ecologically better alternative to conventional oil- or gas-fired heating systems, solid-fuel burners are increasingly used: they rely on renewable material to generate heat, with wooden pellets as their energy supply. These solid-fuel burners come in different designs, either as conventional electric fireplaces or chimneys for individual rooms or as heat plants for entire buildings. Our ebm-papst drive motors are used in the conveyor worm for the automatic transport of the wooden pellets. And our ebm-papst tangential blowers can be customised for the convection of warm air, while our reliable ebm-papst blowers play their part in handling the exhaust gas.

For further and supplementary information, the following brochures are also available:

- *Company Profile/Facts and data*
- *Brochure: Product Overview*
- *Catalogue: Tangential-, radial-, axial blowers, hot air blowers, pumps*

We welcome your interest in our know-how, service and range of products in the field of heating. Is there a new project, perhaps even a vision, involving motors, blowers and fans you would particularly like to see realised? Why not get in touch with us and talk about all the possibilities ebm-papst has to help you – we are always happy to serve you!

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