

## The right solution for every installation situation

### Interaction between fan and application

**Fans are complex flow machines whose behavior in operation is strongly influenced by their installation situation. This means that, when installed in the application, the fan is often not as quiet as hoped for, or less efficient than promised in the data sheet. To select the optimum fan, ebm-papst supports its customers as early as the device development stage.**

#### Taking the installation situation into account during development

Today, modern centrifugal and axial fans are very efficient and quiet. However, when installed in an application – or under real installation conditions – their behavior changes if the inflow or outflow conditions are disturbed. Environmental factors such as flaps, filters, and guard grills can affect the air flow. With typical selection programs, the actual impact of these factors in operation can only be gauged to a limited extent in advance.

#### Decades of experience in fan development

This is why ebm-papst incorporates decades of experience into the development of a fan. The example of RadiPac fans shows just how much the results in use can be influenced by factoring in the installation situation at an early stage of development. In this case, ebm-papst not only optimized the impeller, motor, and control electronics in terms of energy efficiency and noise emission, but also took into account the actual installation situation in AHUs to achieve an optimum result (in application).

#### FlowGrid improves noise level

If the selected fan is too loud or not efficient enough, passive components such as the FlowGrid air inlet grille can mitigate unwanted effects even when already installed. If axial and centrifugal fans are retrofitted with this, it drastically reduces noise-generating turbulence in the inflow without affecting air performance or power consumption.

#### Optimal result through early cooperation

To be on the safe side from the outset, the fan manufacturer should be involved at an early stage in the development of its own device. For both large and small fans, it can be equally worthwhile to analyze and evaluate the flow situation in the application in detail so as to find suitable optimization measures or the most suitable fan for the installation situation.

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Fig. 1: Flaps and filters can obstruct the air flow in AHUs, and the distance to walls and heat exchangers as well as the use of guard grilles also have an effect – which is why the actual installation situation must be considered at an early stage to achieve an optimal result at the end of development.



Fig. 2: The FlowGrid is suitable for centrifugal fans (left) and axial fans (right) and can reduce unpleasant noise effects even when already installed.

Figures	ebm-papst
Characters	approx. 2,300, including headings and sub-headings
Tags	Interaction, installation situation, noise, development, FlowGrid, RadiPac
Link	<a href="http://www.ebmpapst.com/radipac">www.ebmpapst.com/radipac</a>

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### About ebm-papst

The ebm-papst Group, a family-owned company in Mulfingen, Germany, is the world market leader in fans and drives. Founded in 1963, the technology leader with its core competences motor technology, electronics and aerodynamics, has set international market standards ever since. With over 20,000 products, ebm-papst offers customized, energy-efficient and intelligent solutions for virtually any ventilation and drive technology requirements.

In fiscal year 2019/20, the hidden champion achieved a turnover of 2.188 billion euros and employed almost 15,000 people in 29 production sites (e.g. in Germany, China and the US) as well as in 48 sales locations. With their fan and drive solutions, ebm-papst defines and sets the benchmark in practically all industries, such as ventilation, air-conditioning and refrigeration, heating, automotive, IT, mechanical engineering, catering and household appliances, intralogistics and medical engineering.

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