

# Powerful, compact, quiet: *the RVE45 DC centrifugal fan.*

Now also for the high demands of industry.

**ebmpapst**

the engineer's choice



# About ebm-papst.

ebm-papst is a leader in ventilation and drive engineering technology and a much sought-after engineering partner in many industries. With around 20,000 different products, we have the perfect solution for practically every requirement. We believe the consistent further development of our highly-efficient GreenTech EC technology provides our customers with the best opportunities for the future in industrial digitization. With GreenIntelligence, ebm-papst already offers intelligent networked complete solutions that are unique anywhere in the world today.

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## Six reasons that make us the ideal partner:

**Our systems expertise:** as experts in advanced motor technology, electronics and aerodynamics, we provide system solutions from a single source.

**Our spirit of invention:** our 600 engineers and technicians will develop a solution that precisely fits your needs.

**Our lead in technology:** with our EC technology and GreenIntelligence, we combine the highest energy efficiency with the advantages of IoT and digital networking.

**Closeness to our customers:** at 49 sales offices worldwide.

**Our standard of quality:** our quality management is uncompromising, at every step in every process.

**Our sustainable approach:** we assume responsibility with our energy-saving products, environmentally-friendly processes, and social commitment.

## *Developed for medicine.* Perfected for industry.

**The RV 45 was developed for the special demands of medical ventilation equipment.** The compact DC centrifugal fan proved itself best in the health sector. Now it has been further developed for use in industrial applications and is re-entering the market as RVE45. It proves what it can do anywhere that demands dynamic air delivery with a high static pressure increase.

Due to its special features, the extremely compact blower can be implemented in very diverse industrial applications. The RVE45 passes every test with flying colors, whether that's for fuel cells,

smoke detection systems or packaging machines. Its extremely dynamic EC internal rotor motor facilitates adaptation to dynamic pressure changes and switches both quickly and reliably between a high and considerably reduced pressure.

The high speed of up to 50,000 rpm produces exactly the power required, assisted by the low moment of inertia of the rotor. Vibration-absorbing materials and ideal aerodynamics ensure particularly quiet operation – over a period of many years thanks to maintenance-free ball bearings.

# Implemented in the most diverse applications: the RVE45.

**Would you like to know** where the RVE45 is already delivering reliable performance? The five areas of application mentioned below represent a whole host of others.

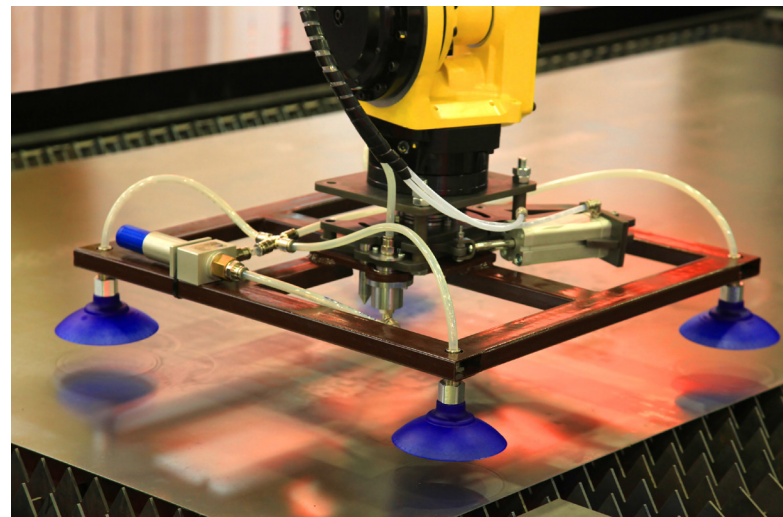
Discover with us how RVE45 can be integrated into your project as well. Just get in touch with us.

## Contact details:

Our expert Martin Sauter can be contacted at any time on +49 7724 811144 or at [martin.sauter@de.ebmpapst.com](mailto:martin.sauter@de.ebmpapst.com).

## Constructive freedom for vacuum lifters

Vacuum lifters require highly varied and changing pressures. High pressure is required when lifting and holding objects. This can be used to generate a strong vacuum. However, when lowering goods, a rapid drop in pressure is necessary, which guarantees that the item is released immediately. Vacuum lifters are used in many areas: one example is in the mail order sector. With the RVE45, cables do not run over the robot arm, significantly increasing the constructional freedom.



## Efficient battery operation for breathing masks

In production plants, there is work that can only be performed using breathing masks, for example work in painting shops. By installing the RVE45 in the mask, the oxygen supply is reliably guaranteed. The same applies for effectively removing the used breathing air. Due to the compact design of the centrifugal fan, the size and weight of the mask move in a comfortable range for the wearer and it can also be efficiently operated with a battery.





### **Extremely quiet for alternating pressure mattresses**

Alternating pressure mattresses are prophylactic measures that reduce the pressure on endangered areas of skin when people are confined to their beds. The RVE45 pumps the air-filled chambers in a mattress, changing the patient's position and thus preventing bedsores. The low noise generation means that the patient's sleep is barely disturbed by it.

### **Compact and quiet for mobile extraction systems and filtration**

Hygiene plays a central role in nail studios. The health of beauticians and customers is even more important. Therefore, it is extremely unpleasant for fine dust from the nail grinding machine to spread around the entire nail studio unhindered. So that this does not happen, there are special extraction systems, which always have a blower at their core. In the ideal scenario, it is very compact, powerful and quiet, just like the RVE45 from ebm-papst.



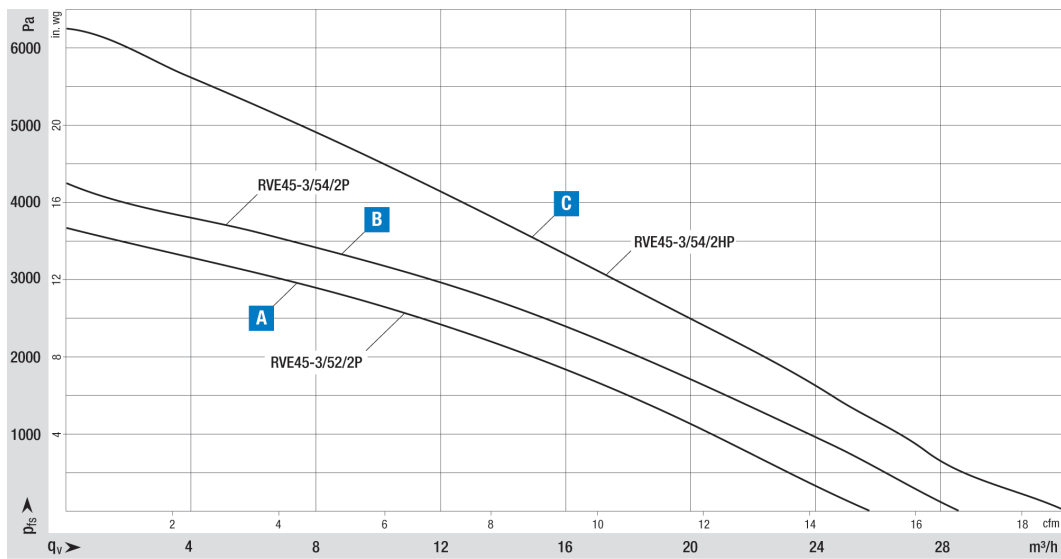
### **For precise pressure surges when filling bubble wrap**

So that goods reach their recipients safely, fragile packaging contents are often padded and protected using bubble wrap. The bubble wrap is produced on special packaging machines. The RVE45 from ebm-papst plays an important role in these. With short, precise pressure surges, it ensures that individual air chambers are firmly inflated but never burst. It doesn't get much better than that.

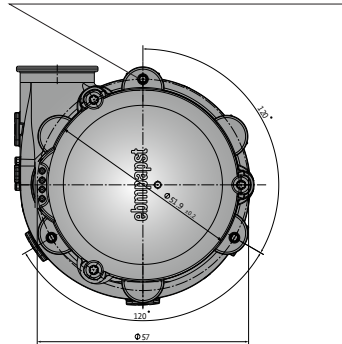
# Big on performance, *compact design.*

Bringing all of its features together, at 65 x 65 x 64 mm, the RVE45 is the ideal solution for any number of demanding tasks in very diverse industrial applications. Speed changes from 5,000 to 40,000 rpm in under 1 second are easy for the RVE45 blower. The high

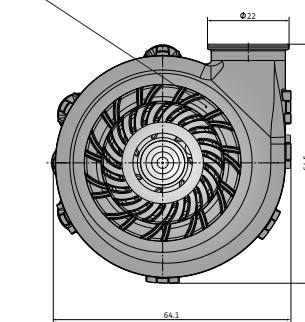
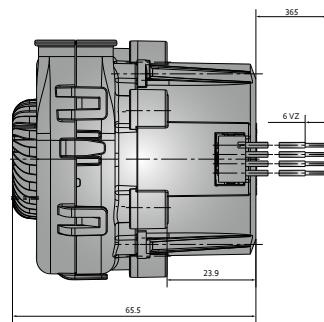
nominal speed of 50,000 rpm produces dynamic performance – with a compact design. Active braking means that similar dynamics can be achieved with negative acceleration.



For plastic-cutting screws  $\varnothing 2.5$  max.  
screw-in depth 6 mm



In an installed state, do not  
apply pressure to the cover



Nominal data	Air flow		Nominal voltage	Voltage range	Sound pressure *	Power consumption	Nominal speed	Temperature range	Service life $L_{10}$ , IPC		Characteristic curve
	l/min	cfm							Hours	Hours	
RVE45-3/54/2HP	533	18.8	24	20 to 30	59	45	41,000	-20 to +70	22,500/7,500	50,000	C
RVE45-3/54/2P	475	16.8	24	20 to 30	59	32	40,000	-20 to +70	22,500/7,500	50,000	B
RVE45-3/52/2P	428	15.1	12	10 to 16	59	27	33,000	-20 to +70	22,500/7,500	50,000	A

\* Extraction noise @ 1,000 Pa. Blower with open intake side upwards, opposite side lays on 10 cm thick foam, outlet openings with hose and 4 mm standard nozzle (acoustically insulated)

Microphone 1.0 m vertically over blower, room noise level < 26 dB(A)

Blower with hose and standard resistor with 4 mm inside diameter, a length of 40 mm and a 45° outlet angle.

All dimensions in mm. Data sheets available on request. The product descriptions in this brochure do not represent assured properties.

# So many strengths. *In such little space.*

## Electronics

- + **Plug and Play**
  - Integrated control electronics
  - Speed control through separate wire by means of PWM signal or analog voltage
  - Output signals: Tach signal or alarm signal
  - 4wire interface



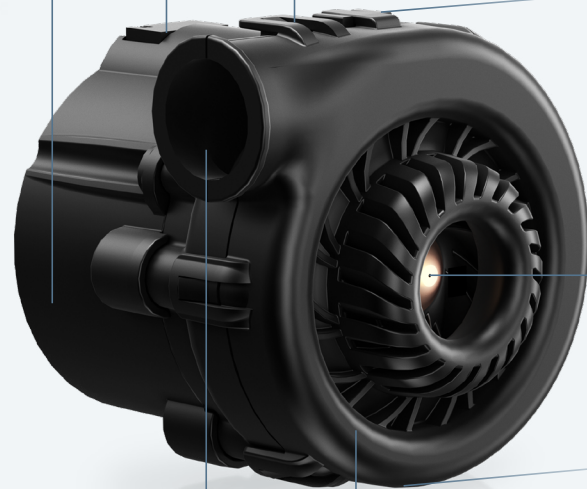
## Motor

- + **Unrivaled compactness**
  - Space-saving motor design
  - Special high-performance magnets
- + **Efficient operation**
  - Lightweight rotor for highly dynamic operation
  - Acceleration: up to 40 rev/ms
- + **Low noise emissions**
  - Quiet-running with 59 dB(A)
- + **Minimal vibration**
  - Dynamic balancing of the impeller-motor unit



## Air outlet

- + **Easy to connect**
  - Universal air outlet simplifies incorporation into the application
  - Connection to rubber collar



## Connection area

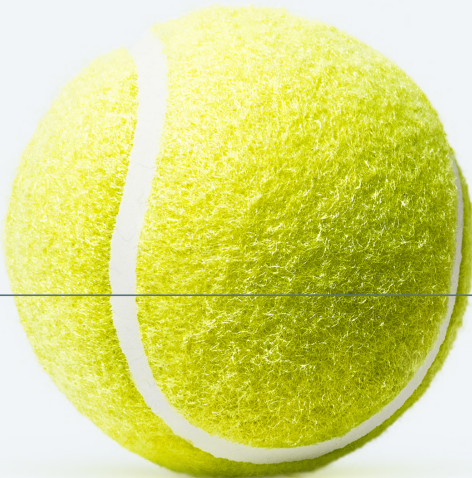
- + **Simple commissioning**
  - Free wires 310 mm, galvanized
  - Customer adaptation on request



## Highlights at a glance

- Highly dynamic and top performance of up to 40 rev/ms with static pressure increase of over 5,000 Pa.
- Quiet-running: Exemplary noise level of just 59 dB(A)
- Ingenious construction: Lightweight with very compact outer dimensions.

Original size



## Scroll housing

- + **Robust design**
  - Scroll housing for reduced noise
- + **Simple installation**
  - Mounting holes for uncomplicated screw attachment



## Impeller

- + **High static efficiency**
  - Aerodynamically optimized blade geometry
- + **Light fan impeller**
  - For highly dynamic operation
- + **Low losses**
  - Optimum fan impeller inflow and quiet operation
- + **Robust design**
  - Designed for revolutions up to 50,000 rpm and extreme pressures



[www.ebmpapst.com](http://www.ebmpapst.com)

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