



A **NEW GENERATION**
OF BLOWERS



The **Evolution project** is a way of satisfying customer requirements for **reducing the acoustic impact of blowers**, an issue much felt during **prolonged exposures** and arising from FPZ's desire to increase the machine's efficiency, reflecting its unceasing endeavour towards the customer and the environment.

Our research department, in association with the University of Genoa, has manufactured a series of machines featuring a new geometry and impellers with a **new blade layout**. We have therefore achieved a significant improvement in sound quality, by diminishing the hiss effect, which specially annoys the human ear.

Such successful evolution has been acknowledged by an **international patent** and the proposal of an article on the authoritative scientific magazine "Journal of Sound and Vibration". In light of these encouraging results, we have applied this solution throughout the new line that has consequently become **one of the best** in the category.



HIGHER EFFICIENCY

THE NEW BLOWERS REACH UP TO **20% EFFICIENCY INCREASE**



LOWER OUTLET TEMPERATURE

THE TEMPERATURE RISE IS **REDUCED UP TO 15%**



IMPROVED SOUND QUALITY

LOWER PERCEIVED NOISE: THE PROMINENCE OF TONAL NOISE PEAKS IS **REDUCED UP TO 6dB**



INDUSTRIAL PATENT

THE **NEW NOISE OPTIMIZED IMPELLER DESIGN** IS WORLDWIDE REGISTERED



3 YEAR WARRANTY

ALL OUR PRODUCTS ARE **GUARANTEED FOR A PERIOD OF 3 YEARS** FROM THE PURCHASE DATE



STANDARD IE3 MOTOR

ALL OUR PRODUCTS ARE AVAILABLE WITH **IE3 WIDE RANGE CURUS MOTORS**

ANALYSIS

THE SOUND OF BLOWERS

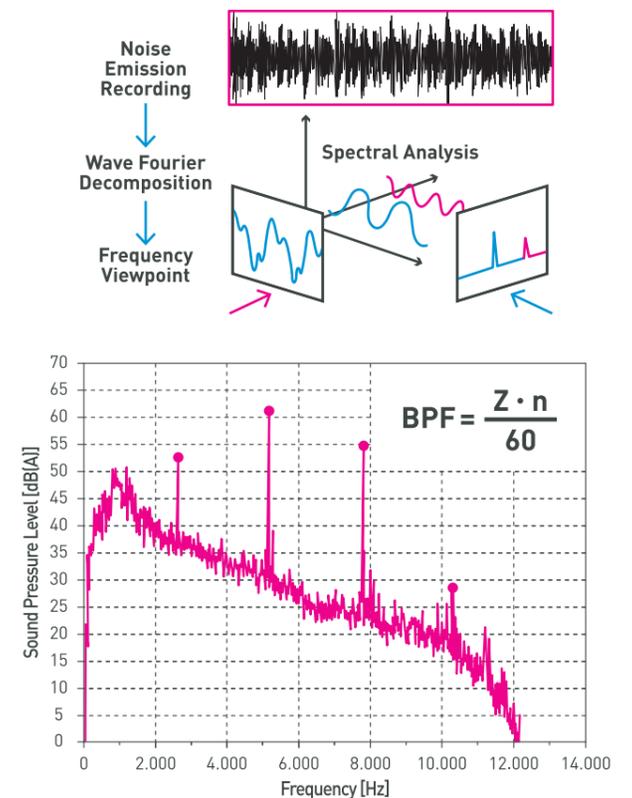
The blower, as a rule, is a very noisy machine.

In order to manufacture a new generation device, we drew from highly specialised expertise, by performing systematic studies of all the varying factors that contribute to noise generation:

- Air flowing into the toroidal channel and between the rotor blades
- Flow at inlet and outlet ports
- Electrical motor
- Bearings
- Structural vibrations (e.g. due to weight imbalances)
- Blade Passing Frequency noise (related to the passing of the rotor blades in front of the inlet and outlet ports)

NOISE ANALYSIS

In an industry first, an assessment of all contributions was made; it enabled us to quantify the enhancement in sound quality that can be achieved via the reduction of Blade Passing Frequency (BPF) peaks.



SOLUTION

NEW GEOMETRY SOLUTION WITH MODULATED IMPELLER BLADE SPACING (UNEVEN BLADE SPACING)

As a result of sound quality studies, we were able to implement a selective reduction of noise emissions. Considering all fluid-dynamic, technological and manufacturing constraints, a new and optimised blade spacing layout was designed with the goal of significantly reducing the tonal components of the impeller noise, akin to what is done for helicopter rotors.

