

# ÅF-Ingemansson

## Designing Product Sounds



Our exciting world of sound and vibration consulting does not only involve techniques to reduce noise. When designing products you want to control the “aural impact” of your product and in this process it is equally important to shape and even create the sounds your product will generate.

Sound may be used to give us signals and information telling me that my tool works properly, the cake is ready, I'm running out of fuel etc. but it may also be used to create or enhance a feeling. Today such sounds are usually created with an electronic circuit and a loudspeaker. In most cases it's a simple beep. However, modern digital signal processing has turned the design of sounds into an art without limits. In the near future designed sounds are likely to be a feature in virtually every technical product.

Sound design can't be made at chance since there are almost no limits to what we can do. This is our philosophy of product sound design.

### Enhancing product image

It is obvious that the design of a product should reflect the desired image of a product. Solid, fast, youth attractive, high quality, feminine, masculine... all these attributes can be reflected and enhanced through sound design. On the other hand, poor sound design can be confusing and damaging to the image. If you not yet have a clear picture of your products wanted acoustical image we can assist you in defining one.

### Man-machine interaction

How do we respond to sounds? Is the meaning of a signal intuitive or can it be easily learned? Should the sound tell me what to do or just alert me or give me a certain feeling? Shall people with hearing impairment use the product? Understanding how a sound is perceived is essential in the design of sounds.

### Audibility

The sound has to be audible. Thus, you must have a good knowledge of the acoustic environment of your product and

how your product interacts with this environment. Sound level measurement, sound quality analysis and recordings form the base of the design work.

### Electroacoustic design

The choice and placement of the loudspeaker is a piece of art in itself. Cost, space and a hidden position are the main factors that limit sound reproduction. Electroacoustic competence is needed to ensure optimal solutions.

### Sound design is art

Though many practical factors have to be considered in the end sound design is a form of art. Thus, this task must not be left to engineers only. Designers and music composers should be involved in the process.

### Let the jury decide

To ensure a good result the sound should be tested before a jury. The jury should ideally be representative to the customers, trained listeners and have a good product knowledge. The tests can be made in the real environment or with headphones in a simulated environment.

### Increasing your competitiveness

ÅF-Ingemansson has an unsurpassed knowledge and tradition in acoustics and the most advanced tools for sound design and sound quality assessment. We have formed a team of engineers, composers, designers and scientists with a totally unique competence meeting the new era of product sound design. In cooperation with your design and marketing departments we can design the sounds of tomorrow's products that will definitely increase your competitiveness.

