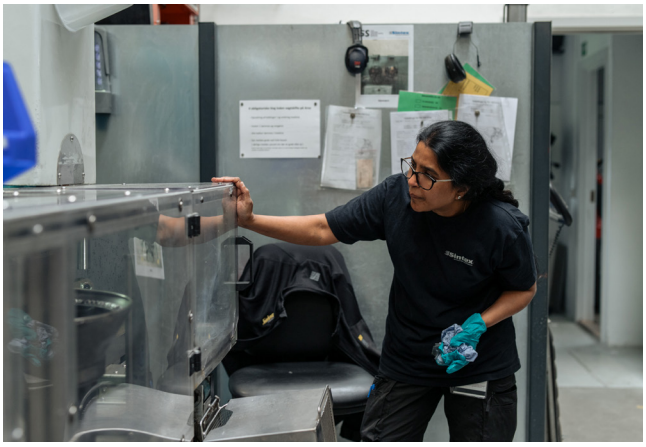
World-class sound using innovative SMC solution.

Sintex has created a magnetic system for loudspeakers that enables a significant reduction in distortion.

World-class sound using innovative SMC solution.

Danish speaker manufacturer's focus on sound led to creation of a world-class loudspeaker solution. SMCs have never previously been used in speakers… Soft magnetic composites in loudspeakers were new when Sintex and our business partner began the joint cooperation. SMC was, however, an obvious solution as it is attractive in applications that require low losses – in particular at high frequencies, as the advantages of SMC increase with the magnetic frequency. At frequencies above 200 Hz SMC has lower losses, which in turn has benefits in terms of maximum rated power, running costs and the environment.

SMC material consists of very pure iron powder with a special surface coating on each and every particle. This electrically insulating surface ensures high electrical resistance in the material even after compaction and heat treatment, which in turn means that eddy current losses are almost negligible.



Sintex has been involved in developing the system right from the start. We have collaborated with regard to patent application, and today Sintex produces the specified components in soft magnetic composites. We ensure competitive products with the best magnetic properties, such as good relative permeability and high magnetic saturation, combined with high electrical resistance.

Sintex has created a magnetic system for loudspeakers that enables a significant reduction in distortion. Optimum and authentic sound have been in focus.

Loudspeaker

The loudspeaker of the customer is the first loudspeaker containing a magnetic system made of soft magnetic composites (SMC). Many of the units in the speaker have been replaced by SMC, which has much lower electrical conductivity. The SMC-based solutions consist of linear properties in the audio frequency band, which helps to reduce distortion. At the same time, aluminium rings are placed round the pole in the speaker's magnet, which helps to reduce and stabilise the inductance of the inductor. This ensures the optimum conversion of voltage to current which runs through the inductor and regulates the travel of the membrane in the magnetic system.

Sintex has thus designed a speaker system in which the measurable third harmonic distortion components are reduced by no less than 20 dB compared to units operating with traditional magnetic systems. The loudspeaker of the customer is therefore a speaker with a relatively high sensitivity that represents a light and uncomplicated load for the amplifier.

How has the Danish loudspeaker manufacturer benefitted from collaboration?

- Optimum sound solution for their high-end products (no distortion)
- Patented solution ensures a competitive edge
- Technology partner – close development business partner
- Competence centre for magnetic calculations

… and not least a significant technological boost to their high-end products, which has also had an impact on the bottom line!

Reference: https://www.dali-speakers.com/media/1662/epicon-whitepaper.pdf

If you would like to learn more, please contact us.

E-mail: info@sintex.com
Tel.: (+45) 9657 4300
www.sintex.com

Sintex

Unleash the power within.