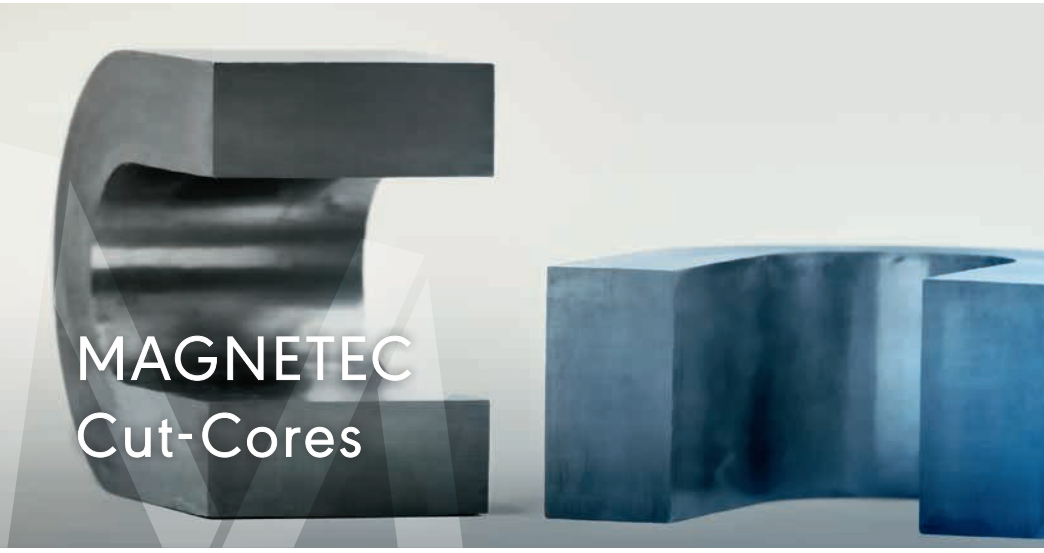
Magnetec



MAGNETEC Cut-Cores

Retrofitable, Adaptable, Efficient

Nanoperm provides new possibilities for applications of soft-magnetic materials due to its low core losses and high saturation flux density.

Furthermore, the lower magnetostriction of nanocrystalline material reduces noise levels in transformers and chokes.

The possibilities of nanocrystalline Cut-Cores

Cut-Cores made from grain oriented electrical sheets are known in the industry since a long time. They are typically used as soft-magnetic material in power applications, such as transformers and chokes. However, grain oriented sheets have limited functionality in applications that require higher frequencies and temperatures.

Nanocrystalline Cut-Cores overcome the problems associated with grain oriented electrical sheets through their unique soft-magnetic material characteristics.

Benefits

- Retrofit existing application to reduce motor bearing currents through a simple installation process
- Reduction of noise levels in transformers and chokes
- Smaller formfactor compared to ferrite cores
- Design of loss- and volume-optimized transformers

Features

- Low specific core losses (see diagram on the back side)
- Magnetic saturation flux density: 1.2 T
- Operating temperature ≤ 180 °C
- Effective permeability (cut, 10 kHz and depending on air gap): > 5.000
- Core shapes: round and oval

Figure 1 depicts the typical core losses of Nanoperm as a function of frequency and flux density. Nanoperm has low core losses at high frequencies while also having a high flux density.

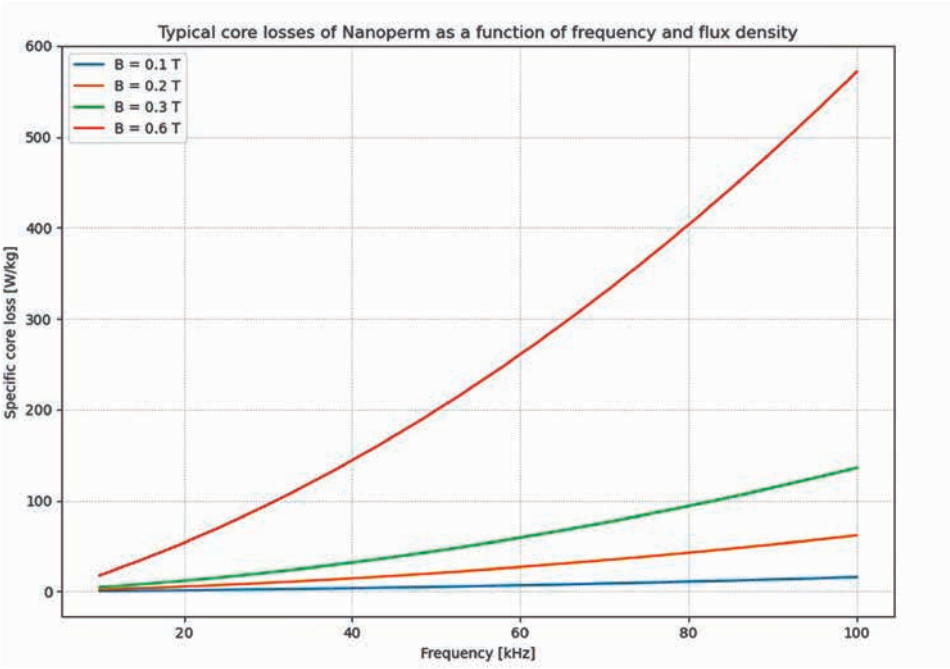
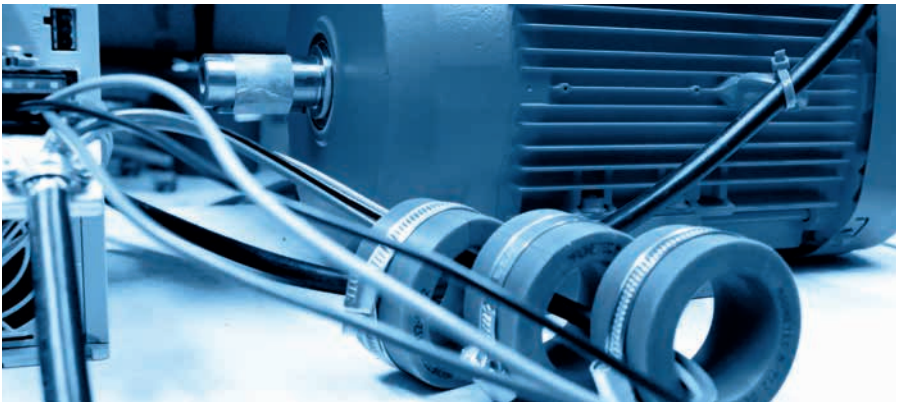


Figure 1: Example of typical core losses of Nanoperm

Applications

Power applications in the medium frequency range and applications to reduce motor bearing currents generated by common-mode currents are typical application domains for nanocrystalline Cut-Cores.



- Reduction of motor bearing currents
- Transformer and storage chokes in switched power supplies
- Power transformers in AC/DC converters
- Welding transformers
- Uninterruptable power supplies
- Chokes and transformers for renewable energies
- Medium frequency transformers in railway applications