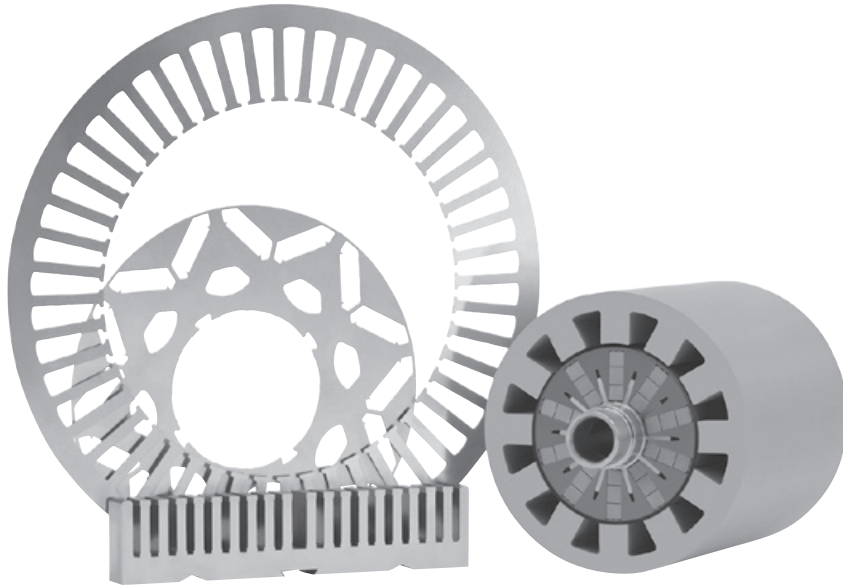


APPLICATION NOTES

VAC LAMINATIONS & ASSEMBLIES

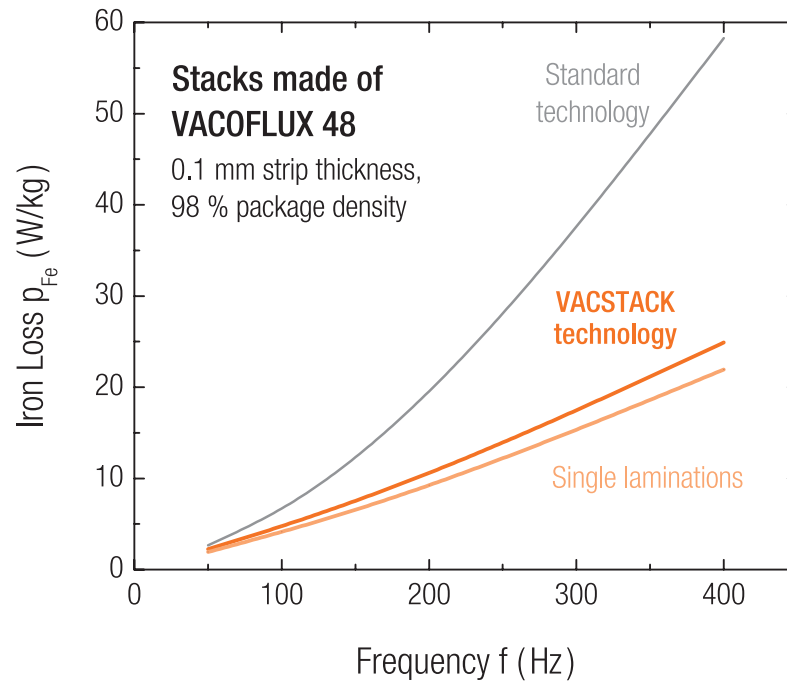
FOR MOTOR AND GENERATOR APPLICATIONS



- **Unique combination of high performance materials and optimized processing technologies**
- **Highest saturation and lowest losses combined with optimum filling factors**
- **Wide range of production technologies**
- Comprehensive product range from sheets over laminations and parts to finished, heat-treated rotor & stator packages
- Customized solutions from the material production to the “ready-to-use” laminations & assemblies

ADVANCED MATERIALS – THE KEY TO PROGRESS

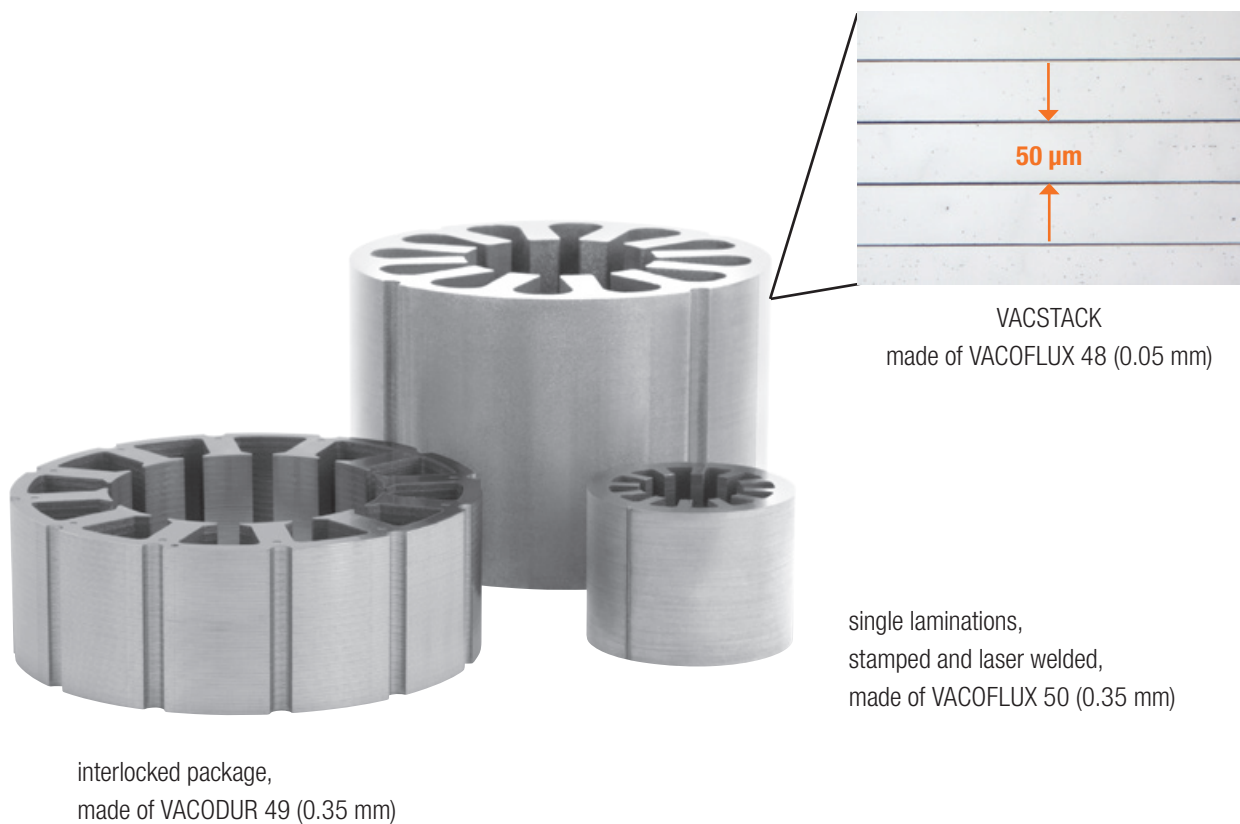
VAC[®]
VACUUMSCHMELZE



The combination of VAC's product range of soft magnetic nickel-iron (e.g. PERMENORM®, MEGAPERM®, ULTRAVAC®) and cobalt-iron (VACOFLUX®, VACODUR®) alloys with optimized processing technologies warrant outstanding properties:

- Maximum package densities for highest induction values:
e.g. VACSTACK® packages made of VACOFLUX 48, strip thickness 50 or 100 µm:
typical package density 96-98%
- Various production methods to achieve thinnest isolation layers with excellent electrical resistivity e.g. combination of isolation and oxidation layer in a thickness range of a **few micrometers**
- **Precise stacking and low geometrical tolerances** avoiding magnetic deterioration and expensive mechanical finishing e.g. no grinding necessary
- Processing capabilities meet highest requirements on mechanic and magnetic properties e.g. high strength values for **fast rotating rotor stacks**

® = registered trademark of VACUUMSCHMELZE GmbH & Co. KG



VAC offers a broad variety of different manufacturing technologies: From premium VACSTACK packages using extremely thin strips and wire EDM production up to cost optimized interlocked packages.

The involved production technologies lead to:

- improved soft magnetic properties
- significant reduction of electric losses
- precise stacking and low geometrical tolerances
- filling factors up to 98 %

The combination of our production technologies and our high end soft magnetic materials like VACOFLUX or VACODUR alloys, moves the application of our customers to the edge of technology and market leadership.



FORMS OF SUPPLY AND DELIVERY STATES

- Sheets (with and w/o coatings, oxidation, heat treatment)
- Laminations and parts (stamped, laser- or wire-cut)
- Finished assemblies (interlocked, glued or laser welded)

VAC's laminations and assemblies are in use where highest performance is required and standard solutions fail. They offer benefits in several markets like:

- Aircraft
- Automation
- Automotive
- Medical

Materials

VAC is also supplying semi-finished products like strips, rods and wires for motor and generator applications. Please see our separate leaflet.

VACUUMSCHMELZE GMBH & CO. KG

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ADVANCED MATERIALS – THE KEY TO PROGRESS