



LAMINATED MAGNETIC CIRCUIT STATOR WITH STRUCTURAL BONDING

Innovative process for manufacturing laminated magnetic circuits using the screen printing method for optimal cohesiveness

Technological advantages

Cutting-edge technology

Screen printing process enables use of all types of structural bonding agents

Complete control over ultra-thin film thicknesses (down to a few microns), resulting in complete insulation between layers

Structural bonding to prevent reinforcement of laminated core

Precise geometry, machined with numerically controlled wire cutter

Perfect alignment of layers

High-performance manufacturing process

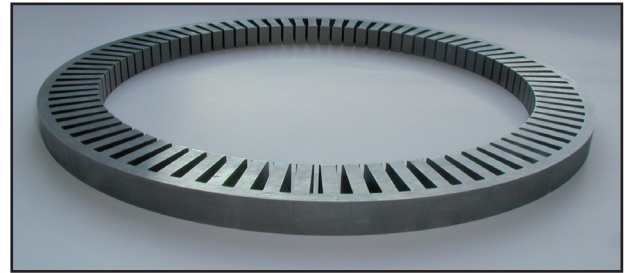
Reduce weight by 20% (magnetic circuit without support)

Core with high iron content (up to 97%)

High rigidity

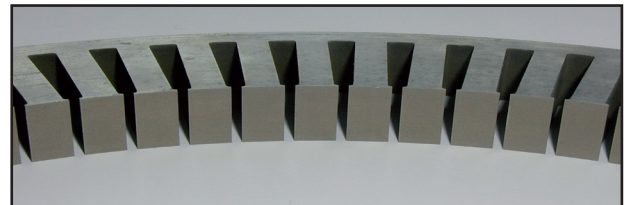
Cogging torque reduced by 40%

Dry fretting reduced by 40%



Laminated magnetic circuit stator

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Example of slots with complex geometry

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Overview of invention

The sheet printing structural bonding process produces a rigid, monolithic part

Final geometry is obtained during finishing via wire cutting of the stack, providing the core with excellent mechanical and magnetic characteristics

Potential applications

Applications requiring robust, low-weight, high-performance electromagnetic results:

- Electric motors for space applications
- Aviation industry
- Land motors (road and rail vehicles, etc.)

Other applications:

- Generators
- Transformers
- electromagnets
- Electromagnetic actuators

Commercial benefits

A reliable bonding process

Robust and stable cores over the long term
Process adapted to small and large-scale series
High magnetic performance levels

Lower costs

Less costly grinding and moulding operations

TRL : 8 (2010)

*Patented invention, available under license
Pre-industrialisation in progress*