



天津珠峰硅钢股份有限公司简介

Introduction of Tianjin Zhufeng Silicon Steel Co., Ltd



天津珠峰硅钢股份有限公司

Tianjin Zhufeng Silicon Steel Co., Ltd

1. 公司介绍 Company Profile



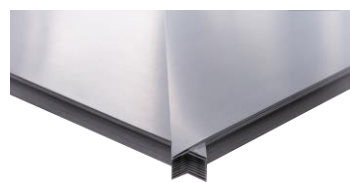
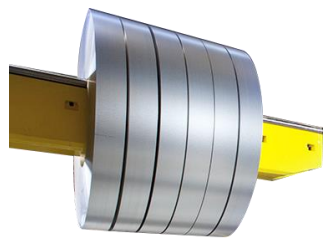
天津珠峰硅钢股份有限公司主营高端定尺硅钢条料、铁心柱料、硅钢铁心、非晶立体卷铁心等产品的研发制造与技术服务。Tianjin Zhufeng Silicon Steel Co., Ltd. provides services of R&D and manufacturing products including high-end silicon steel fixed-length sheets, laminations, transformer cores and amorphous 3D coil core, etc

统一管理天津武清、辽宁沈阳、湖南衡阳、新疆昌吉等四大铁心加工基地，具备20万吨/年的硅钢产品以及15000吨/年的非晶立体卷铁心产品加工生产能力。

ZFGG manage four core processing bases, including Tianjin Wuqing, Liaoning Shenyang, Hunan Hengyang, and Xinjiang Changji. We have an annual production capacity of 200,000 tons of silicon steel core products, and 15,000 tons of amorphous 3D cores per year.

天津武清基地每月可生产配变铁心1500台、主变铁心30台。

Tianjin Wuqing Base can produce 1500 sets of distribution transformer cores and 30 sets of main transformer cores per month.



2. 产线、设备介绍 Introduction of production line and equipment



全自动纵剪线
Fully automatic slitting line



250超高速横剪线
250 ultra high speed shearing line



机器人堆垛横剪线
Robot stacking shearing line



800横剪线
800 shearing line



离线自动叠片设备
Offline automatic lamination equipment



定尺条料自动绕包线
Automatic wrapping line for fixed length strip materials



配变铁心自动试验设备
Automatic testing equipment
美变、干变铁心智能试验系统
Intelligent Test System for dry type and pad mounted cores



珠峰硅钢公司**硅钢车间**占地30000平米，拥有3纵12横共计15条世界先进的剪切线，6台全自动叠片设备，4个智能库房、2条全自动包装线、2套全自动试验设备以及2条全自动物流产线。**非晶车间**占地8000平米，拥有12台自动高速开料机，10台自动高速卷绕线，2条全流程全自动产线，2套全自动试验设备以及2台铁心智能试验站。

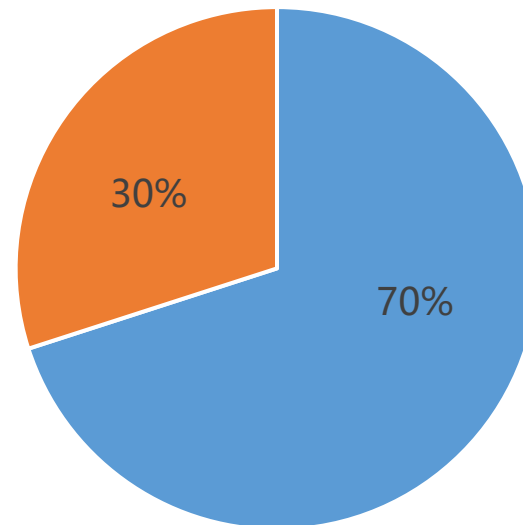
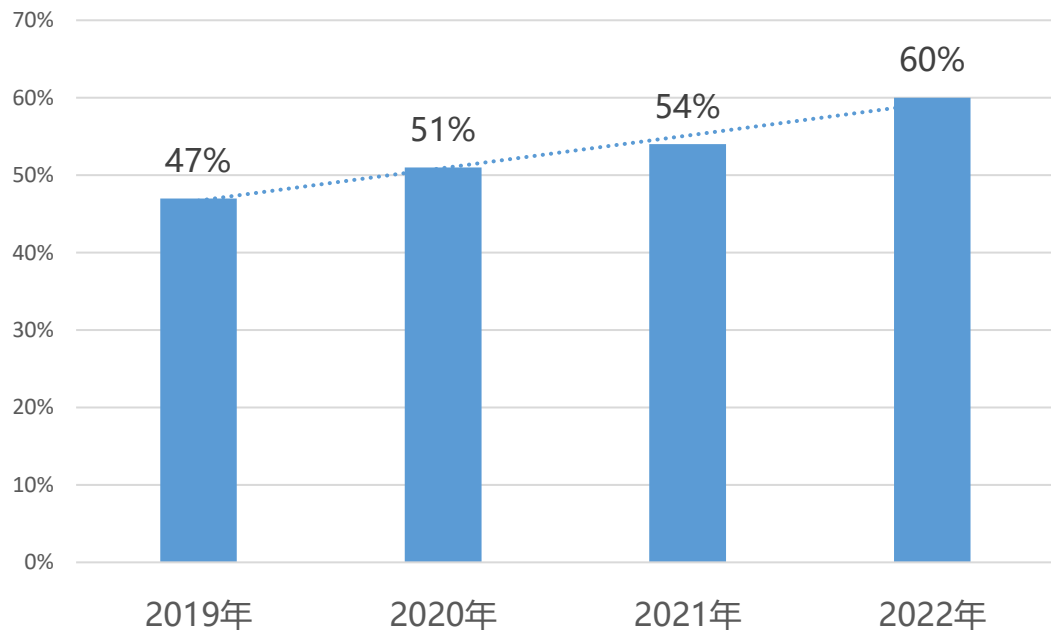
The silicon steel workshop covers an area of 30000 square meters, with 3 advanced slitting line and 12 shearing lines, 6 fully automatic laminating equipment, 4 intelligent warehouses, 2 fully automatic packaging lines, 2 sets of fully automatic testing equipment, and 2 fully automatic logistic production lines. The amorphous core workshop covers an area of 8000 square meters and has 12 automatic high-speed cutting machines, 10 automatic high-speed winding lines, 2 fully automatic production lines, 2 sets of fully automatic testing equipment, and 2 intelligent core testing station.

3.中国取向硅钢产出情况 Output of CRGO silicon steel in China

- 2022年，全球取向硅钢企业合计产出368.9万吨，中国区产量占比达到**60%**。
- In 2022, the total output of global CRGO silicon steel was 3.689 million tons, and China accounting for 60%.

- 中国硅钢技术实力继续进步，高磁极化级产量占比 70%；超低铁损取向硅钢产量大幅提升，为全球新能效变压器的用料提供了坚实的支撑。
- China's silicon steel technology continues to improve. The output of high magnetic polarization products accounting for 70%; The output of ultra-low iron loss products increased significantly, providing solid support for the materials for new energy efficiency transformers worldwide.

2019-2022年我国取向硅钢产量在全球产量占比变化
Change of the proportion of China's CRGO silicon steel production to global production from 2019 to 2022



■ 高磁极化级 ■ 普通级
High magnetic polarization level Normal level

4. 珠峰硅钢资源获取优势 Advantages in obtaining silicon steel resources



采购规模

Procurement scale

2022年，珠峰硅钢全年取向硅钢采购量20万吨以上，位列**全球采购量第一**。

In 2022, ZFGG purchased more than 200,000 tons of CRGO silicon steel in the whole year, ranking first in the world.



战略合作

Strategic Cooperation

珠峰硅钢和宝钢、首钢、浦项、新日铁、蒂森克虏伯等全球主流取向硅钢厂，均建立有长期稳定的战略合作关系，有着稳定可靠的资源获取渠道。

ZFGG has established long-term and stable strategic cooperation relationships with global mainstream CRGO silicon steel plants such as Baosteel, Shougang, POSCO, Nippon Steel, and ThyssenKrupp, so we have stable and reliable access to resources.



产权合作

Property rights cooperation

珠峰硅钢（TBEA）是首钢的股东之一，同时和宝钢在较多层面有资本合作。

ZFGG(TBEA) is one of the shareholders of Shougang and also has capital cooperation with Baosteel at various levels.



技术合作

Technical cooperation

珠峰硅钢（TBEA）和宝钢、首钢均建有联合实验室，共同开发、验证取向硅钢新产品。如新能效变压器、特高压变压器用取向硅钢。

ZFGG(TBEA) has established joint laboratories with Baosteel and Shougang to develop and validate new products, such as CRGO silicon steel which is used for new energy efficiency transformers and ultra-high voltage transformers.

4. 珠峰硅钢资源获取优势 Advantages in obtaining silicon steel resources



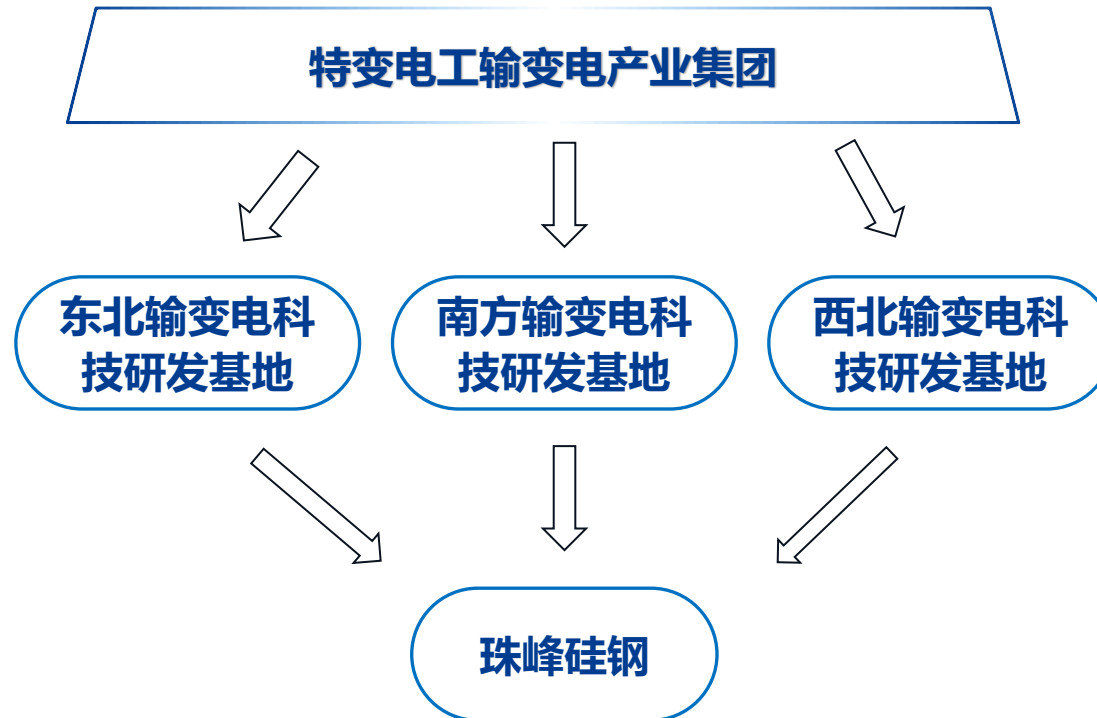
区位优势

location advantage



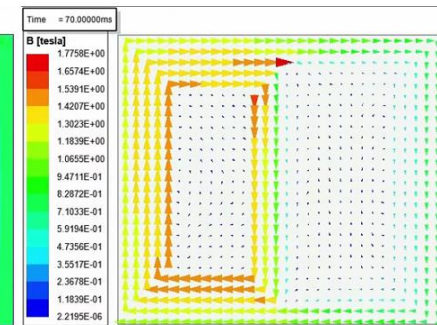
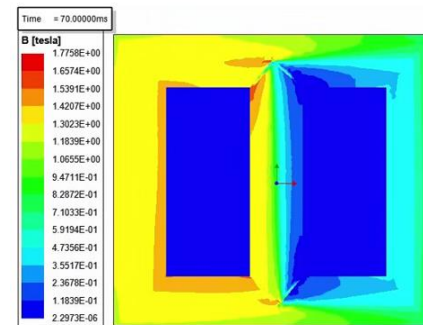
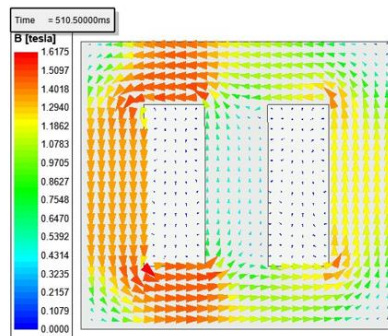
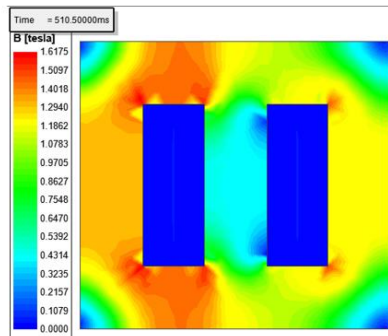
5. 技术研发优势 Technological research and development advantages

- **深厚变压器研发制造背景：**依托特变电工输变电产业集团技术优势，珠峰硅钢对铁心在各类变压器（110kV以下配变、特种变、干变，110kV-750kV交流变压器、电抗器，±1100kV直流换流变压器等）的运行工况有更全面、深入地认识理解和技术输入，能够为客户提供工况更加适宜、成本更具竞争力、性能更加一致的铁心技术方案和产品。
- Deep background in transformer research and development and manufacturing: Relying on the technological advantages of TBEA Transmission and Transformation Industry Group, ZFGG has a more comprehensive and in-depth understanding and technical input of the operating conditions of cores in various transformers (distribution transformers below 110kV, special transformers, dry transformers, 110kV-750kV AC transformers, reactors, ± 1100kV DC converter transformers, etc.), which can provide customers with core technology solutions and products that are more suitable for working conditions, more competitive in cost, and more consistent in performance.



5. 技术研发优势 Technological research and development advantages

- 建立研究中心，与北京首钢股份有限公司研究院、中国宝武钢铁集团有限公司研究院建立联合实验室。与清华大学、上海交通大学、西安交通大学、河北工业大学联合开展课题研究。
- ZFGG established a research center and a joint laboratory with the research institute of Beijing Shougang Co., Ltd. and China Baowu Group Co., Ltd. Collaborated with Tsinghua University, Shanghai Jiao Tong University, Xi'an Jiao Tong University, and Hebei University of Technology to conduct research projects.



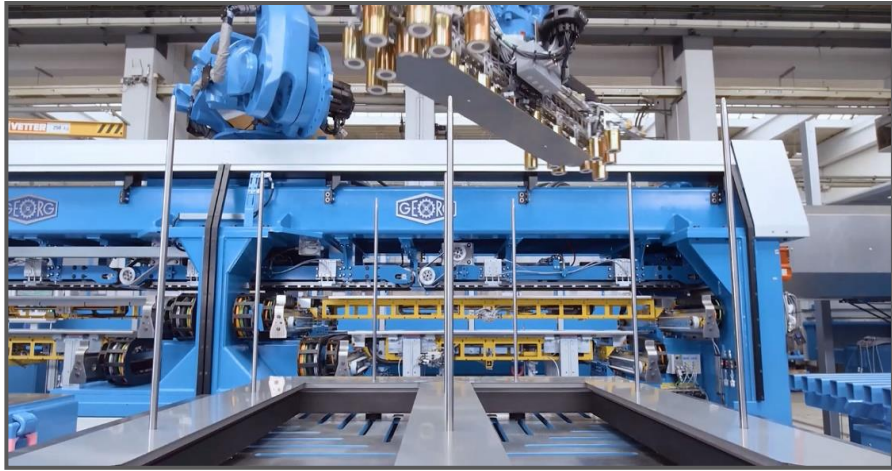
各向同性铁心及其主磁场仿真

Isotropic Core and Its Main Magnetic Field Simulation

各向异性铁心及其主磁场仿真

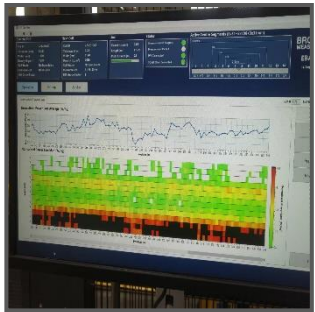
Anisotropic Core and Its Main Magnetic Field Simulation

6. 质量保障优势 Quality assurance advantages



自动化、信息化过程控制保证产品质量 Automation and informatization process control ensure product quality

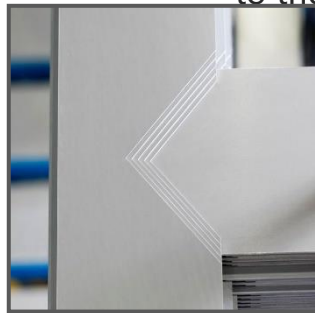
- 基于铁心制造工艺流程，从人、机、料、法、环，测等方面制定保证措施，融入到产品生产制造的各个工序；
- Based on the core manufacturing process, assurance measures are formulated from the aspects of human, machine, material, method, environment, and measurement, and integrated into various processes of product production and manufacturing.
- 结合信息化系统，对设备运行状态进行监控，对过程数据进行采集，使生产过程处于受控状态，保证产品质量。
- By combining information systems, monitoring the operational status of equipment and collecting process data, the production process is kept under control to ensure product quality.
- 从铁心原材料进厂到最后成品出厂，全部采用自动化设备加工转运，避免人员接触，最大程度保证产品一致性。
- From the raw materials of the core to the final products leaving the factory, all are processed and transported using automated equipment to avoid personnel contact and ensure product consistency to the greatest extent possible.



纵剪在线检测获取硅钢铁损数据
Obtaining Iron Loss Data of Silicon Steel through Longitudinal Shear Online Detection



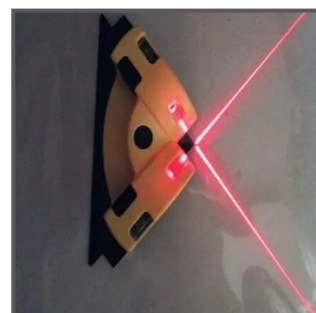
先进的剪切设备保证片型精度
Advanced cutting equipment ensures sheet shape accuracy



采用全序列裁剪确保铁心厚度均匀
Full sequence cropping to ensure uniform thickness of the core



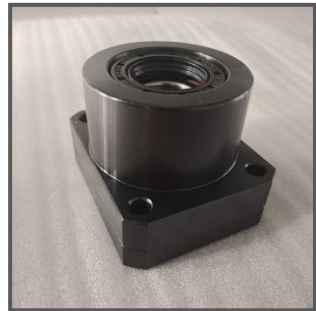
智能立体库进行硅钢存放和自动转运
Intelligent three-dimensional warehouse for silicon steel storage and automatic transportation



采用激光水平仪校准铁心平面度
Using a laser level to calibrate the flatness of the core



采用扭力扳扳手进行铁心拧紧保证夹紧力均匀
Using a torque wrench to tighten the iron core to ensure even clamping force



采用旋转支块支撑减少铁心变形
Using rotating support blocks to reduce core deformation

7. 产品运输包装方案 Product transportation packaging plan

出口ABB西班牙工
厂干变铁心
Dry type
transformer cores
exported to ABB
Spain Factory



出口印尼、土耳其
的铁心及大型柱料
Transformer cores
and laminations
exported to
Indonesia and
Turkey



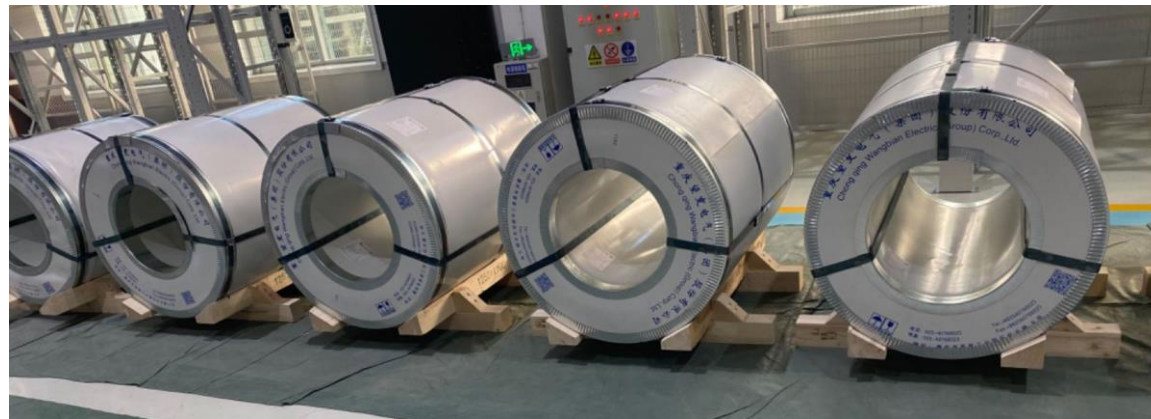
- 运输过程中涉及到海运的产品，全部采用防潮纸+密封真空袋+防潮隔离三层防护，保证产品与外部环境的完全隔离。
- All products involved in sea transportation are protected with three layers of moisture-proof paper, sealed vacuum bags, and moisture-proof isolation to ensure complete isolation from the external environment.

7. 产品运输包装方案 Product transportation packaging plan

出口印度

定尺硅钢

Fixed length
silicon steel
exported to
India



出口印度铁心散
片

Transformer
cut core
exported to
India



- 运输过程中涉及到海运的产品，全部采用防潮纸+密封真空袋+防潮隔离三层防护，保证产品与外部环境的完全隔离。
- All products involved in sea transportation are protected with three layers of moisture-proof paper, sealed vacuum bags, and moisture-proof isolation to ensure complete isolation from the external environment.

珠峰硅钢期待与您合作

**ZFGG looks forward to working
with you!**

