麦格雷博电子（深圳）有限公司
Shenzhen Magnet Laboratories Co.,Ltd.

总部 HQ
地址：广东省深圳市宝安区新桥街道新桥东先进制造产业园一号园区2号楼13层
Add: 13th Floor, Building 2, No.1 Park, Xinqiao East Advanced Manufacturing Industrial Park, Baoan District, Shenzhen, China
P.C：518104
Tel：+86 0755 2658 4313
Website：www.szmglb.com

深圳 Shenzhen
香磁磁业（深圳）有限公司
Magnet Business (Shenzhen) Co.,Ltd.
地址：深圳市宝安区新桥街道新二社区象南工业园A/B/C/D/E栋
Add: Building A/B/C/D/E, Xiangnan Industrial Park, Xin'er Community, Xinqiao Street, Bao 'an District, Shenzhen, China
Tel：+86 0755 2725 0001

日本 Japan
株式会社マグネットラボ
地址：东京都中野区大和町3丁目43番3号
Add: 43-3.3-chome, Daiwa cho, Nakano ku, Tokyo, Japan
Tel: +81 (0) 3 3330 7450
Fax: +81 (0) 3 3330 7430
P.C.: 165-0034
Web: www.magnetlabo.co.jp

香港 HongKong
东京磁铁（香港）有限公司
Tokyo Ferrite (HK) Co.,Ltd.
地址：香港九龍尖沙咀諾士佛臺9號冠福中心6樓604B室
Add: RM 604B, 6/F, Koonfook centre, No.9 Knutsford Terrace, Tsimshatsui,Kowloon, HongKong
Tel：+852 2512 2802

上海 Shanghai
麦格雷博（上海）工程技术中心
Maglab (Shanghai) Engineering Technology Center
地址：上海市嘉定区金园五路333号领兆创客空间D栋1楼
Add: 1st Floor, Building D, Lingzhao Maker Space, No. 333 Fifth Road of Jinyuan, Jiading District, Shanghai,China
Tel：+86-021-3478 0627

德国 Germany
Shenzhen Magnet Laboratories Co.,Ltd.
Representative Office in Germany
Add: Neubrueckstrasse1, 40213 Dusseldorf, Germany
Tel: +49 211 5408 5212
Email: GER.Marketing@szmglb.com

扫描关注麦格雷博公众号

扫描关注官网

麦格雷博
MAGNET LAB

磁能产业技术开发国际先驱
The International Pioneer in the Technology Development of Magnetic Energy Industry

麦格雷博电子（深圳）有限公司
Shenzhen Magnet Laboratories Co.,Ltd.

www.szmglb.com

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公司简介

麦格雷博，磁能技术开发领域国际知名品牌，1979年由佐佐木俊一先生在日本东京创立麦格雷博株式会社。2003年成立了麦格雷博电子（深圳）有限公司，是一家集研发、制造、销售于一体的国家级高新技术企业、国家级专精特新"小巨人"企业。

麦格雷博注重研发和创新，拥有经验丰富的中日技术专家团队，在全球充(退)磁、磁测量、磁场处理等领域始终保持技术领先，拥有超过百项知识产权。自品牌诞生之日，麦格雷博就定位于服务全球高端制造，立志成为提供磁能产业开发技术和设备的世界知名品牌。

公司总部位于深圳，旗下有6家全资子公司（深圳、香港、东京、青岛）及3家分支机构（德国、上海、泰国）。目前麦格雷博（集团）公司总人数近500人，公司研发及生产厂房总面积近6万平方米。

MAGLAB, an internationally renowned brand in the field of magnetic energy technology development, was founded in 1979 by Mr. Sasaki in Tokyo, Japan. Shenzhen Magnet Laboratories Co., Ltd. was founded in 2003 and is a national high-tech enterprise integrating research and development, production and sales. It is also a national "Little Giants" company specializing in niche sectors, commands high market shares, and boasts innovative solid capacity.

MAGLAB focuses on research&development and innovation with an experienced team built with technical experts from both China and Japan. It has always maintains technological leadership in magnetization and magnetic energy detection with more than one hundred intellectual property rights. Since its brand establishment, MAGLAB has marketed itself as a global high-end manufacturing service provider and is determined to become a world-renowned brand that provides technology and equipment for the development of the magnetic energy industry.

Our headquarters is located in Baoan D istrict, Shenzhen, China and has six wholly-owned subsidiaries (Shenzhen, Hong Kong, Tokyo, Qingdao) and three branch offices (Germany, Shanghai, Thailand). At present, Maglab Group has nearly 500 employees, and the manufacture factory is nearly 60,000 square meters.

40+

发展经验与历史沉淀
More than 40 years of development experience and historical precipitation

100+

专利知识产权
100 and more patent intellectual property

300+

年产能300套+自动化整体充磁设备
Annual production capacity 300 sets more Automated Post-assembly Magnetization Equipment

10000+

平方米生产车间
10000m² of workshop size

500+

合作客户
Over 500 cooperative partners

CORPORATE CULTURE

企业文化

经营理念 Business Philosophy

为客户创造价值
Create value for customers

愿景 Vision

做创新磁处理技术的拓荒人　成为磁产品应用解决的领导者
To be a pioneer in innovative magnetic processing technology and a leader in magnetic product application solutions.

使命 Mission

创新磁能开发技术，助力全球智能制造
Innovate magnetic energy development technology and contribute to the global intelligent manufacturing.

价值观 Values

工匠精神：敬业、精益　Craftsmanship Spirit: Dedication and Excellence
创新高效：专注、创造　Innovation and Efficiency: Focus and Creation
团结协作：协同、守信　Team work and Cooperation: Collaboration and Trustworthiness
知行合一：求实、磨练　Knowledge and Action Driven: Seeking Truth and Honour

DEVELOPMENT HISTORY

发展历程

1979年
佐佐木先生在日本东京成立麦格雷博株式会社
Mr. Sasaki founded Magnet Lab in Tokyo, Japan

1995年
为日本发那科FANUC机器人提供整体充磁设备
Provide integrated magnetizing equipment for the Japan FANUC robot

2003年
麦格雷博电子 (深圳)有限公司成立
Shenzhen Magnet Laboratories Co., Ltd. was founded

2007年
多极偏转充磁线圈研发成功
Successful development of multi-pole deflection magnetizing coil

2008年
泰国麦格雷博在曼谷成立
Thailand Maglab was founded in Bangkok

2013年
获得深圳市高新企业认定
Recognized as a high-tech enterprise in Shenzhen

2014年
整体充磁设备成功应用于新能源汽车领域
Integral magnetization equipment has been successfully applied to new energy vehicles.

2015年
获得国家高新企业认定
Recognized as a national high-tech enterprise in China

2016年
列入市中小企业重点培育梯队
Listed as the key cultivation echelon of small and medium-sized enterprises in Shenzhen

2017年
在线自动充磁检测装置专利获得授权
Obtained patent authorization for an online automatic magnetization detection device

2018年
多极电机永磁转子整体充磁专利；在线充磁检测方法专利获得授权。
Obtained patent authorization for multi-pole motor permanent magnet rotor integral magnetization and online automatic magnetization detection method

2019年
获得IS09001质量管理体系认证证书
Accredited IS09001 Quality Management System Certification

2020年
麦格雷博德国办事处成立；麦格雷博院士专家工作站成立。
The Maglab branch office was established in Germany. The Maglab Academician Expert Workstation was established.

2021年
全资收购东京磁铁(香港)有限公司和香磁磁业(深圳)有限公司
M&A of Tokyo Ferrite(HK) and Magnet Business (Shenzhen)

2022年
完成数千万的A轮融资；获得国家级电工学会科技进步一等奖。
Completed series A round funding of tens millions RMB; Won the first prize of scientific and technological progress from China Electrotechnical Society.

2023年
获得国家级专精特新"小巨人"企业称号
It has been awarded the title of national-level Specialized-Refined-Innovative "LITTLE GIANT" enterprise.

获得多家机构A+轮融资
Obtained a series A+ round funding from multiple institutions

CORE
COMPETITIVENESS
核心优势

技术领先
Leading technology

源于日本核心磁能技术，
领先于国内外同行企业，
属技术驱动公司。

Originating from Japan's core magnetic energy technology, leading domestic and international peers, it is a technology-driven company.

方案丰富
Rich solutions

首创整体充磁方案应用于新能源汽车，效率大增；
覆盖90%以上新能源汽车领域，广泛应用于机器人、工业自动化、航天航空、工程机械等行业。

The first overall magnetization solution has been applied to new energy vehicles, greatly increasing efficiency. Covering over 90% of the field of new energy vehicles, it is widely used in industries such as robotics, industrial automation, and aerospace engineering machinery.

行业标杆
Industry benchmark

编码器磁环400+磁极充磁，
马达充磁线圈达50万+次，
行业领先。

Encoder magnetic ring 400+magnetic pole magnetization, motor magnetization coil over 500000 times, leading the industry.

平台卓越
Excellent platform

整合日本技术与产品，
联合全球磁领域人才，
强大资源整合能力。

Integrate Japanese technology and products, collaborate with global magnetic talents, and have strong resource integration capabilities.

AWARDS AND
CERTIFICATES
荣誉资质

国家高新技术企业
National High-tech Enterprise

国家级专精特新"小巨人"企业
National "LITTLE GIANT" company awarded.

深圳市专精特新企业
Specialized and sophisticated engineering enterprises that produce hi-tech products, Shenzhen, China

深圳市创新型中小企业
Innovative SME, Shenzhen, China

ISO9001质量管理认证
ISO9001 Certificate of Quality Management System

ISO9001质量管理认证
ISO9001 Certificate of Quality Management System

CE认证
CE Certification

邓白氏注册认证企业
D-U-N-S
REGISTERED
Company

中国电工技术学会科学进步一等奖
First Prize of Scientific and Technological Progress from China Electrotechnical Society

新能源&智能网联汽车行业核心零部件优秀设备企业
New Energy & Intelligent Networked Excellent Equipment Enterprise of Key supply chain in the Automobile Industry

R&D
INNOVATION

研发创新

2

解决方案

SOLUTION

方案概述
Solution Overview

方案优势
Solution Advantage

方案应用
Solution Application

在线整体充磁解决方案

ONLINE POST-ASSEMBLY MAGNETIZATION SOLUTION

麦格雷博提供"**一站式**"在线整体充磁、表磁、磁通检测解决方案 助力工业数字化升级
Maglab provides a "one-stop" online solution for post-assembly magnetization, surface magnetization, and magnetic flux detection to assist industrial digital upgrading.

01

驱动电机解决方案

DRIVE MOTOR SOLUTION

解决驱动电机制造端高温注塑造成磁钢不可逆退磁等问题，提高磁石运输便利性和装配效率，大幅增加良品率。

Drive Motor Solution solves the problem of irreversible demagnetization of magnetic steel caused by high-temperature injection molding in the manufacturing end of the drive motor. It improves the convenience of magnet transportation and assembly efficiency, significantly increasing the yield rate.

02

轮毂电机和盘式电机解决方案

HUB MOTOR AND DISCMOTOR SOLUTIONS

完美解决轮毂、盘式电机因磁钢面积大、厚度高、磁极多，带来的装配困难问题。

This solution perfectly solves the assembly difficulties caused by sizeable magnetic steel area, high thickness, and multiple magnetic poles in hub and disc motors.

03

涡轮增压及高速电机解决方案

TURBOCHARGING AND HIGH-SPEED MOTOR SOLUTIONS

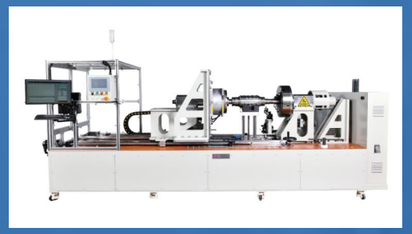
完美解决转子热套后磁石退磁、充磁线圈极头和产品磁极位置校准问题。
This solution professionally solves the magnet's demagnetization after the rotor is hot-sleeved, the calibration of the magnetizing coil's pole head, and the position of the product's magnetic pole.

04

轨道交通电机转子解决方案

RAIL TRANSIT MOTOR ROTOR SOLUTION

通过自主研发的卧式充磁设备，兼容特殊形状产品，上下料采用吊装方式，解决传统立式充磁设备不便充磁的问题。
MAGLAB's horizontal magnetization equipment by self-research is compatible with specially shaped products, using the lifting method for loading and unloading, which solves the problem of inconvenient magnetization for traditional vertical magnetization equipment.



05

伺服电机、直线电机解决方案

SERVO MOTORS AND LINEAR MOTORS SOLUTIONS

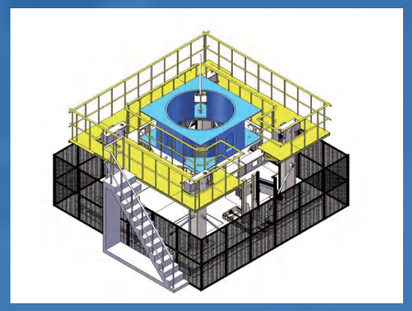
高效精准解决磁钢带磁装配困难问题，效率提升90%+。
This solution solves the problem of the low efficiency and inaccuracy difficulty of the magnetic steel strips assembly process, increasing efficiency by over 90%.

06

大型电机解决方案

LARGE MOTOR SOLUTION

商用车、风力发电等大型装备所采用的大型电机转子，通过国内首创的分段充磁解决方案，不但降低了客户充磁电源的采购成本，充磁效率也大幅提升。
MAGLAB's segmented magnetization solution is applied to large motor rotors, such as commercial vehicles and wind power generation. This solution not only reduces the procurement cost of customers' magnetizing power supply but also significantly improves magnetizing efficiency.



SOLUTION
OVERVIEW

方案概述

在线整体充磁技术，又称为“后充磁技术”，

是指对未充磁的磁石按照要求组装后，再对转子内的所有磁钢整体一次性充磁。充磁线圈与转子磁极一一对应，位置固定好后，线圈通过一个脉冲大电流，产生一个强磁场，对转子内部的磁钢进行一次性磁化；磁化后通过结构脱离线圈，进入下一个检测工位。

Online integrated magnetization technology, also known as "post-assembly magnetization technology", refers to assembling unmagnetized magnet as required, and then magnetizing all magnet steel in the rotor at once. The yokes of the magnetizing coil correspond to the rotor poles one by one. And after the position is fixed, the coil generates a strong magnetic field through a pulsed high current to magnetize the magnetic steel inside the rotor at once. After magnetization, the rotor leaves the ring through the mechanism and enters the next detection station.

目前日本、欧美等主流厂商的整体充磁工艺应用普及率达90%以上。近年国内很多企业认识到整体充磁改造所带来的降低成本、提高品质、改善效率的巨大优势，也开始逐步采用整体充磁技术。整体充磁工艺将成为永磁电机研发、生产制造过程中成熟的主流技术工艺。

Currently, the overall popularization rate of the application of the post-assembly magnetization process by mainstream manufacturers in Japan, Europe, and America is more than 90%. In recent years, many domestic enterprises have realized the vast advantages of post-assembly magnetization in reducing costs and improving quality and efficiency and have gradually adopted the process. The post-assembly magnetization process will become a mature mainstream technology in permanent magnet motors' research and development, production and manufacturing process.

转子充磁电压、电流及充磁线圈的温度可实时监控。表磁检测工位对转子表面空间磁场分布进行检测，可发现漏插磁钢、充磁异常等问题，相关数据可上传服务器。

The rotor magnetization voltage, current, and temperature of the magnetization coil can be monitored in real time. The surface magnetic detection station can inspect the rotor's surface magnetic field distribution, and detect quality defects such as missing magnetic steel and abnormal magnetization can be found. Relevant data will be synced with the manufacturing data server.

公司技术团队具备转子整体充磁三维瞬态场的仿真能力，可准确预判充磁饱和效应，减少研发周期，提高产品质量。

The proficiency of the technical team at our company enables them to simulate a three-dimensional transient field of post-assembly magnetization for rotors, allowing them to make accurate predictions regarding the magnetization saturation effect and consequently shorten the research and development cycle. Additionally, this process leads to improved product quality.

整体充磁技术能改善生产、存储、运输等环节，降低成本、提高品质、改善效率。

Post-assembly magnetization can significantly reduce production costs while improving the quality and efficiency of various processes, such as storage, transportation and more.

SOLUTION
APPLICATION

方案应用

作为国外最早提供整体充磁设备的公司，麦格雷博株式会社在日本率先推广整体充磁技术。1995年，麦格雷博株式会社与多关节和智能机器人企业，法那科株式会社（FANUC）共同合作并实现了大型机器人电机的整体充磁，成功取得了和单品充磁完全一致的磁场特性。在线整体充磁技术可广泛应用于新能源汽车、机器人、电声领域及磁性材料等领域。

As the first company to provide post-assembly magnetization equipment, Maglab Corporation was the first to promote post-assembly magnetization technology in Japan. In 1995, Maglab cooperated with robot company (FANUC Corporation) to develop post-assembly magnetization on large robot motors, successfully achieving magnetic field characteristics that were 100% consistent with single-product magnetization. Online post-assembly magnetization technology can be widely applied in industries such as new energy vehicles, robots, electron-acoustic-filed magnetic materials, etc.

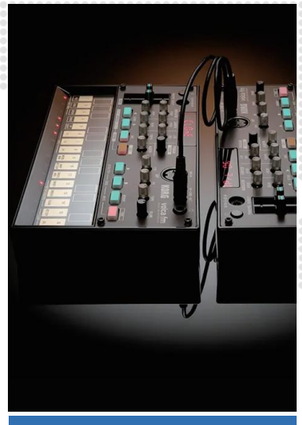
无人机

风力发电

新能源汽车

储能

轨道交通

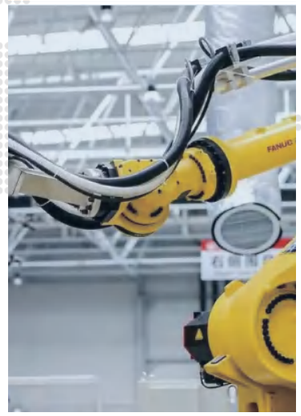


电声+

曳引及工程机械

企业技术中心
及科研院所

机器人



磁性材料

3

产品篇

PRODUCTS

充磁&表磁&磁通一体机
Magnetization & Magnetic Flux and Surface Magnetic Detection Integrated Machine

整体充磁设备
Post-assembly Magnetization Equipment

磁通&充磁线圈
Magnetic Flux and Magnetizing Coil

充磁电源
Magnetizing Power Supply

磁场取向电源
Magnetic Field Oriented Power Supply

退磁机
Demagnetizer

表磁检测设备
Surface Magnetic Detector Equipment

高斯计&霍尔探头
Gauss Meter & Hall Probe

磁通计
Fluxmeter

高分辨率多极磁环
High-Resolution Multi-track Magnet Ring for Encode

MAGNETIZATION & MAGNETIC FLUX AND SURFACE MAGNETIC DETECTION INTEGRATED MACHINE

充磁&表磁&磁通一体机

设备特点

EQUIPMENT CHARACTERISTICS

1
转子充磁检测兼容范围广
The rotor magnetizing detection has a wide compatibility range

2
操作简单
Easy operation

3
具备防误操作
Anti misoperation

4
内嵌式磁通量检测
Embedded magnetic flux detection

5
自动化程度高
High degree of automation

6
检测数据可上传系统
Testing data can be uploaded to the system

7
换型便捷
Convenient type change

8
极性判别精准
Accurate polarity inspection

9
可检测磁极峰谷值、磁极角度、磁极面积、斜极角度、FFT分析
Detectable pole peak, pole angle, pole area, skew angle and FFT analysis

10
充磁信号反馈，异常报警
Magnetization signal feedback, abnormal alarm

技术规格

TECHNICAL SPECIFICATIONS

项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	AC220V±5% 50/60HZ
输入电流	Input current	＜20A
额定功率	Rated power	＜5KW
检测节拍	Cycle time for magnetic field measurement	8s~10s / layer
设备颜色	Equipment color	RAL7035
设备噪声	Equipment noise	≤75dB（充磁瞬间除外 | Except magnetization moment）
表磁测量范围	Surface magnetic measurement range	0~10T
磁通检测范围	Magnetic flux detection range	0~1Wb
最小分辨率	Minimum resolution	0.01mT
铝型材槽密封胶条颜色 | Color of sealing strip for aluminum profile groove		硬质黑色 | Hard black
设备尺寸	Equipment size	长宽高约 | Length,width and height 2000x1500x2200mm
换型时间	Changing time	≤30min（工装+线圈 | Tooling+coil）

INTEGRAL
MAGNETIZING
EQUIPMENT

整体充磁设备

支持人工及机器人上下料，适用于汽车电机、家用电机、伺服电机、各种磁性材料、军工业、扬声器、钢铁、铁路等行业。

Support manual and/or robotic loading and unloading, suitable for automotive motors, household motors, servo motors, various magnetic materials, the military industry, loudspeakers, steel, railway and other industries.

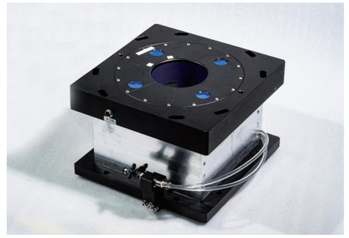
设备特点
EQUIPMENT
CHARACTERISTICS

1. 转子充磁兼容范围广
Wide compatibility range for rotor magnetization.
2. 操作简单
Easy operation
3. 具备防误操作
Anti misoperation.
4. 换型便捷
Convenient type change
5. 自动化程度高
High degree of automation.
6. 支持双模式切换
(人工/机器人)
Supports dual-mode switching (manual/robot)

技术规格
TECHNICAL
SPECIFICATIONS

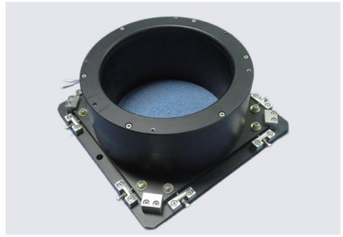
项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	AC220V±5% 50/60HZ	
输入电流	Input current	Max 20A	Easy operation.
额定功率	Rated power	＜5KW	
设备颜色	Equipment color	RAL7035（色号可定制）	
设备噪声	Equipment noise	≤75dB （充磁瞬间除外	Except magnetization moment）
表磁测量范围	Surface magnetic measurement range	0~10T	
磁通检测范围	Magnetic flux detection range	0~1Wb	
最小分辨率	Minimum resolution	0.01mT	
铝型材槽密封胶条颜色 | Color of sealing strip for aluminum profile groove		硬质黑色 | Hard black	
设备尺寸	Equipment size	长宽高约 | Length,width and height 2100x1200x2500mm	
换型时间	Changing time	≤30min（工装+线圈 | Tooling+Coil）	

充磁&磁通线圈
MAGNETIZATION & MAGNETIC FLUX COILS

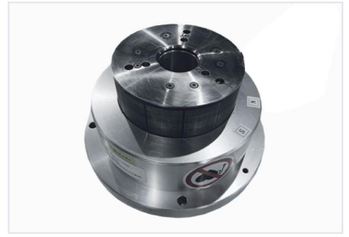


分段错极线圈
Segmented Pole Coil

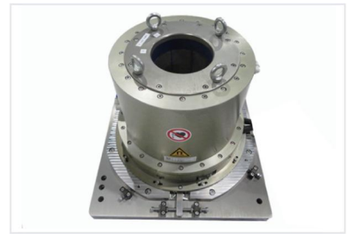
单码道平面充磁线圈
Single Coded Track Planar Magnetizing Coil



扭转多极充磁
Torsional Multi-pole Magnetization



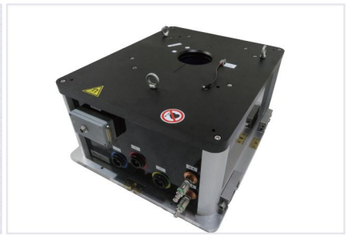
表贴式外充磁
Surface Mounted External Magnetization



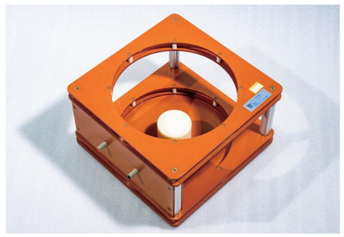
E4-860充磁线圈
E4-860 Magnetizing Coil

嵌入式内充磁
Embedded Internal Magnetization

大型尺寸充磁
Large-size Magnetization

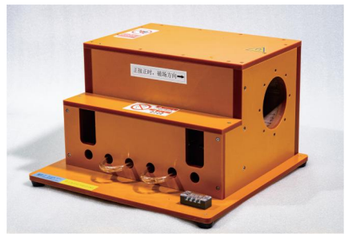


航空插头充磁线圈
Aero Plug Magnetizing Coil



亥姆霍兹线圈
Helmholtz Coil

小电机外周充磁
Small Motor Peripheral Magnetization



螺线管充磁线圈
Solenoid Magnetizing Coil

麦格雷博充磁线圈五大优势
FIVE ADVANTAGES OF MAGLAB MAGNETIZING COIL

1 波形可控
Waveform controllable

充磁效果的好坏对马达、传动装置、传感器等产品性能的影响非常大。随着机械产品体积越来越小、功能越来越强大，对充磁波形控制的要求也越来越苛刻。麦格雷博可根据客户对波形的要求设计磁路的走向。
Magnetization quality greatly influences the performance of products such as motors, drive devices and sensors. As the sizes of mechanical products become smaller and more powerful, the requirements for controlling the magnetizing waveform become more stringent. MAGLAB can design a suitable magnetic circuit according to the customer's requirements for the waveform.

2 耐用性好
Good durability

作为生产设备，充磁线圈的耐用性直接影响着生产成本。提高线圈的耐用性，降低客户生产成本，才能赢得客户信赖。充磁线圈的耐用性与其散热量密切相关，提高线圈耐用程度，麦格雷博着力采取以下改善措施。
① 避免线圈发热，设计低能量、高效率的线圈；
② 改善线圈散热条件，设计利于散热的线圈形状，研究加入风冷装置；
③ 提高线圈耐热水平，高标准选择绕线种类、模具材质。
As production equipment, the durability of magnetizing coils can directly affect production costs. Only by improving the durability of the coil and reducing customer production costs can we win customer trust. The durability of the magnetized coil is closely related to its heat dissipation. To improve the durability of the coil, the following improvement measures are taken:
① Design low-power consumption and high-efficiency coils to avoid heating up.
② Improve the heat dissipation conditions of the coil by applying a shape that is conducive to heat dissipation and studying the addition of air cooling.
③ Improve the heat tolerant level of the coil by using high-standard winding types and mold materials.

3 方便维修
Convenient maintenance

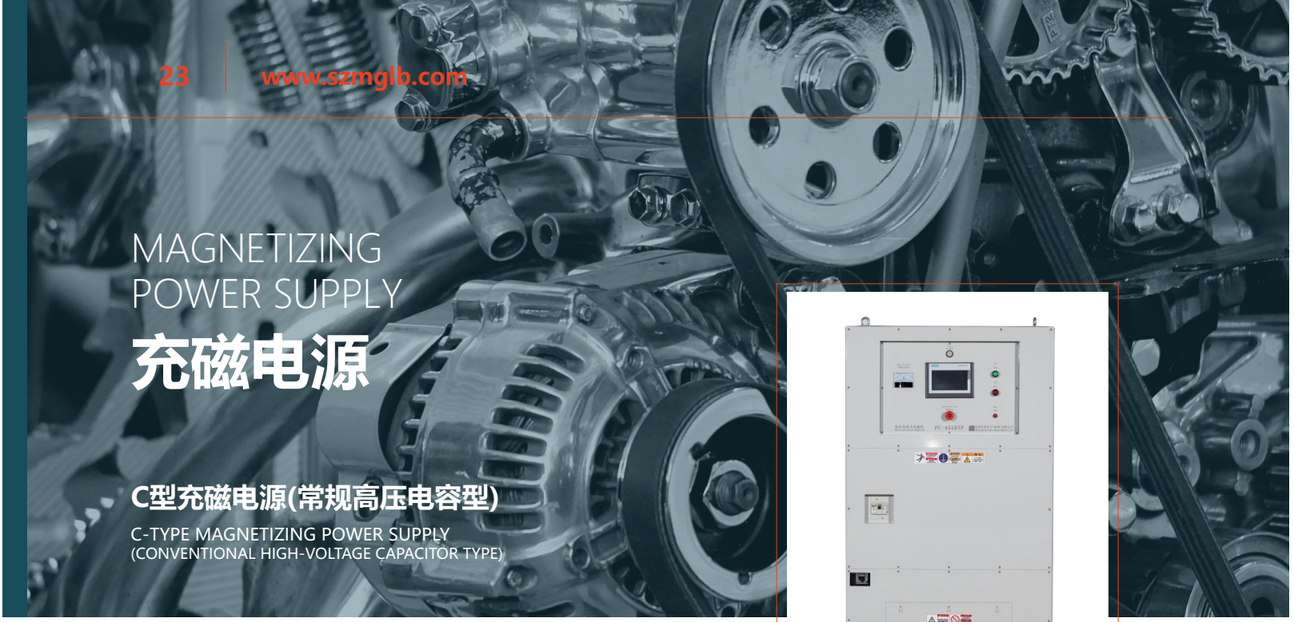
使故障线圈可维修再利用，降低了顾客的生产成本，减少社会资源的消耗。如线圈的磁极部件与水冷部件可分离；当充磁线圈损坏时，只需更换磁极部件，水冷部件可继续使用。
Make the faulty coil repairable and reusable to reduce customer production costs and social resource consumption. For example, the magnetic pole components of the coil can be separated from the water-cooled components. When the magnetizing coil is damaged, only the magnetic pole components need to be replaced, and the water-cooled components can continue to be used.

4 操作便利
Convenient for operation

对产线上使用的充磁线圈，其可操作性及准确性十分重要。如操作困难，或充磁后产品难以快速取出，会导致产线无法正常工作。为配合产线的生产需要，麦格雷博设计出各种专用的充磁线圈和充磁机构，形式上分为人工取出，半自动，全自动化。
The operability and accuracy of the magnetizing coil used on the production line are very important. If the operation is complex or the product is difficult to unload quickly after magnetization, the production line will not work properly. To meet the production line's needs, MAGLAB has designed various specialized magnetization coils and mechanisms, which can driven with manual mode, semi-automatic mode and fully automated mode.

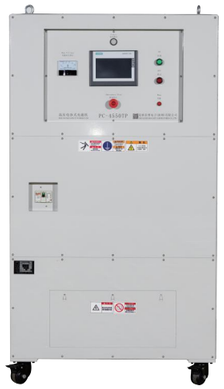
5 本社生产
MAGLAB production

麦格雷博在管理、设计和制造等环节，致力于深入理解和贯彻客户的需求。为生产满足客户需要的充磁线圈，从绕线工序到树脂涂层、成品、发货检查均在本公司内部完成。
MAGLAB applies the practical application of understanding and implementing customer needs in management, design, manufacturing, and other aspects. To produce magnetized coils that meet customer needs, the winding process, resin coating, finished products and shipment inspection are all completed internally within MAGLAB.



MAGNETIZING POWER SUPPLY
充磁电源

C型充磁电源(常规高压电容型)
C-TYPE MAGNETIZING POWER SUPPLY
(CONVENTIONAL HIGH-VOLTAGE CAPACITOR TYPE)



设备特点
EQUIPMENT CHARACTERISTICS

1
耗电量少，效率高，
放电波形稳定，可长时间持续使用；
Low power consumption, high efficiency, stable discharge waveform and long-term continuous operation;

2
系统采用自动控制方式，
提供预留端口，便于升级改造；
The system adopts an automatic control mode and provides reserved ports, making upgrading convenient.

3
提供多重保护和报警输出，
保证系统安全；
Provide multiple protection and alarm outputs to ensure system safety.

4
操作简单，触摸屏精准监控，
充磁电压及电流等数据可上传或存储；
Simple operation, accurate monitoring by touch screen, data such as magnetizing voltage and current can be uploaded or stored;

5
充磁电压DC1000~5500V；
电压等级任选；
Magnetizing voltage DC1000~5500V;
Optional voltage level;

6
关机、断电、故障时
自动释放电容电量。
Automatically releases capacitor power when shutdown, power failure and malfunc.

主要用途
MAIN APPLICATION

新能源电动汽车电机转子、轨道交通电机转子、风电发电组转子的充磁。 Magnetization of new energy electric vehicle motor rotor, rail transit motor rotor and wind power generator rotor.	中大型功率永磁电机转子的充磁。 Magnetization of the rotor of medium and large power permanent magnet motor.	磁保持继电器、钕铁硼喇叭及耳机充磁。 Magnetic latching relay, NdFeB speakers and headphones are magnetized.

技术规格
TECHNICAL SPECIFICATIONS

项目	Items	技术参数	Technical Parameters
电压级别	Voltage level	1000V 1500V 2500V 3500V 4500V 5500V	
输入电压	Input voltage	AC200/220V OR 380V 50/60Hz 1Φ/3Φ	
输入电流	Input current	依电容容量和充电时间要求不同而有差异 | There are differences according to the requirements of capacitor capacity and charging time	
充电电压	Charging voltage	50~1000V 50~1500V 50~2500V 50~3500V 100~4500V 100~5500V	
通电时间	Electrification time	0.1ms~10ms	
通电间隔	Electrification interval	0.5s以上 1s以上 1.5s以上 3s以上 5s以上 8s以上	
控制器	Controller	SCR方式 | SCR mode	
最大输出电流 | Maximum output current		10kA 30kA 50kA	
电容容量	Capacitance capacity	100~50000μF	
能量	Energy	50~25kJ 112~56.25kJ 312~156kJ 612~306kJ 1~506kJ 1.5~756kJ	
附件	Accessories	输入、输出、信号、控制线缆各一根(5m电线) | One input, one output, one signal and one control cable (5m wire)	

L型充磁电源（低阻抗高功率型）

L-TYPE MAGNETIZING POWER SUPPLY
(LOW IMPEDANCE AND HIGH POWER TYPE)

设备特点
EQUIPMENT CHARACTERISTICS

1

该充磁机采用专业定制的低阻抗元器件，使之高效输出充磁电流、且电流衰减时间达到最短。当使用（市面上的）普通充磁机连续充磁时，充磁线圈温度升高易导致充磁线圈本身故障以及导线电阻增加、充磁电流减弱等充磁不足的问题。

The magnetizer can efficiently generate magnetizing current and achieve the shortest current decay time since professionally customized low-impedance components are applied. When using regular components purchased from the market for continuous magnetization, a high-temperature rise in the magnetizing coil can easily lead to malfunction of the magnetizing coil itself, as well as problems such as increased wire resistance, weakened magnetizing current, and insufficient magnetization.

2

L型（低阻抗型）可使充磁线圈发热量降低为原来的1/5。

L-type (low impedance type) can reduce the heat volume of the magnetizing coil by 1/5 of the original.

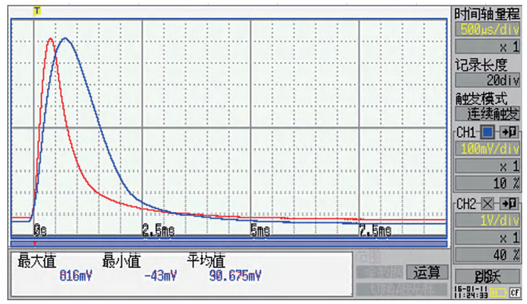
主要用途 MAIN APPLICATION

用于充磁线圈发热量大的稀土类的小型多极充磁，特别适用于充磁线圈持久性差的场合。 It is used for small multi-pole magnetization of rare earths with a high calorific value of the magnetizing coil, especially suitable for occasions with poor durability of the magnetizing coil.	用于固定数额充磁量的高精度充磁场合。 It is used for high-precision magnetic field combinations for a fixed amount of magnetization.	用于小型马达等小径多极充磁时磁极间隙狭小、导线1-2圈、需使用大电流充磁的场合。 It is used for small-diameter multi-pole magnetization, such as small motors, where the gap between the magnetic poles is narrow, the wires are 1-2 turns, and a large current is needed for magnetization.	用于小径多极PM型步进马达、主轴电动机、小型拾音器等充磁。 It is used for magnetizing small-diameter multi-pole PM stepping motors, spindle motors, small pickups, etc.

技术规格
TECHNICAL SPECIFICATIONS

技术规格	Technical Specifications
项目	Items	技术参数	Technical Parameters
输入电源Input power supply	1ΦAC220V
输入电流	Input current	< 35A
充磁电压Magnetizing voltage	50~2500Vdc电压等级任选 50~2500Vdc voltage level is optional.
充磁电流Magnetizing current	< 30KA
充磁节拍Magnetizing cycle time	> 1.5s

L型低阻抗充磁电源与C型充磁电源的充磁电流波形对比
COMPARISON OF MAGNETIZING CURRENT WAVEFORMS OF L-TYPE LOW IMPEDANCE MAGNETIZING POWER SUPPLIES AND C-TYPE ELECTROMAGNETIC POWER SUPPLIES



红色为L型低阻抗充磁电源充磁电流波形
Red is the magnetizing current waveform of L-Type low impedance magnetizing power supply.

蓝色为常规型充磁电源充磁电流波形
Blue is the magnetizing current waveform of conventional magnetizing power supply

MAGNETIC FIELD ORIENTED POWER SUPPLY
磁场取向电源

主要用途
Main Application

应用于铁氧体、钕铁硼、钐铁氮等磁材在压延，注塑和挤压成型的取向。
It is applied to the magnetizing orientation of ferrite, NdFeB, Sm-Fe-N, and other magnetic materials in compression, injection molding, and extrusion molding.

直流型取向电源技术规格
DC-ORIENTED POWER SUPPLY TECHNICAL SPECIFICATIONS

项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	1ΦAC200V/220V OR 3ΦAC360V/380V
输入电流	Input current	依机型而定	Depending on the model
输出电压	Output voltage	0~200V
正向充磁电流	Forward magnetizing current	0~200V/0~1500A （规格任意选择	Optional specification）
反向退磁电流	Reverse demagnetization current	0~50V/0~500A（规格任意选择	Optional specification）
输出调整	Output adjustment	充填、充磁和退磁/定电流控制 Filling,magnetizing and demagnetizing/constant current control
重复精度	Repeatability	充磁、退磁/1%	Magnetization and demagnetization/1%
时间设定	Time setting	充、退磁时间根据成形机充磁指令时间而定；充磁与退磁休止时间：0.05s~以上任意设定。 The magnetization and demagnetization time depends on the magnetization instruction time of the forming machine; the rest time of magnetization and demagnetization: 0.05s~or more.
冷却方式	Cooling mode	水冷式	Water-cooled
工作方式	Operation mode	0.5s~10s交替连续运转	0.5s~10s alternate continuous operation
报警	Alarm	电流上下限报警，时间超限，水流量，温度，外部报警 Current upper and lower limit alarm, time overrun, water flow, temperature,external alarm

脉冲式取向电源技术规格
PULSE ORIENTED POWER SUPPLY TECHNICAL SPECIFICATIONS

项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	1ΦAC200V/220V OR 3ΦAC360V/380V
输入电流	Input current	≤35A
充磁电压	Magnetizing voltage	0~1600V （规格任意选择	Optional specification）
充磁电流	Magnetizing current	＜35KA
退磁电压	Demagnetization voltage	0~1600V （规格任意选择	Optional specification）
退磁电流	Demagnetization current	＜10KA
输出调整	Output adjustment	定电压或定电流控制	Constant voltage or constant current control
重复精度	Repeatability	充磁、退磁电压/±0.5%；充磁、退磁电流/±1% Magnetization and demagnetization voltage/±0.5%; Magnetization and demagnetization current/±1%
时间设定	Time setting	脉冲时间间隔：0.2s，1-99次可设定； Pulse time interval:0.2s,1-99 times can be set; 充磁与退磁休止时间：0.2S-3S，可以任意设定。 The rest time of magnetization and demagnetization:0.2S-3S, which can be set arbitrarily.
冷却方式	Cooling mode	水冷式	Water-cooled
工作方式	Operation mode	最快0.3s交替连续运转	The fastest 0.3s alternate continuous operation.
报警	Alarm	电流上下限报警，时间超限，水流量，温度，外部报警 Current upper and lower limit alarm, time overrun, water flow, temperature, external alarm

直流+脉冲式取向电源技术规格
DC+PULSE ORIENTED POWER SUPPLY TECHNICAL SPECIFICATIONS

项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	1ΦAC200V/220V OR 3ΦAC360V/380V
输入电流	Input current	依机型而定	Depending on the model.
充磁电压	Magnetizing voltage	直流	DC：0~200V/脉冲	pulse：0~1600V（规格任意选择	Optional specification）
充磁电流	Magnetizing current	直流	DC：0~1500A/脉冲	pulse：30KA（规格任意选择	Optional specification）
退磁电压	Demagnetization voltage	直流	DC：0~50V/脉冲	pulse：0~1600V（规格任意选择	Optional specification）
退磁电流	Demagnetization current	直流	DC：0~500A/脉冲	pulse：＜10KA（规格任意选择	Optional specification）
输出调整	Output adjustment	定电压或定电流控制	Constant voltage or constant current control
重复精度	Repeatability	充磁、退磁电压/±0.5%；充磁、退磁电流/±1% Magnetization and demagnetization voltage/±0.5%; Magnetizing and demagnetizing current/±1%
时间设定	Time setting	0~10s
冷却方式	Cooling mode	水冷式	Water-cooled
工作方式	Operation mode	连续运转	Continuous operation
报警	Alarm	电流上下限报警，时间超限，水流量，温度，外部报警 Current upper and lower limit alarm, time overrun, water flow, temperature, external alarm

DEMAGNETIZER

退磁机

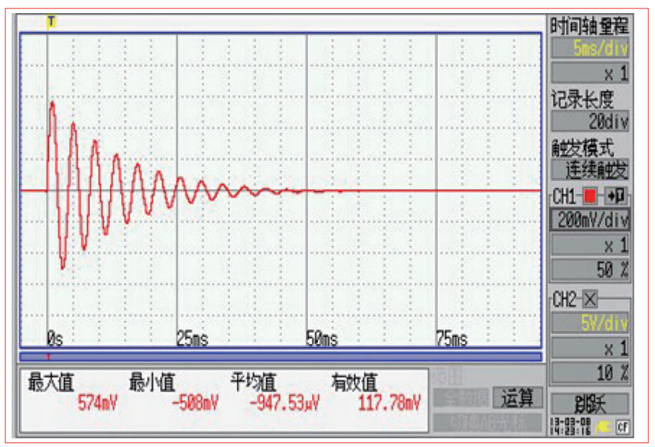
何为退磁?

What's Demagnetizer?

退磁（Demagnetization）又称磁清洗（Magnetic Cleaning）、消磁等，指磁体恢复到磁中性状态的过程。磁体被磁化后可能会影响某些正常生产，如：机械加工等过程中吸附铁粉影响电镀效果等。
Demagnetization, also known as magnetic cleaning or elimination of magnetism, refers to restoring a magnet to a magnetic neutral state. Magnetization of the magnet may affect the production process, such as the adsorption of iron powder during mechanical processing.

退磁可分为"距离衰减式"与"电流衰减式"两种。
Demagnetization can be divided into two types: distance attenuation and current attenuation.
距离衰减式：对线圈施加一定程度的交变磁场，然后慢慢拉开距离，从而逐渐弱化磁场，其主要应用于精密模具、医疗器械、汽车马达轴承、刀具等退磁。
电流衰减式：通过逐渐减小线圈中通过的交变电流，以逐渐弱化磁场。其主要应用永久磁石、磁粉、喇叭磁石、微型电机磁石、伺服电机磁石等再利用时的退磁。
Distance attenuation: Apply a certain degree of alternating magnetic field to the coil and then slowly widen the distance to gradually weaken the magnetic field. This method is mainly used for the demagnetization of precision molds, medical devices, automotive motor bearings, cutting tools, etc.
Current attenuation: The magnetic field is gradually weakened by the gradual decrease of the alternating current passing through the coil. This type is mainly used for demagnetization when reusing permanent magnets, magnetic powder, horn magnets, micro motor magnets, servo motor magnets, etc.

电流衰减式退磁电流波形
Demagnetization current
waveform with current attenuation



电流衰减式专用退磁机

CURRENT ATTENUATION SPECIAL DEMAGNETIZER

技术规格Technical Specifications

项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	1ΦAC220V OR 3ΦAC380V
输入电流	Input current	≤65A
退磁电压	Demagnetization voltage	50~3500Vdc
退磁电流	Demagnetization current	≤10KA
退磁时间	Demagnetization time	≥50ms
退磁节拍	Demagnetization beat	≥3s

距离衰减式退磁线体

DEMAGNETIZATION LINE WITH DISTANCE ATTENUATION

技术规格 Technical Specifications

项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	1ΦAC220V OR 3ΦAC380V
输入电流	Input current	＜30A
退磁时间	Demagnetization time	5s~1min（时间可调	Adjustable）
中心磁场	Central magnetic field	≥200GS
残磁	Residual magnetic field	＜2GS
工作方式	Operation mode	连续工作	Continuous operation

SURFACE MAGNETIC
DETECTOR
EQUIPMENT

表磁检测设备

表磁检测设备概述

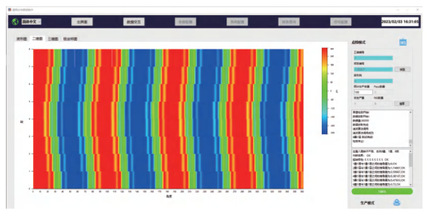
OVERVIEW OF SURFACE MAGNETIC TESTING EQUIPMENT:

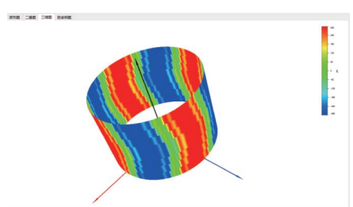
表磁检测设备由高斯计、测试系统软件和操作台等组成的磁场分布测试装备，可实现对表面磁通密度分布检测，具有数据存储、实时上传、超限报警、不良品追踪等综合功能。
产品应用领域覆盖了新能源汽车驱动电机，智能手机等消费类电子，稀土永磁材料、无人机、工业自动化控制及机器人、电梯曳引电机、伺服电机、轨道交通、风力发电电机，核磁共振、靶向给药磁场装置、高端医疗等战略发展产业和新兴行业。

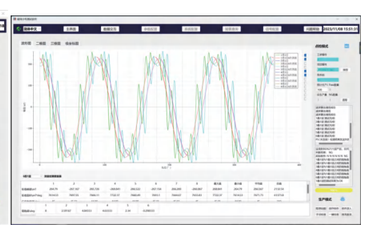
Surface magnetic detection equipment is a magnetic field distribution detection system composed of a Gauss meter, detection system software and operating platform, which can detect the surface magnetic flux density distribution with comprehensive functions, such as data storage, real-time upload, over-limit alarm and defect tracking.
The product application fields cover many industries, such as new energy vehicle drive motors, consumer electronics (for example smart phones), rare earth permanent magnet materials, drones, industrial automation control and robots, elevator traction motors, servo motors, rail transit, wind power generation motors, nuclear magnetic resonance, targeted drug delivery magnetic field devices and high-end healthcare.

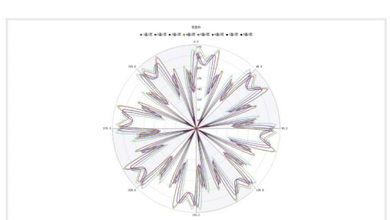
表磁检测设备软件界面

SOFTWARE INTERFACE OF SURFACE
MAGNETIC DETECTION EQUIPMENT









设备特点

EQUIPMENT
CHARACTERISTICS

1. 兼容性高
High Compatibility

2. 极性判别
Polarity Discrimination

3. 换型方便
Convenient Model Change

4. 可检测磁极峰谷值、磁极角度、磁极面积、斜极角度、FFT分析
Can detect magnetic pole peak, magnetic pole angle, magnetic pole area and oblique pole angle，FFT

5. 检测数据可上传系统
Detection data can be uploaded to the system.

技术规格

TECHNOLOGY
SPECIFICATIONS

项目	Items	技术参数	Technical Parameters
输入电源	Input power supply	AC220V±5% 50/60Hz
输入电流	Input current	＜20A
额定功率	Rated power	＜5KW
检测节拍 Cycle time for magnetic field measurement		8s~10s/layer
设备噪声	Equipment noise	≤75dB
测量范围	Measuring range	0~10T
最小分辨率	Minimum resolution	0.01mT
设备主体颜色	Equipment main body color	RAL7035（设备色号可定制	Color can be customized）
铝型材槽密封胶条颜色 Color of sealing strip for aluminum profile groove		硬质黑色 Hard black
尺寸	Size	长宽高约：1100x900x2000mm Length,width and height:1100x900x2000mm
重量	Weight	＜1000kg
换型时间	Changing time	≤15min（工装	Tooling）

TESLA/GAUSS METER
& HALL PROBE

高斯计&霍尔探头

高斯计 Gauss Meter

霍尔探头 | Hall Probe

产品简介
PRODUCTION INTRODUCTION

特斯拉计又称高斯计，是基于霍尔效应原理设计的测量直流、脉冲磁感应强度的专用仪器，是磁性测量领域中用途最为广泛的测量仪器之一。该产品具有精度高、稳定性好、高速测量等优点。具备最大值（Max.）功能，能准确记录测量过程中出现的最大数值。

Tesla meter, also known as the Gauss meter, is a special instrument for measuring DC and pulse magnetic induction based on the Hall effect principle, and it is one of the most widely used measuring instruments in the field of magnetic measurement. This product has the advantages of high precision, good stability, and high speed measurement. With Max's function, it can accurately record the maximum value in the measurement process.

特斯拉计，需搭配表磁检测霍尔探头使用

Tesla meter needs to be used with a surface magnetic detection hall probe.

适用场景
APPLICATION SCENARIO

特斯拉计主要用于测量磁场强度、磁体表面磁场分布、永磁电机磁场、喇叭漏磁场，以及一些特殊磁场的测量。

Tesla meter is mainly used to measure magnetic field strength, magnetic field distribution on magnet surface, permanent magnet motor magnetic field, horn leakage magnetic fields, and some particu lar magnetic fields

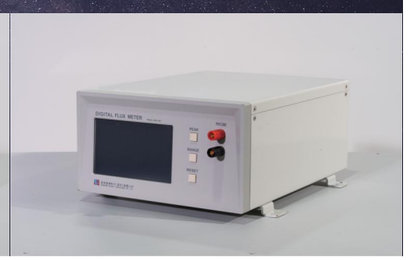
高斯计显示界面
TESLA/GAUSS METER
DISPLAY INTERFACE

技术规格
TECHNICAL
SPECIFICATIONS

项目 | Items	技术参数 | Technical Parameters		
量程 | Measuring range	0~10T		
量程档位 | Range gear	0.1T	1T	10T
显示范围 | Indication range	N99.99mT~S99.99mT	N999.9mT~S999.9mT	N9.999T~S9.999T
分辨率 | Resolution ratio	0.1mT	0.1mT	1mT
精度 | Precision	±（读数0.5%+满量程0.05%）（校正0~2T范围） ± (reading 0.5%+ full scale 0.05%) (calibration range of 0~2T)		
温漂 | Temperature drift	优于-0.06% | Better than -0.06%		
显示位数 | Display digit	4位（5位数显示需要定制） | Four digit(5-digit display needs to be customized)		
显示内容 | Display content	当前值、N峰值、S峰值、上下限显示、极性Current value, N peak value, Speak value, upper and lower limit display, polarity		
显示单位 | Display unit	高斯（Gs）、千高斯（KGs）、特斯拉（T）、毫特斯拉（mT）		
显示更新速率 | Display update rate	5次/秒 | 5 times/second		
模拟量输出 | Analog output	满量程±10V | Full scale±10V		
硬件输出精度1%@满量程 Hardware output accuracy 1%@full scale	DAC修正输出精度0.5%满量程（需定制） DAC corrects the out put accuracy to 0.5% full scale (customization required)		
校准方式 | Calibration mode	分极性多点校准 | Polarization multi point calibration		
外部触发速率 | External trigger rate	最高10k/s | Maximum 10k/s		
通讯接口速率 | Communication interface rate	最高10ksps | Maximum 10ksps		
通讯接口 | Communication interface	USB/RS-232/RS-485可选，标配RS-485 USB/RS-232/RS-485 is optional and comes standard with RS-485.		
测试功能 | Test function	正常测试/峰值测量/脉冲峰值测试 | Normal test/peak measurement/pulse peak test		
脉冲要求 | Pulse requirement	脉冲宽度＞20uS，脉冲幅度＞5%量程 | Pulse width ＞ ＞20uS, pulse amplitude ＞ 5% range.　精度±5%，但不作保证 | The accuracy is ±5%, but it is not guaranteed		
继电器数目 | Number of relays	3个 | three		
继电器方式 | Relay mode	常开，对应HIGH/GO/LOW 输出 | Normally open, corresponding to HIGH/GO/LOW output 继电器触发负载　Relay triggered load　30VDC at 2A		
继电器动作 | Relay action	与高低报警输出一致 | Consistent with high and low alarm output		
供电电源 | Power supply	AC：100V~230V、50/60Hz；FUSE：1A		
环境温度 | Ambient temperature	0~40℃		
尺寸 | Size	长宽高约：304x229x136mm | Length,width and height:304x229x136mm		
重量 | Weight	约5kg | About 5kg		

FLUXMETER

磁通计



产品简介
PRODUCT INTRODUCTION

磁通计是采用了高速微处理器和低噪音、零漂移积分器件的高稳定性测量仪器。采用5.0英寸彩色电阻触摸屏，使得人机交互界面更加人性化。具备峰值保持、分选报警提示和输出功能。可存储10组线圈的测量参数，做到即插即用。具备多种通讯接口，如RS-232/RS-485/USB，可方便与其他控制设备进行连接。

A fluxmeter is a highly stable measuring instrument that is equipped with high-speed microprocessors and integrates devices with low noise and zero drift. Using a five-inch color resistive touch screen can make the human-computer interface more user-friendly. It has the function of peak holding, sorting alarm and output. It can store ten groups of coil measurement parameters and can realize a plug-and-play function. It has a variety of communication interfaces, such as RS-232/RS-485/USB, which can facilitate connection with other control devices.

磁通计，搭配磁通检测线圈使用

Fluxmeter, used with magnetic flux detection coil.

适用场景
APPLICATION SCENARIO

磁通计是测量磁通的一种磁测量仪器，用于测量磁感应通量，空间磁场的测量和材料的磁性研究。

A fluxmeter is a magnetic measuring instrument, which used to measure the magnetic induction flux, space magnetic field, and the magnetic study of materials.

磁通计显示界面
FLUXMETER DISPLAY INTERFACE

技术规格
TECHNICAL SPECIFICATIONS

项目	Items	技术参数	Technical Parameters
量程	Measuring range	0~1Wb	
量程档位	Range gear	1mWb(可选)	(optional) 10mWb 100mWb 1000mWb
分辨率	Resolution ratio	0.1uWb 1uWb 10uWb 100μWb	
精度	Precision	±0.4%	
零点漂移	zero drift	＜±1μWb/min	
输入阻抗	Input impedance	＞200kΩ	
显示位数	Display digit	4（5位数显示需要定制）	4(5-digit display needs to be customized)
显示内容	Display content	磁通量、上下限、量程、峰谷差值、磁矩、线圈系数 Magnetic flux, upper and lower limits, measuring range, peak-valley difference, magnetic moment, coil coefficient	
显示更新速率	Display update rate	5次/秒	5 times/second
采样率	Sampling rate	正常和峰值模式为100 次/秒，峰值模式为1000 次/秒，采样位数24 位。 Normal and peak modes are 100 times/sec, peak-to-peak mode is 1000 times/sec, and the number of sampling bits is 24 bits.	
重复性	Repeatability	0.05%	
输入接口	Input interface	4mm橡胶插座	4mm rubber socket
通讯接口RS-232 Communication interface RS-232		波特率可调；串口接口: DB-9 (默认115200) Baud rate is adjustable; Serial interface: DB-9 (default 115200)	
通讯接口RS-485 Communication interface RS-485		波特率可调(默认115200) Baud rate is adjustable (default 115200)	
USB接口	USB interface	有	Available
继电器数目	Number of relays	3个	three
继电器方式	Relay mode	常开，对应HIGH/GO/LOW 输出	Normally open, Corresponding to HIGH/GO/LOW output
继电器触发负载 Relay triggered load		30VDC at 2A	
继电器动作	Relay action	与高低报警输出一致,能手动操作 Consistent with the high and low alarm output, it can be operated manually.	
供电电源	Power supply	AC：100V~230V、50/60Hz；FUSE：1A	
环境温度	Ambient temperature	0~40℃	
尺寸	Size	长宽高约：304x263x136mm	Length,width and height:304x263x136mm
重量	Weight	约5kg	About 5kg

HIGH-RESOLUTION MULTI-TRACK MAGNET RING FOR ENCODER

高分辨率多极磁环

400+
极充磁
Achieving 400plus pole magnetization.

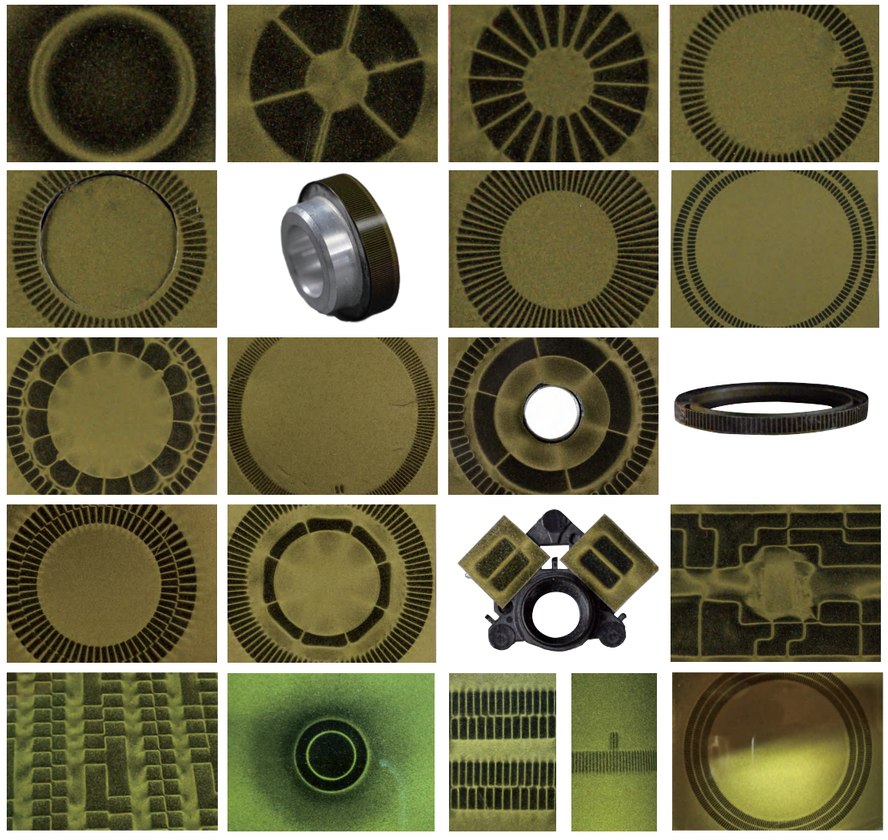
±1%
极间相位偏差
The phase deviation between poles is ±1%.

轴向/径向/平面充磁
Axial/radial/plane magnetization.

±1%
峰值偏差
The peak deviation is ±1%.

0.1mm
最小极间距
The minimum pole spacing is 0.1mm.

充磁实例
MAGNETIZATION EXAMPLE



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客户篇
PARTNERS

合作伙伴

Partners

全球合作伙伴

比亚迪汽车 · 长城汽车 · NISSAN · 东风汽车 DONGFENG MOTOR · Ford · 红旗 · LEAPMOTOR 零跑汽车 · AITO · SERES · TSINGSHAN 青山工业 · VREMT · 智新科技 INTELLIGENT POWER · vitesco TECHNOLOGIES · INOVANCE · 华域汽车 · 上海电驱动 EDRIVE · JEE 巨一科技股份有限公司 JEE TECHNOLOGY CO., LTD. · 合普动力 HEPU POWER · HONGTRON · Physis 菲仕智慧动力 · LEGO · GLB · FANUC · ESTUN · ABB · 中国中车 CRRC · BOSCH · Nidec · TDK · 横店东磁 · 宁波韵升 · AT&M 安泰科技 · Fisher&Paykel 斐雪派克 · Garrett ADVANCING MOTION · Foster Live the Quality · Panasonic

TESLA · 吉利汽车 GEELY AUTO · 长安汽车 CHANGAN · 中国一汽 FAW GROUP · NIO · ZEEKR · 中国中车 CRRC · gm · 弗迪动力 FinDreams Powertrain · HYCET 蜂巢易创 · HUAWEI · BorgWarner · SCHAEFFLER · UAES 联合汽车电子有限公司 · TUOPU 拓普 · 信质 · WOLONG 卧龙 · 方正电机 FOUNDER MOTOR · Enpower 英搏尔 · 大洋电机 BROAD-OCEAN · Welling 威靈電機 · ENGGA · KCFA 禾川股份 · XINJE · 富士电机 · GSK 广数控 · JOHNSON ELECTRIC · ShinanoKenshi New Ideas in Motion · HMC · IGARASHI · ShinEtsu · 金力永磁 JLMAG 用稀土创造美好生活 · ZONGSHEN · 益中智能电气 E-ZONE · Canon · TOSHIBA · HITACHI · Pioneer

以上排名不分先后

The above rankings are in no particular order