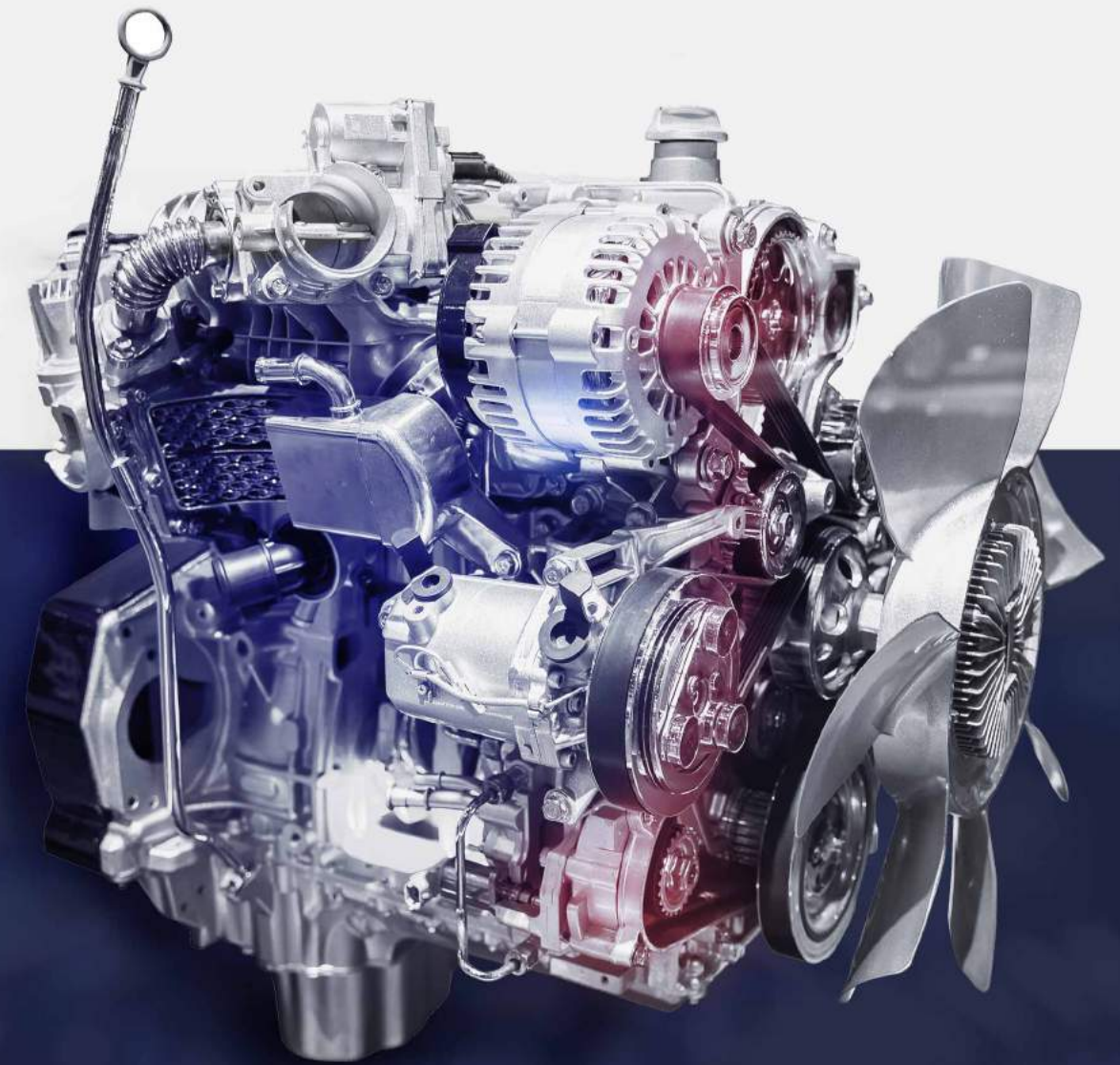


Magnet Firm

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ADDRESS: #1-2F, NO.606, QIUYI ROAD,

HANGZHOU 310051, PRC.

EMAIL : INFO@KYLEMAGNET.INFO

CELL: +86-18257136724

WWW.KYLEMAGNET.INFO

KYLE MAGNETICS CO., LTD

DEVOTES OURSELVES IN CLEAN ENERGY AND PREVENTING

GLOBAL-WARMING EFFECT WITH OUR KNOWLEDGE IN MAGNETICS!

OVER
40 PATENTS
HOLDING

Magnet/Firm

01	Company introduction
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COMPANY INTRODUCTION



Zhejiang Zhonghang New Material Technology Co., Ltd is founded in 2006, with registered capital 400 million CNY. Covering area of 100,000 square meters, with more than 900 employs. Engaged in researching, development, production and marketing sintered NdFeB magnets. With an annual production capacity approximately 10,000 tons, is a pilot enterprise of “Made in China 2025”. In order to increase technological innovation, our company continued to improve the production process of sintered NdFeB, established R&D teams such as Academician workstations, R&D laboratories, and conducted technical cooperation with lots of research institutes like the Ningbo Materials Research Institute of the Chinese Academy

of Sciences. Holding more than 30 invention patents and patents for utility process and design, the company’s R&D projects have won the second prize of National Science and Technology Progress Award and the first prize of Zhejiang Science and Technology Progress Award. The high-performance rare earth permanent magnetic material industrialization project has been promoted as national Major scientific and technological achievements transformation projects, and cooperation with the National Iron and Steel Research Institute, setting up a joint testing center, cooperating with many domestic and foreign

universities on deep processing and comprehensive development of rare earth materials for in-depth technical exchanges and cooperation as well. At present, our company plans to develop NdFeB industries.

Kyle Magnetics Co.,LTD is trading company of zhonghang factory, with our foreign brand Magnetfirm, cooperated with thousands of trading company in China, annual output over 10,000 tons for domestic market since 2006.

Strictly implemented ISO9001 and TS16949 Quality Assurance System and continually strengthening the production management for further development. With many years’ experience in manufacturing and SCM(supply chain management), we have obtained good reputation worldwide up to now.

HIGHLIGHT:

1. Become public traded company in 2017;
2. The largest sintered neodymium motor magnet manufacturer for motorcycle in the world.

- 📍 Kyle Magnetics CO.,LTD**
Established: 2016
Address: Purley, London, UK
Email: info@kylemagnet.info
Cell: +86-182-5713-6724
- 📍 浙江中杭新材料有限公司**
成立时间: 2006年
地址: 浙江省余姚市临山镇
占地面积: 30000m²
主要产品: 实验、研发、检测以及高性能磁材生产
- 📍 包头中鑫安泰磁业有限公司**
成立时间: 2016年
地址: 内蒙古包头市稀土高新区稀土产业应用园
占地面积: 30000m²
主要产品: 实验、研发、检测以及高性能磁材坯料生产

2006

年
创办

HISTORY

2011

Become top 10 of sintered neodymium magnet manufacturer in China

2012

Enterprise Credit Rating improve to A level, which is the best admitted by China government

2016

Passed
ISO9001-2008/TS16949:
2009 Audit Certification

2017

Holding 47 patents, 12 patents of invention patent, mainly focused on sintered rare earth magnet manufacturing.

2017

Filing our international trademark "Magnetfirm" Use Kyle Magnetics title to develop and export magnet to oversea market!

2006

Established zhong hang factory

2009

Our domestic trademark "zhonghang" registered, cooperating with Chinese trading company in this statge.

2013

Be elected to vice president company of NIMTE

2015

Awarded the title of national high-tech enterprises

2017

Start with HEV and wind turbine project, our KM Academician workstation was founded.



ACADEMICIAN WORKSTATION

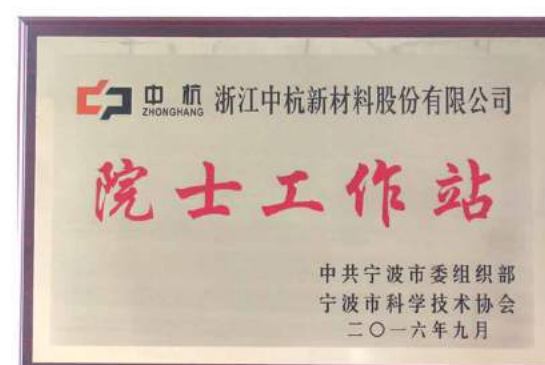
1. R&D of low-cost and high-abundance of Ce-doped sintered NdFeB key technologies, focusing on breakthroughs in high-abundance rare earth permanent magnet phase into phase problem, master the different rare earth elements in the new magnetic functional materials in the law of action, synergies and Regulatory methods;
2. The development of new energy vehicles direct-drive permanent motor magnet, dedicated service NdFeB permanent magnet to solve the work of the motor NdFeB permanent magnet through the high cycle heat shock magnetic failure, poor weather resistance and other issues, developed a high coercivity ($> 30\text{kOe}$), high temperature ($200\text{ }^{\circ}\text{C} \sim 220\text{ }^{\circ}\text{C}$), good magnetic uniformity EH \ AH sintered NdFeB products to enhance the high-level rare earth permanent magnet materials and permanent magnet motor core competitiveness;
3. Developing high-end, high-quality, high value-added, special-shaped NdFeB magnet products and their industrial technologies, and developing low-magnetic declination and high-end magnetic fields in high-end fields such as high-precision magnetic sensors, variable frequency drives and medical nuclear magnetic resonance Processing precision, high-performance sintered NdFeB permanent magnet, and master the key preparation technology of permanent magnetic materials, to achieve its industrialization;
4. To master core technologies such as recycle and reuse of rare earth magnets for waste materials, develop a low-purity / mixed rare earth permanent magnet formulation and preparation technology with independent intellectual property rights, and make full use of HD / Homogenization Powder and other methods, R&D of rare earth permanent magnet waste (ultrafine powder) to prepare high-performance renewable rare earth permanent magnet technology to achieve a balanced and efficient use of rare earth resources and reduce the cost of rare earth permanent magnet raw materials. We signed a project on the development and application of key technologies for the production of ring-shaped neodymium-iron-boron magnets for micro-motors in 2006. The research content and field of the project are based on existing technologies and patents owned by the academicians and their teams, existing production and technology of Zhonghang Co., Ltd is specialized in NdFeB magnets suitable applying for micro-motors. The development of technology, optimization of magnetic steel production formula and production process, improving the performance of

the Chinese Academy of Sciences. He is the deputy director of the magnetics professional committee of the Chinese Physical Society also. Playing director of the Nanoscience and Technology Research Center of Nanjing University. Chief Scientist of National 95 Climbing Plan "Nanomaterial Science" .

Zhejiang Zhonghang technical projects with teaching and research institutes, which played a important role in promoting main technology breakthrough innovation, industrial structure optimization and adjustment, industry brand leapfrogging, and promotion of the sintered NdFeB industry to a higher level.

Du Youwei

Doctor Du is a professor of Department of Physics of Nanjing University, the member of the Chinese Academy of Sciences. He is the deputy director of the magnetics professional committee of the Chinese Physical Society, the fellow of the Chinese Institute of Electronics, deputy director of the Ultrafine Particles Committee of the China Granular Society, vice chairman of the China Instrument Materials Association. Director of the Nanoscience and Technology Research Center of Nanjing University also.



PRODUCTION EQUIPMENT

KM PRODUCTION FLOW



BDM-350/2W
Automatic magnetic field forming compressor unit



FSC6-6090
Six-chamber continuous vacuum sintering furnace



VI8005C
Strip casting furnace



1200KM
HDDR furnace



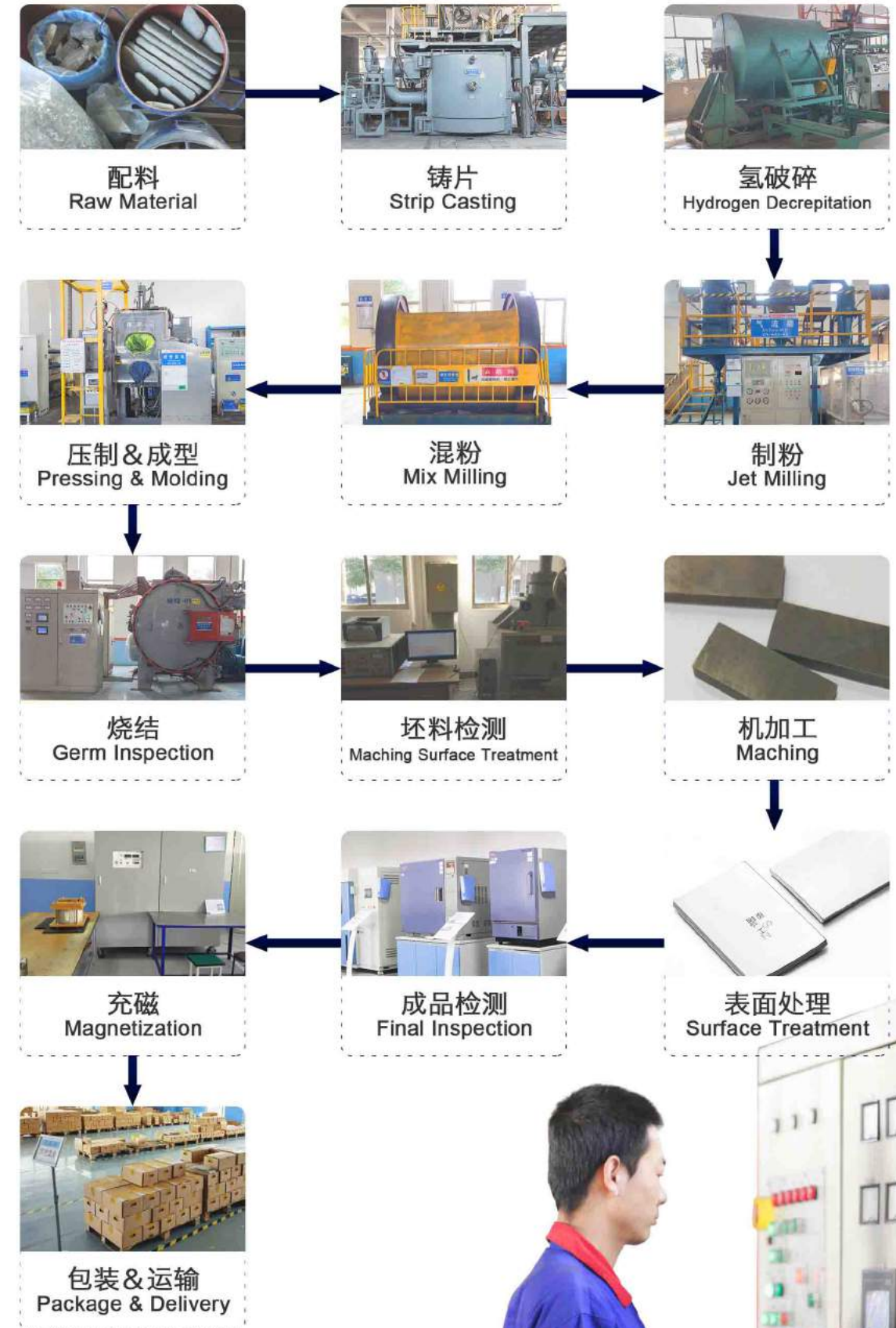
OLMR-400G
Jet milling



Pressing machine



VS-500RPA
Sintering machine



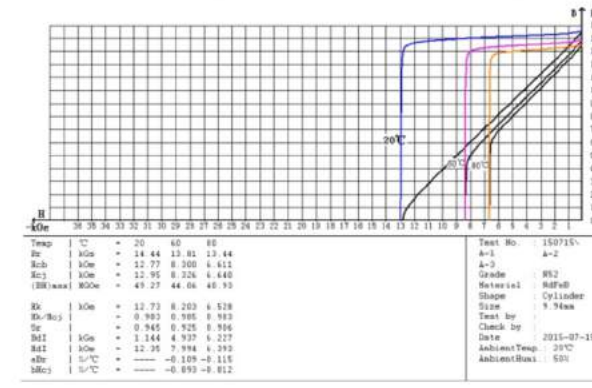
OUR PATENTS

Over 40 patents in magnet manufacturing

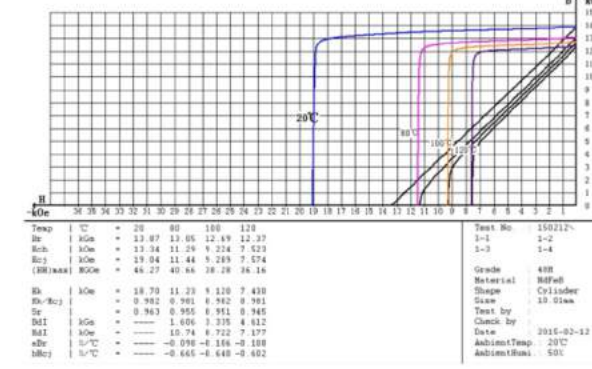


MAIN PRODUCTS

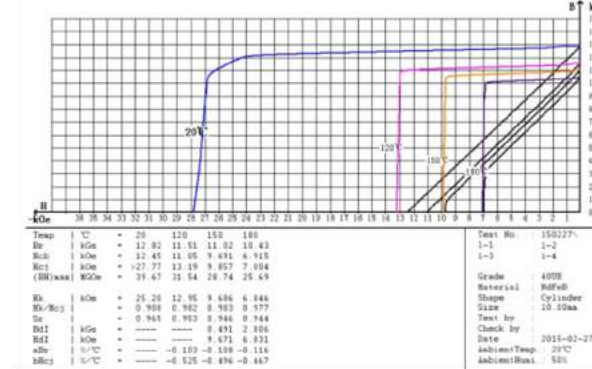
DEMAGNETIZATION CURVE 退磁曲线



N52牌号退磁曲线



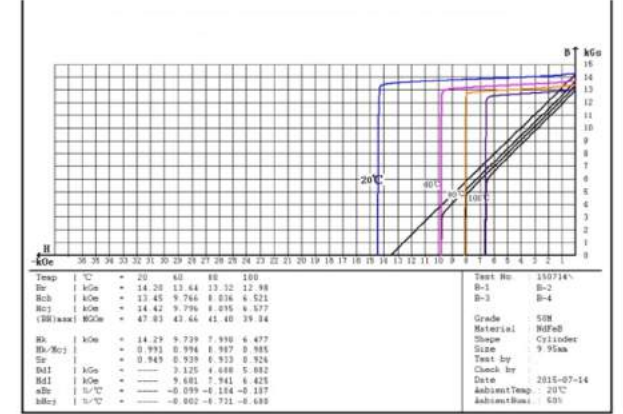
48H牌号退磁曲线



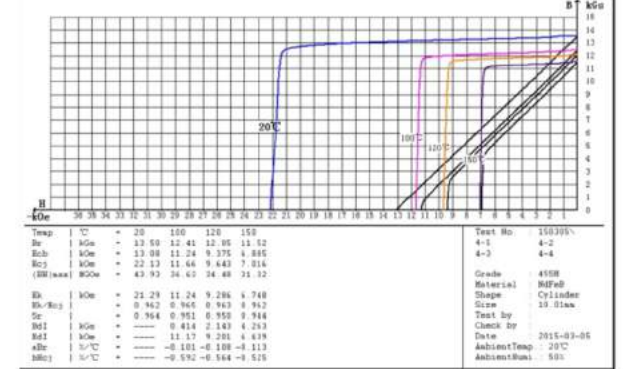
40UH牌号退磁曲线



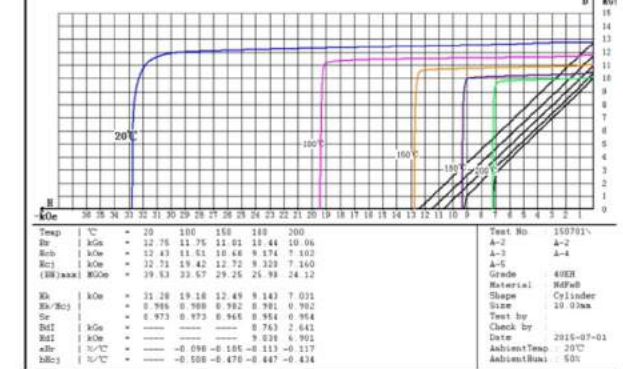
40EH牌号退磁曲线



50M牌号退磁曲线



45SH牌号退磁曲线



KM NEODYMIUM MAGNET SPECIFICATION

ELECTROPLATING FOR MAGNET

PROPERTIES GRADE	Remanence	Coercive Force	Intrinsic Coercive Force	Max Energy Product	Max Working Temp
	BrmT (Kgs)	Hcb KA/m (Koe)	Hcj KA/m (Koe)	(BH)max KJ/m ³ (MGOe)	TW°C
N33	1130-1170 (11.3-11.7)	≥836 (≥10.5)	≥955 (≥12)	247-263 (31-33)	80
N35	1170-1210 (11.7-12.1)	≥868 (≥10.9)	≥955 (≥12)	263-287 (33-36)	80
N38	1210-1250 (12.1-12.5)	≥899 (≥11.3)	≥955 (≥12)	287-310 (36-39)	80
N40	1250-1280 (12.5-12.8)	≥923 (≥11.6)	≥955 (≥12)	302-326 (38-41)	80
N42	1280-1320 (12.8-13.2)	≥923 (≥11.6)	≥955 (≥12)	318-342 (40-43)	80
N45	1320-1380 (13.2-13.8)	≥876 (≥11.0)	≥955 (≥12)	342-366 (43-46)	80
N48	1380-1420 (13.8-14.2)	≥835 (≥10.5)	≥876 (≥11)	366-390 (46-49)	80
N50	1400-1450 (14.0-14.5)	≥796 (≥10.0)	≥876 (≥11)	382-406 (48-51)	80
N52	1430-1480 (14.3-14.8)	≥796 (≥10.0)	≥876 (≥11)	398-422 (50-53)	80
N35M	1170-1220 (11.7-12.2)	≥868 (≥10.9)	≥1114 (≥14)	263-287 (33-36)	100
N38M	1220-1250 (12.2-12.5)	≥899 (≥11.3)	≥1114 (≥14)	287-310 (36-39)	100
N40M	1250-1280 (12.5-12.8)	≥923 (≥11.6)	≥1114 (≥14)	302-326 (38-41)	100
N42M	1280-1320 (12.8-13.2)	≥955 (≥12.0)	≥1114 (≥14)	318-342 (40-43)	100
N45M	1320-1380 (13.2-13.8)	≥995 (≥12.5)	≥1114 (≥14)	342-366 (43-46)	100
N48M	1360-1430 (13.6-14.3)	≥1027 (≥12.9)	≥1114 (≥14)	366-390 (46-49)	100
N50M	1400-1450 (14.0-14.5)	≥1033 (≥13.0)	≥1114 (≥14)	382-406 (48-51)	100
33H	1130-1170 (11.3-11.7)	≥836 (≥10.5)	≥1353 (≥17)	247-271 (31-34)	120
35H	1170-1210 (11.7-12.1)	≥868 (≥10.9)	≥1353 (≥17)	263-287 (33-36)	120
38H	1210-1250 (12.1-12.5)	≥899 (≥11.3)	≥1353 (≥17)	287-310 (36-39)	120
40H	1240-1280 (12.4-12.8)	≥923 (≥11.6)	≥1353 (≥17)	302-326 (38-41)	120
42H	1280-1320 (12.8-13.2)	≥955 (≥12.0)	≥1353 (≥17)	318-342 (40-43)	120
45H	1300-1360 (13.0-13.6)	≥963 (≥12.1)	≥1353 (≥17)	342-358 (43-46)	120
48H	1370-1430 (13.7-14.3)	≥995 (≥12.5)	≥1353 (≥17)	358-390 (46-49)	120
42SH	1130-1170 (11.3-11.7)	≥844 (≥10.6)	≥1592 (≥20)	247-272 (31-34)	150
45SH	1170-1210 (11.7-12.1)	≥876 (≥11.0)	≥1592 (≥20)	263-287 (33-36)	150
28UH	1210-1250 (12.1-12.5)	≥907 (≥11.4)	≥1592 (≥20)	287-310 (36-39)	150
30UH	1240-1280 (12.4-12.8)	≥939 (≥11.8)	≥1592 (≥20)	302-326 (38-41)	150
33UH	1280-1320 (12.8-13.2)	≥987 (≥12.4)	≥1592 (≥20)	318-342 (40-43)	150
35UH	1320-1380 (13.2-13.8)	≥1003 (≥12.6)	≥1592 (≥20)	342-366 (43-46)	150
38UH	1020-1080 (10.2-10.8)	≥764 (≥9.6)	≥1990 (≥25)	207-231 (26-29)	180
40UH	1080-1130 (10.8-11.3)	≥812 (≥10.2)	≥1990 (≥25)	223-247 (28-31)	180
28EH	1130-1170 (11.3-11.7)	≥852 (≥10.7)	≥1990 (≥25)	247-271 (31-34)	180
30EH	1180-1220 (11.8-12.2)	≥860 (≥10.8)	≥1990 (≥25)	263-287 (33-36)	180
33EH	1220-1250 (12.2-12.5)	≥876 (≥11.0)	≥1990 (≥25)	287-310 (36-39)	180
35EH	1240-1280 (12.4-12.8)	≥899 (≥11.3)	≥1990 (≥25)	302-326 (38-41)	180
38EH	1040-1090 (10.4-10.9)	≥780 (≥9.8)	≥2388 (≥30)	207-231 (26-29)	200
30EH	1080-1130 (10.8-11.3)	≥812 (≥10.2)	≥2388 (≥30)	223-247 (28-31)	200
33EH	1130-1170 (11.3-11.7)	≥836 (≥10.5)	≥2388 (≥30)	247-271 (31-34)	200
35EH	1170-1220 (11.7-12.2)	≥876 (≥11.0)	≥2388 (≥30)	263-287 (33-36)	200
38EH	1220-1250 (12.2-12.5)	≥899 (≥11.3)	≥2388 (≥30)	287-310 (36-39)	200

镀层项目	镀层厚度	颜色	使用温度	PCT	耐湿热	耐盐雾	耐腐蚀评价
化学镍 Chemical Nickel	15-30μm	亮银色	≤200°C	≥96h	≥200h	≥72h	优
环氧 Epoxy	12-35μm	黑色、灰色	≤120°C	≥96h	≥200h	≥72h	优
镍+金 Nickel + Gold	10-20μm	金色	≤160°C	≥96h	≥200h	≥72h	优
镍铜镍 NICUNI	15-30μm	亮银色	≤200°C	≥72h	≥200h	≥48h	优
镍+锡 Nickel+Tin	20-30μm	半亮银色	≤160°C	≥72h	≥200h	≥48h	优
单层镍 Single Surface Nickel	10-30μm	亮银色	≤200°C	≥72h	≥96h	≥48h	优
彩锌 Zink	6-15μm	彩虹色	≤160°C	—	—	≥48h	良
蓝白锌 Blue White Zink	6-15μm	蓝白色	≤160°C	—	—	≥24h	良
磷化 Parkerising	1-3μm	黑灰色	≤80°C	—	—	—	差

Above data only represents our current technology, the dimensions, performance and tolerance will be changed since technology breakthrough in manufacturing, please contact our professional engineer for more details.

Comparison among different magnetic materials

Hard Ferrite (aka Ceramic) (SrO·6Fe ₂ O ₃ ·BaO·6Fe ₂ O ₃)	<ul style="list-style-type: none"> • Cheap • Very corrosion resistant • Good heat resistance (max. 250-300°C/482-572°F) 	<ul style="list-style-type: none"> • Weakest power • Not good at low temp. (min. -60 °C/-76°F) • Low mechanical strength, ferrite powder can rub off
Alnico (Fe-Al-Ni-Co-Cu)	<ul style="list-style-type: none"> • Very heat resistant (max. 450-550°C/842-1022°F) • Castable, so complex shapes possible • Mechanical strong and very corrosion resistant • Low change in power with temperature 	<ul style="list-style-type: none"> • Very easily demagnetized • Not very powerful • More expensive than ferrite magnets
Samarium-Cobalt (Sm ₂ Co ₁₇ or SmCo ₅)	<ul style="list-style-type: none"> • Powerful and very hard to demagnetize • Very corrosion resistant • Very wide temperature range from cryogenic -271°C/-456°F up to max. 550°C/1022°F 	<ul style="list-style-type: none"> • Most expensive • Very low mechanical strength • Difficult to make large (over 3")
Neodymium (Nd ₂ Fe ₁₄ B)	<ul style="list-style-type: none"> • World's strongest permanent magnets • Very hard to demagnetize • Good at low temperatures though decrease in strength under -138°C/-216°F 	<ul style="list-style-type: none"> • Most prone to corrode so coating necessary • Lowest heat resistance (max. 80-230°C/176-446°F) • Expensive • Low mechanical strength

OUR ADVANTAGE



Low weight loss&temperature& coefficient&deviation angle magnet



Supplying Cast&Sintered Alnico magnet with high coercivity



Assembling motor rotor with SmCo or other bonded&injection magnetic materials

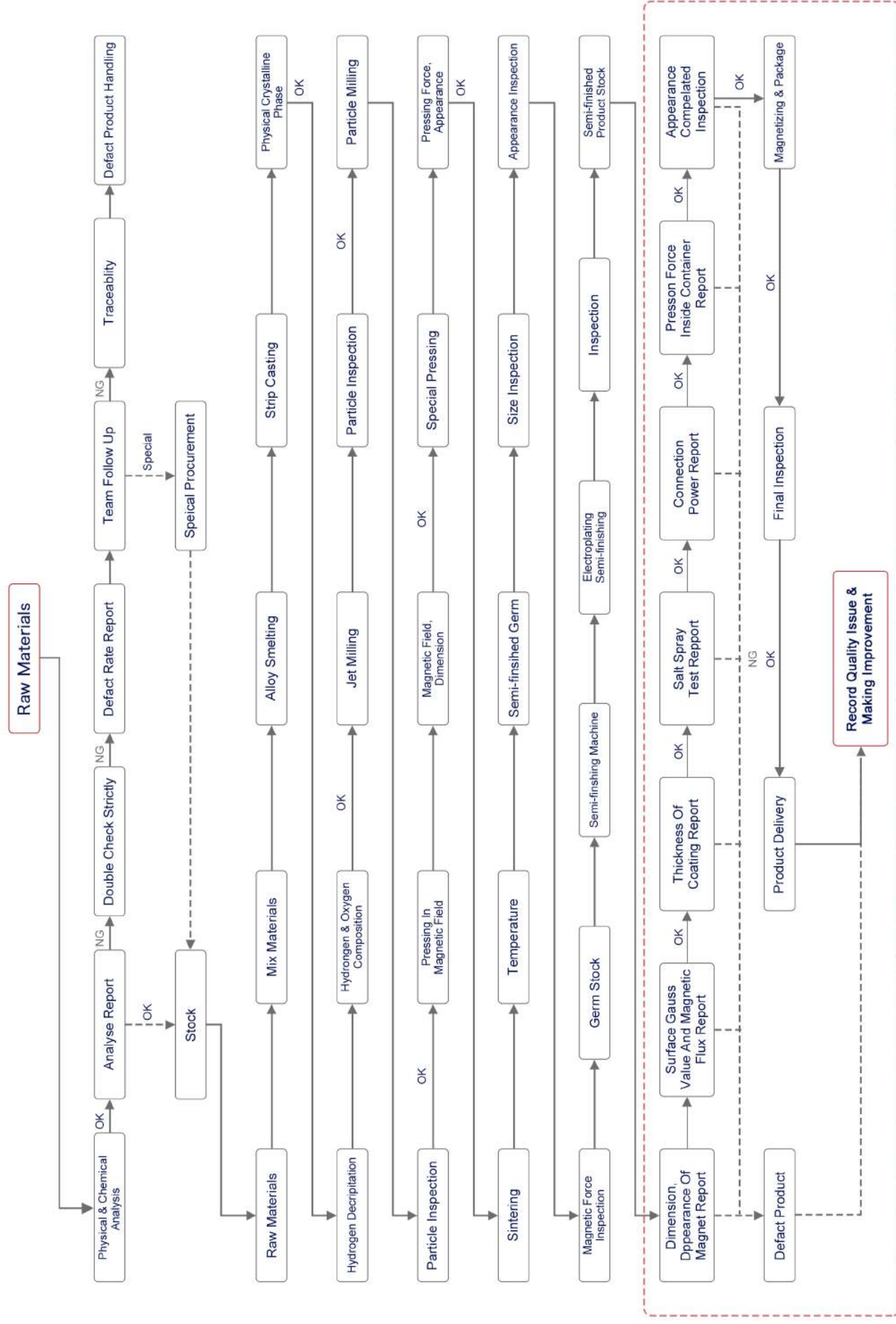
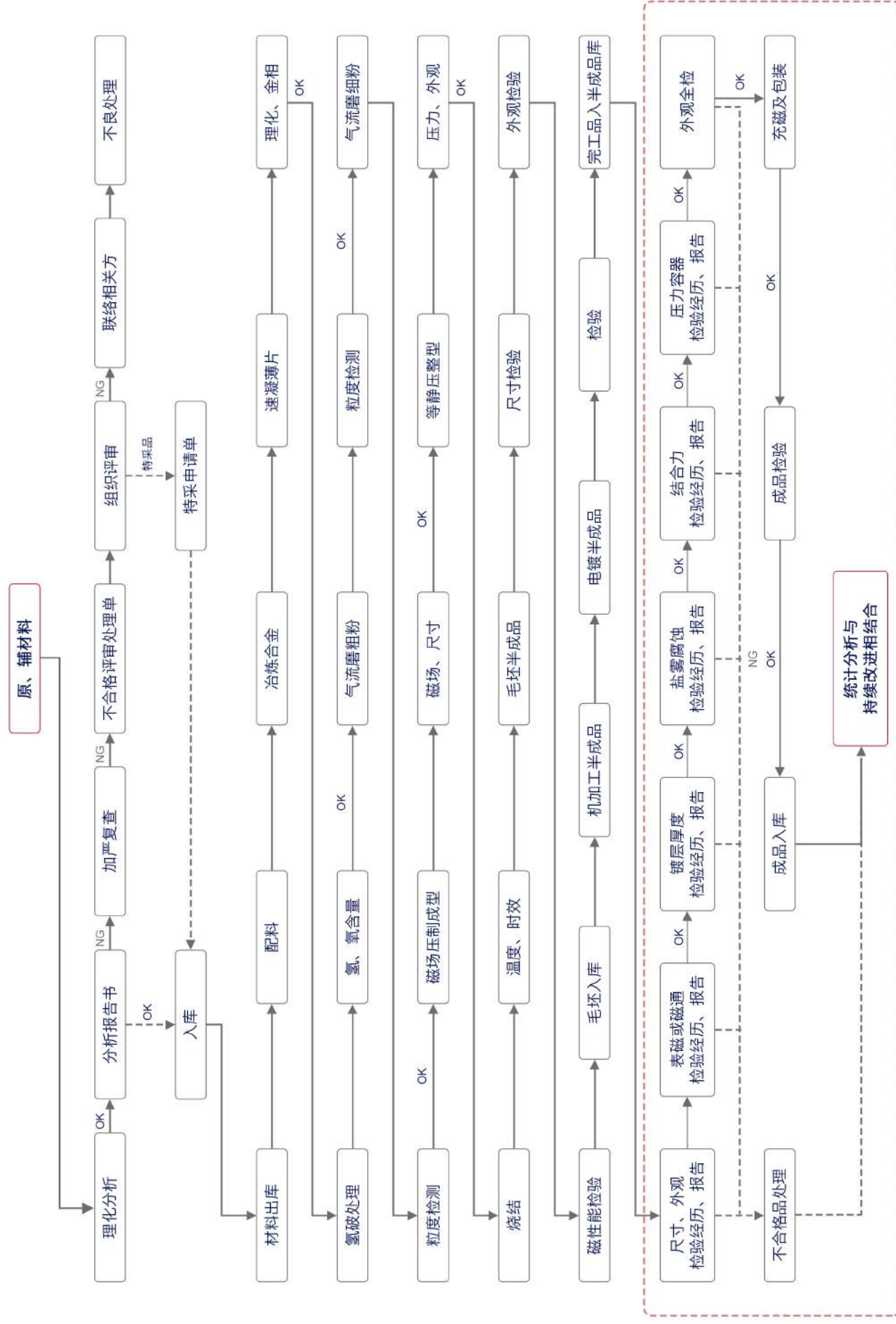


Magnetfirm brand registered, with higher positioning

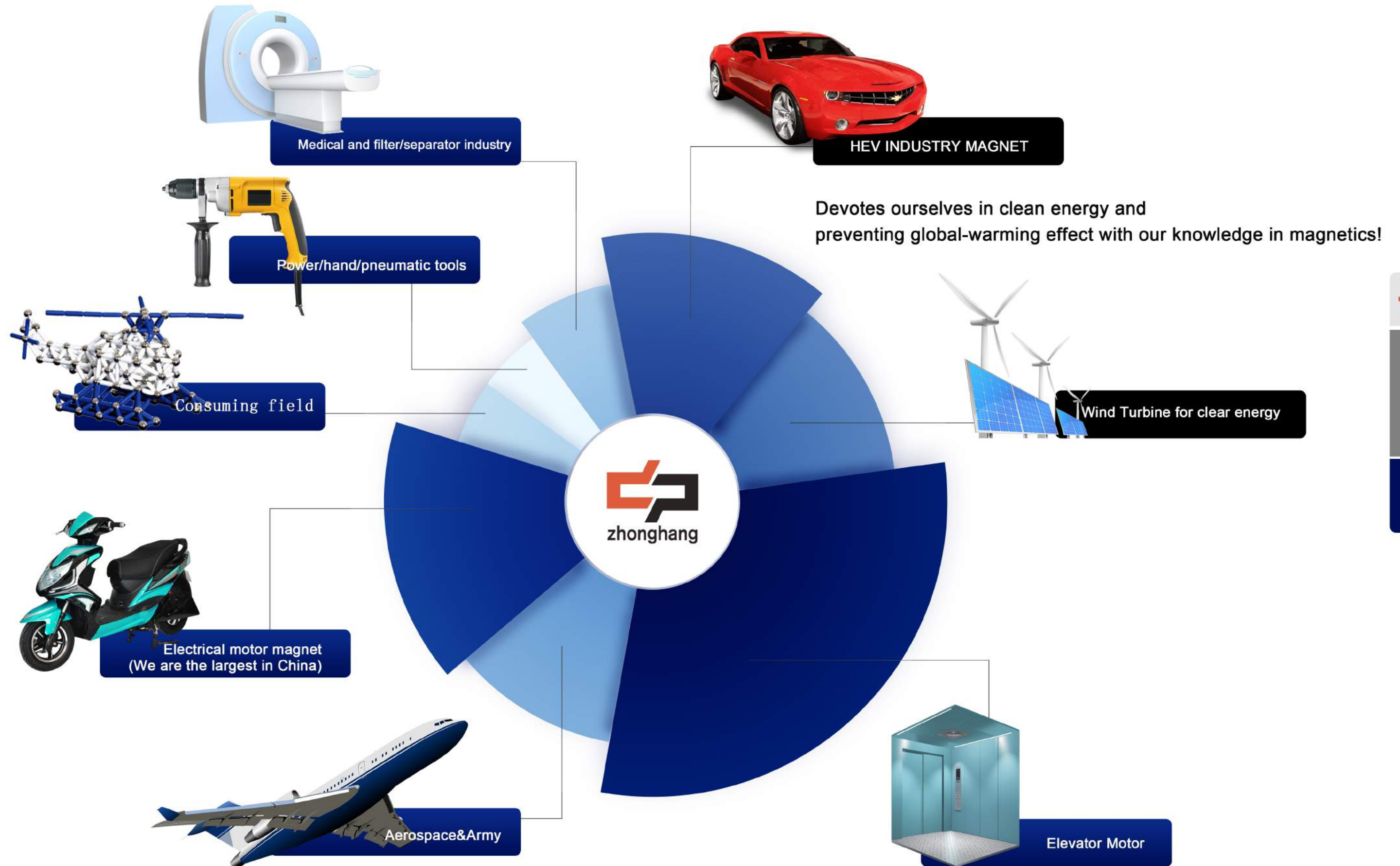
OUR LAB



- 1 高低温冲击试验箱 RGDC-135
High and low temperature impact test chamber
- 2 恒温恒湿试验箱 LHU-213
Temperature and humidity chamber
- 3 氢氧分析仪 NCS-OH-3000
Hydrogen-oxygen analyser
- 4 金相光学分析仪 4XC-PC
Crystal to optical analyzer
- 5 影像测量仪 XY-2515
Projector
- 6 高温试验箱 SEG-021
High temperature laboratory box
- 7 盐雾试验箱 YW-R-250
Salt spray test box
- 8 万能力学试验机 GNT-50
Universal mechanical testing machine
- 9 高频红外碳硫分析仪 CS-2800
High frequency carbon-sulfur analyzer
- 10 激光粒度分析仪 RODOS
Laser particle size analyzer
- 11 高度加速寿命试验箱 EHS-211
Fast oven



APPLICATION



TARGET MARKET



KM CULTURE

OUR STORY

The Earth is a big magnet!

Kyle magnetics obtained domestic reputation for over 10 years experiences in researching, designing, manufacturing and supplying magnetic products, with the purpose of "High efficiency, Accuracy in each magnet, quality is our life". After establishing our foreign brand Magnetfirm, our team is attracted by foreign country's demand for magnetic solution, so we start to export magnet to other part of the earth, like magnetic flux from North pole to South pole, from Asia to Europe, from Europe to America



Values

Active, Ambitious, Efficient(we call AAE in brief)

Vision

Becoming the most professional magnet manufacturer and supplier for HEV and wind turbine industry.

Mission

Devotes ourselves in clean energy and preventing global-warming effect with our knowledge in magnetics!

Core competency

Specialized in magnet manufacturing and R&D since 2006, what we sell is not just magnet, but solutions in magnetics!

Quality policy

Kyle magnetics has advanced technology and equipment, Quality of magnets are ensured by strict implementation of certifications in ISO:9001, AS9100, ISO TS 16949 and NADCAP. Focusing on environmental protection and obtained ISO14000 Environment System Certificate as well.

OUR HONOUR



WHO WE ARE WORKING WITH

