



# Hangzhou Vector Magnets Co., Ltd

*Integrated magnetic application service provider*





# About Vector Magnets



## | Integrated Fabricator and Manufacturer

Facility and manufacturing Located in Hangzhou, assorted magnets and magnetic assemblies, devices and equipment.

## | Global Vision

Professional team collaboration based on efficient communication.

## | Project Experience

Engineers well versed in data analyzing technics providing customer with value-added service.

## | Data Authenticity

Manufacturing automation and advanced test and inspection equipment to ensure reliable verification.

## | Fine Traceability

Automotive customer servicing experience to allow continuous improvement and product traceability.

## | Share

Open to customers and partners to share knowledge and information on magnets.



# Products



## [Sintered NdFeB Magnets](#)

High Br: 1.5T ; High Hcj: 2700 kA/m  
Low working temperature: less than 220°C  
Poor corrosion resistance, needs surface finishing



## [AlNiCo Magnets \(Cast & Sintered\)](#)

High Br: 1.35T; Low Hc: less than 160kA/m,  
Easy for magnetization or demagnetization.  
High working temp.: 550°C; good resistance to corrosion



## [Hard Ferrite Magnets](#)

Low Br: 0.46T, Low Hc: 354 kA/m  
High dielectric property; high electric resistance.  
Hard but crispy



## [FeCrCo Magnets](#)

Multi-pole magnetization; good machinability;  
Available for various shapes and high precision  
Not very high magnetic performance;  
AlNiCo Substitute Magnets at lower cost



## [Sintered SmCo Magnets](#)

High resistance to corrosion,  
Powerful performance in high temp.  
Low machinability, crispy and costly



## [Bonded NdFeB Magnets\(Compression & Injection\)](#)

Available for various shapes and high precision;  
High magnetic performance with good mechanical strength; low specific gravity



## [Bonded Ferrite Magnets](#)

Available for various shapes and high precision;  
Excellent corrosion and impact resistance  
Multi-pole magnetization



## [NdFeB & Ferrite Flexible Rubber Magnets](#)

Magnetic Sheeting, printer, magnetic whiteboard,  
magnetic decoration, extrusion strips, etc



# Products



## [Soft Magnets](#)

SMC, Silicon Iron, Chromium Iron, Phosphorus Iron Permalloy, Nickel-Cobalt alloy, widely applied in micromotors, esp in military & aerospace



## [MIM](#)

Injection Molding of metal powder and binder, Some needs further sintering to achieve closer physical property as forged pieces, i.e. SIM card tray, USB Port earphones, esp in consumer electronics industry



## [Electromagnets](#)

A portable electromagnet is designed to hold materials in place, i.e. lifting magnets. Most typical uses are motor & generators, transformers, relays, electric bells and buzzers, actuators, etc



## [SmFeN](#)

Higher Curie Temp than NdFeB  
Anisotropy field as great as NdFeB  
Need 0% cobalt, bringing down the cost  
Anti-corrosion & anti-oxidation



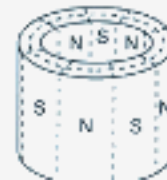
## [Plastic Injection](#)

Hot plastic material melted in certain die into various shapes, consisting of rubber injection, plastic injection, molding injection



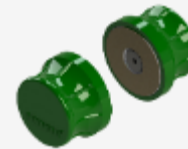
## [Stamping](#)

Metal's plastic deformation under the co-impact of presser and mold, plates, stripes, tubes, etc



## [Sintered Radial Ring NdFeB Magnet](#)

Widely used in PMSM, new multipole radial orientation. High Stability and evenly distributed magnetic flux.



## [Programmable Magnetization](#)

Tailored Design available for various magnetization  
Enhanced with way more magnetic field density



# Applications



## | Motor & Generator

High Temp Demag, High Magnetic flux density consistency, low weight loss; anti-corrosion, dynamic balance; Widely used in BLDC, PMDC, PMSM, Compressor, Blower, linear motor, etc.



## | Devices & Equipment

Mechanical panels i.e. speedometer, flow meter, etc  
Musical Instrument: pickups in guitar, microscope, magnetic Resonance Imaging, etc



## | Office Applications

Greatly improve work efficiency and environment friendly in hundreds of working scenes.



## | Communications & Security

Radio Frequency, Camera, Fire Alertor, Fingerprint Lock and assorted applications in automotive, wireless communication, aerospace, etc



## | Sensor

For various purposes of proximity, rotation, relay, switch, detector, isolator, etc. High Surface Flux Consistency Micro-size with key Features, Magnetic Angle Deviation control, Good Machinability mostly allows for injection molding



## | Industrial Magnets

Glass Filming, Welding Magnets, Magnetic Chuck, Fishing Magnets Available in various shapes and occasions; Comes in different materials, Excellent corrosion and impact resistance, Multi-pole magnetization



## | Pot Magnets

Assorted combination of steel and magnets applicable in various occasions, living room, kitchen, supermarket, garage, office, working lines



## | Green Energy

Wind Turbine Generator requires great amount of high quality, anti-corrosion, high coercivity NdFeB magnets, making it one of the iconic application of this type of magnet. Others are Solar Energy panel, PMSM(lower consumption), etc.



# VECTOR

# Automotive



## Procedures

- Project Confirmation
- Technical Requirement Conversion
- Process Development
- Trial Production
- Mass Production



## Features

- Long Period
- Procedural Approach
- Continuous Improvement
- Process Control
- High Stability



| Engine



| Safety



| Powertrain



| Transmission



| Fuel Tank



| Motors



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# Consumer Electronics



Motor



VCM



Loudspeaker



Camera Zoom

## High Precision



Linear Tolerance:  
0.01mm ~ 0.02mm  
Geometric Tolerance incl,  
concentricity, parallelism  
are relatively small  
compared to the  
industry's average

## miniaturization



0.3mm ID  
0.7mm~1.0mm OD  
0.3mm~0.8mm thickness

## Modularization



A combination of magnetic  
technology and other  
subjects;  
Super easy for replacement;  
Less cost in repairing

## High Grade



N55, N52M  
N50H, N48SH, N44UH  
SmCo 32  
AlNiCo 9  
Hard Ferrite: FB9B

## Auto Inspection



Parts to be assembled  
by machine in  
automatic process;  
Much higher efficiency,  
accuracy and reliability



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# Production Advantages



Jet Milling



Sintering



Grinding



Low Speed Wire Cutting



Injection Molding



Motor Assembly Line

## High Precision

Sets of CNC machines: grinding, low speed wire cutting, engraving, automatic rotary compressor.

## Quality Control

Automation in production and inspection to control magnet appearance, dimensions, magnetic properties, etc.

Unique dual quality control system

Certified by ISO9001, ISO/TS16949, ISO14001, OHSAS18001.

## A wide range of magnetic solutions

Production and technical experiences in various manufacturing processes of casting, sintering, compression/injection molding, coil winding, rolling, welding, powder metallurgy, etc to assist customer with miscellaneous requirements.

## In-house plating

Environment is strictly controlled within all Production site. Available plating are Ni, NiCuNi, Zn, Epoxy, Au, Copper, Aluminum, etc



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# Laboratory

## | Application-oriented

All test devices and equipment are application-oriented, which are widely and high recognized by both magnet manufacturers and users.

## | Applicable to most of magnets

Multiple omnibus test devices and equipment available for almost all sorts of magnets.

## | Reliability

Major test devices and equipment are calibrated with 3rd party authorities, institutes and labs.



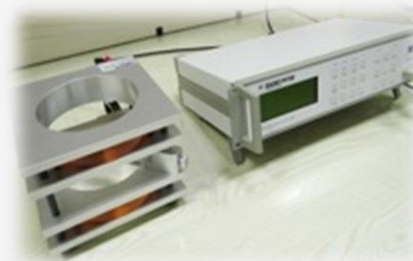
High Precision IMM



Magnet Physik Demag Curve Tester



Image Measurement Machine



Flux Density Tester



Magnetic Angle Deviation



Electronic Microscope



PCT



X-Ray Fluorescence



Pressure Cook Tester



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# Service & Support

## | 24hr Service

Quick response within 24hrs to customer queries

## | Engineering Support

Application-oriented technical feasibility analysis  
Tailored assembly Design for specific application

## | PDCA

PDCA model to tackle quality control and issues

## | Warehousing & Logistics

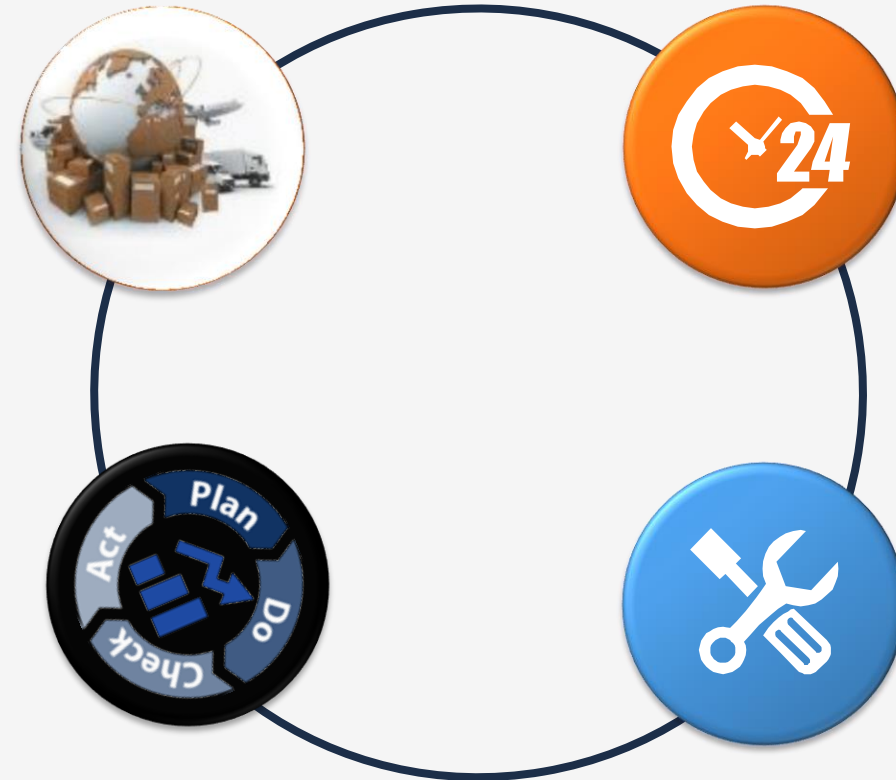
FIFO, Safety Stock, environment control,  
real time tracking

## | Support

In many ways, Vector Magnets can help in teamwork.

Technical: [technical@vectormagnets.com](mailto:technical@vectormagnets.com)

(2 extra technical advisors in Automotive industry and metallurgy)



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*FOCUS EFFICIENCY SHARE*

