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NEODYMIUM MAGNET



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COMPANY PROFILE

In addition to high performance permanent magnets, GME is the leading global supplier of magnets and magnetic solutions for industrial, research and engineering applications, and strives to be the Great service leading provider worldwide.

Founded in 2000, GME was formed to advance development of magnet technology as an OEM wholesale supplier of permanent magnets and magnetic products. By interacting closely with its customers and focusing on a market-driven product line, GME has positioned itself to readily meet the challenges of today's dynamic global economy.

CUSTOMER CARE

Quality is our life. Customer satisfaction is our eternal pursuit. Everything we do at GME is driven by an unyielding passion for excellence in identifying and delivering solutions that exceed expectations.

INNOVATION

In today's fast-developing global economy, innovation is critical to a company's survival. Our heritage inspires us to keep innovative thinking all the time for continuous improvement.

CO-PROSPERITY

A business cannot be successful unless it creates prosperity and opportunity for others. We have a dream-customers could win more through our Great Service; We have a dream-all GME people could realize their own dreams while striving for GME Dream.

SOCIAL RESPONSIBILITY

Sustainability isn't only important for people and the planet, but also is vital for business success. We are environmentally responsible and drive to sustainability. And we actively support the communities and make contribution to society in which we do business.

INTRODUCTION OF PERMANENT MAGNET MATERIALS

Magnetic Material

Magnetic Material Terms

What is a Permanent Magnet?

Magnet is an object that exhibits an external magnetic field, including permanent magnet and soft magnet.It permanent magnet is a material that when inserted into a strong magnetic field.will not only exhibit a magnetic field but also continue to exhibit a magnetic field.once removed from the original field.If the permanent magnet operation environment(temperature, demagnetizing field, etc) isn't change, the exhibited magnetic field would be continuous without weakening.

B- Magnetic Induction

magnetic induction is a basic parameter to describe the magnetic field strength and direction, is a vector, its common symbol is B, also was called magnetic flux density.

Br- Residual Magnetic Induction

After a magnet was magnetised to technical saturated under the action of externalmagnetic field, then the external magnetic field was cancelled, at this time, the magnet performanced magnetic induction is residual magnetic induction, shortened form is remainence.

Hcb - Coercive Force

A magnet was magnetised by reverse magnetic field, making its magnetic induction reduce to zero, at this time, the reverse magnetic field strength value is magnetic induction coercive force.

Hcj -Intrinsic Coercive Force

A magnet was magnetised by reverse magnetic field, Making magnetic polarization intensity reduce to zero, at this time, the reverse magnetic field strength value is Intrinsic coercive force

(BH)max Maximum Magnetic Energy Product

B and H multiplication of any point on the demagnetization curve (namely BH) we called magnetic energy product, the biggest BH value is the maximum magnetic energy product.

H- Magnetic Field Strength

Magnetic field strength mean that magnetic induction B divide vacuum permeability μ_0 , then the division value subtract magnetic polarization intensity M, namely H= (B/ μ_0)-M, it is a vector

Performance Magnetic Material Properties Contrast Chart

Material	Br		Hct)	Нсј		(BH) r	Tw	
Material	mT	kGs	kA/m kOe		kA/m kOe		kJ/m ³	MGOe	C
Sintered NdFeB	$1020 \sim 1450$	$10.2 \sim 14.5$	≥1033	≥13.0	≥ 2624	≥33	$207{\sim}422$	$26{\sim}53$	<230
Compression NdFeB	300 ~ 830	3.0 ~ 8.3	$160{\sim}250$	$2.0{\sim}6.5$	480 ~ 1360	6.0 ~ 17.0	16~104	2.0~13.0	< 150
Injection Molded NdFeB	$200{\sim}630$	$2.0 \sim 6.3$	$120{\sim}430$	1.5~5.4	560~1353	7.0 ~ 17.0	6.4 ~ 67	0.8~8.4	< 120
Flexible NdFeB	$250{}^{\sim}670$	2.3 ~ 6.7	$120{\sim}440$	1.5~5.5	150 ~ 880	$2.0{\sim}11.0$	12 ~ 68	1.5~8.5	<120
Sintered Ferrite	$200 \sim 430$	$2.0{\sim}4.3$	$125{\sim}300$	$1.6 \sim 3.8$	$210{\sim}335$	2.6~4.2	6.5~33.5	0.8 ~4.2	<250
Flexible Ferrite	$135{\sim}270$	1.4 ~ 2.7	85 ~ 195	$1.1{\sim}2.4$	175 ~ 260	2.2~3.3	3.2 ~ 14.5	0.4 ~ 1.8	<80
Injection Molded Ferrite	$115{\sim}450$	$1.2{}^{\sim}4.5$	79 ~ 302	1.0~3.8	203~915	2.5 ~11.4	6.4~33.6	0.8~4.2	< 170
Sintered SmCo	850~1150	8.5~11.5	$620{}^{\sim}820$	7.8 ~ 10.3	955 ~ 1990	12~25	145 \sim 262	17~32	<300
Bonded SmCo	$400 \sim 700$	4.0~7.0	$280{\sim}400$	$3.5 \sim 5.0$	800	10	30~95	4~12	< 120
Sintered AINiCo	520 ~ 1100	5.2 ~11.0	40~123	$0.5{\sim}1.6$	43~150	0.50~1.88	8~48	1.0~6.0	<400
Casted AlNiCo	690 ~ 1250	6.9~12.5	37 <i>~</i> 140	0.47 ~ 1.75	/	/	9~82	1.1~10.3	<550

Example of Surface Flux Density Distribution





Muli-poles magnetised on surface



Methods of Magnetization

Example of Magnetization

Rodial magnetised 6 poles



12 poles magnetised on ID





Skew magnetised



The Magnetic Performance Residual Induction Br Contrast Chart for Permanent Magnetic Material



	Sintered NdFeB		Sintered SmCo		Bonded NdFeB		Bonded SmCo		Casted AiNiCo		Flexible NdFeB		Injection NdFeB		Sint AiN	Sinteredi AiNiCo		Sintered Ferrite		Injection Ferrite		(ible rite
	mT	kGs	mT	KGs	mT	KGs	mT	KGs	mT	KGs	mT	KGs	mT	KGs	mT	KGs	mT	KGs	mT	KGs	mT	KGs
MIN	1080	10.8	850	8.5	300	3.00	400	4.0	690	6.9	250	2.50	200	2.00	520	5.2	200	2.00	115	1.15	135	1.35
ТҮР	1270	12.7	1000	10.0	565	5.65	550	5.5	1020	10.2	455	4.55	415	4.15	700	7.0	315	3.15	280	2.80	200	2.00
MAX	1450	14.5	1150	11.5	830	8.30	700	7.0	1350	13.5	670	6.70	630	6.30	880	8.8	430	4.30	450	4.50	270	2.70

The Magnetic Performance Max Energy Product (BH) max Contrast Chart for Permanent Maanetic Material



Demagnetization analysis



Current flow:1 Ampere

Maximum:3.0410E+01 Minimum:0.0000E+00

Maximum:3.0410E+01 Minimum:-3.6331E-01 Maximum:3.0410E+01

Minimum:-5.4833E-01

Magnetic Flux Density

Vector Plot:T 3.000E-01 2.667E-01 2.333E-01 2.000E-01 1.667E-01 1.333E-01 1.000E-01 6.667E-02 3.333E-02 0.000E+00

Notes on magnet material selection and designing

1. Special attention should be paid, in designing, to anisotropic magnet poles as the great differences between magnetization directions.

2. A sample should be confirmed before placing an order as magnetic properties listed in catalogue may vary at different sizes and shapes.

3. Hcb and Hcj indexes should be considered when the magnet is magnetized by your company. The magnetic field should be strong enough to meet the designing requirements. At the same time, great attention should be paid to prevent the magnetizing fixture from cracking and splashing of the magnets.

4. The magnetic properties might become inferior or demagnetized when being sheared or pulled apart.

5. The bonding strength between magnet and yoke should be noted when the magnet is used in high rotation speed or/and in vibration conditions. Due to the hard and inflexible properties of the magnet, it is necessary to consider, when in designing, to avoid cracking and splashing of the magnet

6. The reliability of the binder should be confirmed in terms of these properties such as types, volume used, working conditions and strength when used to bond magnet to other magnets, yoke or polarization chips

7. Magnets should be stored and applied in specified environment from corrosion or strength inferiority by corrosive gas, high and low temperature or moisture.

8. Magnetized magnets should be carefully taken care of, be insulated with non-magnetic material from other magnets and iron debris, and be kept distant from other magnetic fields.

SINTERED MAGNETS

1.Sintered NdFeB Magnets



Summarize

Sintered neodymium-iron-boron (NdFeB) permanent-magnet material was developed in 1983. The major composition of NdFeB magnets is Nd, Fe,B. It is the highest magnetism performance permanent-magnet material at present, that can be made into the complex shape magnet, and cut.

Application field

The sintered NdFeB magnets earliest mainly applications was for the high performance motor: voice coil motors (VCM's) in hard disk drives brushless DC motors. Other applications include magnetic separation, magnetic resonance imaging, sensors and loudspeakers etc.

Property

The (BH) max value of the sintered NdFeB magnet is 5 to 15 timeshigher than sintered ferrite magnets. Hcj value is 5 to 10 times higher than sintered ferrite and 6 to 10 times higher than AINiCo magnets. The potential magnetic properties of NdFeB magnets are very high. Theoretically, their (BH) max value can be reached to 527 kJ/m³(66MGOe). They can even attract object which weight is 640 times heavier than themselves.

Others

The sintered NdFeB magnets have some limitations due to their poor corrosion resistance. In high-humidity, high-temperature, high-PH applications, protective coating is necessary for the sintered NdFeB magnets. Available coating include plating (Zn, Ni, NiCuNi, Au etc), electrophoresis(Epoxy), parylene, and combinations of these coatings.

Recently innovation in composition and process have brought significant improvements in corrosion resistance and temperature stability. But there also have some problem that the NdFeB magnet have some flux loss under high temperature.

	Sinte NdF	ered eB	Sin Sn	tered าCo	Bo Nc	nded lFeB	Bor Sm	nded ICo	Cas AiN	sted IiCo	Fle Nc	exible IFeB	Inje Nd	ection FeB	Sint AiN	eredi iCo	Sint Ferr	ered 'ite	lnje Feri	ction rite	Flex Fer	kible rite
	MGOe	kJ/m³	MGOe	kJ/m³	MGOe	kJ/m³	MGOe	kJ/m³	MGOe	kJ/m³	MGOe	kJ/m³	MG0e	kJ/m³	MGOe	kJ/m³	MG0e	kJ/m³	MGOe	kJ/m³	MGOe	kJ/m³
MIN	26	270	17	135.3	2.0	15.9	4	31.8	1.1	8.8	1.5	11.9	0.8	6.4	1.0	8.0	0.8	6.4	0.3	2.4	0.4	3.2
ТҮР	39	311	25	199.0	7.5	59.7	8	63.7	5.5	43.8	5.0	40.0	4.6	36.6	3.5	27.9	2.5	20	1.3	9.5	1.2	8.9
MAX	53	422	32	254.7	13.0	103.5	12	95.5	10.3	82	8.5	67.7	8.4	66.9	6.0	47.8	4.2	33.4	2.2	16.5	1.8	14.5

Magnetic field analysis in a permanent magnetic motor



Maximum:2.800E+00 Minimum:1.444E-04



Maximum:2.800E+00 Minimum:1.444E-04



Magnetic Flux Density Contour Plot:T 2.200E+00 1.956E+00 1.711E+00 1.467E+00 1.222E+00 9.778E-01 7.333E-01 4.889E-01 2.444E-01

Magnetic Flux Density Contour Plot:T

0.000E+00

2.600E+00 2.311E+00 2.022E+00 1.733E+00 1.444E+00 1.156E+00| 8.667E-01 5.778E-01 2.889E-01 0.000E+00

Magnetization analysis



prallel pigular Maximum:8.7642E-01 Minimum:6.6324E-03 radial pigular Maximum:6.9454E-01 Minimum:5.1472E-02

Eddy current loss analysis





1 division

2 divisions

4 divisions



Magnetic Flux Density Vector Plot:T

3.000E-01 2.667E-01 2.000E-01 1.667E-01 1.333E-01 1.000E-01 6.667E-02 3.333E-02 0.000E+00





8 divisions

Current Density Contour Plot:A/m^2

5.500E+06 4.889E+06 3.667E+06 3.056E+06 2.444E+06 1.833E+06 1.222E+06 6.111E+05 0.000E+00



	Br		Ho	Hcj		(BH)max		Tw	
Grade	mT	kGs	kA/m	kOe	kA/m	kOe	Kj/m ³	MGOe	Ĉ
N35	1170-1220	11.7-12.2	≥868	≥ 10.9	≥955	≥12	263-287	33-36	<80
N38	1220-1250	12.2-12.5	≥899	≥11.3	≥955	≥12	287-310	36-39	<80
N40	1250-1280	12.5-12.8	≥ 907	≥ 11.4	≥955	≥12	302-326	38-41	<80
N42	1280-1320	12.8-13.2	≥915	≥ 11.5	≥955	≥12	318-342	40-43	<80
N48	1380-1420	13.8-14.2	≥923	≥11.6	≥955	≥12	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
35M	1170-1220	11.7-12.2	≥868	≥ 10.9	≥ 1114	≥14	263-287	33-36	<100
38M	1220-1250	12.2-12.5	≥899	≥ 11.3	≥ 1114	≥14	287-310	36-39	<100
40M	1250-1280	12.5-12.8	≥923	≥ 11.6	≥1114	≥14	302-326	38-41	<100
42M	1280-1320	12.8-13.2	≥955	≥ 12.0	≥1114	≥14	318-342	40-43	<100
48M	1360-1430	13.6-14.3	≥ 1027	≥12.9	≥1114	≥14	366-390	46-49	< 100
50M	1400-1450	14.0-14.5	≥ 1033	≥ 13.0	≥ 1114	≥14	382-406	48-51	<100
33Н	1130-1170	11.3-11.7	≥836	≥ 10.5	≥ 1353	≥17	247-271	31-34	<120
35H	1170-1220	11.7-12.2	≥868	≥10.9	≥ 1353	≥17	263-287	33-36	<120
38H	1220-1250	12.2-12.5	≥899	≥11.3	≥1353	≥17	287-310	36-39	<120
40H	1250-1280	12.5-12.8	≥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	326-358	43-46	<120
48H	1370-1430	137-14.3	≥995	≥ 12.5	≥1353	≥17	366-390	46-49	<120
30SH	1080-1130	10.8-11.3	≥804	≥10.1	≥ 1592	≥20	223-247	28-31	<150
33SH	1130-1170	11.3-11.7	≥844	≥ 10.6	≥ 1592	≥20	247-271	31-34	<150
35SH	1170-1220	11.7-12.2	≥876	≥ 11.0	≥ 1592	≥20	263-287	33-36	<150
38SH	1220-1250	12.2-12.5	≥907	≥ 11.4	≥ 1592	≥20	287-310	36-39	<150
40SH	1240-1280	12.5-12.8	≥939	≥11.8	≥ 1592	≥20	302-326	38-41	<150
42SH	1280-1320	12.8-13.2	≥987	≥12.4	≥ 1592	≥20	318-342	40-43	<150
45SH	1320-1380	13.2-13.8	≥ 1003	≥ 12.6	≥ 1592	≥20	342-366	43-46	<150
28UH	1020-1080	10.2-10.8	≥ 764	≥ 9.6	≥ 1990	≥25	207-231	26-29	<180
30UH	1080-1130	10.8-11.3	≥812	≥10.2	≥ 1990	≥25	223-247	28-31	< 180
33UH	1130-1170	11.3-11.7	≥852	≥10.7	≥ 1990	≥25	247-271	31-34	<180
35UH	1180-1220	11.8-12.2	≥860	≥ 10.8	≥ 1990	≥25	263-287	S3-36	< 180
3SUH	1220-1250	12.2-12.5	≥876	≥11	≥ 1990	≥25	287-310	36-39	< 180
40UH	1250-1280	12.5-12.8	≥899	≥11.3	≥ 1990	≥25	302-326	38-41	<180
28EH	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	2d-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	≥2386	≥30	287-310	36-39	<200
28AH	1040-1090	10.4-10.9	≥787	≥9.9	≥2624	≥33	207-231	26-29	<230
30AH	1000-1130	10.8-11.3	≥819	≥10.3	≥2624	≥33	223-247	28-31	<230
33AH	1130-1170	11.3-11.7	≥843	≥ 10.6	≥ 2624	≥33	247-271	31-34	<230

Magnetic Properties

Br Temperature Coefficient	-0.095~-0.105%/°C	Density	7.3-7.5g/cm ³	Curie Temperature	310-340 [°] C
Coercivity Tempera- ture Coefficient	-0.45~-0.60%/°C	Vickers-hardness	600HV	Electrical Resistivity	114μΩ · cm
Across Transfigura- tion Coefficient	0.24	Break Strength	8.0Kgf/mm ²	Bending Strength	25kgf/mm ²
Thermal Expansion Coefficient	4X10 ⁻⁶ /°C	Specific Heat	0.12Kcal/Kg	Stiffness	0.64N/m ²
The Conduction Coefficient	7.7kcal/[m.h.℃]	Young's Modulus	1.6X10 ¹¹ N/m ²	Compressibility	9.8x10 ⁻¹² m²/N

Surface Treatment Method

Surface Treatment Method	Nickel Plated	Zinc Plated	Ероху	Ni-Cu-Ni Plated	Zinc plated + Parylene coating
Coating Thickness	5-15 μm	10-20 μm	10-20 μm	10-30 μm	10-30 μm

Production Process Flow Chart



Demagnetization Curves





2.Sintered SmCo Magnets

Summarize

The SmCo permanent magn et have two types available: 1:5 type(SmCo₅) &2:17 type (Sm₂Co₁₇). Sintered samarium cobalt magnets are very brittle, so traditionalmachining techniques cannot be applied. If machining is required, high concentration diamond grinding wheels is best selection, and water or oil coolant is necessary.

Application field

The SmCo permanent magnet mainly applications are servo-motors, pump couplings, and sensors. The SmCo permanent magnet can be used in high-temperature, high-humidity and corrosive environment.

Property

The curie temperature of SmCo magnets is 710 to 880 °C. The maximum operation temperature is 250 to 350°C. It is higher than the NdFeB materials which maximum operation temperature is 230 $^\circ$ C. The SmCo materials have better corrosion resistance than NdFeB materials. The SmCo_r materials have lower magnetic flux loss than the NdFeB materials when operation temperature is above 150°C.SmCo, magnet has (BH) max of about 18 MGOe (140kJ/m') and Br reversible temperature coefficient of-0.05%/°C.

Sm₂Co₁₇ magnet has (BH) max of 30 MGOe (240kJ/m³).Sm, Co, magnet has poor machining ability, Sm₂Co₁₇ material cost is lower than SmCo_c due to less cobalt containing. Sm₂Co₁₇ magnet has excellent corrosion resistance and high temperature stability. It has the lowest reversible temperature coefficient of all rare earth alloys. The typically value is-0.03% $^\circ$ C.

Feature of Products

Demagnetizing Field H 1kA/m = 12.57 Ge, 1kOe = 79.58 kA/m, 1T = 10kGs = 10'Gs

High Performance	N54,52M,52H,50SH,42EH,35AH etc.
High Working Temperature	The AH series with 40 KOe super-high coercive force can replace SmCo magnets successfully.
High Consistency	The cpk of Br and Hcj are much higher than 1.67.The consistency of surface magnetic filed and magnetic flux can be controlled within +/-1%.
High Anti-corrosion	The salt spary test and humid heat test of high anti-corrocion coating could be more than 500 hours.
Low Weight Loss	PCT:130C,humidty 100%,vapor pressure 2.7bar,20days,average low weight loss<2 mg/cm².

Demagnetizing Field H 1kA/m = 12.57 Ge, 1kGe = 79.58 kA/m, 1T = 10kGs = 10'Ge



		Br		Hcb		Нсј		(В	H) max	Тс	
Material	Grade	mT	kGs	kA/m	kOe	kJ/m3	kOe	kJ/m ³	MGOe	°C	°C
	SM-18	850	8.5	620	7.8	≥1350	≥17	145-150	17~19	750	<250
SmCo(1:5)	SM-20	900-960	9.0-9.6	653~717	8.2~9.0	1194~1513	15~19	150-175	19~22	750	<250
51100(1.5)	SM-22	930~1000	9.3~10.0	660~772	83~9.7	1194~1751	15~22	159-191	20~24	750	<250
	SM-24	960-1040	9.6~10.4	660-780	83~9.8	1194-1751	15~22	175-207	22~26	750	<250
	SMG-24	950~1020	9.5~10.2	637~732	8.0 9.2	1433~1990	18~25	175-190	22~24	800	<300
	SMG-26	1020~1050	10.2~10.5	748~796	9.4~10.0	1433~1990	18~25	195-215	24~26	800	<300
SmCo(2:17)	SMG-28	1050~1080	10.5~10.8	756~796	9.5~10.0	1433~1831	18~23	205-220	26~28	800	<300
	SMG-30	1070-1120	10.7~11.2	677-820	8.5-10.3	≥1194	≥15	223-247	28~31	800	<300
	SMG-32	1090~1150	10.9~11.5	677~820	8.5~10.3	≥955	≥12	238-262	29~32	800	<300

Demagnetization Curves



Demagnetizing Field H 1kA/m = 12.57 Oe, 1kOe = 79.58 kA/m, 1T = 10kGs = 10'Gs

Production Process Flow Chart



3.Sintered/Casted AlNiCo Magnets

Summarize

The AINiCo permanent magnet materials are primarily composed of aluminum, nickel, cobalt, iron, copper and titanium, AINiCo is produced by casting or sintering process The casting type AINiCo magnets have better magnetic properties than sintering type, but the magnetic performance uniformity of sintering AINiCo magnets is better.

Grades of Alnico is defined by cobalt content, the range from zero(AINiCo 3) to 40% (AINiCo 8). The isotropic AINiCo magnet grades (2, 3 and 4) magnetic properties are relatively lower than anisotropic AINiCo magnet(AINiCo 5,6,8 and 9); The anisotropic grades AINiCo magnet orientation is achieved during heat treatment, by cooling the product from a temperature of about 2000° F (1093C) at a controlled rate, within a magnetic field which conforms to the preferred direction of magnetization.

Application field

AINiCo magnet application newly developed: temperature-sensitive as hall-effect and MR-based automotive electronic sensors.

The traditional applications include magneto, TWT amplifiers, actuators, motors and Instrument. In many applications they are replaced by the rare earth permanent-magnets.

Property

The coercive force of AINiCo magnets is very low, so it can be easily demagnetizated by reverse magnetic force, impact or touched each other, so AINiCo magnets should be stored and packed with the magnetic poles opposing each other.

In open magnetic circuit, the ration of length/diameter (L/D) of the AINiCo magnets should be at least 4:1. If it is less than 4:1, AINiCo magnets property will be easy to diamagnetism. AINiCo magnets have good corrosion resistance, no coating is needed for surface protectiom. AIINiCo magnets have the lowest Br temperature coefficient which is-0.02%/C so they have excellent temperature stability.

The maximum operation temperature of AlNiCo magnets is 550° $^\circ$ C

Others

AINiCo magnets are extremely difficult to machining because they are very hard and brittle.



		Br		Hcb		Нсј		(В	H) max	Тс	
Material	Grade	mT	kGs	kA/m	kOe	kJ/m3	kOe	kJ/m ³	MGOe	°C	°C
	SM-18	850	8.5	620	7.8	≥1350	≥17	145-150	17~19	750	<250
SmCo(1:5)	SM-20	900-960	9.0-9.6	653~717	8.2~9.0	1194~1513	15~19	150-175	19~22	750	<250
51100(1.5)	SM-22	930~1000	9.3~10.0	660~772	83~9.7	1194~1751	15~22	159-191	20~24	750	<250
	SM-24	960-1040	9.6~10.4	660-780	83~9.8	1194-1751	15~22	175-207	22~26	750	<250
	SMG-24	950~1020	9.5~10.2	637~732	8.0 9.2	1433~1990	18~25	175-190	22~24	800	<300
	SMG-26	1020~1050	10.2~10.5	748~796	9.4~10.0	1433~1990	18~25	195-215	24~26	800	<300
SmCo(2:17)	SMG-28	1050~1080	10.5~10.8	756~796	9.5~10.0	1433~1831	18~23	205-220	26~28	800	<300
	SMG-30	1070-1120	10.7~11.2	677-820	8.5-10.3	≥1194	≥15	223-247	28~31	800	<300
	SMG-32	1090~1150	10.9~11.5	677~820	8.5~10.3	≥955	≥12	238-262	29~32	800	<300

Demagnetization Curves



Demagnetizing Field H 1kA/m = 12.57 Oe, 1kOe = 79.58 kA/m, 1T = 10kGs = 10'Gs

Production Process Flow Chart



3.Sintered/Casted AlNiCo Magnets

Summarize

The AINiCo permanent magnet materials are primarily composed of aluminum, nickel, cobalt, iron, copper and titanium, AINiCo is produced by casting or sintering process The casting type AINiCo magnets have better magnetic properties than sintering type, but the magnetic performance uniformity of sintering AINiCo magnets is better.

Grades of Alnico is defined by cobalt content, the range from zero(AINiCo 3) to 40% (AINiCo 8). The isotropic AINiCo magnet grades (2, 3 and 4) magnetic properties are relatively lower than anisotropic AINiCo magnet(AINiCo 5,6,8 and 9); The anisotropic grades AINiCo magnet orientation is achieved during heat treatment, by cooling the product from a temperature of about 2000° F (1093C) at a controlled rate, within a magnetic field which conforms to the preferred direction of magnetization.

Application field

AINiCo magnet application newly developed: temperature-sensitive as hall-effect and MR-based automotive electronic sensors.

The traditional applications include magneto, TWT amplifiers, actuators, motors and Instrument. In many applications they are replaced by the rare earth permanent-magnets.

Property

The coercive force of AINiCo magnets is very low, so it can be easily demagnetizated by reverse magnetic force, impact or touched each other, so AINiCo magnets should be stored and packed with the magnetic poles opposing each other.

In open magnetic circuit, the ration of length/diameter (L/D) of the AINiCo magnets should be at least 4:1. If it is less than 4:1, AINiCo magnets property will be easy to diamagnetism. AINiCo magnets have good corrosion resistance, no coating is needed for surface protectiom. AIINiCo magnets have the lowest Br temperature coefficient which is-0.02%/C so they have excellent temperature stability.

The maximum operation temperature of AlNiCo magnets is 550° $^\circ$ C

Others

AINiCo magnets are extremely difficult to machining because they are very hard and brittle.



	E	Br	н	cb	H	łcj	(BH	H)max	D	αBr	Тс	
Grade	mT	kGs	kA/m	kOe	kA/m	kOe	kJ/m ³	MGOe	g/cm ³	%/°C	C	Remarks
1.0~1.25	520	5.2	40	0.5	43	0.54	8~10	1.0~1.25	6.8	-0.022	760	Isotropic
1.5~1.75	700	7.0	40	0.5	43	0.54	12~14	1.5~1.75	7.0	-0.014	810	Isotropic
1.75~2.0	570	5.7	76	0.95	78	0.98	14~16	1.75~2.0	7.1	-0.020	850	Isotropic
2.25 ~2.75	560	5.6	88	1.1	90	1.13	18~22	2.25 ~2.7	5 7.2	-0.016	850	Isotropic
3.5~4.15	1050	10.5	46	0.58	47	0.59	28~33	3.5~4.15	7.2	-0.016	850	Anisotropic
4.3~4.8	1100	11.0	50	0.63	51	0.64	34~38	4.3~4.8	7.2	-0.020	890	Anisotropic
3.5~3.8	1000	10.0	56	0.7	57	0.71	28~30	3.5~3.8	7.2	-0.020	850	Anisotropic
3.9~4.5	780	7.8	104	1.3	106	1.13	33-36	3.9~4.5	7.2	-0.020	850	Anisotropic
4.15~4.5	650	6.5	136	1.7	150	1.88	31~36	4.15~4.5	7.2	-0.020	850	Anisotropic
4.75~5.3	800	8.0	123	1.55	126	1.58	38~42	4.75~5.3	7.2	-0.020	850	Anisotropic
5.3~6.0	880	8.8	120	1.5	122	1.53	42~48	5.3~6.0	7.25	-0.020	850	Anisotropic

Magnetic Properties for Casted AlNiCo

	[3r	Hcb		(BH)max		D	Тс	Tw	αBr	MMPA	IEC
Grade	Mt	kGs	kA/m	kOe	kJ/m³	MGOe	g/cm³	Ĉ	°C	%/°C	Equivalent	Equivalent
1. Isotropy												
•CLN9	690	6.9	37	0.47	9	1.13	6.9	6.9	760	<450	Alnico3	Alnico9/3
•CLN10	600	6.0	40	0.5	10	1.25	6.9	6.9	760	<450	Alnico3	Alnico9/3
•CLNG12	720	7.2	45	0.6	12	13.5	7	7	810	<450	Alnico2	Alnico12/6
•CLNG13	700	7.0	48	0.6	13	1.63	7	7	810	<450	Alnico2	Alnico12/6
2. LNG Seri	es											
CLNG16	800	8.0	53	0.66	16	2.0	7.3	7.3	850	<525	[Alnico4]	/
CLNG28	1050	10.5	46	0.6	30	3.75	7.3	7.3	850	<525	[Alnico4]	/
CLNG32	1180	11.8	46	0.575	32	4	7.3	7.3	890	<525	[Alnico5C]	/
CLNG34	1180	11.8	46	0.575	34	4.25	7.3	7.3	890	<525	[AInco5C]	/
CLNG37	1200	12.0	48	0.6	37	4.65	7.3	7.3	890	<525	Alnico5	Alnico37/5
CLNG40	1250	12.5	48	0.6	40	5.0	7.3	7.3	890	<525	Alnico5	/
CLNG44	1250	12.5	52	0.65	44	5.5	7.3	7.3	890	<525	Alnico5	Alnico44/5
CLNG48	1250	12.5	52	0.65	48	6	7.3	7.3	890	<525	Alnico5DG	Alnico52/6
CLNG52	1300	13	56	0.7	52	6.5	7.3	7.3	890	<525	Alnico5DG	Alnico52/6
CLNG60	1350	13.5	56	0.7	60	7.5	7.3	7.3	890	<525	Alnico5~7	/
3. LNGT Se	ries of High	Performance	e									
•CLNGT18	580	5.8	90	1.13	18	2.2	7.3	7.3	860	<550	Alnico7	Alnico17/9
CLNGT32	800	8	100	1.25	32	4	7.3	7.3	860	<550	Alnico8	Alnico38/11
CLNGT34	800	8	104	1.3	34	4.25	7.3	7.3	860	<550	Alnico8	Alnico38/11
CLNGT38	820	8.2	110	1.38	38	4.75	7.3	7.3	860	<550	Alnico8	Alnico38/11
CLNGT44	880	8.8	120	1.5	44	5.5	7.3	7.3	860	<550	Alnico8	/
CLNGT60	900	9	110	1.38	60	7.5	7.3	7.3	860	<550	Alnico9	Alnico60/11
CLNGT72	1050	10.5	112	1.41	72	9	7.3	7.3	860	<550	Alnico9	/
CLNGT82	1100	11	120	1.5	82	10.25	7.3	7.3	860	<550	Alnico9	/
CLNGT36J	700	7	140	1.75	36	4.5	7.3	7.3	860	<550	Alnico8HC	Alnico36/15

Demaanetization Curves







¹kA/m = 12.57 Oe, 1kOe = 79.58 kA/m, 1T = 10kGs = 10'Gs



Production Process Flow Chart for Casted AlNiCo



Temperature Effect











BONDED MAGNETS

1.Injection NdFeB Magnets/ Ferrite Magnets/ SmCo Magnets(include hybrid magnets)

Summarize

The injection magnets are thermoplastic resin and different kinds of magnetic powder or mixed magnetic powder composite materials The injection magnets can be processed into thin-walled ring, rods slice and various special complex shapes (such as: steps, damping trough, holes, pins, etc.). The injection magnets with other metals embedded parts (gear, screws, profiled holes etc) over-moldings, is not easy to develop fissures, fracture: The injection magnets adopt injection process, improve the magnet internal uniformity, magnet magnetic consistency is better Injection magnets can be made into hybrid magnet, magnetic property can adjust the most wide range. The thermoplastic resin of injection magnets coat the magnetic powder effectively, so magnets are no surface

coating processing. According to the injection magnets different operating temperature, The thermoplastic resin can choose PA6, PA12 or PPS.

According to the different magnetic powder of injection magnets, the magnetic powder include NdFeB magnetic powder, SmCo magnetic.powder, permanent ferrite magnetic powder (BaO·6Fe₂O₃ or SrO·6Fe₂O₃)and the form er three different proportions mixed magnetic powder.

Application field

The injection magnets are mainly used in DC motors, spindle motors for DVD players, step motor on scanner and vibration motor for mobile.phone, brakes on digital cameras and different kinds of sensing devices etc.

Property

The injection magnets have good rigidity and tenacity. The injection magnet have two types: isotropic and anisotropic, its (BH) max range from 1MGOe to 12 MGOe. The injection magnets thermoplastic resin PA6's maximum operating temperature can amount to 140°C. PA12 up to 120°C, PPS can reach 180°C. The injection anisotropic NdFeB magnet (BH) max is up to 12 MGOe, Br can reach 7.5 kGs.

Others

Precision tooling is necessary to ensure the products dimensional tolerance. The magnets' dimension would be change after cooling due to the thermoplastics shrinkage.

Production Process Flow Chart



Demagnetization Curves.





Magnetic Properties

	Forrito Dowdo	ur i Pindor	Nulon6 N	wlon6												
		105		127		221		6.4		< 140						
	•IMF0606	185	-	127	_	231	-	6.4	_	< 140	-	-	-	-	-	_
	IMF0606	220	_	1/1	_	278	-	9.6	_	< 140	50	200	3.05	0.6	-	_
	IMF0606	250	-	191	-	223	-	12.4	-	< 140	60	120	3.40	0.6	-	-
	IMF0606	260	-	195	-	255	-	13.6	-	< 140	50	100	3.45	0.6	-	-
Injection	IMF0606	275	-	199	-	247	-	14.4	-	< 140	55	130	3.50	0.6	-	-
Magnets	IMF0606	280	-	203	-	238	-	15.6	-	< 140	54	130	3.60	0.5	-	-
	IMF0606	290	-	207	-	250	-	16.8	-	< 140	60	110	3.65	0.5	-	-
	IMF0606	295	-	211	-	263	-	17.6	-	<140	50	100	3.70	0.4	-	-
	Ferrite Powde	r +Binder	Nylon12 I	Vylon12												
	IMF0212	115	-	79	-	203	-	2.4	-	< 120	40	200	2.90	0.7	-	-
	IMF1212	265	_	199	-	250	-	12.8	-	<120	50	50	3.45	0.5	-	-
	IMF1512	280	-	195	-	250	-	15.2	-	<120	40	-	3.60	0.5	-	-
	IMF1612	290	-	199	-	247	-	16.8	-	<120	40	-	3.65	0.5	-	-
	Hybrid Powde	r+Binder I	Nylon12/P	PS Nylon	12/PPS											
Hybrid	IMH13PPS	260	_	179	_	227	-	13.2	—	<180(PPS)	40	40	3.55	0.4	-	-
magnet	IMH34PPS	450	_	302	_	915	-	33.6	_	<180(PPS)	-	-	4.65	_	_	_
	Injection NdFe	eB Magnet	:s													
	IMN-2	200-400	2.0-4.0	120-240	1.5-3.0	560-720	7.0-9.0	6.4-24	0.8-3.0	<120	-	-	3.5-4.0	-	1.25	-0.15
	IMN-4	400-490	4.0-4.9	247-310	3.1-3.9	573-732	7.2-92	28-36	3.5-4.5	<120	-	_	4.0-5.0	_	1.20	-0.10
NdFeB Magnets	IMN-6	490-570	4.9-5.7	312-382	3.9-4.8	637-796	8.0-10.0	42-56	5.2-7.0	<120	-	_	5.0-5.5	_	1.20	-0.10
magneto	IMN-8	570-630	5.7-6.3	382-430	4.8-5.4	676-835	8.5-10.5	59-67	7.4-8.4	<120	-	_	5.0-5.5	_	1.20	-0.10
	IMN-6H	480-560	4.8-5.6	334-398	4.2-5.0	1035-1353	13.0-17.0	40-52	5.0-6.5	<120	-	_	5.0-5.5	_	1.13	-0.15
	Injection SmC	o Magnets	;													
	SMB-6(1:5)	400	4.0	280	3.5	800	10	30-50	4~6	<120	-	-	_	-	-	-
Injection	SMB-10(1:5)	500	5.0	320	5.0	800	10	50-65	6~8	<120	-	-	-	-	_	-
Magnets	SMB-10(2:17)	600	6.0	360	4.5	800	10	65~80	8~10	<120	-	-	_	-	_	_
	SMB-12(2:17)	700	7.0	400	5.0	800	10	80~95	10~12	<120	-	-	_	_	_	_
	. ,															

2.Flexible Ferrite Magnets

Summarize

The flexible ferrite magnet has more than 30 years history. It is a composite material of ferrite magnet powder and compound rubber. There are two types: anisotropic & isotropic.

Application field

The isotropic flexible ferrite magnets' magnetic property is lower than anisotropic flexible ferrite magnets, The principle applications of isotropic flexible ferrite magnets are promotional decoration, refrigerator, toys and learning material.

The principle application of anisotropic flexible ferrite magnets are mic-motors.sensors and magnetic attraction application.

Property

The flexible ferrite magnet has excellent flexibility characteristic, easily folded and twisted without damaging the magnetic property of the magnet.

The flexible ferrite magnet has excellent machining characteristic. easily for cutting. punching, drilling.

Others

The flexible ferrite magnet's binder is the polyethylene and poly butadience rubber. The flexible ferrite magner's operation temperature is up to 120C.



	Br	Hcb	Нсј	(BH) max	D	Tw
Grade	mT	k/m	kA/m	kJ/m³	g/cm³	Ĉ
Y04T	135-155	85-105	175-210	3.2-5.0	3.8	<80
Y10	220-240	145-165	190-225	9.0-10.6	3.4	<80
Y11	230-250	160-185	225-260	10.0-12.0	3.5	<80
Y13	250-270	175-195	200-230	11.5-14.5	3.6	<80
Y15	>270	175-190	200-230	>14.5	3.7	<80

Production Process Flow Chart



Production Process Flow Chart

	Min.Size	Standard Size	Max.Size
Length	0	30M/100'	No limitation

Flexible Magnetic Sheet In Roll							
Width	0	610/620/1000mm	1200mm				
	0	24"/40"	47"				
	0.3mm	0.4/0.5/0.6/0.7mm	2mm				
Thickness	0.012"	0.015"/0.02"/0.03"	0.078"				

Flexible Magnetic Sheet In Sheet							
Width	0	610/620/1000mm	1200mm				
	0	24"/40"	47"				
This	0.3mm	0.4/0.5/0.6/0.7mm	8mm				
Thickness	0.012"	0.015"/0.02"/0.03	0.315"				

3.Flexible NdFeB Magnets-NanomagTM

Summarize

The flexible NdFeB magnets is a kind of flexible magnets based on micro-crystalline NdFeB grinded powder and a polymeric matrix. They have high magnetic properties due to magnetic micro-crystaline powder and good flexibility due to elastomer matrix.

Application field

Sensor for cell phone wheel key, wireless mouse, protector guarding against theft for commodities in supermarket.

Micro-motor strip used for cash register, portable DVD, servo fan, laptop computer. Plane loudspeaker used for TV, stereo device. Strong attraction application.

Property

It is the strongest isotropic flexible magnet in the worid so far. The (BH) max of 90k,.J/m'(11.25MGOe) is available at laboratory, is the 5 times than the Flexible Ferrite magnetic property. Quite close to the highest property of compression molded NdFeB magnet. Magnetic property for industrial mass production ranges from 16 to 68kJ/m3(2.0~8.5MGOe). For outstanding flexibility, it can be automatically assembled more efficiently than compression molded

Others

magnet.

No mould, reduce product development & production lead time. Operation temperature:-40C~120 $^\circ\!\mathrm{C}$.

Can be made into different shapes such as long strip, slim strip, ring, pore plate, large sheeting, etc.







Crada	Br		Hcb		F	Hcj)max	D	lBr	Tw
Giade	mT	kGs	kA/m	kOe	kA/m	kOe	kJ/m ³	MGOe	g/cm ³	%/°C	°C
FN2	250~350	2.5~3.5	120~200	1.5~2.5	160~320	2.0~4.0	12~20	1.5~2.5	3.3-3.9	-0.11	<120
FN3	330~430	3.3~4.3	170~250	2.1~2.3	380~540	4.8~6.8	20~28	2.5~3.5	4.0~4.6	-0.11	<120
FN4	380~480	3.8~4.8	210~300	2.7~3.7	540~700	6.8~8.8	28~36	3.5~4.5	4.4~5.0	-0.11	<120
FN5	430~530	4.3~5.3	250~340	3.2~4.2	620~780	7.8~9.8	36~44	4.5~5.5	4.65~5.25	-0.11	<120
FN6	480~580	4.8~5.8	290~380	3.7~4.7	630~800	8.0~10.0	44~52	5.5~6.5	4.65~5.25	-0.11	<120
FN7	530~630	5.3~6.3	340~420	4.3~5.3	670~880	8.5~11	52~60	6.5~7.5	4.8~5.4	-0.11	<120
FN8	570~670	5.7~6.7	350~440	4.5~5.5	670~880	8.5~11	60~68	7.5~8.5	5.1~5.7	-0.11	<120
FNE2	250~350	2.5~3.5	120~200	1.5~2.5	150~320	2.0~4.0	12~20	1.5~2.5	3.45~4.05	-0.11	<120
FNE3	350~450	3.5~4.5	170~250	2.1~3.1	280~440	3.5~5.5	20~28	2.5~3.5	4.1~4.7	-0.11	<120
FNE4	380~480	3.8~4.8	210~300	2.7~3.7	440~600	5.5~7.5	28~36	3.5~4.5	4.4~5.0	-0.11	<120
FNE5	420~520	4.2~5.2	250~325	3.1~4.1	520~680	6.5~8.5	36~44	4.5~5.5	4.65~5.25	-0.11	<120

Production Process Flow Chart



Other Products Pictures



ASSEMBLY

1.Motor Assembly

Besides the permanent magnets, we are capable of producing different assembly parts for your specific needs, such as motor housing assembly, high speed rotor & multiple step motor rotor electrical components etc.

High speed rotor





Motor housing assembly



2.Sensor Assembly

The experience of the magnetic sensor application of our senior technical engineer, can choose suitable magnetic products and provide profession design solution to meet customers' specific needs, we also can produce the magnetic sensor component for linear, rotary and speed sensor, security product and instrumentation etc.



3. Other Assembly

Besides the motor assembly and sensor assembly, we also help customer to design and manufacture other assemblies, such as magnetic lock, magnetic filter, magnetic holding purpose and so on.







PT PIECES 1.Pot Magnet



Model	D(mm)	D1 (mm)	D2 (mm)	H(mm)	Weight (g)	Attraction (kg)
NA16	16	3.5	6.5	5.2	7	6
NA20	20	4.5	8.6	7.2	15	10
NA25	25	5.5	11	7.7	24	22
NA32	32	5.5	11	7.8	39	32
NA36	36	6.5	12	7.6	50	41
NA42	42	6.5	12	8.8	77	61
NA48	48	8.5	19	10.8	120	81
NA60	60	8.5	19	15	243	115
NA75	75	10.5	21	17.8	480	163



Model	D(mm)	D1 (mm)	D2 (mm)	H(mm)	Weight (g)	Attraction (kg)
NB16	16	3.5	6.5	5.2	7	5
NB20	20	4.5	8	7.2	13	8
NB25	25	5.5	9	7.7	22	20
NB32	32	5.5	9	7.8	38	30
NB36	36	6.5	11	7.6	48	40
NB42	42	6.5	11	8.8	75	65
NB48	48	8.5	15	10.8	114	75
NB60	60	8.5	15	15	235	110
NB75	75	10.5	18	17.8	460	155















Model	D(mm)	D1 (mm)	M (mm)	h (mm)	H(mm)	H1(mm)	Weight (g)	Attraction (kg)
NE16	16	6.5	4	5.2	13.5	35.7	12	8
NE16	16	6.5	4	5.2	13.5	7	12	8
NE25	25	7.5	5	7.7	17	44.9	33	22
NE32	32	10	6	7.8	18	47.8	54	34
NE36	36	10	6	7.6	18.5	49.8	64	41
NE42	42	10	6	8.8	18.8	50	93	68
NE48	48	12	8	10.8	24	61	150	81
NE60	60	12	8	15	28	66	283	120
NE75	75	17	10	17.8	35	84	555	200









Model	D(mm)	D1 (mm)	M (mm)	H(mm)	h(mm)	Weight (g)	Attraction (kg)
ND16	16	6.5	4	13.5	13.5	5.2	8
ND20	20	6.5	4	15	15	7.2	12
ND25	25	7.5	5	17	17	7.7	22
ND32	32	10	6	18	18	7.8	34
ND36	36	10	6	18.5	18.5	7.6	41
ND42	42	10	6	18.8	18.8	8.8	68
ND48	48	12	8	24	24	10.8	81
ND60	60	12	8	28	28	15	120
ND75	75	17	10	35	35	17.8	178





Model	D	А	В	С	н	L	W	Weight (g)	Vertical Attraction (Kg)	Side Attraction (Kg)
NG25	25	20	13.5	24	15.5	55	23	38	14	3.5
NG32	32	20	13.5	24	15.5	55	23	52	23	5.5
NG36	36	20	13.5	24	15.1	55	23	65	29	6.5
NG42	42	20	13.5	24	16.5	55	23	92	32	8







2. Rubber Coated Pot Magnet





Model	D	н	D1	h	н	Weight (g)	Attraction (g)
D22	22	4	8	6	11.5	12	5
D43	43	4	8	6	12	33	8
D66	66	5	10	8	14.2	104	20
D88	88	8	12	8.5	15.8	200	42





Model	D	н	h	н	Weight (g)	Attraction (g)
D22	22	4	6	12.5	11	5
D43	43	6	6	21	32	8
D66	66	8	8	23	107	20
D88	88	8	8.5	24.5	193	42





Model	D	М	н	Weight (g)	Attraction (kg)
D43	43	4	6	29	8
D66	66	6	8	100	20
D88	88	8	8.5	186	42

Holding Force Detection

Holding Force Detection Method:We use the automatic machinery in pull off speed 80mm/min to test the maximum vertical pull force of product by attracting on a 10mm thick steel plate. 1. The test methods measured by different companies can not be compared. 2.Need to consider the direction of force and tension of the insurance factor in actual use.





Product Application

Magnetic assembly mainly applies where a strong clamping force is required. Applications include point of sale, window dressing, door/cupboard and gate clamps, false ceiling clamps, sign and banners, torque limited seals, jigs and fixtures, lighting holders, marketing and exhibition display, retrieval magnets, industrial fixings, etc. If you find better use of pot magnet, please also don't forget to share with us.vv











DAILY LIFE PRODUCTS

1.Scavenger

Picture	Model	Product Size	Weight (kg)	Packing (Carton)
1	RC7508	18	8	1PCS (740*18*18)
	RC7512	21	8.5	1PCS (740*18*18)
	RC7509	24	9	1PCS (740*18*18)
	RC7510	30	9.5	1PCS(1040*18*18)
	RC7511	36	10	1PCS(1040*18*18)

2.Magnetic badge

Picture	Model	Product Size	Weight(g)	Packing (Carton)
13	SC-1	45*13mm	10.2	1000pcs
13	SC-2	45*13mm	10.2	1000pcs
08	SC-3	33*13mm	7.5	1500pcs
	SC-4	45*13mm	10.9	1000pcs
13	SC-7	45*13mm	9.8	1000pcs
18	SC-8	45*13mm	10.2	1000pcs
1.00	SC-9	45*13mm	10.2	1000pcs
29	TC-1	45*13mm	11.7	1000pcs
0	TC-2	D20mm	6	1360pcs
0000	TC-3	60*14mm	18	720pcs
\odot	TC-5	D17mm	5.4	2400pcs

PRODUCTION EQUIPMENT QUALITY CONTROL 1.Quality System

We have a complete quality management system, systematic and complete quality control procedures, customer-oriented process management, emphasis on process control, quality cost management and waste reduction, using product quality planning (APQP), potential failure modes and consequences analysis. (FMEA), Statistical Process Control (SPC), Production Part Approval Process (PPAP), Measurement System Analysis (MSA) and Error Prevention Methods to prevent the occurrence of defects, focus on process performance and improve overall corporate performance, to continuously improve methods, all Involvement and employee motivation to promote the effectiveness of the company's quality management system.

2.Environmental Protection System

The company has always attached great importance to the protection of the ecological environment, continuously adopting advanced technology and equipment, using clean energy and raw materials, improving management, reducing pollution from the source, reducing pollution generation and emissions during the production process, and for a small amount of exhaust gas that must be discharged. Waste and solid waste, using effective means for end treatment.

While pursuing the economic benefits of the enterprise, it also consciously shoulders the social responsibility for society, resources and security, especially in the aspect of environmental protection, let us realize that it is a high-grade modern consciousness that a company should possess. As early as the company's initial stage, we have completely completed the series of environmental protection procedures in accordance with relevant laws and regulations, and have been successfully passed in previous environmental inspections, and have been well received by the environmental management department.





3. Quality Assurance (QA)

Quality Policy

Fully use the quality tools such as APQP, PPAP, MSA and so on tocontrol the product quality, with advanced and all-round measure device, and overall measurement methods.

Excellent quality control team, with super quality intention, can measure, analysis, and control all kinds of magnets material and components. Audit and assist supplier quality system to help supplier assure quality. Strictly according to ISO quality system requirement, perform company's general guides" improve value, fufill-ment requirement, exceed expectation, realize the multi-winner", to supply eligible products for customers.



Measure Equipment



2 Coordinate projector



Universal microscope



Multi- poles magnetization tester



Constant temperature and humidity tester



Salt spray tester



Hysteresigraph

4.R&D



Magnetic Assembly Design Solution

AlC has design ability about optimized and reliable professionalmagnetic solutions. Apply to professional analysis software aided design, timely and economical cost design projects will be achieved, such as motor high-speed rotor and sensor assembly etc.



Motor Magnetic Simulation



Reed Switch Assembly Simulation



High Speed Rotor



Reed Switch Assembly

PRODUCT APPLICATION

The products of Sheensen Magnetics are deep welcomed by the market, our products are widely used inWind power, energy-efficient appliances, EPS system, new energy autonotive, electroacoustic device. magnetic separator, electrict tool, MRI and etc, besides that our products are also widely used VOM, CD-ROM drive, mioro motor, and etc;



1.Loudspeaker

The magnet used in loudspeaker called fixed PM(permanent magnet), which become electromagnet when the coil is energized. And due to the cyclic variation of AC direction, the polarity of the electromagnet changes periodically, which results the magnetic force with the fixed PM, this force promotes the coil move right and left on its axis regularly and make the cone paper vibrate to sodnd, so the quality of PM is very important for the whole loudspeaker system. The beautiful sound comes from the excellent magnetic field.

Our NdFeB magnet and Ferrite magnet are widely used in al kinds of domestic and abroad loudspeakers and related equipment. We can provided magnet with al kind of performances and size for electroacoustic use. The magnet of the loudspeaker used in Olympics 2008 and the Shanghai Expo are provided by us.



2.motor

The magnet used in motors work through electro magnetics transduction theory, the magnetis the medium conversion, which malke the electic energy change to magnetic energy and finally change to the kinetic energy. Nowadays, the rare earth NdFeB magnet and Ferite magnet can be used as either stator or rotor. With the improvement of production technology and technical lever, the efficiency of motor increases dramatically, which promotes the energy conservation and environment protection. The magnet currently widely used in PMDC motors, PM brushless motors, PM synchronous moors, stepper motors, servo motors and etc. The powerful force comes from huge magnetic field; with the responsibility of conservation technology, environment protection and high efficiency, GME magnetics constantly explore and provide superior magnets for outstanding domestic and international motor manufactures. Our magnets are widely used in various fields, such as elevators, household appliances, auto motors and etc. Especially for auto motors, GME magnetics have taken part in establishment of the national professional standards of NdFeB magnet for auto motors. We have already become one of the leaders for auto magnet manufacturing.



