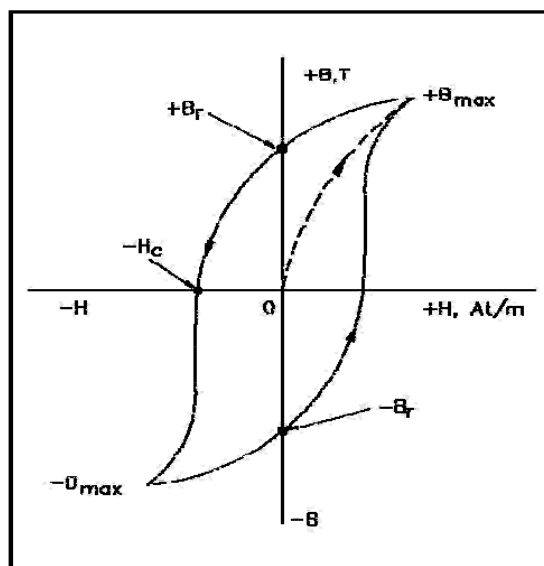
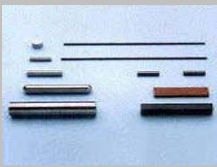












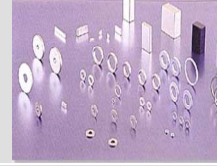












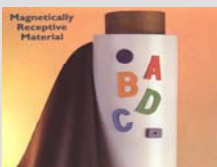































PERMANENT MAGNETS

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Alnico Magnet	Alnico Magnet	Alnico Magnet	Isotropic Ferrite	Anisotropic Ferrite
				
Motor Magnet	Motor Magnet	Motor Magnet	Motor Magnet	Motor Magnet
				
Bonded NdFeB	Bonded NdFeB	Bonded NdFeB	Sintered NdFeB	Sintered NdFeB
				
Sintered NdFeB	Sintered NdFeB	Sintered NdFeB	Injection Magnet	Injection Magnet
				
Samarium Cobalt	SmCo Magnet	SmCo Magnet	SmCo Magnet	SmCo Magnet
				
Rubber Magnet	Flexible Magnet	Rubber Magnet	Rubber Magnet	Magnetic Insole
				
Fridge Magnet	Fridge Magnet	Magnet OEM	Magnet OEM	Magnet OEM
				
Magnet OEM	Magnet OEM	Magnet Door Catch	Magnetic Button	Magnetic Jewelry
				
Ribbon Magnet	Magnet Button	Color Magnet	Magnetic Dart	Compass










Magnets and Magnetic Products

	Isotropic Ferrite Magnets Made from iron oxide, SrCO ₃ (or BaCO ₃) and other additives, having relatively low recoil permeability, results in highly resistant to an external magnetic field, moreover, it's low costs
	Anisotropic Ferrite Magnets Similar to isotropic ferrite magnets, but magnetic domains are being oriented during the process of compression
	Sintered Neodymium Iron Boron Magnets (Sintered NdFeB) Mainly made from Neodymium, Iron, Boron, has earned reputation on its high quality and competitive price. It has excellent properties of high remanence, coercive force
	Bonded Neodymium Iron Boron Magnets (Bonded NdFeB) It is compound of plastic, rubber and rare-earth materials, the shapes are formed by ways of compressing, injecting, extruding etc.
	Rubber Magnets (Flexible, Calendered) The flexible rubber magnet is a kind of composite magnetic material, made by calendaring, it is like rubber, easily to be fabricated
	Rubber Magnets (Flexible, Extruded) The flexible rubber magnet is a kind of composite magnetic material, made by extrusion, easily to be fabricated. It is widely used in fridge doors
	Rubber Magnets (Flexible, Injected) The flexible rubber magnet is a kind of composite magnetic material, made by injection
	Plastic Magnets (Rigid, Injected) The rigid plastic magnet is a kind of composite magnetic material, made by injection. It is usually used for instruments and motors
	Samarium Cobalt Magnets (SmCo) Made from Cobalt and rare earth. It has a very high resistance to demagnetization, and a good remanence and temperature coefficient

Cont'd.....Magnets and Magnetic Products

	<p>Alnico Magnets</p> <p>Made from Aluminum, Nickel, Cobalt and Iron. It has excellent corrosion resistant and temperature stability. It is hard and brittle</p>	
	<p>Motor Magnets</p> <p>NdFeB, Ferrite, Alnico, SmCo, Plastic and Rubber magnets can be used as the magnetic components for the motors, the selection depends on the applications</p>	
	<p>Speaker Magnets</p> <p>NdFeB, Ferrite, Alnico, SmCo magnets can be used as the magnetic components for the speakers and earphones, the selection depends on the applications</p>	
	<p>Fridge Magnets</p> <p>Rubber magnets by injection. It is good for fridge magnets or promotional items with low cost.....</p>	
	<p>Fridge Magnets</p> <p>We can assemble OEM items as required.</p>	
	<p>Magnets OEM</p> <p>Assemblies using metal and other components, magnets can be fabricated by adhering magnets with adhesives, by fastening magnets, or by a combination of these methods</p>	
	<p>Magnets OEM</p> <p>Assemblies using metal and other components, magnets can be fabricated by adhering magnets with adhesives, by fastening magnets, or by a combination of these methods</p>	
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Cont'd.....Magnets and Magnetic Products

	Magnetic Door Catch We can assemble the magnetic door catch as required
	Magnetic Separator This magnetic separator is good for separating iron fillings from the materials used for plastic industries and food industries
	Magnetic Snap Button We can assemble magnets with the metal fabrication and finish with gold plating, bronze plating etc
	White Board Magnets Magnets assembled with plastic caps. It is good for white board and memo board applications
	Color Magnets Ferrite magnets with various colors. It is good for white board and memo board applications
	Magnetic Dart Board We manufacture and distribute high quality of dart boards. It is good for toys and promotional purpose
	Compass We manufactured and distributed precision compass. It is good for educational, and accessories for electronic and toys products
	Magnetic Jewelry High quality of magnets and workmanships. Your designs are welcome
	Ribbon Magnets Made of Rubber magnets. It is widely used for fund raising and promotional materials

MAGNETIC CHARACTERISTICS AND PHYSICAL PROPERTIES OF SINTERED Nd-Fe-B MAGNETS

Material Grade	Residual Induction Br mT(KGs)	Coercive Force bHc KA/m(KOe)	Intrinsic Coercive iHc KA/m(KOe)	Maximum Energy Products (BHmax) KJ/m3(MGOe)	Density g/cm3	Temp. Coefficient %/°C	Currie Temp. °C	Maximum Working Temp. °C
N30	1080-1130	≥810	≥955	220-247	7.4-7.6	-0.12	310	≤80
	(10.8-11.3)	(≥10.2)	(≥12)	(30-31)				
N33	1130-1170	≥836	≥955	247-263	7.4-7.6	-0.12	310	≤80
	(11.3-11.7)	(≥10.5)	(≥12)	(31-33)				
N35	1170-1210	≥868	≥955	263-287	7.4-7.6	-0.12	310	≤80
	(11.7-12.1)	(≥10.9)	(≥12)	(33-36)				
N38	1210-1250	≥899	≥955	287-310	7.4-7.6	-0.12	310	≤80
	(12.1-12.5)	(≥11.3)	(≥12)	(36-37)				
N40	1250-1280	≥923	≥955	302-326	7.4-7.6	-0.12	310	≤80
	(12.5-12.8)	(≥11.6)	(≥12)	(38-41)				
N42	1280-1320	≥923	≥955	318-342	7.4-7.6	-0.12	310	≤80
	(12.8-13.2)	(≥11.6)	(≥12)	(40-43)				
N45	1320-1380	≥876	≥955	342-366	7.4-7.6	-0.12	310	≤80
	(13.2-13.8)	(≥11.0)	(≥12)	(43-46)				
N48	1380-1420	≥836	≥876	366-390	7.4-7.6	-0.12	310	≤80
	(13.8-14.2)	(≥10.5)	(≥11)	(46-49)				
35M	1170-1210	≥868	≥1114	263-287	7.4-7.6	-0.12	320	≤100
	(11.7-12.1)	(≥10.9)	(≥14)	(33-36)				
38M	1210-1250	≥899	≥1114	287-310	7.4-7.6	-0.12	320	≤100
	(12.1-12.5)	(≥11.3)	(≥14)	(36-37)				
40M	1250-1280	≥923	≥1114	302-326	7.4-7.6	-0.12	320	≤100
	(12.5-12.8)	(≥11.6)	(≥14)	(38-41)				
42M	1280-1320	≥923	≥1114	318-342	7.4-7.6	-0.12	320	≤100
	(12.8-13.2)	(≥11.6)	(≥14)	(40-43)				
45M	1320-1380	≥876	≥1114	342-366	7.4-7.6	-0.12	320	≤100
	(13.2-13.8)	(≥11.0)	(≥14)	(43-46)				

Remark:

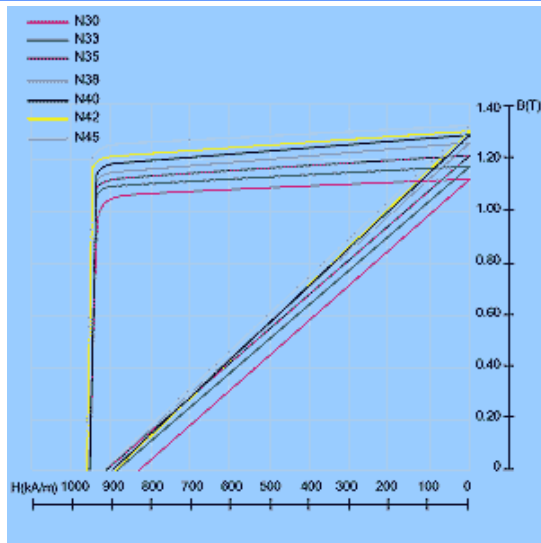
-  Max. Working Temperature is for reference, performance of magnet is depending on the circuit of the magnet.
-  When L / D ratio is equal to or larger than 0.7, the open flux irreversible loss at Maximum Working Temperature will be less than or equal to 5%. (L means magnetization direction length, D means diameter of magnetic pole surface.)
-  Users are recommended to consult us on any application involving temperature issues.

MAGNETIC CHARACTERISTICS AND PHYSICAL PROPERTIES OF SINTERED Nd-Fe-B MAGNETS

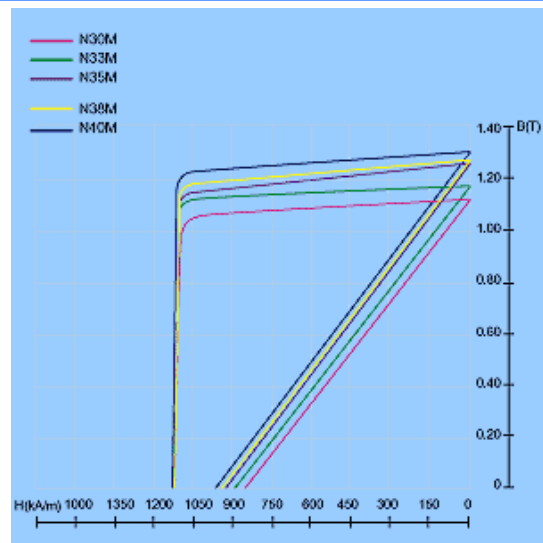
Material Grade	Residual Induction Br mT(KGs)	Coercive Force bHc KA/m(KOe)	Intrinsic Coercive iHc KA/m(KOe)	Maximum Energy Products (BHmax) KJ/m3(MGOe)	Density g/cm3	Temp. Coefficient %/°C	Currie Temp. °C	Maximum Working Temp. °C
30H	1080-1130	≥810	≥1353	220-247	7.4-7.6	-0.1	340	≤120
	(10.8-11.3)	(≥10.2)	(≥17)	(30-31)				
33H	1130-1170	≥836	≥1353	247-263	7.4-7.6	-0.1	340	≤120
	(11.3-11.7)	(≥10.5)	(≥17)	(31-33)				
35H	1170-1210	≥868	≥1353	263-287	7.4-7.6	-0.1	340	≤120
	(11.7-12.1)	(≥10.9)	(≥17)	(33-36)				
38H	1210-1250	≥899	≥1353	287-310	7.4-7.6	-0.1	340	≤120
	(12.1-12.5)	(≥11.3)	(≥17)	(36-37)				
40H	1250-1280	≥923	≥1353	302-326	7.4-7.6	-0.1	340	≤120
	(12.5-12.8)	(≥11.6)	(≥17)	(38-41)				
42H	1280-1320	≥955	≥1353	318-342	7.4-7.6	-0.1	340	≤120
	(12.8-13.2)	(≥12.0)	(≥17)	(40-43)				
30SH	1080-1130	≥810	≥1592	220-247	7.4-7.6	-0.1	340	≤120
	(10.8-11.3)	(≥10.2)	(≥20)	(30-31)				
33SH	1130-1170	≥844	≥1592	247-263	7.4-7.6	-0.1	340	≤120
	(11.3-11.7)	(≥10.6)	(≥20)	(31-33)				
35SH	1170-1210	≥876	≥1592	263-287	7.4-7.6	-0.1	340	≤150
	(11.7-12.1)	(≥11.0)	(≥20)	(33-36)				
38SH	1210-1250	≥907	≥1592	287-310	7.4-7.6	-0.1	340	≤120
	(12.1-12.5)	(≥11.4)	(≥20)	(36-37)				
40SH	1250-1280	≥939	≥1592	302-326	7.4-7.6	-0.1	340	≤120
	(12.5-12.8)	(≥11.8)	(≥20)	(38-41)				
28UH	1020-1080	≥764	≥1990	207-231	7.4-7.6	-0.1	350	≤180
	(10.2-10.8)	(≥9.6)	(≥25)	(26-29)				
30UH	1080-1130	≥812	≥1990	223-247	7.4-7.6	-0.1	350	≤180
	(10.8-11.3)	(≥10.2)	(≥25)	(28-31)				
33UH	1130-1170	≥852	≥1990	247-263	7.4-7.6	-0.1	350	≤180
	(11.3-11.7)	(≥10.7)	(≥25)	(31-33)				
28EH	1040-1090	≥780	≥2388	207-231	7.4-7.6	-0.1	350	≤200
	(10.4-10.9)	(≥9.8)	(≥30)	(26-29)				
30EH	1080-1130	≥812	≥2388	223-247	7.4-7.6	-0.1	350	≤200
	(10.8-11.3)	(≥10.2)	(≥30)	(28-31)				

Demagnetization Curves (NdFeB Magnets)

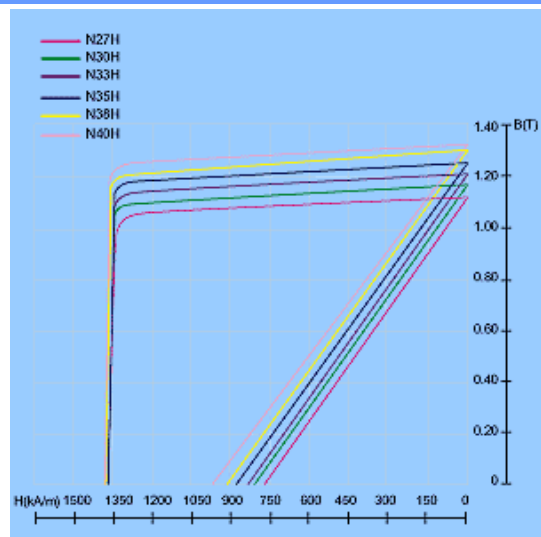
N Grade Demagnetization



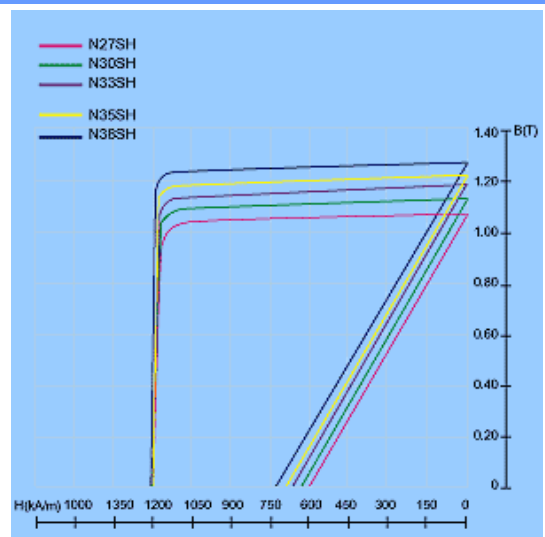
NM Grade Demagnetization Curve



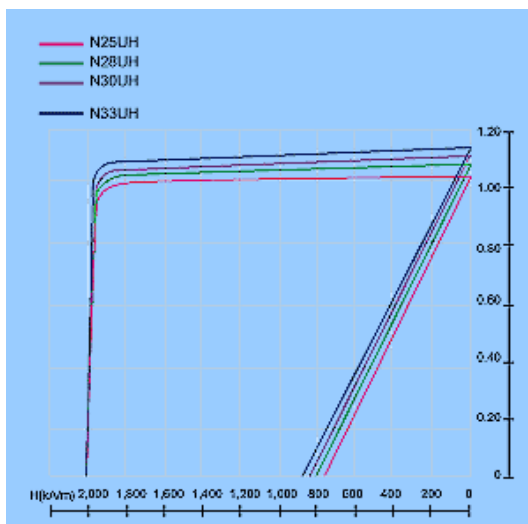
NH Grade Demagnetization Curve



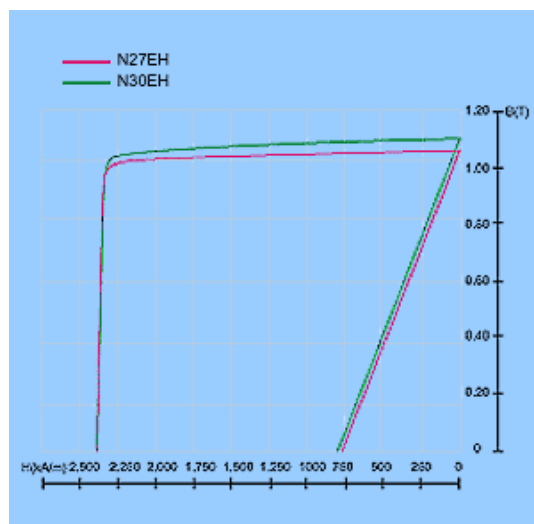
NSH Grade Demagnetization Curve



NUH Grade Demagnetization Curve



NEH Grade Demagnetization Curve



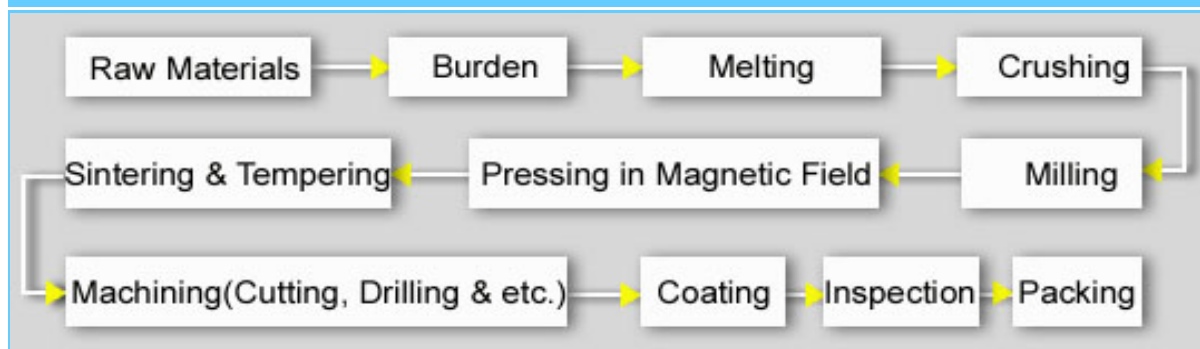
Physical Properties of NdFeB Magnets

Parameter		
Curie Temperature	°C	310-370
Maximum Operating Temperature	°C	80-180
Resistivity	μW.cm	160
Hardness	Hv	560-580
Density	g/cm3	7.4
Relative Recoil Permeability	μ rec	1.05
Saturation Field Strength	kOe	30-40
	kA/m	2,400-3,200
Temperature Coefficient of Br	%/°C	-0.12 ~ -0.10
Temperature Coefficient of iHc	%/°C	-0.6

Surface Treatments of NdFeB Magnets

Type	Information
Metallic	Zinc, Blue-White-Zn, Nickel, Nickel + Nickel, Copper + Nickel, Nickel + Copper + Nickel, Gold
Organic	Epoxy, Nickel + Epoxy coating
Temporary	Surface Passivation

Production Process of NdFeB Magnets



Rubber Magnet



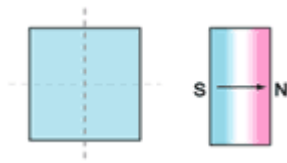
Magnetic properties of the table

Project Type	Residual magnetism	Coercive force	Intrinsic coercivity	Maximum energy product	Material	Applications
Isotropic Ferrite Rubber Magnet	165~180mT	90~110kA m	120~150kA/m	4.5~4.6kJ/m ³	BaO.6Fe ₂ O ₃ SrO.6Fe ₂ O ₃ MIX CPE	Toys Stationery Suction device
	1600~1800Gs	1130~1380oe	1500~1880oe	0.56~0.76MGOe		
Anisotropic Ferrite Rubber Magnet	230~250mT	160~185kA m	215~235kA/m	10.2~12.0kJ/m ³	SrO.6Fe ₂ O ₃ MIX NBR or CPE	Micromotor Stationery Suction device
	2300~2500Gs	2000~2300oe	2700~2950oe	1.3~1.5MGOe		

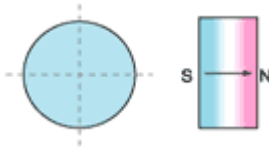
Other physical properties

	Density (g/cm ³)	Shore hardness (shored)	Temperature coefficient (%/°C)	Temperature (°C)	Flexibility	Production
Isotropic Ferrite Rubber Magnet	3.6~3.7	30~45	-0.2	-40~+80	Good	Extrusion By calendar
Anisotropic Ferrite Rubber Magnet	3.6~3.7	30~60	-0.2	-40~+80	Good	By calendar

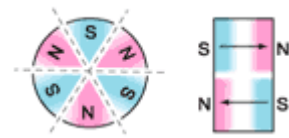
MAGNETIZATION



Through length, width, height



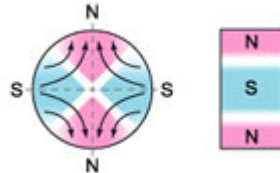
Axial



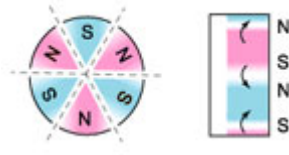
Axial, n poles



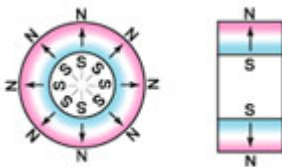
Lateral, n poles



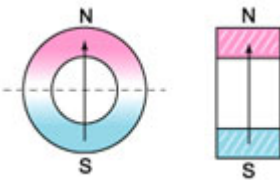
Circumference, n poles



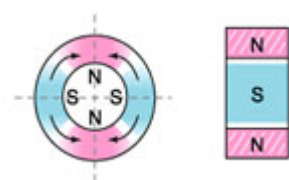
Lateral, n poles sectors



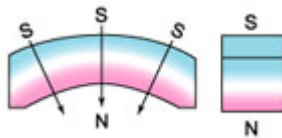
Radial



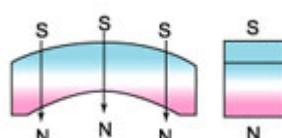
Diametric



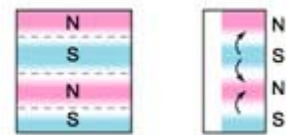
Inside circumference, n poles



Radial, n poles

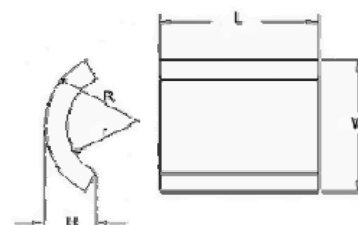
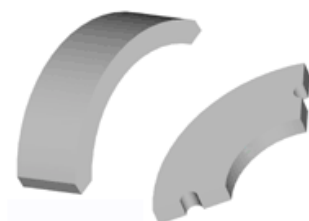
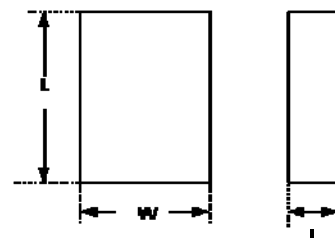
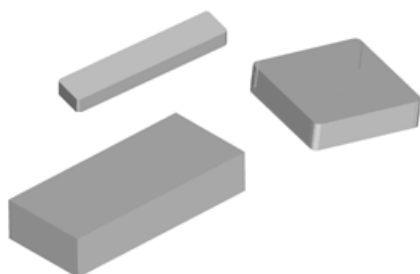
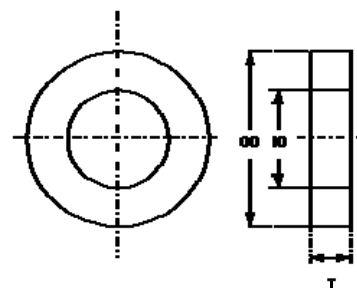
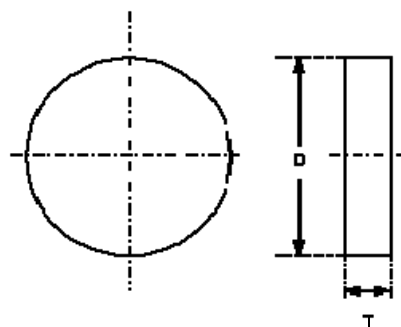
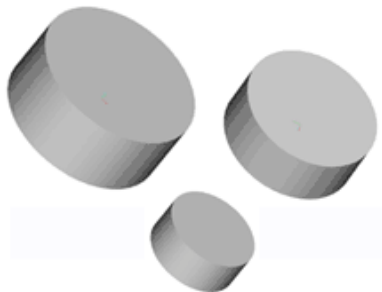


Diametric



Lateral, n poles

Magnet Shape and Size Indication



QUALITY CONTROL FLOW CHART FOR NdFeB

NO.	PROCESS NAME	EQUIPMENT	CONTROL POINT		CONTROL METHOD				REMARKS
			ITEMS FOR INSPECTION	STANDARD	FREQUENCY	INSTRUMENT USED	RECORD DOCUMENT	IN-CHARGE	
1	Purchase Raw Material		1、Name、Amount、Order No. 2、Composition、Appearance	Purchase Document Inspection Standard	All 2Pcs Per Load	Visual ICP or Chemical Analyses	Material Inspection Sheet	Operator Technician	
2	Burden	Electric Balance	1、Weight 2、Appearance	Burden Production Guide	All All	Electric Balance Visual	Burden Record	Operator	
3	Melting	Vacuum Melting Furnace	1、Composition 2、Appearance	Inspection Standard	1Pcs/Furnace/week All	ICP or Chemical Visual	Inspection Sheet Quality Record	Technician Technician	
4	Smash & Jet Milling	Smash Machine Jet Mill	1、Powder Size 2、Oxygen Content	Milling Production Guide	1Times/Day/Machine Per Load	FSSS Oxygen Determine	Powder Size Record Oxygen Record	Technician Technician	
5	Pressing	Press	1、Height 2、Press 3、Weight	Pressing Production Guide	5% Per Load All All	Calipers Press Meter Balance	Produce process Sheet(3)	Operator	
6	Sintering & Tempering	Vacuum Furnace	1、Sintering time 2、Sintering Temperature	Sintering & Tempering Production Guide	Per Furnace	Vacuum Furnace	Produce process Sheet(3)	Operator	
7	Inspection	B-H Curves Measurement Magnetizer	1、Br、jHc、(BH)max 2、Magnetic Property 3、De-Magnetize Volt 4、Appearance	Company Standard Inspection Standard	5Pcs Per Load II /AQL=0.65 II /AQL=0.65 All	B-H Curves Measurement Gauss meter or Flux meter De-Magnetizer Visual	Sintering Produce Test Sheet	Inspection	
8	Machining	Grinder Slicer Electric Spark Machining Magnetizer	1、Dimensions 2、Appearance Tolerances 3、Orientation 4、Magnetic property 5、Appearance	Inspection Standard	II /AQL=0.25 III /AQL=0.25 III /AQL=0.25 S-4/AQL=0.4 III /AQL=0.25	Calipers Calipers Magnetic Material Gauss meter or Flux meter Visual	Produce Inspection sheet	Inspection	
9	Plating	Plating Vat	1、After Plating Dimensions 2、Appearance 3、Plating Thickness	Inspection Standard	S-4/AQL=0.65 S-4/AQL=0.65 5Pcs Per Load	Calipers Visual Thickness Determine	Produce Inspection sheet Thickness Record	Inspection Technician	
10	Final Inspection	Magnetizer	1、Dimensions 2、Appearance Tolerances 3、Orientation 4、Magnetic property 5、Appearance	Inspection Standard	II /AQL=0.65 S-4/AQL=0.1 S-4/AQL=0.4 S-4/AQL=0.65 All	Calipers Calipers Magnetic Material Gauss meter or Flux meter Visual	Final Inspection Record Sheet	Inspection	
11	Packing	Packer	1、Quantity 2、Label	Inspection Standard	All All	Visual Visual	Enter Store Sheet	Operator	

CAUTION IN USING NdFeB MAGNETS

Warning:

- Do not carry the magnet close to medical instrument and equipment and pacemaker. The magnet can cause the medical aid to malfunction.
- Do not swallow the magnet. If swallowed, please immediately go to the hospital for treatment. Please do not place the magnet in the place which the child may touch.

Attention:

In order to prevent personal injuries and keep the magnet working at good performance, please pay attention to the following matters:

Design:

1. After heating, the magnetic performance can be reduced significantly. Please refer to the temperature characteristic. When assembling or using the magnet, pay attention to the working temperature.
2. Magnet when magnetizing, if magnetizing field strength and/or the method are not appropriate, the magnet will not be able to achieve the maximum performance. Please consult with Apex-Tech (Hong Kong) Ltd or a magnetic specialist.
3. When use or storage magnet, please do not store magnets in the acidic, corrosive and / or the high conductive environment and avoid contact with the organic solvent. Otherwise, can cause corrosion to the magnet and the magnetic performance and mechanical strength will be weakened. About thermal stability and other conditions, Please refer to the product catalog or other materials. Please consult with this company for more details.
4. The Nd magnet is hard and brittle, therefore when use in the situation of vibration and heavy impact, the magnet may be broken and fall off. Please pay attention in design to ensure magnets will not fall off even if the magnet broken.
5. Because the motor may spin at a very high speed, therefore magnet may possibly shatter. When design, please take the essential measures to prevent the fragments suddenly shattered.
6. When design to assemble the magnet with adhesive agent, please consult with the provider of the adhesive material for the specification of adhesive.

Operation:

1. Free floating Nd magnets can slam together with great force. As they are brittle in nature they can often peel, crack or shatter and send shards of magnets flying all over the place. Hence it is essential to wear eye protection when handling Nd magnets.
2. In order to secure the safety of magnetizing Nd magnets in core coil, please fixed the magnet, in order to prevent the magnet departs rapidly from the core coil.

Storage:

1. Do not keep the magnet in the humid environment, otherwise, Nd magnet may be oxidized and affect the physical property and magnetic performance.

Other:

1. Do not leave the Nd magnet close floppy disk, the hard disk driver, the credit card, the magnetic tape, and so on; these magnets are likely to cause damage.
2. Do not leave the Nd magnet near to the electronic equipments like televisions, computer monitors and VCRs, otherwise can affect the equipments.
3. If person has the allergic reaction to the metal, contacts with the Nd magnets can cause rough skin, to exude red. If one has the above response, please do not contact the magnet.

Customer notice:

When using this material please note following points:

1. We will not inform your firm for any information updates.
2. This information is for reference only. If the right infringement or the harm to third party benefit occurred, this company will not undertake any responsibility.
3. This material provides the information for the ordinary use. If use the magnet in the high dependence or the survival equipment, the medical instruments (for example, pacemaker), this company will not undertake any responsibility.
4. If use the magnet for special purpose, please consult with this company.

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