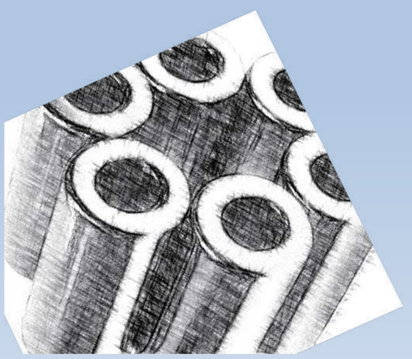
XHMAG is a worldwide magnets producer and provider of magnetic assemblies and equipment with ISO9001 and CE certification, products including:

Permanent Magnets
- | NdFeB Magnets
- | AlNiCo Magnet
- | Ferrite Magnets
- | SmCo Magnets
- | Flexible Magnets
- | Self−Adhesive Magnets

Magnetic Equipment | Lifting Magnets
- | Pot Magnets
- | Magnetic Separator



Neodymium Magnet (NdFeB)

the most widely used type of rare–earth magnet, is a permanent magnet made from an alloy of neodymium, iron and boron.

Two kinds of Neodymium,

Sintered NdFeB & Bonded NdFeB

are commercial according to their different manufacturing process.

NdFeB is the strongest type of permanent magnet commercially available.
Higher remanence (the strength of the magnetic field);
Higher coercivity (resistance to being demagnetized);
Higher energy product (density of magnetic energy).

Sintered

Production

Raw Materials C Melting C Pulverizing C Aligning & Pressing C Sintering C Annealing C Machining C Surface Treating C Magnetizing C Inspecting C Packing & Delivery

Property Table

SI unit

Grade	(range) Remanence (Br)	(min.) Intrinsic Coercivity (Hcj)	(min.) Coercivity (Hcb)	Max Energy Product (BH)max	Max Working Temperature (Tw)	Curie Temperature (Tc)
	mT	kA/m	kA/m	kJ/m³	℃	℃
N33	1130–1170	955	836	247–270	80	310
N35	1170–1220	955	868	263–287	80	310
N38	1220–1250	955	899	287–310	80	310
N40	1250–1300	955	923	302–326	80	310
N42	1280–1330	955	923	318–342	80	310
N45	1330–1380	955	876	342–366	80	310
N48	1370–1430	955	892	366–390	80	310
N50	1390–1450	876	836	374–406	80	310
N52	1420–1470	876	836	390–422	80	310
N33M	1130–1170	1114	836	247–270	100	310
N35M	1170–1220	1114	868	263–287	100	310
N38M	1220–1250	1114	899	287–310	100	310
N40M	1250–1300	1114	923	302–326	100	310
N42M	1280–1330	1114	955	318–342	100	310
N45M	1330–1380	1114	995	342–366	100	310
N48M	1370–1430	1114	1019	358–390	100	310
N50M	1390–1450	1114	1035	374–406	100	310
N33H	1130–1170	1353	836	247–270	120	310
N35H	1170–1220	1353	868	263–287	120	310
N38H	1220–1250	1353	899	287–310	120	310
N40H	1250–1300	1353	923	302–326	120	310
N42H	1280–1330	1274	955	318–342	120	310
N45H	1330–1380	1274	963	334–358	120	310
N48H	1370–1430	1274	971	342–366	120	310
N50H	1390–1450	1274	1035	374–406	120	310
N33SH	1130–1170	1592	844	247–270	150	320
N35SH	1170–1220	1592	876	263–287	150	320
N38SH	1220–1250	1592	907	287–310	150	320
N40SH	1250–1300	1592	939	302–326	150	320
N42SH	1280–1340	1512	971	318–342	150	320
N45SH	1320–1380	1512	995	342–366	150	320
N48SH	1360–1420	1512	995	358–390	150	320
N28UH	1020–1080	1990	764	207–231	180	330
N33UH	1130–1180	1990	852	247–270	180	330
N35UH	1170–1220	1990	860	263–287	180	330
N38UH	1220–1270	1990	876	287–310	180	330
N28EH	1040–1090	2388	780	207–231	200	330
N30EH	1080–1140	2388	812	223–254	200	330
N33EH	1130–1180	2388	820	247–270	200	330
N35EH	1170–1220	2388	836	263–287	200	330
N28AH	1020–1090	2706	780	199–231	220–240	330
N30AH	1070–1130	2706	812	215–247	220–240	330
N33AH	1110–1170	2706	820	239–271	220–240	330

*for reference only

Remanence (Br)
measure the strength of the magnetic field

Coercivity (Hcb / Hcj)
the material's resistance to becoming demagnetized

Energy product (BHmax)
the density of magnetic energy, which relates to the magnetic flux output per unit volume. Higher values indicate stronger magnets

Curie temperature (Tc)
the temperature at which the material loses its magnetism

Bonded

Bonded neodymium is able to be multipole magnetized

Property Table

SI unit

Grade	(range) Remanence (Br)	(range) Intrinsic Coercivity (Hcj)	(range) Coercivity (Hcb)	Max Energy Product (BH)max	Max Working Temperature (Tw)
	mT	kA/m	kA/m	kJ/m³	℃
BNM–5	570–620	560–720	288–320	40–48	120–140
BNM–6	580–630	640–800	322–376	48–56	120–140
BNM–7	590–640	640–800	360–416	56–64	120–140
BNM–8	620–670	680–800	400–464	64–72	120–140
BNM–9	640–690	680–800	416–448	68–76	120–140
BNM–10	670–720	680–800	416–480	72–80	120–140
BNM–11	690–740	720–840	400–464	80–88	120–140
BNM–12	740–760	720–840	456–512	88–96	120–140
BNM–11L	700–750	520–640	400–464	80–88	120–140
BNM–12L	750–800	520–640	432–496	84–92	120–140
BNM–8SR	620–670	880–1120	400–464	64–72	140–160

*for reference only

Production

Rapidly quenched NdFeB Powder C Particle size adjustment C Kneading with other material C Molding C Secondary Process, Surface Treating, Grinding C Inspecting C Packing & Delivery

Shape

Neodymium magnets could be made into various shapes, common shapes including:

Custom design is available for client`s specific needs

Coating

Coating prevents the Neodymium magnets from oxidation, common coationg including:

Other coatings, for example, Phosphate, Copper, Silver, and etc.

Applied in

–Permanent Magnet Motor/Generator
–Magnetic Separator/ Filter
–Magnetic Lifter
–Magnetic Pot/Hook
–Magnetic Bearings and Couplings
–Magnetic Sensors
–Magnetic Resonance Imaging (MRI)
–Bench–top NMR spectrometers
–Loudspeakers and headphones

AlNiCo Magnet (AlNiCo)

Alnico is the permanent magnets composed primarily of Aluminum (Al), Nickel (Ni) and Cobalt (Co).
They also including Copper, Ferrum, and sometimes Titanium.
Two kinds of Alnico,

Cast AlNiCo & Sintered AlNiCo

are commercial according to their different manufacturing process.

Alnico alloys are ferromagnetic with:
High magnetic flux density;
Resistance to corrosion;
Excellent temperature stability;
Electrically conductive

Cast

Production

Raw Materials C Mixing C Melting C Mold Casting C Ingots Selection C Heat Treatment C Tumbling C Magnetic Inspection C Machining C Cleaning and Driving C Machining Inspection C Inspecting C Packing

Property Table

SI unit

Grade	(min.) Remanence (Br)	(min.) Coercivity (Hcb)	Max Energy Product (BH)max	Max Working Temperature (Tw)	Curie Temperature (Tc)	Remarks
	mT	kA/m	kJ/m³	℃	℃	
LN10	600	40	10	450	760	AlNiCo3
LNG10	600	44	10	450	760	AlNiCo3
LNG12	700	44	12	450	810	AlNiCo2
LNG13	680	48	13	450	810	AlNiCo2
LNG16	800	48	16	450	810	AlNiCo4
LNG18	900	48	18	450	810	AlNiCo4
LNGT18	580	80	18	525	850	AlNiCo8
LNG37	1200	48	37	525	850	AlNiCo5
LNG40	1230	48	40	525	850	AlNiCo5
LNG44	1250	52	44	525	850	AlNiCo5
LNG48	1280	56	48	525	850	AlNiCo5DG
LNG52	1300	56	52	525	850	AlNiCo5DG
LNG56	1300	58	56	525	850	AlNiCo5-7
LNG60	1330	60	60	525	850	AlNiCo5-7
LNGT28	1000	56	28	525	850	AlNiCo6
LNGT30	1100	56	30	525	850	AlNiCo6
LNGT32	800	100	32	525	850	AlNiCo8
LNGT38	800	110	38	550	860	AlNiCo8
LNGT40	820	110	40	550	860	AlNiCo8
LNGT44	850	115	44	550	860	AlNiCo8
LNGT48	900	120	48	550	860	AlNiCoHE
LNGT60	950	110	60	550	860	AlNiCo9
LNGT72	1050	112	72	550	860	AlNiCo9
LNGT80	1080	120	80	550	860	AlNiCo9
LNGT88	1100	115	88	550	860	AlNiCo9
LNGT96	1150	118	96	550	860	AlNiCo9
LNGT36J	700	140	36	550	860	AlNiCo8HC
LNGT36J	800	140	48	550	860	AlNiCo8HC
LNGT52J	850	145	52	550	860	AlNiCo8HC

*for reference only

Remanence (Br)
measure the strength of the magnetic field

Coercivity (Hcb / Hcj)
the material's resistance to becoming demagnetized

Energy product (BHmax)
the density of magnetic energy, which relates to the magnetic flux output per unit volume. Higher values indicate stronger magnets

Curie temperature (Tc)
the temperature at which the material loses its magnetism

Shape

AlNiCo magnets could be made into various shapes, common shapes including:

Custom design is available for client`s specific needs

Applied in

Applications requiring for high temperature stability
–Automotive, aerospace and military sensors
–Instruments communication control systems
–Audio Devices
–Magnetron
–Traveling–wave tubes (TWT)

Sintered

Property Table

SI unit

Grade	(min.) Remanence (Br)	(min.) Coercivity (Hcb)	Max Energy Product (BH)max	Max Working Temperature (Tw)	Curie Temperature (Tc)	Remarks
	mT	kA/m	kJ/m³	℃	℃	
FLN8	500	40	9.0	450	760	Alnico 3
FLNG12	700	48	12.0	450	810	Alnico 2
FLNG14	500	60	14.0	450	850	–
FLNG28	1050	46	28.0	450	850	–
FLNG34	1200	48	34.0	450	890	Alnico 5
FLNG37	1250	48	37.0	450	890	–
FLNGT18	600	90	18.0	450	860	Alnico 8
FLNGT28	1050	60	28.0	450	850	Alnico 6
FLNGT31	780	104	33.0	550	850	Alnico 8
FLNGT38	800	120	38.0	450	850	Alnico 8
FLNGT42	880	120	42.0	450	820	Alnico 8
FLNGT33J	700	140	33.0	450	850	–
FLNGT38J	730	151	38.0	550	850	Alnico 8HC

*for reference only

Production

Raw Materials C Pressing C Sintering C Heat Treatment C Tumbling C Magnetic Inspection C Machining C Cleaning and Driving C General Inspecting C Packing & Delivery

Property Table

Remanence (Br)
measure the strength of the magnetic field

Coercivity (Hcb / Hcj)
the material's resistance to becoming demagnetized

Energy product (BHmax)
the density of magnetic energy, which relates to the magnetic flux output per unit volume. Higher values indicate stronger magnets

Curie temperature (Tc)
the temperature at which the material loses its magnetism

Hard

Ferrite Magnet (Ferrite)

Ferrites are usually non−conductive ferromagnetic ceramic compounds derived from iron oxides such as hematite (Fe3OJ) or magnetite (FeJO4) as well as oxides of other metals.
In terms of the magnetic properties, the ferrites are classified as

Soft Ferrite & Hard Ferrite

which refers to their low or high magnetic coercivity.

Ferrites magnets are, like most other ceramics, hard and brittle. Permanent ferrite magnets are made of Hard Ferrites, which have a higher coercivity and remanence after magnetization than soft Ferrite

SI unit

Grade	(range) Remanence (Br)	(range) Intrinsic Coercivity (Hcj)	(range) Coercivity (Hcb)	Max Energy Product (BH)max	Max Working Temperature (Tw)	Curie Temperature (Tc)
	mT	kA/m	kA/m	kJ/m^3	?	?
Y20	320−380	140−195	135−190	18.0	250	450
Y25	360−370	140−200	135−190	22.5	250	450
Y30	380−385	200−220	190−210	26.0	250	450
Y30BH	380−390	230−245	223−235	27.0	250	450
Y30H−1	380−400	235−290	230−275	27.0	250	450
Y30H−2	395−415	310−335	275−300	28.5	250	450
Y32	400−420	165−195	160−190	30.5	250	450
Y33	410−430	225−255	220−250	31.5	250	450
Y35	430−450	217−241	215−239	33.0	250	450
Y40	440−460	340−360	330−345	37.6	250	450

*for reference only

Ferrite magnets could be made into various shapes, common shapes including:

Custom design is available for client`s specific needs

Shape

Hard

Applied in

Some examples of Soft Ferrite applications:
−Electronic Inductors
−RF Transformers
Some examples of Hard Ferrite applications:
−Microphones
−Loudspeakers
−Electro−acoustic Instrument Pickups
−Magnetic Separator

Hard

Production

Raw Materials C Pre−Sintering C Milling C Granulation C Dry/Wet Press in Magnetic Field C Sintering C Machining C Magnetization C General Inspecting C Packing & Delivery

SmCo magnets could be made into various shapes, common shapes including:

Custom design is available for client`s specific needs

Shape

Applied in

High–end electric motors

Turbomachinery

Applications in which performance requiring to be consistent with temperature change or at cryogenic and very hot temperature

Sintered

Sintered

Sintered

SmCo Magnet (SmCo)

SmCo magnet, a type of rare earth magnet, is a strong permanent magnet made of an alloy of samarium and cobalt.
Two "series" of SmCo are available,
namely Series 1:5 and Series 2:17 ($SmCo_y$, Sm_3Co_{17})

Sintered SmCo & Bonded SmCo

similarly in strength to neodymium magnets, while have:
Higher temperature ratings;
Higher coercivity;
Extremely resistant to demagnetization

Property Table

Remanence (Br)
measure the strength of the magnetic field

Coercivity (Hcb / Hcj)
the material's resistance to becoming demagnetized

Energy product (BHmax)
the density of magnetic energy, which relates to the magnetic flux output per unit volume. Higher values indicate stronger magnets

Curie temperature (Tc)
the temperature at which the material loses its magnetism

Production

Raw Materials C Blending C Melting C Milling C Molding C Sintering C Magnetic Inspection C Machining C Surface Treatment C General Inspecting C Packing & Delivery

SI unit

Grade	(min.) Remanence (Br)	(min.) Intrinsic Coercivity (Hcj)	(min.) Coercivity (Hcb)	Max Energy Product (BH)max	Max Working Temperature (Tw)	Curie Temperature (Tc)
	mT	kA/m	kA/m	kJ/m^3	℃	℃
SmCo16	830	1430	640	128	250	750
SmCo18	880	1430	680	144	250	750
SmCo20	920	1430	700	160	250	750
SmCo22	940	1450	730	176	250	750
SmCo24	980	1450	730	192	300	750–820
SmCo26	1030	1450	760	208	300	750–820
SmCo28	1050	1450	780	224	300	750–820
SmCo30	1100	1450	810	240	300	750–820
SmCo26M	1030	1100	760	208	300	750–820
SmCo28M	1050	1100	780	224	300	750–820
SmCo30M	1100	1100	810	240	300	750–820
SmCo28L	1050	700	550	224	250	750–820
SmCo30L	1100	700	550	240	250	750–820
SmCo24H	1000	2000	720	192	350	750–820
SmCo26H	1030	2000	760	208	350	750–820
SmCo28H	1050	2000	770	224	350	750–820
SmCo30H	1080	2000	810	240	350	750–820

*SmCo 16–22, Sm:Co=1:5; the rest grades Sm:Co=2:17
*for reference only

Isotropic

Isotropic

Flexible (Rubber) Magnet

Flexible Rubber magnets are compounded by
mixing ferrite magnet powder and base material, i.e. rubber.
Typically two kinds of flexible magnets are commercially available,

Isotropic & Anisotropic Ferrite

Anisotropic flexible magnet is stronger than Isotropic type.
Both of them are easy to roll, bend, incise, punch and shape.
Pure or various laminations are available:
with adhesive type, with PVC (full color, pattern)

Flexible (rubber) magnets could be made into various shapes, common shapes including:

Custom design is available for client`s specific needs

Shape

Property Table

Remanence (Br)
measure the strength of the magnetic field

Coercivity (Hcb / Hcj)
the material's resistance to becoming demagnetized

Energy product (BHmax)
the density of magnetic energy, which relates to the magnetic flux output per unit volume. Higher values indicate stronger magnets

Curie temperature (Tc)
the temperature at which the material loses its magnetism

Applied in

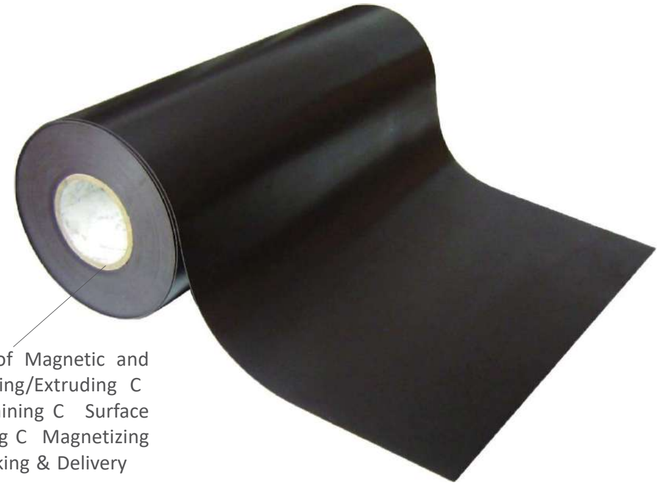
- Printing industry
- Advertisement
- Fridge magnet
- Souvenir / Gift

SI unit

Grade	(range) Remanence (Br)	(range) Intrinsic Coercivity (Hcj)	(range) Coercivity (Hcb)	Max Energy Product (BH)max	Remark
	mT	kA/m	kA/m	kJ/m^3	
FRM−5	165 ±10	132 ±8	108 ±8	5.2 ±0.4	Isotropic
FRM−6	170 ±10	136 ±8	112 ±8	5.6 ±0.4	Isotropic
FRM−8	220 ±5	160 ±8	136 ±8	8.0 ±0.4	Semi−aniso
FRM−11	245 ±5	148 ±8	140 ±8	11.2 ±0.4	Anisotropic
FRM−12	247.5 ±2.5	224 ±8	168 ±8	12.0 ±0.4	Anisotropic

*for reference only

Anisotropic



Production

Raw Materials C Blending of Magnetic and plastic material C Calendaring/Extruding C Mounting in System C Machining C Surface Treatment C Coating/Pattering C Magnetizing C General Inspecting C Packing & Delivery

Self–adhesive magnets could be made into various shapes, common shapes including:

Disk Bar

Custom design is available for client`s specific needs

Shape

Sintered

SI unit

Grade	(range) Remanence (Br)	(min.) Intrinsic Coercivity (Hcj)	(min.) Coercivity (Hcb)	Max Energy Product (BH)max	Max Working Temperature (Tw)	Curie Temperature (Tc)
	mT	kA/m	kA/m	kJ/m^3	℃	℃
N33	1130–1170	955	836	247–270	80	310
N35	1170–1220	955	868	263–287	80	310
N38	1220–1250	955	899	287–310	80	310
N40	1250–1300	955	923	302–326	80	310
N42	1280–1330	955	923	318–342	80	310
N45	1330–1380	955	876	342–366	80	310
N48	1370–1430	955	892	366–390	80	310
N50	1390–1450	876	836	374–406	80	310
N52	1420–1470	876	836	390–422	80	310
N33M	1130–1170	1114	836	247–270	100	310
N35M	1170–1220	1114	868	263–287	100	310
N38M	1220–1250	1114	899	287–310	100	310
N40M	1250–1300	1114	923	302–326	100	310
N42M	1280–1330	1114	955	318–342	100	310
N45M	1330–1380	1114	995	342–366	100	310
N48M	1370–1430	1114	1019	358–390	100	310
N50M	1390–1450	1114	1035	374–406	100	310
N33H	1130–1170	1353	836	247–270	120	310
N35H	1170–1220	1353	868	263–287	120	310
N38H	1220–1250	1353	899	287–310	120	310
N40H	1250–1300	1353	923	302–326	120	310
N42H	1280–1330	1274	955	318–342	120	310
N45H	1330–1380	1274	963	334–358	120	310
N48H	1370–1430	1274	971	342–366	120	310
N50H	1390–1450	1274	1035	374–406	120	310
N33SH	1130–1170	1592	844	247–270	150	320
N35SH	1170–1220	1592	876	263–287	150	320
N38SH	1220–1250	1592	907	287–310	150	320
N40SH	1250–1300	1592	939	302–326	150	320
N42SH	1280–1340	1512	971	318–342	150	320
N45SH	1320–1380	1512	995	342–366	150	320
N48SH	1360–1420	1512	995	358–390	150	320
N28UH	1020–1080	1990	764	207–231	180	330
N33UH	1130–1180	1990	852	247–270	180	330
N35UH	1170–1220	1990	860	263–287	180	330
N38UH	1220–1270	1990	876	287–310	180	330
N28EH	1040–1090	2388	780	207–231	200	330
N30EH	1080–1140	2388	812	223–254	200	330
N33EH	1130–1180	2388	820	247–270	200	330
N35EH	1170–1220	2388	836	263–287	200	330
N28AH	1020–1090	2706	780	199–231	220–240	330
N30AH	1070–1130	2706	812	215–247	220–240	330
N33AH	1110–1170	2706	820	239–271	220–240	330

*for reference only

Property Table

Raw Materials C Melting C Pulverizing C Aligning & Pressing C Sintering C Annealing C Machining C Surface Treating C Magnetizing C Inspecting C Packing & Delivery

Production of Sintered Neodymium

Sintered

Self–adhesive Magnet

self–adhesive magnets combine a strong magnetic force Neodymium and the conve–nience of self–adhesive with a peel away backing tape.

Sintered Neodymium with backing Tape

Besides the capability of self–adhesive, the magnets features is same as Neodymium:
Higher remanence (the strength of the magnetic field);
Higher coercivity (resistance to being demagnetized);
Higher energy product (density of magnetic energy).

Sintered

Property Table Note

Remanence (Br)
measure the strength of the magnetic field

Coercivity (Hcb / Hcj)
the material's resistance to becoming demagnetized

Energy product (BHmax)
the density of magnetic energy, which relates to the magnetic flux output per unit volume. Higher values indicate stronger magnets

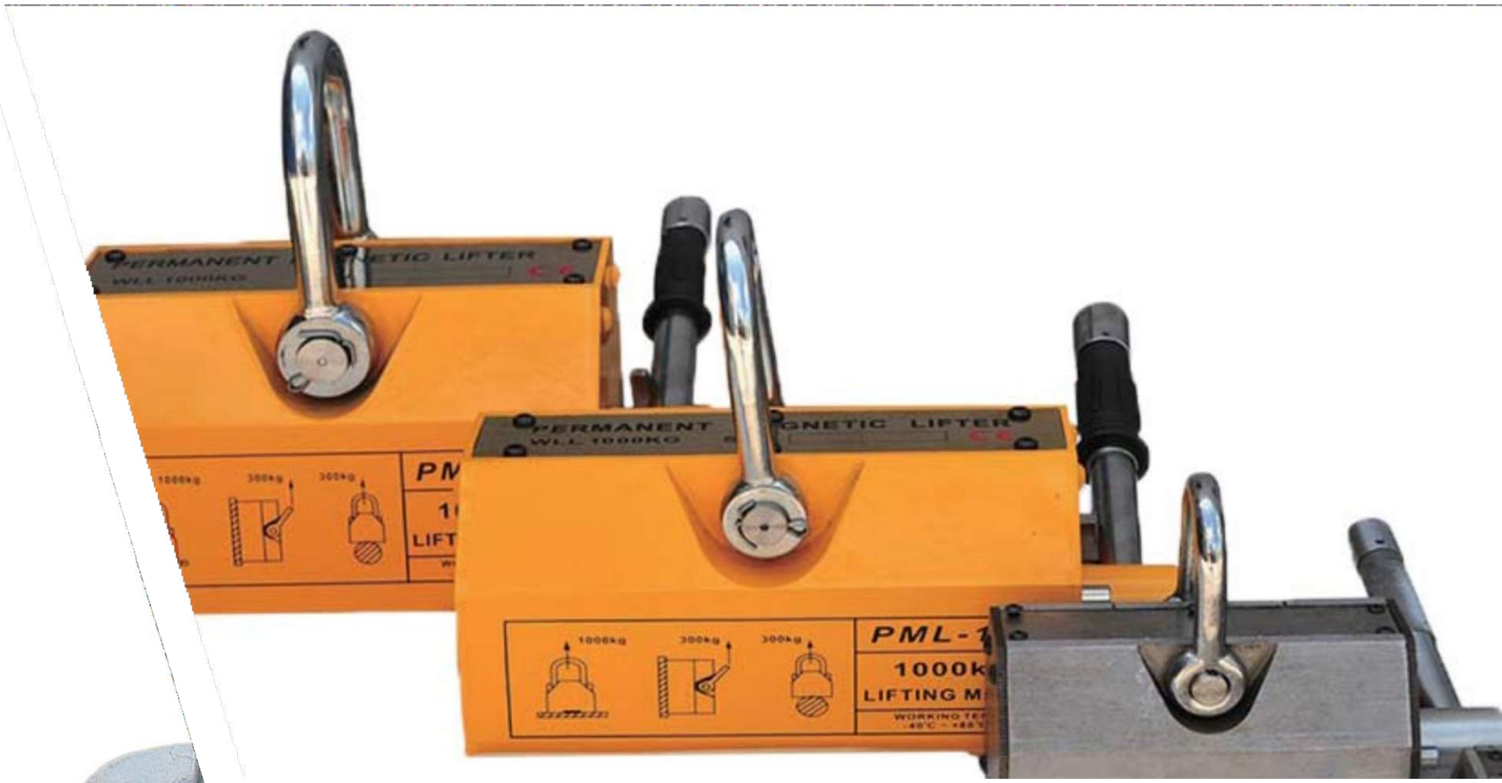
Curie temperature (Tc)
the temperature at which the material loses its magnetism

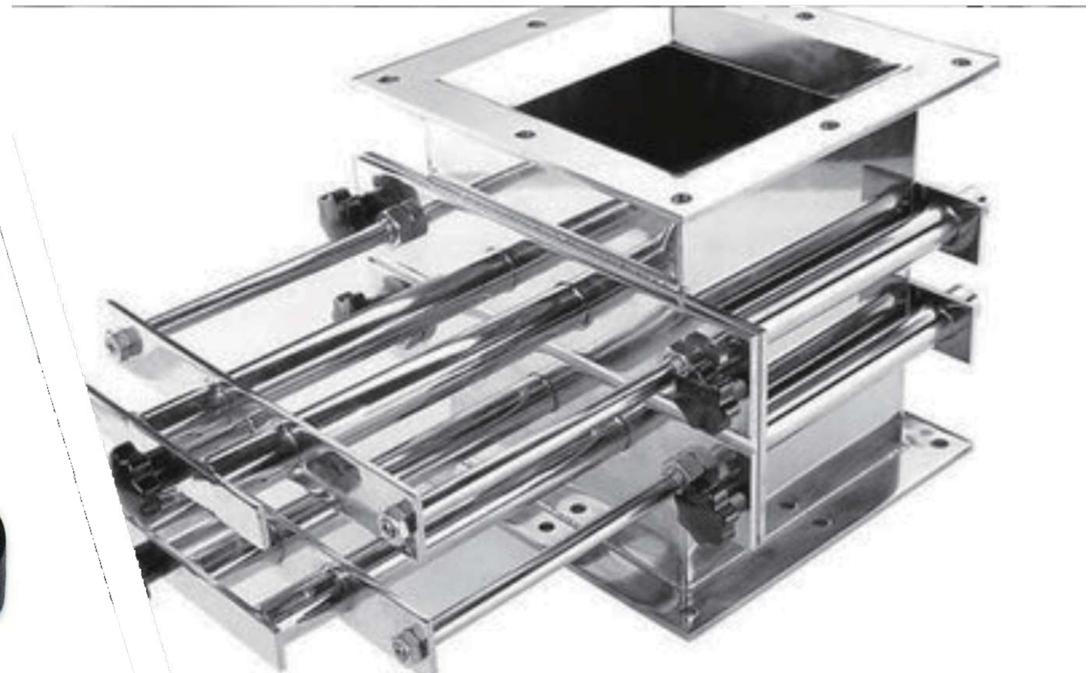
Applied in

Fridge magnets
Book and folder closures
Craft making
Packaging

Pot Magnet is made by the combination of Neodymium magnet, embedded in a steel pot, with countersunk, or hook, or threaded stem for high attraction strength.
If the required attraction strength is lower, ferrite magnet could be used as alternate option.

Lifting Magnet is mainly used to fasten or hold iron workpieces during lifting or handling operation.
It is able to hold the iron plate and cylindrical steel durably and firmly during moving, which is widely used as hoist devices in factories





Magnetic Separator is under the range from simple construction to high gradient one, which covers the wide application in:
ceramics, hemicals, pharmacy, food, plastic, rubber, dyestuff, mining, environmental protection, and etc

These pot magnets with hook can be used to hang up objects.
It is also available to unscrew these hooks.

Hook

Pot Magnet

made by the combination of Neodymium magnet,
embedded in a steel pot, with countersunk, or hook, or threaded stem
for high attraction strength.

The steel pot increases the adhesive force of the magnet
on direct contact with iron surface.

If the required attraction strength is lower,
ferrite magnet could be used as alternate option.

Countersunk

Threaded Stem

Application

Dry indoor use, moist environment would cause the demagnetization of the magnets in certain extent.

Dimension

Dimension is albe to be customized

These pot magnets can be fastened with a countersunk screw

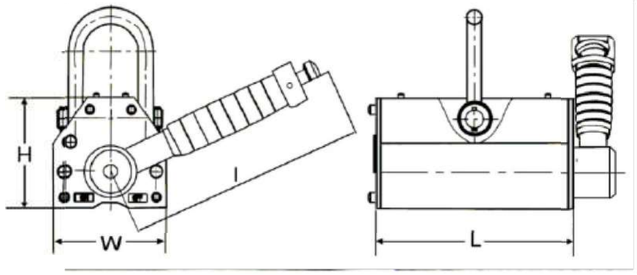
These pot magnets have an external thread.

Permanent Magnetic Lifter

mainly used to fasten or hold iron workpieces during lifting or handling operation.
It is able to hold the iron plate and cylindrical steel durably and firmly
during moving, which is widely used as hoist devices in factories.

Model PML permanent magnetic lifter has
strong magnetic circuit produced by NdFeB magnetic materials.
It is easy and safe for operation, convenient for carrying and efficient for use.

Specification



Model	Rated Capacity (plate)	Cylindrical Capacity	Max Pull−off Strength	Max Working Temperature	L	W	H	I	Net Weight
	kg	kg	kg	℃	mm	mm	mm	mm	kg
PML−1	100	30	300	80	92	64	70	142	3
PML−2	200	60	600	80	114	72	86	142	5
PML−3	300	100	900	80	165	88	96	176	10
PML−5	500	150	1500	80	210	92	96	208	12.5
PML−6	600	200	1800	80	216	118	120	219	20
PML−10	1000	300	3000	80	264	148	140	266	37
PML−15	1500	500	4500	80	308	172	168	285	62
PML−20	2000	600	6000	80	397	172	168	380	80
PML−30	3000	1000	9000	80	443	226	217	512	160
PML−50	5000	1500	15000	80	582	290	265	627	320
PML−60	6000	2000	18000	80	713	290	265	707	398

Dimension is albe to be customized

− Rated Capacity (Plate)
safety range of holding strength on plate metals

− Cylindrical Capacity
safety range of holding strength on cylindrical metals

− Max Pull−off Strength,
Max pull−off strength for lifter (safety factor), typical safety factor is 3:1, 3.5:1
(Max pull−off strength : Rated Capacity (plate))

−Max working temperature
restricted by the features of Neodymium magnets