

Precast Concrete Magnet

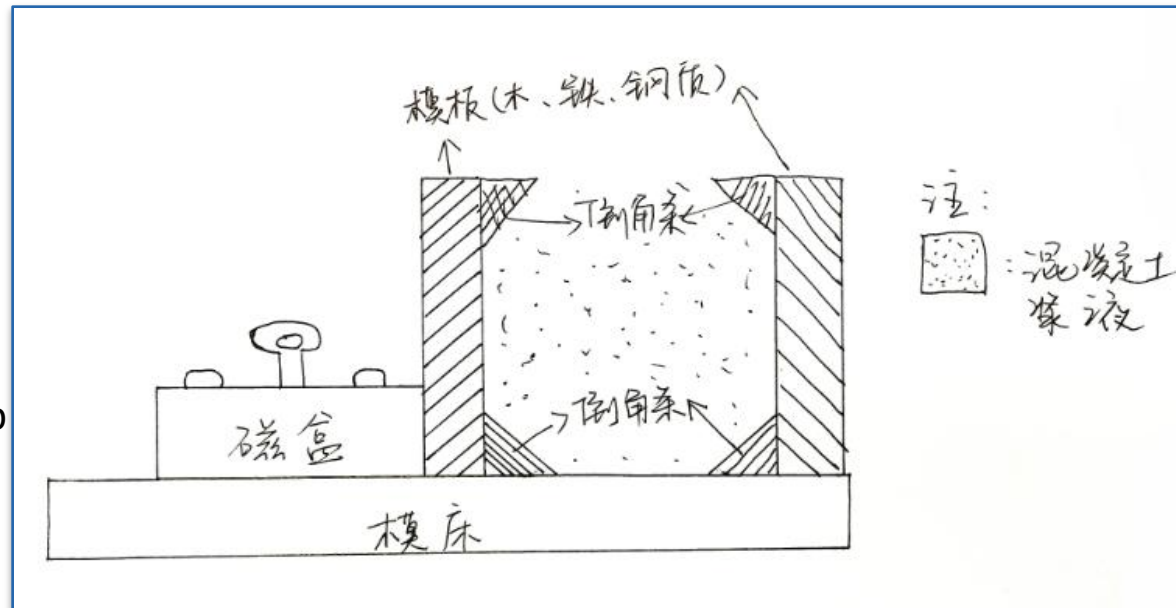
By Great Magtech Electric Team
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Strength • Innovation • Passion

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Shuttering Magnet

1. Structural Analysis

High Quality Spring:

1. Protect Switch
2. Protect magnet from dropping
3. Japanese alloy steel SWOSC-V, by oil quenching; Fatigue resistance, Excellent toughness. Three times strong pressure treatment eliminates internal stress. Surface shot blasting to improve stress concentration strength. Service life of more than one million times.



Plastic Casing

1. Thermal Stability
2. Wear Resistant



Magnet on/off Switch:

1. Stainless steel, Lathe fine grinding
2. Humanization design



Screw: (Applicable national standard)

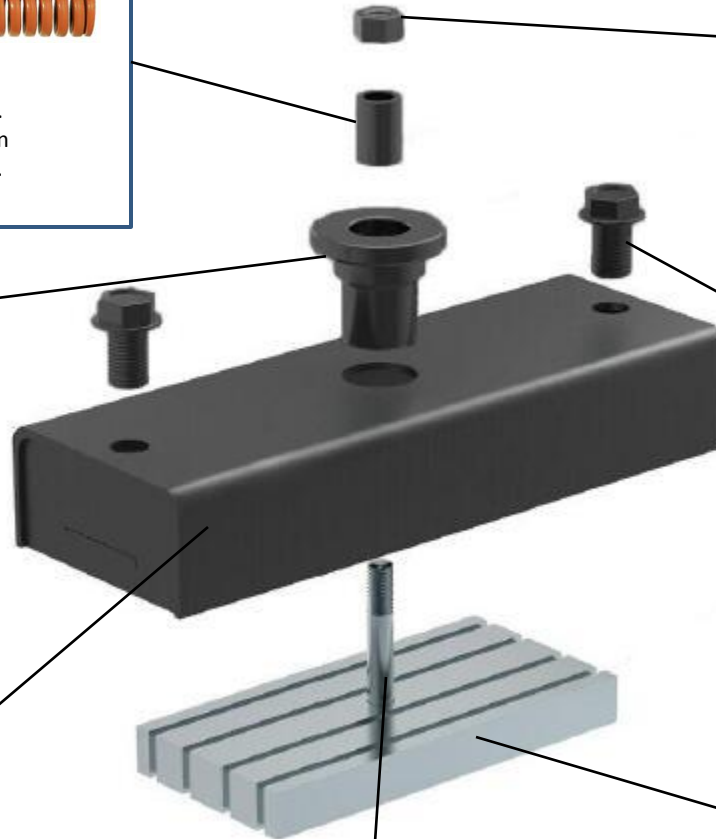
1. Strength ≤ 1000 Kg : M12
2. Strength > 1000 Kg : M16



Box Casing:

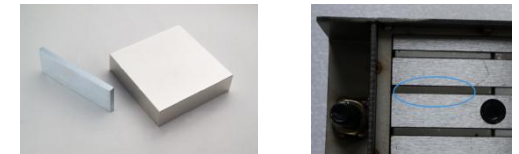
Laser cutting process

1. Stainless steel
2. Iron: Blackening
3. Painting (customized colors)



Stainless steel stud:

1. Fastening
2. Anti-Rust



Neodymium Magnet

1. High Grade, N & M Grade
2. Max operating Temp. $\leq 80^{\circ}\text{C}$
3. Anti-Corrosion
4. Iron casing protection
5. Strong Strength: 450Kg—3500Kg

2. Magnet

- Neodymium Magnets mainly.
- As neodymium iron boron is brittle, we use stainless steel as a protection sleeve, improving service life. This is latest Germany technology.
- Contrast: The old style: epoxy on the outside, after a period of use, epoxy fall off easily and reduce the service life.
- Each magnetic box uses the same grade, but magnetic force are determined by the size of the magnets. The principle is the same to that of POT, and the magnetic force rebounds by the casing.
- Magnets and iron plate are locked and fastened together by a stainless steel stud through the holes on magnet and iron plate.

3. Casing

- Q235A generally, compared with stainless steel, its magnetic flux effect generated is much better and its cost much cheaper.
- Anti-rust treatment on iron casing, painting and blackening. While painting surface are easy to scratched and fall off. So generally blackening is better.
- Steel: higher price than iron, but stainless are more and more popular in the market, because the iron type may be rusted, after a period of using.

4. Magnetic Box Strength:

At least 8-12 magnetic boxes are required to make prefabricated wallboard. Different mould height require different strength, the list as below:

Item	GME-450	GME-600	GME-800	GME-900	GME-1000	GME-1350	GME-1800	GME-2100
Vertical Strength (Kgf) \geq	450	600	800	900	1000	1350	1800	2100
NW(Kg)	2	2.15	2.75	2.7	3.1	6.3	7.2	7.8
Size(cm)	17x6x4	17x6x4	19x10x4	28x6x4	19x10x4	32x9x6	32x12x6	32x12x6
Applicable Framework Height(mm)	40-70	40-70	50-80	60-100	70-120	80-200	100-250	100-250

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8. Features of Shutter Magnets:

- ◆ Light and Compact. Only 2-7.2KG light weigh.
- ◆ Easy and Safe Operation
- ◆ Convenient Maintenance
- ◆ Strength from 450-3500KG
- ◆ Anti-Harmful Substances
- ◆ Easy clean the concrete on surface by polisher. Please refer to the manual and maintenance.
- ◆ Fix the shutter system on the template table by strong magnetic force. And the spring element helps to release the magnet during removing.

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5. Adapter:

mainly used with magnetic box to fasten the template, framework and angle steel.

Adapter size and shape are mostly customized made and design, according to the shape and height of template onsite.



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6. Framework Magnet:

It is long magnetic box. The length of the shell can be 1m, 2m or 3m, etc. (as per customer request). 2-3 magnetic cores of more 900KG are built inside, as follows Illustration.

Compared to the magnetic box, it can be directly installed in the template without adapters. Especially suitable for the production of reinforced walls, double-sided walls and lattice beam ceilings. When used, a prefabricated wallboard requires 4 side forms.



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7. Release Tool: Switch the magnetic field

1. Use the release tool to lift up and then the magnetic strength between magnetic box and table will decrease dramatically, and magnetic box can be moved.
2. The thickness and surface smoothness of the platform will affect the magnetic force between the magnetic cassette and the platform. The thicker the platform and the smoother the surface, the greater the stronger force will be.
3. And the magnetic force is also related to friction coefficient of the contacting surface.

[Click for Operation Demonstration](#)



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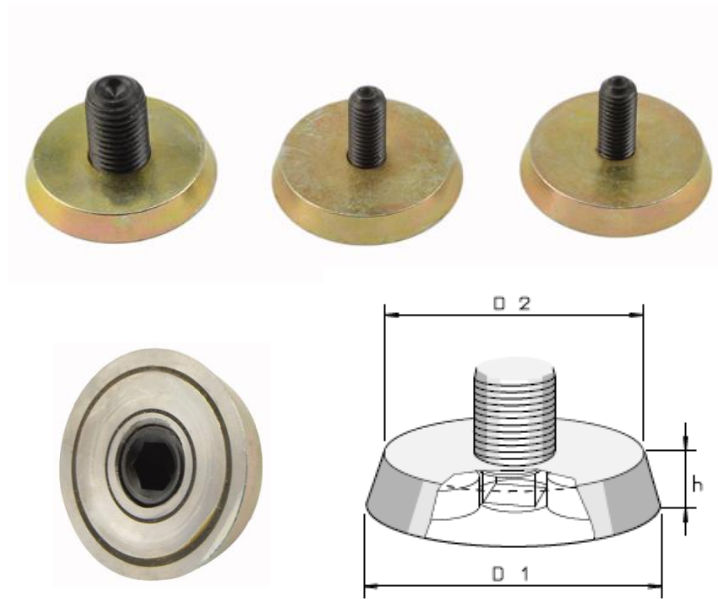
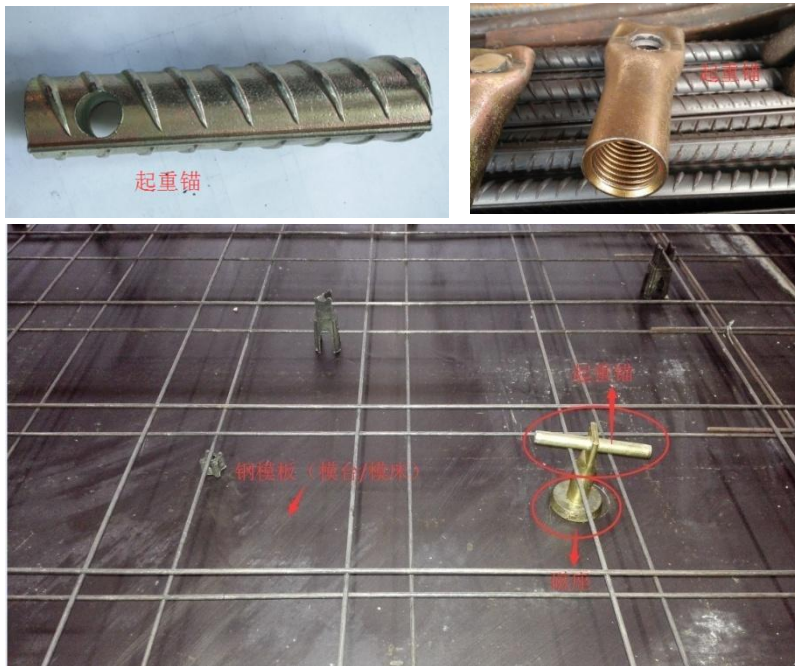
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2. Magnetic Ferrule Insert

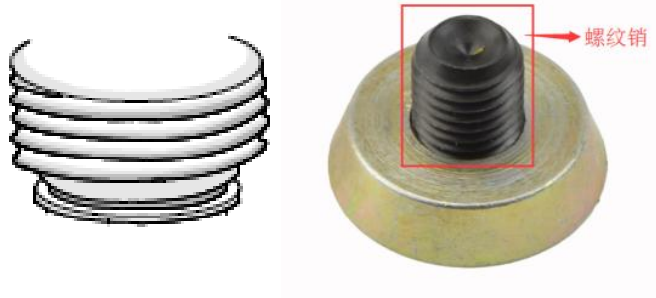
Magnetic ferrule insert is designed to fix the lifting anchor onto the steel template. The neodymium magnet used can exhibit a strong force even in a confined space. The height and diameter of the base can be adjusted according to your needs. The threaded end can be replaced or welded.




3. The thread pin for magnetic insert

When the finished product deliver, the magnetic inserts are generally assembled with the threaded pin, but at the same time it can also be combined with the required specifications. For ease of use, the threaded pin can be individually ordered.

For easy replacement, the threaded pin can be used with a safety buckle and the thread pin can be fixed to the bottom of the magnetic insert.



Thread Pin	M (mm)
	M10
	M12
	M14
	M16
	M18
	M20
	M24

Magnetic Ferrule Insert List

Item No.	Picture	Size	≥ (kg)	Thread Pin Size
GME-15		D40x6mm	15	M20 / M24
GME-35		D40x10mm	35	Polish Rod: 18.1mm / 19.3mm
GME-50		D55x10mm	50	M10 / M14 / M16
GME-55			55	M20 / M24
GME-160		D70x12mm	160	-----

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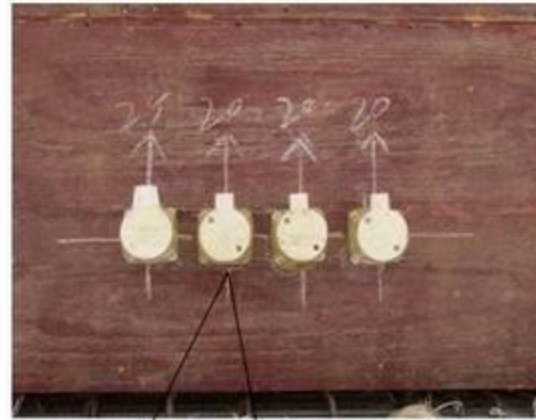
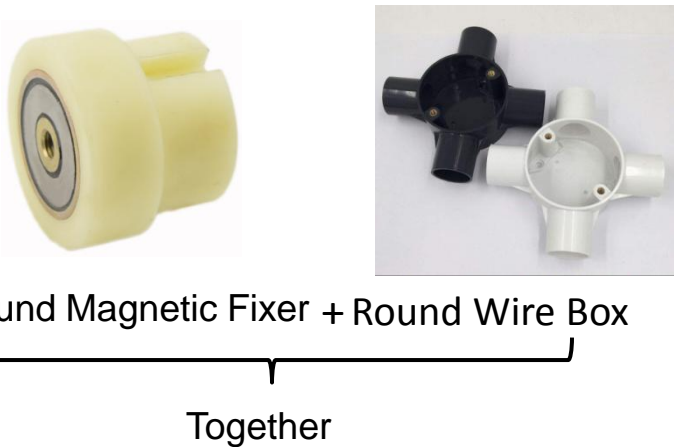
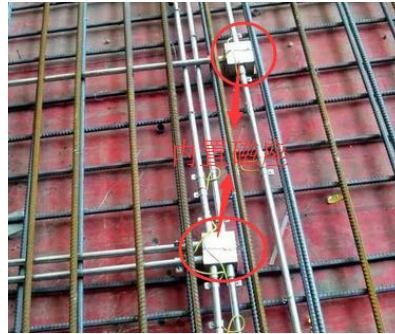
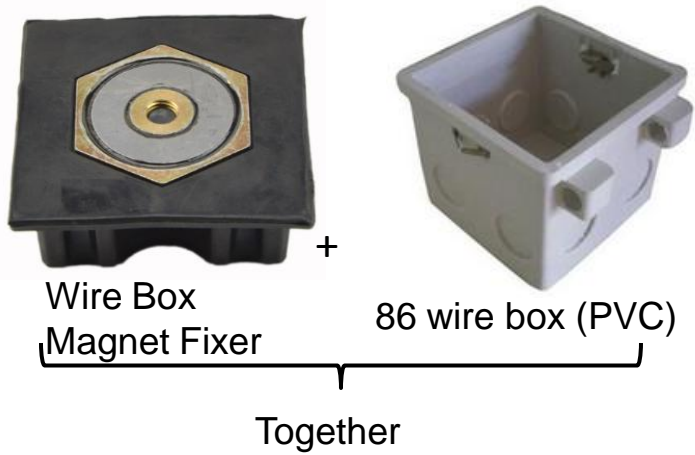
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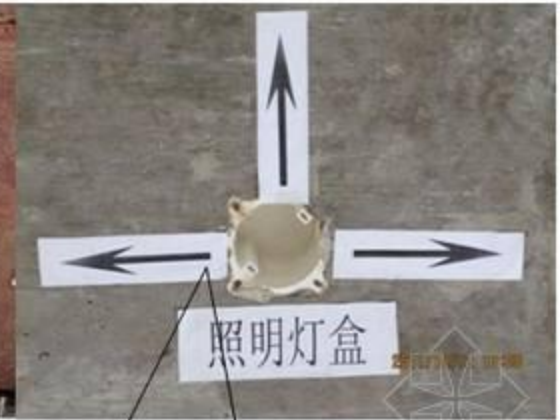
4. Wire Box Magnetic Fixer

Wire box magnetic fixer is designed to fix the wire box hole when making precast concrete components. Once-formed high-strength rubber and powerful magnets are combined together can effectively avoid slipping, wire boxes loosening, and make the precast concrete components more beautiful.



线盒固定牢固、排列整齐、预留接口方向准确

Site Construction



线盒拆模后清理干净，标识张贴及时

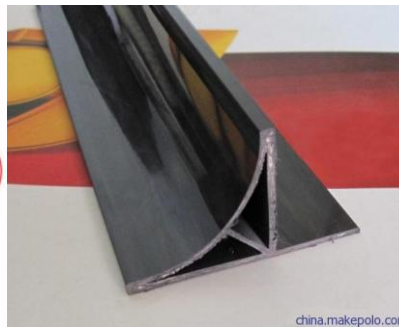
After Concrete Casting

Magnetic Chamfer

- The magnetic chamfer strip is used to generate chamfers during the production of PC components. When side-molds are without chamfer, chamfered magnetic strips can be flexibly used, if chamfering is required.
- Compared with iron chamfer, the rubber magnetic chamfer strip is better on light weight and bendable feature, which is very convenient in practical production and application.
- At the same time, it is also better on its strong magnetic force, simple production processes, and short delivery time; and its price is cheaper than neodymium magnet. Current Sizes are 8x8mm, 10X10mm, 15X15mm.



Magnetic Rubber Chamfer



Traditional PVC Chamfer



Site Construction

Magnetic Steel

2. **The Magnetic Triangle Steel** was fixed by strong magnetic force onto the side or bottom molds before concrete casting to produce precast concrete components.

Compared the traditional welding process, the magnetic triangle steels are easier operation and economically re-use.

Current Sizes:

7x7/10x10/15x15/20x20/25x25mm, can also be customized-made according to customer requirements.



Magnetic Triangle Steel

Magnetic Steel

3. Magnetic trapezoidal steels are used to create drip trays in the process of precast concrete.

With the magnetic fixation, magnetic trapezoidal steels does not slip, is not easy to be deformed, and has accurate positioning and greatly convenient in practical production and use

The magnetic trapezoidal steels can be placed anywhere in the mold to produce a variety of prefabricated drip trays or decorative elements.

The current size is T16xt12xh10mm.

Magnetic Trapezoidal Steel



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Features & Advantages

Features:

- ✓ High-Grade neodymium produced by our own, direct-control on quality and magnetic force.
- ✓ Germany processes, Simple design and excellent quality.
- ✓ Stainless steel as a protection sleeve, Service Life 4-5 Years at least.

Benefits:

Reducing labor costs, saving work time, and improving the labor efficiency; at least 50% cheaper than Ratec.

Advantages:

- ✓ Stable magnetic force, simple and safe operation.
- ✓ Complete ranges, One-Stop Solution
- ✓ Standard Items Inventory, Short Lead time

Evidences:

- Testing video, Testing report.
- The laser cutting technology on casing to prevent from scratches anti-rust treatment.
- Japanese alloy steel SWOSC-V, by oil quenching; Fatigue resistance, Excellent toughness.
- Three times strong pressure treatment eliminates internal stress. Surface shot blasting to improve stress concentration strength. Service life of more than one million times.

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