

Shuttering Magnet



By Great Magtech Electric Team

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Strength • Innovation • Passion

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)

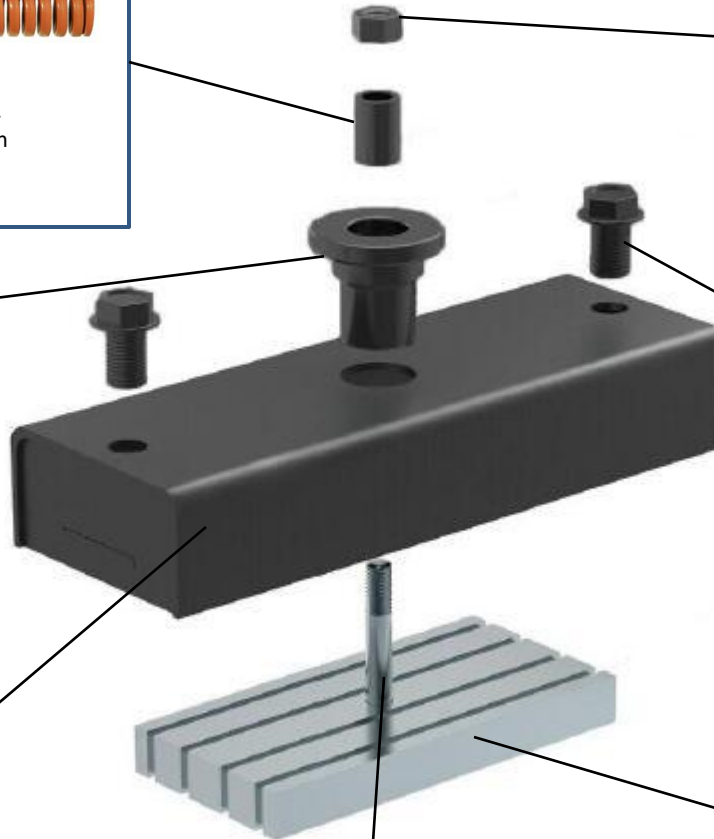
1. Strength ≤ 1000 Kg : M12
2. Strength > 1000 Kg : M16



Box Casing:

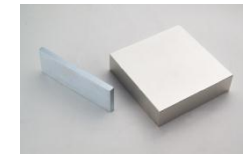
Laser cutting process

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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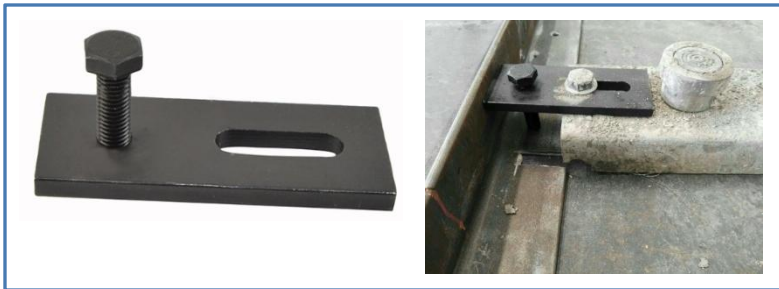
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5. Adapter:

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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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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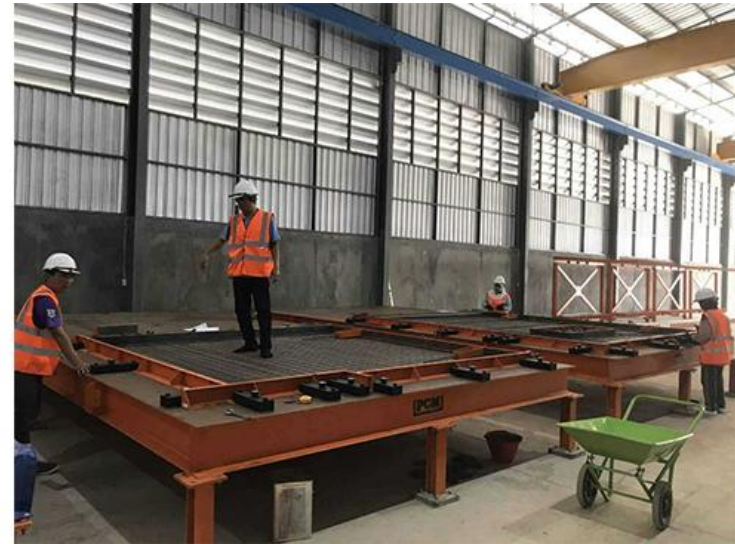
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8. Maintenance of Shuttering Magnets:

First, In the use of the shuttering magnet:

It should avoid any debris at the bottom of the table, affecting the magnetic force of the shuttering magnet too much and the mold table. We use high-performance rare earth permanent magnet materials to produce intense magnetic attraction in the magnetic circuit. When the shuttering magnet is in the working state, the suction surface at the bottom of the magnetic block is closely attached to the steel mold platform and is firmly held. However, when there is a foreign matter (such as concrete, grease, or film) at the bottom of the magnet block, it cannot be closely attached to the platform, and the attraction power will be significantly reduced.



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Secondly, clean the debris on the bottom and the debris on the table:

Before using the shuttering magnet, make sure the bottom of the magnetic block and the platform are clean and flat. If there is foreign matter at the bottom of the shuttering magnet, it can be cleaned with a stainless steel scraper (the iron scraper will be absorbed and cannot be cleaned). If there is concrete, it is difficult to clean the material. At the time, it can be cleaned with a polishing knife. As shown in the figure below, the wire polishing plate is installed on the sander to polish the bottom of the magnet block.



Shuttering magnet bottom debris is not cleaned



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8. Maintenance of Shuttering Magnets:

Third, gently take care to prevent damage to the magnet inside and the shuttering magnet: As the high-performance permanent magnet material used is sintered by rare earth materials, it is hard and brittle, and it is easy to be broken, similar to ceramics, Therefore, during the use of the shuttering magnet, it should be prevented from falling and chaos, and it cannot be thrown at a long distance after it removes from the mold. Avoid using a hard tool (such as an iron big hammer) to knock, bump, etc., causing the shuttering magnet to deform. As shown below:



Rude discard shuttering magnet lead to deformation

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GME 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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