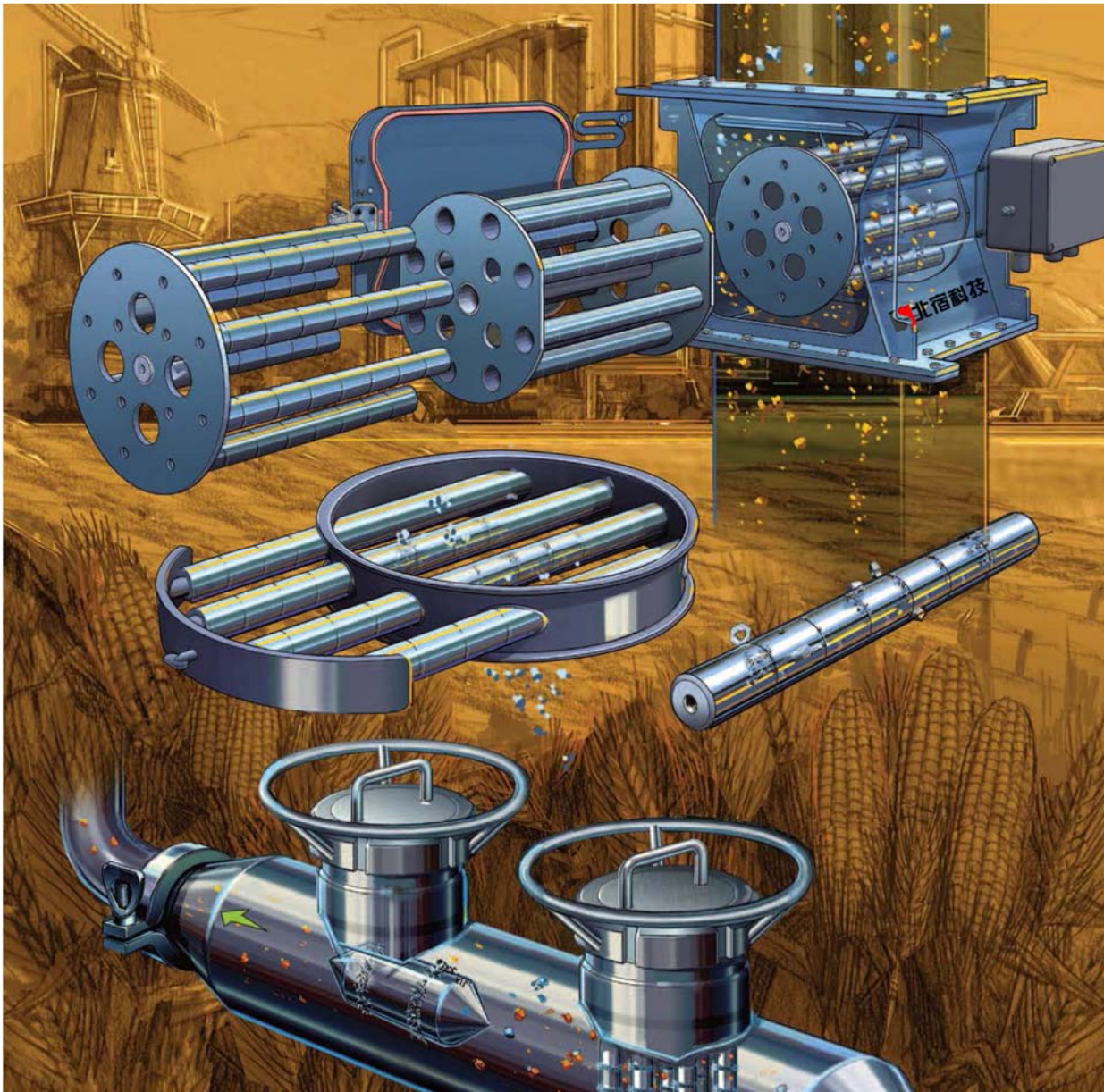


# Grate Magnet Separator

Strong absorption iron and paramagnetic iron in materials, quickly clean and unload iron



**HIGH EFFICIENCY AND HIGH QUALITY  
MAGNETIC SEPARATION SOLUTIONS**

**Based on profound design capabilities, provide you with  
more reasonable magnetic separation solutions**

**Tianjin North Star Technology Co.,Ltd**

Address: 10B, Taihu beiLi, 2 District, Sixiaotun Village,  
Liangwangzhuang Town, Jinghai County, Tianjin,  
P.R.China, 301617

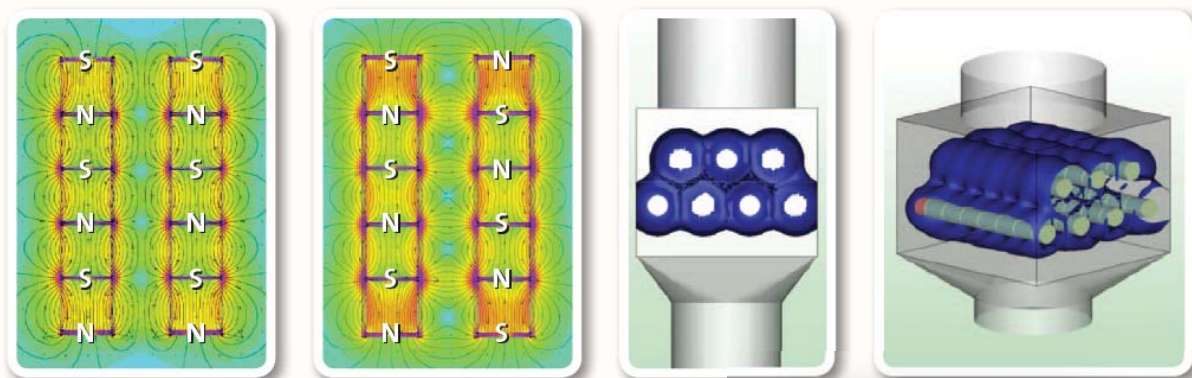
Tel: +86-022-87987163

E-Mail: [tjbeisu@163.com](mailto:tjbeisu@163.com)

Website: <http://tjbeisu.cn>

# Magnetic Bar

Rare earth permanent magnetic rods adopt the powerful magnetic circuit design in industry, which can effectively remove the fine iron in material and reduce the material loss. The following simulation diagram shows the distribution of magnetic sensing lines on magnetic rod surface for different magnetic circuit designs, which fully illustrates the correct magnet configuration to the magnetic force influence on magnetic tube surface.



## Factors affecting magnetism

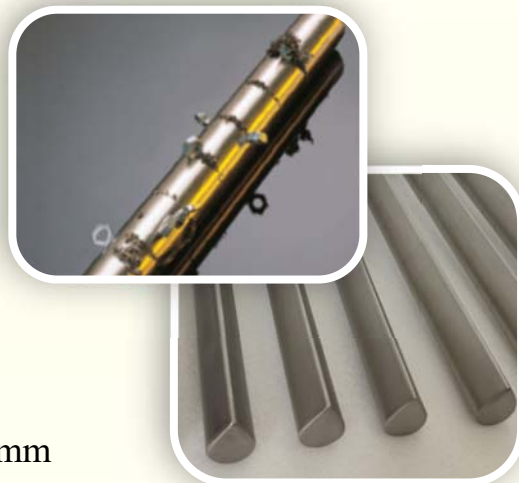
- ◇ Magnetic induction line density on surface of magnet
- ◇ Magnetic field gradient
- ◇ Adsorbed metal particle weight

## Characteristics and advantages

- ◇ Standard magnetic rods have a diameter of 24.8mm
- ◇ The peak strength on the magnetic rod surface is 14000 Gauss
- ◇ Rare earth magnetic circuit design, extreme heat resistance up to 338°F
- ◇ SmCo magnetic system can withstand temperature up to 662°F
- ◇ Surface material 316L cold drawn seamless tube
- ◇ End can be welded handle or cover as a testing tool

## Application industry

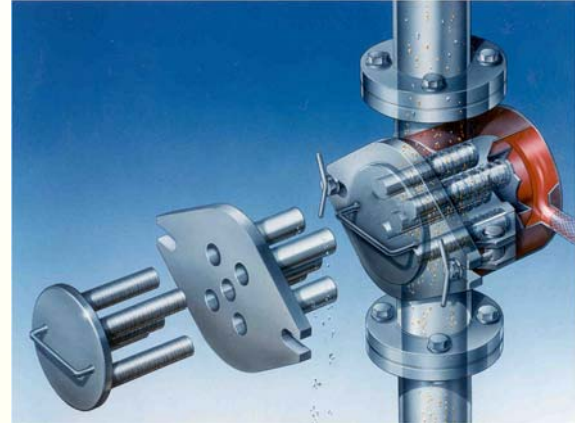
- ◇ Remove iron impurities from liquid piping
- ◇ Used as quality inspection tool for dry powder materials
- ◇ Used in work areas where conventional magnetic grids/grates cannot be installed





# Magnetic Liquid Trap

Magnetic liquid trap connected with pipeline is designed to absorb iron contaminants in slurry. When slurry flows through the trap with magnetic rod and sleeves, iron impurities are adsorbed on sleeves because of magnetism. Then automatic iron unloading can be achieved by separating magnetic rods and sleeves after taking the magnetic element out the trap body.



## Characteristics and advantages

- ◇ All welded 304 or 316 steel outer body
- ◇ 316L cold drawn seamless stainless steel on magnetic bar surface
- ◇ Unique design of rear earth magnetic element (up to 14000 gauss) ensures good iron absorbing performance
- ◇ The design of magnetic bar abut to the shell bottom
- ◇ Quick clamp fixing the trap is more convenient for installation and disassembly

## Optional configuration

- ◇ Hot water jacketed outside of traps can be available (hot water circulates in the inter-layer can prevent viscous products from coagulation)
- ◇ Multiple connections types can be optional, thread/clamp/flange joint, etc.
- ◇ Surface treatment can choose sandblasting or polishing sanitary standards

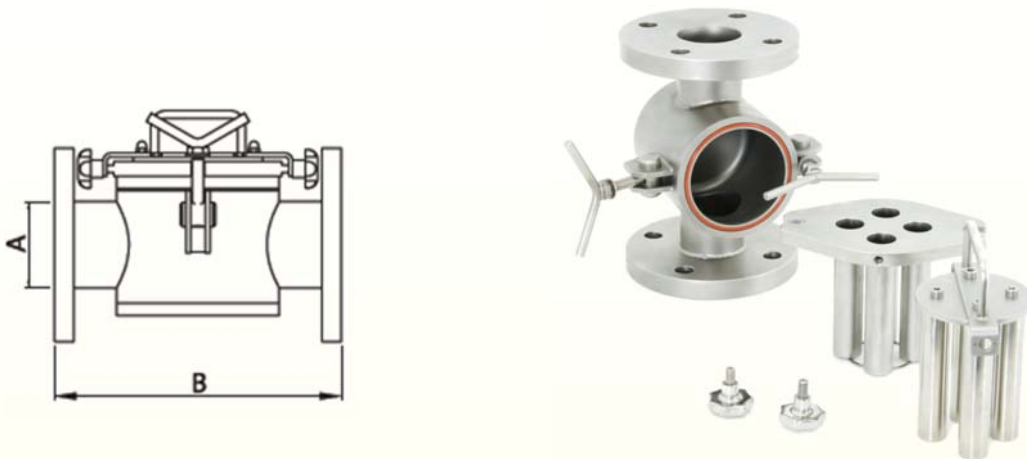
## Handling material

Chocolate sauce, syrup, sauce, cheese, ice cream and other food, paper, medicine, chemical, recycling industries

## Application industry

Remove iron pollutants in slurry and protect downstream equipment, improve product quality, etc.

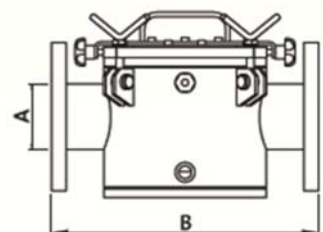
# Magnetic Liquid Trap



| Magnetic Liquid Trap (Ordinary flanged interface) |                    |               |                  |                  |
|---|--------------------|---------------|------------------|------------------|
| Seires  | Specification (mm) | Pipeline Ø(A) | Total length (B) | Magnetic rod qty |
| GBE-DN50  | DN50               | 50            | 280              | 5                |
| GBE-DN65  | DN65               | 65            | 305              | 5                |
| GBE-DN80  | DN80               | 80            | 400              | 6                |
| GBE-DN100   | DN100              | 100           | 400              | 6                |
| GBE-DN125   | DN125              | 125           | 300              | 7                |
| GBE-DN150   | DN150              | 150           | 580              | 7                |
| GBE-DN200   | DN200              | 200           | 460              | 9                |



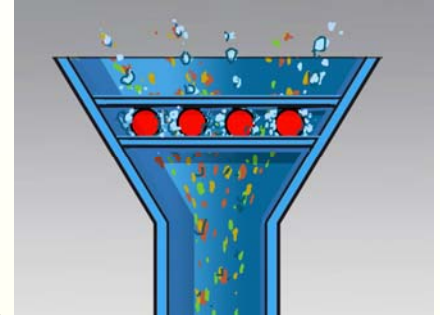
| Magnetic Liquid Trap (Hot water jacketed) |                    |               |                  |                  |
|---|--------------------|---------------|------------------|------------------|
| Seires                                    | Specification (mm) | Pipeline Ø(A) | Total length (B) | Magnetic rod qty |
| GBSE-D50                                  | DIA50              | 50            | 280              | 5                |
| GBSE-D80                                  | DIA80              | 80            | 300              | 6                |
| GBSE-D100                                 | DIA100             | 100           | 380              | 6                |



# Grill Magnet

The hopper magnetic grate can be designed into various shapes, such as square, round, oval or shapes fits with the round hopper. Achieving the purpose of quickly cleaning up iron impurities in powder or granular materials is just through separating the sleeve and magnetic rods out.

## Characteristics and advantages



- ◇ Standard magnetic rods have a diameter of 24.8mm
- ◇ Can be used in the more rigorous sanitary environment
- ◇ All stainless steel structure can meet sanitary ware standard
- ◇ Surface treatment can choose sandblasting or polishing sanitary standards

## Optional configuration

- ◇ Variety of field strengths and temperature tolerance criteria are available
- ◇ Magnetic grill can be equipped with corresponding cleaning device
- ◇ Easy to clean (ETC) structure with sleeves is more convenient for clean iron impurity
- ◇ Diverter bars can be used to enhance the iron removal effect.



## Handling material

Plastic particles, sugar, rice, cereals, food additives, milk powder, etc. powder or pellets which is dry and free-falling by due to gravity.

## Application industry

Always applying for in silos, irregularly shaped hoppers, closed chutes and other slopes and vertical pipelines.

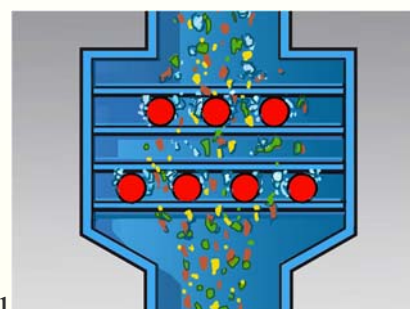
| Grill Magnet |               |                                    |                                    |
|--------------|---------------|------------------------------------|------------------------------------|
| Series       | Diameter (mm) | Capacity with good fluidity (m3/h) | Capacity with poor fluidity (m3/h) |
| GLE-D100     | 100           | 1                                  | 0                                  |
| GLE-D150     | 150           | 3                                  | 1                                  |
| GLE-D200     | 200           | 5                                  | 2                                  |
| GLE-D250     | 250           | 10                                 | 4                                  |
| GLE-D300     | 300           | 20                                 | 6                                  |
| GLE-D350     | 350           | 30                                 | 10                                 |

# Magnetic Drawer

Magnetic drawer adopts single or multiple layer cross-arranged rare-earth permanent magnet system, which can effectively absorb the scrap iron (less than 13mm) mixed in the free-falling powder or granular material. The easy-to-clean magnetic drawer can achieve the purpose of quick iron unloading by manually separating the magnetic system from the sleeves, but the production line needs to be stopped simultaneous.

## Characteristics and advantages

- ◇ Layer number of grids can be customized design
- ◇ No wearing parts that need to be replaced frequently
- ◇ Use shunt strip on wider machine to enhance iron removal effect
- ◇ Have good adsorption effect to fine iron mixed in granular material
- ◇ Configure adaptors for inlet and outlet according to site requirement
- ◇ Special sleeve-design ensures a simple and efficient removal of impurity iron



## Optional configuration

- ◇ Variety of field strengths and temperature tolerance criteria are available
- ◇ Inlet and outlet of the housing can be configured with adapters
- ◇ Diverter bars can be optional according to requirement
- ◇ Surface treatment can choose sandblasting or polishing



## Handling material

Sugar, coffee powder, rice, resin and plastic particles, food additives, refractory matter, etc.

## Application industry

It has good adsorption effect for effectively removing the small miscellaneous iron mixed in the free-falling powder or granular material.

| Magnetic Drawer |               |                      |                                    |                                    |
|-----------------|---------------|----------------------|------------------------------------|------------------------------------|
| Series          | Diameter (mm) | Square box size (mm) | Capacity with good fluidity (m3/h) | Capacity with poor fluidity (m3/h) |
| GHEX-D150       | 100           | 150                  | 3                                  | 1                                  |
| GHEX-D200       | 150           | 200                  | 7                                  | 3                                  |
| GHEX-D250       | 200           | 250                  | 20                                 | 8                                  |
| GHEX-D300       | 250           | 300                  | 30                                 | 12                                 |
| GHEX-D350       | 300           | 350                  | 45                                 | 18                                 |
| GHEX-D400       | 350           | 400                  | 60                                 | 24                                 |

# Self-Cleaning Grate Magnet

Compared with magnetic drawer, the self-cleaning magnetic grate can achieve the purpose of automatic cleaning up iron just by the outside control device without manual participation. When cleaning up the iron, you can decide whether stop the production line according to the layer numbers of the magnetic rod.



## Characteristics and advantages

- ◇ Stainless steel box, sturdy structure
- ◇ Standard NEMA12 button controller
- ◇ Uniquely designed iron discharge export and miscellaneous iron removal device
- ◇ Single or multi-row magnetic grids can be designed according to user requirements
- ◇ Automatic iron unloading through remote control of the circuit save labor costs
- ◇ Adaptor can be configured for inlet and outlet according to site requirement

## Optional configuration

- ◇ variety of field strength and temperature tolerance criteria are available
- ◇ Surface treatment can choose sandblasting, polishing, satin-finished, etc.
- ◇ Scrap iron collecting box can be available

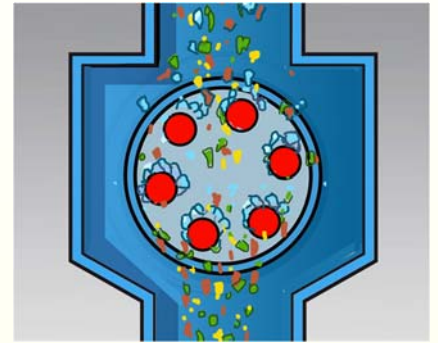


| Self-Cleaning Grate Magnet |                      |                                    |                                    |
|----------------------------|----------------------|------------------------------------|------------------------------------|
| Series                     | Square box size (mm) | Capacity with good fluidity (m3/h) | Capacity with poor fluidity (m3/h) |
| GHAEX-DN250                | 250                  | 40                                 | 22                                 |
| GHAEX-DN350                | 350                  | 60                                 | 30                                 |
| GHAEX-DN400                | 400                  | 90                                 | 45                                 |



# Rotary Grate Magnet

Rotary grate magnet, applied in work site which have rigorous environment, is mainly used to clear out iron from materials such as easily bonding or bridging. Rotary magnet system can also separate materials which is easy to bonding or agglomerate and prevent material from packing and plugging up the processing line. The easy-to-clean rota-grate magnet can make the quickly iron unloading come true by fast separating magnetic system and stainless steel sleeves.



## Characteristics and advantages

- ◇ Inlet and outlet diameter can be customized design
- ◇ Easy to clean and free maintenance
- ◇ No wearing parts that need to be replaced frequently
- ◇ Special sleeve-design ensures a simple and efficient removal of impurity iron
- ◇ Use shunt strip on wider equipment to enhance iron removal effect
- ◇ Have good adsorption effect to fine iron mixed in material that is easy to crystallize or bridge

## Optional configuration

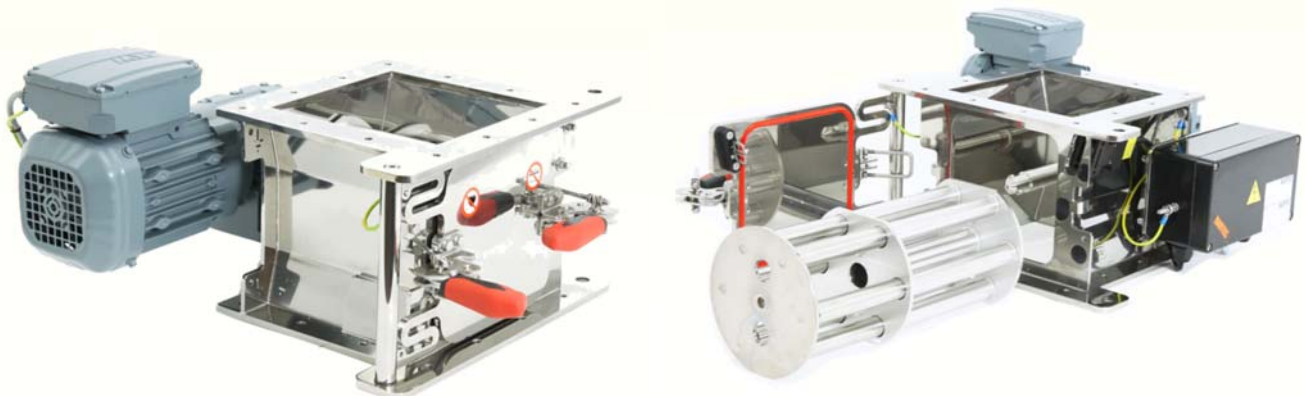
- ◇ variety of field strength and temperature tolerance criteria are available
- ◇ Different adapters can be figured for Inlet and outlet
- ◇ Surface treatment can choose sandblasting, polishing, satin-finished, etc.

## Handling material

Gypsum, barium carbonate, bleaching clay, talcum powder, flour, confectionery and fiber materials, etc.

## Application industry

Chemical and pharmaceutical industry, flour processing industry, mineral processing industry, production milling industry.



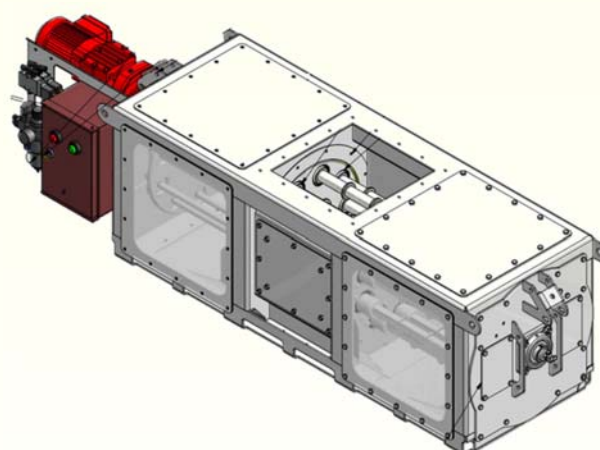
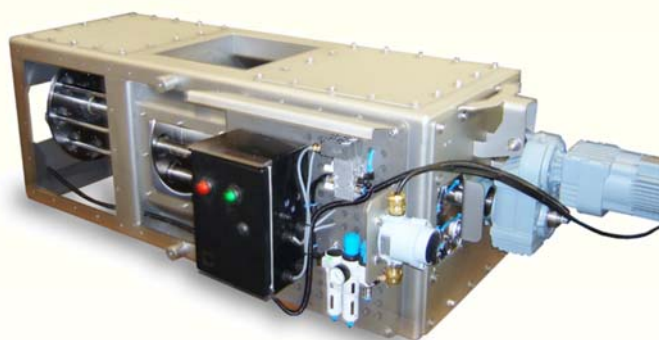


# Self-Cleaning Rotary Magnetic Separators



| Semi-automatic rotary magnetic separators |                        |                          |                                   |                                   |
|---|------------------------|--------------------------|-----------------------------------|-----------------------------------|
| Series                                    | Pipeline diameter (mm) | Pipeline pressure (bars) | Capacity for good fluidity (m3/h) | Capacity for poor fluidity (m3/h) |
| GHER-D200                                 | 150                    | 6                        | 9                                 | 9                                 |
| GHER-D300                                 | 250                    | 8                        | 22                                | 22                                |
| GHER-D300                                 | 250                    | 12                       | 14                                | 14                                |

Compared with general rotary magnetic grate, the automatic rotary magnetic separator do not need manually pull unloading but automatically remove iron on surface of magnetic bars by external control device. But need to stop the production line as iron unloading. Cleaning frequency and interval time can be set by automatic cleaning system according to the content of iron in material.



| Self cleaning rotary magnetic separators |                        |                                   |                                   |
|--|------------------------|-----------------------------------|-----------------------------------|
| Series                                   | Pipeline diameter (mm) | Capacity for good fluidity (m3/h) | Capacity for poor fluidity (m3/h) |
| GHAER-F320                               | 320X320                | 40                                | 40                                |
| GHAER-F400                               | 400X400                | 60                                | 60                                |

# Product & Service

## Control and Test device

In order to provide much more types of magnetic equipment, Tianjin North Star technology Co.,Ltd provides related service including monitoring, installation, maintenance and so on, as well as corresponding monitoring and detection equipment.

In many industry, including the food industry, magnetic equipment requires regular testing. We can provide users with door-to-door service for magnetic strength testing and provide magnetic certification reports after the magnet test, to help users deal with product quality audits inside and outside the company. We can also provide the more high quality Gauss meter to help you test in-house. The main feature of our Gauss meter is very easy to operate. It means person without professional training can easily measure.



Using NdFB magnetic bar, you can quickly test whether the product contains iron impurities. The magnetic strength on surface of magnetic bar can reach 15000GS, and it can absorb iron impurities greater than 30 $\mu$ m. However, such extremely fine iron impurities cannot be detected by metal detector. The detection magnet not only has good detection performance, but also the surface's iron impurities can be easily collected to analyze.



## Product & Service

We can provide the following services:

- $\alpha$ ) Commissioning of the control system
- $\beta$ ) Maintenance service
- $\chi$ ) The installation and commissioning of new product
- $\delta$ ) Control, detection and monitoring of magnetic equipment
- $\epsilon$ ) Maintenance and replacement of magnetic equipment
- $\phi$ ) All of the above service types can be operated on site

