

7 Major Magnet Myths

MYTH 1: When deciding between two magnets, whichever one has the highest gauss level reading should be your determining factor.

FALSE: Although gauss readings are commonly discussed on magnets, gauss (lines of flux per surface area) is an inexact measurement and is not repeatable. Many factors which have nothing to do with the magnet can affect gauss readings. A practical, functional test, such as pull strength, will give the customer a better idea of the magnets ability to remove the tramp metal from their product stream.

MYTH 2: Force Index is the only reliable way to determine which magnet will do a better job attracting metal.

FALSE: It is important to understand that Force Index readings are calculated solely from gauss. If gauss readings are inexact or inaccurate, then it is evident that any calculations taken from these measurements would also be erroneous.

MYTH 3: All Rare Earth Magnet Material is the same.

FALSE: There are many types and grades of rare earth magnet material as well as many different suppliers of magnet material. Rare earth magnet materials are measured by their energy product which is expressed in mega-gauss oersteds or MGOe. There are many common grades ranging from 27 MGOe to 50 MGOe. Even within the commonly used grade designations, the chemistry and process involved in making a rare earth magnet affect its corrosion resistance and temperature coefficient and therefore its long term life. Some suppliers of rare earth materials do not necessarily adhere to the Magnetic Materials Producers Association (MMPA) standards for rare earth magnets.

MYTH 4: Rare earth is weaker at a distance than Ceramic.

FALSE: When comparing two of the same size pieces of Rare Earth and Ceramic, Rare Earth is the stronger material, whether at the magnet face or at a distance. The above misconception may have it's origins from the manufacturing of very large magnets. Neodymium is still very difficult to work with. The material does not stack as easily as ceramic, and due to the high cost of the material, it is not economically sound to do so. Therefore, when reach-out for large tramp metal items is the objective rather than holding onto small fines, Ceramic is virtually always used as the most cost-effective solution.



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MYTH 5: A Magnet is only insurance.

FALSE: Magnets are a proactive piece of equipment that will solve a product purity problem. Capturing large nuts, bolts, paper clips, or staples to fine metal wear residue originating from your processing equipment, magnetic separators are where product purity is a must. In addition, they will protect sensitive and expensive equipment from damage.

MYTH 6: Magnets will always get 100% of the tramp metal out of a product flow.

FALSE: Many factors contribute to the effectiveness of a magnet, such as product density, consistency and granulated size. It is very difficult for a magnet to pull a piece of metal from behind a large, dense lump of product. In addition, since magnets are designed around a particular application, any changes to that system such as an increase in volumetric flow rate or size of material, can negatively affect the performance of the magnet.

MYTH 7: A magnet is a magnet is a magnet.

FALSE: There are many factors that affect a magnetic device's ability to perform a function for the customer. The internal circuitry has a major impact on the strength of a magnet at the working distance it is designed for. The amount of magnet used in the same type magnet will vary from supplier to supplier and this will have a significant effect on the effectiveness of the magnet. The quality of the magnet material itself can be a contributing factor to how well the magnet will perform.

Kinder Australia is now the exclusive Australia and New Zealand supplier of the complete range of IMI Tramp Metal Separation products. They are the first to **offer 52 MgOe rare earth material as a standard in their products.**

For more information, contact a Kinder Sales Engineer for expert tramp metal separation advice. Call us on **03 8587 9111** or email us at **sales@kinder.com.au**

