Why Can't The Bolt Be Pulled Off The Magnet?

At the Plastic Recycling Expo (PRE) in Telford, UK on June 16th and 17th, visitors to the Bunting Magnetics stand were challenged to pull a steel nut off the surface of a Plate Magnet. Whilst surprising to the challengers, it was not a surprise to Bunting that nobody was able to pull the nut off. But why?

Modern magnet technology has produced exceptionally strong permanent magnets called Rare Earth. If configured in the right way, these can be built into a magnetic circuit to produce an intense magnetic field. However, that is only part of the story.

The strongest magnetic material is actually a piece of steel. The only limitation of steel is that it only retains a small amount of magnetism, unlike magnet material such as Ferrite and Rare Earth. This means that it cannot be used as a permanent magnet. However, when a steel nut is put into a strong magnetic field, the magnetic force is intensified in the steel and, hence, makes it almost impossible to remove from the surface of the Plate Magnet.

In practice, the only way the steel nut can be removed is by sliding it off the magnetic face. Even then it is difficult.

The good news for processors looking to prevent damage and contamination from tramp metal is that installing a Plate Magnet or similar Magnetic Separator will capture and hold steel even in a flow of material.

For further details on the Bunting range of Metal Separation Equipment please contact Carlton Hicks (carltonhicks@buntingeurope.com) or our technical sales team on:

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