

Magnetism in Stainless Steel

Many people have mistakenly used a magnet to test whether a metal is stainless steel. Is stainless steel magnetic? The answer is sometimes, yes and sometimes, no.

According to the ASM International's handbook, Stainless Steels, "The magnetic behavior of stainless steels varies considerably, ranging from nonmagnetic in fully austenitic grades, to permanent magnetic behavior, to soft magnetic properties in ferritic stainless steels."



For Further Information:

If you have any questions about any Powerbrace part, and the material from which it is made, please call our Customer Service Department at **262-697-5328**.



Check Our Web Site

Additional information is available at www.powerbrace.com.

Forgings

Any parts made by forging are probably not magnetic because of the nature of the material in its hot-formed state. The majority of forged parts, when tested with a magnet, will most likely not show any attraction.

Stampings

Many stainless steel stampings are made from ferritic stainless steel, which can have weak magnetic properties. According to the ASM International's handbook, **Stainless Steels**, soft magnetic properties exist in ferritic stainless steels. Ferritic stainless steel is suitable for components that must withstand corrosive environments.

Thus, when you test ferritic stainless steel with a magnet, it may or may not show magnetic properties. This in NO WAY reflects

the quality of the stainless steel or its resistance to corrosion.

Powerbrace stamping products made of ferritic stainless steel include some mounting brackets and hinge butts.

Castings

Powerbrace manufactures some cast parts from austenitic stainless steel, CF-8. This stainless steel contains from 5 to 20-percent ferrite, and so may show some attraction to a magnet. Yet, the magnetic properties of austenitic stainless steels are low when compared to conventional magnetic materials.

The ferrite in the stainless steel is very beneficial, and though it may show some attraction to a magnet, it also increases the strength in welding and maximizes corrosion resistance.

Powerbrace cast products made of stainless steel include keepers and hinge butts.



Magnetic Properties

Steel is made of iron and carbon and is always magnetic.

Stainless steel is made of iron, carbon, chromium and nickel, and thus it may or may not be magnetic, depending on the amount of the added elements. Whether your Powerbrace stainless steel part is magnetic or not does not reflect the quality or the corrosion resistance.

What Is Most Important about Magnetism in Stainless Steel?

Whether the stainless steel part is magnetic or not, Powerbrace stands behind the quality of its parts. We build corrosion resistance into all our parts, whether or not they show magnetic properties.