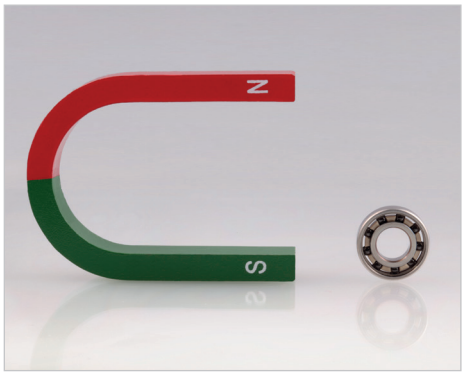
Non-Magnetic Bearings

For applications requiring non-magnetic properties, bearing selection has typically been limited to plastic and full ceramic options. As part of an ongoing solution development program, HQW Precision has developed bearings from a new, fully non-magnetic material which can reach minimum hardness levels of 60HRC.

Non-magnetic steel options currently available are martensitic and do not reach the minimum hardness required for most bearing applications. Therefore they are only suitable for very low loads and speeds. HQW non-magnetic bearings support much higher loads and speeds, while offering extremely high corrosion resistance, in excess of that provided by high nitrogen steels (e.g. SV30).

In comparison with full ceramic bearings, HQW non-magnetic bearings can be pressed onto a shaft without risk of damage. Their thermal expansion coefficient is equal to standard steel bearings, ensuring a similar behaviour to surrounding steel parts in the application.

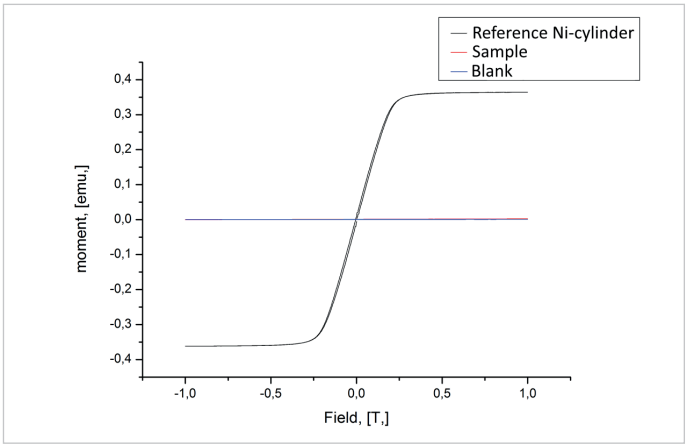
Non-magnetic components can be incorporated, ensuring the bearings are fully non-magnetic. Options include ceramic (silicon nitride) balls, plastic cages (i.e. PEEK, Torlon®) and optional plastic shields. With production to tolerance standards ABEC9/ISO P2, and in a size range starting at just 1mm bore diameter, HQW Precision's non-magnetic bearing products can support a wide range of specialist applications and offer a superior alternative to ceramic and plastic bearings.



Fully non-magnetic bearings incorporate plastic cages and ceramic balls

Typical Applications:

- Medical scanning devices, e.g. MRI/CT
- Semiconductor equipment
- Vacuum environments/space applications
- Magnetometers
- Electron beam process
- LCD Manufacture
- Medical implants
- Aerospace and Defence



Graph comparison

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