

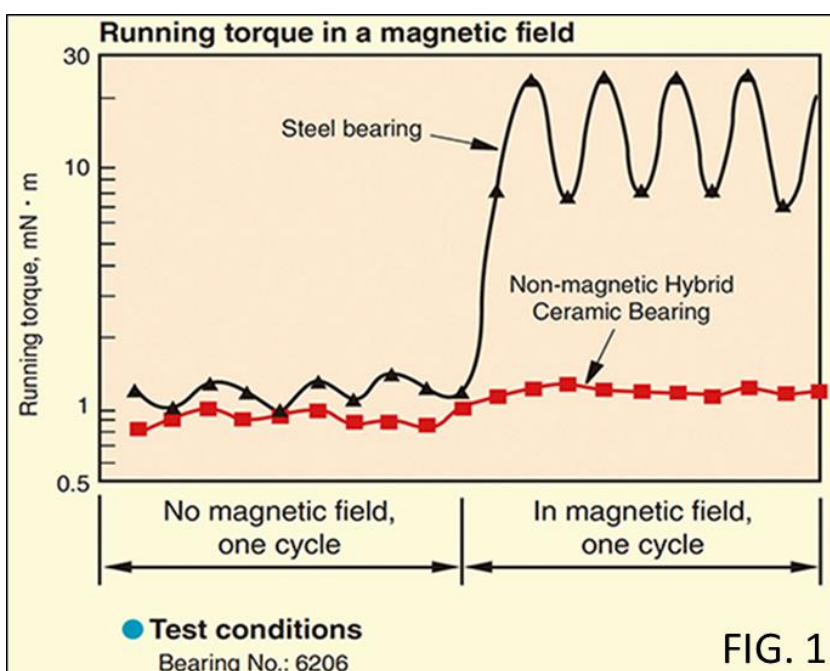


JTEKT INSIDE - July 2023

JTEKT Bearings contributes to improvements in medical devices, while reducing environmental impact.

Introduction.

JTEKT Bearings, formerly known as Koyo Bearings, has a long history of designing and developing (hybrid) ceramic bearings for various applications in “special” environments and was the first company to introduce such bearings in mass-production, more than 30 years ago. This article introduces the *non-magnetic* Hybrid Ceramic Bearing used in MRI machines, among others.



The challenge

If standard bearings (using high carbon chromium bearing steel) were to be used in MRI (Magnetic Resonance Imaging) machines, this could lead to disturbance of the magnetic field (influencing the scanning process), but also to fluctuations in the bearing running torque (influencing the smooth rotation of the scanner). See fig. 1.

Environmental concerns of prevailing solutions

Although beryllium copper has been widely used as a non-magnetic material, its use has waned in recent years due to its containing beryllium, which is a substance of environmental concern.

JTEKT's proposed solution

JTEKT propose to use Hybrid Ceramic Bearings that use bearing rings made of non-magnetic stainless steel and rolling elements made of ceramic materials. For specs see Table 1.

Component	Characteristics
Lubricant (type)	Polymeric solid lubricant (Fluoropolymer)
Lubricant (area)	Cage
Outer ring	Non-magnetic stainless steel
Inner ring	Non-magnetic stainless steel
Ball	Silicon nitride
Cage	Fluorocarbon resin
Shield	None



Other applications

Besides the application in MRI devices, JTEKT non-magnetic Hybrid Ceramic Bearings are used also in other fields with similar requirements like: superconductivity-related applications and semiconductor manufacturing equipment.

General notification



Koyo Bearings has been officially rebranded to **JTEKT Bearings** as of April 1, 2022. Please appreciate that this is only a change of brand. The company, its general structure, the products and services will remain the same. Our customers can rely on the continued good service and quality of our products in the future and our commitment to keep the same excellent business relationship with our valued partners, as in the past.

Please do not hesitate to contact us or your distributor in case you would like to have more information about our company, products and services.

Get to know our bearings at: www.jtekt-bearings.eu

