

RBC ImpactTuff® Spherical Plain Bearings

Designed for reliability, ImpactTuff® Spherical Plain Bearings improves resistance to shock loads by 300%.



In many rugged applications where substantial impact loads are common, spherical plain bearings can fracture and chip adding to the high cost of warranties. In particular, suspension components in off-highway construction vehicles have been subject to abuse from impacting rocks or abrupt terrain changes. Often, the result is broken bearings. Machinery repair is costly. Downtime is even costlier.

RBC solves tough problems.

Controlling impact breakage is a growing concern as equipment users expect higher levels of performance. Our engineers have developed most of the design and manufacturing innovations being used in the spherical plain bearing industry. They addressed this challenge with creative dedication that resulted in a unique solution. *How do we develop a fracture resistant bearing without compromising wear properties?* Producing bearings using softer, more ductile materials can control breakage during use. Yet softer steel will wear at an accelerated rate. So, we looked at combining the impact resistant properties of ductile steel with the wear resistance of harder steel. Additionally, we had to design this product and retain our ability to employ fractured outer ring manufacturing technology.

How did RBC achieve ring fracture using a ductile material solution?

Standard SPB's are made from through-hardened 52100 steel. This steel is highly resistant to wear and facilitates the fractured outer ring manufacturing technology. But, it is somewhat brittle and reduces resistance to fracture from impact.

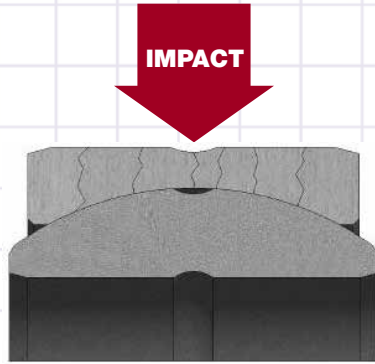
RBC's ImpactTuff® SPB's are made from carburizing grade 8620 steel. By using this material, RBC engineers are able to produce a case hardened outer surface of HRc60 while retaining the inner core ductility of HRc40. The combination of ductile steel plus heat treating, delivers a wear resistant bearing that eliminates impact induced fractures.

The real challenge of the case carburized design is being able to fracture the outer ring to facilitate assembly. We designed a unique outer ring profile with a minimal notch exposure that permits, controlled fracture through the softer inner core.

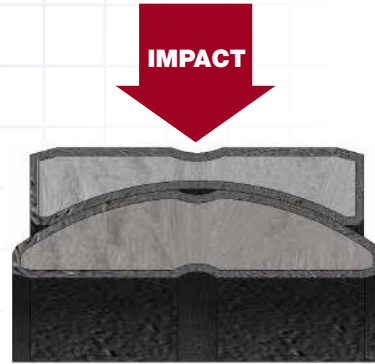


Smoother. Faster. Longer.
Because That's How We Roll.

Engineering Better Bearings for Confident Performance.



Excessive impact loads applied to "Thru-Hardened" Spherical Plain Bearings can lead to brittle fracturing of the rings.



RBC ImpactTuff® Spherical Plain Bearings have a shock absorbing ductile core. This core absorbs impacts and impedes crack propagation through the ring.

High impact loads were unforgiving until ImpactTuff® SPB's came along.

The ImpactTuff® spherical plain bearing has been developed in close association with manufacturers of off-highway vehicles and heavy-duty machinery.

For numerous years, this bearing has been actively used in some of the most demanding off-highway applications.



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