Why do bearings heat up during operation?

by Mike Mortensen - Director of Engineering RBI-USA

As bearings operate in an application, they heat up due to internal and external sources. Friction is the main source for heat generation during operation. It occurs between the balls and the cages as well as between the balls and the raceways. In sealed bearings, there is also frictional contact between the seals and the inner ring.

Another source of internal heat generation comes from the churning of the grease as the bearing rotates. The external sources of heat generation come from the operating conditions that are particular to the application. In some applications, heat from the housing or the shaft may conduct into the bearing. Other sources of heat could be from the environmental conditions of the application, such as heated air encountered in a furnace application or engine compartment.

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