



Ball Bearing Design and Application

An Online Continuing Education Course for Engineers

Course Number: M-3043

Credit: 3 Hours / 3 PDH / 3 CPD

Ball Bearing Design & Application

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Background

Ball bearings are used primarily to support rotating shafts in mechanical equipment. They can be found in everything from personal computers to passenger cars. They are of simple design and can be precision made in mass production quantities. They can support heavy loads over a wide speed range and do it virtually friction free. They come in many different sizes and shapes, are relatively inexpensive, and require little or no maintenance. They have predictable design lives and operating characteristics and are truly a valuable asset to the rotating equipment industry of today.

Description

A ball bearing consists of an inner ring (IR), an outer ring (OR), a complement of balls, and a separator to contain the balls. (See Figure 1.) The outer diameter of the inner ring (IROD) and the inner diameter of the outer ring (ORID) have a groove in which the balls roll on. This groove is commonly called the *pathway*. The raised surfaces on each side of the pathway are called the *shoulders*. The balls are held equally spaced around the annulus of the bearing by the separator. The basic dimensions of the bearing are the bore (B), outside diameter (OD), and the width (W).

Figure 1
Ball Bearing Description

To view the remainder of the course material and to take the quiz for PDH credit, you must purchase the course.

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(Exaggerated View)