Understanding Bearing Life

Bearing Service Life

Bearing service life is based on many factors. Depending on the application requirements, the actual service life can greatly vary. For example, a machine tool spindle bearing may be unfit for further service because of minor wear that affects spindle accuracy. In contrast, a rolling mill roll neck bearing may have a satisfactory service life even if the bearing developed spalling damage, as long as the spalls are properly repaired in a timely fashion.

Reduced service life can be caused either individually or by any combination of:

- Faulty mounting.
- Improper adjustment.
- Insufficient lubrication.
- Contamination.
- Improper or abusive handling.
- Poor housing support.
- High-static misalignment or shaft and housing de□ection.
- Poor or inconsistent maintenance practices.

The life of your bearing also depends on the load zone obtained under operating conditions. Generally speaking, the greater the load zone, the longer the life of the bearing under stabilized operating conditions.

Fig. 64 illustrates this relationship for tapered roller bearings; other roller bearings with radial loads possess a similar performance relationship.

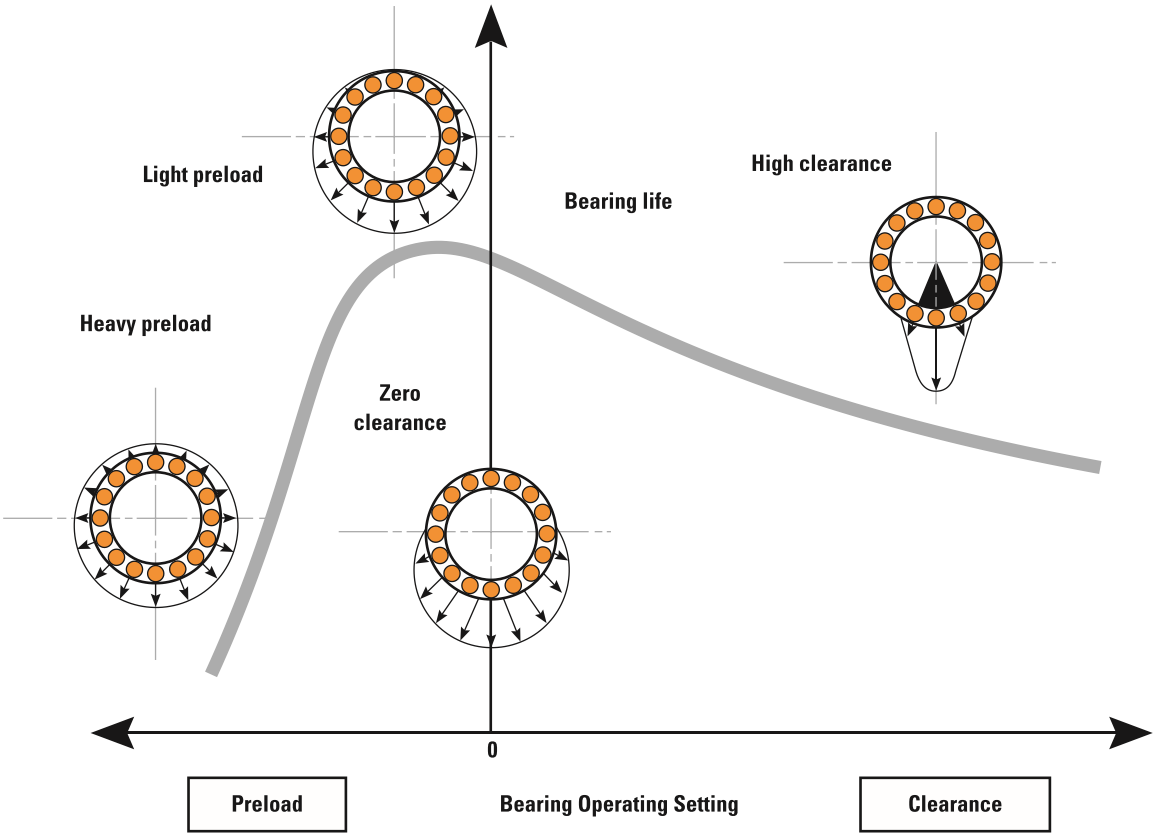

Fig. 64. *Bearing life vs. bearing operating setting.*