PROCESS INDUSTRY PRACTICES

COMPLETE REVISION
April 2017

Machinery

PIP REEP005
Guidelines for Selection of General Rotating Equipment Bearing Lubrication Methods

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In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

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1. Scope

This Practice provides guidelines for selecting lubrication methods for bearings in general rotating equipment applications.

This Practice describes the product-lubrication, grease, wet sump, dry sump, and pressure-fed lubrication methods for lubricating bearings, and provides guidance for applying the methods to various applications.

2. References

Applicable parts of the following industry codes and standards and references shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles are used herein where appropriate.

2.1 Industry Codes and Standards

- American Petroleum Institute (API)
  - Std. 614 - *Lubrication, Shaft-sealing, and Control-Oil Systems and Auxiliaries for Petroleum, Chemical, and Gas Industry Services*

3. Definitions

miscibility: the ability of two liquids, not mutually soluble, to mix

wet sump method (a.k.a. oil-flooded method): a static lubrication method using immersion or partial immersion of a bearing in oil

dry sump method (a.k.a. pure oil mist method): a lubrication method using only oil mist on a bearing

service life: the time period that a lubricant can reliably serve 99% of bearings in similar service without detrimental effect on bearing life

4. General

The lubrication method best suited for bearings in general rotating equipment applications should be based on the type, size of bearing, shaft speed, load on the bearing, available infrastructure, maintenance accessibility, and life cycle cost considerations.

5. Product-Lubricated Bearings

5.1 Product-lubricated bearings are typically provided in vertical turbine pumps and sealless pumps with sleeve bearings.

5.2 Product is used as a hydrodynamic fluid for supporting the pump shaft within one or more sleeve bearings.