



SURFACE VEHICLE RECOMMENDED PRACTICE

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Pilot Bearings for Truck and Bus Applications

RATIONALE

The SAE Powertrain committees no longer have expertise to manage this document. It will be submitted for stabilization.

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1. **Scope**—This SAE Recommended Practice describes STANDARD-DUTY and EXTREME-DUTY Pilot Bearing requirements and sizes for class 6, 7, and 8 on-highway trucks and buses that use diesel engines and manual transmissions. The recommendations may apply to a wide range of other pilot-bearing applications, such as agricultural, industrial, and construction equipment.
- 1.1 **Purpose**—This document establishes standards for pilot-bearing construction, tolerances, installation dimensions, and operating characteristics. It is intended to standardize installation dimensions for engine and transmission manufacturers, and identify minimum operating characteristics to ensure satisfactory bearing life in pilot-bearing application environment.
2. **References**—There are no referenced publications specified herein.
3. **General Information**—This document applies to Pilot Bearings used to locate and support the transmission input shaft to the engine crankshaft rotational center. These bearings are usually located in the engine flywheel, and the pilot diameter of the transmission input shaft slides into them upon installation of the transmission to the engine.

Pilot Bearings described in this document are Conrad type ball bearings and generally conform to normal ball bearing construction and dimensioning practices, except as specified in this document.

The maximum operating temperatures shown in this document reflect temperature ratings for the various materials involved. It is generally agreed that peak temperatures will be short-term events related to duty cycle. Normal continuous operating temperatures will be significantly lower. Continuous operation at maximum temperature rating may result in shortened bearing life. Consult bearing manufacturer for application approval.

- 3.1 **Standard-Duty Pilot Bearings**—STANDARD-DUTY Pilot Bearings are recommended for applications where the maximum bearing temperature will not exceed 149 °C (300 °F).
- 3.2 **Extreme-Duty Pilot Bearings**
 - 3.2.1 EXTREME-DUTY Pilot Bearings are recommended for applications where maximum bearing temperatures exceed 149 °C (300 °F) but do not exceed 200 °C (392 °F).
 - 3.2.2 EXTREME-DUTY Pilot Bearings are suitable for use for standard-duty applications.