

Plain Spherical Bearing Conformity Examination

FOREWORD

The Airframe Control Bearing Group (ACBG-1) prepared this ARP as a conversion of draft military standard MIL-STD-2159-6 into SAE ARP document format.

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1. SCOPE:

1.1 Purpose:

This method outlines a standard procedure for performing conformity tests of bearings utilizing liners of bonded polytetrafluoroethylene (PTFE). The data from these tests shall be used to determine if the product meets the conformity requirements of the applicable specification.

1.2 Classification:

Bearings covered by this test method shall be spherical bearings with either fabric or fabric composite liners containing PTFE (Type I), or with molded PTFE material (Type II).

2. REFERENCES:

There are no referenced publications specified herein.

2.1 Definitions:

CONFORMITY: The characteristic of a spherical bearing which describes the relationship between the spherical surface of the ball and the spherical inner surface of the race.

3. GENERAL REQUIREMENTS:

3.1 Test Apparatus:

The following items shall be used for this examination.

- a. Self-setting, metallurgical mounting resin.
- b. Abrasive paper (180, 240, 320, 400 and 600 grit sizes).
- c. Metal scribe.
- d. Optical comparator or toolmaker's microscope.
- e. Metallurgical mounting mold.

4. DETAILED REQUIREMENTS:

4.1 Encapsulation:

4.1.1 **Material:** Bearing assemblies to be sectioned shall be encapsulated in an appropriate plastic material, as used in metallurgical mounts, to prevent motion of the ball in relation to the race.

4.1.2 **Mount Mold:** Before mixing plastic mounting resin, center bearing in an appropriate size mount mold, which should be large enough such that the bearing will be approximately 50% enveloped in mounting compound. The mold and bearing shall be placed on a glass slab or equivalent hard flat surface (see Figure 1 Method A). It may be necessary to install some bearings in a retaining ring prior to mounting to eliminate a potential spring-back of the bearing race (see Figure 1 Method B).