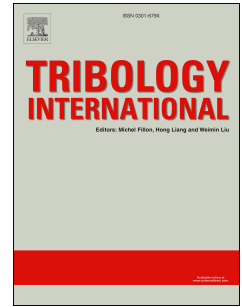


Accepted Manuscript

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PII: S0301-679X(18)30335-9

DOI: [10.1016/j.triboint.2018.07.007](https://doi.org/10.1016/j.triboint.2018.07.007)

Reference: JTRI 5301

To appear in: *Tribology International*

Received Date: 31 May 2018

Revised Date: 28 June 2018

Accepted Date: 5 July 2018

Please cite this article as: Öztürk E, Yıldızlı K, Memmedov R, Ülgen A, Design of an experimental setup to determine the coefficient of static friction of the inner rings in contact with the outer rings of radial spherical plain bearings, *Tribology International* (2018), doi: 10.1016/j.triboint.2018.07.007.

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DESIGN OF AN EXPERIMENTAL SETUP TO DETERMINE THE COEFFICIENT OF STATIC FRICTION OF THE INNER RINGS IN CONTACT WITH THE OUTER RINGS OF RADIAL SPHERICAL PLAIN BEARINGS

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ABSTRACT

In this study, a new experimental setup was designed and manufactured to determine the coefficient of static friction (COF_s) for polyoxymethylene (POM)/steel spherical contact surfaces in radial spherical plain bearings. The experimental setup can measure the frictional moment. The POM/steel COF_s equations from the frictional moment measurements were obtained. A sequence of tests changing the normal force under dry sliding condition for three different axis angles was performed. The calculated POM/steel COF_s decreased with increasing normal force until adequate tightness was observed for all axis angles. Then, the POM/steel COF_s remained stable. The static and dynamic coefficients of friction for the spherical contact of different material couples may be further investigated using a methodology similar to this study.

Keywords: Tribology, friction, coefficient of friction and spherical plain bearing

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