Analysis of Fitted Bearing of Fluid Mechanics with Respect to the Effect of Rotation

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Abstract

With Reynolds' standard extended calculations, the second rotating hydrodynamic lubrication theory was developed in accordance with the principles containing the first and second forces of the rotation number. In the present paper, there is a load analysis of the minimum number of rotations and the maximum number of rotations. Load comparisons are made with the help of expressions and calculated tables included in the second order hydrodynamic lubrication rotation. Analysis of load capacity statistics and tables shows that load capacity increases with increasing rotation. With a high rotation number the pressure rises much faster than with a low rotation number. Appropriate tables and graphs confirm this important investigation in the current paper.

Keywords: Continuity, rotation number, Reynolds figure, film thickness.

References

[1]. Banerjee, M. B., Gupta, R. S. and Dwivedi, A. P. (1981); The Effects of Rotation in Lubrication Problems, *WEAR* 69:205-220.

[2]. Banerjee, M. B., Chandra, P. and Dube, G. S. (1981); Effects of Small Rotation in Short Journal Bearings, *Nat. Acad. Sci. Letters*, Vol. 4(9):112-125.

[3]. Banerjee, M. B., Dube, G. S., Banerjee, K. (1982); The Effects of Rotation in Lubrication Problems: A New Fundamental Solutions, *WEAR* 79:311-323.

[4]. Cameron, A. (1981); *Basic Lubrication Theory*, Ellis Harwood Limited, Coll. House, Watergate, Chicester, p. 45-162.

[5]. Dube, G. S. and Chatterjee, A. (1988); *Proc. Nat. Acad. Sci. India*, (58) I: 79-85.

[6]. Hori, Y. (2005); *Hydrodynamic Lubrication,* Springer Science & Business Media p: 23-31.

[7]. Miyan, M. (2013); Pressure Variation in Porous Bearings under Second Order Rotation, *American International Journal of Research in Science, Technology, Engineering & Mathematics (AIJRSTEM)* 13-310: 25-29.

[8]. Miyan, M. (2013); Inclined Slider Bearing Under the Effects of Second Order Rotatory Theory of Hydrodynamic Lubrication, *International Journal of Science and Research (IJSR)*, 4(2): 2089-2093.

[9]. Miyan, M. (2014); Analysis of Short Journal Bearings under the Effect of Second Order Rotation, *International Journal of Emerging Technologies in Computational and Applied Sciences (IJETCAS)* 14-823: 294-298.

[10]. Miyan, M. (2014); Behavior Of Porous Bearings Under Second Order Rotatory Theory Of Hydrodynamic Lubrication, *International Journal of Scientific Research and Engineering Studies (IJSRES)*, 1 (6): 14-18.

[11]. Miyan, M. (2015); Infinitely Long Journal Bearing Under the Effect of Second Order Rotatory Theory of Hydrodynamic Lubrication, *International Journal of Mechanical Engineering and Information Technology;* 3 (2): 997-1003.

[12]. Miyan, M. (2015); Analysis of Step Bearing of Hydrodynamic Lubrication, *American International Journal of Research in Science, Technology, Engineering & Mathematics (AIJRSTEM)* 15-577: 148-152.

[13]. Miyan, M. (2015); Analysis of Fitted Bearings under Second Order Rotatory Theory of Hydrodynamic Lubrication, *International Journal of Multidisciplinary and Current Research* Vol.3 (July/Aug issue): 765-771.

[14]. Miyan, M. (2016); Different phases of Reynolds equation, *International Journal of Applied Research (IJAR)*; 2(1): 140-148.

[15]. Miyan, M. (2016); Load Capacity for Fitted Bearings of Hydrodynamic Lubrication under Low and High Rotation Number, *IJOPAAR,* 1(2): 109-118.