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Transverse Vibration Test Rig for Threaded Fasteners

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Abstract: The target of this review is to foster test rig for vibration releasing of bolts. Plan and advancement of framework parts for compatibility of various bolts. Test and Preliminary on test apparatus to foster the relaxing qualities of bolts what's more, determine the rot charts versus cycles. A catapulted joint including fasteners without washer just nut, screws with plain washer what's more, nut, fasteners with spring washer and nut, screws with Nyloc washer and nut was considered to complete the examinations. A similar examination was done with Relative investigation of rot qualities of individual bots with different end condition and to foresee vibration relaxing utilizing this review.

Keywords: Transverse Vibration

REFERENCES

- [1] Goodier J N, Sweeney R J. Loosening by vibration of threaded fastenings. Mechanical Engineering 1945; 67: 798–802.
- [2] DIN 65151, —Aerospace series Dynamic testing of the locking characteristics of fasteners under transverse loading conditions (vibration test), Deutsches Institut für Normung (DIN), Berlin, Beuth Verlag GmbH, 10772 Berlin.
- [3] Junker GH. New criteria for self-loosening of fasteners under vibration SAE Transactions 1969; 78: 314–35.
- [4] Sakai T. Investigations of bolt loosening mechanisms (1st report, on bolts of transversely loaded joints). Bulletin of JSME 1978; 21(159):1385–90.
- [5] Ravinder Kumar," CAUSES AND PREVENTION OF LOOSENING IN PRESTRESSED BOLTS", Engineer, Research and Development (R&D)Sterling Tools limited, Palwal (Faridabad), Vol. 2, No. 4, June-July 2013.
- [6] Umesh Dalal, and Dr A.G.Thakur, in "Transverse Vibration Loosening Characteristics of Bolted Joints Using Multiple Jack Bolt Nut".
- [7] Pearce, M. B. (1973). "A study of vibration-resistant fasteners." SAE Paper 730825.
- [8] Haviland, G. S. (1981). "Unraveling the Myths of the Fastener World." SAE Paper 810509.
- [9] Yamamoto, A. and S. Kasei (1984). "A solution for self-loosening mechanism of threaded fasteners under tran sverse vibration." Bull. Jpn. Soc. Precision Eng. 18: 261-266
- [10] Kerley, J. J. (1987). "An Application of Retroduction to Analyzing and Testing the Backing Off of Nuts and Bolts During Dynamic Loading." NASA Technical Memorandum 4001.
- [11] Zadoks, R. I. and X. Yu (1997). "An Investigation of the Self-Loosening Behavior of Bolts under Transverse Vibration." Journal of Sound and Vibration 208(2): 189-209.
- [12] SASE, N., S. Koga, et al. (1996). "Evaluation of anti- loosening nuts for screw fasteners." Journal Of Materials Processing Technology 56(1/4): 321-332.
- [13] Satoh, Y., T. Nagatomo, et al. (1997). "An evaluation test for influences of the paint-film upon self-loosening of fasteners." Quarterly Report of RTRI (Railway Technical Research Institute) (Japan) 38(2): 61-65.
- [14] Dong, Y. and D. P. Hess (1999). "Effect of thread dimensional conformance on vibration-induced loosening." Journal of Vibration and Acoustics, Transactions of the ASME 121(2): 209-213.
- [15] Hashimura, S. (2007). "Influences of various factors of bolt tightening on loosening fatigue failure under transverse vibration." SAE Paper 2007-01-0807.
- [16] Takemasu, T. and H. Miyahara (2005). "Development of thread rolled anti-loosening bolts based on the double thread mechanism and a performance evaluation." JSME International Journal, Series A (Solid Mechanics and Material Engineering) 48(4): 305-10.

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[17] Housari, B. A. and S. A. Nassar (2006). Effect of coating and lubrication on the vibration-induced loosening of threaded fasteners. 2006 ASME International Mechanical Engineering Congress and Exposition, IMECE2006, November 5,2006 - November 10, 2006, Chicago, IL, United states, American Society of Mechanical Engineers.

[18] Kumakura, S., S. Hosokawa, et al. (1995). "On the self-loosening of bolts nuts under repeated tensile loads." PVP Current Topics in Computational Mechanics 305:119-124.

[19] Ravinder Kumar," CAUSES AND PREVENTION OF LOOSENING IN PRESTRESSED BOLTS", Engineer, Research and Development (R&D)Sterling Tools limited, Palwal (Faridabad), Vol. 2, No. 4, June-July 2013.

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