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Design and Analysis of Flywheel for Different Material using Ansys

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Abstract: A flywheel used in machines serves as a reservoir which stores energy during the period when the supply of energy is more than the requirement and releases it during the period when the requirement of energy is more than supply. For example, in I.C. engines, the energy is developed only in the power stroke which is much more than engine load, and no energy is being developed during the suction, compression and exhaust strokes in case of four stroke engines. The aim of the project is to design a flywheel for a multi cylinder petrol engine flywheel using the empirical formulas. A parametric model of the flywheel is designed using 3D modeling software CATIA V5R20. The strength of the flywheel is validated for alloy materials (Silicon carbide) by applying the rotational velocity on the flywheel in analysis software ANSYS. Structural analysis is used to determine whether flywheel withstands under working conditions.

Keywords: Flywheel, Ansys, Design,

REFERENCES

[1]. Phanindra Mudragadda1 , T. Seshaiah,‖ Analysis of flywheel used in petrol engine car‖, International Journal of Engineering Research & Technology, ISSN: 2278-0181, Vol. 3 Issue 5, May – 2014.
[2]. Nagaraj.R.M,‖ Suitability of composite material for flywheel analysis —, International Journal Of Modern Engineering Research , ISSN: 2249 6645 Vol. 4,iss. 6, June. 2014.
[3]. Snehal.R.Raut, Prof .N.P.Doshi,prof .U.D.Gulhane,‖ FEM Analysis of flywheel used for punching press operation‖, IORD Journal Of Science & Technology, E-ISSN: 2348-0831 Volume 1, Issue V JULYAUGUST 2014.
[4]. Kishor D.Farde, Dr.Dheeraj.S.Deshmukh, —Review: Composite flywheel for high speed application‖, International Journal of Innovative Research in Advanced Engineering, ISSN: 2349-2163, Volume 1, Issue 6, July 2014.
[5]. S.M.Choudhary, D.Y.Shahare2,‖ Design optimization of flywheel of thresher using FEM —, International Journal of Emerging Technology and Advanced Engineering , ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 3, Issue 2, February 2013 .
[6]. Ritesh Krishna Kumar, Toms Philip, "Analysis Of An Arm Type Rotating Flywheel", International Conference On Advanced Technology And Science (ICAT'14).
[7]. M. Dhengle, Dr. D. V. Bhope, S. D. Khamankar," Investigation Of Stresses In Arm Type Rotating Flywheels". International Journal of Engineering Science and Technology (IJEST).
[8]. Sudipta Saha, Abhik Bose, G. Sai Tejesh, S.P. Srikanth, "Computer Aided Design & Analysis on Flywheel for Greater Efficiency". International Journal of Advanced Engineering Research and Studies. E-ISSN2249–8974
[9]. S.M.Choudhary, D.Y.Shahare, "Design Optimization of Flywheel of Thresher Using FEM", International Journal of Emerging Technology and Advanced Engineering, IJETAE, ISSN 2250-2459, volume 3, issue 2, February 2013.
[10]. Sushama G Bawane1, A P Ninawe1 and S K Choudhary, "Analysis and Optimization of Flywheel", International Journal of Mechanical Engineering and Robotic Research, ISSN 2278 – 0149, Vol. 1, No. 2, July 2012.

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[11]. Akshay P. Punde, G.K.Gattani." Analysis of Flywheel", International Journal of Modern Engineering Research (IJMER), ISSN: 2249-6645, Vol.3, Issue.2, March-April 2013.