

Automated Portable Hammering Machine

Prof. Govind Devke¹, Mr. Vinayak Sonawane², Mr. Arjun Patore³, Mr. Akash Kolte⁴, Mr. Shubham Kamble⁵

Assistant Professor, Mechanical Engineering, NBSSOE, Pune, India¹

UG Student, Mechanical Engineering, NBSSOE, Pune, India^{2,3,4,5}

Abstract: This paper discusses cad modeling, design and analysis of automatic hammering machines. Our goal for this paper is to design and fabricate an automatic hammering machine. And for this, we have calculated the maximum torque, impact velocity for hammering, torque force and also shear failure in the bolt joint. In our project we are using torque force to perform various manufacturing operations in industries like riveting, upset forging, punching etc. Also, time required for operation is less so it is useful in mass production. In this project we have prepared a solid model of project assembly by using Solid works software. The snapshots of every component are attached in the file in the design section. The model consists of a motor, shaft, hammer, jigs and fixtures. From this we fabricate a conceptual model of an automatic hammering machine. Automatic portable hammering machine is one of the new techniques proposed in design in order to achieve instant Hammering accurate repetition and impacting, fast hammering process. It should be user friendly without any risk and worker manual Effort can be used easily automatically. In the past, labor used a hammer to drive nails, fit parts, break apart and more. It would be used manually with more effort and manpower used in the process. But nowadays it is possible to make the process easy by inventing automatic Hammering. There are very clear benefits that the industry sees while using automated systems. These advantages can be very beneficial in the long run. We assure that our products are one of the best and they are long lasting.

Keywords: Instant Hammering, Connecting Rod, Shaft, 16V Battery, Disc, etc.

REFERENCES

- [1] "Design, Cad Modeling & Fabrication of Automatic Hammering Machine" by Abhijeet Dhulekar, Suyash Shirbhate, Rizwan Shaikh, M V Ingalkar International Research Journal of Engineering and Technology (IRJET) Volume: 05 Issue: 04 Apr-2018.
- [2] "Design & Fabrication Of Automated Portable Hammering Machine" by Rahul Kumar, I.Vijay kumar, G. Prudhvi Raj, N. Venkatesh, K. Reehnadhi published by JETIR March 2019, Volume 6, Issue 3
- [3] "Design of Machine Elements Third Edition" by V B Bhandari published by Tata McGraw Hill Education Private Limited.
- [4] "Analysis of hammer movement based on a parametrically excited pendulum model" by Ken Ohtaa, Koji Umegaki, Koji Murofushic, Zhi Wei Luod and published by Procedia Engineering Volume 2, Issue 2, June 2010, Pages 3197-3203. 5) Machine design book RS khurmi& JK gupta for calculation.
- [5] "A vertical automated forging center for the plastic deformation of continuously-cast ingots" by S. P. Burkin, E. A. Korshunov, V. L. Kolmogorov, N.A. Babailov, V.M. Nalesnik and published by Journal of Materials Processing Technology 58 (1996) 170-173 Received 20 November 1994.
- [6] "The Pattern of Hammer Speed During a Hammer Throw and Influence of Gravity on Its Fluctuations" By Jescjs Dapena Published by Department of Exercise Science. University Of Massachusetts, Amherst, Ma 01003, U.S.A.