

Design and Manufacturing Variable Resistance Biceps Curling Machine

Prof. S. A. More¹, Mr. Sanket Sawale², Mr. Rohit Takale³, Mr. Akshay Gaikwad⁴, Mr. Vishak Nadar⁵

Professor, Department of Mechanical Engineering, JSPM's Rajarshi Shahu College of Engineering, Pune¹
Students, Department of Mechanical Engineering, JSPM's Rajarshi Shahu College of Engineering, Pune^{2,3,4,5}

Abstract: For above purpose firstly, the mild steels are carburized under the different temperature range as stated above and then it is tempered at 2000 C for half an hour after these the carburized and tempered mild steels are subjected for different kind of test such as abrasive wear test, hardness test, tensile test and the toughness test. The results of these experiment shows that the process of carburization greatly improves the mechanical and wear properties like hardness, tensile strength and wear resistance and these properties increases with increase in the carburization temperature but apart from this the toughness property decreases and it is further decreases with increase in carburization temperature.

REFERENCES

- [1] Joseph J Knapik, Physical Therapy Journal of the American Physical Therapy Association, 1983; 63:938-947.
- [2] Giovanni L. Fabian, Strength Curve Generation of the Biceps Muscles via Electronically Controlled Mechanism, DLSU Engineering e-Journal Vol. 1 No. 1, March 2007, pp.1-12.
- [3] Lee Cabell and Carole J. Zebas, Resistive Torque Validation of the Nautilus Multi-Biceps Machine, Journal of Strength and Conditioning Research, 1999, 13(1), pp 20-23.
- [4] A. de Souza Castelo Oliveira, A. Coscrato Cardozo, F. Sérgio Silva Coscrato Cardozo, F. Sérgio Silva Barbosa, M. Gonçalves, Electromyographic fatigue threshold of the biceps brachii: the effect of endurance time EMGFT at different endurance time, Electromyogr. clin. Neurophysiol, 2004, 46, 000-000.
- [5] Liliam F. Oliveira, Thiago T. Matta, Daniel S. Alves, Marco A.C. Garcia and Taian M.M.Vieira, Effect of the shoulder position on the biceps brachii EMG in different dumbbell curls, Journal of Sports Science and Medicine, 2009, pp 24-29.
- [6] Jaykant Ghupte, Mechanical and wear properties of carburized mild steel samples, NIT Rourkela; May 2009.