# The Study of the Effect of Mechanical Parameters in D.C. Crane Mechanism on the Quality of Transient States[1]

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## Abstract

**The major part of industrial productivity machines ( lifts , cranes , etc ...) are electromechanical system which consist of two parts:**

**-The first part is electrical that consists of automatic control system with speed feedback circuits.**

**-The second part is mechanical and it consists of many other mechanical parts wich are separeted by air gaps , mechanical tolerance and flexible connections .**

**The condition of work of the above – mentioned machines is represented by their performance of transient states which can achieve the following conditions :**

**-The minimum extent of vibrations .**

**-The dynamic load is already fixed or stated .**

**The effect of two - mass system factors on the quality and quality of transient states , particularly the effect of mechanical rigidity has been studied in this research .**

**Besides , mathematical expression which can calculate the optimal value of rigidity and provide the minimum extent of electromechanical vibrations have been obtained .**

**Characteristics and schematic diagrams that prove the effect of mechanical rigidity on the behaviour of the transient state are illustrated .**

**These methods help to improve the performance of automatic control systems in order to provide the minimum dynamic loads without reduction of the machine productivity .**


**Key word – Dynamic and vibration of electromechanical two mass system - Rigidity**

[1] For the paper in Arabic see pages (83-104).

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