

## **Ergonomic Considerations to be Taken into Account in Designing Functional Knobs for Industrial Products**

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### **Abstract:**

Ergonomics is the process of designing different products that users deal with in a way to ensure comfort and safety for them, therefore ergonomics is known as the art of design to offer better luxury and comfort for people. For various industrial products, despite their technical development however the interactive side between them and the user still exists, specifically for functional knobs which represent their importance for user in addition to their direct physical effect on him/her. For example , studies indicate the use of hand tools is in response to which approximately 9% of the overall occupational injuries which shows the effect of designing functional knobs on user (Aghazadeh,1986).This research addresses an analytical study of the various functional knobs in industrial products in which it depends on a direct interaction between them and the user and requires him/her to use hands and arms with a certain force to be able to use and control them in which it will lead to have a set of ergonomic considerations as a reference for designers and industrial design students in order to help them in designing their functional knobs with different products and improving their usability and ergonomical function of them in a way to ensure comfort and safety for all users of all categories and ages.

### **Keywords:**

User, Industrial designer, Ergonomics, Occupational Injuries, Industrial Design, Hand Tools.