

DESIGN OF A HOISTING WINCH

Project Report Submitted by:

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## ABSTRACT

The objective of this project is to design a Hoisting Winch with the following terms and conditions

- (1) The Winch to be able to handle a weight of 3 tonne force.
- (2) The Winch to be power operated.
- (3) Safety must be a primary design factor.
- (4) ISO, CYS and BS to be used.

The whole project has been divided into 10 chapters.

Chapter one deals with the creativity and decision making phases of the design.

In chapter 2 a brief description of the several parts of the hoist, its operation and dimensions determination is presented.

Chapter 3 deals with the selection of the rope and chapter 4 deals with the relevant calculations in designing the drum.

In chapter 5 the selection of the gearmotor is presented based on relevant calculations.

Chapter 6 deals with the design of the drum - gearmotor shaft, its mounting and bearing housings selected.

Chapter 7 deals with the calculations and strength analysis of beams 1-5 in order to design the trolley. In the end the selection of the trolley travel gearmotor is made.

In chapter 8 a description is made for those parts of the hoisting winch which are not to be designed and other details are presented.

Suitable instructions to the user and maintenance procedures are included in chapter 9.

Finally the cost analysis of one unit is included in chapter eleven. The total cost found is only an approximate value of how much the total cost will be.

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