



ABSTRACT

Development of modern industrial in recent year is demand of industrial equipment that can be work effective, efficient and continuous. One of the necessary industrial equipment to support modern industrial is material handling equipment like hoisting machine.

Hoisting machine is used to transfer of load in area department, factory, area construction, warehouse and also used to maintenance process of other industrial equipment.

The type of hoisting machine that commonly use in modern industrial is crane. Crane is combined of hoist mechanism and crane's frame that separate each other to hoist or hoist and transfer load.

One type of the crane is double girder overhead crane that belonging to bridge crane type. In order to transferring the load, double girder overhead crane have 3 mechanism, that is hoist mechanism, trolley mechanism, and girder mechanism.

In this design, the crane design is just about the hoisting system, trolleying system, travelling system, and stability of frame structure against the hoisting load while for electric system and equipment the design is just about the choice of electric motor and braking system. The characteristic of crane design is indoor use, overhead travelling crane, double girder, top running, 40 ton capacity of hoisting load, 15 metre in lift, 14,4 metre in span, hoist speed 1,6 m/min, power of hoist motor 15 kW, trolley speed 10 m/min, power of trolley motor 3 kW, and bridge speed 20 m/min with power of bridge motor 5,5 kW. The frame structure of this crane is used rectangular frame profile in main frame and profil L in another frame. In order to analysis the strength of the frame structure is used software SAP version 8.