

Design and Manufacturing of Pneumatically Operated Stairs by Using Scissor Mechanism

1)Vaibhav Dilip Pawar 2) Amit Arun Dhaigude

1) Mechanical Engineering &Suman Ramesh Tulsaini Technical Campus Kamshet, Pune

2) Mechanical Engineering &Suman Ramesh Tulsaini Technical Campus Kamshet, Pune

Abstract - In many mechanical industries, machinery is on the top or place the floor wise. For excess purpose stairs are used but for stairs more space is required. For space saving, there is improper design of stairs and it is very unsafe for workers towards there. Due to such stairs there are increase chances of accidents. To overcome space problem this project deals with compact design of stairs. Due to compact design space utilization is less and due to proper design, there are very less chances of accident. The stairs operate on scissormechanism bypneumatic which is safer then hydraulic mechanism.

1.INTRODUCTION - The structure of this thesis is planned as follows: in the first part, the theory is presented.Itconsistsofseveraltopicsconcerningoverallfli ftingtablesofscissorstype,things that are needed for the design, principles of working, tech-nical characterization and others.

2. Body of Paper

2.1) Classification of lifting platforms -

To start something new it is needed to look at something that already exists. On the design elevators can be divided into the following main types permanent and portable.The permanentelevators are: scissor raise platforms, track liftingplatform, launching and unloading platforms.

2.2) Advantage and application -

1) The scissor lift operator turns on the power source. Using a valve to control the flow of fluid or air starts to fill the cylinder(s) with hydraulic fluid (or compressed air in a pneumatic system.

2) The scissor lift control system moves the hydraulic fluid or compressed air from the reservoir to the operating cylinders.

2.3) Advantage And Disadvantage -

1) **Advantage** - 1.1) Foldable Pneumatic Stairs Easy To Operate. 1.2) Space required is less than traditional stairs 1.3) Avoid Chances of accident &High load caring Capacity 1.4) Maintenance Cost is less.

2)Disadvantages - 2.1) Initial cost is high 2.2)This System used where air compressor is used otherwise cost may vary.

2.4) Technical characteristic of the lift

Loading capacity,kg	700
Height of rise,mm	1260
Rise time,sec.	40
Initial Hight, mm	40
Mass,kg	125

CONCLUSION

The project was carried out successfully according to the project plan. The out-come of the hydraulic scissors lift design meets The objective of the project.As are sult, the project designed the electro-hydraulic parallelogram lift. The general section described the classification, purpose and technical characteristics of the lift,and the mechanism and operation principle of the designed Lift.

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