



# Automatic Insulator Remover

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**Abstract:** The main aim of this tool is to remove the insulation of wire at middle portion. In a industry it becomes very difficult to the worker to remove the insulation of wire using Stripper and it's time consuming. So we have an idea to make a device which will remove the wire insulation from the middle Portion of wire as per the requirement to industry. This tool make the process easy and time saving to the industry and also helps the industry to increase their production. The paper discusses key design considerations, performance metrics, and safety measures, offering insights into the potential integration of this technology into automation.

This article provides an overview of the Automatic Insulator remover .The paper contains modelling and experimental data for both types of systems, and system prototypes have been built.

## I. INTRODUCTION

These systems eliminate the wastage of time and material, providing a seamless and efficient method for insulation remover While surveying in industries to find out there problems we have got a unique problem in Bharti Engineering Pune. This industry make a toys in bulk amount .And one of there product is lighting ball. This ball consist of lights inside it.To connect the lights they need to do tapping in wire at different parts of wire. It was a difficult process to remove the middle insulation of wire manually and it was time consuming process. So we have look after there problem of cutting insulation.

To avoid problem of cutting insulation of wire from middle and to save their time we have an idea of automatic insulation remover This idea will help this kind of industries to save their time in insulation cutting. It will give them an accuracy to their process. This system is fully controlled with the help of microcontroller which will provided them a good benefits and accuracy.

## II. LITERATURE SURVEY

India is a developing country. So to catch up with other developed countries all processes we are dealing with should be at the optimum level. So that industry should also follow the above rule. Automation is required to optimize the processes available in the industry. Automation reduces the time required for the process, increases product quality and reduces the efforts of the worker which results in the higher production rate and increase in net profit of the company. So the study of various processes used in the company shows that there are some processes that one can optimize to increase the productivity of the industry.

The industry currently uses the cutter to provide a cut on the insulation of the wire. After that, the worker pulls The insulation from the wire. This process requires lots of efforts by the operator and hence the process is slow. To reduce the efforts of the worker and to increase the production rate this process is made semi-automatic. The wire is unshielded according to the company requirements.

## III. PROBLEM STATEMENT

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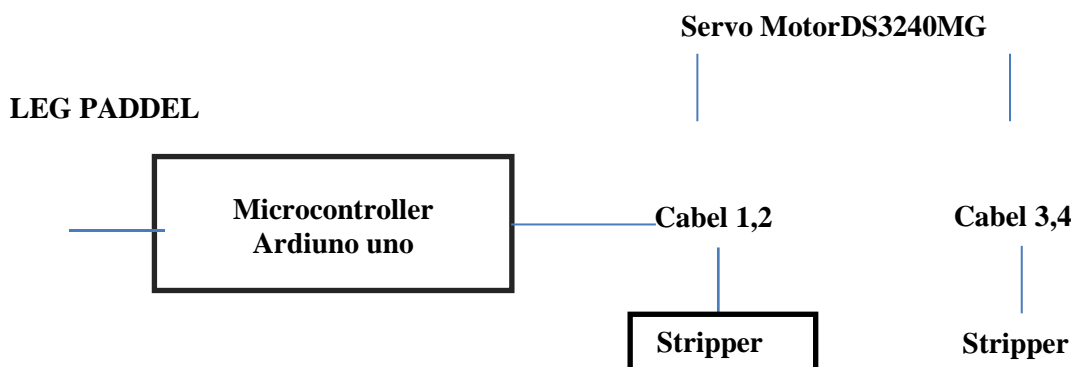


Fig.1 Wire required in this type

**DESIGN & DEVELOPMENT**

The aim of this project is to produce the mechanical design of an automatic machine for Manufacturing segments of heavy gauge insulated electrical wire with both ends stripped. Automatic Cable Stripper is machining which separate core from coaxial cable for Recycling use. In this project, the mechanism of cable Stripper is investigated to study its application from existing Machines. The suitable and material were identified for the Application of stripping the cable. The relevant information Was analyzed to know the size of the cable and speed of Motor that is used in stripping process. The relationship is Made for different size of cable and pulley height to insure Various size of cable can be fed. In theory the expected result Was the Automatic Cable Stripper machine will strip and Separate between core and coaxial cable automatically. Design of the machine is performed using Computer Aided Design (CAD) software In this system it consist of ATMEGA microcontroller which gives a high speed performance to the system.The 2track rollers are introduced in this system helps to vary the cable and gives a direction to cabel and reduces the the frictional losses.The servo motors is used to provide the accuracy and high torque to pull the cabel toward it.Wire stripper is connected to the cabel and a roller system where servo motor is connected.The set of rollers and bearing are provided to vary the wire,This is operated by 12v/24v DC supply.It can be operated fully automatically or semiautomatically

**LEG PADDEL**



**Working-** This system is powered by an 12v DC supply.The wire stripper are arranged in series of set of two.The handle of stripper is connected with the pulling cabel.The wire which are cut in 40cm are placed manually on the stripper slot.Then when the paddle is press it gives signal to ardiuno where the program is feed .The ardiuno gives command to the servo motors.The servo motor comes it motion and pulls the cabel due to it the pulling of the stripper is done.Pulling of stripper makes to slide the insulator to left and right sides.This full process is done in seconds which is time consuming and makes process accuracy The design is simple and less costly .



#### IV. APPLICATIONS

1. Wire stripping .
2. Wire cutting
3. Tapping .

#### V. RESULT & ANALYSIS

Required size and length of wire is stripped with accurately and a less time period. Maintane the productivity

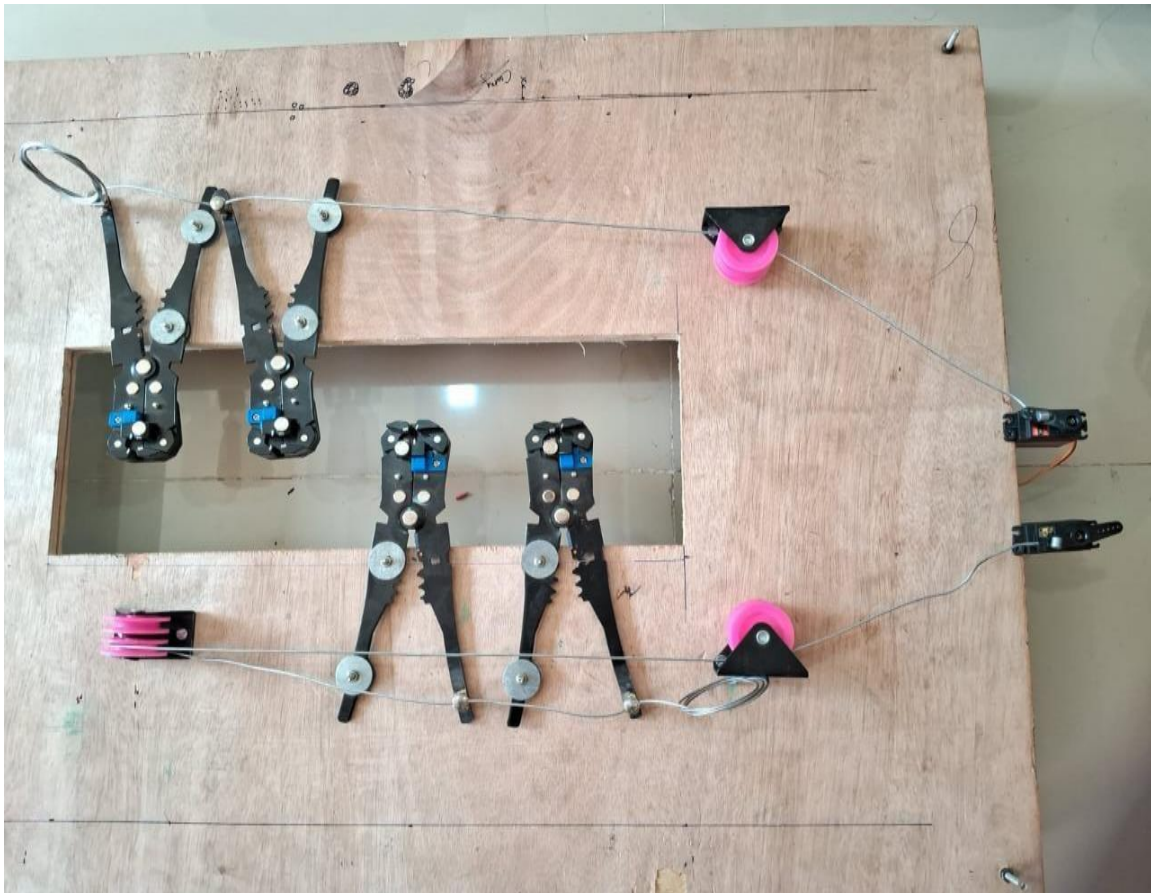


Fig.2 Aligment of strippers and motors

#### VI. CONCLUSION

Automatic Insulator remover improves the efficiency and reduces the work load. It also minimizes the cost and time required. This paper is summary of scientific contribution of various application related to Industrial work.

#### REFERENCES

Research Papers :

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- [2] Design and manufacturing of automatic cable stripper – International Research Journal of Engineering and Technology (IRJET)- Ashwin. V. Desai