

**2010年臺灣國際科學展覽會  
優勝作品專輯**

**國家：South Africa**

**編號：100029**

**作品名稱**

**Cable Strtipper**

**得獎獎項**

**Engineering Third Award**

**作者姓名**

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## **Abstract**

### **PURPOSE OF THE RESEARCH**

The purpose of this project is to provide a cost-effective and efficient way of stripping electrical conductors, with thicknesses of 16mm up to 70mm in diameter, of their isolation. The current methods that are available are unsafe and unpractical. Therefore this project determines a safe way of stripping cables and also provides a new product to improve the worker's safety during the process of stripping cables.

### **PROCEDURES**

The solution can be found by doing research on the types of cable isolations currently on the market. By talking to the workers who use these types of tools, and strip these types of cables on a daily basis, I can comprehend the problems posed by the present methods and provide a solution.

### **DATA**

An electrical cable is commonly a conductive wire surrounded by a non-conductive, insulation sleeve. In order to splice two cables together or connect the cable to an electrical device, the conductive wire inside the sleeve needs to be exposed.

Numerous tools have been developed for slitting and stripping the electrical cable in order to expose the said conductive wire. The simplest tool is a knife with which the user makes an annular cut in the sheathing. The end portion of the sheathing then is pulled away exposing the individually insulated wires and the bare ground wire. The knife may also be used to cut away a short portion of the insulation at the ends of the wires. During both operations the user has to be *extremely careful*, or else the knife blade may damage the insulation around the internal wires and even nick the conductor or he may injure himself. To do so the user must first cut away several inches of the plastic sheathing at the end of the cable. A short length of the insulation then is removed from around each end of the conductors.

As an alternative to using a knife, various scissors-like wire strippers have been developed. Although such scissors-like wire strippers are effective for removing the

insulation from individual wires within an electrical cable, they are not efficient for removing the sheathing from the end of the cable in order to expose the individually insulated wires.

A disadvantage of using a conventional knife and with using the known wire stripper is that a cable having a relatively thick insulation sleeve is difficult to strip and thus prepare for connections, since conventional wire stripping tools and other conventional devices, such as knives or tools with enclosed blades are inefficient for stripping thicker cable jackets.

A further disadvantage of the known wire strippers is that, its basic characteristic dictates that the degree of friction between the tool and the wire after the insulation has been ringed will be high. This occasions no particular difficulty when only a short length of insulation is to be removed from the end of the wire. However, when yards and yards of insulation are to be stripped, as may be the case when reel ends are to be prepared for scrapping, the conventional wire stripper generates so much friction that it cannot be efficiently utilised.

## **CONCLUSION**

The developed product enables workers to effectively strip electrical conductors without any impeding danger to themselves or the risk of damaging said cable. It is cost-effective and saves a lot of time. After several tests of the product no problems have been encountered up to this point.