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WIRE STRIPPING AND CRIMPING TOOL

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Abstract

This project is entitled as The WIRE STRIPPING AND CRIMPING TOOL which is used as a tool for both wire stripping and crimping operations by using a single tool. Means the tool is now used to remove outer insulation of the wire and also crimp the wire.It makes the job easier for an individual and saves time. In the way that the worker make the two operations on a single tool simultaneously instead of having two. The device is very cost effective and can be fabricated easily in due time. The tool as compared with the conventional one in use requires less pressure to operate and makes the work faster and accurate. This tool can be machined as per the requirement by making various holes of different diameter. In turn saves energy and time.

1. INTRODUCTION

A crimping tool is a tool that is used to make a cold weld joints between wires and a connector through deforming one or both of them to hold the other. The main purpose of designing the crimping tool with a wider jaw is to cover bigger surface areas. Th operators require to match the wire size and the terminal size to crimp a cable with crimping. Once the terminal size and the wire size are matched, the operator will be able strip the wire. On the basics of the length of the connector, it is decided how much wire will be removed. The cable and connector are inserted into the crimping tool after the wire is ripped and fitted into the connector. For squeezing the connector with the wires together, the operator presses the handles, and finally, they firmly connect together. The connector and the cables will hold together where a great force is pulling them and he crimping procedure is carried out. Make sure the crimping has not been done correctly if the connection is pulled apart. Operators need to check the goodness of the crimp before installation, which helps to prevent incompletion when the connector and cable are installed. Crimping Tool: It is used to cut various objects such as wires, cords, tapes and so on. It is also used to join wires with metal or plastic objects. A lineman who is doing erection and maintenance work, cannot do

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his job without proper hand tools, which he carries around on a daily basis. Unlike tools used by any other worker, a lineman's tools require proper insulation, because these tools are used with electrical installations. The handles of these tools are coated with rubber to prevent the worker from getting electrocuted. Tools are important to carry out a job. The entire job being carried out by a technician is with the help of tools. The following tools are commonly used for working in a distribution system: (a) Combination Pliers It is used for cutting, removing insulation, jointing and twisting the electric wires and cables even on live-line. A lineman's pliers have special design, which multiplies force through leverage. These pliers usually have grips for better handling than bare metal handles. The grips also have insulation for protection against electric shock when working with live circuits. A lineman's pliers are typically machined from forged steel. The two handles are precisely joined with a heavy-duty rivet that maintains the pliers' accuracy even after repeated use under extreme force on heavy gauge wire.

2. RELATED WORK

The automation has become part and parcel of life, it helps in the improvement of daily activities. So it is decided to automate the processes in the industry with this automation project. In this project, problem statements selected were in the industry based on the study of different processes and used technology in the industry. The "Un-Shielding of Multicore Electric Wire up to the Required Length". In this project, the focus is on the reduction of time required for insulation removal for further processing. This project is totally based on pneumatic circuit. This machine works on the single pedal operated by the operator which drives various valves and actuators and results in the required removal of insulationIndia 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 optimise 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 optimise to increase the productivity of the industry.

3. IMPLEMENTATION

The stripping and crimping of wires uses more pressure and requires two tools to get

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the required operation. In order to make the work easier and simpler we came up with the idea to make a single tool out of this project which is uses less pressure to strip and crimp the wires.A **nut** is a type of faster with a threaded hole. Nuts are almost always used in conjunction with a mating bolt to fasten multiple parts together. The two partners are kept together by a combination of their thread friction (with slight elastic deformation), a slight stretching of the bolt, and compression of the parts to be held together.Washers are usually metal or plastics. High-quality bolted joints require hardened steel washers to prevent the loss of pre-load due to brinelling after the torque is applied. Washers are also important for preventing , particularly galvanic corrsion by insulating steel screws from aluminium surfaces. Crimp-on connectors are attached by inserting the stripped end of a stranded wire into a portion of the connector, which is then mechanically deformed by compressing (crimping) it tightly around the wire. The crimping is usually accomplished with special crimping tool such as crimping pliers.The above tool in the figure consist of 2 MS sheets (5mm thickness) the two sheets are attached with nut, bolt and washers. Between both sheets we drilled different holes to hold the grooving connectors. At one end of the MS sheet (1) we attached welded bolt and at the another end of the MS sheet (2) we drilled a hole(dia 8mm) and we took a bolt of (150mm height) at the top of bolt we welded a washer and that washer is place inside the hole of MS sheet 2 and they are fixed with nut and bolt. We took a bolt of (100mm height) to that bolt we welded a nut. Then we inserted 100mm bolt to 150mm bolt and that 150 mm bolt which is passing through bolt which attached to MS sheet (1) .Between the MS sheet(1) and MS sheet(2) we drilled a holes of dia10,dia12 and cut or peel the wire we grinded a sharp blades at the both edges of the MS sheets(1,2).To join the wires with grooving connectors we use this grooving tool. The grooving connectors is placed in between the grooving diameters .To peel the outer layer of the wire there are two sharp edges are place between 2 sheets by using that sharp edges we cut or peel the wire and that wire is placed inside the grooving connectors and that grooving connectors is placed inside the holes. With the 100mm bolt we apply torque on it then the two MS sheets compressed then the pressure is applied on the grooving connectors and that connectors will tightly holds the wire.In this way the grooving tool grooves or crimp the wire with the help of groove connectors.

4. EXPERIMENTAL RESULTS

The tool is made by joining two MS work pieces of 5mm thick with a nut. It is done so because to insert wires of different diameters. Then a bolt is arranged in such a way that it moves along the length the bolt where we can insert the wires. In this way one tool is made for performing stripping and crimping operations simultaneously in a go.A crimp tool is a tool that is used to join or connect two pieces of material by using compression to form a connecting bond. This type of hand tool is set to the desired pressure needed to effectively join two subjects together for a secure seal that allows a connection is made.Crimp tools are a varied collection of devices used to join materials or components by pressing them together and creating a seal or crimp. One of the most common uses of crimping tools is the attachment of connectors to the end of electrical cables. Our problem is to design a tool which can be used to crimp the wires without any more man work and also can be used by electricians too. we designed this above tool such that it can be used according to our convenience means we can can the diameters of that particular wire.

5. CONCLUSION

It is concluded that this model can be used for various people in multiple ways. It is easier to operate and two operations can be done using single tool.

6. REFERENCE

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