iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** III **Month of publication:** March 2022

DOI: https://doi.org/10.22214/ijraset.2022.40717

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue III Mar 2022- Available at www.ijraset.com

Fabrication of T-Shirt Folding Machine

Dr. A. P. Ninawe[1], Vikesh Borkar[2], Ganesh Nand[3], Mrunal Manapure[4], Devid Dahiwale[5], Pratik Koche[6], Sushant Bhaiswar[7]
[1]Assistant Professor, [2, 3, 4, 5, 6, 7]*Mechanical Department, K.D.K. College of Engineering, Nagpur*

Abstract: ***The purpose of this research is to prepare machine that Automatic T-shirt Folding Machine to make a fold of every shirts which is put on machine. The presented paper will provide a brief idea in designing new machine with some of these materials.***

Keywords: ***Aluminium sheet, wiper motor, square pipes, microcontroller board, relay.***

I. INTRODUCTION

Automation is the use of machineries , control systems and information technologies to increases productivity in the production of goods and delivery of services. The main incentive for applying automation is to increase productivity, and quality beyond that possible with current human labor levels to realize economies of scale, and realize predictable quality levels. In the scope of industrialization, automation is a step ahead of mechanization. Whereas mechanization needs human operators with machine to assist them, automation decreases the need for human sensory and mental requirements while optimizing load capacity, speed, and repeatability. Automation plays important role in the world economy and in daily experience.

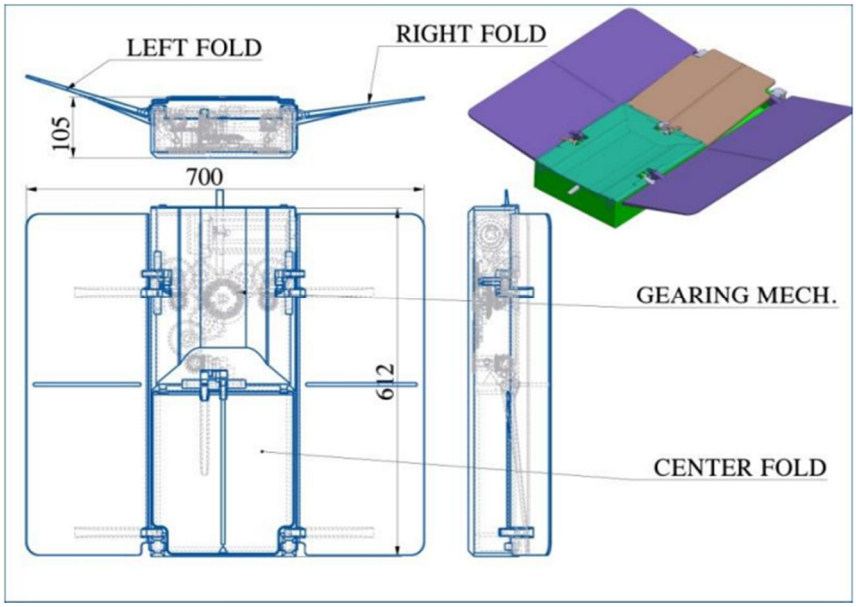


Fig. Design of t-shirt folding machine

II. LITERATURE REVIEW

In order to perform this project, literature review has been made from various sources like journal, books, article and others. This chapter includes all important studies which have been done previously by other research work. It is important to do the literature review before doing the project because we can implement if there are information that related to this project.

N. Gomeshal, et.al [1] described in his paper about the development "T-Shirt folding machine"The aim of this project is to t-shirt folding machine offers an exllent solution to these work by providing a automated machine which folds a t-shirt approx. in 2 seconds. Finally, the machine has been more efficient than the manual folding.

M. Suraj Shah et. Al [2] describe in his paper about the takes one leap against automation by folding the ''t-shirts by sorting mechanism'' the t-shirts by sorting mechanism. Folding has been automated by the usage of Arduino UNO which can be easily replaceable and easily available in shops.

©IJRASET: All Rights are Reserved

Xudong li et. Al [3] Describe in his paper about works on the safety of humans during the '' folding of fabrics'' They include photo sensors and infrared sensor to monitor the human invasion, they also found solution on power supply.

Mukesh P. Mahajan et. al [4] describe in his paper about the ''photovoltaic t-shirt folding machine'' Works on using mechanical gear motors same as the photovoltaic t-shirt folding machine. To overcome traditional chores it can be used in household also. This will results on he past complex designs and rare failures.

Yiwei Liu et. Al [4]] describe in his paper about the Reduce human interference easy folding of clothes Deals with the process and design, the main motto is to reduce human interference by easy folding of clothes. It must have two set of patterns and also completes in just 20 seconds.

Bansari Shetye, Pooja Randive, Snehal Shedbale T-shirt folding process is an easy and useful process in this world. The purpose of this project is to fold t-shirt by just pressing a button. This folding machine is fully automatic where one have to just place the t-shirt on the board and press the start button and within fraction of seconds the tshirt will get folded.

S. Divya1 I. K. Santhosh David2, M. A. Prince Ray Raj Tshirt folding is a process used to pack the fabrics and keep them neat. The textile industry hasn't witnessed the growth in the field of automisation in the manufacturing sector of the clothing industry. In addition, automatic folding mechanism has been used in this machine. Automation has been achieved by designing with the help of sensors and other actuators. This will make a automated technology in textile industry which it has been absence for years.At present the system will be created based on materials and components available to bring simple and low cost in the system. The entire system can be easily implemented to the current system without any high changes in the industries

III. PROBLEM DEFINITION

The textile industries in INDIA currently doesn't use the automation in garments. It is very necessary to bring automation according to the literature survey only few of textile manufacturers uses any kind of automation in INDIA. For folding n number of T-shirts in textile industry through manual folding is a tedious process. As it takes approx 15 – 20 seconds for a single T-shirt, so the time consumption for the folding also very high. The manual process causes error in folding and sorting mechanism and the ability to fold cloths in same size. It costs approx Rs. 30 to fold 100 t-shirts manually, so that the manual folding is not time efficient as well as cost compatible.

IV. PROBLEM IDENTFICATION

For folding one T-shirt manually human takes approx 20 secs, but Tshirt folding machine hardly takes approx 3 – 5 seconds for folding a single T-shirt. If we take comparison between manual folding and automatic folding machine, for 1hour manual (3600 seconds) folding by human only folds 180 T-shirt, whereas automatic Tshirt machine can fold 850 T-shirts in same 3600 seconds. Efficiency of Tshirt folding machine is so greater when compared to manual folding. Automatic T-Shirt Folding Machine (ATFM) is cost compatible than other folding mechanisms when a worker in large scale industry folds approx 1500 cloths per day at a salary costs approx Rs. 500, The ATFM reduces the time to fold cloths and it folds approx 7000 cloths per day costs approx Rs. 500.

V. AIM AND OBJECTIVE

A. Aim

Design and fabrication of T-shirt folding machine for reducing human work

B. Objective

The main objective of project to design the T-Shirt folding machine are follows.

1) Design and development of components of the t-shirt folding machine.
2) Design of aluminium plates
3) Drawing of to draw various components using software.
4) Fabrication and development of the system.
5) Experimental & Testing.

VI. CONCLUSION

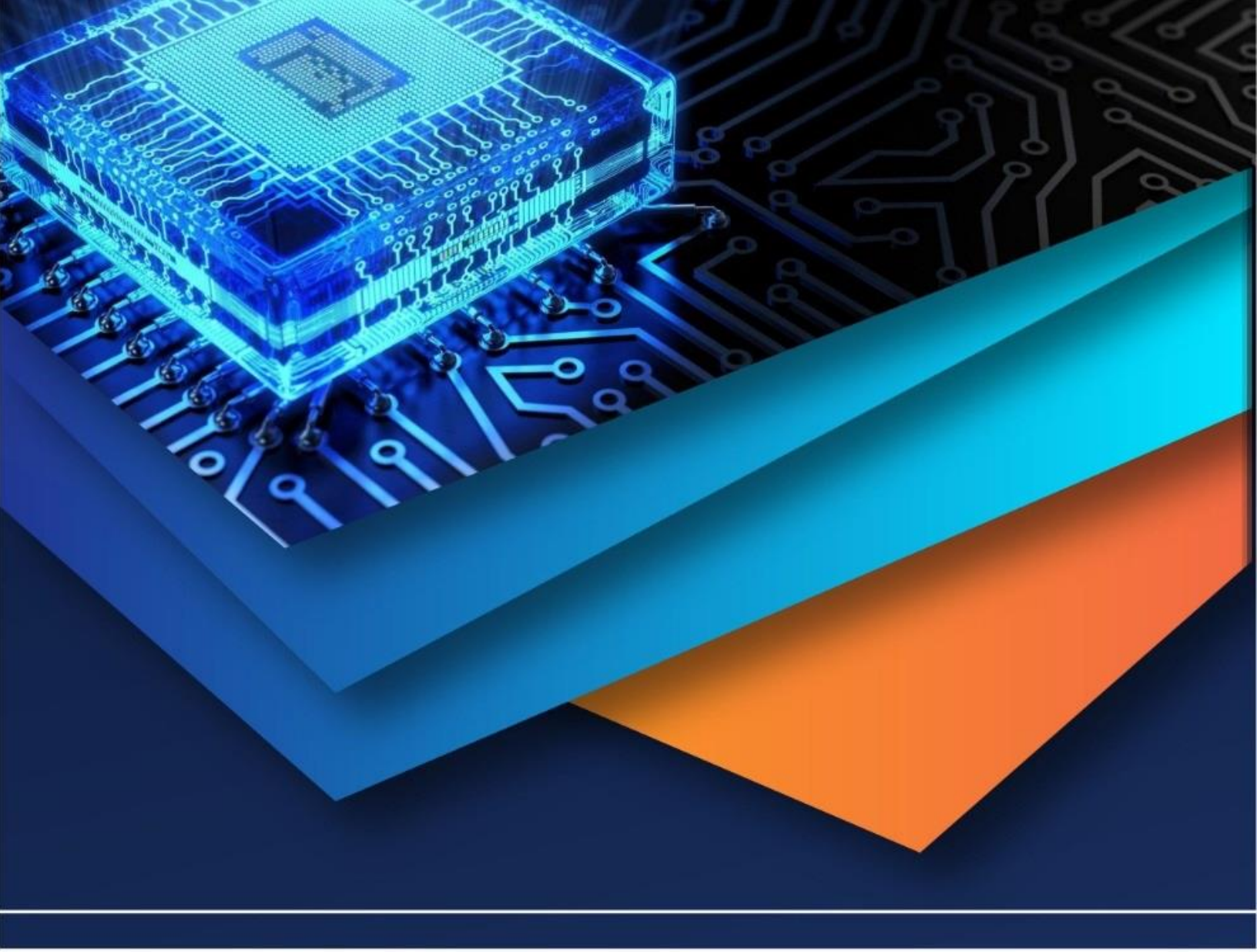
This project is very helpful for small scale textiles or garments, where shirts are folded by manual method, our machine helps these types of garments to reduces their work time, also increases work speed & these machine needs only one person to handle it. Our machine also improves the quality of every folded t-shirt it also helpful for garments progress. Using this machine every small scale textiles and garments profit increased minorly & it is helpful.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

REFERENCES

[1] N. Gomesh, I.Daut, V.Kumaran, M.Irwanto, Y.M.Irwan, M.Fitra "Photovoltaic Powered T-Shirt Folding Machine" Energy Procedia 36 (2013) 313 – 322.
[2] Suraj Shah, Utkarsha Mahajan, "Automatic cloth folding and color based sorting mechanism" IJTRE, Volume 2, Issue 7, March-2015
[3] Xudong L, I Anran Su, Suicheng Zhan "automatic cloth folding machine". Senior Design, spring 2017TA: Yuchen He3 May 2017
[4] Mukesh P. Mahajan, Srishti Prasad, Tejal Binnar, Monika Tambe Automatic T-shirt Folding Machine. International Journal of Computer Applications, Volume 162, No 10, March 2017
[5] Liu, Yiwei; Tran, Dung; and Wang, Kexin, "Cloth Folding Machine" (2017). Mechanical Engineering Design Project Class. 66.
[6] S. Divya1 I. K. Santhosh David2, M. A. Prince Ray Raj1Assistant Professor, Dept. of Mechanical Engineering, Sri Eshwar College of Engineering, Coimbatore, India 2,3UG Student, Dept. of Mechanical Engineering, Sri Eshwar College of Engineering, Coimbatore, India.
[7] Bansari Shetye, Pooja Randive, Snehal Shedbale U. G. Students, department of Entc, Bharti Vidyapeeth's Collage of Engineering, Kolhapur, Maharashtra, India

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)