



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

(Approved by AICTE & Affiliated to Anna University, Chennai)

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Number of Mechanical Engineering Student Undertaking Mini Projects during the Academic Year 2022-23

Programme Name & Code: Mechanical Engineering & 114

Sl. No	Register Number	Name of the Students	Project Title
1	912020114001	Ajay Gowtham	Design and Development of Energy Efficiency Cooking Stove
2	912020114002	Akash R	
3	912020114003	Ashok Kumar N	
4	912020114005	Manikandan V	Design and Fabrication of Low-Cost Magnetic Stripper
5	912020114006	Manoj Kumar L	
6	912020114009	Panner Selvam V	
7	912020114007	Mukesh Raj M	Pneumatic Air Engine
8	912020114010	Prem Kumar V	
9	912020114309	Sathish Kumar S	
10	912020114008	Nandhakumar M	Design and Fabrication of Smart Hencage
11	912020114301	Atheeswara Prabhu.B	
12	912020114310	Sithanathan K	
13	912020114011	Ragavanantham M	Design and Fabrication of Cow Dung Pot Making Machine
14	912020114303	Diwakar P	
15	912020114311	Yanithkanna M	
16	912020114012	Sivakumar M	Design and Fabrication of Smart Hencage
17	912020114013	Veera Abimanyu P	
18	912020114307	Manibharathi J	
19	912020114302	Balaji A	Design and Fabrication of Pneumatic Tin Crusher
20	912020114304	Karthik M	
21	912020114305	Logeshwaran V	
22	912020114306	Madhavan J	Design and Fabrication of Solar Manual Grass Cutter and Grass Collector Using Slotted Crank Mechanism
23	912020114308	Pothiraj R	

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DESIGN AND DEVELOPMENT OF ENERGY EFFICIENCY COOKING STOVE

A PROJECT REPORT

Submitted by

R.AJAYGOWTHAM

(912020114001)

R.AKASH

(912020114002)

N.ASHOK KUMAR

(912020114003)

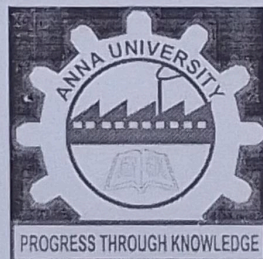
In partial fulfilment for the award of the

degree of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING



ANDIAN SARASWATHI YADAV ENGINEERING COLLEGE,

ARASANOOR, SIVAGANGAI- 630561

ANNA UNIVERSITY: CHENNAI-600025

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BONAFIDE CERTIFICATE

Certified that this project report “DESIGN AND DEVELOPMENT OF ENERGY EFFICIENCY COOKING STOVE” is the Bonafide work of **R.AJAYGOWTHAM(912020114001) R.AKASH (912020114002) N.ASHOK KUMAR (912020114003)**” who carried out the project work under my supervisor.

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HEAD OF DEPARTMENT,

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Engineering college

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Sivagangai-630561

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Dr.S.RAJAMUNEE SWARAN M.E., Phd

ASSOCIATE PROFESSOR,

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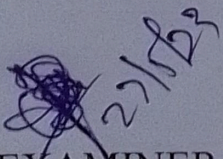
Pandian Saraswathi yadav

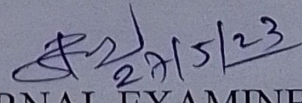
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Submitted for the “VIVA-VOCE” held on....27/05/23.....


INTERNAL EXAMINER


EXTERNAL EXAMINER

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ABSTRACT

It is estimated that more than 2.5 billion people worldwide use Biomass for cooking. Burning Biomass is one of the major contributors to carbon dioxide (CO₂) emission—a principle gas in global warming and climate change. One way of cutting down the CO₂ emissions is adaptation of efficient and clean energy technologies. This study examined the efficiency of the energy saving stoves in Amboseli ecosystem by comparing the cooking time, energy use, wood fuel and carbon emissions to the traditional three stone open fire set ups.

The result indicates a statistical difference in the time spent cooking on energy stoves and three stone open fire ($t = 5.3055$; $n = 60$; $p = 0.00117$). Energy saving stoves saved 12.7% - 33.3% of wood fuel compared to the traditional three stones set ups. Water boiling tests to determine the energy savings, revealed that energy saving stoves saved between 25.74% and 26.16% energy/joule per session in-house and outdoor settings respectively. Based on the two meals prepared per day by each household, the total Carbon Emission Savings for the 1000 local beneficiaries of energy saving stoves varied from 102,200 kg CO₂ (indoor cooking) to 357,700 kg CO₂ (outdoor cooking) per year.

It is therefore concluded that energy saving stoves saves time, fuel wood and energy, and reduces carbon emissions. The study findings refute the claims that open fire when carefully operated can be fuel efficient and clean burning to rival energy saving stoves. To improve the performance of the energy saving stoves, it is recommended that a design modification be done to include a chimney to emit excess smoke during indoor cooking; and the stove should be fixed to the floor with mortar to minimize heat loss and breakages.

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CHAPTER-10 CONCLUSION

In conclusion, energy-efficient stoves offer significant advantages in terms of reducing energy consumption, minimizing environmental impact, and promoting sustainability in cooking applications. These stoves incorporate innovative features and technologies such as efficient combustion mechanisms, insulation materials, heat recovery systems, and advanced control systems to optimize energy utilization and minimize heat loss.

Future modifications for energy-efficient stoves can further enhance their performance and sustainability. These modifications may include the integration of renewable energy sources, smart connectivity and automation, enhanced insulation and heat retention, integration of energy storage systems, waste heat recovery, improved control algorithms, and the use of alternative fuels.

By implementing these future modifications, energy-efficient stoves can continue to evolve and provide even greater energy savings, reduced carbon emissions, and economic benefits. These stoves have the potential to revolutionize cooking practices, contribute to a more sustainable future, and improve the quality of life for individuals and communities worldwide.

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DESIGN AND FABRICATION OF
LOW COST MAGNETIC STIRRER

A PROJECT REPORT

Submitted by

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912020114006

V. PANNEERSELVAM

912020114009

V. MANIKANDAN

912020114005

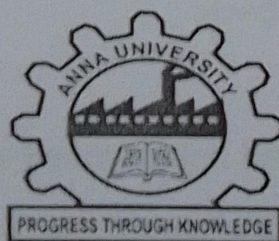
In partial fulfillment for the award of

the degree of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE
DEPARTMENT OF MECHANICAL ENGINEERING

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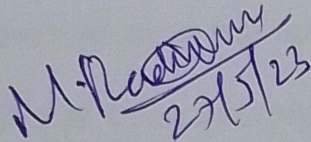
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BONAFIDE CERTIFICATE

Certified that this project report title " DESIGN AND FABRICATION OF LOW COST MAGNETIC STIRRER " is the bonafide work of " MANOJ KUMAR L (912020114006), MANIKANDAN V (912020114005), PANNEERSELVAM V (912020114009)" who carried out this project under my supervision during May 2023.

SIGNATURE
HEAD OF THE DEPARTMENT


27/5/23

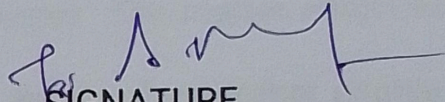
Mr.M.RADHAKRISHNAN, M.E,

Head of the department.

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SUPERVISOR



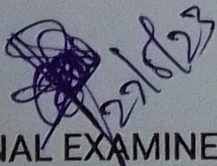
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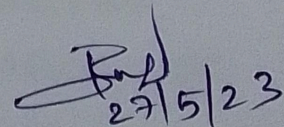
Sivagangai District.

Submitted for the Project Viva-Voce Examination held on...27/05/2023

INTERNAL EXAMINER


27/5/23

EXTERNAL EXAMINER


27/5/23

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ABSTRACT

Magnetic stirrers and hot plates are key components of science Laboratories. However, these are not readily available in many developing Countries due to their high cost. This project is used to show the design of a low-cost Magnetic stirrer with hot plate from recycled materials. Some of the materials Used are magnets and CPU fans from discarded computers and Recycled electrical components from old circuit boards. This prototype was Compared with a commercial magnetic stirrer with hot plate. It was noted that High temperatures were reached at similar rates, and the stirring speed was also Comparable between the two.

With this prototype, which costs 50% less than Commercials ones, magnetic stirrers with hot plate can be readily available to enhance teaching and learning in science laboratories that need them most. Due to rapid growth in population and industrialization, worldwide bio ethanol production demand increasing continuously. This project is used to mix the ethanal liquid homogeneously in the vessel.

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PNUMATIC AIR ENGINE

A PROJECT REPORT

Submitted by

M.MUESHRAJ	912020114007
V.PREM KUMAR	912020114010
S.SATHISHKUMAR	912020114309

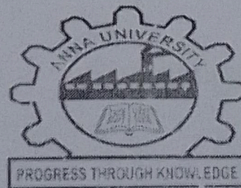
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IN

MECHANICAL ENGINEERING



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

SIVAGANGAI-630561

ANNA UNIVERSITY: CHENNAI 600025

MAY 2023

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Certified that this project report title " PNUMATIC AIR ENGINE " the bonfide work of "
M.MUKESHRAJ(912020114007),V.PREMKUMAR(912020114010),S.SATHISHKUM
AR(912020114309)" who carried out this project under my supervision.

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HEAD OF THE DEPARTMENT

M. Radhakrishnan

r.M.RADHAKRISHNAN, M.E,
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S. Yogeswari

Mrs.S.YOGESWARI
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Submitted for the Project Viva-Voce Examination held on..... 27/05/2023

27/5/23
INTERNAL EXAMINER

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EXTERNAL EXAMINER

CONCLUSION:

We the students took the initiative in doing this project work "**Pneumatic Air Engine**" to the peak of SUCCESS. During the course of action of our project work, we have gained sufficient technical as well as practical knowledge as how a machine is to be designed, fabricated, and priced.

This machine was fabricated successfully and tested. It works satisfactorily. We hope that this will be one among the most versatile and interchangeable one even in future.

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DESIGN AND FABRICATION OF SMART HEN CAGE

A PROJECT REPORT

Submitted by

B.ATHEESWARA PRABU (912020114301)

K.SITHANATHA (912020114310)

M.NANDHAKUMAR (912020114008)

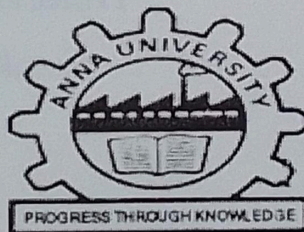
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In

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PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

SIVAGANGAI

ANNA UNIVERSITY, CHENNAI 600025

May 2023

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Date: 2024.06.20

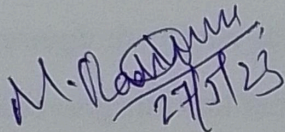
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BONAFIDE CERTIFICATE

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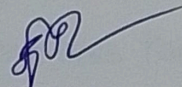

27/5/23

Mr.M.RADHA KRISHNAN M.E.,

HEAD OF THE DEPARTMENT

AP/Mechanical department,
Pandian saraswathi yadav
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Arasanoor,
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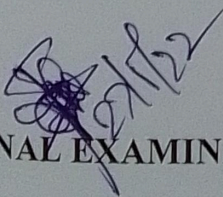


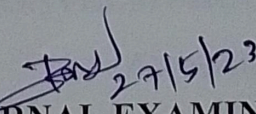
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AP/Mechanical Department,
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Submitted for the project Viva-Voce examination held on 27.05.2023


INTERNAL EXAMINAR


EXTERNAL EXAMINAR

I

R RAJA

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Date: 2024.06.20
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ABSTRACT:

In Tamilnadu, there are more than 11 lakh broiler chickens are produce per day. Nearly 46 lakh broiler chickens were sold in a week, all over Tamilnadu. The city side peoples buy the major part of the Broiler hen's meat, these broiler hens affect our health and Cause Cancer & Male Infertility. We relocated from village to city, we used to grow hens at our Grove. We try to increase Organic hen farming and increase the rate of poultry farming through the Cities. Increase in number of City side Poultries provides a cost effective poultry meat and improves a healthy lifestyle. Customized Design suitable to place at Grove Automation in feeding system. A source of income at less Maintenance. Automatic temperature controller. Disease management guidance. Collect meat and egg from our customers.

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CHAPTER-8

CONCLUSION

IOT is an innovative technology for poultry farming which can be changes a manual farm into modern semi-automated poultry farm. In addition, the system could work on the android mobile application helping the owner to monitor the poultry farm such as food feeding function, object detection, water sprinkling, and unwanted gas reduction. The proposed system can reduce manpower and feed the food to chickens, reduce the unwanted gas, maintain temperature in farm thesis fully automatic. Hence this system will be reducing cost, time, manpower, decreasing environment pollution.

DESIGN AND FABRICATION OF OF COW DUNG POT
MAKING MACHINE

A PROJECT REPORT

Submitted by

M RAGAVANANTHAM (912020114011)

M YANITHKANNA (912020114311)

P DIWAKAR (912020114303)

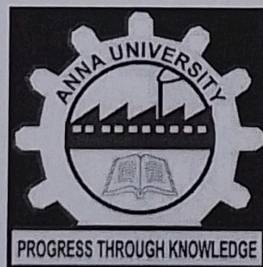
In partial fulfilment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE,

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ANNA UNIVERSITY: CHENNAI-600025

MAY 2023

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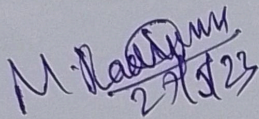
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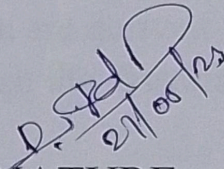
Certified that this project report "DESIGN AND FABRICATION OF COW DUNG POT MAKING MACHINCE "is the Bonafide work of "M.ANANTHKUMAR (912019114003), S.JAYARAM (912019114012), A.MOHAMED ASHIK (912019114015)", who carried out the project work under my supervisor

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27/5/23

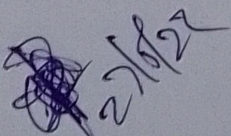
Mr.M.RADHAKRISHNAN M.E.,
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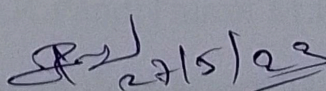
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Submitted for the "VIVA-VOCE" held on..27.05.2023


INTERNAL EXAMINER


EXTERNAL EXAMINER

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ABSTRACT

The purpose of this study is to make an environment healthy, pollution free and depreciate animal atrocity for this we have to make an alternative thing such as it will be non-hazardous to environment so by being this some amount of nature will be pure. Using a cross-sectional analysis, this study analyzed that Dung is an available by product of livestock, farmer's use them as a various way such as fuel, flooring, plastering of house and it has environmental value. Cows dung is used as a source of bio-fertilizer as it is very effective's alternative to chemical fertilizers. Cow dung manure and vermicompost increase soil organic matter content, and this leads to amend water infiltration and water storage capacity as well as raised cation interchange capacity. Application of cow dung in proper and sustainable way which enhance productivity in long term and microbial population but also minimizes bacterial and fungal pathogenic diseases. This study definitively answers the question regarding environmental effects by designing a machine to address these characteristics. Our creativity idea and technical knowledge can afford low cost solution towards improvising livelihood options and their economic condition to enhance environmental value of dung in farmer's life.

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DESIGN AND FABRICATION OF SMART HEN CAGE

A PROJECT REPORT

Submitted by

J.MANI BHARATH

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P.VEERA ABIMANYU

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M.SIVAKUMAR

(912020114012)

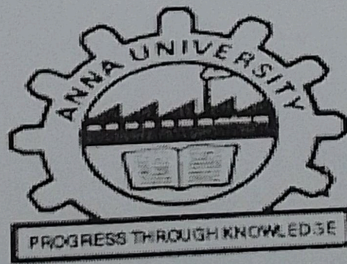
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ANNA UNIVERSITY, CHENNAI 600025

May 2023

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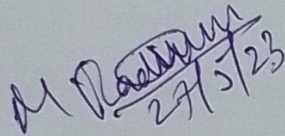
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BONAFIDE CERTIFICATE

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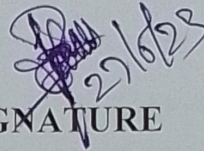


Mr.M.RADHA KRISHNAN M.E.,

HEAD OF THE DEPARTMENT

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Sivagangai district.

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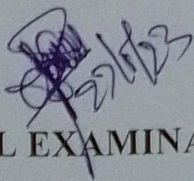
DR.K.D.JAGANATHAN

SUPERVISOR

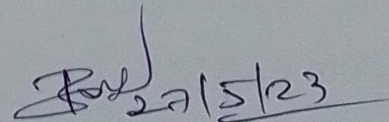
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Submitted for the project Viva-Voce examination held on 27-5-2023.....

INTERNAL EXAMINAR



EXTERNAL EXAMINAR



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ABSTRACT:

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CHAPTER-8

CONCLUSION

IOT is an innovative technology for poultry farming which can be changes a manual farm into modern semi-automated poultry farm. In addition, the system could work on the android mobile application helping the owner to monitor the poultry farm such as food feeding function, object detection, water sprinkling, and unwanted gas reduction. The proposed system can reduce manpower and feed the food to chickens, reduce the unwanted gas, maintain temperature in farm thesis fully automatic. Hence this system will be reducing cost, time, manpower, decreasing environment pollution.

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**DESIGN AND FABRICATION OF PNEUMATIC
TIN CRUSHER**

A PROJECT REPORT

Submitted by

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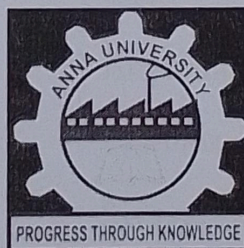
In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING



PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

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ANNA UNIVERSITY: CHENNAI-600025

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Appendix I

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BONAFIDE CERTIFICATE

Certified that this project title "DESIGN AND FABRICATION OF PNEUMATIC TIN CRUSHER" is the bonafide work of "A.BALAJI, M.KARTHIK, V.LOGESHWARAN" who carried out the project work under my supervision.

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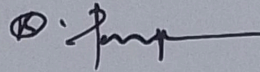
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ABSTRACT

The project tin crusher is a device used for crushing aluminum tins for easier storage in recycling bins. While most recyclers don't require you to crush TINs, if you do recycle a lot, your normal bin may fill up quickly. The crusher gives you extra space by flattening either single or multiple tins. This project is about designing and fabricating the Recycle tin Crusher to help people to crush the tin and aid easier transportation. This project is mainly about generating a new concept of tin crusher that would make easier to bring anywhere and easier to crush tin.

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CHAPTER-5

CONCLUSIONS

In this project, we designed the pneumatic tin crusher manually and generated in 3d model by using pro-E design software. The pneumatic tin crusher was fabricated. From all the results obtained, the design was practically done safe to operate. 5.1 SCOPE

FOR FUTURE EXTENSION

By placing the electric motor instead of manually operated gives more results. The pneumatic tin crusher can be made with electrical & hydraulic system also.

FABRICATION OF PNEUMATIC HAWSAW MACHINCE

A PROJECT REPORT

Submitted by

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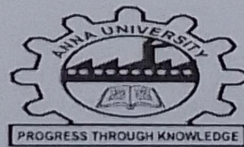
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IN

MECHANICAL ENGINEERING



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BONAFIDE CERTIFICATE

Certified that this project report title " FABRICATION OF PNEUMATIC HAWSAW MACHINE" is the bonfide work of " MADHAVAN J (912020114306), POTHIRAJ R (912020114308)" who carried out this project under my supervision.

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ABSTRACT

The objective of this work is to automate the conventional power hacksaw machine in order to achieve high productivity of workpieces than the power hacksaw machine using pneumatic power. Pneumatic is a huge topic of science and engineering dealing with the mechanical properties of air. In our project we take this pneumatic and a hacksaw for cutting purpose, The pneumatic reciprocating high-speed hacksaw machine has an advantage of working in high pressure , the hacksaw used in this is reciprocate such that required shape can be cutted according to the requirement. The hacksaw is the metal cutting machine tool designed to cut metal by applying pneumatic pressure. Hacksaws are used to cut thin and soft metals the operation of the unit is simplified to a few simple operations involving a cylinder block and piston arrangement. There are numerous systems in hacksaw machine Key Words: Automation, power hacksaw, Solenoid valve, Pneumatic cylinder and Pneumatics.

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CONCLUSION

It is known that conventional power hacksaw machine can be replaced with automated power Hacksaw machine. Automated power hacksaw machine gives high productivity in short time period in comparison with the conventional power hacksaw machines. The major advantage of this machine is intervention of labor is reduced to maximum level. In this rapid emerging industrial section the use of power Hacksaw machine is wide, time and labor plays a major role in production process. This can be overcome by using this type of automated machines.

The automated hacksaw machine can be made use of at any of the industries like pump manufacturing industries that involve bulk amount of shafts that have to be cut frequently. The range of size of work-pieces that can be cut using the automated hacksaw machine can be varied by changing the blade size. Currently, the machine uses 12 inch blade for cutting. An another advancement that can be implemented in automated hacksaw machines is that the user can also get cut work-pieces of different lengths in one cycle itself. This means that the user has to specify the number of work pieces that have to be cut in each of the different length values specified.

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