



A
PROJECT REPORT
ON

“DESIGN AND FABRICATION OF AUTOMATIC TOOL FOR FIXING AND
REMOVAL OF MULTIPLE NUTS IN CAR WHEELS”

Submitted in partial fulfillment of the requirements for the award of the degree of

BACHELOR OF ENGINEERING
IN
MECHANICAL ENGINEERING

Submitted by:

D P MANJUNATHA
ROUSHAN ALI KHAN
SAJID ALAM

(ISV19ME400)
(ISV18ME009)
(ISV19ME403)

Under the Guidance of:

Mr K.P CHANDRAIAH
BE, M Tech, Ph D
Assistant Professor
Department of Mechanical Engineering
SIET, Tumkur



ESTD: 2002



Manjunatha

PRINCIPAL
SIET, TUMAKURU

Department of Mechanical Engineering

Shridevi Institute of Engineering and Technology

(Recognized by Government of Karnataka, Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi)

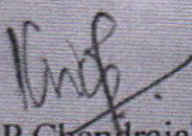
Sira Road, TUMAKURU - 572 106


2021 - 22

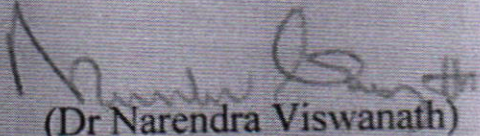


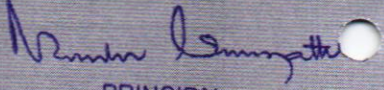
CERTIFICATE

This is to certify that the Project Work entitled "Design And Fabrication Of Automatic Tool For Fixing And Removal Of Multiple Nuts In Car Wheels" is carried out by Mr D P Manjunatha (ISV19ME400), Mr Roushan Ali Khan (ISV18ME009) and Mr Sajid Alam (ISV19ME403), bonafide students of the Department of Mechanical Engineering in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering in Mechanical Engineering of the Visvesvaraya Technological University, Belagavi during the year 2021 - 22. It is also certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the said Degree.


(Mr K.P Chandraiah)
Project Guide


(Mr B H Vasudevamurthy)
Head of the Department


(Dr Narendra Viswanath)
Principal

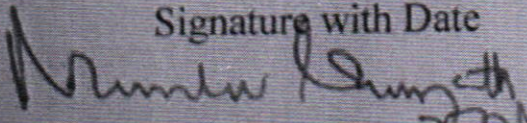


PRINCIPAL
SIET., TUMAKURU

External Viva

Name of the Examiners

1. DR. NARENDRA VISWANATH
2. MR. B.H. VASUDEVA MURTHY

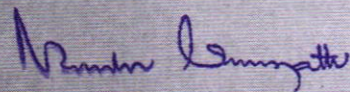
Signature with Date



25/7/2022

ABSTRACT

Essentially, Most of cars use four lug nuts to fix wheels on vehicle. The traditional way to change a car's wheel tire is to unscrew the locking lug nuts one by one using a lug wrench. However, sometimes it can be so exhausting and time consuming. In project our aim is to design of 4 wheel nut rotating hand operated tool for tightening and removing of 4 nuts in one stroke. With the increment of number of car on the road, the number of cars problem due to tyre failure has increased. Often, the car is provided with tyre wheel nuts remover for tyre replacement. Due to difficulty in applying torque to remove nut and to save a time. We develop tool having a planetary mechanism. In our project we are tried to focus on the minimization of human effort for fixing all for nuts of 100 mm PCD wheel in one time. The main objective of work is to develop a single tool, which can be made use during assembling of wheels in automobiles. It can be successfully used as standard tool irrespective of the model of the car. It can be used in garages, workshops and service stations. The remover is designed to be ergonomic to be used for easy maintenance, easy storage, easy to handled and able to remove all nuts at once a time. In Automobile industry, Adjustable Unified wheel opener is a special purpose tool made to open and close all the nuts of a wheel in single operation with less effort.

Although various methods are used for open the nuts, they require a lot of effort to open a single nut and also time consuming because you should open/close single nut separately. The main objective of work is to develop a single tool with use to open multiple nuts in single operation with simple mechanisms, which is widely use during assembling and dismantling of wheels in automobiles. It can be successfully used as a standard tool irrespective of the model of the car. Also it can be used in assembly line of automobiles, garages, workshops and as well as service stations.



PRINCIPAL
SIET, TUMAKURU