PROJECT REPORT

ON

“Design and Development of drive and steering mechanism of Automatic guided vehicle

Submitted by

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In partial fulfillment for the award of the Degree

Of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

UNDER THE GUIDANCE

Of

Prof. Zia Momin

DEPARTMENT OF MECHANICAL ENGINEERING

ANJUMAN-I-ISLAM

KALSEKAR TECHNICAL CAMPUSNEW PANVEL,

NAVI MUMBAI – 410206

UNIVERSITY OF MUMBAI

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ANJUMAN-I-ISLAM

KALSEKAR TECHNICAL CAMPUSNEW PANVEL

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CERTIFICATE

This is to certify that the project entitled

"Design and Development of drive and steering mechanism of an AGV"

Submitted by

Bhosale Prasad
Chavan Manoj
Dubuy Devang
Koli Aniket

To the Kalsekar Technical Campus, New Panvelis a record of bonafide work carried out by him under our supervision and guidance, for partial fulfillment of the requirements for the award of the Degree of Bachelor of Engineering in Mechanical Engineering as prescribed by **University Of Mumbai**, is approved.

Project guide	**Internal Examiner**	**External Examiner**
(Prof.Zia Momin)		

Headof Department	**Principal**
(Prof.Zakir Ansari)	(Dr. Abdul RazzakHonnutagi)

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APPROVAL OF DISSERTATION

This is to certify that the thesis entitled

"**Design and Development of drive and steering mechanism of an AGV"**

Submitted by

Bhosale Prasad
ChavanManoj
DubuyDevang
KoliAniket

In partial fulfillment of the requirements for the award of the Degree of Bachelor of Engineering in Mechanical Engineering, as prescribed by University of Mumbai approved.

(Internal Examiner) **(External Examiner)**

Prof. Zia Momin_____

Date: 27/04/2015

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Bhosale Prasad
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Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Bhosale Prasad
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Date: 27/04/2015

ABSTRACT

DEVELOMENT OF DRIVE AND STEER MECHANISM FOR AUTONOMOUS GUIDED VEHICLE (AGV)

Autonomous Guided Vehicle or AGV is one of material handling equipment that has been widely used in most manufacturing industry today as it provides more flexibility to the systems. The basic concept of the AGV incorporates battery-powered and remotely operate vehicles with programming for path selection and positioning.

This project includes the designing for this AGV. Using software SOLID WORKS, the design of the vehicle can be done with the respect of specification needed. The drive and steering mechanism is an important system of any AGV as the navigation of the AGV is totally governed by the drive and steering mechanism.

The types of AGV, the basic concept, the classifications of the AGV and the steering mechanism that usually used in common AGV will be reviewed. Then, this project will be focusing on the mechanical design concept of the AGV which combines knowledge on parts such as the electric motor, gears, gear head, wheel, bearing, coupling of the AGV and others mechanical parts that are essential for this project.

PROBLEM DEFINATION

With the current pressures on companies to cut the costs that go into manufacturing products, companies are turning to autonomous guided vehicle systems (AGVS) to decrease the cost of labor. This reduction in labor comes from using AGVS to transport products on fork trucks, with tow trucks, or with an AGVS as the loaded vehicle instead of the conventional methods of using manned vehicles to transport these products. Drive and steering systems, route planning are two things that need to be given serious consideration when contemplating the purchase of an AGVS.

Two things that could have a major impact on the success or failure of an AGVS are the vehicle drive and steering system and guidance systemwhich directs the vehicle along its predetermined route. To have a good understanding of drive and steering system of AGVS, one must first have a firm grasp of the AGVS's major components and the types of vehicles that are available and their function.

The DRHR (department of Remote Handling and Robotics), BARC is working on design and development of different types of AGVs.

Our industrial guide Mr. V.K. Shrivastava has assigned us a task to design and development of drive and steering mechanism for AGV's. So, this project is about to design and development of drive and steering system for AGV, which is capable to take 700kg payload at speed of 1.5m/s.

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