

**DESIGN AND ANALYSIS
OF
WOBBLE PLATE ENGINE CONFIGURATION**

A Project report submitted in partial fulfillment for the award of

**BACHELOR OF TECHNOLOGY
In
MECHANICAL ENGINEERING**

Submitted By

P.GIRITEJA	(15815A0345)
P.JEEVANA RAO	(15815A0341)
P.SRINIVASA RAO	(15815A0342)
N.PHANENDRA	(15815A0338)

Under The Guidance of

Mr. P.V.V.SATYANARAYANA M.Tech.

Assistant Professor

DEPARTMENT OF MECHANICAL ENGINEERING



AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

**(Approved by AICTE, Permanently Affiliated to JNT University, Kakinada)
Accredited by NAAC with B+ grade and Accredited by NBA
Tamaram, Makavarapalem, Narsipatnam(R.D), Visakhapatnam-531113**

(2014-2018)

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Permanently Affiliated to JNT University, Kakinada)

Accredited by NAAC with B+ grade and Accredited by NBA

Tamaram, Makavarapalem, Narsipatnam(R.D), Visakhapatnam-531113



CERTIFICATE

This is to certified that the project work entitled “DESIGN AND ANALYSIS OF WOBBLE PLATE ENGINE CONFIGURATION” is a bonafide project work carried out by **P.GIRITEJA (15815A0345)**, **P.JEEVANA RAO (15815A0341)**, **P.SRINIVASA RAO (15815A0342)**, **N. PHANENDRA (15815A0338)** in partial fulfillment for the award of **BACHELOR OF TECHNOLOGY** in **DEPARTMENT OF MECHANICAL**. The project report has been approved as it satisfies the academic recruitments in respect of project work prescribed for the mentioned degree.

P.v.v Satyanarayana

Signature of the Guide

Mr. P.V.V. SATYANARAYANA M.Tech.

Haris

Head of the department

Mr. V. HARIKIRAN M.Tech. (Ph.D)

**HEAD OF THE DEPARTMENT
MECHANICAL ENGINEERING**

Avanthi Institute of Engg. & Tech
Makavarapalem, Visakha (R.D)

[Signature]

External Examiner

ABSTRACT

This invention relates to internal combustion engine of the type that employs a wobble plate to transfer power from parallel piston to the central shaft. The design of the engine is done by using CATIA and analysis by ANSYS.

A wobble plate includes a cylinder block, a plurality of pistons, a drive shaft, a weight, an oscillating member, a plurality of rods connecting the pistons to the oscillating member, a pair of bevel gears and a plurality of thrust bearing assemblies wherein the plurality of thrust bearing assemblies are installed at the cylinder block and the oscillating member to support the straight shaft, the weight and the declined shaft and reduce a rotational velocity transferred. The connections between the wobble plate, connecting rod and pistons incorporate spherical bearings. Also a wobble plate internal combustion engine incorporating the wobble plate engine assembly is presented.

The single cylinder wobble plate engine includes two part wobble plate, where in inner part is mounted to the main shaft, external part is mounted by the stabilized rod. The wobble effect produced by the wobble plate rotation automatically open and closes the inlet and outlet valves. Stroke of the engine is determined by the angle inclination of the wobble plate relative to the main shaft. The angle inclination of the wobble plate effects efficiency of the engine.