

# CAMSHAFT

*Machine drawing project*



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## PROBLEM STATEMENT

Camshafts play a vital role in internal combustion engines by controlling the timing and operation of engine valves. Accurate design and analysis of camshafts are critical for optimizing engine performance. Traditional design methods often lack precision and are time-intensive. This project aims to develop a detailed 3D model of a camshaft using

SolidWorks to ensure high precision in design and facilitate performance analysis. The objective is to streamline the design process and enable simulations to test various parameters for improved durability and efficiency.

## OBJECTIVE

To design a precise 3D model of a camshaft in SolidWorks and perform a basic analysis to evaluate its structural integrity, material distribution, and functionality.

## SHORT DESCRIPTION

This project involves the creation and analysis of a camshaft using SolidWorks. The key steps include:

### 1.Design Phase:

- Sketching the camshaft profile using SolidWorks' parametric tools.
- Extruding and revolving sketches to create the camshaft body.
- Incorporating key features such as cams, journals, and keyways.

### 2.Material Assignment:

- Assigning appropriate material properties, such as steel or cast iron, based on industry standards.

### 3.Output:

- A detailed, accurate 3D model of the camshaft ready for further analysis or prototyping.

## REFERENCES

1. Shigley, J.E., Mechanical Engineering Design.
2. SolidWorks User Manual, Dassault Systèmes.
3. Youtube channel - 3D SolidWorks