

9th International

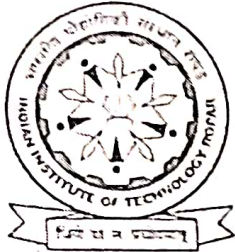
107_Design and Analysis of Brake Caliper for Hydraulic Brake

Advancements and Futuristic Trends in Mechanical and Materials Engineering AFTMME 2021

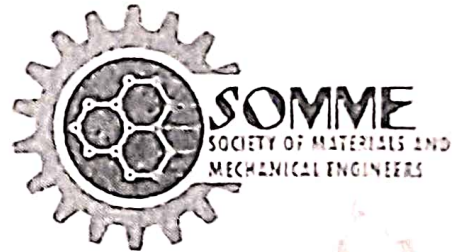
December 9-11, 2021 at IIT Ropar, India



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Society of Materials and Mechanical
Engineers (SOMME)

Important Dates

Abstract Submission
(15/08/2021)

Abstract Acceptance
(15/09/2021)

Early Bird Registration
(15/10/2021)

ANNOUNCEMENT & CALL FOR PAPERS

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[9th International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (AFTMME-2021)]

Design and Analysis of Brake Caliper for Hydraulic Brake

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Abstract

In modern automobile technology, with every step of advancement, there is an increase in the speed and performance of the vehicle. Thus, simultaneously stopping the vehicle or deceleration of the vehicle also becomes an equally important factor. The main function of the braking system is to inhibit the motion of the vehicle by absorbing kinetic energy. The braking system should be sustainable enough to stop the vehicle in different terrain conditions, critical or even panic braking. Efficient braking is achieved with the help of different braking components, with brake PEDAL brake DISC and brake CALIPER being the most important. Calipers provide the required amount of clamping force to the brake disc to stop the vehicle. There are different types of calipers depending upon the Braking System. They are electronic or hydraulic brakes. This paper presents designing and analysis of a hydraulic brake caliper in order to optimize the design structurally, thermally and according to the driving conditions and the driving force. Some important parameters such as piston drag, groove design, etc. with calculations, material selection, and manufacturing techniques have been discussed. The CAD model of the caliper is designed on Solidworks 16 and FEA is performed on Ansys 18.1.

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Keywords: calliper, pads, piston groove

1. Introduction



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Certificate of Participation

This is to certify that

Ganesh Wahile, Uday Aswalekar, Suman Biswas, Manisha Kushwaha, Isha Pise

delivered a contributory talk in the

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Title of the Talk: Design and analysis of Brake Caliper for Hydraulic Brakes AFTMME 2021

Chandrakant K. Nirala

13.12.2021

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