

# ESWAR

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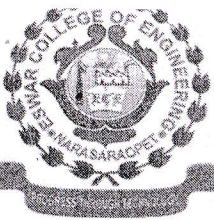
### 3.3.2 Number of books and chapters/papers published in national/ international conference proceedings per teacher in the year 2022-23

No	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	National / International	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	N.HYMAVATHI	EMERGING TRENDS IN MECHANICAL ENGINEERING AND INDUSTRIAL AUTOMATION	STERILIZATION OF WATER COURCE CONTRIVANCE	ICETMEIA-2K22	INTERNATIONAL	978-93-91420-07-9	ESWAR COLLEGE OF ENGINEERING	SPECTRUM PUBLICATIONS
2	R.RAMBABU	EMERGING TRENDS IN MECHANICAL ENGINEERING AND INDUSTRIAL AUTOMATION	STERILIZATION OF WATER COURCE CONTRIVANCE	ICETMEIA-2K22	INTERNATIONAL	978-93-91420-07-9	ESWAR COLLEGE OF ENGINEERING	SPECTRUM PUBLICATIONS
3	N.HYMAVATHI	EMERGING TRENDS IN MECHANICAL ENGINEERING AND INDUSTRIAL AUTOMATION	TRANSIENT THERMAL ANDSTRUCTURAL ANALYSIS OF DISC BRAKE	ICETMEIA-2K22	INTERNATIONAL	978-93-91420-07-9	ESWAR COLLEGE OF ENGINEERING	SPECTRUM PUBLICATIONS
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5	SHAIK CHAND MABHU SUBHANI	2023 Global Conference on Information Technologies and Communications	APPLICATIONS OF MACHINE LEARNING AND DEEP LEARNING ALGORythMS TO THE PREDICTION OF STOCKMARKET TRENDS	IEEE CONFERENCE	INTERNATIONAL	979-8-3503-0816-7/23	ESWAR COLLEGE OF ENGINEERING	IEEE explore

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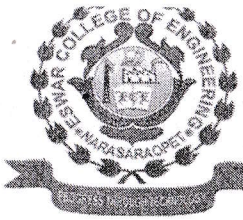


6	SHAIK CHAND MABHU SUBHANI	EMERGING TRENDS IN MECHANICAL ENGINEERING AND INDUSTRIAL AUTOMATION	TRANSIENT THERMAL AND STRUCTURAL ANALYSIS OF DISC BRAKE	PROCEEDINGS OF ICETMEIA-2K22	INTERNATIONAL	978-93-91420-07-9	ESWAR COLLEGE OF ENGINEERING	SPECTRUM PUBLICATIONS
7	SHAIK CHAND MABHU SUBHANI	EMERGING TRENDS IN MECHANICAL ENGINEERING AND INDUSTRIAL AUTOMATION	SIMULATION OF AUV ROBOTIC VEHICLE BODY USING FEA METHOD	ICEMEIA-2K23	INTERNATIONAL	978-93-91420-39-0	ESWAR COLLEGE OF ENGINEERING	SPECTRUM PUBLICATIONS
8	Dr.SYED KHASIM	FUNDAMENTALS OF DATA SCIENCE	3rd INTERNATIONAL CONFERENCE ON MOBILE COMPUTING AND SUSTAINABLE INFORMATICS	ICMCSI 2022	INTERNATIONAL	978-93-91420-33-9	ESWAR COLLEGE OF ENGINEERING	SPRINGER PUBLICATIONS
9	K.Jhansi Rani	INTRODUCTION TO MECHANICS OF SOLIDS			International	978-93-6371-894-4	ESWAR COLLEGE OF ENGINEERING	MSR EDUSOFT PRIVATE LIMITED
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13	D.KOTESWARA RAO	THE ENGINEERING MATHEMATICS-II			International	978-93-6371-459-5	ESWAR COLLEGE OF ENGINEERING	MSR EDUSOFT PRIVATE LIMITED

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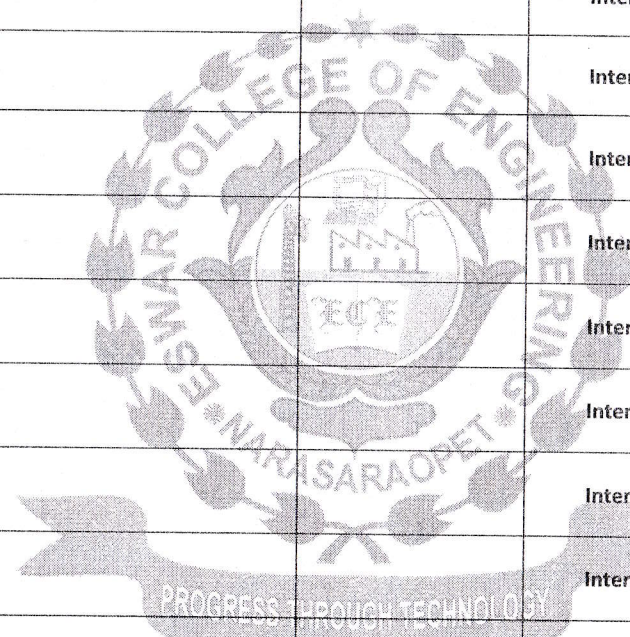
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# TRANSIENT THERMAL AND STRUCTURAL ANALYSIS OF DISC BRAKE

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**Abstract**— Braking system is a process which converts the kinetic energy of the vehicle into mechanical energy which must be dissipated into the atmosphere in the form of heat. A brake disc usually made of cast iron or ceramic composites is connected to the wheel and/or the axle. Friction material in the form of brake pads is forced mechanically, hydraulically, pneumatically or electromagnetically against both sides of the disc to stop the wheel. The present analysis "transient thermal and structural analysis of disc brake" deals with the heat generation in the different disc brake materials with varying speeds of the vehicle and the dissipation of heat through these materials and also the deformation and the stresses produced in these materials because of the temperature rise is analysed. A comparative study is made between these materials to suggest the best material for the disc brake in the aspect of the problem considered. Modelling of the disc brake has done using CATIAV5 and the complete analysis is done by using ANSYS 16.0.

## 1. INTRODUCTION

Of all the systems that make car, the brake system is one of the most important. Its function determined the safety of the driver, passenger and also pedestrian. In the olden days it was also one of the simplest. Over the years as improvements have been made, the system that has evolved isn't so simple anymore. Brake system work as hard or harder than any other part of the car, however much energy it takes to get the car up a hill, it takes at least as much energy to stop it at the bottom. In general, there are three main functions of a brake system, to maintain a vehicle's speed when driving downhill, to reduce a vehicle's speed when necessary and to hold a vehicle when in parking. When the brakes were applied, the pads or shoes that press against the brake drum or rotor convert kinetic energy into thermal energy via friction. The cooling of the brakes dissipates the heat and the vehicle slows down. This is all to do with The First Law of Thermodynamics, sometimes known as the law of conservation of energy. This law states that energy cannot be created nor destroyed; it can only be converted from one form to another. In the case of brakes, it is converted from kinetic energy to thermal energy.

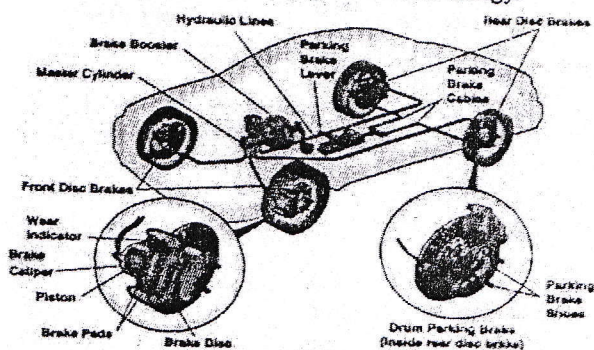


Fig: 1 components of braking system in a car

Typically, there are two types of brakes that were implemented in today's car, drum brake and disc brake. Disc brake is widely used because its design is far superior to that of drum brakes. Disc brakes use a slim disc and small caliper to halt wheel movement. Within the caliper are two brake pads, one on each side of the disc, that clamp together when the brake pedal is pressed. Fluid is used to transfer the movement of the brake pedal into the movement of the brake pads. The disc used in disc brakes is fully exposed to outside air. This exposure works to constantly to cool the disc, greatly reducing its tendency to overheat or cause fading.

## 1.2 Components of disc brake

A disk brake consists of so many components disk bolted to the wheel hub and a stationary housing called caliper. The caliper is connected to some stationary part of the vehicle like the axle casting or the stub axle as is cast in two parts each part containing a piston. In between each piston and the disc there is a friction pad held in position by retaining pins, spring plates etc. The passages are also connected to another one for bleeding. Each cylinder contains rubber-sealing ring between the cylinder and piston.

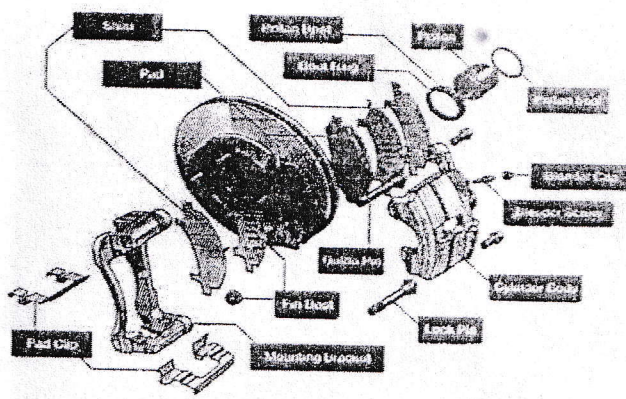


Fig 2: Components of disc brake

The main components of the disk brake are:

- > The Brake Pads
- > The Caliper which contains the piston
- > The Rotor which is mounted to the hub

When the brakes are applied, hydraulically actuated pistons move the friction pads in to contact with the rotating disk, applying equal and opposite forces on the disk. Due to the friction in between disk and pad surfaces, the kinetic energy of the rotating wheel is converted into heat, by which vehicle is to stop after a certain distance. On releasing the brakes the rubbers-sealing rings acts as return spring and retract the pistons and the friction pads away from the disk.

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# Simulation of AUW Robotic vehicle body using FEA method

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**ABSTRACT:**

An Autonomous Underwater Robotic Vehicle (AUWRV) is a robot that travels underwater without requiring input from an operator. AUWRVs constitute part of a larger group of undersea systems known as unmanned underwater vehicles, the structure of an Autonomous Underwater Robotic Vehicle (AUWRV), usually composed of a cylindrical shell, may be exposed to high hydrostatic pressures where buckling collapse occurs before yield stress failure. In conventional submarines, welded stiffeners increase the buckling resistance, however, in small AUWRVs, they reduce the inner space and cause residual stresses. The Aim of the project work presents an innovative concept for the structural design of an AUWRV Pressure vessel, proposing the use of sliding stiffeners that are part of the structure used to accommodate the electronics inside it.

Design of AUWRV pressure vessel using Catia software and analysis using Ansys software using sand which beam material in this project taken total 4 cases.

CASE 1: 2mm Steel + 2mm Rubber +2mm Steel

CASE 2: 2.5mm Steel + 1mm Rubber +2.5mm Steel

CASE 3 :2mm Ti64Al + 2mm Rubber +2mm Ti64Al

CASE 4: 2.5mm Ti64Al + 1mm Rubber +2.5mm Ti64Al

Finally concluded the which material is suitable on pressure vessel based on the stresses, strains, deformation, shear stress in static analysis and in modal analysis find out the modes at Total deformation in different Frequency

**KEYWORDS:** AUWRV, ANSYS, CATIA, Analysis, Materials

## I. INTRODUCTION

### 1.1. INTRODUCTION OF AUTONOMOUS UNDERWATER ROBOTIC VEHICLE (AUWRV)

Autonomous Underwater Vehicles (AUWRVs) are programmable, robotic vehicles that, depending on their design, can drift, drive, or glide through the ocean without real-time control by human operators. Some AUWRVs communicate with operators periodically or continuously through satellite signals or underwater acoustic beacons to permit some level of control.

AUWRVs allow scientists to conduct other experiments from a surface ship while the vehicle is off collecting data elsewhere on the surface or in the deep ocean.

Some AUWRVs can also make decisions on their own, changing their mission profile based on environmental data they receive through sensors while under way.

The first AUWRV was developed at the Applied Physics Laboratory at the University of Washington as early as 1957 by Stan Murphy, Bob Francois and later on, Terry Ewart. The term light hull (casing) is used to describe the outer hull of a submarine, which houses the pressure hull, providing hydro dynamically efficient shape, but not holding pressure difference.

The term pressure hull is used to describe the inner hull of a submarine, which holds the difference between outside and inside pressure.

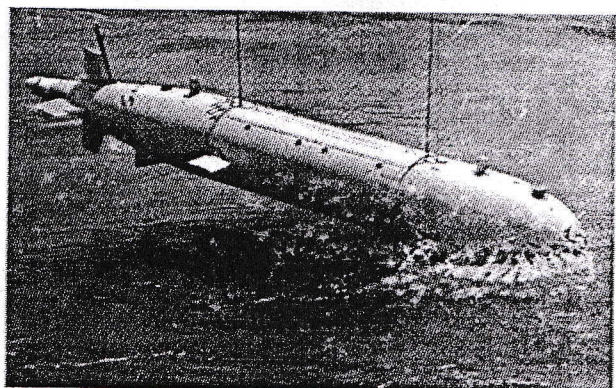


Figure 1: Autonomous Underwater Robotic Vehicles

### 1.2 PRESSURE HULL

Inside the outer hull there is a strong hull, or pressure hull, which actually withstands the outside pressure and has normal atmospheric pressure inside. The pressure hull is generally constructed of thick high-strength steel with a complex structure and high strength reserve, and is separated with watertight bulkheads into several compartments. The pressure and light hulls aren't separated, and form a three-dimensional structure with increased strength. The inter hull space is used for some of the equipment which doesn't require constant pressure to operate. The list significantly differs between submarines, and generally includes different water/air tanks. In case of a single-hull submarine, the light hull and the pressure hull are the same except at the bow and stern. The constructions of a pressure hull require a high

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# STERILIZATION OF WATERCOURSE CONTRIVANCE

R.Rambabu<sup>1</sup>, N.Hymavathii<sup>2</sup>, D Raghavendra<sup>3</sup>

<sup>1</sup> Asst. Professor & HOD, Department of Automobile Engineering, Eswar college of Engineering, Narasaraopet

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**Abstract:** River is the important source for water the livelihood. Maintaining its purity is very important. Water pollution is the addition of undesirable substance in water such as inorganic, organic, biological, radiological, heat, which degrades the quality of water so that it becomes unfit for use. Also, on the other hand gutter acts as a channel to divert the waste water from the water source, where it again meets the river at the other end. Hence, maintaining the purity of both the river is very important. However, cleaning of waste water by using man power will causes health problems and diseases occurs. To overcome these types of problems we designed an automatic river cleaning machine by using conveyor. The main objective of this project is to cleaning the river to reduce the man power, and time. In this project we have Automatic River cleaning with the help of mechanical conveyor. This project emphasis on cleaning of water. The work has done looking at the current situation of our national rivers which are dump with core litres of sewage and loaded with pollutants, toxic materials, debris etc. by using conveyor mechanism we can collect all types of unwanted waste from all water bodies with less capital.

## 1. INTRODUCTION:

Rivers are important part of human lives. But, unfortunately, only few are aware of its importance. The proof tons of trash in rivers and creeks, making it took and smell like a dumpsite. The garbage in rivers is more than just an eyesore because it can possibly contaminate our drinking water, threaten nature, our lives and aquatic animals.

The waste and gases produced from the industries are very harmful to human beings and to the environment. Our proposed system is used to clean and control the water garbage level using automatic conveyor mechanism technique.

The "River cleaning machine" used in that places where there is waste debris in the water body which are to here move. This machine which consists of water wheel driven conveyor mechanism which collects & remove the wastage, garbage & plastic wastages from water bodies. This also reduce the difficulties which we face when collection of debris take place.

A machine will collect the waste debris from the water bodies through the conveyor, this will ultimately result in reduction of water pollution and lastly the aquatic animal's death to reduce these types of problems. Water bodies for clean the surface water debris from bodies. Similarly, they are lots of problems of water pollution under Ganga River, Godavari River, and Nasik which affect the acoustic, human life & beauty of Ganga River.

### 1.1. Importance of River Cleaning:

The rivers in India play an important role in the lives of the peoples as following below:

- According to a World Bank report titled 'Issues and Priorities for Agriculture', India has about 195 million hectares of land under cultivation.
- Of this, about 63% or nearly 125 million hectares is rain-fed, while remaining 37% or 70 million hectares of the agricultural land depends on irrigation. Generally, rivers around agricultural zones provide much-needed water for irrigation.
- Several wildlife sanctuaries of India are located on banks of rivers and their backwaters.
- They provide potable water, cheap transportation, electricity, and the livelihood for many people nationwide.
- The rivers also have an important role in Hindu Religion and are considered holy by many Hindus in the country
- These national parks are home to several endangered species that feature on Red List of International Union for Conservation of Nature (IUCN). Hence rivers in India are critical to their survival.
- Further, rivers of India also provide livelihood to millions of people including fishermen, sand dredgers and various other professions.

### 1.2. Causes of Pollution:

1. Oil & Natural Gas Exploration:
2. Chemicals & Effluents:
3. Garbage Dumping:
4. Washing & Sewage:
5. Cremation & Last Rites
6. Sand Dredging:

Possible Consequences of River Water Pollution:

1. Impact on Flora & Fauna:
2. Loss of Livelihood:
3. Food Security:
4. Drinking Water:
5. Agriculture:
6. Loss of Export Revenue

### 1.3. Control to Pollution:

Reducing the effluent concentration of the waste input by:

- Wastewater treatment
- Industrial in-plant process control
- Eliminating effluent constituents by pre-treatment prior to discharge to sewer systems or by different product manufacturing for an industry.
- Reducing the upstream concentration by upstream point and non-point source controls.

Reducing the effluent volume by:

- Reduction of direct industrial discharge volumes into the municipal sewer system.
- Reduction in infiltration into municipal sewer systems.

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- Reduction of direct industrial discharge into the municipal sewer systems.
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# Application of Machine Learning and Deep Learning Algorithms to the Prediction of Stock Market Trends

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Shravan Khunti ; Prikshit Kumar ; M. Lakshman Rao ; T Vijay Muni ; Varun Sanjeev Singh ; Shaik Chand Mabhu Subhani All Authors

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Abstract



Document Sections

- I. Introduction
- II. Existing System
- III. Proposed Work
- IV. Results
- V. Conclusions

**Abstract:** The stock market's inherent volatility poses ongoing challenges for stock traders, as it is subject to a multitude of circumstances that exert influence on its behavior. ... [View more](#)

### Metadata

#### Abstract:

The stock market's inherent volatility poses ongoing challenges for stock traders, as it is subject to a multitude of circumstances that exert influence on its behavior. This research aims to mitigate the risk associated with forecasting stock market trends through the utilization of deep learning and machine learning techniques. Eleven machine learning models were utilized in this study: random forest, logistic regression, xgboost, naive Bayes, K-nearest neighbors, decision tree and support vector classifier and extreme gradient boosting. Additionally, two powerful deep learning techniques: recurrent neural networks (RNN) and long short term memory (LSTM) were used. From the Tehran Stock Exchange, four market groups were chosen for the experimental estimates. Petroleum, non-metallic minerals, basic metals, and diversified financials are all part of these categories.

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**I. Introduction**

The focus of recent business research has been on challenging and time-consuming topics like future stock price estimates. Contrarily, financial data is perceived as being challenging to forecast and anticipate. Business associations, scholars, and interested parties are keen to obtain the stock price projection of stock market trends because they think that knowledge from the past and present influences events that will happen in the future. Fama's efficient market hypothesis (EMH) (1990) shows that forecasting market prices is challenging.

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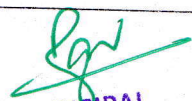
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Keywords

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# TRANSIENT THERMAL AND STRUCTURAL ANALYSIS OF DISC BRAKE

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**Abstract**— Braking system is a process which converts the kinetic energy of the vehicle into mechanical energy which must be dissipated into the atmosphere in the form of heat. A brake disc usually made of cast iron or ceramic composites is connected to the wheel and/or the axle. Friction material in the form of brake pads is forced mechanically, hydraulically, pneumatically or electromagnetically against both sides of the disc to stop the wheel. The present analysis “transient thermal and structural analysis of disc brake” deals with the heat generation in the different disc brake materials with varying speeds of the vehicle and the dissipation of heat through these materials and also the deformation and the stresses produced in these materials because of the temperature rise is analysed. A comparative study is made between these materials to suggest the best material for the disc brake in the aspect of the problem considered. Modelling of the disc brake has done using CATIAV5 and the complete analysis is done by using Ansys 16.0.

## 1. INTRODUCTION

Of all the systems that make car, the brake system is one of the most important. Its function determined the safety of the driver, passenger and also pedestrian. In the olden days it was also one of the simplest. Over the years as improvements have been made, the system that has evolved isn't so simple anymore. Brake system work as hard or harder than any other part of the car, however much energy it takes to get the car up a hill, it takes at least as much energy to stop it at the bottom. In general, there are three main functions of a brake system, to maintain a vehicle's speed when driving downhill, to reduce a vehicle's speed when necessary and to hold a vehicle when in parking. When the brakes were applied, the pads or shoes that press against the brake drum or rotor convert kinetic energy into thermal energy via friction. The cooling of the brakes dissipates the heat and the vehicle slows down. This is all to do with The First Law of Thermodynamics, sometimes known as the law of conservation of energy. This law states that energy cannot be created nor destroyed; it can only be converted from one form to another. In the case of brakes, it is converted from kinetic energy to thermal energy.

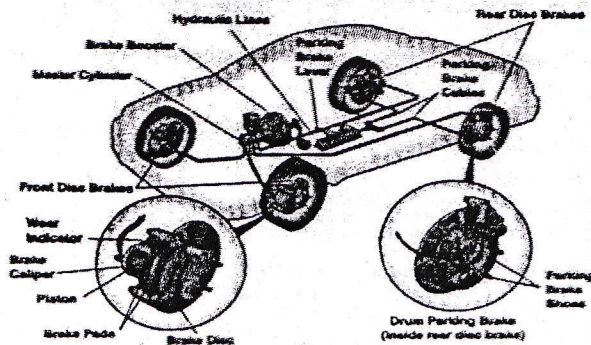


Fig: 1 components of braking system in a car

Typically, there are two types of brakes that were implemented in today's car, drum brake and disc brake. Disc brake is widely used because its design is far superior to that of drum brakes. Disc brakes use a slim disc and small caliper to halt wheel movement. Within the caliper are two brake pads, one on each side of the disc, that clamp together when the brake pedal is pressed. Fluid is used to transfer the movement of the brake pedal into the movement of the brake pads. The disc used in disc brakes is fully exposed to outside air. This exposure works to constantly to cool the disc, greatly reducing its tendency to overheat or cause fading.

## 1.2 Components of disc brake

A disk brake consists of so many components disk bolted to the wheel hub and a stationary housing called caliper. The caliper is connected to some stationary part of the vehicle like the axle casting or the stub axle as is cast in two parts each part containing a piston. In between each piston and the disc there is a friction pad held in position by retaining pins, spring plates etc. The passages are also connected to another one for bleeding. Each cylinder contains rubber-sealing ring between the cylinder and piston.

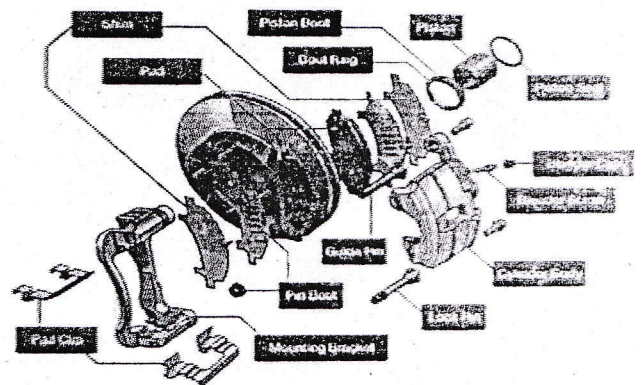


Fig 2: Components of disc brake

The main components of the disk brake are:

- > The Brake Pads
- > The Caliper which contains the piston
- > The Rotor which is mounted to the hub

When the brakes are applied, hydraulically actuated pistons move the friction pads to contact with the rotating disk, applying equal and opposite forces on the disk. Due to the friction in between disk and pad surfaces, the kinetic energy of the rotating wheel is converted into heat, by which vehicle is to stop after a certain distance. On releasing the brakes the rubbers-sealing rings with its return spring and retract the pistons and the friction pads away from the disk.

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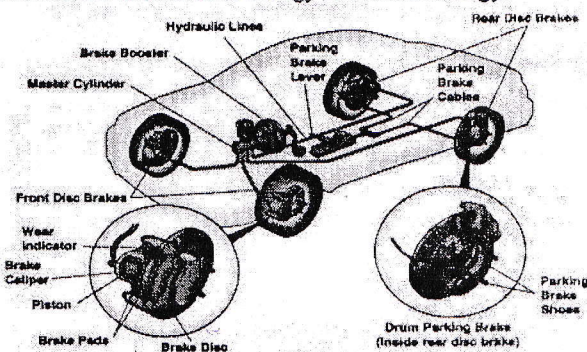


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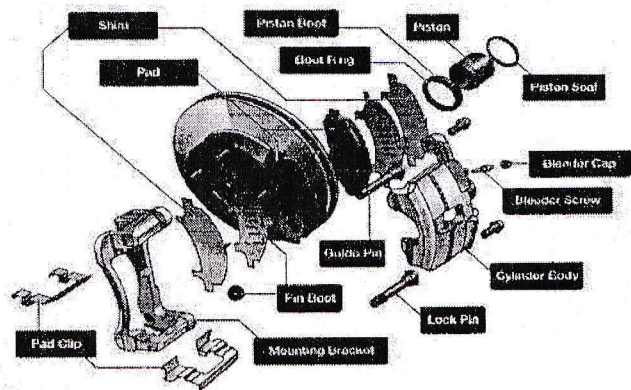



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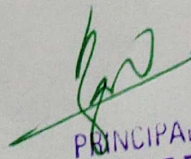
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