



**PERFORMANCE ENHANCEMENT
ON FOUR STROKE SI ENGINE
USING CONSTANT AIR SUPPLY**



A PROJECT REPORT

Submitted by

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In

Partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

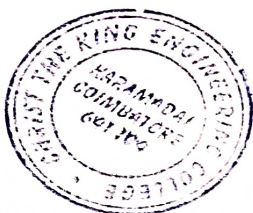
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BONAFIDE CERTIFICATE

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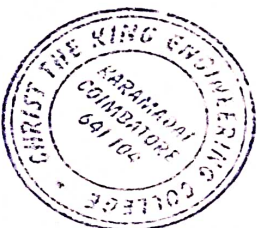

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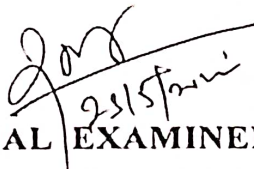
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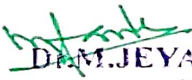
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ABSTRACT

One of the most difficult challenges in automotive technology today is to increase engine fuel economy and to reduce the emission. This project explains about high fuel efficient engine with less emission.

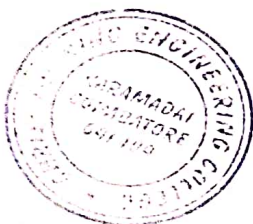
In this engine only fresh air is allowed to pass inside the combustion chamber when the vehicle is running in a slope and reduce the effort of the piston during suction stroke due to less air flow by closed throttle valve during deceleration.

There are several other technologies like twin spark ignition system, cold air intake system, triple spark ignition system, exhaust tech system available to enhance the performance and fuel economy of the engine. Still we are in a need to increase the performance and fuel economy to meet the future fuel shortage and to reduce the increasing pollution.

This design uses an extra air flow passage to combustion chamber in between carburettor and engine. This passage supplies only fresh air to the engine when the accelerator is released.

When the driver release the accelerator of the vehicle the air/fuel mixture will be cut down and the engine speed is reduced. During normal running if the driver of the vehicle feels that the road is sloppy and is not required, and leaves the accelerator for free running of the vehicle, the throttle valve of the engine will come to idling position and thus the entry of air to the high speed engine will be blocked.

It is very difficult for the piston to run freely as more effort is needed to the piston to pull the air from atmosphere in that throttle valve condition. So the engine speed and vehicle speed will be slowed down even in sloppy areas.



CHAPTER 5

CONCLUSION

The following conclusions are made with our experimental work.

5.1 INCREASE IN FUEL ECONOMY

The fuel economy of the engine is increased as often fresh air is supplied. The fuel used during the supply of fresh air during normal running is saved. There will be increase of 8-10% from the normal economy of the engine. This increase in fuel economy will decrease the running cost of the vehicle and also saves the total fuel consumption of our country.

5.2 EFFICIENT COOLING

Efficient cooling of engine is obtained as often only fresh air is passed inside the engine cylinder. During constant fresh air flow the engine runs only with fresh air, thus the combustion process during power stroke does not take place.

Thus the heat produced during the combustion process is reduced and the heat present in the linear and piston will be carried out through the fresh air sent inside.

5.3 INCREASED ENGINE LIFE

Engine life depends on the running conditions of the engine like temperature, cooling of the engine, lubricating oil, periodic maintenance. As our system maintaining the engine temperature without increasing, this will help to reduce the friction between the piston rings and the linear. It also helps the lubricating oil to retain its viscosity due to lower temperature, so the lubrication to the engine will be efficient.



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