Modification of Car Body & Fuel System

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Abstract— In this manuscript, by replace old carburettor of engine improve performance as well as provide convertible roof on maruti 800 car, the objective of this provide convertible car look as bell as by replacing carburettor improve efficiency of engine. So the present study aims for internal combustion engine is making economical and reliable. The term may refer to a personal transportation vehicle, such as an automobile, or any other vehicle that uses carburettor in a similar fashion, such as a racing car. The old vehicles convert the aesthetic look and Morden techniques use for improve performance, by replacement of carburettor its test performance in IC engine, I.C. Engines equipped with a conventional carburettor system has the defect of improper combustion in different load ranges because of a sub-optimal Air-Fuel ratio. The results are harmful exhausts, high fuel consumption and a low degree of efficiency. Where the fuel consumption will be very low when comparing to conventional carburettor systems and also we obtained a high degree of efficiency compared to conventional carburettors with a simple and cheap alternative to injection system.

Key words: Carburetor, Convertible Roof

I. INTRODUCTION

Carburettor is a devise used to mix gasoline and air at various proportions according to different load conditions. The Mechanism of breaking up of volatile fuel into minute particles and mixing with correct quantity of air is called Carburetion. When the engine is running at low speed, Air-Fuel mixture supplied by the conventional carburettor is so weak to ignite combustible mixture. So there is a need for modified set up consist of pre combustion chamber. The Pre-Combustion Chamber consist of spiller fan were the required amount of air and fuel gets thoroughly mixed and entered in the carburettor.

A convertible or cabriolet is a passenger car that can be driven with or without a roof in place. The methods of retracting and storing the roof vary between models. A convertible allows an open-air driving experience, with the ability to provide a roof when required. Potential drawbacks of convertibles are reduced structural rigidity (requiring significant engineering and modification to counteract the effects of removing a car's roof) and cargo space.

II. ARRANGEMENT OF CARBURETTOR SYSTEM

1) Modified carburettor
2) Engine
3) Exhaust outlet

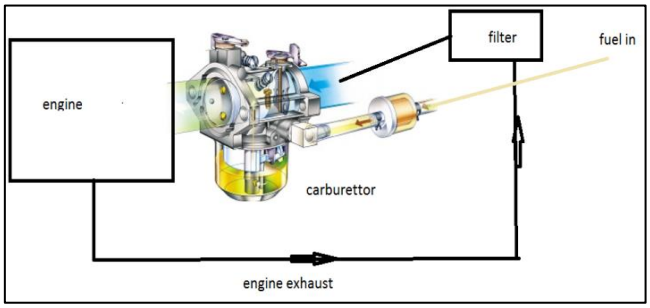

Fig. 1: Component Setup Of Modified Carburetor

Fig. 2: Actual Setup of Modified Carburetor.

III. FUNCTION OF CARBURETTOR

The function of the carburettor is to atomize the fuel into smaller droplets (mist), so that the fuel gets mixed with the air entering the engine combustion chamber in a proper ratio of 14 parts air to 1 part fuel which is based on the combustion equation of gasoline or petrol. Usually it varies from 11:1 to 17:1 in an engine typically based on the application cruising or accelerating. It is necessary to understand that liquids are incompressible. So the fuel has to be vaporised and made into gas as gases are compressible , compression of air-fuel mixture is one of the four process in the working of an engine.

IV. SPECIFICATION OF ENGINE

Length	3335mm
Width	1440mm
Height	1405mm
Seating Capacity	4Person
Displacement	796cc
Fuel Type	Petrol
Max Power	37 bhp @ 5000 RPM
Max Torque	59 Nm @ 2500 RPM
Transmission Type	Manual
No of gears	4Gears
Drive train	Front Wheel Drive

Table 1:

V. MODIFICATION PROCESS FOR OPEN ROOF

Firstly we disassembly car door, sit as well as boot space, and remove window glass,

Fig. 3: Then After That We By Using Power Saw Cut Half Portion Of Car In Which Roof Of Car Completely Removed.

Fig 4: So That Again We Perform Grinding Operation O Car Body In Which Sharp Edges Remove And Provide Smoothness To The Body

Fig. 5: After That We Remove All Dent And Paint Car Body With Aesthetic Look.

Fig. 6: So Finally Modification Completed

VI. PERFORMANCE DURING TASTING

Sr. no	Fuel quantity	Before modification Average	After modification Average
1	1liter	12	16

Table 2:

VII. ADVANTAGES

- Advantages of using modified carburettor
- Carburettor parts are not expensive as that of fuel injectors, especially EFI, which would give you large savings.
- With the use of carburettor you get more air and fuel mixture.
- In terms of road test, carburettors have more power and precision.
- Carburettors are not restricted by the amount of gas pumped from the fuel tank which means that cylinders may pull more fuel through the carburettor that would lead to denser mixture in the chamber and greater power as well.

VIII. DISADVANTAGES

- Disadvantages of using carburettor
- At a very low speed, the mixture supplied by a Simple Carburettor is so weak that it will not ignite properly and for its enrichment, at such conditions some arrangement in the carburettor is required to be made.
- The working of simple carburettor is affected by changes of atmospheric pressure. Carburettors used in aircraft are to be provided with altitude control, as the rich mixture is unnecessarily available, due to less density of air.
- The working of simple carburettor is affected by changes of atmospheric temperature. If the setting is done in winter season, it will be found to give too rich mixture in the summer. This is happened due to less density of air with the rise of temperature to a greater extent than the density of fuel.
- It gives the proper mixture at only one engine speed and load, therefore, suitable only for engines running at constant speed increase or decrease ,the quantity of fuel issuing out will change and not match the velocity of air flowing through the venture and proper mixture is not

take place. To overcome this various modifications have to be made in simple carburettor.

IX. APPLICATION

Automobile vehicle: automobile vehicle like bus, cars, bikes, Small machines, such as lawn mowers, chainsaws and portable engine generator,

X. CONCLUSION

In this paper From above we conclude that modification of car are most effective and reliable as compare to other fuel efficient engine as well as open roof car we successfully run engine by using modified carburettor. As well as from above modification we get better performance at fewer prices. The results of conventional carburettor system have the harmful exhausts, high fuel consumption and a low degree of efficiency. To overcome these results, we have used the modified arrangement of carburettor, so that efficiency was achieved with low specific fuel consumption.

REFERENCES

[1] Bolt, J.A (1960) Influence of Fuel Properties in Carburetors.
[2] Ersue, E (1964) Investigation of Air Consumption Measurement of Internal Combustion Engines.
[3] Ficher, C.H (1969) Petrol Engine Emission.
[4] Gajendra babu, M.K (1954) Four Stroke Single Cylinder Spark Ignition Engine.
[5] Ricardo, H.R (1968) Internal Combustion Engine.
[6] G. Arun Reddy, S. Navya Sree and Mastan Valli Babu, Modelling of Bicycle Fitted with Two Stroke Petrol Engine. International Journal of Mechanical Engineering and Technology, 8(7), 2017, pp. 439–448.
[7] Vikas Mukhraiya, Raj Kumar Yadav and Brajesh raikawar, Production of Fuel through Waste Plastic and Polythene and Used in Four Stroke Petrol Engine as A Fuel. International Journal of Advanced Research in Engineering and Technology, 6(12), 2015, pp. 12-15.

