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DOMESTIC USED ENGINE

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ABSTRACT

*An**ELECTRICITY GENERATION USING DOMESTIC ENGINE** is an arrangement of 4-stroke IC engine attached to the electricity generating device. The name suggests its type of use. It can be used for generating electricity during load shading schedule as well saving the electricity in a sufficient scale.*

As we all are aware of IC engine, we can do several operations on single IC engine. So there are 4-5 operations are arranged on IC engine. The project concept can be visualized easily.

A Domestic Engine also offers the used of domestic mixer by joining bevel gear instead of sprocket, this is also suitable for lighting purpose, fan purpose etc. by doing suitable alterations. A Domestic Engine possess significant working depth. It have sufficient capacity to conserve electricity.

Keywords;Use of multiple Fuels (Hydrogen,Petrol,LPG),Economic, Electricity generation in low cost.

I. INTRODUCTION

Now a days electricity is becoming the main source of power and living. its is taking the place of basic needs in human life. Human races need a large quantity of electricity for its living all over the globe. The quantity requests are not satisfied by the fabricates of the same. Which results into shortage of electricity.The results into stoppage of works which are dependent on electricity. Apart formthis the electricity in INDIA is only developed in the urban and some of the rural parts of INDIA. The other parts like hilly areas, drought affected areas, deserted land are still facing the shortage of electricity. Some parts of INDIA have still not seen the magic and power of electricity. INDIA is a forming country. Farmers need electricity to take water out from the wells by using pump. Due to the shortage of electricity, the working of pumps and various electrical equipments does not takes place.

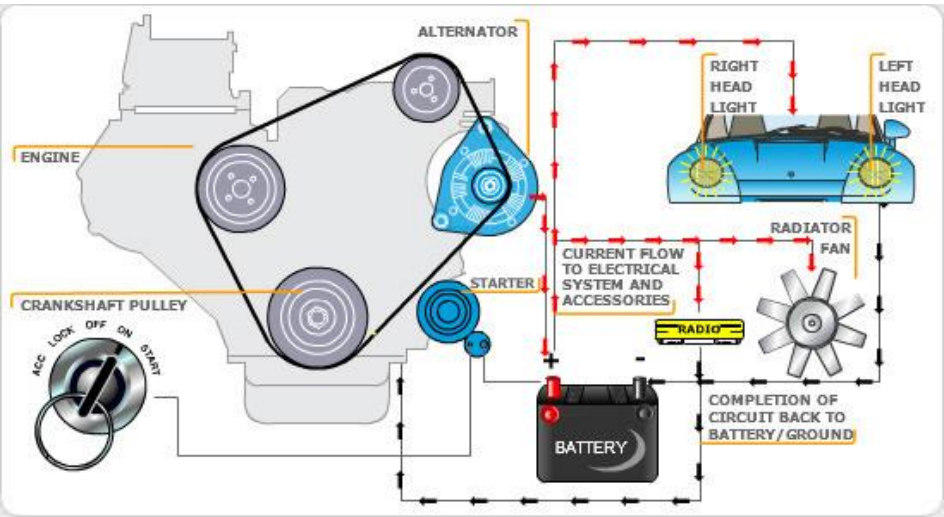
Hence we are developing a model which will generate electricity using the IN ENGINE which very much easily available in all parts of the INDIA. Generation of electricity using this is so reasonable that each agriculturist can make venture for purpose of electricity generation and make his works to be done efficiently and in well manner. This will bring profits to the farmers of INDIA.

II. LITERATURE REVIEW

2.1 ADVANCED INTERNAL COMBUSTION ELECTRICAL GENERATOR

1.Peter Van Blarigan, sandia National Laboratories Livermore ,CA 94550:-

In this paper,research on hydrogen internal combustion engines is discussed .The objectives of this project is to provide a high efficiency means of renewable hydrogen based fuel utilization .The development of high efficiency low emissions electrical generator will prompt building up a way for renewable hydrogen based fuel use .A full-scale model will be produced in collaboration with industrial partners.



2.2 COMPRESSED NATRUAL GAS AS AN ALTERNATIVE FUEL FOR SPARK IGNITION ENGINE.

2.MundeGopal G.,Dr.Dalu Rajendra S.

The exploration on option energizes for inner burning engine has become essential due to depletion of petroleum products and its major contribution for pollutants for the future. Independent of vehicle category, natural gas(CNG) will cut down hurtful outflows. Compacted normal gas has long been used in stationery engine ,but the application of CNG as a vehicle motor fuel has been extensively advanced over the last decade by the development of lightweight high pressure storage cylinder. There are various methods which use the compressed natural gas in IC engine with little modification.

2.3 HYDROGEN FULLED IC ENGINE

3.VVN BHASKAR,Associate Professor Dept.of ME,ACE,Madanapalle,A.P.India

Hydrogen as a fuel in IC engine is a solution for the near future to realize zeroCO_2 emission for traffic applications. The hydrogen fuelled IC engine is prepared for that. The capacity and generation of hydrogen, and to build the necessary infrastructure, are the genuine inadequacies in the general utilization of hydrogen. This paper gives an overview of the development of hydrogen fuelled IC engine by the most critical auto manufacturers(Ford, BMW etc.).This overview indicates the evolution in the development of hydrogen fuelled engines. This evolution is also made at Ghent University.

2.4 Hydrogen Internal Combustion Engine Vehicles.

4.Kenneth Gillingham, Stanford University.

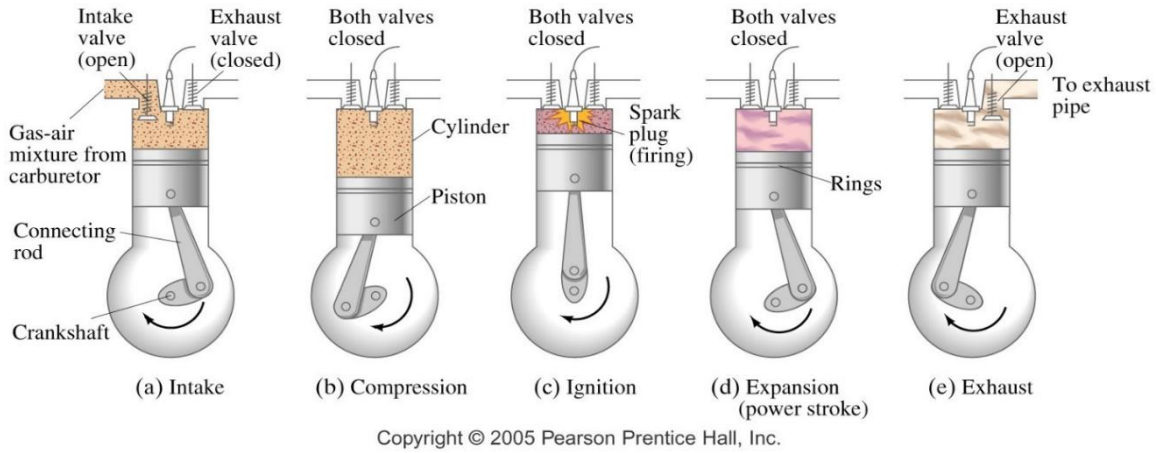
Hydrogen internal combustion engine(ICE)vehicles present much of the same promise as hydrogen fuel cell vehicles(FCV's)reduced reliance on imported oil and reduced carbon dioxide emissions. Advocates imagine hydrogen ICE as a connecting innovation from gasoline vehicles to hydrogen FCVs. This paper examines the hydrogen ICE technology, focusing on relevant aspects such as power ,fuel economy ,tank size and state of the technology. An economic analysis is then performed to examine the potential implications of widespread adoption of hydrogen ICE vehicles in the united states.

2.5 Internal Combustion Engine

R.K.Rajput.

A four-stroke engine (also known as four cycle) is an internal combustion (IC) engine in which thepiston completes four separate strokes while turning a crankshaft. A stroke refers to the full travel of the piston along the cylinder, in either direction. The four separate strokes are termed:

1. Intake: This stroke of the piston begins at top dead center (T.D.C.) and ends at bottom dead center (B.D.C.). In this stroke the intake valve must be in the open position while the piston pulls an air-fuel mixture into the cylinder by producing vacuum pressure into the cylinder through its downward motion.
2. Compression: This stroke begins at B.D.C, or just at the end of the suction stroke, and finishes at T.D.C. In this stroke the cylinder packs the air-fuel mixture in preparation for ignition during the power stroke (underneath). Both the admission and fumes valves are closed during this stage.
3. Power: This is the start of the second revolution of the four stroke cycle. At this point the crankshaft has completed a full 360 degree revolution. While the cylinder is at T.D.C. (the end of the pressure stroke) the compressed air-fuel mixture is ignited by a flash attachment (in a gas motor) or by warmth created by high compression (diesel engines), forcefully returning the piston to B.D.C. This stroke produces mechanical work from the engine to turn the crankshaft.
4. Exhaust: During the exhaust stroke, the piston once again returns to T.D.C from B.D.C while the exhaust valve is open. This action expels the spent air-fuel mixture through the exhaust valve.



5. 4-Stroke IC Engine Manufacturers in India includes:-

6. 1) Bajaj Auto
7. 2) Honda Motors
8. 3) Kerala Auto Limited
9. 4) TVS Motors.
10. After a deep survey of 4-stroke IC engine we selected the following Engine of HONDA ACTIVA which would be sufficient and suitable to this project due to its technical specifications.

2.6 Alternator

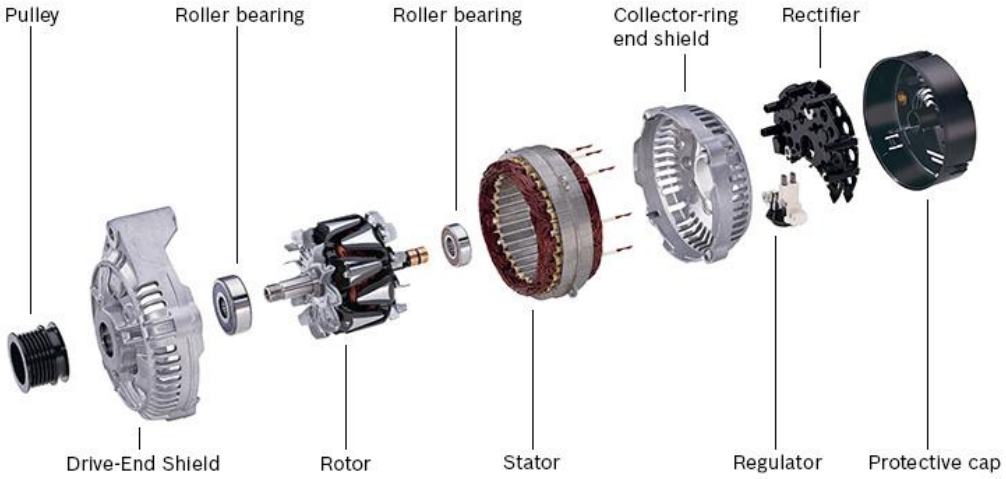
An **alternator** is an electrical generator that converts mechanical energy to electrical energy in the form of alternating current. For reasons of cost and simplicity, most alternators use a turning attractive field with a stationary armature. Once in a while, a linear alternator or a rotating armature with a stationary magnetic field is used. In principle, any ACelectrical generator can be called an alternator, but usually the term refers to small rotating machines driven by automotive and other internal combustion engines. An alternator that uses a permanent magnet for its magnetic field is called a magneto. Alternators in power stations driven by steam turbines are called turbo-alternators. Vast 50 or 60 Hz three stage alternators in force plants generate most of the world's electric power, which is distributed by electric power grids.

A conductor moving relative to a magnetic field develops an electromotive force (EMF) in it, (Faraday's Law). This emf turns around its extremity when it moves under magnetic poles of opposite polarity. Typically, a rotating magnet, called the rotor turns within a stationary set of conductors wound in coils on an iron core, called the stator. The field cuts across the conductors, generating an induced EMF (electromotive force), as the mechanical input causes the rotor to turn.

The rotating magnetic field induces an AC voltage in the stator windings. Since the currents in the stator windings vary in step with the position of the rotor, an alternator is a synchronous generator.

The rotor's magnetic field may be produced by permanent magnets, or by a field coil electromagnet. Automotive alternators use a rotor winding which allows control of the alternator's generated voltage by varying the current in the rotor field winding. Permanent magnet machines avoid the loss due to magnetizing current in the rotor, but are restricted in size, due to the cost of the magnet material. Since the permanent magnet field is constant, the terminal voltage varies directly with the speed of the generator. Brushless AC generators are usually larger than those used in automotive applications.An automatic voltage control device controls the field current to keep output voltage constant. If the output voltage from the stationary armature coils drops due to an increase in demand, more current is fed into the rotating field coils through the voltage regulator (VR). This increases the magnetic field around the field coils which induces a greater voltage in the armature coils. Thus, the output voltage is brought back up to its original value.

Alternators used in central power stations also control the field current to regulate reactive power and to help stabilize the power system against the effects of momentary faults. Often there are three sets of stator windings, physically offset so that the rotating magnetic field produces a three phase current, displaced by one-third of a period with respect to each other.



3.1 Objective

1. To study how electricity can be generated easily and in cheap way.

2. To find out the alternatives ways of generation of electricity.

3. To study problems faced by famers in INDIA due absence of electricity.

4. To make a model which will generate electricity which will be affordable by most of the farmers in INDIA.

3.2 SCOPE

1. This model can generate electricity at minimal cost which will be very affordable for farmers.
2. Model will generate electricity with minimal pollutants emission.

3.3 Methodology

In this we will build a model which will generate electricity using IC engine. IC engine will be attached to an alternator. The rotation of the IC engine shaft will rotate the alternator shaft and result into generation of electricity. The IC engine will work on petrol as fuel in starting will later on shift on alternative fuel.

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