International Journal For Technological Research In Engineering
Volume 4, Issue 12, August-2017 *ISSN (Online): 2347 - 4718*

AIR DRIVEN ENGINE

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Abstract: Internal combustion engines seriously pollute the environment, and consume excessive non-energy energy, hence the whole world is in search of alternative fuel today and alternative energy such as solar energy, tidal power, geothermal power Etc. Compressed air is the air engine runs on the air so there is no need for any fossil fuel and carburetor. The current paper gives brief description on zero pollution compressed air engines.As we are already going to converge the existing conventional engine into an air driven one, it is easy to optimize the new technology and the other advantage is that it uses air as air, which is full of environments Available in quantity. This technique is cheap in cost and maintenance and it does not do any harm to the environment. Thus it is definitely a revolutionary mode of transportation.

Key Words: Compressed air engines, zero pollution, compressed air fuel (CAF), ecological friendly engine, single stroke engine.

I. INTRODUCTION

Today fossil fuels are widely used as energy sources in different areas such as power plants, internal combustion engines, external combustion engines, heat sources etc. in the manufacturing industries. But due to limited stock and excessive use, fossil fuels are rapidly decreasing at rates. Therefore it is mandatory to develop alternative technologies to use renewable energy sources so that fossil fuels can be preserved. Fossil fuels are used in one of the major areas, internal combustion engines. One option of the IC engine is "air induced engine". This is an engine that will use the compressed air to run the engine. It is cheap because it uses air in the form of fuel, which is available in abundance in the environment. There are several technical benefits to using this engine, such as no combustion inside the cylinder, the temperature of the engine is very close to the ambient temperature. This helps to reduce the wear and tear of engine components. Apart from this, there is no possibility of knocking. In return, the result of the engine's smooth work is the additional technical advantage is that there will be no need to install the cooling system or complex fuel injection systems. This simplifies the design.

II. OBJECTIVE

1. Modification of IC Engine in an engine driven engine.
2. To develop an engine which is almost zero emissions.
3. Preparing our own test rig
4. Engine test on manufactured test rig

BASIC PRINCIPLE:

The principle behind the work of a wind driven engine is the ability to store energy on the compression of energy and then it has been released on expansion. On compression, the work done by the pump is deposited in the form of pressure energy, for later use this compressed air is stored in cylinders tanks. When this air is allowed to be extended, then the pressure of air turns into energy kinetic energy and causes propulsion. The same principle is used for the engine. A throttling mechanism is connected to the cylinder opening valve from Throttle. When throttle is provided necessary rotation, then the valve opens to a specific degree which controls the amount of air.This air is given to the engine. When the compressed air enters the engine through the inlet valve then it attacks the piston, which is caused by the rotation of the first half of the crank shaft (exchange), this striked air expands, which again means the outlet medium. Crank shaft exits during the second half rotation. Air is stored in either cylinders or compressors, the only purpose of storing air in such high pressure is to ensure that the vehicle has sufficient amounts of air so that it can be used for long periods before replacing the cylinder Get permission to walk The work of the engine is shown in Fig.

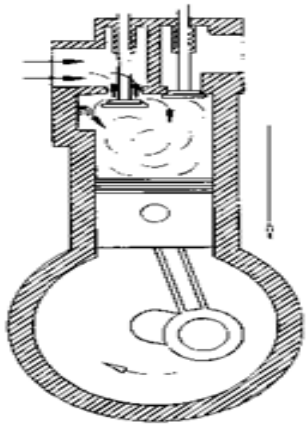

Figure.1 Working 1st half rotation of crank shaft

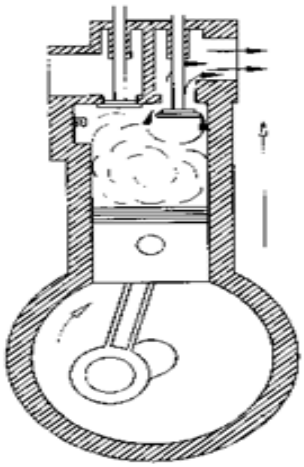

Figure 2: Working of 2nd Half Rotation of Crank Shaft

III. CONCLUSION

With the current state of hazardous pollution and the lack of fossil fuels, the concept of compressed air engines has taken an important position in the research and development field. Nowadays the need for energy is constantly increasing, and we are using traditional resources at a dangerous rate, so an alternative fuel is very important and compressed air technology can be a best option because the reason for pollution is zero and it Is also efficient. What was used also shows that the vehicle was running at a speed of 60 km and the increased weight was 18.5 kg, which affected only the nominal impact of the engine's efficiency. Apart from this, there was no pollution there. Therefore it is better and more durable and environmentally friendly than fuel like petrol and etc. The entire technology is about modifying the engine of any regular IC engine vehicle in the air pipe engine. Air power engine technology is cheaper in cost and maintenance, can be easily adapted by the public and it does not harm the environment. Instead, the use of wider propagation will help humankind to control the serious global warming problem.

ADVANTAGES:

Technical Benefits

• While working, the engine temperature will be slightly lower than ambient temperature.
• Wear a lot of components and tear the engine's work easier. There is no possibility of knocking.
• No need for cooling system and spark plug or complex fuel injection system.
• The engine runs on cool or hot air, so it can be made with low power light weight materials such as aluminum, plastic, low friction teflon or combination.

Economic Benefits

• There is no use of expensive fossil fuels because free air is compressed and used.
• Because of this, people can easily make changes in new technology.

Compressors use electricity to produce compressed air, which is relatively cheap and widespread.

• Wear and tear less than doing smooth work, such a low maintenance cost
• Compressed air technology reduces the cost of vehicle production up to 20%, because there is no need to create cooling system, fuel tank, ignition system or silencer.
• Easy maintenance with low construction and maintenance cost
• Lighter vehicles have less loss of roads, resulting in lower maintenance cost.

SCOPE FOR FUTURE WORK:

Since light engine parts such as carbon fiber for piston and connecting rod are not combustion, the over whelmingity will be reduced because its inertia will be reduced. Improvement in efficiency of reduction in piston diameter. The use of cam low inlet and outlet valves will not be necessary to run cameras through cameras through the use of output power to improve efficiency. A new technology can be developed in combination with the gasoline internal combustion engine and compressed air storage. It is developing this vehicle in response to the global need of energy efficient vehicles. A unique rotary piston concept can be focused on the development of aerial motor technology. Engine air motor can be invented which will eliminate vibration, internal wear and friction to achieve better performance for various types of applications. Air-compressed vehicle can be developed with high performance which will only run on compressed air.

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