

**IMPLEMENTATION OF BICYCLE BY PETROL POWERED TWO STROKE  
INTERNAL COMBUSTION ENGINE**

Petro Bicycle

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**Abstract** —a petrol bicycle is with an attached motor and transmission used either to power the vehicle unassisted. However, for purposes of governmental licensing and registration requirements, the type may be legally defined as a motor vehicle, motorcycle, moped, or a separate class of hybrid vehicle. Our model is eco-friendly. In that project are one I. C. 2 stroke engine is mount on "v" cycle frame, and the fuel tank mounted in during seat and the belt is mount on rear pulley and attach to clutch and the clutch and the clutch wire is attach to clutch and the clutch wire is attach on handle apply to impart force on paddle then engine will be start, 35cc engine used in my project, maximum speed 45-50 km/hrs. Average above 100 km/l and 70% efficiency.

**Keywords**- - bicycle frame, engine, belt system, clutch system

**I. INTRODUCTION**

Power assisted pedal cycles must meet the definition within the Commonwealth Motor Vehicles Standards Act 1989 (the Act). Importantly, this definition specifies that a power assisted pedal cycle is a form of bicycle, which, according to the definition in the Act, means it must be designed to be propelled solely by human power. This means that the primary source of power must come from the cyclist, with the motor used to provide assistance, such as when cycling into a strong headwind or up a steep hill, or if the cyclist is not fit enough to sustain a certain effort over an extended period. The recent demand for more efficient, environmentally-friendly vehicles has seen a growth in the market for power assisted pedal cycles. This demand has seen a number of motorized bicycles entering the market that are not genuine power assisted pedal cycles, but a form of moped or even small motorcycle. These vehicles are not illegal providing they meet the necessary mandatory safety and performance standards specified in the Act for mopeds or motorcycles, and are issued with an identification plate by the Commonwealth Department of Infrastructure and Regional Development. They must be registered and their riders must hold a motorcycle license and obey the road rules applicable to motorcycles. There has been a history of crashes involving petrol-powered bicycles in New South Wels, including a number of crashes where the bicycles ignited. As a result of a fatal crash involving a 14 year old boy riding a petrol-powered bicycle in October 2013, the Centre for Road Safety decided to investigate petrol-powered bicycles to assess their status under road transport legislation and the road safety risk they pose.

**II. CURRENT SYSTEM**

Three petrol-powered bicycles were purchased from internet suppliers; one with a 48cc engine fitted with a restricted device to limit its power to 200 watts; one with an unrestricted 48cc engine; and one with a 66cc engine. These were chosen as the 48cc model represents the smallest engine fitted to bicycles, and the motorized bicycle involved in the October 2013 fatal crash was fitted with a 66cc engine. In addition, a restricting device was obtained for independent analysis. A pedal-type power assisted pedal cycle that was marketed as complying with the definition of a power assisted pedal cycle was also purchased, from a retailer in Sydney to compare against the petrol-powered bicycles. A series of dynamic tests were done to determine the bicycles' performance capabilities.

**III. FUTURE PLAN**

- Now a days, many teenagers like the riding the power assisted vehicle.
- In big vehicle like bike, scooter, moped, is heavy and danger for them and that is very costly.
- So, our new design is overcome totally problem.
- We changing the some points a bicycle an fitting a small engine.
- This is a only 35cc engine and this type of engine is used in past to agricultural pump.
- In this type of engine do not required any type of licence or insurance.
- This bicycle price is very low as compare to bike.
- This bicycle running at 30 – 35 km/hour speed.

**1. Bicycle frame**

A bicycle is a human powered, pedal driven, single track vehicle, having two wheels attached to a frame, one behind the other. The basic shape and configuration of a typical upright, or safety bicycle, has changed little since the first chain-driven model was developed around 1885. Several components that eventually played a key role in the development of the automobile were initially invented for use in the bicycle, including ball bearings, pneumatic tires, chain-driven sprockets, and tension-spoke wheels. The bicycle is the most efficient human-powered means of transportation in terms of energy a person must expend to travel a given distance. The petrol assisted bicycle is driven by petrol engine fitted in front axle housing & operated by petrol fuel. The petrol engine is mounted on the bicycle frame and which in turn drive the hub motor. When the bicycle is idle running the day and the petrol engine is used to the petrol fuel and the system will make operate more efficiently.



## 2. Engine (Two Stroke Petrol Engine)

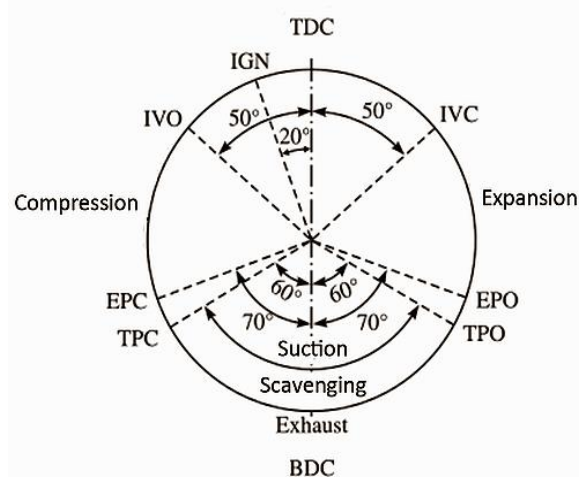
In four stroke cycle engines there is one working stroke in two revolutions of the crankshafts or in a cycle of four strokes of the piston. The desire of one working stroke in very revolution of the crankshaft has led to the development of two stroke cycle engines. Two stroke cycle engines are widely used for small powers required in auto cycles, scooters and motor cycles. In two stroke cycle engines, the suction and exhaust strokes are eliminated. There are only two remaining strokes – the compression stroke and power stroke; and these are usually called the upward stroke and downward stroke respectively.



## 3. Port Timing Diagram For Petrol Engine

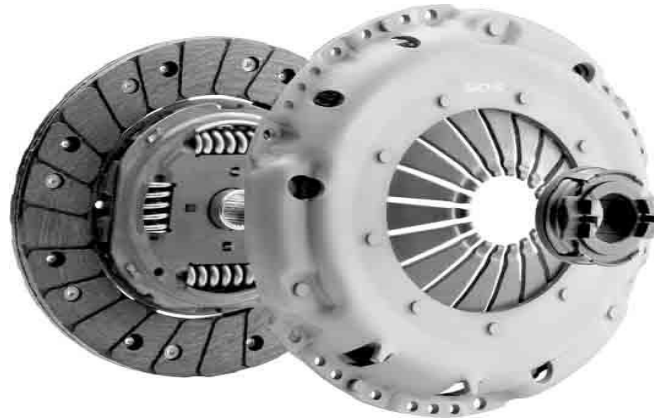
In two stroke petrol engines, ports are use in its place of valves, and therefore, the port timing diagram.

1. **Inlet port:** Inlet port opens  $35^\circ$  to  $50^\circ$  prior to TDC position which closes in the same amount after TDC place.
2. **Exhaust port:** Exhaust port opens and closes  $35^\circ$  near  $70^\circ$  before and after BDC place, in that orders.
3. **Transfer port:** Transfer port opens  $35^\circ$  to  $60^\circ$  in proceed to BDC place and closes  $35^\circ$  to  $60^\circ$  after TDC place



## 4. Clutch

The clutch works on the principle of friction. When two friction surfaces are brought in contact with each other and pressed, they are united due to the friction between them. If one is revolved, the other will also revolve. The friction between the two surfaces depends upon the area of the surfaces, pressure applied upon them and co efficient of friction of the surface materials. Clutch is a device used in the transmission system of a motor vehicle to engage and disengage the engine to the transmission.



- Testing



SPECIFICATION	PETROL BICYCLE
TYPE	Two wheeler
BORE	38.4 mm
STROKE	43 mm
NO. OF CYLINDERS	One horizontal
DISPLACEMENT (cc)	35 cc
COMPRESSION RATIO	8.0:1 ( + 0.5)
a. MAX. ENGINE OUTPUT (KW)	1.25 + 0.06 KW @ 4500 + 500 rpm
b. MAX. ENGINE OUTPUT (HP)	1.67
MAX. TORQUE (Nm)	2.943 @ 3000 rpm
AIR CLEANER	Wire mesh
OIL SUMP CAPACITY	N.A
WEIGHT OF ENGINE (Kg.)	7.5
WHEEL BASE ( mm )	1100
OVERALL WIDTH (mm)	630
OVERALL LENGTH (mm)	1650
MAX. GVW (Kg.)	170
MIN. GROUND CLEARANCE	120



#### IV. CONCLUSION

- From our report we can conclude that we can produce self-propelled vehicle at very low cost.
- Easily accessible for lower age child.
- Also we can produce better efficiency of the engine.

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