



## DO IT YOUR-SELF - # 14

### Some important facts to be considered to get better results from Emission Test.

As per the S.L . Motor Traffic Regulations, most of the two stroke scooters are also to be obtained annually an Emission Test Certificate prior to renew the revenue licenses. This Test seems to be a barricade for many scooter lovers as most of them experience a failure at least once or twice with this test. Therefore the following few facts are like to be brought to the interested parties in order to consider for them to obtain better results at the test.

Very simply it is understood that this test is done to calculate or gauge the percentage of poisonous particles or gases emission from the engine to the environment after the combustion of fuel/air mixture inside of it.(eg: carbon oxide gasses, Soot etc: )And also unburned fuel waste not only your money but also affect badly to the Government economy. As such the following facts may help to avoid this situation.

#### (1) Maintenance of carburetor (carburetor settings).

Liquid fuels must be transformed into gaseous state prior to combustion. The carburetor is a device fitted outside of the engine to do the above process and it should be precisely tuned to meet this Requirement.**pls: read my previous articles on carburetor repairs and carburetor settings for better Understanding.**



(a) Modified carb fixed to Scooter Engine



(b) Two-stroke Scooter Engine

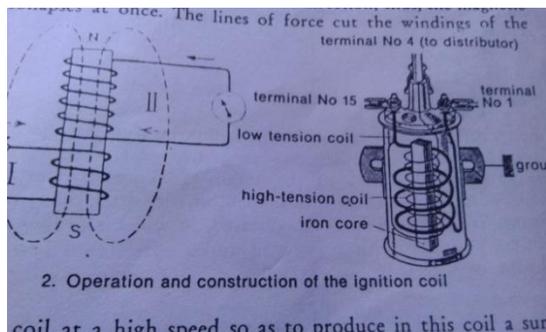
#### (2) Maintenance of ignition system

Ignition system serves or aids to ignite the fuel/air mixture inside the combustion chamber. If there is any fault with this system, it may affect badly to do the total combustion of the fuel/air mixture resulting the failure of the test. Therefore the maintenance of the following components of this System is very vital.



## 2.1 High-tension coil-

The high sparking voltage is produced in a high-tension coil. It consists of two kinds of windings such as Primary or Low-tension winding and Secondary winding or the coil. The Voltage rating depends on the ratio of these windings. If, for instance, the secondary coil carries 10000 turns, the primary coil on the contrary only 10 turns, then, the voltage induced in the Secondary coil =  $10000 : 10 = 1000$  times as big, that is with 6 volts of primary voltage = 6000 volts.



(a) Drawing of a H.T. coil



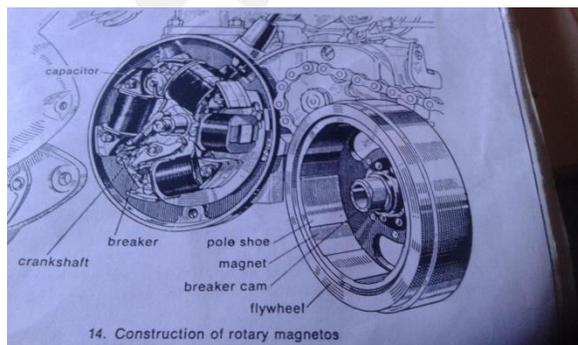
(b) H.T. coil used by a Grasscutter fixed to Two-stroke Scooter Engine

Therefore it is vital to fix the engine a highperformance H. T. coil for better performances.

## 2.2 Ignition Coil

Most commonly it is concerned as magnetos as its consists of Ignition coil, magnets & flywheel. On

Rotating the flywheel which consists of magnets , the ignition coil fixed on the stator plate generate current which used to Generate high voltage through the system of H.T. coil for the use of combustion.

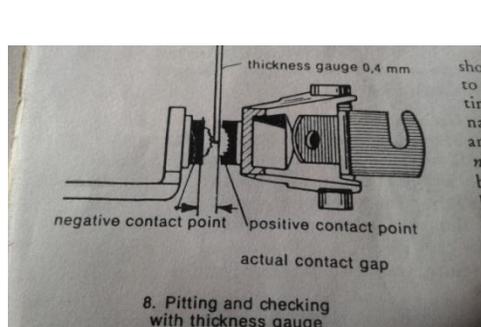




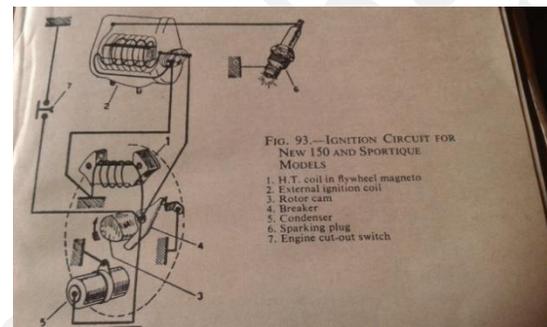
Therefore the strength of this Ignition Coil which is fixed on the Stator plate is also one of the Key factor for the better performances of the ignition system.

### 2.3 Maintenance of C.B ( Contact Breaker ) points

The early engines which relied on CB (Contact Breaker ) points as part of ignition system some times need a reasonable attention since it involve for a good combustion( quality of the spark). Burned or CB points with hump or pittings do not give smooth function required for better combustion.



(a) checking CB points



(b) Ignition system of a Scooter

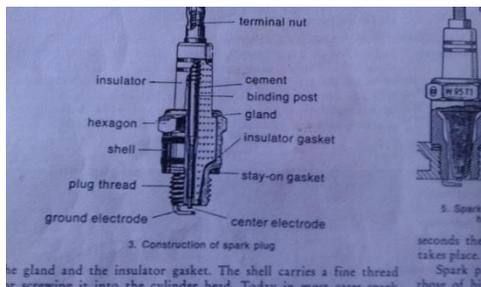
Therefore setting the correct contact gap after checking the condition of CB point is very vital for the best performances of it.

### 2.4 CDI Unit & Pulsor (pick-up coil)

Most two-stroke engines in later models consists of CDI system which is also to be carefully give some attention as malfunctioning of these units also very badly affected to the combustion system. Because at some RPMS, either both or one of these units may function poorly due to the defects therefor they should be replaced in order to obtain smooth output.

### 2.5. Spark Plug

A high performance spark plug is also one of the factor to get better performance of the ignition System. therefore a spark plug with correctly set electrode gap in a suitable heat range to be selected For your machine. The face of the spark plug reveals important information of the engine operation.



(a) construction of Spark Plug



(b) The face of the plug says condition of engine Operation.

## 2.6 Ignition lead ( Plug Wire)& Plug -top

Many do not concern about the plug lead & plug-top but it is also very important to get better output. Therefore carefully check the insulation & the resistance of both items as if there is any leakage or consist of high resistance the better performance won't get.

Apart from the above factors ,the good combustion depends on precise ignition timing.

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