



4-stroke Internal Combustion Engine



Job – Spark Plug & Magneto Output

Objectives

- To learn how to test the spark produced at the spark plug
- To learn how to test the magneto output.

Introduction

Trouble with the ignition system may stem from the spark plug or from the magneto itself. It is often helpful when troubleshooting to determine (1) if the magneto is delivering high enough voltage to fire the spark plug, and (2) if the spark plug is able to make use of the generated electricity and create a spark. Poor ignition can result in the following conditions: engine misfire; poor performance under load; hard starting; failure to start/run. If trouble exists, the two simple checks that follow will establish whether or not the ignition system is the source of the problem.

Assignment

You are to perform the tests detailed below, testing first the magneto's output and second the output at the spark plug.

Procedure

1. Testing the strength of the magneto's output.
 - a. Remove the spark plug wire from the plug.
 - b. Connect the magneto tester between the spark plug wire and a good engine ground. (a good ground being any non-painted metal surface)
 - c. Turn the engine over as if it were to be started.
 - d. Observe the spark in the tester's window. Optimum generation will produce a thin blue spark.
2. Testing the strength of the spark at the spark plug.
 - a. Remove the spark plug's wire and the plug itself the re-attach the lead to the plug.
 - b. Lay the plug on the engine such that the shell of is in contact with bare metal.
 - c. Turn the engine over as if it were to be started
 - d. If a good strong spark jumps at the electrodes, the plug is considered OK.

*Note - the spark plug test that you have just performed is not an absolute test as it is more difficult for the spark to fire under compression. If the spark plug is questionable, do not hesitate to install an new one.

Questions

1. Is it possible for the magneto to be good and the spark to be bad? Explain.

2. Is it possible to get a good spark at the plug if the magneto is bad? Explain.

3. Why is it important to tighten the spark plug securely during reassembly?

4. What is the proper torque specification for your spark plug?

_____ Inch lbs

5. How would you describe the spark you observed when using the magneto tester?

6. If the spark fires correctly when it is removed from the cylinder will it necessarily fire correctly when it is under compression? Explain.
