

Operating Instructions - Model MT-1

This Instrument is a reproduction of the St. Louis Electric Works Magneto Tester circa 1916. It is quite possibly the best tester ever designed for the Ford Model T internal magneto. What is important to understand is that this tester was designed and sold circa 1916 and thus later magneto changes by Ford were not considered in the calibration of this unit. In the interest of authenticity Fun Projects, Inc. decided to mark the meter reading exactly the same as the original tester and to explain the operation of the tester when used on the later 1917-1927 magnetos.

The original tester was designed and calibrated against Ford published magneto output voltage and current data as published in Ford Service Bulletins. Few of the later magnetos actually are that powerful nor do they need to be in order to run coils only. In 1916 The Ford magneto was expected to power both the headlights AND the coil ignition. Later changes to the Ford magneto reduced its power output slightly.

For connection of this instrument you will need to use 16 guage or heavier wire. The operation of this tester is as printed on the front panel but it should be noted that so long as the meter reading is steady and above the 1914 mark, the magneto is of sufficient strength to properly operate coils. This assumes only that the coils are in proper adjustment having been setup using a Hand Cranked Magneto Coil Tester (HCCT) or a Fun Projects, Inc. Strobo-Spark coil tester.

The use of this magneto tester was published for several years running in Editions 13-16 of Dyke's Automobile and Gasoline Engine Encyclopedia. That information is reprinted here in the info box to the right.

NOTE: It is NORMAL for the meter to not read at zero when at rest. Do NOT attempt to zero the meter or calibrate this instrument.

Drive Sober

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DYKE'S INSTRUCTION No. 85



Fig. 91. Ford magneto tester. Note how the scale is marked. See text.

The Ford magneto can be tested with a special magneto tester, as shown in Figs. 91 and 93. This instrument is nothing more than an ammeter, but one provided with a "reactance coil" (R) (Fig. 93), which enables the meter to indicate a constant current at all engine speeds. In other words, the meter is so designed that it will indicate if the magneto is giving its proper output at any speed of the engine, while testing.

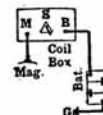


Fig. 92

Fig. 92. Method of connecting the battery to the ignition coils.

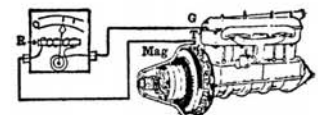


Fig. 93

Fig. 93. Method of connecting Ford tester.

This instrument can be used to test the strength of the magneto while the engine is being run on a battery, if the engine fails to start on the magneto.

If engine starts on the magneto, but continually misses, and if the trouble is not due to other causes, then the tester can be used to see if the magneto is delivering its proper current, while the engine is being operated on the magneto.

The connection for testing would be the same in both cases (Fig. 93), except that, when the engine is running on the battery, the wire from the ignition coil to the magneto is removed, and the switch is placed on (B) side (Fig. 92).

The clearance or air gap of Ford magnetos is the distance the magnets are from the core of the magneto coils. This should be as stated on next page. If they are farther away, the amperage and voltage will be less; if closer, the amperage and voltage will be greater, but there is danger that the magnet will strike the coil core.

The tester is a great help when assembling the magneto on the bench. The "air-gap" can be adjusted to the point of greatest output, if you have the meter to test with as you assemble. The fly-wheel can be turned by hand fast enough, so that the instrument will give a steady reading.

Adjusting air-gap clearance: The clearance, or air gap, between the coils and magnets should be .030", which is almost 1/32". The allowable limits are from .025" to .040". If the gap is too wide, put the necessary shims behind the coil support. If the gap is too narrow, take out some shims. The steel shims are .015", and the paper ones are .005".

If the needle fails to reach this mark, remagnetize the magnets.

If then the magneto fails to test up to this mark, and the missing still occurs, and is not due to loose terminals, and runs satisfactorily with a battery, then you may know you have a "grounded" magneto coil. The magneto must be removed, the defective coil located, another put in place, and the "air-gap" clearance must be given as described above.