

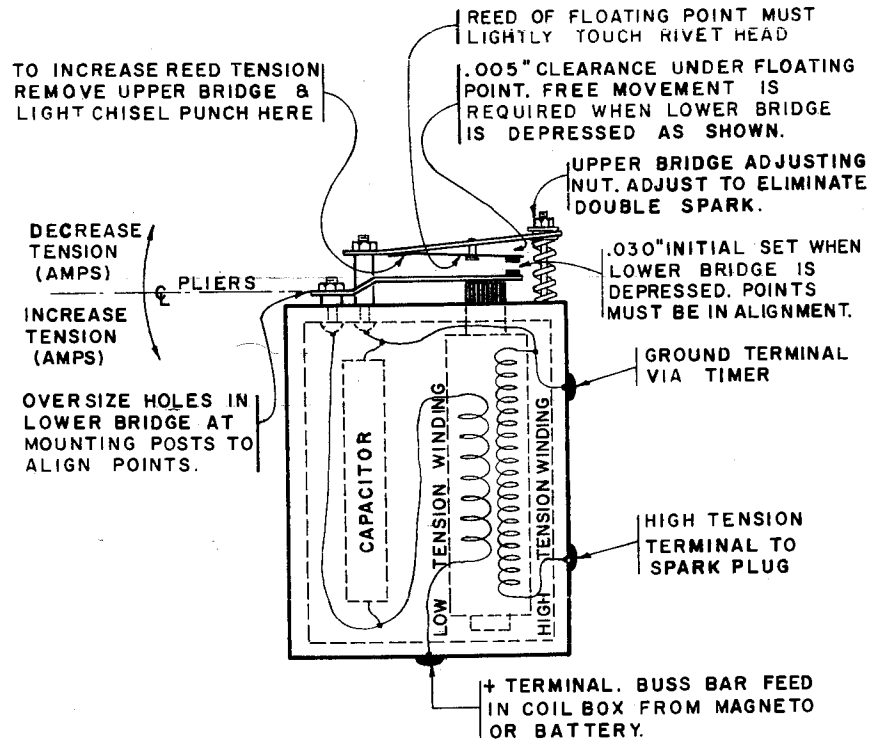
# Adjusting Model T Ford Coils with a K. R. Wilson Coil Testing Machine

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Fox Valley Chapter

The K. R. Wilson and other similar hand-cranked coil testers duplicate the energy source of the Model T Ford magneto ignition system with one exception—

The “spark” is not timed and the coil will fire when a balance between coil components and magneto output is achieved. For this reason all four coils should be adjusted to uniform performance.

1. Clean, align points and set gap at .030" with .005" clearance under floating point.
2. Test Coil. Normal current draw = 1.3 AMP. and depends upon the dwell of the points caused by the floating point following the lower bridge point for .005" of travel. Bend the lower bridge slightly with pliers as indicated to adjust spring tension that resists the attraction of the coils magnetic field resulting in a change in amperage draw.
3. Adjust upper bridge adjusting nut to eliminate double spark. Replace locknut. **NOTE.** On the coil tester a double (or multiple) spark within each of the 16 segments of the rotary spark gap disc is caused by an imbalance between the floating point reed and the lower bridge spring when under the varying magnetic strength



caused by the alternating current of the 16 coil flywheel type magneto.

One pass of a flywheel magnet by a magneto coil should break the points only one time for one spark jump. Multiple sparks indicate the points are vibrating similar to operation with a battery and there is not sufficient elapsed time for the spark coil windings and condenser to be “saturated” to capacity for one “hot” spark.

4. Test a “dead” or weak coil for a “blown” condenser by shunting a spare auto type condenser across the points

(upper bridge post nut to lower bridge post nut.)

A coil that vibrates without throwing a spark probably has an internal short in the secondary (high tension) coil windings. A coil that is completely dead has a break in the primary (low tension) coil winding, internal wiring or broken post connection.

A blown condenser can be replaced by removing the coil side, carefully digging out the asphalt pitch so as not to break the internal wiring and soldering in a new condenser across the upper and lower bridge connections. The old

paper and tinfoil condenser need not be removed, but cut the leads and re-pour the case with hot pitch or candlewax.

Condenser polarity is not critical due to the AC output of the magneto. However, if replacing an old condenser with a modern automotive type, which usually has a 12-volt negative ground system, the "case" should be solder connected to the wire going to the upper bridge (grounded side). This will reduce point arcing with a resultant peak and cratering of the points, should continued operation on battery be necessary.

*Model T Times*, May-June 1972, page 21, has several additional simple tests for coils which may help locate a broken internal wiring connection that could be repaired, but any shorts or opens in the coil windings would render the unit useless.

Incidentally, the Model T Ford ignition system is not without eccentricities. To quote from the Ford Model T instruction book of September 1913—"You have undoubtedly observed in advancing the spark lever that there are certain notches in the quadrant (Known as cut-outs on the magneto), at which the motor does not respond with increased speed, as naturally would be expected; whereas by placing the lever one or two notches in either direction this is overcome. It is advisable to locate these "dead points" by marks on the quadrant and avoid placing the spark lever in such positions when cranking or driving the machine."

The Model T manual timing advance is in steps or increments as the spark coils actually fire when a certain build up of current is achieved by the alter-

nating current flywheel magneto.

The timer has about a 60° range from full retard to full advance but the magneto field coils are 22½° apart which means that when advancing the timer you will encounter two null points where the alternating current is reversing and at zero voltage. Timer or commutator segments are in contact with the roller and ground a spark coil through 90° of crankshaft rotation during which time four magneto coils will fire the spark coil four times. Only the "lead" magneto coil is effective and continued manual advance of the "spark lever" will not accomplish an actual advance of timing until the commutator segment is advanced past the null point between two magneto coils and the output of the next leading magneto coil exceeds that of the trailing coil.

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## The Society of Automotive Historians Inc.

Press Release—

David L. Lewis of 2588 Hawthorn Rd., Ann Arbor, Mich., was elected to the office of President of The Society of Automotive Historians at that organization's annual meeting held October 9 in Harrisburg, Pa.

Others elected included Keith Marvin, Menands, N.Y., vice president; Charles L. Betts, Jr., Yardley, Pa., secretary; and George B. P. Ward, Jr., Baltimore, Md., treasurer. New directors include Walter Gosden, Floral Park, N.Y.; William J. Lewis, Anaheim, Calif.; and Michael Sedgwick of West

Midhurst, England.

The 11-year-old society has a worldwide membership with chapters throughout the United States, Canada, and the United Kingdom. Its membership ranks are composed of automotive writers, academic researchers, automobile collectors and those with simply an interest in automotive history over the past 200 years.

Society members enjoy a number of publications including a newsletter and the authoritative *Automotive History Review*.

Mr. Lewis, who succeeds David Brownell in the society's leading office, has been Pro-

fessor of Business History at the University of Michigan since 1965. He is author of the "Public Image of Henry Ford" which won the society's Cugnot Award and in addition writes the column "Ford Country" for *Cars & Parts* magazine and recently edited the *Michigan Quarterly Review* special issue on "The Automobile and American Culture." A member of the Society of Automotive Historians since 1970, he has served as a director for six years and is chairman of the Professional Standards Committee as well as a member of the Publications Committee.

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