

Technical Notes

Model A Ford – Timing Relationships

By Steve Pargeter

When setting the ignition timing of a Model “A” using the timing pin, you start with the spark advance lever (left side of steering column) all the way up. The timing pin is used to find Top Dead Center (TDC) in the timing gear and then the distributor cam is rotated to make the points just touch. When this procedure is followed, the ignition timing will be set to fire the spark plugs at TDC with the spark advance lever fully up.

Since the distributor cam is attached to the distributor shaft, which is turned by the engine camshaft, the distributor cam moves in sync with engine revolutions. The movement of the spark advance lever controls changes in ignition timing. This lever moves the points in relation to the distributor cam and effectively changes ignition timing. Moving the spark advance lever moves the points - that movement controls when the spark plugs are fired. As you advance the timing (pulling the lever down), the position of the rotor, moves in a clockwise rotation in relation to the distributor cap pin for each spark plug. As you move the lever down, the plugs are fired further before TDC (which is called advanced). You want to fire the plugs before TDC since this gives the gasoline/air mixture additional time to burn.

As you move the spark lever down, the spark timing is advanced by about 4 degrees per notch. My 1930 Model “A” has 10 notches in the spark lever and that means I can advance the engine ignition timing about 40 degrees from TDC using the spark advance lever. The following table shows what I observed using a timing light, a degree plate next to the front pulley, and modified distributor cap. The modified distributor cap allowed me to use the timing light to see the position of the rotor at time of firing of the spark plug. Do not confuse ignition timing with cam timing, the timing described here is measured at the crank pulley on the front of the engine.

<u>Advance Lever</u>	<u>Spark Advance</u>
(On steering column)	(Expressed in degrees)
Top Notch (0)	0° - TDC
One Down (1)	4° Advanced
Two Down (2)	8° Advanced
Three Down (3)	12° Advanced
Four Down (4)	16° Advanced
Five Down (5)	20° Advanced
Six Down (6)	24° Advanced
Seven Down (7)	28° Advanced
Eight Down (8)	32° Advanced
Nine Down (9)	36° Advanced
Bottom (10)	40° Advanced

The following illustrates the rotor position relative to the Nr 1 sparkplug contact at both Top Dead Center timing (spark lever up) and full ignition advance (spark lever down)

