

# A-12176 Timing Advance System

The original Model A Ford did not include a mechanism for automatic spark ignition timing. The driver manually controlled timing from the steering column, similar to that of the Model T.

This Nu-Rex system provides automatic crankshaft timing. It is designed for stock Model A engines with stock carburetor linkages or Model B engines used in Model A's with stock Model A carburetor linkages \*. Installation requires no permanent modification to the distributor, engine or timing procedures.

The kit consists of the following:

- Angle Transfer Assembly- translating carburetor- throttle plate rotation to distributor point plate rotation for automatic spark timing.
- Replacement linkages to couple the distributor point plate to the carburetor and driver foot controls.
- A replacement spring to reduce friction of the distributor point plate within the distributor housing.

## Installation Procedure

1. Rotate the crankshaft to zero degrees TDC piston #1 with the Timing Pin. Place the distributor upper plate steering column manual control and hand throttle to "off" (both arms all the way up toward the windshield).
2. Remove the distributor cap, rotor and distributor cam.
3. Remove the steering column manual spark control rod, distributor point plate and internal coil spring.
4. Clean the casting slot and the centering boss in which the point plate rotates and the bottom of the plate of any paint, rust or burrs. The plate should rotate freely. A lubricant can be used in this area but extreme care should be taken to avoid lubricant contact with the points.
5. Examine the lower plate 'pig-tail' wire, if the insulation or length is questionable replace it with a new one to avoid future difficulties.
6. Replace the original plate spring with the kit spring. Drop some oil in the two linkage holes of the throttle linkage located directly between the cylinder head and the firewall. This is done to minimize the friction forces on plate rotation and linkage.
7. Reassemble the point plate into the distributor casting slot and rotate the actuating arm to the original full retard position ( arm toward passenger side ). **IMPORTANT** The plate should move freely with minimum friction.
8. Drain the engine coolant from the radiator and block.
9. Remove the cylinder head retaining nut, 2nd one forward from the firewall on the passenger side of the engine. Locate the "Angle Transfer Assembly" on this head stud at a right angle to the block (see photo) and tighten in place with the cylinder head nut and torque to 55 ft. lbs. This is necessary to reseal the head gasket. This nut should be torqued again after the engine has run.
10. Reinstall the cam (loosely tighten) on the distributor shaft and check the points are set to 0.020 plus or minus 0.002 inches when opened by the cam high point.
11. Remove your original carburetor rod and install the kit supplied Ball Clip on one end of the rod as shown in photo. Carefully align the hole in the rod end with the cut out provision on the clip then tighten the clamp nut. Re-install the rod with the clip toward the rear of the engine as shown.
12. Install the kit supplied Adjustable Rod with the Brass Adjuster between the Ball Clip ball and the Transfer Assembly placing the Brass Adjuster end toward rear of engine closest to the Ball Clip.
13. Install the Short Adjustable Link between the point plate ball and the Transfer Assembly, as shown.
14. Loosen the upper hex set screw on the Brass Adjuster using the kit supplied Allen wrench. Carefully adjust the rod length while holding the upper plate arm against the stop in the distributor body cut out opening (in an anti-clockwise retard rotation). Tighten the set screw.
15. The spark timing must now be adjusted. The recommended timing procedure uses a crankshaft degree timing scale mounted at the crank pulley and a timing light. (The NuRex Precision Timing Kit or similar tools are strongly advised). Rotate the distributor cam in a clockwise direction to where the points are just starting to open

for # 1 cylinder. Tighten the hold down screw. Start the engine with the timing light connected. Adjust the Short Adjustable Link in or out between the Angle Transfer assembly and the distributor point plate for 5 degrees advance at idle, measured with the timing light and scale. Tighten the lock nut. Any timing procedure without the use of a timing light is indeterminate and not recommended. Turn off engine.

16. The upper point plate control arm should be at least 1/8 inch away from and not touching the distributor opening in the start position and with gas pedal not actuated. This action assures the carburetor butterfly at the idle setting with the spark on cylinder #1 at TDC.
17. Manually push the foot throttle crank by hand to fully open the throttle and check that the point plate control arm does not contact the fully advanced side of the opening in the distributor. This gap on the advance side of the opening assures advance range. Adjust the setting as required if these gaps do not exist. Recheck timing.
18. Install the distributor cap and high voltage coil wire. Refill the engine with coolant.
19. Start engine using the choke as required but avoid depressing the throttle until after the engine has started. This keeps the engine in condition for proper start up.

\*This system is not recommended for use on Model A Fords with the following Non-Stock equipment:

Modified throttle linkage

Manifold heaters

Wireless pig tail upper distributor plates

Non-stock type cylinder heads including overhead valve type

Non original type distributors

# A-12176 Throttle Link Control Automatic Spark Timing System (TLC)

Kit Spring



Angle Transfer Assembly



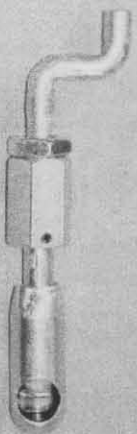
Ball Clip



Allen Wrench



Short Adjustable Link



Adjustable Rod with Brass Adjuster



