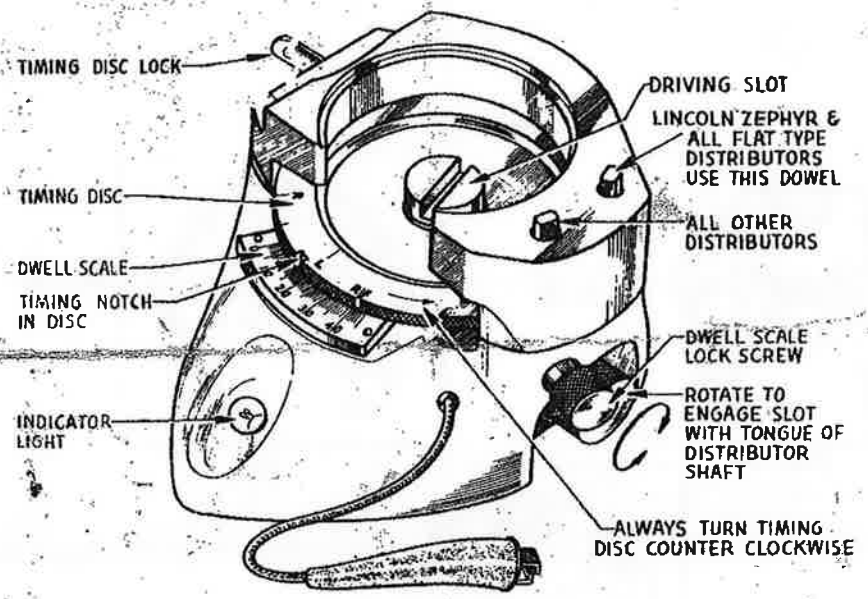
Wasco Valve Seat Co.

Essex, Ontario

OPERATING INSTRUCTIONS

DISTRIBUTOR TIMING FIXTURE (X-12127-D)

The points on the left break the circuit and the set on the right close the circuit. By this arrangement the primary circuit is closed for a longer period than possible if a single set of points were used, thus adding greatly to ignition coil efficiency. A diagram showing the firing cycle is shown in Fig. 2.



DISTRIBUTOR TIMING FIXTURE X-12127D

FIG. 1

The primary circuit is closed for a total of 288° (36° x 8) for each revolution. This results in a coil saturation period of 36° with points closed and a 9° period with points open in each firing cycle of 45°.

The firing cycle is illustrated in Figs. 3 to 7 inclusive:

V8 IGNITION FIRING CYCLE

In illustrations 3 to 7 we have the following sequence of operation:

Fig. 3 — A to B Left and right hand points both remain open while camshaft turns 9°.

Fig. 4 — At B Right hand point closes.

B to D Right hand point remains closed while camshaft turns 22 1/2°.

At C Fig. 2, left hand point closes.

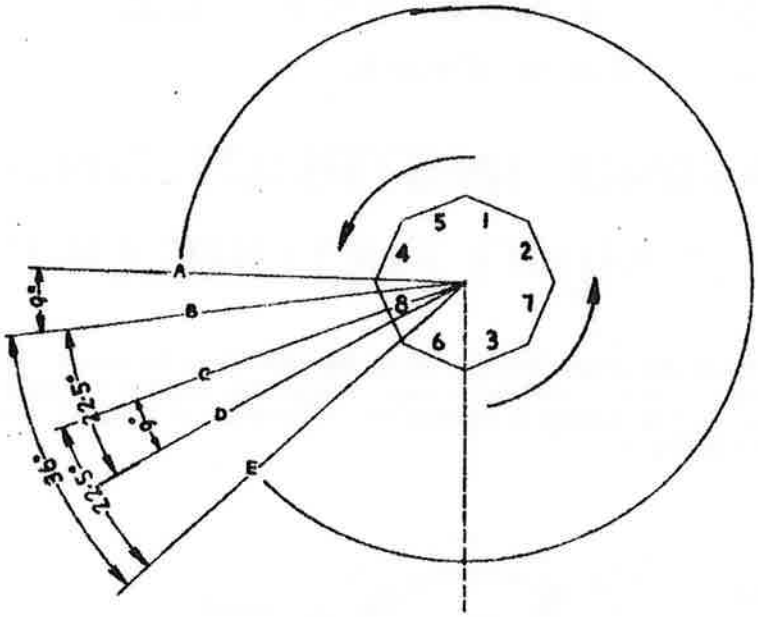


FIG. 2

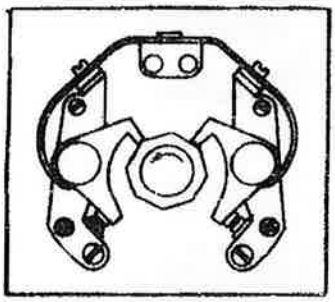


FIG. 3

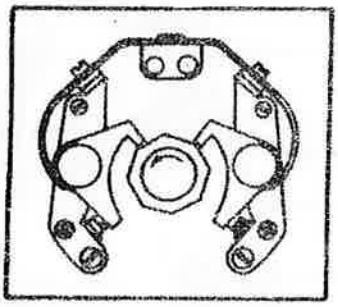


FIG. 4

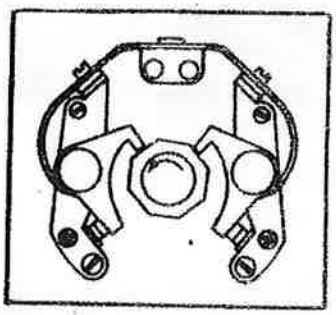


FIG. 5

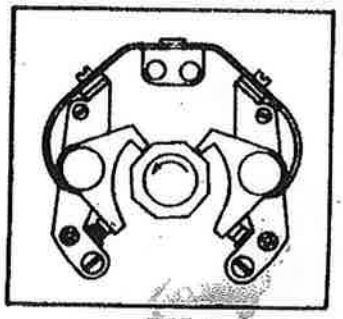


FIG. 6

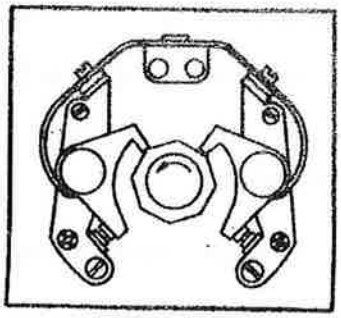


FIG. 7

Fig. 5 C to D Left and right hand points both closed at 9°.

Fig. 6 At D Right hand points open. Left hand points still closed.

Fig. 7 At E Left hand point opens. This is instant at which firing takes place.

The ignition coil primary circuit is closed 36° (B to E) while the camshaft turns 45° or 80% of the time.

As shown in the foregoing paragraphs each point on the V8 distributor remains closed for 22 1/2°. This allows maximum saturation of the coil. Timing fixture Fig. 1 incorporates a dwell scale which permits the operator to measure the length of time the points dwell or remain closed thereby resulting in an accurate setting of the breaker point gap.

Assuming the distributor has been overhauled according to standard practice. The following procedure is used to properly space the points and "time" the distributor.

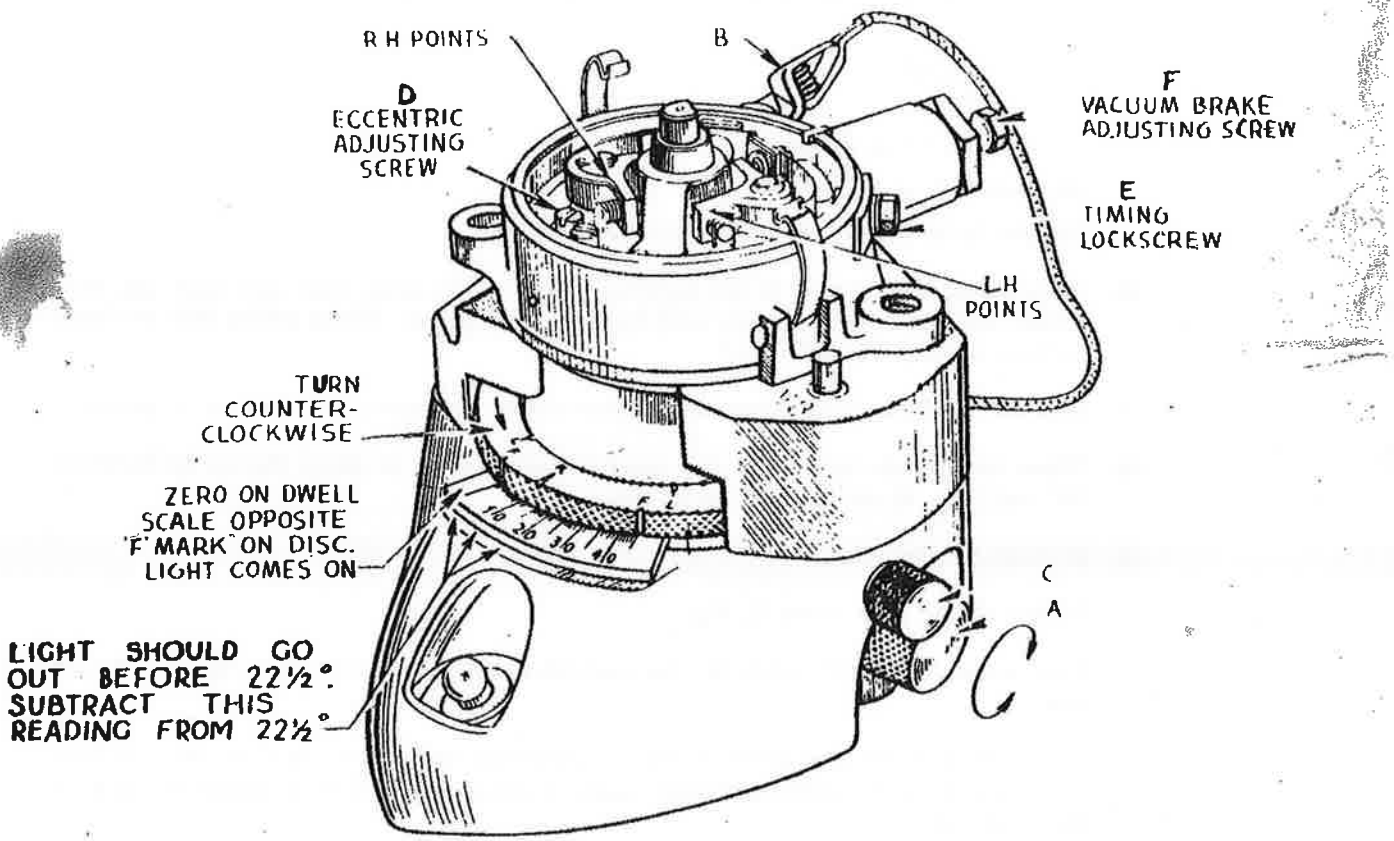


FIG. 8

To simplify this procedure, only one point adjustment will be required for each set of points, if made in the following manner.

1. Place distributor on fixture with vacuum brake assembled, Fig. 8.
2. Turn adjustment "A", Fig. 8, to engage slot in timing disc with tongue of distributor shaft.
3. Fasten electric clip "B", Fig. 8, to condenser terminal.

4. Loosen both points to what is known to be too wide, or less than 22 1/2° of dwell.

5. Insulate one set of points.

6. Turn timing disc counter-clockwise until light comes on and set zero of scale opposite "F" mark on disc. Lock scale with knurled knob "C", Fig. 8.

7. Now turn timing disc counter-clockwise until light goes out. Note exact reading. It will be less than 22 1/2°.

8. Subtract this reading from 22 1/2 degrees.

9. Now turn disc one half the amount of difference in (8). Be accurate on this.

   Example

   (a) "F" mark at 0° on scale—light comes on

   (b) Turn disc until light goes out—let this be 10° on scale

   (c) Then

   22 1/2°
   10°
   12 1/2° is difference

   (d) Then 1/2 or 12 1/2°=6 1/4°

   (e) Disc is turned 6 1/4° further counter-clockwise

10. With timing disc moved to this position, adjust point until light just goes on, then adjust until light just goes out and lock points in place. These points will be found to have exactly 22 1/2° dwell.

11. Remove insulator from points and repeat above procedure for other set of points.

12. When both points are set in this manner, total period of dwell should be between 34° and 38°. If not proceed as follows.

13. Replace breaker plate.

14. Loosen timing lock screw E, Fig. 8.

15. Turn timing disc until notch in disc coincides with timing disc lock, Fig. 1, and lock disc.

16. If light is on move lock screw E, Fig. 8, clockwise until light just goes out. If light is out move screw counter-clockwise until it comes on and then clockwise until it just goes out.

17. Release lock on timing disc. Turn disc counter-clockwise until light just goes out. Set zero of dwell scale opposite "F" mark on disc.

18. Turn disc counter-clockwise. Light should remain out for 9° and on for 36°.

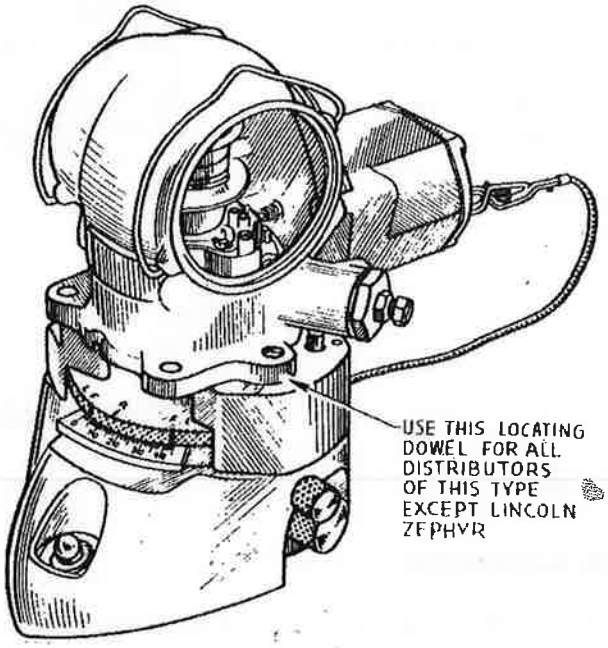
19. At instant each "F" mark coincides with zero on dwell scale light should go out. This checks the 8 lobes of the cam. Any variance greater than plus or minus one degree indicates cam should be replaced.

20. For initial setting of vacuum brake adjust screw "F", Fig. 8, so that approximately three threads show beyond lock nut.

21. Fit distributor to vehicle and road test for final setting of vacuum brake.

V8 DISTRIBUTOR PRIOR TO 1942 DESIGN

Mount distributor as shown Fig. 9.



V 8 DISTRIBUTOR PRIOR TO 1942

FIG. 9

Note that different locating dowel is used from that with 1942 distributor.

All operations on this distributor are exactly as shown for the 1942 design.

SIX CYLINDER DISTRIBUTOR

This assembly uses one set of points and a six lobe cam and this introduces several variances for procedure from the V8.

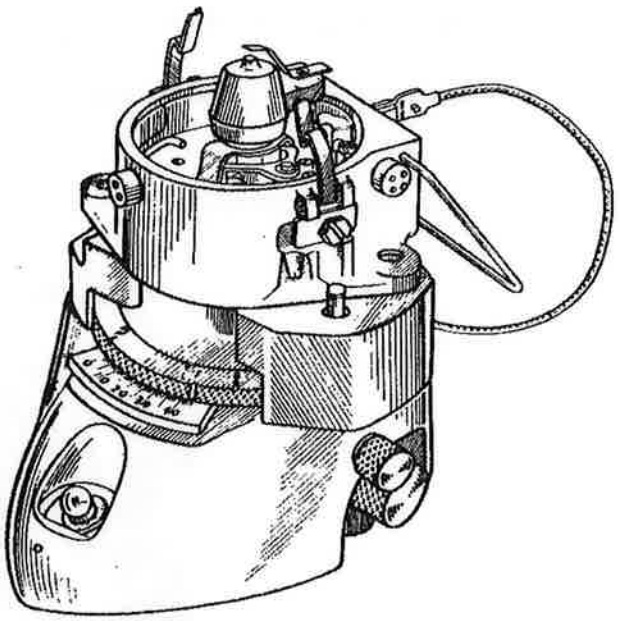
Mount distributor exactly as for current design V8 type, Fig. 2.

Space points by turning timing disc counter-clockwise and adjust point gap so that light remains on for 40°.

Timing is accomplished by locking timing disc and moving timing lock screw on distributor until light just goes out as in paragraph 16 above.

FOUR CYLINDER DISTRIBUTOR

This assembly uses only one set of breaker points and a four lobe cam. Mount distributor on fixture as in Fig. 10 and follow procedure for six cylinder assembly except points should be closed for 37°.



TRACTOR AND 4-CYLINDER COMMERCIAL

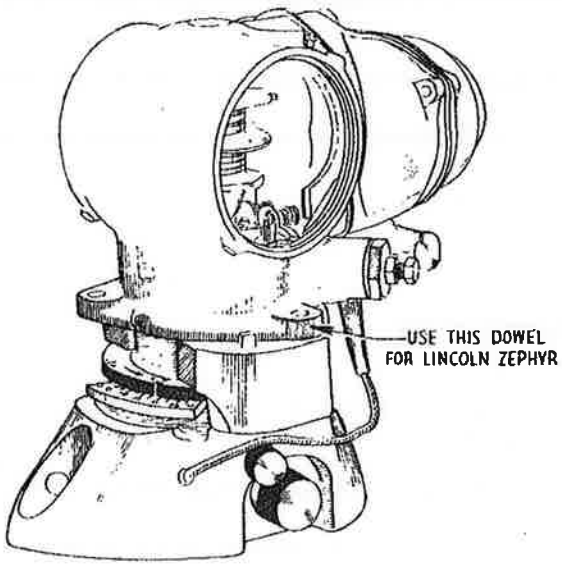
FIG. 10

LINCOLN ZEPHYR DISTRIBUTOR

The Lincoln-Zephyr is a 12 cylinder vehicle and the distributor is actually two distributors in one.

The ignition coil is two coils in one case and is fitted with two primary and two secondary leads. Two condensers, two sets of points, each controlling one half of the ignition coil and a special rotor having two high tension circuits completes the dual equipment.

The distributor assembly with vacuum brake in position is mounted on fixture as in Fig. 11.

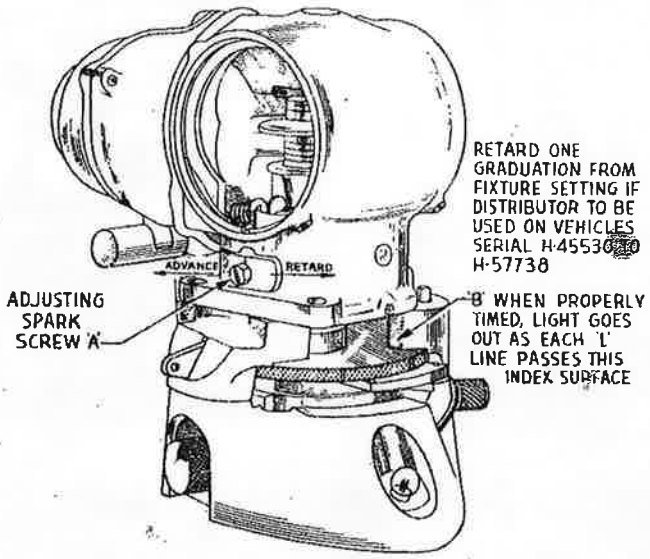


LINCOLN ZEPHYR DISTRIBUTOR
MOUNTED ON TIMING FIXTURE X-12127D

FIG. 11

The procedure is as follows:

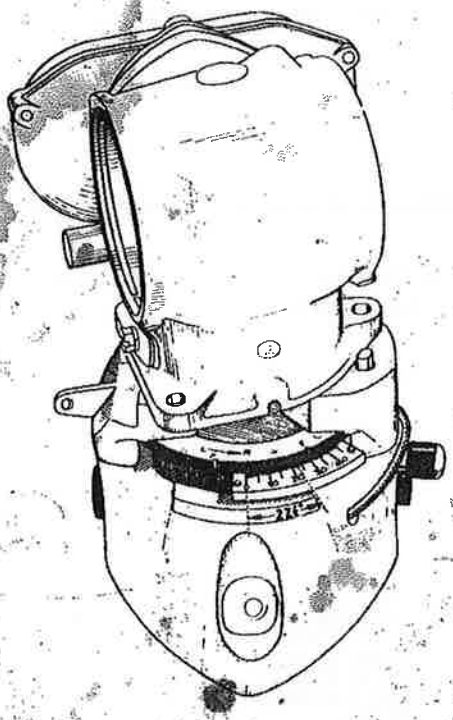
1. Connect lead to right hand condenser terminal, (right hand as viewed from driver's seat).
2. Using "R" mark on disc, adjust gap of right hand breaker points so light remains on for a period of 40°. Tighten point mounting screw.
3. Connect lead to left hand condenser terminal.
4. Using "L" mark on disc, adjust gap of left hand breaker points so light remains on for a period of 40°. Tighten point mounting screw.
5. Loosen spark adjusting lock screw A, Fig. 12, just sufficiently to permit adjustment to be fully retarded. (Move screw toward bottom of distributor.)



SPARK ADJUSTING SCREW-LINCOLN ZEPHYR

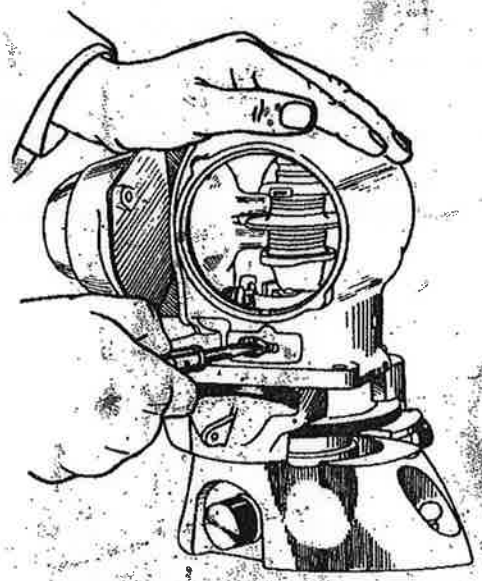
FIG. 12

6. Rotate disc several times counter-clockwise to remove backlash caused by backing up the timing screw.
7. Lock timing disc. Be sure final movement of disc was counter-clockwise.
8. Slowly advance timing lock screw to a point where light just goes out.
9. Connect timing fixture lead to the right hand condenser terminal, (right or left as viewed from the driver).
10. Turn dwell scale until "zero" mark on the scale is opposite "R" mark on timing disc, Fig. 13.
11. Lock dwell scale with thumb screw.
12. Remove lock from timing disc.
13. Rotate timing disc counter-clockwise. Light should go out as "R" mark on disc passes 22 1/2° mark on dwell scale, Fig. 13. If this occurs, distributor is synchronized. Proceed with paragraph 16. If not proceed as follows:
14. With screw driver turn adjusting screw clockwise for advancing and anti-clockwise for retarding the spark on the right hand side, Fig. 14.



CHECKING RIGHT HAND POINT FOR SYNCHRONIZATION WITH LEFT HAND POINTS

FIG. 13



ADJUSTING SYNCHRONIZING SCREW

FIG. 14

15. Reinstall timing adjustment screw and tighten. Connect fixture wire to left hand condenser terminal and check timing of points to make sure procedure has been correctly followed. If correcly timed and synchronized the light will go out as each line marked "L" passes index B, Fig. 12. Move lead to right hand condenser terminal and light should go out as each "R" mark passes 22 1/2° on dwell scale.
16. If distributor is to be used on engines numbered H-45530 to H-57738, retard spark advance one graduation, Fig. 12.
17. Install distributor on vehicle and adjust vacuum brake.