

TIMING, ADJUSTING, TESTING

MERC 650, STARTING WITH 1965

61

Description	Merc 650
Cylinder Firing Order	1-3-2-4
Firing Sequence	90° Consecutive
Spark Plug, Standard Instal	J4J
Spark Plug Gap	.025" (.6350mm)
Timing	.222" (5.6388mm) (32½°) BTDC
Breaker Setting	48° Dwell (.010" [0.2540mm] + .000" [.000mm] - .002" [.0508mm])
RPM, Maximum	5200

TIMING AND LINKAGE ADJUSTMENT

A. Flywheel, Magneto Pulley and Belt Assembly

1. Rotate flywheel until timing mark (a straight line stamped on upper surface) is in a straight line with center of crankshaft and magneto pulley center. (Figure 1)
2. Position arrow on pulley (not plate) to point at timing mark on flywheel.
3. Install timing belt, plate, cap, washers and screw and tighten to 60 in. lbs. (10.65 kg/cm)

B. Installing Magneto

Magneto rotor shaft and shaft extension are splined with one blanketed spline on each shaft for easy installation.

1. With flywheel and pulley in position described in "A" preceding, install magneto on engine.
2. Rotate timing pulley until shaft sets in place. A 1/16" (1.588mm) groove is located at end of shaft coupling in centerline of blanketed shaft to locate for easy installation.
3. Secure magneto to magneto adaptor with 4 hex head cap screws.

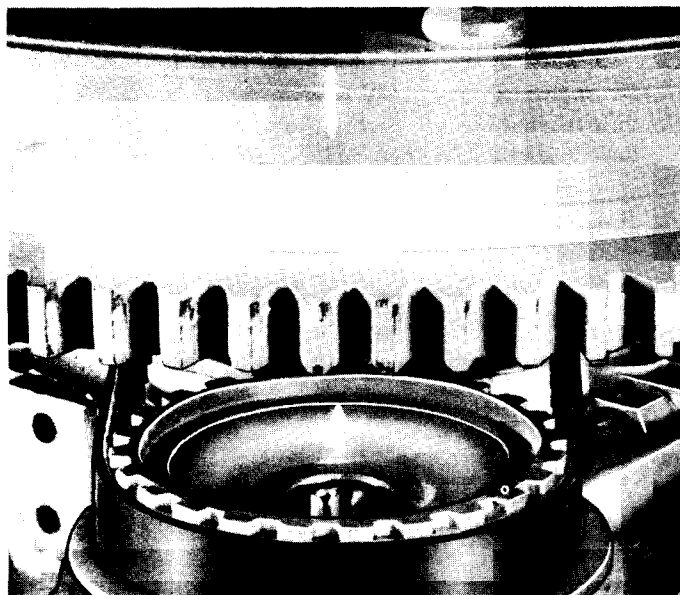


Figure 1. Timing Marks on Flywheel and Pulley

C. Setting Maximum Spark Advance

1. Thread Timing Gauge (C-91-32253A1) into No. 1 spark plug hole.
2. Turn flywheel until No. 1 piston strikes Timing Gauge.
3. While turning flywheel, thread Timing Gauge in or out so that piston can "rock" over center shaft of gauge, indicating that Timing Gauge is set at top dead center (TDC) position.
4. Rotate flywheel clockwise ¼ turn.
5. Depress center shaft of Timing Gauge.
6. Rotate gauge shaft ¼ turn to seat on tool body shoulder (.222" [5.6388mm] BTDC position). Be careful that tool body does not move, or preceding procedure will have to be repeated.
7. Rotate flywheel clockwise by hand until No. 1 piston strikes Timing Gauge center shaft. This is .222" (5.6388mm) BTDC.
8. Attach one test lead of Timing Meter (C-91-22966) or Magneto Analyzer (C-91-25213) (on No. 2, Resistance) to magneto frame.
9. Attach second lead of tester to primary ground terminal of magneto.
10. Slowly advance magneto until points break, as indicated by tester used.
11. Hold magneto in this position and adjust spark advance stop screw to just touch pilot assembly and tighten lock nut. (Figure 2)
12. Recheck setting by actuating magneto with throttle control lever on side of bottom cowl.

D. Pickup Plate Adjustment

1. Thread .015" (0.3810mm) Timing Gauge (C-91-31161-A1) into No. 1 spark plug hole.
2. Turn flywheel until piston strikes Timing Gauge.
3. While turning flywheel, thread timing gauge in or out so that piston can "rock" over center shaft of gauge, indicating that Timing Gauge is set at top dead center (TDC) position.
4. Rotate flywheel clockwise ¼ turn.
5. Depress center shaft of Timing Gauge and rotate ¼ turn to seat on tool body shoulder (.015 [0.3810mm] BTDC). *NOTE: Be careful that tool body does not move or preceding steps will have to be repeated.*
6. Continue to rotate flywheel clockwise until piston strikes Timing Gauge.
7. Connect one test lead of Timing Meter (C-91-22966) or Magneto Analyzer (C-91-25213) (selector switch on No. 2, Distributor Resistance) to magneto frame.
8. Attach second lead of tester to primary ground terminal of magneto.
9. Retard magneto against idle stop screw. (Figure 2)
10. Rotate magneto slowly counterclockwise until points break, as indicated by timing unit used.
11. Loosen throttle pickup plate screws. (Figure 3)
12. Slide throttle pickup plate so that tab (without nylon sleeve) just touches carburetor cluster. (Figure 3)
13. Tighten throttle pickup plate screws.
14. Turn magneto against .222" (5.6388mm) ("spark advance") stop.