Mazda Ignition Timing Control

1977 GLC & 808 (Piston Engines)

DESCRIPTION

Used on Federal 808 (1300cc) and GLC 1300cc manual transmission equipped models, this system advances or retards ignition timing to reduce oxides of nitrogen (NOx) emissions. The GLC and 808 (1300cc) system consists of top gear detecting switch, accelerator switch and transistorized ignition system. The 808 (1600cc) system consists of speed switch and dual point distributor. The distributor has one set of contact points for normal operation and one set for timing retard operation.

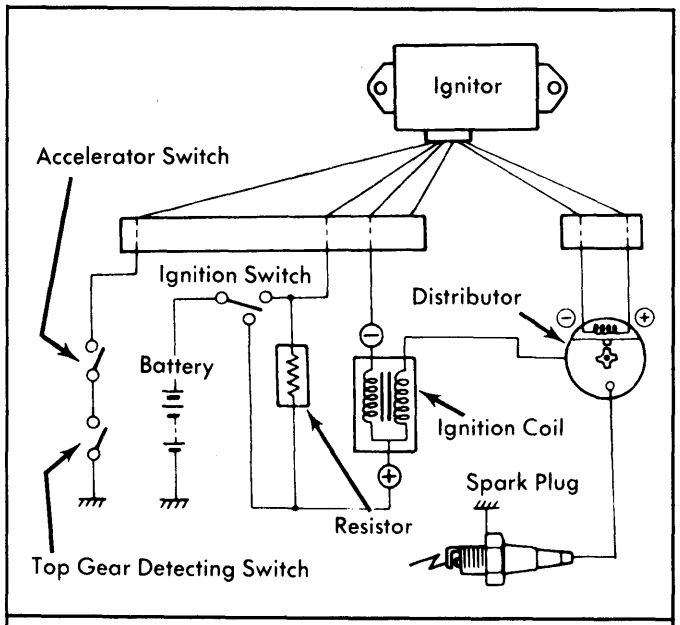

Fig. 1: 808 (1300cc) Ignition Timing Control System

OPERATION

The 808 (1300cc) and GLC (1300cc) manual transmission equipped models, have systems which operate to advance or retard ignition timing. Ignition timing is retarded whenever both accelerator switch and top gear detecting switch are on. Accelerator switch comes on when gas pedal is between idle position and 3/4 depressed (off after 3/4 depression). Top gear detecting switch is on in 1st, 2nd, 3rd, and reverse positions. Switch is off in 4th or 5th gears. Ignition timing is allowed to advance normally under all other driving conditions.

The 808 (1600cc) system operates by sensing vehicle speed and either retarding ignition timing or allowing it to advance. Ignition timing is retarded when vehicle speed is lower than 42 MPH and is allowed to advance at speed higher than 42 MPH (speed switch is off).

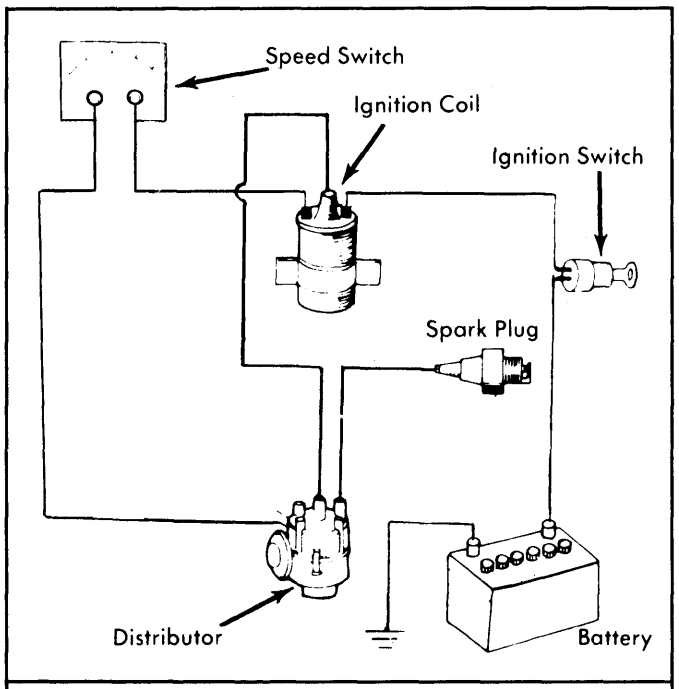

Fig. 2: 808 (1600cc) Ignition Timing Control System

TESTING

ACCELERATOR SWITCH

1) Unplug accelerator switch connector. Connect ohmmeter to switch connector terminals and check continuity. With accelerator pedal at less than 3/4 stroke, continuity should exist (switch is on).

2) With pedal depressed beyond 3/4 stroke, no continuity should exist (switch is off). To adjust accelerator switch, loosen switch lock nut and fully depress accelerator pedal. Turn switch until switch plate on pedal gently touches switch flange.

TOP GEAR DETECTING SWITCH

Unplug top gear detecting switch connector. Switch is located at right rear of engine. Connect ohmmeter to switch connector terminals and check continuity. With gearshift lever in 3rd gear position, continuity should exist (switch is on). With gearshift lever in 4th or 5th gear positions, no continuity should exist (switch is off).

VEHICLE SPEED SWITCH

1) Connect voltmeter to distributor connector. Hook lead to Green/Red wire terminal. Block front wheels, raise rear of vehicle, and support with safety stands.

2) Start engine and slowly increase vehicle speed. Current should stop flowing between 41-43 MPH. Slowly decrease vehicle speed. Current should stop within 3 MPH of initial current speed.