Ignition System (Carbureted Engine)

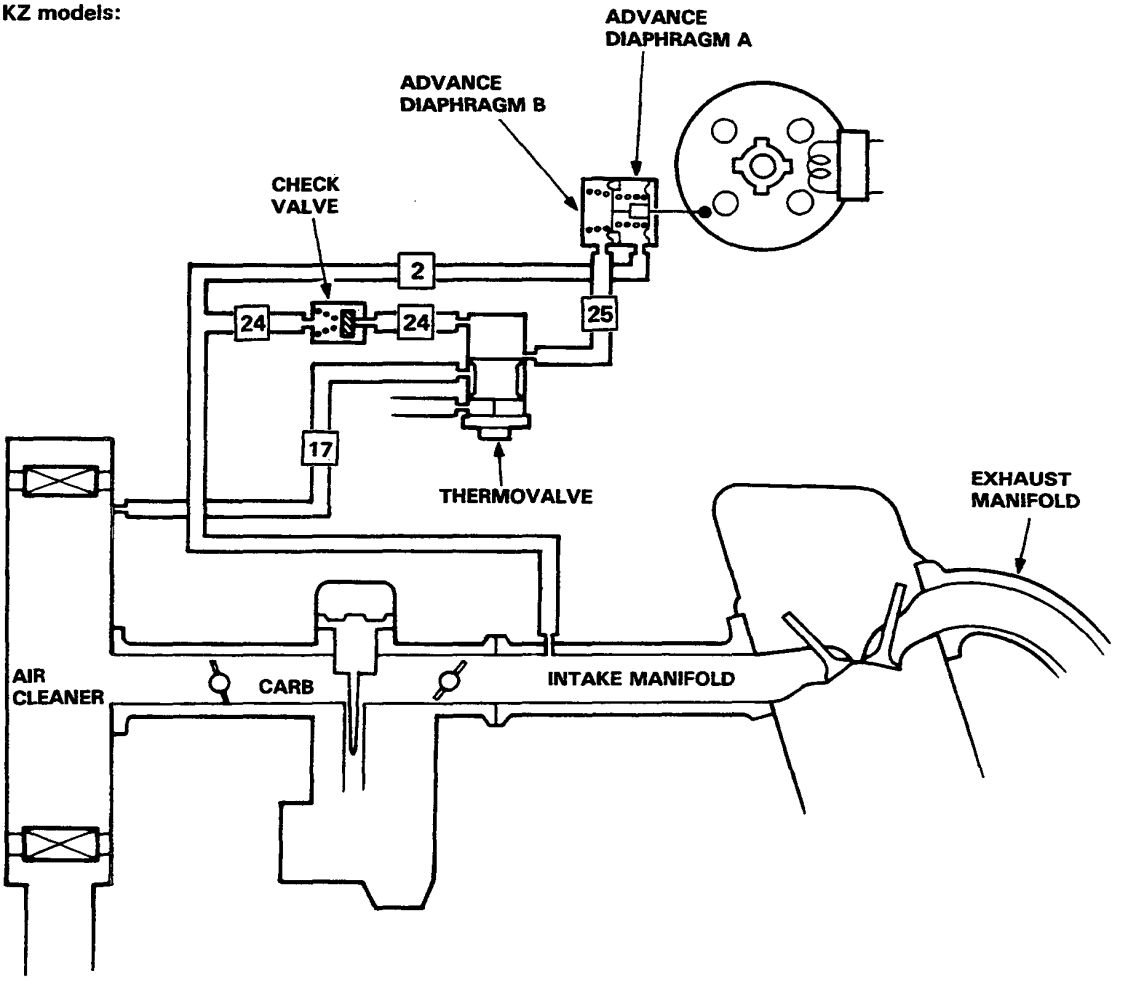
Description

Ignition timing control, combined with the internal distributor control (centrifugal advance), affects the time at which each spark plug ignites the air-fuel mixture, in accordance with engine speed, load and coolant temperature. This control system gives vacuum advance in response to the manifold vacuum and coolant temperature. This optimizes ignition timing during and after engine warm-up to maximize fuel economy and engine performance.

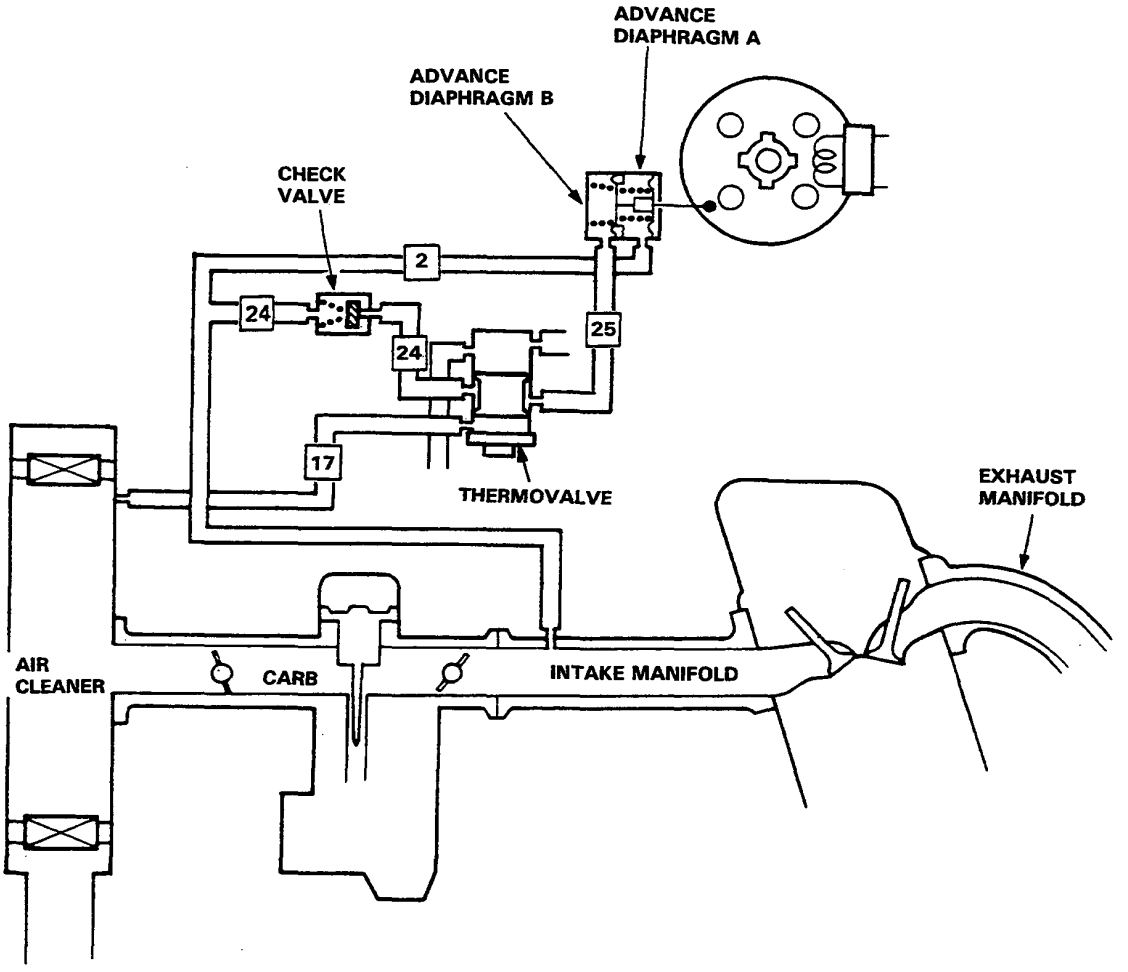
This distributor has two separate vacuum advance diaphragms which operate on manifold vacuum. Diaphragm B also has a thermovalve in the line.

This system is provided to improve driveability at cold engine temperature by advancing the ignition timing.
When the engine coolant temperature is below the set temperature of the thermovalve, manifold vacuum is applied through the check valve to the diaphragm of the vacuum advance unit. The thermovalve blocks the air entering the vacuum line and the diaphragms retract to turn the breaker plate of the distributor to advance the timing. When the coolant temperature is above the set value, vacuum in the thermovalve is released.

KX, KS, KZ models:



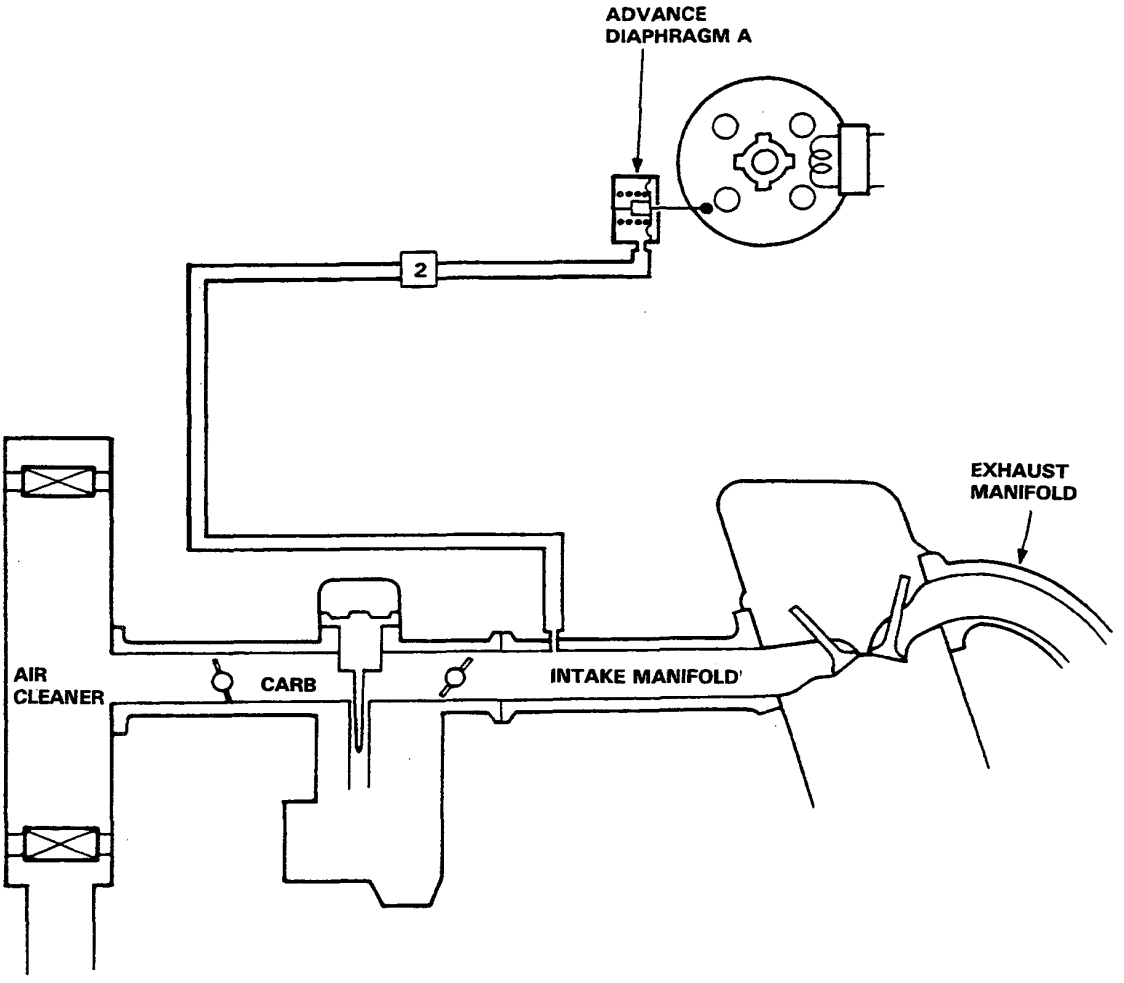
KF, KG, KW, KB, KE models:



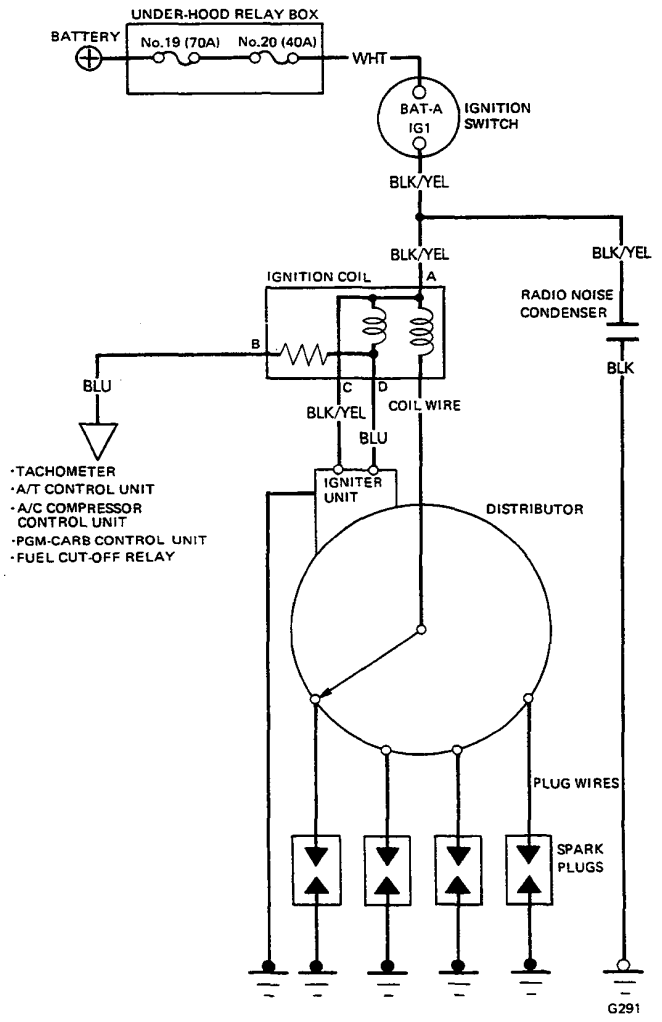
(cont'd)

Description (cont'd)

KY, KT models:
Ignition timing control, combined with the internal distributor control (centrifugal advance), affects the time at which each spark plug ignites the air/fuel mixture. This control system gives vacuum advance in response to the manifold vacuum to optimize ignition timing to control emission levels while maximizing fuel economy and engine performance.

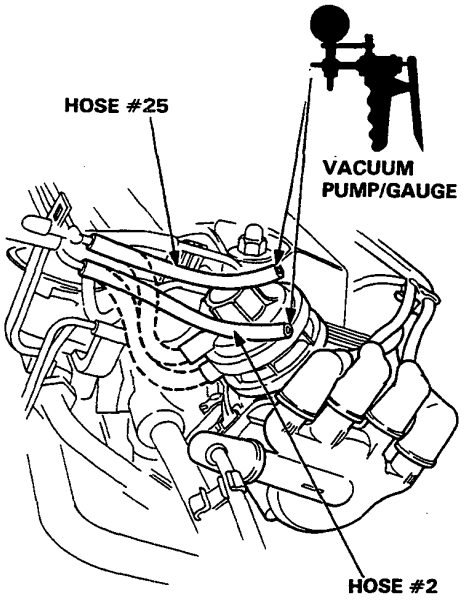


Circuit Diagram

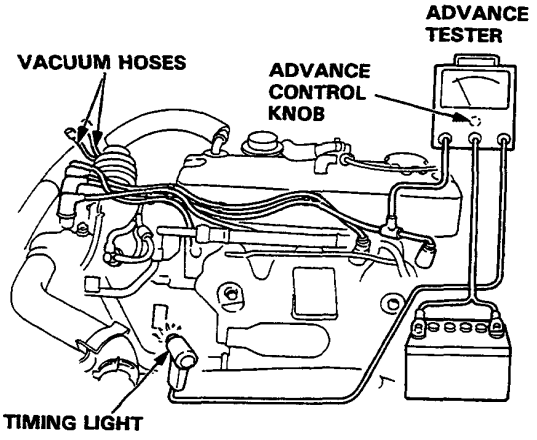


Ignition Timing Inspection and Setting

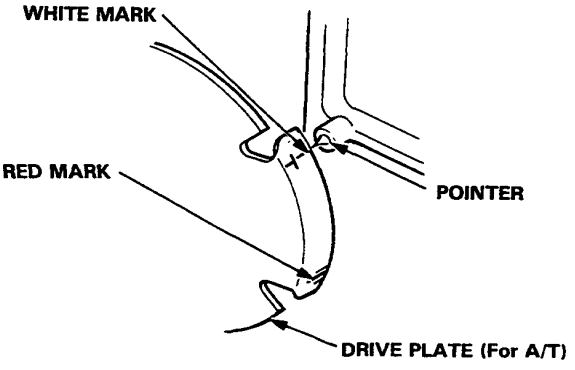
1. Disconnect the vacuum hoses from the vacuum advance diaphragm, then connect the vacuum pump/gauges to the vacuum hoses.



2. Start the engine and let it idle.
3. When the engine is cool (coolant temperature is below 140°F), check each hose for vacuum.
   The #2 and #25 hoses should have vacuum.
   - If the #2 hose has no vacuum, check the #2 hose of proper connection, cracks, blockage or disconnected hose.
   - If the #25 hose has no vacuum, check the #24 and #25 hoses for proper connections, cracks, blockage or disconnected hoses, and the check valve is not clogged.
     If the #24 and #25 hoses, and the check valve have no problem, replace the thermovalve and recheck the #25 hose for vacuum.
4. Connect the vacuum hoses to the vacuum advance diaphragm and allow the engine to warm up. (cooling fan comes on).
5. Disconnect the #25 hose from the vacuum advance diaphragm and connect the vacuum pump/gauge to the #25 hose.
6. Check the #25 hose for vacuum.
   The #25 hose should have no vacuum.
   - If the #25 hose has vacuum, replace the thermovalve and recheck it.
7. Disconnect the vacuum hoses from the vacuum advance diaphragm and plug them.
8. Connect a timing light and an advance tester, and remove the rubber cap from the inspection window of the cylinder block.



9. While the engine idles, point a timing light toward the flywheel (for M/T), or the drive plate (for A/T).
10. Align the timing mark (White) on the flywheel (for M/T) or the drive plate (for A/T) to the pointer by turning the advance control knob of the advance tester.



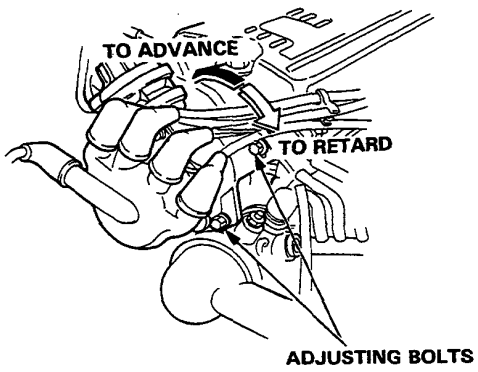
11. Read initial timing when timing mark (white) is aligned to the pointer.

Initial Timing

- **Manual Transmission [at 800±50 min^{-1} (rpm) in neutral]**
  KX, KS, KT, KY, KZ models: 4° BTDC
  KG, KE, KB, KF, KW models: 10° BTDC

- **Automatic Transmission [at 750±50 min^{-1} (rpm) in neutral]**
  KX, KS, KT, KY, KZ models: 4° BTDC
  KG, KE, KB, KF, KW models: 10° BTDC

12. Adjust as necessary by loosening the distributor adjusting bolts, and turn the distributor housing clockwise to retard the timing, or counterclockwise to advance the timing.



13. Tighten the distributor adjusting bolts, then rechek the timing.

14. Connect the vacuum hoses to the vacuum advance diaphragm and inspect ignition timing at idle.

Ignition Timing

- **Manual Transmission [at 800±50 min^{-1} (rpm) in neutral]**

  KT, KY models: 15±2 ° BTDC (Red)
  KG, KE, KB, KF, KW models: 16±2° BTDC (Red)
  KX, KS, KZ models: 20±2° BTDC (Red)

- **Automatic Transmission [at 750±50 min^{-1} (rpm) in neutral]**

  KT, KY models: 10±2 ° BTDC (Red)
  KG, KE, KB, KF, KW models: 16±2° BTDC (Red)
  KX, KS, KZ models: 15±2° BTDC (Red)

If advance is not as specified, check the vacuum advance diaphragm and distributor advance mechanism.