

COURIER DECELERATION CONTROL SYSTEM

DESCRIPTION

All models are equipped with a deceleration control system which is designed to maintain a balanced air/fuel mixture during periods of vehicle deceleration. System components vary depending on vehicle application, and are as follows:

2.0L Engines

Deceleration control system consists of throttle positioner system and anti-afterburn valve (Federal) or air by-pass valve (California).

2.3L Engines

Deceleration control system consists of coasting richer solenoid valve, accelerator switch and vehicle speed switch. On California models only, an air by-pass valve and dashpot (man. trans.) are also used.

OPERATION

ANTI-AFTERBURN VALVE

During sudden deceleration, a rich air/fuel mixture is immediately introduced into combustion chambers and some of it passes unburned into the exhaust manifold. Air supplied by the air pump leans this mixture. This could cause abnormal combustion, or afterburning, in the exhaust system.

To prevent this, the anti-afterburn valve will only allow air from the air pump into intake manifold according to changes in engine load. This keeps air intake at proper levels so air/fuel mixture is properly burned in cylinder. This valve is controlled by intake manifold vacuum.

AIR BY-PASS VALVE

The air by-pass valve is located between the air injection pump outlet and the check valve to prevent abnormal combustion in the exhaust system. During sudden deceleration, a high amount of unburned gases are discharged through the engine into the exhaust manifold.

To prevent this condition, the air by-pass valve senses high intake manifold vacuum and diverts air from pump back into pump inlet hose instead of into exhaust manifold.

COASTING RICHER SOLENOID VALVE

2.3L Engines Only

The coasting richer solenoid valve is controlled by 2 switches: the vehicle speed switch and the accelerator switch. In order for valve to operate, both switches must be closed.

When coasting richer valve is activated, solenoid in valve is retracted, opening a fuel passage in the secondary system of the carburetor. This feeds additional fuel into the lean mixture created in the intake manifold by deceleration action.

Vehicle Speed Switch

This switch closes the coasting richer circuit at speeds above approximately 17-23 MPH. At lower speeds, the circuit is opened.

Accelerator Switch

This switch closes the coasting richer circuit whenever the accelerator pedal is in the released position. Depressing the accelerator pedal opens the circuit.

ANTI-STALL DASHPOT

The dashpot, mounted on the intake manifold, prevents the throttle return spring from closing carburetor throttle plates instantly when the accelerator pedal is released.

THROTTLE POSITIONER SYSTEM

2.0L Engines Only

Deceleration results in an improper air/fuel mixture. Operated by intake manifold vacuum and electrically connected to engine speed switch, the throttle positioner servo diaphragm keeps throttle plate slightly open to maintain an adequate air/fuel ratio.

When engine speed is above 1700 RPM, speed switch opens throttle positioner circuit, allowing 3-way solenoid valve to energize and direct vacuum to servo diaphragm. Below 1700 RPM, solenoid is not energized and no vacuum passes to servo diaphragm. If equipped with air conditioning, 3-way solenoid is energized whenever A/C control is on. This establishes a slightly higher engine speed.

TESTING

THROTTLE POSITIONER

System Test

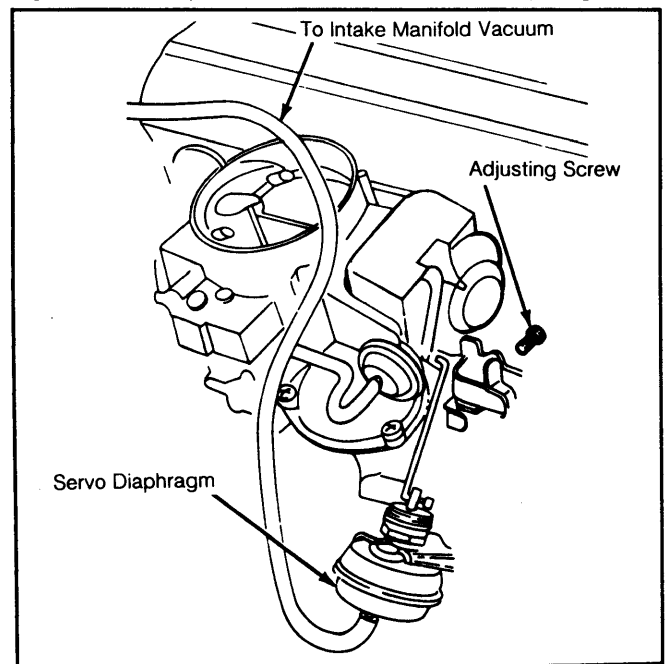
1) Start engine and set idle speed. Remove Black/White or Brown/Red wire (as equipped) from 3-way solenoid. Engine speed should increase to 1000 RPM (Federal) or 1100 RPM (California).

2) If engine speed does not increase, 3-way solenoid or servo diaphragm is improperly operating. See "Servo Diaphragm" testing. Replace units as required.

Servo Diaphragm

1) Check hoses for proper routing and condition. Start engine and set idle speed. Turn engine off,

Fig. 1: Adjusting Throttle Positioner Servo Diaphragm



Turn adjusting screw to obtain correct engine speed.

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detach vacuum hose from servo diaphragm. Connect a vacuum hose directly from intake manifold vacuum to servo diaphragm.

2) Connect tachometer to engine. Start engine and let idle. Check for engine speed increase to 900-1100 RPM for Federal vehicles or to 1000-1200 RPM for California vehicles.

3) If increase does not occur, adjust engine speed by turning adjusting screw on servo diaphragm throttle lever until proper speed is obtained. Reconnect all hoses to original position.

ANTI-AFTERBURN VALVE

1) Disconnect anti-afterburn valve inlet hose and run engine at idle speed. Press a finger tightly over inlet hose opening. Engine speed should not vary.

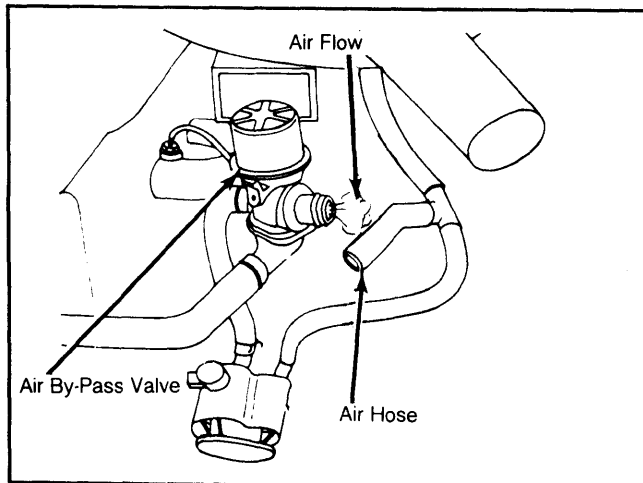
2) Hold a finger lightly over inlet hose opening. Increase engine speed above 2000 RPM and quickly release accelerator. Air should flow inward for a few seconds.

3) If the valve passes air inward for longer than 3 seconds, or does not pass air at all, replace the anti-afterburn valve.

AIR BY-PASS VALVE

Disconnect air hose from side of air by-pass valve. Start engine and raise speed above 2000 RPM. Release throttle. Air should flow from valve connection if by-pass valve is operating properly.

Fig. 2: Testing Air By-Pass Valve



Air flow indicates correct by-pass valve operation.

COASTING RICHER CIRCUIT

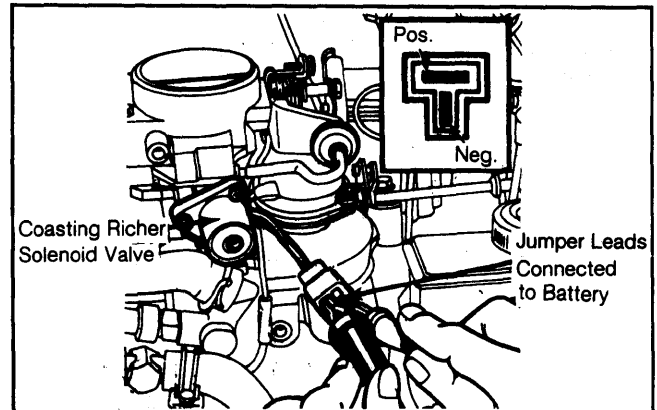
Coasting Richer Solenoid Valve

1) Start engine and run at idle. Disconnect coasting richer valve electrical connector. Connect valve electrical connector to battery as shown in Fig. 3. If engine speed immediately rises to 950-1200 RPM, valve is operating correctly.

2) Connect a test lamp to coasting richer valve electrical lead. Raise rear of vehicle and support on safety stands. Start engine and raise vehicle speed above 30 MPH.

3) Release accelerator pedal. The test lamp should light and remain lit until vehicle speed falls below 14-23 MPH.

Fig. 3: Testing Coasting Richer Solenoid Valve



4) If coasting richer circuit is operating properly, no further tests are required. If circuit does not operate correctly, test the following components:

Accelerator Switch

The accelerator switch is located on the accelerator pedal. When checking the switch with a test light, the light should come on when accelerator pedal is fully released and turn off when pedal is depressed.

Vehicle Speed Switch

1) If accelerator switch is operating properly, check vehicle speed switch. Remove instrument cluster and disconnect Blue/Green wire connector from speedometer to speedometer switch relay. Connect test lamp in-line with connector.

2) Reconnect speedometer cable. Raise rear of vehicle and support on safety stands. Start engine and depress accelerator pedal to increase speed and check that test lamp is lit at speeds above 17-23 MPH and that lamp is off at speeds below 14 MPH.

ANTI-STALL DASHPOT ADJUSTMENT

1) With engine at normal operating temperature, remove air cleaner and attach a tachometer to engine. Check that idle speed and carburetor adjustment are to specifications.

2) Move throttle lever until it contacts dashpot rod. Engine speed should read 2100-2300 RPM. If not, loosen dashpot lock nut and hold throttle lever so that correct engine speed is maintained.

3) Turn dashpot until dashpot rod contacts throttle lever. Tighten lock nut, release throttle lever and recheck engine speed. Repeat adjustment if needed.