

## HONDA THROTTLE CONTROL SYSTEM

## All Models

## DESCRIPTION &amp; OPERATION

The throttle control system uses a dashpot and throttle opener to reduce hydrocarbon (HC) emissions during gear shifting and deceleration. The throttle controller holds the throttle open slightly as necessary to improve combustion.

## DASHPOT SYSTEM

This system functions as a dashpot to slow the closing of the throttle. During periods of deceleration, ported vacuum in the carburetor acts on the throttle controller through the dashpot check valve to hold the throttle open slightly.

The fixed orifice in the dashpot check valve gradually decreases the vacuum until the throttle closes completely. The speed at which the throttle closes is determined by the size of the fixed orifice in the dashpot check valve, the tension of the throttle return spring, and the amount of vacuum generated at the carburetor port above the preset level in the dashpot check valve.

## THROTTLE OPENER SYSTEM

The throttle opener is controlled by a solenoid valve, control valve, and speed sensor. When vehicle speed is above 20 MPH, the speed sensor causes the solenoid valve to open and allow manifold vacuum at the control valve. When the manifold vacuum exceeds a preset value (which occurs during deceleration), the valve opens and the throttle opener opens the throttle a small amount.

When vehicle speed drops below 10 MPH, the speed sensor closes the solenoid valve, control vacuum drops, and the throttle positioner vacuum is relieved through an orifice. Carburetor return spring tension closes the throttle.

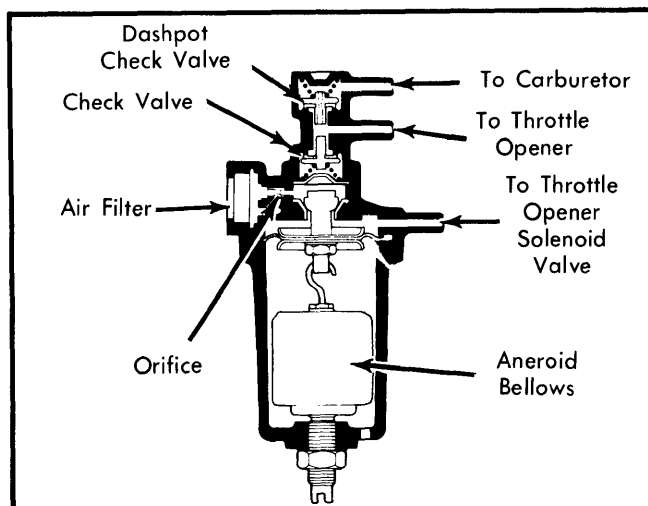


Fig. 2 Throttle Control Valve

**Throttle Control Valve** – The throttle control valve incorporates the dashpot check valve in its top section. This check valve is separated from the control valve by a second check valve. Closing time of the throttle is regulated by the dashpot check valve and the atmospheric pressure sensing bellows, which controls tension on the diaphragm. As altitude increases, less vacuum is needed to keep the valve open, thus keeping the throttle open longer.

**Speed Sensor** – The speed sensor consists of a metal plate which passes through a magnetic coil in the speedometer. The sensor opens and closes a switch at approximately 20 MPH.

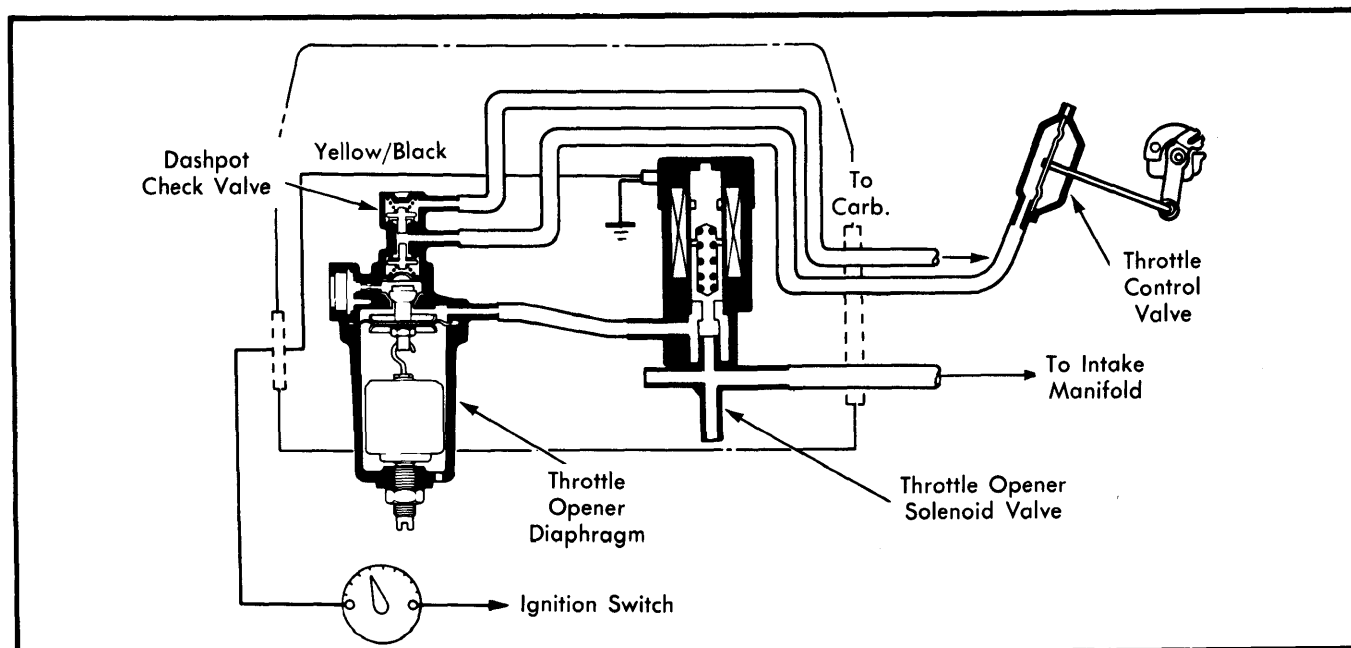
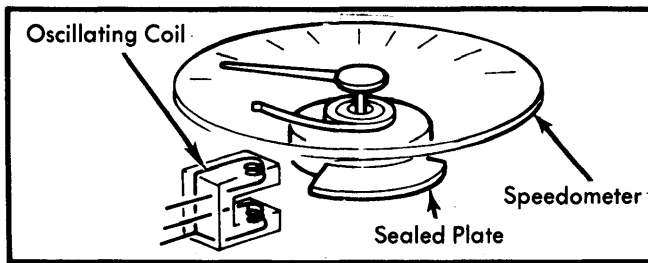


Fig. 1 Throttle Control System Diagram (All Models)

## HONDA THROTTLE CONTROL SYSTEM (Cont.)



**Fig. 3 Throttle Control System Speed Sensor**

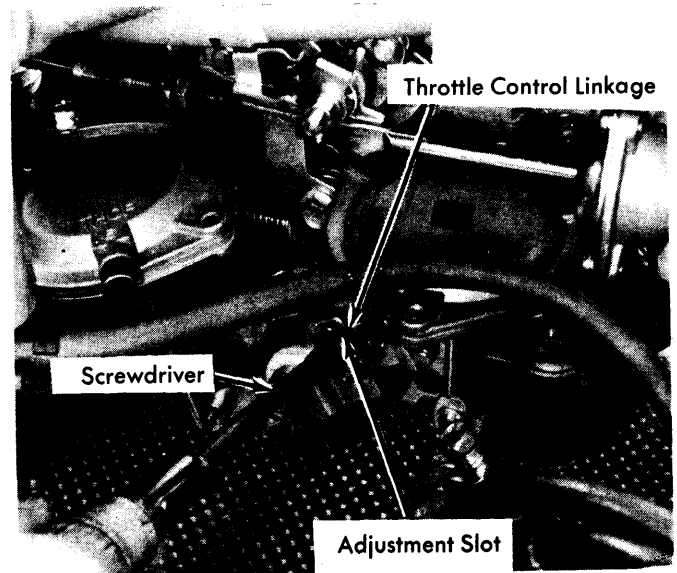
### TESTING

#### DASHPOT SYSTEM CHECK

- 1) Connect a tachometer to the engine. Start engine and allow to reach normal operating temperature (cooling fan on).
- 2) Check throttle opener speed by disconnecting hose from the throttle opener diaphragm and connecting a hand vacuum pump.
- 3) With engine running, apply at least 16 in. Hg for more than one minute and check that engine speed rises to RPM shown in the following table.

Throttle Opener Speed	
Application	RPM
Civic	
1300 & 1500 Man. Trans. ....	3000±500
1500 Auto. Trans. ....	2800±500
Accord & Prelude 1800 ....	2500±500

- 4) If necessary, adjust engine speed; if speed was too low, widen adjustment slot in dashpot speed adjustment lever using a screwdriver; if too high, narrow the slot with suitable pair of pliers; if speed cannot be adjusted, or diaphragm will not hold vacuum, replace the diaphragm and repeat test.
- 5) Reconnect vacuum hose and raise engine speed to 3500 RPM and maintain for 2-3 seconds. Quickly release throttle.
- 6) Engine should return to idle in 1-4 seconds. If return time is correct, proceed to "Throttle Opener Check".
- 7) If return time is less than 1 second, "T" a vacuum gauge into the lower vacuum line at dashpot check valve. Vacuum should be at least 1.2 in. (30 mm) Hg at 4000 RPM. If so, replace control valve. If less, clean carburetor port and hoses and repeat test in step 5).
- 8) If idle return time is more than 4 seconds, clamp hose between throttle opener solenoid valve and control valve, then repeat test. If no change, replace control valve. If test is now within limits, check for voltage at solenoid valve. If voltage is present, replace speed sensor. If no voltage, replace throttle opener solenoid valve.



**Fig. 4 Widening Dashpot Speed Adjusting Lever**

#### THROTTLE OPENER CHECK

- 1) Complete "Dashpot System Check" as outlined above.
- 2) Bypass the speed sensor by applying battery voltage to yellow/black wire at throttle opener solenoid connector.
- 3) Raise engine speed to 3500 RPM and release throttle. Engine should return to idle in less than 6 seconds, but not faster than dashpot check time.
- 4) If return time is less than check valve time, remove vacuum line from throttle opener solenoid valve to throttle control valve. Feel for vacuum at throttle opener solenoid.
- 5) If vacuum is present, replace throttle control valve. If no vacuum, replace throttle opener solenoid valve. If return time to idle was more than 6 seconds, replace the throttle opener valve. After component replacement, retest system and remove jumper wires.

#### SPEED SENSOR CHECK

- 1) Jack up front of car and support with safety stands. Block rear wheels and set parking brake.
- 2) Connect voltmeter positive probe to yellow/black wire terminal at control box connector. Connect negative probe to a suitable ground.
- 3) Start engine. Select second gear and accelerate slowly while observing voltmeter.
- 4) Voltmeter should show battery voltage above 20 MPH. Below this speed, no voltage should be shown.
- 5) If voltage is present at the wrong speed, replace speed sensor. If no voltage is present, check fuse and related wiring and repair as necessary.