

1975-79 EXHAUST EMISSION SYSTEMS

International Harvester Throttle Modulator

3-181

1975-78 Models

DESCRIPTION

The throttle modulator system is used to reduce emissions during deceleration. System consists of a vacuum operated throttle modulator, solenoid vacuum valve and an electronic speed sensor. Early models have separate speed sensor and solenoid vacuum valve. Later models have a combined speed sensor/solenoid vacuum valve. See Figs. 1 and 2.

OPERATION

The electronic speed sensor is calibrated to electrically ground the solenoid vacuum valve when engine speed is greater than 1850 RPM. When solenoid vacuum valve is grounded, intake manifold vacuum is applied to the throttle modulator. With vacuum applied, modulator shaft extends keeping throttle from returning to complete idle position. Modulator shaft should hold throttle at 1400-1600 RPM during deceleration.

TESTING

THROTTLE MODULATOR

- 1) With engine off, inspect throttle modulator shaft to ensure shaft is fully retracted. There should be a small clearance (about 1/4") between modulator and throttle linkage.
- 2) Connect a tachometer to engine. Start engine and observe modulator shaft. Shaft should remain retracted. If shaft extends at idle, vacuum solenoid or speed sensor is faulty. Slowly raise engine speed. Modulator shaft should extend when engine exceeds 1850 RPM.
- 3) Allow engine RPM to decrease. Modulator shaft should retract when engine drops below 1850 RPM. If throttle modulator does not perform as described, check vacuum supply, vacuum solenoid valve and speed sensor.

VACUUM SOLENOID VALVE

- 1) Start engine. Disconnect wiring at solenoid valve. Modulator shaft should be retracted. Using jumper wires, apply battery voltage and ground to solenoid terminals.

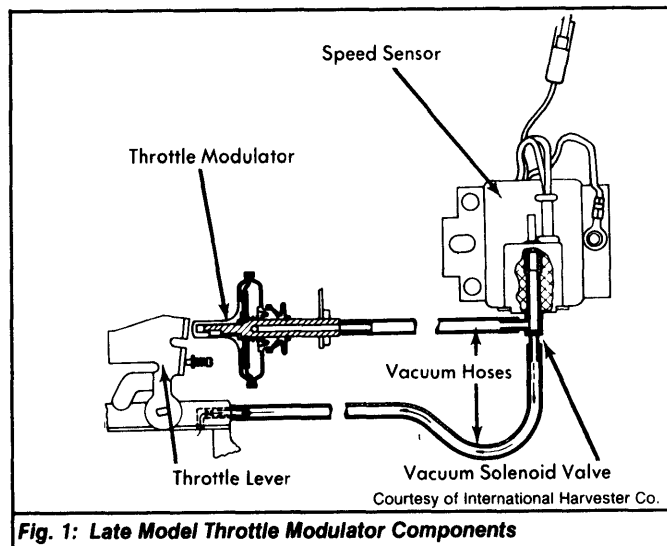


Fig. 1: Late Model Throttle Modulator Components

- 2) Modulator shaft should extend, holding engine at 1400-1600 RPM. If modulator does not operate properly, replace modulator and retest.

SPEED SENSOR

- 1) Disconnect electrical connector at vacuum solenoid valve. Connect a test light between harness terminals. Connect a tachometer and start engine.
- 2) Slowly accelerate engine while observing tachometer and test light. Test light should glow when engine exceeds 1850 RPM. Test light should not glow when engine is below 1850 RPM.
- 3) If speed sensor does not check okay, check speed sensor wiring. If wiring is okay, replace speed sensor and retest. Late model systems require speed sensor/vacuum solenoid valve unit replacement.

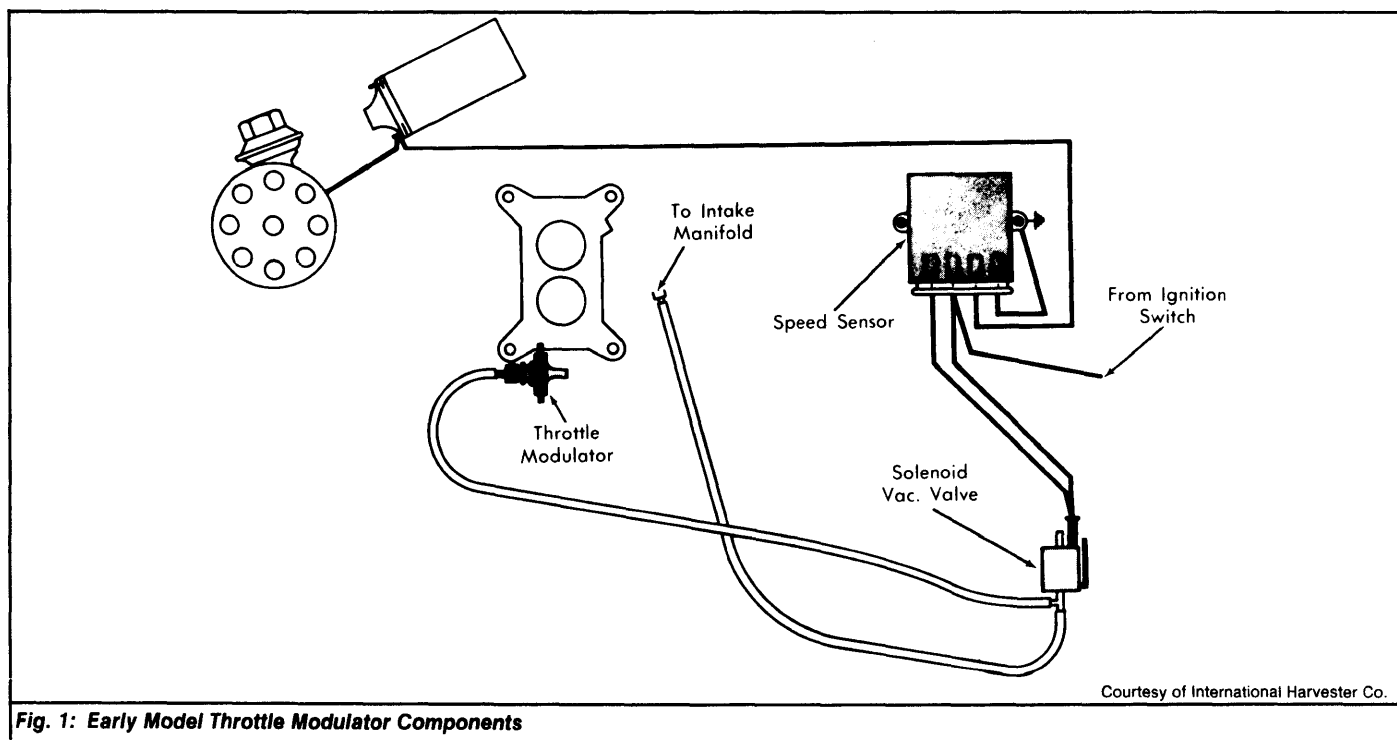


Fig. 1: Early Model Throttle Modulator Components