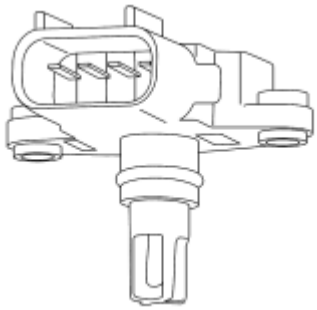
Typical IAT Sensor Integrated With A MAPT Sensor



N0073171

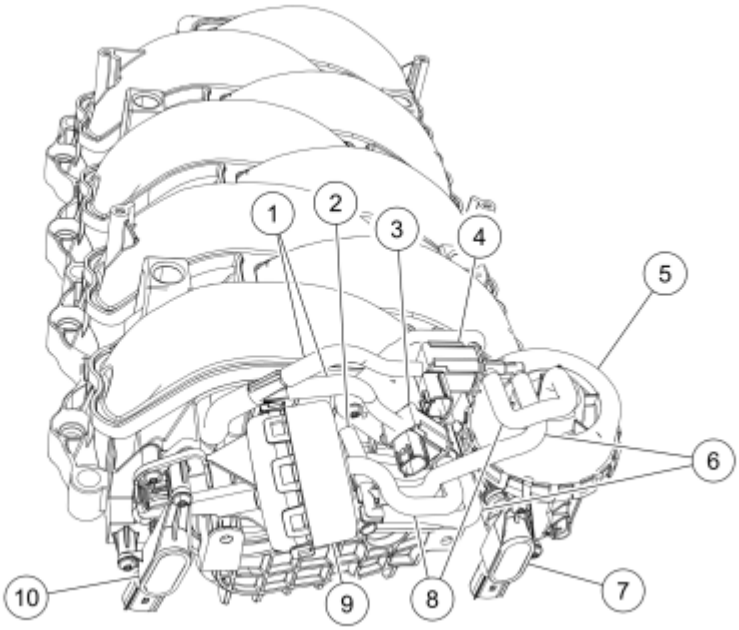
Typical IAT2 Sensor Integrated With A MAP Sensor

Intake Manifold Runner Control (IMRC)

WARNING: SUBSTANTIAL OPENING AND CLOSING TORQUE IS APPLIED BY THIS SYSTEM. TO PREVENT INJURY, BE CAREFUL TO KEEP FINGERS AWAY FROM LEVER MECHANISMS WHEN ACTUATED. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.

The IMRC is a vacuum actuated system with a PCM controlled electric solenoid and manifold mounted vacuum actuators for bank 1 and bank 2. The IMRC solenoid controls each vacuum actuator to activate a shutter device attached to the actuator shaft. There is an intake manifold runner control sensor mounted to each actuator shaft to provide the shutter position to the PCM.

The IMRC shutters are in the closed position below 3,000 RPM to create air flow turbulence for better charge mixing in the cylinder. The IMRC shutters are in the open position above 3,000 RPM to reduce air flow restriction.



N0163102

Typical IMRC

Intake Air System	Component
1	Vent Lines To The Intake Air Tube
2	Manifold Vacuum Supply Port
3	Intake Manifold Runner Control Bank 2 (IMRC2) Solenoid
4	Intake Manifold Runner Control Bank 1 (IMRC1) Solenoid
5	Vacuum Actuator Bank 1
6	Manifold Vacuum Supply Lines
7	Intake Manifold Runner Control Bank 1 (IMRC1) Sensor
8	Vacuum Lines From IMRC Solenoid To Vacuum Actuator
9	Vacuum Actuator Bank 2
10	Intake Manifold Runner Control Bank 2 (IMRC2) Sensor

Intake Manifold Tuning Valve (IMTV)

WARNING: SUBSTANTIAL OPENING AND CLOSING TORQUE IS APPLIED BY THIS SYSTEM. TO PREVENT INJURY, BE CAREFUL TO KEEP FINGERS AWAY FROM LEVER MECHANISMS WHEN ACTUATED. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.

The IMTV is a motorized actuated unit mounted directly to the intake manifold. The IMTV actuator controls a shutter device attached to the actuator shaft. There is no monitor input to the PCM with this system to indicate shutter position.

The motorized IMTV unit is not energized below a calibrated RPM. The shutter is in the closed position to prevent airflow blend from occurring in the intake manifold. The motorized unit is energized above a calibrated RPM. The motorized unit is commanded ON by the PCM initially at a 100 percent duty cycle to move the shutter to the open position, and then falling to approximately 50 percent to continue to hold the shutter open.

Knock Sensor (KS)

The KS is a tuned accelerometer on the engine which converts engine vibration to an electrical signal. The PCM uses this signal to determine the presence of engine knock and to retard spark timing.