

 **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.**

There are 2 basic types of intake air subsystems:

- IMRC
- IMTV

There are several different styles of hardware used to control airflow within the engine air intake system. In general, the devices are defined based on whether they control charge motion or manifold tuning.

The IMRC modifies the air charge motion in the intake manifold. The IMRC is located at the rear of the intake manifold. The IMRC system must have a monitor feedback system in order to meet OBD II regulations.

The IMTV modifies the airflow volume of the manifold by connecting multiple plenums or inlets within the intake manifold. The IMTV control valve is located in the center of the intake manifold. The IMTV system does not have to be monitored for OBD II regulations.

These subsystems provide increased intake airflow to improve torque, emissions and performance. The overall volume of air metered to the engine is controlled by the throttle body.

INTAKE AIR SYSTEMS > INTAKE MANIFOLD RUNNER CONTROL (IMRC) SYSTEM

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The IMRC system consists of a manifold mounted vacuum actuator and a PCM controlled electric solenoid. For additional information on IMRC vacuum actuated components, refer to ENGINE CONTROL COMPONENTS in this service information. The linkage from the actuator attaches to the manifold plate lever. The IMRC vacuum actuator and manifold has a single intake air passage for each cylinder. The passage has a valve plate that blocks a large percentage of the opening when actuated, leaving the top of the passage open to generate turbulence. The housing uses a return spring to hold the valve plates open. The IMRC sensors provide feedback to the PCM indicating the valve plate position.

1. The PCM monitors the TP sensor, cylinder head temperature (CHT) sensor, and CKP sensor signals to determine activation of the IMRC system. There must be a positive change in voltage from the TP sensor along with the increase in RPM at the correct engine temperature to open the IMRC valve plates.
2. The PCM uses the information from the input signals to control the IMRC solenoid based upon changes in the throttle position, the engine temperature, and the RPM.
3. The PCM energizes the IMRC solenoid with the ignition ON and the engine running. Vacuum is