

	OEM items affecting idle rpm	Type of control	My understanding of operation.
1	Throttle plates stop	Physical limit	Setting generally made only during production to determine the absolute minimum closure point of each throttle plate and thereby prevent the long-term wear that results increased air leakage.
2	Air bypass adjustment screw	Physical adjustment	A slotted brass screw about 3/8" diameter whose head is visible on the throttle body below elbow mounting area and slightly toward the firewall. Manual setting that controls how much air bypasses primary throttle-plate and IAC; used to set the fully warmed up base idle RPM.
3	Thermal wax/fast idle cam	Thermal range	Intended to increase idle speed based on the relative temperature of the throttle body. Has two adjustments, one for matching cam position to an actual temperature, and the second for setting the amount of RPM increase at that temperature. Heated by flow of engine coolant and should completely loose any effect following warm-up.
4	Deceleration dashpot	Slows rate of throttle closing	Designed to slow the rate at which the primary throttle plate closes the last few degrees, but should not result in more than a 1-2 second delay in full closure. Adjustable but rarely needed following correct installation.
5	Idle Air Control solenoid	Closed loop controlled by ECU.	Duty-cycled solenoid valve responsible for controlling idle RPM. Duty rate controlled by ECU w/feedback from other sensors and adjusts to offset electrical loads (see below) and A/C compressor. Also feeds in additional air during engine deceleration to prevent afterburn.
6	Automatic Warm-up Solenoid	Binary Thermal	ECU controlled valve thought to provide a simple off/on control of a fixed amount of additional air during initial cold start conditions and responsible for the 3K RPM behavior at startup. Generally operates for only 5-10 seconds. Effect is prevented on cars with manual transmissions by placing transmission in any gear before starting engine.
7	Electrical Load Control System	Electrical load	Monitors several electrical circuits (see below) and if one or more is active, the RPM is increased by the IAC solenoid (see above).
8	Vacuum leak(s)	Uncontrolled amount of air	Any uncontrolled source of air leakage can affect idle speed, idle A/F mixture, and boost. In general vacuum leaks cause the idle speed to float up & down over several hundred RPM. Small leaks tend to slightly increase idle speed for 5-10 seconds followed by a stumble, while larger leaks make the idle speed lower than normal and very unstable. Effects can vary greatly depending on the amount of leakage,

			engine condition, and etc.
9	Water Temperature sensor	ECU feedback	Measures coolant temperature and used by ECU to make many adjustments including several that affect idle speed.
10	Throttle Position sensor	Provides feedback to ECU	If miss-adjusted the ECU can/will in-correctly control fuel maps, ignition advance, etc. potentially causing idle RPM fluctuations.
11	PRC solenoid	Binary	Can allow extra air to enter manifold.
12	Fuel pressure regulator	Reactive to manifold vacuum	Depending on conditions, excess fuel can either slow idle RPM and/or mask vacuum leaks.
13	Power steering pressure switch	Binary	Provides feedback to ELC (see above) in response to steering input while at idle. Idle speed is increased slightly while the steering wheel is being turned; stop turning regardless of position and idle drops back down.
14	AC switch	Binary	Provides feedback to ELC (see above) in response to AC compressor loads while at idle.
15	Vehicle Speed	Unknown	RPM held higher than normal idle speed until vehicle comes to a complete stop.