

D - ADJUSTMENTS - V8

1992 ENGINE PERFORMANCE General Motors V8 On-Vehicle Adjustments

V8 IGNITION TIMING

NOTE: Procedures for timing adjustment are for engines equipped with HEI-EST distributors only. Other engines are equipped with C3I, DIS or IDI ignition system. Timing on these systems is not adjustable.

NOTE: Some engines are equipped with a socket for a magnetic probe timing meter, located 9.5 degrees ATDC. DO NOT use this location for setting timing using a conventional timing light.

5.0L (VINS E & F) & 5.7L (VINS 7 & 8)

1. Place transmission in Park. Start and warm engine to normal operating temperature. Turn A/C and all accessories off. Ensure CHECK ENGINE light is off.
2. Put Electronic Spark Timing (EST) into by-pass mode by unplugging Set-Timing connector. Connector is a single wire in wiring harness near distributor or right shock tower. DO NOT unplug 4-wire connector at distributor.
3. Connect timing light to spark plug No. 1 wire. Loosen distributor hold-down bolt. Set timing to specification. Refer to the [V8 IGNITION TIMING SPECIFICATIONS](#) below. Tighten distributor, and recheck timing. Reconnect Set-Timing connector. Clear Electronic Control Module (ECM) trouble code by momentarily disconnecting ECM power source or negative battery terminal.

V8 IGNITION TIMING SPECIFICATIONS

Application	Degrees BTDC @ RPM
5.0L	0 @ 600
5.7L	
VIN P	(1)
VIN 7	0 @ (2)
VIN 8	6 @ 600
(1)	Timing is not adjustable.
(2)	A/T in Drive.

IDLE SPEED & MIXTURE

NOTE: Idle mixture is controlled by Electronic Control Module (ECM). Adjustment is not possible. When battery is disconnected,

vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. Refer to [COMPUTER RELEARN PROCEDURES](#) at the end of this article.

V8 IDLE SPEED

MINIMUM IDLE (5.0L VINS E & F & 5.7L VINS 7 & 8)

NOTE: On 5.0L (VINS E & F) and 5.7L (VINS 7 & 8), idle speed is controlled by ECM and will normally vary; adjustment is normally not required. Following adjustment is for minimum idle speed only.

1. Pierce idle stop screw plug using an awl, and remove plug. With Idle Air Control (IAC) motor connected, ground ALDL test connector, located under driver side of dash. Disconnect distributor Set-Timing connector located near distributor.
2. Turn ignition on, but DO NOT start engine. Wait 45 seconds. With ignition on, disconnect IAC connector. Remove jumper from ALDL test connector, and start engine. Allow engine to go into closed loop mode.
3. Adjust idle screw to specifications. See [MINIMUM IDLE SPEED \(V8 - 5.0L VINS E & F & 5.7L VINS 7 & 8\)](#) . Turn ignition off, and reconnect IAC motor. Check TPS adjustment. See [THROTTLE POSITION SENSOR \(TPS\)](#) . Start engine, and check for proper idle operation.

MINIMUM IDLE SPEED (V8 - 5.0L VINS E & F & 5.7L VINS 7 & 8)

Application	RPM
5.0L (VINS E & F)	400-450
5.7L (VINS 7 & 8)	400-450

IAC VALVE RESET (5.7L VIN P)

1. Idle speed is ECM controlled. Resetting of IAC valve pintle is only possible adjustment. To reset IAC valve pintle position, depress accelerator pedal slightly. Start engine, and release accelerator pedal. Run engine for 5 seconds.
2. Turn engine off for 10 seconds. Restart engine, and check for proper idle operation. Clear any trouble codes.

V8 IDLE MIXTURE

NOTE: Idle mixture is controlled by Electronic Control Module (ECM). Adjustment is not required or possible.

THROTTLE POSITION SENSOR (TPS)

NOTE: All testing procedures are made with engine at normal operating temperature. TPS is not adjustable. For further testing, see appropriate G - TESTS W/CODES article in this section.

TPS ADJUSTMENT VOLTAGE

Application	(1) Volts
5.0L	(2) .20-5.00
5.7L	
VIN P	(2) .60-5.00
VIN 7	(2) .20-5.00
VIN 8	(2) .50-5.00
(1) Voltage range is from idle position to wide open throttle position.	
(2) Not adjustable.	

COMPUTER RELEARN PROCEDURES

INTRODUCTION

Vehicles equipped with engine or transmission computers may require a relearn procedure after the vehicle battery is disconnected. Many vehicle computers memorize and store vehicle operation patterns for optimum driveability and performance. When the vehicle battery is disconnected, this memory is lost. The computer will use default data until new data from each key start is stored. As the computer memorizes vehicle operation for each new key start, driveability is restored. Vehicle computers may memorize vehicles operation patterns for 40 or more key starts.

Customers often complain of driveability problems during the relearn stage because the vehicle acts differently then before being serviced. Depending on the type and make of vehicle and how it is equipped, the following complaints (driveability problems) may exist:

- Harsh Or Poor Shift Quality
- Rough Or Unstable Idle
- Hesitation Or Stumble
- Rich Or Lean Running
- Poor Fuel Mileage

These symptoms and complaints should disappear after a number of drive cycles have been memorized. To reduce the possibility of complaints, after any service which requires battery power to be disconnected, vehicle should be road tested. If a specific relearn procedure is not available, the following procedure may be used:

COMPUTER RELEARN PROCEDURES

Automatic Transmission Models

- Set parking brake, and start engine in "P" or "N" position. Warm-up vehicle to normal operating temperature or until cooling fan cycles.
- Allow vehicle to idle for one minute in "N" position. Select "D" and allow engine to idle for one minute.
- Accelerate at normal throttle position (20-50%) until vehicle shifts into top gear.
- Cruise at light to medium throttle.
- Decelerate to a stop, allowing vehicle to downshift, and use brakes normally.
- Process may be repeated as necessary.

Manual Transmission Models

- Place transmission in Neutral position.
- Ensure the emergency brake has been set and all accessories are turned off.
- Start engine and bring to normal operating temperature.
- Allow vehicle to idle in Neutral for one minute.
- Initial relearn is complete; process will be completed during normal driving.

These procedures are especially important if the vehicle is equipped with an electronically controlled automatic transmission or transaxle. Always complete the procedure before returning the vehicle to the customer.