

D - ADJUSTMENTS

ABC123

Entire Article
2000 Chevrolet Camaro

ARTICLE BEGINNING

2000 ENGINE PERFORMANCE
General Motors On-Vehicle Adjustments - Cars
Except Metro & Prizm

Alero, Bonneville, Camaro, Catera, Cavalier, Century,
Corvette, DeVille, Eldorado, Firebird, Grand Am, Grand Prix,
Impala, Intrigue, LeSabre, Lumina, Malibu, Monte Carlo,
Park Avenue, Regal, Saturn, Seville, Sunfire

ENGINE MECHANICAL

Before performing any on-vehicle adjustments to fuel or ignition systems, ensure engine mechanical condition is okay.

CAUTION: 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. See COMPUTER RELEARN PROCEDURES article in GENERAL INFORMATION before disconnecting battery.

VALVE CLEARANCE

NOTE: All models use hydraulic lifters. Adjustments are not required.

IGNITION TIMING

NOTE: All engines are equipped with C3I, DIS or IDI ignition systems. Timing on these systems is not adjustable.

IDLE SPEED & MIXTURE

NOTE: Idle mixture is controlled by Powertrain Control Module (PCM). Adjustment is not possible.

NOTE: Incorrect idle speeds are normally caused by a dirty throttle plate or vacuum leaks. Ensure all vacuum components are functioning properly.

IDLE SPEED (4-CYLINDER)

NOTE: Idle speed is controlled by PCM and is not adjustable. Slight fluctuations in idle speed are considered normal. Start and run engine for at least 7 minutes to establish PCM control of idle.

1.9L

1) Warm engine to normal operating temperature. Turn ignition off. Ensure all accessories are off. Connect IAC Tool (SA9195E) to IAC valve electrical connector. Move lever on tool downward to completely

D - ADJUSTMENTS

ABC123

Entire Article
2000 Chevrolet Camaro

seat IAC valve pintle. Insert IAC Air Plug (SA9106E) in throttle body assembly. Connect scan tool to Data Link Connector (DLC).

2) Start engine and check idle speed. Idle speed should be between zero (stall) and 700 RPM. If idle speed is not as specified, check for vacuum leaks or binding throttle blade. Clean throttle bore if necessary.

3) If idle speed is greater than 700 RPM after repairs, replace throttle body. DO NOT adjust minimum idle speed screw. Turn engine off. Remove IAC tool and reconnect IAC valve electrical connector. Check Throttle Position (TP) sensor voltage. See THROTTLE POSITION SENSOR.

4) Remove IAC air plug. Start engine and verify proper idle speed. If proper idle speed cannot be obtained, see appropriate SELF-DIAGNOSTICS article.

2.2L & 2.4L

1) Idle speed is PCM-controlled. Resetting of IAC valve pintle is the only adjustment that can be performed. To reset IAC valve pintle position, turn ignition on.

2) Turn ignition off for 10 seconds. Start engine and check for proper idle operation. Repeat procedure if proper idle operation is not obtained.

IDLE SPEED (V6)

NOTE: Idle speed is controlled by PCM and is not adjustable. Slight fluctuations in idle speed are considered normal. Start and run engine for at least 7 minutes to establish PCM control of idle. All 3.0L engines, and "F" body 3.8L engines are equipped with an Accelerator Pedal Position (APP) sensor. The APP sensor controls throttle movement based on PCM input. No adjustments or resetting procedures are given by manufacturer.

3.1L, 3.4L, 3.5L & 3.8L

1) Idle speed is PCM-controlled. Resetting of IAC valve pintle is the only adjustment that can be performed. To reset IAC valve pintle position, turn ignition on.

2) Turn ignition off for 10 seconds. Start engine and check for proper idle operation. Repeat procedure if proper idle operation is not obtained.

IDLE SPEED (V8)

NOTE: Idle speed is controlled by PCM and is not adjustable. Slight fluctuations in idle speed are considered normal. Start and run engine for at least 7 minutes to establish PCM control of idle. "Y" body 5.7L engines are equipped with an Accelerator Pedal Position (APP) sensor. The APP sensor controls throttle movement based on PCM input. No adjustments or resetting procedures are given by manufacturer.

4.6L

Resetting of IAC valve pintle is the only adjustment that can

D - ADJUSTMENTS

ABC123

Entire Article
2000 Chevrolet Camaro

be performed. To reset IAC valve pintle position, start and idle engine for 15 seconds. Turn ignition off and wait 15 seconds. Restart engine and ensure idle speed is correct.

5. 7L (Automatic Transmission)

Resetting of IAC valve pintle is the only adjustment that can be performed. To reset IAC valve pintle position, turn off A/C controls. Apply parking brake and block drive wheels. Start engine and allow it to reach normal operating temperature. Place gear selector in Drive. Allow engine to idle for 5 minutes. Place gear selector in Park. Allow engine to idle for an additional 5 minutes. Turn engine off for 30 seconds.

5. 7L (Manual Transmission)

Resetting of IAC valve pintle is the only adjustment that can be performed. To reset IAC valve pintle position, turn off A/C controls. Apply parking brake and block drive wheels. Place gear selector in Neutral. Start engine and allow it to reach normal operating temperature. Allow engine to idle for 5 minutes. Turn engine off for 30 seconds.

THROTTLE POSITION SENSOR

NOTE: Ensure Throttle Position (TP) sensor voltage is as specified. See TP SENSOR VOLTAGE table. TP sensor is not adjustable. For further testing procedures, see appropriate SELF-DIAGNOSTICS article.

NOTE: On some models, throttle control is electronic with no mechanical link from engine to accelerator pedal. The PCM and Throttle Actuator Control (TAC) module monitor the position of accelerator pedal based on signals from a nonadjustable Accelerator Pedal Position (APP) sensor. The APP is mounted above the accelerator pedal.

TP SENSOR VOLTAGE

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Application (1) Volts

1. 0L	(2)
1. 3L	0.42-1.0 To 3.0-4.8
1. 8L	0.3-0.8 To 3.2-4.9
1. 9L	0.2-0.6 To 4.7
2. 2L	
Saturn	0.35-4.65
All Others	0.2-0.9 To 5.0
2. 4L	0.2-0.9 To 5.0
3. 0L	
Sensor No. 1	(3)
Sensor No. 2	(4)
3. 1L, 3. 4L, 3. 5L & 4. 6L	(3)
3. 8L	
"F" Body	
Sensor No. 1	(3)

D - ADJUSTMENTS

ABC123

Entire Article
2000 Chevrolet Camaro

Sensor No. 2 (4)
All Others (3)
5. 7L
"F" Body (3)
"Y" Body
Sensor No. 1 (5)
Sensor No. 2 (6)

- (1) - Voltage range is from idle position to wide open throttle position.
- (2) - Ensure engine is at normal operating temperature. Connect a DVOM (backprobe) between ground and TP sensor signal circuit at PCM. See appropriate wiring diagram in WIRING DIAGRAMS article. Voltage reading should be 0.98-1.02 volts with a .140" (3.5 mm) feeler gauge placed between throttle stop screw and throttle lever. Adjust or replace as necessary.
- (3) - Voltage range is from less than one volt at closed throttle to greater than 4 volts at wide open throttle.
- (4) - Voltage range is from greater than 4 volts at closed throttle to less than one volt at wide open throttle.
- (5) - Voltage range is from less than 1.1 volt at closed throttle to 3.7 volts at wide open throttle.
- (6) - Voltage range is from greater than 3.9 volts at closed throttle to less than 1.2 volt at wide open throttle.

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THROTTLE POSITION SENSOR LEARN (4.6L)

NOTE: Ensure accelerator and brake pedals are free from any obstructions while performing Throttle Position (TP) sensor learn procedure. PCM will not perform learn function with accelerator pedal or brake pedal obstructions.

1) If a new TP sensor, throttle body or PCM is installed, PCM must learn new TP sensor offset. This procedure is necessary since TP sensor is not adjustable and may be produced by more than one manufacturer, causing varying tolerances during minimum air adjustment.

2) High idle at closed throttle or a stall condition may occur if PCM maintains an improper TP sensor offset. To perform TP sensor learn, turn ignition on, engine off. Wait one minute, and then turn ignition off. Wait an additional 15 seconds.

END OF ARTICLE