

1975-79 TUNE-UP PROCEDURES

Chevrolet 6-Cylinder

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Fifth character of Vehicle Identification Number (VIN), located on a plate affixed to top left side of instrument panel and visible through windshield, is the engine code letter.

VIN CODES

Application	Code
250" 6-Cyl.	D

ENGINE IDENTIFICATION CODE

Engine code is stamped on right side of cylinder block, near distributor.

ENGINE CODES

Application	Code
1975	
Camaro & Nova	CJM, CJU, KJR
Chevelle	CJR
Chevelle, Nova & Camaro	CJL, CJT
Nova	CJS
1976	
California	CCC
Federal	CCB, CCD, CCF, CCJ
1977	
California	CCC
Federal	CCD, CCF, CCR
High Altitude	CCF
1978	
California	CCK, CCL, CJK, CJM
Federal	CCH, CCM, CJJ, CJR
1979	
All Models	DCA, DCB, DCC, DCD DKA, DKB, DKC, DKD, DKF

TUNE-UP NOTES

NOTE: In order to comply with emission standards, specifications shown on engine compartment Emission Control Tune-Up Decal must be used in all instances.

NOTE: The EPA High Altitude emission standards apply to vehicles sold in certain areas outside of California which have an elevation above 4000 feet.

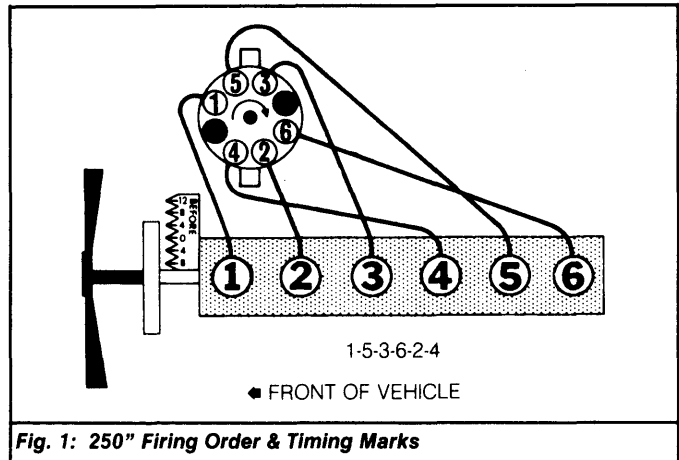
NOTE: Before making compression test or cranking engine with a remote starting switch, disconnect ignition switch "BATT" terminal lead at distributor.

CAUTION: Do not remove spark plug wires with engine running. High Energy Ignition (HEI) system secondary voltage is higher than standard ignition systems and may inflict harmful electrical shock.

NOTE: Damage to the HEI electronic module and/or ignition coil may result if "TACH" terminal, in distributor cap connector, is directly grounded.

ENGINE COMPRESSION

Test compression pressure with engine at normal operating temperature, all spark plugs removed and throttle and choke valves wide open. Check compression through at least 4 compression strokes.



COMPRESSION SPECIFICATIONS

Application	Specifications
Compression Ratio	8.3:1
Recommended Fuel	Unleaded (87 AKI Minimum)
Compression Pressure	130 psi
Maximum Variation	
Between Cylinders	20 psi

VALVE CLEARANCE

Hydraulic Lifters - One (1) full turn down from zero lash.

VALVE ARRANGEMENT

E-I-I-E-E-I-I-E-E-I-I-E (Front-to-rear).

SPARK PLUGS

SPARK PLUG TYPE

Application	AC NO.
1975	
All Models	R46TX
1976-79	
All Models	R46TS

SPARK PLUG INSTALLATION

Application	Gap	Torque
1975		
All Models060"	15 ft. lbs.
1976-79		
All Models035"	15 ft. lbs.

HIGH TENSION WIRE RESISTANCE

Carefully remove ends of wire from spark plug and distributor. Using an ohmmeter, check resistance while gently twisting wire. If resistance is not to specification, or fluctuates from infinity to any value, replace wire.

WIRE RESISTANCE

Wire Length	Ohms (Maximum)
1975-76	
0-15"	10,000
15-25"	15,000
25-35"	20,000
Above 35"	25,000
1977-79	
Under 24"	30,000
Over 24"	50,000

1975-79 TUNE-UP PROCEDURES

Chevrolet 6-Cylinder (Cont.)

DISTRIBUTOR

All models are equipped with High Energy Ignition (HEI) system. No adjustments are required.

IGNITION TIMING

1975-76 Models - Set timing at specified hot (slow) idle speed with manual transmission in Neutral, automatic transmission in Drive, air conditioning off (if equipped), and distributor vacuum hose disconnected and plugged.

1977 Models - **1)** Ensure engine is at normal operating temperature, air cleaner installed, choke fully open, and air conditioner is off (if equipped). Set parking brake.

2) Disconnect fuel tank hose from vapor canister. Disconnect and plug vacuum advance hose at distributor. Start engine and check ignition timing. Adjust if necessary.

3) Reconnect vacuum advance hose to distributor. Place manual transmission in Neutral or automatic transmission in Drive. With idle speed solenoid energized, turn solenoid in or out to obtain curb idle RPM.

4) Disconnect solenoid lead to de-energize solenoid. Adjust base idle speed by turning 1/8 hex screw located in end of solenoid body. Reconnect solenoid lead and hose.

1978-79 Models - **1)** Check or adjust ignition timing with engine at normal operating temperature, choke fully open, air cleaner installed and air conditioning off (if equipped).

2) Disconnect and plug distributor vacuum advance hose. Set timing at specified hot (slow) idle speed with manual transmission in Neutral, automatic transmission in Drive.

IGNITION TIMING SPECIFICATIONS (DEGREES BTDC@RPM)

Application	Man. Trans.	Auto. Trans.
1975		
Nova (Federal)	8@550	8@550
All Others	10@850	10@550
1976		
Nova (Federal)	8@550	8@550
All Others	¹ 6@850	6@850
1977 ²		
Calif.		³ 6@550
Federal	6@750	10@550
High Altitude		6@600
1978		
Calif.		6@600
Federal	6@800	10@550
1979		
Calif.		6@600
Federal	12@800	8@675

¹ - 600 RPM on California models.

² - Increase RPM by 50 on A/C equipped models, except high altitude models.

³ - If equipped with carburetor No. 17057310 or 17057312, set timing to 8°BTDC.

HOT (SLOW) IDLE RPM

1) Adjust idle speed with engine at normal operating temperature, choke fully open, air cleaner installed, air conditioning off (if equipped). Place manual transmission in Neutral or automatic transmission in Drive.

2) Disconnect and plug vacuum advance hose at distributor. Check ignition timing and adjust as necessary. Reconnect vacuum advance hose.

3) Disconnect and plug vacuum hose at EGR valve and purge hose at vapor canister. With idle speed solenoid energized, turn solenoid in or out to obtain specified curb idle RPM.

4) Disconnect electrical lead to de-energize solenoid. Turn 1/8" hex screw in end of solenoid to obtain specified base idle RPM. Reconnect all disconnected hoses.

IDLE SPEED (RPM) SPECIFICATIONS

Application	Curb Idle	Base Idle
1975		
Man Trans.	850	425
Auto. Trans.		
Calif.	600	425
Federal	550	425
Nova (Federal)	600	435
1976		
Man Trans.	850	425
Auto. Trans.		
Calif.	600	425
Federal	¹ 550	425
1977 ²		
Calif.	550	425
Federal		
Man. Trans.	750	425
Auto. Trans.	550	425
1978		
Calif.	600	400
Federal		
Man. Trans.	800	425
Auto. Trans.	550	425
1979		
Calif.	600	400
Federal		
Man. Trans.	800	400
Auto. Trans.	675	400

¹ - With non-integrated head, set curb idle speed to 600 RPM.

² - Increase curb idle RPM by 50 on A/C equipped models, except High Altitude models.

IDLE MIXTURE

NOTE: Idle mixture screw is preset and capped at factory. Manufacturer recommends idle mixture adjustment only after major carburetor overhaul, throttle body replacement or emissions failure.

TACHOMETER (LEAN DROP) PROCEDURE

1975-77 Models - **1)** Set parking brake and block drive wheels. Remove air cleaner to access carburetor, but keep vacuum hoses connected. Disconnect and plug other hoses as directed on Emission Control Tune-Up Decal under hood.

2) Ensure engine is at normal operating temperature and air conditioner is off (if equipped). Disconnect and plug distributor advance hose. Check ignition timing and adjust if necessary. Reconnect vacuum advance hose.

3) Using care not to bend idle mixture screw, remove limiter cap from idle mixture screw. Lightly seat idle mixture screw, then back out just enough so engine will run.

4) Place automatic transmission in Drive. Back out (richen) idle mixture screw until maximum idle speed is obtained. Next, adjust idle speed screw until maximum RPM reading is obtained.

5) Turn idle mixture screw in (lean) until lower RPM reading is obtained. Adjust idle speed screw to obtain specified curb idle speed. Reconnect all hoses.

1975-79 TUNE-UP PROCEDURES

Chevrolet 6-Cylinder (Cont.)

IDLE MIXTURE SPECIFICATIONS

Application	RPM
1975 ¹	
Man Trans.	850
Auto. Trans.	
California	600
Federal	550
Nova (Federal)	600
1976	
Man Trans.	1200/850
Auto. Trans.	
California	640/600
Federal	² 575/550
1977	
California	640/600
Federal	
Man. Trans.	950/750
Auto. Trans.	575/550
High Altitude	650/600

¹ - See Emission Control Tune-Up Decal under hood, for curb idle specifications.

² - With non integrated head, specification is 640/600 RPM.

1978-79 Models - 1) With engine at normal operating temperature, choke fully open and air conditioning off (if equipped), set parking brake and block drive wheels. Disconnect and plug hoses as directed on Emission Control Label under hood. Connect tachometer to engine.

NOTE: On vehicles equipped with vacuum parking brake release, disconnect and plug vacuum hose.

2) Disconnect vacuum advance hose at distributor and set ignition timing to specification. Reconnect vacuum advance hose. Disconnect crankcase ventilation tube from air cleaner. Insert hose, with rubber stopper (J-26911), from propane valve into ventilation tube opening in air cleaner.

3) Propane cartridge must be in vertical position. Slowly open propane control valve until maximum engine speed is reached with manual transmission in Neutral or automatic transmission in Drive.

NOTE: Too much propane will cause engine speed to drop.

4) Observe propane flow meter to ensure propane cartridge is full. If enriched RPM is within specifications, the idle mixture is correct.

5) If enriched RPM is incorrect, remove idle mixture screw cap. Turn in mixture screw (clockwise) until lightly seated, then back screw out until lean best idle point at the enriched RPM¹ is reached.

6) Starting with a lean best idle setting at the enriched RPM, turn screw clockwise (leaner) until correct curb idle speed is reached.

7) Recheck enriched RPM with propane. If not within specifications, repeat adjustment procedure. Turn off engine and remove propane set up. Connect crankcase ventilation tube to air cleaner.

PROPANE ENRICHED RPM SPECIFICATIONS

Application	Enriched RPM
1978-79	
California	975-1025
Federal	
Man. Trans.	1050-1150
Auto. Trans.	1200-1250

COLD (FAST) IDLE RPM

1975-76 Models - Set fast idle with engine at normal operating temperature, choke fully open, transmission in Neutral, and EGR vacuum hose disconnected and plugged. On vehicles with ported vacuum advance, disconnect and plug vacuum advance hose at distributor. Position fast idle cam follower on highest step of cam and bend tang to obtain specified RPM.

1977-79 Models - With engine at normal operating temperature and curb idle set to specifications, place fast idle cam follower on highest step of cam. Bend fast idle cam follower to obtain specified fast idle RPM.

FAST IDLE RPM SPECIFICATIONS

Application	Man. Trans.	Auto. Trans.
1975		
Nova (Federal)		1800
All Others	1800	1700
1976		
California	1700	1700
Federal	¹ 2100	¹ 2100
1977		
California	1800	1800
Federal & High Altitude	2000	2000
1978		
California		2000
Federal	2000	2100
1979		
All Models	1800	2000

¹ - With non-integrated head, set fast idle to 2200 RPM.

AUTOMATIC CHOKE

1975-76 Models - Pull on choke coil rod to end of travel to close choke valve. Bottom of rod should be even with top of lever. Bend rod if adjustment is required.

1977-79 Models - To adjust, loosen choke cover retaining screws and place cam follower on highest step of fast idle cam. Align mark on choke cover to specified mark on choke housing. Tighten retaining screws.

AUTOMATIC CHOKE SETTING

Application	Setting
1977	
California	Index
Federal	
Man. Trans.	1 Notch Rich
Auto. Trans.	¹ 2 Notches Rich
High Altitude	1 Notch Lean
1978-79	
All Models	Index

¹ - On models equipped with carburetor No. 17057018, setting is one notch rich.

FUEL PUMP

FUEL PUMP PRESSURE

Pinch off fuel return line (if equipped), connect pressure gauge to fuel line at carburetor, and hold pressure gauge at level of pump outlet.

FUEL PUMP SPECIFICATIONS

Application	Specifications
1975-76	
Pressure (At Idle)	3.5 psi
Volume (At Idle)	1 pint in 30 sec.
1977-79	
Pressure (At Idle)	4.5-6.0 psi
Volume (At Idle)	1 pint in 30 sec.

IGNITION

DISTRIBUTOR

All models are equipped with High Energy Ignition (HEI) system. No adjustment is required.

1975-79 TUNE-UP PROCEDURES

Chevrolet 6-Cylinder (Cont.)

NOTE: Module must be replaced as a unit. A liberal coat of silicone grease **MUST** be applied to surface on which module will be mounted.

Other Data & Specifications - See Delco Ignition Systems in DISTRIBUTORS & IGNITION SYSTEMS section.

IGNITION COIL

IGNITION COIL SPECIFICATIONS

Application	Specification
Resistance	
Primary (at 75°F)	¹ 0.4-0.5 ohm
Secondary (at 75°F)	6000-30,000 ohms
Coil Output	² 25,000-35,000 volts

- ¹ - One ohm on 1975 models, 0-0.1 ohms on 1978-79 models.
- ² - Replace if below 25,000 volts.

FUEL SYSTEM

CARBURETOR

CARBURETORS

Application	Model
1976	
All Models	Rochester 1MV 1-Bbl.
1978-79	
All Models	Rochester 1ME 1-Bbl.

Other Data & Specifications - See Rochester Carburetors in FUEL SYSTEMS section.