1966-74 GENERAL MOTORS EXHAUST EMISSION TUNE-UP (Cont.)
CADILLAC

DESCRIPTION

Refer to EMISSION CONTROL APPLICATIONS Section for individual systems as applied to particular combinations of vehicle model, engine, and transmission.

Several systems are used to control emissions of pollutants. Each system is designed to effect particular vehicle emission situations. In addition, specially calibrated carburetors, distributors, modified combustion chambers and valve timing are used with these systems.

SERVICE PROCEDURES

In addition to servicing an individual emission system or component, all ignition system and/or carburetor adjustments necessary must also be correctly performed.

NOTE — Due to late changes and corrections, always refer to Engine Tune-Up decal in engine compartment before beginning Tune-Up. In event of any conflict between decal specifications and given specifications, decal specifications should prevail.

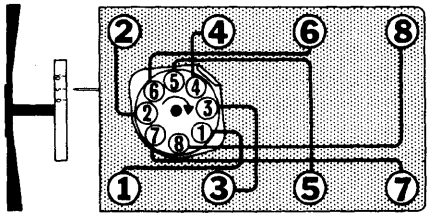
NOTE — To by-pass Starter Interlock, turn ignition "ON" and locate by-pass relay switch in engine compartment. Press and release button on relay. Engine can now be cranked or started. If ignition is turned to "OFF" or "LOCK" position, reactivation of relay button will again be required before engine can be cranked or started.

IGNITION SYSTEM

IGNITION TIMING

Refer to appropriate Tune-Up chart in TUNE-UP SPECIFICATIONS Section for ignition system and timing specifications.

All Engines (1966-74) — Check or adjust ignition timing with distributor cam angle correctly set, idle speed adjusted to specified RPM, and distributor vacuum line disconnected and plugged. After timing is set, reconnect vacuum line and bring idle speed to specified idle RPM.



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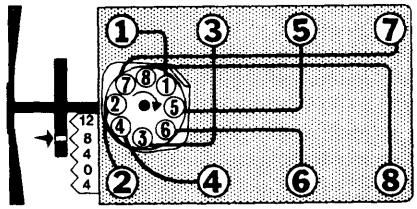
CADILLAC 429" V8 (1966-67)



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CADILLAC 472" & 500" V8 (1968-74)

CARBURETION

For service procedures and specifications, refer to following individual carburetor articles in CARBURETION Section, or for idle speed and mixture specifications, refer to appropriate TUNE-UP Chart in TUNE-UP SPECIFICATIONS Section.

Application	Carburetor Type
429" V8	
4-Bbl. (1966-67)	Rochester 4MC, 4MC, AFB
472" V8	
4-Bbl. (1968-74)	Rochester 4MV
500" V8	
4-Bbl. (1970-74)	Rochester 4MV

IDLE SPEED & MIXTURE ADJUSTMENT

NOTE — Correct mixture for emission compliance and idle quality are pre-set by manufacturer. Following procedures should only be used when normal tune-up activities fail to give satisfactory idle performance at specified air/fuel ratio or CO level, or after major carburetor overhaul or component replacement.

NOTE — 1966-67 engines will not idle properly if stainless steel shim is not installed with carburetor.

All Models (1966) — 1) Disconnect parking brake vacuum hose at vacuum cylinder. *NOTE — Hose must be disconnected at this location to include any calibrated leakage in the balance of the system, and to maintain vacuum for air conditioning controls.*

2) Connect suitable tachometer to engine and set parking brake firmly. Place transmission selector in "N" position. Bring engine to normal operating temperature, remove air cleaner. Check to ensure throttle dashpot is not holding throttle valves open, then place transmission selector in either "DR" position.

3) To set stator blades at proper performance angle, remove pink wire from contact fitting on transmission downshift switch and connect to white wire fitting using suitable alligator clip. Stator switch will now activate.

1966-74 GENERAL MOTORS EXHAUST EMISSION TUNE-UP (Cont.)

CADILLAC (Cont.)

IDLE SPEED & MIXTURE ADJUSTMENT (Cont.)

4) Set idle speed to minimum of 480 RPM, or maximum of 500 RPM, by turning air adjustment screw. *NOTE — On vehicles equipped with Air Injection Reactor system, set idle speed at 550 RPM. Air conditioner must be in "OFF" position.* Vehicles without A.I.R. system and equipped with air conditioning should have conditioner in "ON" position. Turning air adjustment screw outward increases engine speed, but also leans mixture supplied to intake manifold, condition is compensated by adjustment of idle mixture screw (always adjust last). Use minimum amount of air possible to obtain proper idle speed.

NOTE — Hot idle compensator must be closed when idle adjustments are made. Closure is accomplished by pressing suitable object on brass valve of idle compensator located in secondary side of carburetor. Do not press on bimetal strip of compensator as permanent damage may occur, causing lack of response to temperature change as designed.

5) Turn one idle mixture adjustment screw clockwise to obtain highest reading on tachometer. Continue to turn screw until speed falls off 20 RPM (lean idle speed fall off point). Reverse direction of screw ¼ turn. *NOTE — On vehicles equipped with Air Injection Reactor system, reverse direction of screw 1⅛ turns from lean idle speed fall off.* Repeat procedure with other idle mixture adjusting screw. Reset idle to 480-500 RPM (550 RPM on A.I.R. equipped vehicles).

6) Install air cleaner and recheck idle. Shut off engine and remove tachometer, reconnect pink wire to proper fitting on transmission downshift switch. Connect parking brake vacuum cylinder line.

All Models (1967) — 1) Disconnect parking brake vacuum hose at vacuum release cylinder. *NOTE — Hose must be disconnected at this location to include any calibrated leakage in balance of system.*

2) Connect suitable tachometer to engine, set parking brake firmly, place transmission selector in "N" position. Remove air cleaner and check that throttle dashpot is not holding throttle valves open.

3) For preliminary adjustment, turn idle speed adjusting screw in (clockwise) approximately 1½ turns after screw makes contact with primary throttle lever. Bring engine to normal operating temperature, place transmission selector in either "DR" position.

4) Hot idle compensator must be closed when idle adjustments are made, closure is accomplished by pressing suitable object on air horn vent stack located just to left rear of secondary metering rod hanger. Set idle speed at 480-500 RPM by adjusting low speed idle screw.

5) Vehicles equipped with Air Injector Reactor system must have air conditioning off (if equipped) and idle speed set at 550 RPM. Vehicles without A.I.R. system should have air conditioner operating (if equipped) and Automatic Climate Control lever placed in "AUTO" position. Disconnect and plug vacuum line from power servo located on firewall above engine.

6) Turn one idle mixture adjustment screw clockwise in order to obtain highest reading on tachometer. Use suitable extension hex-head driver (J-22646) to facilitate adjustment of idle mixture screws on 693 Series vehicles with air conditioning. Continue to turn screw until speed drops off 20 RPM (lean idle speed fall off point). Then turn screw counterclockwise until speed drops off 20 RPM (rich idle speed fall off point). Turn screw midway between rich and lean fall off for proper mixture setting. *NOTE — On vehicles equipped with A.I.R. system, reverse screw 1⅛ turn from 20 RPM lean fall off point.* Repeat process with other idle mixture adjusting screw.

7) Reset idle RPM to 480-500 RPM on standard vehicles, and 550 RPM on vehicles equipped with A.I.R. system. Install air cleaner and recheck idle. Shut off engine and remove tachometer, reconnect power servo vacuum line on air conditioned vehicles, and connect parking brake vacuum cylinder line.

All Models (1968-74 — 1) Disconnect parking brake vacuum hose at vacuum release cylinder, disconnect vacuum advance hose at distributor, plug both hoses. Disconnect and plug air leveling compressor hose at air cleaner. Remove air cleaner but do not disconnect vacuum hoses from air cleaner.

2) Connect suitable tachometer. Set parking brake firmly and block drive wheels. Place transmission selector in "N" position. Remove limiter caps on adjustment screws and turn each mixture screw out (counterclockwise) six turns from lightly seated position (four turns on 1974 Models). Bring engine to normal operating temperature. Choke should be off and carburetor on slow idle.

3) Place transmission selector in "D" position with air conditioner (if equipped) "OFF", and hot idle compensator closed (if applicable). Adjust anti-dieseling solenoid to 640 RPM (initial idle) and lock solenoid in place with suitable jam nut. *NOTE — This adjustment not necessary on 1974 models without anti-dieseling solenoid.* Alternately turn each mixture screw in (clockwise) ¼ turn at a time until 600 RPM (final idle) is reached, then turn each mixture screw out ¼ turn and readjust anti-dieseling solenoid to give 600 RPM idle speed (not required on some 1974 models). Lock solenoid in place if applicable. *NOTE — Do not replace idle limiter caps.*

4) With transmission selector still in "D" position and air conditioning "OFF", disconnect wire to anti-dieseling solenoid. Plunger should retract and close throttle. Adjust idle speed screw to 350-400 RPM (600 RPM on 1974 models not equipped with anti-dieseling solenoid).

5) Reconnect solenoid wire and crack throttle slightly; plunger should fully extend, readjust solenoid to 600 RPM, tighten solenoid and reconnect all hoses (this step not necessary on 1974 models not equipped with anti-dieseling solenoid).

Cadillac Idle Speed RPM Specifications (1966-74)

Application	Initial Idle RPM	Final Idle RPM
1966-67		
429"	① 480-500	① 480-500
1968-74		
472" & 500"	640	600

① — Vehicles equipped with Air Injection Reactor are set at 550 RPM.