

1975-79 TUNE-UP PROCEDURES

American Motors 4-Cylinder

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Engine can be identified by the seventh character of the Vehicle Identification Number (VIN), which is stamped on a plate attached to top left corner of instrument panel.

VIN CODE

Application	Code
121" (2.0 Liter) 2-Bbl.	G

ENGINE IDENTIFICATION CODE

Engine code is part of a number stamped on machined pad at left rear of cylinder block adjacent to engine oil dipstick. On engines built for sale in Georgia and Tennessee, machined pad will have an additional number enclosed by asterisks.

ENGINE CODE

Application	Code
121" (2.0 Liter) 2-Bbl.	G

TUNE-UP NOTES

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

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

CAUTION: When performing tune-up on vehicles equipped with catalytic converters, do not allow or create a condition of engine misfire in more than 1 cylinder for an extended period of time. Damage to converter may occur due to loading converter with unburned fuel.

ENGINE COMPRESSION

COMPRESSION SPECIFICATIONS

Application	Specification
Compression Ratio	8.2:1
Recommended Fuel	Unleaded (87 AKI Minimum)
Compression Pressure	116-160 psi
Maximum Variation Between Cylinders	44 psi

VALVE CLEARANCE

VALVE CLEARANCE

Application	Intake	Exhaust
121"		
Cold004-.007"	.014-.017"
Hot006-.009"	.016-.019"

VALVE ADJUSTMENT

1) Remove cylinder head cover. Rotate crankshaft until number 1 cylinder is at TDC. Check clearance for exhaust valves on cylinders 1 and 3 and intake valves on cylinders 1 and 2.

2) To adjust, use special valve adjusting screw bit (J-26810) and turn adjusting screw. Turn screw one complete turn until it clicks. Each turn changes clearance by .002". Continue making complete turns until clearance is within specifications.

3) Rotate crankshaft 360° and stop at TDC. Check clearance for exhaust valves on cylinders 2 and 4 and intake valves on cylinders 3 and 4. Adjust valves as necessary.

NOTE: When clearance is within specifications, use Tappet Adjusting Screw Gauge (J-26820) to check position of screw in tappet. A band is marked on gauge, and outside edge of tappet must fall within that band. If gauge indicates screw is turned too far into tappet, install next thicker screw.

Tappet must be removed from head to change adjusting screw. Five sizes of adjusting screws are available. They are identified by grooves on end of screw opposite wrench socket.

VALVE ARRANGEMENT

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

SPARK PLUGS

SPARK PLUG SPECIFICATIONS

Application	Specification
Gap033-.038"
Torque	22 ft. lbs.

SPARK PLUG TYPE

Application	Champion No.
121"	N8L

HIGH TENSION WIRE RESISTANCE

Do not puncture spark plug wires with any type of probe. Remove spark plug wire and check resistance using an ohmmeter.

WIRE RESISTANCE (OHMS)

Wire Length	Minimum	Maximum
0-15"	3000	10,000
15-25"	4000	15,000
25-35"	6000	20,000
Over 35"	8000	25,000

DISTRIBUTOR

DISTRIBUTOR SPECIFICATION

Application	Specification
Point Gap018"
Cam Angle	44-50°
Breaker Arm Spring Tension	18-23 ozs.
Condenser Capacity18-.22 mfd.

IGNITION TIMING

Check or adjust ignition timing with engine at normal operating temperature, idle speed set to 700 RPM and distributor vacuum hose disconnected and plugged.

NOTE: On 1975 Pacer models, check for a loss of vacuum at distributor vacuum advance. This condition may be caused by a pinched hose between the air cleaner and the valve cover. If necessary, reposition vacuum hose and tie it to the PCV hose.

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IGNITION TIMING SPECIFICATIONS ¹

Application	Auto. Trans.	Man. Trans.
121"		
1977	12°@500	12°@500
1978-79		
Federal	12°@700	² 12°@700
Calif.	8°@700	

- ¹ - Settings are BTDC at specified RPM and ± 2°.
- ² - 16°@700 for 1979 code "EH" (from upper right-hand corner of Emission Control Tune-Up Decal).

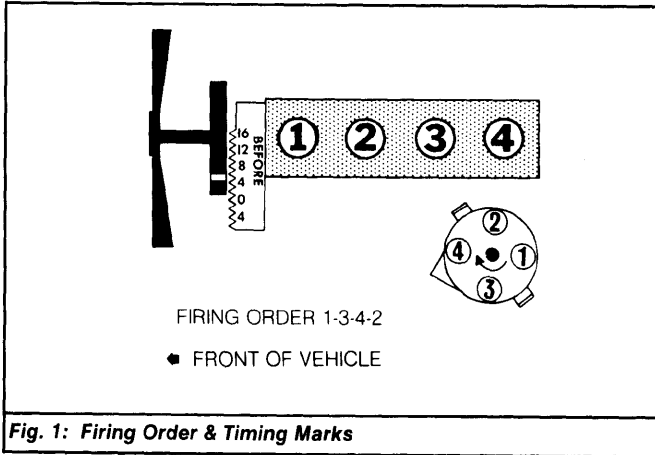


Fig. 1: Firing Order & Timing Marks

HOT (SLOW) IDLE RPM

NOTE: Do not idle engine for over 3 minutes at a time. If idle adjustment is not completed within 3 minutes, run engine at 2000 RPM for 1 minute before continuing, repeat as necessary.

- 1) Warm engine to operating temperature. Place automatic transmission in Drive and manual transmission in Neutral. Set parking brake. Leave air cleaner installed.
- 2) Set curb idle speed to specifications by turning curb idle adjusting screw.
- 3) If equipped with solenoid, turn solenoid adjusting screw to obtain specified idle speed.
- 4) Disconnect solenoid electrical wire and adjust curb idle screw to 500 RPM idle speed. Connect solenoid wire.

CURB IDLE SPEED (RPM)

Application	Auto. Trans.	Man. Trans.
121"		
1977-78	800	900
1979		
Federal	800	900
Calif.	800	

- ¹ - 1000 RPM for code "EH" (from upper right-hand corner of Emission Control Tune-Up Decal).

IDLE MIXTURE

NOTE: Do not idle engine for over 3 minutes at a time. If idle mixture adjustment is not completed within 3 minutes, run engine at 2000 RPM for 1 minute before continuing, repeat as necessary.

NOTE: Plastic idle limiter cap prevents any mixture adjustment. Remove only if necessary to bring emission levels within specified limits. To remove, insert a No. 10 sheet metal screw into center of cap and turn clockwise; or melt off with a soldering iron.

TACHOMETER (LEAN DROP) PROCEDURE

- 1) With engine at normal operating temperature and air cleaner installed, note position of idle mixture screw head slot and remove limiter cap from screw.
- 2) Place manual transmission in Neutral and automatic transmission in Drive. Starting from full rich position, turn mixture screw leaner (clockwise) until a noticeable RPM loss is indicated.
- 3) Turn mixture screw richer (counterclockwise) until highest RPM reading is obtained. Do not turn screw any further than point at which highest RPM is first obtained.
- 4) As final adjustment, turn mixture screw clockwise to obtain specified drop in engine RPM. If final RPM differs more than ± 30 RPM from specified curb idle speed, reset curb idle to specification and repeat mixture adjustment.
- 5) Install replacement (Blue) limiter cap on mixture screw and make sure tab on cap is positioned in slot on carburetor body to prevent any adjustment.

NOTE: Be careful not to disturb mixture setting when installing new limiter cap.

LEAN DROP SPECIFICATIONS

Application	RPM Drop
121"	
1977-78	
Calif. & Federal	120
Altitude	75
1979	
Federal	
Man. Trans.	120
Auto. Trans.	45
Calif.	
Auto. Trans.	45

COLD (FAST) IDLE RPM

With engine at normal operating temperature and EGR disconnected, position fast idle adjusting screw on 2nd step for 1977 models (lower step of fast idle cam and against shoulder of highest step for 1978-79 models). Turn fast idle adjusting screw to obtain specified fast idle RPM.

FAST IDLE (RPM)

Application	RPM
121"	
1977	1500-1700
1978-79	1700-1900

NOTE: Some 1978-79 vehicles may develop hard starting when cold. This condition may be caused by a binding choke link. To correct this condition, install the revised link (8129871). The choke link is located between the choke plate shaft and the choke housing bimetal lever.

AUTOMATIC CHOKE

To adjust automatic choke, loosen choke cover retaining screws and rotate cover clockwise to richen or counterclockwise to lean until specified setting is obtained.

AUTOMATIC CHOKE SETTING

Application	Setting
Altitude & Carbs. No. 8165 & 8675	Index
All Others	1 Notch Rich

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American Motors 4-Cylinder (Cont.)

FUEL PUMP

Perform fuel pump test with air cleaner removed and fuel inlet line or filter disconnected at carburetor. Disconnect fuel return line at fuel filter and plug nipple on filter. Make all tests at idle speed.

FUEL PUMP SPECIFICATIONS

Pressure	4-6 psi
Volume	6/10 pint in 30 seconds
Vacuum	
Direct	7 in. Hg (min.)
Indirect	3 in. Hg (min.)

IGNITION

DISTRIBUTOR

Bosch conventional breaker point type ignition system.

Other Data & Specifications - Also see Bosch Distributors in DISTRIBUTOR & IGNITION SYSTEM section.

IGNITION COIL

COIL SPECIFICATIONS

Application	Specification
Resistance	
Primary (at 75°F)	1.6-1.8 ohms
Secondary (at 75°F)	9400-11,700 ohms
Coil Output	
All Models	20 KV Min.
Current Draw	
Engine Stopped (Ignition "ON")	4 amps
Engine Idling	2 amps

CARBURETION

CARBURETORS

Application	Model
121" 2-Bbl.	Holley 5210

Other Data & Specifications - Also see Holley Carburetors in FUEL SYSTEMS section.