1974-79 TUNE-UP PROCEDURES
General Motors 4-Cylinder

LUV

ENGINE IDENTIFICATION

Engine serial number is stamped on pad between distributor and cylinder head.

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Vehicle Identification Number is stamped on a plate attached to driver's door lock pillar.

ENGINE COMPRESSION

Test compression with engine at normal operating temperature, spark plugs removed, throttle valve wide open and engine at cranking speed (300 RPM). Maximum variation between cylinders should not exceed 8.5 psi (.6 kg/cm²).

COMPRESSION PRESSURE SPECIFICATIONS

Application	Min. Pressure psi (kg/cm²)	Std. Pressure psi (kg/cm²)
All Models	120 (8.4)	170 (12)

VALVE CLEARANCE

NOTE: Before adjusting valve tappet clearance, check torque of cylinder head and camshaft bolts. Valves should be adjusted every 15,000 miles.

1974-75 Models - Measure clearance between rocker arm and cam lobes. Position piston No. 1 to TDC of compression stroke. Adjust valves No. 1, 2, 3 and 5 (front-to-rear). Turn crankshaft one full turn until No. 4 piston is at TDC of compression stroke. Adjust valves No. 4, 6, 7 and 8 (front-to-rear).

1976-79 Models - **1)** Measure valve clearance between rocker arm and valve stem. Position piston No. 1 on compression stroke at TDC. Adjust intake valves No. 1 and 2 and exhaust valves No. 1 and 3.

2) Turn crankshaft one full turn until No. 4 cylinder is at TDC. Adjust intake valves No. 3 and 4 and exhaust valves No. 2 and 4.

VALVE CLEARANCE

Application	Clearance In. (mm)
1974-75 Models	
Intake	.004 (.010)
Exhaust	.006 (.015)
1976-79 Models	
Intake	.006 (.015)
Exhaust	.010 (.025)

VALVE ARRANGEMENT

1974-75 Models

E-I-I-E-E-I-I-E - Front-to-rear.

1976-79 Models

Right Side - All Intake.

Left Side - All Exhaust.

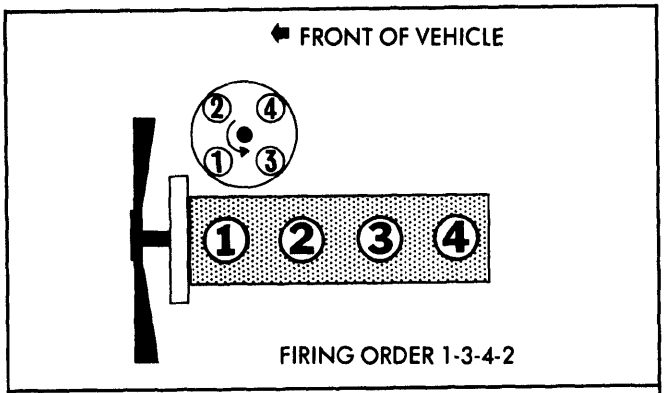

Fig. 1: Typical Firing Order & Distributor Rotation

SPARK PLUGS

SPARK PLUG SPECIFICATIONS

Application	Specification
Gap	.030" (.8 mm)
Torque	18-25 ft. lbs. (24-34 N.m)

SPARK PLUG TYPE

Application	NGK
1974-75 Models	BP6ES
1976-79 Models	BPR6ES

HIGH TENSION WIRE RESISTANCE

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

HIGH TENSION WIRE RESISTANCE

Application	Resistance (Ohms)
All Models	25,000-30.000

DISTRIBUTOR

DISTRIBUTOR SPECIFICATIONS

Application	Specification
Point Gap	.018-.020" (.46-.51 mm)
Dwell Angle	49-55°
Breaker Arm Spring Tension	14-19 ozs. (400-540 g)
Condenser Capacity	.20-.24 mfd.

IGNITION TIMING

With engine at normal operating temperature and idle speed set to 900 RPM, connect a timing light to No. 1 cylinder. Disconnect and plug distributor vacuum hose. Check timing with marks on crankshaft pulley and rotate distributor to adjust timing.

IGNITION TIMING SPECIFICATIONS

Application	Timing
1974-75 Models	12°BTDC
1976-79 Models	6°BTDC

1974-79 TUNE-UP PROCEDURES
General Motors 4-Cylinder (Cont.)

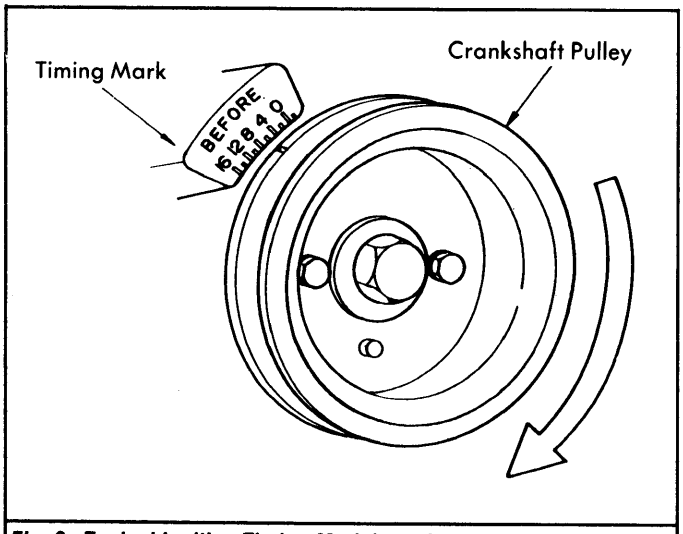

Fig. 2: Typical Ignition Timing Mark Location

IDLE SPEED & MIXTURE

1974 Models - 1) Turn idle mixture screw all the way in, then back out 3 1/2 turns. Set idle speed to specification with throttle stop screw. With mixture screw, adjust idle speed to fastest and smoothest setting. Reset idle stop screw to obtain specified idle speed.
2) On A/C equipped vehicles, turn on A/C to maximum cooling and high blower. Open throttle 1/3 and allow throttle to close. Adjust speed-up controller screw to obtain 900 RPM. Open and close throttle and recheck idle speed.
1975-78 Models - 1) Set idle with engine at normal operating temperature, valve clearance correctly set and ignition timing to specifications. Choke should be open, air conditioning off and air cleaner installed. Disconnect and plug vacuum lines for distributor and hot idle compensator.
2) Turn idle mixture adjusting screw all the way in, then back out 3 turns. Set throttle adjusting screw to obtain 900 RPM. Adjust idle mixture screw until maximum RPM is obtained.
3) Readjust idle speed screw to obtain 900 RPM. Turn idle mixture adjusting screw clockwise (lean) until 850 RPM is reached, then turn screw 1/2 turn clockwise (rich). Readjust idle speed screw to obtain 900 RPM.
4) On A/C equipped vehicles, turn on A/C to maximum cooling and high blower. Open throttle far enough to allow idle speed-up solenoid to reach full travel. Then, turn speed-up controller adjusting screw to obtain 900 RPM.

1974-75 IDLE SPEED SPECIFICATIONS

Application	Idle RPM	CO%
All Models	[1] 700	.5-1.5

[1] - Set to 900 RPM with air conditioning on.

1976-78 IDLE SPEED SPECIFICATIONS

Application	RPM
All Models	900

1979 Models - 1) Set idle with engine at normal operating temperature, valve clearance correctly set and ignition timing to specifications. Choke should be open, air conditioning off and air cleaner installed. Disconnect and plug vacuum lines for distributor, hot idle compensator, and EGR valve.
2) Turn idle mixture adjusting screw all the way in, then back out 3 turns (Federal) or 1 1/2 turns (Calif.). Set throttle adjusting screw to obtain 900 RPM or 850 RPM (Federal vehicles with manual transmission).
3) Reset idle mixture screw to obtain maximum RPM, then reset throttle adjusting screw to achieve same RPM as in step **2)**. Turn idle mixture screw clockwise (lean) until speed drops to 850 RPM or 800 RPM (Federal vehicles with manual transmission).
4) On all models (except Federal vehicles with manual transmission), turn idle mixture screw counterclockwise (rich) 1/2 turn. Then, reset throttle adjusting screw to obtain specified idle speed.
5) On A/C equipped vehicles, turn on A/C to maximum cooling and high blower. Open throttle far enough to allow idle speed-up solenoid to reach full travel. Then, turn speed-up controller adjusting screw to obtain 900 RPM.

1979 IDLE SPEED SPECIFICATIONS

Application	RPM
Federal	
Man. Trans.	800
Auto. Trans.	900
Calif.	900

COLD (FAST) IDLE RPM

1976-79 Models - Automatic choke fast idle is adjusted by opening angle of throttle valve on carburetor, rather than by engine speed. Adjust valve opening at 1st step of fast idle cam to 16-18 degrees. Disconnect and plug distributor, hot idle compensator, and EGR valve vacuum hoses after engine warm-up.

FAST IDLE SPECIFICATIONS

Application	RPM
Man. Trans.	3400
Auto. Trans.	3200

FUEL SYSTEM

CARBURETORS

CARBURETORS

Application	Model
All Models	Hitachi 2-Bbl.

Other Data & Specifications - See appropriate Hitachi Carburetor article in FUEL SYSTEMS section.

FUEL PUMP

FUEL PUMP SPECIFICATIONS

Application	Specification
Pressure	2.4-3.3 psi (.17-.23 kg/cm²)

EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

IGNITION SYSTEM

DISTRIBUTOR

All models are equipped with Hitachi or Nippondenso single-point distributors.

Other Data & Specifications - See Hitachi or Nippondenso Distributor article in DISTRIBUTORS & IGNITION SYSTEMS section.

IGNITION COIL

IGNITION COIL SPECIFICATIONS

Application	Resistance (Ohms)
Hitachi	
Primary	1.5
Secondary	11,500
Nippondenso	
Primary	1.3-1.4
Secondary	7650-9350