TUNE-UP

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER CODE

Engine can be identified by the Fifth Digit of Vehicle Identification Number, located on plate attached to left corner of instrument panel and visible through windshield.

VIN Code

Application	Code
1.7 Liter (104 CID)	A

ENGINE IDENTIFICATION NUMBER CODE

The engine identification and serial number is stamped in a pad on engine block, located above fuel pump.

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 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 one cylinder for an extended period of time. Damage to converter may occur due to loading converter with unburned air/fuel mixture.*

CAUTION — *On vehicles equipped with catalytic converters, do not add fuel system cleaning agents to fuel tank or carburetor as their use may be detrimental to the catalytic converter.*

CAUTION — *Before making a compression test or cranking engine using a remote starting switch, disconnect coil wire from distributor and secure to a good ground.*

ENGINE COMPRESSION

Compression Ratio	8.2:1
Recommended Fuel	①87 AKI Minimum

① — Unleaded if equipped with catalytic converter.

Check compression pressure with engine warm, spark plugs removed, throttle valve wide open, and at cranking speed. Minimum compression pressure should be 100 psi, with a maximum variation of 25 psi between cylinders.

VALVE TAPPET CLEARANCE

Application	Clearance (Hot)
Intake	.008-.012"
Exhaust	.016-.020"

VALVE ARRANGEMENT

E-I-E-I-I-E-I-E

SPARK PLUGS

Gap	.035"
Torque	20 ft. lbs.

Spark Plug Type

Application	Champion No.
All	RN12Y

HIGH TENSION WIRE RESISTANCE

Carefully remove spark plug wire from spark plug and install proper adapter between wire and spark plug. Carefully remove wire from distributor cap. Connect an ohmmeter between spark plug adapter and opposite end of wire. If resistance is not within specifications, replace wire. To check coil wire resistance, remove distributor cap from distributor without removing wire from cap or coil. Connect an ohmmeter between center contact in cap and either primary terminal at coil. If resistance is not within specifications, remove coil wire at coil tower and check cable resistance. If resistance is not within specifications, check for a loose connection at coil tower or defective coil. If resistance is not within specifications, replace wire.

Resistance (Ohms)

Application	Maximum
Coil Wire	
Installed	25,000
Removed	15,000
Spark Plug Wire	50,000

DISTRIBUTOR

All models are equipped with Chrysler Corp. Electronic Ignition System. No adjustments are required.

NOTE — *Dwell is not adjustable, even though it may be read with a dwell meter. There is no means provided to change dwell.*

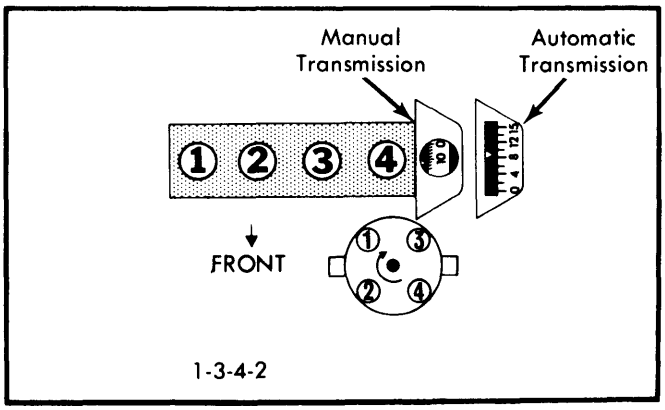

Fig. 1 Firing Order and Timing Marks

TUNE-UP (Cont.)

IGNITION TIMING

CAUTION — *Timing light connections should be made using proper adapters. Do not puncture cables, boots or nipples with test probes.*

Connect a suitable timing light to number 1 cylinder. With engine at normal operating temperature, ground carburetor switch (if equipped) and adjust specified curb idle RPM. Check timing through access hole in clutch housing.

Ignition Timing Specifications (Degrees BTDC@RPM)

Application	Man. Trans.	Auto. Trans.
1.7 Liter (104 CID)		
Federal	12@900	12@900
Calif.	10@900	10@900

HOT (SLOW) IDLE RPM

NOTE — *Idle speed adjustment procedures will vary with vehicle model and component application. Refer to Emission Control Tune-Up Decal in engine compartment for adjustment preparations, then proceed as follows:*

Engine must be at normal operating temperature and all lights and accessories off. Set parking brake. Attach tachometer and jump radiator fan switch so it runs continuously.

FEDERAL VEHICLES

Without A/C — Turn idle speed screw on top of solenoid to specified "Curb Idle" (transmission in Park.) DO NOT adjust mixture screw. To adjust mixture (if necessary), follow propane assisted mixture adjustment procedure.

CAUTION — *Propane enriched idle must be set before setting idle on A/C equipped vehicles.*

With A/C — Remove adjusting screw and spring from top of A/C solenoid. Turn air conditioning on and open throttle to energize solenoid (transmission MUST be in Drive). Turn screw with an Allen wrench to specified "Solenoid Energized" RPM. Place transmission in Park and turn off air conditioning. Replace adjusting screw and spring on A/C solenoid and reset speed to "Curb Idle" RPM.

NOTE — *When air conditioning is operating, compressor clutch will cycle on and off. Make sure compressor clutch is engaged when checking idle speed.*

CALIFORNIA VEHICLES

Without A/C — Disconnect idle stop solenoid wire and set throttle stop screw to specified "Solenoid Energized" RPM (transmission in Park). Reconnect wire, open throttle to set solenoid plunger and set "Curb Idle" with screw on solenoid.

With A/C — Remove curb idle screw from idle stop solenoid. With solenoid energized, compressor running and transmission in Drive, set "Solenoid Energized" RPM with an Allen wrench. Turn compressor off, place transmission in Park, reinstall curb idle screw and set "Curb Idle".

Idle Speed (RPM)

Application	Curb Idle	Solenoid Energized
Federal		
Man. Trans.		
Without A/C	900	.....
With A/C	850	900
Auto. Trans.		
Without A/C	900	.....
With A/C	750	900
California		
Man. Trans.		
Without A/C	700	900
With A/C	850	900
Auto. Trans.		
Without A/C	700	900
With A/C	750	900

IDLE MIXTURE

PROPANE ENRICHMENT PROCEDURE

1) With engine at normal operating temperature and air conditioning off, set parking brake and place tranmission in Neutral. Connect a tachometer and timing light to engine. Disconnect and plug EGR vacuum hose. Disconnect vacuum hose on air cleaner side of four-way connector and install propane supply hose. Set and adjust engine timing if necessary.

2) Propane bottle must be in upright position and both valves fully closed. Install a jumper wire at radiator fan connector so it will run continuously. Remove PCV valve at connector and disconnect vapor canister purge hose at carburetor; DO NOT PLUG.

NOTE — *California vehicles only: Ground carburetor switch with a jumper wire. Disconnect and ground coolant switch lead with a jumper.*

3) Open propane main valve. With air cleaner in place, slowly open propane metering valve until maximum engine speed is reached. Adjust propane metering valve to attain highest engine speed.

NOTE — *Too much propane will cause engine speed to drop.*

4) With propane flowing, adjust idle speed screw to "Enriched RPM" setting. Check propane flow and adjust propane metering valve again to insure maximum idle speed; readjust idle speed screw if necessary. Turn off propane main valve and allow engine speed to stabilize.

5) With air cleaner in place, adjust mixture screw to smoothest curb idle speed. Pause between adjustments to allow engine speed to stabilize. Turn on propane valve.

6) If maximum engine speed varies more than 25 RPM from "Enriched RPM" setting, repeat steps **3)-5)**. If idle is correct, remove propane and test equipment. Reconnect vacuum hoses and remove jumper wires and reconnect wiring.

NOTE — *Upon reconnection of all hoses, variation in engine RPM may occur; DO NOT readjust.*

TUNE-UP (Cont.)

Propane Enrichment RPM

Application	Man. Trans.	Auto. Trans.
1.7 Liter (104 CID)		
Federal	1400	1700
California		975

COLD (FAST) IDLE RPM

1) With engine at normal operating temperature, remove air cleaner top. Disconnect and plug vacuum hoses to EGR valve. Disconnect and plug distributor vacuum line (Federal vehicles). Disconnect and jumper wire electric cooling fan so it runs continuously. Place transmission in Neutral.

2) Ground carburetor switch with jumper wire (California vehicles only). Place fast idle speed screw on lowest step of cam and adjust screw to obtain specified RPM. Remove jumper wires, reconnect all vacuum hoses and install air cleaner top after adjustment procedure is complete.

NOTE – *Choke valve must be fully open to set fast idle.*

Fast Idle Speed (RPM)

Application	RPM
Man. Trans.	1400
Auto. Trans.	1700

THROTTLE STOP SPEED (RPM)
NON-AIR CONDITIONED MODELS

1) Adjustments are made with engine at normal operating temperature. Place transmission in neutral and set parking brake. Make sure headlights are off.

2) Disconnect idle speed solenoid. Adjust throttle stop screw to specification. Reconnect solenoid wire and remove jumper wire.

Throttle Stop Speed (RPM)
Non-Air Conditioned Models

Application	RPM
All Models	700

AUTOMATIC CHOKE

Loosen 3 choke housing cover screws and adjust choke housing to specification.

Automatic Choke Setting

Application	Setting
All Models	2 Notches Rich

FUEL PUMP

Pressure	4-6 psi
Volume at Idle	1 quart in 1 minute

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

Chrysler Corp. Electronic Ignition System.

IGNITION COIL

Resistance

Primary (at 70-80°F)	
Prestolite	1.60-1.79 ohms
Essex	1.41-1.62 ohms
Secondary (at 70-80°F)	
Prestolite	9,400-11,700 ohms
Essex	8,000-11,200 ohms
Ballast Resistor (at 70-80°F)	1.20 ohms

Current Draw (Including Coil & Ballast Resistor)

Engine Stopped	3.0 amps.
Engine Idling	1.9 amps.

Coil Output

All Models	20 KV Min.

CARBURETION

CARBURETORS

Application	Models
1.7 Liter (104 CID) 2-Bbl.	Holley 5220

Other Data & Specifications – *See Tune-Up and Holley Carburetors in FUEL SYSTEMS Section.*

ELECTRICAL

BATTERY

12 Volt – Negative ground.

Application	Cold Crank (Amps@0°F)	Reserve Capacity (Minutes)
Standard	310	60
Cold Weather Optional	430	100

GENERAL SERVICING (Cont.)

STARTER

Either a Bosch or Nippondenso direct drive starter is used.

Free Speed Voltage	11 at 6600 RPM
Free Speed Amperage	47 at 6600 RPM
Current Draw (Amps.)	120-160

ALTERNATOR

Application	Rated Amp. Output
All Models	65

ALTERNATOR REGULATOR

Chrysler Corp. Electronic Voltage Regulator

Operating Voltage (at 80°F)

All Models	13.9-14.6 Volts

BELT ADJUSTMENTS

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	① Used Belt
All	120	70

① — Any belt operated for 15 minutes.

FILTERS & CLEANERS

Filter or Cleaner	Replacement Interval
Oil Filter	7500①
Air Filter	30,000
Fuel Filter	30,000
PCV Valve	Clean15,000 Replace 30,000

① — At first 7,500 miles, then every other oil change.

CAPACITIES

Application	Quantity
Cooling	6 qts.
Crankcase	4 qts.
Fuel Tank	13 gals.
Manual Transaxle (SAE 90)	1.4 qts.
Automatic	
Transmission (Dexron)	①3.0 qts.
Differential (Dexron)	1.2 qts.

① — Refill capacity.

ENGINE

INTAKE MANIFOLD TIGHTENING

Start at center and work out. Tighten exhaust manifold stud nuts to 150 INCH lbs. Tighten intake manifold bolts to 200 INCH lbs.