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
225" 1-Bbl.	C
225" 2-Bbl.	D

ENGINE IDENTIFICATION NUMBER CODE

Engine Identification Number is located on block at right front corner adjacent to number one cylinder bore. The second, third and fourth digits designate CID.

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	8.4:1
Recommended Fuel	Unleaded (87 AKI Minimum)

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	.010"
Exhaust	.020"

VALVE ARRANGEMENT

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

SPARK PLUGS

Gap	.035"
Torque	10 ft. lbs.

NOTE – *Spark plug has a tapered seat and tapered threads. Torque only to specifications as over-torquing can result in damaged threads.*

Spark Plug Type

Application	Champion No.
All	RBL-16Y

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 now within specifications, check for a loose connection at coil tower or a faulty 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 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.*

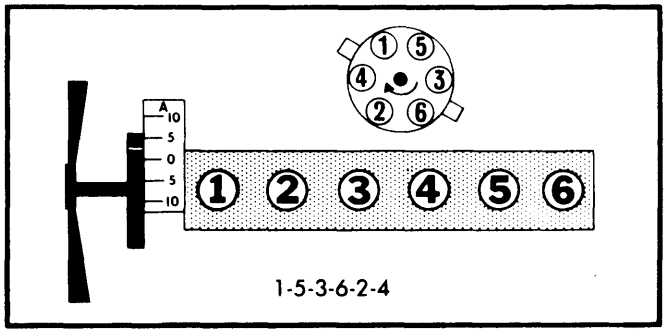

Fig. 1 Firing Order and Timing Marks

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.*

NOTE — *Engine is equipped with a magnetic probe receptacle, located 10° ATDC. Do not use this location to check timing with a conventional timing light.*

Connect a suitable timing light to number 1 cylinder. With engine at normal operating temperature, disconnect and plug vacuum hose at distributor. Ground carburetor switch (if equipped and adjust specified curb idle RPM. Transmission should be in Neutral.

Ignition Timing Specifications (Degrees BTDC@RPM)

Application	Man. Trans.	Auto. Trans
225" 1-Bbl.		
Federal	12@725	12@725
Calif.	.....	12@725
225" 2-Bbl.	12@750	12@750

HOT (SLOW) IDLE RPM

NOTE — *To prevent tampering, the idle mixture screws on some carburetors are concealed by metal plugs installed in mixture screw bores.*

PROPANE ENRICHMENT PROCEDURE

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:*

FEDERAL VEHICLES

1) Set parking brake, place transmission in Neutral and connect a tachometer to engine. Start engine and bring to normal operating temperature. Return engine to idle and turn all lights and accessories off. Disconnect and plug vacuum hoses at distributor and EGR valve. Remove PCV valve and disconnect vapor canister purge hose at carburetor; DO NOT PLUG.

2) Turn idle speed screw to attain specified "Curb Idle." DO NOT adjust mixture screw. To adjust mixture (if necessary), follow propane assisted mixture adjustment procedure.

CALIFORNIA VEHICLES

1) Ground carburetor switch with a jumper wire. Disconnect and ground coolant temperature switch with a jumper wire. Remove and plug EGR hose. Remove PCV valve and allow to draw air. Remove canister vapor hose at carburetor and plug carburetor connection. Set parking brake, place transmission in Neutral and connect a tachometer to engine.

NOTE — *Coolant temperature switch must be grounded before starting engine.*

2) Start and warm engine to operating temperature. Connect a jumper wire from positive battery post to solenoid lead wire in three-way connector on carburetor. DO NOT disconnect three-way connector; insert connector. DO NOT connect jumper wire to curb switch. Open throttle slightly to energize solenoid.

NOTE — *If at any time engine stalls or engine is warm before making adjustment, wait 2 minutes before resuming adjustment.*

3) Remove curb idle speed screw from solenoid and insert Allen wrench to adjust speed to "Solenoid Energized" RPM. Reinstall curb idle speed screw into solenoid, turning screw until it seats and then backing out ½ turn as a starting point to set "Curb Idle".

4) Remove jumper wire from wiring connector and turn curb idle screw to set "Curb Idle". Reinstall vacuum hoses, connect carburetor switch and disconnect test equipment.

Idle Speed (RPM)

Application	Curb Idle	Solenoid Energized
225" 1-Bbl.		
Federal		
Man. Trans.	725±100	.....
Auto. Trans.	725±100	.....
California	840①	900
225" 2-Bbl.	750±100	.....

① — Curb idle is 750 RPM minimum with hoses connected.

IDLE MIXTURE

PROPANE ENRICHMENT PROCEDURE

Federal Vehicles — 1) With engine at normal operating temperature, set parking brake and place transmission in Neutral. Turn all lights and accessories off. Connect tachometer and timing light to engine. Disconnect and plug vacuum hoses at distributor and EGR valve.

2) Adjust engine timing if necessary, remove timing light. Disconnect heated air door vacuum hose at carburetor and install propane supply hose. Remove PCV valve and disconnect vapor canister purge hose at carburetor; DO NOT PLUG.

3) Propane bottle must be in upright position and both valves fully closed. With engine idling and air cleaner in position, open main propane valve. Slowly open propane metering valve until maximum engine speed is obtained. 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 to stabilize.

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

TUNE-UP (Cont.)

speed to stabilize. Before removing mixture screw limiter caps, check for engine malfunctions and vacuum leaks first. Turn on propane valve.

NOTE – *If mixture screw limiter caps are removed, service caps must be installed with tang against full rich stop.*

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.

California Vehicles – 1) Place transmission in Park and set parking brake. Turn off all lights and accessories. Start the engine allowing it to reach normal operating temperature. Turn engine off, connect a timing light and tachometer.

2) Ground the idle stop switch with a jumper wire. Disconnect heated air door vacuum hose at carburetor and install propane supply hose. Disconnect and plug EGR vacuum hose and vapor canister control hose. Remove PCV valve and allow opening to draw air; DO NOT plug. Disconnect tan wire on charge temperature switch.

3) Remove and jumper wire the combustion computer coolant switch to ground. Start engine and after 2 minutes, check and adjust timing as required. Open propane main valve. Slowly open propane metering valve to attain maximum engine speed. If necessary adjust "Enriched RPM" speed by turning screw on solenoid.

4) Turn off propane main valve. Adjust mixture screw to curb idle. Open propane main valve and check for "Enriched RPM". Turn propane main valve off. Speed should return to curb idle, adjust if necessary.

5) Remove jumper wire to idle stop switch and computer coolant switch. Reconnect computer coolant temperature switch. Engine speed should drop to 750 RPM minimum. If not, repeat steps **3)-5)**.

6) Turn engine off. Remove all test equipment. Unplug and reconnect vacuum hoses. Reconnect tan wire to charge temperature switch.

NOTE – *If engine should stall during procedure, wait 2 minutes after restart before resuming procedure.*

Propane Enrichment RPM

Application	Man. Trans.	Auto. Trans.
225" 1-Bbl		
Federal	880	835
California	.....	885
225" 2-Bbl.	.....	885

COLD (FAST) IDLE RPM

1) With engine at normal operating temperature, remove air cleaner top. Disconnect and plug EGR hose. Disconnect and plug vacuum hose to distributor (Federal vehicles). Ground carburetor switch with jumper wire (California vehicles). Ground carburetor switch with jumper wire (California vehicles). Remove and ground coolant temperature switch.

NOTE – *Coolant temperature switch on California vehicles must be grounded prior to starting engine for proper setting.*

2) Start engine and allow speed to stabilize (transmission in Neutral). Set fast idle speed screw on second highest step of fast idle cam. Adjust to specified fast idle RPM. Unplug and reconnect vacuum hoses and wires. Reinstall air cleaner cover. Engine speed should return to curb idle RPM.

Fast Idle Speed (RPM)

Application	Man. Trans.	Auto. Trans.
225" 1-Bbl.		
Federal	1400	1600
California	.....	2000
225" 2-Bbl.	.....	1600

DASHPOT ADJUSTMENT

Remove air cleaner and cap disconnected air cleaner vacuum hose. Maintain all other vacuum hoses and carburetor fittings. Set brake, place transmission in neutral and start engine. Position throttle lever so lever contacts dashpot stem without depressing it. Allow 30 seconds for engine speed to stabilize, then adjust to specification by turning dashpot after locknut is loosened. Tighten lock nut and check idle return.

Dashpot Adjustment Speed (RPM)

Application	RPM
225" 1-Bbl.	
Federal Man. Trans.	2500

AUTOMATIC CHOKE

All models use an electrical assist choke and no adjustment is required.

FUEL PUMP

Pressure	3.5-5.0 psi
Volume at Idle	1 pint in 30 sec.

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

1980 Chrysler Corp. 6 Tune-Up

GENERAL SERVICING

IGNITION

DISTRIBUTOR

Chrysler Corp. Electronic Ignition System

IGNITION COIL

Resistance
Primary (at 70-80°F)
- Prestolite ..... 1.60-1.79 ohms
- Essex ..... 1.34-1.55 ohms

Secondary (at 70-80°F)
- Prestolite ..... 9,400-11,700 ohms
- Essex ..... 9,000-12,200 ohms

Ballast Resistor
- Coil Side ..... .5-.6 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	Model
225" 1-Bbl.	Holley 1945
225" 2-Bbl.	Carter BBD

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

ELECTRICAL

BATTERY

12 Volt – Negative Ground.

Application	Cold Crank (Amps@0°F)	Reserve Capacity (Minutes)
Standard		
225" 1-Bbl.	325	68
225" 2-Bbl.	375	86
New Yorker, Newport & St. Regis	430	100
Optional	500	140

STARTER

Chrysler Corp. 1.5 & 1.8 HP, 3.5-1 Gear Reduction Type.
Starter Current Draw
- 1.5 HP ..... 165-180 Amps.
- 1.8 HP ..... 180-200 Amps.

ALTERNATOR

Color Code	Rated Amp. Output
Violet Tag	41
Yellow Tag	60
Brown Tag	65
Yellow Tag	100

ALTERNATOR REGULATOR

Chrysler Corp. Electronic Voltage Regulator
Operating Voltage (at 80°F)
- All Models ..... 13.9-14.6 volts

ENGINE

INTAKE MANIFOLD TIGHTENING

Start at center and work out. Check intake-to-exhaust manifold studs for 240 INCH lbs. torque and intake-to-exhaust manifold bolts for 200 INCH lbs. torque.

BELT ADJUSTMENTS

Tension (Lbs.) Using Strand Tension Gauge

Application	New Belt	①Used Belt
All	120	70

① – Any belt operated for 15 minutes.

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	Replace Every 15,000
Air Filter	Replace Every 30,000
Fuel Filter	Replace Every 30,000
Vapor Canister Filter	Replace Every 30,000
PCV Valve	Clean Every 15,000
	Replace Every 30,000
Crankcase Inlet Air Filter	Clean Every 30,000

CAPACITIES (COOLING)

Application	Quantity (Quarts)
Newport, New Yorker & St. Regis	
Exc. W/Air Cond.	11.5
W/Air Cond. & "Max Cooling"	14.5
All Others	12.5

GENERAL SERVICING (Cont.)

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase	①4 qts.
Automatic Transmission (Dexron)	
Standard	16.3 pts.
Optional	16.8 pts.
Manual Transmission (Dexron)	
3-Spd.	4.75 pts.
4-Spd.	7.0 pts.
Rear axle (SAE 90)	
7.25" Ring Gear	2.1 pts.
8.25" Ring Gear	4.4 pts.
9.25" Ring Gear	4.5 pts.
Fuel Tank	
Aspen, Volare, LaBaron & Diplomat	18.0 gals.
Station Wagon	19.5 gals.
All Others	21.0 gals.

① — Add one quart with filter change.