

# 1982 Chrysler Corp. 6 Tune-Up

## TUNE-UP

### ENGINE IDENTIFICATION

The engine can be identified by a number stamped on right side of block below No. 6 spark plug. The first digit indicates model year. The next 3 digits indicate cubic inch displacement. The engine can also be identified by the eighth digit of the Vehicle Identification Number (VIN). The VIN number is located on a label on upper left corner of instrument panel, near windshield.

#### VIN ENGINE CODES

Application	VIN Code
3.7L (225") 1-Bbl. ....	E
3.7L (225") 2-Bbl. ....	W

### 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. In the event of a conflict between specifications given in this manual and decal specifications, use the decal specifications.

**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.

### ENGINE COMPRESSION

Before making a compression test or cranking engine using a remote starting switch, disconnect coil wire from distributor and secure to a good ground. With engine warm, spark plugs removed and throttle wide open, compression pressure should be as specified.

#### COMPRESSION SPECIFICATIONS

Compression Ratio .....	8.4:1
Compression Pressure .....	Min. 100 psi (7.0 kg/cm <sup>2</sup> )
Maximum Pressure Variation .....	25 psi (1.8 kg/cm <sup>2</sup> )

### VALVE CLEARANCE

All engines are equipped with hydraulic valve lifters. Lifters should be adjusted to zero lash.

#### VALVE ARRANGEMENT

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

### SPARK PLUGS

#### SPARK PLUG SPECIFICATIONS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
All Models .....	.035 (.90)	10 (14)

#### SPARK PLUG TYPE

Application	Champion No.
All Models .....	RBL-16Y

### HIGH TENSION WIRE RESISTANCE

1) Carefully remove spark plug wire from spark plug and install the 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.

2) 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.

3) 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.

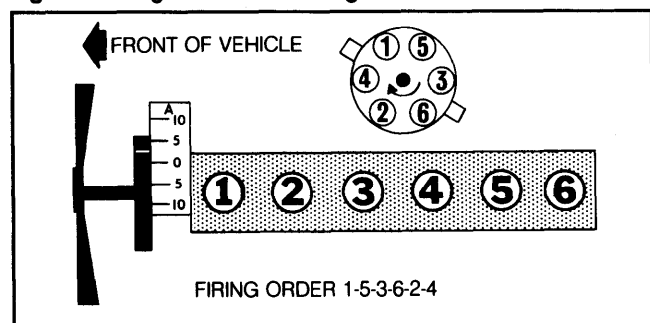
#### RESISTANCE (Ohms)

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

### DISTRIBUTOR

All models are equipped with Chrysler Electronic Spark Advance system with dual pick-up distributor. No adjustments are required.

Fig. 1: Timing Marks and Firing Order



Magnetic probe located at 10° ATDC.

### IGNITION TIMING

**NOTE:** All models are equipped with socket for magnetic timing equipment, located at 10° ATDC. Do not use this location for timing with a conventional timing light.

1) Connect timing light to number 1 cylinder and tachometer to engine. Start engine, set parking brake and place transmission in neutral. Bring engine to normal operating temperature. With engine at operating temperature, momentarily open throttle and ensure idle speed screw returns against its stop.

## TUNE-UP (Cont.)

2) On vehicles with a carburetor switch, connect a jumper wire between switch and ground. Disconnect and plug vacuum line at Spark Control Computer (SCC). On vehicles not equipped with SCC, disconnect and plug vacuum line at distributor.

3) Adjust idle speed screw if necessary to obtain curb idle. Aim power timing light at timing plate on chain case cover or read magnetic timing unit.

4) If timing is not within 2° of specification, loosen distributor hold-down arm screw and rotate distributor housing to obtain correct timing. Tighten distributor hold-down screw when timing is correct. Recheck idle set RPM and timing.

**CAUTION: DO NOT use distributor vacuum advance unit as a handle when turning distributor housing.**

### TIMING SPECIFICATIONS (Degrees BTDC@RPM)

Application	Man. Trans.	Auto. Trans.
All Models		
Federal .....	12@600	16@600
Calif. ....	12@800	16@800

### HOT (SLOW) IDLE RPM

#### MODELS WITH 1-BARREL CARBURETOR

1) Before checking idle speed, check and adjust ignition timing. Disconnect and plug EGR valve hose, distributor vacuum hose, and 3/16" control hose at canister. Pull PCV valve from valve cover and allow to draw fresh air.

2) Set parking brake, place transmission in Neutral and warm engine to normal operating temperature. Turn air conditioning "ON" and disconnect compressor clutch wire. If not equipped with air conditioning, connect a jumper wire between 12V and solenoid lead wire.

**NOTE: Be sure jumper wire is connected to solenoid wire. Wrong connections may damage wiring harness.**

3) Open throttle switch slightly to allow solenoid plunger to extend. Remove external screw and spring from top of solenoid. Insert a 3/8" hex wrench into solenoid and adjust solenoid idle speed. Turn air conditioning "OFF" and reconnect compressor, or remove jumper wire.

4) Allow engine to run at least 2 minutes, then check idle speed. Replace idle speed screw on solenoid and adjust curb idle. Stop engine, remove test equipment and reconnect all hoses.

#### MODELS WITH 2-BARREL CARBURETOR

1) Before checking or adjusting idle speed, check and adjust ignition timing. Disconnect and plug vacuum hose at EGR valve. Disconnect and plug carburetor vacuum hose at heated air temperature sensor. Remove air cleaner and plug control hose at canister.

2) Remove PCV valve at cylinder head cover and allow valve to draw underhood air. Start the engine.

Allow the engine to run for 1 minute and check RPM. If the RPM is not correct, turn the idle speed screw to obtain proper idle set RPM.

### IDLE SPEED (RPM)

Application	Curb Idle	Solenoid Energized
All Models		
1-Bbl.		
Federal .....	600	800
Calif. ....	800	800
2-Bbl. ....	700	.....

### IDLE MIXTURE

#### MIXTURE SCREW PLUG REMOVAL

1) Remove carburetor. Remove throttle body from carburetor and clamp in a padded vise. Drill a 3/64" pilot hole at a 45° angle toward concealment plugs.

2) Redrill to 1/8" and repeat on opposite side. Drive out plug with a blunt punch. Reassemble and reinstall carburetor.

#### PROPANE ENRICHMENT PROCEDURE

1) Remove concealment plug. Set the parking brake and place transmission in neutral. Start engine and allow to warm up on second highest step of fast idle cam until normal operating temperature is reached and allow to return to idle.

2) Remove air cleaner. Disconnect and plug vacuum hose at EGR valve. Disconnect vacuum supply hose from choke diaphragm at the "T".

3) Install propane supply hose to "T". With the propane bottle upright, remove PCV valve from the cylinder head cover and allow valve to draw underhood air.

4) Disconnect and plug control hose from canister. Open main propane valve. Slowly open the metering valve until maximum RPM is reached. With propane flowing, adjust idle speed screw to reach specified RPM.

5) Adjust metering valve again to reach maximum RPM. If there has been a change in maximum RPM, readjust idle speed screw to specified RPM. Turn off propane and allow engine speed to stabilize. Adjust the idle mixture screws 1/8 turn at a time, waiting 30 seconds between adjustments, until smoothest idle at specified RPM is reached.

6) If RPM is more than 25 RPM different from specified RPM, repeat steps 4) and 5). Turn off the propane valves. Remove supply hose from "T" and reconnect to choke diaphragm. Install new concealment plugs and perform Slow and Fast Idle Speed Adjustments.

### MIXTURE ADJUSTMENT RPM

Application	Mixture RPM
All Models	
Federal .....	675
Calif. ....	900

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## TUNE-UP (Cont.)

### COLD (FAST) IDLE RPM

1) Warm engine to operating temperature and place transmission in neutral. Disconnect and plug hoses at EGR valve, distributor and canister. Remove PCV valve from valve cover and allow to draw fresh air.

2) Place fast idle adjustment screw on 2nd highest step of fast idle cam. With choke fully open, adjust fast idle speed by turning screw. Remove test equipment and reconnect all hoses.

#### FAST IDLE SPEED (RPM)

Application	Man. Trans.	Auto. Trans.
All Models .....	<sup>1</sup> 1800 .....	1600

<sup>1</sup> — Federal models set to 1600 RPM.

### BOWL VENT VALVE ADJUSTMENT

**NOTE:** Idle speed must be properly set before performing this adjustment.

#### MODELS WITH 2-BARREL CARBURETOR

1) Warm engine to normal operating temperature. Operate engine at curb idle. Remove air cleaner, step-up piston cover plate and gasket.

2) Using pin gauge, measure clearance between top of bowl vent valve and seat. Clearance should be .080" (.20 mm). If adjustment is required, bend bowl vent lever tab until specification is obtained. Support bowl vent lever while bending vent tab.

3) Stop engine. Install step-up piston, gasket and air cleaner.

### AUTOMATIC CHOKE

Vehicles over 6000 lbs. GVW are equipped with a non-adjustable thermostatically controlled automatic choke using engine heat only in positioning valve. All other vehicles have an electric assist choke requiring no adjustment.

### FUEL PUMP

Measure fuel pump output and pressure at idle.

#### FUEL PUMP SPECIFICATIONS

Application	Pressure psi (kg/cm <sup>2</sup> )	Volume Quarts (Liters)
All Models .....	3.0-4.5 (.21-.32) .....	1 in 1 min. (.95 in 1 min.)

### MANIFOLD HEAT CONTROL VALVE

Every oil change apply solvent to both ends of valve shaft where it rotates in bushing. Work valve back and forth several times.

**CAUTION:** Apply solvent only when manifold is cold.

### EMISSION CONTROL SYSTEMS

**NOTE:** See appropriate article in Emission Control Section.

## GENERAL SERVICING

### IGNITION

#### DISTRIBUTOR

All models are equipped with Chrysler Electronic Spark Advance system with dual pick-up. No adjustments are necessary.

#### DISTRIBUTOR PICKUP COIL RESISTANCE (Ohms)

All Models ..... 150-900

#### IGNITION COIL

#### COIL RESISTANCE (Ohms)@75°F (24°C)

Application	Primary	Secondary
Essex .....	1.34-1.55 .....	9000-12,200
Prestolite .....	1.60-1.79 .....	9400-11,700

### FUEL SYSTEMS

#### CARBURETORS

Application	Model
Fed. Man. Trans. Models .....	Carter BBD 2-Bbl.
All Other Models .....	Holley 1945 1-Bbl.

### ELECTRICAL

#### BATTERY SPECIFICATIONS

Application	Cold Cranking Amps <sup>1</sup>	Reserve Capacity Minutes
Standard .....	305 .....	68
Optional .....	375 .....	86
Optional .....	430 .....	100
Optional .....	500 .....	125

<sup>1</sup> — At 0°F (-18°C).

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## GENERAL SERVICING (Cont.)

### STARTER

All models use Chrysler Corp. reduction gear type starters.

#### STARTER SPECIFICATIONS

Application	Volts	Amps	Test RPM
All Models .....	11 .....	90 .....	3700

### ALTERNATORS

All models use Chrysler Corp. alternator.

#### ALTERNATOR SPECIFICATIONS

Tag Color	Rated Amp. Output
Violet .....	41
Yellow	
"D", "W", "AW" & "PW" Models .....	117
All Other Models .....	60
<b>Field Current Draw@12 Volts</b>	
All Models .....	<sup>1</sup> 4.5-6.5 amps.

<sup>1</sup> — While rotating alternator by hand.

### ALTERNATOR REGULATOR

All models use Chrysler Corp. Electronic Voltage Regulator. Unit is non-adjustable.

#### REGULATOR OPERATING VOLTAGE@80°F (27°C)

All Models .....	13.9-14.6 volts.
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## ADJUSTMENTS

### BELT ADJUSTMENT

With 10 pounds (4.54 kg) pressure applied midway between pulleys, belt deflection for new belts should be .25" (6.0 mm). Belt deflection for used belts should be a maximum of .33" (8.0 mm). Used belts are any operated more than 15 minutes.

## SERVICE INTERVALS

#### REPLACEMENT INTERVALS

Component	Interval (Miles)
Oil Filter .....	15,000
Air Filter .....	30,000
Fuel Filter .....	30,000
PCV Valve .....	30,000
Spark Plugs .....	30,000

## CAPACITIES

#### FLUID CAPACITIES

Application	Quantity
Crankcase .....	<sup>1</sup> 5.0 qts. (4.7L)
Cooling System	
Standard .....	<sup>2</sup> 12.0 qts. (11.4L)
Optional .....	<sup>2</sup> 14.0 qts. (13.2L)
Automatic Transmission (Dexron II) ...	<sup>3</sup> 7.7 pts. (3.6L)
Manual Transmission	
A-833 4-Speed Overdrive (Dexron II) .....	7.5 pts. (3.5L)
N. P. 435 4-Speed (SAE 80W-90) .....	7.0 pts. (3.3L)
Transfer Case	
N. P. 205 (SAE 80W-90) .....	4.5 pts. (2.1L)
N. P. 208 (Dexron II) .....	6.0 pts. (2.8L)
Rear Axle (SAE 80W-90)	
8 $\frac{1}{4}$ " Ring Gear .....	4.5 pts. (2.1L)
9 $\frac{1}{4}$ " Ring Gear .....	6.0 pts. (2.8L)
9 $\frac{3}{4}$ " Ring Gear .....	6.5 pts. (3.1L)
10 $\frac{1}{2}$ " Ring Gear .....	6.5 pts. (3.1L)
Front Axle (SAE 80W-90)	
Model 44 .....	3.5 pts. (1.7L)
Model 60 .....	6.5 pts. (3.1L)
Fuel Tank	
Van Models	
Standard .....	22.0 gals. (83.3L)
Optional .....	36.0 gals. (136.3L)
Pickup Models	
Standard .....	20.0 gals. (75.7L)
Optional .....	30.0 gals. (113.6L)
Optional .....	35.0 gals. (132.4L)

<sup>1</sup> — Add 1 quart (.95L) with filter change.

<sup>2</sup> — Add 1 quart (.95L) with rear heater.

<sup>3</sup> — Without torque converter drain.