TUNE-UP

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER CODE

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

VIN Engine Codes

Application	Code
5.2L (318") 2-Bbl.	K
5.2L (318") 4-Bbl.	M
5.2L (318") EFI	J

ENGINE IDENTIFICATION NUMBER CODE

Engine Identification Number is stamped on right side of block to rear of engine mount. The third, fourth and fifth digits indicate 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.*

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	
318" V8	8.6:1
Recommended Fuel	Unleaded (87 AKI Minimum)
Compression Pressure	100 psi Minimum
Max. Variation Between Cylinders	40 psi

Check compression pressure with engine at normal operating temperature, all spark plugs removed, throttle valve wide open and engine at cranking speed.

VALVE CLEARANCE

Hydraulic Lifters	Zero Lash

VALVE ARRANGEMENT

All Engines – E-I-I-E-E-I-I-E (Both banks, front to rear.)

SPARK PLUGS

Application	Gap (In.)	Torque (Ft. Lbs.)
All Models	.048	30

Spark Plug Type

Application	Mopar No.
5.2L (318") 2-Bbl. & 4-Bbl.	65PR-4
5.2L (318") EFI	68ER

HIGH TENSION WIRE RESISTANCE

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. 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 are equipped with Electronic Spark Control system with Spark Control Computer. 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.*

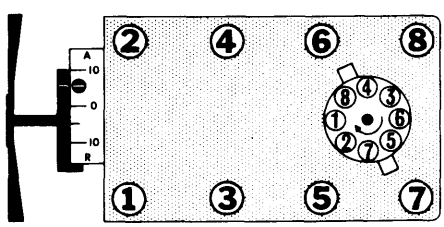

Fig. 1 Firing Order and Timing Marks

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.*

Ignition timing is checked with engine warm and idling. Vacuum hose should remain connected to computer on air cleaner. Use a jumper wire to connect carburetor idle stop switch to ground. Connect timing light and adjust timing by turning distributor.

Ignition Timing Specifications (Degrees BTDC@Idle)

Application	Timing
5.2L (318") 2-Bbl. & 4-Bbl.	16
5.2L (318") EFI	12

HOT (SLOW) IDLE RPM

CARBURETED MODELS ONLY

1) Place transmission in neutral, set parking brake, turn lights and accessories off, and connect tachometer to engine. Start and warm engine until at normal operating temperature. Allow engine to run for at least 2 minutes after reaching normal operating temperature, then check ignition timing. Adjust if necessary.

2) Turn on A/C and disconnect compressor clutch wire. If vehicle is not equipped with A/C, use a jumper wire to connect 12 volts to solenoid.

CAUTION — *Solenoid lead comes out of boot on solenoid barrel. Apply voltage at connector 6" from solenoid, while connector remains hooked up. Do not connect battery voltage to any other wire or wiring harness may be damaged.*

3) With solenoid energized, adjust RPM with screw on throttle lever. Remove jumper wire, reconnect compressor clutch wire, and turn off A/C.

4) Disconnect and plug EGR vacuum hose. Ground carburetor switch with jumper wire. Remove PCV valve from cylinder head cover and allow to draw fresh air. Disconnect and plug 3/16" control hose at canister.

5) Disconnect lead from oxygen sensor at connector 4" from sensor. Ground wiring harness side of connector. Allow engine to idle for 2 minutes and check idle speed. If adjustment is necessary, turn idle speed screw on solenoid.

NOTE — *After curb idle speed is reached, reduce speed by 25 RPM (2-Bbl.) or 50 RPM (4-Bbl.) to compensate for disconnected hoses.*

FUEL INJECTED MODELS ONLY

1) Idle speed is controlled by Automatic Idle Speed (AIS) system. To check AIS, stop engine, then turn key on (do not start). AIS motor should move linkage arm rearward and open throttle blades. Start engine. Idle speed in Drive should be 580±50 RPM and should remain steady.

2) Chrysler EFI Tester is required if idle speed must be adjusted. Connect tester with battery leads to battery, tachometer pick-up to No. 1 spark plug lead and diagnostic aid to AIS. Set diagnostic aid switch to normal position.

3) Start engine and run until normal operating temperature is reached. Move diagnostic aid switch to manual position. Depress AIS switch to down position, holding it until engine speed no longer decreases.

4) Place transmission selector in "D". Idle speed should be 580±50 RPM. If not, adjust by turning screw on the end of AIS motor linkage. One turn of screw will change idle speed by 50 RPM.

Idle Speed (RPM)

Application	Curb Idle	Solenoid Energized
5.2L (318") 2-Bbl.	700	850
5.2L (318") 4-Bbl.	700	850
5.2L (318") EFI	①530-630	.....

① — Idle speed is controlled by AIS motor and should not need adjustment.

NOTE — *No mixture adjustment is possible with the EFI system. See Chrysler Electronic Fuel Injection in FUEL SYSTEMS Section for testing and repair information.*

IDLE MIXTURE SCREW PLUG REMOVAL (CARBURETED MODELS ONLY)

1) Remove carburetor from engine. On 2-Bbl., remove throttle body from carburetor. On all models, clamp carburetor or throttle body in padded vise with mixture screws up.

2) On 2-Bbl. models, drill a 1/16" pilot hole directly above each roll pin. Enlarge hole to 1/8" and drive out roll pin with punch. Then redrill on 45° angle towards plug and drive out plug with punch.

3) On 4-Bbl. models, drill a 1/8" pilot hole on 45° angle upwards toward mixture plugs. Redrill hole to 1/8" and drive out plugs with punch. Insert sharp punch through idle mixture screw hole and drive out roll pins.

4) On all models, position new roll pins on bottom of throttle body. Pins should be inserted in holes only far enough so mixture screws are still accessible. Reinstall carburetor.

PROPANE ENRICHMENT PROCEDURE (CARBURETED MODELS ONLY)

1) Place transmission in neutral, set parking brake, turn lights and accessories off, and connect tachometer to engine. Start engine and allow it to reach normal operating temperature. Check and adjust timing if necessary.

TUNE-UP (Cont.)

2) Ground carburetor switch. Disconnect and plug EGR hose and 3/16" control hose at canister. Disconnect PCV valve but do not plug.

3) Connect propane bottle to air cleaner vacuum motor source nipple at rear of carburetor on 2 barrel carburetor models. Connect propane bottle to bowl vent solenoid manifold vacuum supply hose using a "T" on 4 barrel carburetor models.

4) On models with an oxygen sensor, disconnect and ground (harness side) oxygen sensor wire. Open main propane valve, then slowly open propane metering valve until maximum engine RPM is reached.

5) With propane flowing, adjust idle speed screw on solenoid to obtain propane RPM. Readjust propane flow to ensure highest RPM has been reached.

6) Turn propane off and allow engine idle to stabilize. Carefully adjust mixture screws to obtain curb idle RPM. Recheck by turning on propane. If enriched RPM differs from propane RPM by more than 25 RPM (2-Bbl.) or 50 RPM (4-Bbl.), repeat adjustment.

Propane Enrichment RPM

Application	Auto. Trans.
5.2L (318") 2-Bbl.	760
5.2L (318") 4-Bbl.	775

COLD (FAST) IDLE RPM

NOTE – *No fast idle adjustment is necessary for EFI models.*

1) With engine at normal operating temperature, place transmission in neutral and set parking brake. Check and adjust basic timing if necessary.

2) Disconnect and plug EGR hose and 3/16" control hose at canister. Ground carburetor switch and disconnect and ground oxygen sensor harness. Disconnect PCV valve from cylinder head cover and allow to draw air.

3) Place carburetor linkage on specified step of fast idle cam and adjust fast idle speed. Reconnect all hoses and wiring and remove test equipment.

Fast Idle Speed (RPM)

Application	RPM
All Except EFI	1400

AUTOMATIC CHOKE SETTING

All models except EFI are equipped with electric chokes and no adjustment is necessary. EFI models do not have a choke system.

FUEL PUMP

Pressure (At Idle)	
All Except EFI	5.8-7.3 psi
EFI	7.5-11.5 psi
Volume (At Idle)	
All Except EFI	1 pint in 30 sec.
EFI	①

① – Information not available from manufacturer.

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with Chrysler Electronic Spark Control System. EFI models (Imperial) use a single pick-up distributor. All other models use a dual pick-up distributor.

IGNITION COIL

Coil Resistance (Ohms@75°F)

Application	Primary	Secondary
Essex	1.34-1.55	9000-12,200
Prestolite	1.60-1.79	9400-11,700
Ballast Resistor	1.12-1.38 ohms	

CARBURETION

CARBURETORS

Application	Model
5.2L (318") 2-Bbl.	Carter BBD 8291S
5.2L (318") 4-Bbl.	
Federal	Carter Thermo-Quad 9283S
Calif.	Carter Thermo-Quad 9293S

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

FUEL INJECTION

FUEL INJECTION

All Imperial models are equipped with 5.2L (318") engines with Chrysler Electronic Fuel Injection systems with oxygen sensor.

GENERAL SERVICING (Cont.)

Other Data & Specifications – *See Tune-Up and Chrysler Electronic Fuel Injection in FUEL SYSTEMS Section.*

ELECTRICAL

BATTERY

Application	Cold Crank (Amps@0°F)	Reserve Capacity (Minutes)
Imperial	500	120
All Other Models		
Standard	430	100
Optional	500	120

STARTER

Chrysler Corp. 1.8 HP, 2.0:1 gear reduction type.

Starter Specifications

Application	Volts	Amps	Test RPM
All Models	11	90	5700

ALTERNATOR

Application	Rated Amp. Output
Imperial	100
All Other Models	
Standard	60
Optional	65, 100

ALTERNATOR REGULATOR

Application	Operating Voltage (Volts@80°F)
All Models	13.9-14.6

COOLING CAPACITIES

Application	Quantity
LeBaron & Diplomat	
Standard	15.0 qts.
Optional & A/C	16.5 qts.
All Other Models	
Standard	15.0 qts.
Optional	17.5 qts.

TRANSMISSION & DIFFERENTIAL CAPACITIES

Application	Quantity
Auto. Trans. (Dexron II)	
A904	7.7 qts.
A727	7.3 qts.
Rear Axle (Hypoid Gear Lube, GL-5)	
7.25" Axle	2.1 pts.
8.25" & 9.25" Axle	4.4 pts.

OIL & FUEL CAPACITIES

Application	Quantity
Crankcase (including filter)	5.0 qts.
Fuel Tank	
Cordoba, Diplomat, Imperial, LeBaron, Mirada	18.0 gals.
Gran Fury, Newport, New Yorker, St. Regis	21.0 gals.

REPLACEMENT INTERVALS

Component	Interval (Miles)
Oil Filter (Every 2nd oil change)	15,000
Air Filter	52,500
PCV Filter (Clean & lubricate)	52,500
Spark Plugs	30,000

BELT ADJUSTMENT

Tension (Lbs.) Using Tension Gauge

Application	New Belt	Used Belt
All	120	70