1980 Chrysler Corp. V8 Tune-Up

TUNE-UP

ENGINE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER CODE

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

VIN Code

Application	Code
318" 2-Bbl.	G
318" 4-Bbl.	H
360" 2-Bbl.	K
360" 4-Bbl.	J
360" 4-Bbl. High Perf.	L

ENGINE IDENTIFICATION NUMBER CODE

Engine Identification Number on all 318" and 360" engines is stamped on front of block, just below cylinder head. 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.*

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

318"	8.5:1
360"	8.4:1
360" High Perf.	8.0:1

Recommended Fuel ..... Unleaded (87 AKI Minimum)

Check pressure with engine at normal operating temperature, spark plugs removed, throttle valve wide open, at cranking speed. Compression should not be less than 100 psi and not vary more than 40 psi between cylinders.

VALVE TAPPET CLEARANCE

Hydraulic Lifters ..... Zero Lash

VALVE ARRANGEMENT

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

SPARK PLUGS

Gap	.035"
Torque	30 ft. lbs.

Spark Plug Type

Application	Champion No.
318" & 360"	RN-12Y

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 either the Chrysler Corp. Electronic Ignition System or the optional Electronic Lean Burn 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.*

TUNE-UP (Cont.)

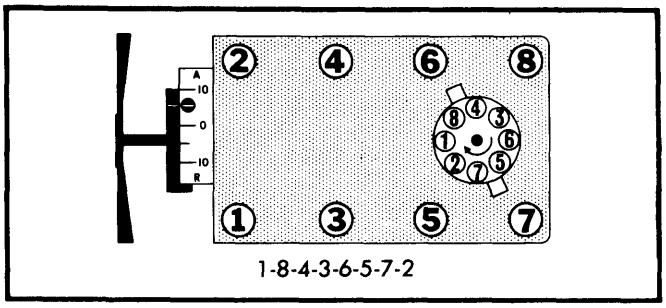

Fig. 1 318" and 360" Firing Order and Timing Marks

IGNITION TIMING

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

CAUTION — *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	Auto. Trans.
318" 2-Bbl.	12@700
318" 4-Bbl.	
Federal	16@700
California	16@700
360" 2-Bbl.	12@700
360" 4-Bbl.	16@750

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:*

318" 4-Bbl. (Federal & Calif.) — **1)** Set parking brake, place transmission in Neutral and connect a tachometer. Ground carburetor switch with a jumper wire. Remove wire from coolant temperature switch and ground with jumper wire. Remove and plug EGR hose at valve. Remove PCV valve but DO NOT plug. Remove vapor canister vacuum hose at carburetor and plug carburetor nipple.

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

2) Start engine allowing it to reach operating temperature. If engine is already at operating temperature, wait 1 minute before proceeding with adjustment. Connect a jumper wire from positive battery post to solenoid lead wire in four-way connector on carburetor; DO NOT disconnect four-way connector, just insert jumper wire into connector. DO NOT connect jumper wire to carburetor switch of connector.

3) Turn on air conditioning (if equipped) and disconnect compressor lead. Open throttle to energize solenoid. Turn screw on throttle shaft lever to obtain specified "Solenoid Energized" RPM. Remove jumper wire from wiring connector, turn off A/C (if equipped), and reconnect lead to compressor. Set "Curb Idle" speed to specification by turning screw on back of solenoid.

All Others — **1)** Set parking brake and place transmission in Neutral. Connect a tachometer to engine. Start engine and allow to reach operating temperature. Return engine to idle; turn off all lights and accessories. Disconnect and plug vacuum hoses at distributor and EGR valve.

2) Remove PCV valve and disconnect vapor canister purge hose at carburetor; DO NOT plug. 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.

Idle Speed (RPM)

Application	Curb Idle	Solenoid Energized
318" 2-Bbl.	700±100	.....
318" 4-Bbl.		
Federal	① 650	950
California	① 650	950
360" 2-Bbl.	700±100	.....
360" 4-Bbl.	750±100	.....

① — 700 RPM minimum with hoses connected.

IDLE MIXTURE

PROPANE ENRICHMENT PROCEDURE

318" 4-Bbl. (Federal & Calif.) — **1)** With engine at normal operating temperature, set parking brake and place transmission in Neutral. Connect tachometer and timing light to engine. Disconnect heated air door vacuum hose at air cleaner and install propane supply hose. Remove air cleaner breather hose.

2) Ground carburetor switch. Remove and ground wire from coolant switch. Turn screw on back of solenoid until it seats. Disconnect and plug EGR hose. Remove PCV valve; DO NOT plug. Disconnect canister vapor hose from carburetor and plug carburetor nipple. Start engine.

NOTE — *Coolant switch wire must be grounded before starting engine to obtain proper setting.*

3) Open propane main valve. Slowly open propane metering valve to attain maximum engine speed. Adjust screw on carburetor throttle shaft lever to attain "Enriched RPM" setting. Turn off propane main valve. Slowly adjust mixture screws to achieve smoothest curb idle.

4) Open propane main valve. Recheck "Enriched RPM", readjust if necessary. Turn propane main valve off and check curb

TUNE-UP (Cont.)

idle. Readjust if necessary, allowing time for engine speed to stabilize between adjustments. Turn air conditioning on (if equipped) and disconnect air compressor electrical lead. Adjust engine speed to 950 RPM using screw located on carburetor throttle shaft lever.

5) Reconnect air compressor and turn off air conditioning (if equipped) and adjust engine to curb idle using screw on back of solenoid. Install PCV valve and reconnect canister vapor hose. Remove jumper wires and reconnect coolant switch. Reconnect EGR hose. Engine speed should drop to 700 RPM.

NOTE – *With hoses connected a fluctuation between 675 and 725 RPM is normal. DO NOT readjust.*

All Others – 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 propane main valve. Slowly open propane metering valve to attain maximum 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 to insure maximum idle speed; readjust idle speed screw if necessary. Turn off propane main valve and allow engine to stabilize.

5) Adjust mixture screw to smoothest curb idle speed. Pause between adjustments to allow engine 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.

Propane Enrichment RPM

Application	Enriched RPM
318" 2-Bbl.	800
318" 4-Bbl.	
Federal	800①
California	800①

Propane Enrichment RPM (Cont.)

Application	Enriched RPM
360" 2-Bbl.	800
360" 4-Bbl.	870

① – 950 RPM with A/C.

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 and remove and ground coolant temperature switch (Federal and California 318" 4-Bbl. ONLY).

NOTE – *Coolant temperature switch on Federal and California 318" 4-Bbl. engines must be grounded before starting engine to obtain proper setting.*

2) Start engine and allow speed to stabilize (transmission in Neutral). Set fast idle speed screw on second highest stop 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.

NOTE – *Curb idle may fluctuate ±25 RPM on Federal and California 318" 4-Bbl. engines. DO NOT readjust.*

Fast Idle Speed (RPM)

Application	Fast Idle Speed
318" 2-Bbl.	1500
318" 4-Bbl.	1500
360" 2-Bbl.	1500
360" 4-Bbl.	1200

AUTOMATIC CHOKE SETTING

All models use an electrical assist choke and no adjustments are required.

FUEL PUMP

Pressure (At Idle)	
All Models	5.0-7.5 psi
Volume (At Idle)	
All Models	1 pint in 30 seconds

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	1.34-1.55 ohms
Secondary (at 70-80° F)	
Prestolite	9,400-11,700 ohms
Essex	9,000-12,200 ohms
Ballast Resistor (at 70-80°F)	
All Models	1.12-1.38 ohms

CARBURETION

CARBURETORS

Application	Model
318" 2-Bbl.	Carter BBD
360" 2-Bbl.	Carter BBD
318" & 360" 4-Bbl.	Carter Thermo-Quad

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

ACCELERATOR LINKAGE ADJUSTMENT

Block choke in full open position, release fast idle cam and place carburetor lever in slow idle position. Loosen cable clamp nut and adjust position of cable housing ferrule to remove all slack from cable. Back off ferrule to provide ¼" slack at idle. Tighten clamp nut to 45 INCH lbs.

ELECTRICAL

BATTERY

12 Volt – Negative Ground.

Application	Cold Crank (Amps@0°F)	Reserve Capacity (Minutes)
Standard		
318"	325	68
360"	430	100
Optional	500	140

STARTER

Chrysler Corp. Reduction Gear Type

318" engines use a 1.5 HP. 3.5:1 gear reduction model. 360" engine use a 1.8 HP, 2.0:1 gear reduction model.

Starter 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

Check manifold bolts in sequence shown for 45 ft. lbs. torque.

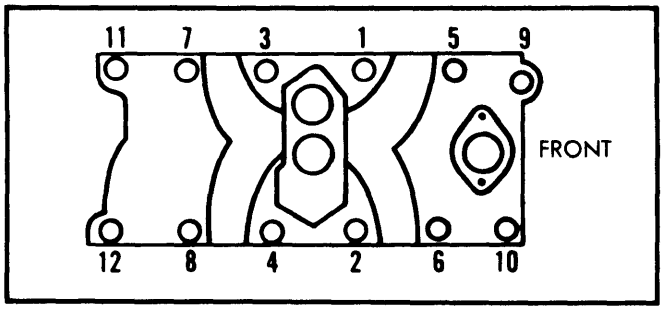

Fig. 2 Intake Manifold Tightening Sequence

BELT ADJUSTMENT

Tension (Lbs.) Using Tension Gauge

Application	New Belt	Used Belt
All	120	70

GENERAL SERVICING (Cont.)

FILTERS & CLEANERS

Filter or Cleaner	Service Interval (Miles)
Oil Filter	Replace every 12 months
Air Filter	Replace every 30,000
Fuel Filter	Replace every 30,000
Vapor Canister Filter	Replace every 30,000
PCV Valve	Replace every 30,000

CAPACITIES (COOLING)

Application	Quantity (Qts.)
318" with A/C	
Aspen, Volare, LeBaron, Diplomat, Cordoba & Mirada	15.5
318" with Maximum Cooling	
Aspen, Volare, LeBaron, Diplomat, Cordoba & Mirada	16.5
318" All Others	15.0
360"	
Aspen, Volare, LeBaron, Diplomat, Cordoba & Mirada	15.0
All Others	16.0

CAPACITIES (EXCEPT COOLING)

Application	Quantity
Crankcase	①4.0 qts.
Automatic Transmission (Dexron)	
A-727	②15.9 qts.
A-904	②16.3 qts.
Rear Axle (SAE 90)	
7¼" Ring Gear	2.1 pts.
8¼" Ring Gear	4.4 pts.
9¼" Ring Gear	4.5 pts.
Fuel Tank	
Aspen, Volare, LeBaron & Diplomat	18.0 gals.
Station Wagons	19.5 gals.
All Others	21.0 gals.

① — Add 1 qt. with filter change.
② — Add .5 pt. for transmission cooler.