

1982 Jeep 6 Tune-Up

TUNE-UP

ENGINE IDENTIFICATION

Engine can be identified by the fourth digit of engine Build Date Code number, located on a tag attached to right side of block between No. 2 and 3 cylinders. The same code letter is also the fourth digit in the Vehicle Identification Number (VIN), located at top left corner of dashboard.

VIN ENGINE CODE

Application	Code
4.2L (258") 2-Bbl.	C

TUNE-UP NOTES

CAUTION: When performing tune-up on vehicles equipped with a catalytic converter, do not allow or create a condition of engine misfire in one or more cylinders for an extended period of time. Damage to converter from overheating may occur due to loading with unburned fuel.

NOTE: Due to production changes, always refer to Engine Tune-Up Decal in engine compartment before attempting tune-up. In the event of a conflict between specifications given in this manual and decal specifications, use the decal specifications.

ENGINE COMPRESSION

Measure compression pressure with engine at normal operating temperature, spark plugs removed, throttle and choke valves wide open and engine at cranking speed.

COMPRESSION SPECIFICATIONS

Compression Ratio	8.0:1
Compression Pressure ..	120-140 psi (8.4-9.8 kg/cm ²)
Maximum Variation Between Cylinders	30 psi (2.1 kg/cm ²)

VALVE CLEARANCE

All engines have hydraulic lifters which should be adjusted to zero lash.

VALVE ARRANGEMENT

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

SPARK PLUGS

Application	Gap In. (mm)	Torque Ft. Lbs. (N.m)
All Models035 (.9)	7-15 (10-20)

SPARK PLUG TYPE

Application	Champion No.
All Models	RFN14LY

HIGH TENSION WIRE RESISTANCE

Do not puncture spark plug wires with any type of probe. Remove spark plug wire and check resistance using an ohmmeter.

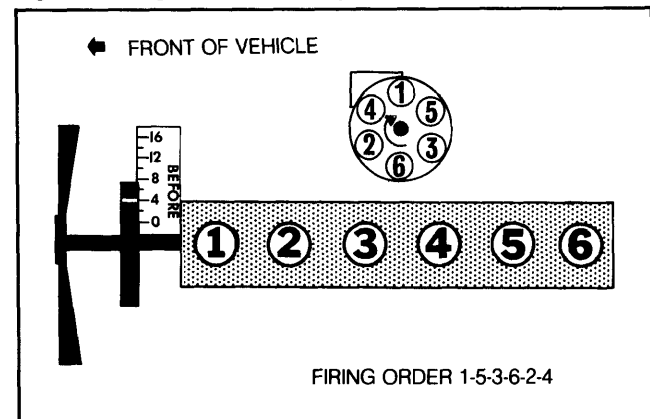
RESISTANCE (Ohms)

Wire Length	Minimum	Maximum
0-15"	3000	10,000
15-25"	4000	15,000
25-35"	6000	20,000
Over 35"	8000	25,000

DISTRIBUTOR

All models are equipped with Motorcraft Solid State Ignition (S.S.I.) systems. No adjustments are required.

Fig. 1: Timing Mark and Firing Order



Magnetic probe located at 10° ATDC.

IGNITION TIMING

NOTE: Engines are equipped with a receptacle for a magnetic probe timing light, located 10° ATDC. Do not use this location to check timing with a conventional light.

1) Connect timing light using inductive pickup or adaptor. Do not puncture spark plug wire. Connect tachometer, then disconnect and plug vacuum hose at distributor.

2) Disconnect 2-wire (yellow and black) connector at electronic ignition module. Short circuit module terminal connectors with jumper wire (except on Federal CJ and Scrambler models). Start engine and adjust idle speed to specifications.

TUNE UP (Cont.)

3) Increase engine speed to 1600 RPM and adjust timing (except Federal CJ and Scrambler models). Set timing by loosening distributor clamp bolt and turning distributor. Recheck timing after clamp bolt is tightened.

TIMING SPECIFICATIONS (Degrees BTDC@RPM)

Application	Man. Trans.	Auto. Trans.
CJ & Scrambler Models		
Federal	8@650	8@550
Calif.	15@650	15@550
All Other Models		
High Altitude	19@1600	21@1600
Fed. & Calif.	15@1600	15@1600

HOT (SLOW) IDLE RPM

1) Warm engine to normal operating temperature. Set parking brake and place automatic transmission selector in "D". Disconnect vacuum hose from vacuum actuator and plug. Disconnect solenoid wire and electrical connection.

2) Adjust curb idle screw to obtain correct curb idle. Apply direct manifold vacuum to vacuum actuator. Adjust screw on throttle lever to set vacuum actuator RPM. Disconnect vacuum source.

3) Apply battery voltage to solenoid with a jumper wire. Turn on air conditioning and open throttle to allow solenoid to extend fully. Adjust hex-head screw to obtain solenoid RPM. Reconnect solenoid connector and vacuum hose.

CURB IDLE SPEED (RPM)

Application	RPM
CJ & Scrambler Models	
Man. Trans.	650
Auto. Trans.	550
All Other Models	
Man. Trans.	600
Auto. Trans.	500

VACUUM ACTUATOR & SOLENOID IDLE (RPM)

Application	Vacuum Actuator	Solenoid Energized
Man. Trans.	900	750
Auto. Trans.	800	650

IDLE MIXTURE

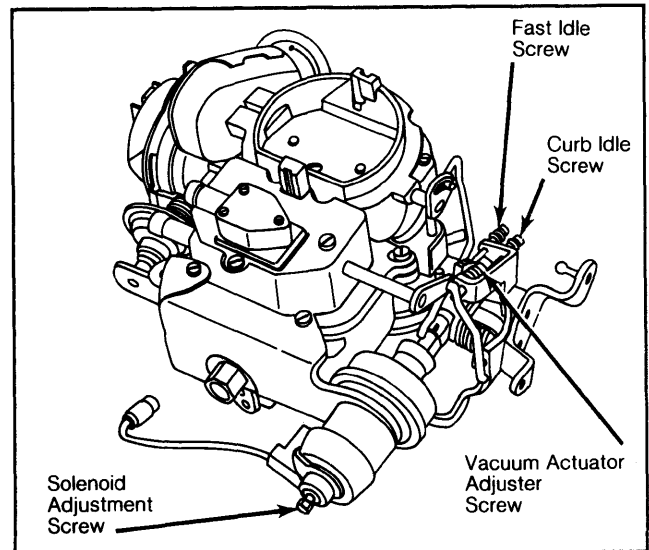
NOTE: Be sure idle speed and timing are set before performing idle mixture adjustment. If mixture setting takes more than 3 minutes, run engine at 2000 RPM in neutral for 1 minute, then resume adjustment.

TACHOMETER (LEAN DROP) PROCEDURE

NOTE: Idle mixture adjustment is not part of a normal tune-up. DO NOT adjust mixture

unless carburetor has been disassembled or vehicle fails emissions testing.

Fig. 2: Adjustment Points for Carter BBD Carburetor



Holding solenoid maintains throttle position.

1) Remove carburetor and locate roll pins blocking idle mixture screws. Drill through throttle body on closed end of roll pin hole, then drive pins out with punch. Reinstall carburetor.

2) Warm vehicle to operating temperature and adjust idle speeds. Place automatic transmission selector in "D". Turn mixture screws in (lean) until RPM drops, then turn screw out until highest RPM is reached.

3) Turn mixture screws in until specified "Lean Drop" is obtained. Adjust both screws equally. When mixture is correctly adjusted, replace roll pin to block adjustment screws.

NOTE: If final RPM differs more than 30 RPM from specified curb idle speed, reset curb idle and repeat mixture adjustment.

LEAN DROP RPM

Application	Man. Trans.	Auto. Trans.
All Models	50	50

COLD (FAST) IDLE RPM

Disconnect EGR solenoid line and plug carburetor ports. With engine running at normal operating temperature, place fast idle screw on second step of fast idle cam and against shoulder of high step. Turn screw to adjust fast idle speed.

FAST IDLE SPEED (RPM)

Application	Man. Trans.	Auto. Trans.
All Models	1700	1850

¹ — Cherokee, Truck and Wagoneer set to 1700 RPM.

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AUTOMATIC CHOKE SETTING

To adjust automatic choke, loosen coil housing retaining screws and rotate housing in direction indicated by arrows. Adjust to 1NR and tighten screws.

FUEL PUMP

FUEL PUMP SPECIFICATIONS

Application	Pressure psi (kg/cm ²)	Volume Pts. (Liters)
All Models	4.0-5.0 (.28-.35)	1 in 30 sec. (.47 in 30 sec.)

EMISSION CONTROL

NOTE: See appropriate article in EMISSION CONTROL Section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All vehicles use a Motorcraft breakerless solid state distributor.

TOTAL SPARK ADVANCE@2000 RPM

Application	With Vac. Advance	Without Vac. Advance
Truck Models	33°	10°
CJ & Scrambler		
Federal	33°	10°
Calif.	34°	12°

IGNITION COIL RESISTANCE (Ohms)@68°F (20°C)

Application	Primary	Secondary
All Models	1.13-1.23	7700-9300

FUEL SYSTEMS

CARBURETORS

Application	Model
All Models	Carter BBD 2-Bbl.

ELECTRICAL

BATTERY

Application	Cold Cranking Amps. ¹	Reserve Capacity Minutes
Standard	380	75
Optional	450	90
Police	440	135

¹ — At 0°F (-18°C.)

STARTER

All models use Motorcraft positive engagement starters.

STARTER SPECIFICATIONS

Application	Volts	Amps.	Test RPM
All Models	12	67	7380-9356

ALTERNATOR

All models use Delco solid state alternators with internal voltage regulator.

ALTERNATOR SPECIFICATIONS

Application	Rated Amp. Output
Standard	42
Optional	63, 70
Police	85

ALTERNATOR REGULATORS

All models use Delco solid state regulators, integral with alternator. Regulator is non-adjustable.

ADJUSTMENTS

BELT ADJUSTMENT

Application	Tension Using Strand Tension Gauge Lbs. (Kg)
New Belts	
Air Pump & Pwr. Strg. ¹	65-75 (29-34)
Serpentine	180-200 (82-91)
All Other Belts	125-155 (57-70)
Used Belts	
Air Pump & Power Steering ¹	60-70 (27-32)
Serpentine	140-160 (64-73)
All Other Belts	90-115 (40-52)

¹ — $\frac{3}{8}$ " belt only.

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GENERAL SERVICING (Cont.)

SERVICE INTERVALS

REPLACEMENT INTERVALS

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

CAPACITIES

FLUID CAPACITIES

Application	Capacity
Cooling System (Includes Heater)	10.5 qts. (9.9L)
Crankcase (Includes Filter)	6.0 qts. (5.7L)
Man. Trans. (SAE 85W-90)	
T4 4-Speed	3.5 pts. (1.7L)
T176 4-Speed	3.5 pts. (1.7L)
T18 4-Speed	6.5 pts. (3.1L)
T5 5-Speed	4.0 pts. (1.9L)
Auto. Trans. (Dexron)	
Refill	8.5 pts. (4.0L)
Overhaul	17.0 pts (8.0L)
Transfer Case	
CJ Series (SAE 85W-90)	4.0 pts. (1.9L)
Quadra-Trac (SAE 10W-30)	4.0 pts. (1.9L)
All Others (SAE10W-30)	6.0 pts. (2.8L)
Drive Axles	Fill to bottom of filler plug hole
Fuel Tank	
CJ & Scrambler	
Standard	14.8 gals. (56.0L)
Optional	20.3 gals. (76.8L)
Cherokee & Wagoneer	20.3 gals. (76.8L)
Truck	18.2 gals. (68.9L)