

# 1975-79 TUNE-UP PROCEDURES

## Jeep V8 Tune-Up

### ENGINE IDENTIFICATION

#### VEHICLE IDENTIFICATION NUMBER

A 13 character Vehicle Identification Number (VIN) is stamped on a metal plate attached to left side of firewall under hood. Seventh character identifies engine.

#### VIN CODE

Application	Code
1976-78 Models	
304" 2-Bbl. ....	H
360"	
2-Bbl. ....	N
4-Bbl. ....	P
401" 4-Bbl. ....	Z
1979 Models	
304" 2-Bbl. ....	H
360" 2-Bbl. ....	N

#### ENGINE IDENTIFICATION CODE

Engine can be identified by 4th character of engine code, located on a tag attached to right bank cylinder head cover. The same identification code is used as 7th character of Vehicle Identification Number.

### TUNE-UP NOTES

**NOTE: Procedures and specifications for idle speed adjustment must be followed exactly as outlined. See HOT (SLOW) IDLE RPM in this article.**

**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.**

**NOTE: 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.**

### 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.

#### ENGINE COMPRESSION SPECIFICATIONS

Application	Specification
Compression Ratio	
304" ....	8.4:1
360" & 401" ....	8.25:1
Recommended Fuel	Unleaded (87 AKI Minimum)
Compression Pressure (All)	120-150 psi
Maximum Pressure Variation	20 psi

### VALVE CLEARANCE

Hydraulic Lifters - Zero lash.

### VALVE ARRANGEMENT

E-I-I-E-E-I-I-E - (Both Banks, Front-to-Rear).

### SPARK PLUGS

#### SPARK PLUG TYPE

Application	Champion No.
1975-78 Models	N-12Y
1979 Models	RN-12Y

#### SPARK PLUG INSTALLATION

Application	Gap	Torque
All Models	.033-.037"	22-33 Ft. Lbs.

### HIGH TENSION WIRE RESISTANCE

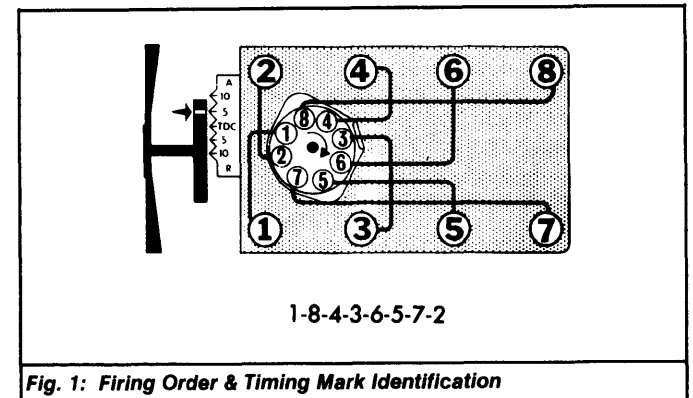
Do not puncture spark plug wires with any type of probe. Remove spark plug wire and check resistance using an ohmmeter.

#### WIRE 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 1975-77 models use Prestolite Breakerless Inductive Discharge (BID) Ignition systems. The 1978-79 models use Motorcraft Solid State (SSI) Ignition systems.



### IGNITION TIMING

- 1) Timing is set by lining up a milled notch in vibration dampener with a graduated degree scale located on timing case cover. A socket cast into the timing case cover is used with special magnetic timing probe equipment.
- 2) Disconnect and plug vacuum hose at distributor. Connect a tachometer and ignition timing light. If light has an advance control feature, turn control to "OFF" position.
- 3) Start engine and adjust to idle speed of 500 RPM with solenoid disconnected. Adjust timing to specifications by loosening distributor hold down clamp and turning distributor. Recheck timing after distributor hold down is tightened.

# 1975-79 TUNE-UP PROCEDURES

## Jeep V8 Tune-Up (Cont.)

### IGNITION TIMING SPECIFICATIONS (DEGREES BTDC)

Application	Man. Trans.	Auto. Trans.
<b>1975 Models</b>		
304" .....	5 .....	5
360" & 401" .....	2.5 .....	2.5
<b>1976 Models</b>		
304"		
Federal .....	5 .....	10
Calif. ....	5 .....	5
360" & 401"		
Federal .....	5 .....	8
Calif. ....	5 .....	5
<b>1977-78 Models</b>		
304"		
Federal .....	5 .....	10
Calif. ....	5 .....	5
High Alt. ....	5 .....	10
360" .....	5 .....	8
401" .....		8
<b>1979 Models</b>		
304"		
Federal .....	5 .....	8
Calif. ....	5 .....	
360" .....	8 .....	8

### HOT (SLOW) IDLE RPM

1) Set parking brake and block drive wheels. Warm engine to normal operating temperature with transmission shift lever in Neutral (Park on automatic transmission).

2) On carburetors without solenoid, turn curb idle adjusting screw to obtain specified curb idle speed. On carburetors with solenoid, turn hex screw on solenoid carriage to obtain specified speed. Tighten lock nut if equipped. Then disconnect solenoid wire and adjust curb idle screw to obtain 500 RPM idle speed. Reconnect solenoid wire.

### HOT (SLOW) IDLE RPM SPECIFICATIONS

Application	Man. Trans.	Auto. Trans.
<b>1975-78 Models</b> .....		
	750 .....	700
<b>1979 Models</b>		
304"		
Federal .....	700 .....	600
Calif. ....	750 .....	
360"		
Federal .....	800 .....	600
Calif. ....		600

### IDLE MIXTURE

**NOTE: The tachometer (lean drop) procedure is the only recommended idle mixture setting procedure for 1979 models. Before adjusting idle mixture, be sure engine is performing properly and curb idle has been properly set. Air cleaner should be installed. If mixture setting takes more than 3 minutes, run engine at 2000 RPM in Neutral for one minute.**

### TACHOMETER (LEAN DROP) PROCEDURE

1) With engine at normal operating temperature and running at curb idle speed in Neutral (Drive on automatic transmission), turn idle mixture screws to full rich stop (counterclockwise). Note position of screw head slots inside limiter caps.

2) Remove and discard limiter caps. If screw position has changed, return to position noted before cap removal.

3) Turn mixture screws clockwise (leaner) until RPM begins to decrease. Now turn screw(s) counterclockwise until highest RPM reading is obtained. This is lean best idle. Turn mixture screws clockwise until specified lean drop in engine RPM is obtained.

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

4) Carefully install new Blue limiter caps with tabs positioned against full rich stop. Press caps firmly and squarely into place.

### LEAN DROP RPM SPECIFICATIONS

Application	Man. Trans.	Auto. Trans.
<b>1975-78 Models</b>		
CJ Models <sup>1</sup> .....	100 .....	20
All Others .....	<sup>2</sup> .....	<sup>2</sup>
<b>1979 Models</b>		
304"		
Federal .....	20 .....	40
Calif. ....	100 .....	
360"		
Federal .....	50 .....	20
Calif. ....		20

<sup>1</sup> - Adjust to 40 RPM drop on 1975 models.

<sup>2</sup> - Adjust to lean best idle. There is no specified idle drop.

### COLD (FAST) IDLE RPM

Disconnect EGR vacuum line and plug carburetor port. Disconnect TCS solenoid. With vacuum hoses disconnected and plugged at distributor, set curb idle speed. With engine running at normal operating temperature, place fast idle screw on second step of fast idle cam and against shoulder of high step. Adjust screw to obtain specified fast idle speed.

### COLD (FAST) IDLE RPM SPECIFICATIONS

Application	Man. Trans.	Auto. Trans.
<b>1975-76 Models</b> .....		
	1600 .....	1600
<b>1977-78 Models</b>		
304"		
High Alt. ....	1600 .....	1600
All Others .....	1500 .....	1600
360" .....	1600 .....	1600
401" .....	1600 .....	1600
<b>1979 Models</b> .....		
	1500 .....	1600

### AUTOMATIC CHOKE ADJUSTMENT

To adjust automatic choke, loosen cover retaining screws and rotate cover in direction indicated by arrow on face of cover. Adjust to specified setting.

### AUTOMATIC CHOKE SETTING

Application	Man. Trans.	Auto. Trans.
<b>1975 Models</b> .....		
	2NR .....	1NR
<b>1976 Models</b>		
304" .....		
	1NR .....	1NR
360" & 401" .....	2NR .....	2NR
<b>1977-78 Models</b>		
304"		
Federal .....	2NR .....	1NR
Calif. ....	1NR .....	1NR
High Alt. ....	2NR .....	2NR
360" .....	2NR .....	2NR
401" .....	2NR .....	2NR
<b>1979 Models</b>		
304"		
Federal .....	2NR .....	1NR
Calif. ....	1NR .....	
High Alt. ....	Index .....	
360" .....	2NR .....	2NR

# 1975-79 TUNE-UP PROCEDURES

## Jeep V8 Tune-Up (Cont.)

### DASHPOT ADJUSTMENT

**1976-79 Models** - With throttle set at curb idle, depress dashpot stem and set clearance between stem and throttle to specification. Adjust by loosening lock nut and turning dashpot.

#### DASHPOT ADJUSTMENT

Application	Specification
1976 Models .....	.075"
1977-78 Models <sup>1</sup> .....	.093"
1979 Models .....	.061"-.125"

<sup>1</sup> - Models with Holley 2100 2-barrel carburetor only.

### FUEL PUMP

#### FUEL PUMP SPECIFICATION

Application	Specification
Pressure (At Idle) .....	5-6.5 psi
Volume in 1 Minute (At Idle) .....	1 qt.
Minimum Vacuum (At Idle) .....	10 in. Hg

### IGNITION SYSTEM

#### DISTRIBUTOR

All 1975-77 models use Prestolite Breakerless Inductive Discharge (BID) Ignition systems. The 1978-79 models use Motorcraft Solid State (SSI) Ignition systems.

**Other Data & Specifications** - See Prestolite or Motorcraft Distributors in DISTRIBUTOR & IGNITION SYSTEMS section.

### IGNITION COIL

#### IGNITION COIL SPECIFICATIONS

Application	Specification
Primary Resistance .....	1.13-1.23 Ohms
Secondary Resistance	
Prestolite .....	9000-15,000 Ohms
Motorcraft .....	7700-9300 Ohms
Coil Output (Minimum) .....	24,000 Volts

### FUEL SYSTEM

#### CARBURETORS

Application	Model
1975-76 Models	
304" & 360" 2-Bbl. ....	Motorcraft 2100 2-Bbl.
360" 4-Bbl. & 401" ....	Motorcraft 4350 4-Bbl.
1977-78 Models	
304" .....	Motorcraft 2100 or 2150 2-Bbl.
360" 2-Bbl. ....	Motorcraft 2100 2-Bbl.
360" 4-Bbl. & 401" ....	Motorcraft 4350 4-Bbl.
1979 Models	
304" .....	Motorcraft 2100 2-Bbl.
360" .....	Motorcraft 2150 2-Bbl.

**Other Data & Specifications** - See Motorcraft Carburetors in FUEL SYSTEMS section.