

# 1974-79 TUNE-UP PROCEDURES

## Jaguar 6-Cylinder

### XJ6, XJ6L

### ENGINE IDENTIFICATION

Engine number is stamped on top of cylinder block, at rear of engine. Number is also stamped on a plate, which is located in the engine compartment. The "L" suffix following the engine number indicates a low compression ratio.

### MODEL IDENTIFICATION

### VEHICLE IDENTIFICATION NUMBER

Vehicle Identification Number is stamped on a metal tag and attached to the left side rear pillar. Information on tag identifies production date and chassis number.

### ENGINE COMPRESSION

Check compression pressure with engine at normal operating temperature, throttle valve wide open, all spark plugs removed and coil wire disconnected. Compression pressure is normal if all cylinders are within 5 psi (.35 kg/cm<sup>2</sup>) of each other.

### VALVE CLEARANCE

#### VALVE CLEARANCE SPECIFICATIONS

Application	Clearance In. (mm)
Intake .....	.012-.014 (.30-.35)
Exhaust .....	.012-.014 (.30-.35)

### VALVE CLEARANCE

1) With camshaft covers removed, rotate camshafts and record clearance between heel of each cam lobe and its respective tappet. If adjustment is necessary, rotate camshaft and install Valve Timing Gauge (C.3993) before removing final camshaft retaining nut. If required, disconnect sprockets from camshafts.

**NOTE: DO NOT rotate engine while camshaft sprockets are disconnected.**

2) Remove camshaft bearing caps and lift off camshaft. Remove each tappet that requires adjustment and note its location for reassembly in its original position. Remove adjusting pad and measure thickness.

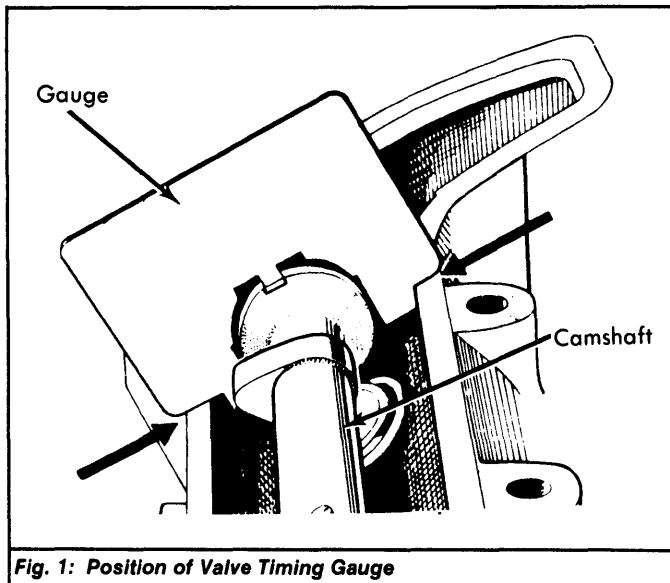


Fig. 1: Position of Valve Timing Gauge

3) Use measured pad thickness and difference between measured valve clearance and specified clearance to calculate required thickness of new adjusting pad. Adjusting pads are available in increments of .001" (.03 mm) from .085" (2.16 mm) to .110" (2.79 mm) and are marked with letters from "A" to "Z" respectively.

4) Insert correct adjusting pads and install tappets. Attach camshafts (using timing gauge). Torque camshaft bearing cap nuts to 9 ft. lbs. (12 N.m), connect camshaft sprockets, and install camshafts covers.

### VALVE ARRANGEMENT

Left Side - All Exhaust.  
Right Side - All Intake.

### SPARK PLUGS

#### SPARK PLUG SPECIFICATIONS

Application	Specification
Gap	
1974-77 Models .....	.025" (.64 mm)
1978-79 Models .....	.035" (.89 mm)
Torque .....	27 ft. lbs. (37 N.m)

#### SPARK PLUG TYPE

Application	Champion No.
1974-77 Models .....	N11Y
1978-79 Models .....	N12Y

### HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wires from spark plugs and distributor cap. Using an ohmmeter, check resistance of each wire while gently twisting wire. If resistance is not to specifications, or fluctuates from infinity to any value, replace wire.

#### HIGH TENSION WIRE RESISTANCE

Application	Resistance (Ohms)
All Models .....	25,000-30,000

### DISTRIBUTOR

All 1974 models use Lucas single-point distributors. All 1975-79 models are equipped with Lucas Opus electronic ignition system.

#### DISTRIBUTOR SPECIFICATIONS

Application	Specifications
1974 Models	
Point Gap .....	.014-.016" (.36-.41 mm)
Dwell Angle .....	32-38°
Breaker Arm Spring Tension .....	18-24 ozs.
1975-79 Models	
Air Gap .....	1 .014-.016" (.36-.41 mm)

<sup>1</sup> - Measured between timing rotor and pick-up module.

### IGNITION TIMING

Check or adjust ignition timing with engine at normal operating temperature, idle speed set to specification and distributor vacuum line connected. If timing is not correct, loosen distributor clamp bolt and rotate distributor to achieve specified timing. Then tighten clamp bolt.

#### IGNITION TIMING SPECIFICATIONS

Application	Timing
1974-77 Models .....	8°BTDC
1978-79 Models .....	4°BTDC

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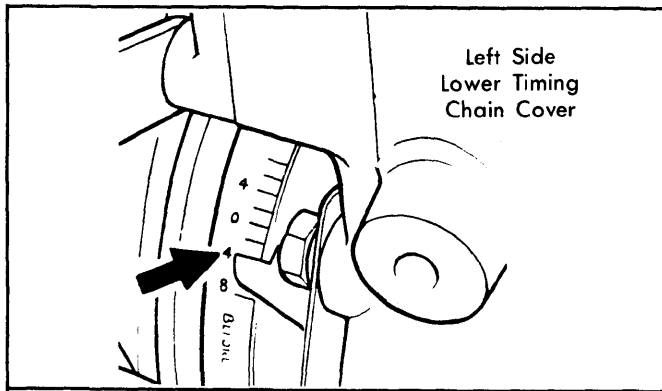


Fig. 2: Ignition Timing Mark Location

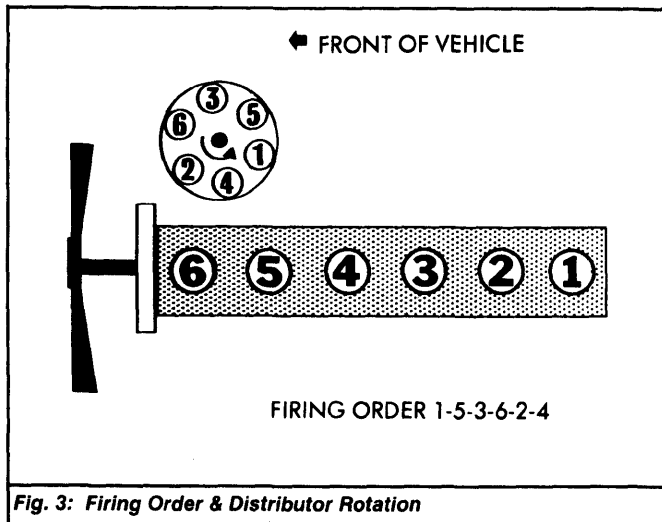


Fig. 3: Firing Order & Distributor Rotation

## IDLE SPEED & MIXTURE

**1974 Models** - 1) Warm engine to normal operating temperature. On automatic transmission equipped vehicles, place selector lever in Park position.

2) Adjust idle speed to specified value by turning each idle adjustment screw an equal amount. Check carburetor balance using a carburetor synchronizer. Adjust idle mixture screws to obtain specified CO% level.

**1975-77 Models** - 1) With engine at normal operating temperature, connect tachometer and exhaust gas analyzer to vehicle. Ensure that oil level in carburetor dampers is 1/4" below top of piston guide rod.

2) Loosen idle speed screw of each carburetor until it no longer contacts throttle lever. Make sure choke is fully opened. Loosen clamp bolts on throttle interconnecting shaft. Make sure both throttle valves are fully closed and tighten clamping bolts.

3) Screw in rear idle speed screw until contact is made with throttle lever. Start engine and adjust rear idle speed screw until specified idle RPM is obtained. Screw in front idle speed screw until contact is made with throttle lever. Check carburetor balance using a carburetor synchronizer.

4) Disconnect air injection system and check CO% level. If CO% level is not within specifications, turn idle mixture screws. Move each screw an equal amount and turn in 1/8" increments. Clockwise rotation richens mixture and counterclockwise rotation leans out mixture.

### IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
1974 Models	750	3.0-4.5
1975-77 Models	750	2.0-4.5
1978-79 Models	750-850	.5-1.5

**1978-79 Models** - 1) Connect tachometer and CO% meter to engine (at exhaust manifold test points). Run engine until normal operating temperature is reached.

2) Adjust idle with air volume screw at overrun valve housing. Use a 7/32" Allen wrench and turn screw clockwise to lower idle; counterclockwise to raise engine idle.

3) Remove plastic plug on airflow meter to locate mixture adjustment screw. Disconnect oxygen sensor and allow engine to idle for one minute to stabilize mixture.

4) Turn mixture screw clockwise to richen mixture and counterclockwise to lean mixture. If correct setting cannot be attained, check all electrical connections and all hoses for proper location. After adjustment, replace oxygen sensor lead and disconnect test equipment.

## COLD (FAST) IDLE RPM

**1974 Models** - Make sure that choke control arm on rear of carburetor is off cam. Release lock nut and turn fast idle adjustment screw until gap between cam and screw is .067" (1.7 mm). Tighten lock nut and recheck gap.

**1975-77 Models** - With engine at normal operating temperature and idle speed set to specification, loosen lock nut on rear carburetor fast idle speed screw. Adjust fast idle speed screw until gap between head of screw and fast idle cam is .045-.055" (1.1-1.4 mm) on 1977 models; .035" (.9 mm) on 1975-76 models. Tighten lock nut and recheck gap.

## FUEL PUMP

### FUEL PUMP SPECIFICATIONS

Application	Specification
Pressure	
1974-77 Models	2.5-3.0 psi ( .18-.21 kg/cm <sup>2</sup> )
1978-79 Models	36 psi (2.5 kg/cm <sup>2</sup> )

## EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

## IGNITION

### DISTRIBUTOR

All 1974 models use Lucas single-point distributors. All 1975-79 models are equipped with Lucas Opus electronic ignition system.

**Other Data & Specifications** - See Lucas Distributors or Lucas Opus Ignition Systems article in DISTRIBUTOR & IGNITION SYSTEMS section.

## FUEL SYSTEMS

### CARBURETORS

#### CARBURETORS

Application	Model
1974-77 Models	Zenith-Stromberg 1-Bbl.

### FUEL INJECTION

All 1978-79 models are equipped with Lucas-Bosch fuel injection.

**Other Data & Specifications** - See appropriate Zenith-Stromberg Carburetor article or Lucas-Bosch Fuel Injection System article in FUEL SYSTEMS section.