

1974-79 TUNE-UP PROCEDURES

Jaguar V12

XJ12, XJ12L, XJS

ENGINE IDENTIFICATION

Engine identification number is stamped on rear of crankcase, between cylinder heads.

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

Vehicle Identification Number is stamped on a plate which is located on right side of firewall, next to heater.

ENGINE COMPRESSION

Check compression pressure with engine at normal operating temperature, spark plugs removed, throttle wide open and engine at cranking speed. Pressure should be 120-140 psi (8.4-9.8 kg/cm²) with a maximum variation between cylinders of 5 psi (.35 kg/cm²).

VALVE CLEARANCE

1) With intake manifolds and camshaft covers removed, check and record clearance between heel of each cam lobe and its respective tappet. If adjustment is necessary, bend locking tabs and remove 2 camshaft sprocket bolts.

2) Rotate engine until Valve Timing Gauge (C.3993) can be installed, then remove remaining bolts. Separate sprocket from camshaft and use Sprocket Retainer (JD.40) to hold sprocket in place.

NOTE: DO NOT rotate engine with camshaft sprockets disconnected.

3) Remove camshaft bearing caps and camshaft. Remove each tappet that requires adjustment and note its location for reassembly. Remove adjusting pad and measure thickness.

4) 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.

5) Insert correct adjusting pads and install tappets. Install camshafts using valve timing gauge. Torque bearing cap nut to 9 ft. lbs. (12 N.m). Connect camshaft sprockets, and install camshaft covers and manifolds.

VALVE CLEARANCE

Application	Clearance In. (mm)
All Models	.012-.014 (.30-.35)

VALVE ARRANGEMENT

E-I-E-I-E-I-E-I-E-I-E - Both banks, front-to-rear.

SPARK PLUGS

SPARK PLUGS SPECIFICATIONS

Application	Specification
Gap	.035" (.9 mm)
Torque	25 ft. lbs. (34 N.m)

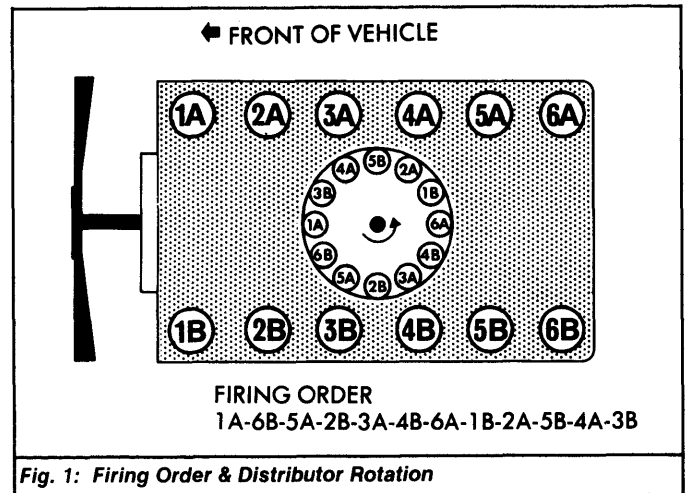
SPARK PLUG TYPE

Application	Champion No.
All Models	N10Y

HIGH TENSION WIRE RESISTANCE

HIGH TENSION WIRE RESISTANCE

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



DISTRIBUTOR

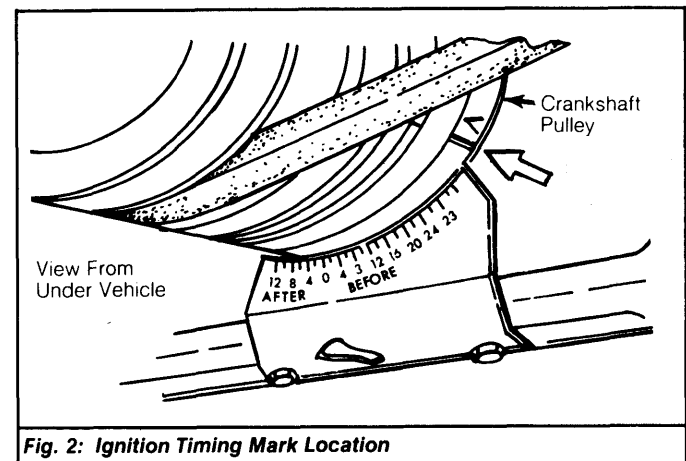
All models are equipped with Lucas Opus electronic ignition system.

DISTRIBUTOR SPECIFICATIONS

Application	Specification
Air Gap	.020-.022" (.50-.55 mm)

IGNITION TIMING

Set ignition timing with engine at specified idle RPM and distributor vacuum hose connected. If timing is incorrect, adjust distributor to achieve specified timing. See Fig. 2.



IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
1974 Models	750	4°ATDC
1975-77 Models	750	10°BTDC
1978-79 Models		
Federal	750	10°BTDC
California	750	4°ATDC

IDLE SPEED & MIXTURE

1974 Models - 1) Remove air cleaners and top-off carburetor piston dampers with oil. Warm engine to normal operating temperature. Disconnect throttle linkage and make sure that choke control is fully closed. Loosen idle speed screw on each carburetor until they no longer contact throttle levers.

2) Loosen throttle spindle bolts. With throttle valves fully closed, tighten throttle spindle bolts. Loosen throttle balancing screws until they no longer contact throttle lever.

1974-79 TUNE-UP PROCEDURES

Jaguar V12 (Cont.)

3) Start engine and adjust idle trim screw on rear right-hand and on front left-hand carburetor until 650-750 RPM is obtained. Use a carburetor synchronizer to balance carburetors.

4) Screw in idle trim screw on front right-hand and rear left-hand carburetor until contact is just made with throttle levers. Reconnect throttle linkage and install air cleaners.

IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	Idle CO%
1974 Models	650-750	4.5 Max.
1975-79 Models	750	1.0-2.0

¹ - With air injection system disconnected.

1975-79 Models - 1) Idle speed is controlled by an auxiliary air valve. Valve is located on left cylinder bank rear water pipe. Warm engine to normal operating temperature. With throttle linkage correctly set and transmission in Neutral, adjust idle screw to obtain specified idle RPM.

NOTE: Idle CO% level should be checked with air injection system inoperative. Remove plug from diverter valve diaphragm housing.

2) Use an exhaust gas analyzer to check CO% levels at sample points located in air injection distribution rails. Check both banks for correct CO% level.

3) Locate Electronic Control Unit (ECU) in trunk of vehicle. Adjust ECU control knob one "click" at a time until specified CO% level is reached. A high reading on one bank could indicate a leaking injector or cold start injector.

NOTE: If adjusting procedures take over 2 minutes, engine must be run at 2500 RPM for 30 seconds. A hot engine may operate thermostatic vacuum switch and advance ignition timing.

COLD (FAST) IDLE RPM

1974 Models - 1) Remove air cleaners. Warm engine to normal operating temperature. Operate choke control until mark on front right-hand carburetor choke cam is opposite center of dome headed screw.

2) Start engine, loosen lock nut, and adjust idle speed is 1600-1700 RPM. Tighten lock nut. Push choke control closed and measure gap between screw head and cam.

3) Make sure that gap between screw and cam on rear left-hand carburetor is the same as front right-hand carburetor. Adjust gap if necessary. Install air cleaners.

THROTTLE LINKAGE ADJUSTMENT

1974 Models - 1) Loosen bolts holding heat shields to intake manifold and lift off shields. Disconnect throttle linkage from throttle levers. Check that angle across top left-hand bellcrank equals that of right-hand bellcrank.

2) If angles are not equal, loosen rod lock nuts. While keeping platform in closed position, turn rod to increase or decrease angle. When angles are equal, tighten lock nuts.

3) Loosen lock nuts and adjust length of vertical links until they can be connected to throttle levers without being disturbed. After adjustment tighten lock nuts.

4) Loosen lock nut and unscrew throttle stop. Open throttle fully and screw throttle stop in until contact is made with platform. After adjustment, tighten lock nut.

1975-69 Models - 1) Release throttle cross-rods from throttle pulley. See Fig. 3. Loosen clamps securing levers to rear of throttle shafts.

2) With relay arm and butterfly valves against their stops, and play in coupling taken up in opening direction, tighten clamp-to-lever on rear of throttle shaft. Repeat procedure for the other side of engine.

3) Now try to fit cross-rods to ball connectors on pulley. Rods must fit without moving pulley or linkage. If rods will not fit, loosen lock nut on

cross-rods and adjust length until attachment can be made without moving any part of linkage. Tighten lock nuts and ensure ball joints remain free.

4) Loosen lock nut on throttle pulley and back out stop screw to full extent of travel. Hold throttle relay arm pulley fully open and check that butterfly stop arms are against throttle housing. Adjust stop to just touch throttle pulley and tighten lock nut.

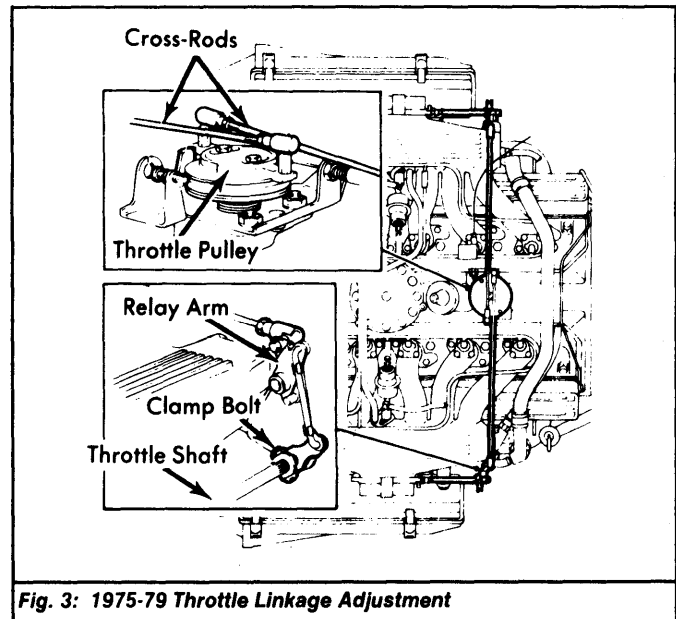


Fig. 3: 1975-79 Throttle Linkage Adjustment

FUEL PUMP

FUEL PUMP SPECIFICATIONS

Application	Specification
All Models	28.5-31.3 psi (2.0-2.2 kg/cm ²)

EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

IGNITION

DISTRIBUTOR

All models are equipped with Lucas Opus electronic ignition system. **Other Data & Specifications** - See Lucas Opus Ignition System article in DISTRIBUTORS & IGNITION SYSTEMS section.

FUEL SYSTEMS

CARBURETORS

CARBURETORS

Application	Model
1974 Models	Zenith-Stromberg 1-Bbl.

FUEL INJECTION

All 1975-79 models are equipped with Lucas-Jaguar electronic fuel injection.

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