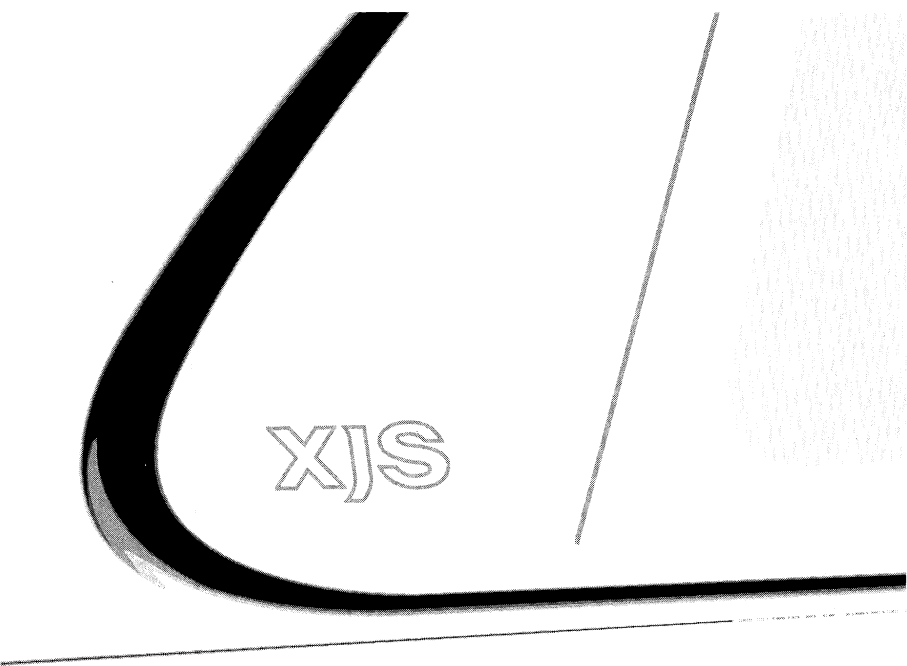


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XJS Range
1992 Model Year

Technical Introduction

XJS Range
1992 Model Year

Technical Introduction

Publication number S-71

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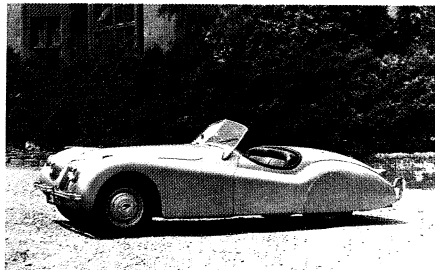
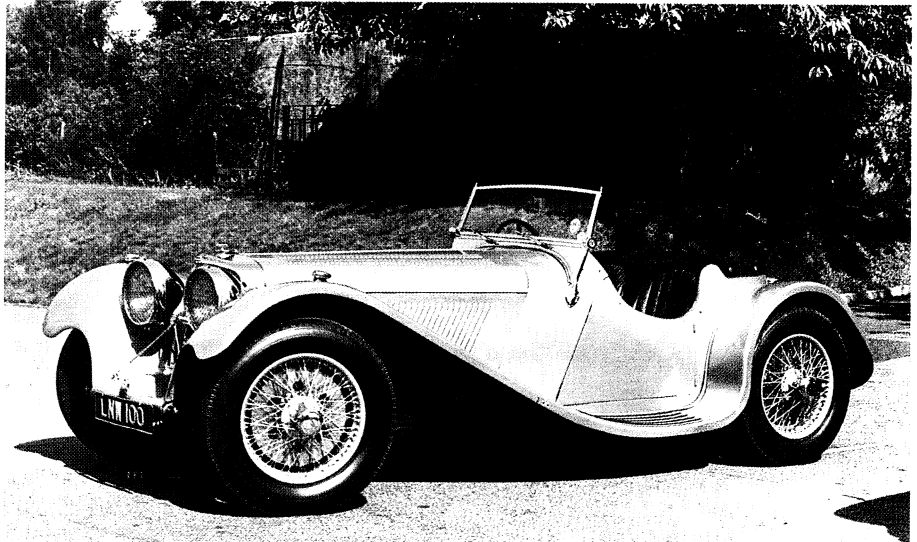
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Jaguar Heritage

The Jaguar heritage has its roots in the development of sporting and luxury automobiles in the 1930's. Every exciting new model introduced throughout Jaguar's history has had its own identity and has embodied elements that made it uniquely Jaguar. These elements combined to enhance the owner's motoring experience and include: traditional craftsmanship, the richness of natural materials — wood and leather, exceptional road holding and ride comfort, spirited performance and the tasteful integration of luxury features.

Today's Jaguars continue these traditions in a line of classic automobiles blended with a high degree of technical sophistication and advanced technology.

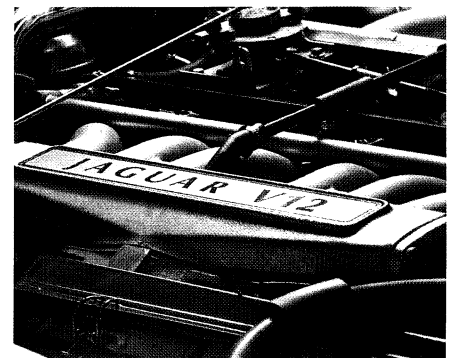
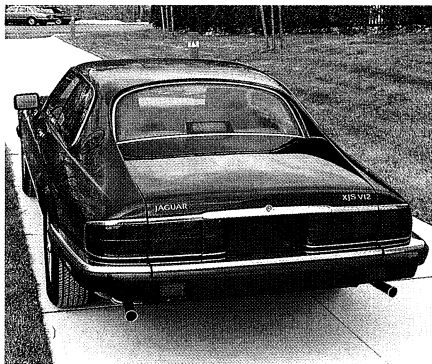
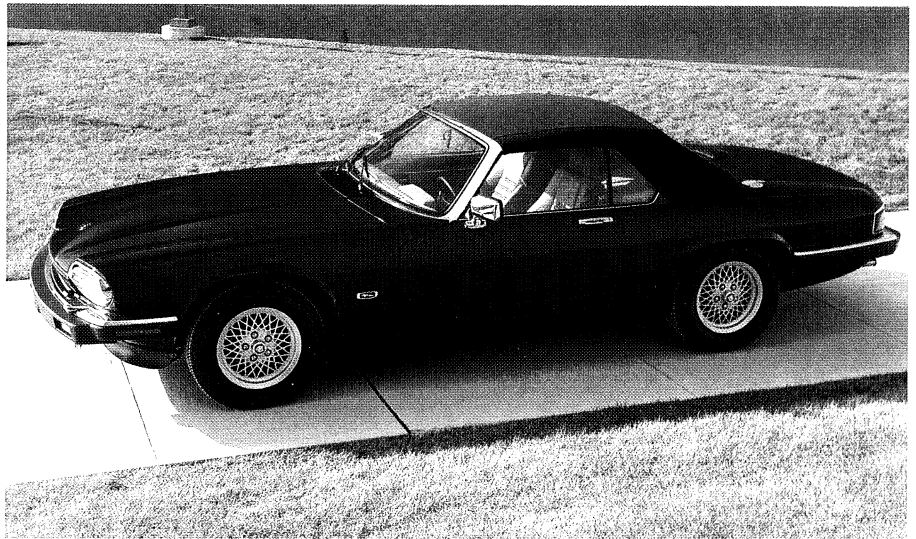


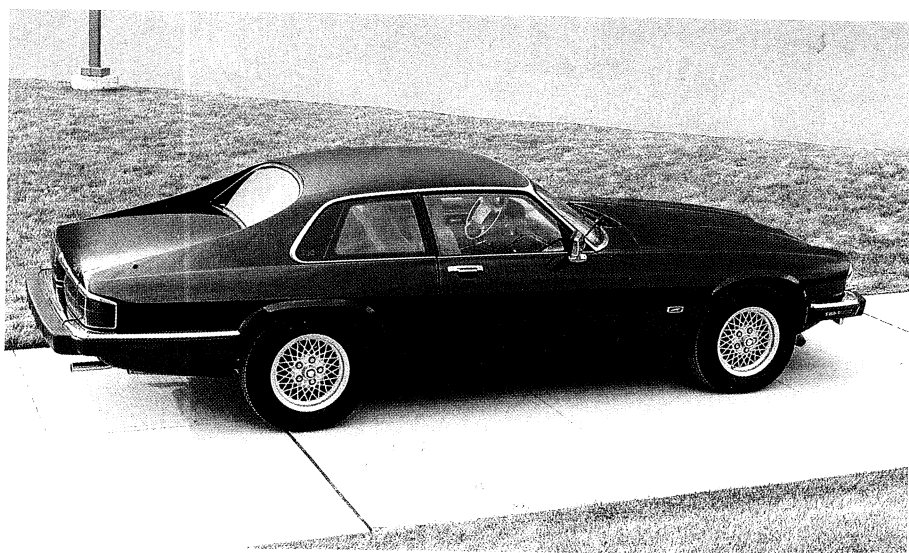
XJS Range

First introduced in 1975, the Jaguar XJS Range vehicles, with their smooth and powerful V12 engine, have earned a unique standing in the world of high performance luxury automobiles. The design of the XJS embodies the best of Jaguar's sporting and luxury heritage.

XJS Range — 1992 Model Year

Throughout its production run, the XJS has undergone steady improvement and refinement. To carry the Jaguar sporting line into the future in an increasingly competitive market, a decision was made to undertake a major facelift and quality upgrade program. The new XJS Range represents the results of the massive engineering and manufacturing effort required to fulfill the program's objectives. One main objective of the program was to retain the XJS distinctive Jaguar image. Although the end result retains much of its predecessors basic design, a detailed analysis will reveal a vastly improved automobile.



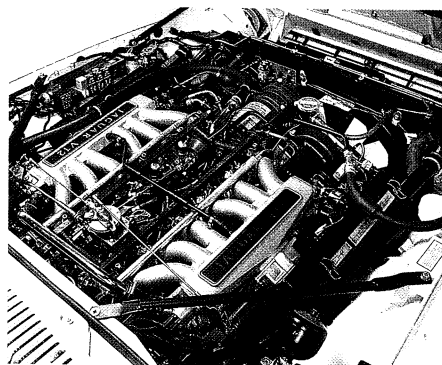


Quality upgrade

The emphasis on quality upgrade concentrated on the fuel delivery system, the body construction methods and techniques, body corrosion resistance, and the electrical system. The basic engine mechanical system, chassis and drive train systems remain unchanged.

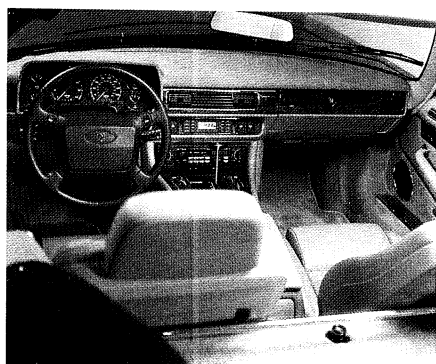
Exterior changes

The exterior styling underwent subtle but effective changes producing a fresh appearance to the classic Jaguar form. New glazing (coupe), new front and rear bumpers, and new front and rear lighting complement the styling changes.



Vehicle systems changes

A new engine management system with on-board diagnostics (OBD), a new fuel delivery system, new cruise control, air conditioning revisions, and new electrical system construction methods and componentry upgrade the existing Jaguar systems.



Interior changes

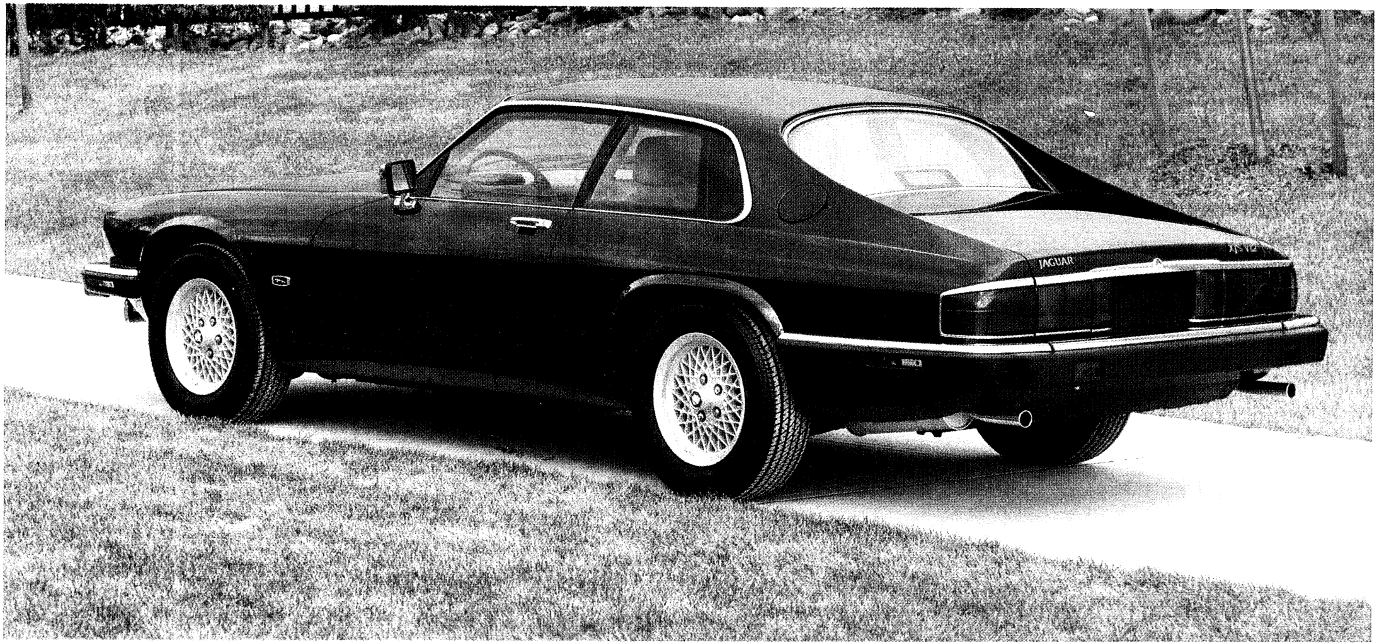
New restyled powered seats with memory (driver's side), color keyed dash panel, new door casings, new instrument pack, new trip computer, new clock and message display, door mirror memory, new switch gear, climate control revisions, and a new in-car entertainment system with optional CD autochanger enhance the XJS driving experience.

Body Styling

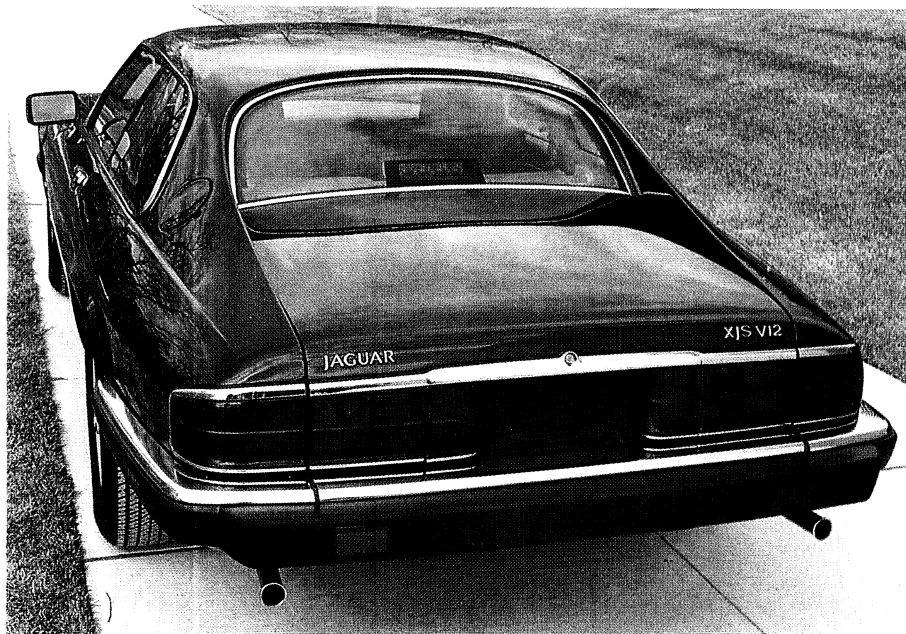
The major objective in the design of the new XJS Range vehicles was to produce a sports / luxury automobile with style, performance, and elegance that would appeal to the sporting minded driver while retaining the Jaguar uniqueness.

Most of the styling changes are subtle in nature but combine to provide a distinctively fresh appearance to the classic XJS Range:

- New sills with a slight flare at the front and rear add a sportier appearance.
- New front and rear bumpers with modified shapes employ new construction techniques and materials.
- All new lighting at the front and rear is the most obvious external change from previous models.
- All new glazing on Coupe models.
- Expanded convertible top color availability.
- Additional new body colors are offered.



Exterior



The numerous subtle changes to the front of the vehicle have the combined effect of making the hood appear longer and the overall vehicle appear more sleek and longer:

- The hood is styled with a raised center section.
- The flat black grille with its chrome front edge finisher produces a clean appearance.

Styling and design changes to the rear of the car combine to allow more accurate and reliable construction and assembly, in addition to providing the desired updating of the XJS image:

- Redesigned Coupe rear quarter panels and trunk opening ensure a consistent trunk lid fit.
- Redesigned buttress area and new rear window allow a more reliable and simplified construction technique with fewer seams and the resulting fill operations.

Body Construction

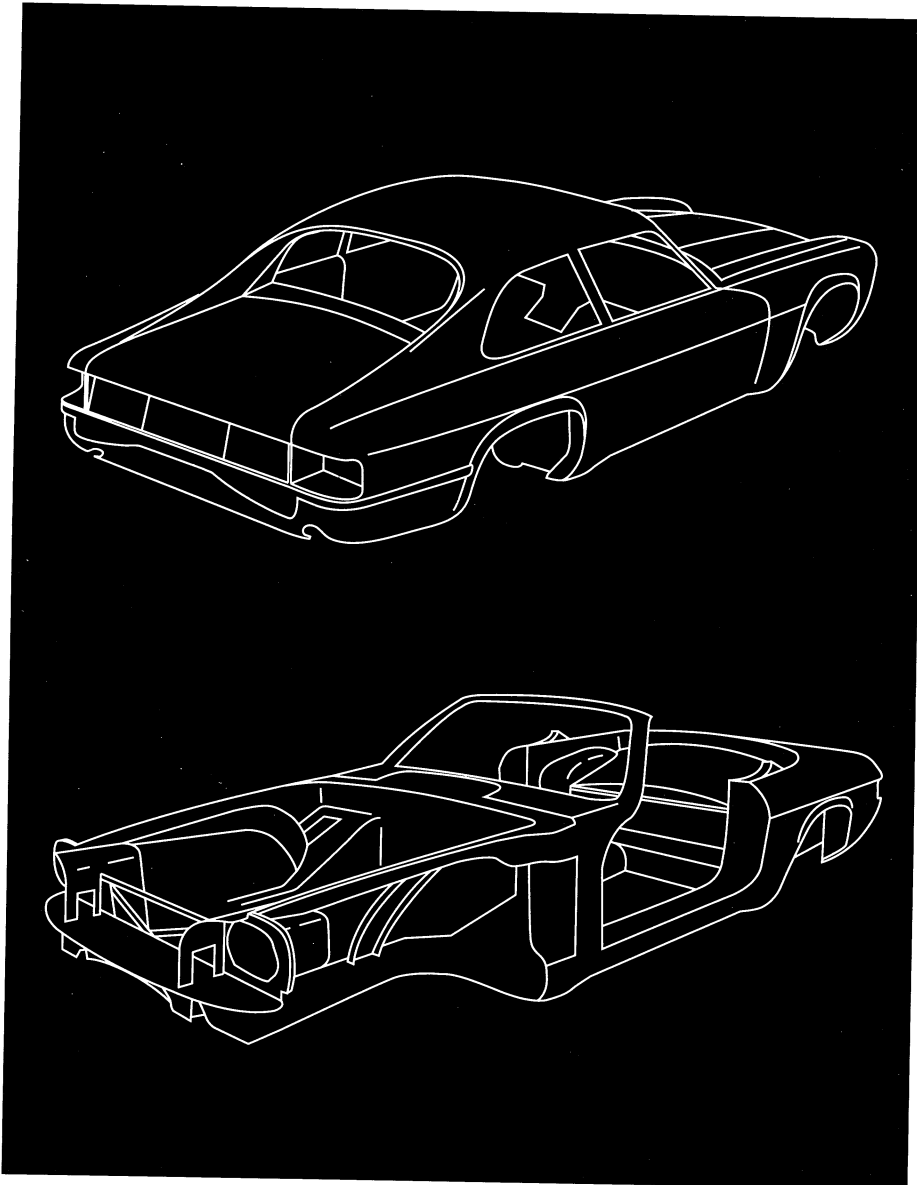
Body Shell

Panels and seams

In the redesigned XJS, there is substantial reduction in the number of panels in the body shell. All leaded seams have been eliminated and the number of metal finishing operations has been reduced.

Automated assembly

The body shell is produced in an automated assembly facility. The new construction techniques, with a minimum number of openings in the vehicle's underbody, reduce the possibility of moisture entering the vehicle structure.



Corrosion Protection

Improved materials

Exterior components such as bumpers and mouldings are revised in material or finish to reduce the possibility of corrosion.

Zinc-coated steel

The extensive use of zinc-coated steel in areas where the risk of moisture accumulation can occur (approximately 40% of the panels) provides substantially increased protection. Some panels in high risk areas are zinc coated on both sides.

Cathodic primer application

A cathodic process, in which the body is charged negatively and the primer paint bath is charged positively results in even and complete primer coverage.

Finish

Clear Over Base process

The XJS Range is finished using the state-of-the-art Clear Over Base process. The color coats are electrostatically applied and then covered with two clear coats, resulting in a very smooth, durable finish.

Glazing

The 1992 Coupe glazing system is completely new, both in design and construction. The convertible retains the previously upgraded glazing system.

Windshield

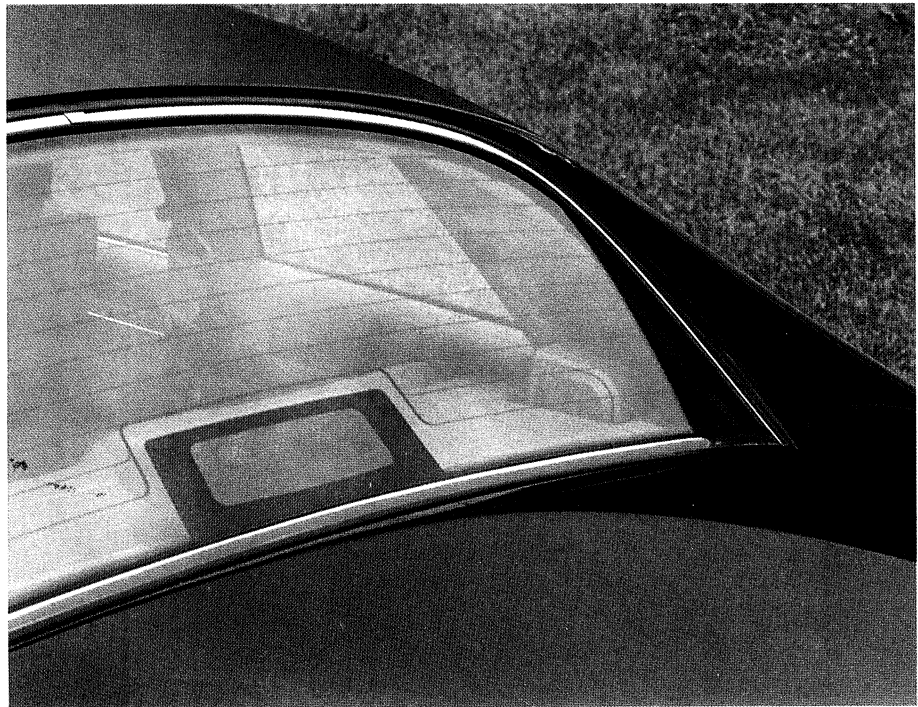
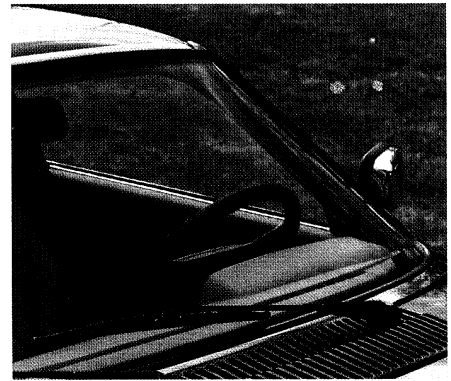
The windshield employs the direct glazing technique to enhance aerodynamics, reduce wind noise, and improve sealing.

Rear window

The new direct glazed rear window has an increased angle of rake and finishes at the leading edge of the trunk opening eliminating the previous body panel in this area.

Door and rear quarter windows

The door windows have frameless construction and close against a new-style seal. An improved window lift mechanism and redesigned guide channels are used to provide smooth and reliable window operation. Redesigned rear quarter windows replace the previous extractor panel and trim. Interior air extraction is incorporated into the "B" post as on the convertible.



Lighting

Front Lighting

Headlights

The styled headlights increase headlight performance and provide a balanced light spread. They are easy to adjust with remote adjustment screws located on the inner fenders.

Auxiliary lighting

The auxiliary lighting compliments the new front end treatment and restyled bumpers.

Fog lights

Standard equipment fog lights provide an additional level of lighting safety.



Rear Lighting

Wraparound lighting

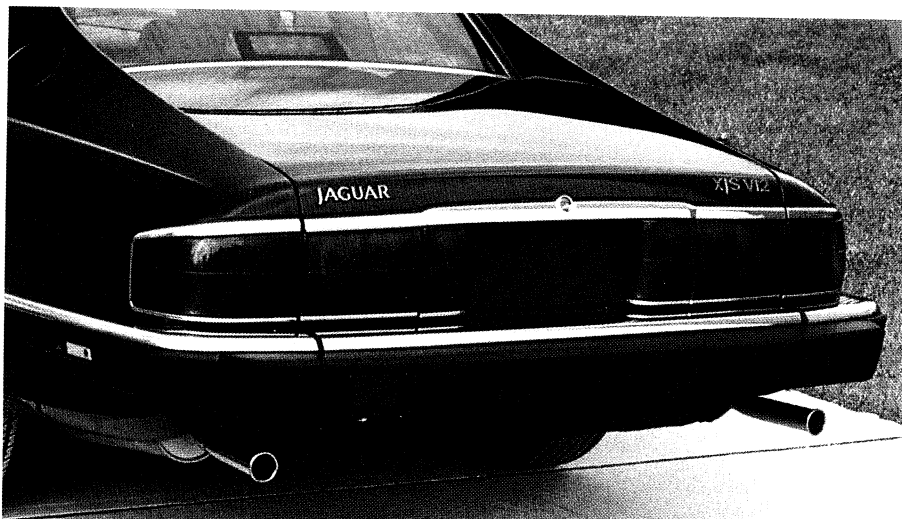
A new wraparound neutral density lighting system for the rear of the car gives a distinctive new appearance and improves the reliability and accessibility of the components. The entire unit is trimmed in chrome.

Auxiliary lighting

The auxiliary lighting is incorporated into the new wraparound lighting system.

Fog lights

New rear fog lights allow for increased recognition in poor visibility conditions.



Doors; Mirrors

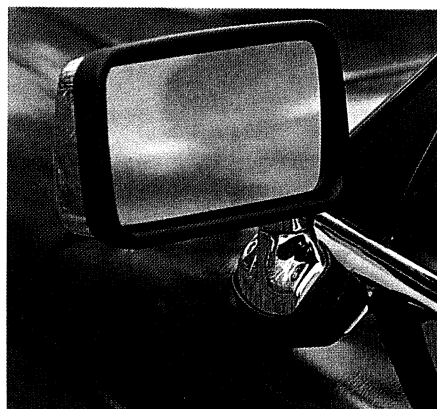
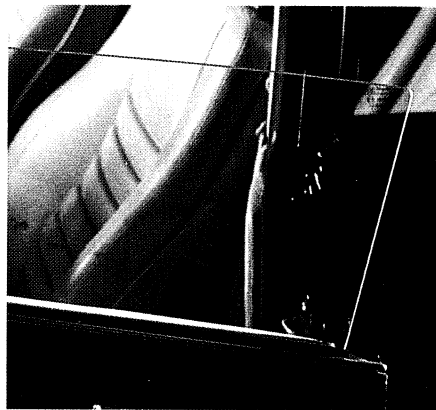


Doors

The new door assembly is designed to achieve reliable, consistent assembly and fit. A one-piece inner panel simplifies assembly and improves quality.

The frameless door window is operated by a simplified window regulator. A new door and glass seal system minimizes wind noise.

The door lock actuators are mounted directly to the latch assemblies eliminating link rods and adjustment requirements.



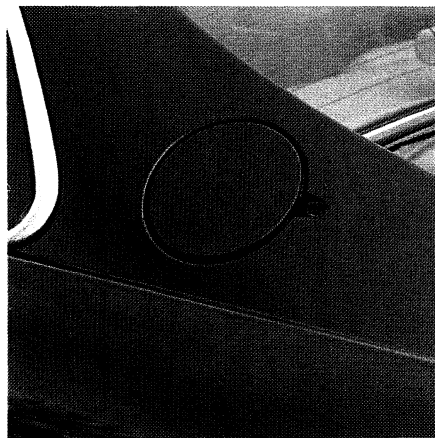
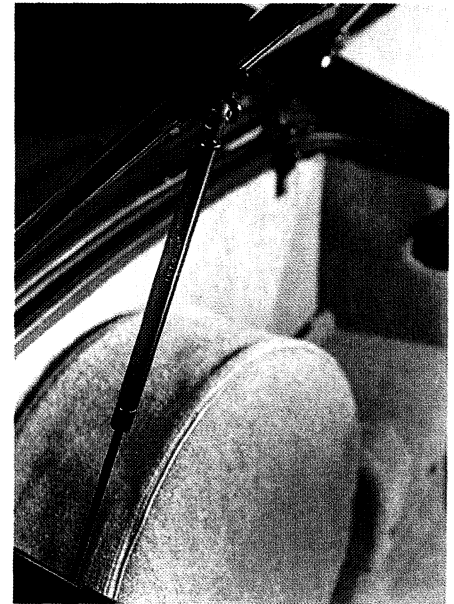
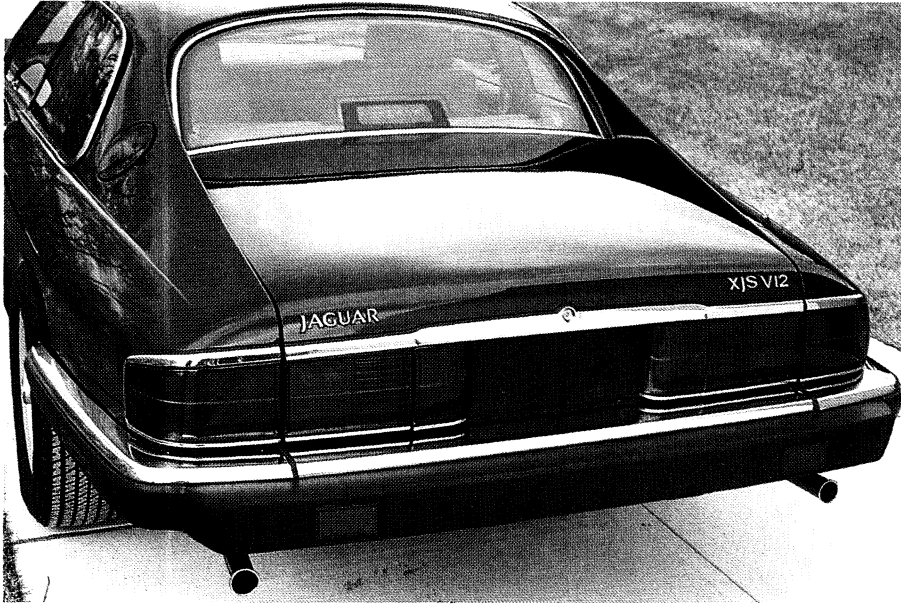
Mirrors

The mirrors incorporate revised viewing angles, larger glass area, new frames and motor assemblies. Two memory positions are available in conjunction with the driver's seat memory. The passenger's side mirror can be dipped when REVERSE is selected.

Trunk; Fuel Flap

Trunk lid

A new construction design and technique have produced a trunk lid that is 30% stiffer than its predecessor. Gas struts are used to hold the lid open. The trunk body opening panels are made using a new one-piece construction method providing improved and consistent fit of the trunk lid. New drain channels minimize the chance for water entry into the trunk.



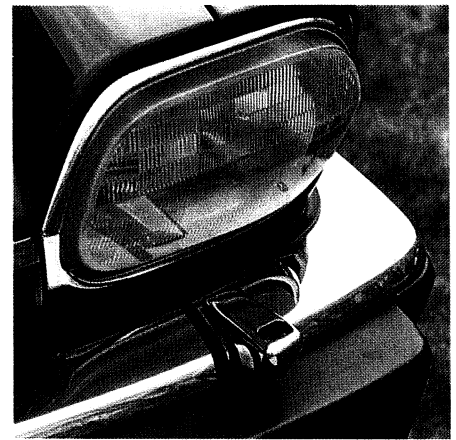
Fuel filler flap

On coupe models, the new fuel filler flap is round in shape and employs a revised locking arrangement. The flap is incorporated into the central locking system. Emergency release is obtained by a manual release lever located in the trunk.

Wash; Wipe

Windshield wipers and washers

The windshield wipers and washers have programmed operation that includes adjustable intermittent wipe delay. The motor unit is housed under a grille which is color keyed to the body color. The washer jets are heated to prevent freezing.



Headlight power wash

The power wash function is timed through the wiper logic unit. Power wash jets are heated to prevent freezing.

Interior Design

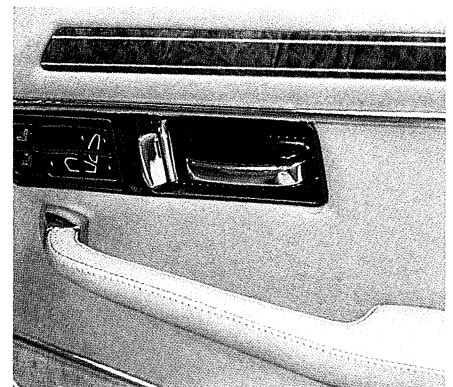
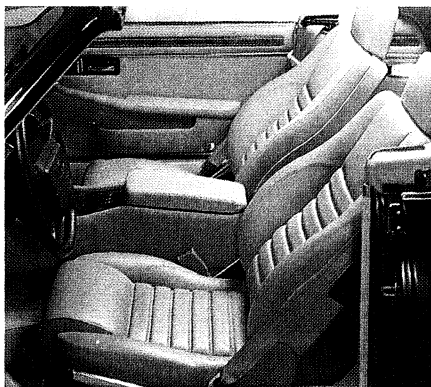
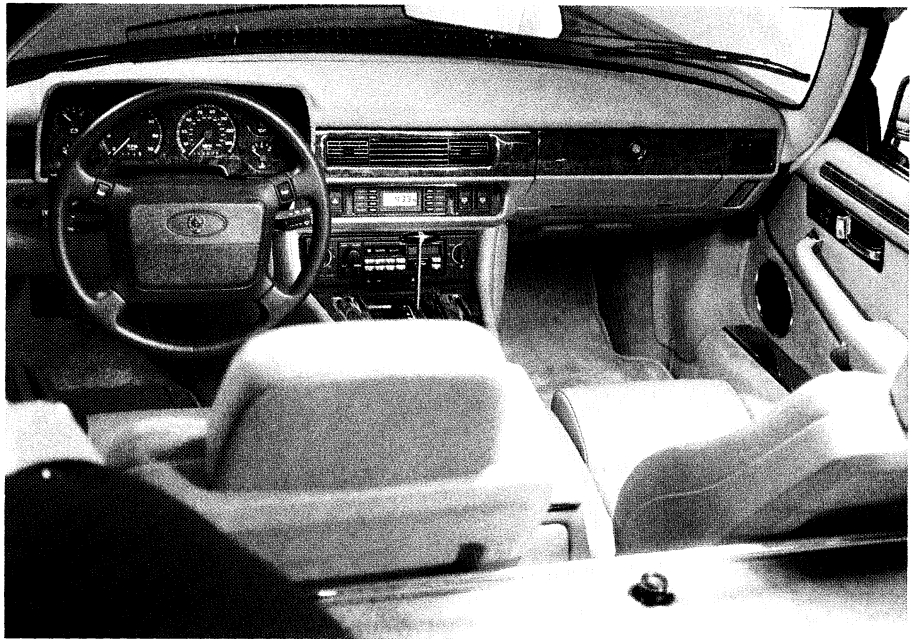
Interior Design and Finish

The interior of the XJS Range underwent subtle but effective changes, as did the exterior, resulting in an integrated and luxurious passenger environment:

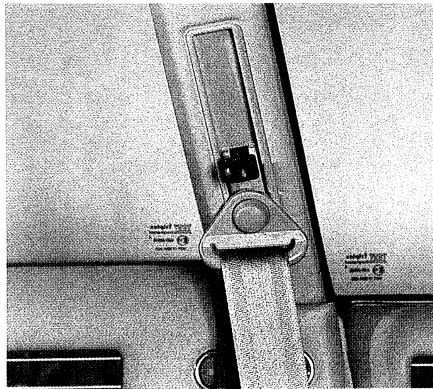
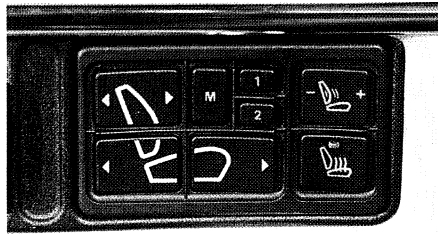
- All new dash and instrument panel.
- New center console.
- Color keyed interior trim and dash panel.
- Door casings with wood insets.
- New restyled front sports seats combining traditional and modern design.

Coupe models

- Redesigned and enhanced rear compartment is color keyed and integrated evenly into an attractive and comfortable seating area.
- New rear seats are complimented by color keyed seat belts.
- Rear quarter panels incorporate wood insets to match the door insets.



Seats



Powered sports seats

The new sports seats feature full power adjustment. Tastefully styled with box pleats and double stitching, these seats provide both comfort and support. The moulded seat back has an integral release lever for tilting the seat forward. An integrated seat switch pack is located just forward of each interior door handle.

Seat heaters

The new seat heaters are high efficiency units that provide rapid seat heating.

Lumbar supports

The new power lumbar support mechanisms operate quietly.

Driver's seat memory

Memory controls are incorporated into the driver's seat switch pack. An Electronic Control Unit is used to manage the system. This circuit also controls the door mirror memory functions.

Rear seats — Coupe

The rear seats match the styling of the front seats and have a center section for storing the seat belt latches.

Adjustable seat belt anchors — Coupe

The anchor points for the shoulder belt are adjustable through five positions.

Instrumentation

Instrument pack

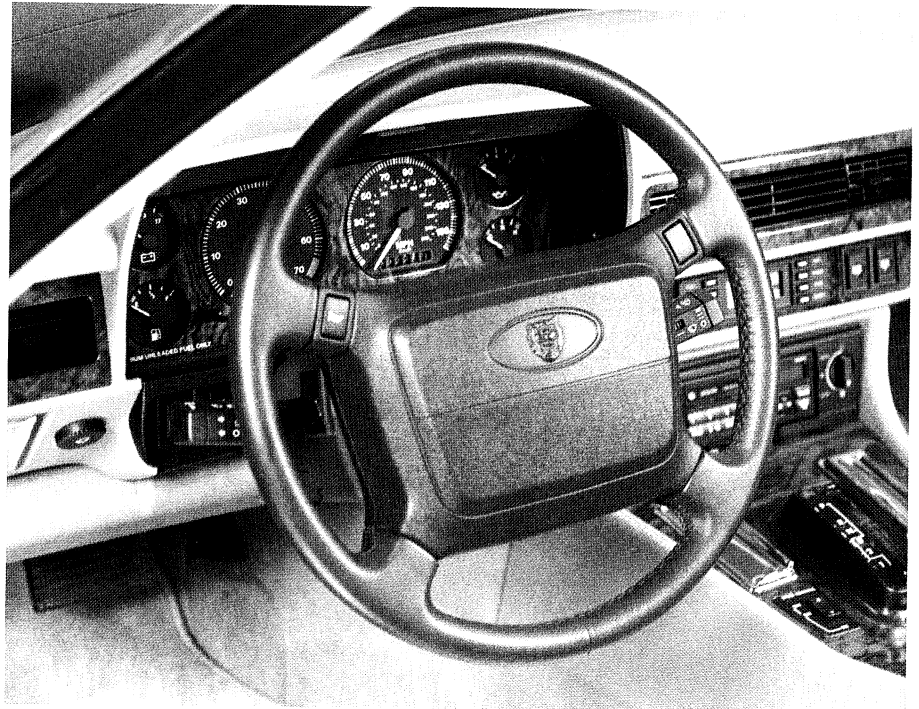
The new instrument pack follows the classic Jaguar design featuring analog instruments and wood overlay. The speedometer and tachometer are supported by four small instruments. An indicator and warning light system is arranged across the top.

Trip computer

The revised trip computer retains its straight forward operation.

Clock and message display

An easy-to-read LCD display is shared by the clock, the trip computer, and the OBD (On Board Diagnostics) CHECK ENGINE function.



Controls

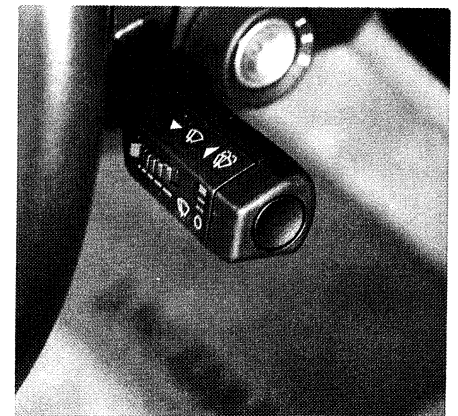
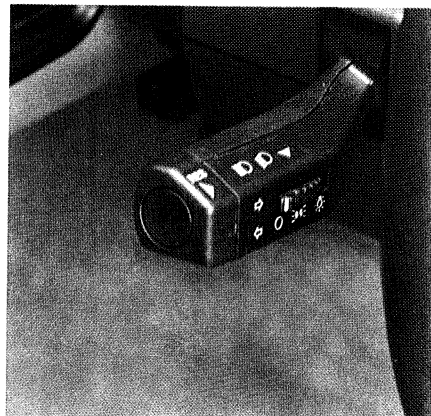
Steering column stalk switches operate most of the circuits frequently used by the driver. The stalk switches are lighted for easy identification.

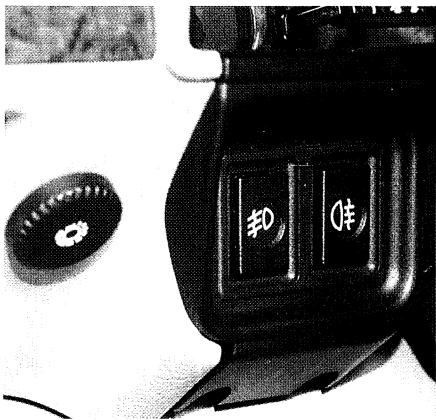
Left switch

The left stalk switch incorporates the main lighting switch, cruise control resume, and turn signals.

Right switch

The right stalk switch incorporates all the controls for the programmed wiper system, and the power wash and windshield wash systems.





Dimmer

All locate lighting is controlled through the dimmer system.

Fog lights

The fog lights are switched by new-style switches similar to the center console switches.

Mirrors

The mirrors have a single joy stick control and have a REVERSE gear dip function.

Cruise control

The new cruise control system, with its independent vacuum pump, provides accurate speed control. This is the same system as used in the Sedan Range.

Center console switches

Redesigned switches flank the center console.

Climate control panel

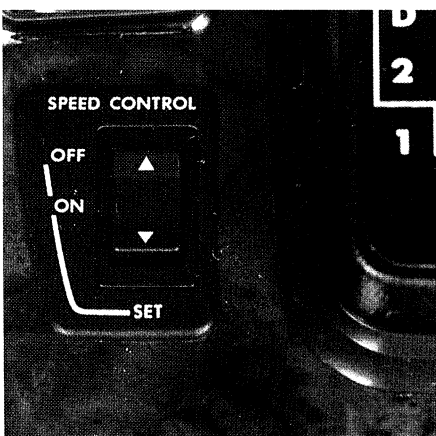
The revised control panel incorporates locate lighting.

In-car entertainment

A new Alpine unit, similar to that in the Sedan Range, with an optional CD autochanger coupled to an improved larger speaker system delivers outstanding audio performance.

Keys and locks

Three keys are provided. The ignition key operates the ignition, trunk, and the glove box. The valet key operates the ignition only. The doors use a conventional key.



IGNITION



VALET

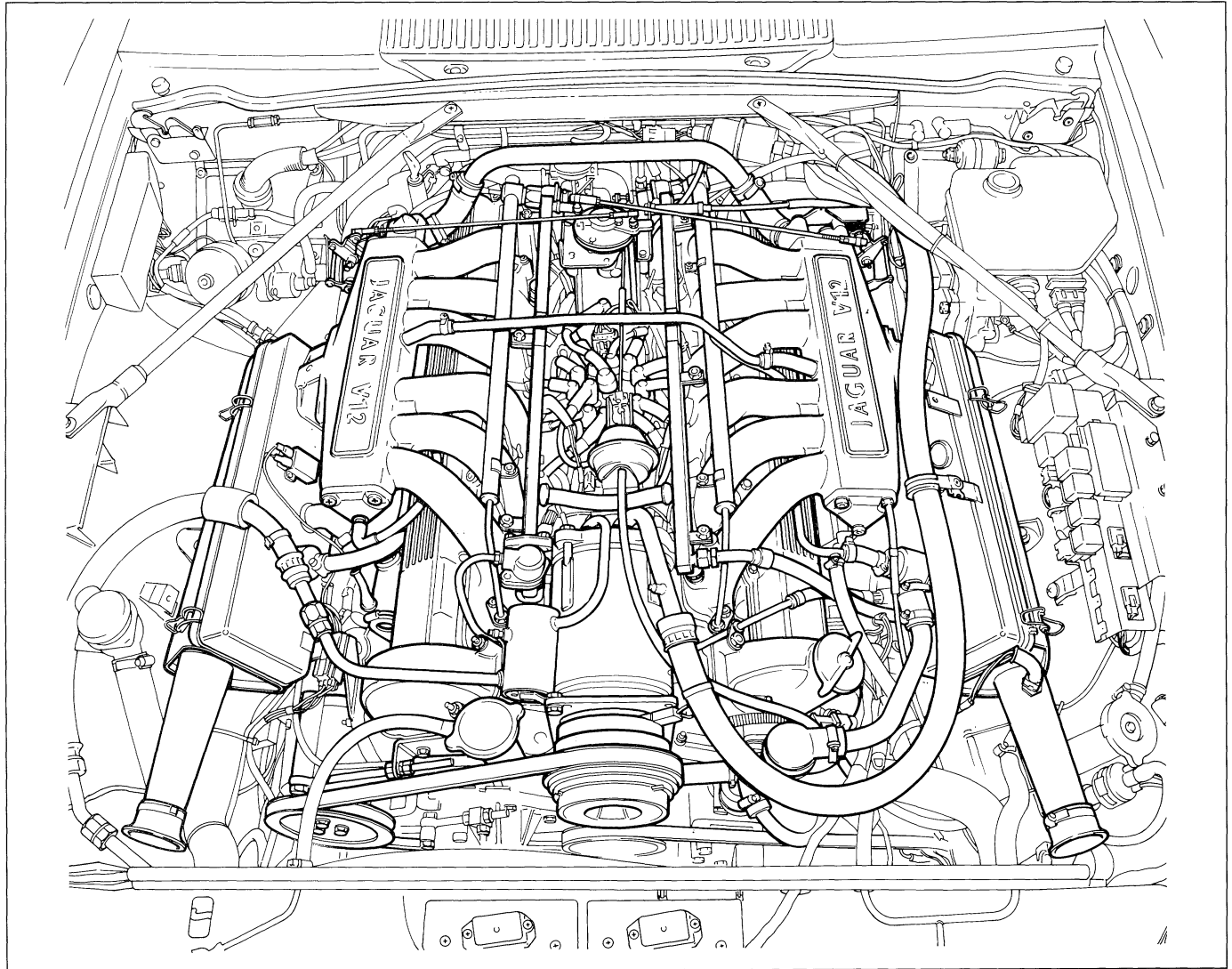


DOOR

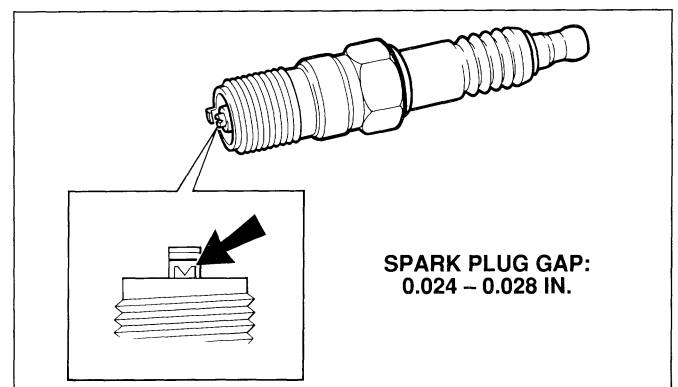
Engine Mechanical

The smooth and powerful Jaguar 5.3 litre V12 engine powers the XJS Range. The basic mechanical system remains unchanged. Minor changes have been incorporated to enhance the underhood appearance and allow easier servicing:

- Redesigned intake manifolds feature etched stainless steel identification plates.
- The ignition coils are relocated to allow better accessibility.
- A shorter oil filter enables easy removal at service intervals.



V-groove electrode spark plugs (BR7EF) improve engine efficiency and deliver improved firing consistency.



Engine Management System

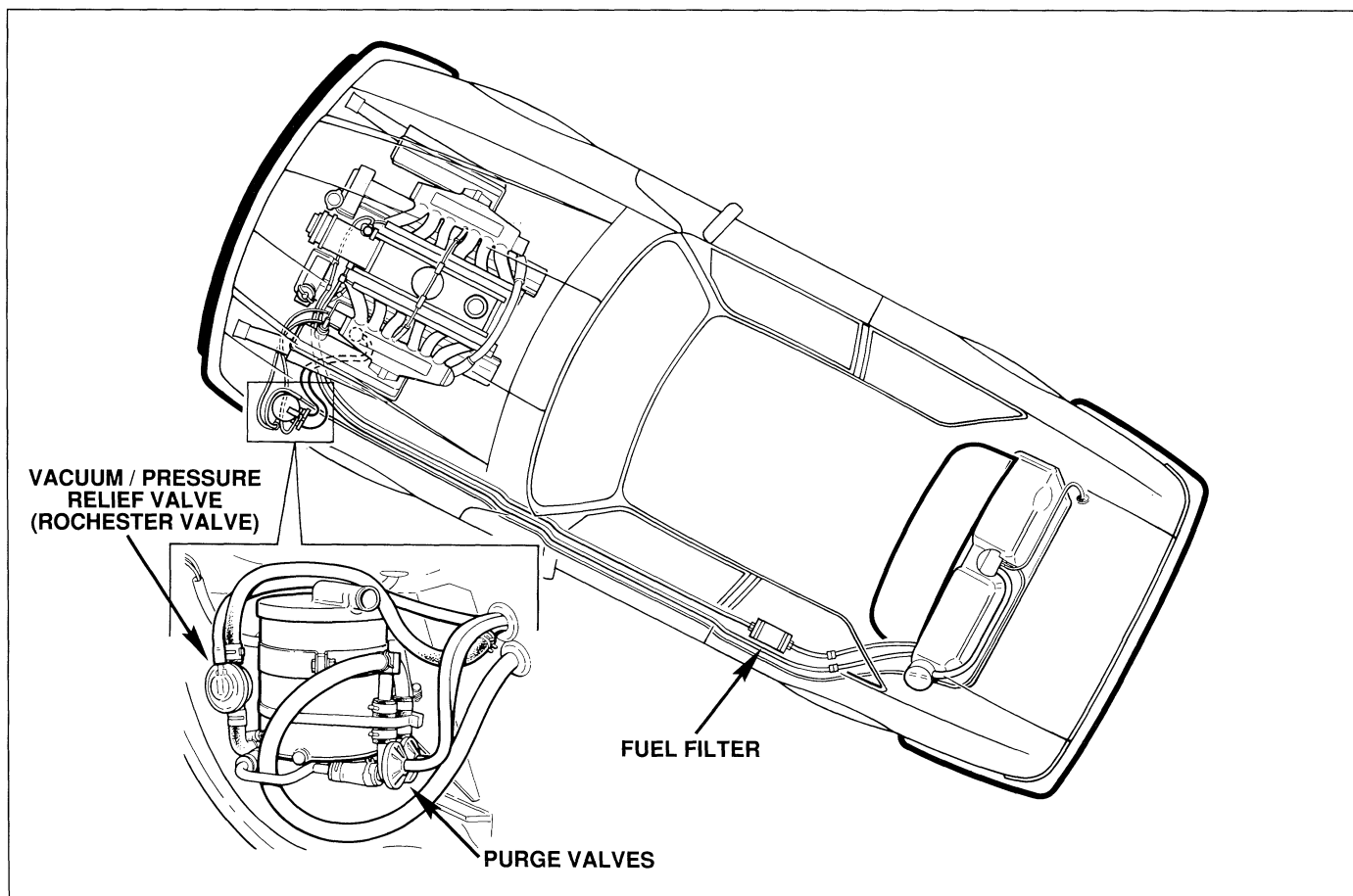
The XJS Range vehicles use electronic systems, vacuum systems, and air injection to govern engine and engine-related functions. These are independent systems; however, they are dependent on each other to achieve an overall efficiency of operation, while providing precise control over each individual function. The independent systems should be thought of as one engine management system when considering engine performance.

1992 Model Year

Although the Engine Management systems remain fundamentally similar to previous XJS systems, many of the components are new and operation is revised. In the interest of clarity, a complete system description, except for ignition, is included in this section.

Fuel Delivery and Evaporative Emission Control

The fuel delivery system in the new XJS Range is completely redesigned and follows the same principals and layout as the current Sedan Range system. The fuel pump is part of an in-tank fuel pump module that gives superior fuel handling qualities under varying conditions and reduces operating noise. A new external filter is located under the vehicle. The previous sump tank has been eliminated. Approximate fuel tank capacity – 23.5 gallons (Coupe), 21.6 gallons (Convertible).

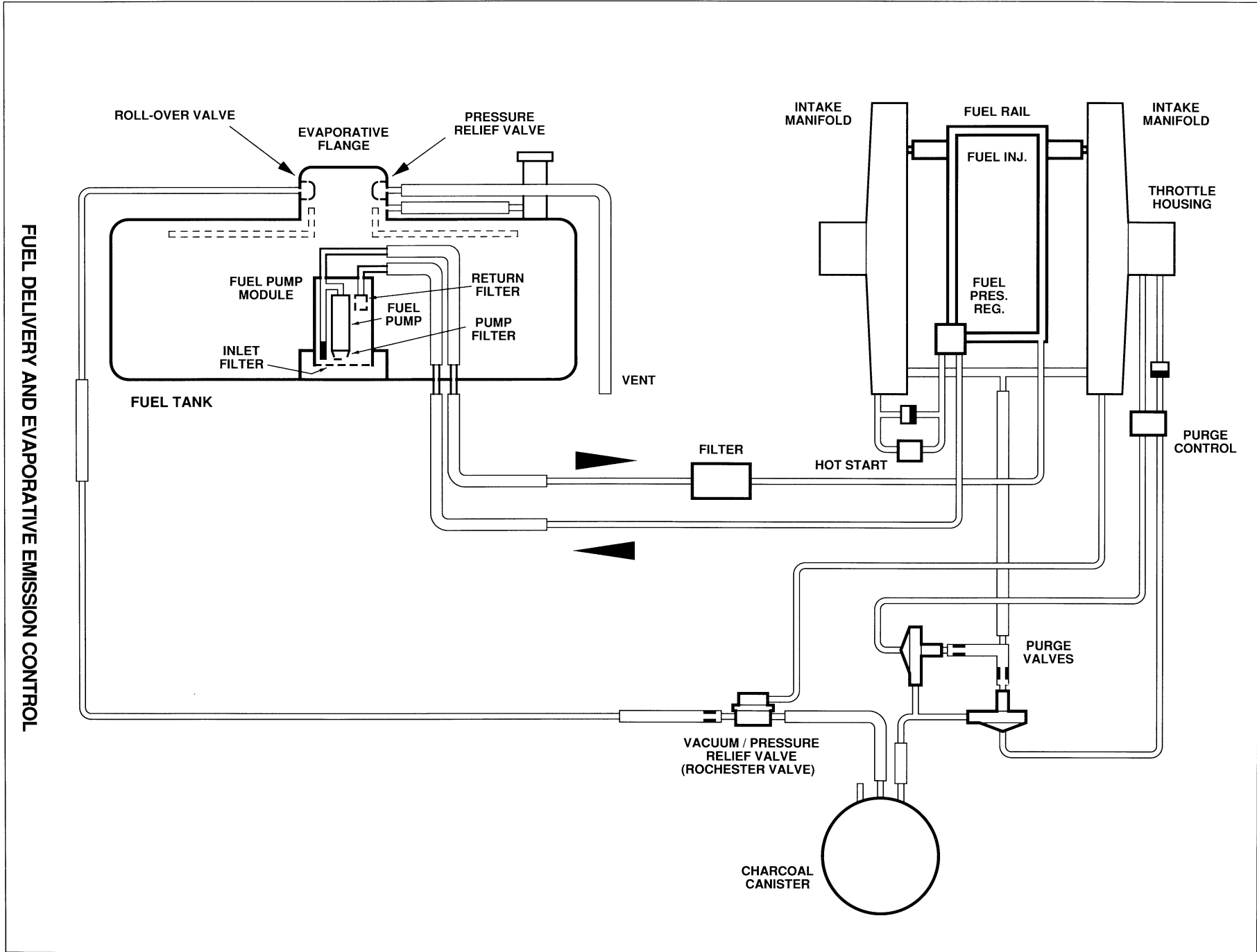


Fuel lines and connectors

The routing, materials, and connectors of the fuel lines are all new. Steel braided PTFE hoses run between the fuel tank flange and the steel underbody lines. Flexible plastic hoses that can be clamped during service operations are used in the engine compartment. Quick fit connectors are used throughout the system (except for internal fuel tank, fuel filter, and fuel rail connections). Feed lines have 3/8 in. connectors; return lines have 8 mm connectors.

Engine Management System

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Fuel Delivery and Evaporative Emission Control

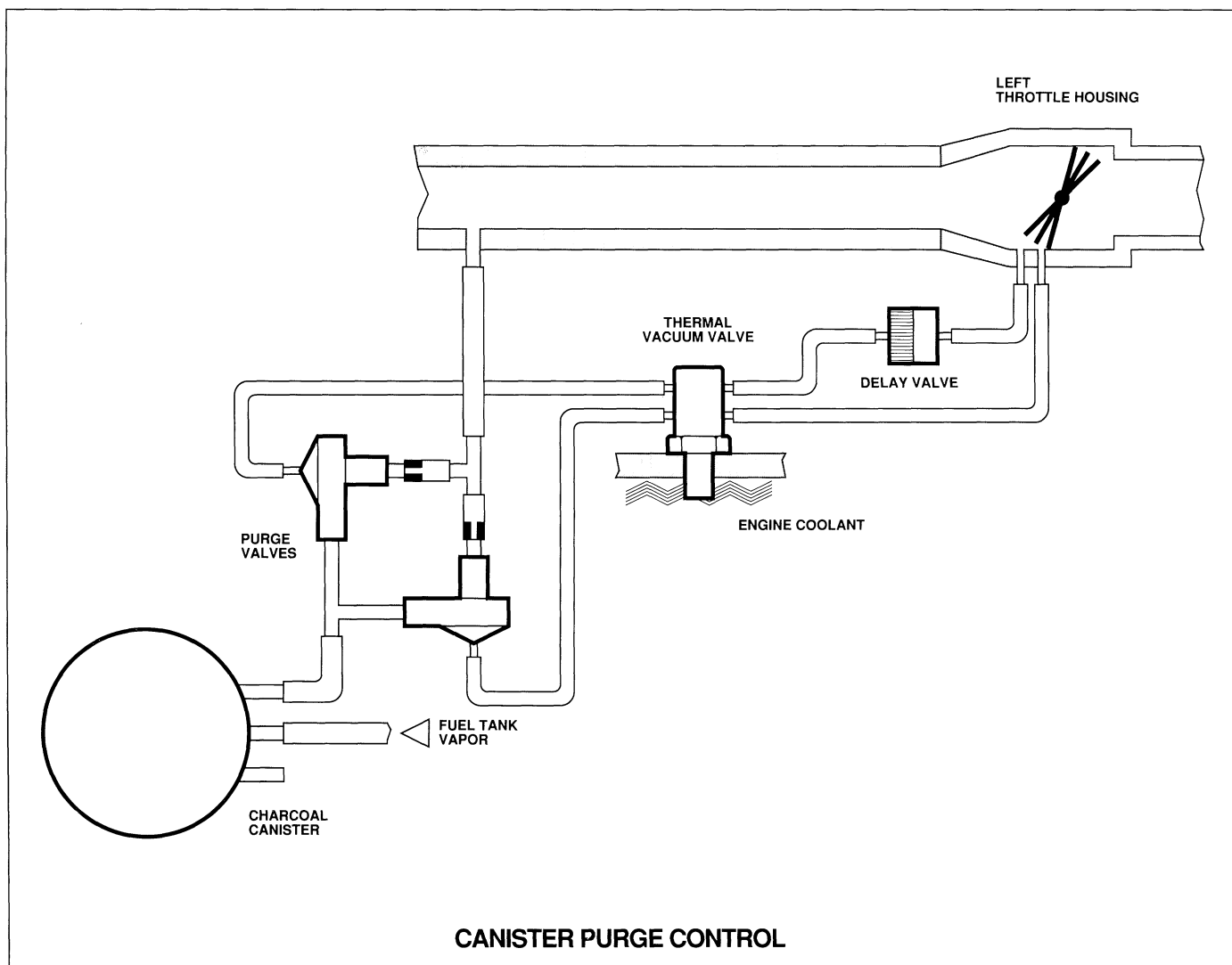
Evaporative emission control

The fuel tank design includes a lengthened fill tube that limits the fill level and allows for 10% fuel expansion. Tank venting is via the fuel tank evaporative flange. From there, a tube leads to the charcoal canister located in the left front wheel well. Vapor flow to the canister is controlled by a pressure / vacuum relief (Rochester) valve that holds 1–1.25 psi when the engine is not running. Fuel tank pressure is released to the canister upon engine start-up.

The system incorporates two safety pressure relief valves that vent to the atmosphere: a 2 psi relief valve in the evaporative flange and a 4 psi relief valve in the fill cap.

Canister purging is accomplished by a two stage system. Two purge control valves are vacuum controlled from two left throttle body ports via a thermal vacuum valve. The vacuum ports are situated so that there is no purge when the throttle plate is in the idle position. Progressive purge is obtained as the throttle is opened. The thermal vacuum valve controls both vacuum circuits. The vapor flows to the intake manifolds via the crankcase breather pipe.

At engine coolant temperature of 95° F and above, the thermal vacuum valve opens allowing canister purge. As the throttle plate moves off idle, the first vacuum port is exposed applying vacuum to the first stage purge valve. Further throttle plate movement exposes the second vacuum port and vacuum is applied to the second stage purge valve. A delay valve in the second stage further delays full canister purge as the engine speed increases preventing an over-rich fuel mixture.



Fuel Delivery and Evaporative Emission Control

Fuel tank

The fuel tank assemblies are similar for Coupe and Convertible models with the exception of the filler necks. The previous sump tank has been eliminated.

Fuel pump module

The fuel pump is contained in a module that mounts in a rubber holder attached to the bottom of the fuel tank on brackets. The fuel pump module and the rubber holder are indexed to ensure correct alignment in the tank. The design diverts some of the fuel flow from the pump through a venturi to maintain full fuel in the module at all times. Fuel enters the module through a 70 micron filter then into the pump inlet through a 400 micron filter. Returning fuel from the engine fuel rail enters the module through a 70 micron filter. Both the outlet and return feed ports into the pump module have check valves. The outlet check valve reduces backflow from the fuel rail when the pump is off. The return check valve prevents siphoning of the fuel tank when the fuel line is disconnected. Two rubber hoses connect the assembly to the tank inlet and outlet bosses. The hoses are retained by clamps that are installed and removed with special tool JD 175. Electrical connection to the pump is made through the evaporative loss flange.

Fuel pump specifications:

Speed	7000 rpm
Flow rate	170 litres per hour
Current	8–9 amps @ 13.2 volts

Note: Tool JD 175 is a non-ferrous wrench for use when loosening / tightening in-tank fuel hose clamps. Using JD 175 will eliminate the possibility of a spark being created.

Evaporative loss flange

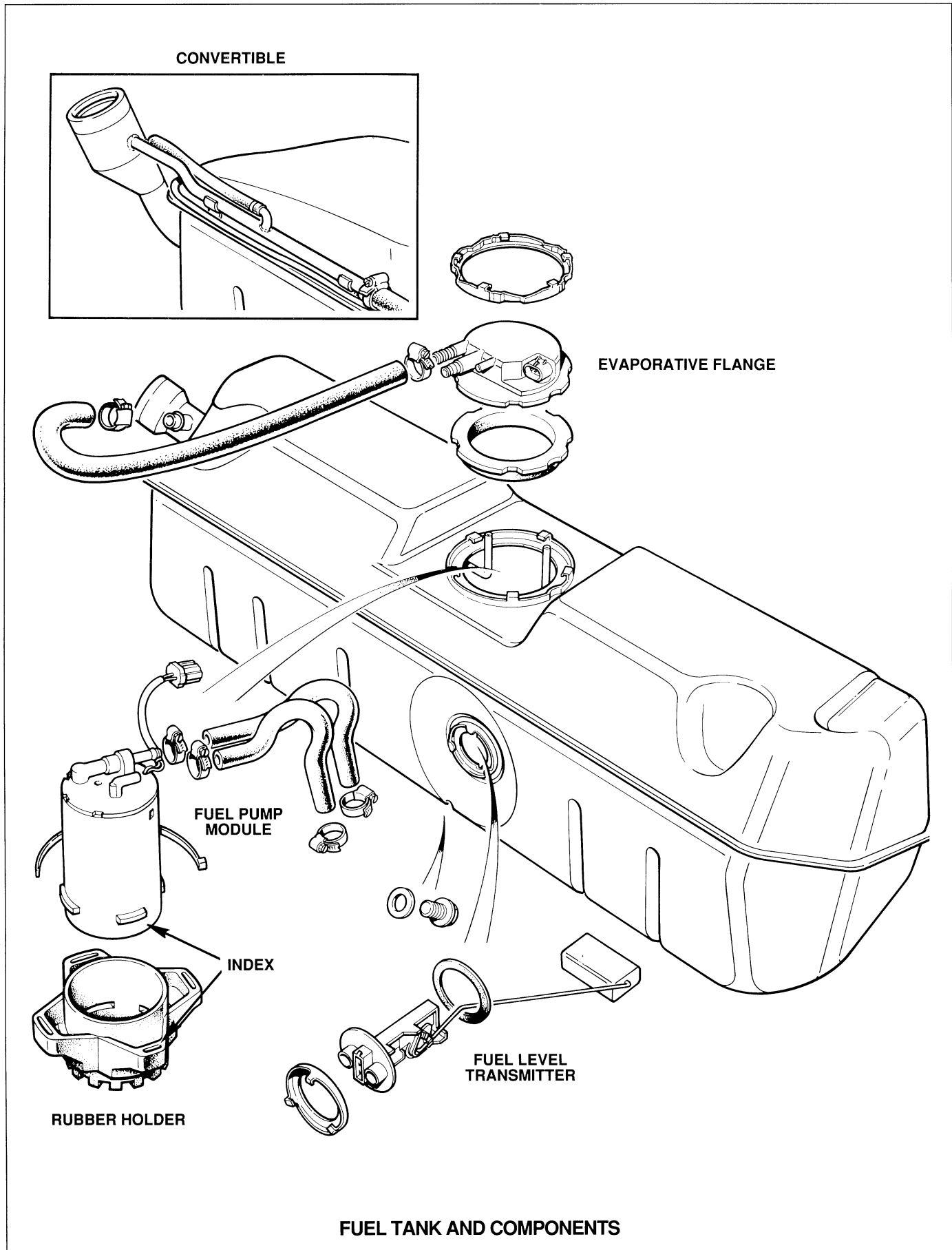
The removable evaporative loss flange allows installation and removal of the fuel pump assembly, provides two outlet ports for evaporative loss and provides electrical connection to the fuel pump. Additionally, the flange incorporates a pressure relief valve in the vent port and a roll-over valve in the evaporative emissions port. The flange is retained by a locking ring that requires special tool JD 174 for installation and removal.

Fuel level sensing

The instrument pack low fuel warning illuminates with approximately 3.2 gallons of fuel remaining in the tank. An anti-slosh module in the circuit dampens the low level warning by delaying the signal 20 seconds.

Engine Management System

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Electronic Fuel Injection and Emission Control

The XJS "P" electronic fuel injection (EFI) system has a new electronic control unit (ECU) and revised components and subsystems.

The EFI system maintains optimum fuel flow control over the entire engine operating range by precisely metering the fuel into each cylinder. The main parameters for determining fuel flow requirement are engine load and speed. The ECU senses engine load from intake manifold absolute pressure and engine speed from the ignition pulses.

The ECU incorporates a manifold pressure sensor (transducer) and has a memory with stored fuel-flow strategy for various combinations of engine load and speed. The ECU receives inputs from sensors, switches and the ignition system that are applied to its memory to determine the required fuel flow.

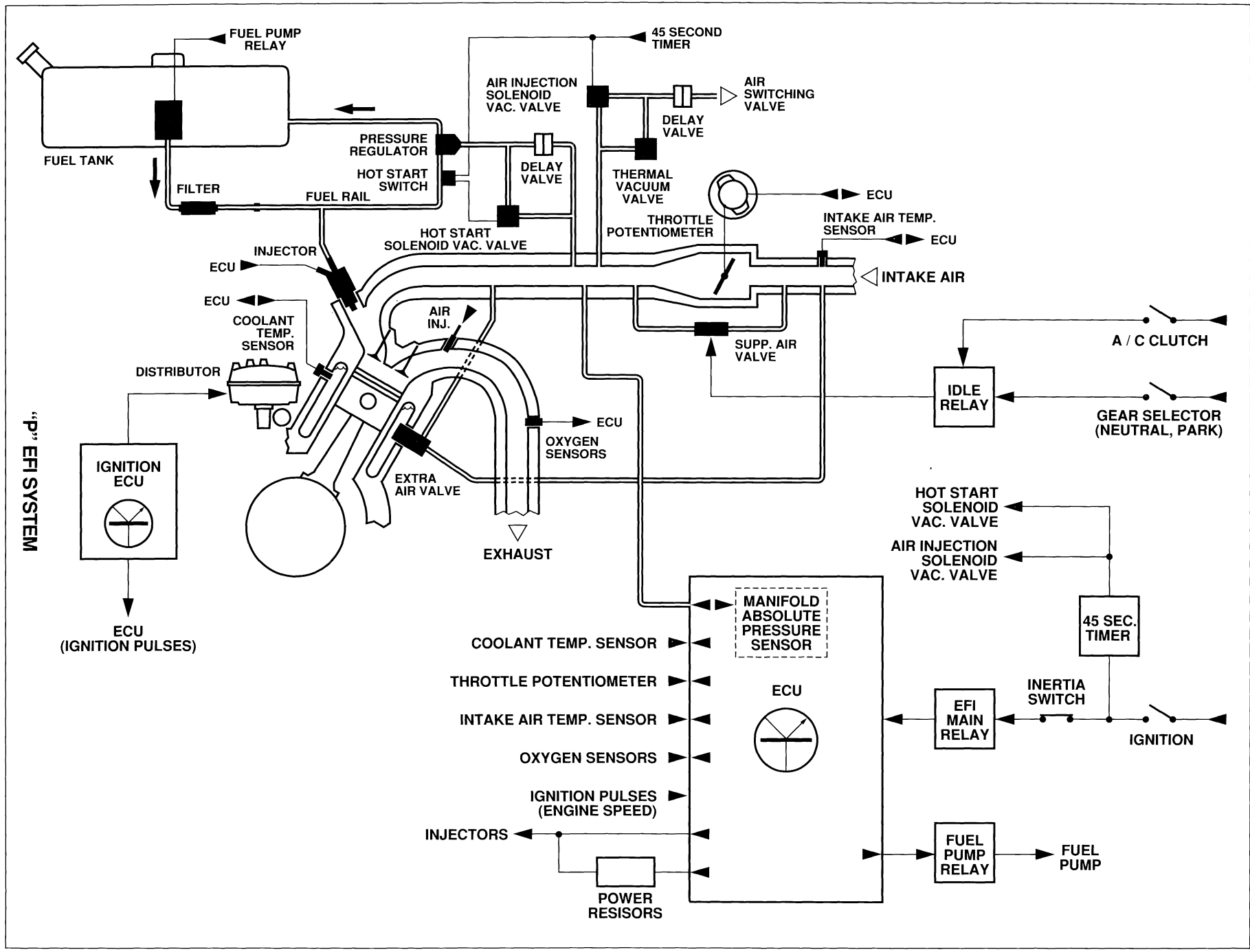
1992 Model Year

The revised ECU has an expanded strategy to provide more precise control over the full range of EFI control. In particular, starting, and warm-up control has been expanded and refined. A facility for on-board diagnostics (OBD) that stores fault data during engine operation has been added and CHECK ENGINE fault codes are displayed on the center console message display. Additionally, a JDS serial communications serial link is used to access the stored fault data and test the system.

The complete range of EFI ECU functions is as follows:

- ECU self-test
- Fuel delivery (fuel pump)
- Fuel injection
- Cold start
- Warm-up
- Hot start
- Exhaust emissions feedback
- Fuel cut-off during engine over-run
- "Limp home" capability
- Collision safety
- Fuel monitoring (trip computer)
- On-board diagnostics (OBD)
- Serial Communications (ISO) with JDS

Note: The sensors and switches are unique to the EFI system and are not used or shared by the digital ignition system.

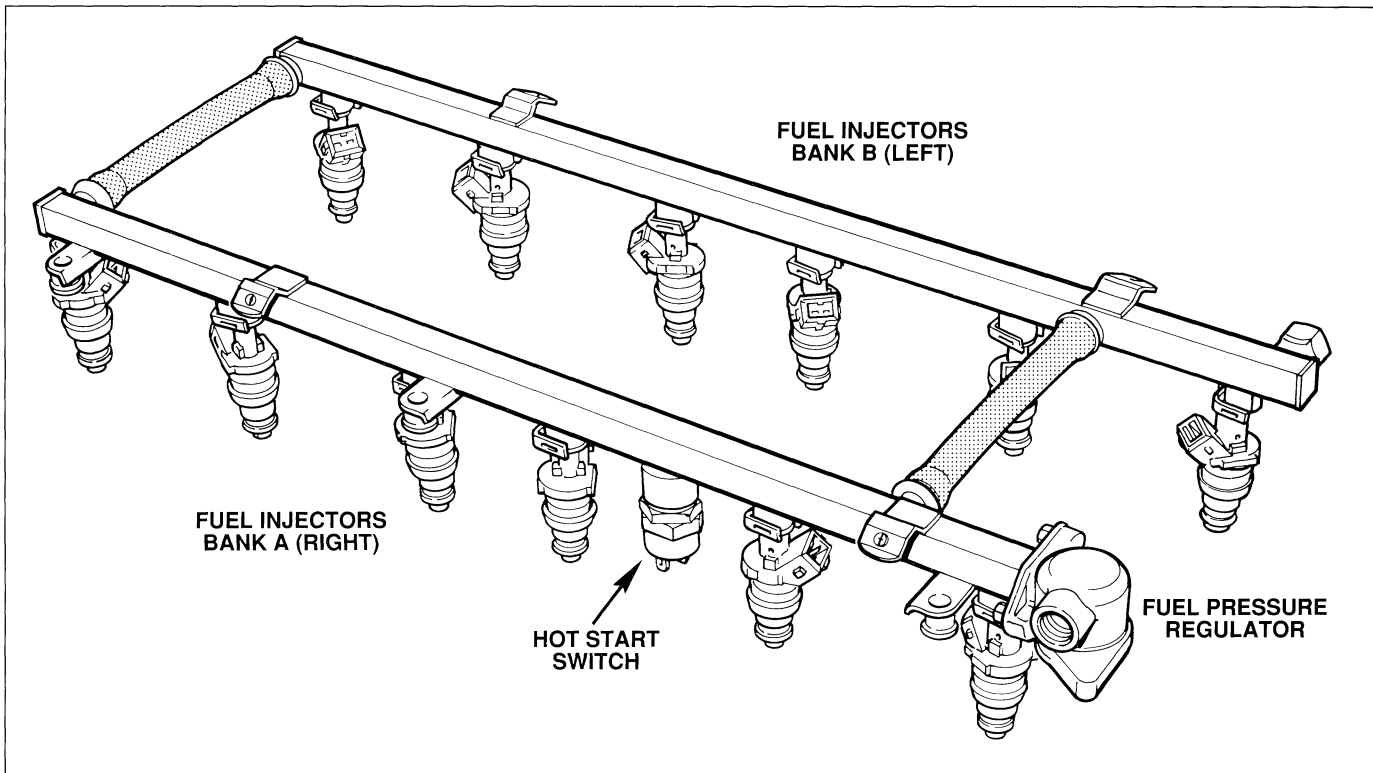


Engine Management System

Electronic Fuel Injection and Emission Control

Fuel Distribution

The fuel rail assembly, fuel injectors, and fuel pressure regulator are all new in the revised system.



Injectors

The injectors are smaller and lighter and allow a lower mounted fuel rail. The injectors are refined to give improved control of fuel flow at small pulse widths. The injectors connect to the fuel rail by "O" rings and clips.

Fuel rail

The fuel rail has improved flow characteristics to allow equal injector fuel flow. The rail assembly is comprised of two separate rails joined by two hoses. The assembly is secured to the manifolds by integral lugs. The need for a fuel cooler is eliminated by the improved hot fuel handling capacity of the new system.

Fuel pressure regulator

A single 36 psi regulator mounts in a cast housing connected to the fuel rail. The vacuum signal from the right intake manifold to the regulator passes through a solenoid vacuum valve that is a component of the hot start system (page 26).

Fuel Injection — Primary Inputs

The fuel injectors are triggered and held open by electrical pulses that operate the injector solenoid valves. Injector "on time" (pulse duration) determines the quantity of fuel injected and is primarily determined by engine load and speed. The ECU uses the input from the manifold absolute pressure sensor and ignition pulses to output the required injector "on time" from its memory. The injectors are triggered via the power resistors, in staggered groups of six. Except during starting and sudden throttle opening, injector pulses occur every third ignition pulse (once per engine revolution).

Fuel Injection — Correction Inputs

Additional correction inputs are used by the ECU to vary injector "on time" as necessary.

Cranking enrichment

At engine cranking speeds, the ECU increases the number of injector pulses to three per engine revolution. It also increases the injector "on time" in relation to coolant temperature sensor input. As engine speed increases, cranking enrichment is reduced to transition to the warm-up phase.

Engine warm-up correction

During warm-up, the ECU lengthens the injector "on time" in response to the input received from the coolant temperature sensor. Enrichment is reduced as engine speed increases.

Air density correction

Intake air density is sensed by temperature measurement and supplied to the ECU as an input. The ECU alters the injector "on time" to lean or enrich the fuel flow as necessary.

Demand corrections

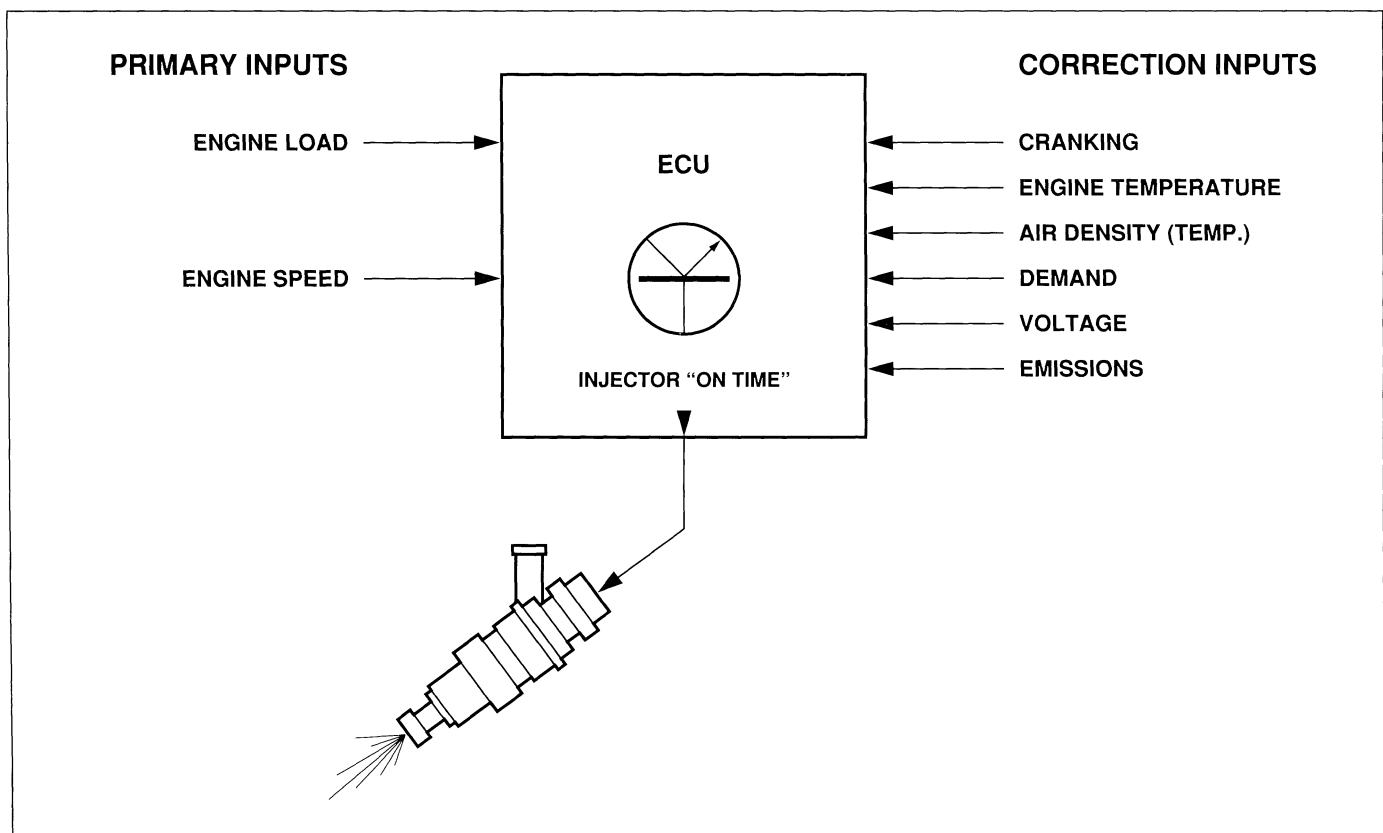
During acceleration and full power demands, the injector "on time" is lengthened by the ECU in response to input received from the throttle potentiometer.

Voltage correction

The EFI system uses stabilized voltage for sensing and injector operation.

Emissions corrections

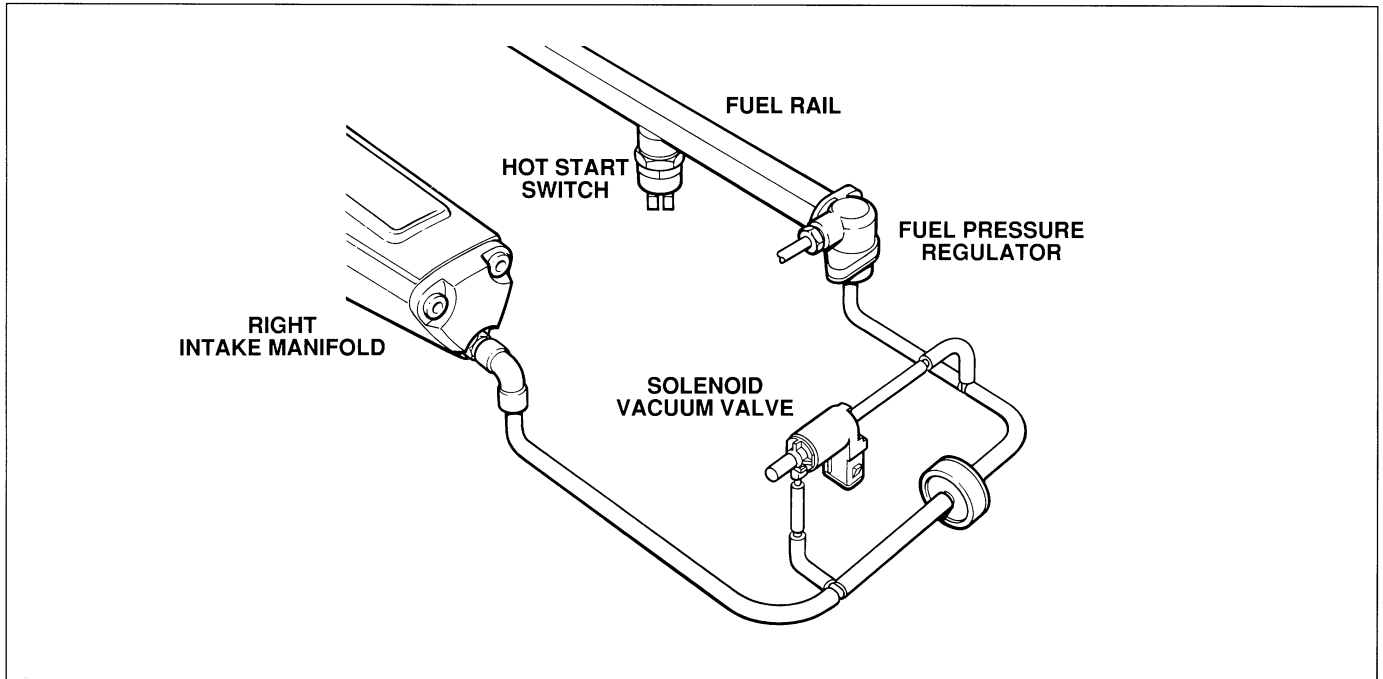
"Closed loop" exhaust emissions control is provided by inputs from the two heated oxygen sensors. At coolant temperatures below 95° F and for 45 seconds after start-up, air injection is applied to the exhaust manifolds. During this period, inputs from the oxygen sensors are not used by the ECU.



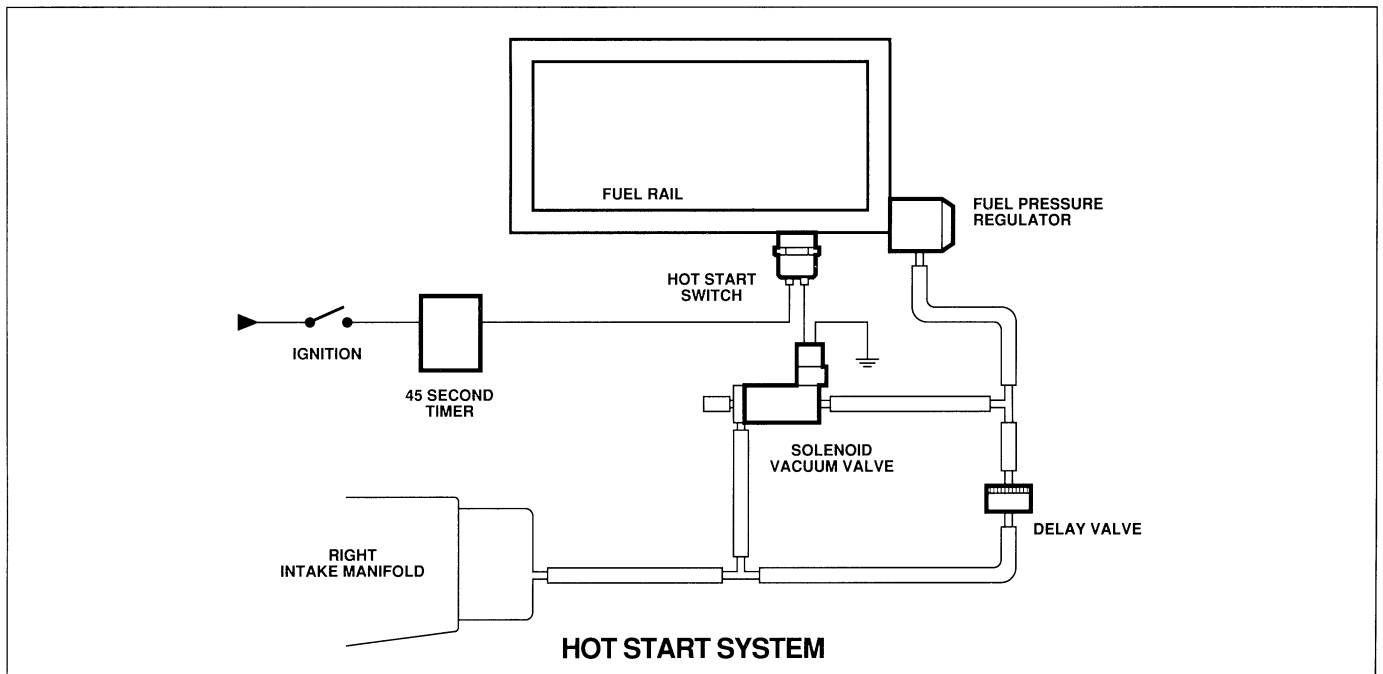
Electronic Fuel Injection and Emission Control

Hot Start

During conditions of high underhood temperatures, a hot start system aids in engine starting by increasing fuel pressure and purging the fuel rail. The system consists of: a fuel rail temperature sensitive switch, a 45-second timer, and a normally open solenoid vacuum valve located in the fuel pressure regulator vacuum line. During normal operation, vacuum is applied to the regulator through the solenoid vacuum valve.



Each time the ignition is switched ON, the 45-second timer is activated and applies current to the hot start switch. If the fuel rail temperature is 158° F or above, the switch closes and allows current flow to close the solenoid vacuum valve. Vacuum to the regulator is delayed causing the regulator to momentarily increase fuel pressure to purge the fuel rail.



Idle Speed

Base idle

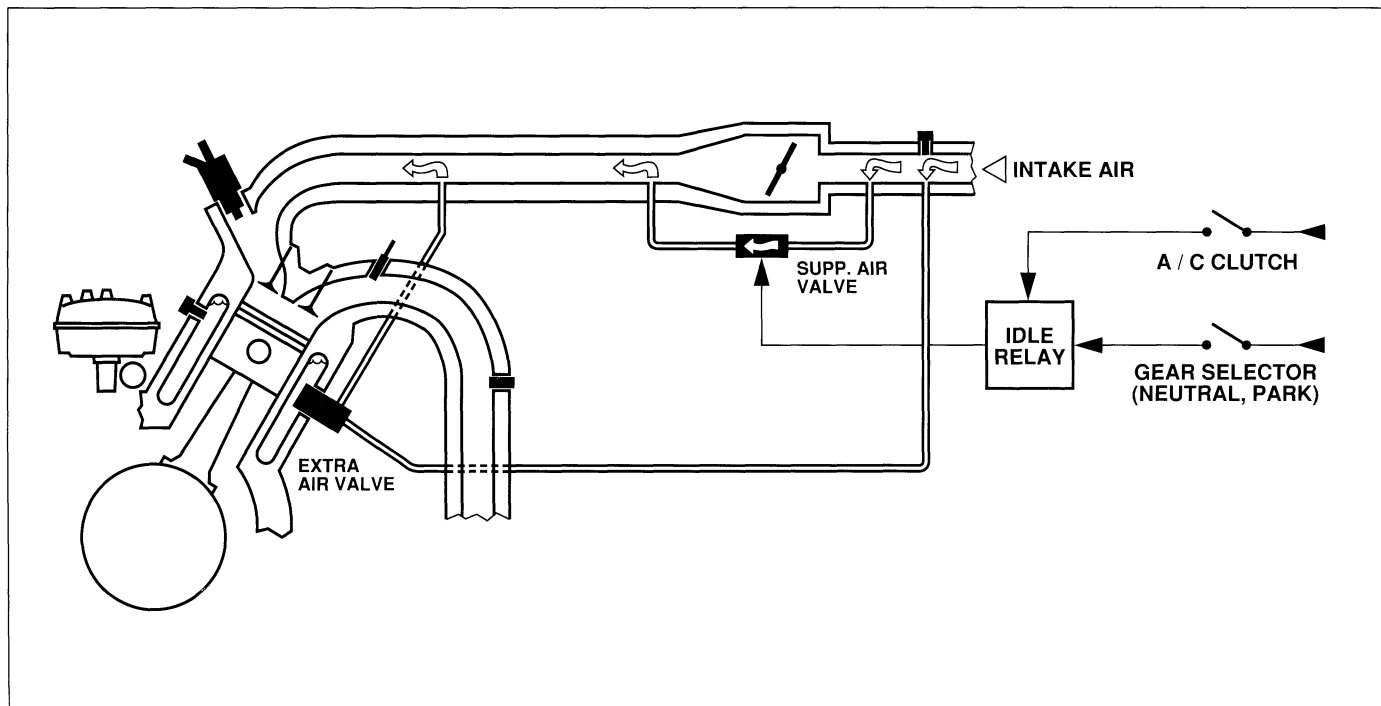
The base idle speed is set with the adjustment screw on the extra air valve. The adjustment regulates the throttle valve bypass idle air flow.

Warm-up

Dependent on engine coolant temperature, the extra air valve allows additional air to bypass the throttle valve to maintain idle speed during warm-up.

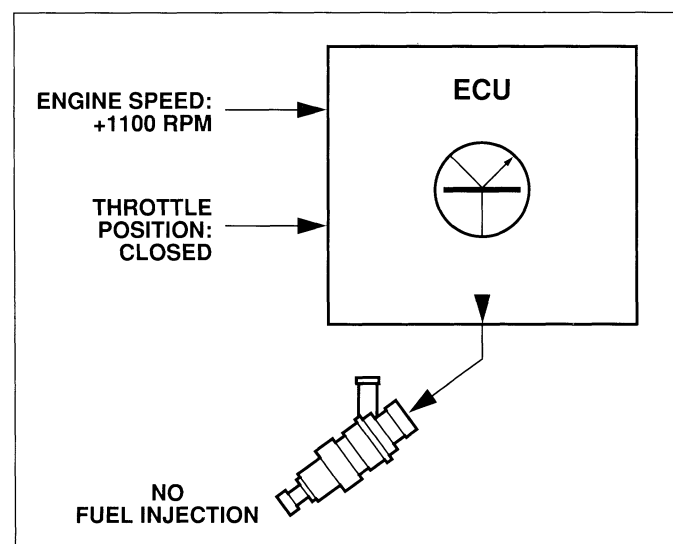
Idle stabilization

During air conditioning compressor operation, the supplementary air valve is opened via the de-energized idle relay, allowing additional throttle-valve-bypass and stabilizing the idle speed. To prevent excessive idle speed with no engine load (neutral, park), the idle relay is energized to switch off the supplementary air valve.



Over-run Fuel Cut-off

To improve fuel economy and aid in controlling exhaust emissions, the ECU cuts off fuel injection during engine over-run conditions. The ECU determines over-run conditions from throttle position (throttle potentiometer) and engine speed (ignition pulses).

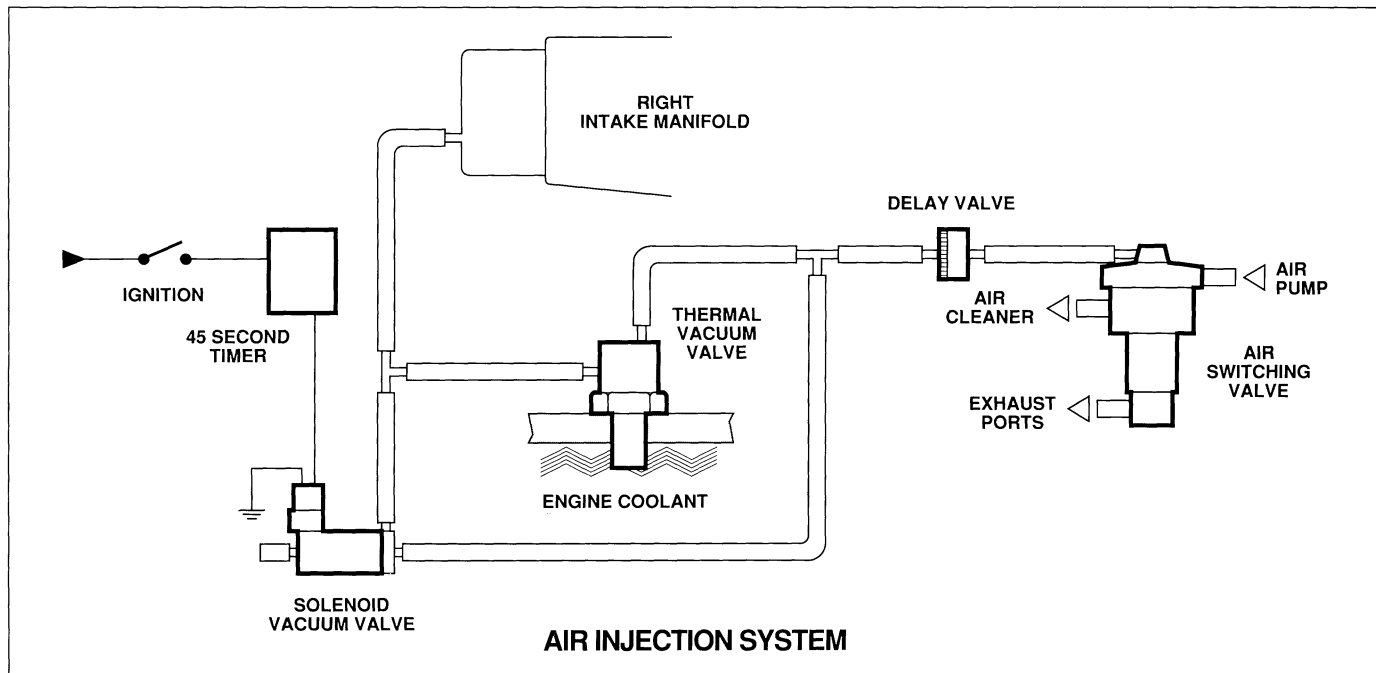


Electronic Fuel Injection and Emission Control

Air Injection

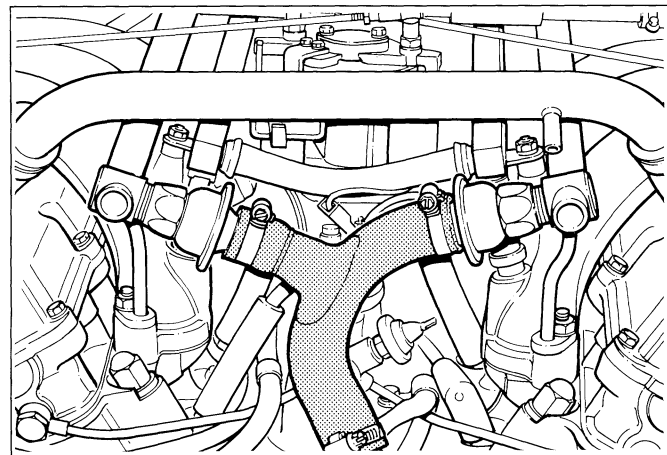
Secondary air is delivered to the exhaust manifolds during the initial engine warm-up period to aid oxidation. The rotary vane air pump is belt driven from the crankshaft pulley. Air is delivered to the exhaust manifolds via the air switching valve, which is controlled by either a thermal vacuum valve or the 45-second timer via a solenoid vacuum valve. The vacuum circuit also contains a delay valve.

Each time the ignition is switched ON, the 45-second timer is activated and the normally closed solenoid vacuum valve is opened. If the coolant temperature is below 95° F, the thermal vacuum valve opens. Manifold vacuum is applied to the air switching valve for 45 seconds after start-up or until the coolant temperature reaches 95° F, which ever is longer. The delay valve prevents vacuum loss to the air switching valve when the throttle is suddenly opened.



Air injection rails

New air injection rails have been designed to clear the new fuel rail. This arrangement uses two check valves located at the rear of the engine.



Collision Safety

In the event of a vehicle impact, the inertia switch will switch off all power supply to the EFI system. The fuel pump will cease to operate, preventing fuel flow to the engine compartment.



Limp Home

A “limp home” facility is provided in the memory of the ECU. This facility will allow engine operation in the event EFI system failure(s). The ECU will substitute a nominal value for missing inputs from the coolant temperature sensor, air temperature sensor, throttle potentiometer, oxygen sensor(s), and the manifold pressure sensor.

On-Board Diagnostics

A facility for on-board diagnostics (OBD) that stores fault data during engine operation is contained in the ECU.

Serial Communications (ISO)

A JDS serial communications serial link is used to access stored fault data in the OBD facility. In addition, the serial link allows ECU input and output values to be transmitted to JDS to check the current status of the EFI system. The serial link connector is the brown PM 4 located under the passenger’s center console kick panel.

Check Engine; Fuel Fail Codes

If a fault occurs in the EFI system, a fuel fail (FF) code is generated. The CHECK ENGINE warning is immediately displayed on the center console message display. If the ignition is switched off, and then on, the CHECK ENGINE warning is displayed with the fail code appearing five seconds later. When the engine is cranked, the message is cleared and the clock displays. The CHECK ENGINE warning and FF code will be displayed at every ignition cycle.

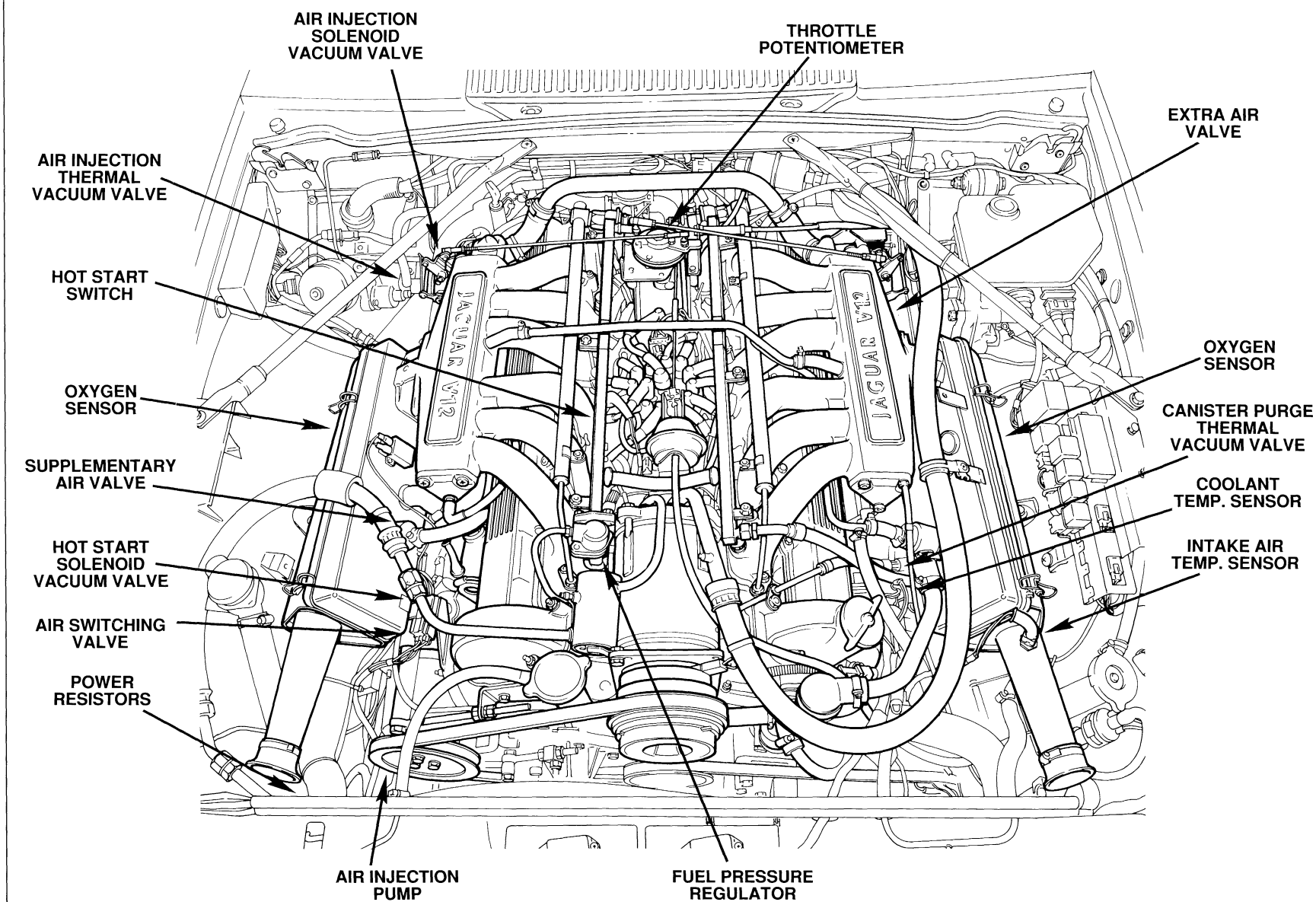
Fuel fail codes (listed in order of priority):

Code	Fault area	Limp home	Failure
29	ECU self test	NO	Checks microprocessor function
44	Oxygen sensor — bank A (right)	YES	No oxygen sensor response to fueling change (bank A)
45	Oxygen sensor — bank B (left)	YES	No oxygen sensor response to fueling change (bank B)
13	Manifold absolute pressure sensor	YES	Manifold pressure does not change on engine starts or manifold pressure is out of range
34	Fuel injectors or air leak — bank A (right)	NO	Poor feedback control — rich or lean (bank A)
36	Fuel injectors or air leak — bank B (left)	NO	Poor feedback control — rich or lean (bank B)
14	Coolant temperature sensor	YES	Sensor voltage does not change after engine start or sensor voltage is out of normal range
17	Throttle potentiometer	YES	Throttle potentiometer voltage is out of normal range
18	Calibration 1 (engine speed, manifold pressure, throttle position)	YES	High throttle potentiometer voltage / low load (manifold pressure)
19	Calibration 2 (engine speed, manifold pressure, throttle position)	YES	Low throttle potentiometer voltage / high load (manifold pressure)
23	Fuel supply	NO	Poor feedback control — both banks rich or lean
49	Power resistors	YES	No current through power resistors
11	ECU idle potentiometer	YES	Idle trim potentiometer is out of normal range
16	Air temperature sensor	YES	Sensor voltage is out of normal range

NOTE: When multiple faults occur, only the highest priority code will be displayed.

Engine Management System

APPROXIMATE LOCATIONS



NOTE: ECU IN TRUNK;
45-SEC. TIMER ON RIGHT COMPONENT PANEL

EFI and Emission Control Component Locations

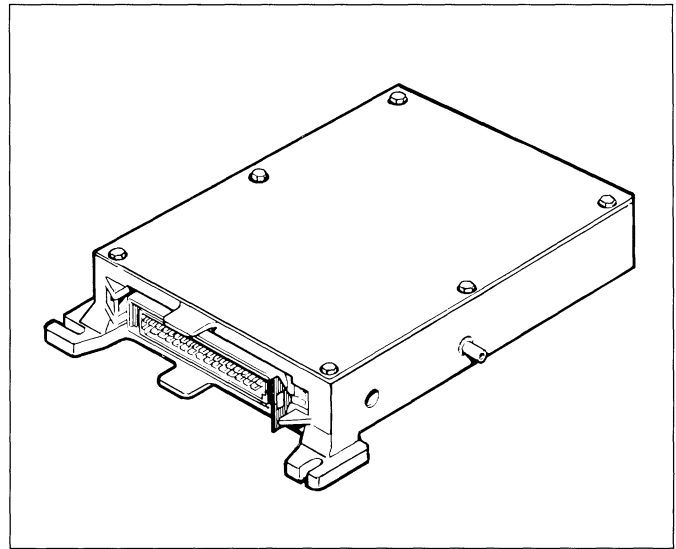
Electronic Fuel Injection and Emission Control

EFI and Emission Control Components

Electronic Control Unit (ECU)

Location Trunk, right front.

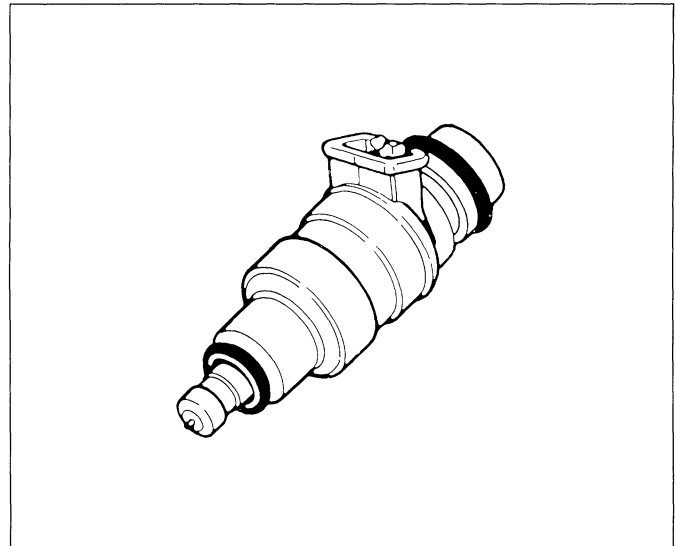
Description The ECU contains an integrated circuit for a dedicated fuel injection control chip and an analog / digital converter for the manifold pressure input. A manifold absolute pressure sensor (transducer) is built into the ECU. Fuel injection information is stored in ROM (read only memory), so that for a given combination of manifold pressure and engine speed, the memory assigns a number proportional to the required injector "on time". The ECU also contains facilities for OBD and serial communications.



Fuel injectors

Location Intake manifolds.

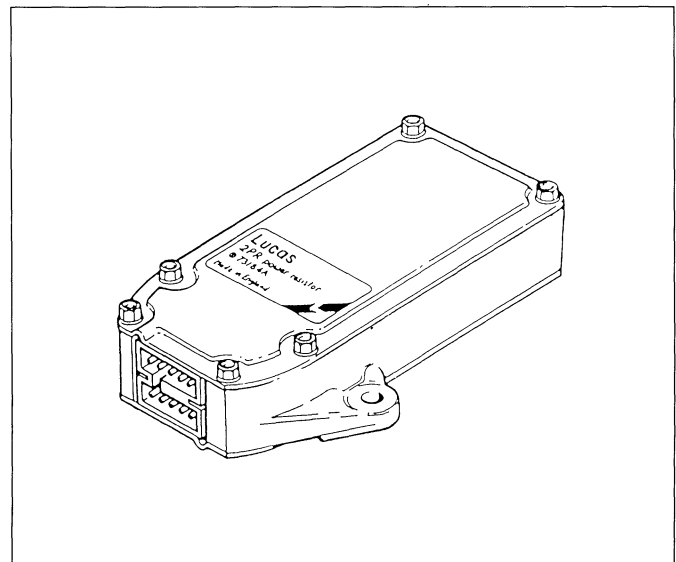
Description Each fuel injector contains a solenoid-operated needle valve, which is held against a seat by spring pressure. When energized, the coil moves the needle away from the seat, allowing pressurized fuel to flow through the tip.



Power resistors

Location Engine compartment, right front.

Description The power resistors (one per injector group of three) are used to limit current flow to the injectors to a safe level in order to protect the ECU.



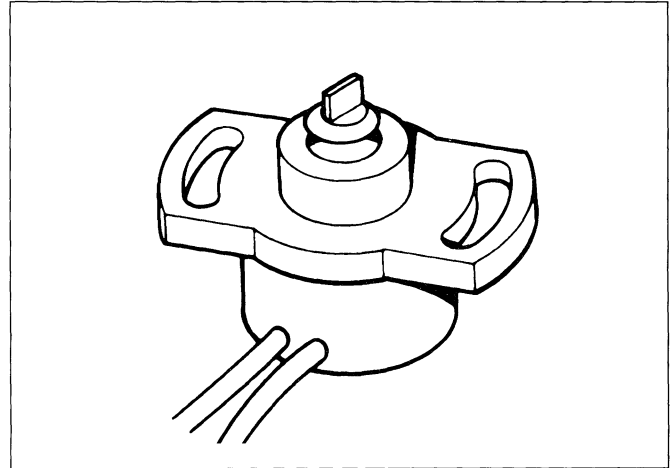
Electronic Fuel Injection and Emission Control

EFI and Emission Control Components (continued)

Throttle potentiometer

Location Under the throttle turntable.

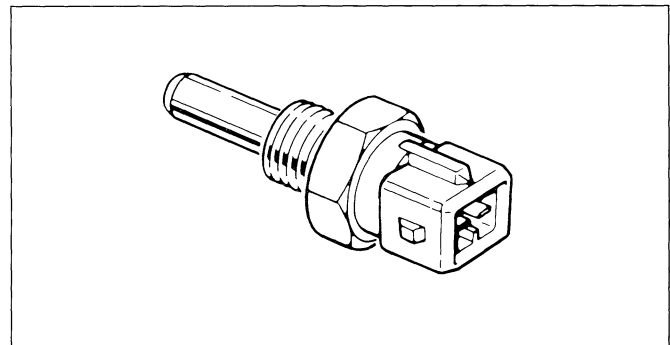
Description The throttle potentiometer is mechanically connected to the throttle valve shaft and provides a reference voltage input to the ECU dependent on throttle position.



Coolant temperature sensor

Location Left thermostat housing.

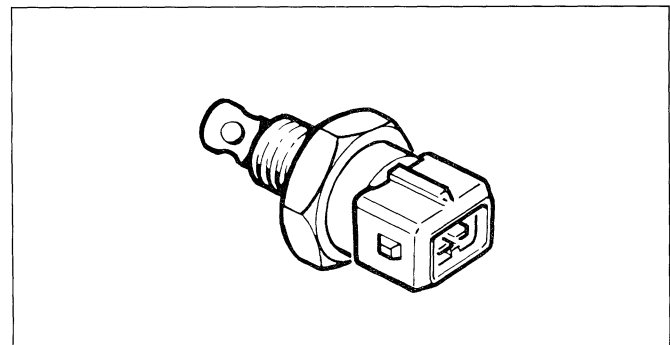
Description The coolant temperature sensor is a temperature-sensitive resistor. As the coolant temperature rises, the electrical resistance decreases providing a coolant temperature input to the ECU.



Intake air temperature sensor

Location Left air cleaner intake.

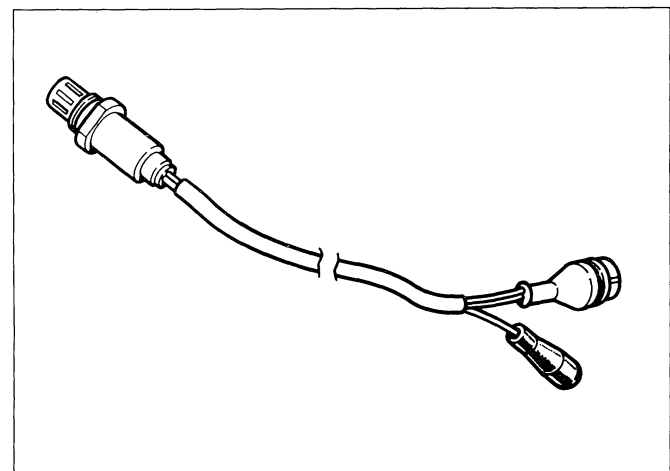
Description The air temperature sensor is a temperature-sensitive resistor. As the ambient (intake) air temperature rises, the electrical resistance decreases, providing an input to the ECU. The ECU uses this input as a measure of intake air density (as air temperature rises, its density decreases).



Oxygen sensor

Location Exhaust down-pipes.

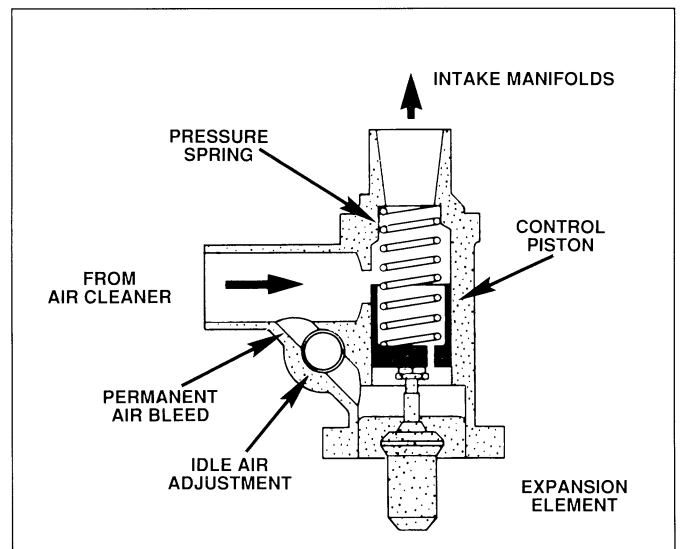
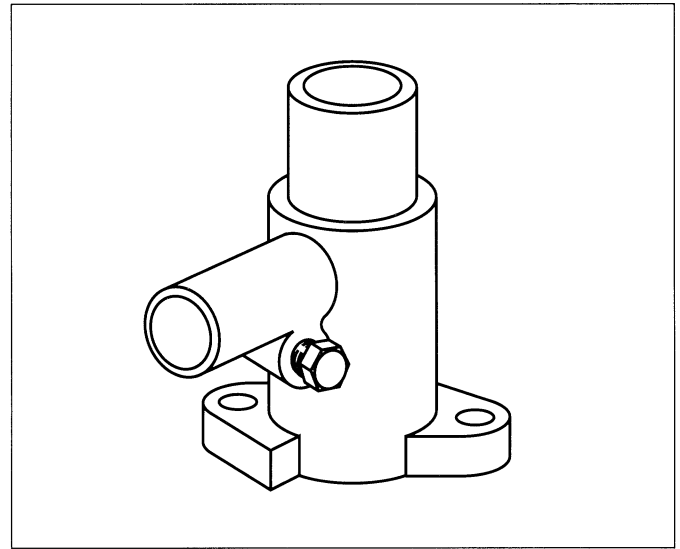
Description The oxygen sensors measure the oxygen concentration in the exhaust gases and provide input to the ECU.



Extra air valve

Location Left cylinder head, rear.

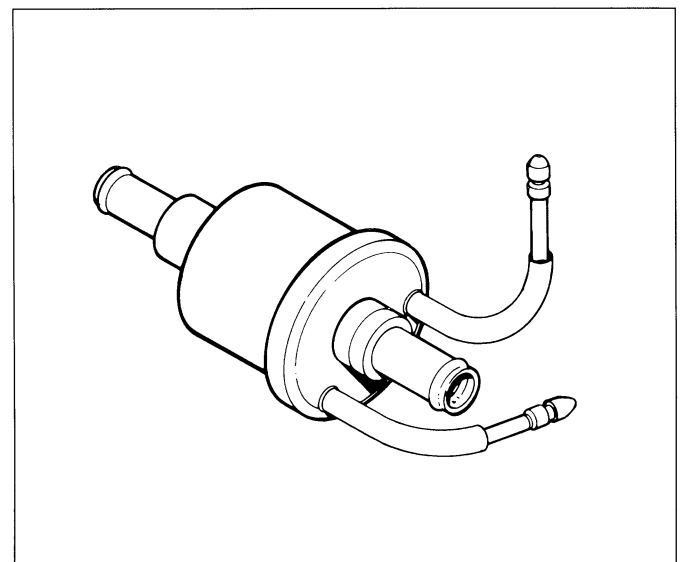
Description The extra air valve has two functions: it provides the engine base idle speed through the adjustable idle air bleed and it provides warm-up idle speed stabilization through the variable air duct. The duct area is varied by a temperature-sensitive expansion element, in contact with engine coolant, that moves a control piston. As the coolant temperature increases, the area of the duct is gradually reduced until, at a coolant temperature of 140 – 158° F, it closes completely.



Supplementary air valve

Location Right air cleaner back plate.

Description The supplementary air valve allows additional throttle bypass air into the intake manifolds to stabilize the idle speed during air conditioning compressor operation (except when in neutral or park).



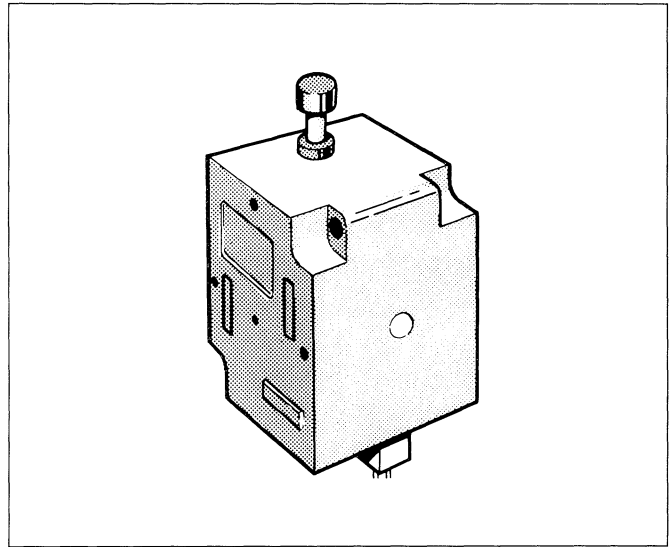
Electronic Fuel Injection and Emission Control

EFI and Emission Control Components (continued)

Inertia switch

Location Passenger's side "A" post.

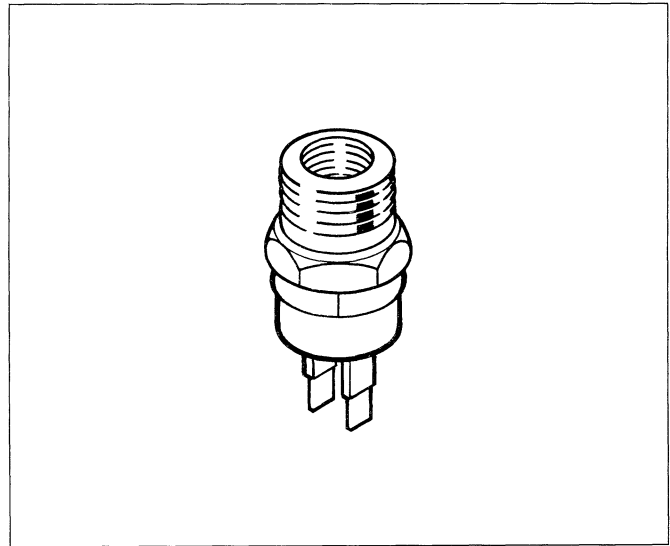
Description In the event of a vehicle impact, the inertia switch switches off all power supply to the EFI system.



Hot start switch

Location Fuel rail, right.

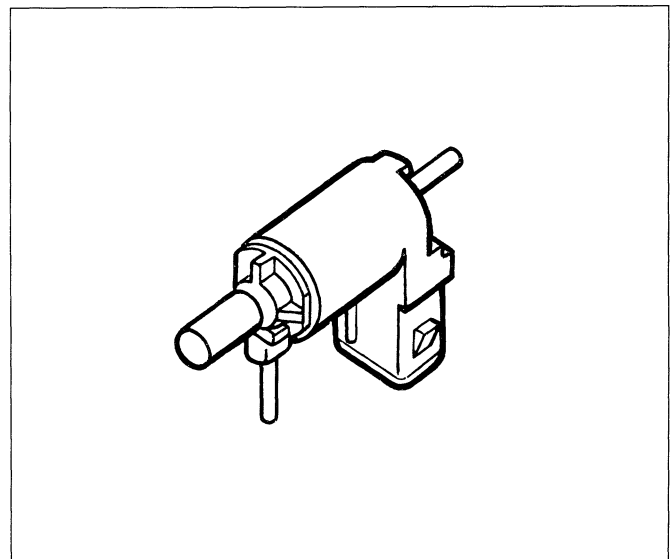
Description The hot start switch switches current between the 45-second timer and the hot start solenoid vacuum valve. The switch contacts close at 158° F and above.



Hot start solenoid vacuum valve

Location Above right thermostat housing.

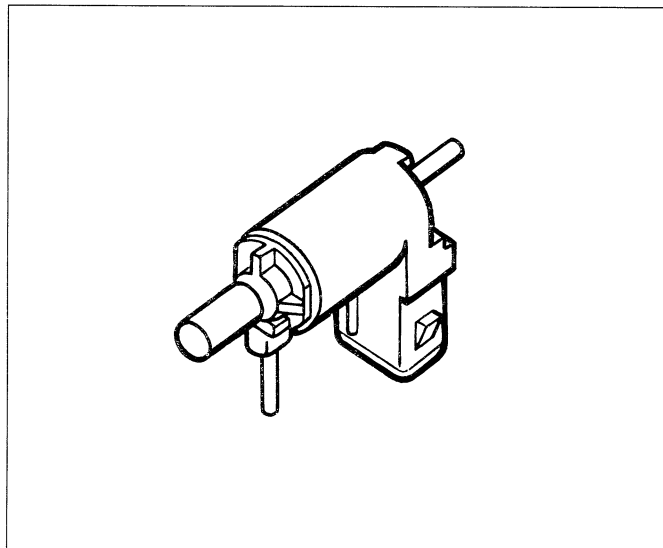
Description The normally open solenoid valve closes when current is applied via the 45-second timer and the hot start switch.



Air injection solenoid vacuum valve

Location Right cylinder head, rear.

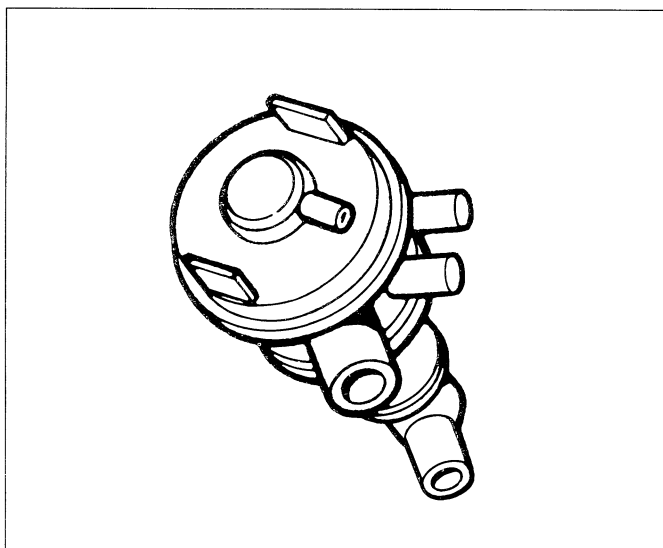
Description The normally closed solenoid vacuum valve opens when current is applied via the 45-second timer.



Air switching valve

Location Engine, right front.

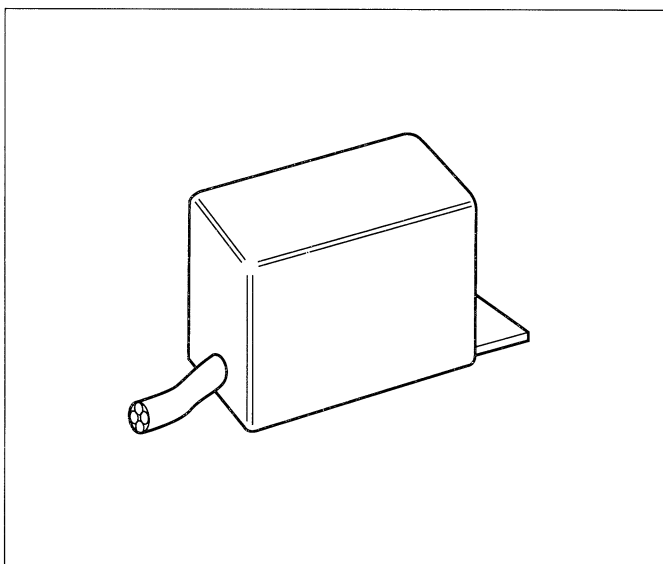
Description The air switching valve directs air injection to the exhaust manifolds or the air cleaner dependent on vacuum signal.



45-second timer

Location Right component panel.

Description The 45-second timer applies current to the hot start switch and the air injection solenoid vacuum valve for 45 seconds after every engine start.



Digital Ignition

The ignition system has a new ECU incorporating minor software changes.

The ignition system is a digital microprocessor-controlled system that eliminates vacuum and mechanical advance controls. The microprocessor memory contains ignition timing strategy with precise timing for engine speeds, loads, and modes of operation. The microprocessor, in the ECU, receives inputs from engine sensors to program the necessary ignition timing. The double-deck two-rotor distributor distributes the high tension voltage to bank A (right) via the lower deck and to bank B (left) via the upper deck. The low-voltage circuit is switched by the ECU via the two power modules to the two ignition coils. High voltage is generated by the ignition coils and supplied to the distributor.

The inputs supplied to the ECU from the engine sensors form two groups of control parameters: primary inputs and correction inputs. The crankshaft position and engine-speed inputs are necessary for the engine to start. The remaining inputs affect engine operation but are not necessary for engine start.

1992 Model Year

The coolant temperature compensation to the ignition timing strategies for cranking, idle, and main operation have been made more flexible.

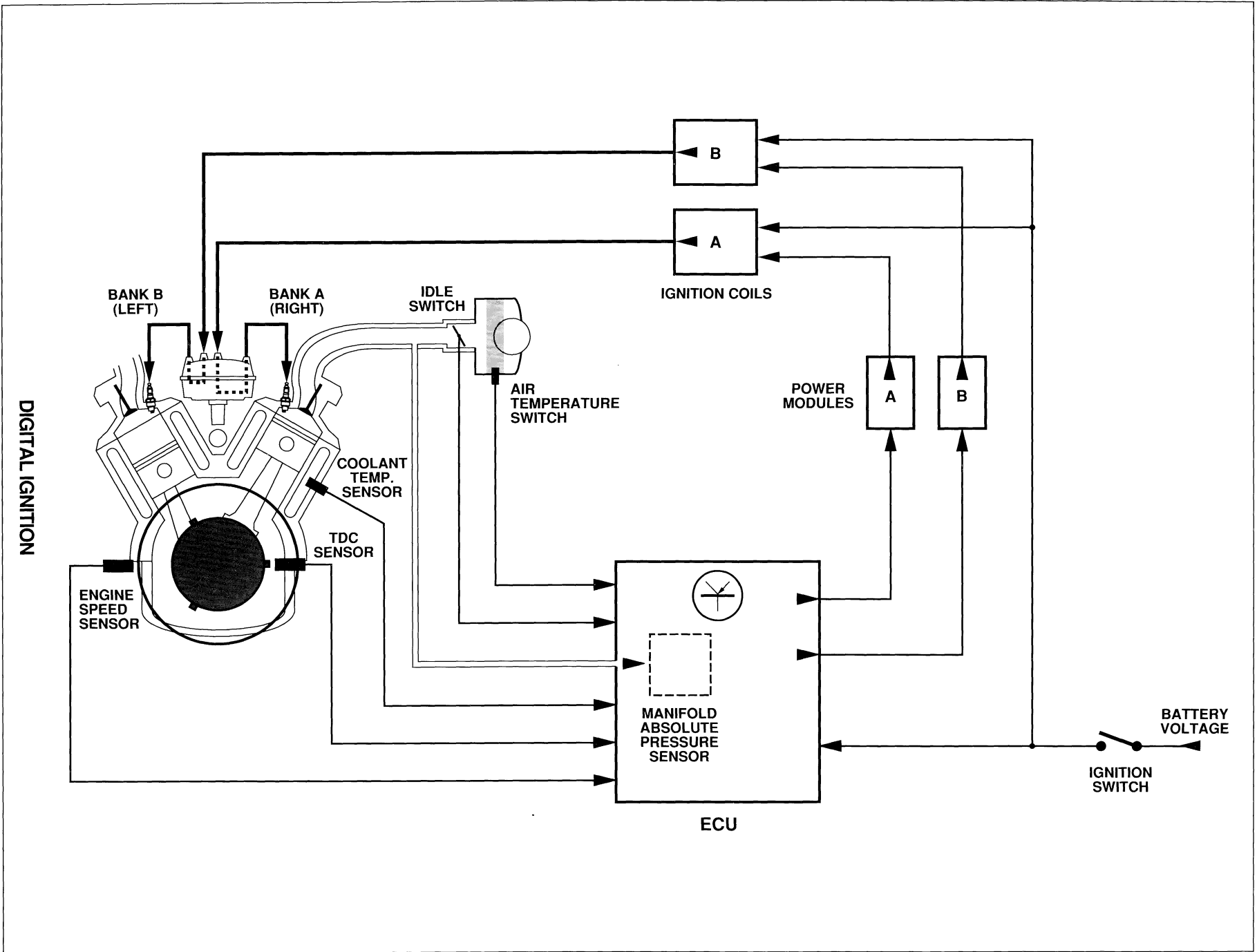
Primary inputs:

- Crankshaft position — TDC sensor
- Engine speed — Engine speed (flywheel) sensor
- Engine load — Manifold absolute pressure sensor

Correction inputs:

- Throttle position — Idle switch
- Engine coolant temperature — Coolant temperature sensor
- Intake air temperature — Air temperature switch

NOTE: The sensors and switches are unique to the digital ignition system and are not used or shared by the EFI system.



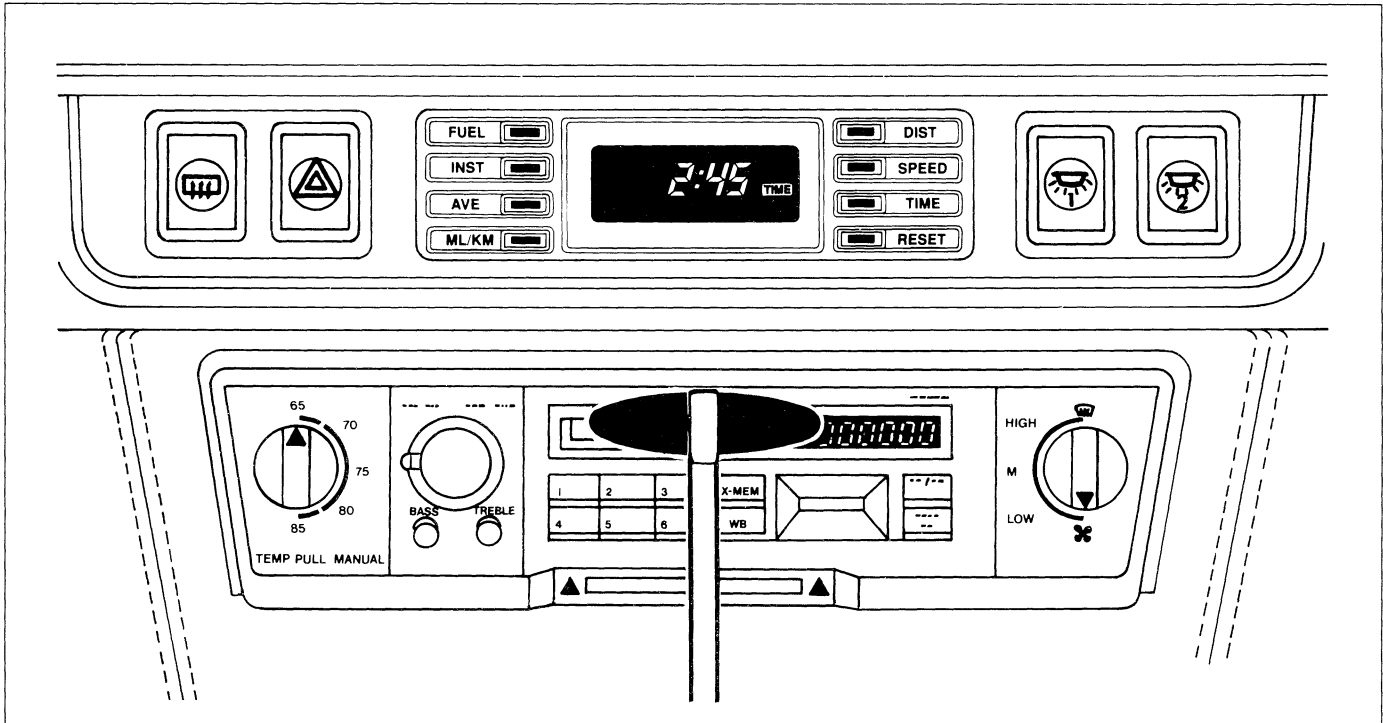
Engine Management System

Climate Control

The climate control system has undergone minor changes to stabilize performance and accommodate the new fuel delivery system.

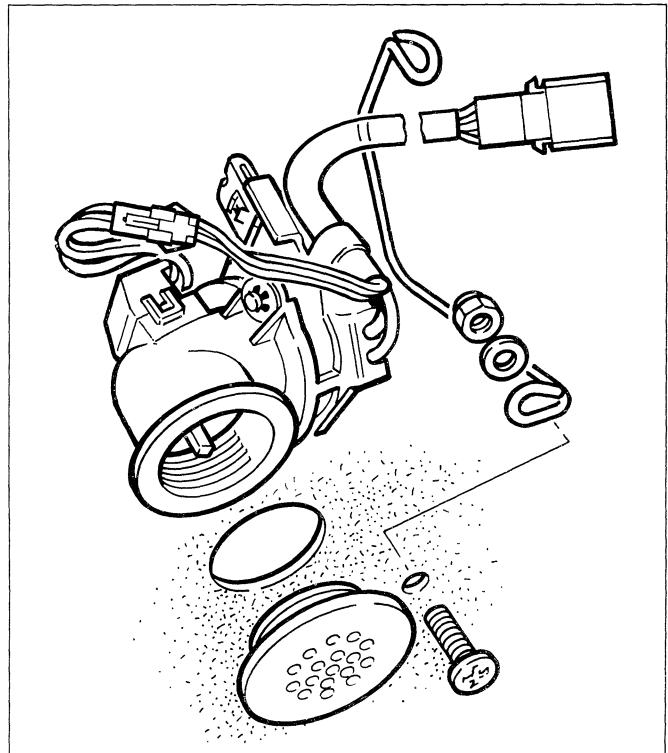
Control panel

The control panel has revised temperature and blower range knobs and new graphics. Locate lighting bulbs to replace the former fiber optic system.



Motorized aspirator

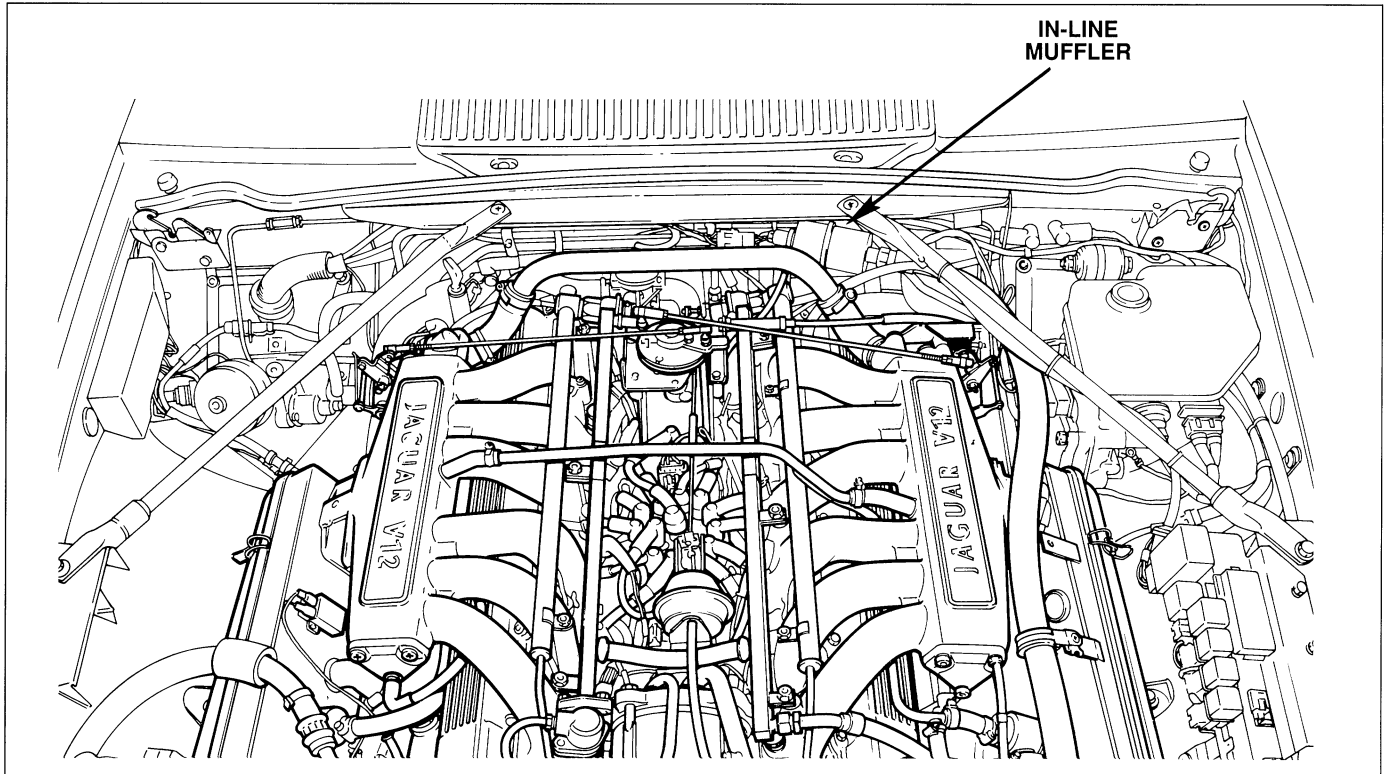
A motorized aspirator provides more stable system performance by continually drawing interior air over the in-car temperature sensor. This arrangement helps prevent temperature drift and overshoot. The aspirator assembly is located in the passenger's under-dash panel.



Fuel cooling

With the introduction of the new fuel delivery system, the necessity of the previous fuel cooler is eliminated. The internal climate control circuit that was used to operate the air conditioning system at all times on convertible models has been likewise eliminated.

Air conditioning



An additional muffler has been added to the low pressure return line to the compressor. This in-line muffler is in addition to the compressor mounted muffler.

The high and low side charging ports have different diameters, $7/16$ in. and $3/8$ in. respectively.

Electrical System Design and Layout

The XJS Range electrical system retains a conventional design with no distinct logic ground or power ground systems. Circuits are switched on both the power side and the ground side. Electronics are used where appropriate to provide precise control and/or increased convenience.

Much of the vehicle electrical componentry is new as described earlier. To compliment these, many additional changes have been made:

- The wiring harness is completely redesigned. The new harness design provides uniformity, efficient construction, and reliable mating.
- Reduced wire size reduces bulk and weight.
- New connectors make up the majority of connections.
- Bulkhead connectors are replaced by in-line connectors.
- Circuits have been redesigned to improve operation and reliability.
- System relays have been upgraded to a single high quality specification.
- Logic control has been added to circuits.
- All the switch gear is new.
- All exterior lighting is new.
- The fuse panels are redesigned.
- Additional fuse panels replace in-line fuses.
- Rerouting of harnesses in exposed areas improves underhood appearance.
- Pre-wiring for optional security system.

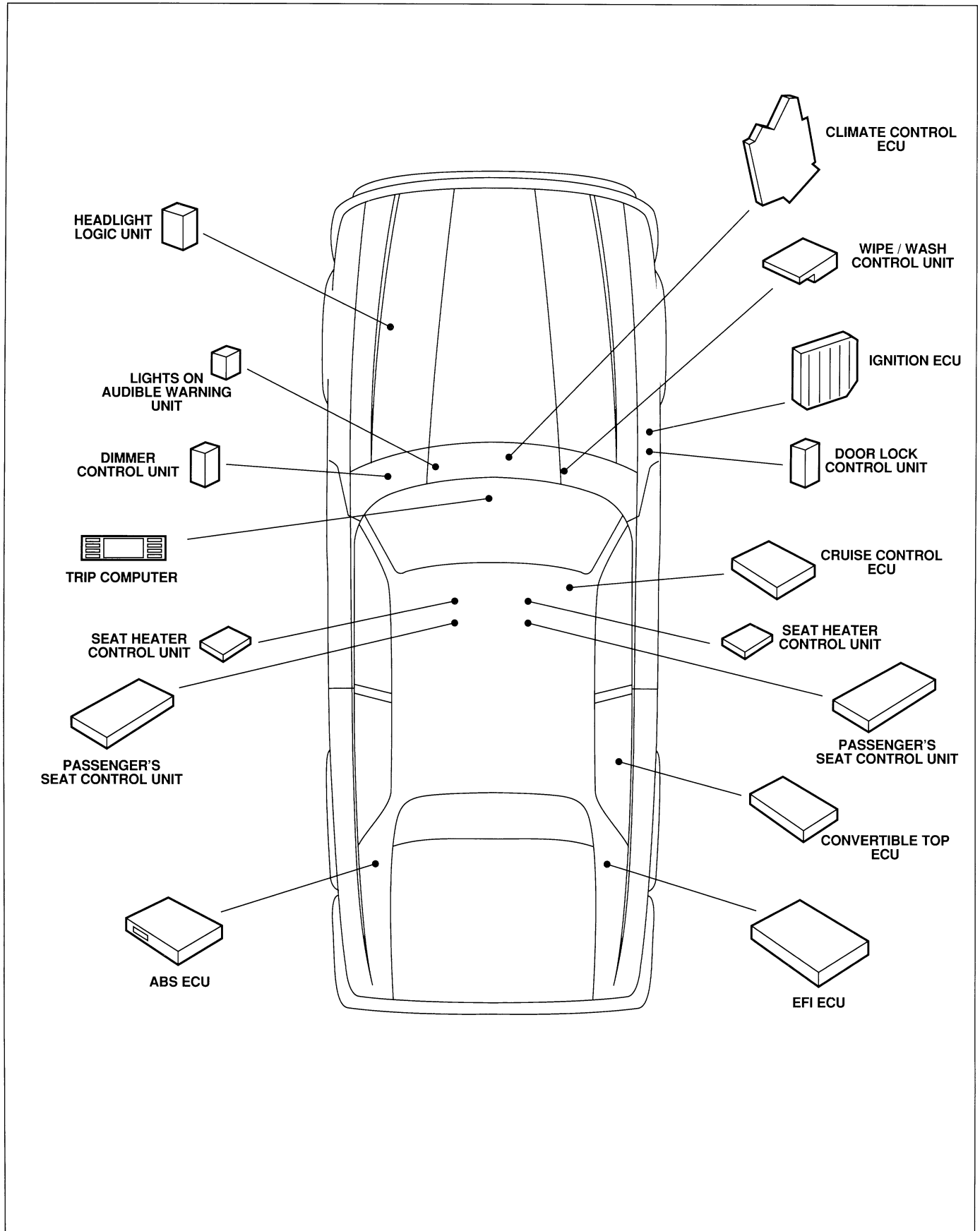
JDS (Jaguar Diagnostic System)

The JDS software release accompanying the new XJS contains expanded system coverage and incorporates serial communications (ISO) to interface with the On-board diagnostics (OBD) in the fuel injection ECU and the driver's seat and mirrors ECU.

- The menu structure is simplified and allows faster and easier test selection.
- The MULTIMETER MODE adds frequency measurement and pulse recognition.
- The MEASUREMENT PROBE has on-screen measurement display and allows retaking of measurements.

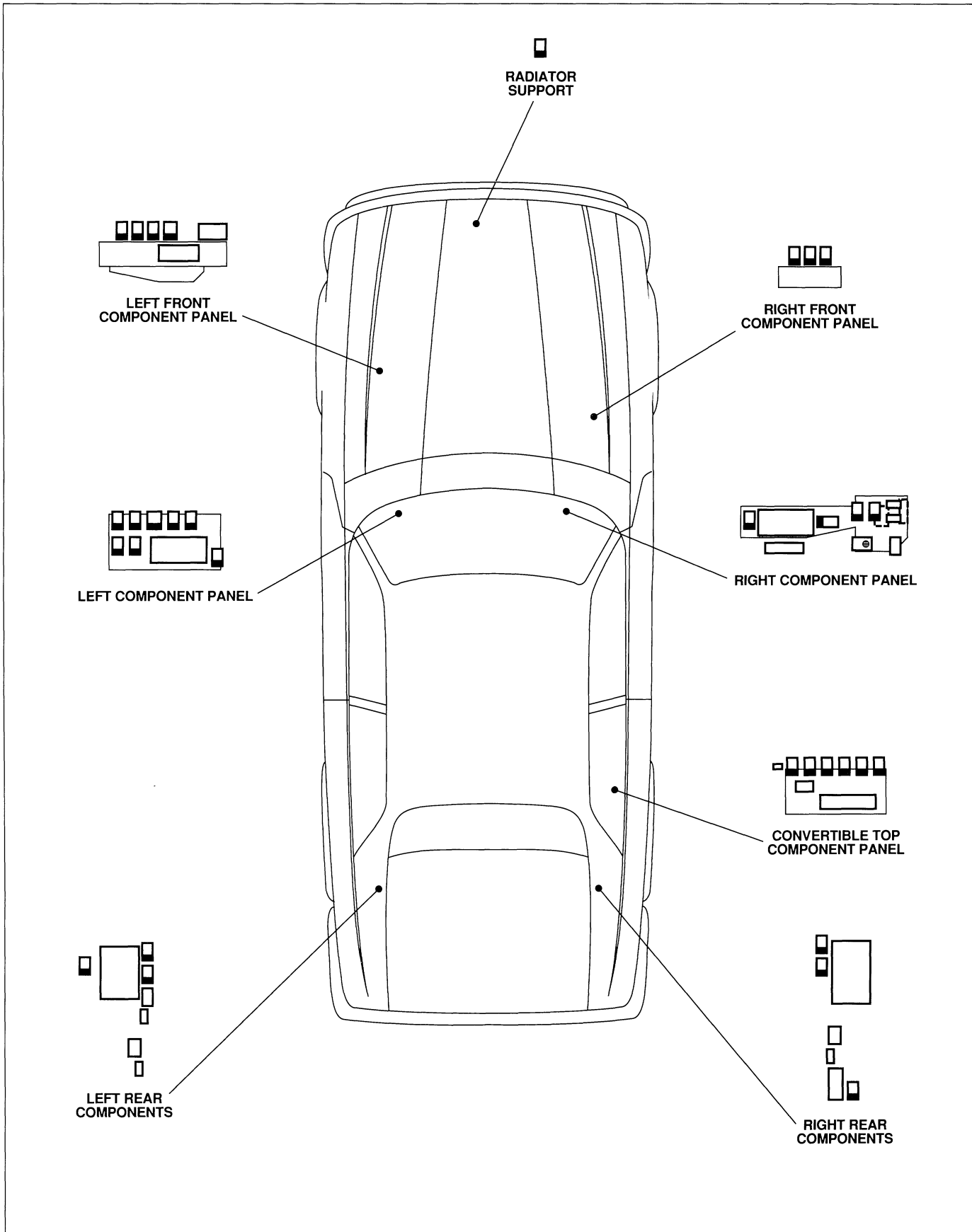


Electronic Control Units; Logic and Control Units



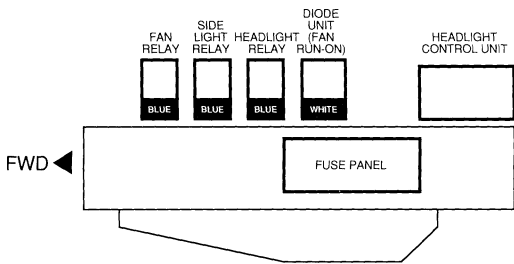
Electrical System Design and Layout

Component Panels, Fuses and Relays — Locations and Identifications

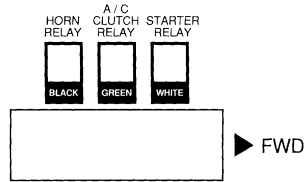




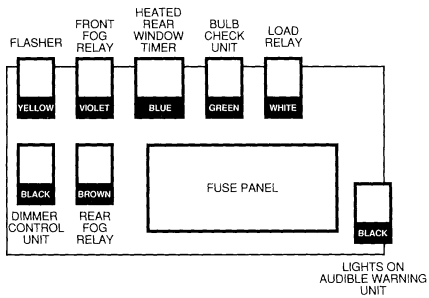
RADIATOR SUPPORT



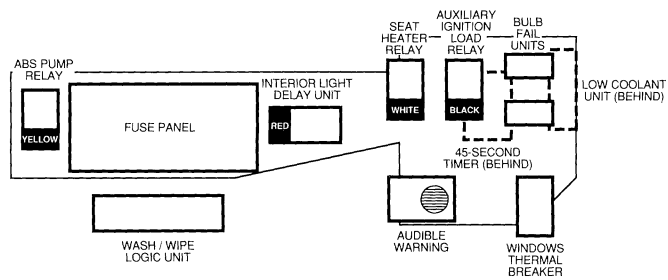
LEFT FRONT COMPONENT PANEL



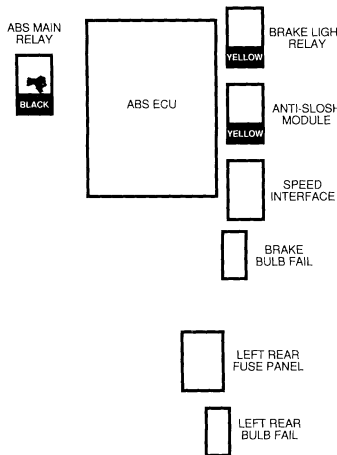
RIGHT FRONT COMPONENT PANEL



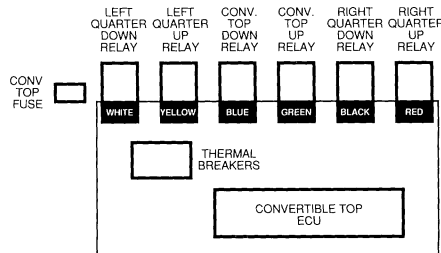
LEFT COMPONENT PANEL



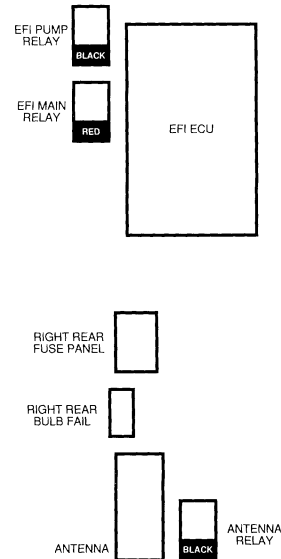
RIGHT COMPONENT PANEL



LEFT REAR COMPONENTS



CONVERTIBLE TOP COMPONENT PANEL



RIGHT REAR COMPONENTS

Electrical System Design and Layout

Fuse Panels and Identifications

Left fuse panel

Number	Color	Value	Circuit
1	Lt. Blue	15A	Driver's seat movement – fore, aft, lumbar
2	Violet	3A	Kick down
3	Yellow	20A	Left blower
4	Pink	4A	Telephone ignition power (optional); 45-second timer
5	Tan	5A	Telephone battery power (optional)
6	Tan	5A	Radio memory
7	Red	10A	Radio power
8	Red	10A	Windshield washer pump
9	Red	10A	Driver's seat heater
10	–	–	Not used
11	Red	10A	Trunk lighting
12	Yellow	20A	Driver's seat movement – recline
13	Violet	3A	Trip computer memory
14	Violet	3A	Power mirrors; door switch packs; seat memory
15	Pink	4A	Heated washer jets
16	Tan	5A	Reverse lights; trip computer
17	Tan	5A	Rear fog lights
18	Orange	7.5A	Locate lighting; instrument pack lighting
19	Orange	7.5A	Hazard warning; seat belt warning logic
20	Lt. Blue	15A	Front fog lights
21	–	–	Not used
22	Lt. Blue	15A	Heated rear window; heated door mirrors

Right fuse panel

Number	Color	Value	Circuit
1	Yellow	20A	Passenger's seat movement – fore, aft, recline
2	Violet	3A	Cruise control
3	Yellow	20A	Right blower
4	Tan	5A	Interior lighting
5	Brown	7.5A	Turn signals
6	Red	10A	Central door locking
7	Red	10A	Cigar lighter
8	Lt. Blue	15A	Windshield wipers
9	Lt. Green	30A	Headlight power wash
10	Violet	3A	Solenoid vacuum valves
11	Lt. Green	30A	ABS main
12	Tan	5A	Passenger's seat movement – lumbar
13	Violet	3A	Left front side lights
14	Violet	3A	Right front side lights
15	Violet	3A	Climate control (ECU and control circuit); cooling fan run-on
16	Tan	5A	Air conditioning relay
17	Red	10A	Passenger's seat heater
18	Lt. Blue	15A	Horns
19	Lt. Blue	15A	Stop lights
20	Lt. Blue	15A	Not used
21	–	–	Not used
22	Lt. Green	30A	ABS pump

Left front fuse panel

Number	Color	Value	Circuit
1	–	–	Not used
2	–	–	Not used
3	–	–	Not used
4	–	–	Not used
5	Red	10A	Left headlight high beam
6	Red	10A	Right headlight high beam
7	Red	10A	Cooling fan
8	Lt. Blue	15A	Not used
9	Brown	7.5A	Left headlight low beam
10	Brown	7.5A	Right headlight low beam
11	–	–	Not used
12	Violet	3A	Not used

Left rear fuse panel

Number	Color	Value	Circuit
1	Violet	3A	Left tail, left license plate lighting
2	Violet	3A	Not used
3	Violet	3A	Not used

Right rear fuse panel

Number	Color	Value	Circuit
1	Violet	3A	Right tail, right license plate lighting
2	Red	10A	Antenna
3	Tan	5A	Not used

Convertible top fuse

Number	Color	Value	Circuit
1	Lt. Green	30A	Convertible top

In-line fuses

Color	Value	Circuit	Location
Tan	5A	EFI diagnostic	Passenger footwell cheek panel (diagnostic socket)
Violet	3A	Driver's lumbar motor	Driver's seat back
Violet	3A	Passenger's lumbar motor	Passenger's seat back

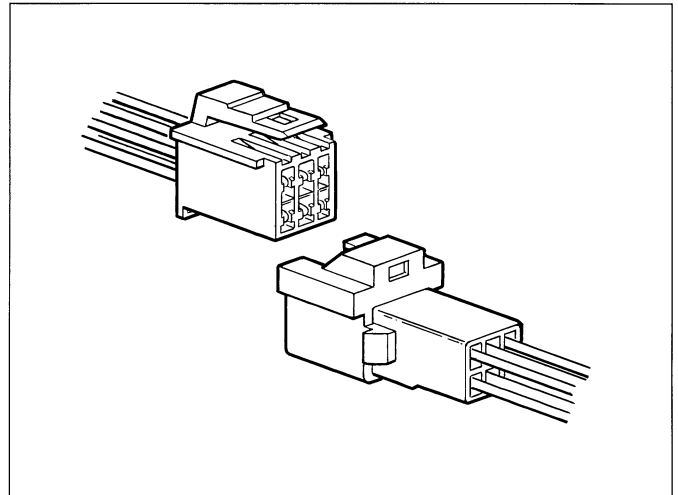
Electrical System Design and Layout

Connectors

In an effort to ensure maximum reliability, a new generation of connectors was developed for use in the new XJS Range electrical system. Each connector type housing is color coded in one of a range of colors for easy identification. Three new connectors manufactured by Sumitomo are introduced on the XJS. All three are the HM 090 series that use 0.090 in. blade connectors.

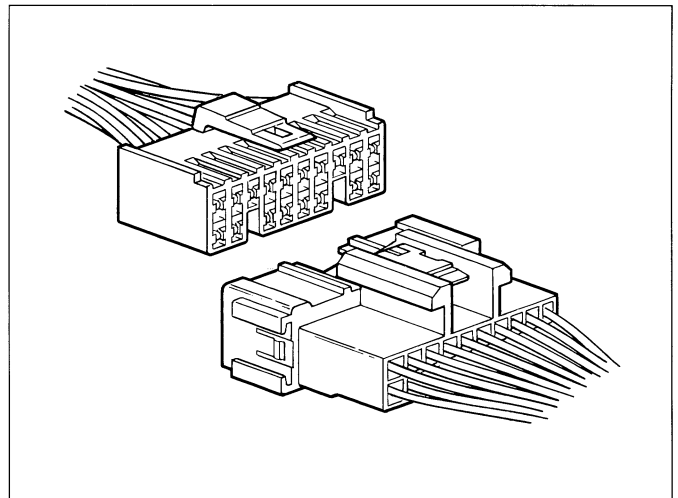
Sumitomo HM 090 Standard

Standard connectors are used primarily in the interior of the vehicle to make final connection to a component. The connector has positive mate and anti-backout features and either latch or reject when making.



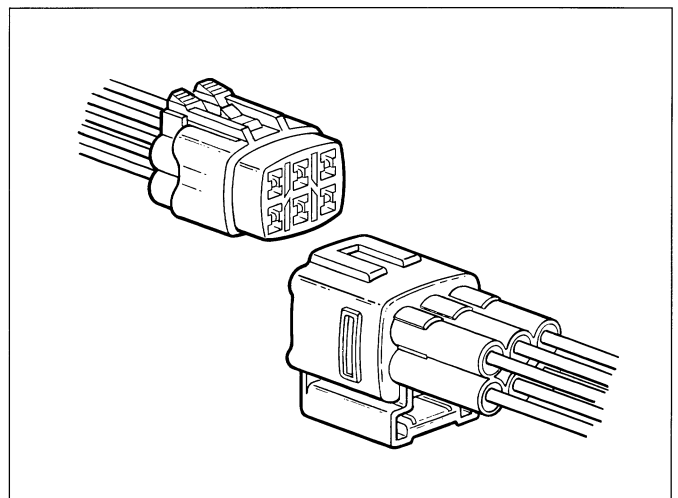
Sumitomo HM 090 Block

Block connectors are used for making connections at major harness junctions. The connector has positive mate and anti-backout features and either latch or reject when making. These block connectors replace the previous bulkhead connectors at the "A" posts.



Sumitomo HM 090 Sealed

Sealed connectors are used in exposed areas of the vehicle. The connector has positive mate and anti-backout features and either latch or reject when making. A mounting lug is incorporated into the housing to allow attachment to a fixed location.

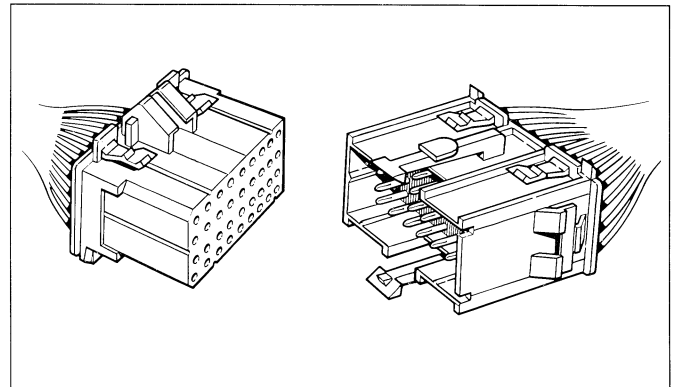


Electrics / Electronics

PM-5 and Multilock connectors previously used only on the Sedan Range vehicles have been incorporated into the XJS Range.

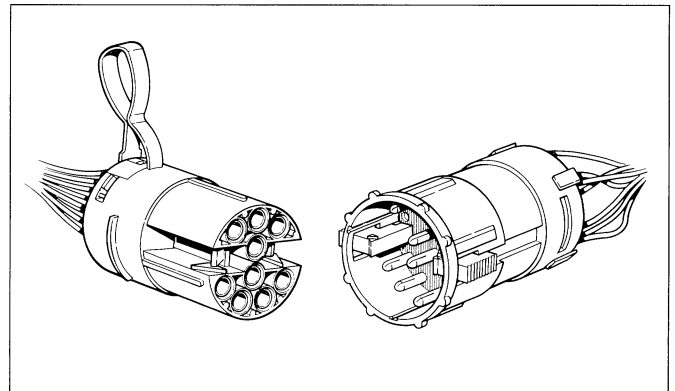
PM HD (Positive Mate — high density)

PM HD high-density rectangular connectors with up to 36 contact sets are used in a limited number of applications. The connector has positive mate and anti-backout features and either latch or reject when making.



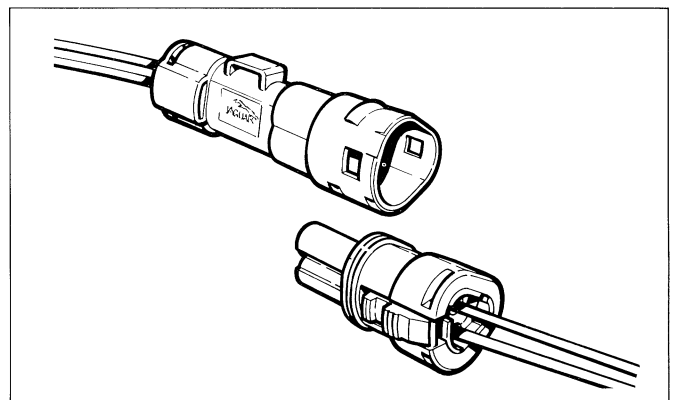
PM 4 (Positive Mate — 4th generation)

PM 4 round connectors with up to 9 contact sets are used in a number of applications. The connector has the same features as PM HD with the addition of weather sealing, which allows them to be used in areas that are exposed to weather.



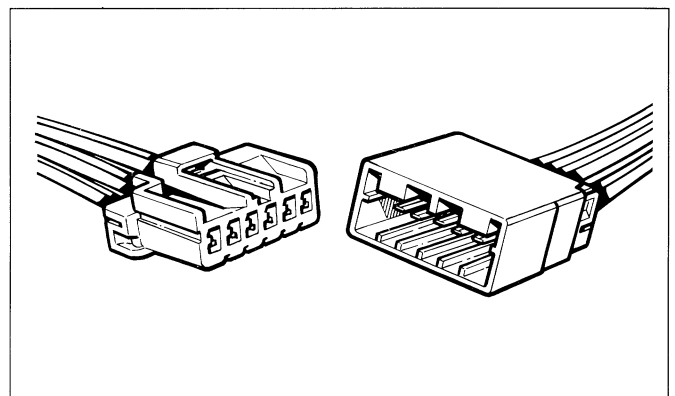
PM 5 (Positive Mate — 5th generation)

PM 5 round connectors are used to reduce connector bulk and are primarily located in the engine compartment. They are supplied in both sealed and unsealed types with 1-, 2- and 3-way connections.

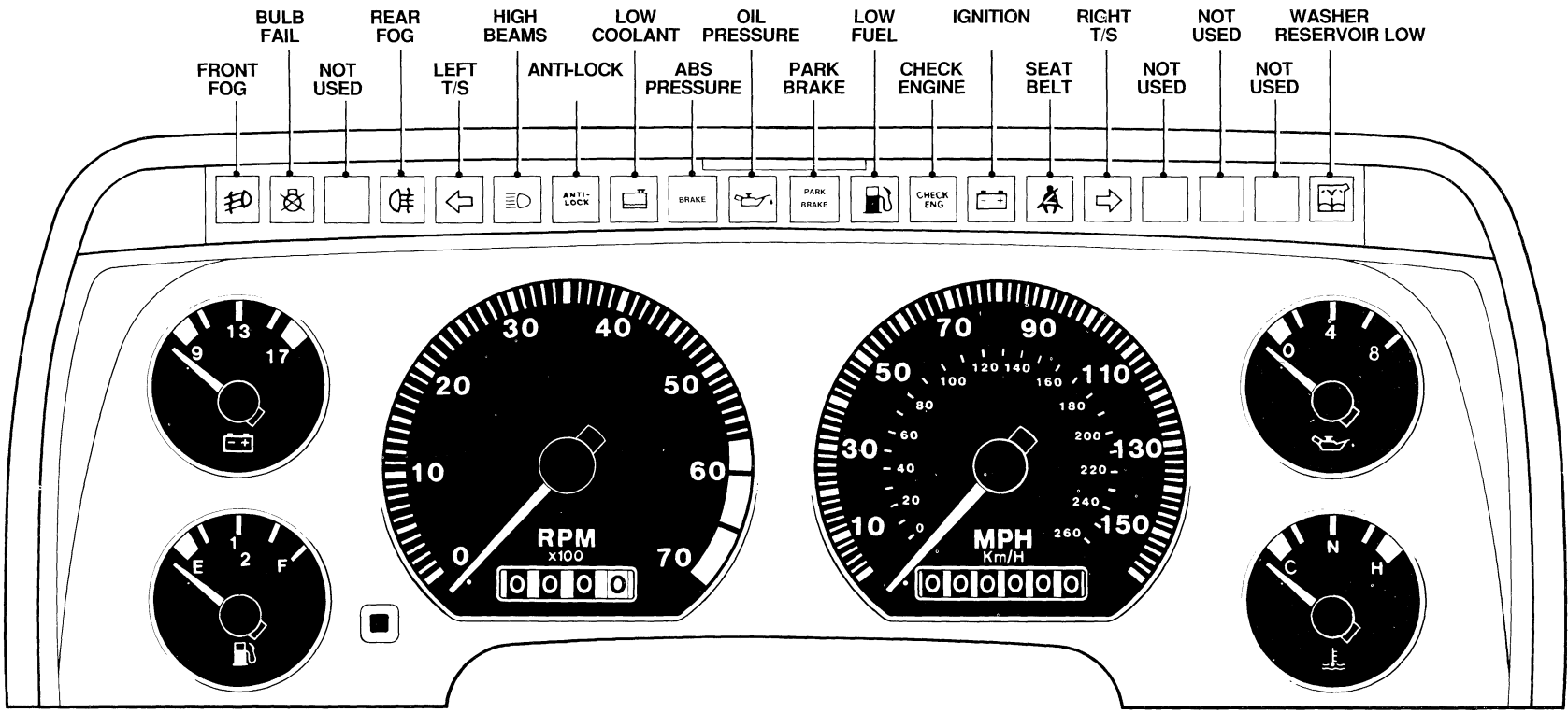


Multilock

Multilock rectangular connectors have blade-type contacts in two sizes (dependent on current load). The connector can be used for in-line harness connection, as shown, or as a "board" connector where direct connection to a component is made.



INSTRUMENT PACK



Instrument Pack

The instrument pack is of conventional design incorporating analog gauges and a warning indicator system. The speedometer and tachometer are supported by four supplementary gauges. The warning indicators are arranged in a row across the top. Back lighting is used to provide even illumination.

BRAKE FAIL warning inverter

The instrument pack incorporates the BRAKE FAIL signal inverter eliminating the previous inverter relay.

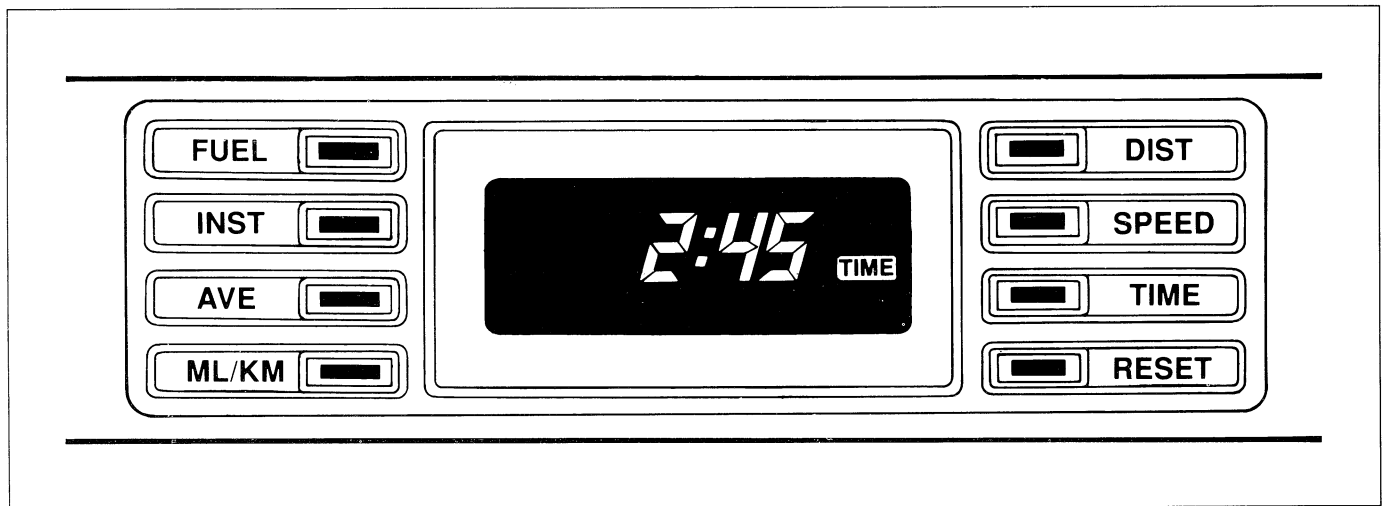
Trip Computer; Clock

The new trip computer uses a liquid crystal display (LCD), new graphics, and a new layout. When the ignition is turned ON, the LCD message display back lighting comes on and the trip computer defaults to the time of day. Except for the time functions, the function displays are to either side of the time display.

Key functions are as follows:

- FUEL: fuel used since last reset
- INST: instantaneous fuel consumption
- AVE: average fuel consumed since last reset
- ML / KM: miles / km selector
- DIST: Distance traveled since last reset
- SPEED: average speed since last reset
- TIME: time of day / elapsed time*
- RESET: clears memory

* The TIME key has two functions: the first press produces the time of day, the subsequent press displays the elapsed time since RESET. After five seconds, the time of day is once again displayed.



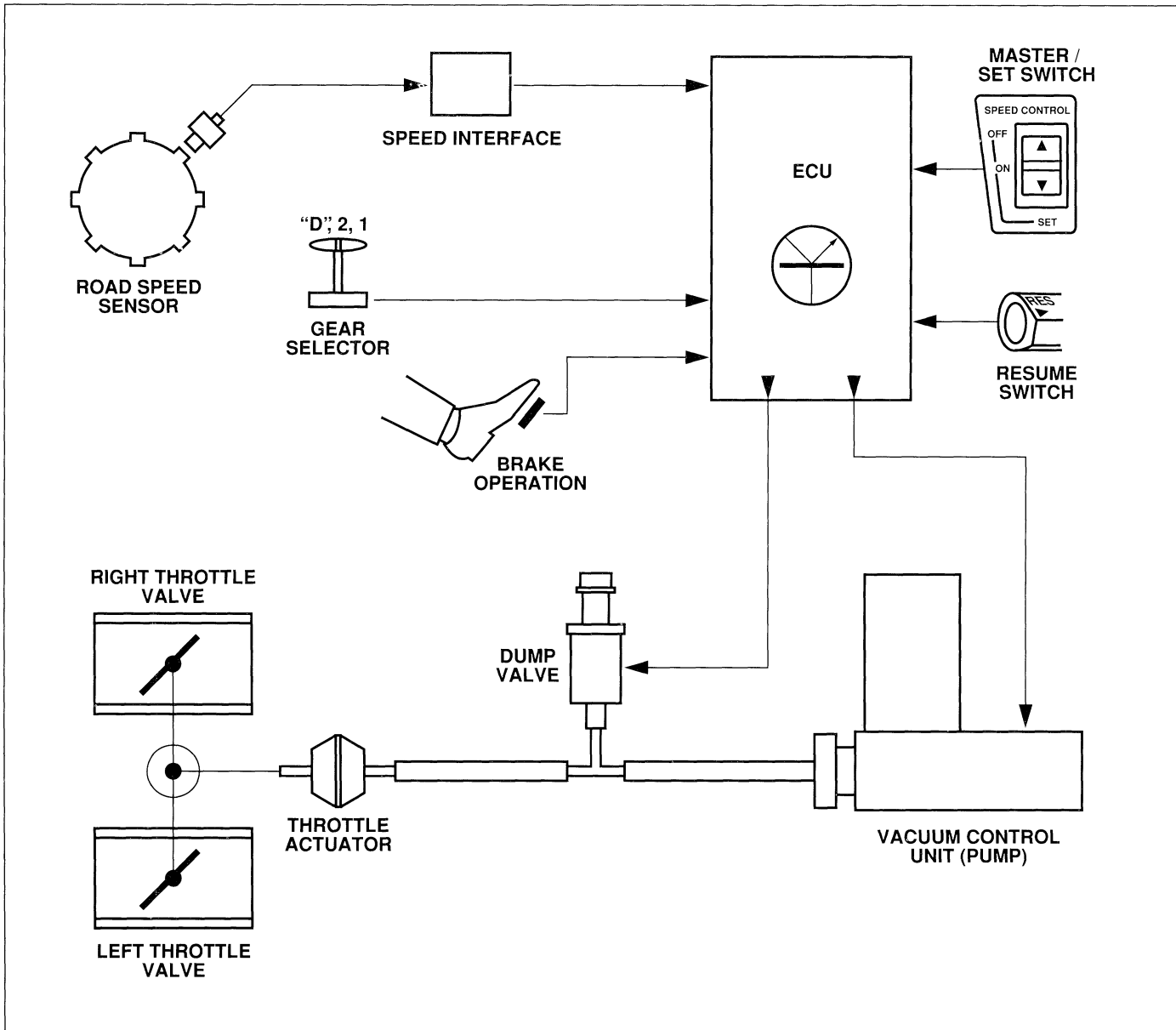
Message Display

The message display also serves as a CHECK ENGINE warning in the event of an EFI fuel failure.

If a fault occurs in the EFI system, a fuel fail (FF) code is generated. The CHECK ENGINE warning is immediately displayed on the message display. If the ignition is switched off, and then on, the CHECK ENGINE warning is displayed with the fail code appearing five seconds later. When the engine is cranked, the message is cleared and the clock displays. The CHECK ENGINE warning and FF code will be displayed at every ignition cycle. Refer to page 29.

Cruise Control

The new cruise control system is similar to the Sedan Range system. The system maintains the vehicle at a selected speed by controlling the position of the throttle over a wide range of movement, from idle to full throttle. The system has an independent vacuum source to operate the throttle movement under varying road conditions. The ECU (electronic control unit) interprets sensor and control panel inputs to activate the vacuum control unit and the dump valve.



System Operation

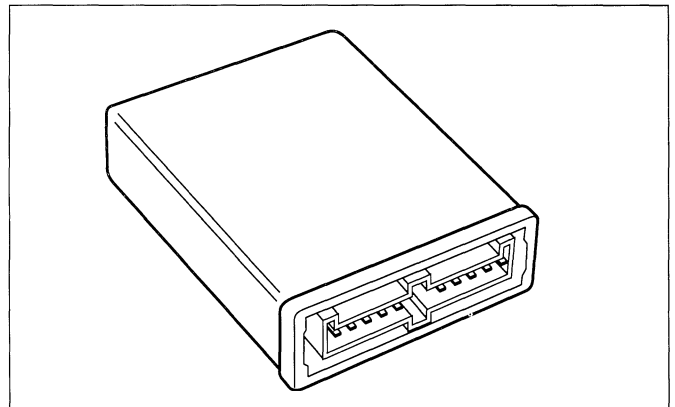
System operation is straight forward with the exception of "coast down". To "coast down" with cruise control engaged, momentarily press RESUME and the car will decelerate. To return to the set speed, press RESUME again. The system operates in all forward gears.

Cruise Control Components

Electronic Control Unit (ECU)

Location In front of the passenger's seat.

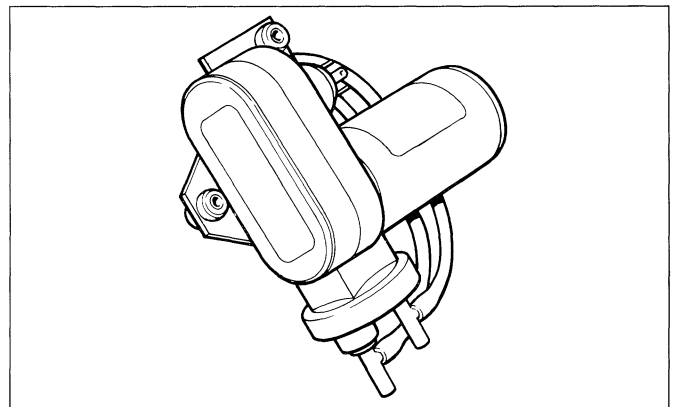
Description The ECU interprets sensor and control panel inputs to activate the vacuum control unit and the dump valve thereby positioning the throttle actuator to maintain the selected road speed.



Vacuum control unit

Location Engine compartment, right front.

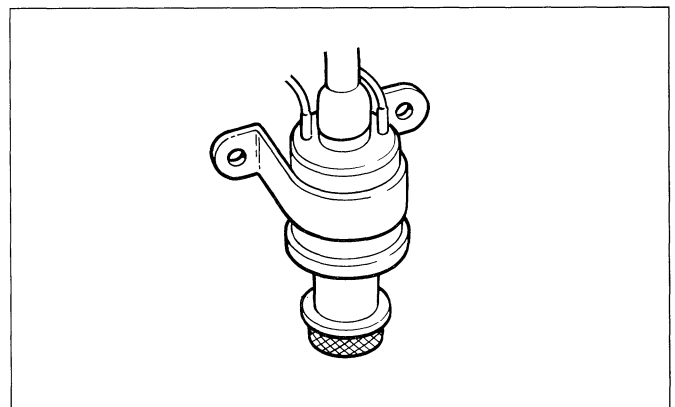
Description The vacuum control unit receives signals from the ECU and activates to create vacuum with the internal pump. The vacuum is used to position the throttle actuator.



Dump valve

Location Engine compartment, right front.

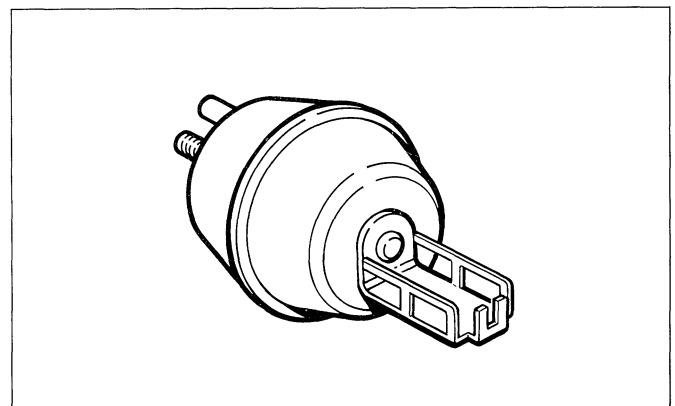
Description The dump valve receives signals from the ECU and releases vacuum to reposition the actuator.



Throttle actuator

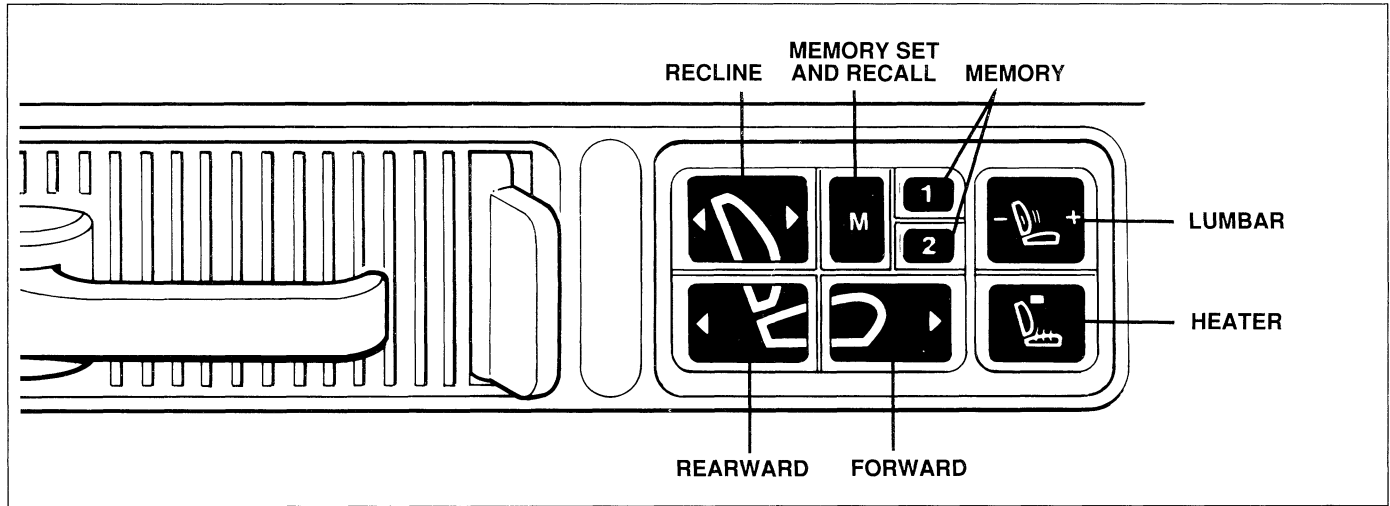
Location Engine vee.

Description The throttle actuator moves, under vacuum, to position the throttle turntable as necessary to maintain the selected road speed.

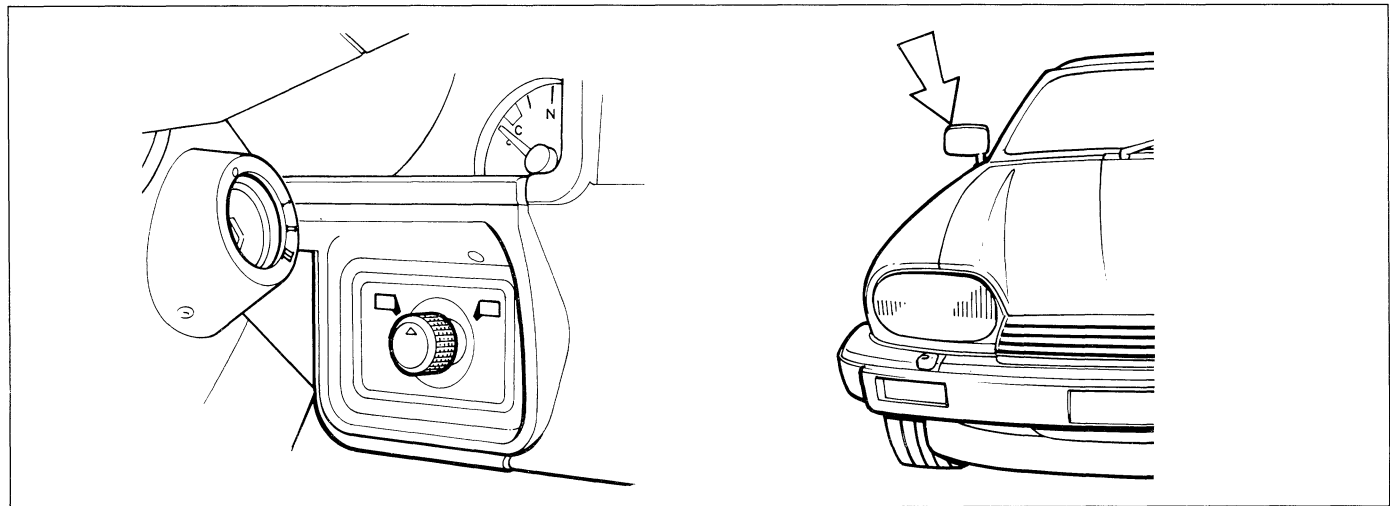


Powered Seats and Door Mirrors

The completely new front seats have full power control of movement, high efficiency heaters, and power lumbar supports. Additionally, the driver's seat has a two-position memory linked with a corresponding mirror position memory. When REVERSE gear is selected, the passenger's side mirror can be dipped to allow viewing of the rear wheel area.



The seats can be adjusted rearward when the doors are open (ignition OFF) to allow easy entry. The driver's seat memory is linked to the door mirrors so that the seat and door mirrors can be reset at the touch of the memory switch. Seat operation with the doors closed occurs only with the ignition in position I or II. The mirrors are adjusted with a single control. Turn the control left or right for the desired mirror, then move the control as a "joy stick" to position the mirror. Return the control to the center position.



Driver's seat and mirrors memory

Two sets of seat and door mirror positions may be programmed into the memory with the ignition in positions I or II. After adjusting the driver's seat and door mirrors to suit, simultaneously press the M (memory set) and 1 (memory position 1) switches and hold for three seconds. A second set of positions can be programmed into the system by repeating the process and pressing switch 2. The memory function operates only if the ignition is in positions I or II, or the driver's door is open. To activate the memory to position the seat and mirrors, press and hold the desired memory switch (1 or 2) until the seat movement stops. Once the seat is positioned, the mirrors will move to the position set in the memory.

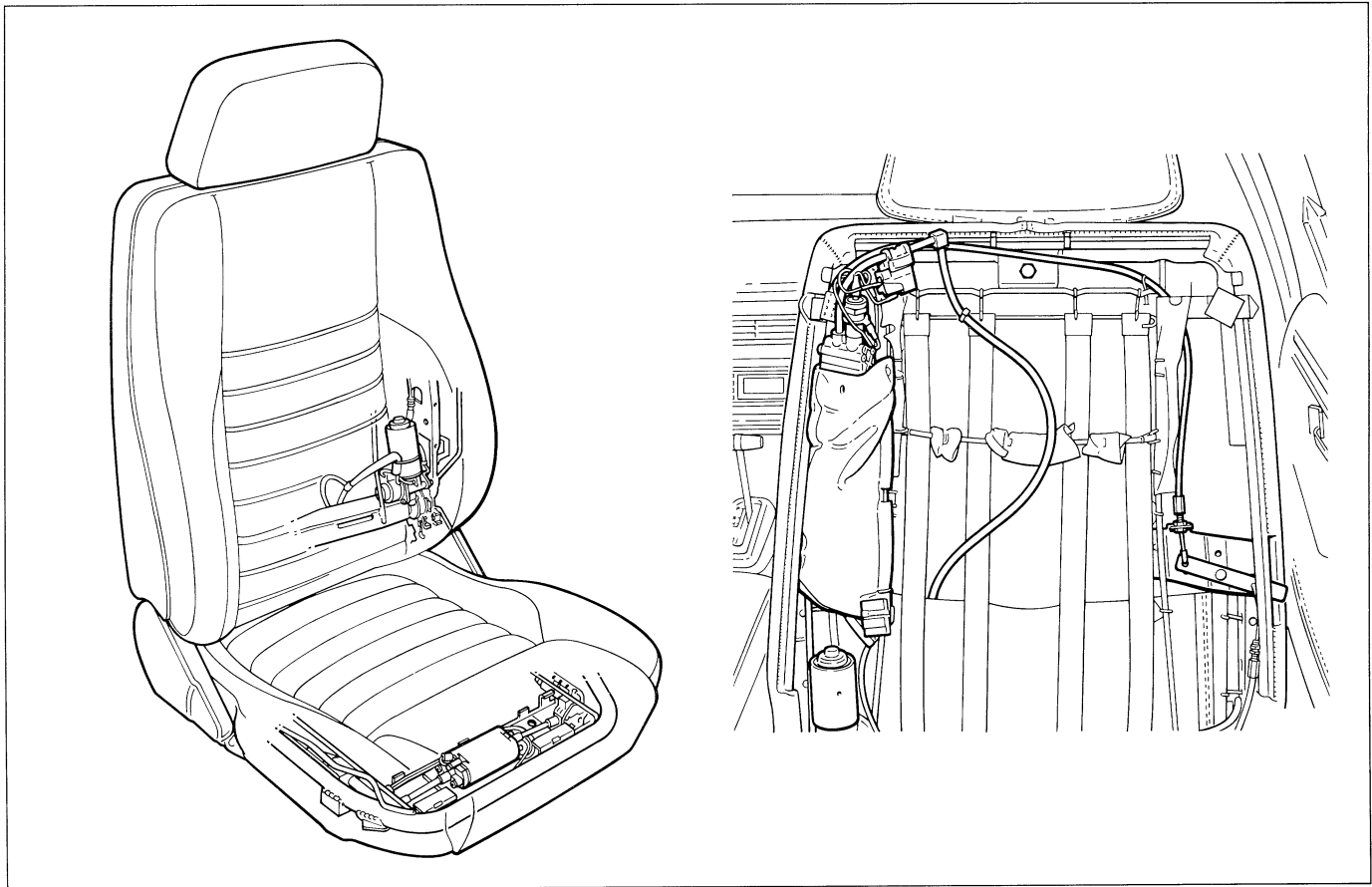


Passenger door mirror dipping

When REVERSE is selected, the passenger mirror can be dipped by simply moving the mirror control in any direction. The remainder of the mirror movement circuit is disabled when REVERSE is selected. When the gear selector is moved out of REVERSE, the mirror returns to the memory position.

Seat heaters

The new seat heaters incorporate a closed loop temperature sensing system in addition to the timing function. The control units employ field effect transistors to replace the previous relays. This system ensures faster warm-up and improved temperature stability. It also eliminates clicking noises associated with relays. The seat heaters operate only if the ignition is in position I or II. State illumination in the switch indicates heater operation.



Lumbar supports

The new lumbar support system delivers silent and smooth operation. The pump is quiet during inflation. Deflation is virtually silent and is accomplished via a pressure relief valve. The lumbar support motor is enclosed in a sound insulating bag and located in the seat back assembly. The lumbar supports operate only if the ignition is in positions I or II.

Seat slides and motors

A new seat support and slide mechanism is used in conjunction with the new seats. The fore / aft motor unit is located at the front of the seat cushion. The seat back recline motor unit is located at the base of the seat back. Coupe seat slides have one inner seat belt anchor. Convertibles have an inner and an outer seat belt anchor.

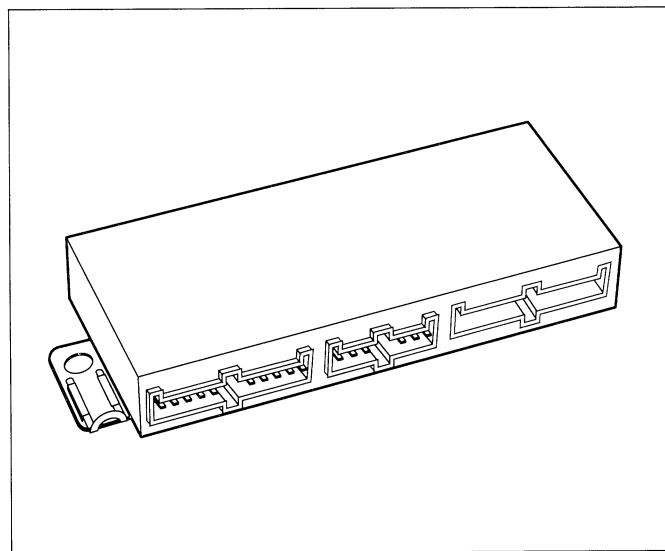
Powered Seats and Door Mirrors

Powered Seat and Door Mirror Components

Driver's seat and mirror Electronic Control Unit (ECU)

Location In front of driver's seat.

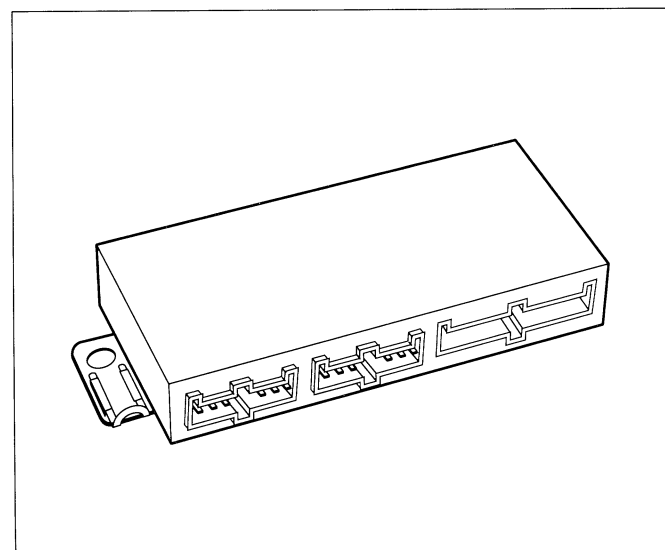
Description The ECU drives the seat position and mirror position motors. Memory position inputs to the ECU are received from potentiometers that are linked to the various position motors. A serial communications (ISO) link is provided for JDS testing. The diagnostic socket is a brown PM 4 connector located adjacent to the ECU.



Passenger's seat control unit

Location In front of passenger's seat.

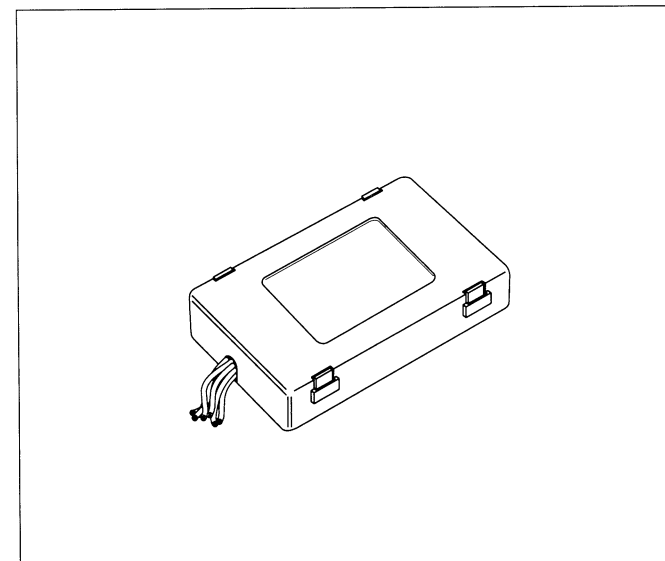
Description The control unit drives the passenger's seat position from signals received from the seat switch pack.



Seat heater control units

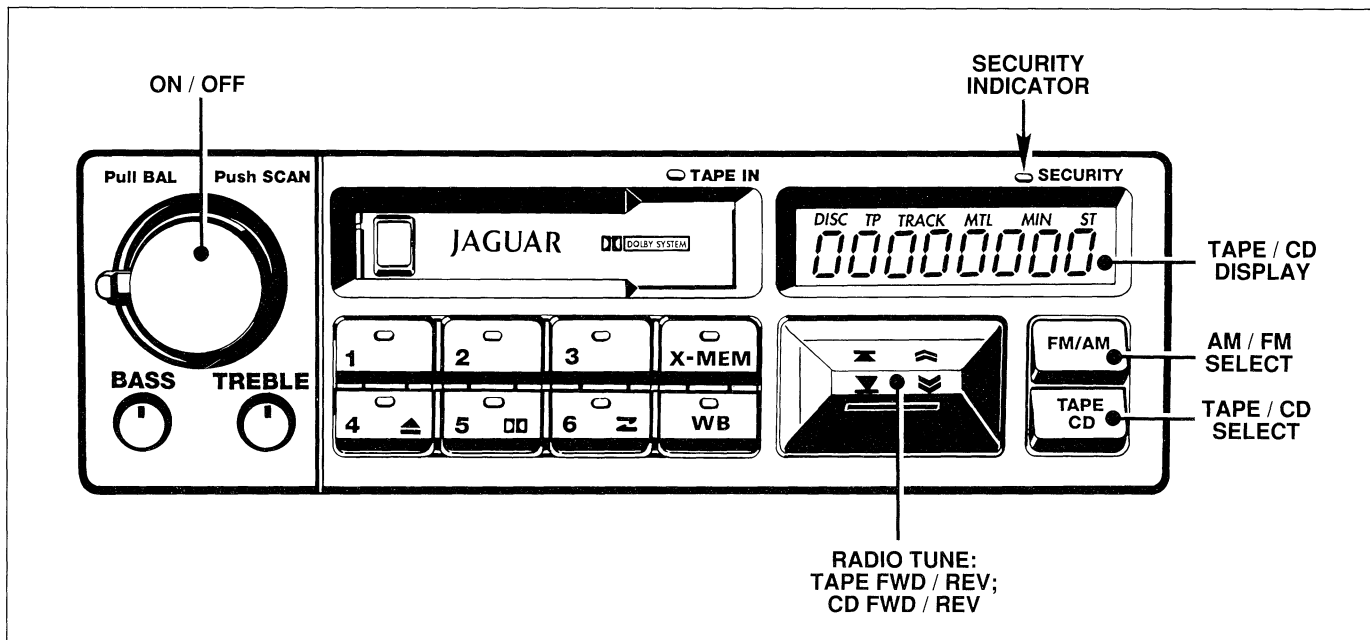
Location In front of each front seat.

Description The units control the seat heater timing and switching functions. The control units employ field effect transistors.



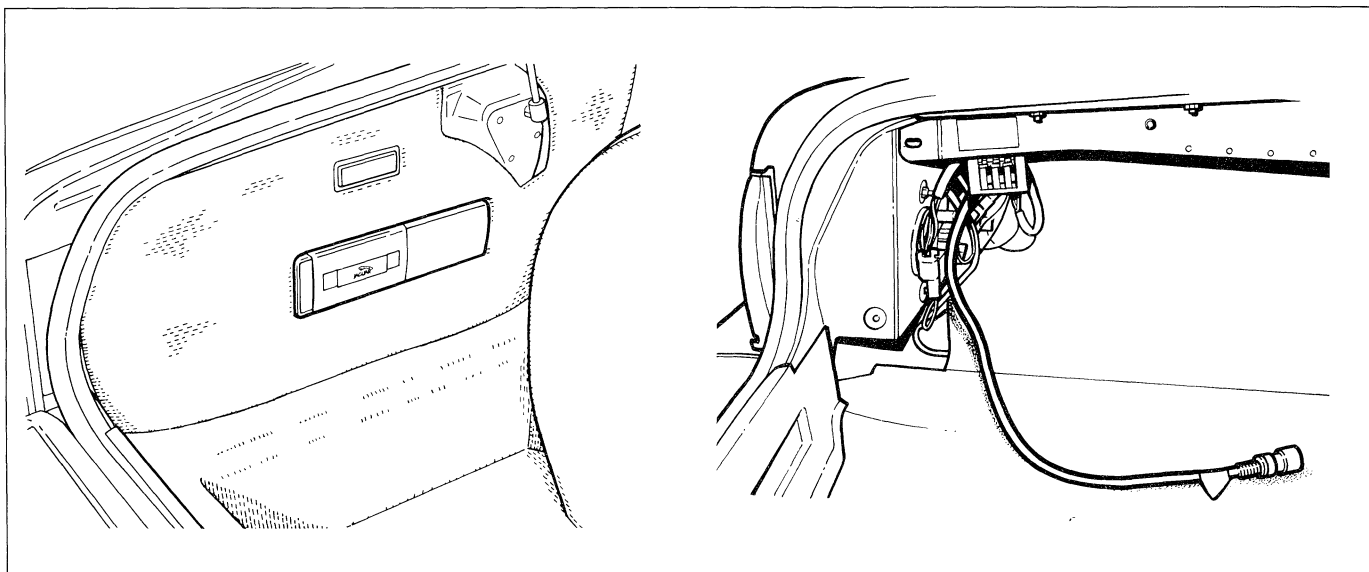
In-Car Entertainment

The new Alpine AJ 9150 audio unit incorporates a tuner, cassette deck, amplifier, CD control and anti-theft code system. The tuner provides manual tuning as well as seek, scan and auto-store. The new speaker system uses four 6 inch co-axial speakers, one each in the doors and two in the rear compartment side panels.



Optional Compact Disc Autochanger

All vehicles are pre-wired for installation of an optional trunk mounted compact disc autochanger. A separate harness is located on the left side and makes connection to the audio unit and the CD unit trunk. The audio unit provides complete control over the CD autochanger and includes error messages such as "no cont" meaning no continuity in the CD harness.

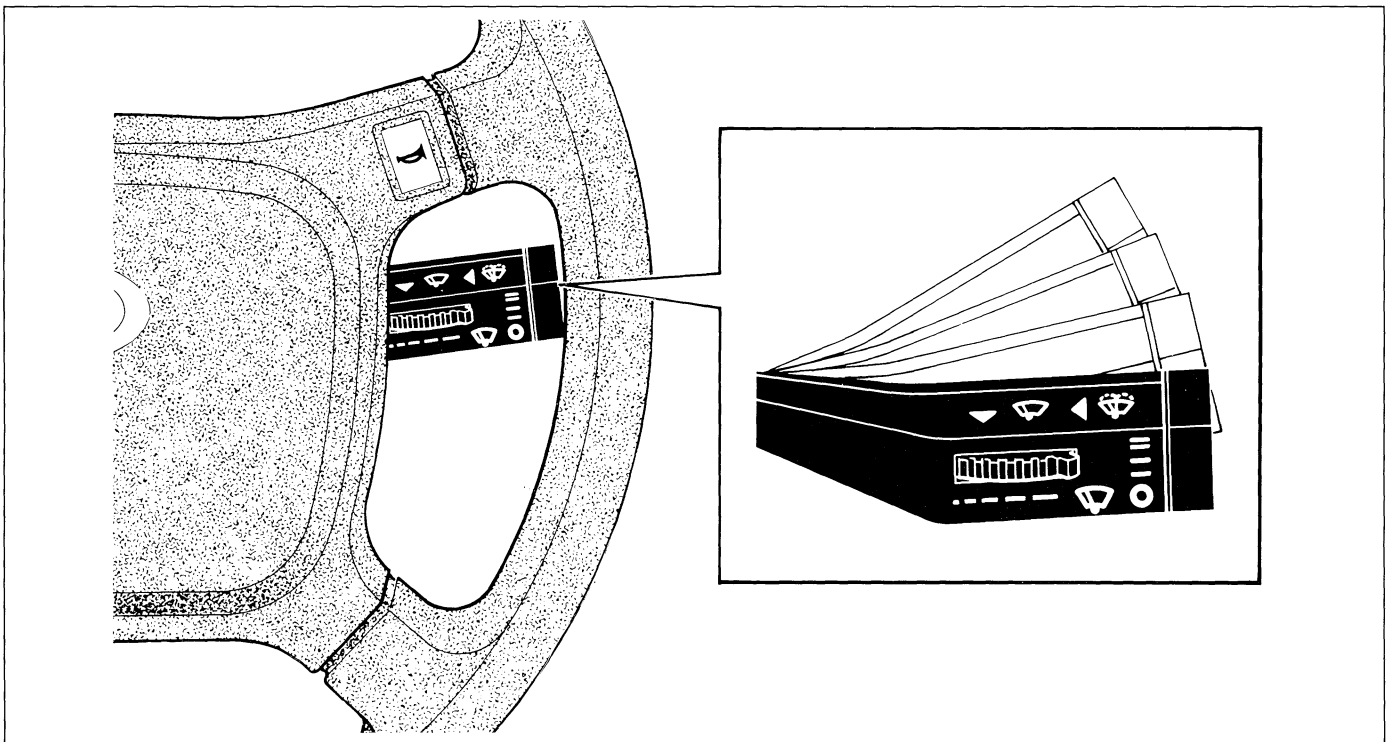


Wash, Wipe System

The programmed wash, wipe requires a single push of the stalk to activate a 1.5-second windshield wash followed by four complete wiper cycles. If the headlights are turned ON, the headlight power wash is activated for 1/2 second. Intermittent wiper cycle times can be varied between 2 and 16 seconds by rotating the thumb wheel on the stalk switch.

The new wash, wipe system has all new components and incorporates improvements to upgrade quality and increase reliability. New-type tubing with improved temperature handling characteristics is used for the wash lines. The redesigned plenum grille is color keyed to the body and has improved mounting.

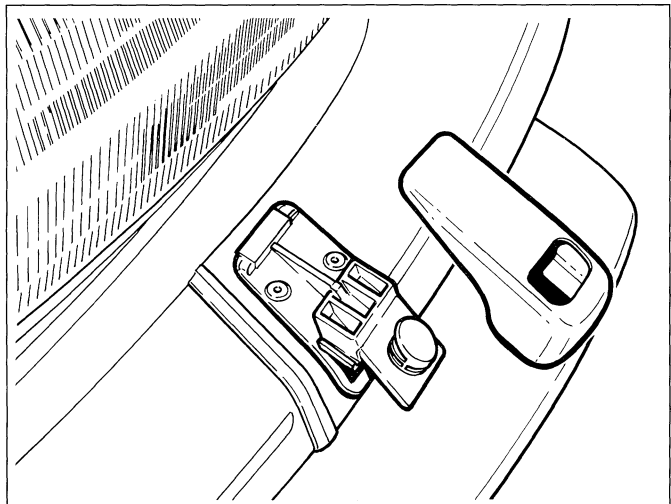
The headlight power wash system is similar to the Sedan Range system, using the same pump assembly. The wash jets are riveted to the front bumper and are accessed by sliding the finisher forward.



Wash, Wipe System Components

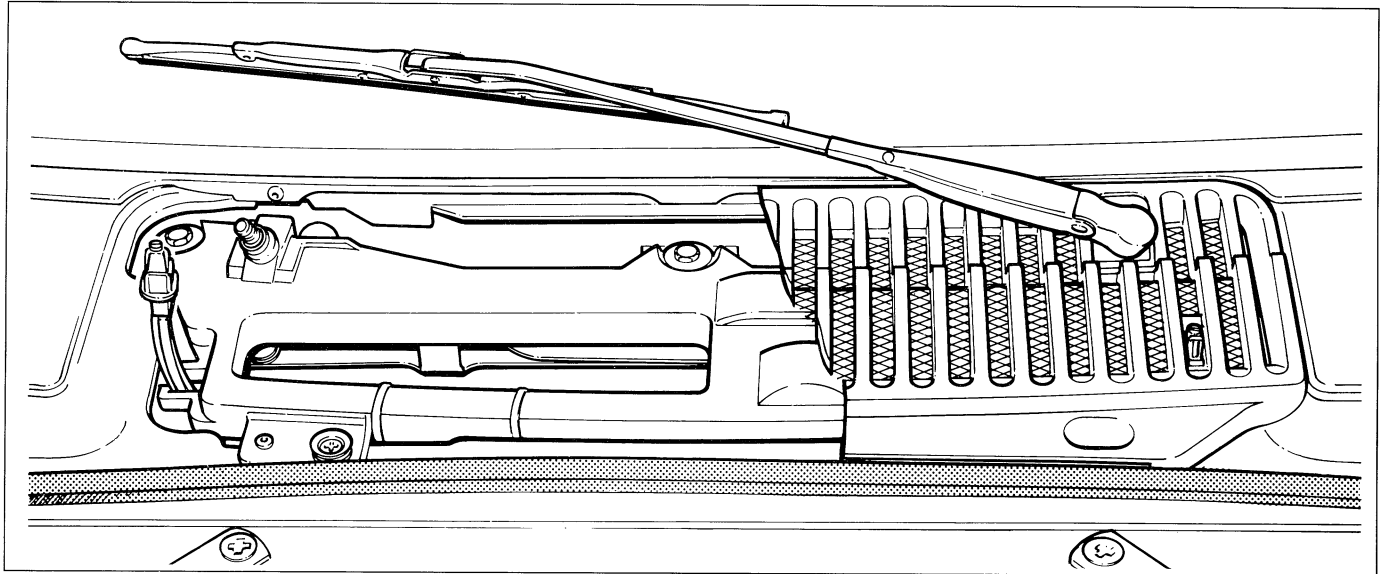
Heated washer jets

Both the windshield washer and headlight power wash jets have heated nozzles. All jet heaters operate simultaneously from the same temperature sensing system.



Wiper assembly

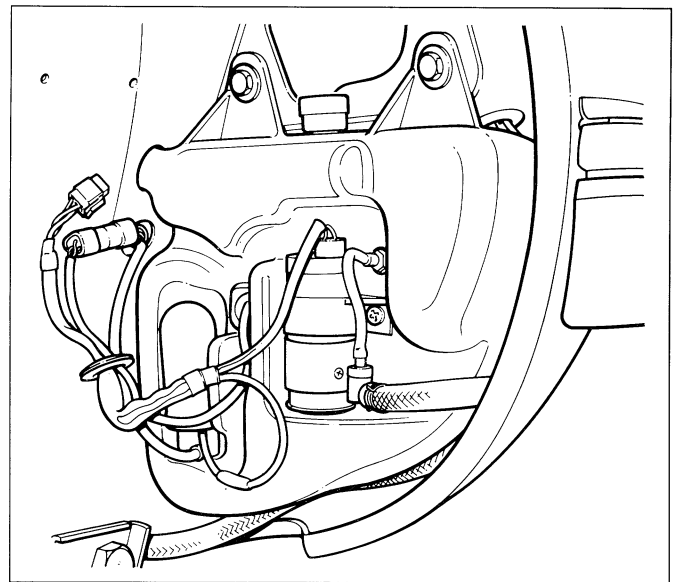
The wiper assembly features an improved mounting arrangement, a repositioned wiper motor to prevent water leaks, and a sealed electrical connector.



Reservoir assembly

Location Right front fender.

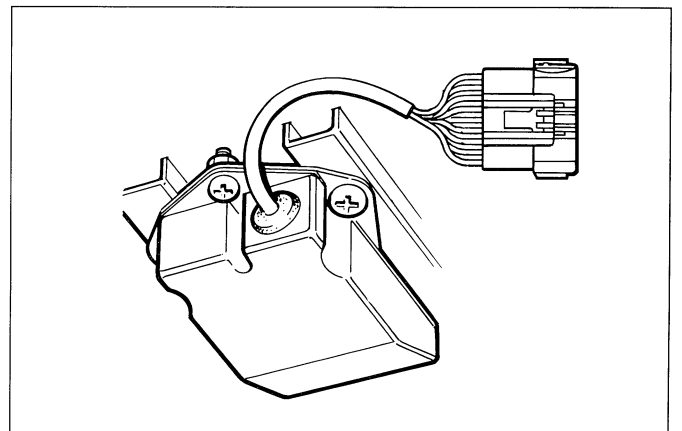
Description The assembly consists of the reservoir, windshield washer pump, power wash pump and a low level warning transmitter.



Wiper logic unit

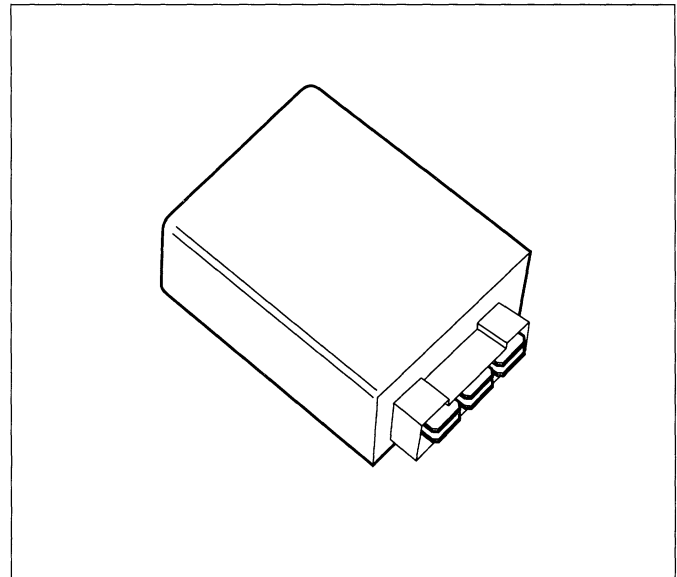
Location Under right component panel.

Description The wiper logic unit receives inputs from the stalk switch and the reservoir low level transmitter and provides outputs to the windshield washer pump, the wiper motor and the power wash pump.



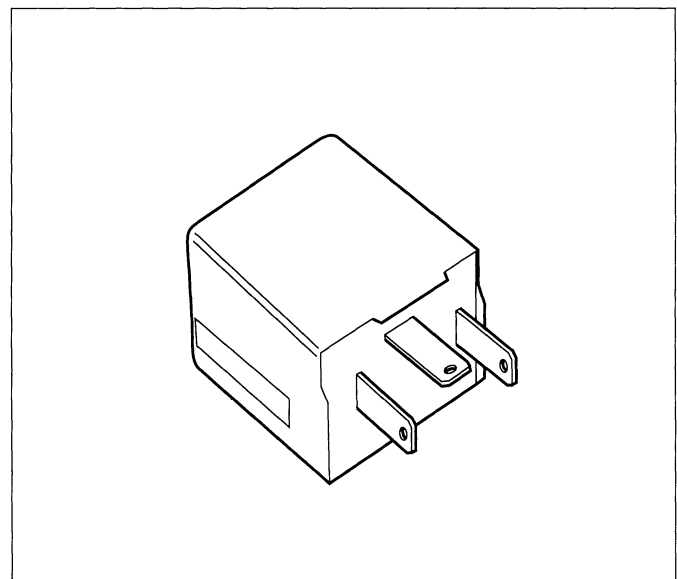
Headlights

The headlight circuit incorporates a new logic unit located on the underhood component panel. The headlights operate only when the ignition is in position I or II. The logic unit provides switching between high and low beams and defaults to low beams each time the ignition is switched ON.



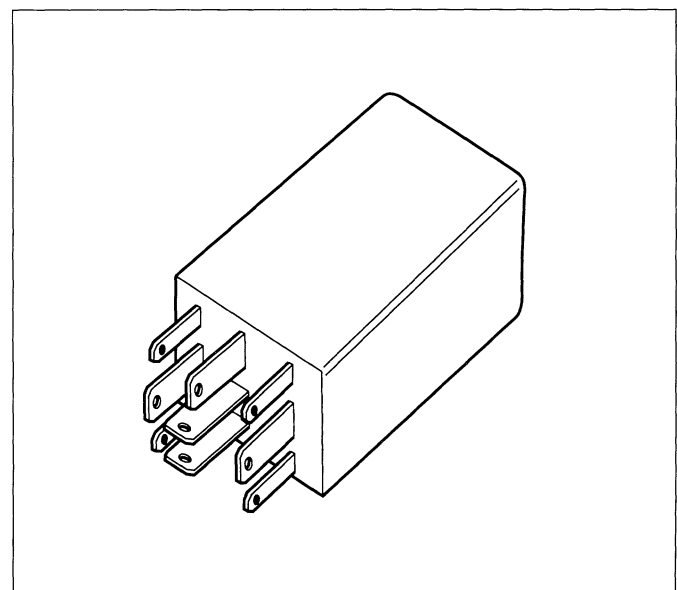
Lights On Audible Warning

A lights on audible warning is provided in the event that the side lights are left ON with the ignition OFF. The audible warning unit is located on the left component panel.



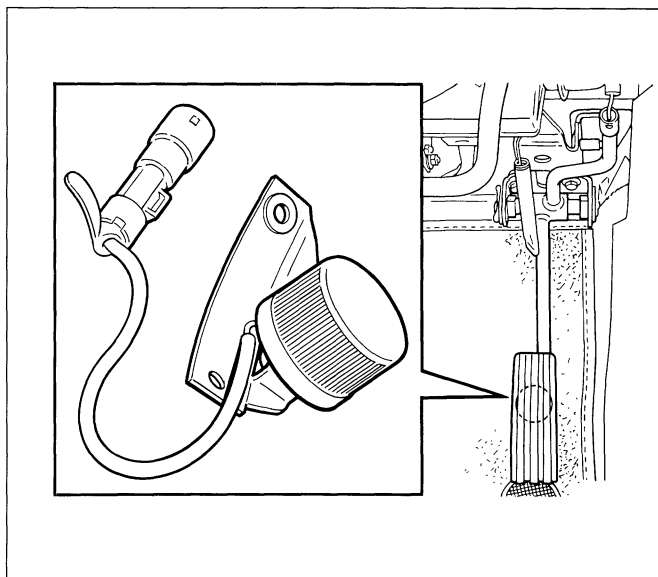
Locate Lighting Dimming

The intensity of locate lighting for the center console panels and switches, seat switch packs, dash panel switches and stalk switches is controlled by the dimmer control. The system incorporates a dimmer control unit located on the left component panel.



Kickdown switch

The transmission kickdown switch, formerly located on the throttle cable, has been replaced or relocated to under the accelerator pedal. Switch adjustment is accomplished using JDS.

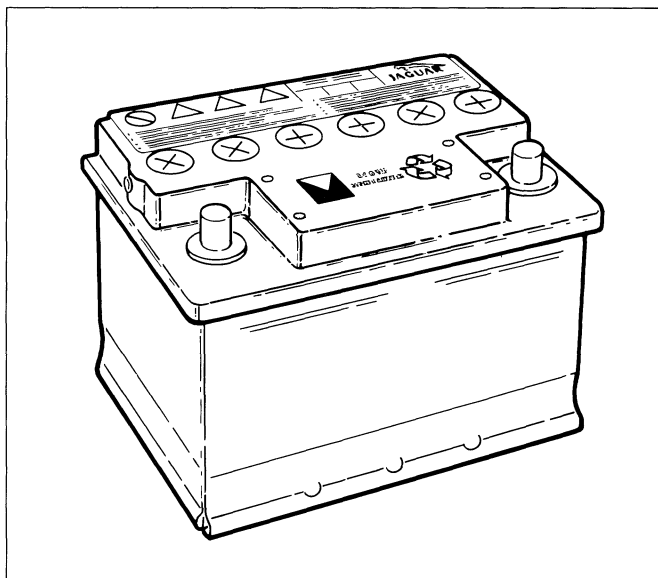


Battery

The battery type and specification have been changed to match the Sedan Range.

Battery Specifications:

Type	Varta DIN 55
Capacity	52 amp hr. (min)
Reserve capacity	85 minutes
Cold cranking	43 amps



Optional Security System

The wiring harness is provided with the connections for the optional dealer installed security system. The Coupe and Convertible have a common installation with the ECU, motion detector, and battery back-up located in the trunk right side. An improved antenna is supplied with the system

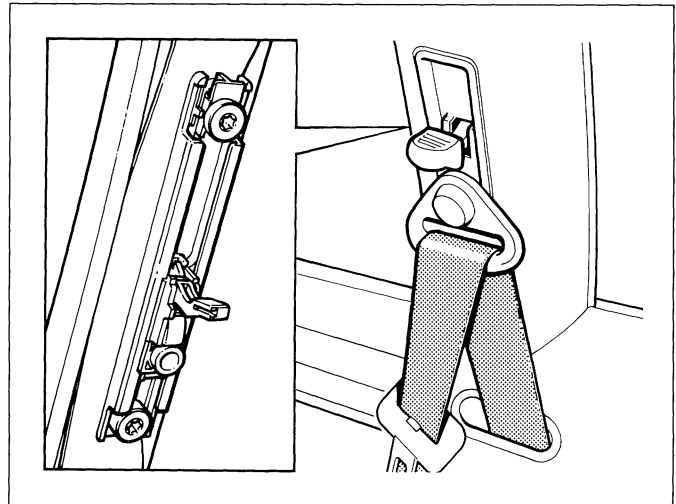
Service Notes

Seat Belt Anchors — Coupe

The shoulder belt anchors have a five-position adjustment range of 3 3/4 in. The anchor bracket is attached to the "B" post with torx bolts coated with thread locking compound. THESE ARE SAFETY CRITICAL INSTALLATIONS. Removed bolts must be replaced by new coated bolts and torqued to specification.

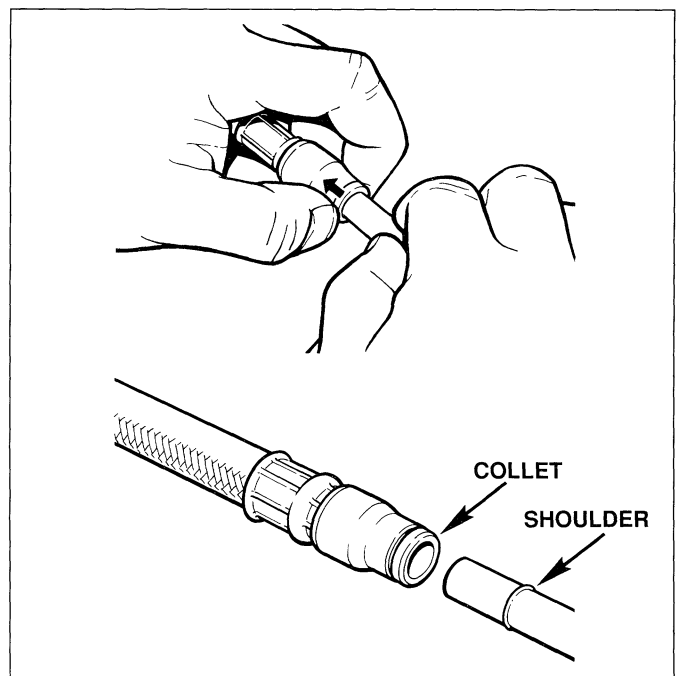
Torque Specification:

Anchor bracket bolts	27 Nm (20 lb ft)
Belt loop bolts	35 Nm (26 lb ft)



Fuel System Connectors

Fuel line connectors make and break by sliding back the collet. Be sure the connector area is cleaned before disconnection. Exercise care that the "O" rings are not damaged and the tubing is not scratched. During reassembly, push the connector fully home and ensure that the collet is contacting the shouldered ring on the tubing.



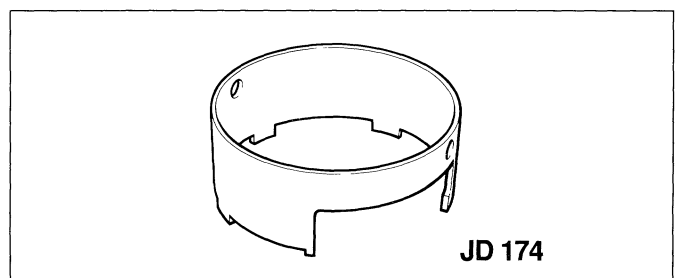
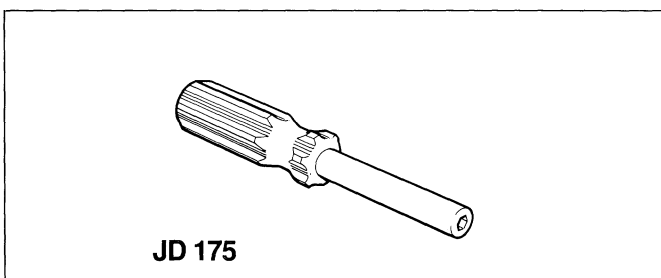
Fuel System Tools

In-tank fuel hose clamps

Tool JD 175 is a non-ferrous wrench for use when loosening / tightening in-tank fuel hose clamps. Using JD 175 will eliminate the possibility of a spark being created.

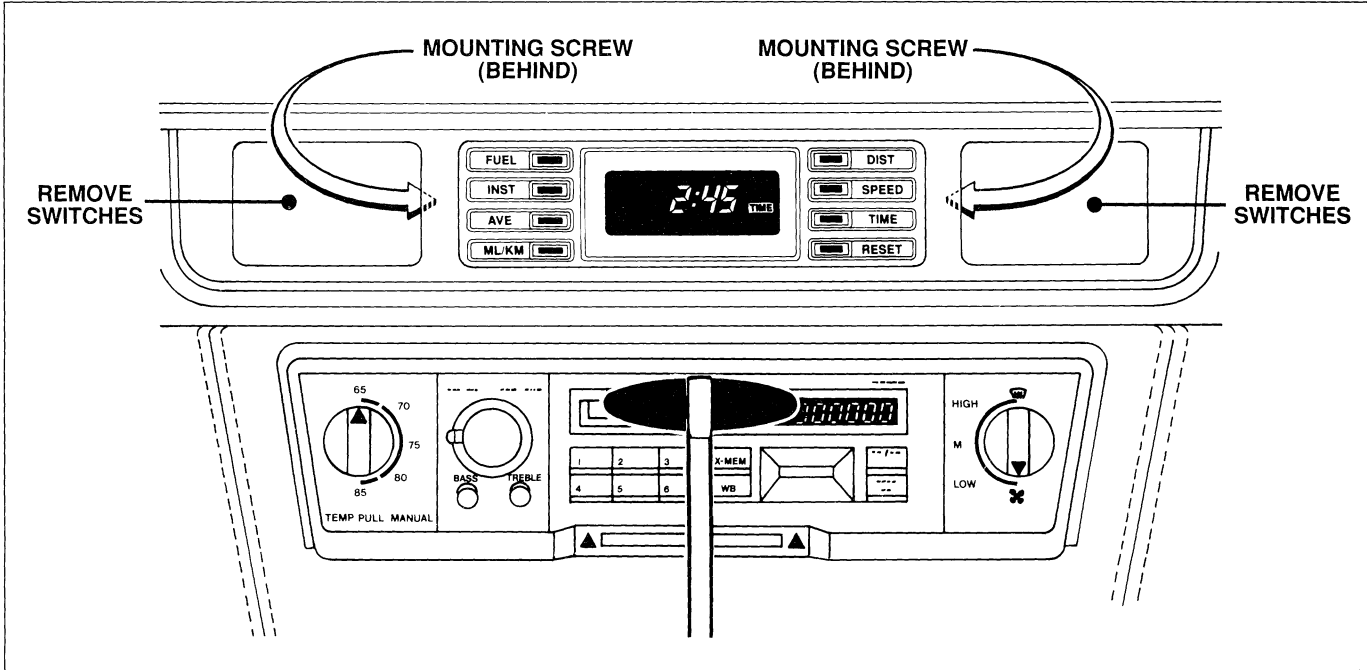
Evaporative loss flange

The evaporative loss flange is retained by a locking ring that requires special tool JD 174 for installation and removal.



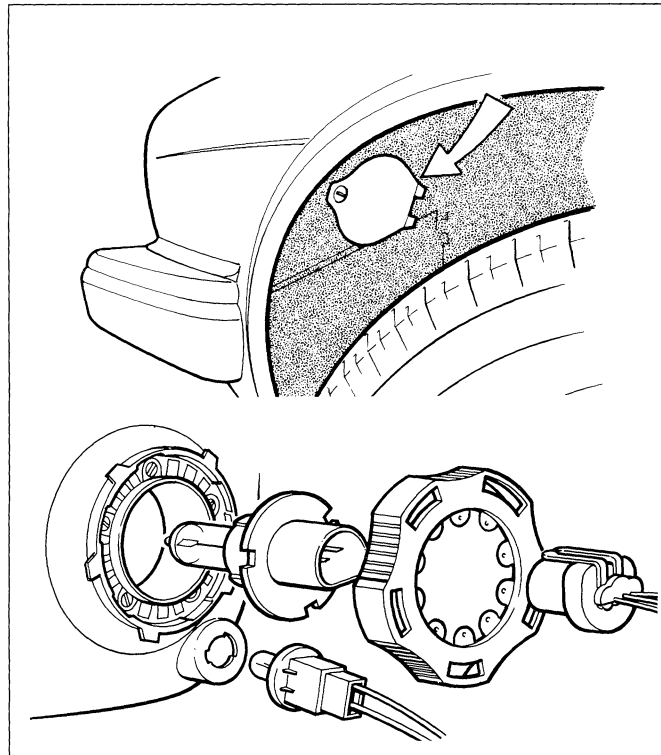
Trip Computer Removal

The trip computer unit is retained in the center console by screws. To remove it, first remove the switches on either side to allow access to the trip computer unit retaining screws. Remove the screws, then withdraw the unit from the center console.



Headlight Bulb Replacement

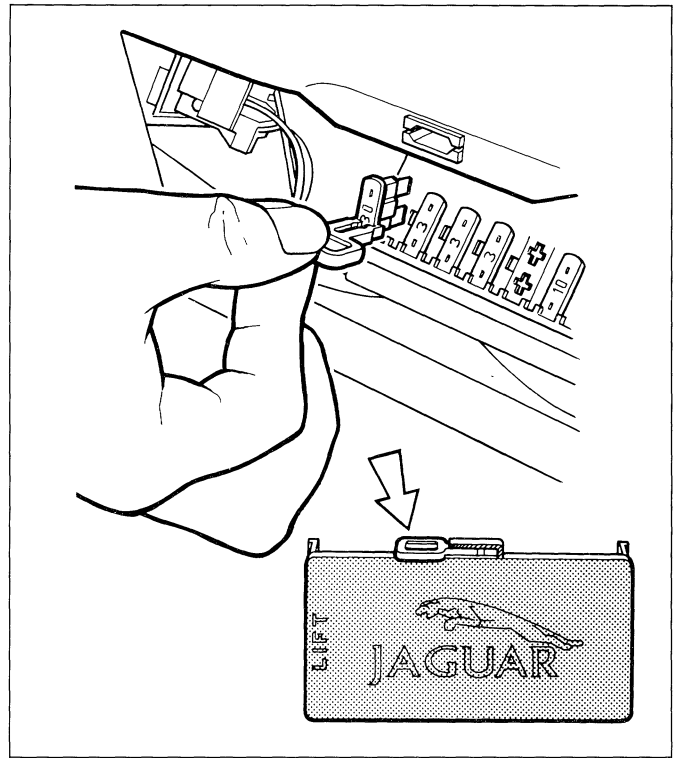
Headlight bulbs are replaced through removable access panels located in the front fender liners.



Service Notes

Fuse Removal Tool

A fuse removal tool is located on the covers of the left and right fuse panels.



Fuse Connector Pin Removal

Special tool JD 177 is used for fuse panel connector pin removal.

