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XJS Range  
**Model Year Update**

**1993**



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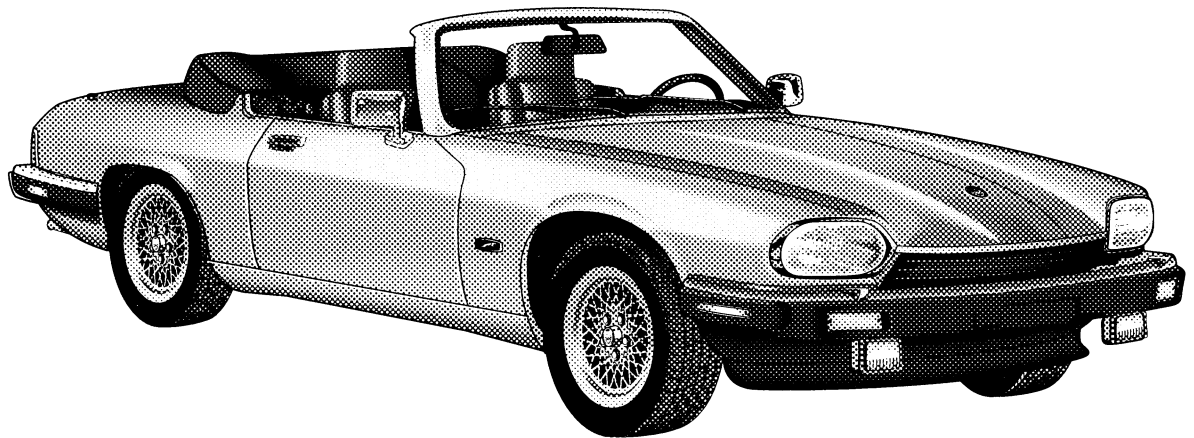
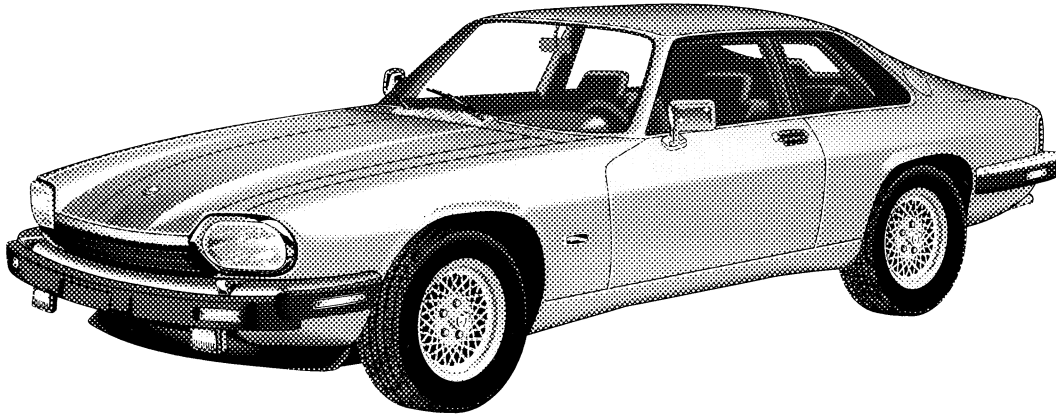
Publication number S-79

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The 1993 model year technical information contained in this publication should be considered preliminary information. Certain "running changes" that occurred during the 1992 model year are included where appropriate.

### Vehicle Identification Number (VIN)

COUPE (A4) SAJNW574( )PC (serial number)  
COUPE (M5) SAJNW578( )PC (serial number)

CONVERTIBLE (A4) SAJNW474( )PC (serial number)  
CONVERTIBLE (M5) SAJNW478( )PC (serial number)

**NOTE:** ( ) = Check digit P = 1993 MY

### Standardized Terminology

Starting with the 1993 model year, emission related components and systems must conform to industry standardized terminology. The following is a summary of the new or revised terminology included in this publication:

#### Standardized Terminology

Generator  
Engine Control Module (ECM)  
Mass Air Flow Meter  
Malfunction Indicator Lamp  
Diagnostic Trouble Code (DTC)  
Data Link Connector (DLC)

#### Previous Terminology

Alternator  
Engine Management ECU  
Air Flow Meter  
Check Engine Indicator  
OBD Code  
Diagnostic Socket

## 1993 XJS Range

The 1993 model year XJS Coupe and Convertible are powered by the six-cylinder 4.0-litre AJ6 engine. Both models are standard equipped with the ZF four-speed electronically controlled automatic transmission. A manual five-speed gearbox is optional. Automatic transmission equipped models will be abbreviated as A4; manual gearbox equipped models will be abbreviated as M5. The following table summarizes the various new and optional technical features of the models.

**X** Standard equipment      **O** Optional equipment      **N/C** No cost option      **-** Not available

Technical Feature	XJS Coupe	XJS Conv.
Driver's side air bag	X	X
Child seat tether	X	-
Tilt steering wheel	X	X
Gear shift interlock system	X (A4 only)	X (A4 only)
Electronically controlled automatic transmission with Normal and Sport modes	X	X
Five-speed manual gearbox	N/C	N/C
120 amp generator	X	X
72 amp hour battery	X	X
Mechanical plus auxiliary electric fan engine cooling system	X	X
Goodyear 235/60 VR 15 tires	X	X
Lattice alloy road wheels	X	X
Front and rear fog lights	X	X
Limited slip differential	X	X
Security system	X	X
Remote CD autochanger	O	O
Cold Weather package (engine block heater, heated headlight power wash)	O	O
Metallic paint	N/C	N/C

**NOTE:** All Canadian vehicles are equipped with the Cold Weather package and the Canadian compliance package including: daytime running lights, metric speedometer / odometer, ISO brake warning symbol, Canadian VIN, metric certification, and glove box label.

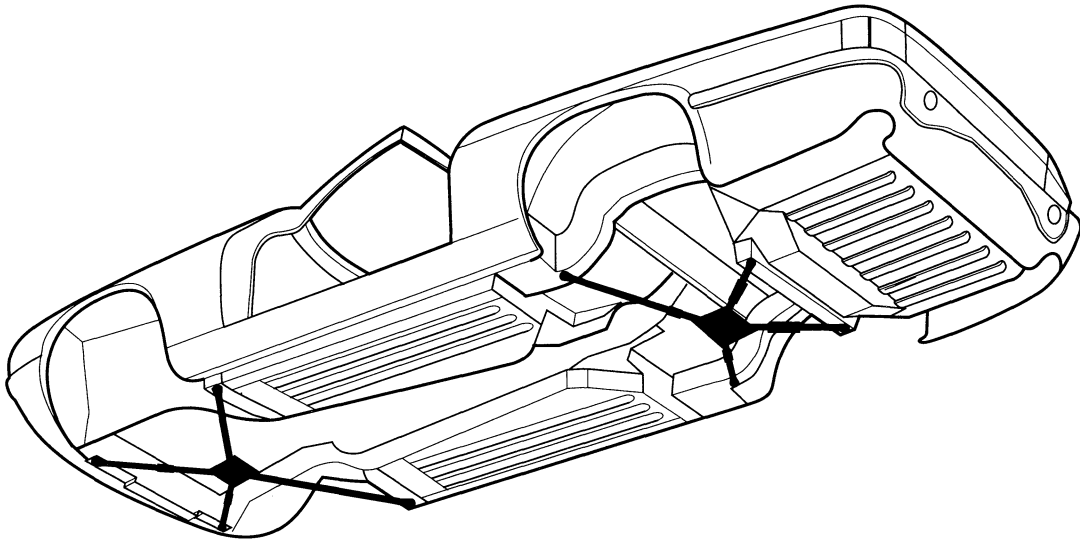
**Body Structure**

**Convertible torsional rigidity "X" bracing**

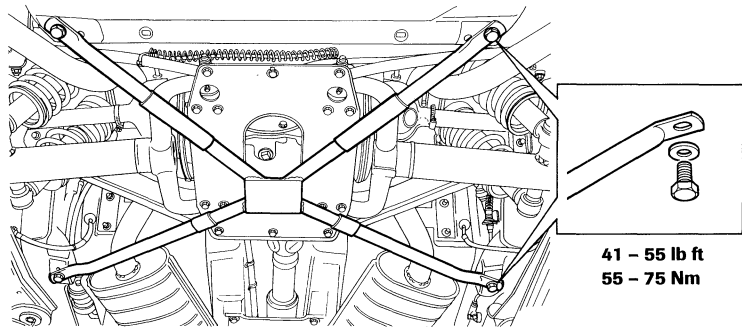
The torsional rigidity of the convertible body shell has been substantially enhanced by a system of front and rear "X" bracing. Constructed of stainless steel tubing with welded reinforcements at the center, the X bracing system provides a 40% increase in body torsional rigidity. The trunk floor is locally reinforced to handle the increased loading

through the brace rear mounting brackets. Servicing of the vehicle is not compromised as the X braces are easily removable. Each brace is secured to the body structure by four bolts and washers (tightening torque: 55-75 Nm; 41-55 lb ft).

**CONVERTIBLE "X" BRACING**

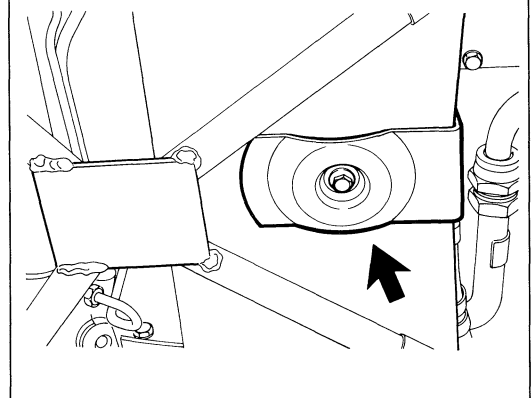


**REAR "X" BRACE**



**CAUTION:** Do not jack the vehicle on the center of the X braces. Jack only as described in the Service Manual and the Owner's Handbook. A jacking pad is provided on the front suspension subframe at the rear of the X brace reinforcement plate. If the rear of the vehicle must be jacked from the center point, place a wooden block against the rear skid pan, behind the X brace reinforcement plate.

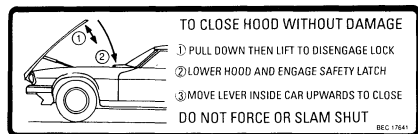
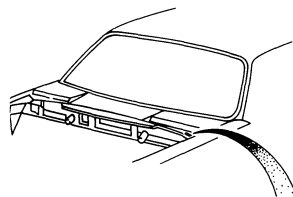
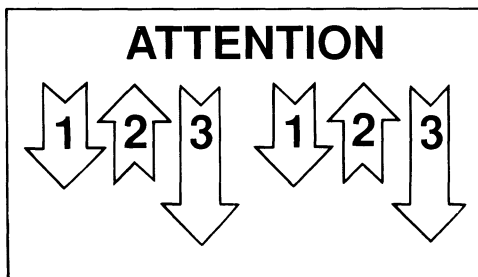
**FRONT JACKING PAD**



**Locking hood support strut**

A locking, gas-filled support strut is used to retain the hood in the open position. The method of unlocking and opening remains unchanged; however, the hood must be fully opened to engage the locking strut. To unlock the hood, pull down slightly then raise to the upper limit to disengage the lock. Close the hood in the normal manner. A warning label indicating the unlocking sequence is located on the strut. An instruction label detailing the procedure is located on the engine compartment flange.

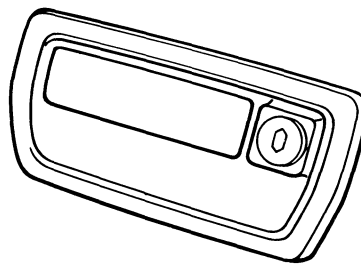
**HOOD SUPPORT WARNING AND INSTRUCTION LABELS**



**Door handles**

During the 1992 model year, the door handles and locks were changed to the type used on the Sedan Range. This type of door handle provides a smoother and more positive operation, and ensures normal operation during winter ice conditions. A single key operates the ignition as well as the door, trunk and glove box locks.

**DOOR HANDLE**

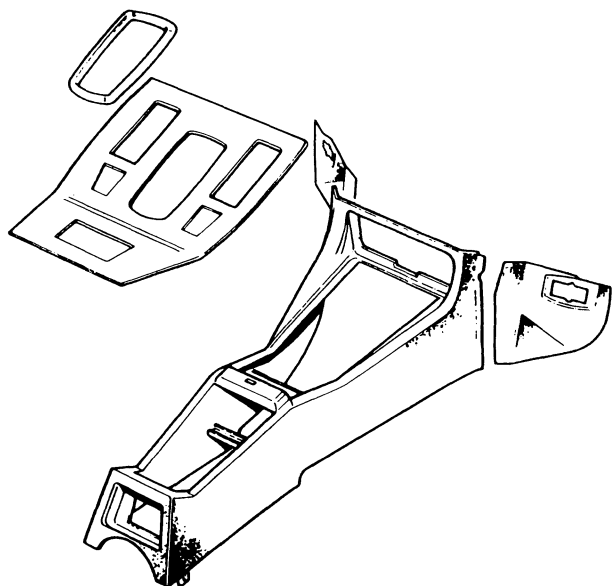


**Interior Design**

**Center console**

The center console top finisher is made by a new process that laminates wood and aluminum. This process controls expansion and eliminates cracking. Removal of the top finisher is simplified by the deletion of the threaded side mount fasteners.

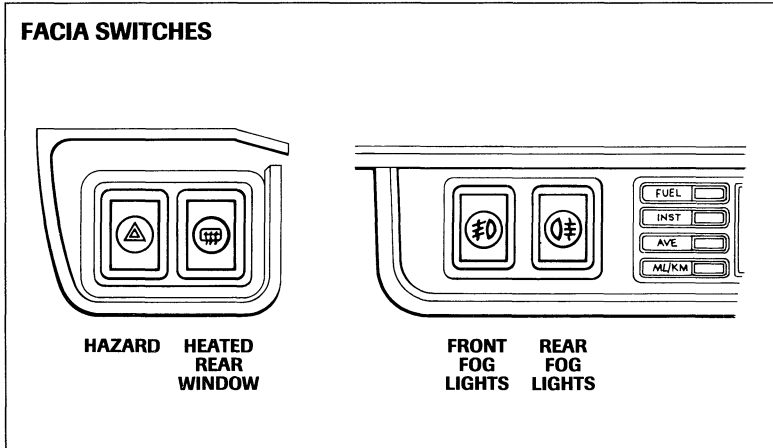
**CENTER CONSOLE**



**Interior Design (continued)**

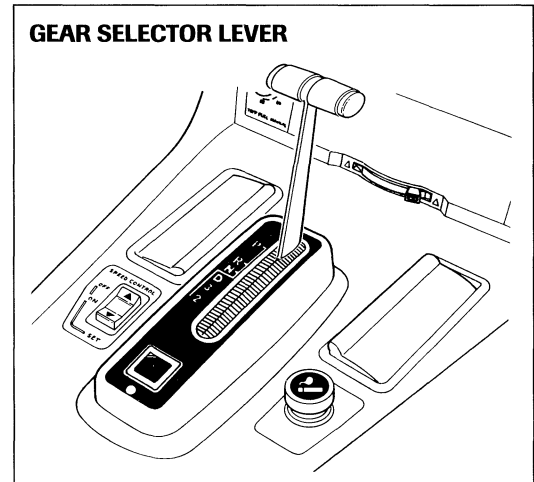
**Facia switches**

The facia-mounted switches are constructed in twin combinations with revised locations. The front and rear fog light switches relocate to the center console to the left of the trip computer. The hazard warning and heated rear window switches relocate to the left of the steering column.



**Gear selector lever**

Ergonomic design considerations have led to a redesign of the automatic transmission gear selector knob. The shape and size of the knob have been altered to provide a more positive feel during gear selection.

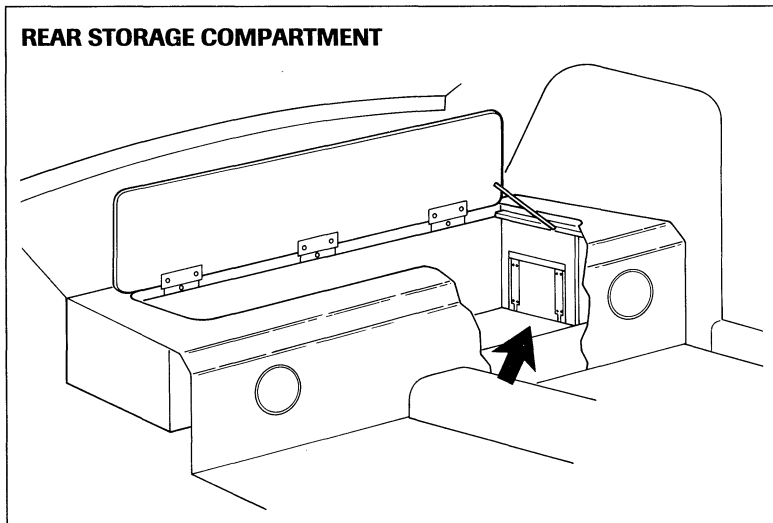


**Seat slides**

Increased leg room for both occupants is made available by relocated seat slides. The new slide location allows an additional <sup>13</sup>/<sub>16</sub> inch (20mm) of rearward seat movement.

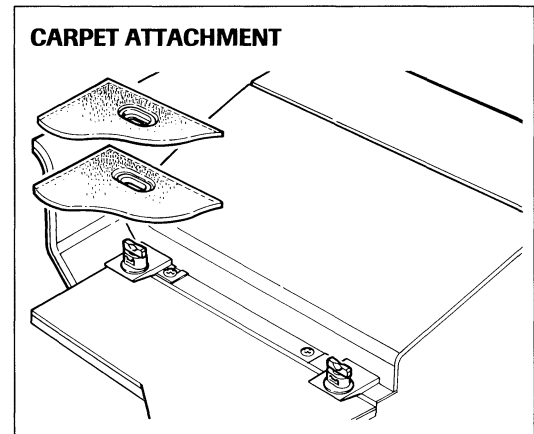
**Convertible rear storage compartment**

Access to the transmission control ECU (A4 models only) is provided by a split inner side panel on the left side of the convertible rear storage compartment.



**Carpet attachment**

Positive location of the carpets is ensured by two half-turn fasteners at the rear of the carpets. These fasteners are also used to retain the accessory Jaguar floor mats.





### Engine Design / Construction

Power for the 1993 XJS Range is supplied by the spirited AJ6 engine formally used only in the XJ6 Sedan Range. Engine power and torque are altered slightly in the XJS installation.

#### AJ6 4.0 litre: XJS

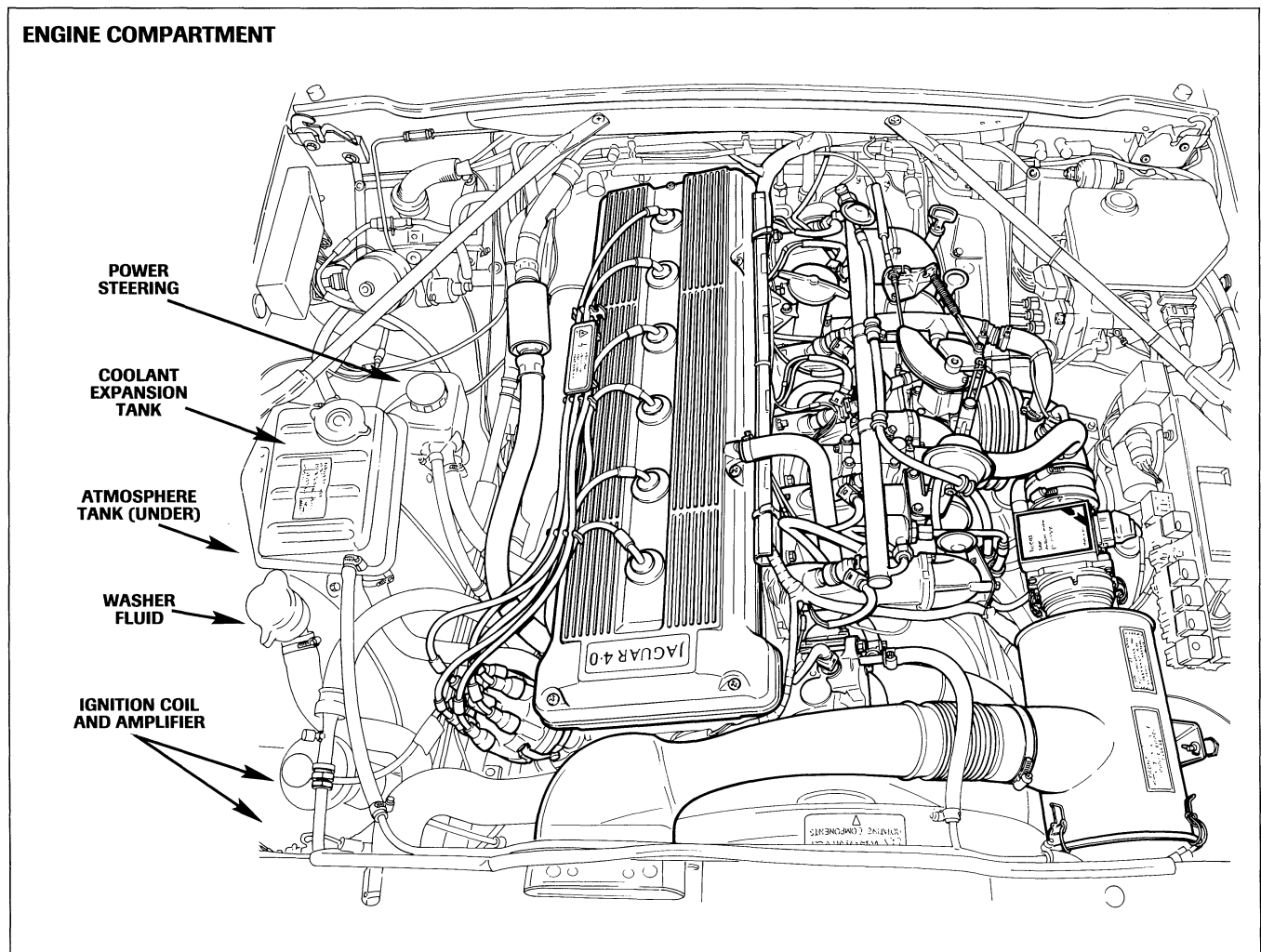
Power (DIN)	219 hp @ 4750 rpm
Torque (DIN)	273 ft lbs @ 3650 rpm

#### Air cleaner

The paper element air cleaner has a sheet metal housing and intake neck with the intake air entering at the center of the radiator support through a molded horn.

Installation of the engine and associated systems in the XJS Range differs in the following areas:

- Air cleaner
- Oil cooling system
- Cooling system
- Exhaust system and oxygen sensor.

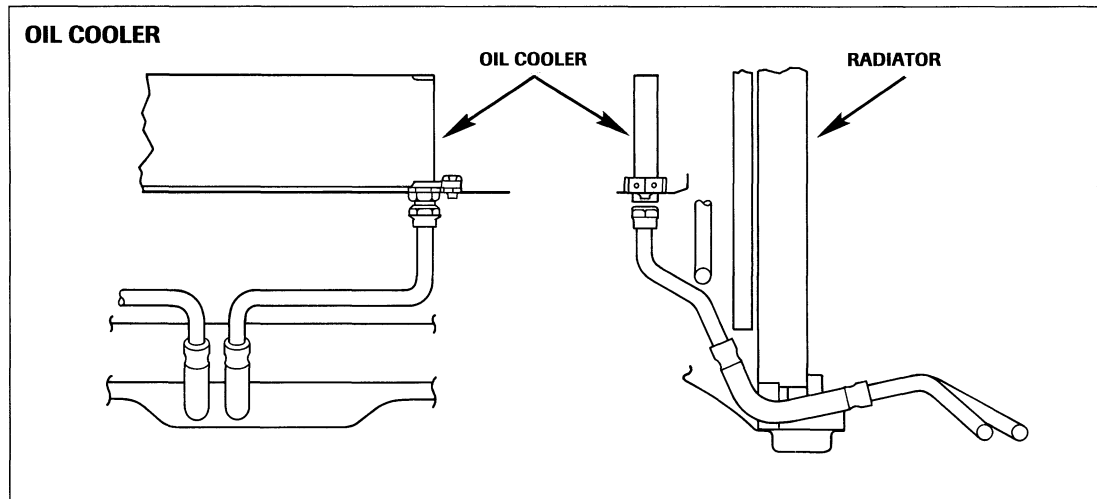


**Engine Design / Construction (continued)**

**Oil cooling**

An external oil cooling system is used for the AJ6 engine installation in the XJS. The separate oil cooler is mounted in front of the radiator with lines running to and from the engine routed under the radiator.

**NOTE:** During the 1992 model year (VIN 184574 ON) the V12 engine oil cooler system was changed to a full flow design. At the same time, the cooler was resized and relocated to the front of the radiator.

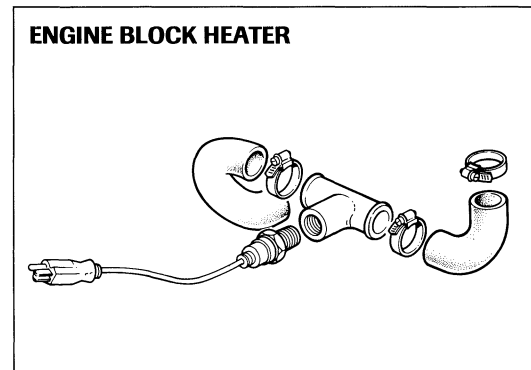
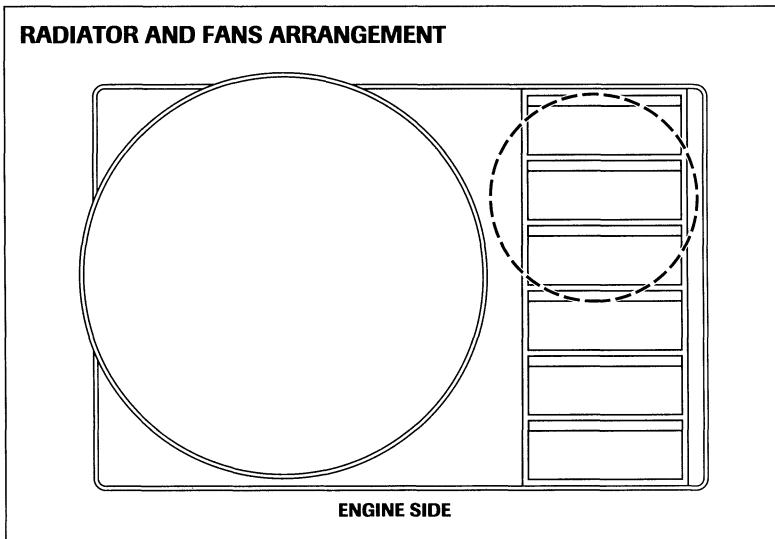


**Cooling system**

The cooling system fans consist of an engine driven mechanical fan with a thermostatic viscous coupling plus a high capacity auxiliary electrical cooling fan mounted ahead of the radiator. The transmission oil cooler is incorporated into the right side of the radiator.

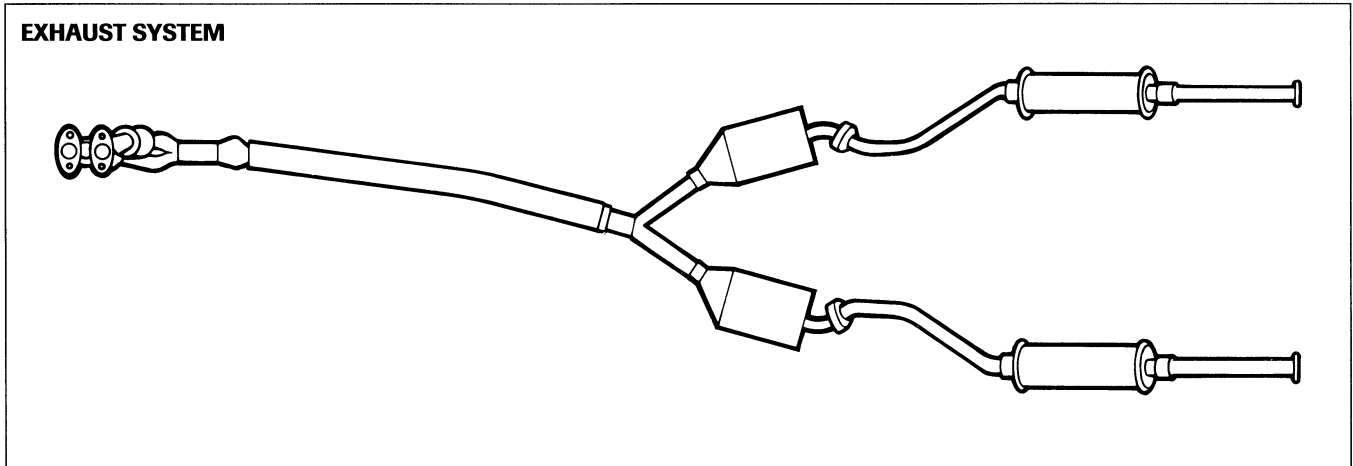
**Engine block heater**

An engine block heater, located in the lower radiator hose, is available as part of the optional cold weather package.

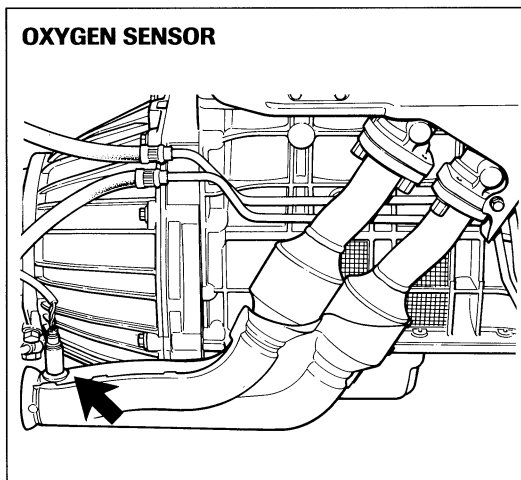


**Exhaust system**

The exhaust system employs two primary catalysts in the down-pipes with two combined catalyst / mufflers acting as secondary catalysts.



The oxygen sensor is located just to the rear of the down-pipe "Y" connection.



**Engine Design / Construction (continued)****AJ6: 1993 model year**

The improvements and revisions made to the AJ6 for 1993 model year are the same for both the XJS Range and XJ6 Sedan Range.

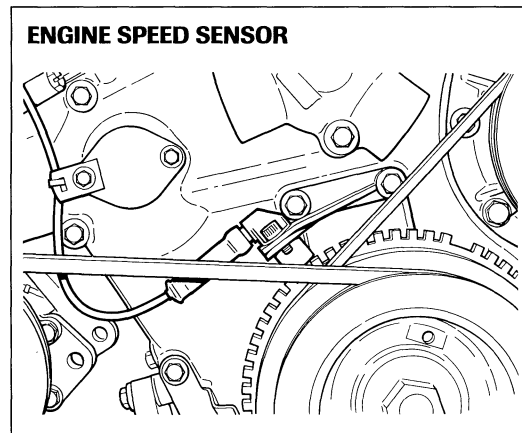
**NOTE:** The new generator is described in the Electrics / Electronics section of this publication.

**Camshafts and valve springs**

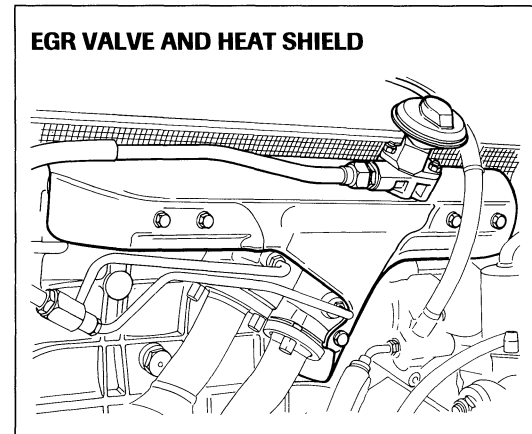
The AJ6 engine is equipped with redesigned camshafts and improved valve spring assemblies. The camshaft lobe profiles are altered to reduce valve gear noise at higher engine speeds. The valve springs, spring seats and collars are modified to extend life.

**Crankshaft pulley and engine speed sensor bracket**

The crankshaft pulley has a five-groove drive for the new generator drive belt. In order to accommodate the wider pulley, the serrated engine speed reluctor has been narrowed. A new offset engine speed sensor bracket is used to center the sensor on the narrower reluctor.

**ENGINE SPEED SENSOR****Exhaust gas recirculation valve heat shield**

The exhaust manifold heat shield is modified so that it is cut out around the EGR valve and is no longer sandwiched between the manifold and the gasket. The gasket between the manifold and the EGR valve is increased in thickness to compensate. This arrangement allows easier service operations.

**EGR VALVE AND HEAT SHIELD**

## Engine Management System

**NOTE:** Except as described in this publication, the engine management system is identical to the AJ6 system installed in the XJ6 Sedan Range.

### Fuel delivery and evaporative emission control

The fuel delivery and evaporative emission control system is unchanged from the V12 version except for the engine and evaporative canister portions of the system.

**Fuel delivery** A recirculating fuel system is used to provide a continuous supply of pressurized, cool fuel to the fuel rail. Fuel is drawn from the fuel tank by an electric pump and a jet pump integral with the fuel pump module and is delivered to the fuel rail through a renewable filter.

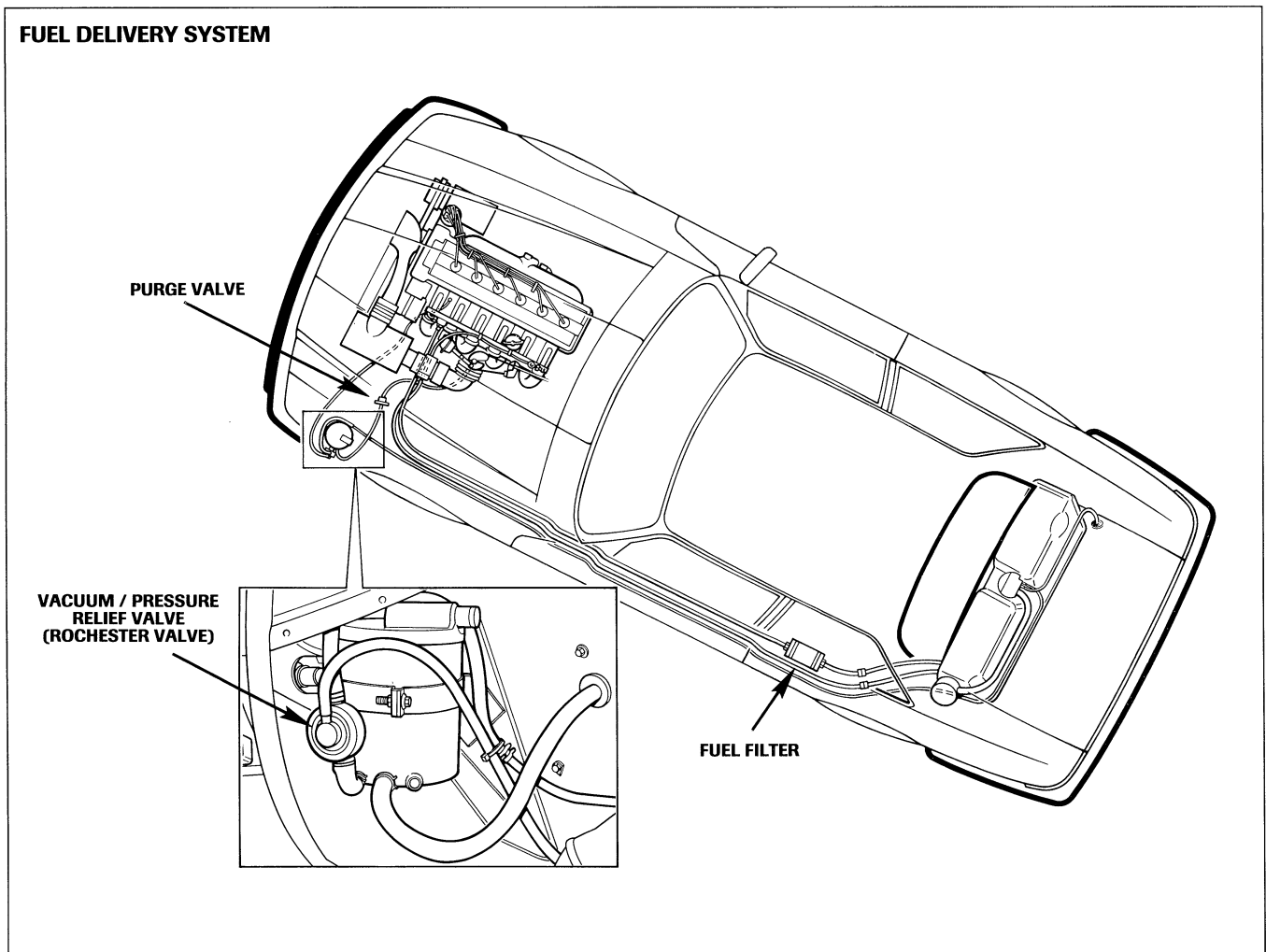
The pressure regulator, incorporated on the fuel rail, senses engine intake manifold absolute pressure (manifold vacuum) and maintains a constant pressure across the fuel injectors. Fuel pressure varies from 36 psi at idle to 44 psi

at full throttle depending on manifold absolute pressure. The varying fuel pressure ensures that the quantity of fuel injected for a given "injector on" time is constant regardless of intake manifold pressure.

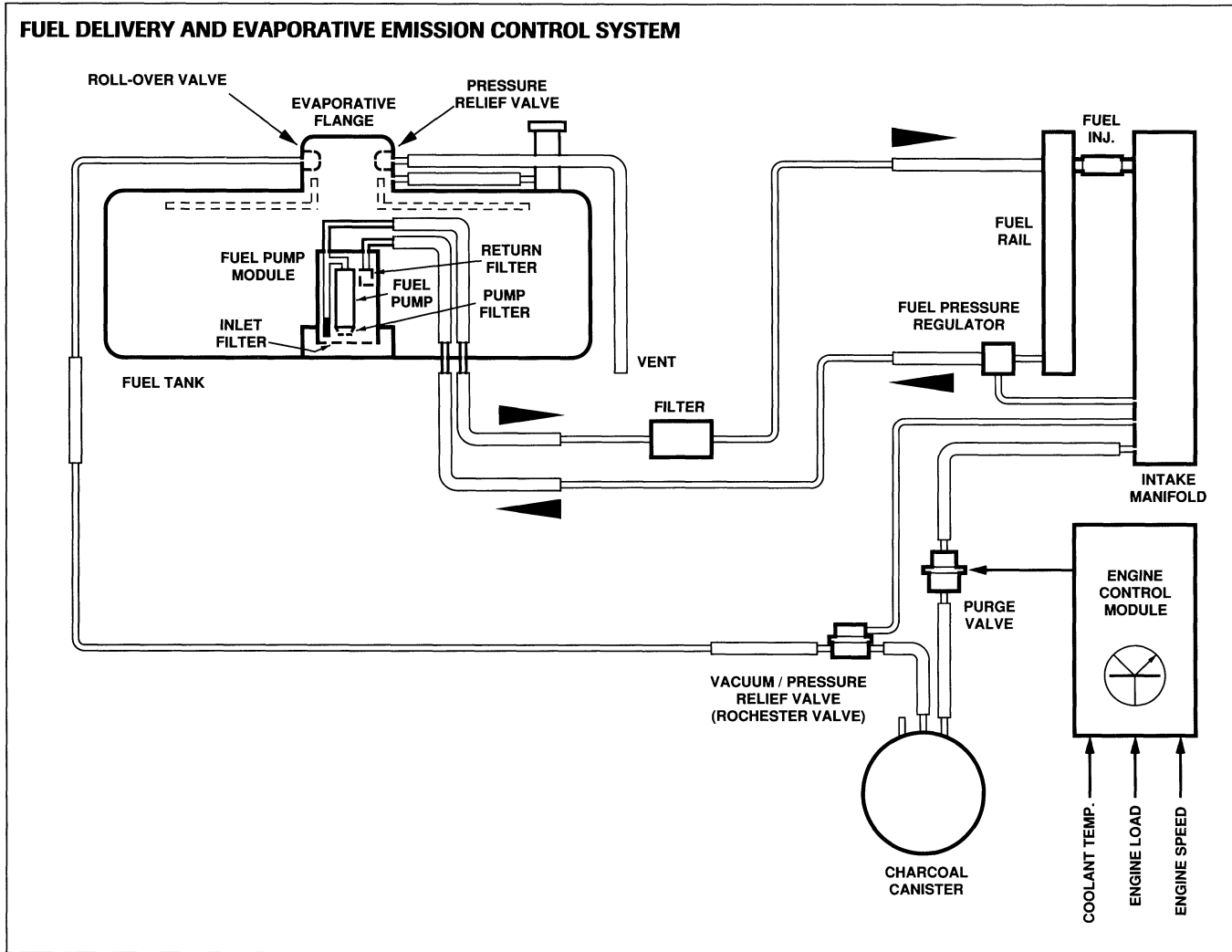
Unused fuel is returned to the fuel pump module where it mixes with the remaining fuel in the tank. This action cools the returning fuel.

The fuel pump is energized via a relay when the Engine Control Module (ECM) senses an engine "cranking" or "running" input.

**Evaporative emission control** Canister purging to the intake manifold is controlled by the ECM via the purge valve. The ECM activates the purge valve to control the rate of purge flow, dependent on engine speed, load, temperature and canister saturation.



**Engine Management System (continued)**



**Engine Control Module (ECM)**

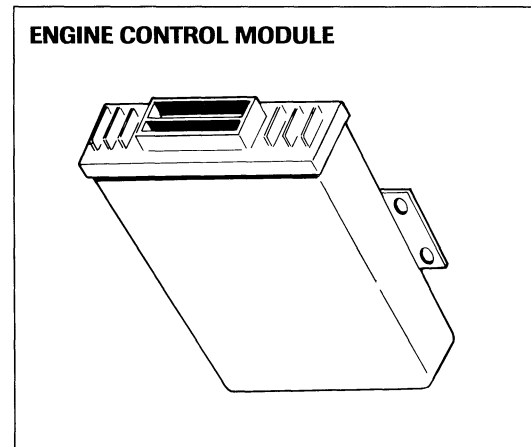
The AJ6 ECM, located at the base of the right 'A' post, is revised to include changes in the following areas:

- Recalibration to accommodate the new engine camshaft design and the new fuel injectors
- Hardware change to eliminate radio injector noise
- Incorporation of adaptive idle fueling
- Improved On-Board Diagnostics (OBD).

The ECM connects to the serial communications data link for JDS diagnosis.

**NOTES:** The tachometer input to the instrument pack is from the ignition coil negative terminal via a 6.8 K ohm resistor.

The transmission inputs and outputs associated with the A4 installation are not used in the M5 installation.



## Engine Management System (continued)

### Engine Control Module (ECM) (continued)

**Adaptive idle fueling** In order to ensure optimum performance, the ECM contains an adaptive idle fueling software function that automatically trims the fuel "injector on" time (pulse width) at idle, throughout the life of the vehicle. The total available trim to the nominal injector on time at idle is  $\pm 20\%$ . Adaptive fueling is performed by the ECM software only when the listed diagnostic trouble codes (DTC) are cleared, and the listed preconditions are met.

Diagnostic trouble codes that must be cleared for adaptive idle fueling to occur:

- 12 Mass air flow meter
- 14 Coolant temperature sensor
- 17 Throttle potentiometer
- 18 Throttle potentiometer and mass air flow meter calibration
- 19 Throttle potentiometer and mass air flow meter calibration
- 23 Fuel supply
- 26 Oxygen sensor feedback (lean)
- 34 Injectors
- 37 EGR drive
- 39 EGR temperature sensor
- 44 Oxygen sensor
- 48 Idle speed control valve
- 68 Road speed sensor
- 89 Purge valve drive

Adaptive idle fueling preconditions:

- throttle is closed
- engine speed is below 1000 rpm
- road speed is below 3 mph (6 kph)
- engine coolant temperature is above 170°F (76°C)
- idle speed adaptive delay is complete (vehicle speed reached 3 mph for approximately 100 yards traveled)
- closed-loop fueling is operating and in control
- integrator voltage less than two volts or greater than three volts

If the DTCs are cleared and the preconditions are met, the ECM cancels purge flow and adapts the idle fueling. Between fueling adaptations, there is a delay of approximately eight minutes during which the preconditions must be met. If the preconditions are interrupted, the delay will be longer.

**On-Board Diagnostics** JDS engine management testing will access all stored Diagnostic Trouble Codes (DTC).

JDS reports additional information associated with each code to assist in correct diagnosis. Examples of this additional information include:

- If the fault was present during the last driving cycle
- If the fault was present at the last ignition switch ON
- The number of times the fault occurred
- The mode of failure (open or short circuit, rich or lean, high or low voltage).

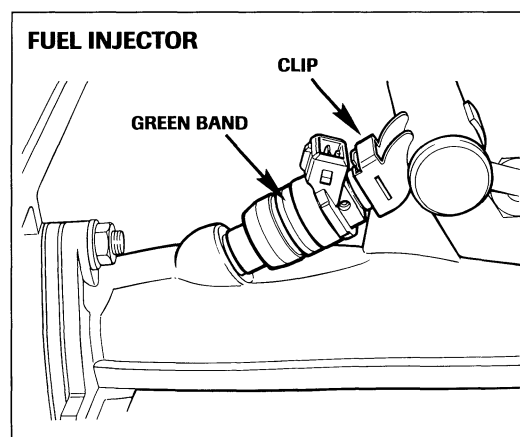
This information can only be accessed through JDS. Details of the expanded information will be supplied with the applicable JDS Software User Guide.

### Mass air flow meter

The idle trim adjustment on the mass air flow meter is deleted with the introduction of adaptive idle fueling.

### Fuel injectors

New plate-type, twin spray fuel injectors replace the previous pintle-type injectors. The injectors are secured to the fuel rail with custom clips that ensure the twin jets of fuel are directed to the intake valve throats. This type of injector is quieter in operation and is less prone to orifice contamination than the pintle type. A green band is used to identify the plate-type injector.

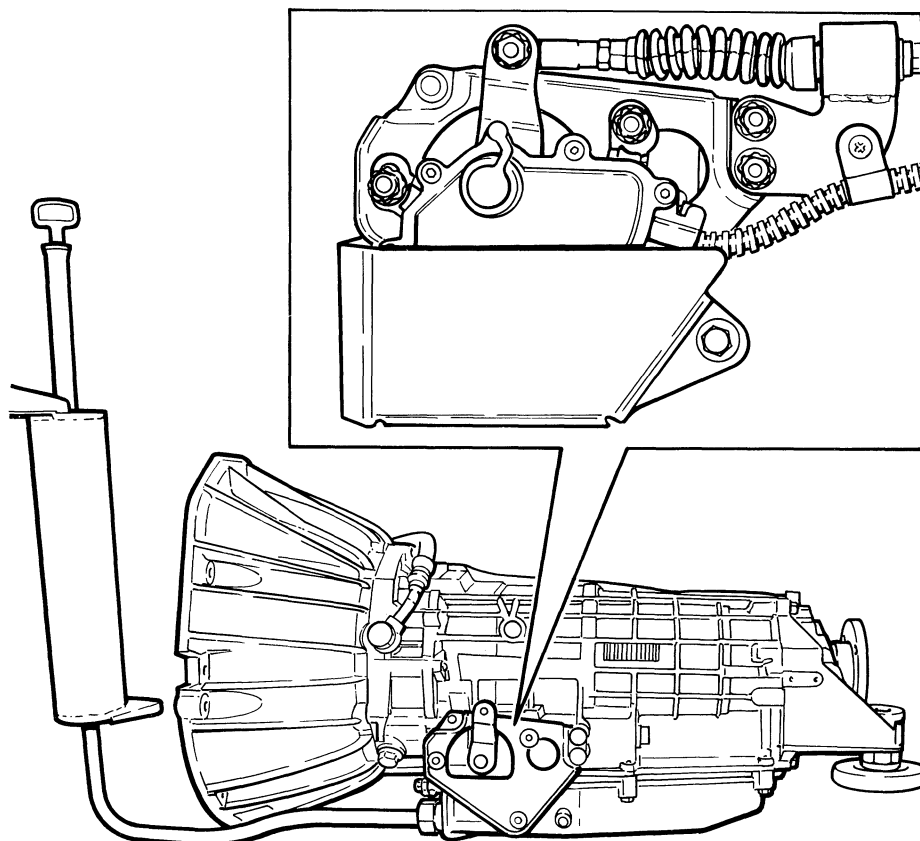
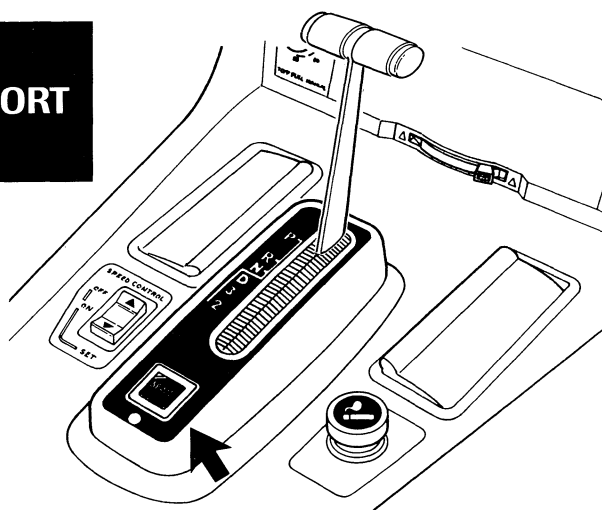


### Throttle potentiometer

The throttle potentiometer has increased linear calibration thereby providing greater accuracy in measuring the throttle valve angle.

### Provisional wiring diagram

An Engine Management System provisional wiring diagram is shown on pages 36 – 37 of this publication.

**Four-Speed Automatic Transmission**
**TRANSMISSION AND ROTARY SWITCH**

**SPORT MODE SWITCH**
**SPORT**


The ZF 4HP 24E four-speed automatic transmission in the XJS remains basically the same as the transmission used in the XJ6 Sedan Range. The installation of the transmission differs in the gear selector mechanism and cable, the fill tube assembly and the fluid pan. The enlarged fill tube area allows for fluid expansion during operation. This expansion area is made necessary by the shallow fluid pan.

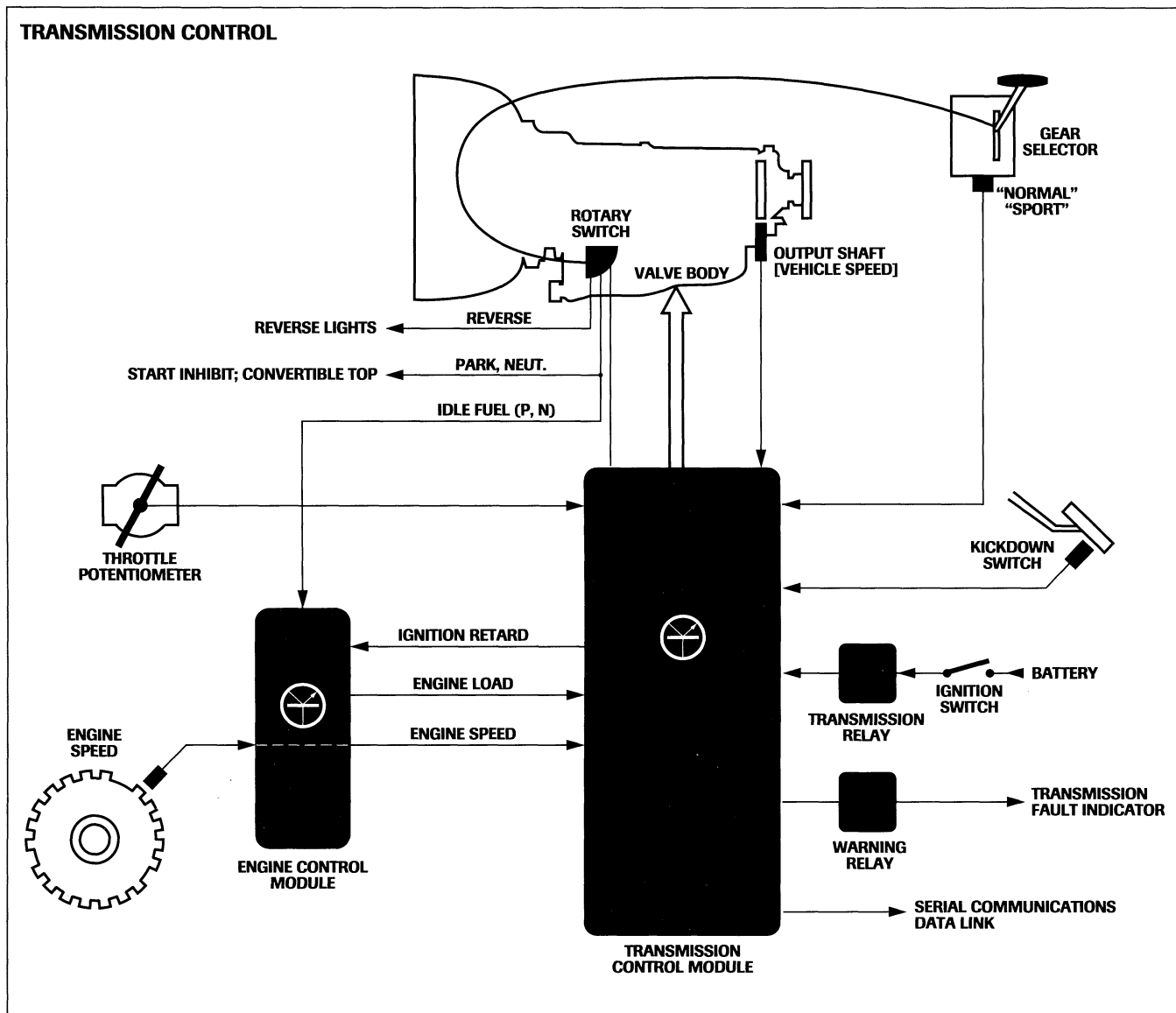
**Transmission modes**

Two transmission modes are available: NORMAL and SPORT. The transmission mode switch is a momentary push type for selecting NORMAL or SPORT modes. The instrument pack has an indicator that illuminates when SPORT mode is selected.



**Transmission control**

Operation and control of the transmission remains the same as the XJ6 Sedan Range; however, the decoder module is not used in the XJS, and certain inputs and outputs are either revised or not used.

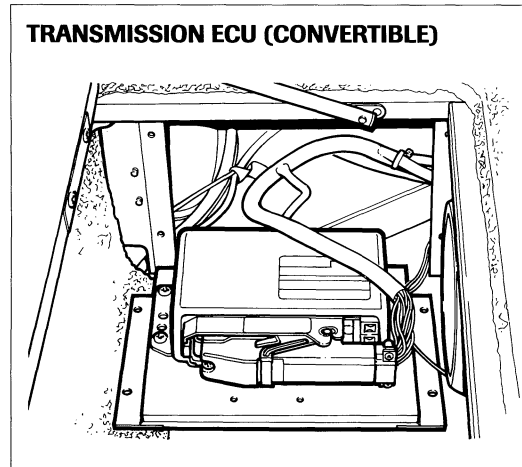


**Four-Speed Automatic Transmission (continued)****Transmission control (continued)**

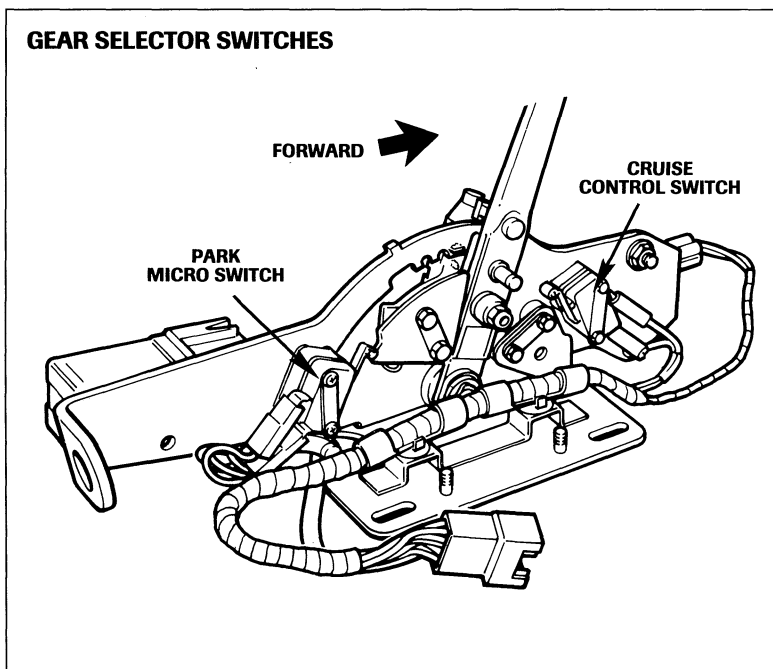
**Transmission control module** The transmission control module is located at the base of the right B/C post on Coupe models and behind a spot panel at the left side of the rear storage compartment on Convertible models. The module is connected to the serial communications data link for JDS diagnosis.

**Provisional wiring diagram**

A Transmission Control provisional wiring diagram is shown on pages 38 – 39 of this publication.

**Gear selector switches**

The gear selector mechanism incorporates two micro switches that provide signals for the gear shift interlock system (park micro switch) and the cruise control system.



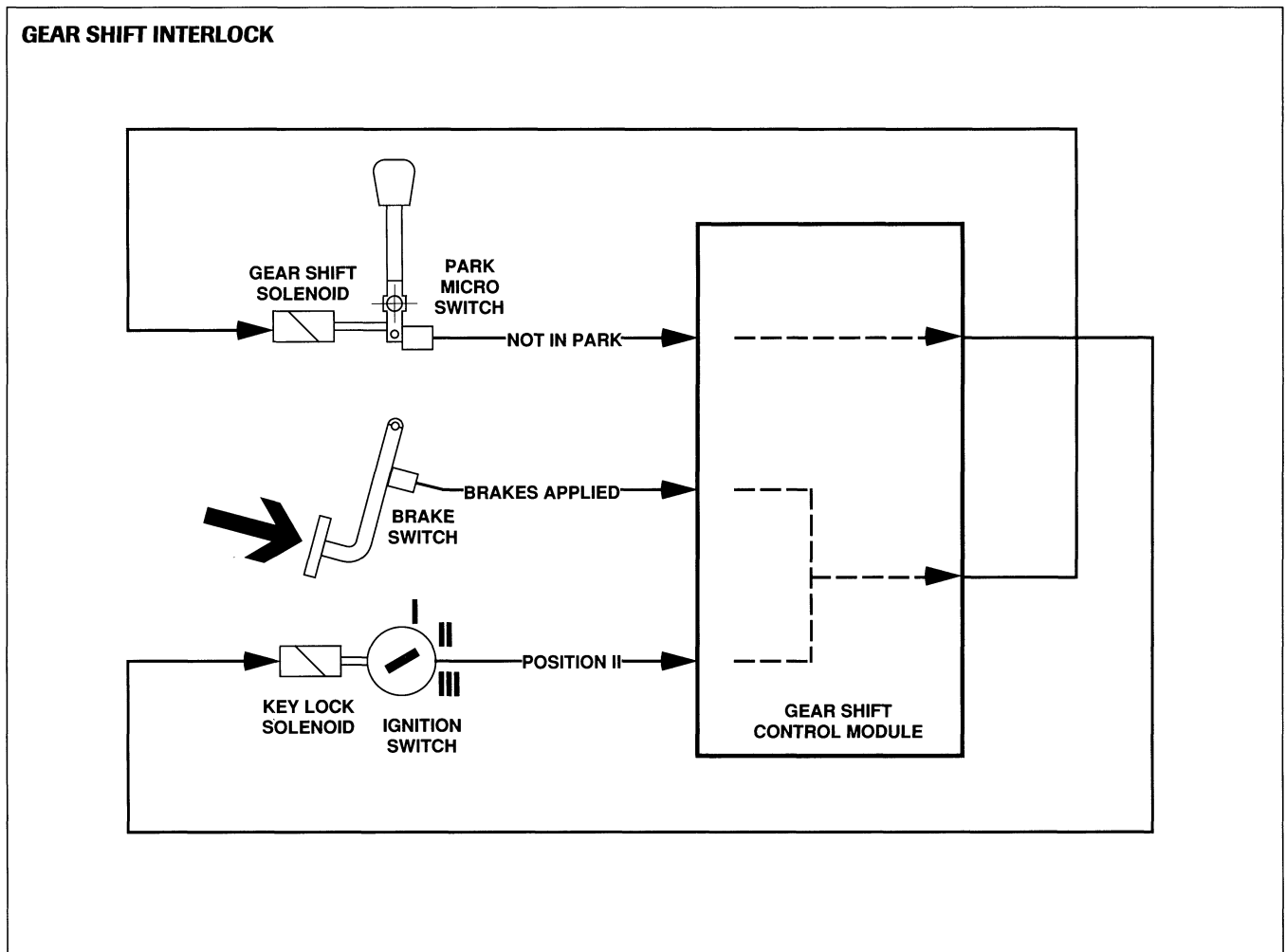
**Gear shift interlock**

A gear shift interlock system is introduced for the 1993 model year. The system prevents movement of the gear selector from PARK unless the ignition switch is in position II and the brake pedal is applied. In addition, the ignition key cannot be removed from the ignition switch unless the gear selector is in PARK.

**System operation**

The system is controlled through the gear shift control module with inputs for brake pedal applied, PARK position and ignition key in position II. The brake pedal applied input is sourced from the brake switch; the PARK position input is sourced from the PARK micro switch on the selector assembly and the ignition switch position II input is sourced from the ignition power supply circuit.

The gear shift control module energizes the gear shift solenoid when the ignition is in position II and the brakes are applied. The energized solenoid releases the locking mechanism, allowing the gear selector to be moved out of PARK. When the gear selector is moved out of PARK, the gear shift control module energizes the key lock solenoid to prevent ignition key removal. The gear shift control module de-energizes the key lock solenoid when the gear selector is in PARK, thus allowing ignition key removal.



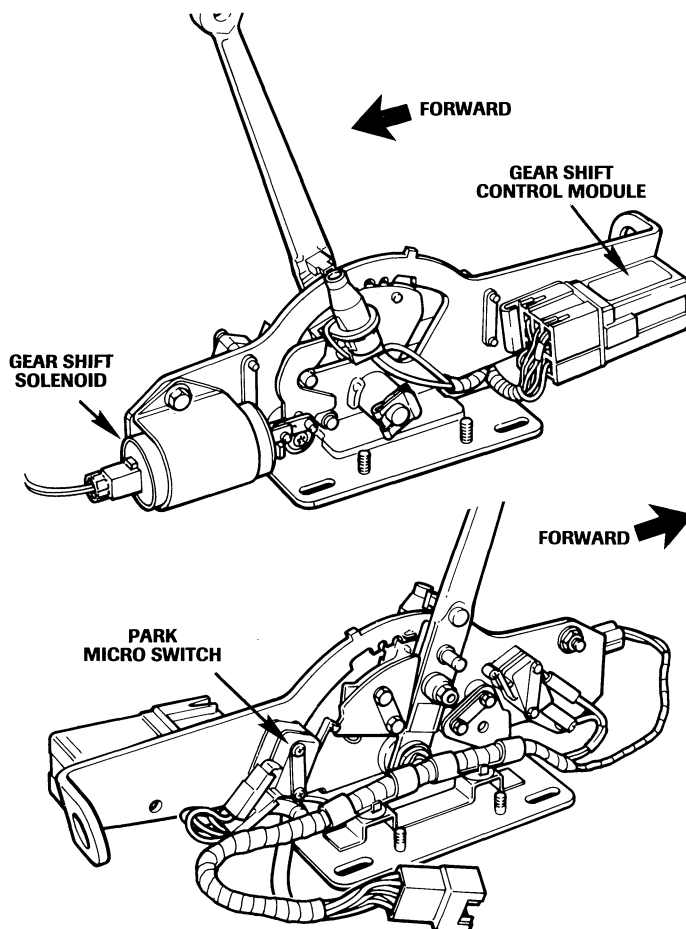
## Gear Shift Interlock (continued)

### System components

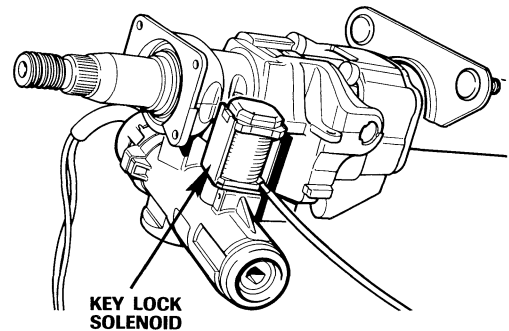
The system components are as follows:

- Gear shift control module mounted on the gear selector assembly
- Gear shift solenoid located on the gear selector assembly
- PARK micro switch located on the gear selector assembly
- Key lock solenoid located on the steering column.

### GEAR SHIFT INTERLOCK MECHANISM



### GEAR SHIFT INTERLOCK – KEY LOCK



**Manual override** If the vehicle must be moved without power, the gearshift locking mechanism can be disengaged. The release requires removal of the center console top finisher (the slotted side mount fasteners have been deleted). Reach under the gear selector assembly from the left front and manually release the lock by moving the cam forward while moving the selector lever out of PARK.

**Five-Speed Manual Gearbox**

**Gearbox design**

The model 290 gearbox is a five-speed unit incorporating synchromesh on all forward gears. Gear selection is accomplished by a centrally mounted lever connected to the selector shaft via a pivoting joint. All of the gears are engaged by the single selector shaft operating three rods that, in turn, move the selector forks.

**Drive pinion** The drive pinion is supported at the rear by a duplex ball bearing in the front housing and at the front by a needle roller bearing in the flywheel (through the first motion shaft).

**Main shaft** The main shaft is supported in three places: at the front by a caged roller bearing in the drive pinion counter bore, at the center by a roller bearing in the intermediate housing, and at the rear by a duplex bearing in the rear housing. Each of the forward speed mainshaft gears incorporates an integral synchromesh mechanism. The synchromesh clutch hubs are splined to the main shaft and located between each pair of gears.

**Counter shaft** The counter shaft is supported by three roller bearings located in the front, center and rear housings.

**Reverse idler gear** The reverse idler gear rotates on a stationary shaft and is in constant mesh. Two caged roller bearings support the gear. Location of the idler gear is maintained by a spacer on the shaft.

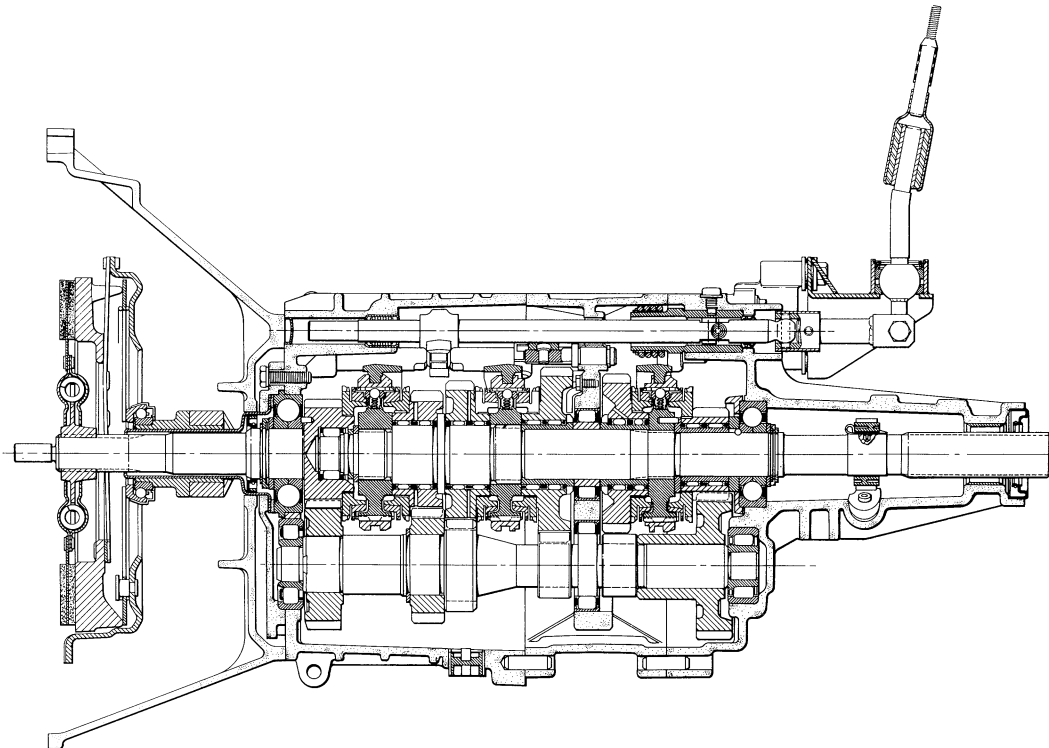
**Gear ratios**

First	3.553:1
Second	2.041:1
Third	1.4:1
Fourth	1.00:1
Fifth	0.755:1
Reverse	3.553:1

**Lubricating fluid**

Fluid type	Dexron II E
Quantity	1.5 quarts (U.S.) (1.65 litres) (drain and refill)

**FIVE-SPEED MANUAL GEARBOX**



## Five Speed Manual Gearbox (continued)

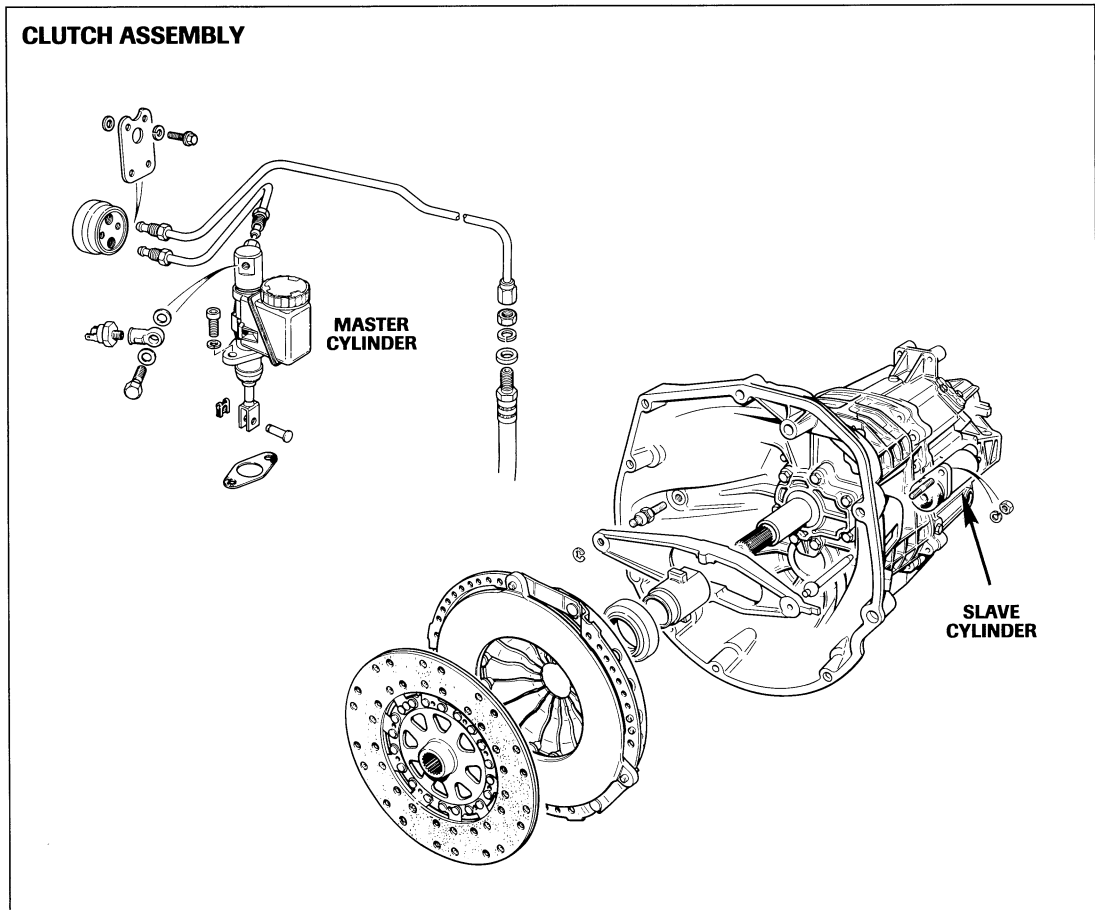
### Clutch and flywheel

The clutch is a hydraulically actuated single-plate, diaphragm type. A slave cylinder mounts on the bell housing and is hydraulically operated by a clutch master cylinder through a damper. Mechanical motion to the bulkhead mounted master cylinder from the clutch pedal is via a push rod. The flywheel is a heavy twin-mass design with

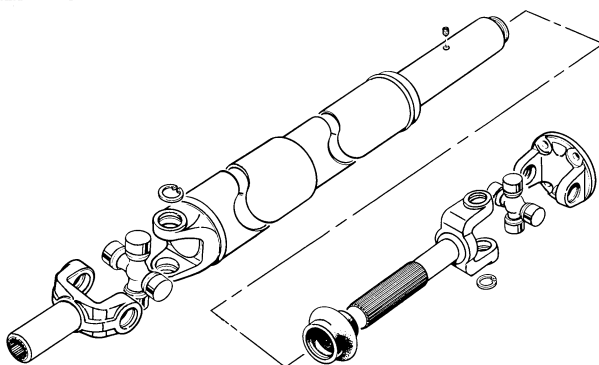
built-in springs. This type of flywheel provides a smooth power transfer from the engine to the gearbox.

### Hydraulic fluid

Fluid type      DOT 4 brake fluid



### PROPELLER SHAFT



### Propeller shaft

The propeller shaft used with the manual gearbox has two universal joints with a reverse spline-type coupling to the gearbox. The rear flange is the same as the automatic transmission shaft.

### Final drive

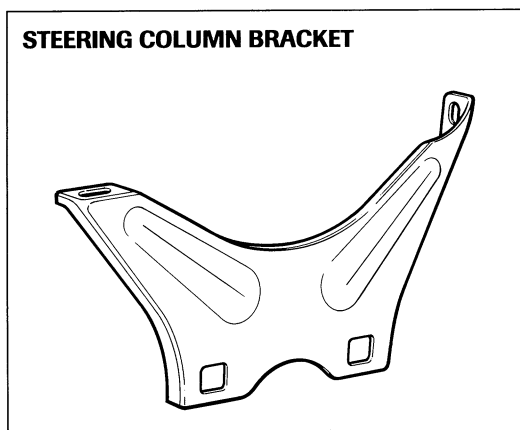
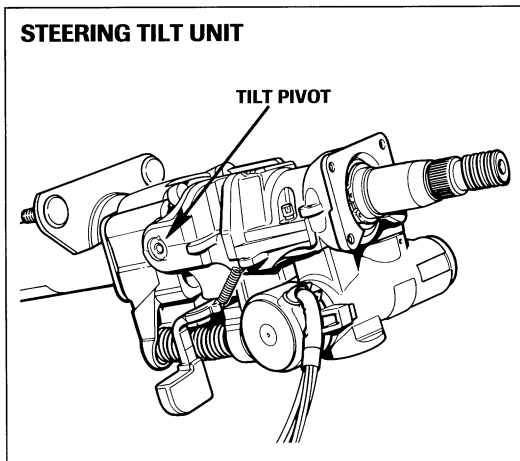
The differential unit has a ratio of 3.54:1 and is similar in construction to the unit used in the previous V12 models. An integral road speed sensor provides a road speed output to the speed interface unit.

## Power Steering

The power steering system uses the steering rack and pinion unit from the previous XJS models with a new shortened steering column. Operating pressure for the system is provided by the engine-driven power steering pump. There is no power steering fluid cooler.

### Steering column and support brackets

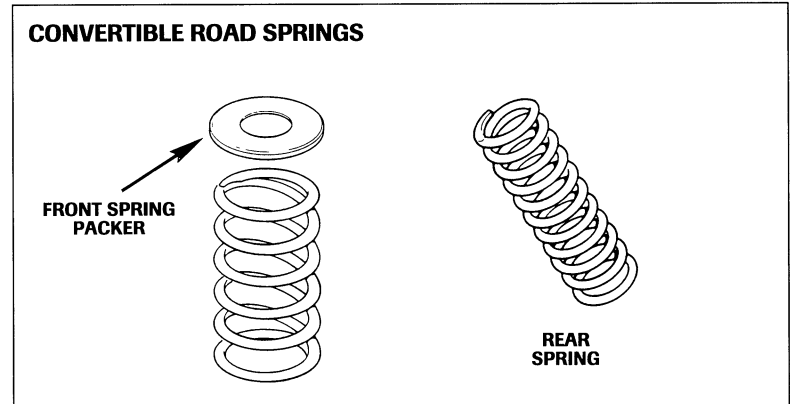
The driving position is improved by the shortening of the steering column by approximately two inches. Four tilt position adjustments are available. A new steering column upper mounting bracket replaces the previous longitudinal strut and slide mount arrangement.



## Suspension

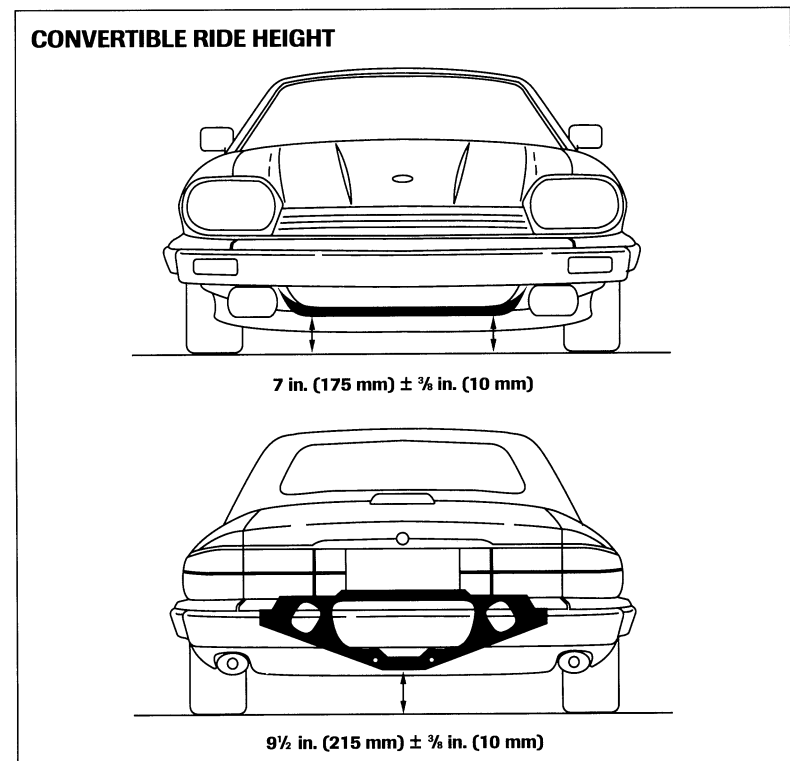
### Convertible road springs

Convertible normal road clearance is maintained by the installation of front spring packers and longer rear road springs to compensate for the space occupied by the X bracing system.



### Convertible ride height

Due to the change in road springs, the ride height of the convertible in the "kerb condition" is increased. This change does not affect the steering and suspension alignment specifications, nor does it change the method for checking and adjusting the steering and alignment. The existing "mid-laden" tools are used for these procedures.



**Power Supply**

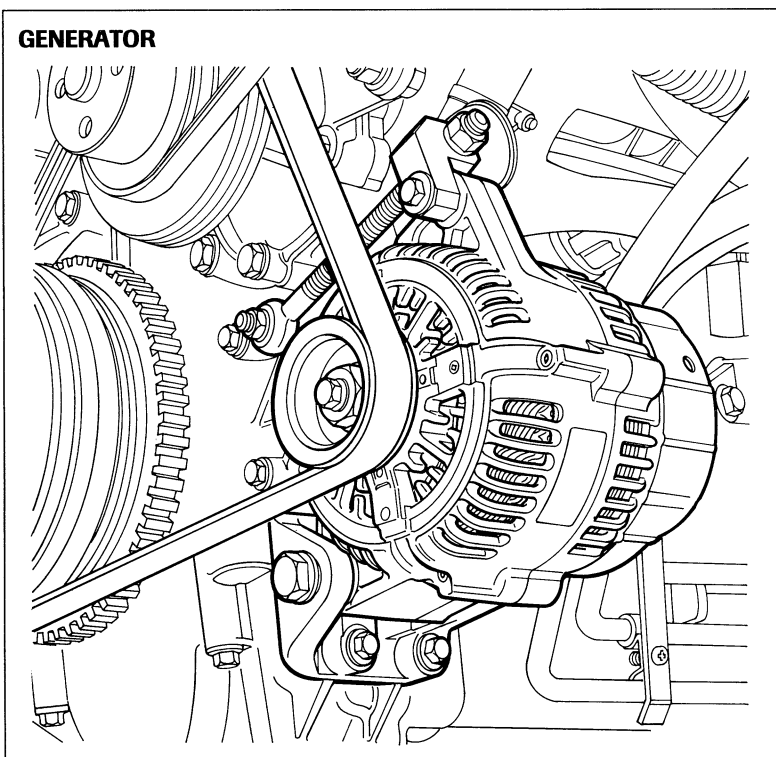
The battery and generator have been upgraded to ensure adequate power supply under all operating conditions.

**Battery**

A low-maintenance DIN 66 battery with a 72 amp hour capacity is installed in the existing trunk location. The battery tray, support brackets and trim are modified to accommodate the increased height of the new battery.

**Generator**

A new 120 amp generator provides the necessary current to satisfy the electrical loads of the vehicle. Drive from the crankshaft pulley is by a five-rib belt that also drives the coolant pump and fan. The mounting and adjustment arrangement is the same as the generator in previous Sedan models; however, the mounting is now by a two-lug bracket.



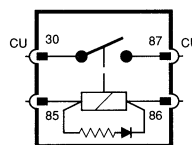
The new generator has increased low speed output characteristics to provide an improved battery load balance. The improvement is made possible by a different type of regulator and smaller diameter pulley. As the new generator has an internal overload protection circuit, the previous load dump module is no longer required. The generator provides the instrument pack with the correct signal for charge warning making an instrument pack excitation resistor unnecessary.

**Wiring Harness and Components**

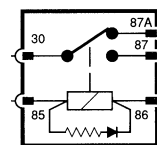
**Relays**

All of the XJS relays are the individual type with color-coded connectors. Most of the relays incorporate transient protection as an internal circuit. Two types of relays make up the bulk of those used in the electrical system: the normally-open single-contact relay (87 terminal, light blue case), and the change-over contact relay (87 and 87A terminals, violet case). Adjacent to the relay base, the wiring harness is color-coded to the relay case color. Gray is used to indicate a silver relay. If the harness does not have a color code, the component is not a relay.

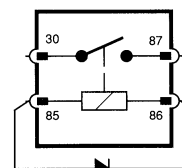
**RELAY CIRCUITS**



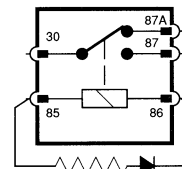
**NORMALLY OPEN  
(LIGHT BLUE CASE)**



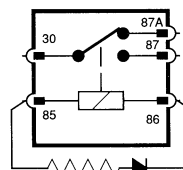
**CHANGE-OVER  
CONTACT  
(VIOLET CASE)**



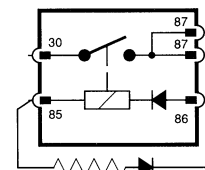
**ABS PUMP  
(YELLOW CASE)**



**ABS MAIN  
(WHITE CASE)**



**CHANGE-OVER  
CONTACT  
(SILVER CASE)**



**EMS MAIN  
(SILVER CASE  
WITH RED STRIPE)**



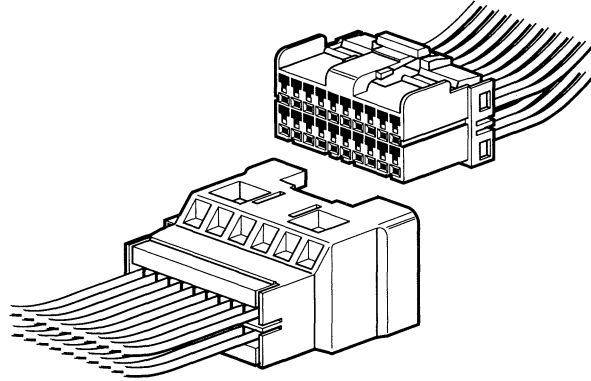
### Connectors

Two connectors are new to the wiring harness: Multilock 040 and Econoseal III HC connectors.

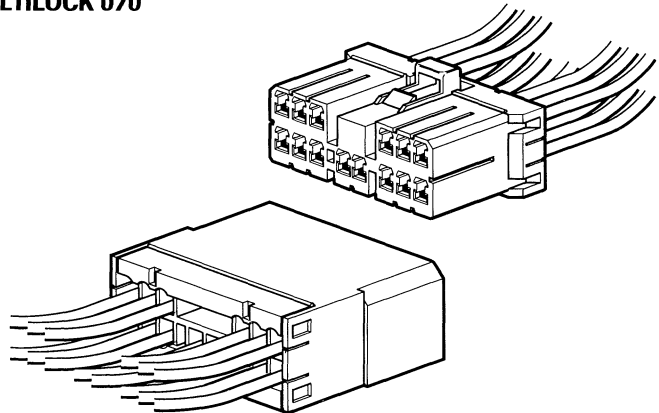
**Multilock 040, 070** Multilock 040 and 070 connectors are 2 to 20-pin connectors that can be used for both wire to wire and wire to board connectors. Multilock 040 have a current-carrying capacity of up to 4.5 amps per contact; Multilock 070 have a current-carrying capacity of up to 12 amps per contact. Multilock 070 have previously been used for limited vehicle applications.

**Econoseal III HC** Econoseal III HC connectors are 2, 4 or 8-pin high current connectors that feature wire sealing to prevent corrosion.

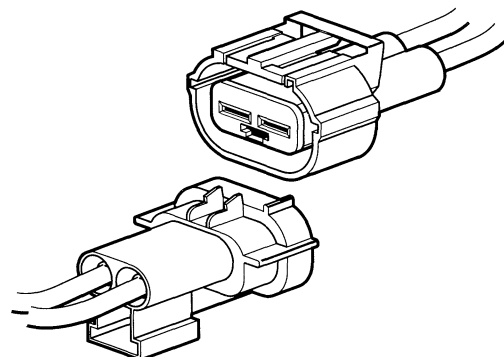
**MULTILOCK 040**



**MULTILOCK 070**



**ECONOSEAL III HC**

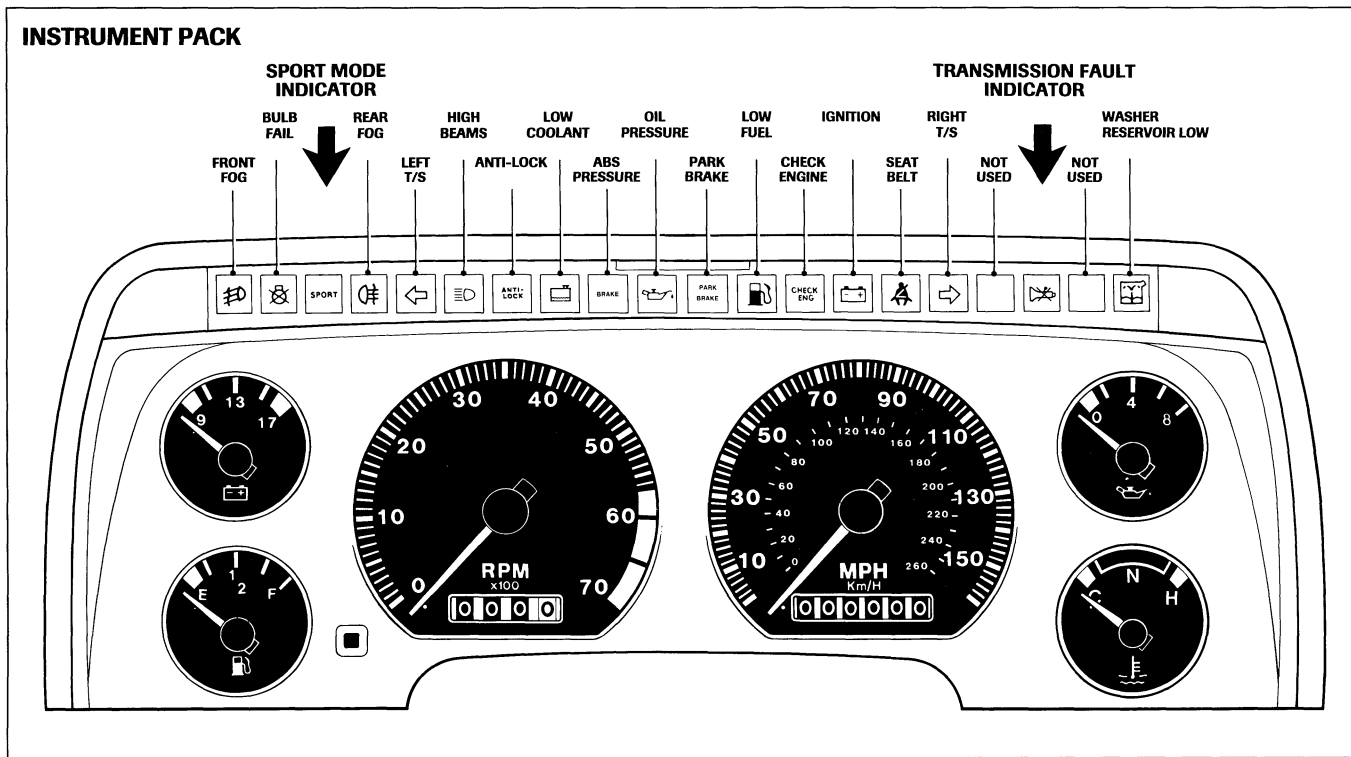


**Instrument Pack**

A redesigned engine coolant temperature gauge is included in the revised instrument pack. The previous generator excitation resistor located behind the instrument pack has been deleted.

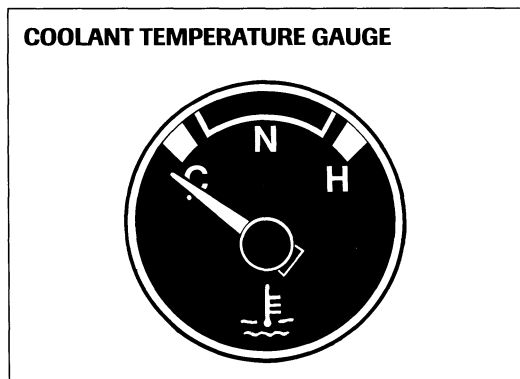
**SPORT mode indicator**

The automatic transmission SPORT indicator is included in the top row of indicators.



**Coolant temperature gauge**

A recalibrated coolant temperature gauge with revised graphics is designed to prevent mistaken high coolant temperature readings. The normal band (N) is extended to occupy more of the temperature needle sweep.



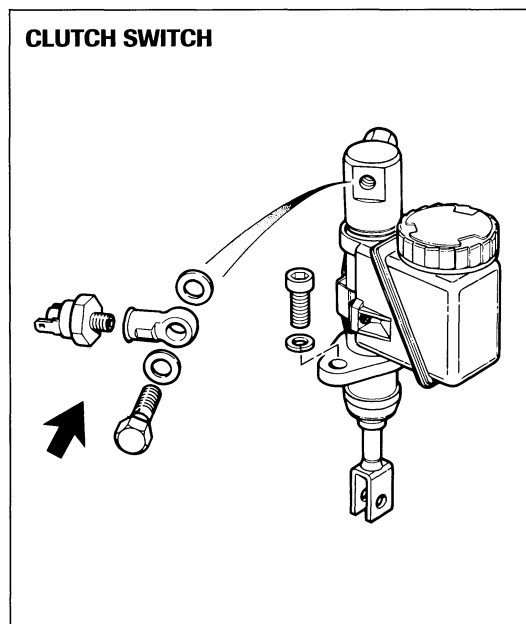
## Cruise Control

The cruise control system is the same system as previously used in the 1992 model year V12 models and can be engaged in all forward speeds.

### Inhibit and disengage switches

The A4 models use the gear selector mechanism micro switch to input the PARK and NEUTRAL positions to the cruise control ECU.

The M5 models use a clutch master cylinder switch (clutch pedal depressed) to input "clutch disengaged" to the cruise control ECU.



## Interior Electrical Components

### Column switch gear

The column switch gear is modified to adapt to the shortened steering column.

### Door guard lights

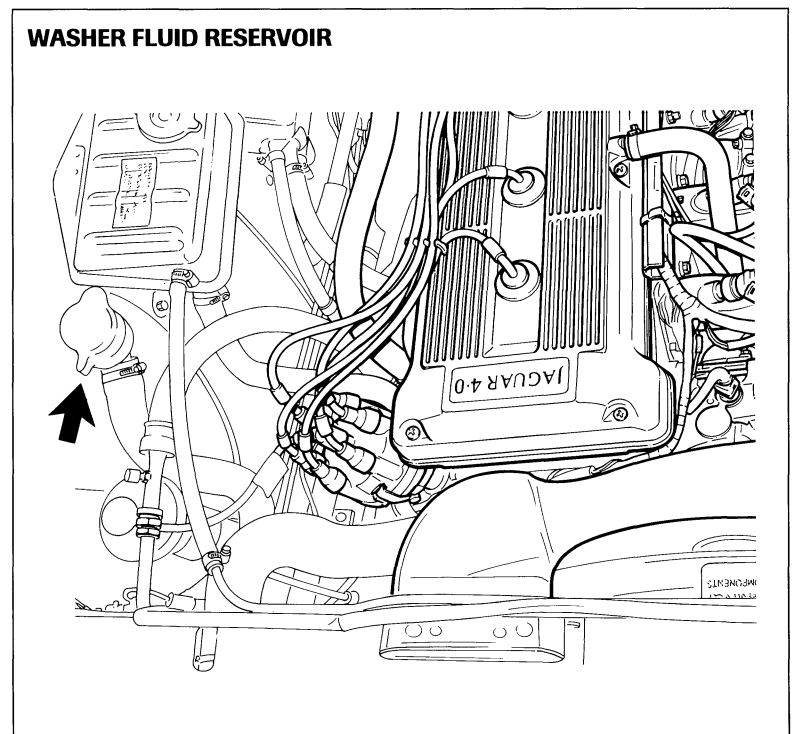
The bulb for the door guard lights has been changed to a festoon type.

## Windshield Washers / Headlight Power Wash

### Washer fluid reservoir

The washer fluid reservoir is altered and combines a new pump and connector. The location remains in the right front fender.

**NOTE:** Headlight power wash is optional equipment, included in the Cold Weather package.

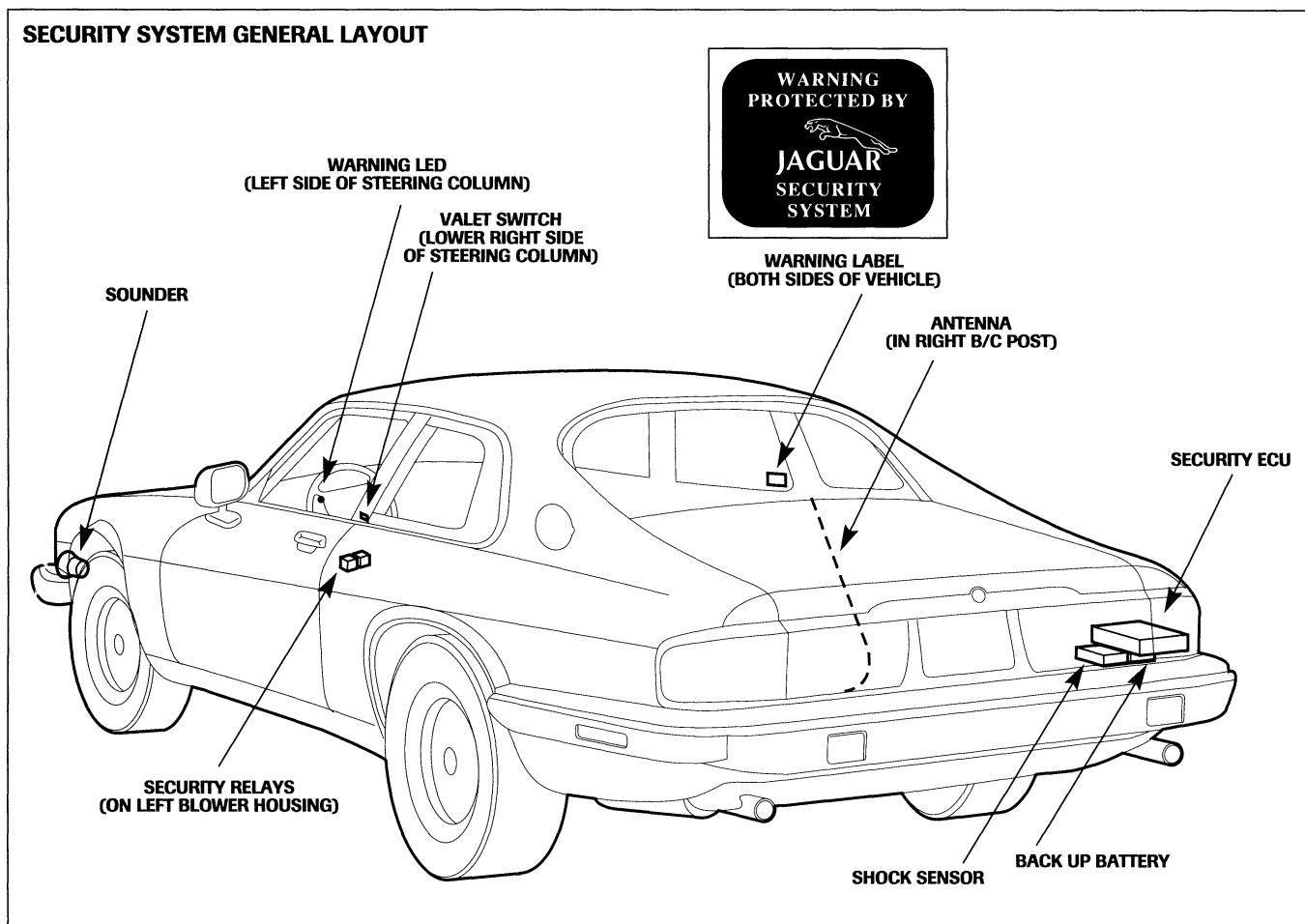


## Jaguar 19K Security System

Initial 1993 Model Year vehicles will include a Jaguar "19K" accessory security system as standard equipment. Later production vehicles will be equipped with a factory-integrated system.

### System layout and features

The 19K security system combines theft protection and operating convenience features. Theft protection is provided by audible and visual alarms, and starter disable. The system is supplied with two radio frequency (RF) key fob transmitters.

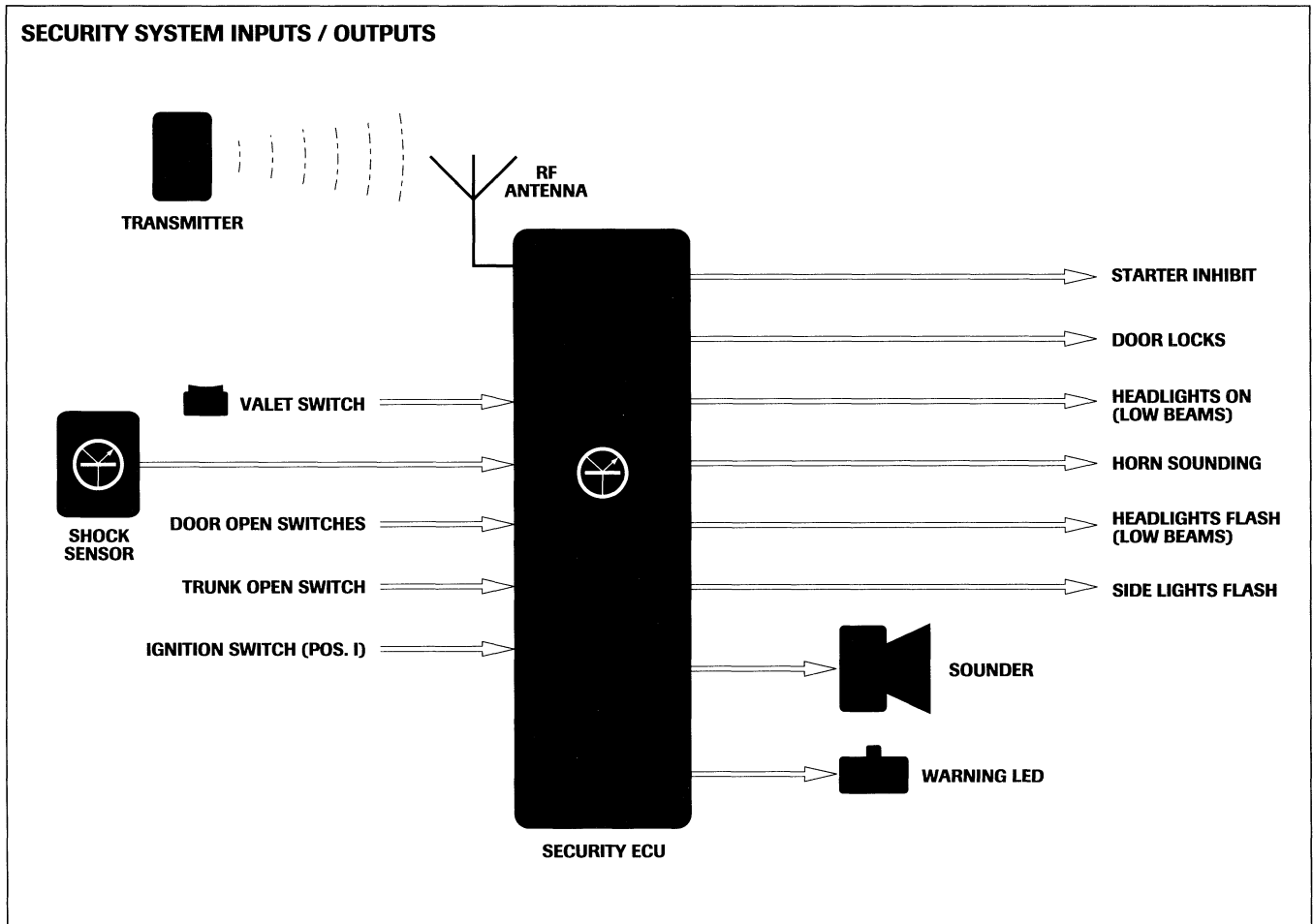


**Audible and visual alarms (FULL ALARM)** The audible alarm begins as an escalating tone that builds to full volume after ten seconds. The visual alarm consists of flashing of the headlights (low beams) and the side lights.

**Standard convenience features** Remote central locking / unlocking and headlight low beams ON are standard features of the security system.

**Other standard features** Engine starter disable, panic alarm, shock sensor "warn away" (two-second tone), transmitter signal received indication (chirp and side lights flash), valet reminder (four tones) and LED history readout are additional security system features.

**Dealer-installed accessory security features** Passive arming (automatic arming with door closing) is a dealer-installed feature.



**Inputs to the security ECU** The ECU receives inputs from the following sources:

- Door open switches
- Trunk open switch
- Ignition switch (position I)
- RF transmitter (via antenna)
- Shock sensor
- Valet switch.

**Vehicle function control** The ECU controls the following vehicle functions:

- Starter inhibit
- Central door locking
- Headlights ON (low beams).

**Outputs from the security ECU** The ECU outputs to the following systems and components:

- Headlights flash (low beams)
- Side lights flash
- Horn sounding
- Security system sounder tones
- Warning LED.

**Jaguar 19K Security System (continued)**

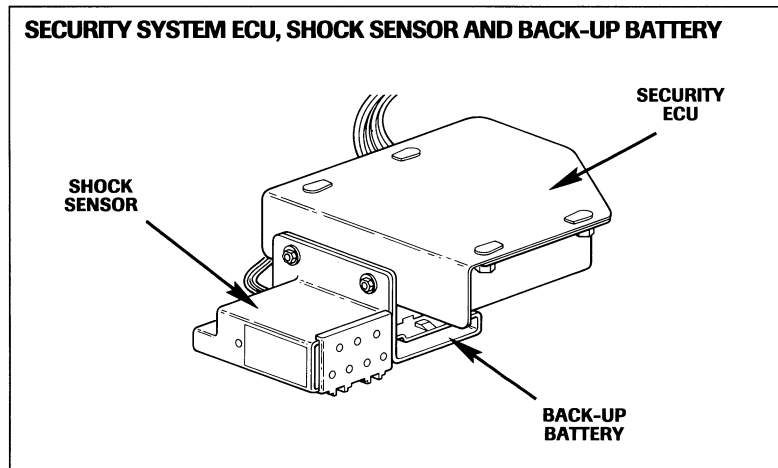
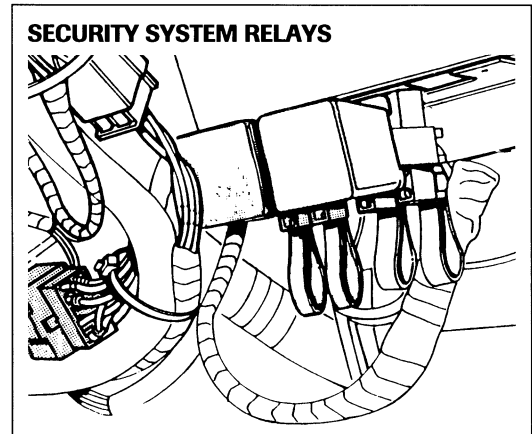
**System components**

**Security system ECU** The security system ECU is microprocessor based for direct interface with vehicle inputs, RF transmitter reception, alarm outputs and control of certain vehicle systems. The ECU is mounted behind the right rear trunk trim panel.

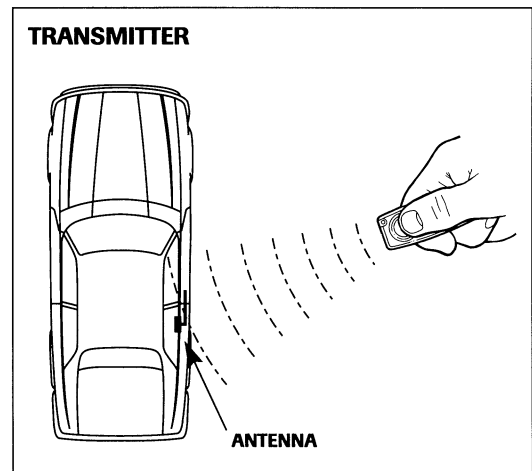
**Shock sensor** The standard equipment shock sensor detects impacts or jarring motions and inputs directly to the security system ECU. The shock sensor is mounted to the ECU case.

**Back-up battery** The back-up battery will power the security system ECU and drive the alarm sounder in the event of vehicle battery disconnection. The back-up battery is also mounted to the ECU case.

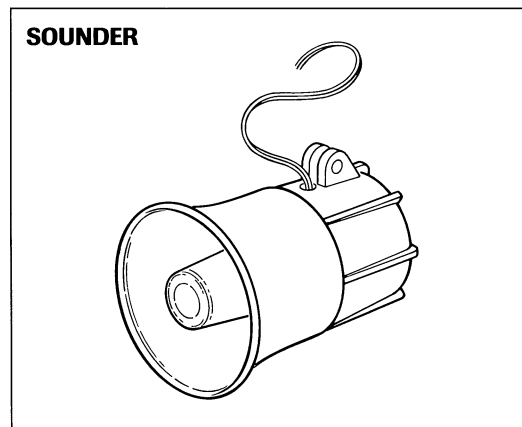
**Relays** Two relays are included in the security system: a normally-open (light blue case) relay for headlight operation, and a change-over (violet case) relay for starter disable. The relays are mounted on a bracket located on the left blower housing.



**Key fob RF transmitter** The transmitter has a single button to operate all security system functions. Since the transmitter is RF (radio frequency), it does not have to be aimed at the vehicle. The operating range of the transmitter is approximately 20 feet.

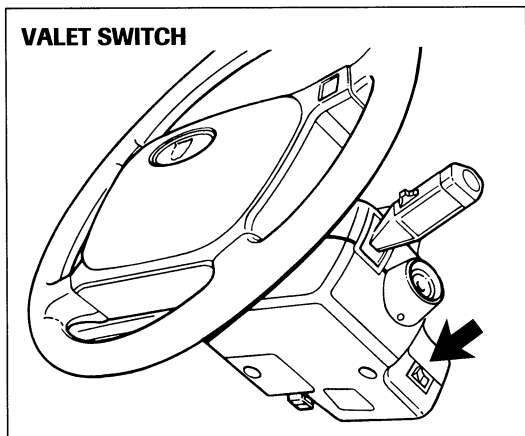


**Security sounder** The sounder is a powerful speaker located ahead of the left front wheel arch.

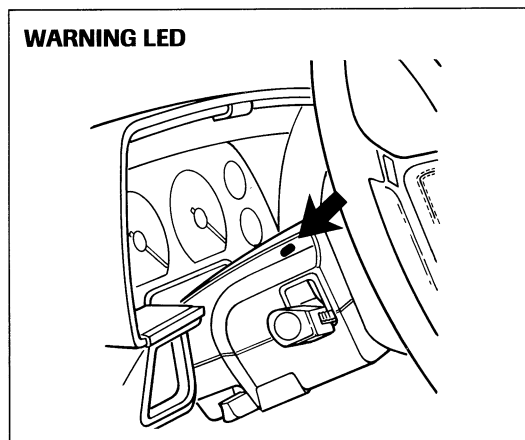


**Antenna** The antenna receives RF transmissions from the key fob transmitter and is positioned behind the right rear quarter interior trim panel.

**Valet switch** The valet switch disables the security system theft protection functions while allowing the use of the convenience features (remote central locking and headlights ON). The valet switch is located on the right side of the steering column cover.



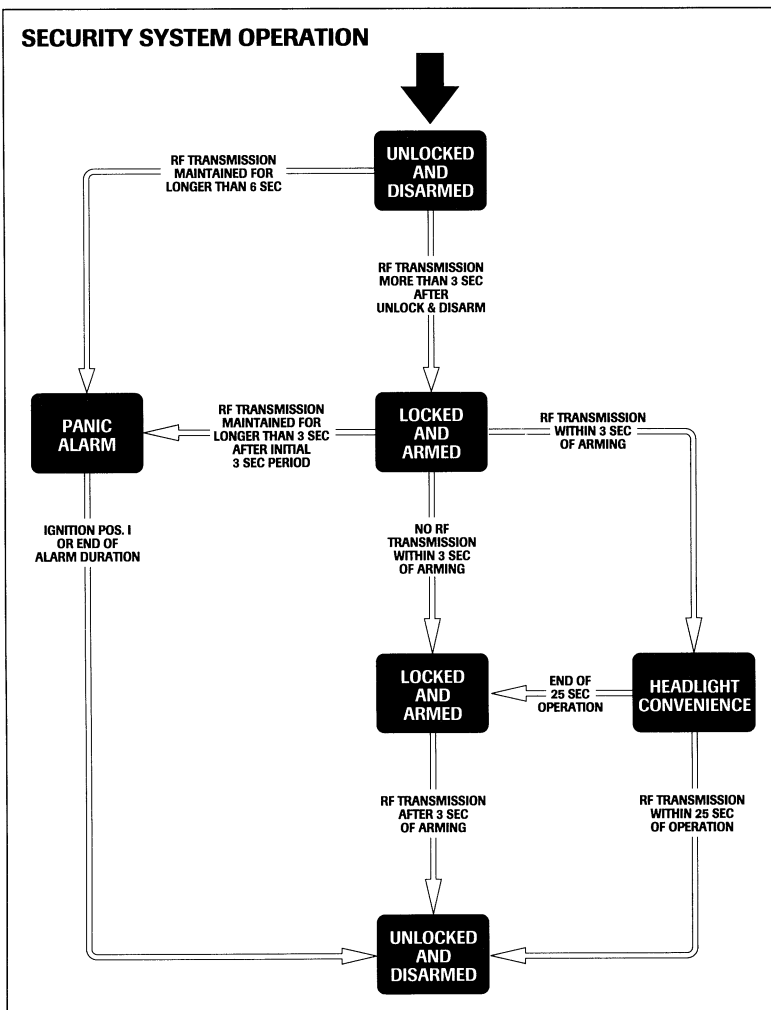
**Warning LED** The warning LED provides a visual indication of the security system status (one flash per second with the system enabled and armed, or with the system disabled and the doors locked). The warning LED is positioned at the top of the steering column cover.



**Operating the security system**

The basic operation of the security system requires a single press of the transmitter that will cause the system to lock and arm the vehicle, or to unlock and disarm the vehicle.

Prior to locking and arming, the system emits a short chirp and flashes the side lights once.



When the vehicle is unlocked and disarmed, the system emits two chirps and flashes the side lights twice. The security system ceases to monitor for alarm violations. If the alarm was triggered while armed, it will emit a third chirp and visual flash.

**Remote headlight convenience** Pressing the transmitter for a second time within three seconds of locking and arming will activate the headlight low beams for 25 seconds. Remote headlights is a standard feature.

**Remote panic alarm** The panic alarm is triggered by a maintained press of the transmitter for three or more seconds. The alarm will sound at full volume for ten minutes unless turned off by switching the ignition to position I or by pressing the transmitter for ten or more seconds. Panic alarm is a standard feature.

## Jaguar 19K Security System (continued)

### Operating the security system (continued)

**Valet mode** By moving the valet switch to ON, the security system theft protection functions are disabled. Valet mode should be switched ON only when the system is not armed, otherwise the full alarm will be triggered. In valet mode, convenience features will operate and the LED will flash to deter theft.

### Security functions

In addition to monitoring the door and trunk switches, and shock sensing, the security system has a number of other features.

**Passive arming (automatic arming)** The security system will automatically arm if the vehicle is left with the ignition off and the doors and trunk closed for more than 30 seconds. The doors will not lock when the system passively arms. To disarm a passively armed vehicle requires that the transmitter be pressed or the ignition switched on. Passive arming is a dealer-installed accessory feature.

**Alarms and warning tones** The system provides several warnings and alarms:

**ERROR TONE** The error tone is a high-pitched tone emitted when the transmitter is pressed to arm the system while one or more of the following conditions exist:

- a door is open; the trunk is open
- the ignition is on
- the driver's door has not been closed since the ignition was switched off.

**VALET REMINDER TONES** With the valet switch in the ON position, four alternating tones (low - high - low - high) are sounded when the doors are opened or the transmitter is pressed.

**WARN AWAY** A low-pitched warning tone sounds for 2 seconds if the shock sensor detects a jarring motion. The full alarm is triggered if there are three warn away signals within a 15-second period.

**ESCALATING RESPONSE** An alternating tone that starts at low volume and builds over a 10-second period to the full alarm if the system is not disarmed by pressing the transmitter.

**AUDIBLE TICKING** A ticking tone that has a 15-second duration is the equivalent to the escalating response when the system has been passively armed. If the system is not disarmed during this 15-second period, the system will activate the full alarm.

**FULL ALARM** The full alarm is the combined audible and visual alarm that will last for 2 minutes unless turned off with the transmitter.

**Anti-scan** If the system receives more than 10 different RF transmissions within a short period of time (approximately one minute), the security system will not disarm for approximately one hour. This feature prevents defeat of the system by thieves employing frequency scan.

### Battery back-up

If the vehicle battery is disconnected with the security system armed, the alarm will sound using the back-up battery as its power source. This alarm can also occur if the vehicle battery is completely discharged. The alarm will continue until the vehicle battery is reconnected and the system is disarmed by pressing the transmitter. The back-up battery is charged during the time the ignition is ON.

**Low voltage vehicle battery** If the vehicle battery is in a low state of charge, the security system may not disarm when the transmitter is pressed. If, after the vehicle is jump started, the sounder chirps at a rate of once per second, the system must be recoded for each transmitter. Refer to "Coding for new transmitters".

**LED history readout** After the alarm has been triggered and has stopped, the LED will show groups of flashes rather than the normal one-per-second. When the system is disarmed, two chirps will be followed by a pause and then a third chirp. The LED flash groups indicate the type of security violation that has occurred:

FLASHES PER GROUP	VIOLATION
2 or 3	door opened
4	shock sensor triggered
5	anti-scan violation
7	trunk opened or valet switch turned ON
8	ignition switched ON

The history memory is cleared when the system is disarmed and the ignition is switched to position I.



### Jaguar Diagnostic System

#### Coding for new transmitters

Two transmitters are supplied with each vehicle; however, the system may be coded for use with up to five transmitters. If new or additional transmitters are requested, the system must be recoded with all of the transmitters for the vehicle at hand (from two to five transmitters).

Coding for new transmitters is completed as follows:

- record the radio preset stations
- disconnect the security system back-up battery
- disconnect the vehicle battery negative terminal
- reconnect the vehicle battery and then the back-up battery – the sounder emits a tone indicating that the system is awaiting code entry.

Press each transmitter button one or more times until five transmissions are made, noting that each transmitter must be pressed at least once. The sounder emits a tone with each code entry to indicate that the code was accepted. When the system has accepted five code entries, coding is complete. Reset the radio station memory and the clock.

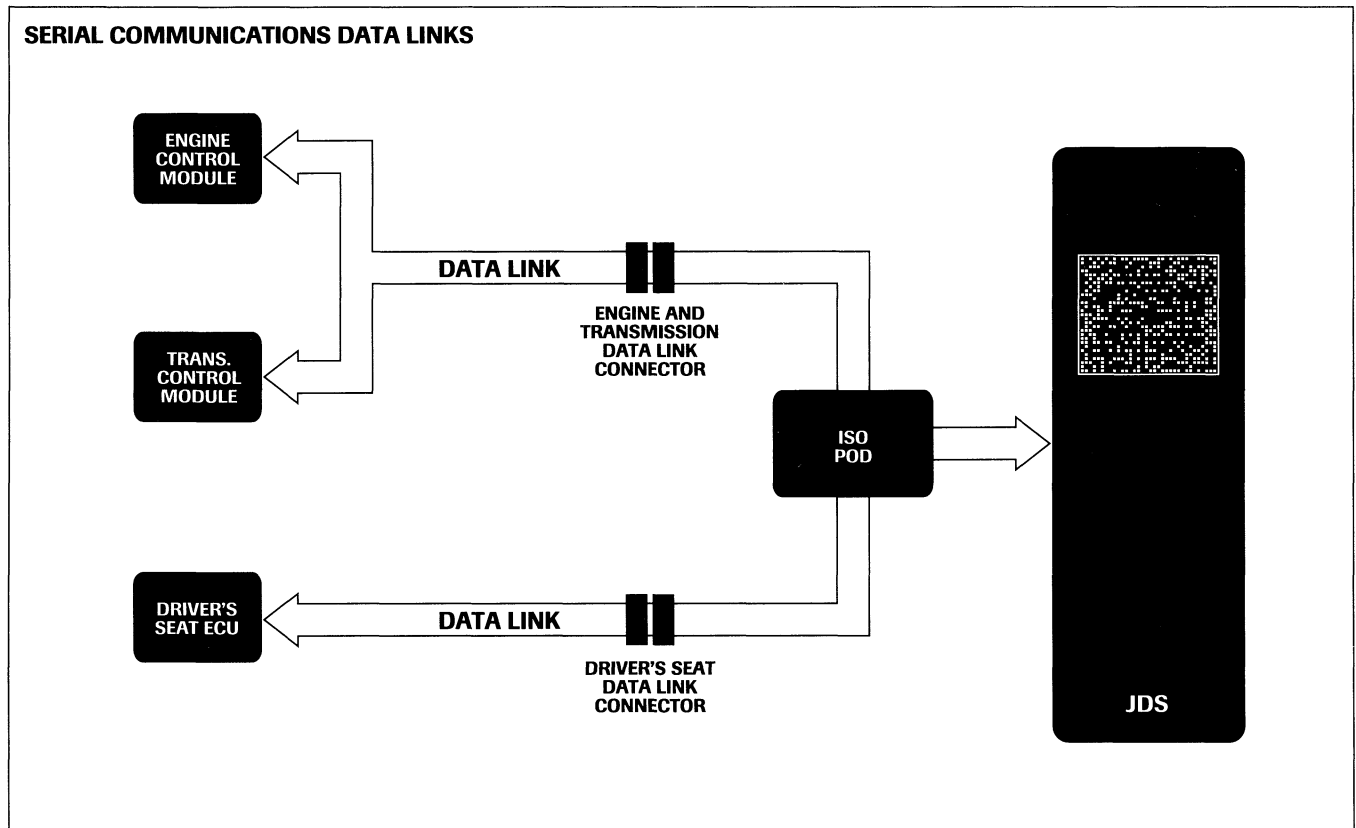
Jaguar Diagnostic System (JDS) is used for serial communications with three of the vehicle's ECUs (electronic control units/modules):

- Engine control module
- Transmission control module (A4)
- Driver's seat ECU.

Two serial communications Data Link Connectors (DLCs) are provided for connection to JDS. Serial communication is used for Diagnostic Trouble Code (DTC) retrieval and fault diagnosis.

In addition to upgraded serial communications, the new JDS software issues feature circuit diagnosis "down to the wire" and determine if the fault is open circuit or short circuit.

The ABS ECU and the Climate Control ECU have individual diagnostic connection to JDS.



## Fuse Identification and Location

## Left fuse panel

Number	Color	Value	Circuit
1	Lt. Blue	15A	Driver's seat movement – fore, aft, lumbar
2	Violet	3A	Not used
3	Yellow	20A	Left blower
4	Pink	4A	Telephone ignition power (optional)
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	Trip computer; gear shift interlock
17	Tan	5A	Rear fog lights
18	Orange	7.5A	Locate lighting; instrument pack lighting
19	Red	10A	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	Lt. Blue	15A	Passenger's seat movement – fore, aft, lumbar
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	Yellow	20A	Passenger's seat movement – recline
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	Red	10A	Transmission control (A4 only)
22	Lt. Green	30A	ABS pump

## Fuse Identification and Location

### 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	Reverse lights

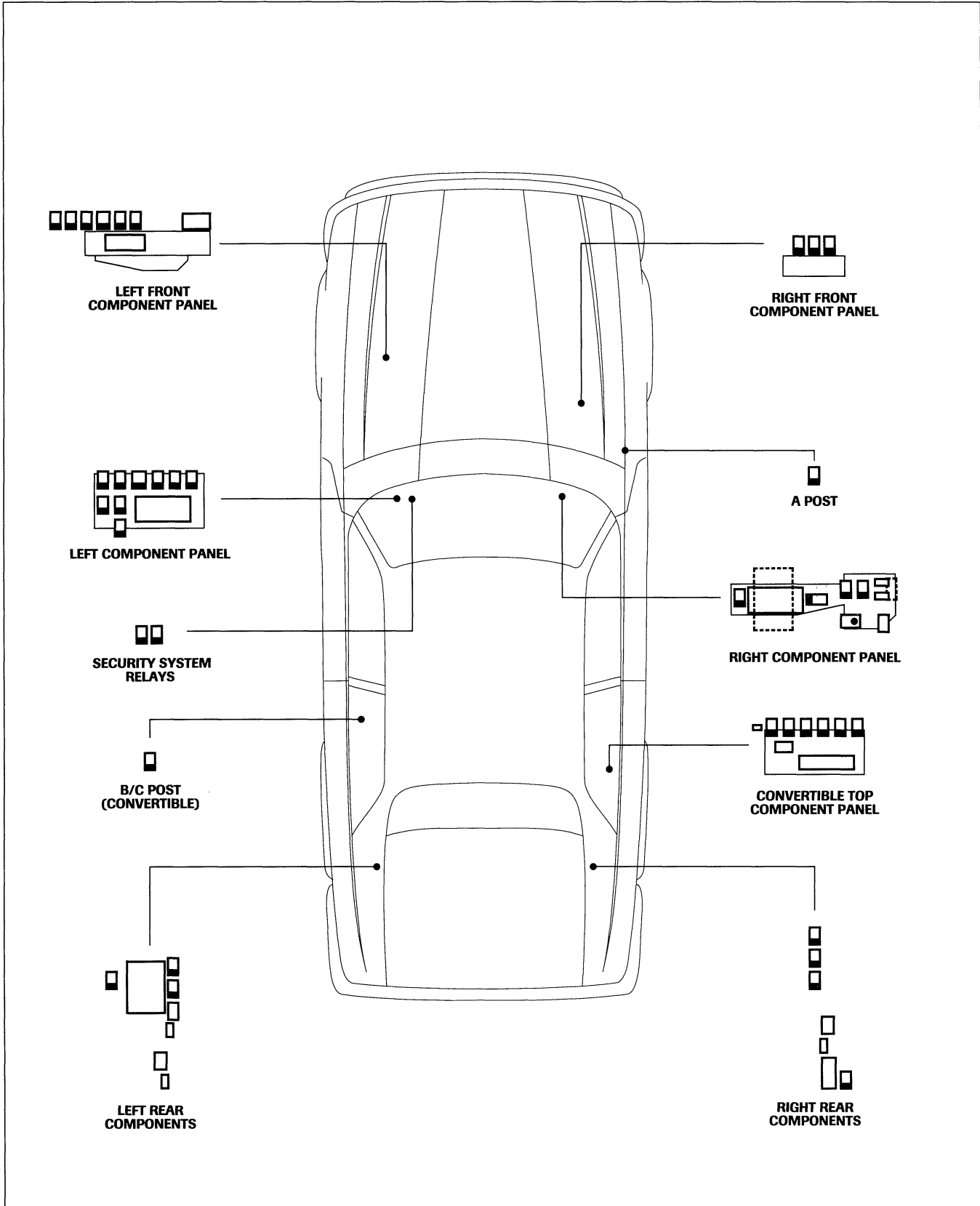
### Convertible top fuse

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

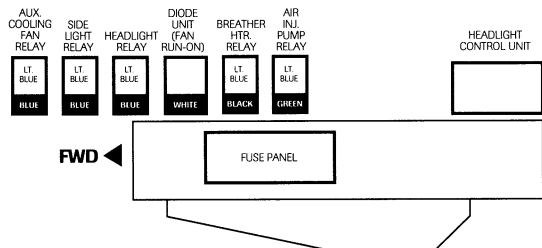
### In-line fuses

Color	Value	Circuit	Location
Violet	3A	Driver's lumbar motor	Driver's seat back
Violet	3A	Passenger's lumbar motor	Passenger's seat back
Tan	5A	Serial communications data link	Center console, right side
Brown	7.5A	Security system	Trunk, right rear
Tan	5A	Right rear side lights	Trunk, right rear
Tan	5A	Left rear side lights	Trunk, left rear

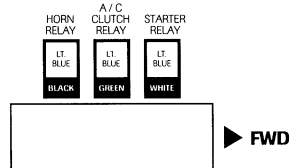
**Component Panel Location**



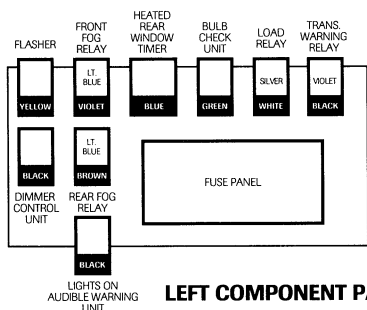
Relay Identification and Location



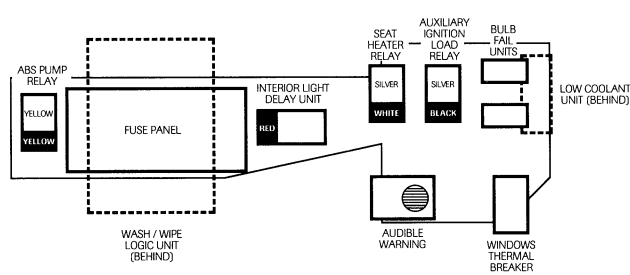
LEFT FRONT COMPONENT PANEL



RIGHT FRONT COMPONENT PANEL



LEFT COMPONENT PANEL



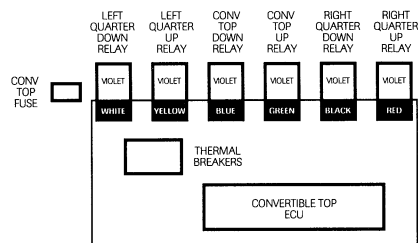
RIGHT COMPONENT PANEL



SECURITY SYSTEM RELAYS



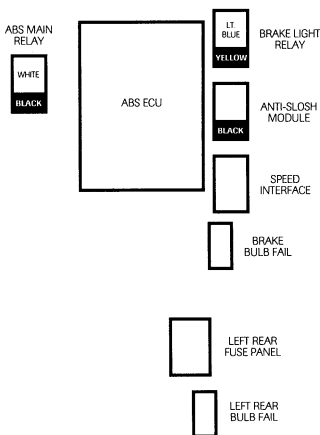
RIGHT A POST



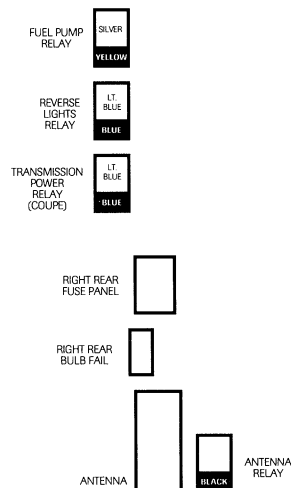
CONVERTIBLE TOP COMPONENT PANEL



LEFT B/C POST (CONVERTIBLE)

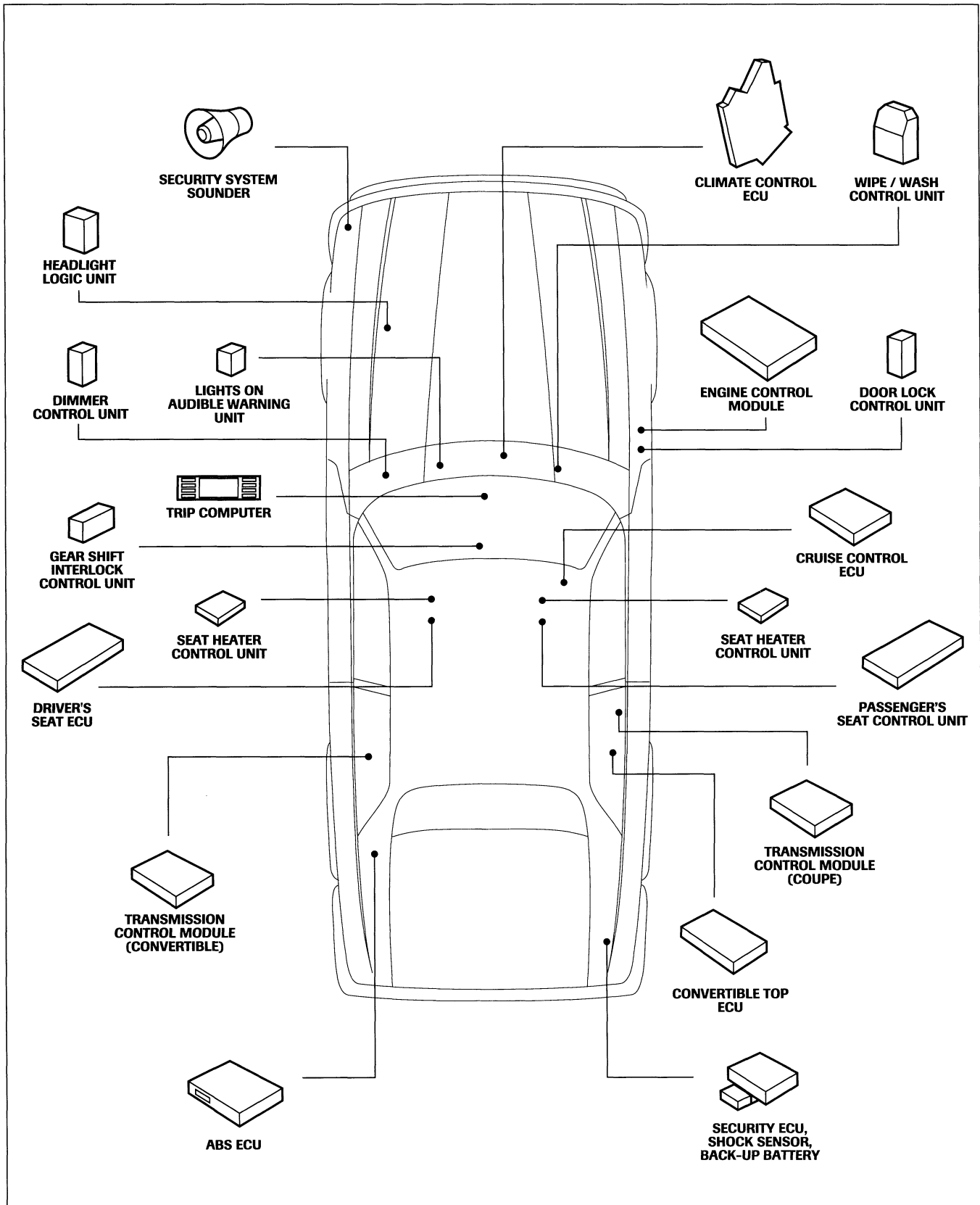


LEFT REAR COMPONENTS



RIGHT REAR COMPONENTS

ECU and Component Identification and Location



**Driver's Air Bag**

The existing driver's air bag supplementary restraint system is continued for 1993 model year.

**Air bag identification symbol**

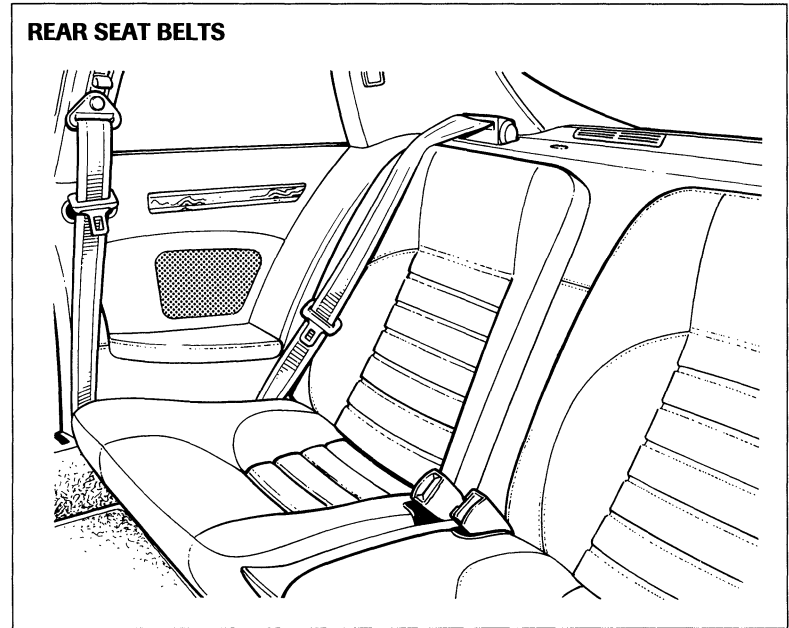
The vehicle data plate includes an air bag symbol. The purpose of this graphic symbol is to alert emergency and service personnel that the vehicle is air bag equipped. In the event of a road accident in which the air bag does not deploy, emergency and service personnel must proceed with caution when handling the steering system.



**Seat Belts**

**Rear seat belt anchors**

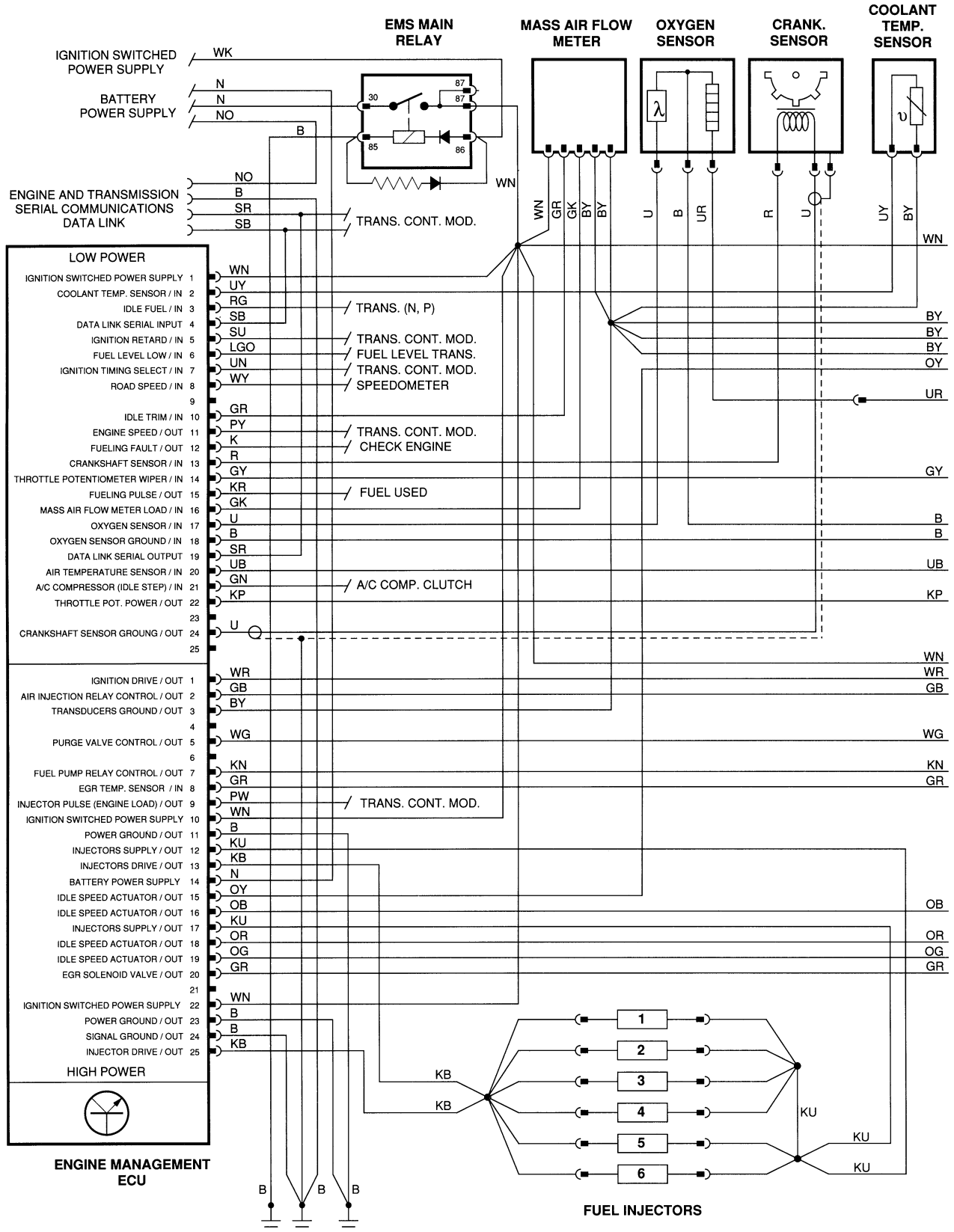
The rear belts have revised anchor positions and anchor hardware. No other changes to the belts or the body structure have been made.



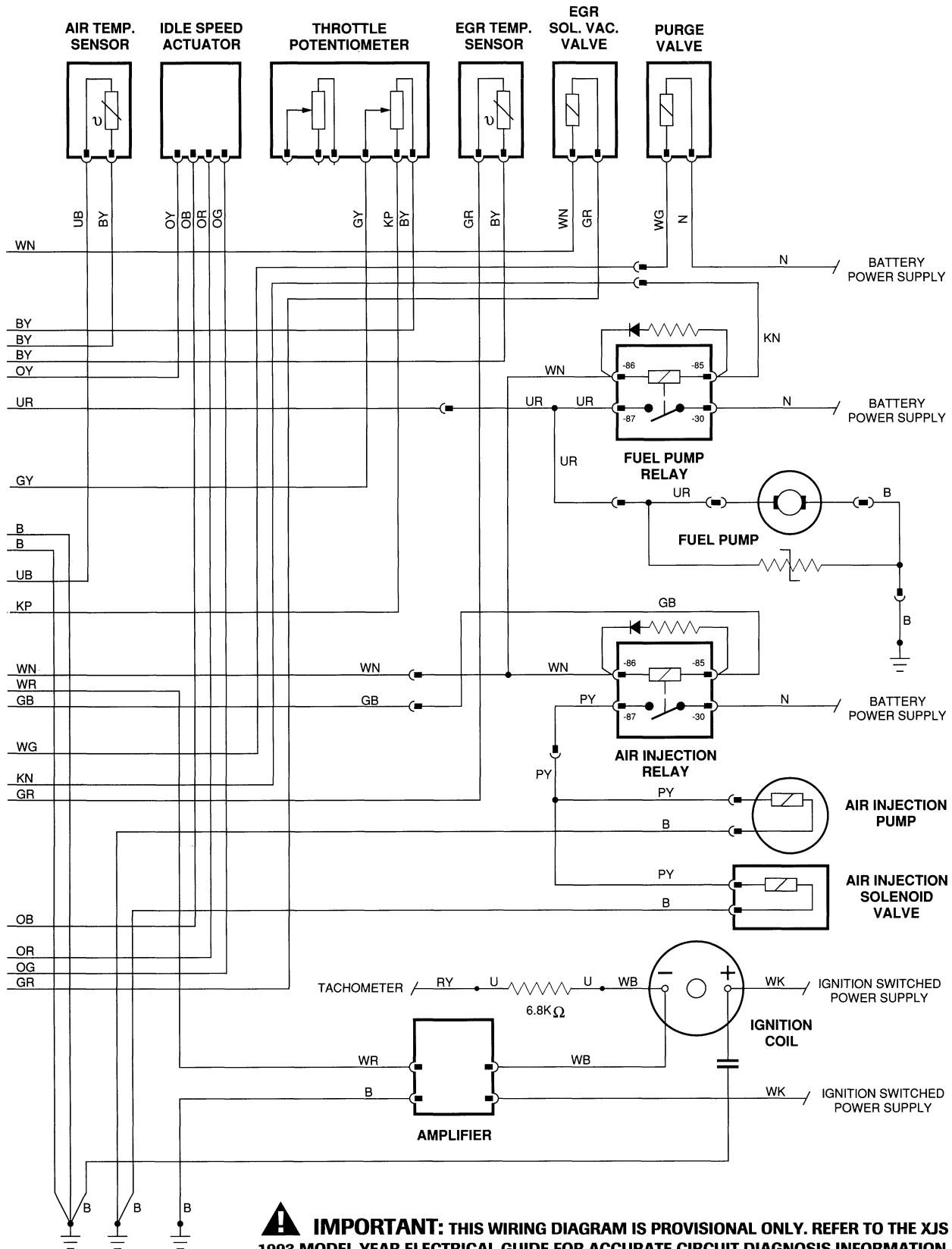
**Child's seat tether**

Coupe models will be supplied with a child's seat tether that can be installed to one of the three attachment points under the rear shelf trim panel. Instructions for the installation of the tether will be issued in a Technical Bulletin.

4.0 LITRE ENGINE MANAGEMENT SYSTEM XJS RANGE 1993 MY

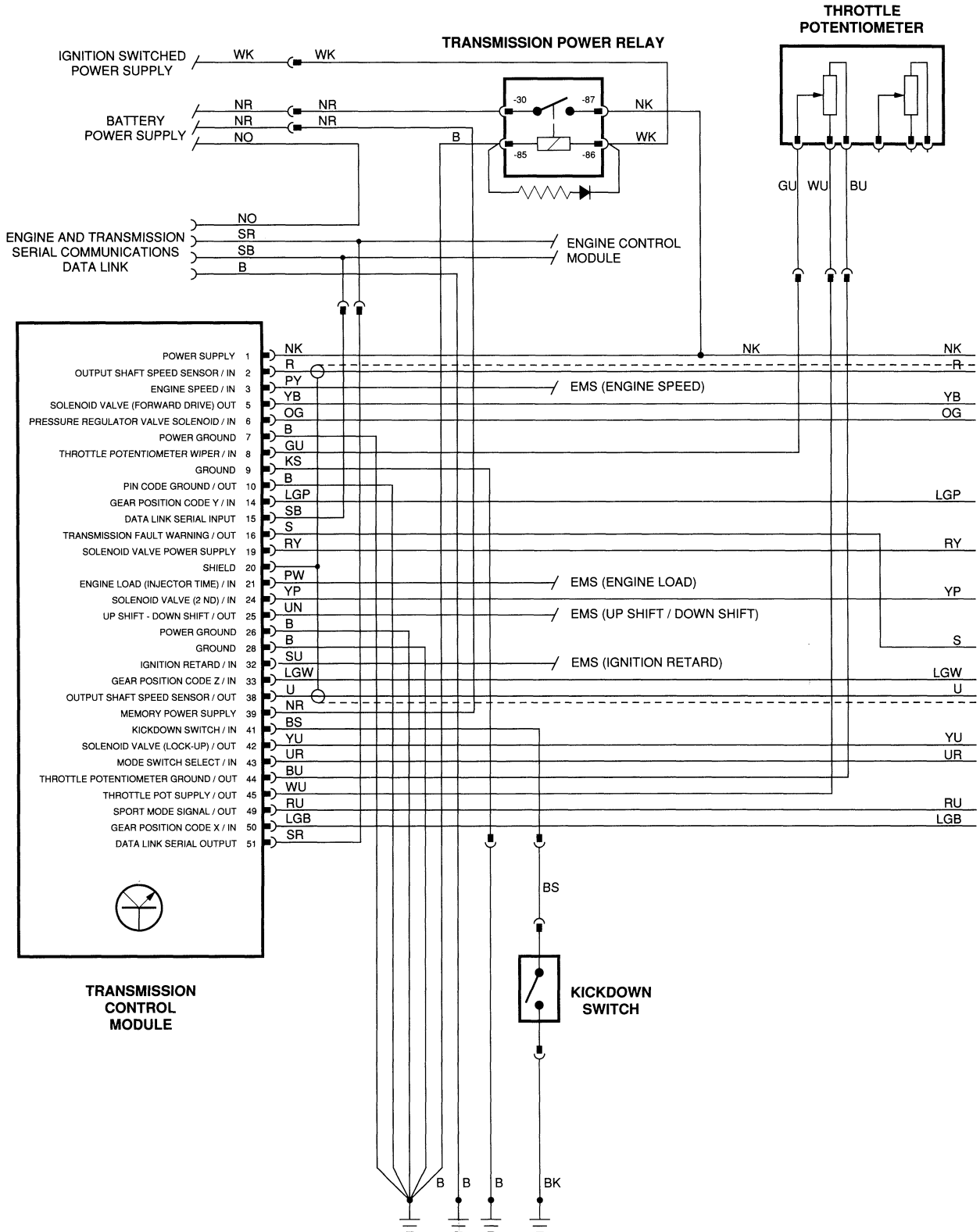






**IMPORTANT:** THIS WIRING DIAGRAM IS PROVISIONAL ONLY. REFER TO THE XJS 1993 MODEL YEAR ELECTRICAL GUIDE FOR ACCURATE CIRCUIT DIAGNOSIS INFORMATION. REFER TO PAGE 40 OF THIS PUBLICATION FOR WIRING COLOR CODES.

TRANSMISSION CONTROL XJS RANGE 1993 MY





**Wiring Color Codes**

N	Brown	Y	Yellow
B	Black	O	Orange
W	White	S	Slate
K	Pink	L	Light
G	Green	U	Blue
R	Red	P	Purple



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