

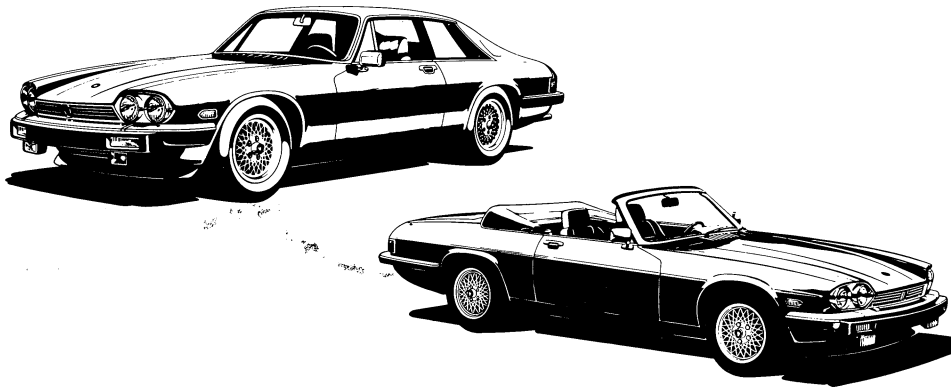
XJ-S COUPE & CONVERTIBLE

U P D A T E

1990 MODEL YEAR



XJ-S COUPE & CONVERTIBLE



1990

Publication number S-67

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INTRODUCTION

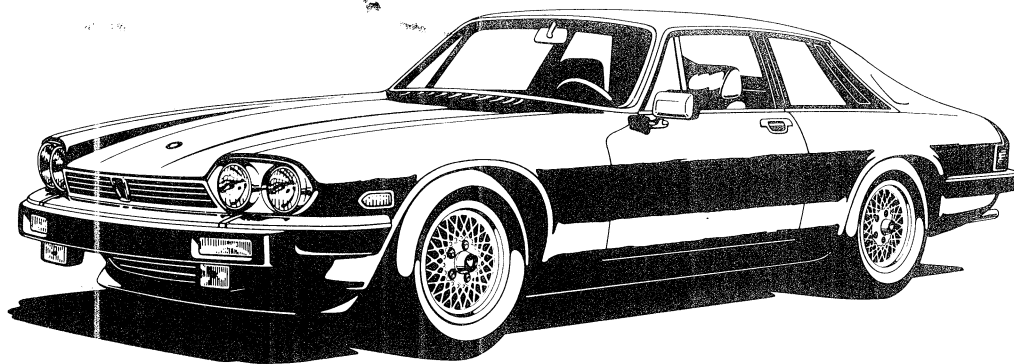
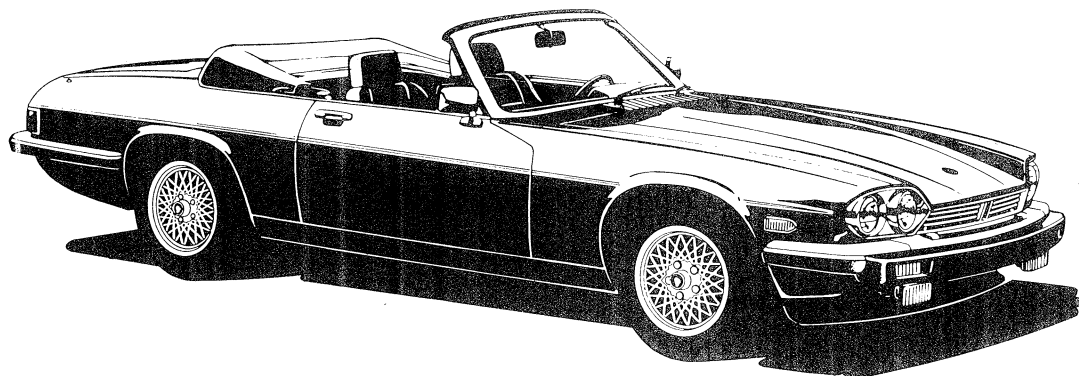
The 1990 Jaguar XJ-S continues the evolutionary process with the addition of a driver's side airbag, tilt steering wheel and other refinements. This publication serves as an introduction to these changes and improvements.

1990 MY COUPE & CONVERTIBLE VIN 165791-ON

Wiring color code

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

When a wire has two or more color code letters, the first letter indicates the main color and the subsequent letter(s) indicate the tracer color(s).



FEATURES

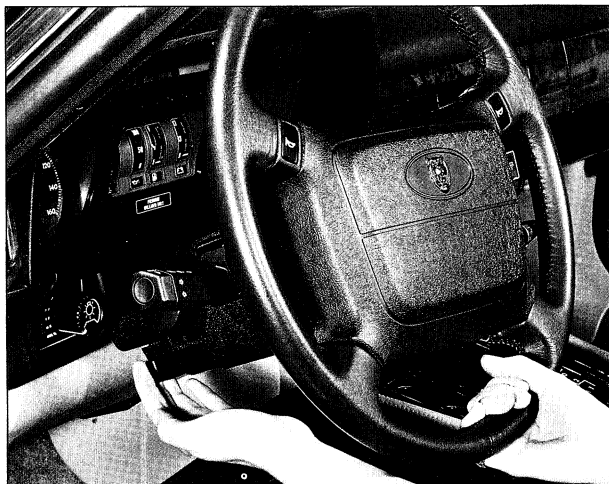
DRIVER'S AIRBAG

A driver's side airbag supplementary safety system is introduced for the XJ-S 1990 Model Year. This system is used in conjunction with the front active seat belts and replaces the passive restraint seat belt system. The airbag is mechanically activated and is entirely self-contained in the center of the steering wheel assembly.



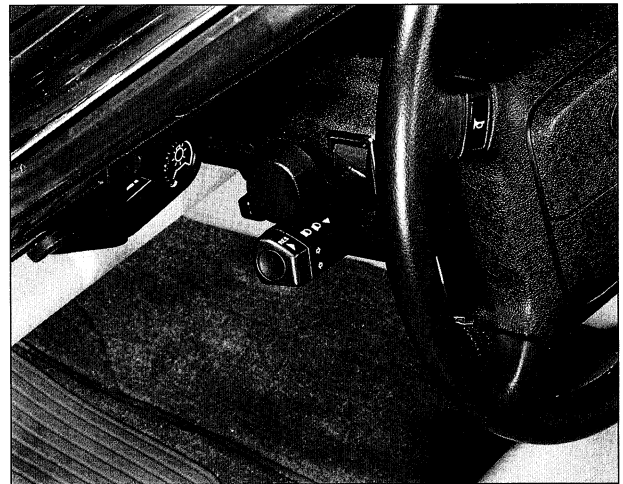
TILT STEERING WHEEL

A six-position tilt mechanism allows the driver to adjust the steering wheel angle for optimum comfort. The lever on the left side of the column is actuated for adjustment.



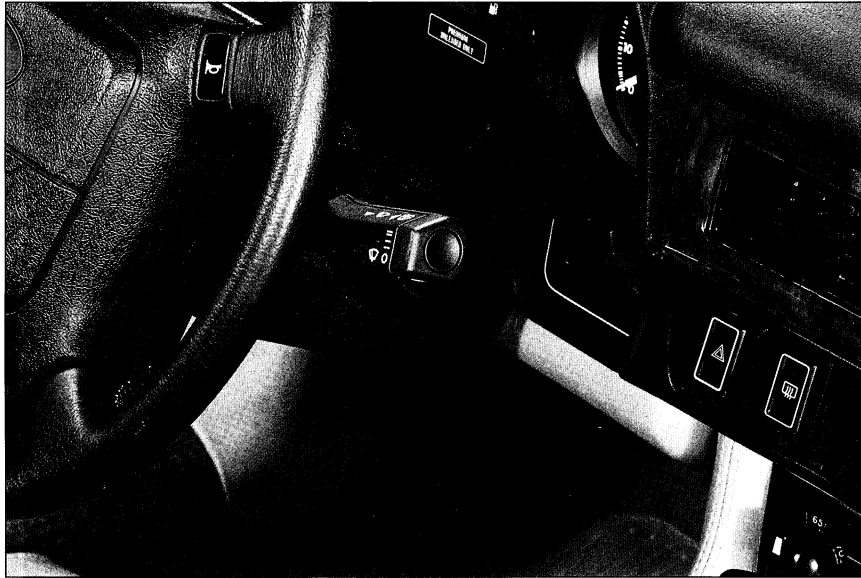
COLUMN STALKS

New style column stalks are used to complement the new steering wheel.



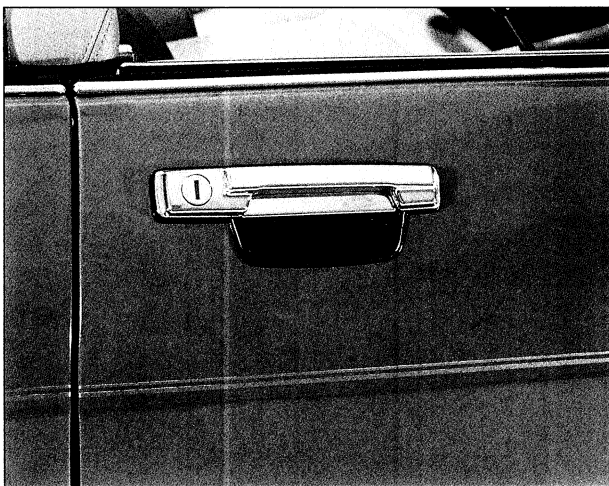
WINDSHIELD WIPERS

A new wiper control system is used with revised switch positions: OFF—bottom position; INTERMITTENT—one position up; SLOW—two positions up; FAST—three positions up; and FLICK—pull toward driver.



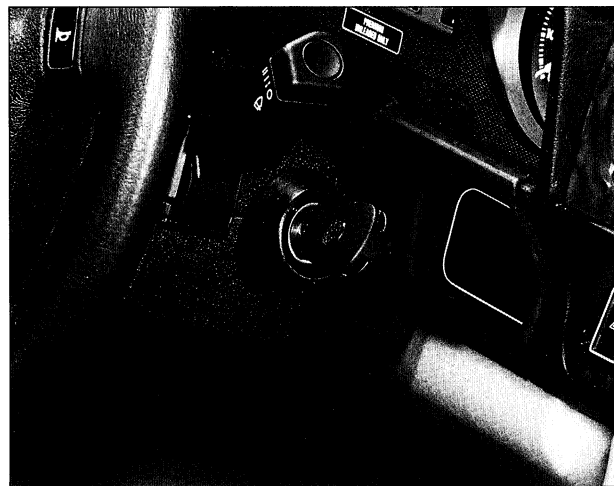
DOOR HANDLES

The outer door handles have been modified to lower the operating load. Changes to the release lever and the pivot point allow the doors to be opened with reduced effort.



IGNITION SWITCH AND KEY

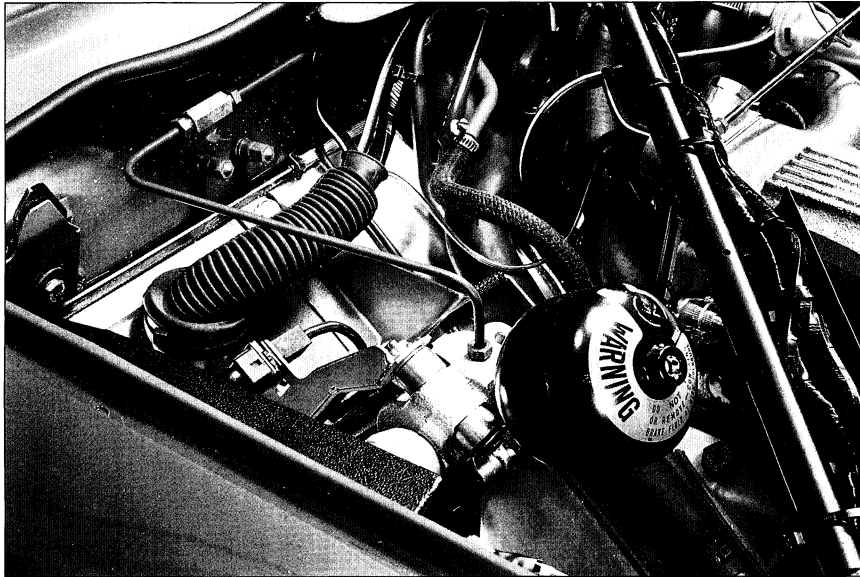
The ignition switch and key have been changed to match the 1990 Sedan Range. The switch functions remain the same. All other keys and locks remain unchanged.



FEATURES

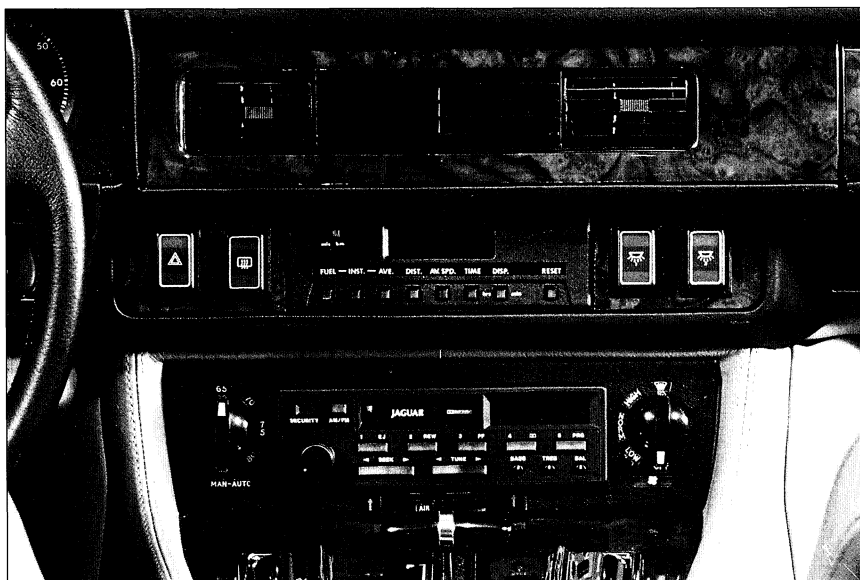
ANTI-LOCK BRAKING

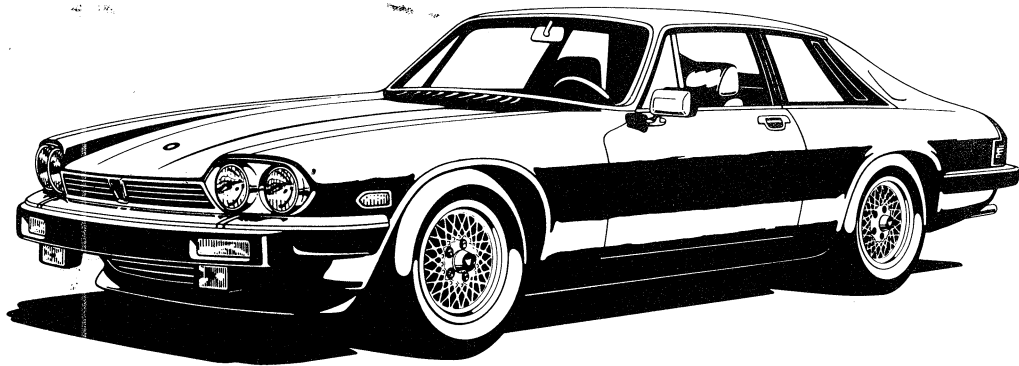
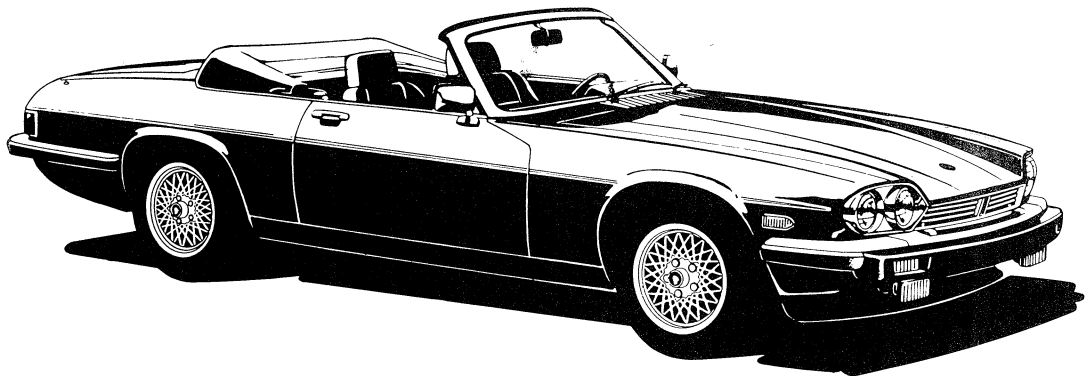
Minor changes have been made to the ABS system including the operating sequence of the brake warning lights.



CLIMATE CONTROL

A revised climate control microprocessor is used with a revised coolant temperature switch. The operating control of the convertible air conditioning compressor, with the climate control system off, has been changed.



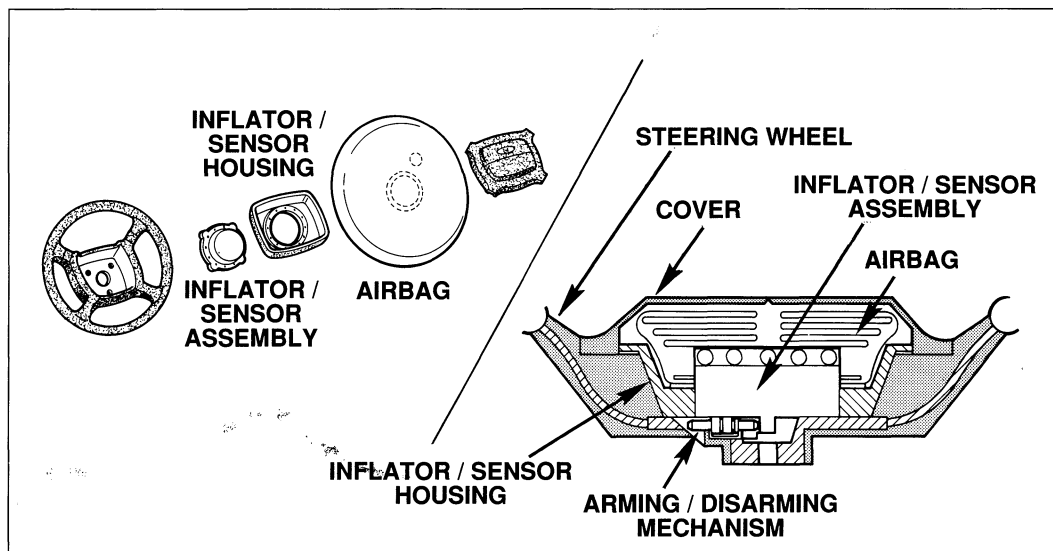


SYSTEMS DESCRIPTION

DRIVER'S AIRBAG

The driver's airbag system is a fully mechanical system that is one component of an integrated supplementary safety system. The airbag deploys if the vehicle experiences a crash pulse equal to a frontal impact into a solid barrier at or above 6 mph. The complete safety system consists of the following components:

- steering wheel
- upper steering column
- vehicle structure and components
- active seat belts
- knee bolster
- airbag assembly
- arming/disarming mechanism



Steering wheel

The steering wheel houses the airbag assembly and the arming/disarming mechanism. The steering wheel also transmits the crash pulse to the airbag sensors [via the inflator/sensor housing].

Upper steering column

The upper steering column assembly transmits the crash pulse to the steering wheel. In the event of a frontal impact, the steering column collapses to absorb impact energy.

Vehicle structure and components

In the event of a frontal impact, the body structure will deform and absorb impact energy. The crash pulse is transmitted through the body to the steering column.

Active seat belts

The airbag system is designed as a supplement to the active seat belt system and the other safety system components. The seat belts should be used at all times when operating the vehicle.

Knee bolster

The driver's side under-dash panel is padded and incorporates a knee bolster. Necessary changes have been made to the climate control ducting and the location of electrical components.

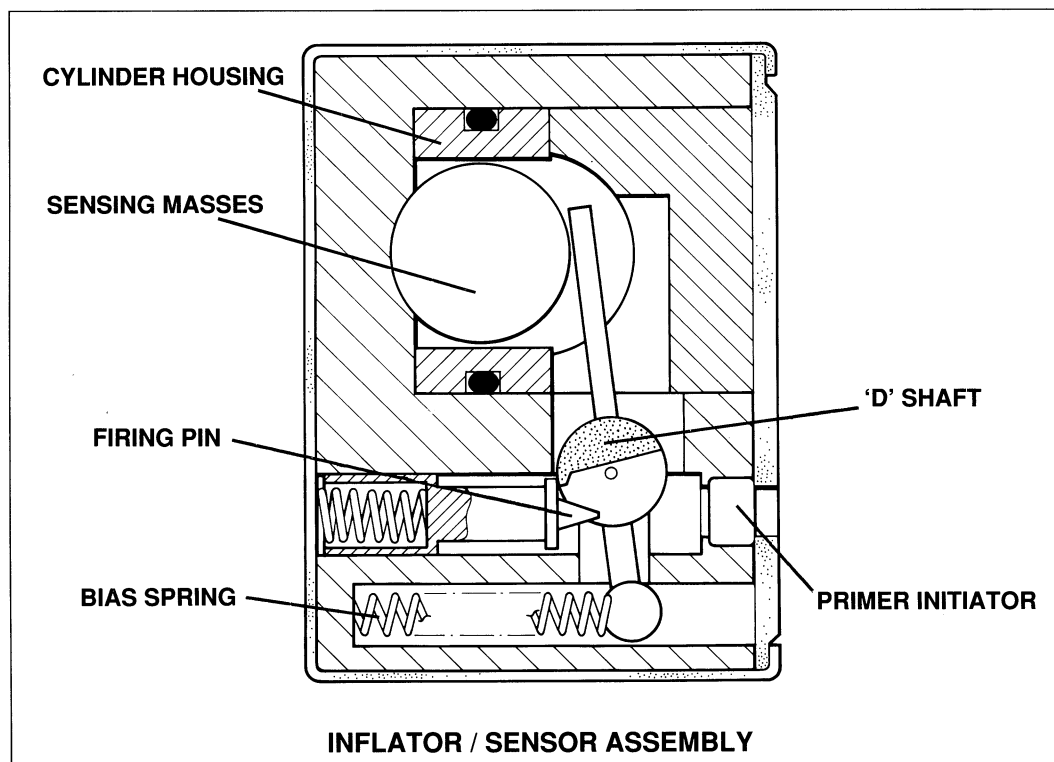
SYSTEMS DESCRIPTION

Airbag assembly

The airbag assembly contains the airbag, the inflator/sensor assembly, and the inflator/sensor housing. The assembly is enclosed by a trimmed cover that splits horizontally as the airbag inflates.

THE AIRBAG ASSEMBLY IS NON-SERVICEABLE AND MUST NOT BE TRANSFERRED FOR USE IN OTHER VEHICLES.

Inflator/sensor assembly The inflator/sensor assembly triggers the airbag deployment if it senses a crash pulse equal to a frontal impact into a solid barrier at or above 6 mph. Through the operating mechanism, two firing pins ignite a primer, which in turn reacts with a propellant to produce nitrogen gas and inflate the airbag.



If the specified impact occurs, two spherical 'sensing masses' move forward against levers, which rotate the 'D' shafts. The 'D' shafts pivot and release the firing pins to ignite the primer. Two bias springs return the 'D' shafts to their seated positions if an impact is insufficient to fully trigger the sensing masses. The 'D' shafts can be prevented from rotating by carrying out a disarming procedure to allow service and maintenance work to be safely conducted.

⚠ WARNING: DO NOT ATTEMPT SERVICE OR MAINTENANCE WORK ON THE AIRBAG SYSTEM WITHOUT THE JAGUAR-SPECIFIED TOOLS, EQUIPMENT, AND SERVICE PROCEDURES. DO NOT REMOVE THE STEERING COLUMN OR STEERING WHEEL FROM THE VEHICLE WITHOUT FIRST DISARMING AND REMOVING THE AIRBAG ASSEMBLY.

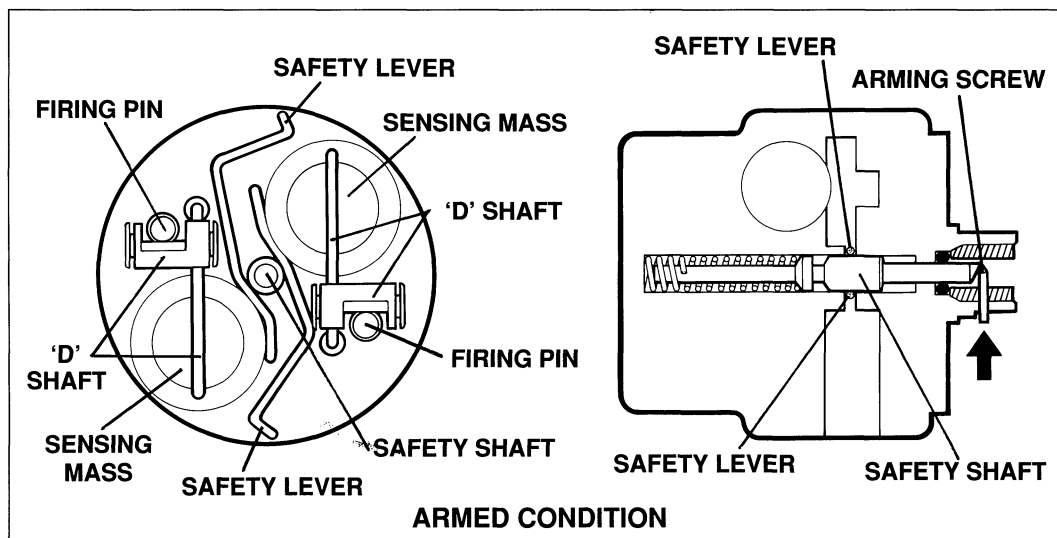
DRIVER'S AIRBAG

Arming/disarming mechanism

The mechanism allows safe service and maintenance of the steering-related components. The arming/disarming mechanism is built into the inflator/sensor assembly. Arming and disarming is determined by the position of the arming screw in the steering wheel hub.

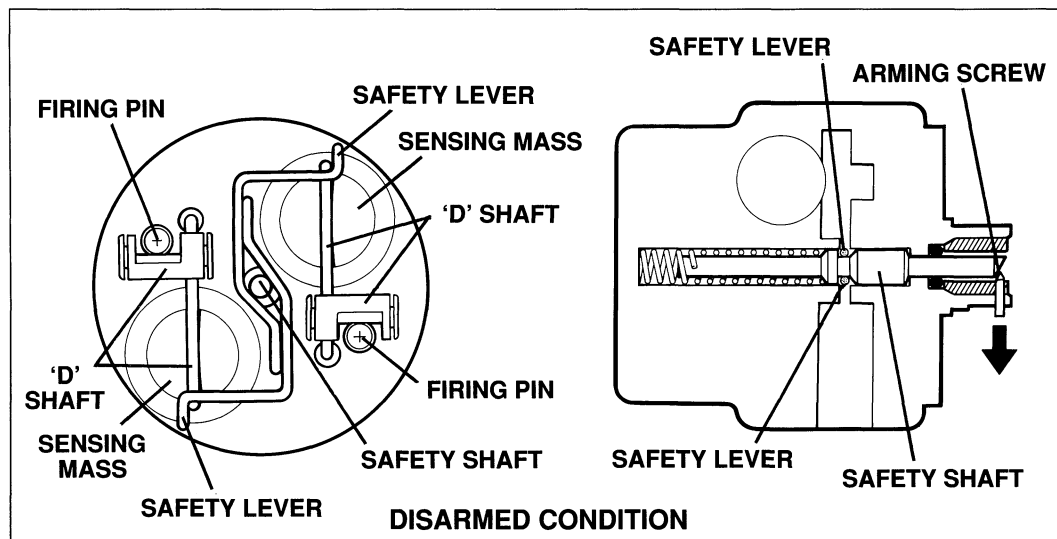
ARMED CONDITION

When screwed fully clockwise against the stop, the arming screw forces the chamfered safety shaft between the two safety levers. The levers are held away from the 'D' shafts allowing the 'D' shafts to be triggered by the sensing masses.



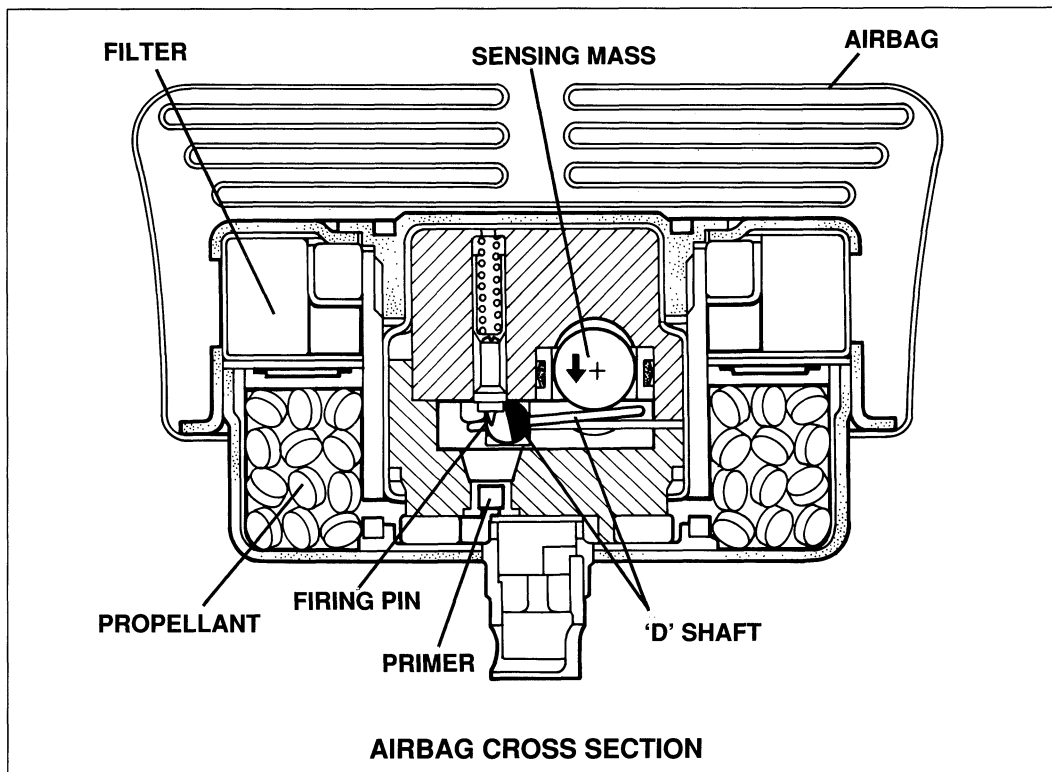
DISARMED CONDITION

When screwed fully counter-clockwise against the stop, spring pressure moves the safety shaft away from the safety levers. The safety levers return to their rest position in the safety shaft recess and prevent any movement of the sensing masses.



SYSTEMS DESCRIPTION

AIRBAG SYSTEM OPERATION



Crash sensing In the event of a frontal impact, the vehicle body structure will deform, absorbing the energy of the impact. The crash pulse is transmitted to the steering column, then to the steering wheel, then to the inflator/sensor.

Airbag deployment If the crash pulse is of sufficient strength and duration, the sensing masses move forward and rotate the 'D' shafts. The 'D' shafts release the firing pins to ignite the primer. The primer reacts with the propellant to produce nitrogen gas and inflate the airbag.

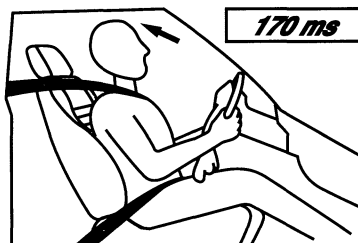
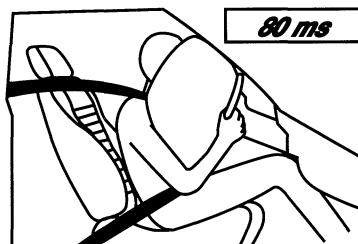
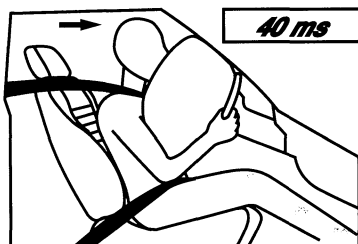
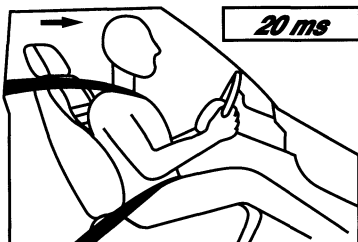
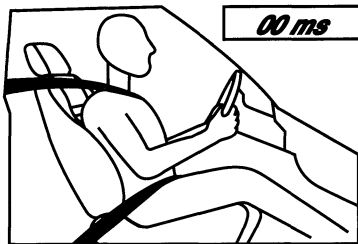
Driver protection The airbag fills with nitrogen gas and expands, splitting open the airbag cover. The airbag continues to expand until it is fully inflated. The driver travels forward until contact is made with the fully inflated airbag, at which time the driver's forward motion is decelerated. As the driver travels into the airbag, the nitrogen is expelled via the vent hole in the rear of the airbag, thus absorbing impact energy. Simultaneously, the steering column collapses, absorbing additional impact energy until the driver comes to rest. Impact energy is also absorbed by the deformation of the steering wheel and the steering column brackets.

Airbag replacement The airbag assembly is designed for one deployment only. If deployed, the complete assembly and the cover must be replaced and armed.

⚠ WARNING: REFER TO TECHNICAL BULLETINS AND THE XJ-S REPAIR MANUAL FOR SAFETY PRECAUTIONS BEFORE HANDLING AN AIRBAG.

DRIVER'S AIRBAG

TYPICAL TIME LAPSE SEQUENCE DURING A 30 MPH FRONTAL IMPACT INTO A SOLID BARRIER



TIME SCALE milliseconds [ms]

Start of impact.

Time elapsed—00 ms

Crash pulse reaches airbag sensor; driver begins to travel forward; sensor triggers firing pin; nitrogen gas is produced by primer/propellant; airbag starts to inflate; airbag cover splits open.

Time elapsed—20 ms

Airbag continues to inflate; airbag is fully inflated.

Time elapsed—40 ms

Driver continues to travel forward into the airbag; nitrogen is exhausted through the vent hole; simultaneously, the steering column collapses, absorbing impact energy.

Time elapsed—60 ms

Driver at foremost position during impact.

Time elapsed—80 ms

The vehicle finishes crumpling at approximately 110 ms; driver starts to rebound from the deflating airbag to the fully seated position.

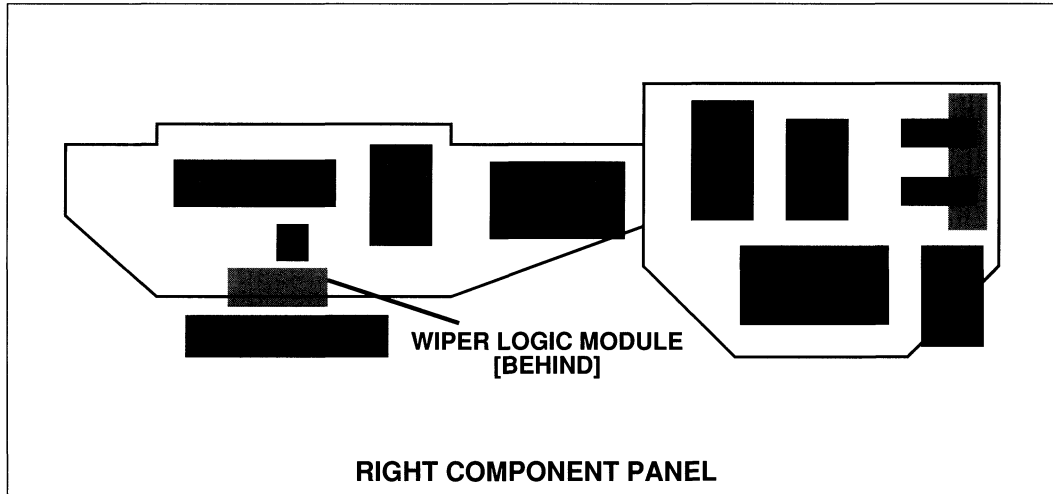
Airbag is fully deflated; all nitrogen is expelled.

Time elapsed—170 ms

SYSTEMS DESCRIPTION

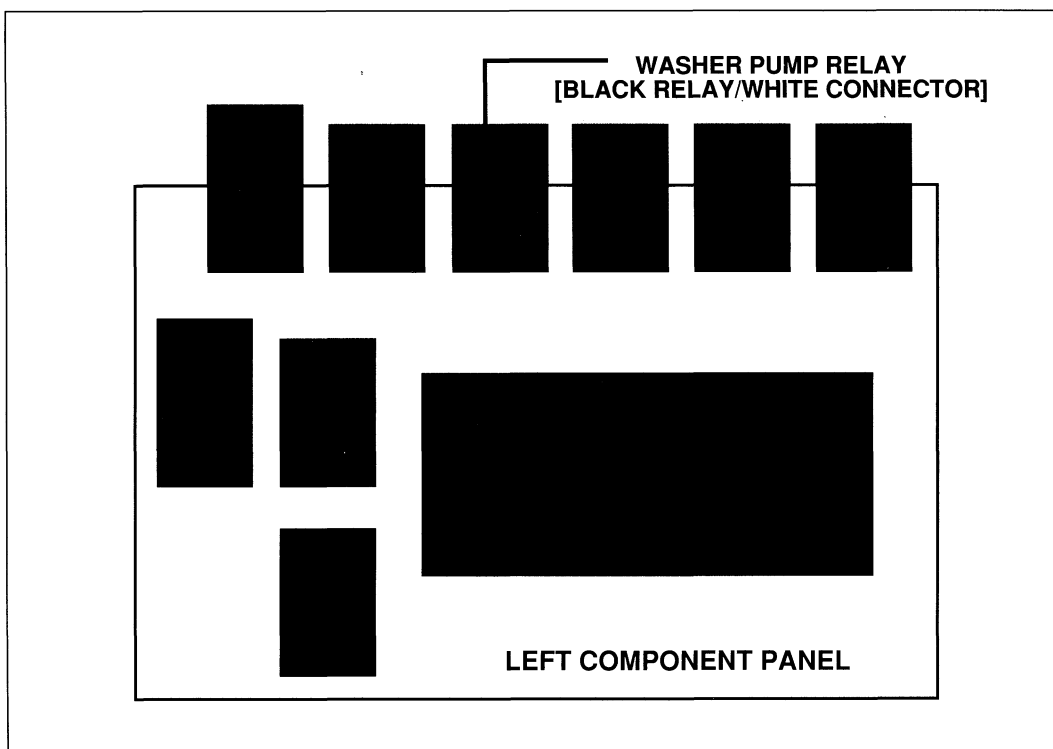
WINDSHIELD WIPERS

The windshield wiper system has a new switch assembly and incorporates a logic module to control all wiper motor operating modes. The wiper delay unit has been eliminated. The logic module is located behind the right component panel.

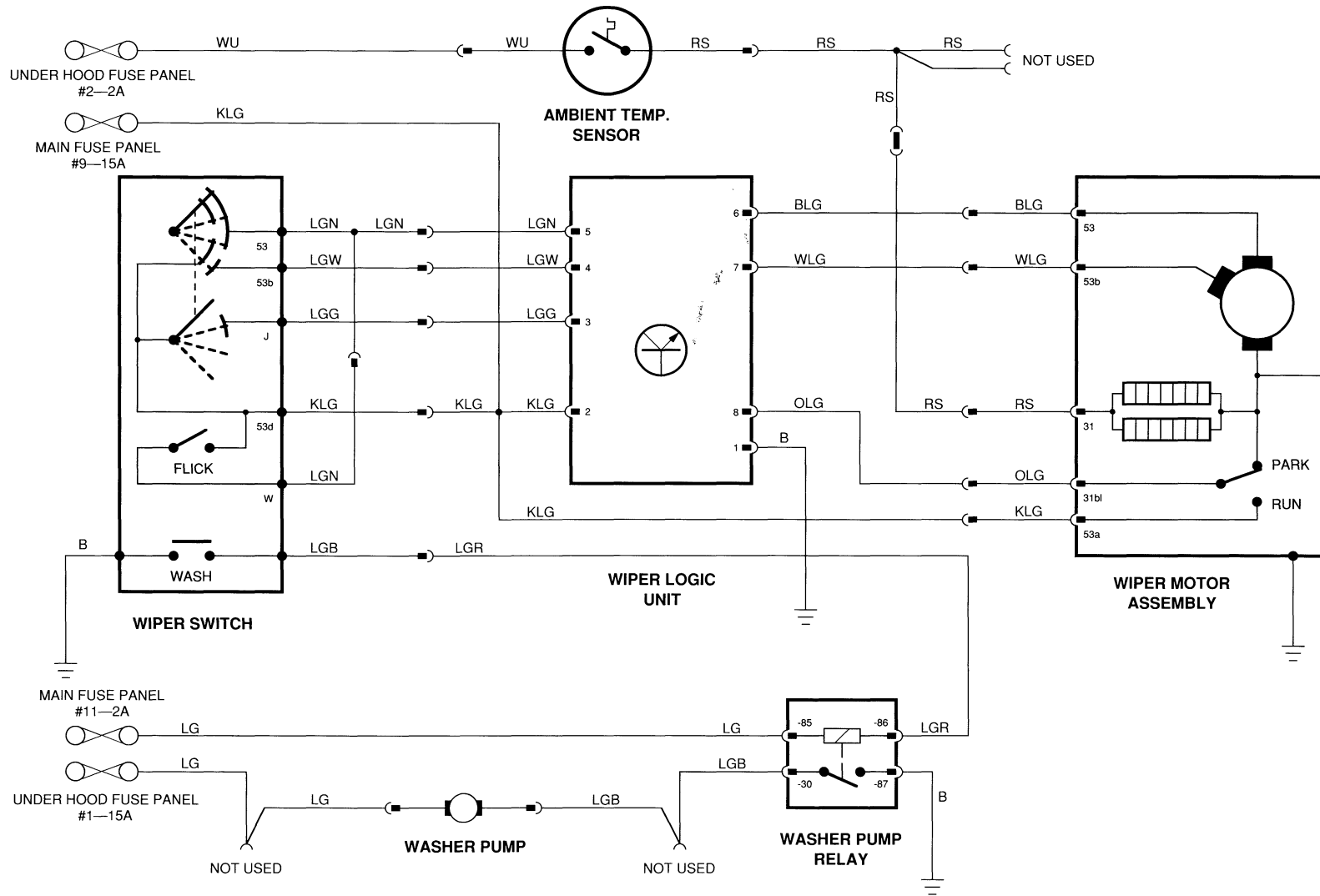


WINDSHIELD WASHERS

The washer circuit now incorporates a relay to power the washer pump motor. Located on the left component panel, the relay is black with a white connector.

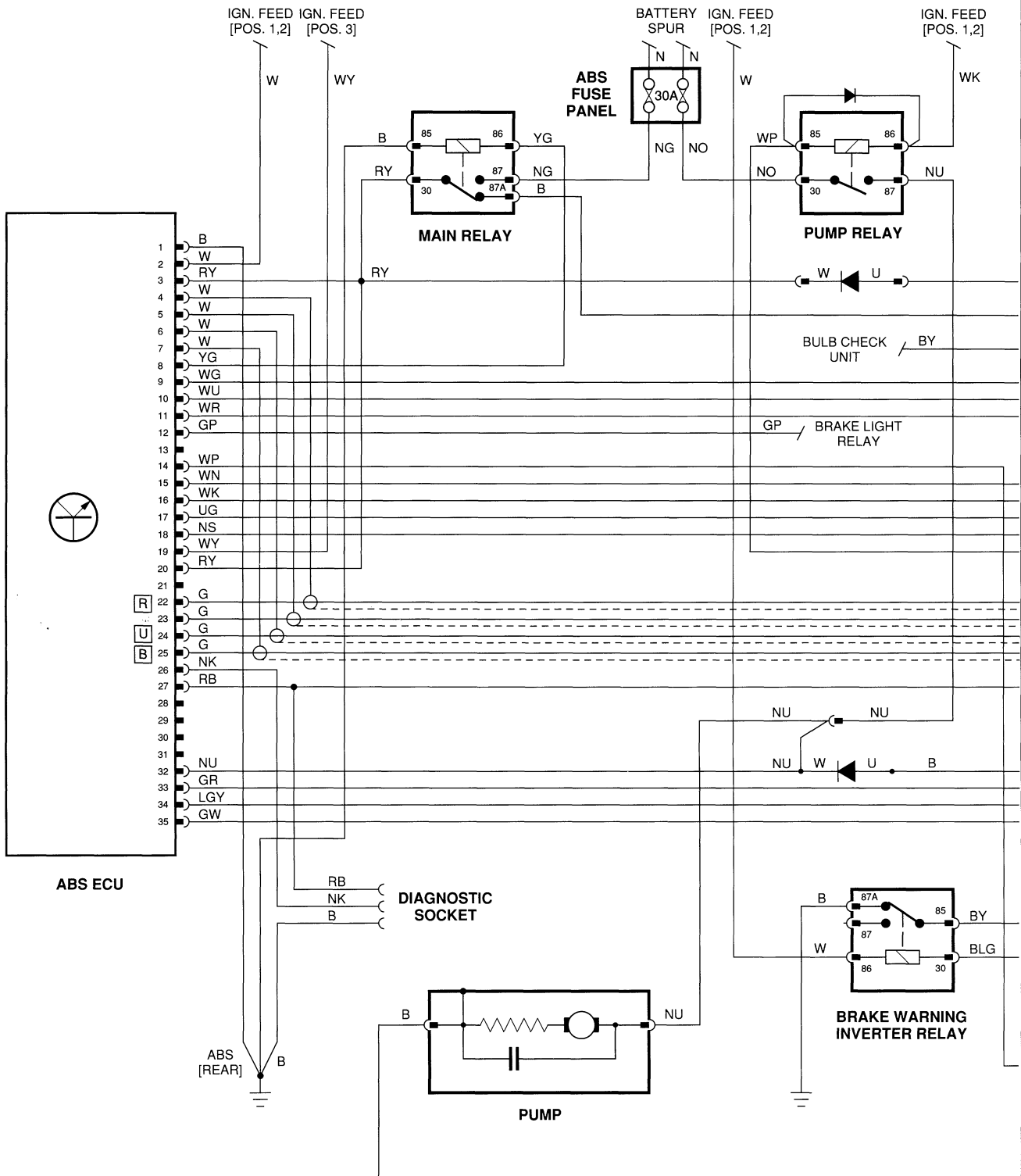


PROVISIONAL WIRING DIAGRAM
REFER TO PAGE 1 FOR WIRING COLOR CODE

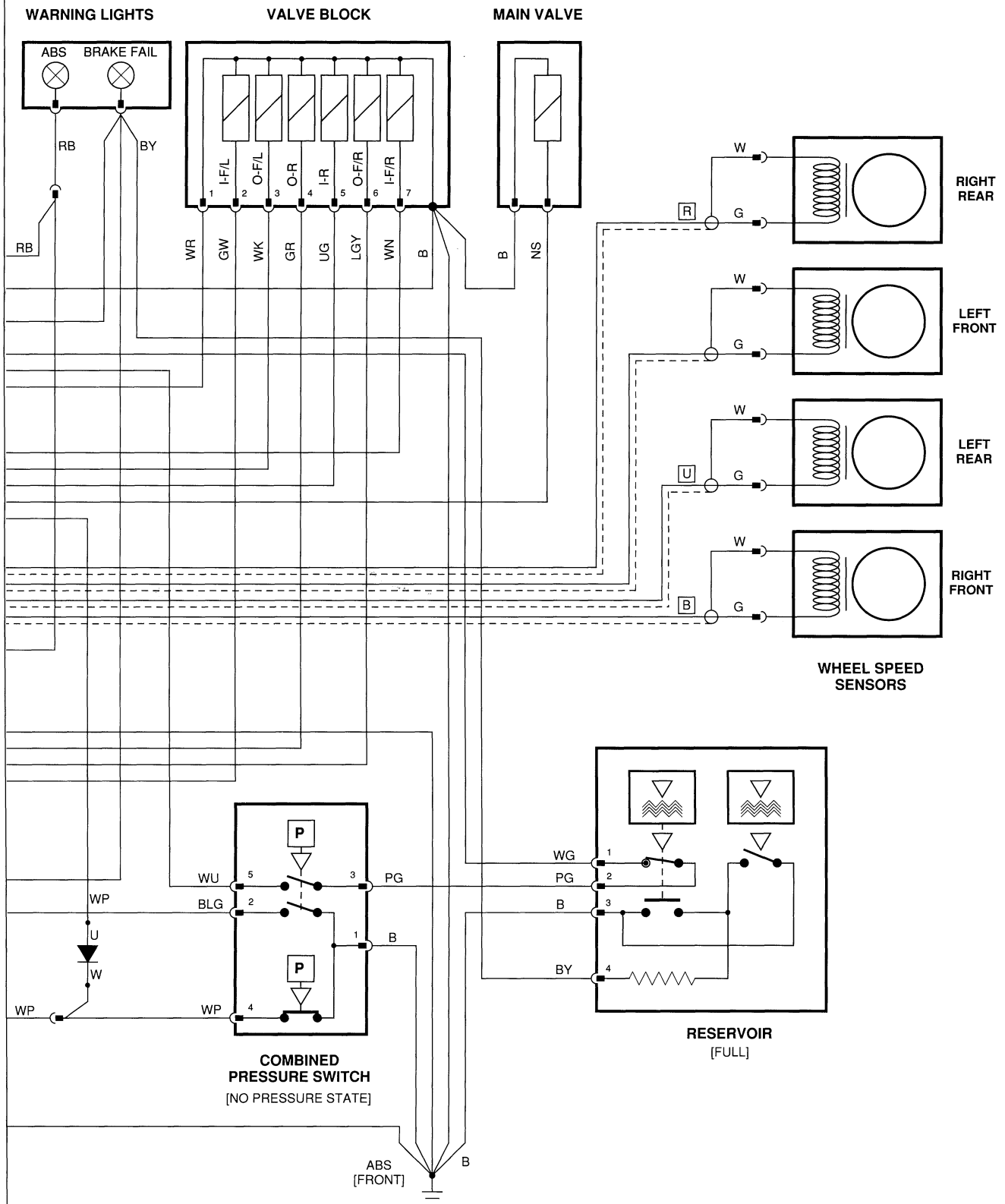


WINDSHIELD WIPER AND WASHERS

SYSTEMS DESCRIPTION



ANTI-LOCK BRAKING

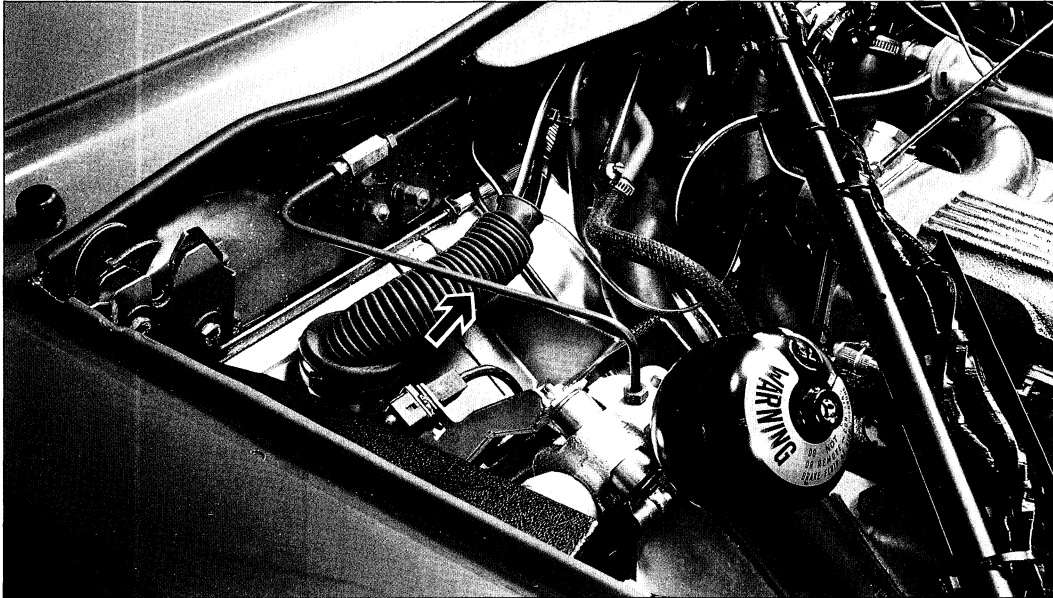


PROVISIONAL WIRING DIAGRAM
REFER TO PAGE 1 FOR WIRING COLOR CODE

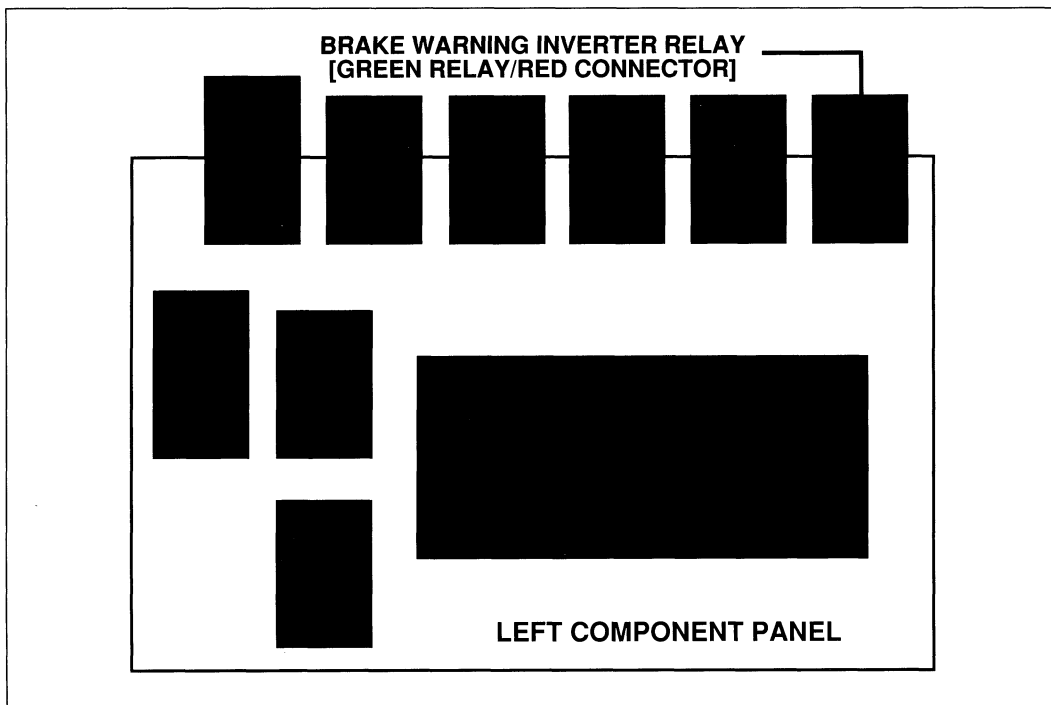
SYSTEMS DESCRIPTION

ANTI-LOCK BRAKING

High pressure fluid line The anti-lock braking system uses a steel tube to connect the high pressure outlet from the accumulator to the hydraulic actuator.



Anti-lock warning By incorporating the brake warning light inverter relay into the warning circuit, the operating sequence of the BRAKE WARNING and the ABS WARNING lights matches that of the 1990 Model Year Sedan Range. During system charging, the ABS WARNING goes off first, then the BRAKE WARNING. Located on the left component panel, the inverter relay is green with a red connector.



CLIMATE CONTROL

CLIMATE CONTROL [Coupe & Convertible]

ECU and coolant temperature switch

The ECU and the coolant temperature switch have been changed to ensure that the system receives continuous, changing input signals. The new ECU must be used with the new switch.

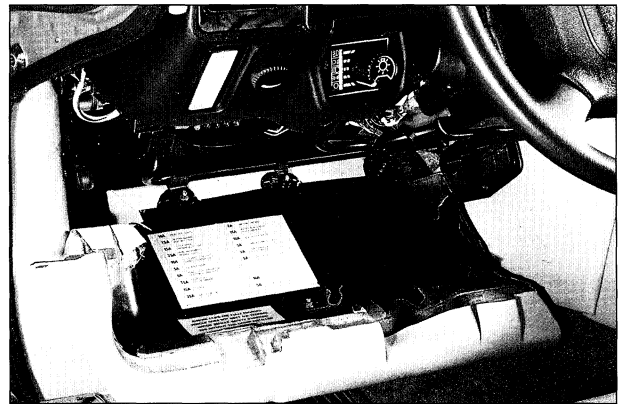
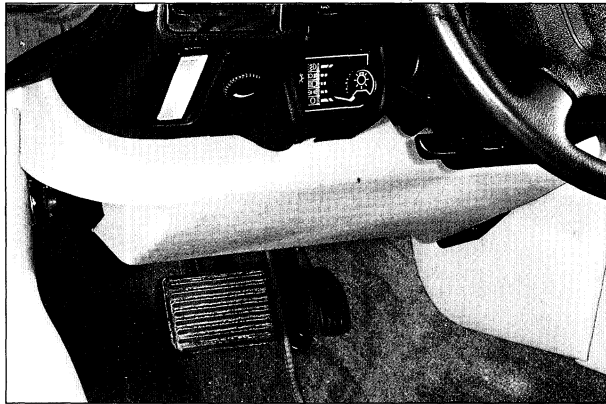


Ducting and refinements

The knee bolster incorporated as part of the air bag system contains the footwell air duct for the driver's side. The bolster hinges down for access to the under dash area.

The climate control system has been changed and refined further as follows:

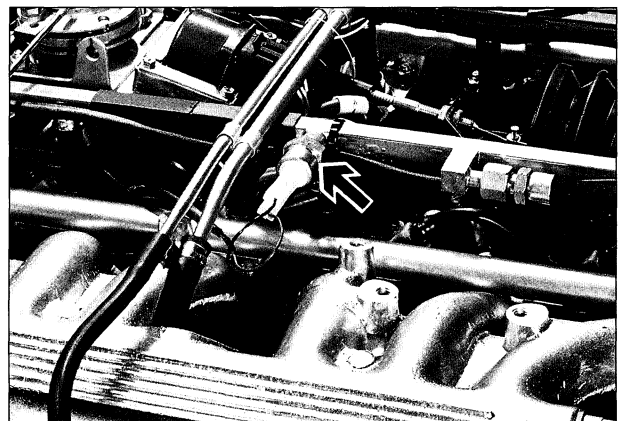
- strengthened footwell outlets
- rerouted vacuum lines and electrical harnesses
- plastic shield with foam insulation added to prevent condensation from dripping on the radio
- upper air duct modifications to accommodate the tilt steering column



CLIMATE CONTROL [Convertible]

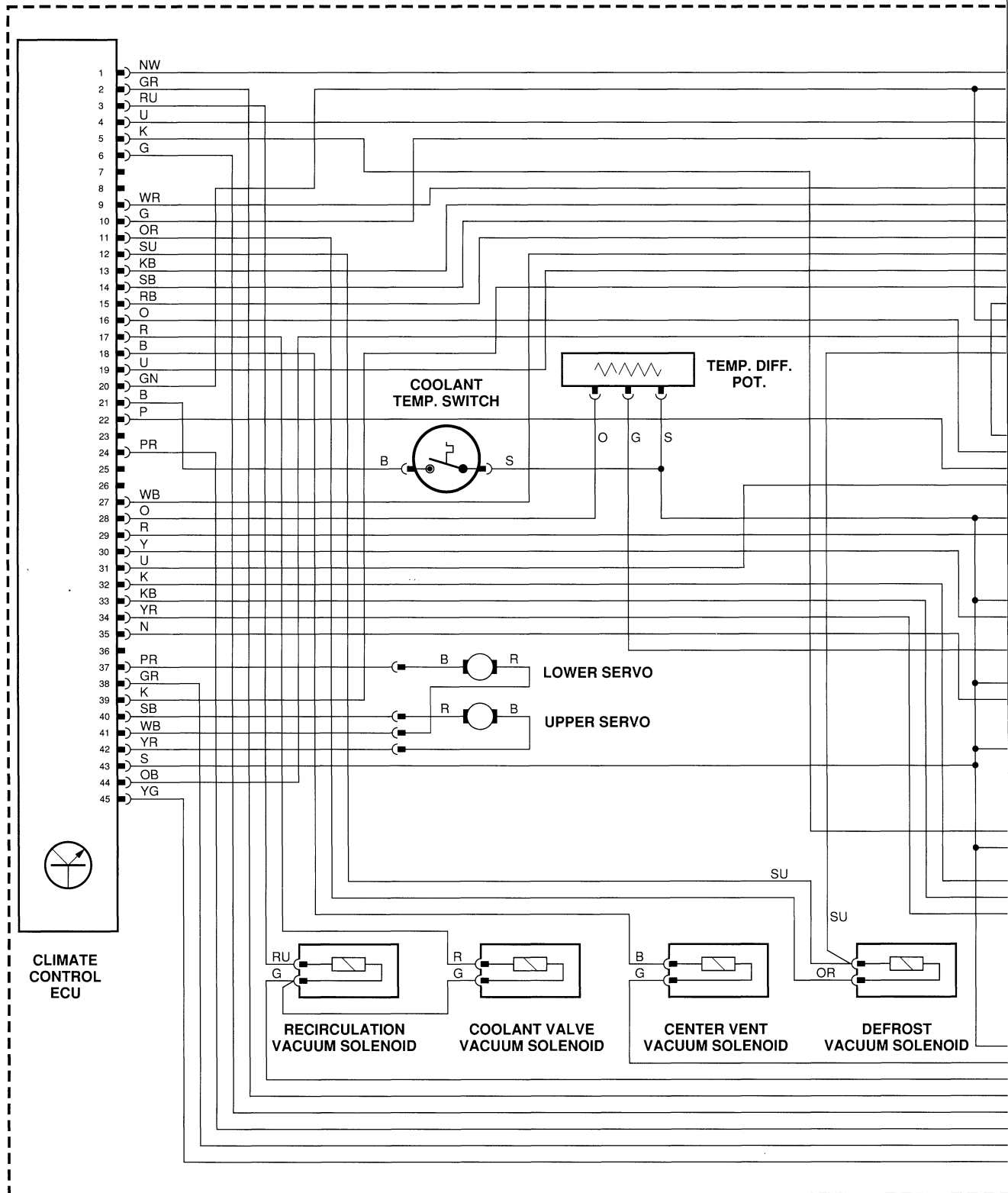
Compressor operation

When the climate control system is switched off, the air conditioning compressor operation [to ensure fuel cooling] is now controlled by a fuel temperature switch on the fuel rail. The switch operates through a revised mode switch in the climate control unit. The compressor is switched on at a rising fuel temperature of 45°C and off at a falling temperature of 38°C.

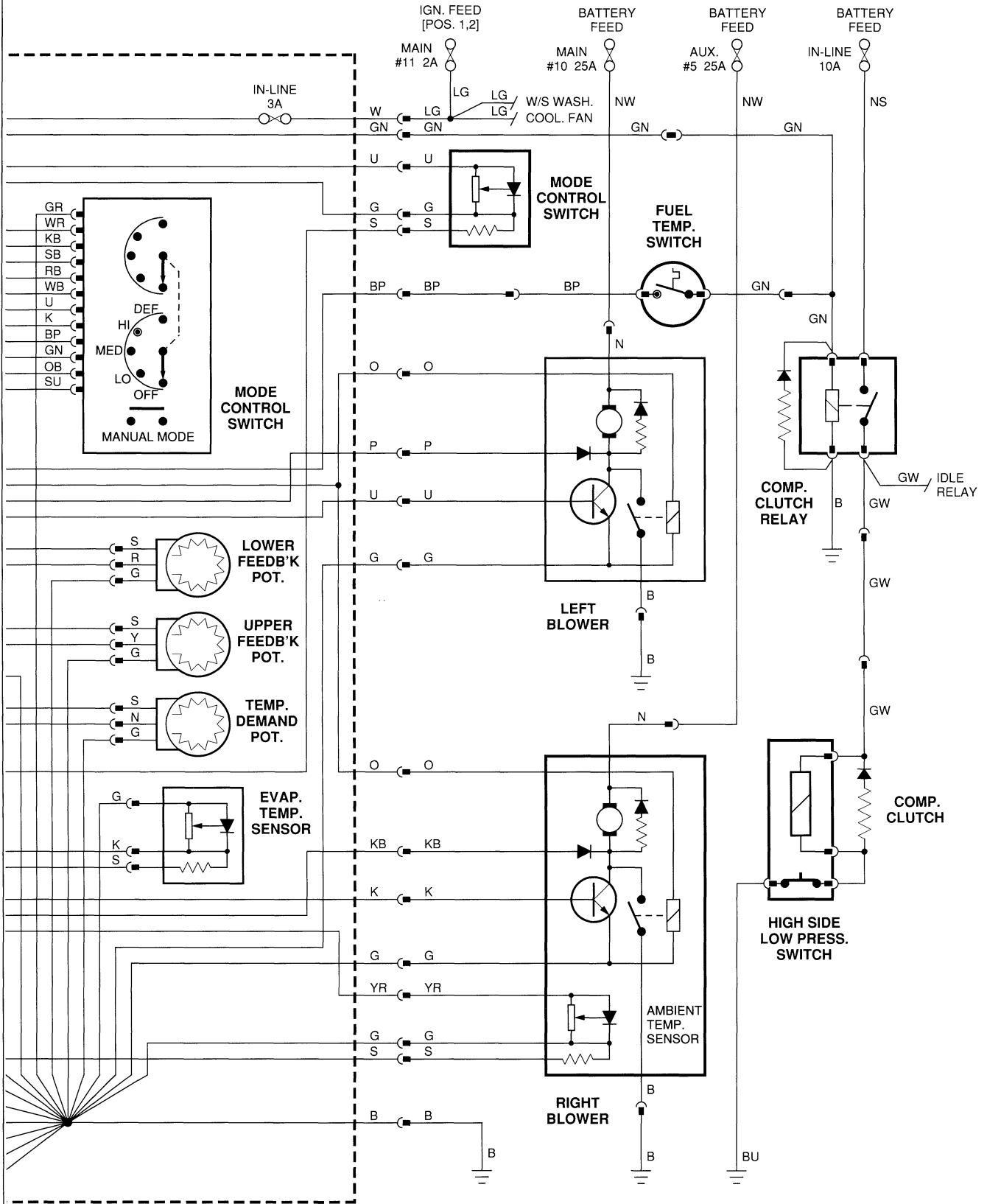


SYSTEMS DESCRIPTION

CLIMATE CONTROL UNIT



CLIMATE CONTROL



PROVISIONAL WIRING DIAGRAM
REFER TO PAGE 1 FOR WIRING COLOR CODE

SYSTEMS DESCRIPTION

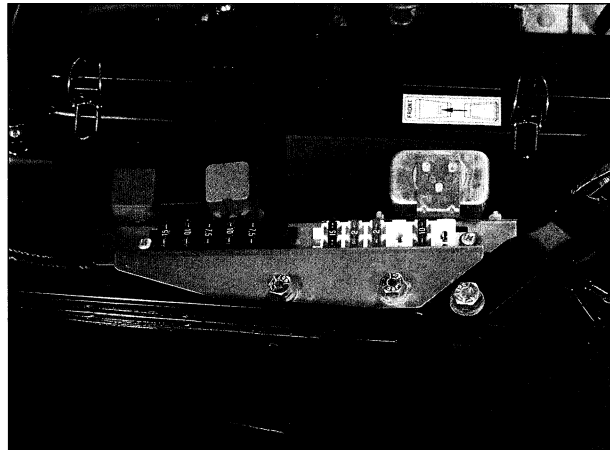
Fuse and component panels

The fuse panels remain unchanged from 1989 MY with the exception of the deletion of fuses #17 and #18 [passive restraint] from the main fuse panel. The revised component panels are shown on page 21.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----|------|-----|------|-----|----------|----------|----------|-----|-----|
| 10A | 7.5A | 15A | 7.5A | 10A | NOT USED | 5A | 7.5A | 15A | 25A |
| 2A | 15A | 10A | 5A | 3A | NOT USED | NOT USED | NOT USED | 10A | 5A |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

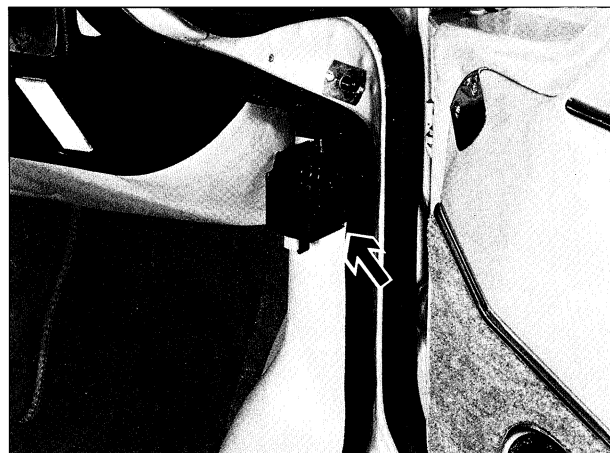
Under hood components

The under hood fuses and components remain unchanged from 1989 MY.



Inertia Switch

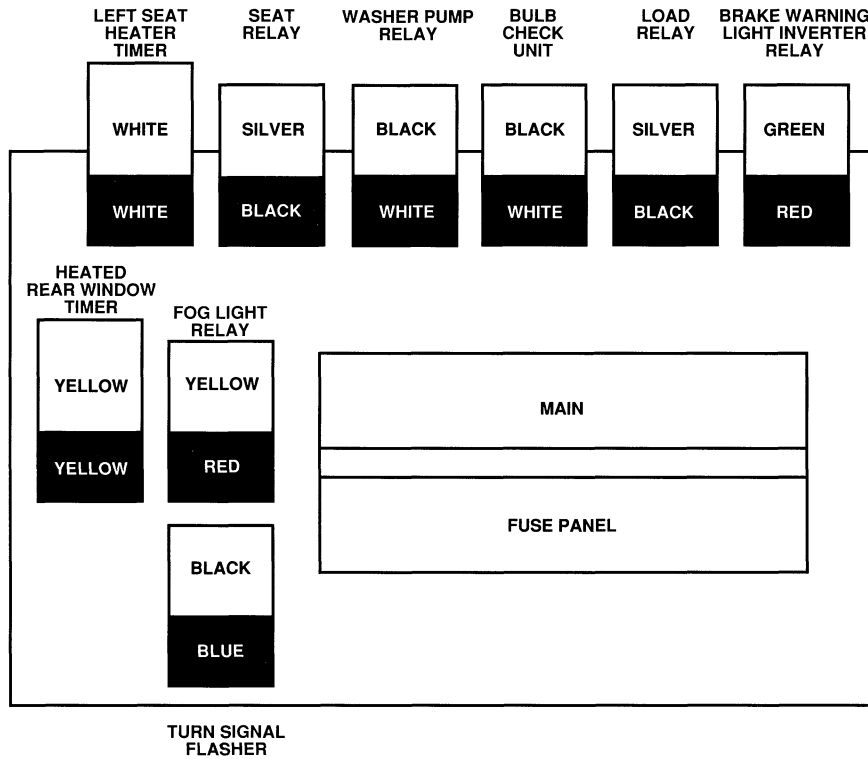
The inertia switch has been moved to the right side to accommodate the air bag and tilt steering systems.



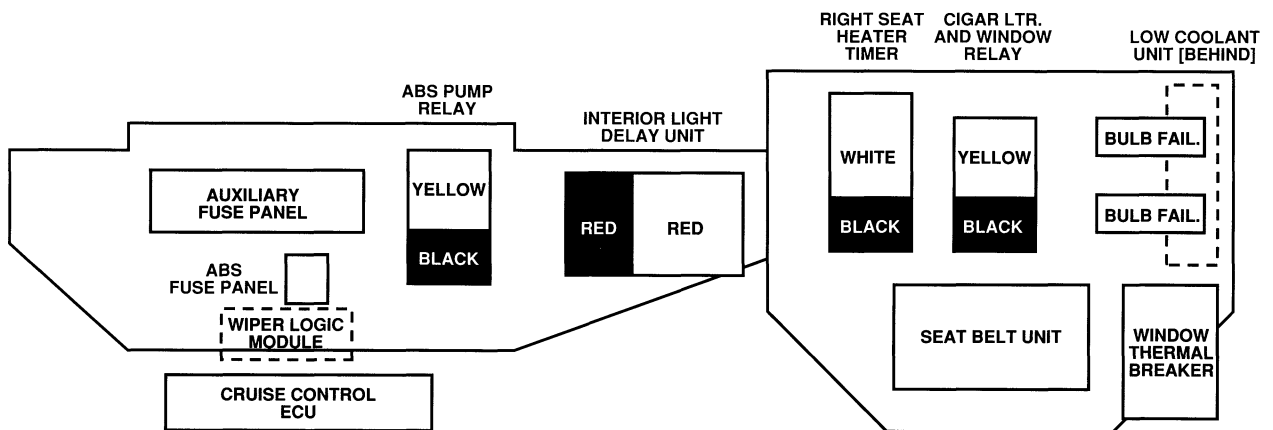
EFI and emissions control

With the deletion of the passive restraint system, the EFI main relay is controlled directly from the inertia switch. The EFI main switching relay has been deleted from the circuit. Pages 22–23 show the EFI and emissions control wiring diagram.

ELECTRICAL COMPONENTS

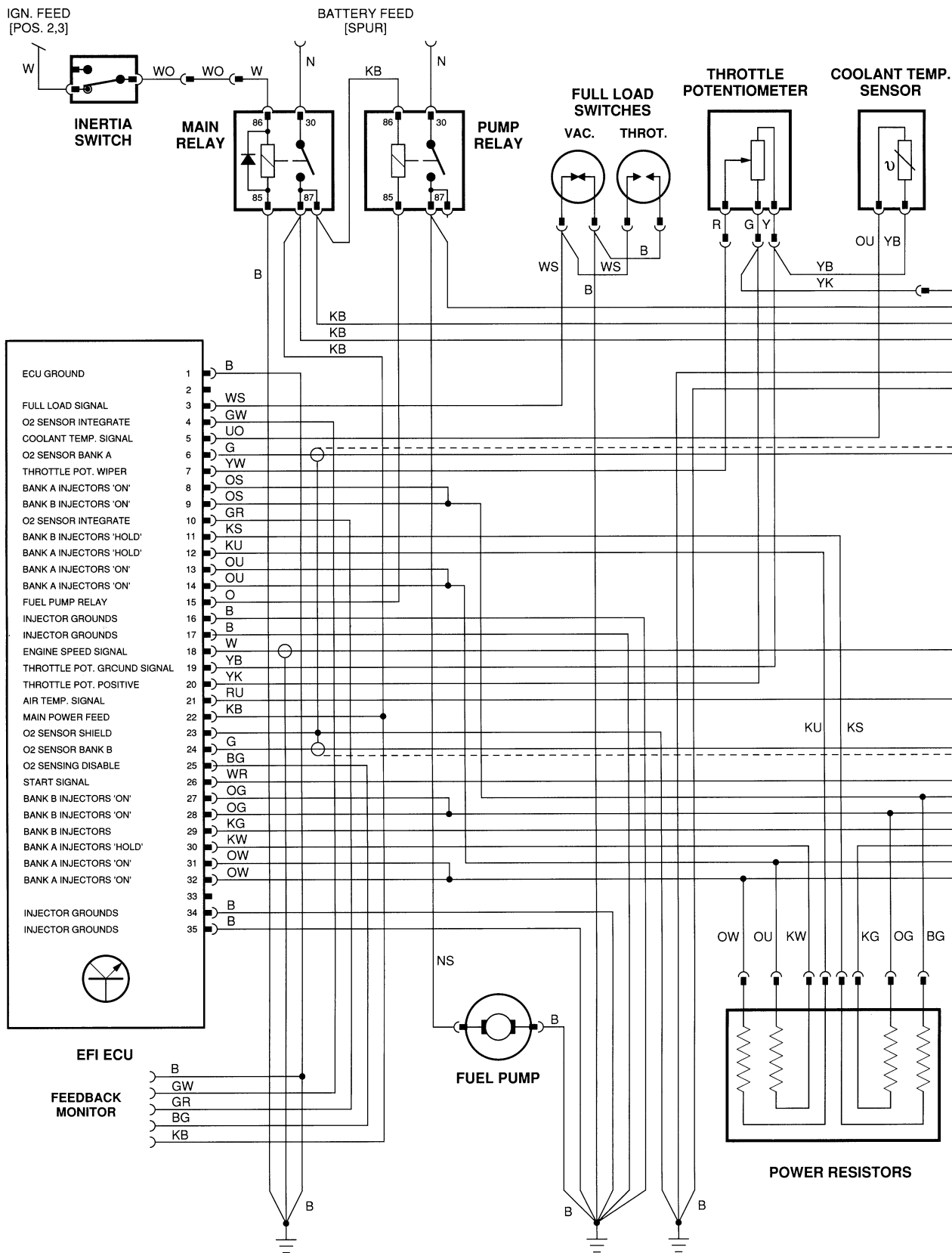


LEFT COMPONENT PANEL

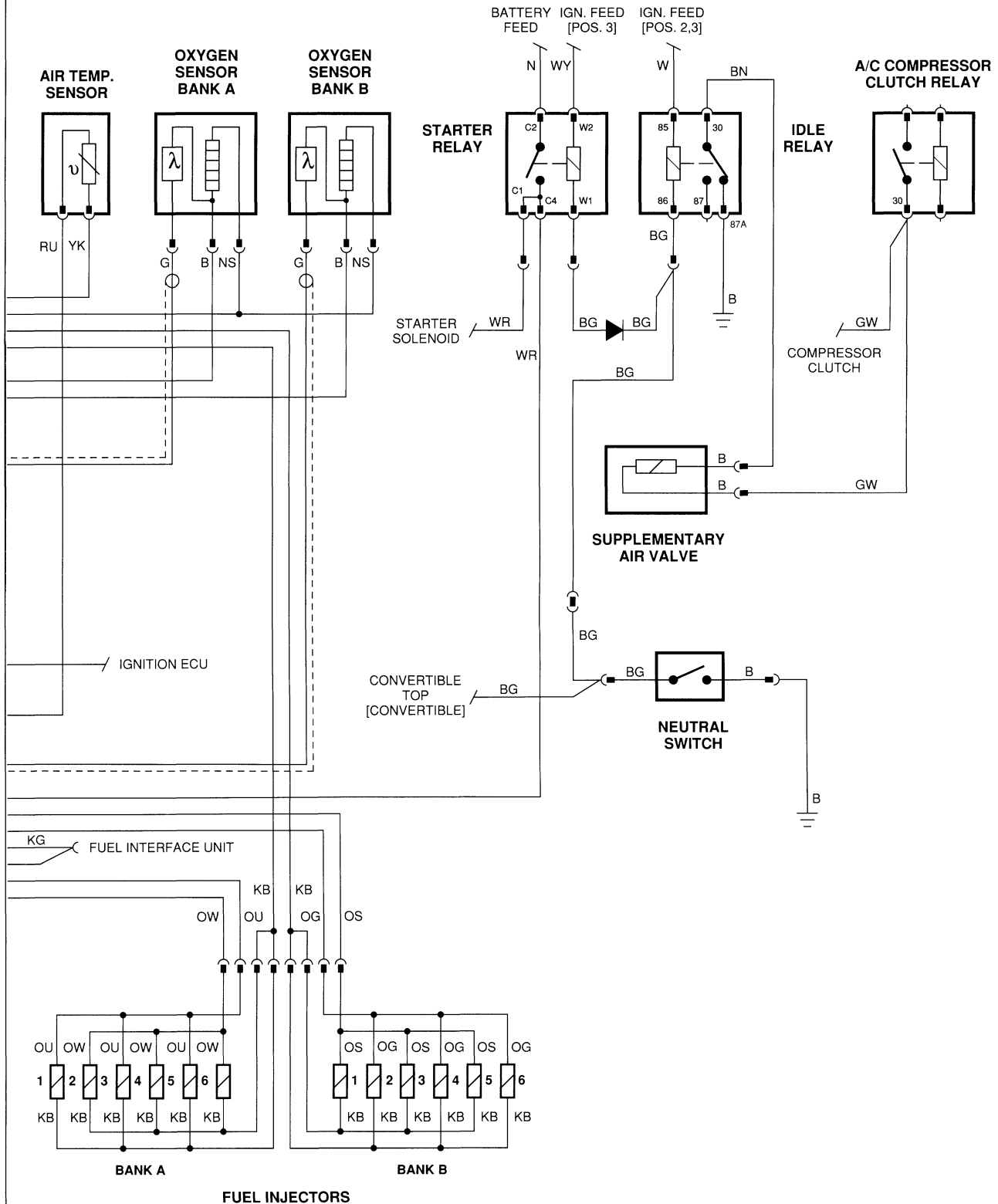


RIGHT COMPONENT PANEL

SYSTEMS DESCRIPTION



EFI AND EMISSIONS CONTROL



PROVISIONAL WIRING DIAGRAM
REFER TO PAGE 1 FOR WIRING COLOR CODE

NOTES

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1990



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