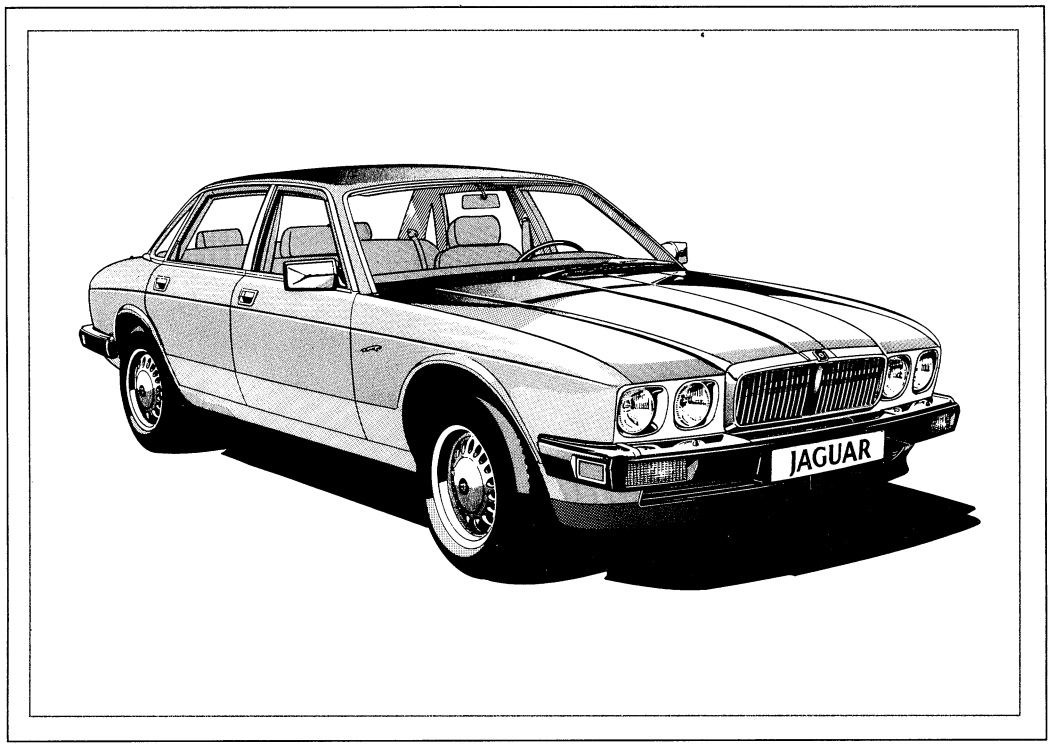
JAGUAR

XJ6 & VANDEN PLAS 3.6



PRODUCT ENHANCEMENT


JAGUAR

INTRODUCTION

This publication contains the necessary service procedures to perform and install all the currently available product enhancement modifications.

References References to left and right are made while seated in the vehicle.

Service tools Tool numbers are included in the procedures.

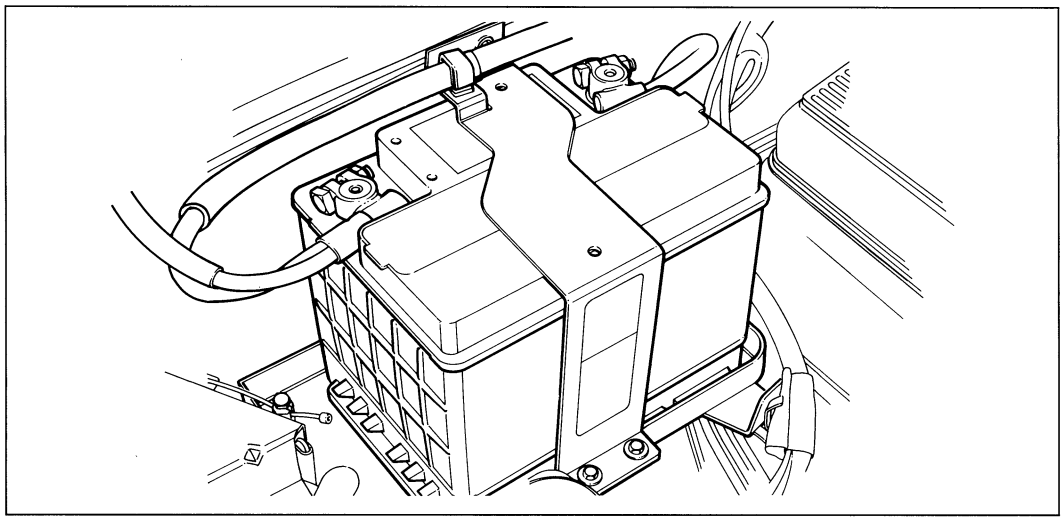
Tightening torques, clearances, and settings Values and dimensions for assembly and adjustment are included in the procedures.

WARNING: THE OPERATIONS AND PROCEDURES CONTAINED IN THIS PUBLICATION ARE INTENDED FOR USE BY PROFESSIONAL TECHNICIANS WITH KNOWLEDGE OF JAGUAR VEHICLE SYSTEMS. ALL NECESSARY SAFETY PRECAUTIONS MUST BE TAKEN WHEN SERVICING OR TESTING SYSTEMS THAT HAVE THE POTENTIAL FOR CAUSING BODILY INJURY OR DEATH.

Publication number S-28

CONTENTS

Ensure that the battery terminals are clean and tight, the case is in good condition, and the electrolyte level is 4–9 mm above the plates. Check the alternator belt condition and adjustment (100 lb tension). With the ignition and all circuits off, check the battery static voltage.



12.5 VOLTS OR MORE If the reading is 12.5 volts or more, the battery is OK and no further testing is required.

LESS THAN 10.5 VOLTS If the reading is less than 10.5 volts, replace the battery and check the electrical and charging systems.

10.5–12.4 VOLTS If the reading is between 10.5 and 12.4 volts, further testing is required. Check the electrical and charging systems and load test the battery.

Battery load test

Read the specific gravity of each cell. If it is less than 1.225 and/or there is a difference of more than 0.050 between cells, service and charge the battery as necessary.

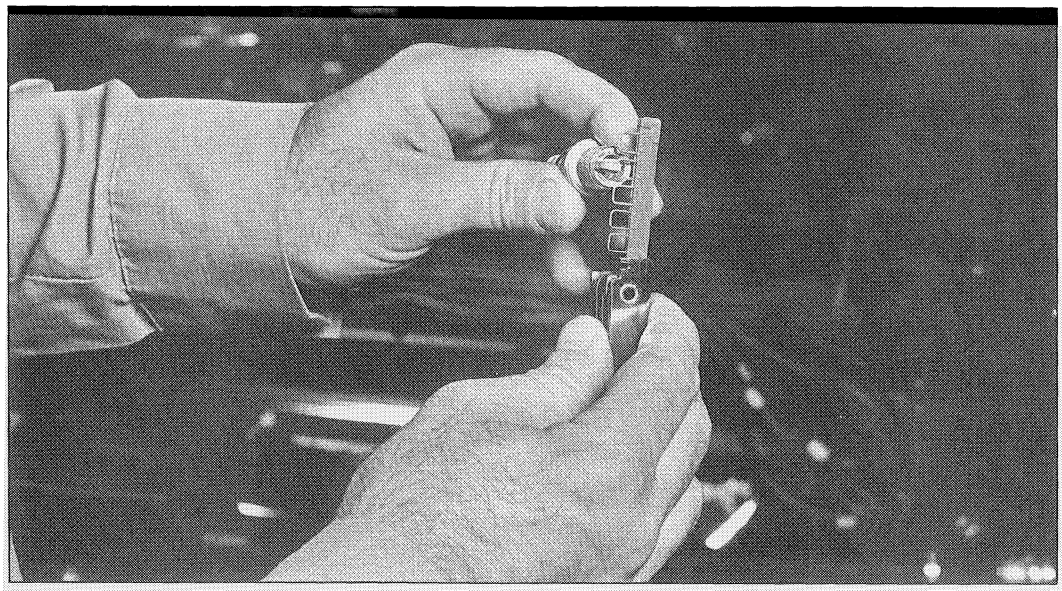
Load the battery to 300 amps for one second to remove the surface charge.

Load the battery to 210 amps for 15 seconds and read the voltage. If the voltage is 9.6 volts or more, the battery is OK.

NOTE: The minimum voltage will vary with the temperature of the battery:

Temperature	Minimum voltage
70°F	9.6
60°F	9.5
50°F	9.4
40°F	9.3
30°F	9.1
20°F	8.9
10°F	8.7
0°F	8.5

The spark plug gap has been changed to 0.035 in. to ensure smooth idle.

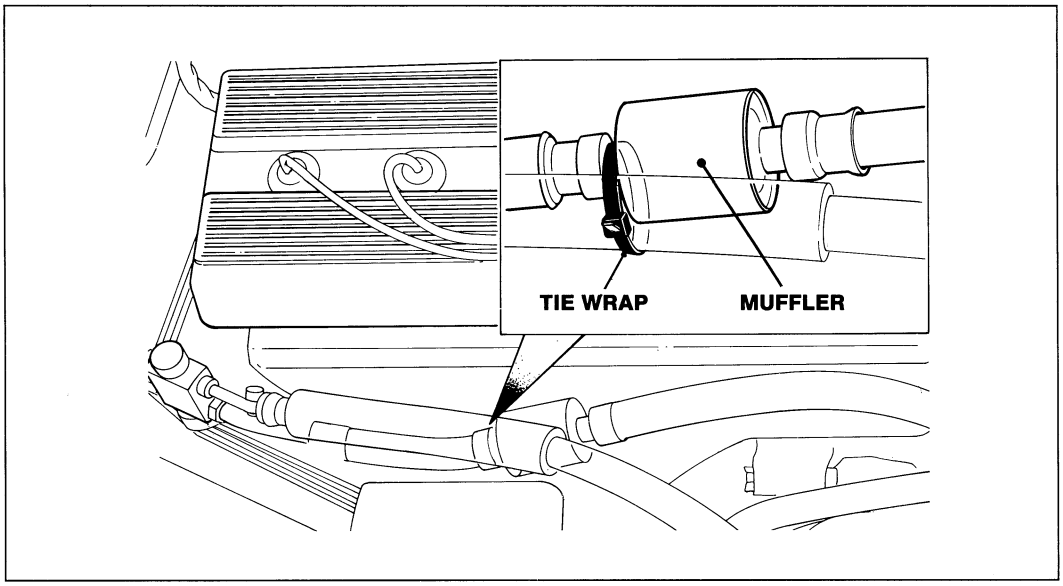


When removing the spark plugs, be careful not to allow dirt to enter the engine.

Set the gaps to 0.035 in. and reinstall the plugs.

Torque to 17–20 lb ft (23–28 Nm).

The revised low side hose incorporates a muffler to eliminate operating noise.



⚠WARNING: DURING DISCHARGING AND CHARGING OF THE AIR CONDITIONING SYSTEM, TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PREVENT THE POSSIBILITY OF BODILY INJURY AND EXPLOSION.

Discharge the air conditioning system.

Remove the low side hose between the compressor and the expansion valve block.

NOTE: The use of a 22-mm crow foot will allow the removal of the low side hose at the evaporator without disturbing the high side hose. Support the valve block during removal.

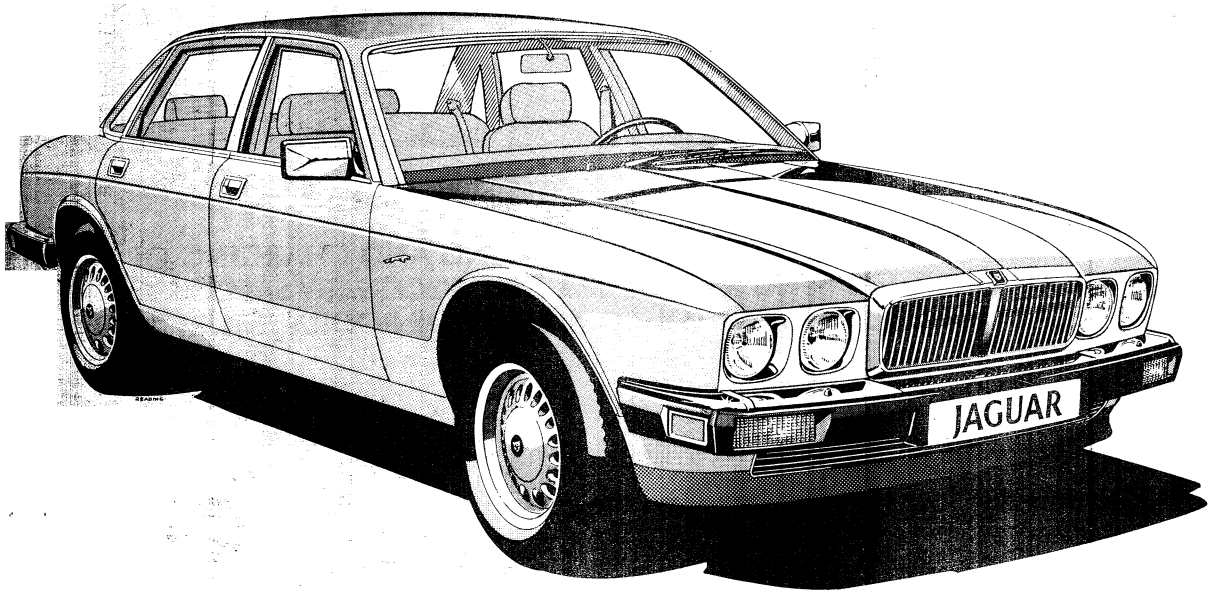
Before installing the new hose, coat the O rings with refrigeration oil.

Install the hose and torque the compressor attaching plate bolt to 25 lb ft (34 Nm).

Use a tie wrap to attach the new hose to the high side hose as shown. This will prevent the muffler from contacting the engine.

Evacuate the system and recharge with 3 lb of refrigerant *and* ½ oz of refrigeration oil.

Leak test the system and check the operation.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The instrument pack has been modified to eliminate a trip computer error.

Identifying pack number

With the ignition on, select the mph mode on the trip computer. Press and hold CLEAR while cycling mph to kph then back to mph (FIG 1). The pack number will appear on the VCM display. The affected pack numbers are:

0 to 41600
41900 to 45000
no number displayed

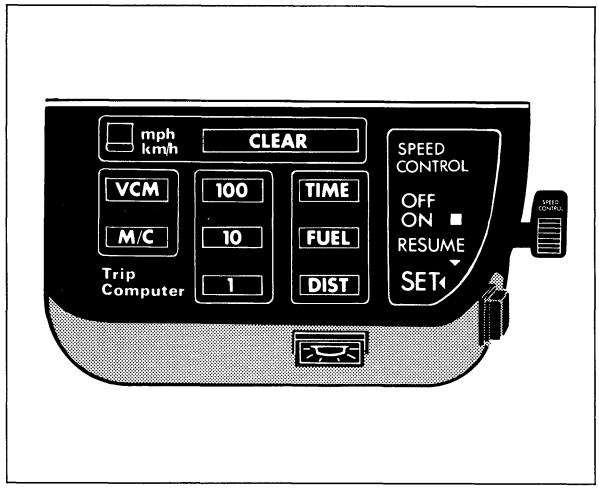


FIG 1

Replacing instrument pack

Disconnect the battery negative cable.

Remove the left dash liner (FIG 2).

Remove the air discharge duct (FIG 3).

FIG 2

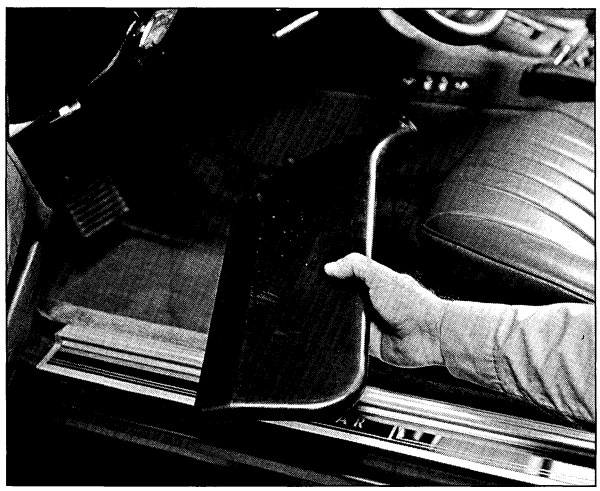


FIG 3

FIG 4

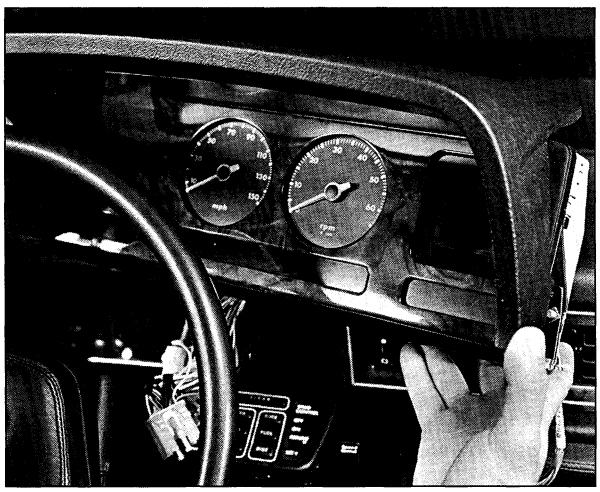


FIG 5

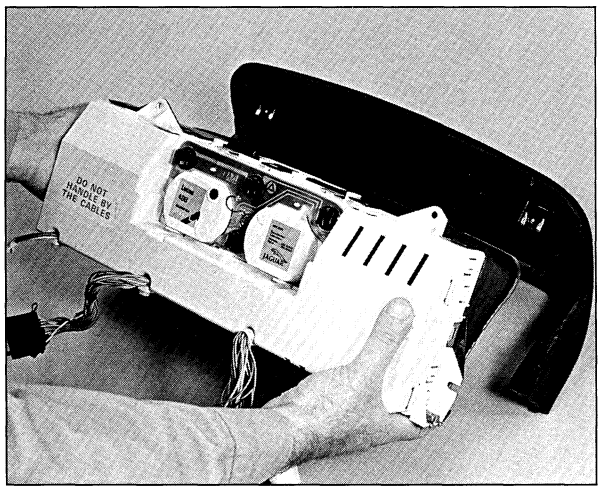


FIG 6

Replacing instrument pack *(cont'd.)*

Remove the four pack mounting screws from underneath. Two of the screws are accessible through the holes in the lighting logic unit and the trip computer panel (FIG 4).

Disconnect the four electrical connectors (2 black, 1 yellow, 1 blue PMHD).

Extend the steering column.

Lift the instrument pack and remove it to the right of the steering wheel (FIG 5).

NOTE: Before proceeding further, refer to pages 8–16 (defroster flaps replacement).

Remove the four screws and remove the dash panel (FIG 6).

Replacing instrument pack *(cont'd.)*

The new instrument pack is supplied with a shipping cowl that has a label on the lens (FIG 7). DO NOT REMOVE THE LABEL. The existing cowl is to be exchanged for the shipping cowl. The defective pack is to be returned with the shipping cowl installed.

Carefully pry up the five upper clips and roll the cowl off (FIG 8).

Exchange the cowls and install the new instrument pack in the reverse order.

⚠CAUTION: USE CARE TO ENSURE THAT THE INSIDE OF THE LENS REMAINS CLEAN.

Place the defective pack in the original shipping carton for return.

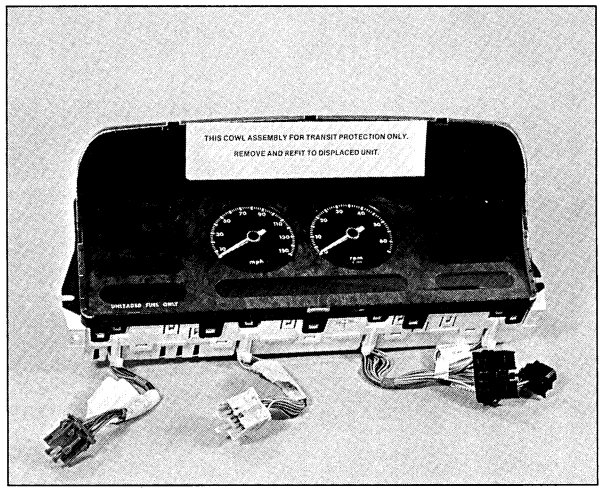


FIG 7

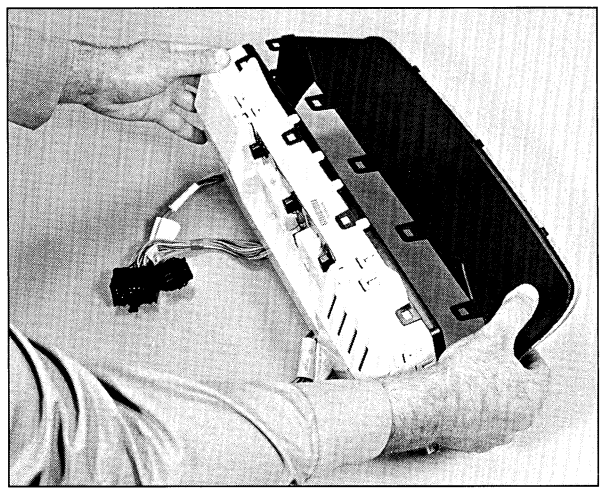


FIG 8

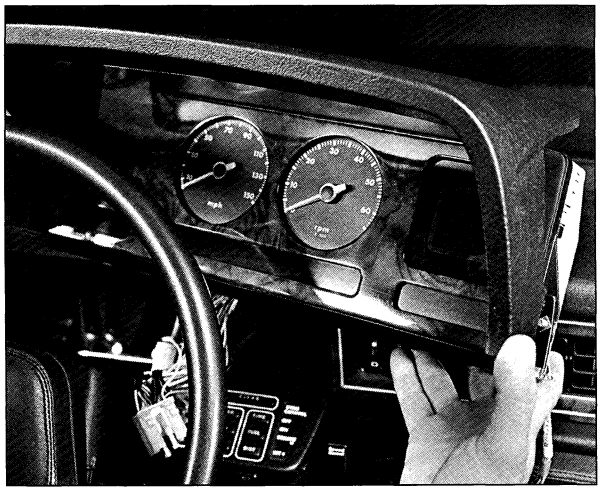


FIG 1

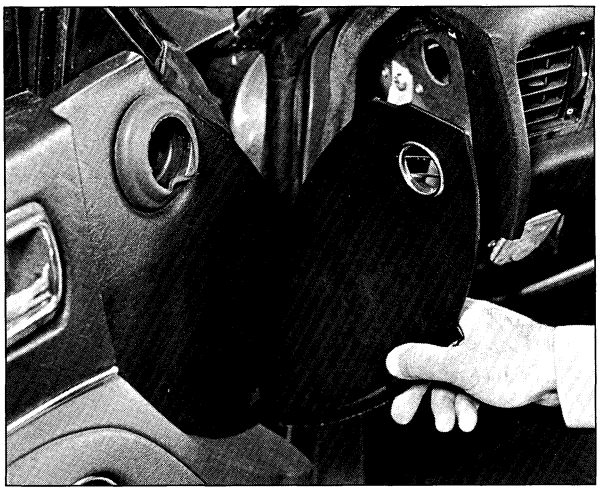


FIG 2

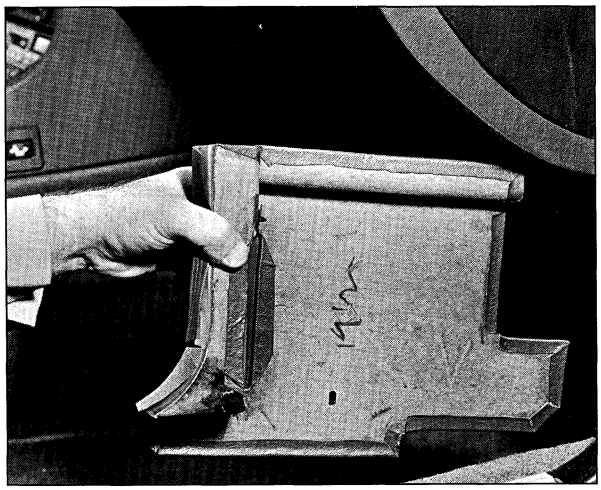


FIG 3

The defroster flaps have been modified to eliminate exterior windshield misting during air conditioner operation.

Dash removal

Disconnect the battery negative cable.

Remove the instrument pack (FIG 1) following the instructions on pages 5–6.

Remove the left window defroster vent cover by removing the lower nut, carefully prying out the top, and sliding the panel down (FIG 2).

Remove the right A post kick panel (FIG 3).

Dash removal *(cont'd.)*

Remove the right dash liner (FIG 4).

Remove the air discharge duct (FIG 5).

Remove the right window defroster vent cover by removing the lower nut, carefully prying out the top, and sliding the panel down (FIG 6).

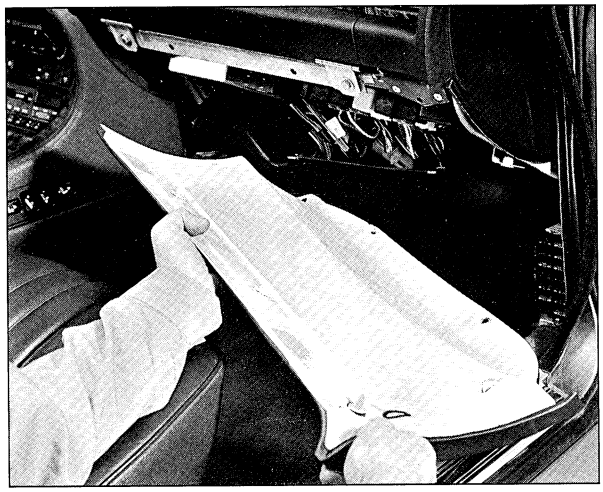


FIG 4

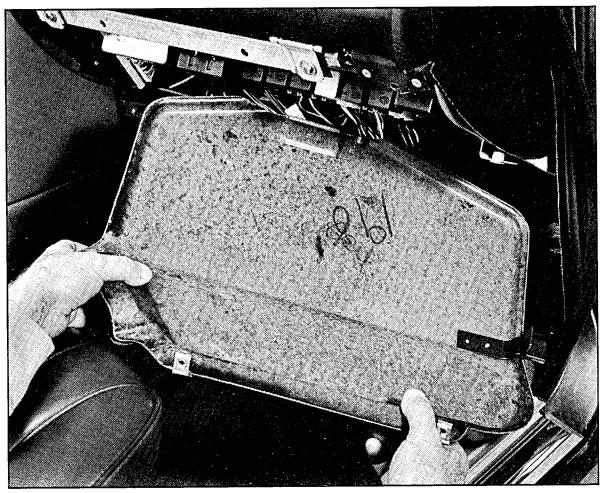


FIG 5

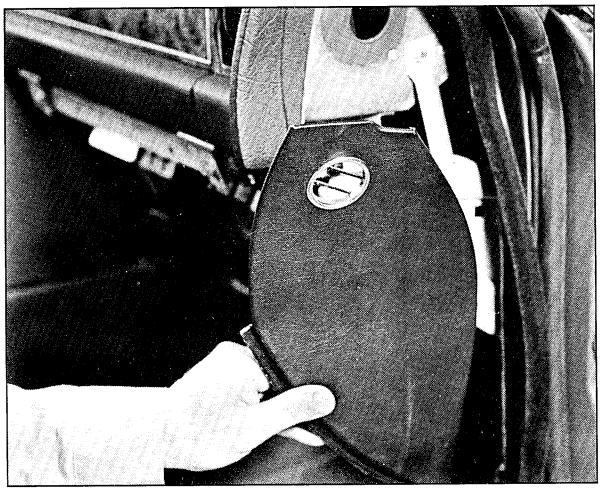


FIG 6

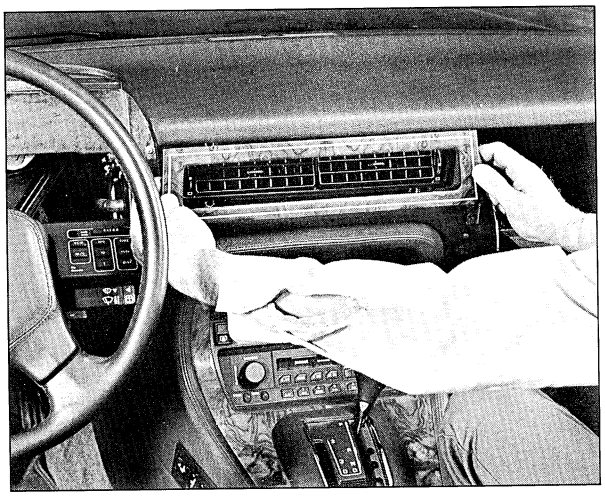


FIG 7

FIG 8

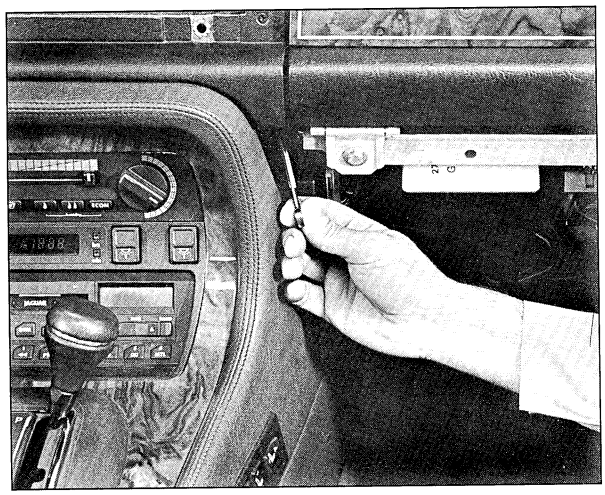


FIG 9

Dash removal *(cont'd.)*

Open the glove box door and carefully pry off the center fascia wood panel with both hands (FIG 7). Remove the center vent.

Remove the two screws behind the center vent (FIG 8).

Remove the two nuts from the support brackets on either side of the center console (FIG 9).

Dash removal *(cont'd.)*

At the outsides of the dash, remove the upper bolts from the support brackets. Loosen the lower bolts and move the brackets down (FIG 10).

Remove the four mounting screws and disconnect the three electrical connectors (1 brown, 1 green, 1 black PMHD). Remove the lighting logic unit and trip computer assembly (FIG 11).

Remove the bolt located behind the instrument pack (FIG 12).

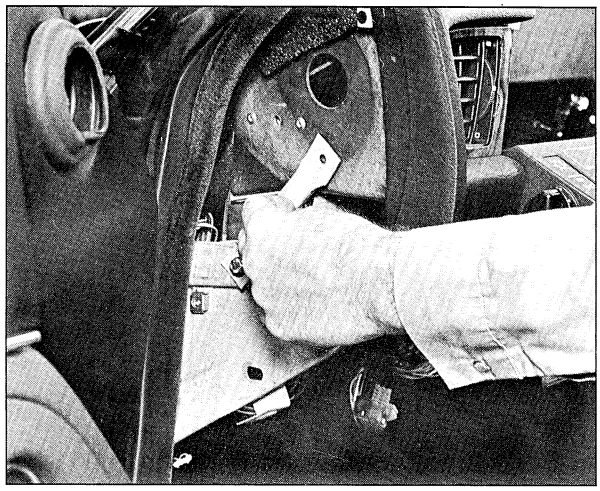


FIG 10

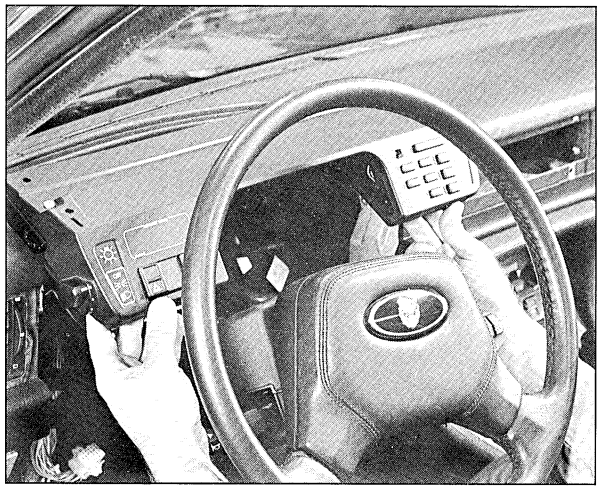


FIG 11

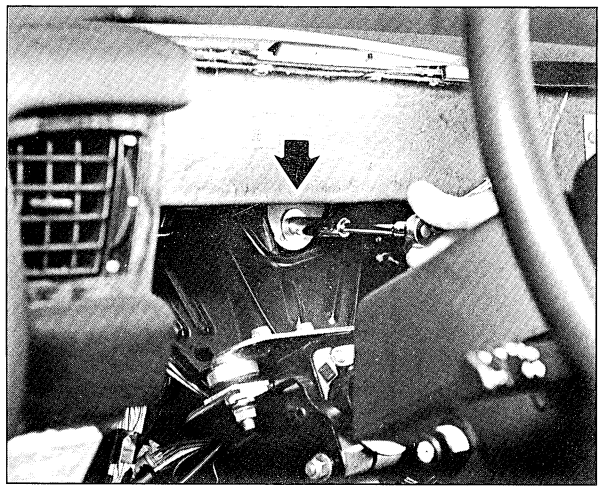


FIG 12

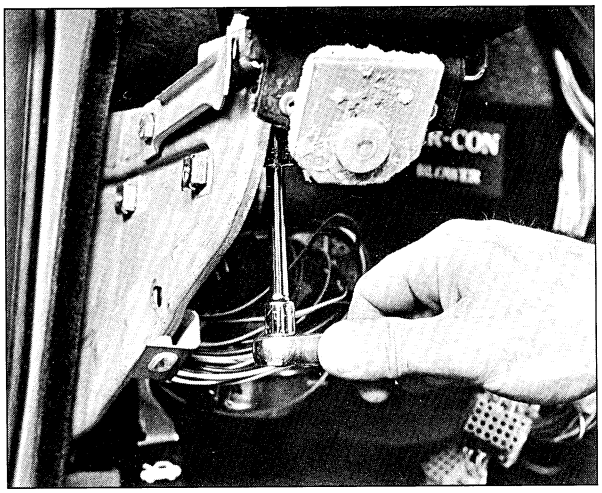


FIG 13

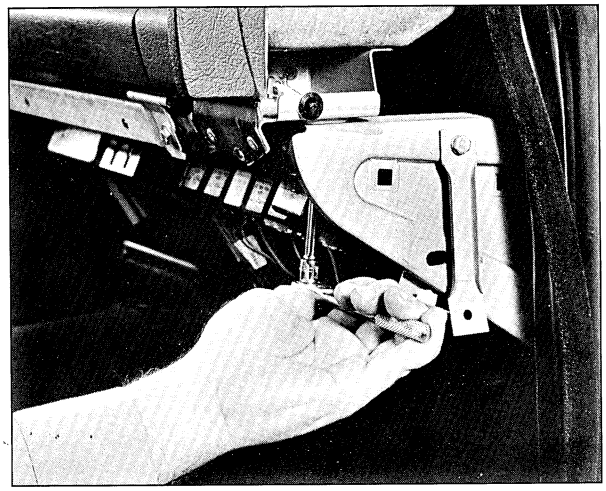


FIG 14

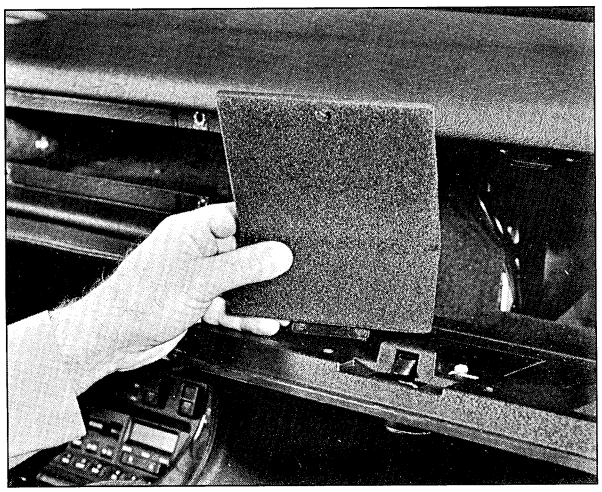


FIG 15

Dash removal *(cont'd.)*

Remove the bolt on the left side of the dash (FIG 13).

Remove the bolt on the right side of the dash (FIG 14).

Remove the glove box rear panel (FIG 15) and disconnect the in-car sensor (JST connector). Disconnect the aspirator tube.

Disconnect the solar sensor connector below the dash in the glove box area (JST connector).

Dash removal *(cont'd.)*

Loosen the two lower screws and remove the two upper screws from the electrical component panel; lower the panel (FIG 16).

Disconnect the yellow, black, and green vacuum lines at the right of the climate control unit (yellow connects to red).

Disconnect the glove box light connector at the right of the climate control unit (black PMHD).

Carefully remove the dash assembly to the right to clear the steering wheel (FIG 17).

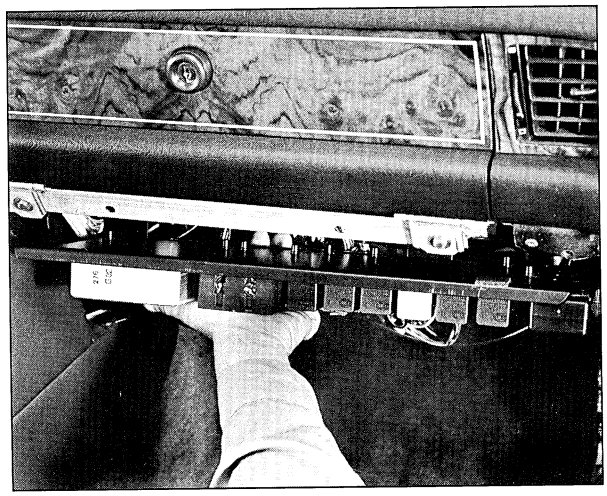


FIG 16

Defroster flaps replacement

Note the position first; then carefully pry up the solar sensor panel. Disconnect the JST connector and remove the solar sensor assembly (FIG 18).

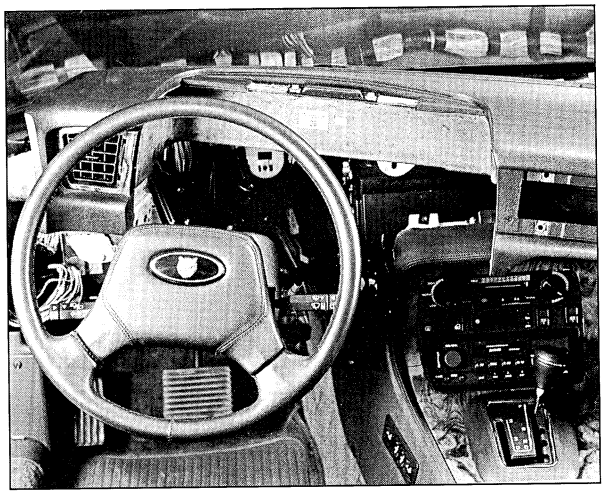


FIG 17

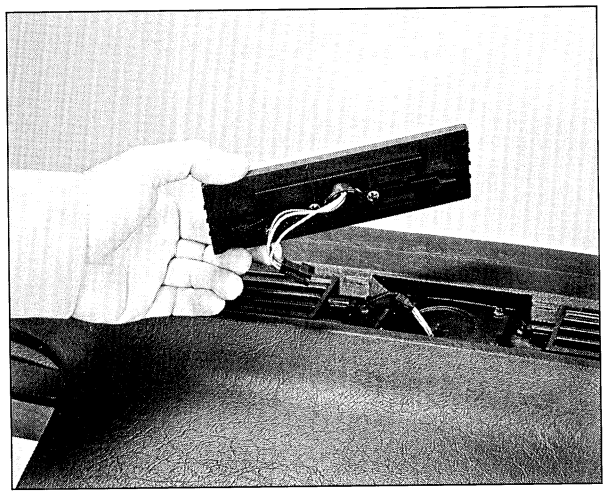


FIG 18

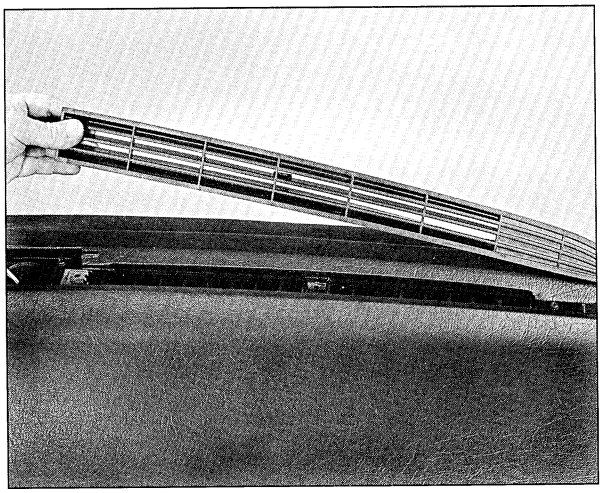


FIG 19

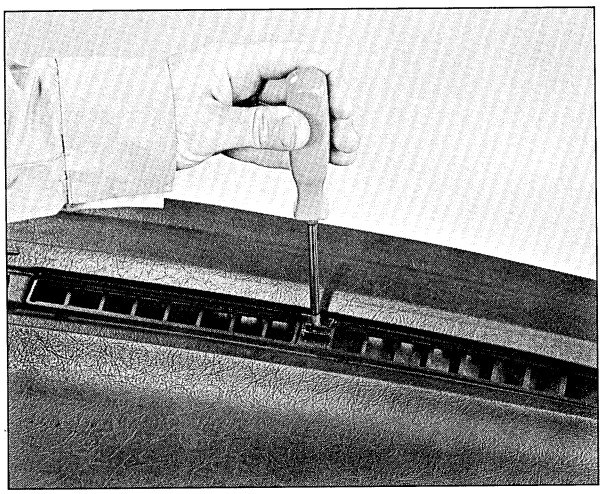


FIG 20

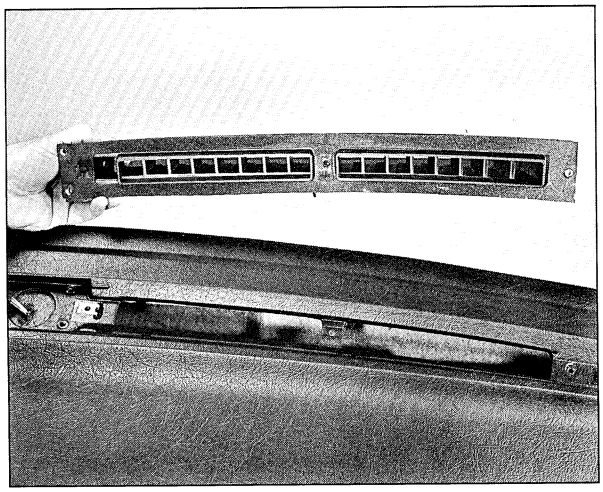


FIG 21

Defroster flaps replacement *(cont'd.)*

Remove the center screw, lift the vent at the screw, and slide it toward the opposite side of the car to remove (FIG 19). Repeat for the other vent.

Note the position of the middle retaining clip and remove the screw and clip (FIG 20). Repeat for the other vent.

Remove the three remaining screws from each vent and allow the defroster flap assemblies to drop into the dash. Disconnect the hoses from the vacuum actuators and remove the flap assemblies (FIG 21).

Replace the defroster flap assemblies with the revised units in the reverse order. Do not reinstall the dash assembly at this time.

Modify center vent vacuum circuit

Locate the center vent vacuum solenoid restrictor (blue) under the climate control unit at the right side (FIG 22). Replace the blue restrictor with the straight connector provided (FIG 23).

Replace the elbows on both the blue and red restrictors (FIG 22) with the elbows provided (FIG 23).

Remove the PVC tape from the black, yellow, and green vacuum lines.

Reroute the vacuum lines to run above the footwell outlet duct. Secure the lines to the lower climate control microprocessor mounting bracket with a tie wrap (FIG 24).

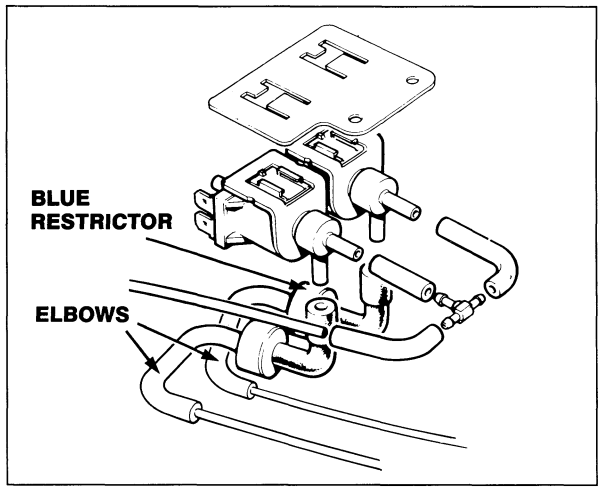


FIG 22

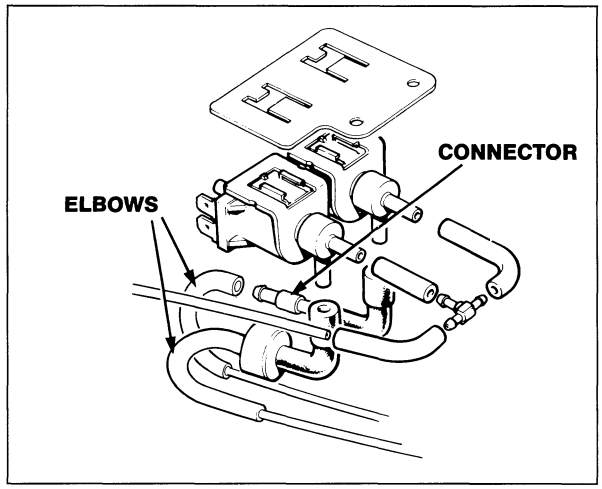


FIG 23

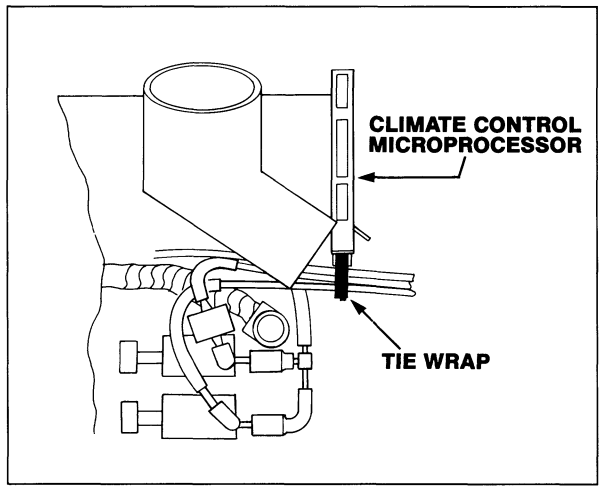


FIG 24

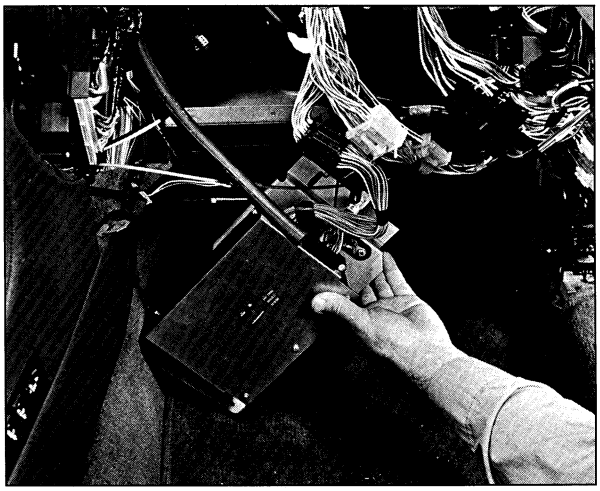


FIG 25

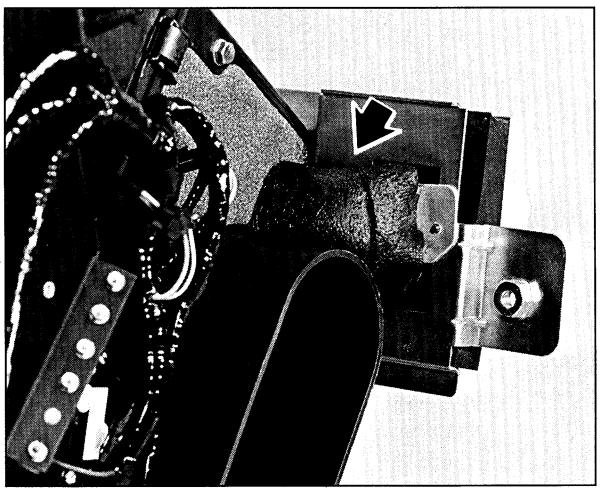


FIG 26

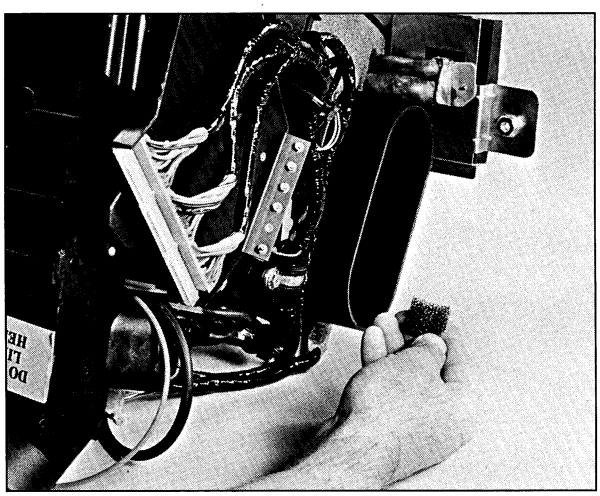


FIG 27

Evaporator tubing insulation

Remove the two upper bolts and lower the central microprocessor and bracket assembly (FIG 25).

Remove the horseshoe clip from the ducts on both sides of the climate control unit. Remove the ducts.

Locate the tubes at the right side of the evaporator. Wrap the tubes with air conditioning insulating tape to prevent the formation of condensation (FIG 26).

Evaporator drain filters

To prevent clogging, remove the drain filters at both sides of the evaporator (FIG 27). Be sure to remove all the silicone glue (four places each filter) used to retain the filters.

Reinstall the ducts.

Reinstall the dash assembly

Reinstall the dash assembly in reverse order ensuring that all vacuum and electrical connections are made.

⚠CAUTION: DO NOT PINCH OR DAMAGE WIRES AND HARNESSES.

The blower motor assembly has been modified to eliminate the possibility of the fan loosening on the motor shaft.

Remove blower assembly(ies)—dash in place

Disconnect the battery negative cable.

Remove the dash liner (FIG 1)—R, L, or both.

Remove the air discharge duct (FIG 2)—R, L, or both.

Remove the glove box—right side. Note the position of the door hinge shims.

Loosen the two lower screws and remove the two upper screws from the electrical component panel; lower the panel (FIG 3)—right side.

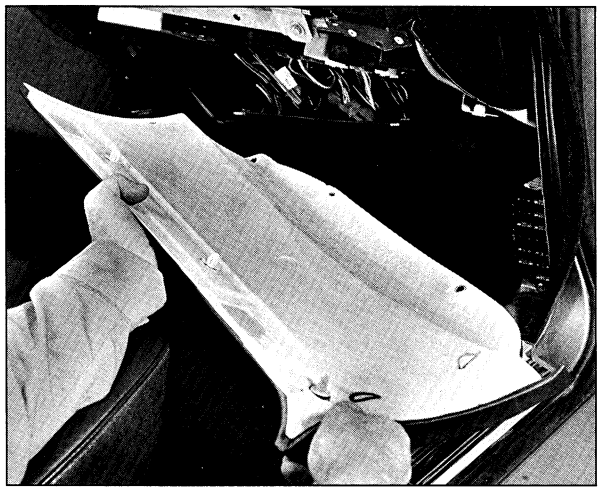


FIG 1

FIG 2

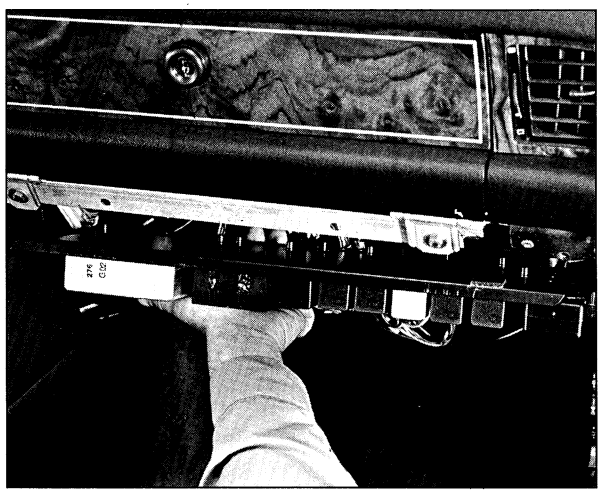


FIG 3

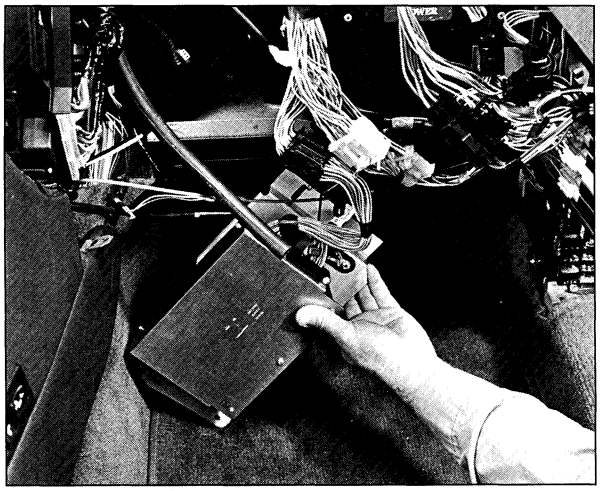


FIG 4

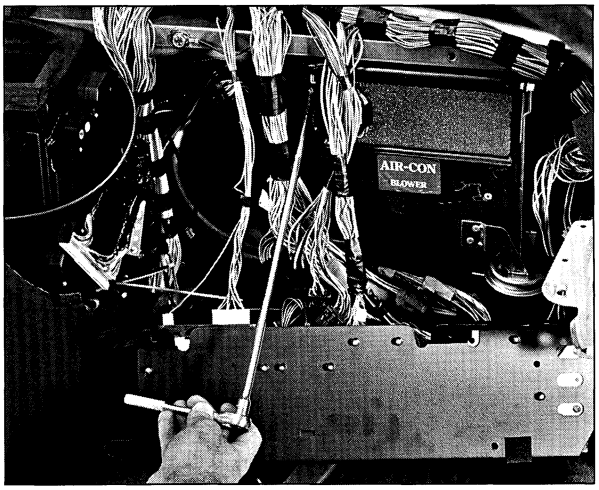


FIG 5

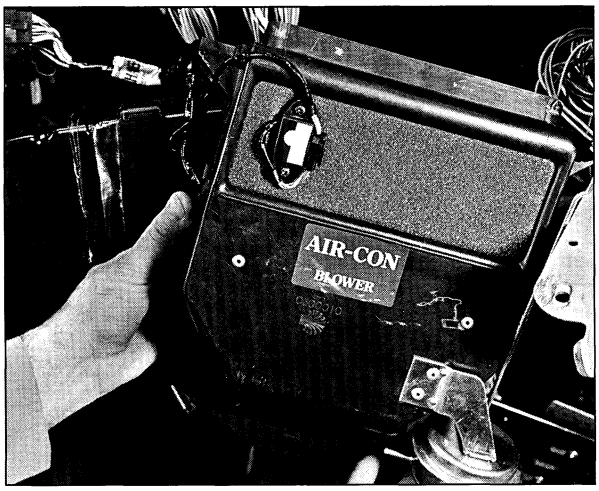


FIG 6

Remove blower assembly(ies)—dash removed

Remove the two upper bolts and lower the central microprocessor and bracket assembly—right side (FIG 4).

Remove the horseshoe clip from the duct at the climate control unit.

Disconnect the blue vacuum line and the two electrical connectors (1 JST, 1 black PM4).

Remove the two mounting bolts (FIG 5) and the blower assembly (FIG 6).

Remove the tape and separate the duct from the blower assembly.

Install the replacement blower assembly in reverse order.

Wedges are inserted in the door panel to eliminate resonance when the door is closed.

Install door panel wedges

Disconnect the battery negative cable.

Remove the upper and lower door interior panels.

Three wedges are installed in the front doors as shown (FIG 1).

Three wedges are installed in the rear doors as shown (FIG 2).

Apply 3M Weatherstrip Adhesive (YELLOW) to the flat side of the wedge.

Insert the wedge between the door outer panel and the side intrusion beam with the flat side facing the panel. Center the wedge vertically behind the side intrusion beam.

⚠ CAUTION: USE HAND PRESSURE ONLY TO INSTALL THE WEDGES. DO NOT USE MECHANICAL FORCE.

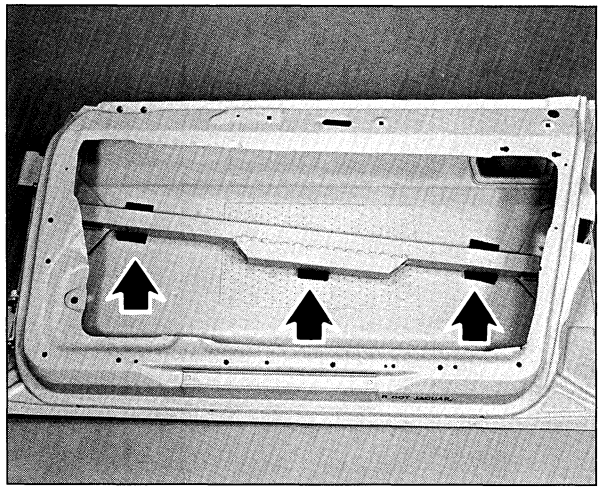


FIG 1

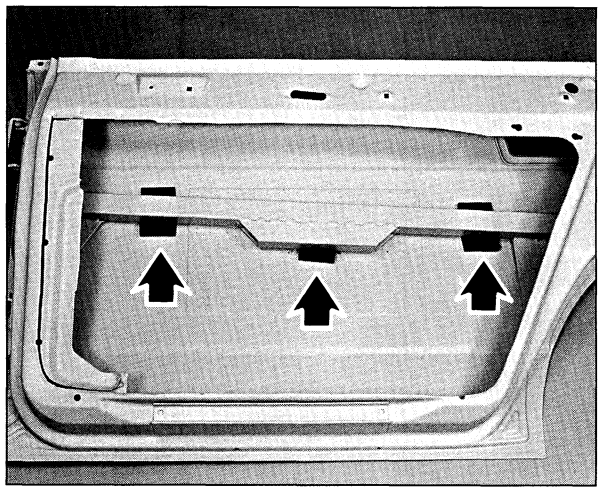
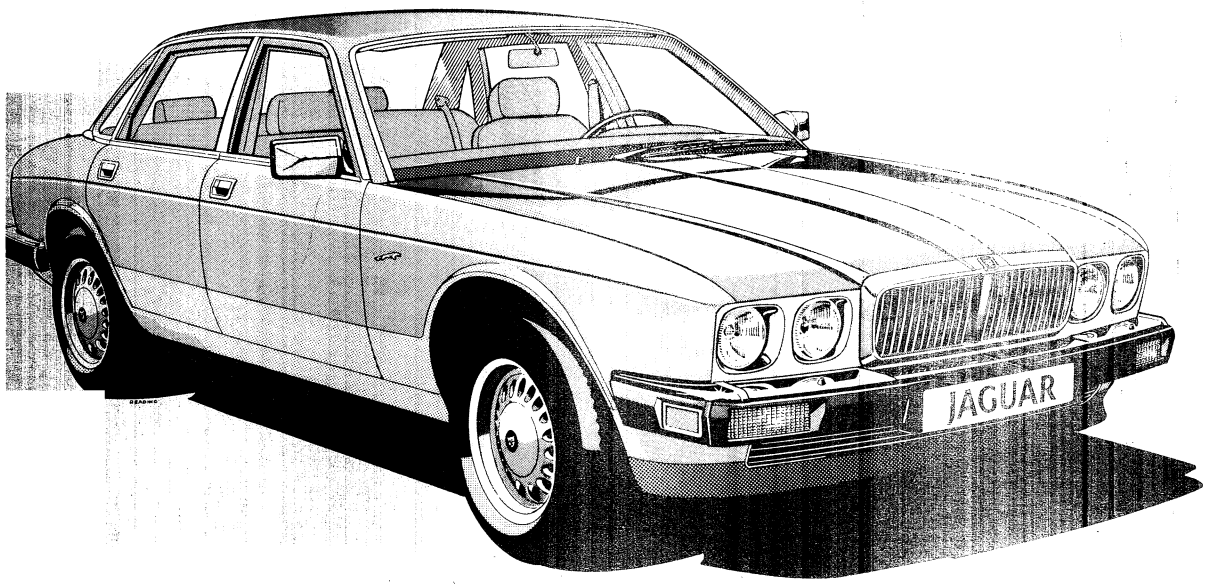


FIG 2


JAGUAR

To provide accurate fuel gauge readings at full, the fuel level transmitter has been revised.

Replace fuel level transmitter

Service tool required:
18G 1001 lock ring wrench

⚠WARNING: TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PREVENT THE POSSIBILITY OF EXPLOSION AND FIRE.

Disconnect the battery negative cable.

Remove *all* fuel from the tank.

Remove the spare wheel, carpet, and insulation.

Note the position of the two wires connected to the transmitter and disconnect the wires.

Using tool 18G 1001, remove the lock ring by turning counterclockwise (FIG 1).

Carefully remove the transmitter from the tank (FIG 2) and discard the gasket.

NOTE: Before installing the replacement transmitter, refer to pages 22–23 and check the fuel return line.

Install the replacement transmitter and gasket in the reverse order.

Check for leaks after filling the tank.

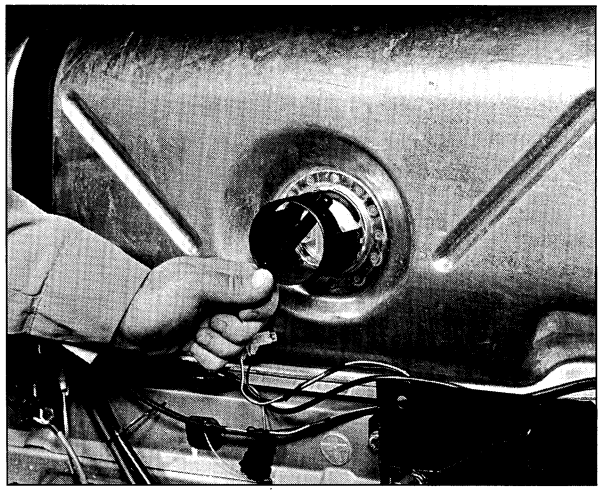


FIG 1

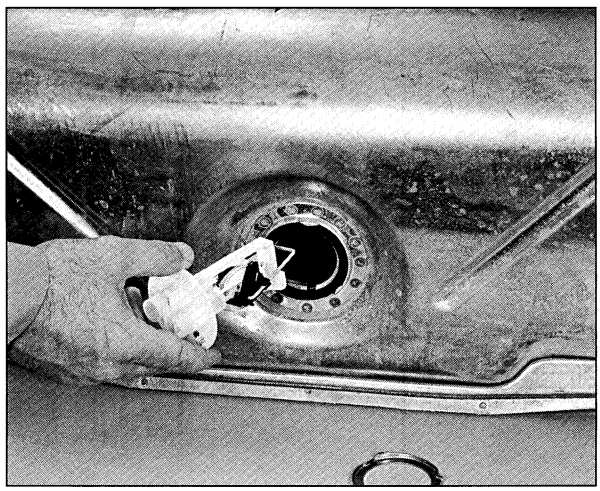


FIG 2

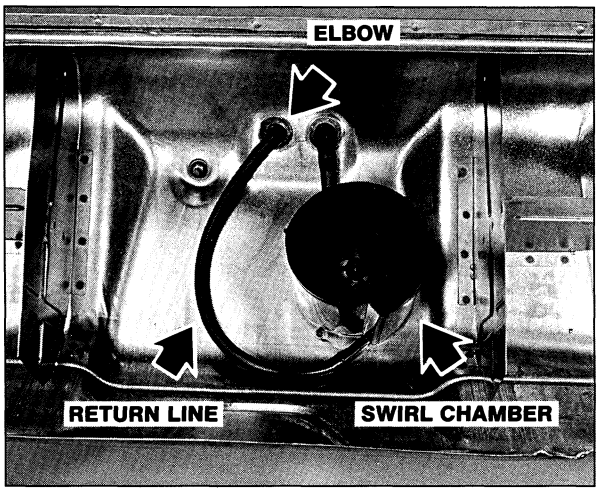


FIG 1

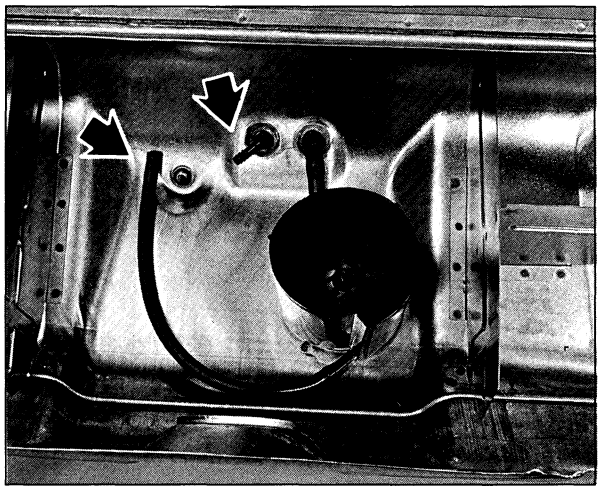


FIG 2

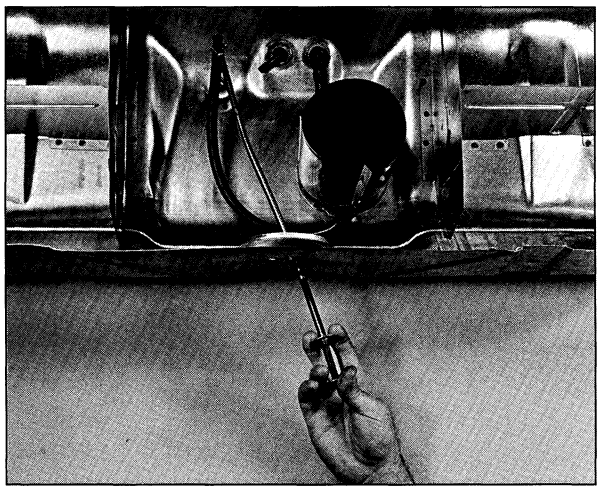


FIG 3

Engine hesitation under hard acceleration or when driving in turns may be caused by the fuel return line in the tank backing off the return elbow.

Reconnect fuel return line

Service tools required:
18G 1001 lock ring wrench
JD 114 spark plug cap remover

⚠ WARNING: TAKE ALL NECESSARY SAFETY PRECAUTIONS TO PREVENT THE POSSIBILITY OF EXPLOSION AND FIRE

Carefully remove the fuel level transmitter and the gasket from the tank following the instructions on page 21.

Look into the tank with the aid of a pen light or a flexible light and check the fitting of the return line. The return line runs between the elbow and the swirl chamber (FIG 1).

If the hose is disconnected at the swirl chamber, the fuel tank must be replaced.

If the hose is disconnected at the elbow (FIG 2), complete this procedure.

Grip the loose end of the hose with a pick-up tool and carefully bring the hose through the transmitter opening (FIG 3). Tool JD 114 can be used for this operation.

⚠ CAUTION: DO NOT PULL THE RETURN LINE OFF THE SWIRL CHAMBER.

Reconnect fuel return line *(cont'd.)*

Place an 8–16 hose clamp on the end of the hose (FIG 4) so that the clamp screw will be at the top when the hose is installed on the elbow. Tighten the clamp just enough to hold it in place on the hose.

Lubricate the hose (petroleum lubricant) and carefully feed it into the tank using tool JD 114. Push the hose onto the elbow (FIG 5).

If necessary, use a long screwdriver to position the clamp. The clamp should be positioned on the flat area of the elbow in front of the barbs.

Tighten the clamp with a flex drive socket while holding the hose with tool JD 114 (FIG 6) to prevent the elbow from rotating.

⚠CAUTION: DO NOT OVER-TIGHTEN THE CLAMP. DO NOT PULL THE HOSE OFF THE SWIRL CHAMBER.

Reinstall the fuel level transmitter.

Check for leaks after filling the tank.

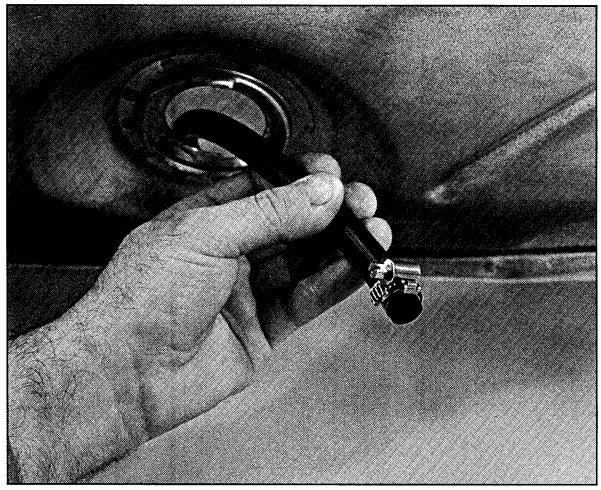


FIG 4

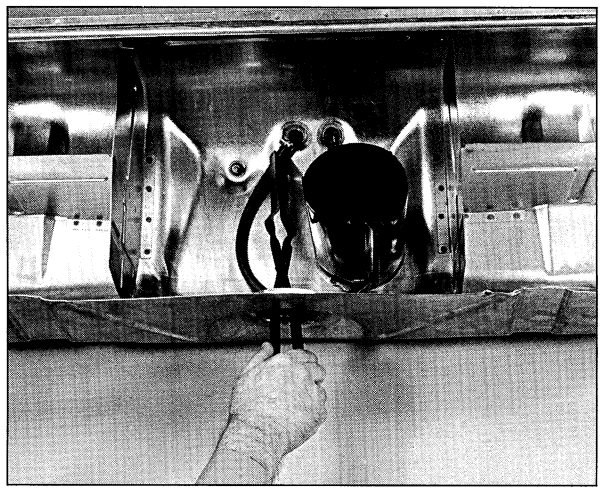


FIG 5

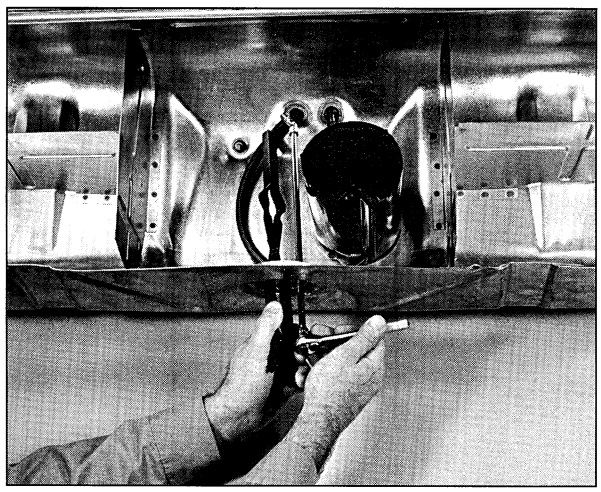
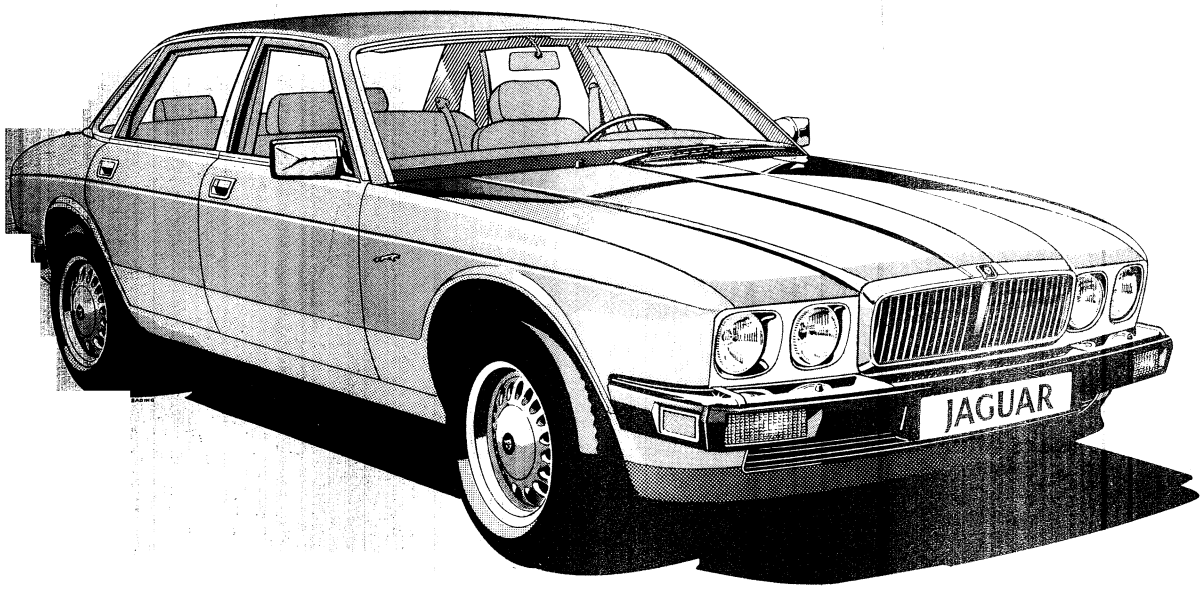


FIG 6


JAGUAR

The fuel filler flap hinge has been strengthened, and the plunger shape has been modified to improve operation.

Replace flap hinge

Remove the filler cap and cover the tank opening with a clean cloth.

Remove the filler flap from the hinge (FIG 1). Remove the plunger from the flap.

Remove the two bolts and the hinge from the car.

Install the replacement hinge first, and then the flap. Snug the hardware only to allow adjustment.

Adjust the flap to the opening by positioning it at the hinge and flap hardware. Tighten the hardware.

Install the replacement plunger and adjust the plunger (FIG 2) until the flap is flush with the body. Tighten the plunger lock nut. If necessary, readjust the hinge and flap.

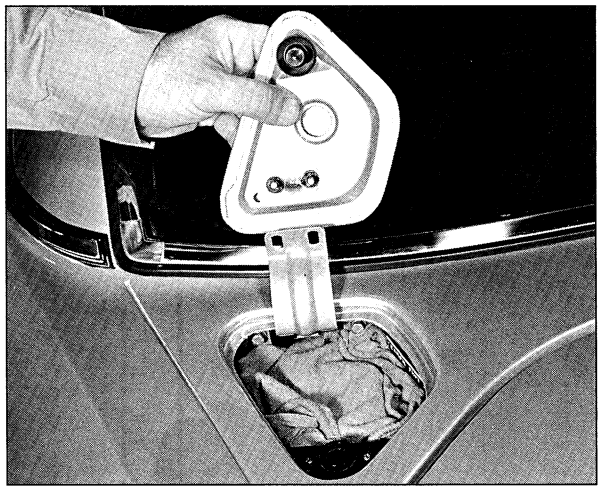


FIG 1

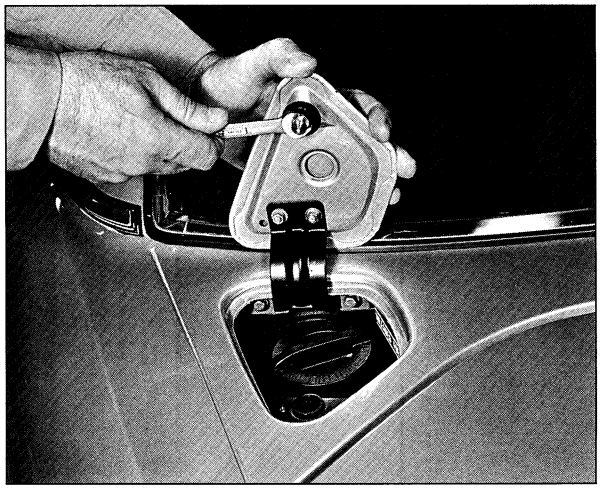


FIG 2

FIG 1

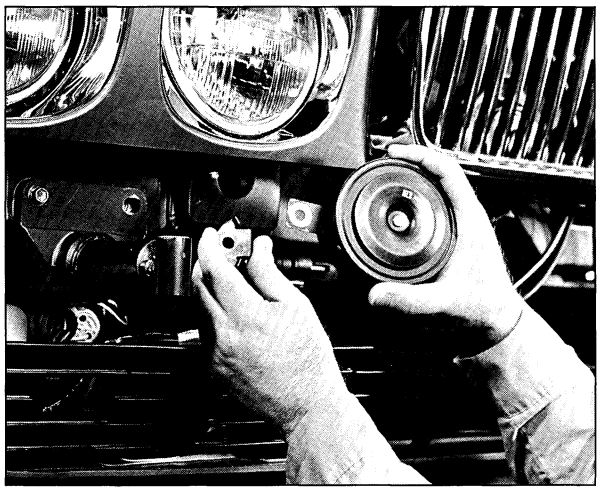


FIG 2

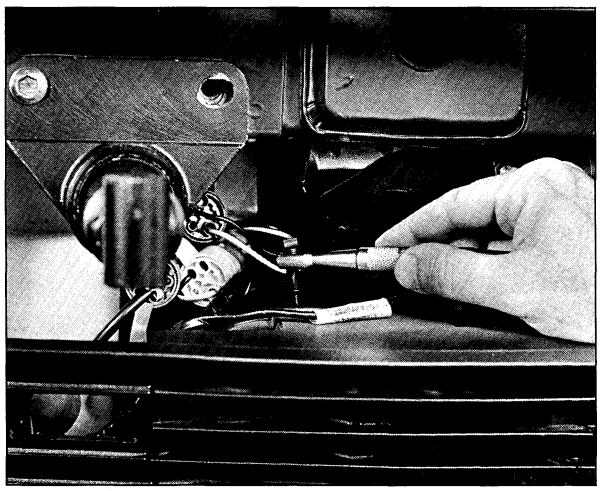


FIG 3

A towing eye is available for the XJ6 and VDP 3.6.

Install towing eye

Disconnect the battery negative cable.

Remove the bumper by removing the two bolts and disconnecting the electrical connectors (FIG 1).

Remove the right horn and discard the positioning bracket (FIG 2).

Remove the screws at the front of the brake cooling air duct (FIG 3).

Install towing eye *(cont'd.)*

Remove the seven screws and the right lower panel (FIG 4).

Remove the two screws and four bolts. Remove the right rear panel and the air duct (FIG 5).

Remove the washer pump hose(s) and drain the reservoir.

Loosen the upper bracket bolts. Disconnect the electrical connectors. Remove the two lower bracket nuts and remove the reservoir (FIG 6).

FIG 4

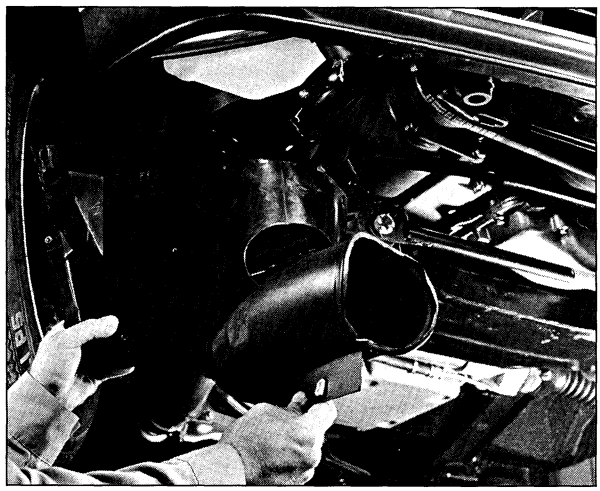


FIG 5

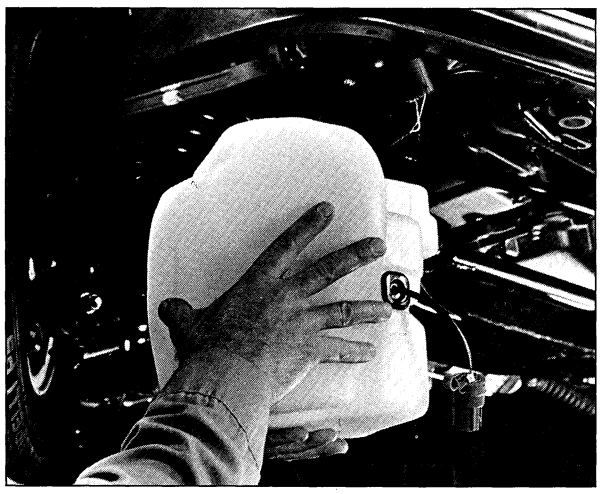


FIG 6

FIG 7

FIG 8

FIG 9

Install towing eye *(cont'd.)*

Loosen the two side spoiler bolts (FIG 7).

Cut the tie wrap. Remove the remaining three bumper strut bolts and remove the strut (FIG 8). Discard the existing strut bolts.

The towing eye fits over the strut (FIG 9), and the two are installed as a unit.

Install towing eye *(cont'd.)*

Position the strut and towing eye to the body and loosely install the right front bolt (FIG 10). The wires and connectors run below the strut.

Install the horn with the bracket between the eye and the strut (FIG 11). Do not tighten the bolt.

Remove the right front bolt and place the spacer washer between the eye and the strut (FIG 12). Reinstall the bolt loosely. Install the two rear bolts loosely.

Position the horn and hold the eye and strut assembly up and back. Tighten and torque the four bolts to 17–19 lb ft (23–27 Nm).

Reinstall the remaining components in reverse order. Torque the bumper bolts to 30–37 lb ft (40–50 Nm). Ensure that all electrical connections are made and replace all tie wraps.

⚠CAUTION: DO NOT PINCH OR DAMAGE WIRES AND HARNESSES.

FIG 10

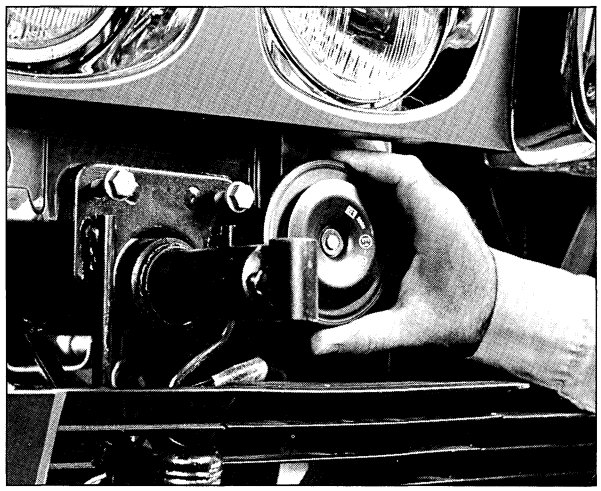


FIG 11

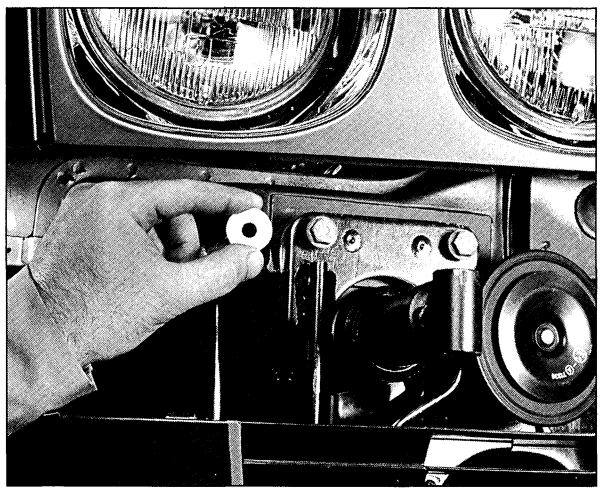
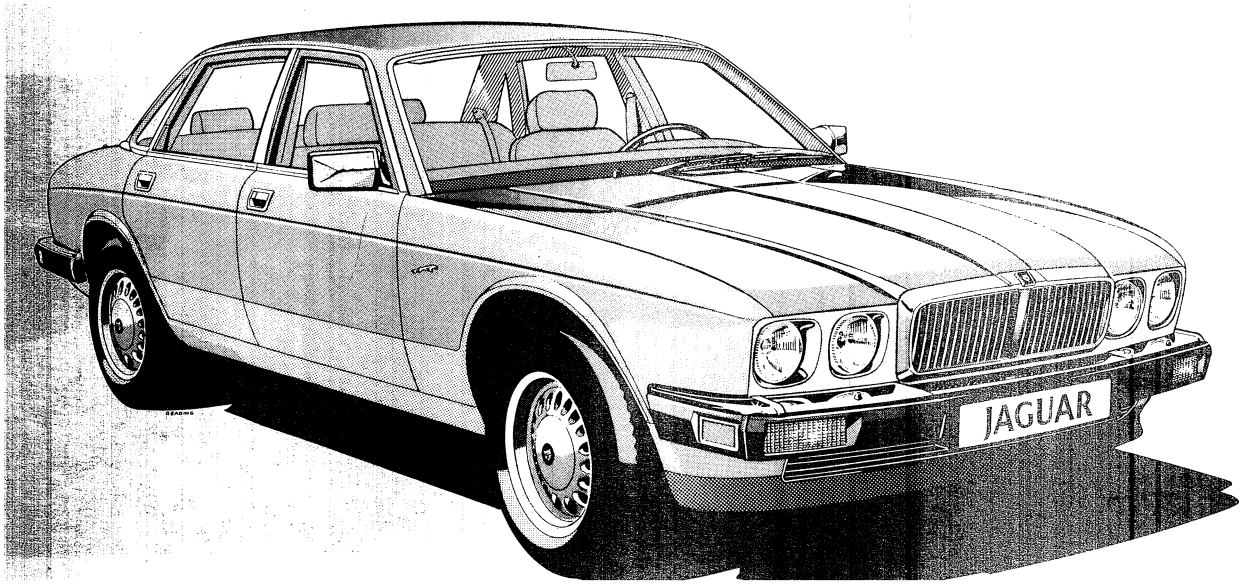


FIG 12


JAGUAR

To eliminate intermittent low oil pressure warning light operation, the transmitter has been revised.

Replace oil pressure transmitter

Disconnect the battery negative cable.

Back off the alternator belt adjustment.

Loosen the alternator adjusting bracket pivot bolt (FIG 1).

Remove the adjuster anchor bolt (FIG 1).

Remove the alternator mounting bolt and move the alternator forward.

Loosen the transmitter clamp and pull back the boot. Disconnect the Lucar connector (FIG 2).

NOTE: It may be necessary to loosen the clamp from above.

Replace the transmitter (FIG 3).

Reinstall the remaining components in reverse order.

Adjust the alternator belt to 100 lb tension.

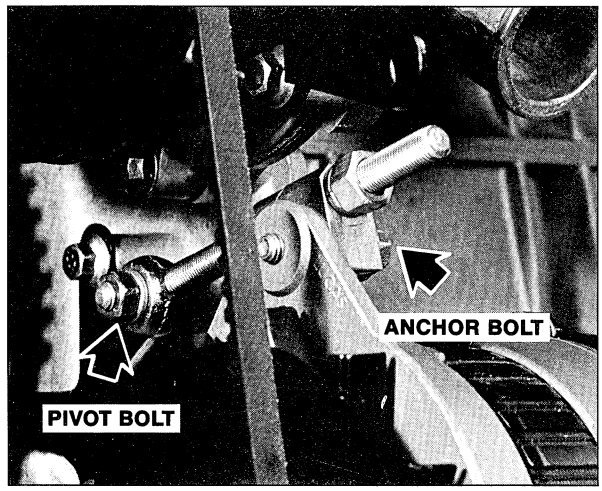


FIG 1

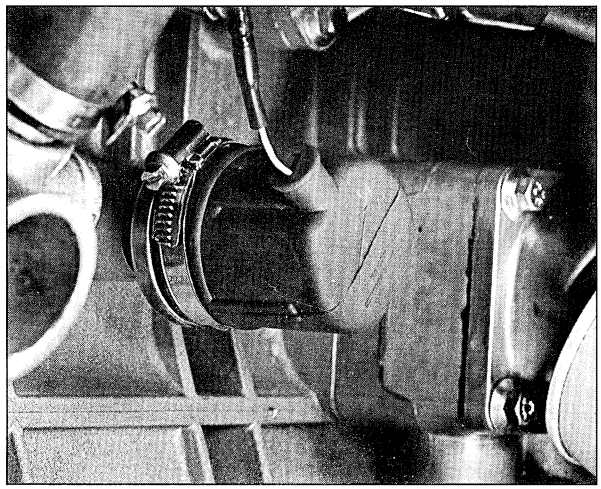


FIG 2

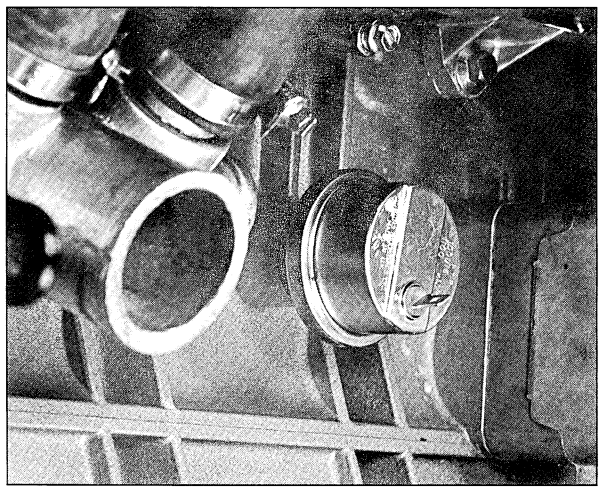


FIG 3

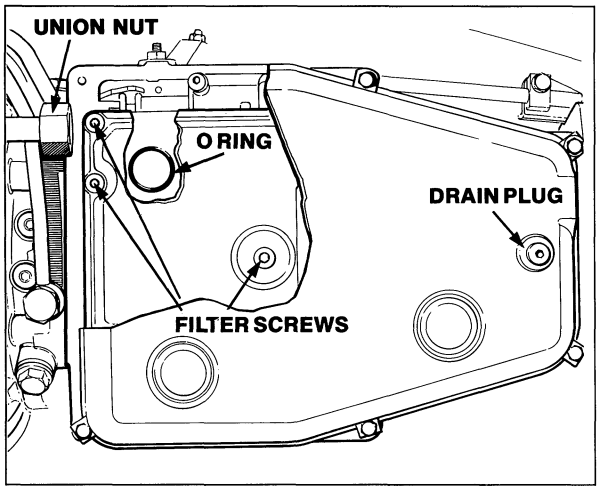


FIG 1

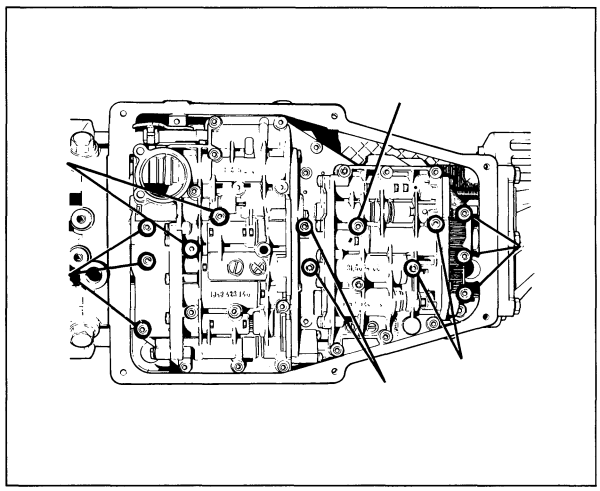


FIG 2

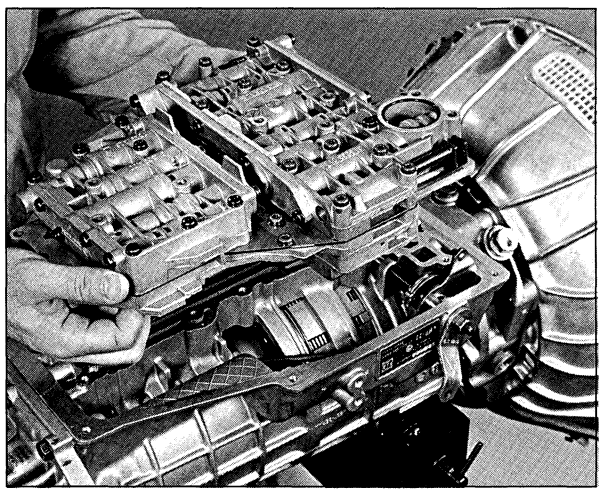


FIG 3

The transmission valve body has been revised to eliminate shudder during the 1–2 shift under acceleration.

Replace transmission valve body

Service tool required:
JD 103 linkage setting gauge

⚠CAUTION: KEEP DIRT FROM ENTERING THE TRANSMISSION DURING THIS PROCEDURE.

Remove the drain plug (FIG 1) and drain the fluid.

Disconnect the dipstick tube union (FIG 1) and drain the remaining fluid.

Remove the pan bolts and clamps. Lower the pan and drain off any remaining fluid. Discard the pan gasket.

Remove the filter screws. Remove the filter and discard the O ring (FIG 1).

Remove the thirteen mounting screws (FIG 2) and carefully remove the valve body (FIG 3).

Replace transmission valve body *(cont'd.)*

Clean the valve body mating surface on the transmission with a lint free cloth.

Install the replacement valve body while engaging the linkage. Do not tighten the screws. Three different length screws are used (FIG 4). Do not install the filter screws at this time.

⚠CAUTION: DO NOT INTERMIX THE BOLTS.

Place tool JD 103 between the valve body and the case with the throttle valve pin on the step of the tool. Push the valve body forward and hold it against the tool while tightening the screws (FIG 5). Torque the screws to 6 lb ft (8 Nm).

Install the filter with a new O ring. Torque the screws to 6 lb ft (8 Nm).

Clean and install the pan with a new gasket. Torque the bolts to 6 lb ft (8 Nm). Install the drain plug.

Clean the union and reconnect the dipstick tube. Torque the union nut to 15 lb ft (20 Nm).

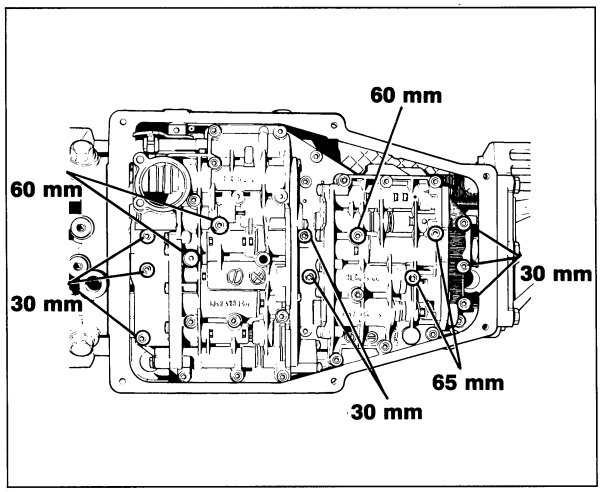


FIG 4

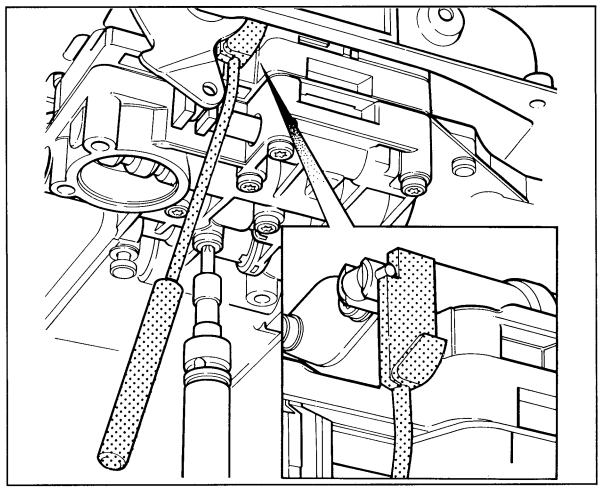


FIG 5

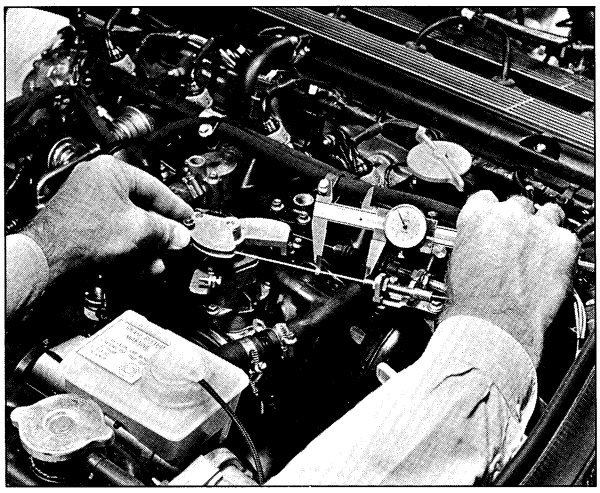


FIG 6

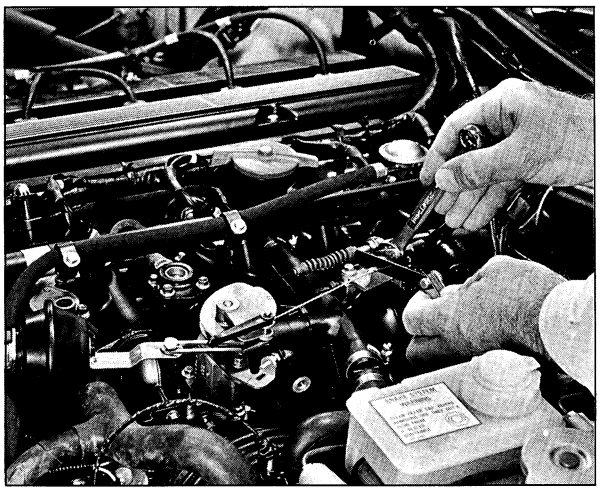


FIG 7

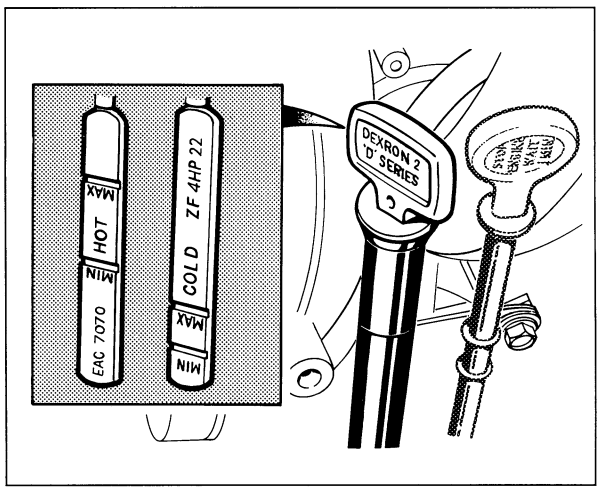


FIG 8

Adjust kickdown cable

Verify the cable lug position Hold the throttle bellcrank at the kickdown position. The kickdown detent can be felt as the bellcrank is moved. Measure the distance from the cable lug to the outer cable (FIG 6). It should be 39–40 mm. If the measurement is outside this range, the lug has moved and requires cable replacement.

Adjust at idle position Return the bellcrank to the idle position. Adjust the cable to achieve a gap of 0.030 in. ±0.020 in. between the lug and the outer cable (FIG 7).

Check at full throttle Fully depress the accelerator pedal and hold in this position. Measure the distance between the lug and the outer cable. It should be a minimum of 44 mm. If the distance is less than 44 mm, check the throttle adjustments.

Check fluid level

Add approximately 3 quarts of Dexron 2D automatic transmission fluid (FIG 8). Apply the handbrake and select P. Start the engine and bring it to normal operating temperature. Apply the brakes and move the gear selector through the complete range of gears. Select P. Check the fluid level on the HOT side of the dipstick with the engine idling. If necessary, add fluid.

Road test to ensure normal operation.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