

DESCRIPTION AND OPERATION (Continued)

Manual Organization

The set of manuals required to service the X100 family of vehicles comprises:

- Workshop Manual.
- Diagnostic and Test Manual.
- On-board Diagnostics Manual.

The manuals are arranged in sections, each section dealing with a specific part of a vehicle system. For example, Section 412-03 covers air conditioning, which is part of the climate control system.

The first digit of the section number indicates the group. There are six groups:

- 1. General Information.
- 2. Chassis.
- 3. Powertrain.
- 4. Electrical.
- 5. Body and Paint.
- 6. Routine Maintenance.

The second and third digits of the section number indicate the vehicle system.

The last two digits of the section number indicate the part of the system covered by the section.

The Workshop Manual contains specification, description and operation, and removal and installation sub-sections, as required, for each section. The description and operation sub-sections give a brief overview for the relevant section and may be supplemented by more detailed information in the corresponding section in the Diagnostic and Test Manual.

The Diagnostic and Test Manual contains description and operation, diagnosis and testing, and general procedure sub-sections, as required, for each section. The manual covers non-OBD mechanical and electrical components.

The On-board Diagnostics Manual covers all OBD-related components to a legally required level of description, diagnosis and renewal.

Repairs and Replacements

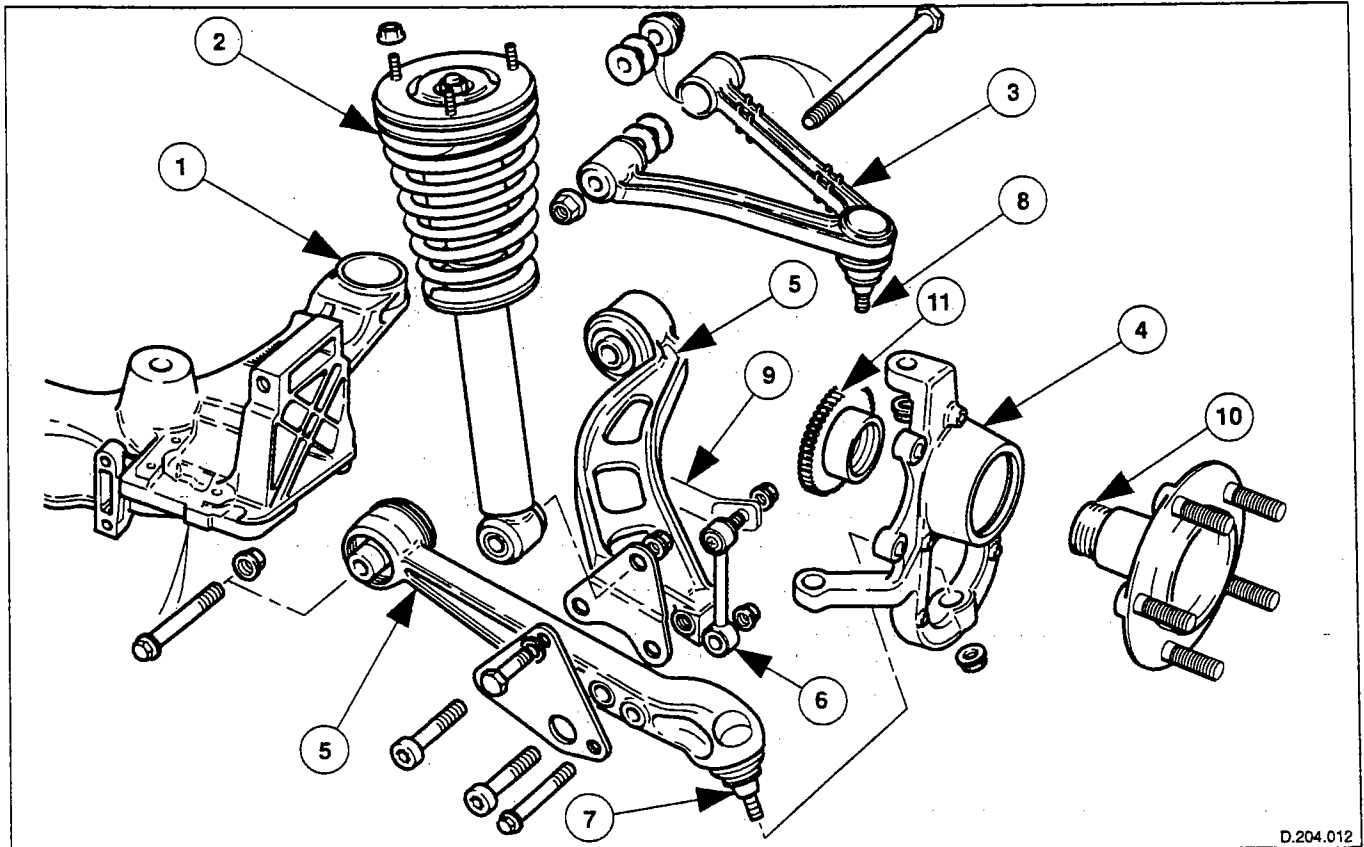
When service parts are required, it is essential that only genuine Jaguar/Daimler replacements are used.

Attention is drawn to the following points concerning repairs and the fitting of replacement parts and accessories:

- Safety features embodied in the vehicle may be impaired if other than genuine parts are fitted. In certain territories, legislation prohibits the fitting of parts which are not produced to the vehicle manufacturer's specification.
- Torque wrench setting figures given in this manual must be strictly adhered to.
- Locking devices, where specified, must be fitted. If the efficiency of a locking device is impaired during removal it must be renewed.
- Owners purchasing accessories while travelling abroad should ensure that the accessory and its fitted location on the vehicle conform to mandatory requirements existing in their country of origin.
- The vehicle warranty may be invalidated by the fitting of other than genuine Jaguar/Daimler parts. All Jaguar/Daimler replacements have the full backing of the factory warranty.
- Jaguar/Daimler dealers are obliged to supply only genuine service parts.

DESCRIPTION AND OPERATION

Front Suspension



D.204.012

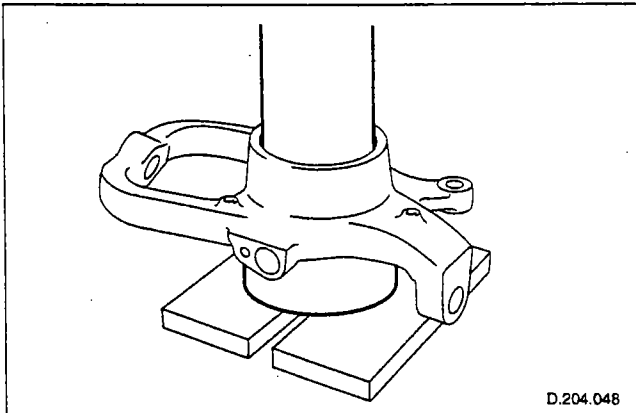
Item	Description
1	Aluminum Crossbeam
2	Co-axial Spring and Damper
3	Upper Wishbone
4	Vertical Link and Bearings Assembly
5	Lower Wishbone
6	Stabilizer Bar Link
7	Lower Wishbone Ball Joint
8	Upper Wishbone Ball Joint
9	Stabilizer Bar
10	Front Hub
11	Hub Nut/ABS Rotor

The independent front suspension is of the double wishbone type and is mounted on an aluminum crossbeam. The crossbeam is a heat treated aircraft specification aluminum casting and is mounted on four resilient mountings. It carries mounting points for the upper and lower wishbones, the steel crossbeam tie bar, stabilizer bar, power steering rack and engine hydramounts.

A two piece steel forged wide base lower wishbone and a one piece steel forged upper wishbone are used. A vertical link is installed between the wishbones and carries the live front hub, combined hub nut and ABS rotor, ABS sensor and connector, cartridge wheel bearings, and brake rotor and caliper assemblies. The vertical link swivels in two ball joints which are pressed into the upper and lower wishbones.

A co-axial spring and damper unit is installed between the lower wishbone and the vehicle body.

A stabilizer bar is mounted on the crossbeam and is connected to each lower wishbone by a short link.

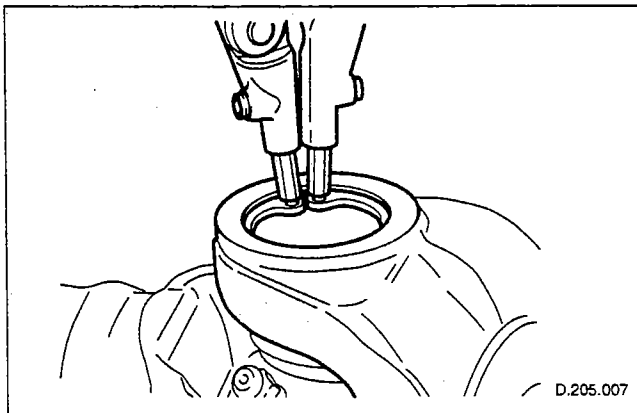
REMOVAL AND INSTALLATION (Continued)

11. Press the bearing assembly from the vertical link.

- 1 Release and withdraw the inboard circlip.
- 2 Position the special tool on the bearing inner cone.
- 3 Press the bearing assembly from the vertical link.
- 4 Scrap the bearing assembly.

12. Thoroughly clean the bearing bore in the vertical link.

13. Thoroughly clean the bearing diameter of the hub.

Installation

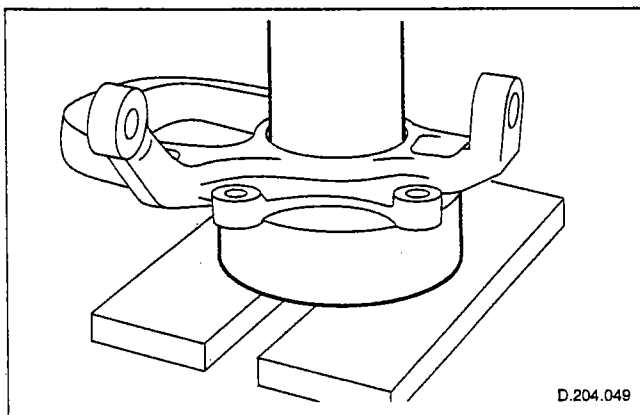
14. Install the outboard circlip in the groove of the vertical link.

- 1 Using the special blunt nosed circlip pliers, install the circlip in the groove of the vertical link.

NOTE: The ears of the circlip must be located in the lowest position to permit water drainage. Allow for the caster angle when selecting the position.

CAUTION: Do not allow the nose of the pliers to protrude beyond the circlip as this may damage the integral bearing seal.

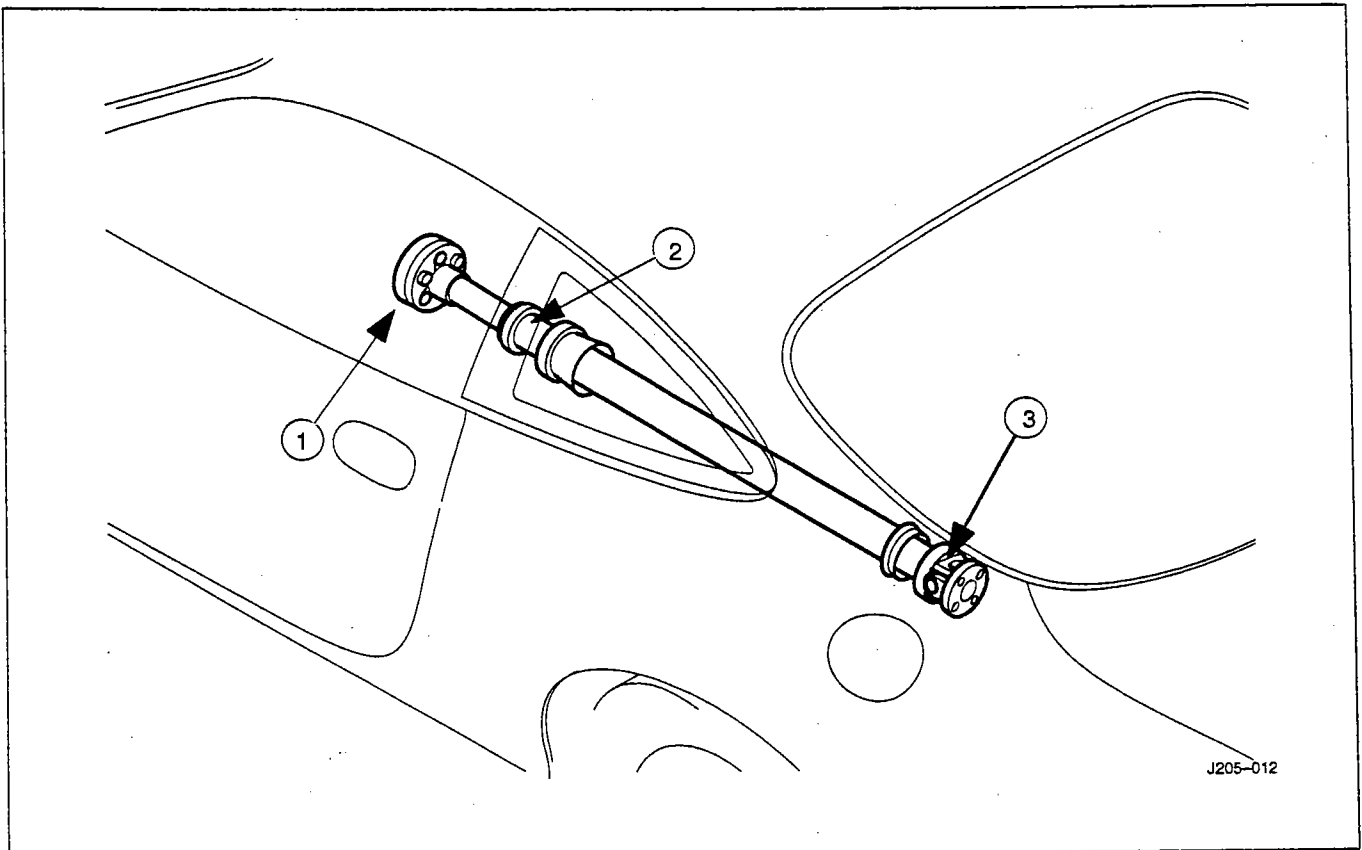
15. Press a new bearing assembly into the vertical link.



- 1 Support the outboard face of the vertical link.
- 2 Press in the bearing assembly from the rear of the vertical link using the special tool on the bearing outer ring.
- 3 Ensure that the bearing is fully seated by applying a three tons seating load.

DESCRIPTION AND OPERATION

Driveshaft



J205-012

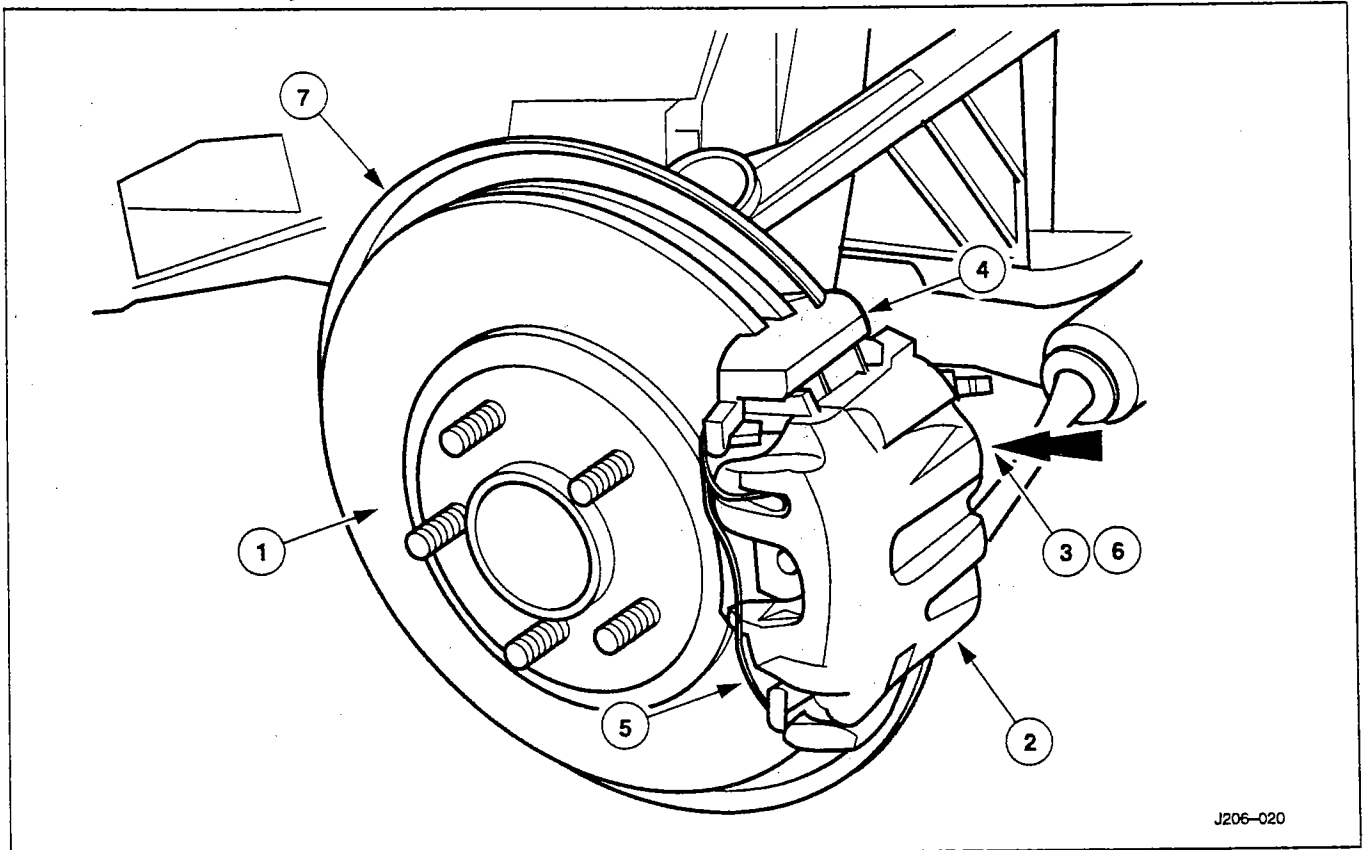
Item	Description
1	Flexible drive coupling
2	Sliding joint
3	Hookes drive coupling

A one piece aluminum driveshaft incorporating a sliding joint, a flexible drive coupling and a Hookes drive coupling is installed.

The drive couplings and sliding joint allow for variations in the driveshaft alignment due to the relative movement of components.

The function of the driveshaft is to transmit the drive from the automatic transmission to the final drive unit.

DESCRIPTION AND OPERATION
Front Disc Brake System



Item	Description
1	Brake Rotor
2	Caliper
3	Caliper Guide Pins
4	Caliper Carrier
5	Caliper Retaining Clip
6	Guide Pin Dust Caps
7	Rotor Shield

The guide pins slide in bushes installed in the caliper body. The bushes have dust caps, which must always be installed when reassembling the caliper.

The hose port of the caliper faces towards the front of the vehicle and armoured hoses are installed. A rotor shield is installed and may be removed without disturbing the hub bearings. The brake pads are installed in the caliper body.

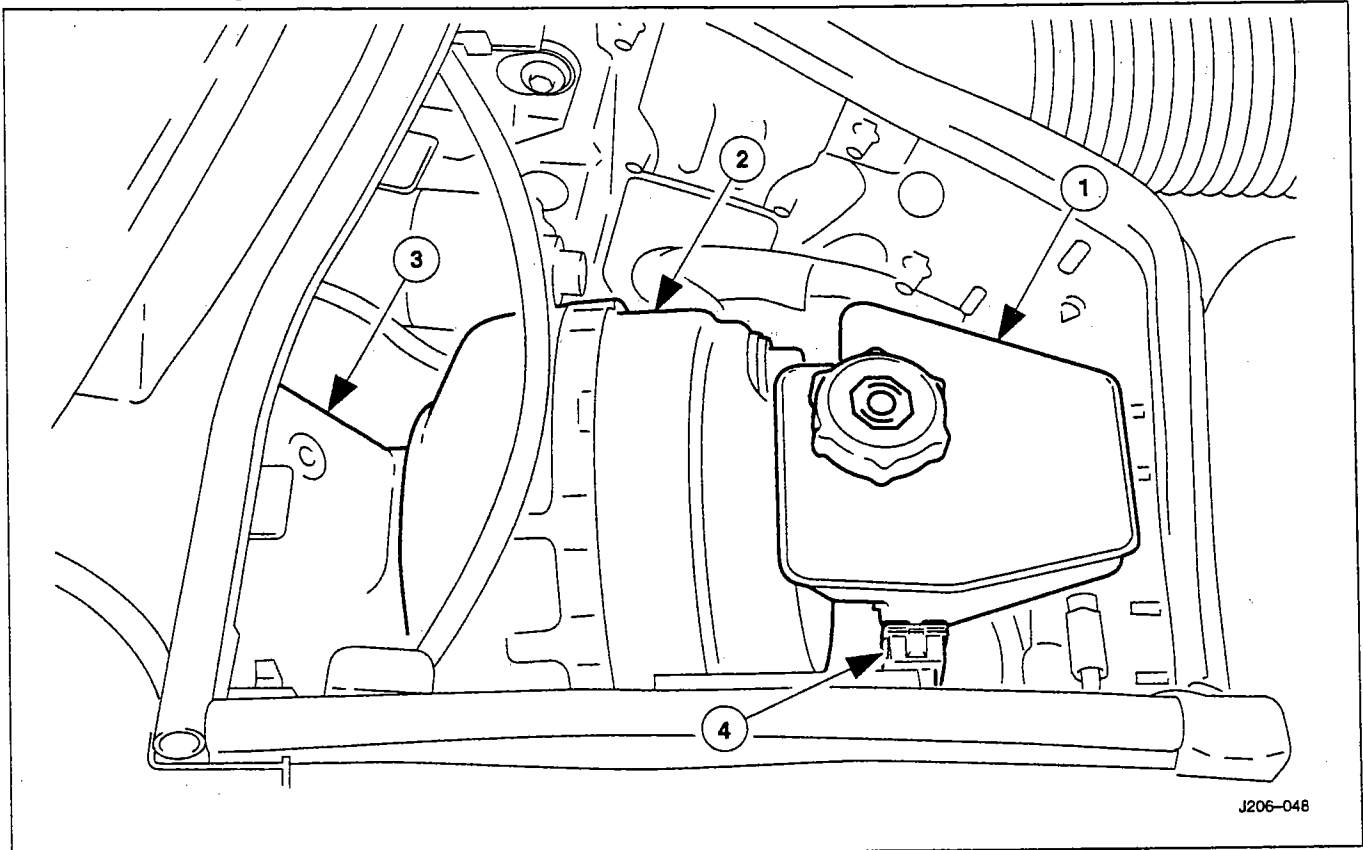
The front disc brake rotor is mounted on the wheel lug studs directly behind the wheel and is clamped between the wheel and hub. It is of the ventilated type and measures 305 mm diameter and 28 mm thick.

The single piston caliper is mounted on a carrier by means of two guide pins and a caliper retaining clip. The carrier is installed on the suspension vertical link by two bolts. An ABS sensor connector is also mounted at the front of the vertical link.

When hydraulic pressure is generated in the caliper due to a brake application, the piston pushes one of the brake pads into contact with the brake rotor. The caliper body is free to move on the two guide pins, which allows it to centralize itself to the brake rotor. This causes the other brake pad to contact the brake rotor with equal pressure. The greater the hydraulic pressure in the caliper, the the harder the brake pads grip the rotor.

DESCRIPTION AND OPERATION

Brake Master Cylinder



Item	Description
1	Tandem Master Cylinder
2	Brake Booster
3	Pedal Box
4	Fluid Level Indicator Switch

The tandem brake master cylinder is mounted, together with the vacuum booster, in the forward bulkhead extension within the engine compartment. The brake operating pedal is housed with the accelerator pedal in a plastic pedal box.

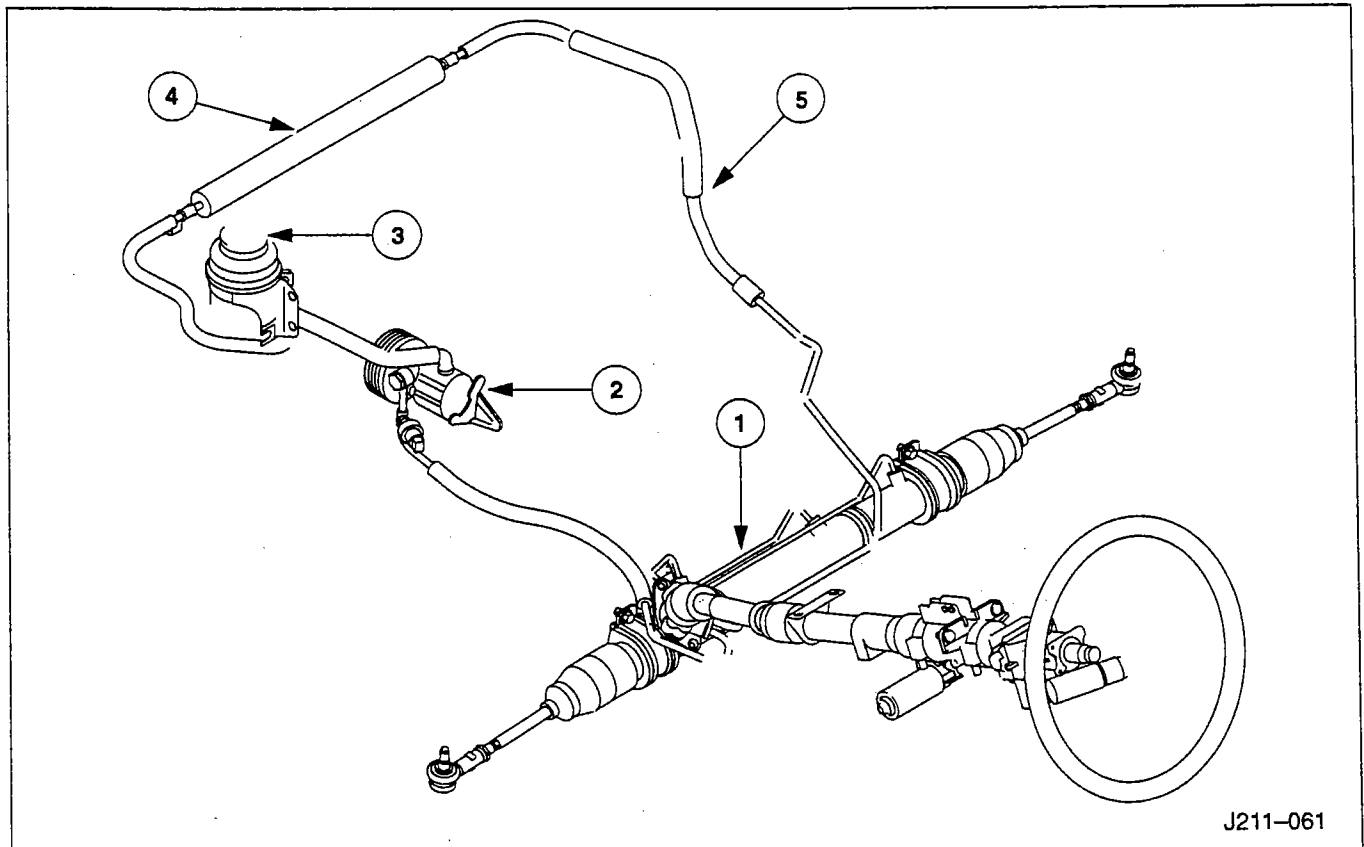
The brake fluid reservoir has a fluid level indicator switch installed, which opens when the fluid level is low, causing the fluid level warning lamp to illuminate.

The applied brake pedal force is increased by the booster which activates the intermediate piston of the tandem master cylinder. As the piston moves, fluid under pressure is displaced from the master cylinder into the brake lines and caliper assemblies to apply the brakes.

The front-to-rear braking ratio is 65/35.

DESCRIPTION AND OPERATION

Power Assisted Steering System



Item	Description
1	Rack and Pinion Assembly
2	PAS Pump
3	Fluid Reservoir with Integral Filter
4	Wire Bound Tube Type Fluid Cooler
5	Hoses and Pipework

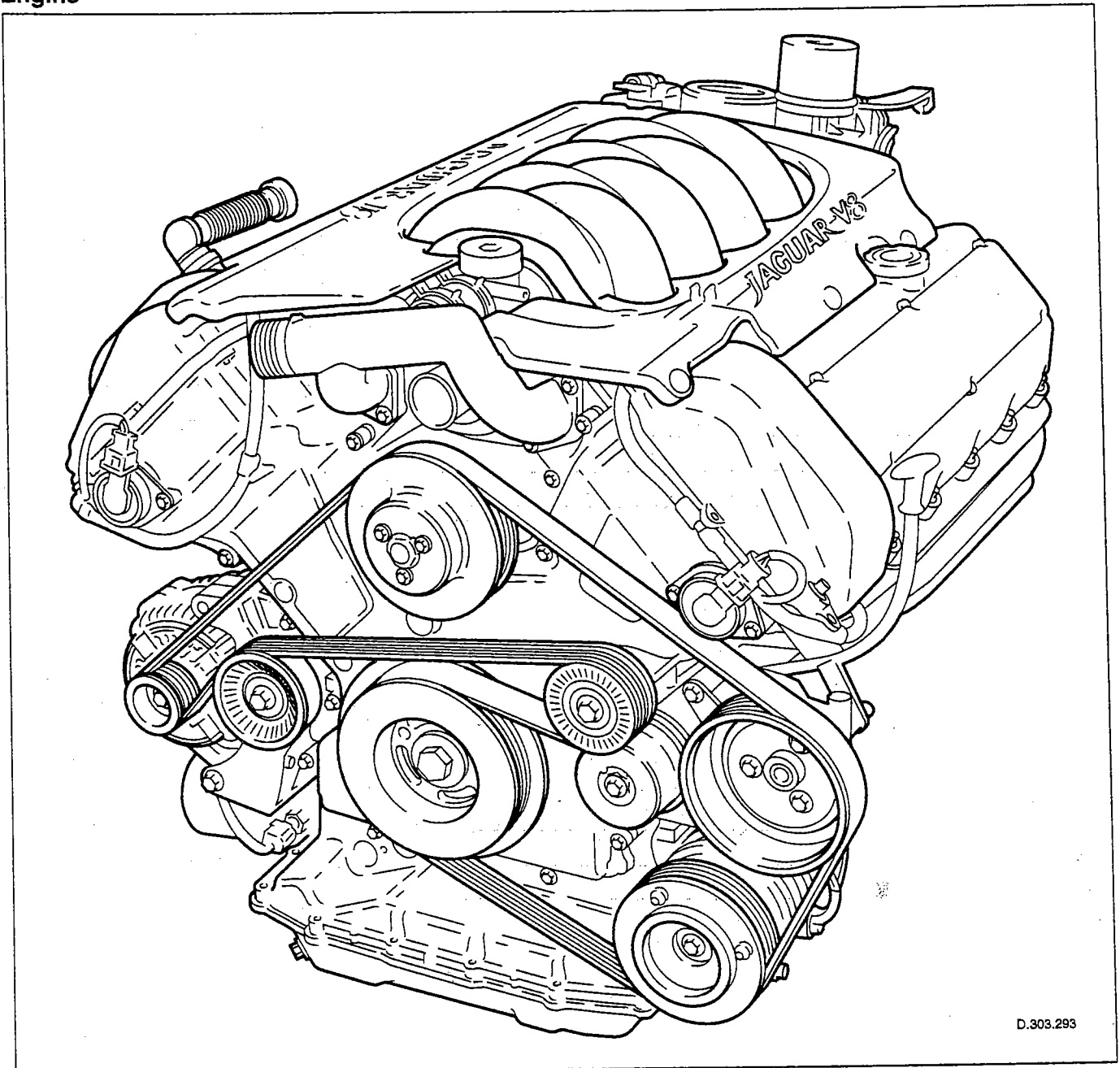
The ZF variable ratio rack and pinion power assisted steering (PAS) system is fitted to all variants of the X100 model.

The system consists of:

- Rack and pinion assembly.
- Power assisted steering pump.
- Fluid reservoir.
- Fluid cooler.
- Associated hoses and pipework.

DESCRIPTION AND OPERATION

Engine



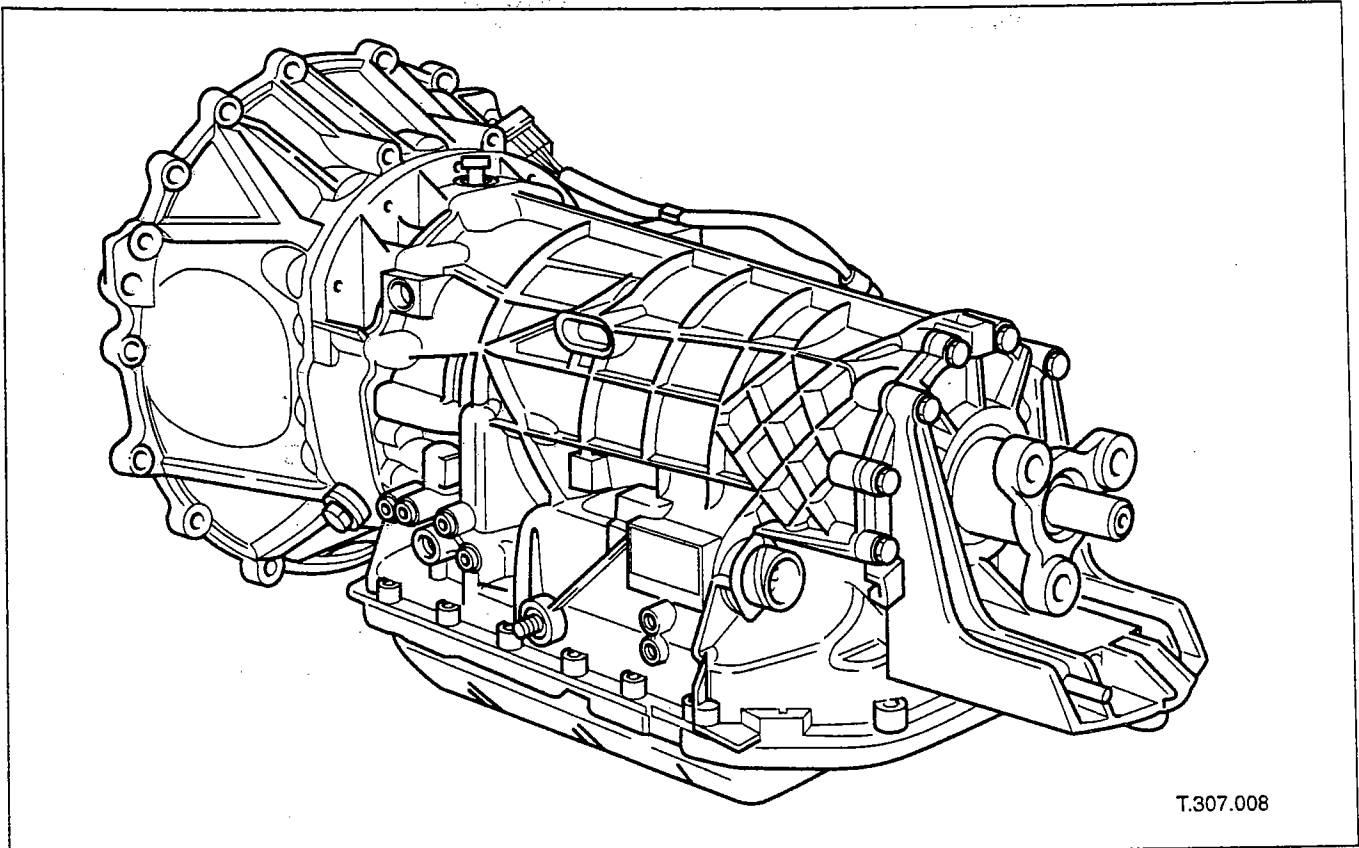
The AJ26 power unit is an aluminum-alloy 90° V8 liquid-cooled unit. It has a nominal capacity of 4.0 liters.

The unit meets all of the requirements of the CARB OBDII USA legislation

DESCRIPTION AND OPERATION

Transmission System

Introduction

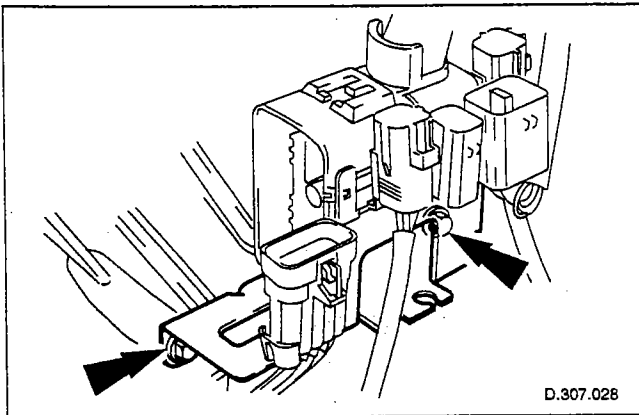


The automatic transmission system has the following features:

- Five forward gears and Reverse.
- Filled-for-life fluid system.
- Transmission fluid cooling by cooler mounted in the engine cooling radiator.
- Variable slip control on torque converter lock-up.
- Electronic gearshift control.
- Two driving modes, Normal and Sport.
- Special shift maps for particular driving conditions.

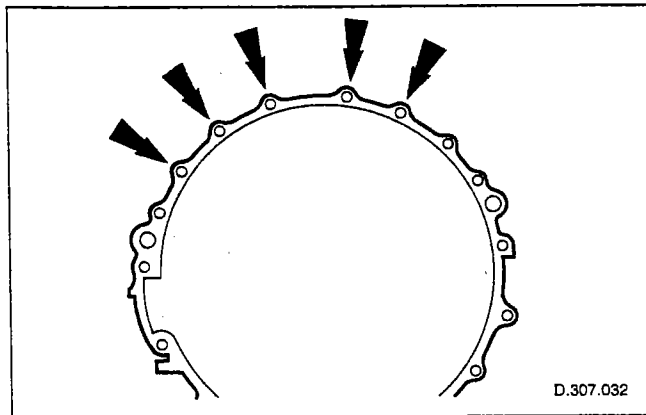
Filled-for-life Fluid System

The transmission fluid is filled for life and does not require changing except for prolonged driving under severe conditions. Routine level checking is not required and a dipstick is not provided. A level/filler plug is fitted for service level checking and replenishment if required; refer to the Diagnostic and Test Manual.

REMOVAL AND INSTALLATION (Continued)

22. Reposition the engine harness multiplug mounting bracket for access.

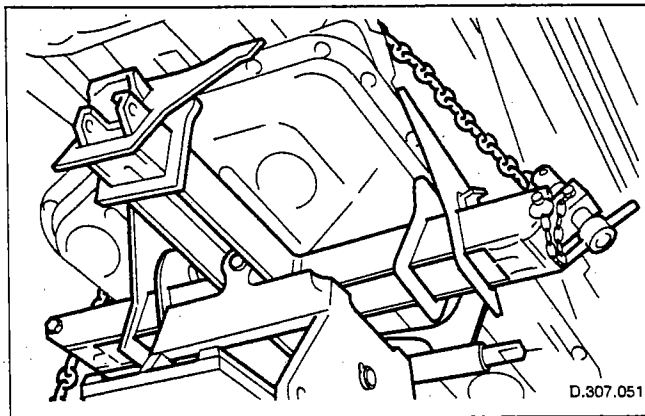
- Remove the bracket to transmission unit securing bolts.



NOTE: The arrows are shown as viewed from the rear of the vehicle.

23. Remove the upper transmission unit to engine securing bolts.

- One bolt also secures a fluid cooler pipe.



WARNING: ENSURE CORRECT USE OF LIFT INCLUDING SIDE CLAMPS, SECURING PEG AND SAFETY CHAIN AS APPROPRIATE.

24. Position an Epcor V-100 or similar lift under the ramp and take the weight of the transmission unit.

- Pass the safety chain over the transmission unit, engage in the side arm of the lift and tighten the chain adjuster.

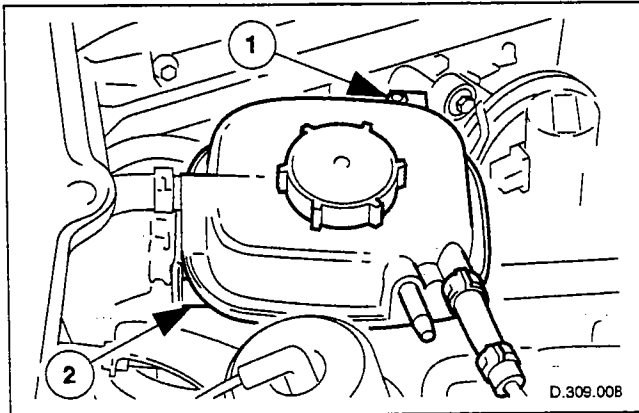
25. Remove the transmission unit from the engine.

- Remove the remaining transmission unit to engine securing bolts.

REMOVAL AND INSTALLATION

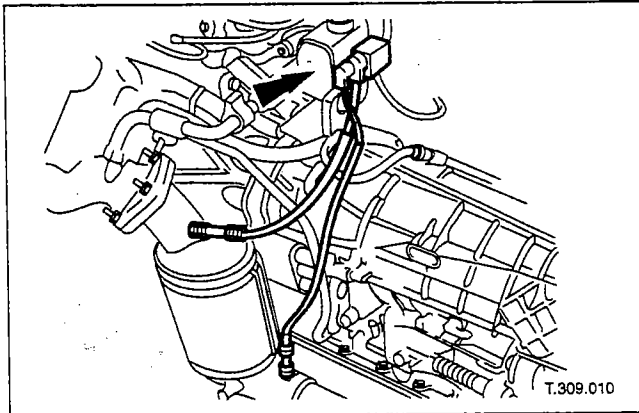
Downpipe Catalytic Converter (17.50.09 Left-hand, 17.50.10 Right-hand)

Removal



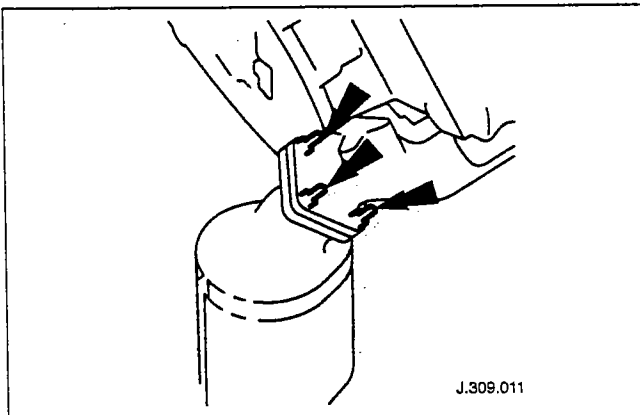
1. Remove the front muffler; refer to the procedure in this section.
2. Remove the coolant header tank (left-hand only).

- 1 Remove the securing bolt.
- 2 Detach the header tank dowels from the mounting grommets.



CAUTION: Note the position of the upstream and downstream oxygen sensor multiplugs for reassembly.

3. Disconnect the oxygen sensor multiplugs.
 - Displace the multiplugs from the engine mounting bracket.

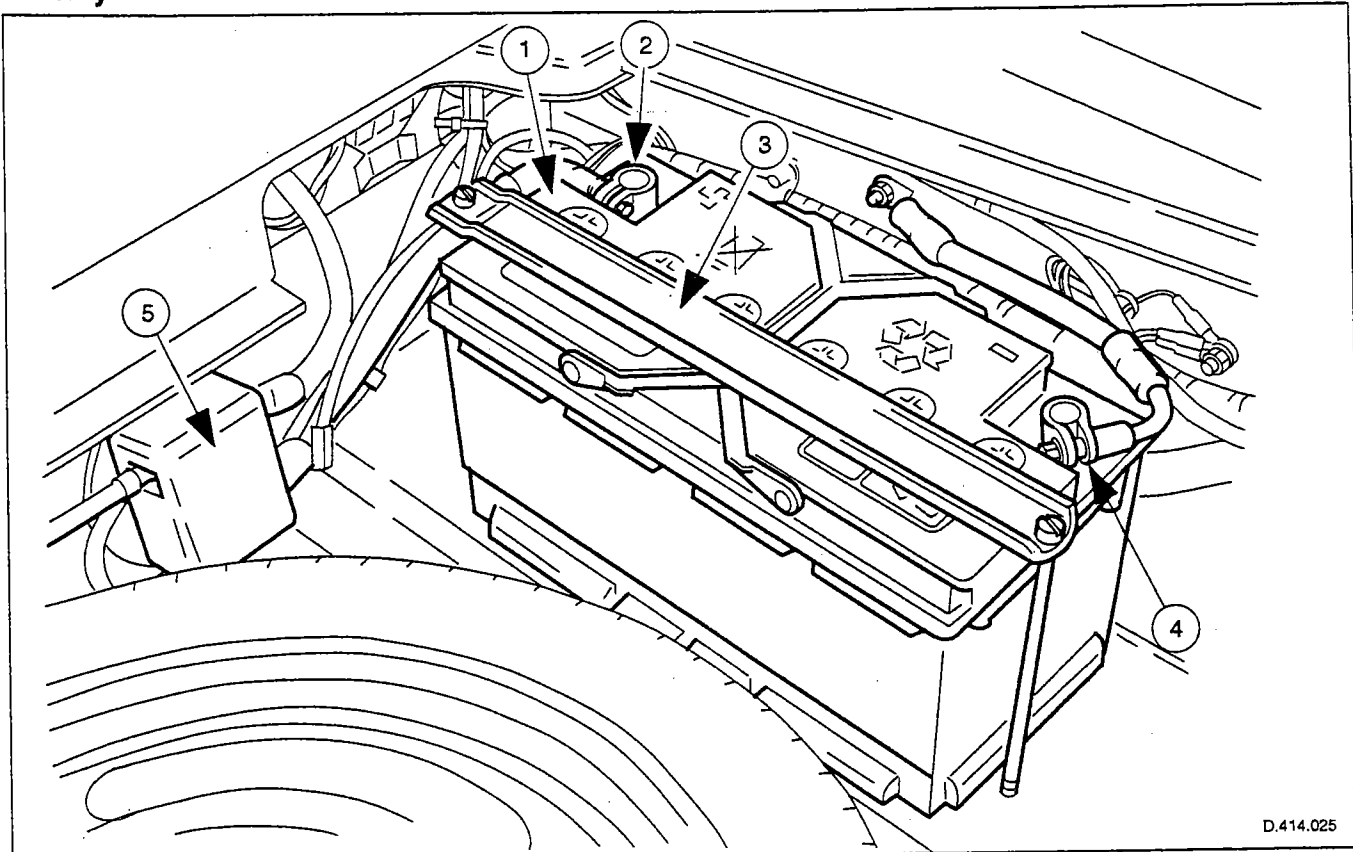


4. Remove the downpipe catalytic converter to exhaust manifold securing nuts.

5. Raise the vehicle on a four-post ramp.

DESCRIPTION AND OPERATION

Battery



Item	Description
1	Battery
2	Positive Lead
3	Battery Hold-Down Clamp
4	Negative (Ground) Lead
5	High Power Protection Module (Fuses)

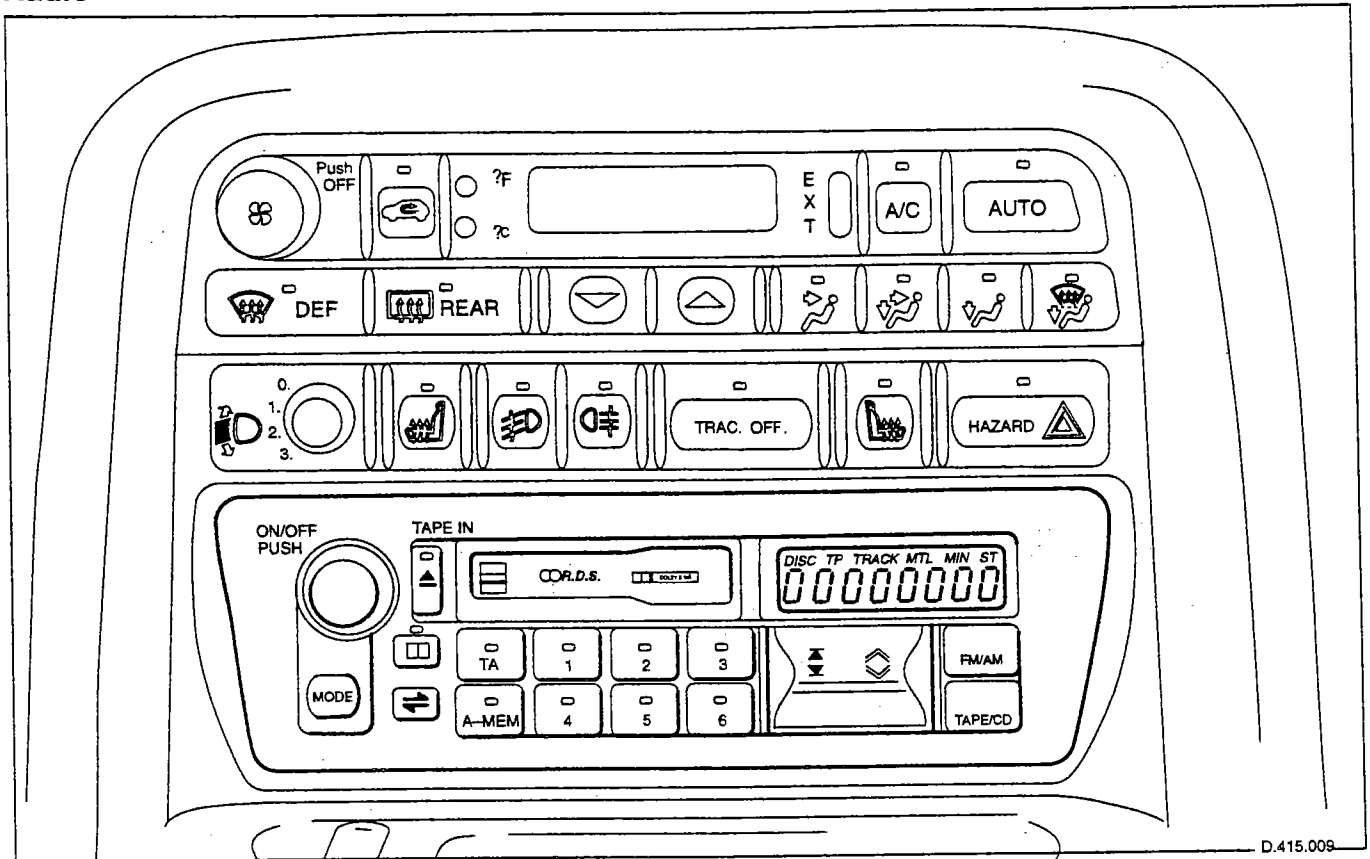
A low maintenance battery is located in the right hand side, on the luggage compartment floor.

The negative (Ground) lead is connected to the vehicle body. The positive lead is connected to a high power protection module; from here power is connected to the starter motor and distributed to other systems on the vehicle.

The high power protection module comprises three fuses, each of 250A capacity. Two fuses are connected in parallel to provide protection for the starter circuit. The third one provides high level protection for fusebox supply circuits .

DESCRIPTION AND OPERATION

Radio



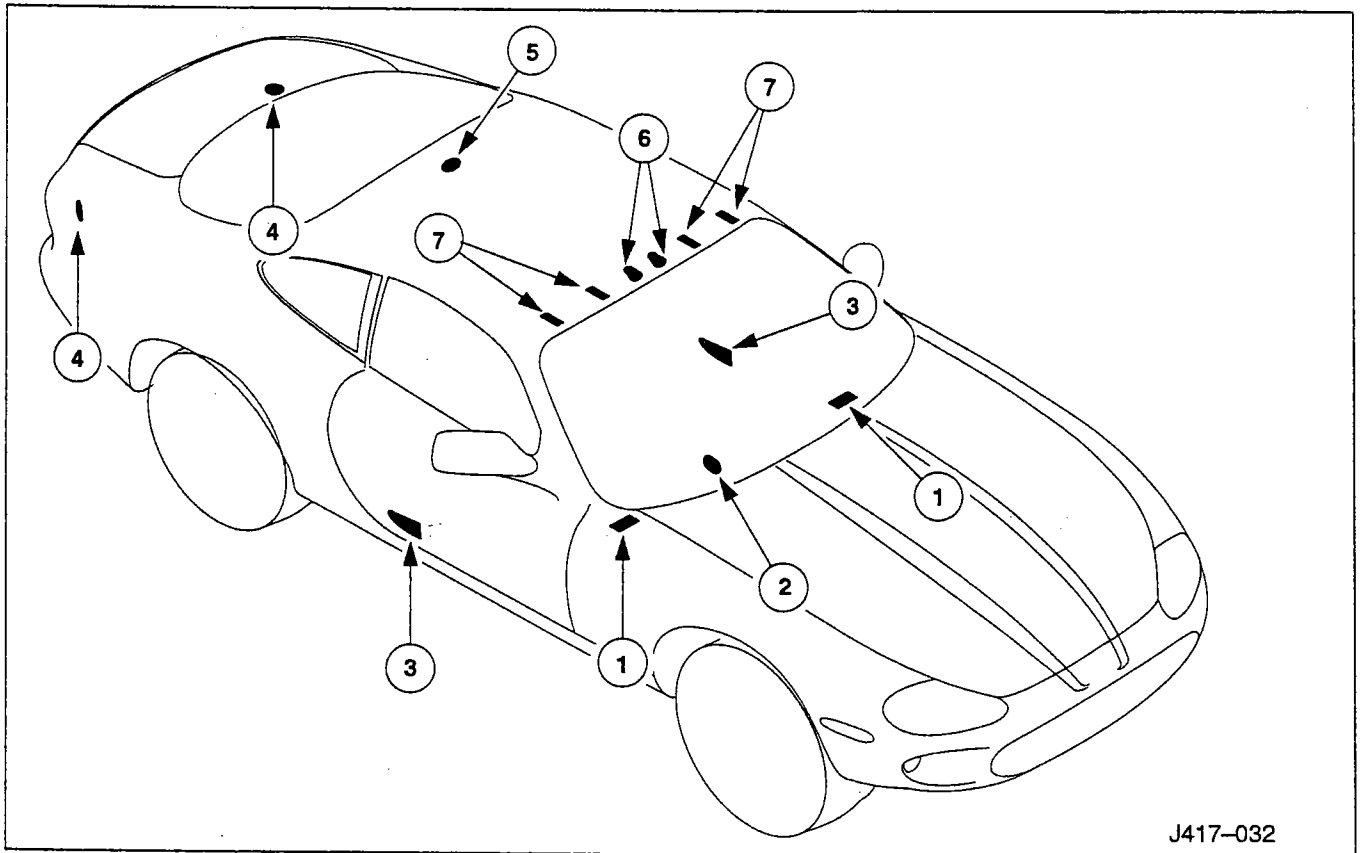
D.415.009

The choice of two entertainment systems is available; base or premium. Both systems use the same radio and electrically operated aerial. The premium system has the addition of a power amplifier, different speakers and a CD Autochanger. The CD Autochanger and the amplifier are located in the luggage compartment, at the right hand side.

Both systems may be operated remotely by use of switches located on the steering wheel. Refer to the Sound System Handbook for setting-up procedures and use.

DESCRIPTION AND OPERATION

Interior Lamps



J417-032

Item	Description
1	Footwell Lamps
2	Glovebox Lamp
3	Door Guard / Puddle Lamps
4	Luggage Compartment Lamps
5	Roof Rear Lamp (Coupe Only)
6	Roof Console Map / Courtesy Lamps
7	Sun Visor Vanity Mirror Lamps

Two footwell lamps are fitted, one at each end of the fascia lower rail. They are not fitted with manual switches and operate only when either or both doors are opened.

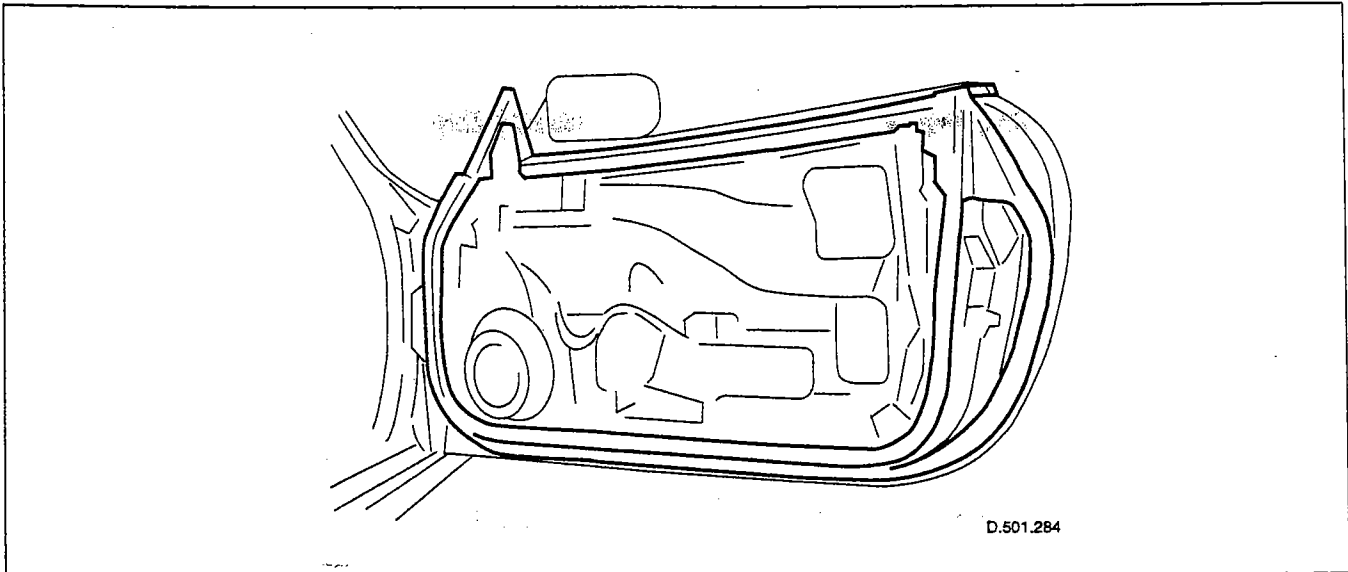
The glovebox lamp operates whenever the glovebox lid is opened. The lamp comprises a combined switch and bulb holder assembly, and a white lens.

A lamp is fitted to the rear lower corner of each door. Each has a double lens; red to project rearwards to warn oncoming traffic that the door is open and white to project down onto the ground. They are not fitted with manual switches and operate only when either or both doors are opened.

A lamp is fitted to each rear corner of the luggage compartment, adjacent to the rear lamp assemblies. They are operated automatically whenever the luggage compartment lid is opened; the switch is incorporated within the latch mechanism.

The roof rear lamp is fitted to the coupe only. It is not fitted with a manual switch and operates only when either or both doors are opened.

The two lamps located in the roof console, function as map reading lamps and as courtesy lamps. Individual switches control each lamp manually and the door switches control the lamps automatically to provide the courtesy lamp function

DESCRIPTION AND OPERATION (Continued)**Doors**

Doors are common to both coupe and convertible, with a frameless glass system, dual door-mounted seals and demountable hinges with separate multi-stage check arms. The door casings and top rolls are UEV trimmed with cloth center pads. Leather center pads are fitted for some markets. Combined armrests/door pockets are trimmed in leather and have burr walnut veneer insets.

The colour-keyed exterior door handles each have an integrated switch for glass drop on opening. Additionally, the driver's door handle has an integrated key barrel. The cheater is formed by the door mirror base and a black injection moulded inner cheater. The cheater seal is integral with the secondary door seal. Tweeters are fitted in the inner cheater as part of the premium in-car entertainment option. Each door has a combined rearguard/puddle lamp mounted in the door pocket casing.

Both the driver and passenger door incorporate Door Control Modules (DDM & PDM) which are connected to the SCP network and control the raising and lowering of the window glass, locking and security, puddle lamp and door mirror movement and heating functions. A drive-away door locking function incorporated in the DDM & PDM software is activated when the transmission is taken out of Park or Neutral position.

Adjustment of driver and passenger door mirrors including memory functions is controlled by the driver door switchpack through each door module. Door mirror heating is controlled via the rear windshield heating switch on the air conditioning control panel. Electrochromic mirrors available as an option are automatically heated at very low ambient temperatures. A mirror fold back function enabling the door mirrors to fold back against the body/glass when parking the car, is featured for some markets.

Dipping of the passenger door mirror when reverse gear is selected is also featured on some vehicles/markets. Dipping is either 7 degrees in a downward direction, bottom of travel or 5 seconds dependent upon which condition is satisfied first. When the gear selector is moved from reverse the door mirror will return to the original position.