

General Information - General Service Information

Description and Operation

Safety Notice

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all motor vehicles, as well as the safety of the person doing the work. This manual provides general directions for accomplishing service and repair work with tested, effective, techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the person doing the work. This manual cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in the manual must first establish that neither personal safety nor vehicle integrity is compromised from choices of methods, tools or parts.

Notes, Cautions and Warnings

Throughout this manual, important information is highlighted by the use of notes, cautions and warnings. NOTES give additional information on a topic or procedure, CAUTIONS are given to prevent damage to the vehicle, and WARNINGS are given to prevent personal injury.

Workshop Manual Organization

This manual incorporates descriptive, diagnostic, and repair information to help trained Jaguar technicians complete service and rectification procedures. The information can be accessed by choosing the appropriate five digit section number. For example, Section 412-03 covers air conditioning, which is part of the Climate Control System.

The manual is organized into groups covering generic aspects of the vehicle systems; the first digit of the section number represents a group selected from the following:

1. General Information.
2. Chassis.
3. Powertrain.
4. Electrical.
5. Body and Paint.

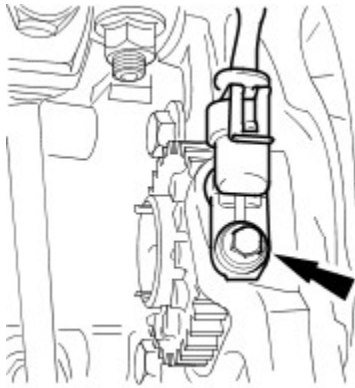
Each of the groups comprises sections relating to specific areas of the vehicle.

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

The last two digits of the section number define the system covered, more specifically.

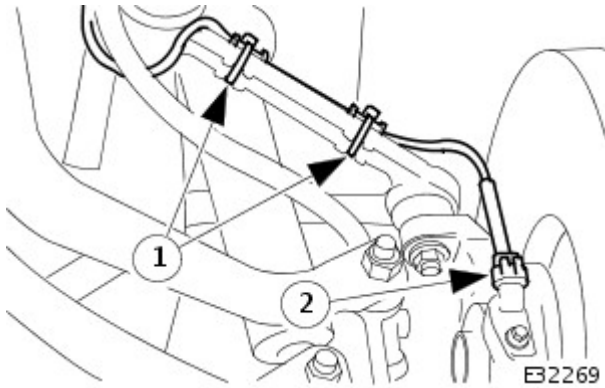
Each section comprises one or more of the following sub-sections:

Specification



E35089

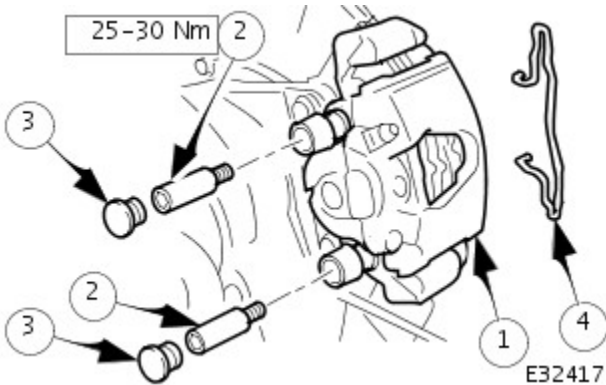
- Install sensor bolt and tighten to 8-10Nm.



E32269

22. Connect wheel speed sensor harness.

1. Connect wheel speed sensor harness to sensor.
2. Using new tiestraps secure wheel speed sensor harness to upper wishbone.



E32417

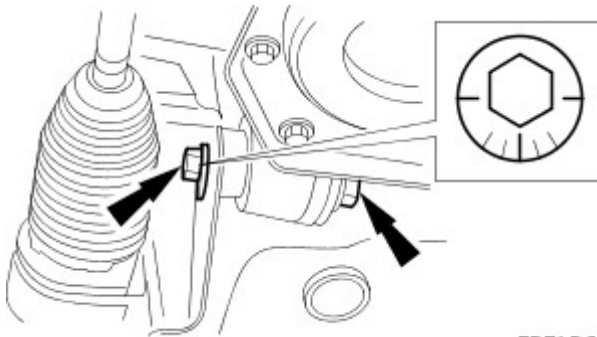
23. Install brake calipers.

- Remove tie supporting brake caliper.
1. Install caliper on carrier.
 2. Install guide pins.
 3. Install guide pin dust caps.
 4. Install caliper spring clip.

24. Install road wheel. Refer to Section 100-02.

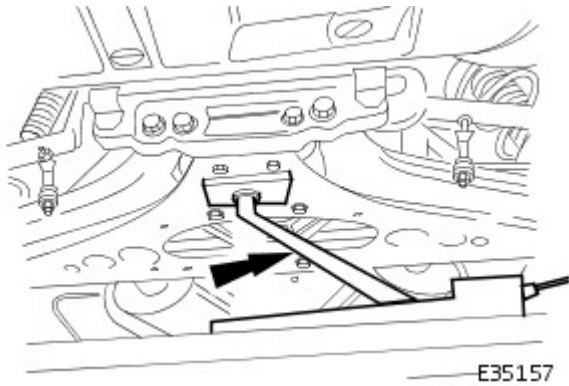
25. Raise vehicle, remove stands and lower vehicle onto road wheels.

26. Ensuring graduation mark remains aligned, finally tighten wishbone rear eccentric bolt to 113-153Nm.



E35126

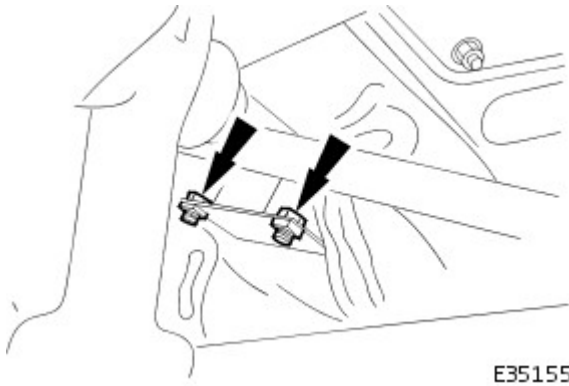
27. Check wheel alignment and if necessary adjust. Refer to 57.65.01.



- Position a suitable piece of wood between the jack and the rear suspension and axle assembly.
- Raise the jack to take the weight of the rear suspension and axle assembly.

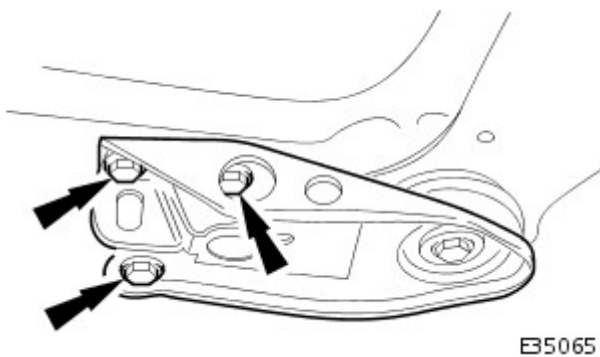
14. NOTE: Left-hand shown, right-hand similar

Remove the exhaust mounting to suspension bracket bolts.



15. NOTE: Right-hand shown, left-hand similar

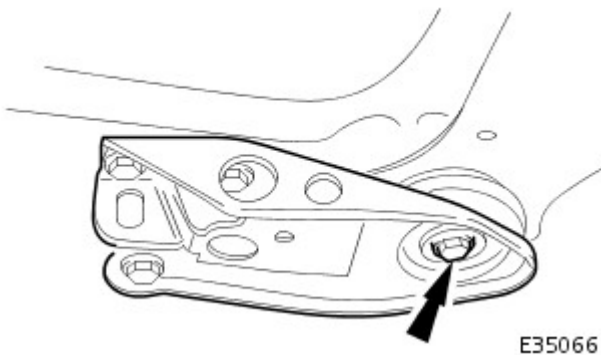
Remove and discard the subframe front mounting brackets to body bolts.



16. NOTE: Right-hand shown, left-hand similar

Remove the subframe front mounting brackets.

- Remove and discard the mounting bracket to subframe bolts.
- Remove the front mounting bracket.



17. NOTE: Left-hand shown, right-hand similar

Remove differential strut upper mounting to body bracket securing bolts.

Rear Disc Brake - Brake Pads Vehicles With: Standard Brakes

Removal and Installation


Removal



WARNING: BRAKE DUST, IF INHALED CAN DAMAGE YOUR HEALTH. ALWAYS REMOVE BRAKE DUST USING A VACUUM BRUSH. DO NOT USE A COMPRESSED-AIR LINE TO DISPERSE BRAKE DUST INTO THE ATMOSPHERE.

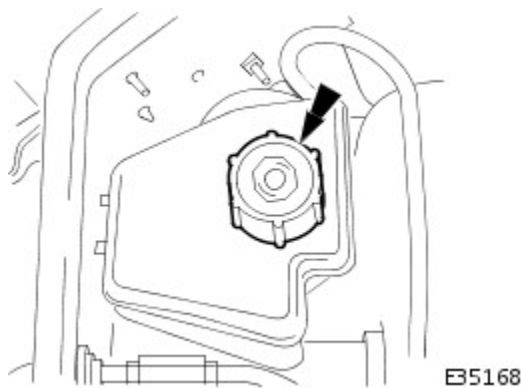



CAUTION: Replacement of nuts and bolts: Various thread-locking devices are used on nuts and bolts throughout the vehicle. These devices restrict the number of times a nut or bolt can be used. See section 100-00 for information.

1. Open engine compartment and fit paint work protection covers to fenders.
2. Raise rear of vehicle and support on stands. See Section 100-02.
3. Remove both rear wheels. See Section 204-04.
4.  **CAUTION:** Remove brake fluid spillage immediately from paint work, with clean water.

Loosen brake fluid reservoir-cap.

- Position a cloth around the reservoir to collect any fluid spillage.



5.  **CAUTION:** Tie caliper housing aside. Do not allow the caliper housing to hang on the hydraulic hose, as this will damage the hose.

Remove caliper housing from caliper carrier.

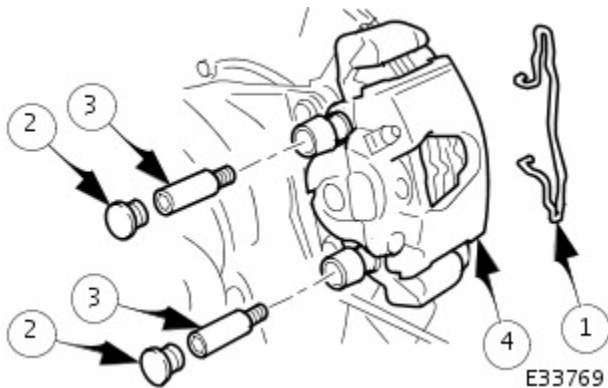
1. Remove anti-rattle spring.
2. Remove dust covers.
3. Remove guide pins.
4. Remove housing from carrier.

- Tie caliper housing aside.

6. **NOTE:** The inner brake pad is fitted with a clip which secures the pad into the caliper piston.

Remove brake pads from caliper housing.

- Discard brake pads.

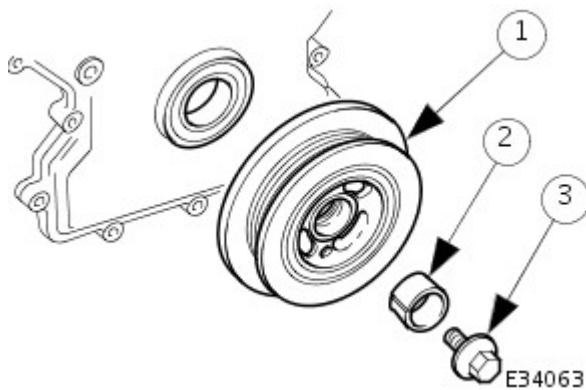


3. If the damper is not to be installed immediately, the transit ring should be installed temporarily to the seal.

4. Install a new O-ring seal to the damper.



E32839



E34063

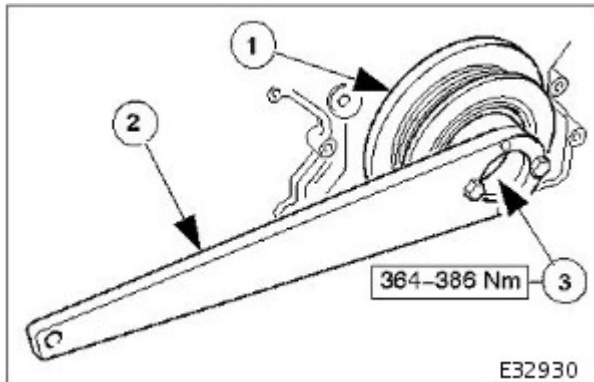
5. Install the crankshaft damper.

- Apply petroleum jelly to the damper bore and O-ring seal.

1. Install the damper onto the crankshaft.


2. Install the split locking ring onto the crankshaft, inside the centre bore of the damper.

3. Install, but do not tighten, a new damper securing bolt.



364-386 Nm

E32930

6.  **CAUTION:** Under no circumstances should the crankshaft setting peg 303-531 be used in the following operations, to lock the crankshaft.

Tighten the damper securing bolt.

1. Reposition the damper to allow access to the bolt holes for installing the locking tool.

2. Install the locking tool (303-01 and 303-01-02) to the damper using the bolts provided.

3. Fully tighten the damper securing bolt to 364-386 Nm.

7. Remove the locking tool from the damper.

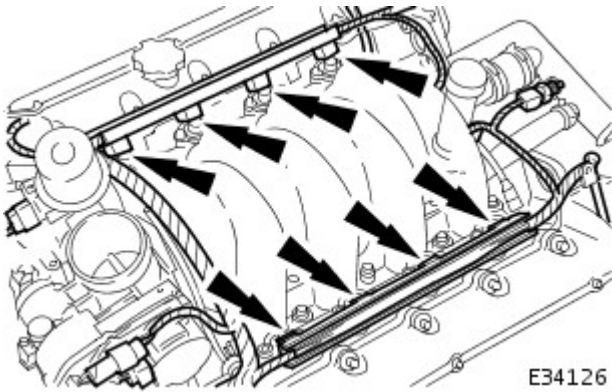
8. Install the drive belt to the front accessory drive. Refer to Section 303-05.

9. Install the twin fan and motor assembly. Refer to Section 303-03.

10. Install the plastic mesh cover to the torque converter housing; if removed for access to lock the crankshaft.

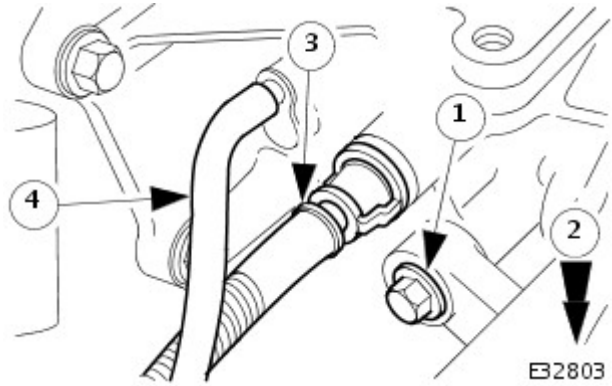
11. Reset the engine compartment cover to the normal position and connect the gas struts.

12. Remove the paintwork protection sheets and close the engine compartment.



E34126

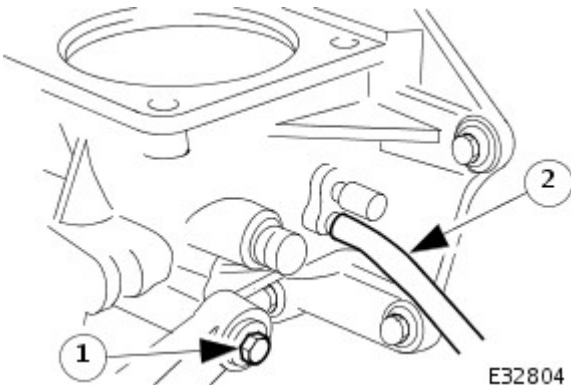
7. Refit the induction elbow support; working from the left hand side.



E32803

1. Fit the upper bolt to the induction elbow support bracket.
2. Tighten the lower two bolts at the induction elbow support bracket.
3. Connect the engine breather T-piece to the induction elbow.
4. Connect the vacuum pipe to the front of the induction elbow.

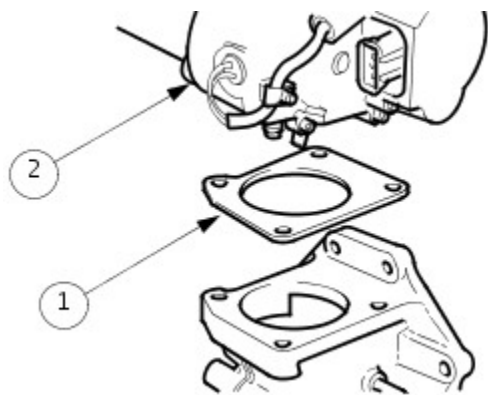
8. Fit the induction elbow support; working from the right hand side.



E32804

1. Fit the upper bolt to the induction elbow support bracket.
2. Reconnect the vacuum pipe to the centre of the induction elbow.

9. Fit the throttle body.



E34149

1. Fit a new gasket to the throttle body.
2. Position the throttle body to the induction elbow.

10. Fit the throttle body securing bolts.

Engine detonates/knocks	<ul style="list-style-type: none"> ● Fuel pump ● HO2 sensors ● Air leakage ● Blocked part-load breather (service action S474) ● Mass air flow (MAF) sensor 	<p>Check fuel pressure. REFER to Section 310-00 Fuel System - General Information.</p> <p>For HO2 sensor circuit tests, check for DTC indicating which sensor and follow indicated pinpoint test. For intake system information, REFER to Section 303-12 Intake Air Distribution and Filtering.</p> <p>Check service action S474. For MAF sensor circuit tests, REFER to Section 303-14 Electronic Engine Controls.</p>
No throttle response	<ul style="list-style-type: none"> ● Throttle sensors ● Throttle motor 	<p>For throttle position sensor and throttle motor relay tests, REFER to Section 303-14 Electronic Engine Controls.</p>
Poor throttle response	<ul style="list-style-type: none"> ● Throttle sensors ● Throttle motor ● Air leakage ● Mass air flow (MAF) sensor 	<p>For throttle position sensor and throttle motor relay tests, REFER to Section 303-14 Electronic Engine Controls.</p> <p>For intake system, REFER to Section 303-12 Intake Air Distribution and Filtering.</p> <p>For MAF sensor tests, REFER to Section 303-14 Electronic Engine Controls.</p>

Driver Information Chart



• NOTE: Use this table to identify DTCs associated with the message center display, then refer to the DTC index for possible sources and actions.

• NOTE: For definitions of Default Modes, see the foot of this table.


Warning light	Message	Default Mode	DTC
Red	Engine Failsafe Mode	Limp-Home	P1224
Red	Engine Failsafe Mode	Limp-Home	P1229
Red	Engine Failsafe Mode	Limp-Home	P0122, P0123,
Red	Engine Failsafe Mode	Limp-Home	P0222, P0223
Red	Engine Failsafe Mode	Limp-Home	P0121
Red	Engine Failsafe Mode	Limp-Home	P1122, P1123
Red	Engine Failsafe Mode	Limp-Home	P1222, P1223
Red	Engine Failsafe Mode	Limp-Home	P1121, P1632
Red	Engine Failsafe Mode	Limp-Home	P1251, P0560, P1658
Red	Engine Failsafe Mode	Limp-Home	P1631
Red	Engine Failsafe Mode	Limp-Home	P1611
Red	Engine Failsafe Mode	Limp-Home	P1633
Red	Engine Failsafe Mode	Limp-Home	P1609
Red	Engine Failsafe Mode	Limp-Home	P0506, P0507
Red	Engine Failsafe	Limp-Home	P1656

Intake Air Distribution and Filtering - Throttle Body Elbow 4.0L NA V8 - AJ27/3.2L NA V8 - AJ26

Removal and Installation

Special Tool(s)	
 E36393	Release tool - quick fit 310-044 (JD 182)
 E36394	Release tool 5/16 - quick fit 310-054 (JD 203)

Removal

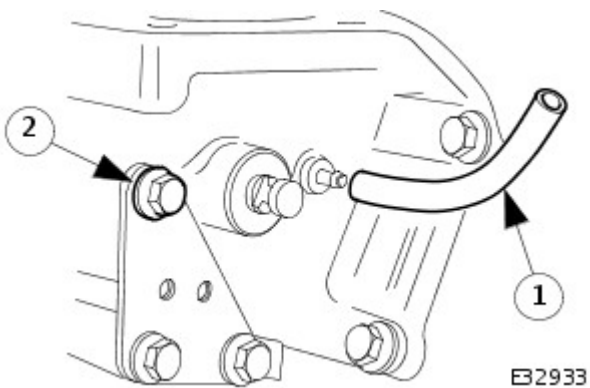
-  **WARNING:** BEFORE PROCEEDING, IT IS ESSENTIAL THAT THE WARNING NOTES GIVEN IN SECTION 100-00 (UNDER THE HEADING 'SAFETY PRECAUTIONS') ARE READ AND UNDERSTOOD.

Disconnect battery ground cable (IMPORTANT, see SRO 86.15.19 for further information).

- Depressurize fuel system; refer to 19.50.02
- Remove air cleaner cover / intake assembly; refer to 19.10.30.
- Remove throttle body; refer to 19.70.04.
- Release intake elbow from right-hand support bracket.

- Release brake servo vacuum pipe and disconnect pipe.

- Disconnect vacuum pipe.
- Remove bolt.



- Release intake elbow from left-hand support bracket.

- Disconnect vacuum pipe.
- Disconnect engine breather T-piece.
- Remove bolt.
- Loosen, but do not remove two bolts.

1



E32154

Is underhood fuse F1 OK?

Yes

GO to K3

No

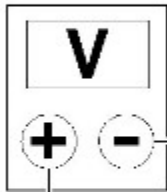
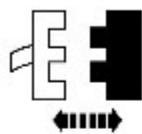
Renew the fuse (10A) and test the system for normal operation

K3: CHECK SWITCHED POWER SUPPLY

1



2



E32115

1 With EM007 disconnected measure the voltage between EM007/054 and ground EM008R

2 Repeat for EM007/055 and ground EM008R

B+?

Yes

Cycle the ignition ON - (OFF for 2 minutes) - ON, start the engine and run >1600 rpm, if the fault re-logs contact Jaguar Service

No

No re-log?

GO to K5

No

GO to K4

K4: CHECK HARNESS CONTINUITY - SWITCHED POWER SUPPLY

Operation

- NOTE: The rotary position switch is NOT adjustable.

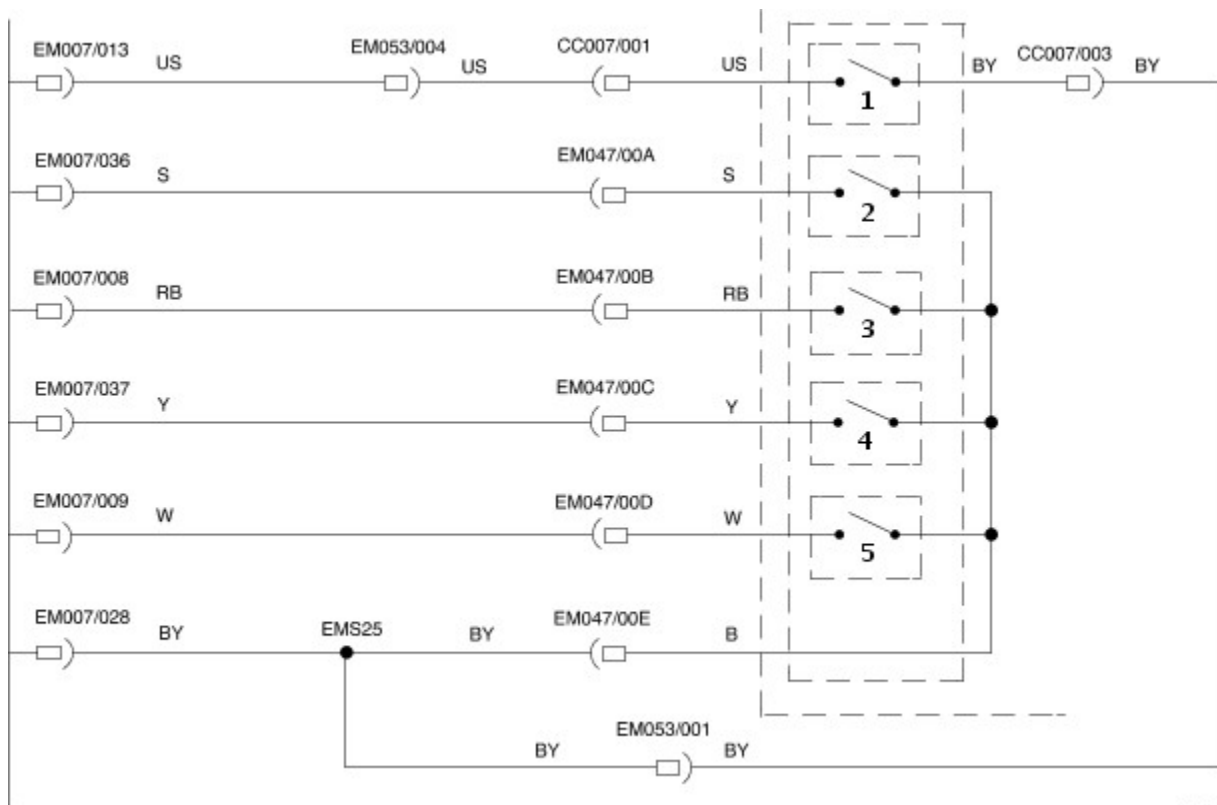
The position of the gear selector lever is detected by the range sensor; a system which consists of two sensors (switch systems).

1. The rotary position switch, which is located on the RH side of the transmission case and is coaxial with the selector shaft.
2. The D to 4 (micro) switch, which is mounted in the 'J gate' assembly.

When the selector is moved across the gate to engage 4, or back from that side towards D the selector cable does not move. In order that this change of state be registered by the TCM the D to 4 switch is incorporated.

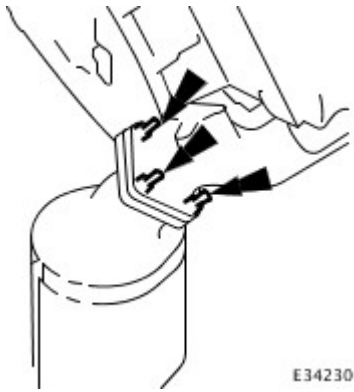
The rotary switch in isolation provides a 4-bit code, which, when added to the D to 4 switch becomes a 5-bit code. The TCM will make a failure judgement if it detects an 'illegal' code.

Circuit Diagram, Rotary and Drive to 4th Switches / TCM



E34214

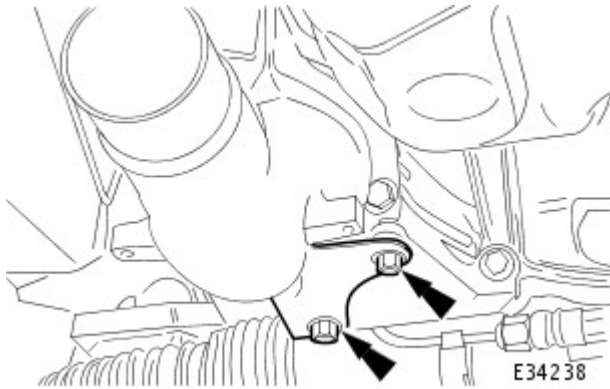
Item	Description
1	Drive to 4th switch
2	Switch L1
3	Switch L2
4	Switch L3
5	Switch L4



7. Raise the vehicle on a ramp.

8. Remove the downpipe catalytic converter.

- Remove the bolts which secure the downpipe lower mounting bracket.
- Remove the downpipe assembly.



9. Remove gasket from the manifold flange.

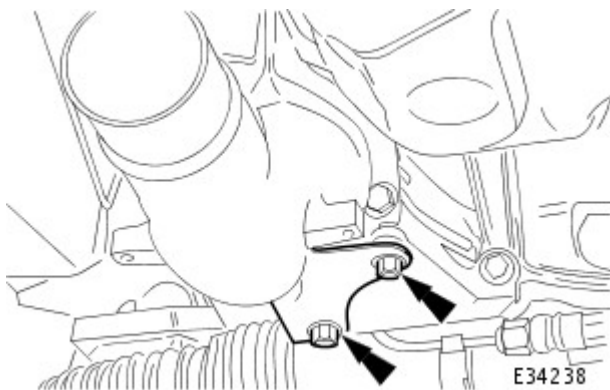
- Clean and inspect the manifold joint faces.
- Clean and inspect the threads on the downpipe studs.

Installation

1. Fit a new gasket to the manifold mating flange on the downpipe.

2. Fit the downpipe catalytic converter.

- Fit the downpipe assembly to the manifold
- Fit, but do not fully tighten, the mounting bracket securing bolts. (Leave loose until the nuts securing the downpipe to the exhaust manifold are fitted.)



3. Lower the ramp.

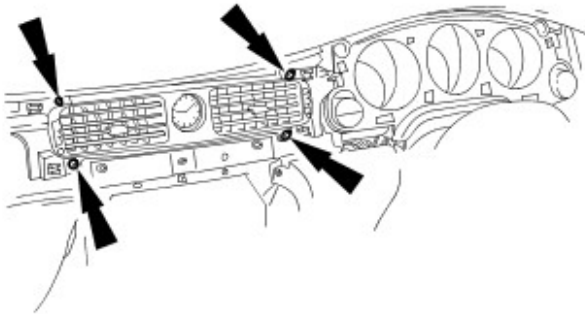
4. Tighten the nuts securing the downpipe flange to the manifold flange.

Air Distribution and Filtering - Center Registers

Removal and Installation

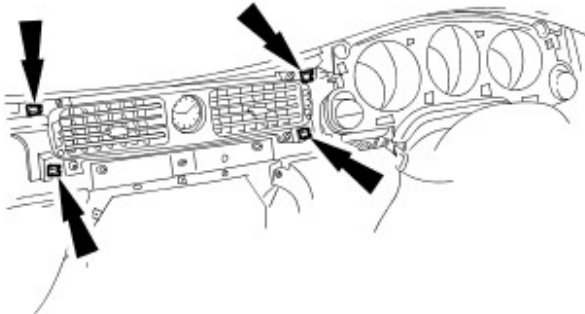
Removal

1. Remove battery cover and disconnect ground cable from battery terminal. Refer to 86.15.19.
2. Remove passenger airbag deployment door for access. Refer to Section 501-20.
3. Remove major gauge module veneer panel for access. Refer to 76.47.24.
4. Carefully withdraw fascia centre veneer panel.
5. Slacken and remove four screws securing centre vent assembly to fascia.



E36341

6. Withdraw centre vent assembly for access, disconnect clock harness multiplug, release clock retaining tangs and remove clock from vent assembly.
7. Remove and discard the four veneer panel to fascia securing clips.



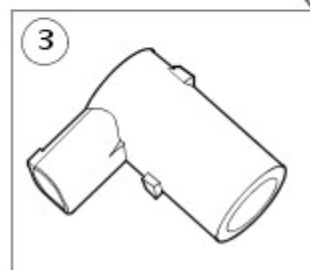
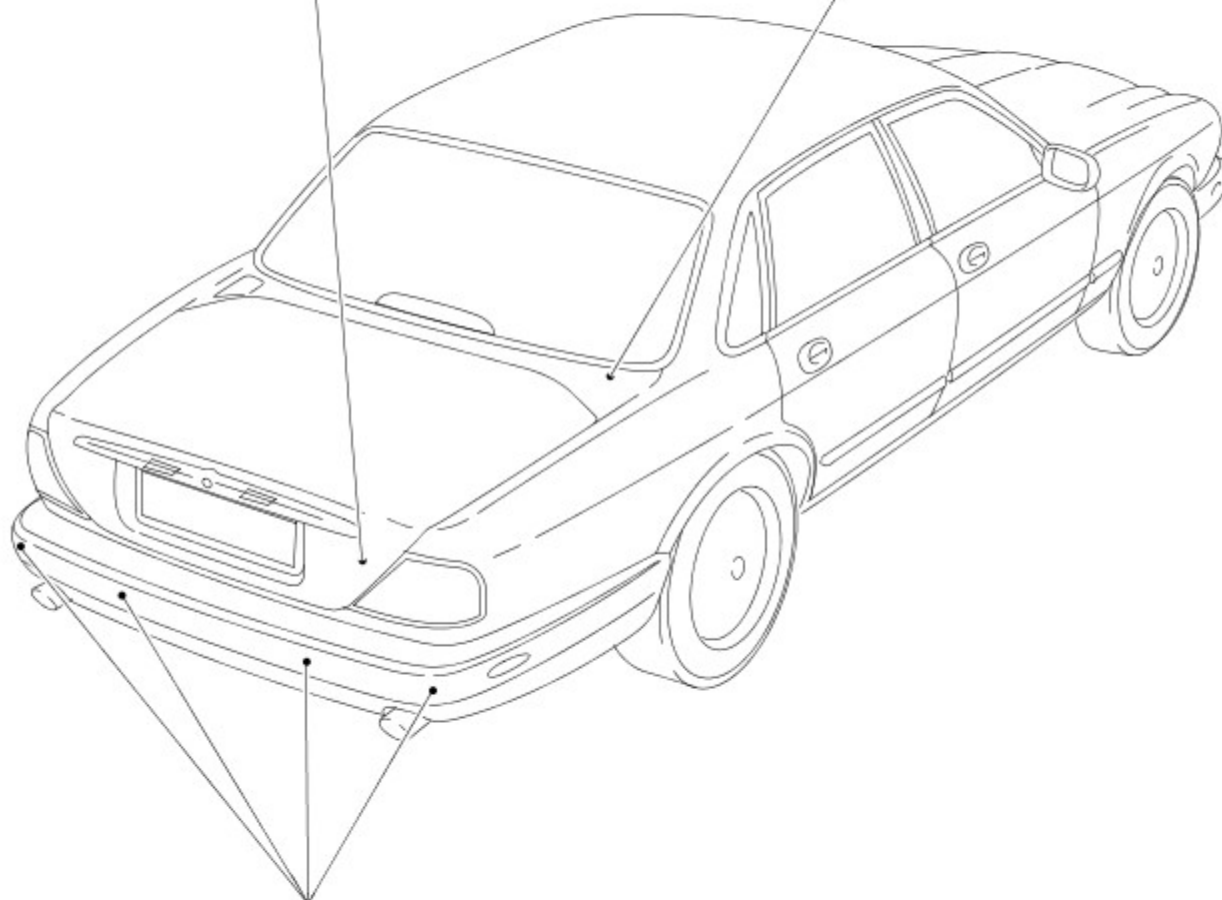
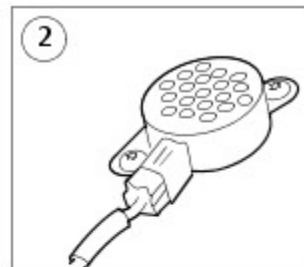
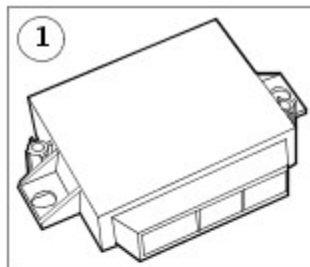
E36342

Installation

1. Fit and fully seat new veneer panel retaining clips to fascia.
2. Fit clock to centre vent assembly, ensuring retaining tangs are fully seated.
3. Position centre vent assembly at fascia and connect clock harness multiplug.
4. Fully seat vent assembly in fascia and fit and tighten securing screws.
5. Fit and fully seat centre veneer panel.
6. Fit major gauge module veneer panel. Refer to 76.47.24.
7. Fit passenger airbag deployment door. Refer to Section 501-20.
8. Connect ground cable to battery terminal and fit battery cover. Refer to 86.15.15.

Parking Aid - Parking Aid

Description and Operation



Body Closures - Luggage Compartment Lid Hinge

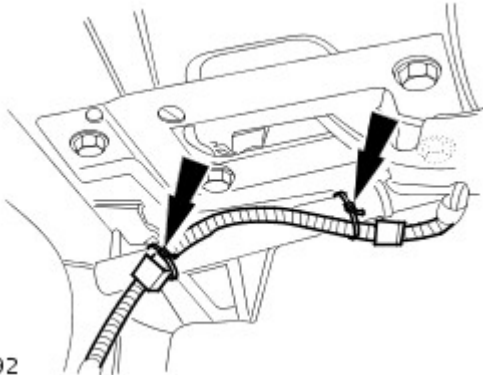
Removal and Installation

Removal

1.  **CAUTION:** Before slackening hinge securing bolts, ensure that trunk lid is sufficiently supported to prevent paintwork damage .

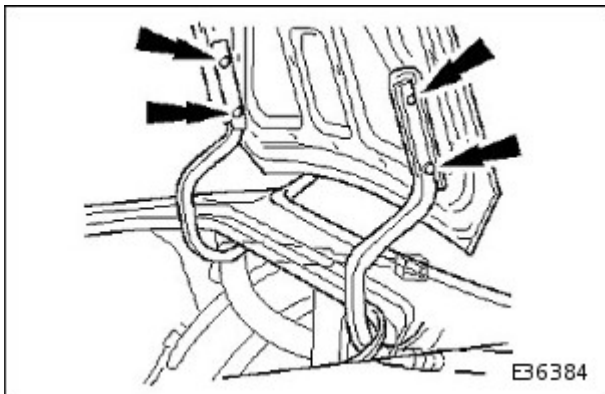
Remove hinge cover.

2. Sever and discard tie straps securing harness to hinge (RH hinge only) and position harness clear of hinge.

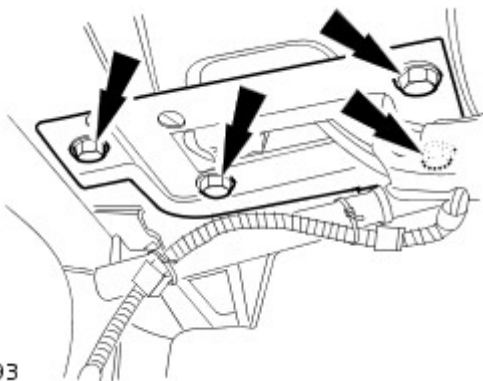


3. Disconnect gas strut rod end from from hinge pivot. Refer to 76.19.27.

4. Slacken and remove bolts securing hinge to trunk lid.



5. Slacken and remove bolts securing hinge to underside of BIW saddle panel.



6. Remove hinge from vehicle.

Installation

1. Fit and tighten bolts securing hinge to BIW saddle panel.
2. Fit but do not tighten bolts securing hing to trunk lid.

Handles, Locks, Latches and Entry Systems - Exterior Driver Door Handle

Removal and Installation

Removal

1. Motor door glass to fully up position.
2. Remove battery cover and disconnect ground cable from battery terminal. Refer to 86.15.19.
3. Remove door casing veneer panel. Refer to 76.47.11.
4. Remove door casing for access. Refer to 76.34.01.
5. Feeding electrical harness through water shedder, carefully peel shedder from door and place adhesive face down on a clean dry polythene sheet.



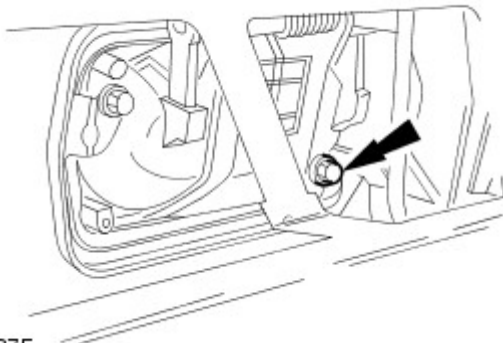
E36273

6. Position PVC inner sheet for access.
7. Disconnect outer handle link rod from lock assembly.



E36274

8. Slacken and remove outer handle rear securing bolt.



E36275

9. Slacken and remove security guard lower securing bolt and remove guard from door.