

General Information - General Service Information

Description and Operation

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 make sure 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.

Vehicle Specifications

Purchasers are advised that the specification details set out in this manual apply to a range of vehicles and not to any specific one. For the specification of a particular vehicle, purchasers should consult their dealer.

The Manufacturer reserves the right to vary the specifications, with or without notice, and at such times and in such manner as the Manufacturer thinks fit. Major as well as minor changes may be involved, in accordance with the Manufacturer's policy of continuous improvement.

Whilst every effort is made to make sure the accuracy of the particulars contained in this manual, neither the Manufacturer nor the Dealer, by whom the manual is supplied, shall in any circumstances be held liable for any inaccuracy or the consequences thereof.

Service Repair Operation Numbering

A master index of numbered operations has been compiled for universal application to all vehicles manufactured by Jaguar Cars Ltd.

Each operation is allocated a number from the master index and cross-refers with an identical number in the Repair Operation Times schedule. The number consists of six digits arranged in three pairs.

Each maintenance procedure in this manual is described in the sequence necessary to complete the operation in the minimum time, as specified in the Repair Operation Times schedule.

References to Bank-1 and Bank-2


References to Bank-1 and Bank-2 are made with regard to the engine. When viewed from the flywheel the right-hand bank will be Bank-1 and the left-hand bank will be Bank-2.

Special Tools

Any special tools and equipment required to perform a maintenance procedure, are shown at the beginning of each procedure. When possible, illustrations are given to assist in identifying the tool needed.

Disconnecting/Connecting the Battery

Always stop the engine before disconnecting the battery negative lead and make sure the battery positive lead is isolated i.e. wrapped in a suitable cloth.

 **WARNING:** Radio code saving devices must not be used when conducting work on Air Bag or Fuel systems. It must be noted that, when using these devices, the vehicle electrical system is still live albeit with a reduced current flow.

• **NOTE:** Before disconnecting the battery make sure that the radio receiver/cassette player/mini disc player and compact disc player keycodes are known and, that no data is required from the engine control module (ECM) as battery disconnection will erase any fault codes and idle/drive values held in the Keep Alive Memory (KAM). It is not necessary to disconnect or remove electronic control modules.

Always disconnect the battery before commencing repair operations which require:

- The vehicle to be jacked up
- Work on the engine
- Work underneath the vehicle
- Arc welding

Alternatively a Radio Code Saver may be used. With the battery disconnected, a Radio Code Saver will allow sufficient current to pass to maintain the radio receiver/cassette player/mini disc player and compact disc player memory, operate the clock and supply the door operated interior lights while isolating the battery in the event of a short circuit.

Reconnecting the Battery

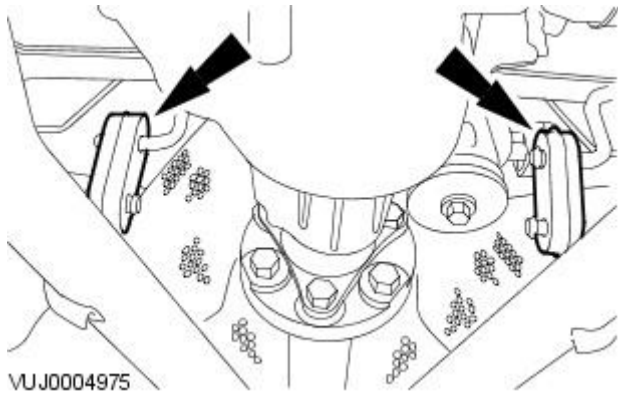
 **WARNING:** If the battery has been on bench charge the cells may be giving off explosive hydrogen gas. Avoid creating sparks, and if in doubt cover the vent plugs or covers with a damp cloth.

Always make sure that all electrical systems are switched OFF before reconnecting the battery to avoid causing sparks or damage to sensitive electrical equipment.

Always reconnect the battery positive lead first and the negative last, ensuring that there is a good electrical contact and the battery terminals are secure.

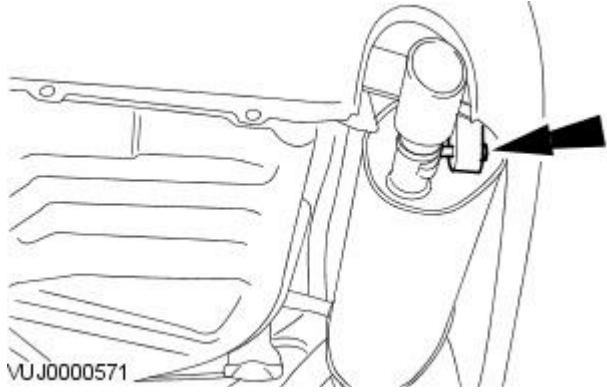
Restart the clock (where fitted) and set it to the correct time.

9. Attach the intermediate muffler exhaust hanger insulators.



10. NOTE: Right-hand shown, Left-hand similar.

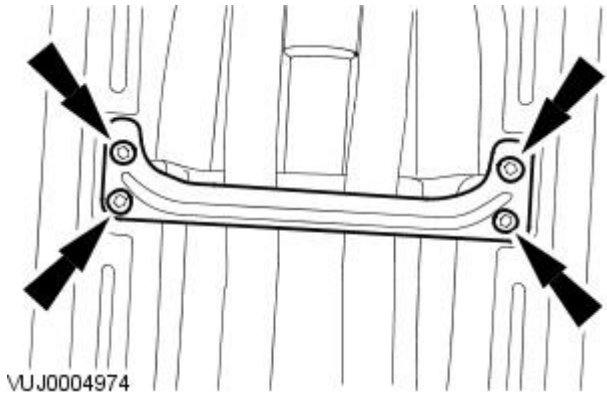
Attach the rear muffler and tailpipe exhaust hanger insulator.



All vehicles

11. Install the support bracket.

- Tighten to 9 Nm.

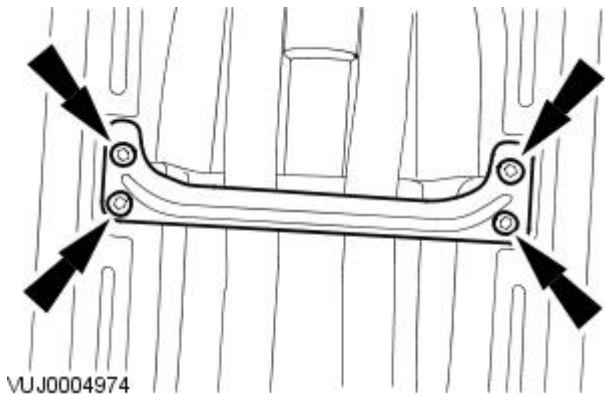


Driveshaft - Driveshaft

Removal and Installation

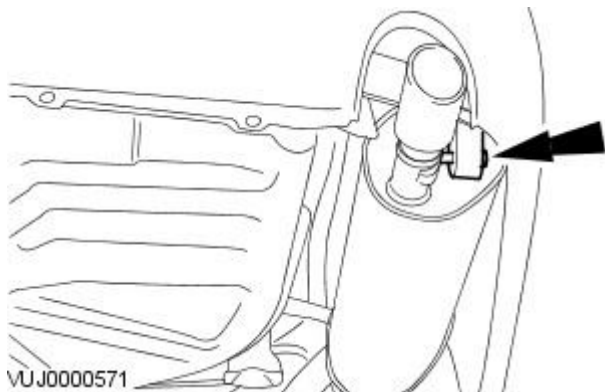
Removal

1. Raise and support the vehicle.
For additional information, refer to Section [100-02 Jacking and Lifting](#).
2. Remove the support bracket.



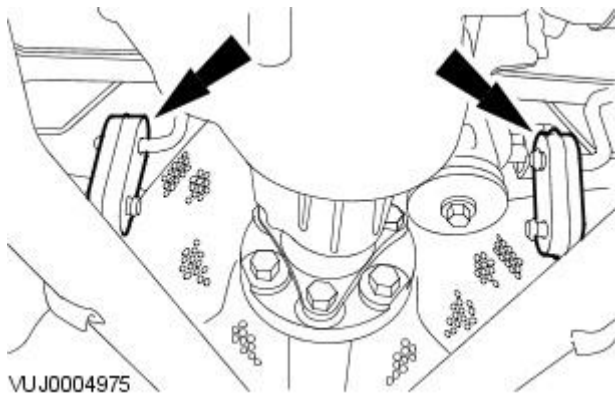
3. **NOTE:** Right-hand shown, Left-hand similar.

Detach the rear muffler and tailpipe exhaust hanger insulator.



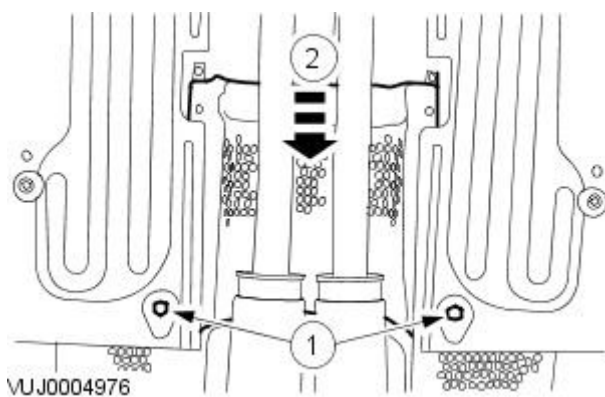
4.  **CAUTION:** Using a suitable transmission jack, support the intermediate muffler.

Detach the intermediate muffler exhaust hanger insulators.

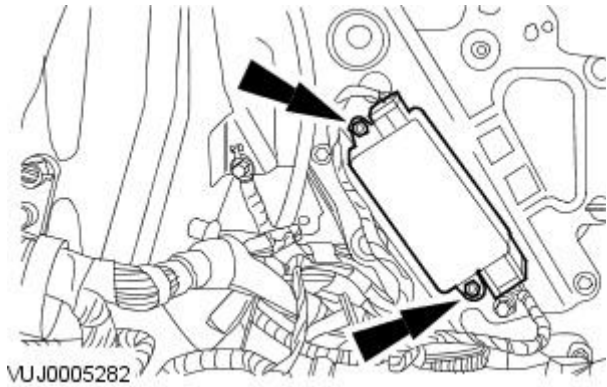


5. Remove the driveshaft heat shield.

1. Remove the retaining bolts.
2. Remove the driveshaft heat shield.

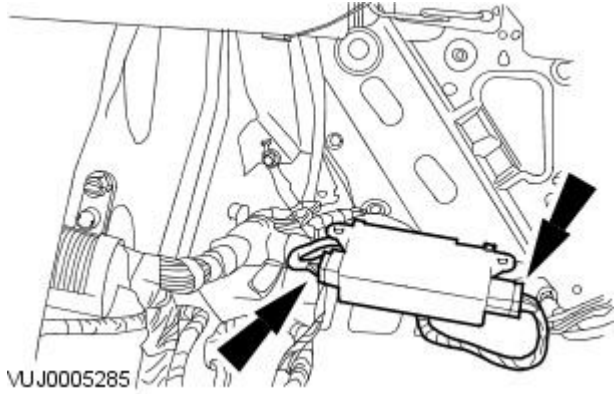


5. Detach the parking brake module.



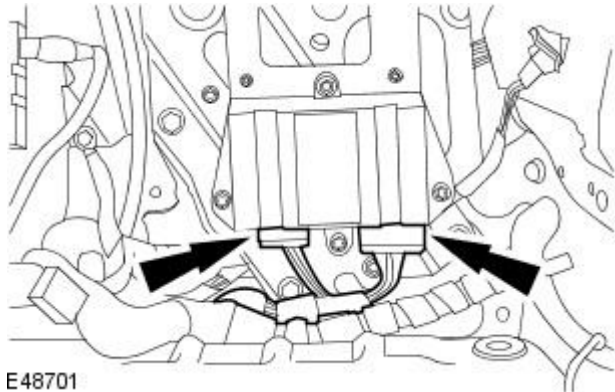
6. Remove the parking brake module.

- Disconnect the parking brake module electrical connectors.



Vehicles built from VIN: N13089

7. Disconnect the parking brake module electrical connectors.



8. Remove the parking brake module.



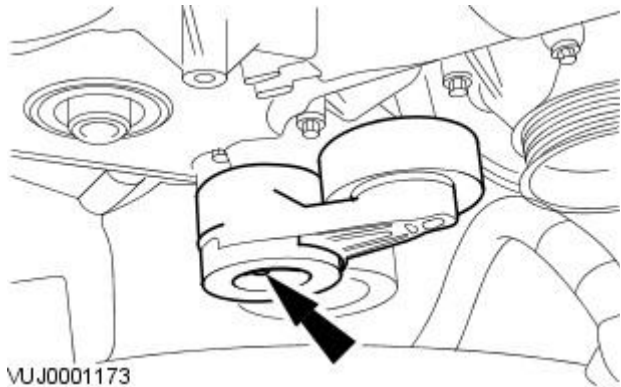
Installation

- NOTE: If a new parking brake module is installed it must be configured using the Jaguar approved diagnostic system.

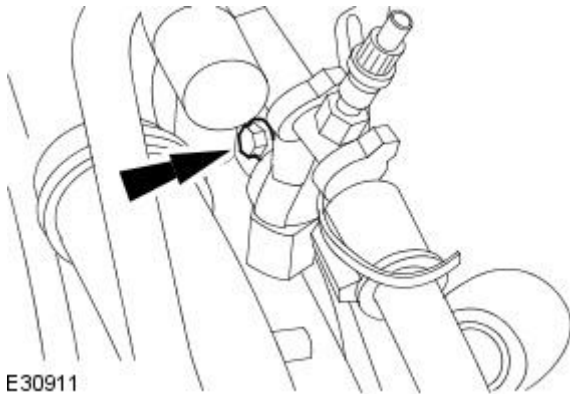
1. To install, reverse the removal procedure.

13. Install the accessory drive belt tensioner.

- Tighten to 45 Nm.

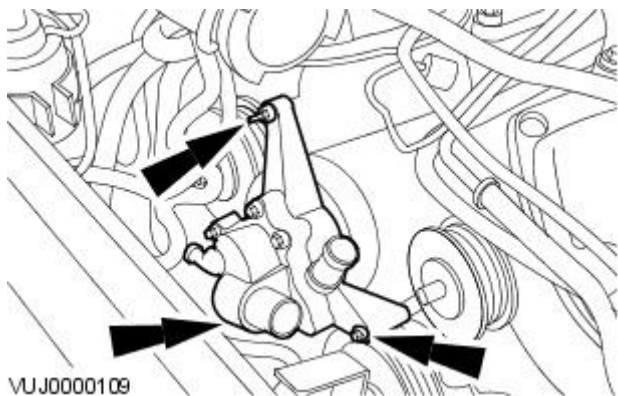


14. Attach the fuel supply manifold retaining bolt.

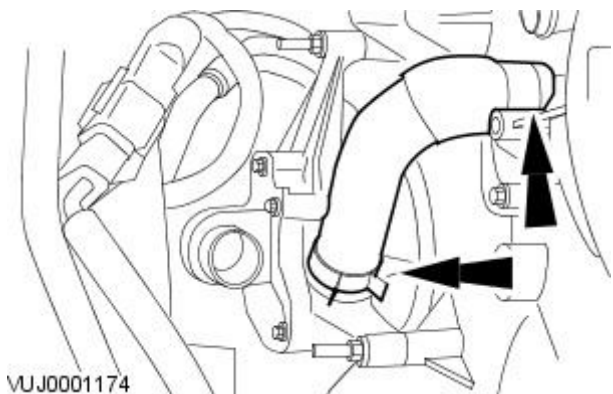


15. Install the water pump.

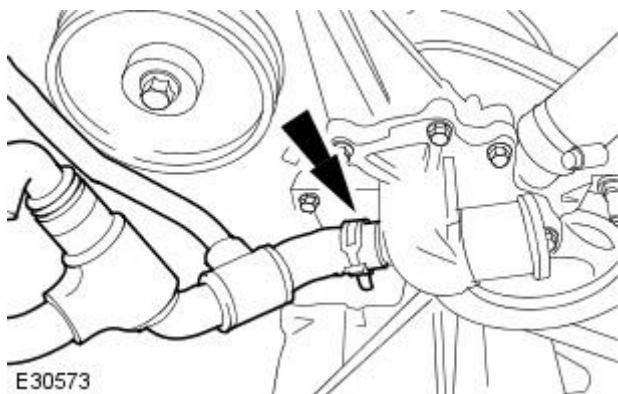
- Tighten to 25 Nm.



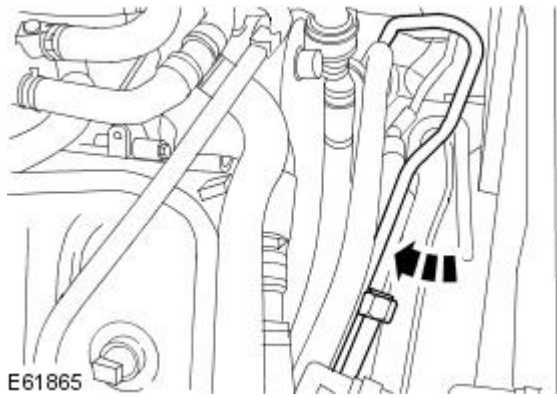
16. Install the coolant hose.



17. Attach the coolant hose.

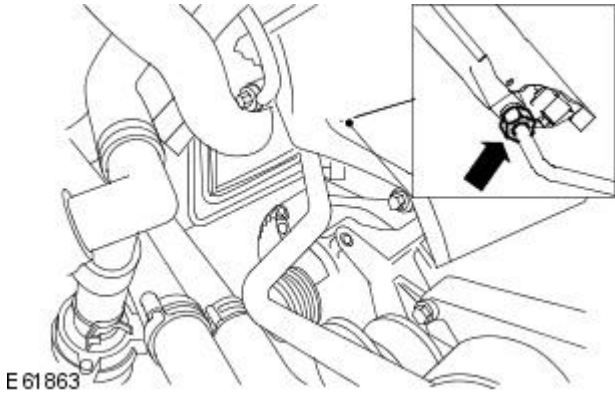


6. Install the AIR control valve to exhaust manifold tube.



7. Connect the AIR control valve to exhaust manifold tube.

- Tighten to 35 Nm.

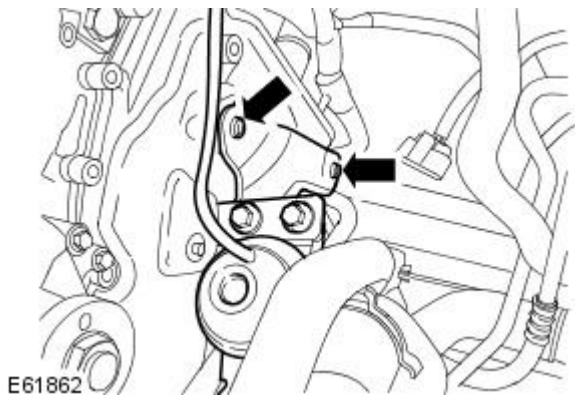


All vehicles

8. NOTE: Vehicles with supercharger shown, vehicles without supercharger similar.

Reposition the AIR control valve and bracket assembly.

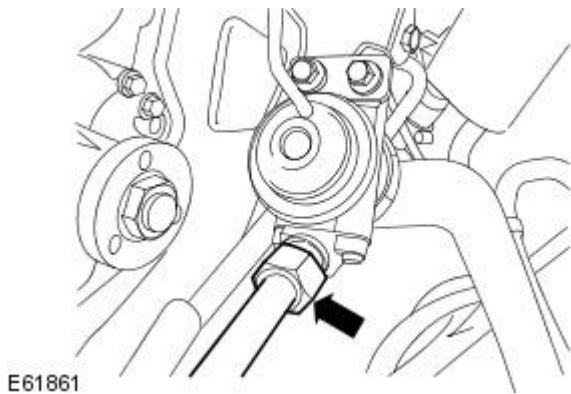
- Tighten to 8 Nm.



9. NOTE: Vehicles with supercharger shown, vehicles without supercharger similar.

Connect the AIR control valve to exhaust manifold tube.

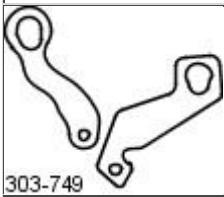

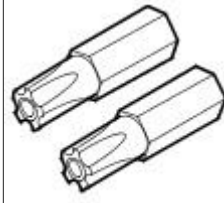
- Tighten to 35 Nm.



Vehicles with supercharger

Engine - V8 4.2L Petrol/V8 S/C 4.2L Petrol - Engine

Removal

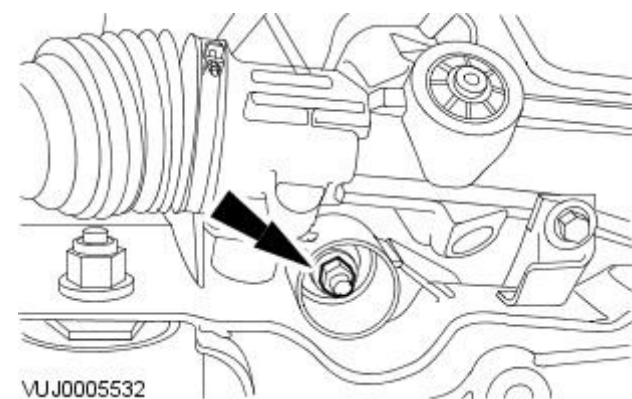
Special Tool(s)	
 303-749	Engine lifting brackets 303-749
 303-536	Engine lifting brackets 303-536
 418-535	5 point security torx bit 418-535

Removal

All Vehicles

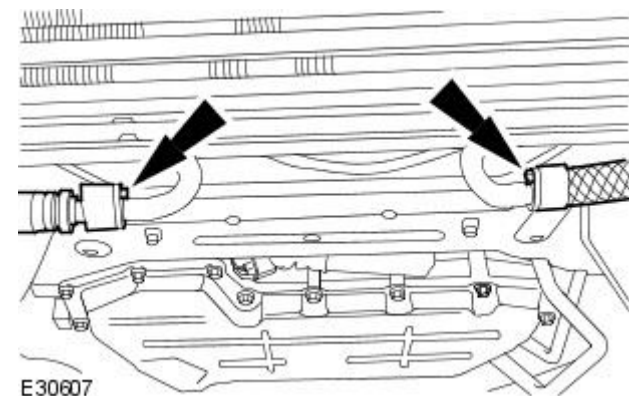
1. Reclaim the air conditioning refrigerant
For additional information, refer to Section [412-00 Climate Control System - General Information](#).
2. Remove the automatic transmission
For additional information, refer to Section [307-01 Automatic Transmission/Transaxle](#).
3. **NOTE:** Left hand shown, right hand similar.

Remove the engine mount retaining nuts.

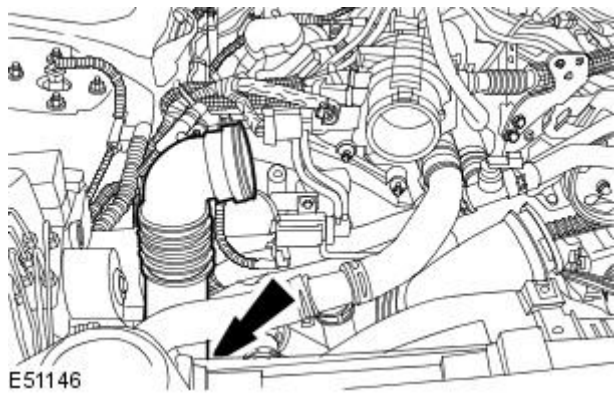


Vehicles with supercharger

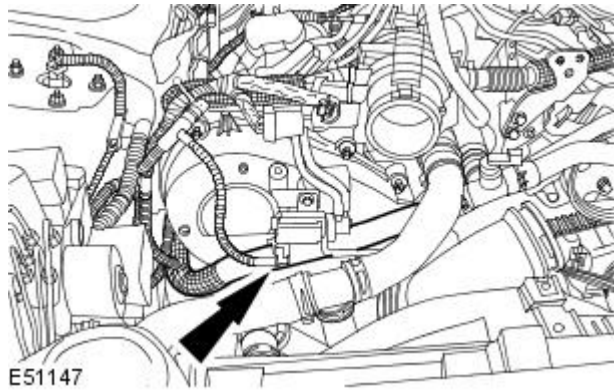
4. Detach the oil cooler lines.
 - Remove and discard the oil cooler O rings



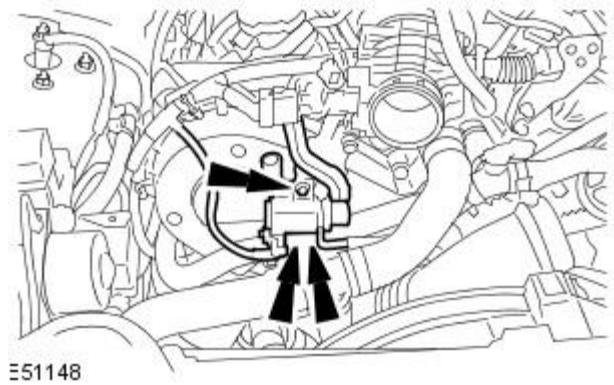
17. Remove the charge air cooler hose.



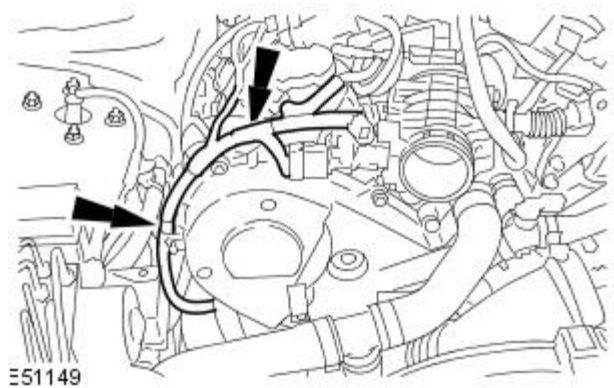
18. Detach the coolant hose.



19. Detach the port deactivation valve retaining bracket.

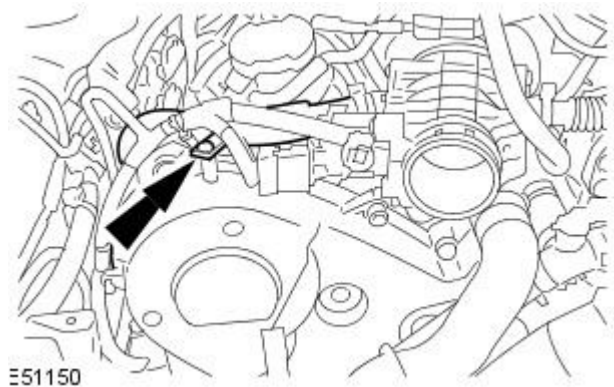


20. Detach the air temperature sensor wiring harness.



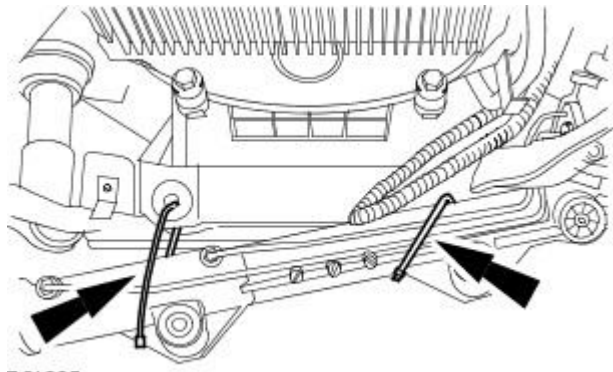
21. Detach the EGR valve tube.

- Remove the retaining bolt.



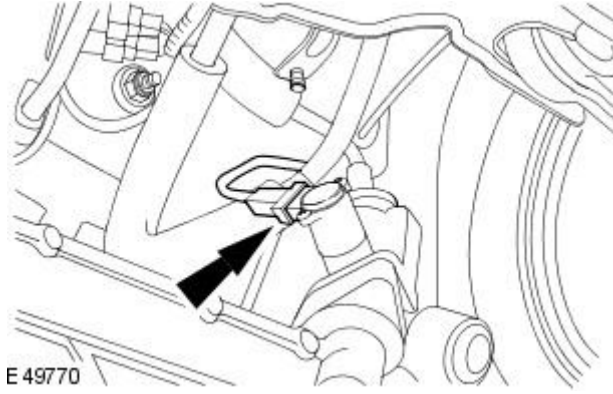
Symptom	Possible source	Action
Difficult to start hot	<ul style="list-style-type: none"> ● Injector leak ● Engine fuel temperature (EFT) sensor ● Intake air temperature (IAT) sensor ● Mass air flow (MAF) sensor ● Purge valve ● Fuel pump ● Ignition system ● EGR valve stuck open 	<p>Testing).</p> <p>For purge valve tests, REFER to: Evaporative Emissions - VIN Range: N52048->N99999 (303-13 Evaporative Emissions, Diagnosis and Testing).</p> <p>For fuel injector information, REFER to: Fuel Injectors (303-04B Fuel Charging and Controls - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Removal and Installation).</p> <p>For EFT, IAT and MAF sensor tests, REFER to: Electronic Engine Controls - VIN Range: N80181->R99999 (303-14B Electronic Engine Controls - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For purge valve tests, REFER to: Evaporative Emissions - VIN Range: N52048->N99999 (303-13 Evaporative Emissions, Diagnosis and Testing).</p> <p>Check the fuel pressure, REFER to: Fuel Tank and Lines - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, VIN Range: N80181->R99999 (310-01 Fuel Tank and Lines, Diagnosis and Testing).</p> <p>For ignition system tests, REFER to: Engine Ignition - VIN Range: N52048->N99999 (303-07B Engine Ignition - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For EGR system information, REFER to: Engine Emission Control - VIN Range: N80181->R99999 (303-08A Engine Emission Control - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, Diagnosis and Testing).</p>
Difficult to start after hot soak (vehicle standing after engine has reached operating temperature)	<ul style="list-style-type: none"> ● Injector leak ● EFT sensor ● IAT sensor ● MAF sensor ● Purge valve ● Fuel pump ● Ignition system ● EGR valve stuck open 	<p>For fuel injector information, REFER to: Fuel Injectors (303-04B Fuel Charging and Controls - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Removal and Installation).</p> <p>For EFT, IAT and MAF sensor tests, REFER to: Electronic Engine Controls - VIN Range: N80181->R99999 (303-14B Electronic Engine Controls - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For purge valve tests, REFER to: Evaporative Emissions - VIN Range: N52048->N99999 (303-13 Evaporative Emissions, Diagnosis and Testing).</p> <p>Check the fuel pressure, REFER to: Fuel Tank and Lines - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, VIN Range: N80181->R99999 (310-01 Fuel Tank and Lines, Diagnosis and Testing).</p> <p>For ignition system tests, REFER to: Engine Ignition - VIN Range: N52048->N99999 (303-07B Engine Ignition - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For EGR system information, REFER to: Engine Emission Control - VIN Range: N80181->R99999 (303-08A Engine Emission Control - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, Diagnosis and Testing).</p>
Engine stalls soon after start	<ul style="list-style-type: none"> ● Breather system disconnected/restricted ● ECM relay ● Harness ● MAF sensor ● Ignition system ● Air filter restricted ● Fuel lines ● Fuel rail pressure (FRP) sensor ● Air leakage 	<p>For breather system information, REFER to: Engine Emission Control - VIN Range: N80181->R99999 (303-08A Engine Emission Control - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, Diagnosis and Testing).</p> <p>For ECM relay and MAF sensor tests, REFER to: Electronic Engine Controls - VIN Range: N80181->R99999 (303-14B Electronic Engine Controls - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For ignition system tests, REFER to: Engine Ignition - VIN Range: N52048->N99999 (303-07B Engine Ignition - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For air filter information, REFER to: Intake Air Distribution and Filtering - VIN Range: N52048->N99999 (303-12B Intake Air Distribution and Filtering - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For fuel line information, REFER to: Fuel Tank and Lines - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, VIN Range: N80181->R99999 (310-01 Fuel Tank and Lines, Diagnosis and Testing).</p> <p>For FRP sensor tests, REFER to: Electronic Engine Controls - VIN Range: N80181->R99999 (303-14B Electronic Engine Controls - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p> <p>For intake system information, REFER to: Intake Air Distribution and Filtering - VIN Range: N52048->N99999 (303-12B Intake Air Distribution and Filtering - V8 4.2L Petrol/V8 S/C 4.2L Petrol, Diagnosis and Testing).</p>
Engine hesitates/poor acceleration	<ul style="list-style-type: none"> ● Fuel pump ● Injector leak ● Fuel pressure ● Fuel lines ● Air leakage ● Throttle position (TP) sensors 	<p>Check the fuel pressure, check the fuel lines, REFER to: Fuel Tank and Lines - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, VIN Range: N80181->R99999 (310-01 Fuel Tank and Lines, Diagnosis and Testing).</p> <p>For intake system,</p>

6. Secure the steering gear.



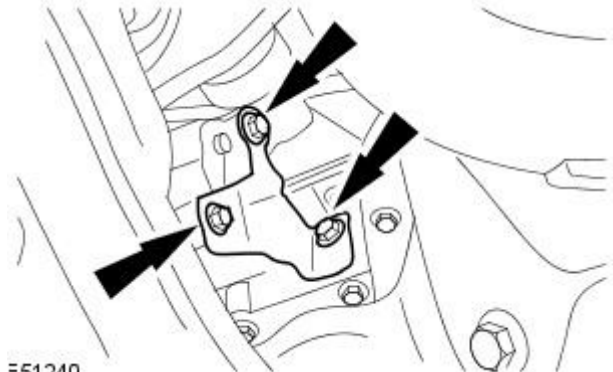
E 31035

7. Disconnect the power steering control valve actuator electrical connector.



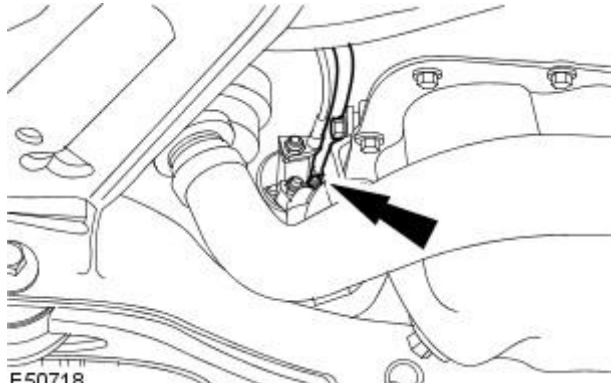
E 49770

8. Remove the starter motor retaining bracket.



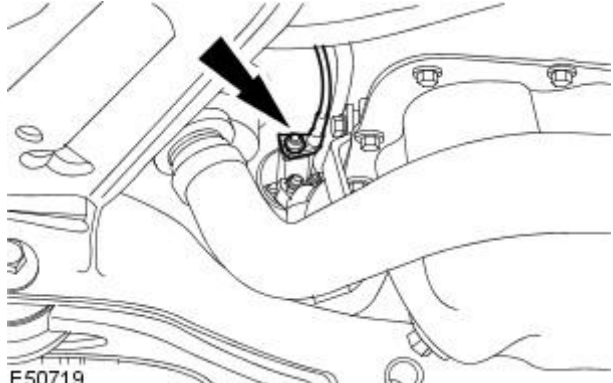
E 51240

9. Detach the starter motor solenoid harness.

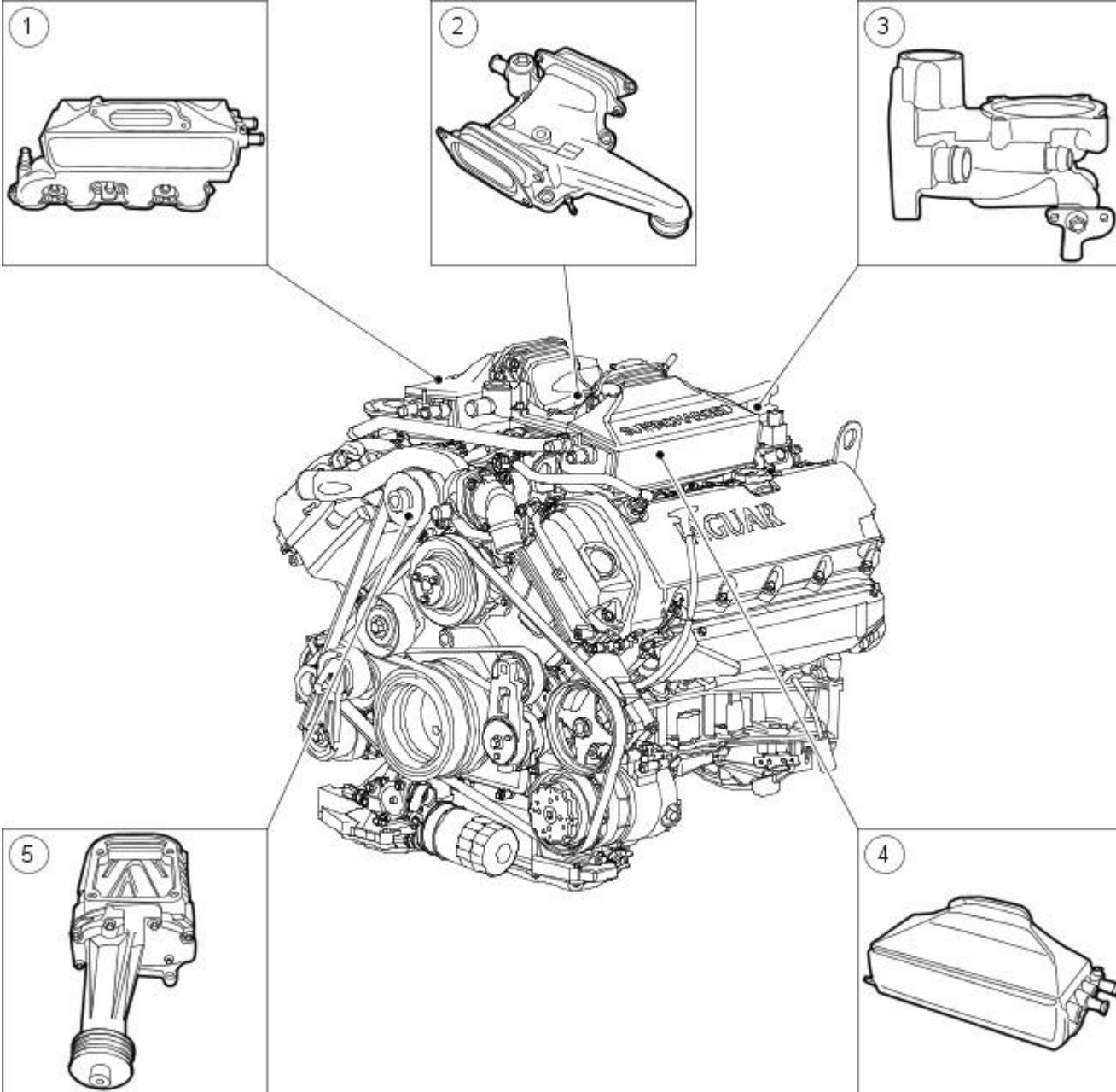


E 50718

10. Detach the starter motor cable.



E 50719



E30233

Item	Part Number	Description
1	—	Charge air cooler
2	—	Supercharger outlet pipe
3	—	Throttle body elbow
4	—	Charge air cooler
5	—	Supercharger

Intake air distribution and filtering for vehicles with supercharger

Air is supplied to the supercharger via the air cleaner, air cleaner outlet pipe, throttle body intake pipe, throttle body and throttle body elbow. The supercharger delivers pressurized air to two separate charge air cooler units, each unit being mounted on the cylinder bank it supplies. Pressurized cooled air is fed from the charge air coolers directly into each inlet port. The air cleaner outlet pipe differs from the normally aspirated by having tuned resonators to reduce inlet noise levels. An intake air temperature sensor is fitted at the outlet of the bank 1 charge air cooler. The sensor provides an input to the engine control module (ECM). For additional information, refer to Section [303-14A Electronic Engine Controls](#) / [303-14B Electronic Engine Controls](#) / [303-14C Electronic Engine Controls](#). The intake elbow directs the metered airflow from the throttle body outlet (underside of the throttle body) into the intake of the supercharger. The supercharger by-pass valve assembly is part of the intake elbow. The butterfly valve inside the assembly is opened by a diaphragm actuator operated by vacuum feed from the elbow. At closed or partially open throttle positions, the butterfly valve opens, allowing the airflow from the two charge air cooler inlets to be directed back to the supercharger inlet. This action inhibits the supercharging effect and reduces engine torque. Progressive opening of the throttle causes the by-pass valve to gradually close.

Supercharger

The supercharger is attached to the three mounting bosses between the two cylinder heads. The supercharger has a filled for life internal lubrication system. The supercharger is positively aligned with the drive belt by a doweled mounting bracket

Charge Air Cooler

Each cylinder bank is fitted with a charge air cooler which supplies pressurized air to the four cylinders. The inlet ports to the two charge air coolers are connected to the supercharger via the supercharger outlet pipe consisting of adjustable metal ducts with bonded rubber seals. The charge air coolers are water cooled via a radiator and water pump. For additional information, refer to Section [303-03A Engine Cooling](#) / [303-03B Supercharger Cooling](#) / [303-03C Engine Cooling](#).

1	Measure the resistance between:		
	Catalyst monitor connector PI13, harness side		Battery
	Pin 04		Positive terminal

Is the resistance less than 10,000 ohms?
Yes
 REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC and test the system for normal operation.
No
[GO to L3.](#)

L3: CHECK THE CATALYST MONITOR SENSOR SENSING CIRCUIT FOR HIGH RESISTANCE

1	Disconnect the ECM electrical connector, PI300.		
2	Measure the resistance between:		
	Catalyst monitor connector PI13, harness side		ECM connector PI300, harness side
	Pin 04		Pin 41


Is the resistance greater than 5 ohms?
Yes
 REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC and test the system for normal operation.
No
[GO to L4.](#)

L4: CHECK THE CATALYST MONITOR SENSOR GROUND CIRCUIT FOR HIGH RESISTANCE

1	Measure the resistance between:		
	Catalyst monitor connector PI13, harness side		ECM connector PI300, harness side
	Pin 03		Pin 45

Is the resistance greater than 5 ohms?
Yes
 REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC and test the system for normal operation.
No
 INSTALL a new catalyst monitor sensor.
 REFER to: Catalyst Monitor Sensor (303-14A Electronic Engine Controls - 2.5L/3.0L, Removal and Installation).
 CLEAR the DTC and test the system for normal operation.

PINPOINT TEST M : LEFT-HAND CATALYST MONITOR SENSOR SUPPLY AND HEATER CONTROL CIRCUITS

 **CAUTION:** Under no circumstances must the sensor wiring be cut to facilitate removal, should this prove necessary.
 • **NOTE:** Carry out a visual inspection of the HO2S connectors (integrity of connections may be affected by heat from catalytic converters)

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
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M1: CHECK THE CATALYST MONITOR HEATER POWER SUPPLY CIRCUIT

1	Disconnect the catalyst monitor sensor electrical connector, PI13.		
2	Key on, engine off.		
3	Make sure the O2S heater relay is energized.		
4	Measure the voltage between:		
	Catalyst monitor connector PI13, harness side		Battery
	Pin 01		Negative terminal

Is the voltage greater than 10 volts?
Yes
[GO to M2.](#)
No
 REPAIR the power supply circuit to the catalyst monitor heater. This circuit includes the O2S heater relay and fuse 35 of the front power distribution box. For additional information, refer to the wiring diagrams. CLEAR the DTC and test the system for normal operation.

M2: CHECK THE CATALYST MONITOR HEATER CONTROL CIRCUIT FOR SHORT CIRCUIT TO GROUND

1	Key off.		
2	Measure the resistance between:		
	Catalyst monitor connector PI13, harness side		Battery
	Pin 02		Negative terminal

Is the resistance less than 10,000 ohms?
Yes
 REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC and test the system for normal operation.
No
[GO to M3.](#)

M3: CHECK THE CATALYST MONITOR HEATER CONTROL CIRCUIT FOR SHORT CIRCUIT TO POWER

1	Measure the resistance between:		
	Catalyst monitor connector PI13, harness side		Battery
	Pin 02		Positive terminal

Is the resistance less than 10,000 ohms?
Yes
 REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC and test the system for normal operation.
No
[GO to M4.](#)

M4: CHECK THE CATALYST MONITOR SENSOR HEATER CONTROL CIRCUIT FOR HIGH RESISTANCE

1	Disconnect the ECM electrical connector, PI300.		
2	Measure the resistance between:		
	Catalyst monitor connector PI13, harness side		ECM connector PI300, harness side
	Pin 02		Pin 89

Is the resistance greater than 5 ohms?
Yes
 REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC and test the system for normal operation.
No
 INSTALL a new catalyst monitor sensor.

Electronic Engine Controls - V8 4.2L Petrol/V8 S/C 4.2L Petrol - Manifold Absolute Pressure (MAP) Sensor

Removal and Installation

Removal

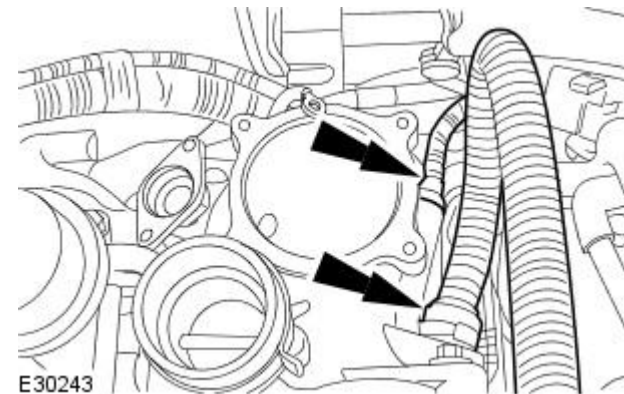
Vehicles without supercharger

1. Remove the intake manifold. For additional information, refer to: (303-01B Engine - V8 4.2L Petrol/V8 S/C 4.2L Petrol)

[Intake Manifold - VIN Range: M45255->N52047](#) (In-vehicle Repair),
[Intake Manifold - VIN Range: N52048->N99999](#) (In-vehicle Repair).

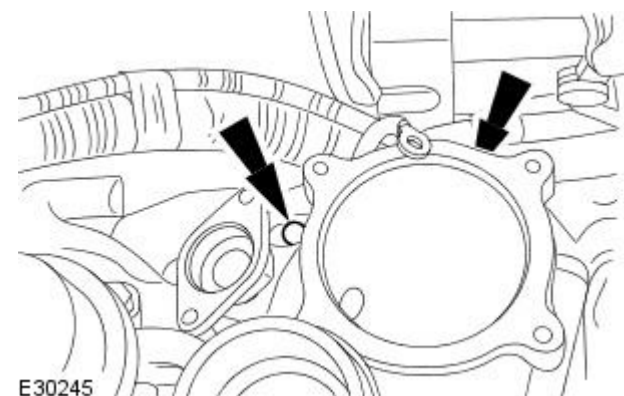
Vehicles with supercharger

2. Remove the exhaust gas recirculation (EGR) valve.
 For additional information, refer to: [Exhaust Gas Recirculation \(EGR\) Valve](#) (303-08A Engine Emission Control - V8 4.2L Petrol/V8 S/C 4.2L Petrol/2.5L NA V6 - AJV6/3.0L NA V6 - AJ27, Removal and Installation).
3. Disconnect the air intake elbow pipes.



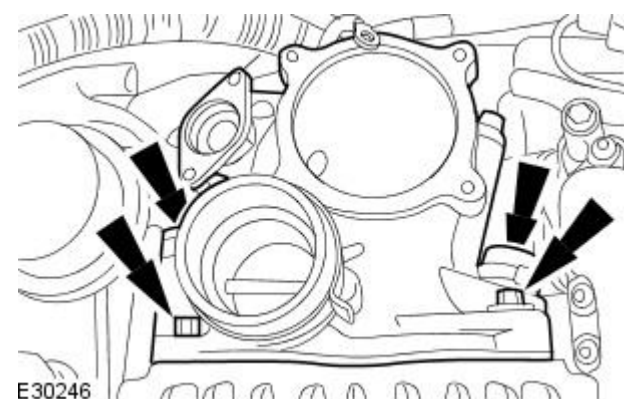
4. NOTE: Make sure that the correct location of the ground strap is noted.

Remove the air intake elbow retaining bracket lower retaining bolts.

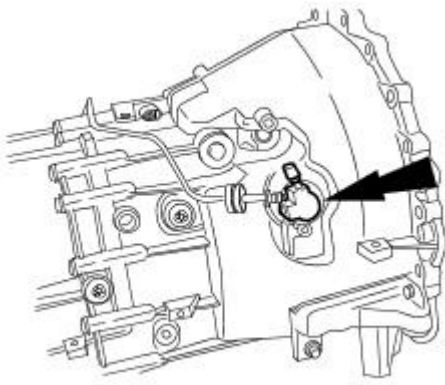


5. Detach the air intake elbow.

- Remove and discard the gasket.
- Remove and discard the retaining bolt seals.

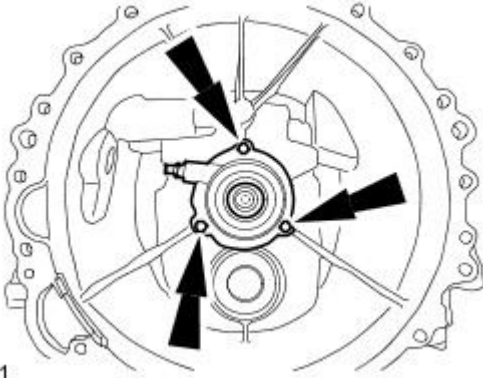


6. Remove the hydraulic restricter.



E50700

7. Remove the clutch slave cylinder.



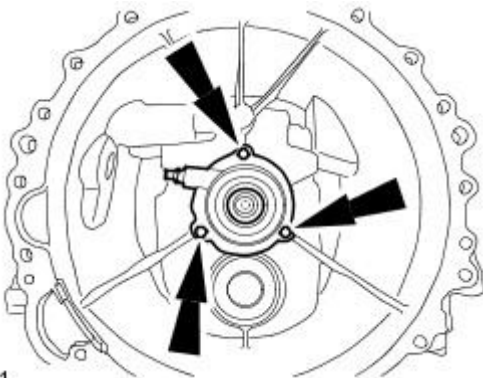
E50701

Installation

• NOTE: Apply suitable tape to the input shaft to protect the slave cylinder seal from damage. Remove the tape when the slave cylinder is installed.

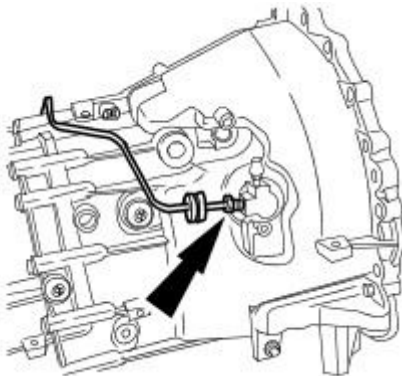
1. To install, reverse the removal procedure.

- Tighten to 9 Nm.



E50701

2. Tighten to 24 Nm.



E50698

3. Install the transmission.

For additional information, refer to: [Transmission](#) (308-03B Manual Transmission/Transaxle - Vehicles With: S6-53 6-Speed Manual Transmission, Installation).

operation.

B3: CHECK THE HORN SWITCH OPERATION BEFORE THE CLOCKSPRING

1	Remove the driver airbag assembly.	
2	Disconnect the horn switch connector, SQ5.	
3	Connect an ohmmeter between:	
	SQ5, component side	SQ5, component side
Pin 01		Pin 02
4	Operate the horn switch and monitor the meter reading.	
	<ul style="list-style-type: none"> Check the switch at all four corners of the horn push pad 	

Does the resistance switch to less than 10 ohms when the horn switch is operated?
Yes
[GO to B5.](#)
No
[GO to B4.](#)

B4: CHECK THE HARNESS BETWEEN THE HORN SWITCH AND THE CLOCKSPRING FOR HIGH RESISTANCE

1	Remove the steering wheel.	
2	Disconnect the clockspring connector, SQ2.	
3	Measure the resistance between:	
	SQ5, harness side	SQ2, harness side
Pin 02		Pin 05
Pin 01		Pin 04

Is the resistance less than 10 ohms?
Yes
[GO to B5.](#)
No
 REPAIR the high resistance circuit. For additional information, refer to the electrical guides. Test for normal operation.

B5: CHECK THE CLOCKSPRING FOR HIGH RESISTANCE

1	Measure the resistance between:	
	SQ2, component side	FC117, component side
Pin 04		Pin 06
Pin 05		Pin 07

Is the resistance less than 10 ohms?
Yes
 CHECK for DTCs indicating an instrument cluster, front electronic module or SCP network fault. For horn circuit and relay tests. GO to Pinpoint Test [A](#).
No
 INSTALL a new clockspring.
 REFER to: [Clockspring](#) (501-20B Supplemental Restraint System, Removal and Installation).
 Test for normal operation.

PINPOINT TEST C : HORN CIRCUIT AND RELAY (HORN SOUNDING CONTINUOUSLY)

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
-----------------	-------------------------

C1: CHECK FOR SHORT CIRCUIT TO POWER IN THE HORN ASSEMBLY CIRCUIT

1	Remove the horn relay (relay 12, front power distribution fuse box).
Does the horn stop?	
Yes	GO to C2.
No	REPAIR the short circuit to power in the circuit between the front power distribution fuse box and the horn. For additional information, refer to the electrical guides. Refit the relay, test for normal operation.

C2: CHECK FOR SHORT CIRCUIT TO GROUND IN THE FEM TO FPDB CIRCUIT

1	Disconnect the FEM connector, FH59.	
2	Measure the resistance between:	
	FH59, harness side	Battery
Pin 08		Negative terminal
Is the resistance greater than 100 Kohms?		
Yes	GO to C3.	
No	REPAIR the short circuit. For additional information, refer to the electrical guides. Test for normal operation.	

C3: CHECK FOR SHORT CIRCUIT TO GROUND IN THE HORN SWITCH TO INSTRUMENT CLUSTER CIRCUIT

1	Disconnect the instrument cluster connector, FC8.	
2	Without pressing the horn switch, measure the resistance between:	
	FC8, harness side	Battery
Pin 09		Negative terminal
Is the resistance greater than 100 Kohms?		
Yes	CHECK for DTCs indicating an instrument cluster, front electronic module or SCP network fault.	
No	GO to C4.	

C4: CHECK THE HORN SWITCH OPERATION AFTER THE CLOCKSPRING

1	Disconnect the battery negative terminal.	
2	Disconnect the clockspring connector, FC117.	
3	Connect an ohmmeter between:	
	FC117, component side	FC117, component side
Pin 06		Pin 07
4	Operate the horn switch and monitor the meter reading.	
	<ul style="list-style-type: none"> Check the switch at all four corners of the horn push pad 	