



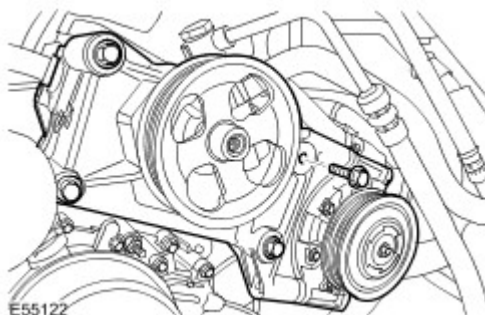
Engine Front Cover (12.65.01)

Removal

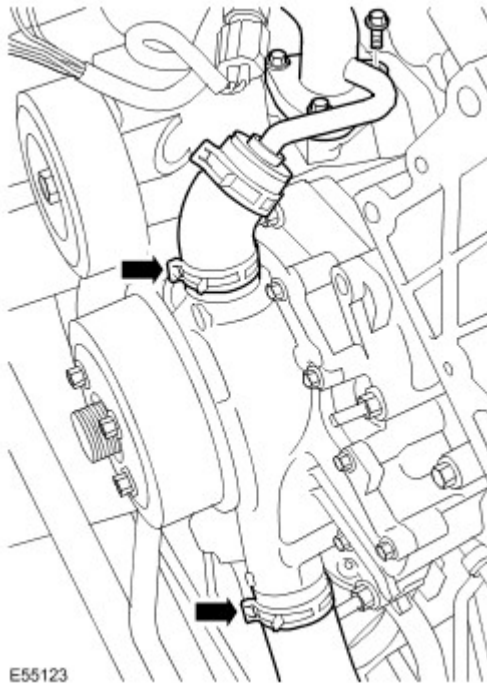
1. Disconnect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
2. Drain the cooling system. For additional information, refer to [Cooling System Draining, Filling and Bleeding \(26.10.01\)](#) (Section 303-03)
3. Remove the intake manifold. For additional information, refer to [Intake Manifold \(30.15.02\)](#) (Section 303-01)
4. Remove the crankshaft pulley. For additional information, refer to [Crankshaft Pulley \(12.21.01\)](#) (Section 303-01)
5. Remove the cooling fan lower shroud.
 - Release 2 clips from the cooling fan lower shroud.
 - Release and remove the cooling fan lower shroud from the cooling pack.



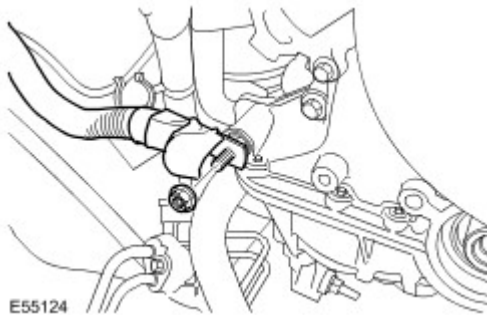
6. Position the A/C compressor mounting bracket assembly aside.
 - Remove the 4 bolts.
 - Tie aside.



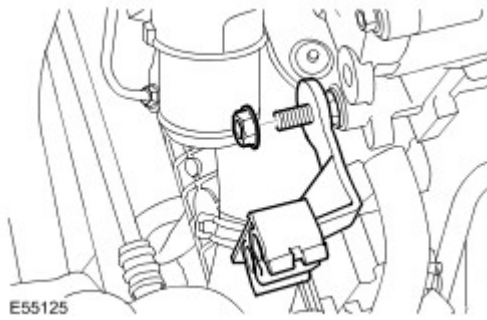
- 7 . Disconnect the 2 hoses from the coolant pump.
- Release the cylinder head coolant flange, to aid coolant hose removal.
 - Remove the 3 bolts.
 - Position the coolant hoses aside for access.



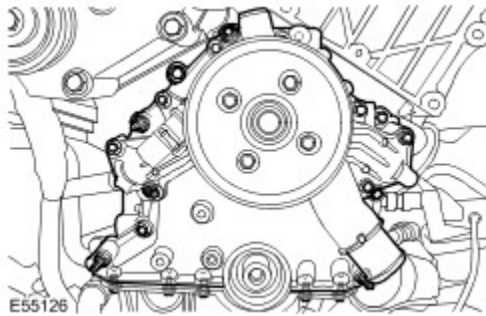
- 8 . Disconnect the engine ground cable.
- Remove the nut.



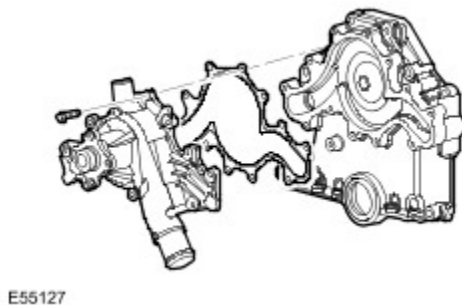
- 9 . Release the transmission line support bracket.
- Remove the nut.
 - Position aside.



- 10 . Remove the engine front cover.
- Remove the 5 studs.
 - Remove the 4 bolts.
 - Remove the 5 cylinder cradle bolts.
 - Remove and discard the gasket.



- 11 . **NOTE :**
Do not disassemble further if the component is removed for access only.
Remove the coolant pump.
- Remove the 12 bolts.
 - Remove and discard the gasket.



Installation

- 1 . Install the coolant pump.
- Clean the component mating faces.
 - Install the new gasket.

- ▶ Tighten the bolts to 10 Nm (7 lb.ft).

2 .



CAUTION: Care must be taken when removing sealant from gasket faces, prevent damage to the mating faces.

NOTE :

The component must be installed within 20 minutes of the sealant application.

NOTE :

Make sure the cylinder block cradle gasket is located correctly around the front oil seal.

Install the engine front cover.

- ▶ Clean the component mating faces.
- ▶ Spirit wipe the gasket mating faces.
- ▶ Install a new gasket.
- ▶ Apply sealant to the 4 places shown.

3 .

NOTE :

Tighten the bolts in two stages.

Install the engine front cover bolts.

- ▶ Evenly and progressively tighten the bolts and studs to 8 Nm (6 lb.ft).
- ▶ Tighten the M6 bolts to 10 Nm (7 lb.ft).
- ▶ Tighten the M8 bolts and studs to 20 Nm (15 lb.ft).

4 .

Install the transmission support bracket.

- ▶ Tighten the nut to 20 Nm (15 lb.ft).

5 .

NOTE :

Care must be taken when installing the ground connections. The engine will fail to start on either or both banks if the ground is poor.

Connect the engine ground cable, make sure the mating faces are clean.

- ▶ Tighten the nut to 20 Nm (15 lb.ft).

6 .

Install the A/C compressor mounting bracket assembly.

- ▶ Release the cable tie.
- ▶ Tighten the bolts to 45 Nm (33 lb.ft).

7 .

Install the crankshaft pulley. For additional information, refer to [Crankshaft Pulley \(12.21.01\)](#) (Section 303-01)

8 .

Install the cooling fan shroud.

9 .

Install the intake manifold. For additional information, refer to [Intake Manifold \(30.15.02\)](#) (Section 303-01)

10 .

Refill and bleed the cooling system. For additional information, refer to [Cooling System Draining](#).

[Filling and Bleeding \(26.10.01\)](#) (Section 303-03)

- 11 . Connect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)