

General

Applies to 9 and 13 litre engines with XPI, PDE or GAS and cylinder block generation 2.

Tools

Examples of suitable tools from Scania:

Part number	Designation
98 094	Lifting chain
99 318	Engine support
99 470	Adapter
587 308	Ratchet lever hoist
99 637	Lifting eye

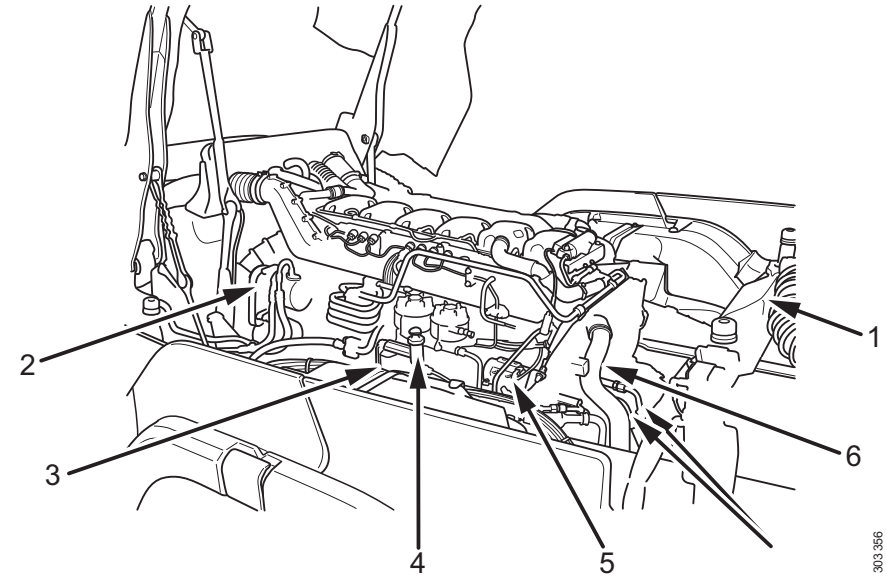
Work description

Preparatory work

1. Connect SDP3 to the vehicle and unlock the engine control unit. The function is accessed by selecting COO/EMS/LAS in the menu bar. Select Immobiliser.
2. Depressurize the fuel system using SDP3.
3. Depressurise the pneumatic system.
4. Remove the battery cover and detach the ground connection from the negative terminal.
5. Drain the coolant.
6. Tilt the cab.
7. Remove the catwalk.

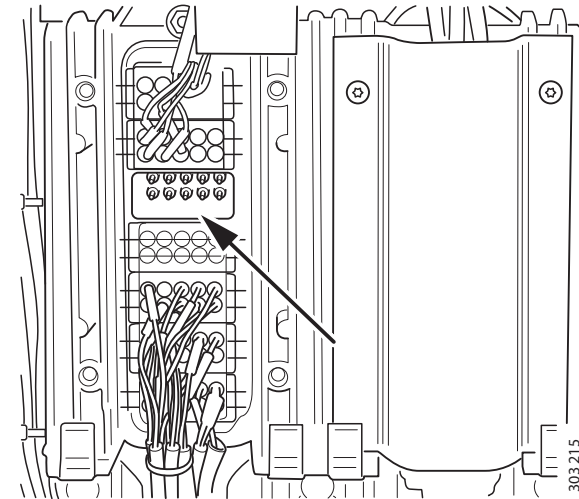
From the left-hand side of the engine

1. Remove the beam between the rear cab attachments.
2. Undo the AC compressor and remove it. Disconnect the AC compressor connector.

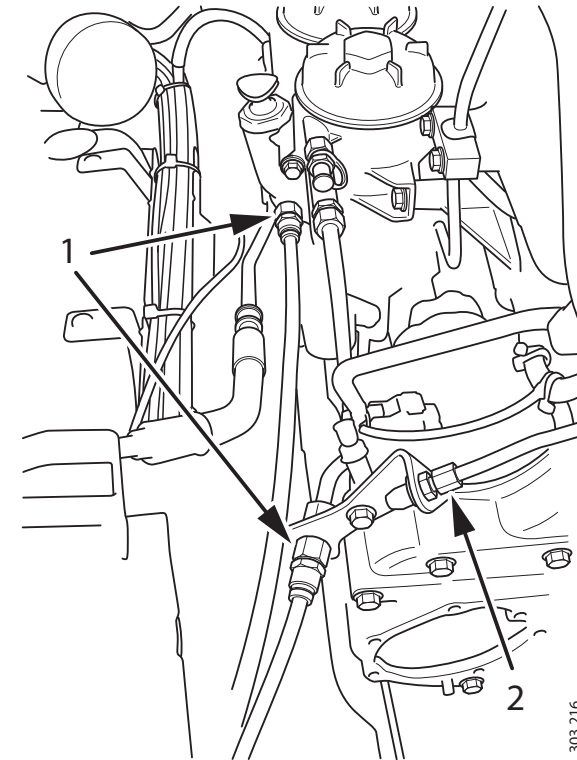


1. *Beam between rear cab attachments*
2. *AC compressor*
3. *Control unit*
4. *Hand pump*
5. *High pressure pump*
6. *Upper coolant hose to retarder*
7. *Oil pipe*

3. Remove the left-hand cover from the control unit. Disconnect the third connector from above.



4. Detach the fuel pipes (1) of the high pressure pump and hand pump and detach the compressed air line (2) to the compressor.



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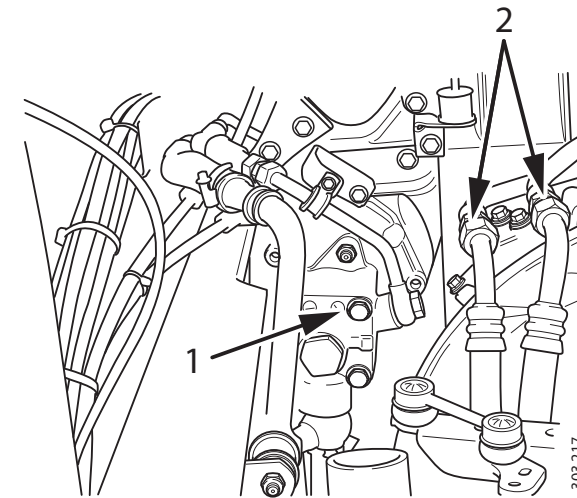
1. Fuel pipe
2. Compressed air line

5. Remove the 5 screws on the hydraulic pump (1). Detach the oil pipes (2) at the clutch housing.

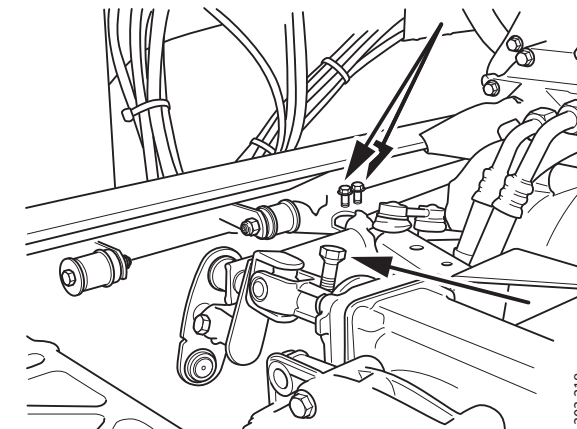
6. Undo the gear shift linkage screws.

7. Undo the hose clamp on the upper retarder coolant hose.

8. Remove the upper screws on the clutch housing.



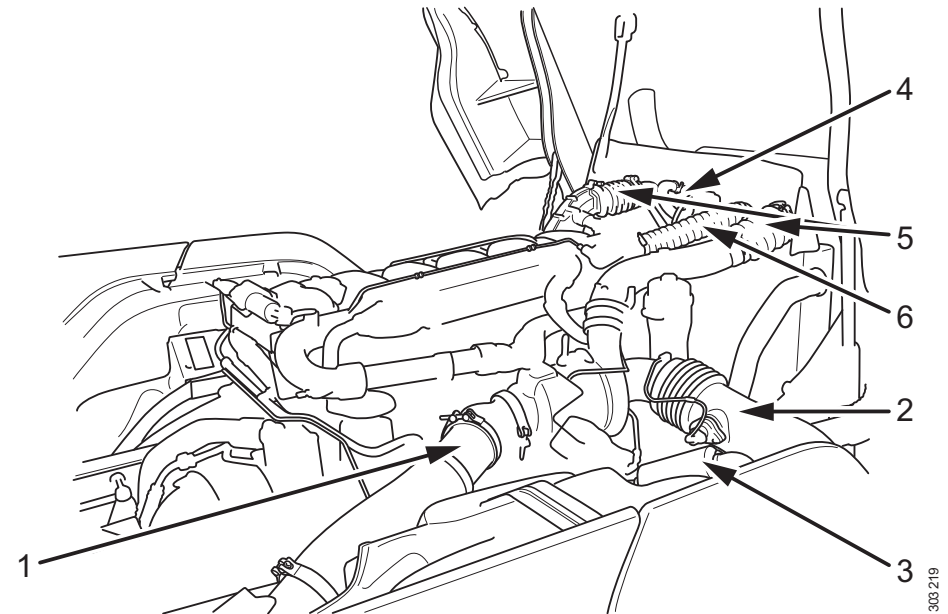
1. Hydraulic pump
2. Oil pipe



Screws

From the right-hand side of the engine

1. Undo the exhaust pipe V-clamp. Remove the exhaust pipe.

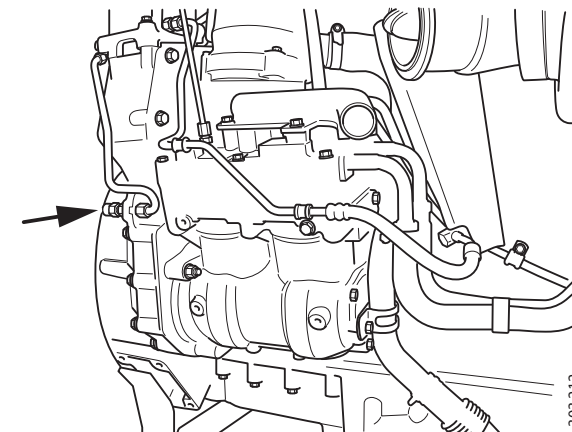
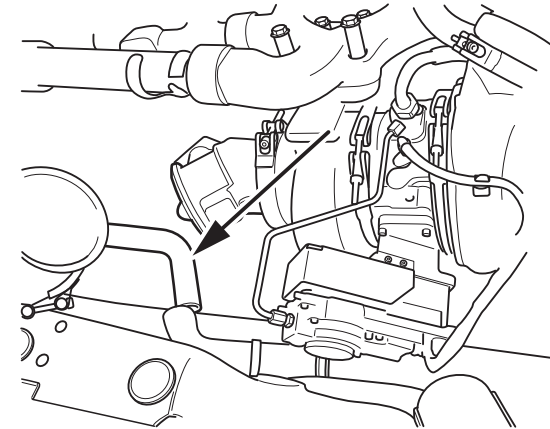


- 1. Exhaust pipe
- 2. Inlet pipe
- 3. Compressor silencer
- 4. Coolant connection for expansion tank
- 5. Charge air cooler hoses
- 6. EGR cooler hose

2. Detach the hose from the air dryer to the compressor.

3. Remove the inlet pipe.

4. Detach the compressed air pipe to the valve block.



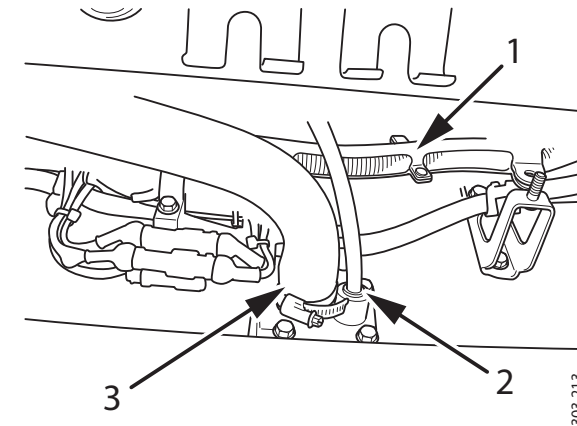


Removing the engine

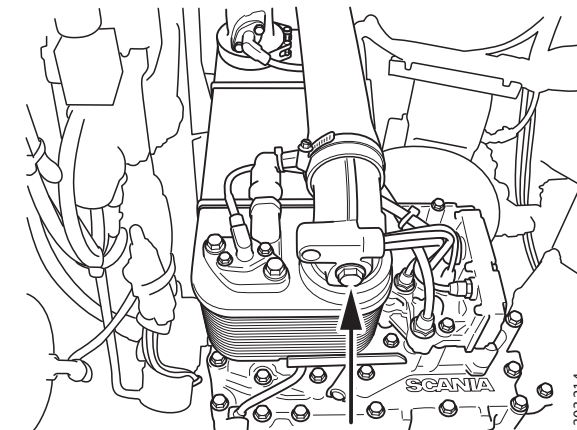
5. Detach the coolant hoses from the radiator.
6. Detach the coolant hoses to the expansion tank.
7. Detach the ribbed hoses for the charge air cooler and EGR cooler.
8. If the vehicle has an engine heater: Undo the connection for the engine heater.

From the underside of the vehicle

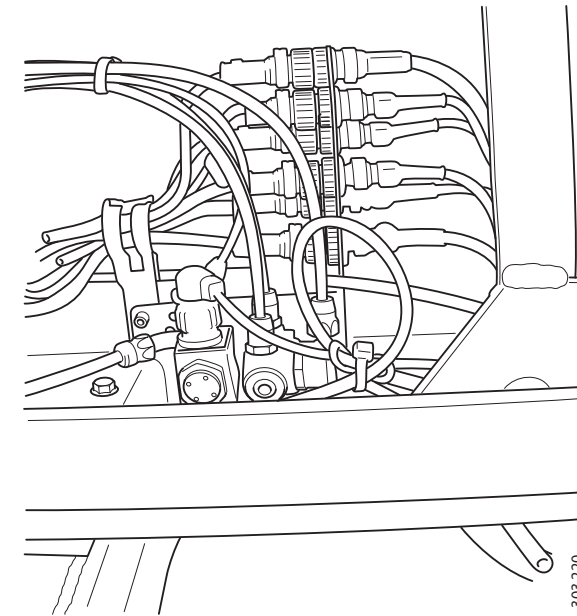
1. Jack up the vehicle.
2. Remove the noise shields.
3. Undo the starter motor cable harness (1), oil dipstick (2) and oil filler hose (3).
4. Detach the ground connection.
5. Disconnect the upper coolant hose to the retarder cooler.



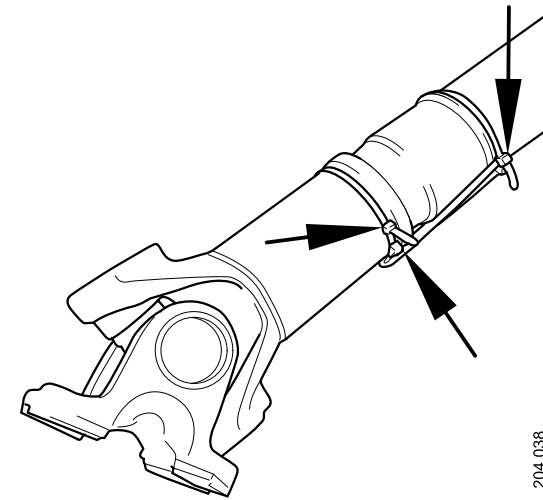
6. Drain the retarder cooler by undoing the coolant plug.



7. Detach the electrical cables and the compressed air lines at the upper rear edge of the gearbox.

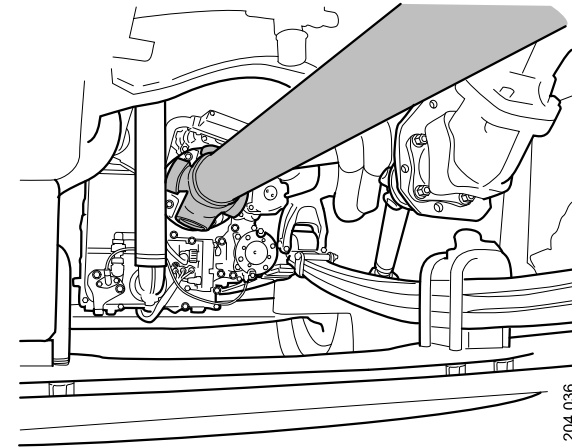


8. If the chassis is long: Undo the propeller shaft mounting at the joint.



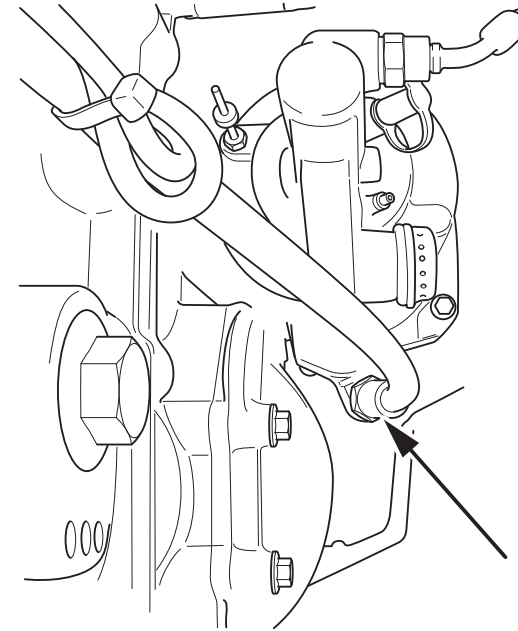
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9. Undo the 4 screws at the front of the propeller shaft and then use an M12 screw as a puller.



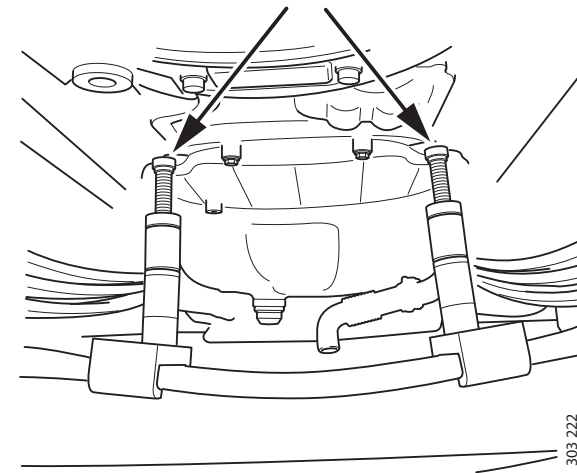
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10. Detach the propeller shaft at the rear and lower the propeller shaft.
11. Detach the compressed air lines for the clutch servo.
12. Undo the clutch servo.



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13. Fit engine supports 99 318 and adapters 99 470 to support the engine.
Before the engine supports can be fitted, 2 screws must be removed from the oil sump as illustrated.
14. Remove the gearbox.

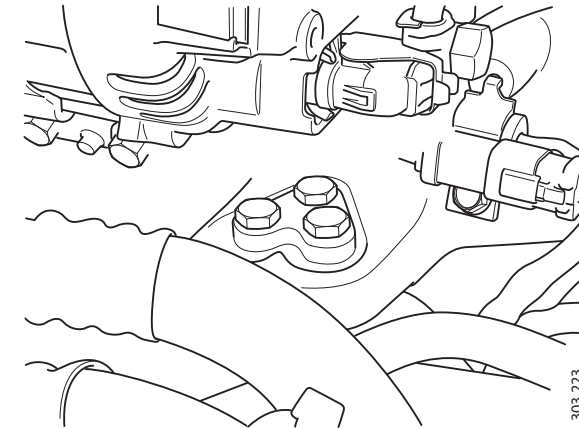


Lift the engine out

! IMPORTANT!

- The lifting eyes 99 637 are designed to manage a maximum inclination angle of 30° when lifting an engine with the gearbox removed.
- The lifting eyes are not designed to lift the whole vehicle and therefore must not be used for this purpose. All 3 lifting eyes must be used when lifting the engine.

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1. Lower the vehicle.
 2. Undo the screws at the engine brackets - 3 screws on each side of the engine.



3. Fit the lifting eyes on the flywheel housing studs.

Hook the ratchet lever hoist 587 308 in the lifting eye on the front edge of the engine.
Hook the lifting chain 98 094 into the 2 lifting eyes on the rear of the engine.

Lift out the engine.

