

Document Title: Complete engine, removal	Function Group: 210	Information Type: Service Information	Date: 2014/7/7 0
Profile:			

Complete engine, removal

Op nbr 210-01

Lifting chains, min. 1000 kg



Before starting any work, allow the diesel engine to cool down in order to avoid burn injuries.

NOTE!

In general, all clamps that secure hoses and electrical cables must be removed.

1. Turn off the electric power with the battery disconnecter.
2. Remove the attaching bolts for the gas struts **2** and the bolts **3** for securing the engine hood.
3. Remove the cover plate **1**.

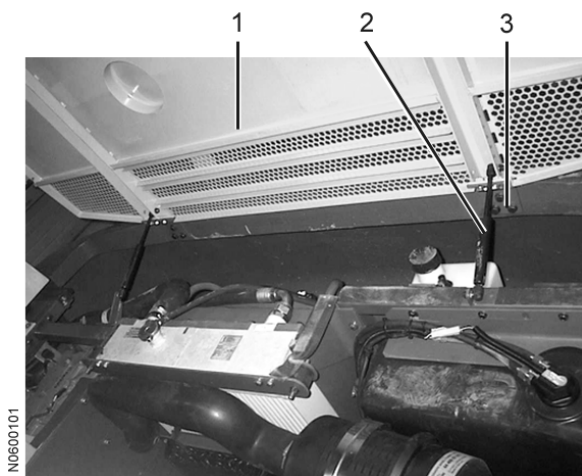


Figure 1
Counterweight compartment

1. Plate
 2. Gas strut
 3. Bolts
4. Remove the plate **1**.

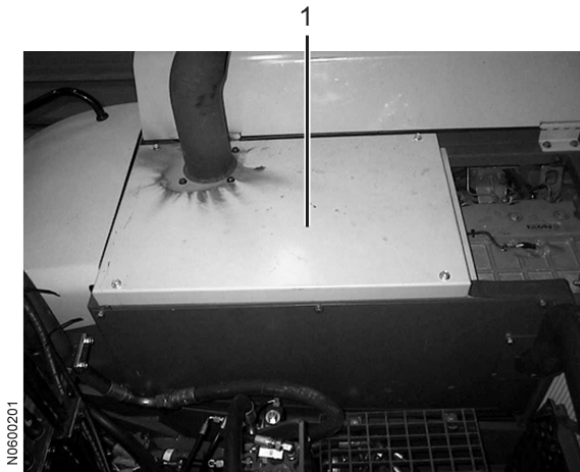


Figure 2
Engine compartment

1. Plate
5. Release the gas strut (hidden) from the engine hood **2**.
6. Remove the attaching bolts **1** and lift away the engine hood **2**.

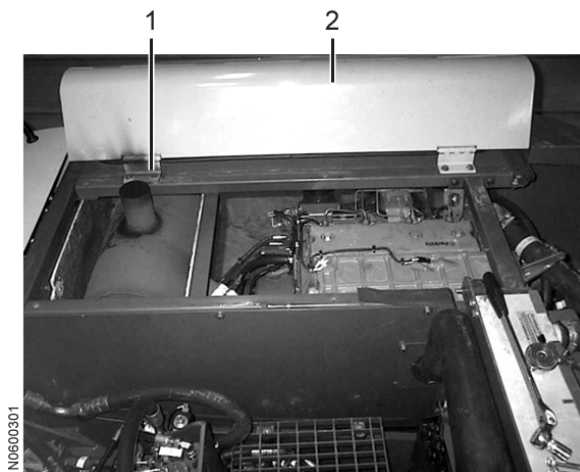


Figure 3
Engine compartment

1. Attaching bolts
2. Plate
7. Remove the plate **1**.

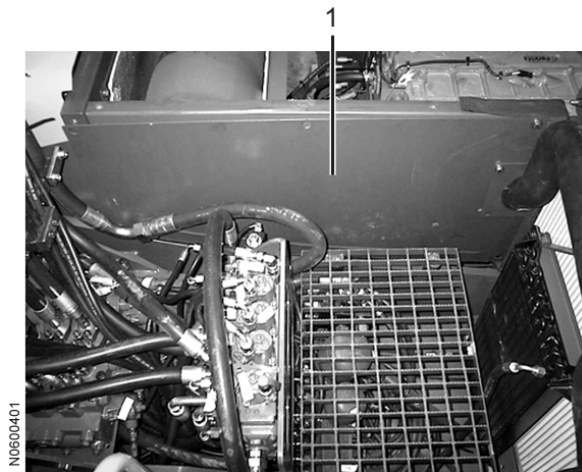


Figure 4
Hydraulic compartment

1. Plate
8. Remove the rubber moulding **3** around the frame parts.
9. Remove the frame parts **1** and **2**.

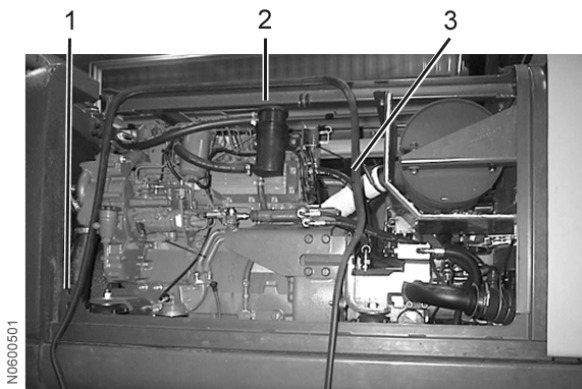


Figure 5
Engine compartment

1. Frame
2. Frame
3. Rubber moulding
10. Remove the frame part **1**.



Figure 6
Engine compartment

1. Frame
11. Remove the counterweight according to *Counterweight, removal* in Section 7.
12. Remove the plate **1** underneath the engine.



Figure 7
Superstructure

1. Plate
13. Remove the connector **2** from the throttle control.
14. Remove the throttle control **1** from the engine and place it to the right by the hydraulic oil tank.

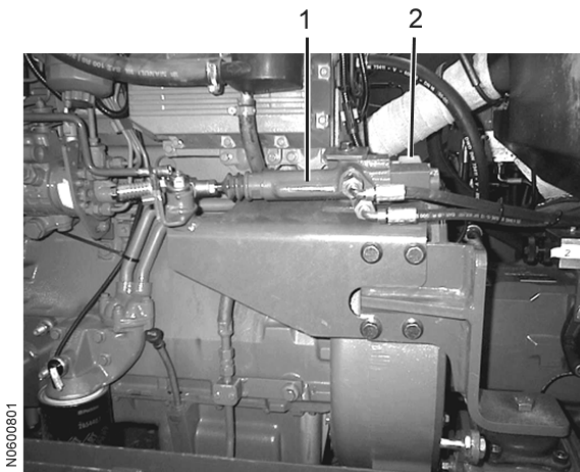


Figure 8
Engine compartment

1. Throttle control
2. Connector
15. Remove (if one is fitted) the compressor **1** from the engine, (4 bolts **2**) and remove the Vee belts.

NOTE!

Do not disconnect any hoses from the compressor.

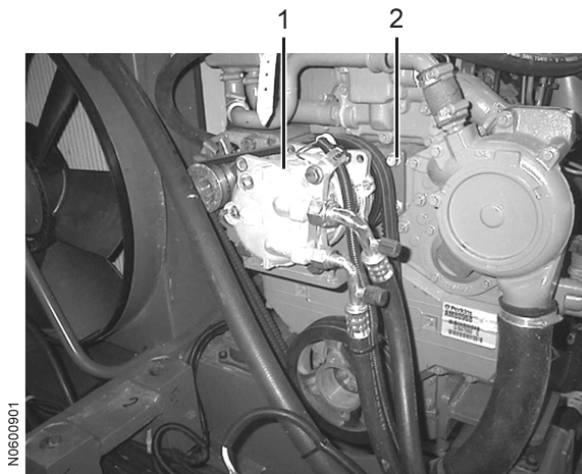


Figure 9
Engine compartment

- 1. Compressor
- 2. Bolt

- 16. Disconnect the hose **1** from the engine and pinch the hose with the pliers **2**.
- 17. Connect a drain hose **3** on the hose connection **1** and drain the engine coolant into a container.

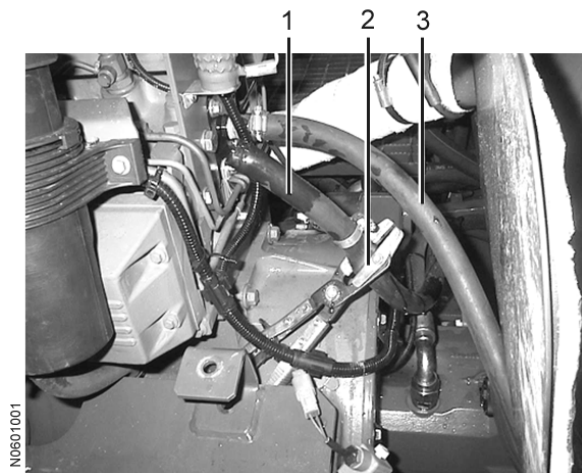


Figure 10
Engine compartment

- 1. Hose
- 2. Pliers
- 3. Hose

- 18. Remove the clamp **1** from the member.
- 19. Disconnect the hose **2** from the coolant pump.

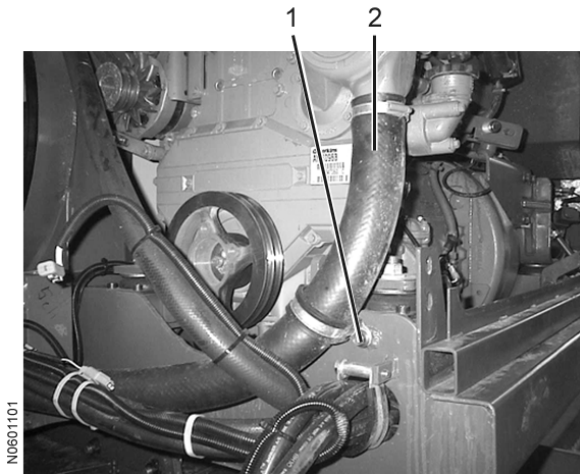


Figure 11
Engine compartment

- 1. Clamp
- 2. Hose

20. Pinch the hose **1** and place it according to Fig. 12.

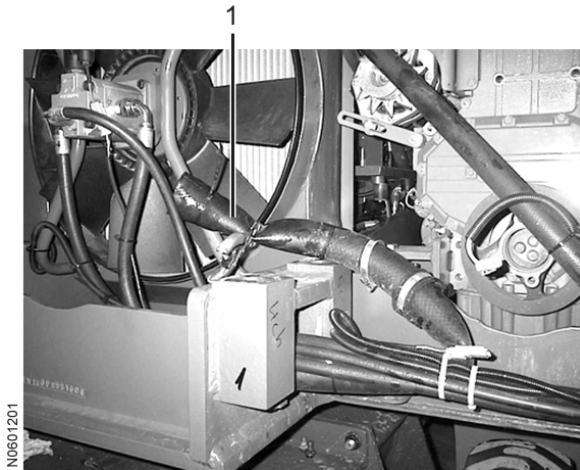


Figure 12
Engine compartment

- 1. Hose

- 21. Remove the ground cables **1** and the cabling **2** to the starter motor.
- 22. Mark up and disconnect the electrical cables from all sensors and monitors on the engine.
- 23. Disconnect the fuel lines (2 lines) and plug the lines and connections.

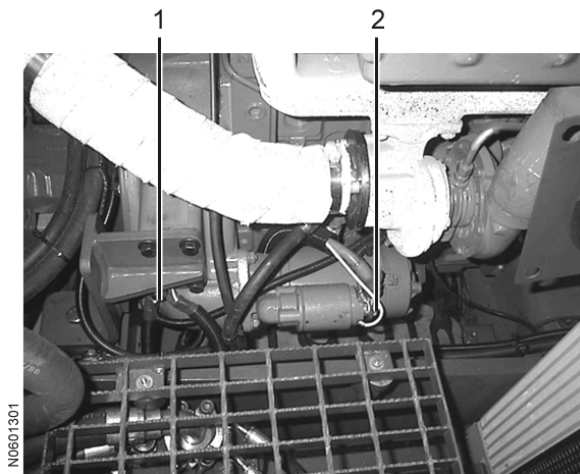


Figure 13
Engine compartment

1. Ground cables
2. Starter motor cabling

24. Remove the electrical cables from the alternator **1** .

25. Remove the hose **2** from the engine and the hose **3** from the crankcase ventilation.

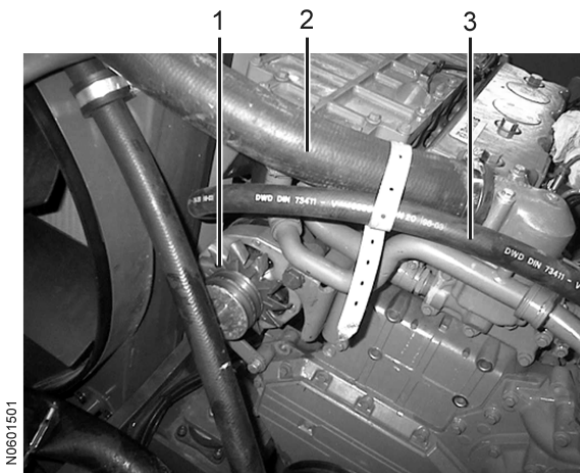


Figure 14
Engine compartment

1. Alternator
2. Hose
3. Hose

26. Remove the hose **1**.

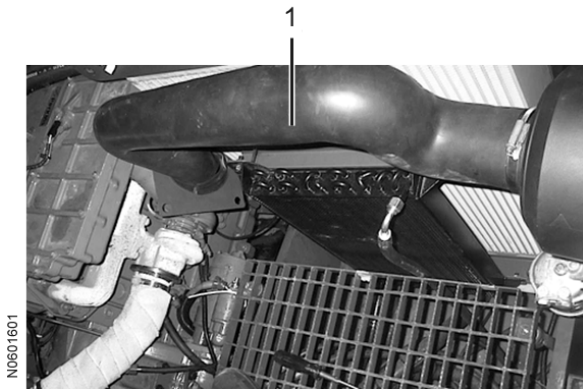


Figure 15
Hydraulic compartment

1. Hose

27. Remove the protective plate **1**.

28. Remove the silencer **2** with bracket and pipe to the turbo.

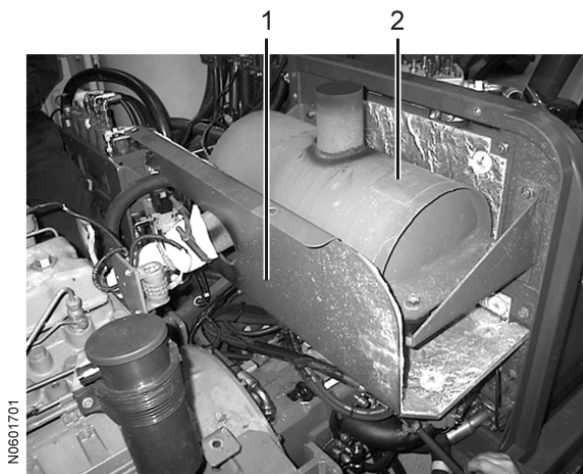


Figure 16
Engine compartment

1. Protective plate

2. Silencer

29. Remove the attaching bolt **1** from the front right engine mounting.

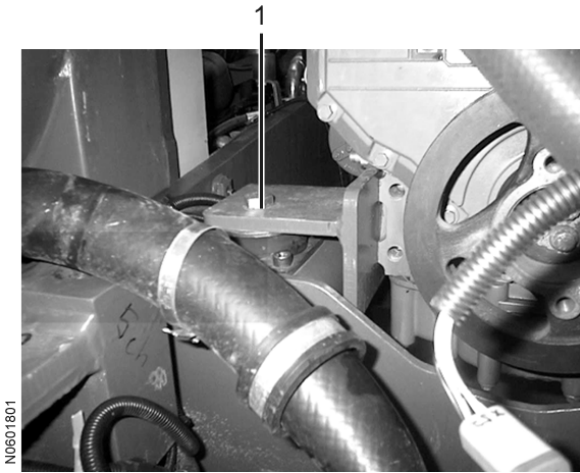


Figure 17
Engine compartment

1. Attaching bolts

30. Remove the attaching bolt **1** from the front left engine mounting.

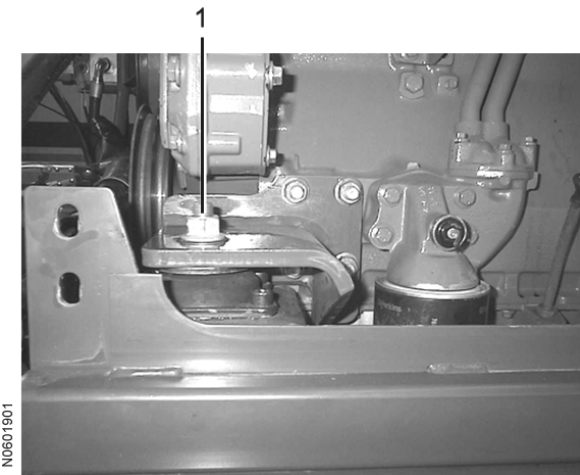


Figure 18
Engine compartment

1. Attaching bolts

31. Remove the bolts **1** for the working pump (1 underneath).

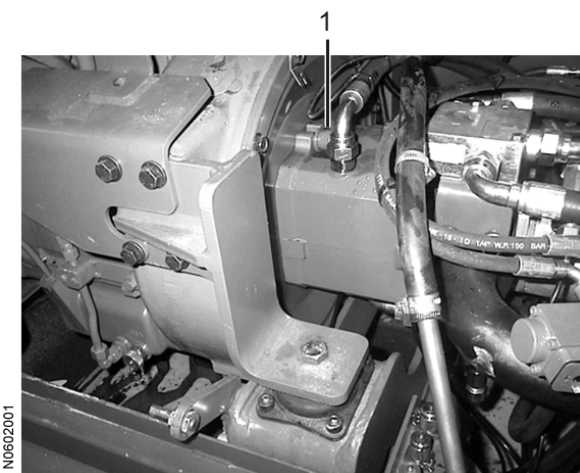


Figure 19

Engine compartment

1. Bolts

32. Connect lifting chains to the lifting eyes **1** on the engine and to a lifting device.

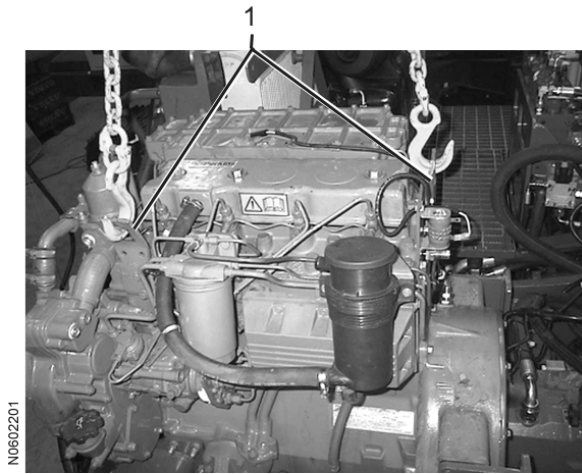


Figure 20
Engine compartment

1. Lifting eyes

33. Remove the engine mounting **1** from the engine.



Figure 21
Engine compartment

1. Engine mounting

34. Remove the engine mounting **1** from the engine.

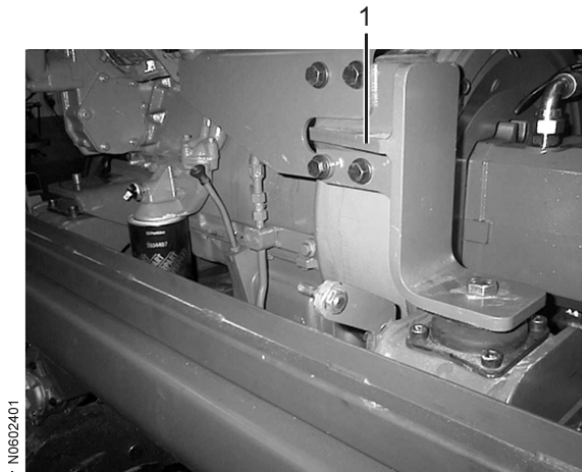


Figure 22
Engine compartment

1. Engine mounting

35. Remove the oil filter **1**.

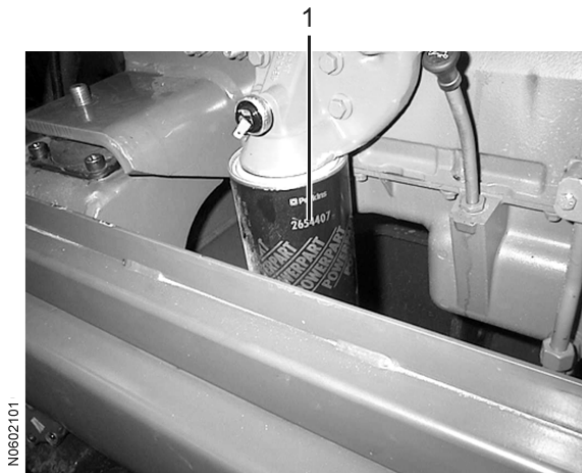


Figure 23
Engine compartment

1. Oil filter

36. Slightly lift the engine and place a block **1** under the connection on the working pump.
37. Remove the working pump from the engine by moving the engine backwards.
38. Lift out the engine.



Figure 24
Engine compartment

1. Block

39. Place the engine on stable supports.

Document Title: Complete installation	Function Group: engine, 210	Information Type: Service Information	Date: 2014/7/7 0
Profile:			

Complete engine, installation

Op nbr 210-02

Lifting chains, min. 1000 kg

NOTE!

As a general rule, all removed cable ties and clamps securing hoses and electrical cables must be replaced.

1. Transfer the engine mounting **1**.
Tightening torque:**85 Nm**
2. Transfer the alternator**2**.

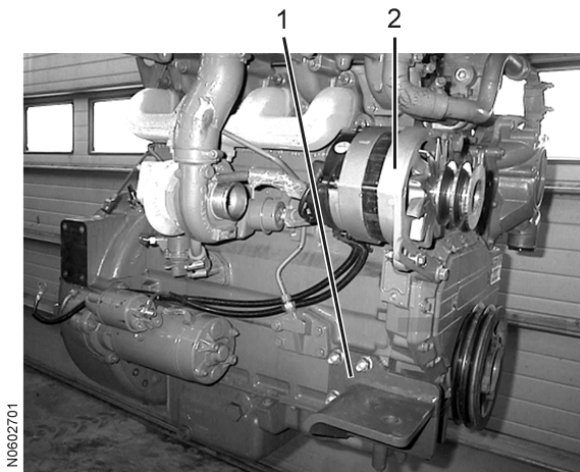


Figure 1
Engine

1. Engine mounting
 2. Alternator
-
3. Transfer the drive flange and the cap **1**.
 4. Transfer the bracket **2**.
 5. Transfer the coolant connection **3**.

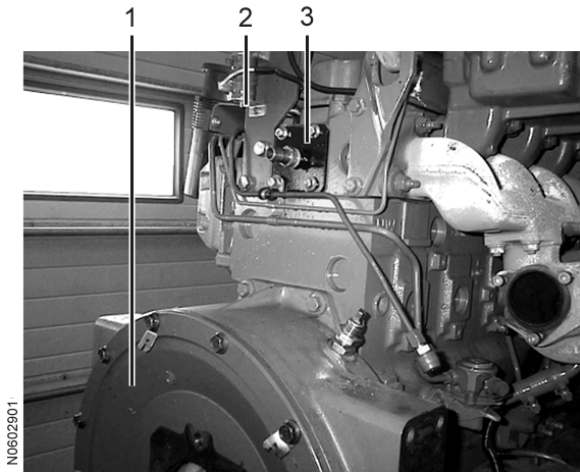


Figure 2
Engine

1. Drive flange/cap
 2. Bracket
 3. Connection
6. Transfer the engine mounting **1**.
Tightening torque: **85 Nm**
 7. Transfer sensor and monitors that are missing on the new engine and the crankcase ventilation.

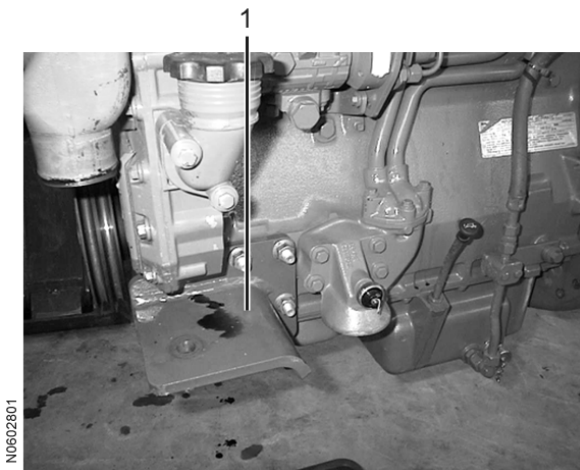


Figure 3
Engine

1. Engine mounting
8. Connect lifting chains to the lifting eyes on the engine and to a lifting device.
 9. Lift the engine into the machine.



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