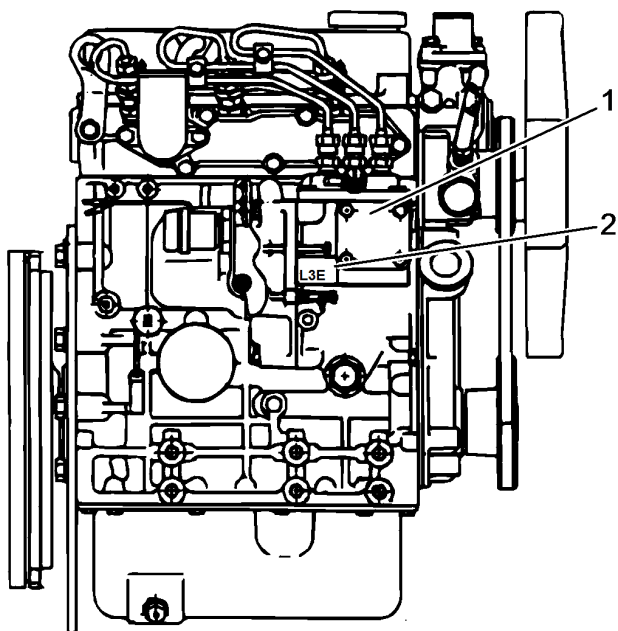


Document Title: <b>Description</b>	Function Group: <b>200</b>	Information Type: <b>Service Information</b>	Date: <b>2014/4/2 0</b>
Profile:			

## Description

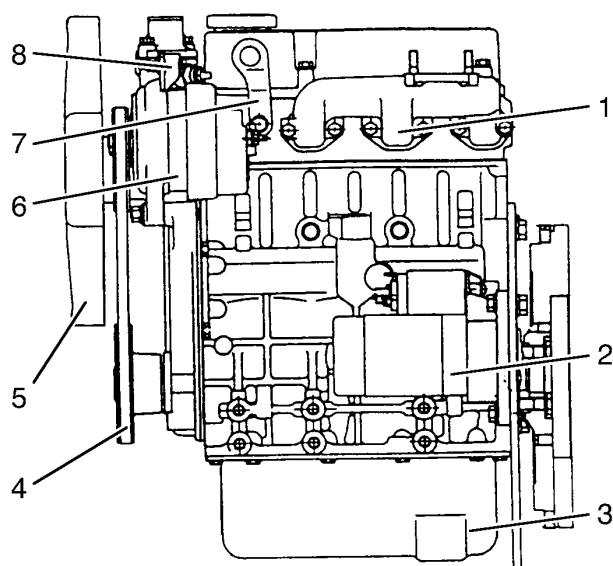
The EC13 is powered by a 3-cylinder four-stroke diesel inline engine with water cooling.



E130091B

**Figure 1**  
**Engine, side view**

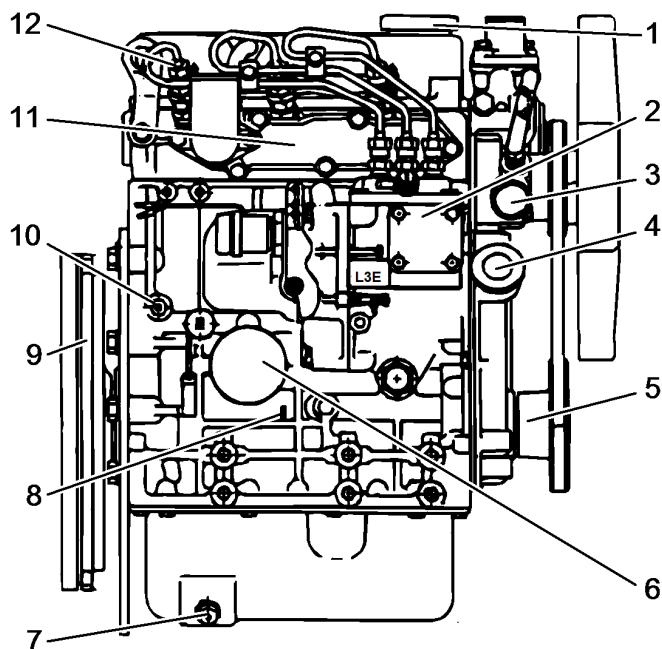
1. Serial number
2. Engine type



E250003A

**Figure 2**  
**Left hand side view**

- |                    |             |               |
|--------------------|-------------|---------------|
| 1 Exhaust manifold | 4 V-belt    | 7 Towing hook |
| 2 Starter          | 5 Fan       | 8 Thermostat  |
| 3 Oil sump         | 6 Generator |               |



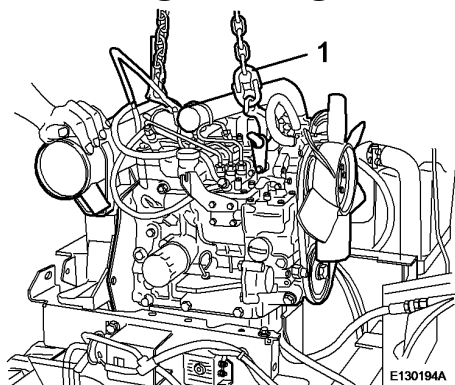
E130092B

**Figure 3**  
**Right hand side view**

- |                   |                     |                  |                       |
|-------------------|---------------------|------------------|-----------------------|
| 1 Oil filler neck | 4 Oil filler neck   | 7 Oil drain plug | 10 Coolant drain plug |
| 2 Injection pump  | 5 Crankshaft pulley | 8 Oil dipstick   | 11 Intake manifold    |
| 3 Water pump      | 6 Oil filter        | 9 Flywheel       | 12 Injection nozzle   |

Document Title: <b>Installing the engine</b>	Function Group: <b>200</b>	Information Type: <b>Service Information</b>	Date: <b>2014/4/2 0</b>
Profile:			

## Installing the engine



**Figure 1**

### Op nbr 2101

Lifting sling 1 m

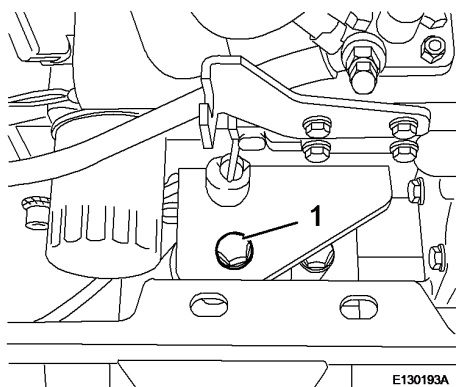
Shackle 3/8"

1. Attach lifting tackle (1) to the engine. Weight approx. 125 kg.

2. Lift the engine into the machine.

**NOTE!**

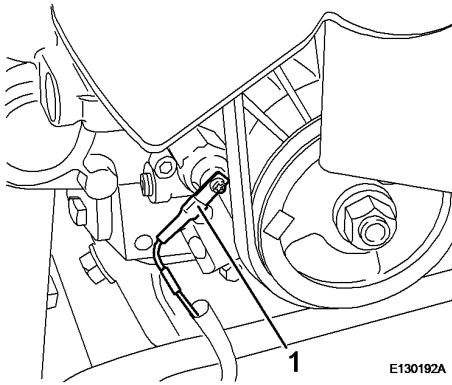
Take care not to damage the hydraulic hoses.



**Figure 2**

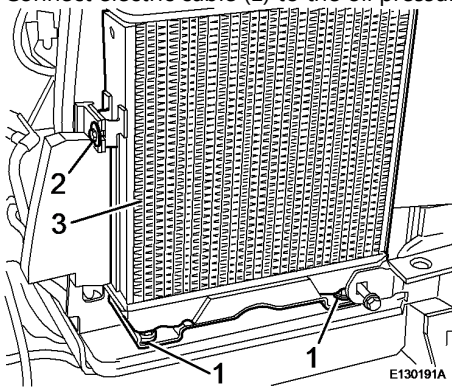
3. Cover the threads of screws (1) with screw retention agent, turn them into the rear and front engine mounts and tighten with 105 Nm.

4. Remove the lifting tackle to the engine.



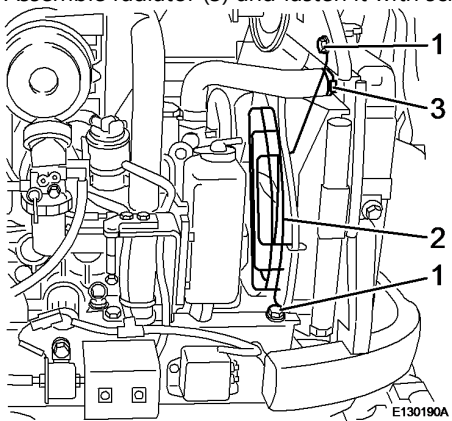
**Figure 3**

5. Connect electric cable (1) to the oil pressure switch.



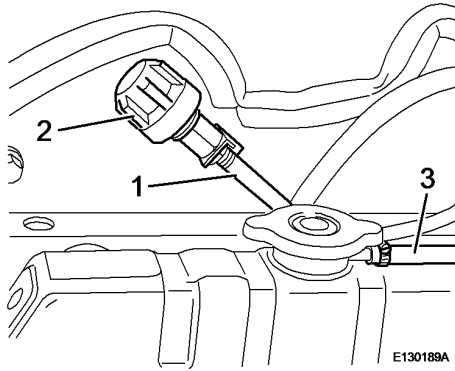
**Figure 4**

6. Assemble oil cooler and air baffle.
7. Assemble radiator (3) and fasten it with screws (1 and 2).



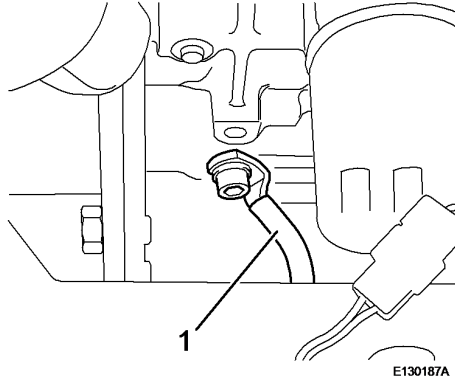
**Figure 5**

8. Assemble top and bottom coolant hoses with new hose clamps (3).
9. Fasten fan grid (2) with screws (1).



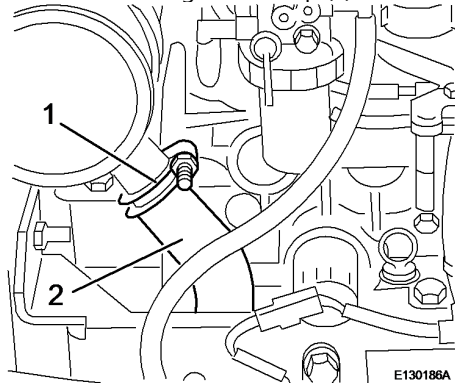
**Figure 6**

10. Assemble compensation tank with hose.
11. Fasten suction hose (3) to the radiator with a new hose clamp (1).
12. Connect hose (1) to the hydraulic tank breather valve.



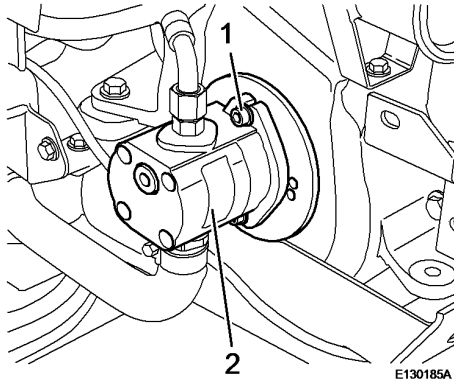
**Figure 7**

13. Fasten the front ground strap (1) to the engine block.



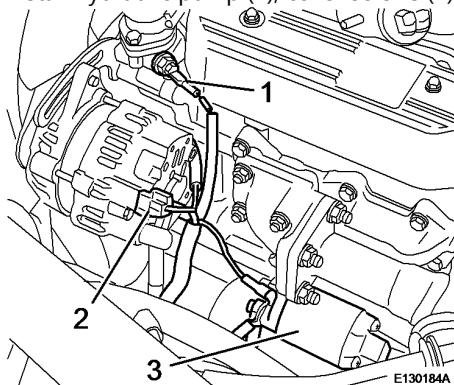
**Figure 8**

14. Assemble exhaust pipe (2) with a new clamp (1).



**Figure 9**

15. Install hydraulic pump (2), cover screws (1) with screw retention agent, turn them in and tighten with 105 Nm.

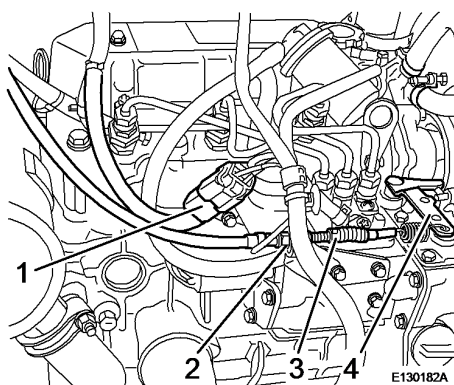


**Figure 10**

16. Install the engine wiring loom and connect the following components:

- Thermal switch (1)
- Generator (2)
- Starter (3)
- Pre-heating system ( [Invalid linktarget] /1)

Fasten the cables with cable straps.



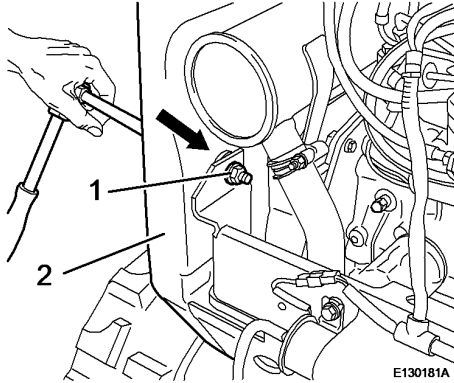
**Figure 11**

17. Attach throttle cable (3) to injection pump (4).
18. Adjust throttle cable (3) and fasten with counter nut (2).

**NOTE!**

Check idle speed and full load stop positions.

19. Join electric plug connection (1) for engine shut-down together.



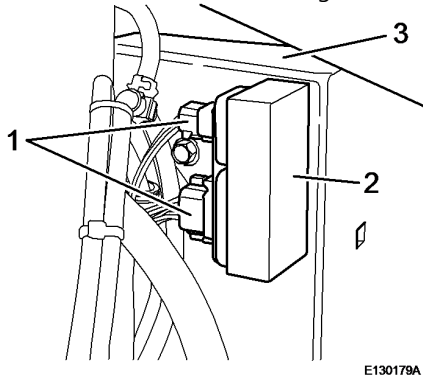
**Figure 12**

20. Fasten fuel tank (2) with screw (1).

**NOTE!**

Ensure correct fit of the spacer.

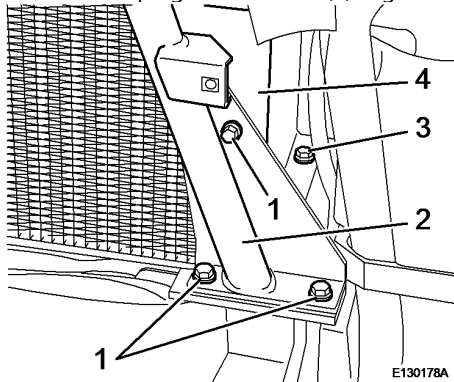
21. Fasten the front tank fastening bracket with screw ( [Invalid linktarget] /1).



**Figure 13**

22. Assemble reinforcement plate (3) with immobilizer control unit (2).

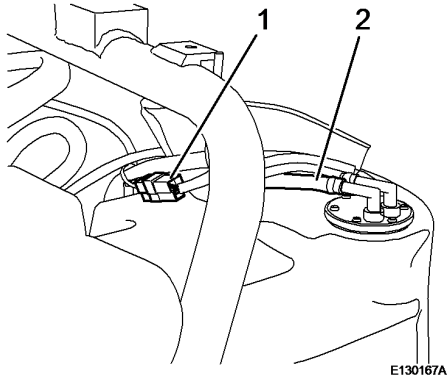
23. Join electric plug connections (1) together.



**Figure 14**

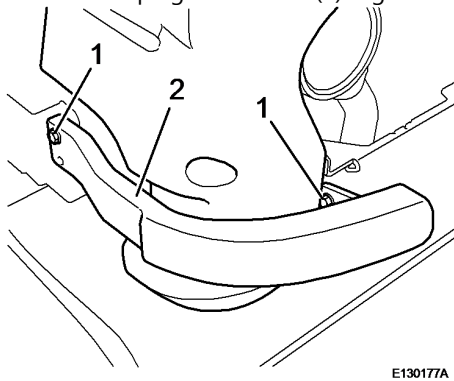
24. Fasten the right hand reinforcement plate (4) with screw (3).

25. Attach bracket (2) and fasten it with screws (1) from both sides.



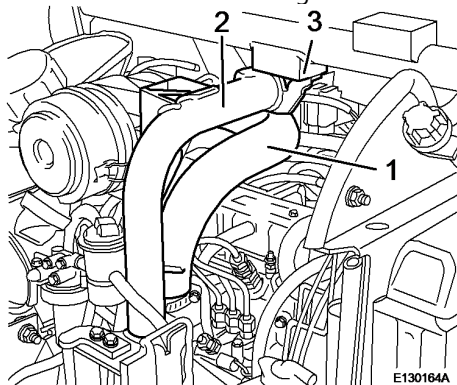
**Figure 15**

26. Push fuel lines (2) onto fuel sensor.
27. Push ventilation hose onto yoke.
28. Join electric plug connection (1) together.



**Figure 16**

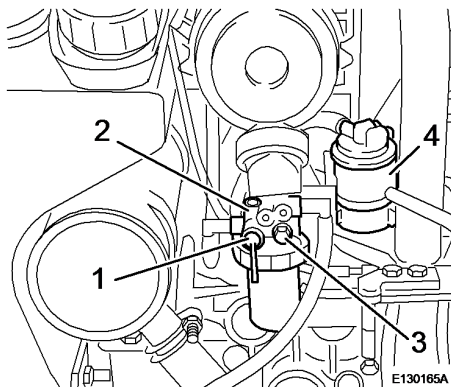
29. Assemble counterweight (2) and fasten with screws (1) on left and right hand side.
30. Insert the foam rubber wedge from underneath behind the right hand counter weight.



**Figure 17**

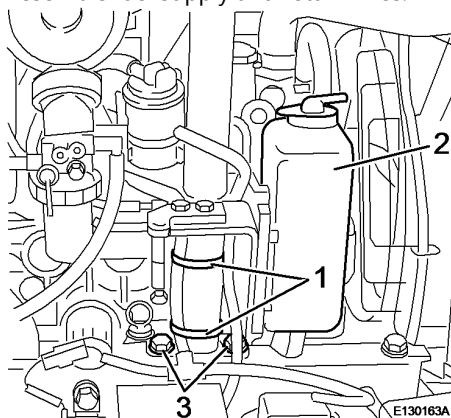
31. Assemble air filter bracket (2) with air filter to bracket (3) and frame.
32. Fasten the air intake hose (2) with a new hose clamp to the air intake pipe.
33. Connect electric cables ( [Invalid linktarget] /1) to the air filter contamination indicator ( [Invalid linktarget] /2).





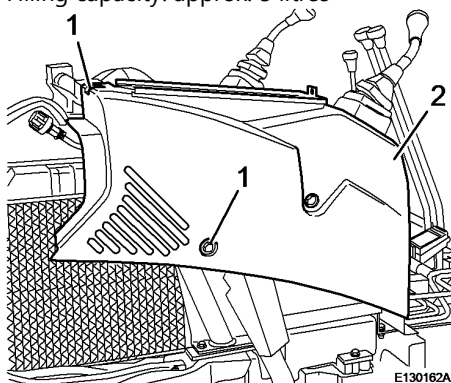
**Figure 18**

34. Fasten fuel pre-cleaner (2) with screw (3).
35. Set valve lever (1) to position OPEN.
36. Assemble fuel filter (4).
37. Assemble fuel supply and return lines.



**Figure 19**

38. Attach compensation tank (2).
39. Fasten the cable set with new cable strap (1).
40. Close the drain plug ( [Invalid linktarget] /1) and fill in coolant.  
Filling capacity: approx. 5 litres

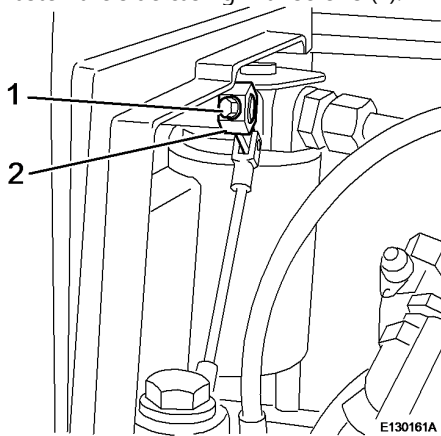


**Figure 20**

**NOTE!**

Insert the foam rubber on the right hand reinforcement plate.

41. Apply the right hand top side casing (2), plug in the electric plug connections, assemble the rubber grommet and fasten the side casing with screws (1).



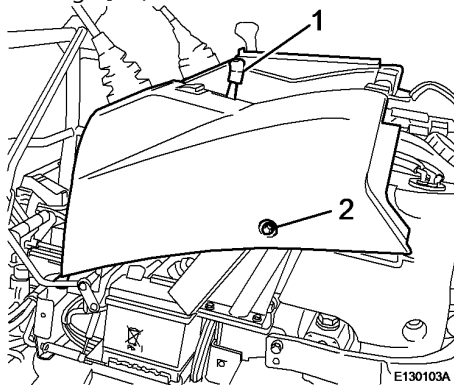
**Figure 21**

42. Insert the dozer blade control lever from outside, slide on pivot arm (2) and fasten with screw (1).

**NOTE!**

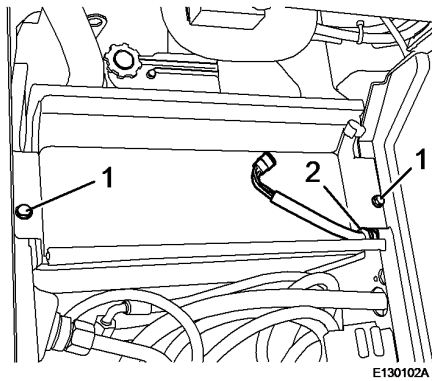
Insert the foam rubber on the left hand reinforcement plate.

43. Connect ground cable ( [Invalid linktarget] /1) to the battery.
44. Assemble the top left hand side casing.
45. Assemble carrier ( [Invalid linktarget] /3).
46. Insert the rubber grommet.
47. Insert switch ( [Invalid linktarget] /2) into the carrier and plug in the electric plug connections ( [Invalid linktarget] /1).



**Figure 22**

48. Fasten the side casing with screws (2).
49. Assemble rubber handle (1) to the throttle control lever.



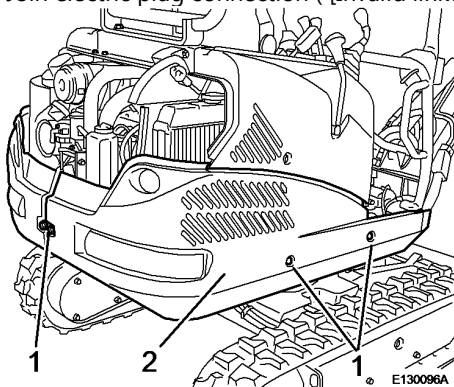
**Figure 23**

50. Fasten the tool box with screws (1).

**NOTE!**

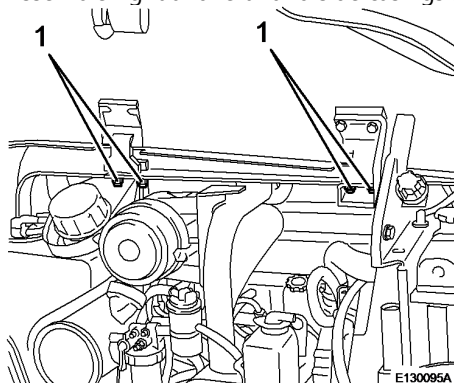
Ensure correct fit of rubber grommet (2).

51. Assemble the seat with console ( [Invalid linktarget] ).
52. Assemble roll over protection structure ( [Invalid linktarget] and [Invalid linktarget] ).
53. Join electric plug connection ( [Invalid linktarget] /1) together.



**Figure 24**

54. Assemble right and left hand side casings (2) with screws (1).



**Figure 25**

55. Fasten the engine hood with screws (1) and align.
56. Assemble the floor plate.

57. Check engine oil level, top up if necessary
58. Start the engine and make sure that there are no leaks.

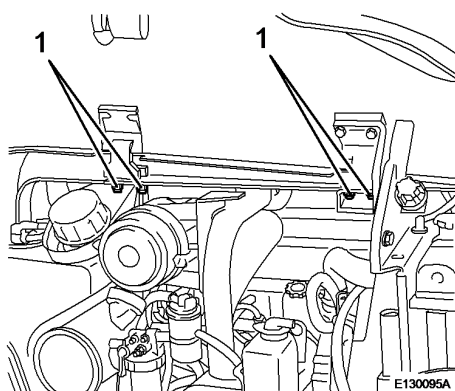
Document Title: <b>Removing the engine</b>	Function Group: <b>200</b>	Information Type: <b>Service Information</b>	Date: <b>2014/4/2 0</b>
Profile:			

## Removing the engine

Op nbr 2101

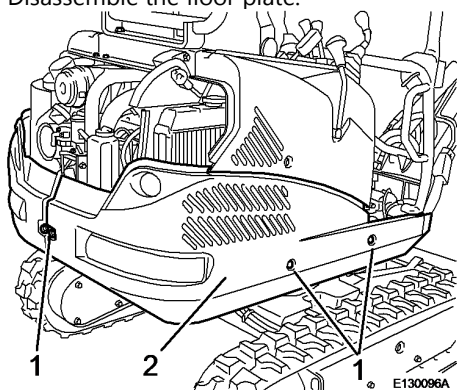
Lifting sling 1 m

Shackle 3/8"



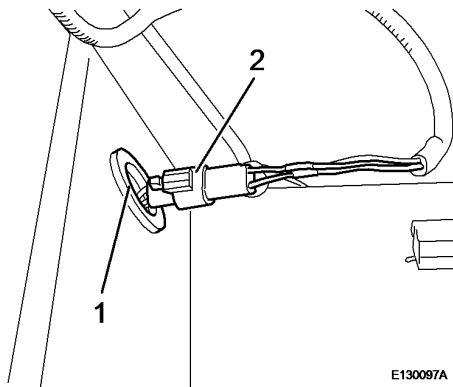
**Figure 1**

1. Unscrew fastening screws (1).
2. Take off the engine hood.
3. Disassemble the floor plate.



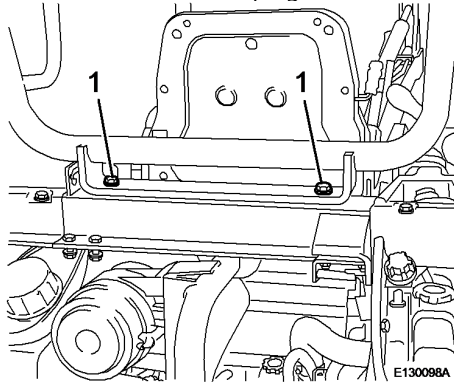
**Figure 2**

4. Unscrew all screws (1) and remove lower right and left hand side casing (2).



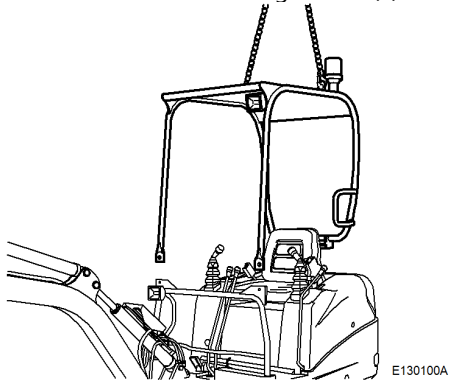
**Figure 3**

5. Disconnect the electric plug connection (1).



**Figure 4**

6. Unscrew the rear fastening screws (1) for the roll over protection structure.



**Figure 5**

7. Attach the lifting sling to the lifting points of the roll over protection structure and lift the roll over protection structure until the ropes are tight.
8. Unscrew the front fastening screws.
9. Lift the roll over protection structure slightly up, make sure that the area around is safe and lift it off completely.



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