

Document Title: <b>Engine, removing</b>	Function Group: <b>210</b>	Information Type: <b>Service Information</b>	Date: <b>2014/5/6 0</b>
Profile: <b>WLO, L220F [GB]</b>			

[Go back to Index Page](#)

## Engine, removing

Op nbr 210-070

[9998547 Lifting tool](#)

Sling, 3 m, 2 pcs.

Sling, 4 m, 1 pcs.

Lifting eye M12, 2 pcs.

Washer M12, 2 pcs.

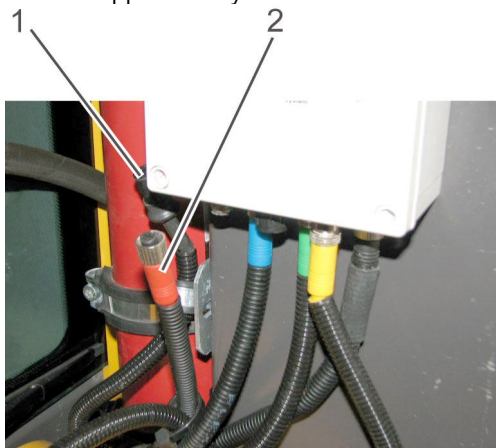
Nut M12, 2 pcs.

Shackle, 6 pcs.

Ratchet block, 750 kg

The operation also includes tools and times for steps to which references are given.

1. Place the machine in service position, see [191 Safety rules when servicing](#).
2. Turn off the main electric power with the battery disconnect switch.
3. Disconnect the (red) electric power cable and squib cable (gas generator cable) from the control unit to deactivate the fire suppression system.



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**Figure 1**  
**Control unit**

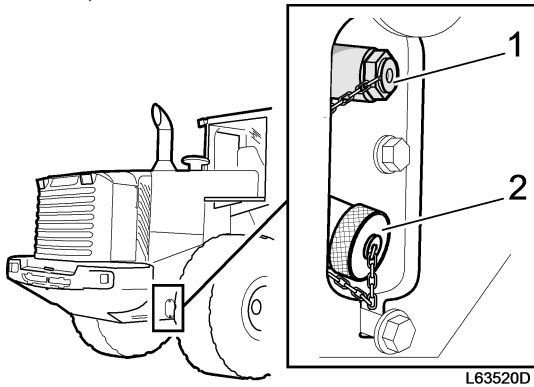
1. Squib cable (gas generator cable)

2. Electric power cable

**! WARNING**

**Risk of burns when removing the header tank cap because of excess pressure in the cooling system.**

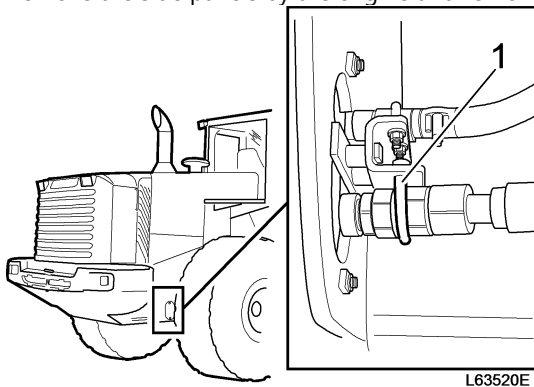
4. Remove the cap from the expansion tank.  
Drain the coolant. Use the drain hose located in the machine's toolbox.  
Volume, see [030 Cooling system, volume](#).



**Figure 2**

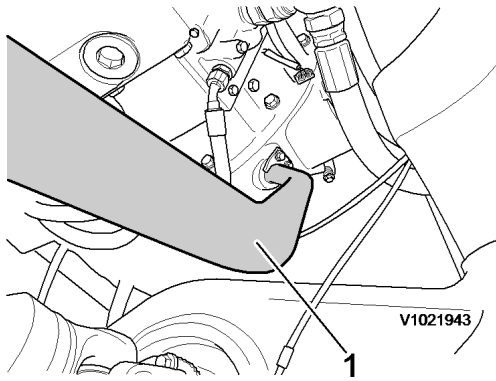
1. Drain point for coolant
2. Drain for engine oil

5. Remove the engine hood, see [821 Engine hood, removing](#).
6. Drain the engine oil. Use the drain hose located in the machine's toolbox.  
Volume, see [030 Engine, capacities](#).
7. Remove the side panels by the engine and remove the clamp that holds the oil drain.



**Figure 3**

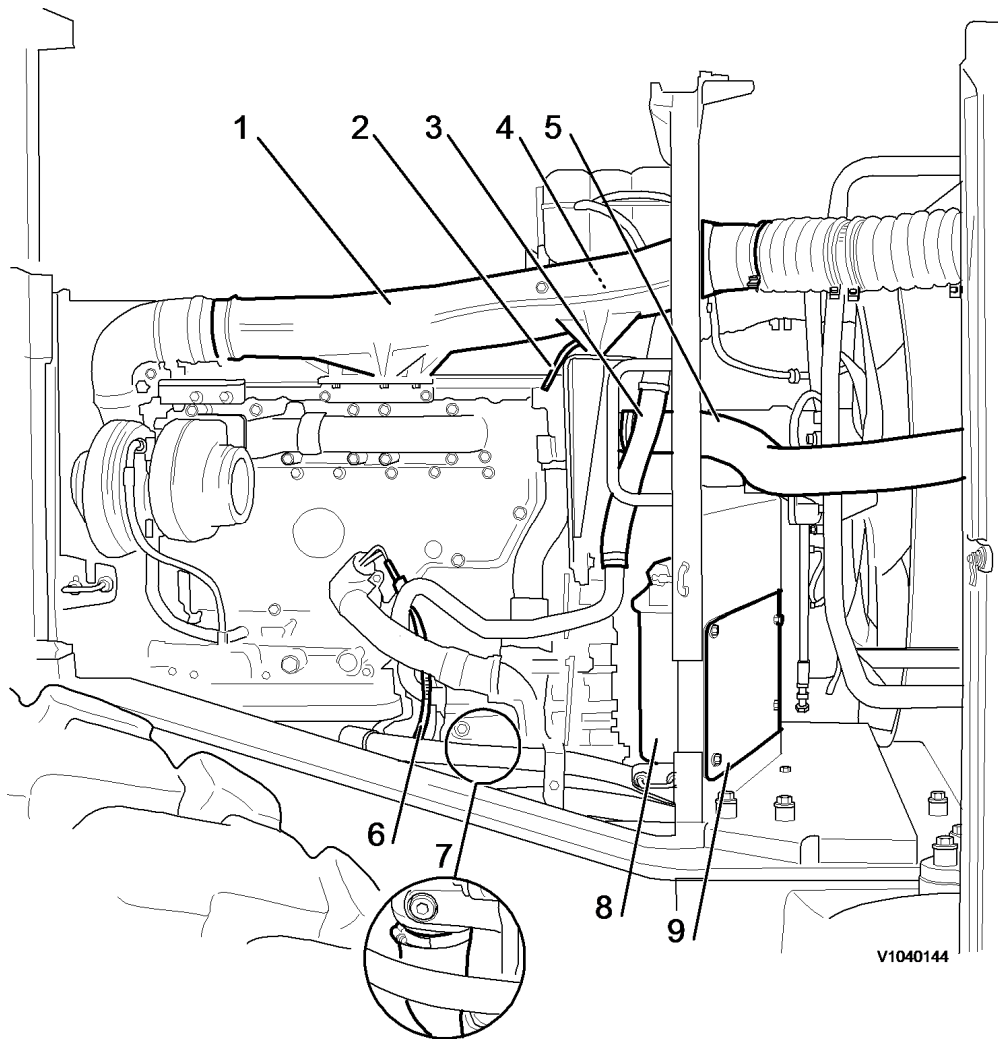
1. Clamp
8. Drain the transmission oil. Volume, see [030 Hydraulic transmission, capacity](#)
  9. Remove the oil pipe from the flywheel housing.



**Figure 4**

- 1. Oil pipe

**Left side**

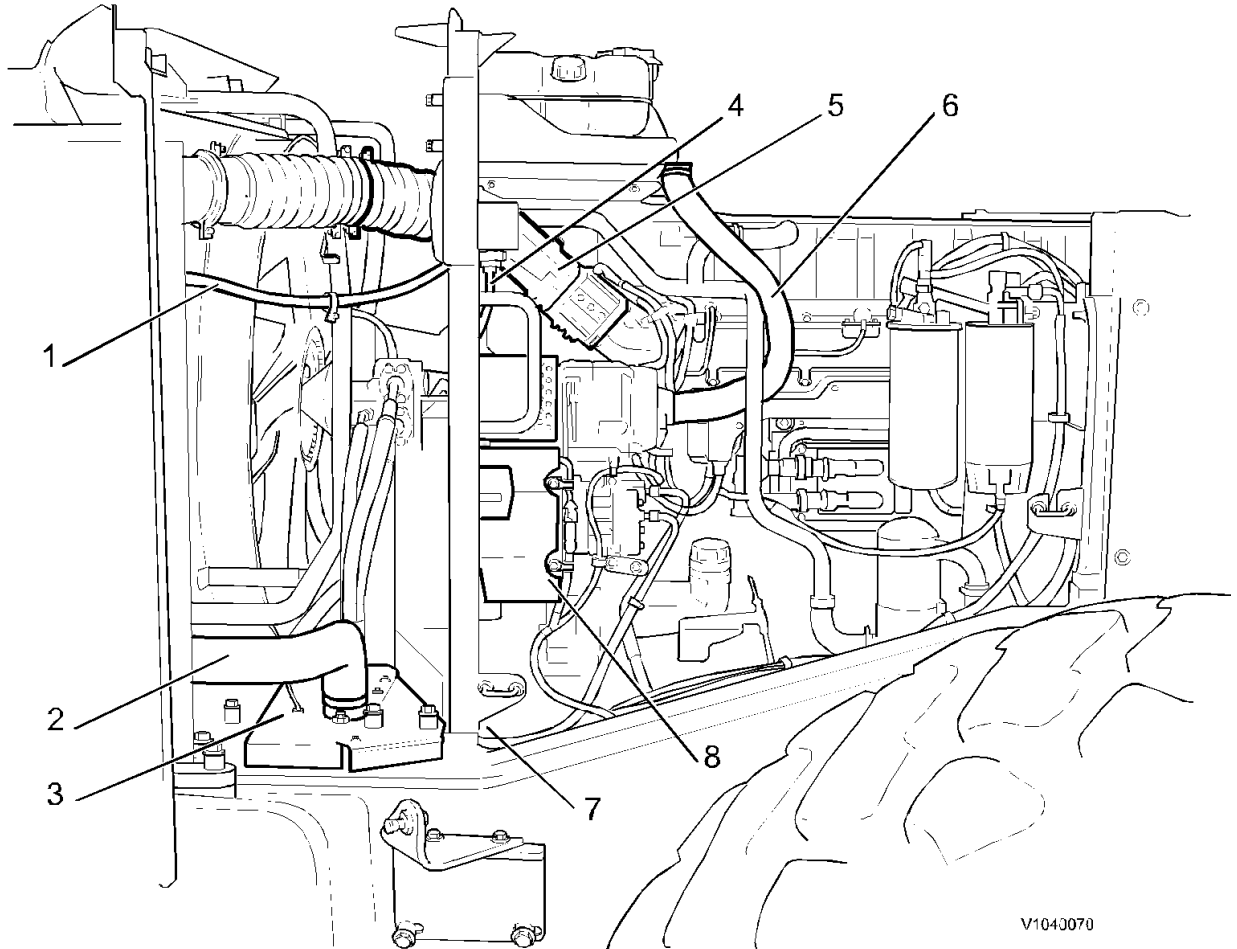


**Figure 5**

- |                         |                         |
|-------------------------|-------------------------|
| 1. Charge-air pipe      | 6. Cable, engine heater |
| 2. Radiator hose        | 7. Radiator hose, lower |
| 3. Hose                 | 8. Filter housing       |
| 4. Connector (SE2603)   | 9. Plate                |
| 5. Radiator hose, upper |                         |

10. Remove the charge-air pipe.
11. Disconnect the upper and lower radiator hose from the engine.
12. Disconnect the cable to the optional engine heater.
13. Disconnect the hose at the cylinder head and the hose at the expansion tank.  
Unplug the connector for the coolant level sensor (SE2603) on the expansion tank.
14. Remove the plate by the oil filters.
15. Remove the filter housing from the intermediate wall and remove the clamp.

**Right side**



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**Figure 6**

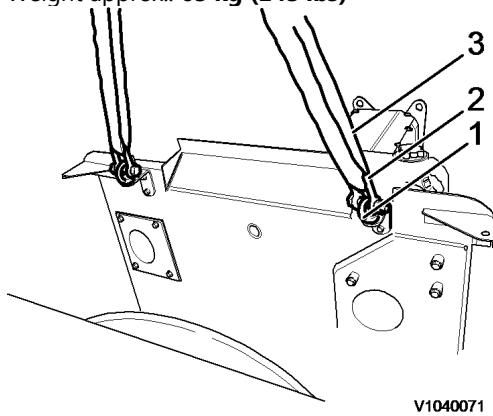
- |                        |                    |
|------------------------|--------------------|
| 1. Upper radiator hose | 5. Charge-air pipe |
| 2. Radiator hose       | 6. Air hose        |
| 3. Bottom plate        | 7. Bracket         |
| 4. Breather hose       | 8. Guard           |

16. Remove the protection for the AC compressor.
17. Disconnect the hose from the radiator.
18. Remove the clamps for the breather hose and drain hose. Disconnect the hose from the breather filter.
19. Disconnect the air hose from the alternator.

**! WARNING**

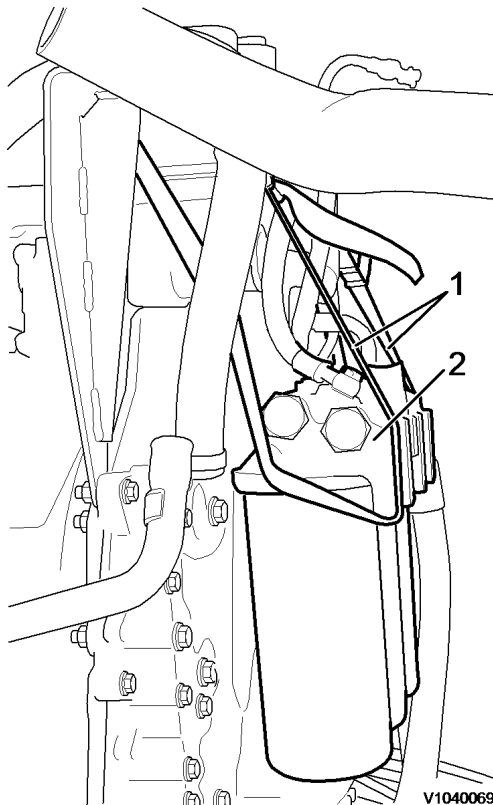
**Do not disconnect or loosen connections for the air conditioning unit (AC). Risk of gas leakage.**

20. Disconnect the charge-air pipe in the space between the radiator and the intermediate wall. Remove the bolts that hold the preheating coil. Fold aside the heating coil and remove the pipe.
21. Disconnect the bracket for the AC hoses from the intermediate wall.
22. Disconnect the radiator hose and remove the bottom plate.
23. Remove the intermediate wall.  
Weight approx.: **65 kg (143 lbs)**



**Figure 7**

1. Lifting eye M12, 2 pcs.
2. Shackle M16, 2 pcs.
3. Slings, 4 m (13 ft)



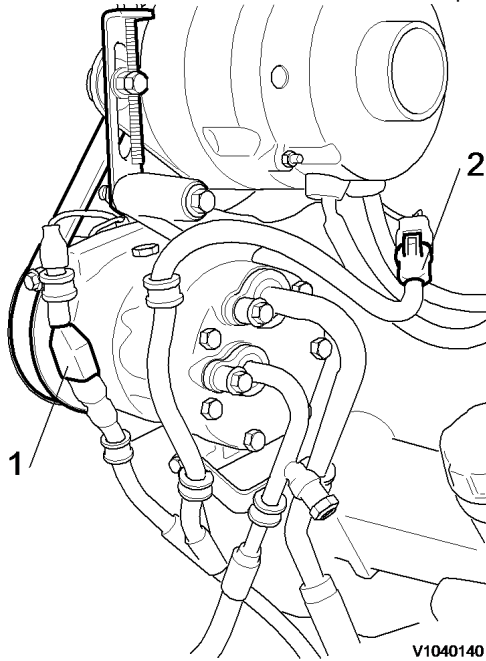
24.

**Figure 8**

1. Tensioning strap
2. Bracket with oil filter

Tighten up the oil filters against the engine with a tensioning strap.

25. Disconnect the connectors for the AC compressor and alternator.



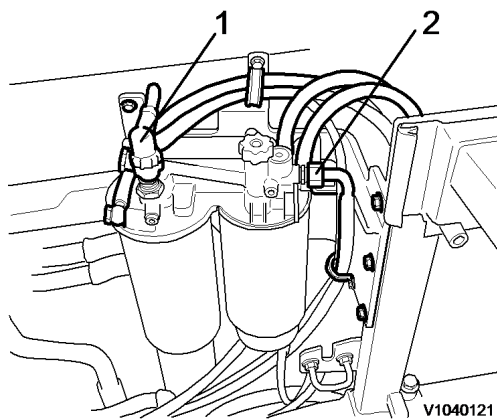
**Figure 9**

1. Connector, MA802
2. Connector, RD

26. Loosen the belt tensioner and remove the belt. Disconnect the AC compressor and lay it on the frame.

27. Mark the hose connections on the fuel filter bracket. Disconnect the fuel hoses from the fuel filters and collect the fuel that drains.

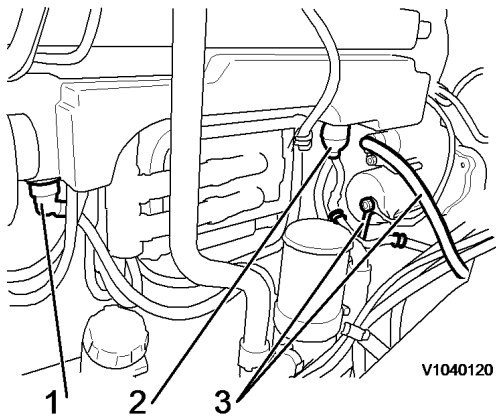
Disconnect the connectors SE2301 and SE2302 and remove their clamps.  
Remove the bracket with the filters.



**Figure 10**

1. SE2301
2. SE2302

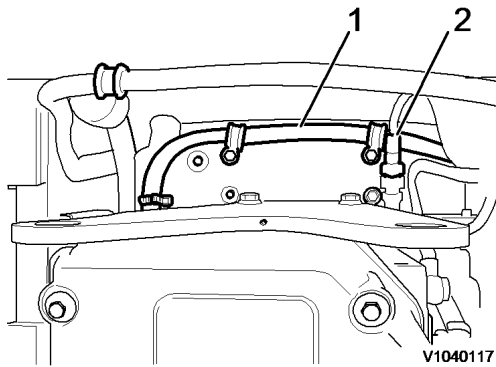
28. Disconnect the connectors EMS and EL and remove their clamping. Disconnect the cables on the starter motor.



**Figure 11**

1. Connector EL
2. Connector EMS
3. Starter motor connections

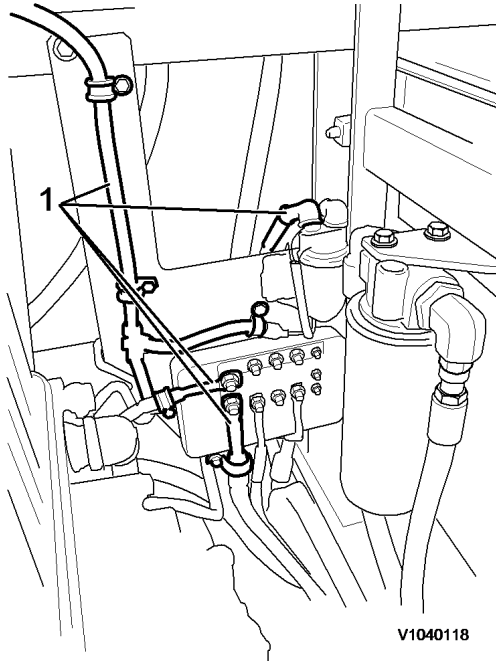
29. Remove the clamps. Disconnect the hose and connector RT.



**Figure 12**

1. Slang
2. Connector, RT

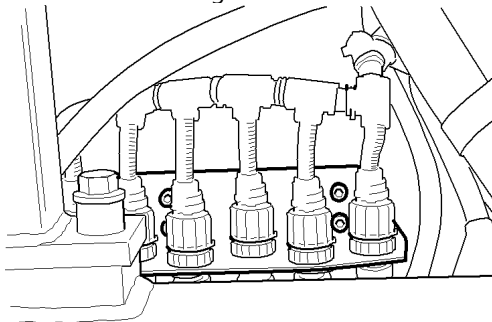
30. Remove the cover for the box with the main fuses and disconnect the cables and their clamps. See fig.



**Figure 13**

1. Cables

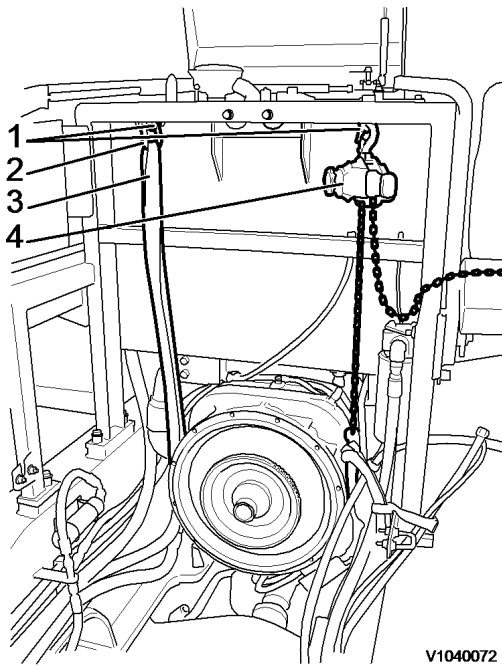
31. Disconnect the bracket and move it aside.
32. Disconnect the bridge for the contacts to the shift solenoids from the transmission.



**Figure 14**

33. Remove the air filters for the transmission and rear axle.  
Secure the hydraulic transmission with lifting eyes, shackle, sling and ratchet block.





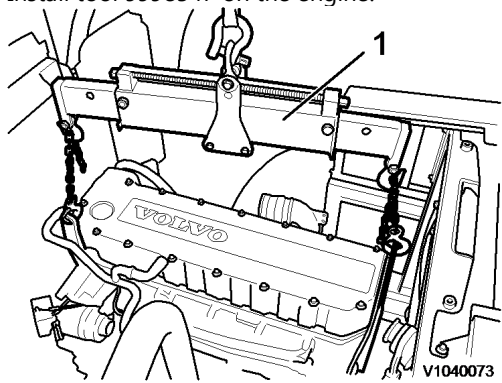
**Figure 15**  
**(Engine removed.)**

1. Lifting eye M12, 2 pcs.
2. Shackle M16, 1 pc.
3. Sling, 4 m (13 ft)
4. Ratchet block, 750 kg

**NOTE!**

Do not tighten up the transmission.

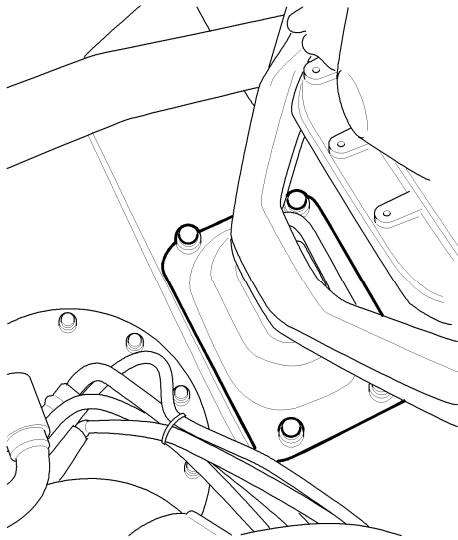
34. Install tool 9998547 on the engine.



**Figure 16**

1. Lifting tool

35. Remove the bolts for the engine mount.



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**Figure 17**

36. Remove the bolts on the hydraulic transmission, except the two upper bolts. Tighten up the transmission using the lifting device. Remove the two upper bolts. Remove the engine.  
Engine's weight: **1250 kg (2756 lbs)**
37. If changing the engine, transfer the components required to the new engine.  
**NOTE!**  
Never transfer a component that could cause a malfunction.

**Thank you very much for reading.**

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