



200 ENGINE REMOVAL

ENGINE REMOVAL



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GENERAL

Details of the engine removal procedure vary from one vehicle to another. This section provides general guidelines for removing the engine from the vehicle.

NOTE

Before beginning engine removal, make sure all equipment is available for use and has been inspected for safety.

Vehicle Preparation

NOTE

It is good practice to steam-clean the engine to remove road grime, grease and oil before starting work. Steam cleaning the engine and engine area allows more detailed inspection and improved workmanship.

Care must be used to keep moisture from entering the air intake system. If moisture does enter the system, make sure it is removed (dried out) before the engine is reinstalled.

1. Position vehicle on a flat and level surface in an area with ample work space in and around the vehicle. Ensure that a suitable lifting device is available.
2. Apply the parking brake and block the vehicle wheels to prevent vehicle from moving. Observe all safety precautions.
3. Disconnect the battery negative (ground) cable.
4. Drain the air tanks.

Engine Removal

1. Remove the hood and position it away from the work area to prevent accidents or hood damage. Refer to Hood Removal procedures in the appropriate vehicle manual.
2. Place a suitable container beneath the engine and drain engine oil and coolant. Open the coolant drain valves in the block, if applicable.

3. Using an appropriate filter wrench, remove the oil filters, fuel filters and coolant conditioner.
4. Loosen clamps that secure the air intake tube to the turbocharger and air filter. Remove the intake tube.
5. If vehicle is equipped with air conditioning:
 - a. Using A/C refrigerant recovery and recycling equipment, recover the A/C system refrigerant.
 - b. Disconnect the A/C compressor discharge hose at connection near the radiator support.
 - c. Disconnect the A/C line at the receiver/dryer.
 - d. Locate and disengage the electrical connector from binary pressure switch on the receiver/dryer.
 - e. Locate and disengage the electrical connector from the low-pressure cutout switch in the A/C refrigerant line.
6. Disconnect the upper radiator hose from the engine coolant outlet fitting.
7. Disconnect the lower radiator hose from the coolant inlet of the oil cooler assembly.
8. Remove the clamps that retain the coolant overflow tank. Remove tank.
9. Disconnect the chassis-mounted charge air cooler inlet hose at the cooler.
10. Disconnect the chassis-mounted charge air cooler outlet hose at the cooler.
11. Locate the engine coolant temperature sensor and disengage the electrical connector, if applicable. Remove sensor harness from the radiator support.
12. Remove fastener from the bracket that secures the radiator fan air clutch solenoid valve to the radiator support. Set the solenoid valve aside.
13. Remove the retaining bolts from the radiator support rods at the radiator support.
14. Obtain a lifting device (chain fall or engine hoist) and support the radiator.
15. Remove the retaining bolts from the radiator support mounts.
16. Remove the radiator from the vehicle using a lifting device and an assistant, if required.



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17. Disconnect the heater hoses and A/C refrigerant lines, if applicable, from connections at the lower dash panel behind the engine.
18. Disconnect the tube connecting the turbocharger to the air cleaner assembly.
19. Remove all coolant tubes, ground straps, air lines, fuel lines, hydraulic hoses or tubes, throttle linkage and electrical wiring harnesses that are attached to the engine and would prevent its removal.
20. Remove the air cleaner assembly, if required.
21. Remove the exhaust bracket from the clutch, or the torque converter, flywheel housing and exhaust clamp at the turbocharger.
22. Remove power steering hoses and the reservoir, if applicable.
23. Disconnect any electrical cables or wires still connected to the starter. Remove three mounting capscrews from the mounting flange and remove the starter.
24. Support the transmission with an appropriate transmission jack.
25. Remove the retaining bolts that secure the transmission bell housing to the flywheel housing.
26. Remove the hood rest crossmember(s), if applicable.
27. Obtain the appropriate lifting equipment (bar or chain) and attach to the proper lift points on the engine.
28. Position and attach the engine hoist to the lift bar or chain and place tension on the bar or chain by operating hoist.
29. Remove the clutch linkage and bracket retaining bolts (manual transmission).
30. Remove torque converter access panel and remove capscrews that secure the torque converter to the flywheel (automatic transmission).
31. Remove the retaining bolts that secure the engine mounts to the engine.
32. Obtain assistance for removal of the engine. Remove engine while watching for obstructions that interfere with its removal such as engine or chassis components, brackets, clamps or other parts still attached to the engine.
33. Refer to the ENGINE DISASSEMBLY section of this manual for procedures for mounting the engine on an engine stand.



NOTES
