

1997 Volvo 850 GLT

1997-98 ENGINES 2.3L & 2.4L 5-Cylinder & 2.9L 6-Cylinder

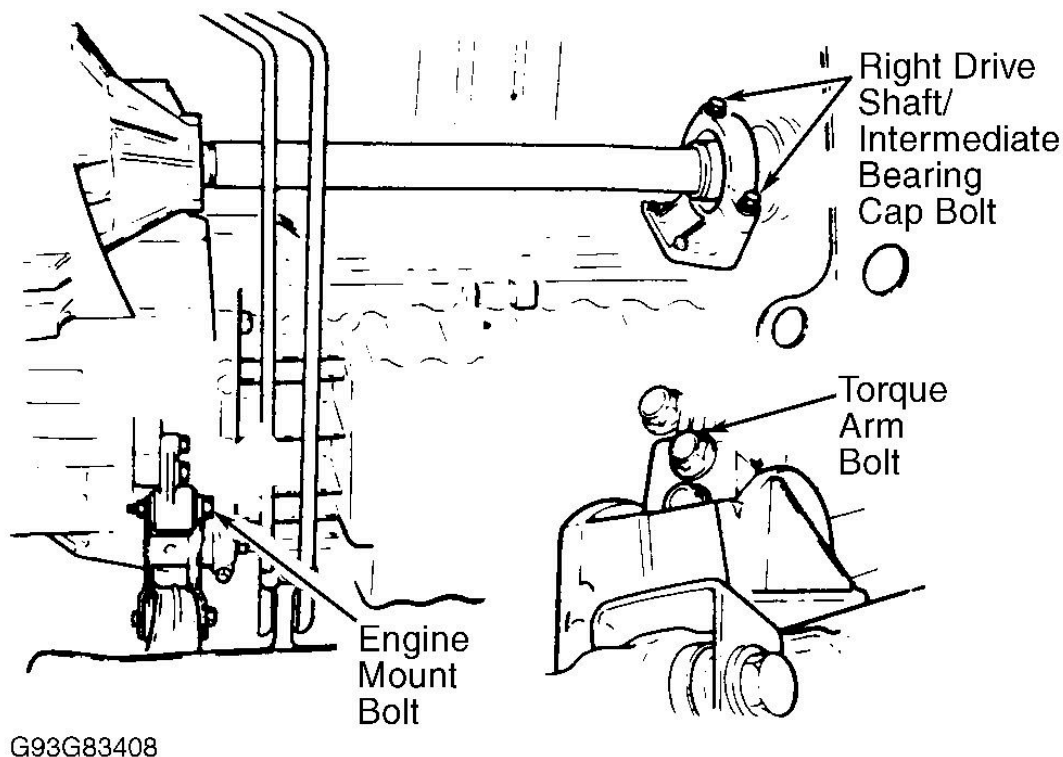


Fig. 2: Removing Drive Shaft, Engine Mount Bolt & Torque Arm (5-Cylinder)
Courtesy of VOLVO CARS OF NORTH AMERICA.

4. Remove front exhaust pipe nuts and springs. Remove front exhaust pipe bolts. Disconnect speedometer. Remove engine mounting shield bolt. Lower vehicle.
5. Remove battery, battery self, and fresh air hose between air intake and air cleaner housing. Disconnect MAF sensor connector and primary lead between distributor and coil. Remove throttle pulley cover. If equipped with cruise control, disconnect all necessary electrical wiring and vacuum hose.
6. Disconnect intake hose at throttle body and idle air control valve hose. Disconnect vacuum hose and crankcase ventilation hose from intake hose. Disconnect vacuum hoses and connector from solenoid valve. Disconnect heater hose. Remove air cleaner housing. Disconnect throttle cable from throttle pulley. Remove torque arm.
7. Disconnect 2 heater hoses at firewall, brake servo hose, and 2 HO2S connectors. Remove upper nut on rear engine mount. Disconnect gear selector cables from mounting bracket on transmission. Disconnect rubber-mounted section of cable bracket. On automatic transmission equipped vehicles, disconnect 2 oil cooler hoses. On manual transmission equipped vehicles, remove clutch slave cylinder retaining ring. Remove slave cylinder from transmission.
8. On all vehicles, disconnect negative battery cable. Disconnect lower radiator hose at radiator. Loosen and move air cleaner mounting bracket aside. Remove rubber mount from air cleaner bracket. On manual transmission equipped vehicles, remove clutch slave cylinder through front hole in air cleaner bracket and place aside. On all vehicles, place air cleaner bracket aside.

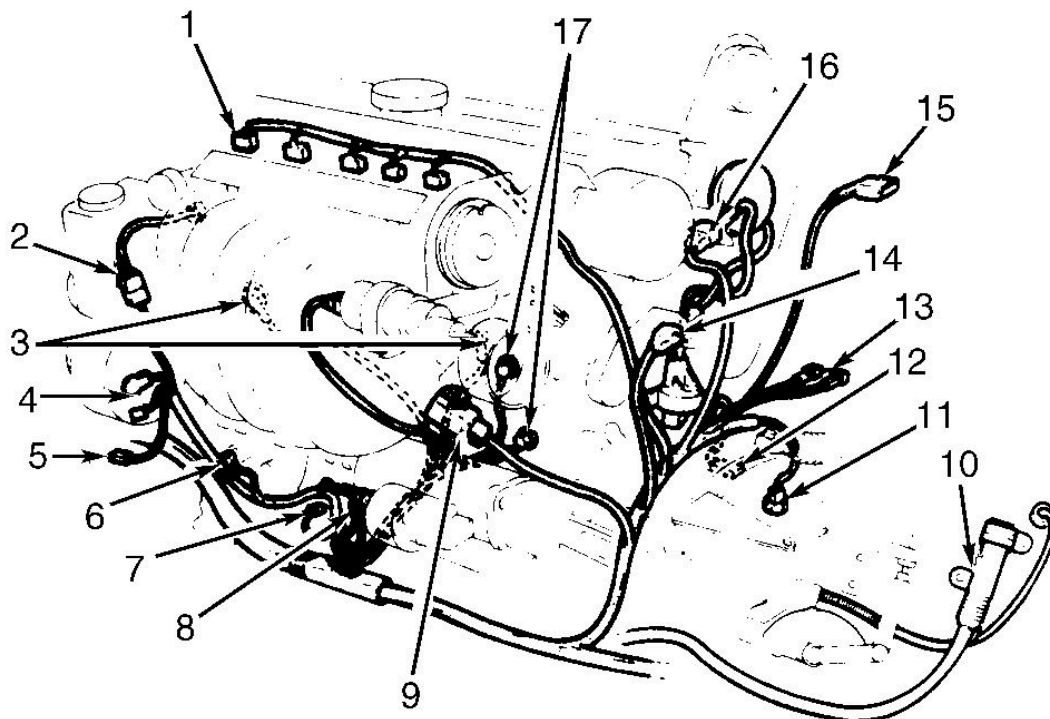
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9. Remove electric cooling fan relays from fan shroud. Disconnect connectors and place wiring aside. Remove 2 control module box cooling air ducts. Remove 4 fan shroud screws from radiator. Use a piece of plywood to protect radiator and slide fan housing back slightly and remove air intakes. Remove fan.
10. Remove 2 long mounting bolts in A/C compressor. Leave compressor in position until removing engine. Remove front engine mounting pad nut and cable duct bracket mounting bolts. Remove intake manifold and starter support brackets.
11. Disconnect upper radiator hose from thermostat housing. Remove coolant hose between expansion tank and thermostat housing. Remove expansion tank lower hose from fitting on engine. Remove drive belt. Disconnect temperature sensor wiring from bracket on servo pump. Remove 6 servo pump bolts. Leave servo pump in position at this time.
12. Remove protective cover over fuel distribution manifold. Remove upper and lower fuel pipe clips. Remove fuel distribution manifold bolts. Disconnect braided ground lead from engine. Secure injectors with 5 Holders (5465). Lift and place fuel distribution manifold (including injectors) aside. Remove engine wiring harness. See **Fig. 3**.

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|-----------------------------|------------------------------|
| 1. Injectors | 10. Lead To Auto. Trans. |
| 2. Coolant Temp. Sensor | 11. Back-Up Lights |
| 3. Knock Sensor | 12. Speed Sensor |
| 4. Alternator | 13. HO2S Connector |
| 5. A/C Compressor | 14. Camshaft Position Sensor |
| 6. Cooling Fan | 15. Mass Airflow Sensor |
| 7. Starter Motor | 16. RPM Sensor |
| 8. Oil Pressure Switch | 17. Ground Terminals |
| 9. Throttle Position Sensor | |

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Fig. 3: Removing Engine Wiring Harness (5-Cylinder)
Courtesy of VOLVO CARS OF NORTH AMERICA.

13. Remove spark plug cover and attach Lifting Lugs (5459 and 5464) to engine. Lift servo pump and place aside. Remove A/C compressor and place on sub-frame. Lift out engine and transmission using Lifting Yokes (2810 and 5428).

Removal (6-Cylinder)

1. Place hood in vertical position. Disconnect battery. Remove ground lead connection to body at top side member. Remove clip on side member. Remove battery. Remove auxiliary drive belt. Remove cooling fan and drain coolant.

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2. Disconnect upper and lower coolant hoses from engine. Disconnect expansion tank hose from radiator and return pipe. Disconnect cooling lines from radiator.
3. Remove top nut from both left and right engine mounts. Remove air mass meter and intake hose. Disconnect and remove large and small crankcase ventilation hoses, idling hose and idling valve lead.
4. Remove 2 EVAP valve hoses at intake manifold. Remove air mass meter connector, air preheater hose and throttle pulley cover. Remove 3 bolts at front of servo pump and 2 at rear of servo pump. Remove servo pump.
5. Disconnect fuel return line at regulator. Remove fuel line at bulkhead. Remove throttle cable. Remove cruise control vacuum hose. Remove fuel line snap catches. Remove engine wiring harness cover and disconnect connector. Remove harness duct mounting nuts.
6. Disconnect 2 cooling hoses from firewall. Remove 2 ECC hoses at intake manifold. Remove camshaft sensor, timing pick-up and brake servo vacuum line. To support engine, use 2 Support Rails (5033), Lifting Beam (5006), Lifting Hook (5115) and Lifting Yoke (5428). Attach Lifting Lug (5429) to rear of engine. Support engine.
7. Remove splash guard and air baffle under engine. Loosen 2 radiator mounting bolts. Drain engine oil. Disconnect oil thermostat hoses at thermostat in cylinder block. Remove 2 air conditioner compressor mounting bolts and disconnect electrical connector. Remove compressor and lay aside.
8. Loosen exhaust pipe flanges at manifold. Remove lower section of air preheater pipe. Remove exhaust pipe shield. Remove oil cooler lines at transmission. Disconnect gear selector lever from transmission.
9. Disconnect oxygen sensor wiring. Mark propeller shaft for reassembly reference. Disconnect propeller shaft and remove transmission support member. Place jack under transmission and remove all lifting tools. Remove radiator attaching bolts. Lift out radiator and transmission fluid cooling lines.
10. Using Lifting Tool (2810), lift engine from vehicle. Remove jack from under transmission.

Installation (5-Cylinder & 6-Cylinder)

1. Attach Lifting Lug (5429) to rear of engine. Using Lifting Yoke (5428) and Lifting Tool (2810), lower engine and transmission into position. Guide engine mountings into position and tighten top nuts to 37 ft. lbs. (50 N.m).
2. Support transmission with floor jack, and remove lifting yoke from engine. Using 2 Support Rails (5033), Lifting Beam (5006) and Lifting Hook (5115), support rear of engine. Remove jack under transmission. Using Transmission Lifting Fixture (5972), raise transmission. Install transmission support member. Tighten bolted joints between support member and side members. Tighten transmission bump stop nut to specification. See **TORQUE SPECIFICATIONS**.
3. Install control rod and reaction arm to lever mounting. Install locking clip. Install oxygen sensor and reconnect electrical connector. Using Socket (5244), tighten front and rear couplings. Ensure "O" ring is okay and install air preheater pipe to exhaust pipe.
4. Install air conditioning compressor to mounting. Reconnect oil cooler lines. Tighten fittings to 26 ft. lbs. (35 N.m). Remove lifting tools.
5. Reinstall coolant hoses to firewall. Install timing pick-up and camshaft sensor connectors. Reconnect engine connector to wiring harness connector on left wheel housing. Reconnect relay and install wiring duct mounting nuts. Install harness connector cover.
6. Install fuel hoses, cruise control vacuum hose, ECC vacuum hoses, brake servo vacuum hose, throttle cable and throttle pulley cover. Install air mass meter and intake hose. Reconnect idling valve hose and

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connector. Reconnect oil trap hoses. Reconnect 2 EVAP vacuum hoses.

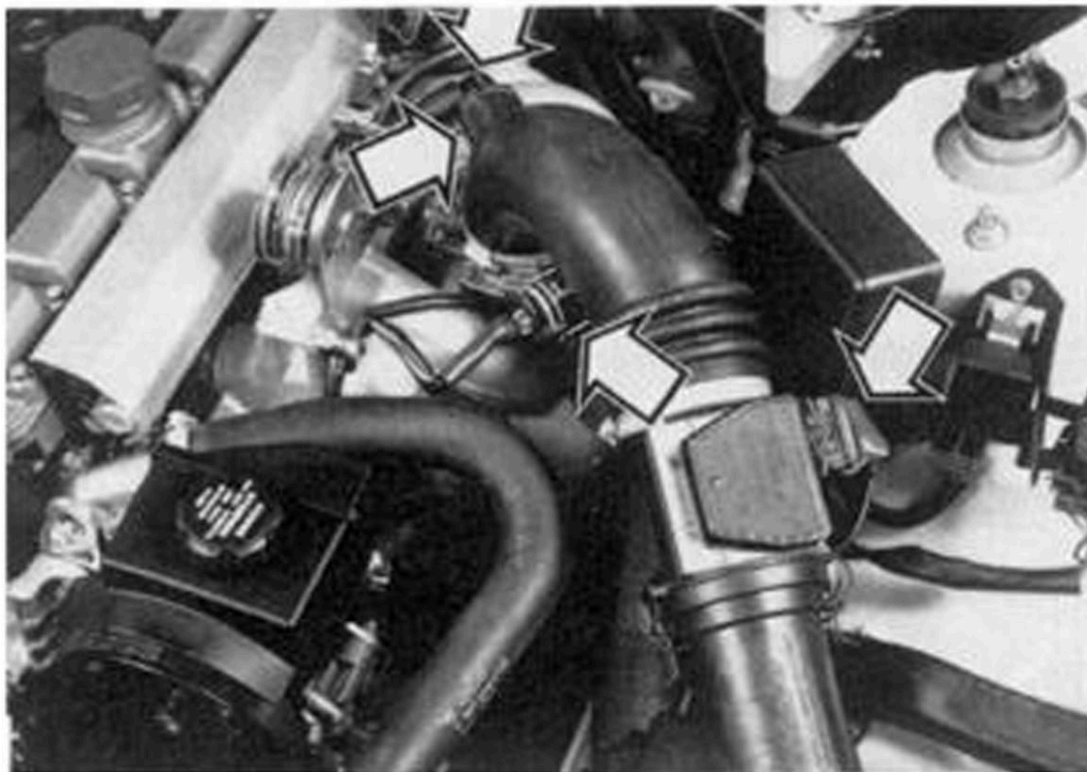
7. Install servo pump and drive belt. Install radiator and radiator hoses, expansion tank hoses, and transmission oil cooler lines. Tighten cooling line fittings to 26 ft. lbs. (35 N.m). Install cooling fan. Install battery and reconnect positive cable.
8. Jack up vehicle and reconnect cooling lines to transmission. Tighten fittings to 26 ft. lbs. (35 N.m). Install exhaust pipe and heat shield. Install radiator mounting bolts, air baffle under radiator, and splash guard under engine. Fill engine with oil and cooling system. Connect negative battery cable. Start engine, and check for leaks.

INTAKE MANIFOLD

NOTE: Information is not available for 5-cylinder engines.

Removal & Installation (6-Cylinder)

1. Remove the outer section of the intake manifold. Remove the Mass Air Flow (MAF) sensor with the inlet hose. Disconnect battery negative lead. Disconnect connector at the MAF sensor. See **Fig. 4**. Remove the Idle Air Control (IAC) valve electrical terminal and air hose. Remove flame trap casing (bayonet connector). Remove inlet hose.

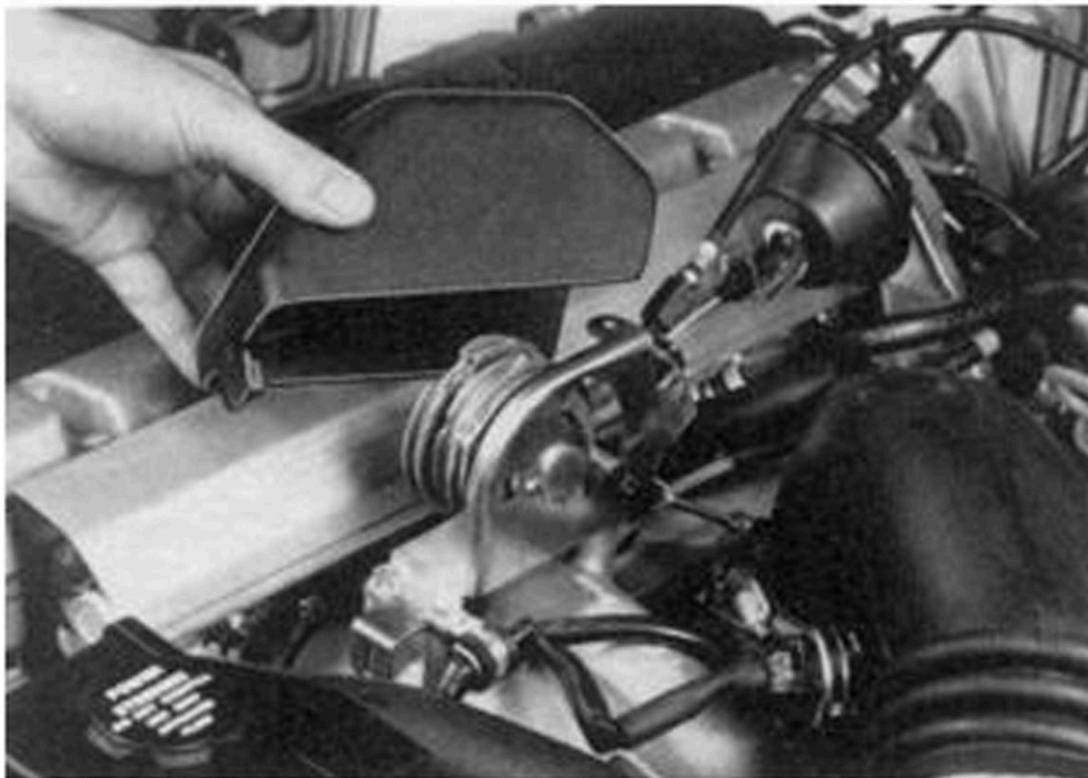


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Fig. 4: Locating MAF Sensor Connector
Courtesy of VOLVO CARS OF NORTH AMERICA.

2. Remove throttle pulley cover. See **Fig. 5**. Remove the following components. See **Fig. 6**.

- Throttle switch electrical terminal
- Throttle cable
- Cruise control vacuum reservoir
- Cable holder at throttle pulley
- 2 vacuum hoses at throttle body



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Fig. 5: Removing Throttle Pulley Cover
Courtesy of VOLVO CARS OF NORTH AMERICA.