1992 Volvo 940

Submodel: | **Engine Type:** L4 | **Liters:** 2.3
Fuel Delivery: FI | **Fuel:** GAS

NOTE: In addition to a driver side air bag module, some models contain a passenger side air bag module, located above the glove box.

Driver Side

WARNING
Before working near the steering wheel, read the SRS service precautions earlier in this section.

1. Place the front wheels in a straight-ahead position.
2. Disconnect the negative battery cable AND TAPE the cable end away from the battery.
3. Turn the ignition key to position **I** so that the steering lock is OFF.
4. On some models, remove the sound insulation knee guard and the side panel from the center console.
5. Turn the steering wheel slightly in order to reach the 2 Torx® bolts in back of the steering wheel.
6. Remove the two attaching bolts.
7. Disconnect the connector and remove the air bag module.

   CAUTION
   Be sure to carry the air bag module with the pad facing away from you, and place it on a workbench or other flat surface with the pad facing upward. This will reduce the chance of injury in the event of accidental deployment.

   NOTE: Do not turn the ignition switch

   ON while the air bag assembly is removed, as this will register a fault code.

   To install:

8. Rest the bottom of the air bag assembly on the steering wheel and reattach the connector.
9. Place the air bag module in position, being careful not to get the leads caught.
10. Install and tighten the retaining bolts to 53 inch lbs. (6 Nm).

    NOTE: When tightening the air bag assembly retaining bolts, tighten the right side bolt first.

11. Install the knee guard (if removed).

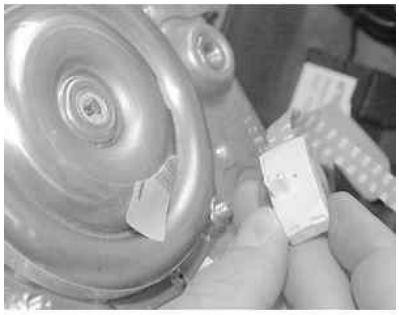
    CAUTION
    When connecting the battery, make sure that no one is in the vehicle, in case of an SRS malfunction causing accidental air bag deployment.

12. Connect the negative battery cable.
13. Turn the ignition on and check the SRS system for codes.

Fig. 1: Remove the driver side air bag module's retaining bolts . . .

Fig. 2: . . . and carefully pull the module from the steering wheel

Fig. 3: Unplug the connector from the air bag and remove the module from the car. Handle and store the module safely, as described



Passenger Side

The passenger side air bag is removed when the instrument panel cover is removed. See the Instrument Cluster Removal and Installation procedure, later in this section, for removal of the cover. After the cover is removed, the air bag module is simply unbolted from the cover. To install, tighten the module retaining bolts and install the cover back onto the instrument panel.

1992 Volvo 940

Submodel: | **Engine Type:** L4 | **Liters:** 2.3
Fuel Delivery: FI | **Fuel:** GAS

WARNING
Before working near the steering wheel, read the SRS service precautions earlier in this section.

1. Place the front wheels in a straight-ahead position.
2. Disconnect the negative battery cable AND TAPE the cable end away from the battery.
3. Remove the air bag assembly.

   NOTE: Do not turn the ignition switch ON while the air bag assembly is removed, as this will register a fault code.
4. Unfasten the retaining bolt and remove the steering wheel. On some models, it may be necessary to use a puller; if so, follow the tool manufacturer's instructions.
5. Detach the connector and remove the contact reel.

   To install:
6. Set the contact reel to the zero position. If the contact reel must be "zeroed," turn the reel to the far right end and then back 3 revolutions to the left. Lock the contact reel with the screw in the plastic strip.
7. Install the steering wheel.
8. Install the air bag assembly.

   CAUTION
   When connecting the battery, make sure that no one is in the vehicle, in case of an SRS malfunction causing accidental air bag deployment.
9. Reconnect the negative battery cable.
10. Check the vehicle operation and SRS system for fault codes.

1992 Volvo 940

Submodel: | **Engine Type:** L4 | **Liters:** 2.3
Fuel Delivery: FI | **Fuel:** GAS

The air bag system used on Volvo vehicles is referred to as Supplemental Restraint System (SRS). The SRS system provides additional protection for the driver, if a forward collision of sufficient force is encountered. The SRS assists the normal seat belt restraining system by deploying an air bag, via the steering wheel and, on some models, the passenger side of the dashboard.

The system also includes a knee bolster at the lower steering column area. It is used to absorb energy and control the driver's forward movement during an accident by limiting leg movement.

The system also includes a battery voltage check. The SRS warning lamp will illuminate, if the voltage falls below 9 volts. When the voltage rises above 9 volts again, the lamp will be go out after approximately 10 seconds.

The SRS system is monitored continuously by a microprocessor in the crash sensor. Any fault which is detected is stored in the memory and the SRS warning lamp will turn ON.

Some later Volvo models are equipped with a Side Impact Protection System (SIPS). Vehicles equipped with SIPS will contain a decal possibly located on the front windshield, driver's side of the instrument panel, below the seat pocket, or on the driver's side B-pillar.

The object of the SIPS system is to protect the occupants in the event of certain side-impact accidents. An air bag is deployed to cushion the impact against the outer side of the vehicle. This system uses sensor mounted in the seat bottom, just outside the seat track. If an accident occurs, the bag could deploy, triggered based upon information gathered by the crash sensor measuring the violence of the collision. This sophisticated process occurs in milliseconds.

The SIPS system is not part of the SRS system and has it's own function, in fact unlike the SRS system, the SIPS system can deploy one side without deploying the other, depending on which side the impact occurs.

Fig. 1: This label is a reminder of the presence of a Supplemental Restraint System (SRS); be sure to heed the information

Fig. 2: This label is a notification of the presence of a Side Impact Protection System (SIPS); again, note the service requirements

1992 Volvo 940

Submodel: | **Engine Type:** L4 | **Liters:** 2.3
Fuel Delivery: FI | **Fuel:** GAS

Assuming that the system components (air bag control module, sensors, air bag, etc.) are installed correctly and are in good working order, the system is armed whenever the battery's positive and negative battery cables are connected.

WARNING
If you have disarmed the air bag system for any reason, and are re-arming the system, make sure no one is in the vehicle (as an added safety measure), then connect the negative battery cable.

1992 Volvo 940

Submodel: | **Engine Type:** L4 | **Liters:** 2.3
Fuel Delivery: FI | **Fuel:** GAS

---

1. Turn the ignition switch to the **OFF** position.
2. Disconnect the negative battery cable AND TAPE the cable end away from the battery.

1992 Volvo 940

Submodel: | **Engine Type:** L4 | **Liters:** 2.3
Fuel Delivery: FI | **Fuel:** GAS

NOTE: Since the Supplemental Restraint System (SRS) is such a complex and critical safety system (which requires special precautions when repairs are being made), Volvo recommends that all repairs to the SRS system be performed by Volvo SRS-trained technicians.

CAUTION
To avoid deployment when servicing the SRS system or components in the immediate area, do not use electrical test equipment such as battery or AC powered voltmeter, ohmmeter, etc. or any type of tester other than specified. Do not use a non-powered probe tester. To avoid personal injury all precautions must be strictly adhered to.

- All work which includes removing or replacing the air bag assembly must be carried out with the battery disconnected and with the ignition turned **OFF** for the duration of work. This is to ensure that the air bag does not accidentally inflate during service repairs and that no faults codes will register, requiring subsequent cancellation.
- When working around the instrument panel or steering column, take special care to ensure that the SRS wiring are not pinched, chafed or penetrated by bolts/screws, etc. This is most likely to happen when installing the sound insulation, knee bolsters, ignition lock or steering column cover.
- For air bag fault tracing purposes and/or to check the system, use multimeter 999 6525 and test resistor 998 86595 or their equivalents.
- Do not disassemble or tamper with the air bag assembly.
- Always store a removed air bag assembly with the pad surface upwards.
- Never install used SRS parts from another vehicle.
- Never replace the original steering wheel with any other design, since it will make it impossible to properly install the air bag.
- Always detach the yellow SRS connector when performing any diagnostic troubleshooting or service procedure associated with the SRS system.
- When repairs are made to the front suspension and steering, be aware that the contact reel can only withstand being turned 3 turns in either direction.
- Never install an air bag assembly that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.
- When replacing a sensor, the replacement unit should be installed with the directional arrow oriented.
- Do not energize the system until all components are connected. A failure code may appear.
- Always wear gloves and safety glasses when handling the air bag assembly. Wash hands with mild soap and water afterwards.
- Always store the air bag assembly on a secure flat surface, away from high heat source and free of oil, grease, detergent or water.
- Never disconnect any electrical connection with the ignition switch **ON** unless instructed to do so in a test.
- Before disconnecting the negative battery cable, make a record of the contents memorized by each memory system (audio, seats, etc.). Then when service or repairs are completed, make certain to reset these memory systems.

1992 Volvo 940

Submodel: | **Engine Type:** L4 | **Liters:** 2.3
Fuel Delivery: FI | **Fuel:** GAS

Under normal conditions, the SRS warning lamp will come ON when the ignition switch is turned to the **ON** position. If the engine is not started, the lamp will be extinguished after approximately 10 seconds. Failure of the warning lamp to go OFF, while driving, indicates a fault in the SRS system. The warning lamp will remain lit until the fault is corrected and the memory cleared.

The crash sensor records a combination of G-force and prolong deceleration. When a sufficiently high G-force and prolong deceleration are simultaneously recorded, the power unit will deliver a current which will trigger the gas generator of the inflatable bag. The bag will be filled in a few hundredths of a second with non-toxic nitrogen. Immediately after the collision, the gas is released through a ventilation hole and the air bag slowly collapses. The entire sequence of inflation and collapse takes approximately 0.2 milliseconds.

The SIPS system works very similar to the SRS, however the SIPS is completely mechanical. Only three components per side of the vehicle are used. The crash sensor operates very similar to the SRS and activates when an impact of the deformed door hits the sensor at a speed greater than 2 milliseconds or 6.6 ft. per second. No electricity is used, the crash sensor deploys an igniter that uses a charge very similar to the way a shotgun is fired to fill the bag.

The SIPS bag deploys and breaks through the seat cushion SIPS module cover. A stitch seam in the seat is strategically placed to aid in this process. The bag deploys toward the door to help protect the driver/passenger's rib cage during a side-impact collision. There is a vent on the underside of the bag which will allow the bag to deflate slowly, acting as a brake on the driver/passenger.