

Front side-impact airbag, removing and installing

1. Disconnect negative (-) cable from battery and cover negative terminal with insulating material.

CAUTION —

Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

2. Remove inside door panel as described in **411 Doors**. Remove vapor shield.
3. Disconnect electrical harness connector from door-mounted airbag unit. See Fig. 12.

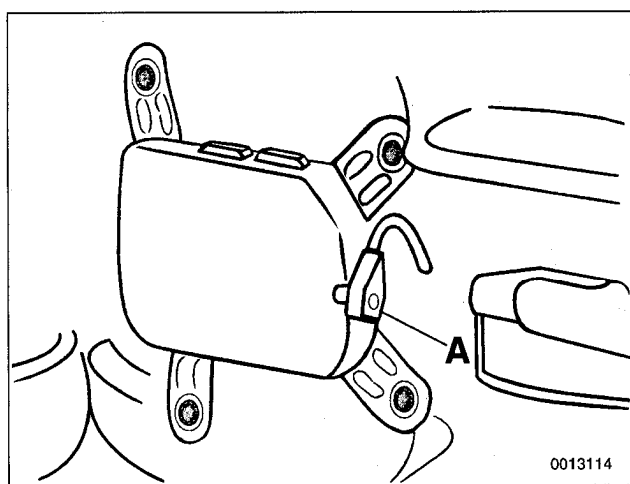


Fig. 12. Front side-impact airbag (inner door panel removed). **A** is electrical harness connector.

WARNING —

The plug connector inside the door is not marked in orange, unlike other SRS connectors in the car.

CAUTION —

- The electrical harness connector of the side-impact airbag unit may be either on the side of the unit or in the back. When removing and installing the unit, pay attention to the routing of the harness to avoid kinks or breaks in the wire.
- Store the removed airbag unit with the soft pad facing up. If stored facing down, accidental deployment could propel it violently into the air, causing injury.

4. Remove mounting screws and remove airbag from door.
5. Installation is reverse of removal.

WARNING —

The side-impact airbag mounting screws must always be replaced any time they are removed. Use new screws with factory-applied locking sealer.

Tightening Torque

- Side-impact airbag to door 8.5 Nm (75 in-lb)



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5. Carefully lift airbag unit off steering wheel and disconnect orange harness connector from rear of airbag unit. See Fig. 10.

NOTE —

In some models, the airbag electrical connection to the steering wheel is via a plug in back of the airbag unit. There is no wire harness to disconnect.

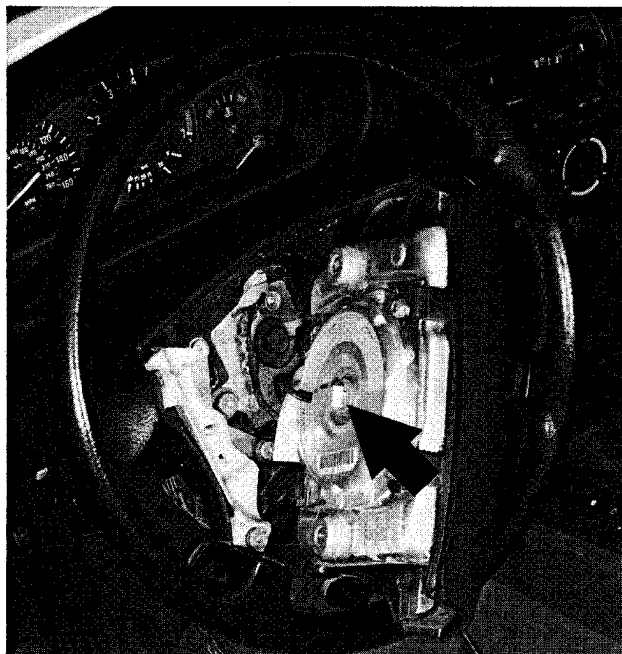


Fig. 10. Driver side airbag unit harness connector (arrow).

WARNING —

- Store the removed airbag unit with the horn pad facing up. If stored facing down, accidental deployment could propel it violently into the air, causing injury.
- Once an airbag is removed, the car must not be driven.
- Do not connect the battery with the airbag disconnected. A fault code will be stored, setting off the SRS warning light. Special tools are needed to reset the fault memory.
- Special instructions apply when installing an airbag equipped steering wheel. See 320 Steering and Wheel Alignment.
- Once the airbag unit is installed and all other service procedures have been completed, start the engine and check that the SRS warning light goes out. If the warning light stays on, the SRS system will not function as designed. Have the system diagnosed and repaired by an authorized BMW dealer.

6. Installation is reverse of removal. Tighten right side screw on airbag first (as viewed from driver's seat), then left side screw.

NOTE —

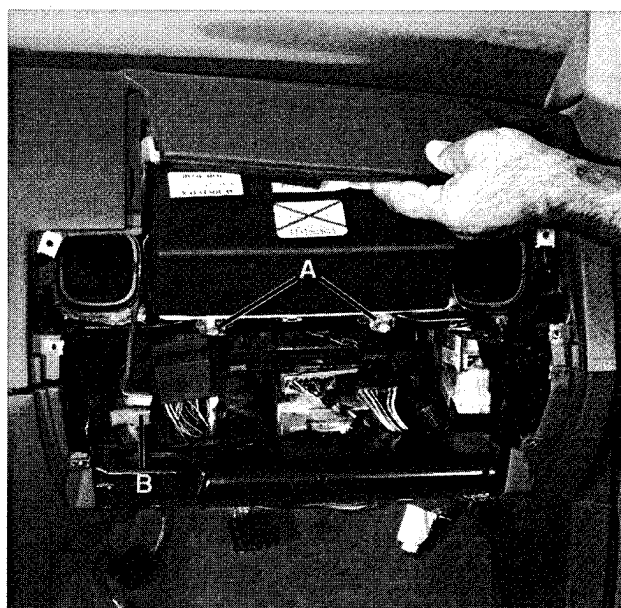
If there is no electrical harness connector between the airbag and the steering wheel, be sure to fit the push-in electrical plug in back of the airbag into the proper receptacle in the steering wheel.

Tightening Torque

- Airbag unit to steering wheel 8 Nm (71 in-lb)

Passenger side airbag, removing and installing

1. Disconnect negative (–) cable from battery and cover negative terminal with insulating material.
2. Remove glove compartment. See 513 Interior Trim.
3. Lift cover from top of passenger side airbag on dashboard. See Fig. 11.



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Fig. 11. After removing glove compartment, lift out passenger side airbag cover. Note airbag mounting bolts (A) and airbag electrical connector (B).

4. Remove passenger side airbag mounting bolts. Disconnect electrical harness connector from rear of airbag unit and remove airbag.
5. Installation is reverse of removal. Make sure wiring harness is not pinched when installing airbag unit in dashboard.

AIRBAGS

Driver side airbag, removing and installing

1. Disconnect negative (–) cable from battery and cover negative terminal with insulating material.

WARNING —

On cars with ZAE system: If the airbag system has detected a fault (SRS indicator illuminated), a waiting period of at least ten minutes must be observed before removing the airbag from the steering wheel. This will allow the system capacitor to discharge, reducing the possibility of a trigger pulse being generated to the airbag.

CAUTION —

Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

2. Remove lower steering column trim mounting screw and remove lower trim. Refer to Fig. 6.
3. Remove orange SRS connector from its holder and carefully separate connector. Refer to Fig. 7.
4. Working behind steering wheel, completely loosen Torx screws (T30) while holding airbag in place. See Fig. 9. Support airbag unit to prevent it from falling out.

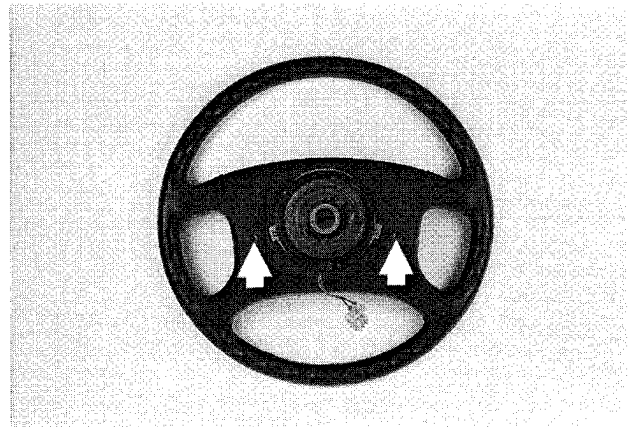
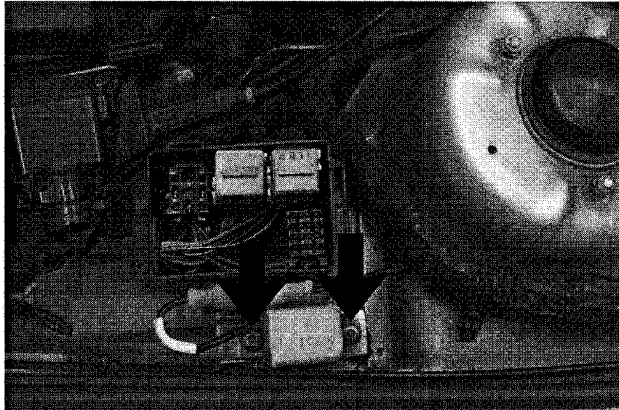


Fig. 9. Driver side airbag unit mounting screws (arrows).

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Fig. 8. Airbag crash sensor mounting screws (arrows) on early cars. Note Torx screws with anti-tamper pin in screw-head.

ZAE control module, replacing

NOTE —

Some versions of early ZAE control modules are no longer available from BMW. When replacing control modules on cars built between September 1993 and June 1994, consult a BMW parts department for the latest information on retrofitting the later module.

1. Disconnect negative (–) cable from battery and cover negative terminal with insulating material.
2. Lift rear seat cushion. Unplug harness connectors and remove ZAE airbag control module, which is bolted to top of driveshaft tunnel.
3. Installation is reverse of removal.

Front side-impact airbag crash sensor, removing and installing

1. Disconnect negative (–) cable from battery and cover negative terminal with insulating material.
2. Remove front seat. See **520 Seats**.
3. Convertible: remove rear seat
4. Remove plastic door sill trim.
5. Fold up carpet in back of front seat.
6. Pull off connector from crash sensor, which is located under rug next to door sill.
7. Remove sensor by removing screws. Note direction arrow before removing sensor.
8. Installation is reverse of removal, noting direction arrow on sensor.

CAUTION —

A new contact ring is held in center position with a screw. This locking device must be removed after contact ring is installed on steering wheel. See Fig. 4.

Later cars (1994 on):

- Connect ground lead at contact ring.
- When installing a new contact ring from BMW (later production cars), remove locking pin after installing contact ring to steering wheel. See Fig. 5.

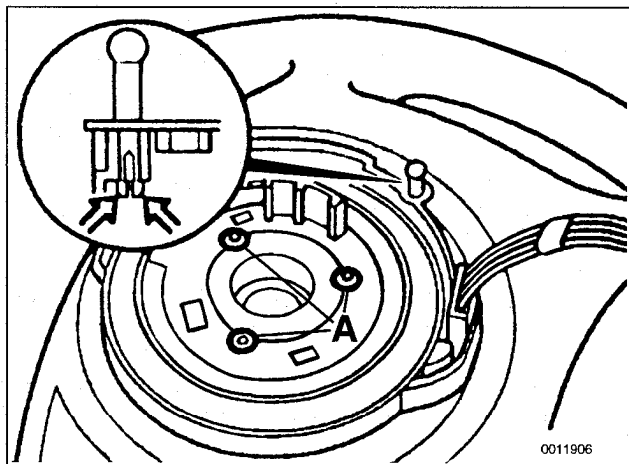


Fig. 5. Airbag contact ring locking pin (arrows), as installed on new replacement part from BMW (later production cars). Contact ring mounting screws shown at A.

CAUTION —

A new contact ring is held in center position with a screw or pin. This locking device must be removed after contact ring is installed on steering wheel. See Fig. 5.

Airbag crash sensor, replacing

The airbag system in cars produced through 1993 uses two crash sensors mounted in the engine compartment on the left and right wheel arches. The sensors are identified by their orange color.

WARNING —

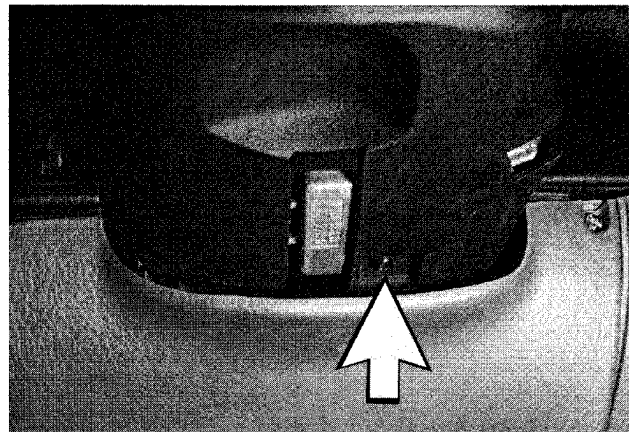
If an airbag is deployed, both sensors must be replaced.

1. Disconnect negative (–) cable from battery and cover negative terminal with insulating material.

CAUTION —

Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

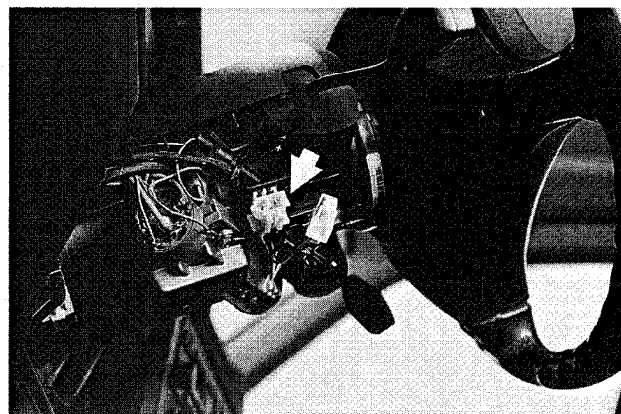
2. Remove lower steering column trim mounting screw and remove lower trim. See Fig. 6.



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Fig. 6. Lower steering column retaining screw (arrow).

3. Remove orange SRS connector from its holder and carefully separate connector. See Fig. 7.



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Fig. 7. Orange SRS connector below steering column (arrow).

4. Working in engine compartment, remove anti-tamper Torx screws from crash sensor. Remove sensor and disconnect harness connector. See Fig. 8.
5. Installation is reverse of removal. Make sure arrow on sensor faces forward when installing sensor.

WARNING —

Once the airbag unit is installed and all other service procedures have been completed, start the engine and check that the SRS warning light goes out. If the warning light stays on, the SRS system will not function as designed. Have the system diagnosed and repaired by an authorized BMW dealer.

Airbag contact ring, replacing

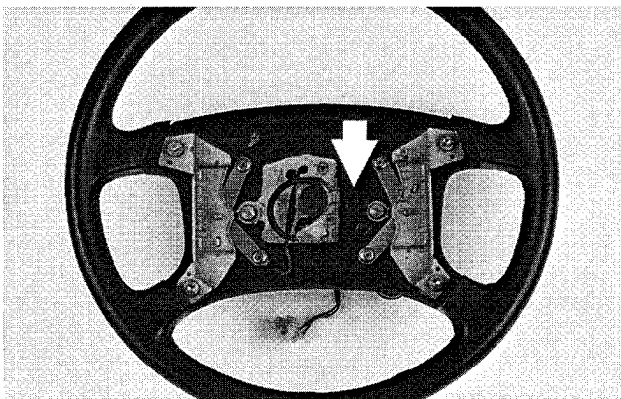
The airbag contact ring is mounted to the rear of the steering wheel and is made up of a wire ribbon that coils and uncoils as the steering wheel is turned. The contact ring assures continuous electrical contact to the driver side airbag unit.

1. Disconnect negative (–) cable from battery and cover negative terminal with insulating material.

CAUTION —

Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

2. Remove driver side airbag from steering wheel. See **Driver side airbag, removing and installing** in this repair group.
3. With wheels facing straight ahead and steering wheel centered, remove steering wheel. See **320 Steering and Wheel Alignment**.
4. Remove contact ring cover (flat plastic ring containing warning text) from steering wheel, if applicable.
5. Disconnect ground wire, if applicable.
6. Lift out plastic lock from steering wheel, if applicable. See Fig. 2.



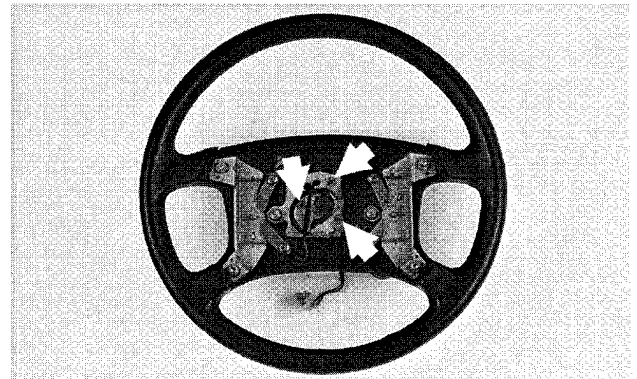
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Fig. 2. Airbag contact ring lock (arrow). Pry out lock and remove spring from behind lock. Some airbag steering wheels are not equipped with contact ring lock.

WARNING —

- The contact ring lock holds the contact ring in the centered position. Once the lock is removed, the contact ring is free to rotate. Do not allow the contact ring to rotate once the lock is removed.
- If the contact ring is accidentally rotated out of center, turn the ring either fully clockwise or counterclockwise, then turn in the opposite direction 3 complete revolutions until the alignment arrow can be seen through the lock opening.

7. Remove mounting nuts or screws from contact ring. See Fig. 3. Disconnect wire lead(s) and remove contact ring from rear of steering wheel.



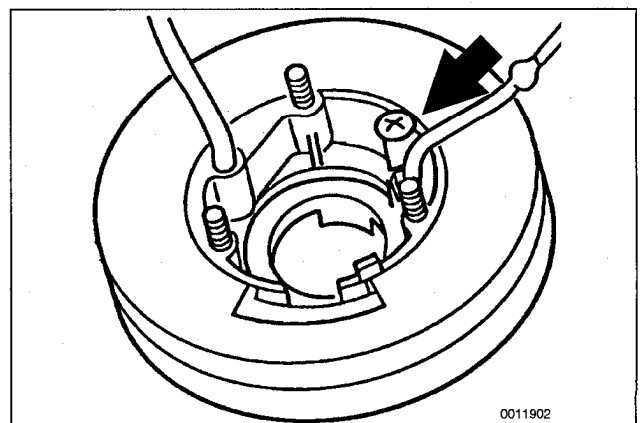
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Fig. 3. Airbag contact ring mounting fasteners (arrows).

8. Installation is reverse of removal, noting the following:
 - Coat horn slip ring (electrical contact ring) with CRC® copper paste before installing steering wheel.
 - Press on lower lock until it is fully engaged.
 - When installing contact ring lock, make sure lock spring engages pins on lock and lock cover.
 - Special instructions apply when installing airbag equipped steering wheel. See **320 Steering and Wheel Alignment**.

Early cars (through 1993):

- Route wiring lead for horn through square opening in steering wheel.
- When installing a new contact ring from BMW, remove locking screw after installing the contact ring to steering wheel. See Fig. 4.
- Lock contact ring mounting fasteners in place using lacquer paint or varnish.



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Fig. 4. Airbag contact ring locking screw (arrow), as installed on new replacement part from BMW (early production cars).

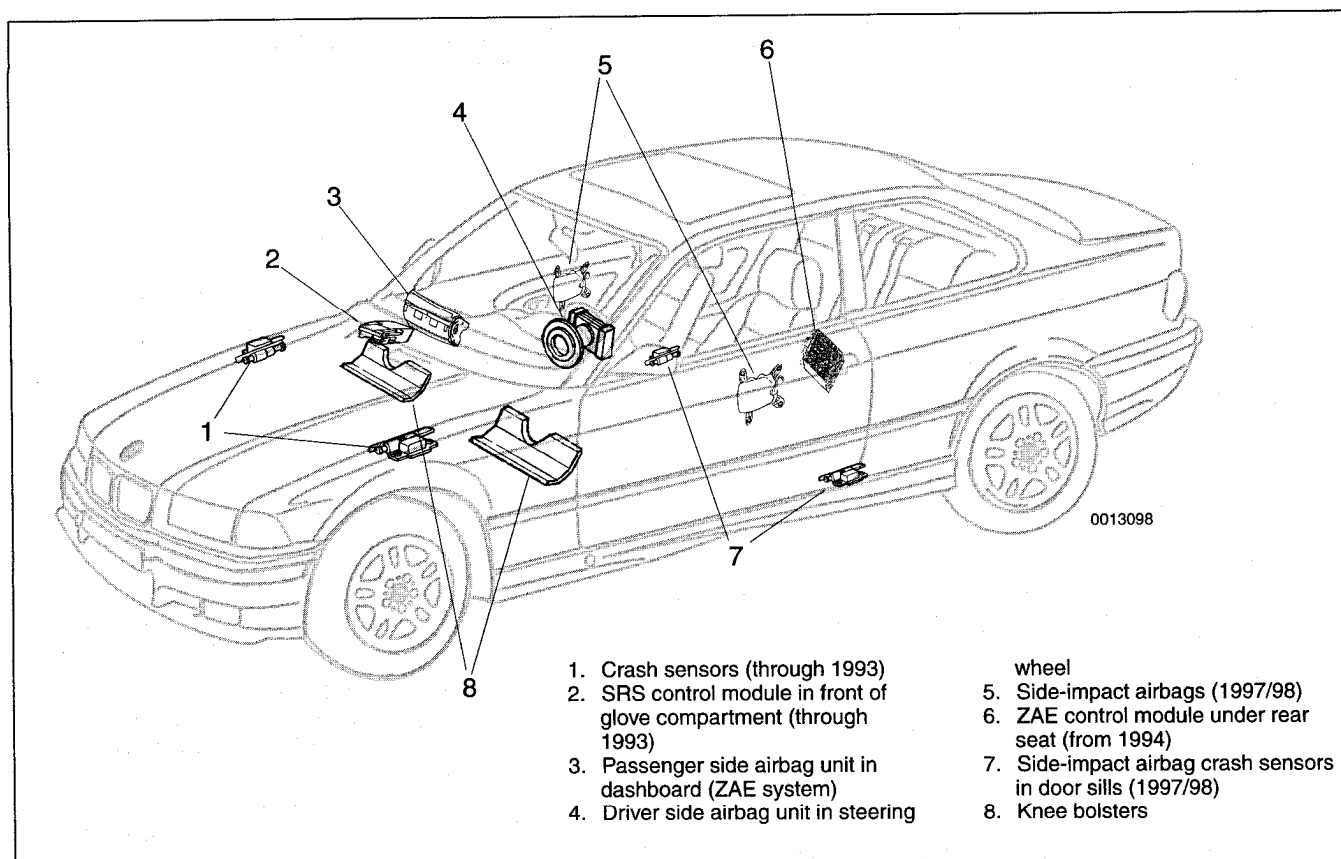


Fig. 1. Airbag system components.

AIRBAG SENSORS AND ELECTRONICS

CAUTION —

- If an airbag is activated, the following components **must** be replaced:
 - Airbag with contact ring;
 - Pyrotechnic seat belt tensioners (if fitted);
 - SRS Control module;
 - Impact sensors;
 - All airbags which did not deploy.
- Consult your BMW dealer for parts and service information.

The E36 airbag system consists of the following components: crash sensors (in early cars, through 1993), an electronic control/monitoring module (with integrated crash sensor in ZAE systems), an indicator light in the instrument panel, and inflatable airbags equipped with gas generators in the steering wheel and in the passenger side of the instrument panel (ZAE systems).

Some 1997 and all 1998 cars also have side-impact airbags in the front doors.

In addition to the airbags, the vehicles are equipped with knee bolsters for extra protection.

SRS Warning Light and Fault Display

The airbag system utilizes a self-diagnostic control module to detect and store system faults. If a fault is detected, the SRS indicator in the instrument cluster comes on and stays on.

When the ignition key is turned on, the indicator light will illuminate for approximately 4-6 seconds. The illuminated light indicates the self-test of the electronic control/monitoring module, the ignitors and crash-sensor circuits, and the system wiring. The airbag system should be inspected by an authorized BMW dealer if the indicator light does not come on, if it does not go out in approximately 4-6 seconds after switching on the ignition, or if the light comes on during driving. If the system has detected a fault, the light will come on and stay on.

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GENERAL

This repair group covers only removal and installation of airbag components. Airbag system repair and fault diagnosis is not covered here. Diagnostics, component testing, and airbag system repair should be carried out by trained BMW service technicians.

NOTE —

Special test equipment is required to retrieve SRS fault codes, diagnose system faults, and reset/turn off the SRS indicator light. The SRS indicator light will remain on until any problem has been corrected and the fault memory has been cleared.

When servicing cars equipped with SRS, the precautions on this page must be observed to prevent personal injury.

Airbag Systems

The airbag system installed on E36 cars through the 1993 model year consisted of a single airbag in the steering wheel. This system can be identified by the orange crash sensors located on the front wheel wells and the absence of a passenger side airbag.

The ZAE airbag system, starting in model year 1994 (production date 9/93 and later), provides both a driver side and a passenger side airbag. On ZAE vehicles, the crash sensors are integrated into the airbag control module, located under the center of the rear seat. The ZAE control module triggers deployment of the airbags when it senses the vehicle decelerating at a rate equivalent to a head-on collision of at least 13 mph (18 km/h).

In some 1997 4-door models and all 1998 models, side-impact airbags were installed in the front doors. The airbag units are mounted behind the door trim panels. Caution must be used when working on vehicle systems in the proximity of air bags, such as the steering column, the dashboard, or the doors.

WARNING —

- Airbag(s) are inflated by an explosive device. Handled improperly or without adequate safeguards, the system can be very dangerous. Special precautions must be observed prior to any work at or near the driver side airbag, the passenger side airbag (where applicable) or the side-impact airbags (where applicable).
- The airbag is a vehicle safety system. Serious injury may result if system service is attempted by persons unfamiliar with the BMW SRS and its approved service procedures. BMW advises that all inspection and service be performed by an authorized BMW dealer.
- Always disconnect the battery and cover the negative (–) battery terminal with an insulator before starting diagnostic, troubleshooting or service work not associated with SRS, and before doing any welding on the car.
- If an airbag has been activated due to an accident, BMW specifies that SRS components be replaced. For more information on post-collision SRS service, see an authorized BMW dealer.
- Do not allow the airbag unit to come in contact with cleaning solutions or grease. Never subject an airbag unit to temperatures above 212°F (100°C). When reconnecting the battery, no person should be inside the vehicle.
- Always place an airbag unit that has been removed from its packaging with the padded side facing upward. Do not leave an airbag unit unattended.
- If the airbag unit or airbag control module has been dropped from a height of ½ meter (1½ ft.) or more, the airbag unit should not be installed.

Airbag system components are shown in Fig. 1.

GENERAL