

510 Exterior Trim, Bumpers

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GENERAL

This repair group includes repair information for the outside rear view mirror, front and rear bumpers, and the easily removable exterior trim parts.

OUTSIDE REAR VIEW MIRRORS

The remote controlled mirrors come in two styles: heated and unheated. Many of the mirror components are separately available from an authorized BMW dealer, including the glass and outside plastic housing.

Outside mirror glass, replacing

CAUTION —

Mirror should be at or above room temperature before removal. Otherwise, small plastic parts or glass will break.

1. Insert thin pry tool (wooden or tape-wrapped screwdriver) between bottom mirror edge and mirror housing and carefully pry out mirror glass from housing. See Fig. 1.
2. Heated mirror: remove heating element harness connectors from back of mirror glass.
3. Install new glass into position by pressing firmly until it snaps into place.

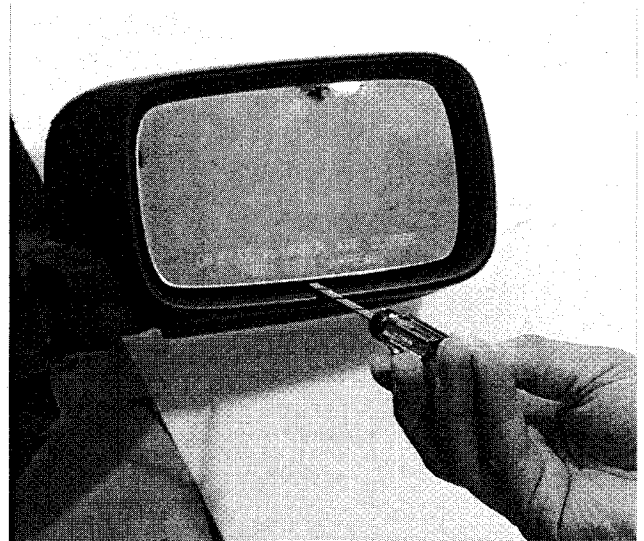


Fig. 1. Prying mirror glass out of mirror housing. Note screwdriver shaft wrapped with tape.

Outside mirror housing, removing and installing

1. Remove mirror glass as described above.
2. Remove housing retaining screws and lift off rear housing. See Fig. 2.
3. Tilt mirror housing forward and compress plastic retainers and lift off front housing. See Fig. 3.
4. Installation is reverse of removal. Check mirror function before installing covering parts.

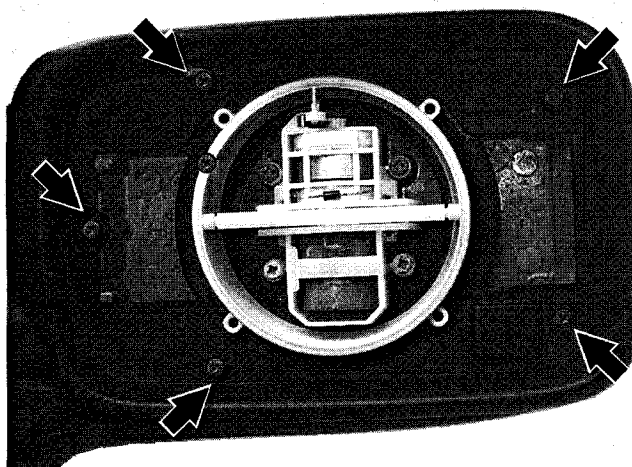


Fig. 2. Mirror housing retaining screws (**arrows**).

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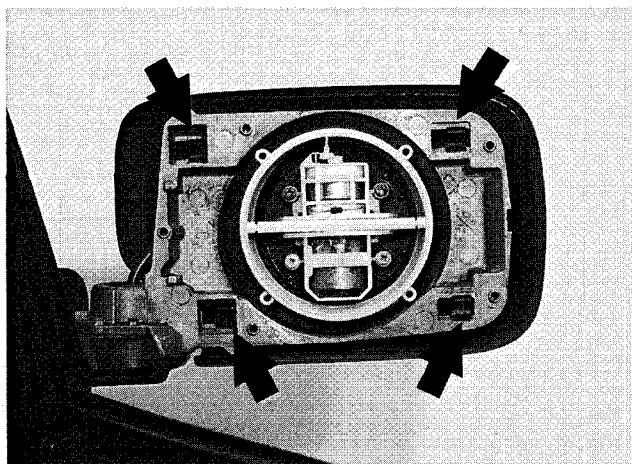


Fig. 3. Use needle-nose pliers to release retainers (**arrows**).

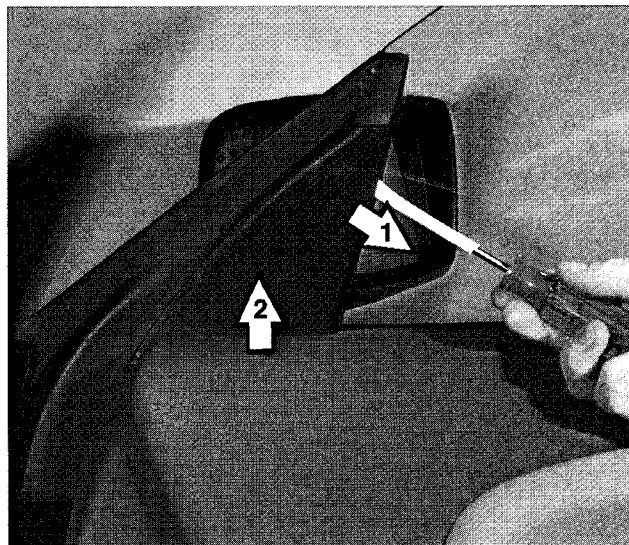
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Outside mirror, removing and installing

1. Remove triangular trim plate by prying and lifting gently from door frame. See Fig. 4. Unhook harness splice connector from base of trim plate.
2. Separate harness connector. Support mirror and remove mirror mounting bolts. Lift mirror off door. See Fig. 5.
3. Installation is reverse of removal. Check mirror function before installing covering parts.

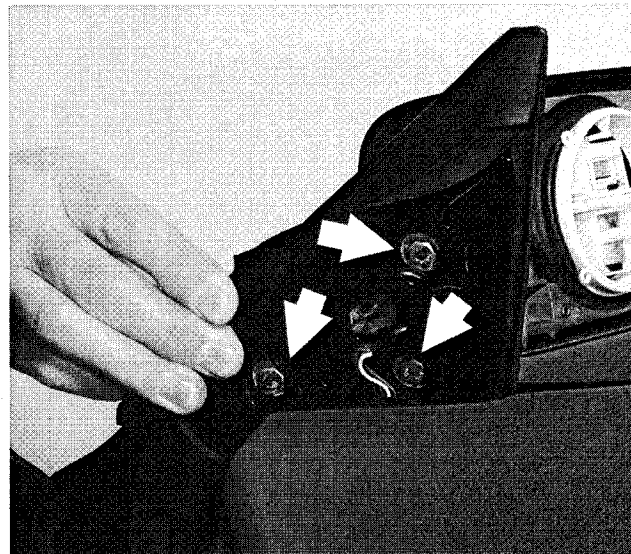
Tightening Torque

- Outside mirror to door (M6) 6 Nm (4.5 ft-lb)



0013041

Fig. 4. Pry plastic trim in direction of **arrow 1**, then lift off in direction of **arrow 2**.



0013042

Fig. 5. Mirror mounting bolts (**arrows**). Two-door body style shown.

BUMPERS

Front bumper, removing and installing

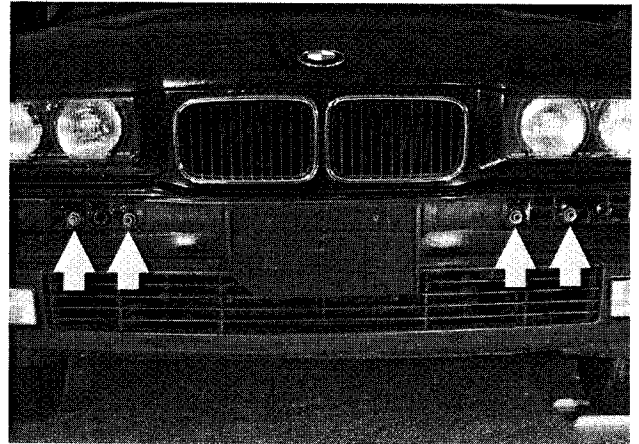
Refer to Fig. 6. when removing and installing the front bumper.

1. Raise and properly support vehicle.

WARNING —

Make sure that the car is firmly supported on jack stands designed for the purpose. Place the jack stands beneath a structural chassis point. Do not place jack stands under suspension parts.

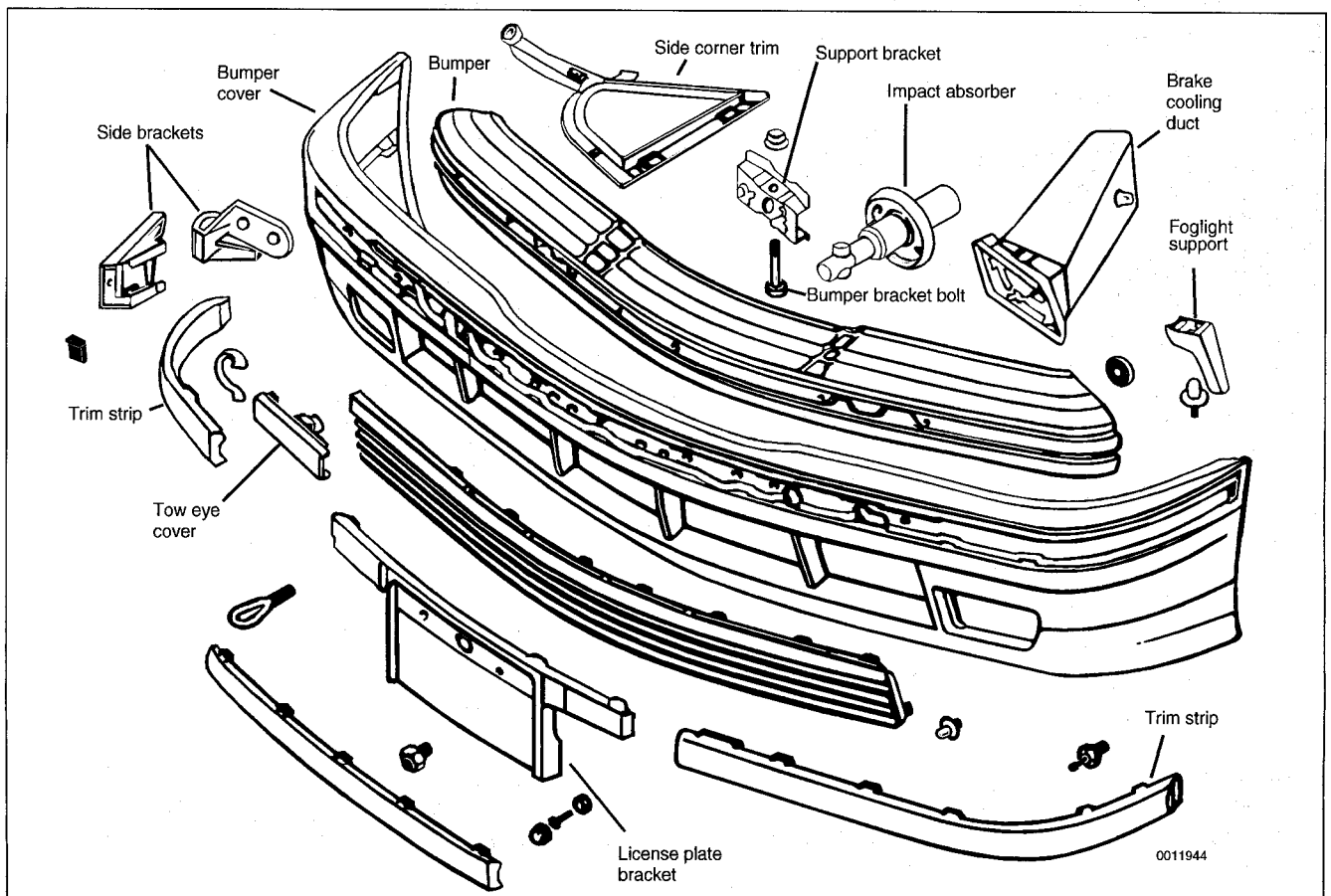
2. Unclip left trim strip by prying gently under plastic trim at front of bumper. Similarly, unclip towing eye cover from right side.
3. Remove four mounting nuts from bumper mounts (two nuts on each mount). See Fig. 7.
4. Working underneath car, remove screws from left and right side corner trim, then remove trim.



0013043

Fig. 7. Front bumper mounting nuts (arrows). Left trim and towing eye cover on right have been removed.

5. Remove bumper cover retaining screws in front wheel well (left and right sides). See Fig. 8.
6. Disconnect harness connectors at foglight sockets (if applicable).



0011944

Fig. 6. Front bumper assembly.

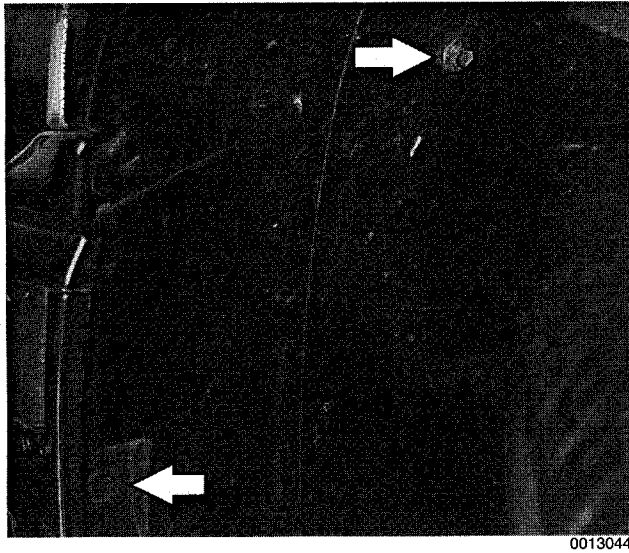


Fig. 8. Bumper cover retaining screws (arrows) in left wheel well.

7. Disconnect harness connectors at outside temperature sensor at rear of left side of bumper and temperature switch at rear of right side of bumper (if applicable).
8. Slide bumper straight off side brackets.
9. Installation is reverse of removal, noting the following:
 - Slide side brackets on bumper and body carefully together.
 - Make sure tabs on trim strip engage slots in bumper correctly.

Tightening Torque

- Bumper to bumper bracket (M8 nut) 22 Nm (16 ft-lb)

Front bumper impact absorber, replacing

The bumper mounting bracket and impact absorber mounting hardware are accessible with the front bumper removed, as described above. See Fig. 9.

NOTE —

Install the bumper bracket bolt with thread locking compound such as Loctite®270 or equivalent.

Tightening Torques

- Bumper bracket to impact absorber (M10 nut) 55 Nm (41 ft-lb)
- Impact absorber to chassis (M6 nut) . . . 9 Nm (7 ft-lb)

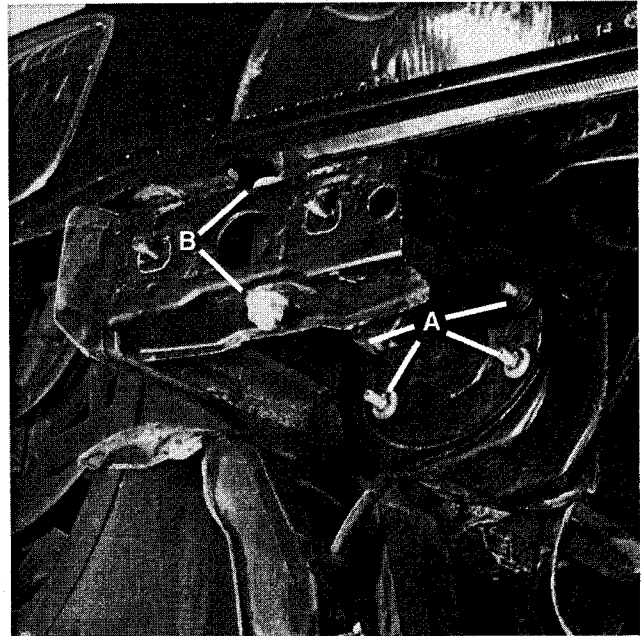


Fig. 9. Front bumper impact absorber mounting nuts (A) and bumper bracket hardware (B).

Rear bumper, removing and installing

When removing and installing the rear bumper or its components, refer to Fig. 10.

1. Raise and properly support vehicle.

WARNING —

Make sure that the car is firmly supported on jack stands designed for the purpose. Place the jack stands beneath a structural chassis point. Do not place jack stands under suspension parts.

2. Working under bumper, remove screws or expansion rivets at corners and middle of lower bumper panel. Pull panel backward, uncoupling it from bumper cover. See Fig. 11.
3. Remove bumper cover expansion rivets and screws inside left and right rear wheel wells.
4. Remove left and right bumper bracket mounting bolts and remove bumper. See Fig. 12.
5. Installation is reverse of removal.

NOTE —

Install the bumper bracket bolt with thread locking compound such as Loctite®270 or equivalent.

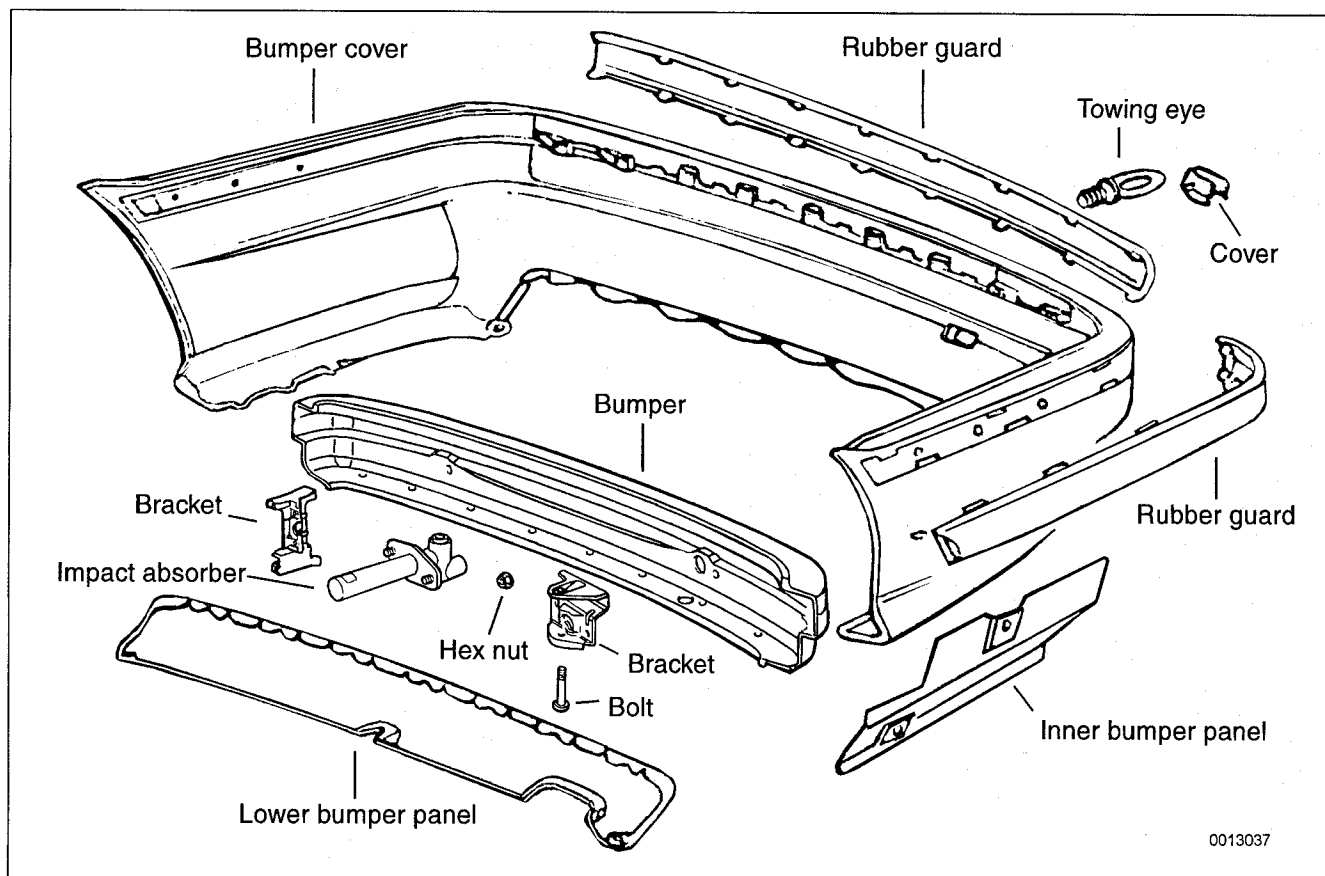
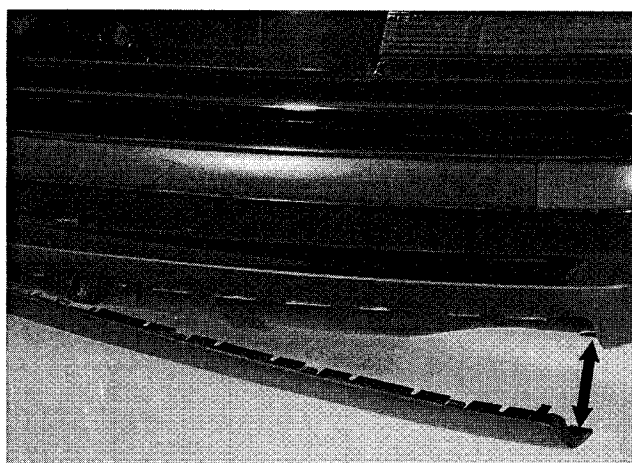
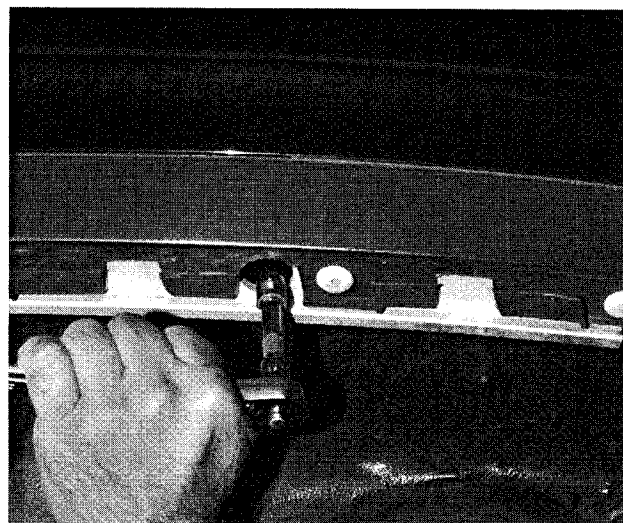


Fig. 10. Rear bumper assembly.



0013045

Fig. 11. Expansion rivet at corner of rear bumper lower panel (arrow). Some models use screws. Pull panel backward to disengage from bumper cover.



0013047

Fig. 12. Insert tool through rear bumper mount bores to remove mounting bolts (right side shown).

Tightening Torque

- Bumper bracket to impact absorber (M10 bolt) 42 Nm (31 ft-lb)

Rear bumper impact absorber, replacing

1. Remove bumper as described above.
2. Remove luggage compartment floor covering.
3. Right side: Remove battery and battery tray.
4. Remove fasteners from left or right luggage compartment floor panels and lift out panel. See Fig. 13. Impact absorber mounting nuts can now be accessed.

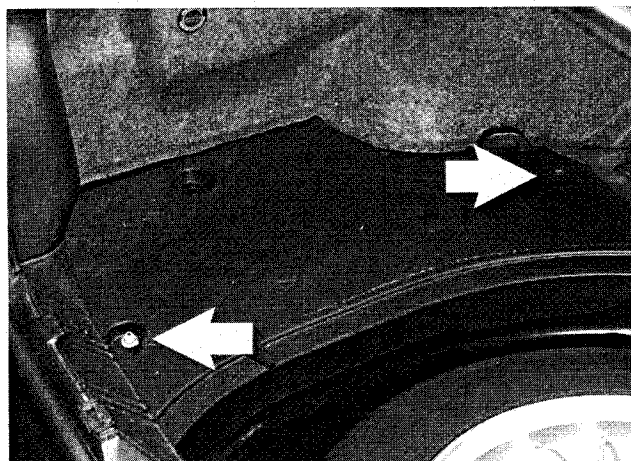


Fig. 13. Luggage compartment floor panel fasteners (arrows). (Left side shown. Right side is similar)

5. Installation is reverse of removal.

Tightening Torques

- Bumper bracket to impact absorber (M10 bolt) 42 Nm (31 ft-lb)
- Impact absorber to chassis (M8 nut) 22 Nm (16 ft-lb)

Bumper height, adjusting

The adjustment procedure given below applies to either the front or rear bumper. A 14mm allen socket is needed to make the adjustment.

1. Raise and properly support vehicle.

WARNING —

Make sure that the car is firmly supported on jack stands designed for the purpose. Place the jack stands beneath a structural chassis point. Do not place jack stands under suspension parts.

2. Front bumper:
 - Remove bumper as described earlier.
 - Remove bumper bracket bolt. Refer to Fig. 9.

3. Rear bumper:

- Remove lower bumper panel as described in **Rear bumper, removing and installing.**
- Remove bumper bracket mounting bolt at impact absorber.

4. Using a 12-inch extension and a 14mm Allen socket, turn adjusting collar clockwise or counterclockwise as needed to change height of adjusting collar. See Fig. 14.

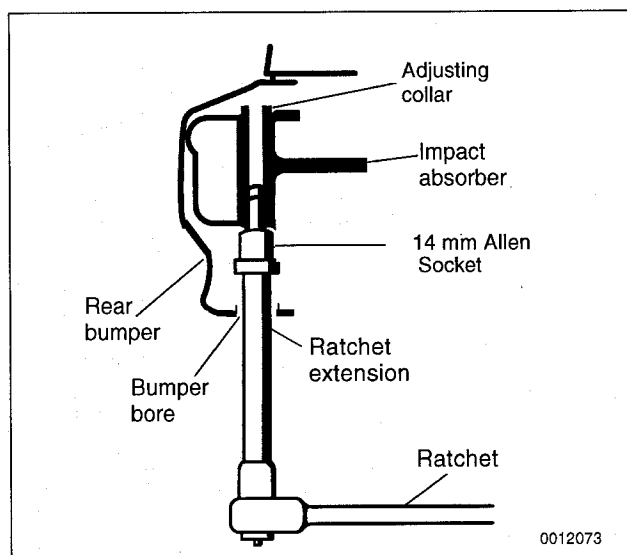


Fig. 14. Adjust bumper height at threaded adjusting collar in bumper impact absorber.

5. Reinstall mounting bolts and check bumper height. Re-fit front bumper.

Tightening Torques

- Front bumper to bumper bracket (M8 nut) 22 Nm (16 ft-lb)
- Front bumper bracket to impact absorber (M10 bolt) 55 Nm (41 ft-lb)
- Rear bumper bracket to impact absorber (M10 bolt) 42 Nm (31 ft-lb)

EXTERIOR TRIM

Much of the exterior trim is retained to the body by plastic clips and fasteners that may be damaged during removal. Be sure to have the necessary fasteners on hand when removing exterior trim pieces.

BMW emblem, removing and installing

The procedure given below applies to both front and rear emblems.

1. Wrap end of a screwdriver with tape.

CAUTION—

Protect hood paint by covering area around emblem with tape.

2. Carefully pry out emblem. See Fig. 15.

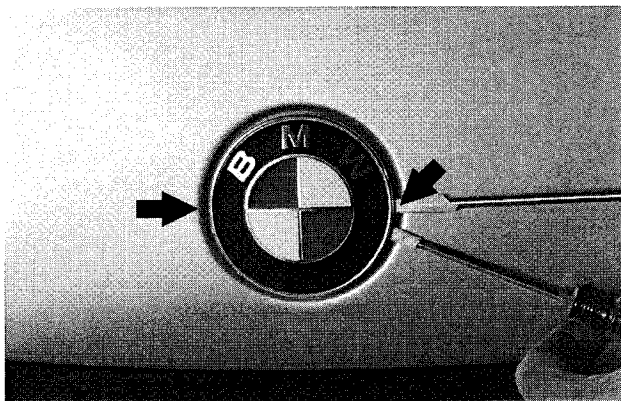


Fig. 15. BMW emblem being removed. Pry up emblem carefully on either side (**arrows**). Note tape on screwdriver tips.

3. Installation is reverse of removal.

- Replace plastic inserts in body if damaged.
- If emblem fits loosely into inserts, use a small amount of body molding tape or adhesive on rear of emblem before installing.

Body side molding, replacing

To remove body side moldings, carefully pry the moldings straight off. See Fig. 16.

Installation is the reverse of removal. Replace any clips or clip covering boots damaged during removal.

Radiator grille, removing and installing

1. Remove plastic front radiator shroud or air duct, as needed
2. Lightly tap center of grille toward radiator and remove from panel opening. Chrome ring pulls out from front. See Fig. 17.
3. To replace, snap grille and chrome piece together. Push assembly into front panel, pressing at top and bottom until it snaps into place.

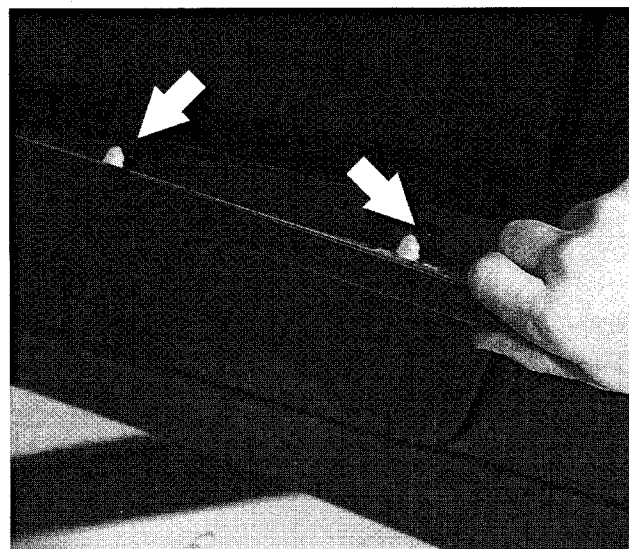


Fig. 16. Body side molding retaining clips (**arrows**).

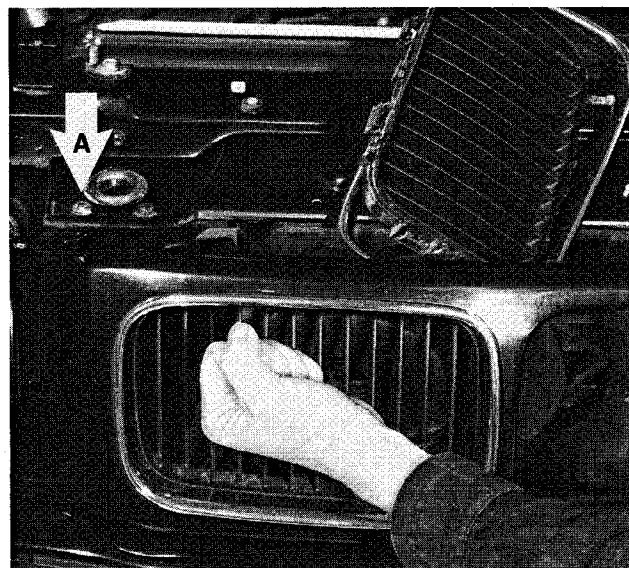


Fig. 17. Radiator grille being tapped inward. Right side front panel top retaining screw is shown at **A**.

Front panel, removing and installing

The front panel is shown in Fig. 18.

1. Remove front bumper as described earlier.
2. Remove headlights. See **630 Exterior Lighting**.
3. Remove radiator grille as described earlier.
4. With engine hood open, remove front panel retaining screws at left and right sides of radiator. See Fig. 19.

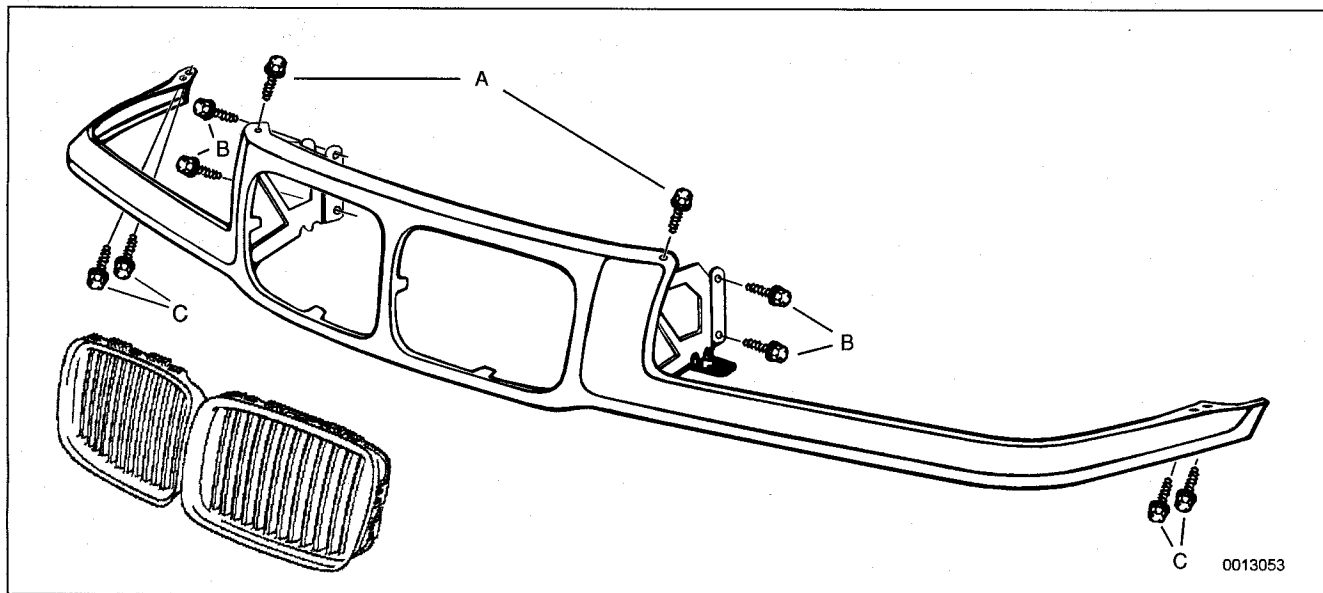


Fig. 18. Front panel assembly. Note top retaining screws (A), retaining screws at radiator support (B), and side retaining screws (C).

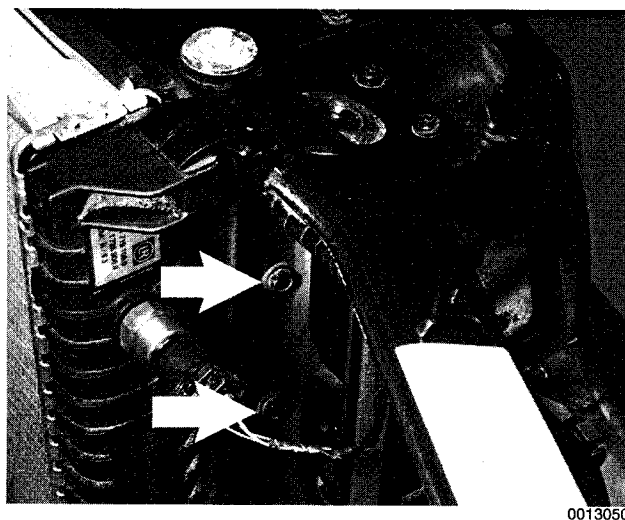


Fig. 19. Front panel retaining screws at radiator (arrows). Right side shown. To remove left side screws it may be necessary to remove air filter housing or duct.

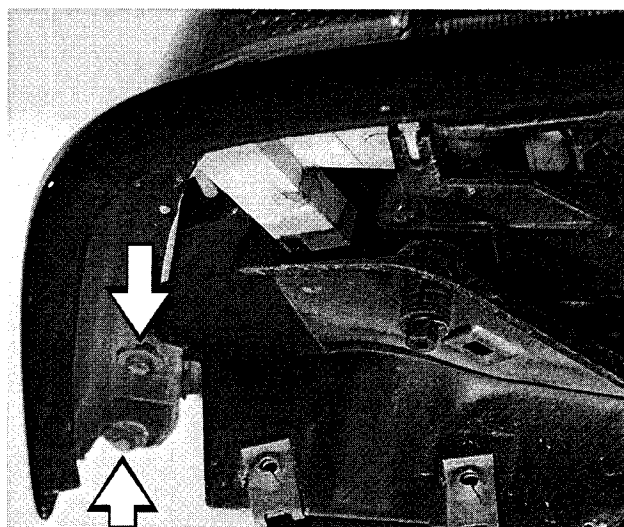


Fig. 20. Front bumper must be off to access far right and left front panel retaining screws from below (arrows). (Right side shown.)

5. Remove front panel top retaining screws near hood latches. Refer to Fig. 17.
6. Working under car, remove left and right side panel retaining screws. See Fig. 20.
7. Remove panel and repair or replace with painted part.
8. Installation is reverse of removal.



512 Door Windows

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Front door window, initializing.	512-1

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Front door window, removing and installing (2-door models)	512-5
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WINDOW REGULATOR SERVICE	512-12
Door window regulator and motor, removing and installing.	512-12

GENERAL

This heading covers door glass, window regulator and power window motor repair information. Before proceeding with window repairs, specifically on late cars fitted with front side-impact airbags, read the procedure through to determine the scope of the repair.

The bonded windshield and rear glass are replaced using special adhesives and tools. It is recommended that bonded glass replacement be done by a professional glass installer.

WARNING —

- Always wear hand and eye protection when working with broken glass.
- If a window is broken, all of the glass bits should be vacuumed out of the door cavity. Use a blunt screwdriver to clean out any remaining glass pieces from the window guide rails.

CAUTION —

If battery power is lost or the battery has been disconnected, windows must be re-initialized. Both one touch up/down and pinch-protection will be inactive until windows are re-initialized. See below.

Front door window, initializing

The front door windows incorporate a pinch-protection feature as well as one-touch up/down (1994 and later models). In order for these features to work correctly, the mechanical stop reference point must be re-initialized after repairs are carried out.

1. Close door and turn ignition key on. Fully open front window.
2. Fully close front window.
3. Hold window button in up position for at least 5 seconds after window is closed.
4. Repeat for remaining window.
5. The windows should now be initialized and the anti-pinch and one-touch up/down functions should be enabled.

WINDOW SERVICE, 4-DOOR MODELS

WARNING —

When servicing the door windows, the harness connector to the window regulator should always be disconnected to prevent pinching fingers in closing window.

NOTE —

If the battery is disconnected, the front window regulator motors must be re-initialized after repairs are carried out. If the window motors are not reinitialized, the programmed one-touch up/down and anti-pinch functions will be disabled. See **Front door window, initializing**.

Front door window, removing and installing (4-door models)

1. Lower door window about 12 in. (300 mm).
2. Remove front door panel and vapor barrier as described in **411 Doors**.

WARNING —

- Some 1997 and all 1998 cars are fitted with side-impact airbags in the front doors. When servicing the door windows on cars with front side-impact airbags, always disconnect the negative (–) battery cable. See **721 Airbag System (SRS)** for cautions and procedures relating to the airbag system.

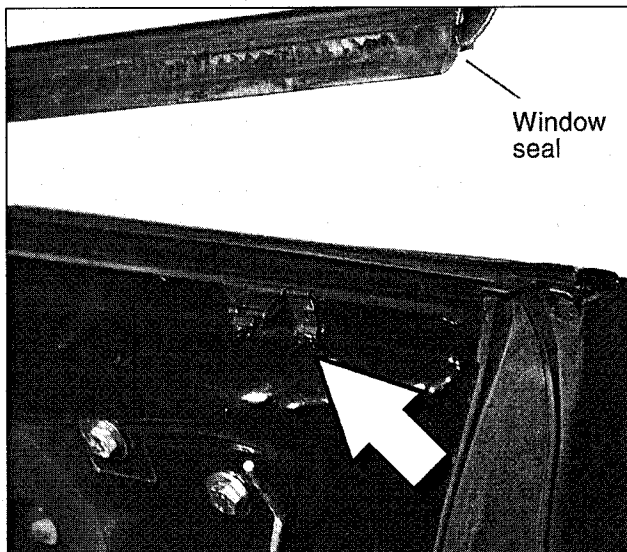
- Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

3. On cars with side-impact airbags, disconnect negative (–) cable from battery. Then remove airbag unit from door. See **721 Airbag System (SRS)**.

NOTE —

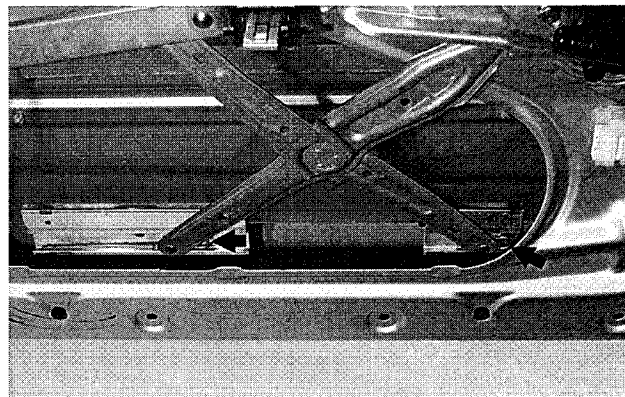
In some models covered in this manual, it is not essential to remove the side-impact airbag to access internal door components. However, the procedure is recommended for safety reasons.

4. Disconnect harness connector from window motor to prevent accidental operation.
5. Carefully remove window inner seal and pry off metal retainers under sealing lip to prevent scratching glass. See Fig. 1.
6. Remove retaining clips from window slides. See Fig. 2.



0013061

Fig. 1. Lift off window seal from door. Note metal retainer (arrow). 2-door car shown.



0011696

Fig. 2. Retaining clips for window slides (arrows).

7. While supporting window glass, pry window lifting arms out of left and right slides. See Fig. 3.
8. Pivot window up at rear and out of door.
9. Installation is reverse of removal, noting the following:
 - Use new mounting bolts when reinstalling the side-impact airbag to the door (where applicable). See **721 Airbag System (SRS)**.
 - Adjust window as described later.
 - Re-initialize window regulator motors as described earlier.

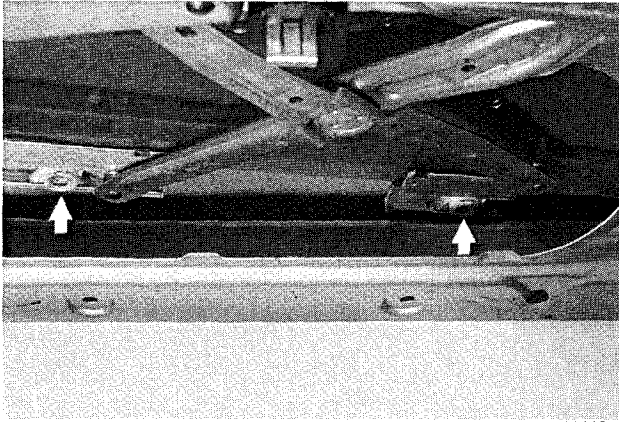


Fig. 3. Window lifting arms shown removed from slides (arrows).

Front door window, adjusting (4-door models)

Whenever the front window or window regulator is removed, window adjustment should be checked. The glass should contact the top of the window squarely and should seat against the window seal uniformly.

NOTE —

If the window does not contact the window seal uniformly, wind noise or water infiltration may result.

Be sure to re-initialize the window motors as described earlier.

WARNING —

Some 1997 and all 1998 cars are fitted with side-impact airbags in the front doors. When servicing the door windows on cars with front side-impact airbags, always disconnect the negative (–) battery cable. See 721 Airbag System (SRS) for cautions and procedures relating to the airbag system.

CAUTION —

- In models with side-impact airbags, adjusting the front window requires that the battery cable be reconnected with the side-impact airbag disconnected. This will set a fault code in the SRS control module, turn on the SRS warning light, and disable the SRS system until the fault memory is cleared using special SRS test equipment.

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

1. Raise door window to top of its travel.
2. On cars with side-impact airbags, disconnect negative (–) cable from battery.

3. Remove front door panel and vapor barrier as described in 411 Doors.
4. Remove airbag unit from door. See 721 Airbag System (SRS).

NOTE —

In some models covered in this manual, it is not essential to remove the side-impact airbag to access internal door components. However, the procedure is recommended for safety reasons.

5. Loosen regulator stop at window regulator support. See Fig. 4.

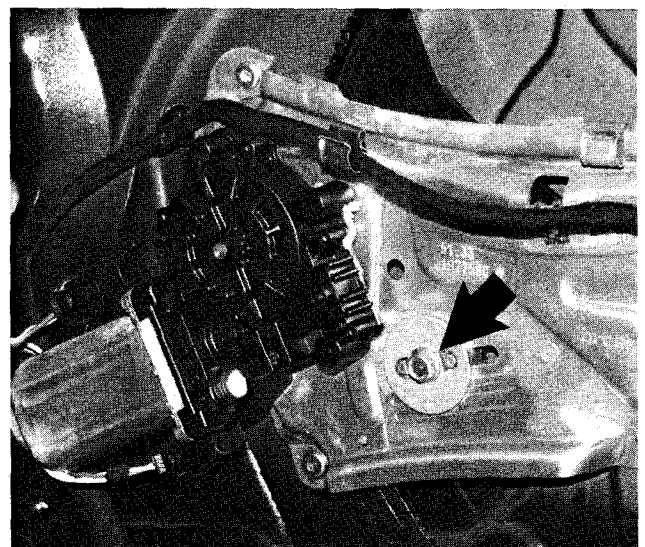


Fig. 4. Window regulator stop (arrow).

6. If glass is not squarely positioned in window frame, loosen support arm bolt and reposition arm as necessary. Tighten bolt. See Fig. 5.

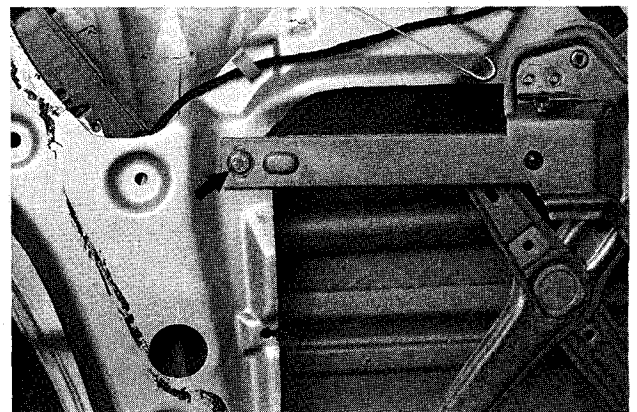


Fig. 5. Adjust window to its frame by loosening bolt (arrow) and repositioning support arm up or down.

512-4 DOOR WINDOWS

7. Push regulator stop tightly against window regulator sector and tighten nut.
 - Check for tight, even fit at top of window frame.
 - If necessary, temporarily reconnect negative (-) cable to battery and raise window so it is pressing uniformly against top rubber seal before final tightening.
8. Reinitialize front window motors as described earlier.

Tightening Torques

- Regulator stop to window regulator 9 Nm (7 ft-lb)
- Window regulator bracket to door 9 Nm (7 ft-lb)

Rear door window, removing and installing (4-door models)

1. Remove rear door panel and vapor barrier. See 411 Doors.
2. Pull out rubber guide at front of window frame. Remove three screws and pull off exterior trim cover. See Fig. 6.

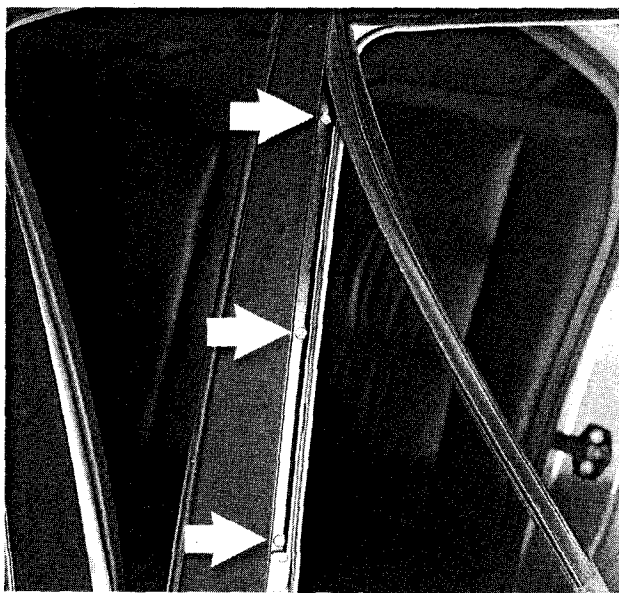


Fig. 6. Trim cover mounting screws (arrows). To remove cover, slide up and off door.

3. Lift up and remove window inner sealing strip. Remove clips at edge of window channel. Refer to Fig. 1.

4. Lower door window about 12 in. (300 mm). Remove window lifting arm retaining clip from window slide. Refer to Fig. 2.

WARNING —

Once the window is lowered, disconnect harness connector from power window motor to prevent accidental operation of the window.

5. Pry lifting arm out of slide. Refer to Fig. 3.

NOTE —

Support window in door before disconnecting lifting arm from window slide.

6. Remove rubber channel from door frame perimeter.
7. Remove window glass from above.
8. Installation is reverse of removal.
 - Rear window adjustment is similar to front window adjustment, given earlier.
 - Reinitialize window motors as described earlier.

Rear door fixed glass, removing and installing (4-door models)

1. Remove window from rear door as described earlier.
2. Remove upper and lower bolts at guide rail. Lift up rubber seal to access upper bolt. See Fig. 7.

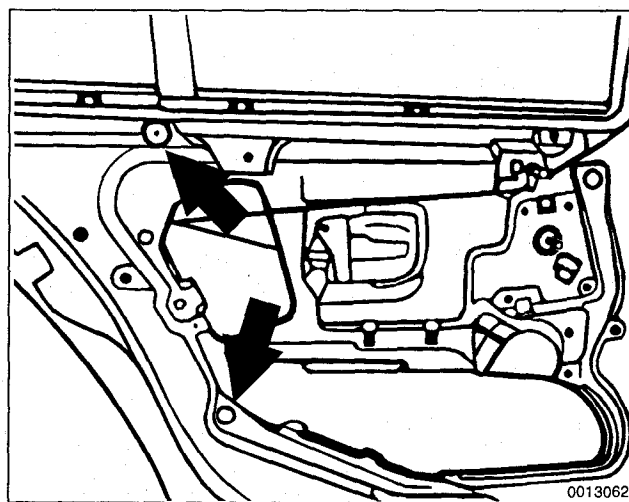


Fig. 7. Rear guide rail mounting bolts (arrows).

3. Remove guide rail screw at top and move rail aside enough to slide glass forward and out of door frame. See Fig. 8.

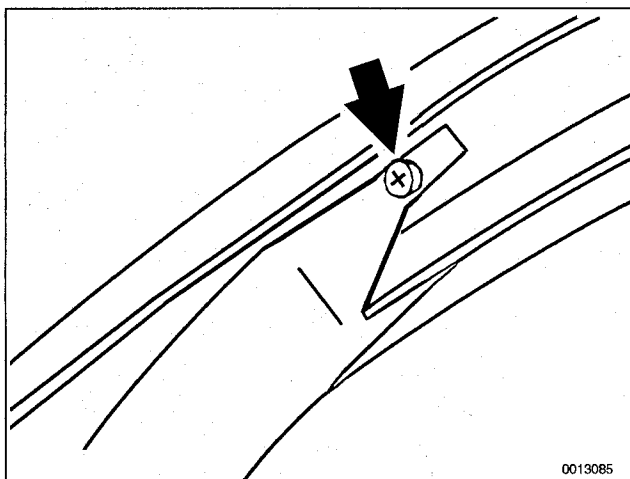


Fig. 8. Remove guide rail screw (A) and move rail aside.

4. Installation is reverse of removal.

WINDOW SERVICE, 2-DOOR MODELS

WARNING —

When servicing the door windows, the harness connector to the window regulator should always be disconnected to prevent pinching fingers in closing window.

2-door models are equipped with the "close with door shut" feature. In this mode, the window glass moves down slightly when the door latch is activated, then goes up tightly against the weather-strip when the door is fully closed.

NOTE —

The front window regulator motors must be re-initialized after repairs are carried out. If the window motors are not reinitialized, the programmed one-touch up/down and anti-pinch functions will be disabled. See **Front door window, initializing**.

Front door window, removing and installing (2-door models)

WARNING —

Some 1997 and all 1998 cars are fitted with side-impact airbags in the front doors. When servicing the front windows on cars with front side-impact airbags, always disconnect the negative (-) battery cable. See **721 Airbag System (SRS)** for cautions and procedures relating to the airbag system.

CAUTION —

- In models with side-impact airbags, removing the front window requires that the battery cable be reconnected with the side-impact airbag disconnected. This will set a fault code in the SRS control module, turn on the SRS warning light, and disable the SRS system until the fault memory is cleared using special SRS test equipment.
- Removing the front window will upset the adjustment and alignment of the window. Window adjustment, as described later, **must** be carried out after installation to prevent damaging the glass.

1. On cars with side-impact airbags, disconnect negative (-) cable from battery.

CAUTION —

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

2. Remove interior door panel and vapor barrier. See **411 Doors**.
3. Where applicable, remove side-impact airbag from door. See **721 Airbag System (SRS)**.

NOTE —

In some models covered in this manual, it is not essential to remove the side-impact airbag to access internal door components. However, the procedure is recommended for safety reasons.

4. Pull off exterior door molding. See **510 Exterior Trim, Bumpers**.
5. Lower door window completely. If necessary, temporarily reconnect battery cable.
6. Lift up and remove window inner sealing lip. Remove all metal retainers under sealing lip. See Fig. 9.
7. Raise window to about 10 in. (250 mm). If necessary, temporarily reconnect battery cable. Remove guide bracket mounting nuts and remove bracket. See Fig. 10.
8. Lower window about 4½ in. (110 mm). If necessary, temporarily reconnect battery cable. Working through bore hole in door exterior, remove lower guide bracket through-bolt from glass. See Fig. 11.
9. Lower window about 2½ in. (65 mm). If necessary, temporarily reconnect battery cable. Repeat step 8 to remove upper through-bolt from guide bracket.
10. Raise window to about 7½ in. (190 mm) from top. If necessary, temporarily reconnect battery cable. Remove window rear limit stop bracket. See Fig. 12.

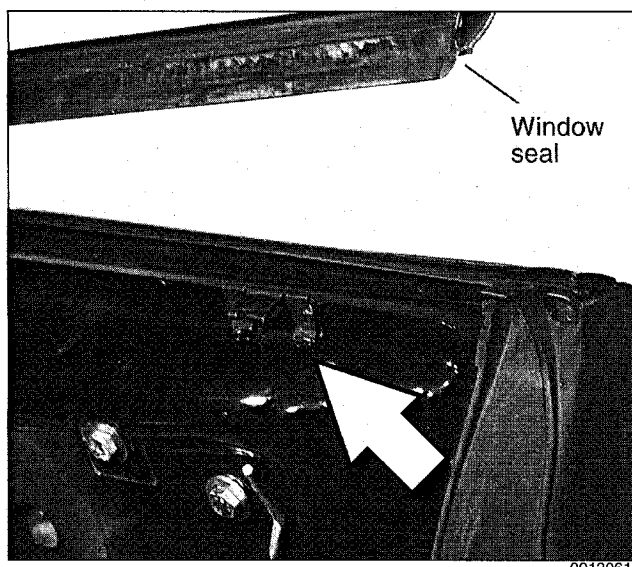


Fig. 9. Lift window inner sealing lip from door. Note metal retainer (arrow).

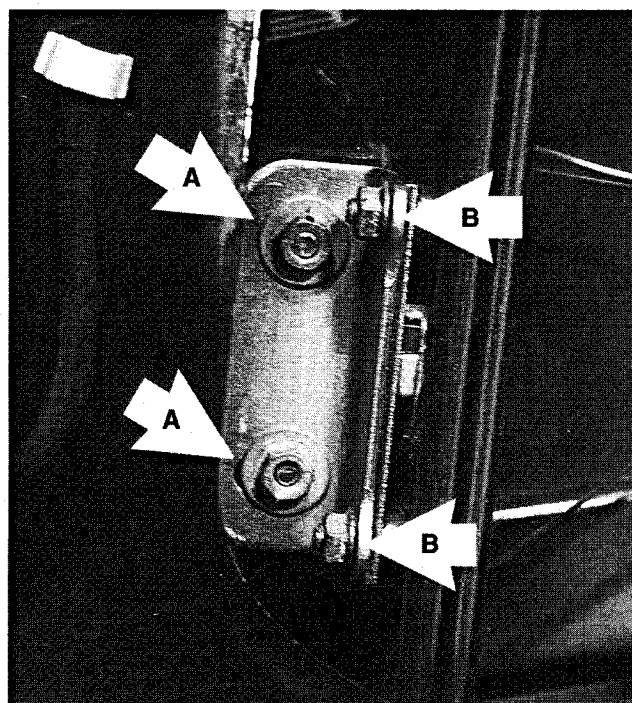


Fig. 10. Window rear guide bracket nuts **A** to be removed. Loosen nuts **B** to allow bracket room to swivel out of the way.

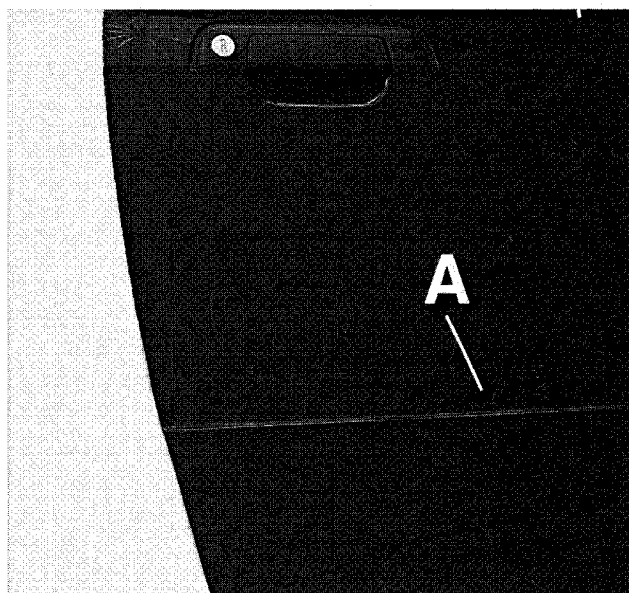


Fig. 11. Using 4mm Allen socket, reach through rear bore hole (**A**) in door to remove window guide bracket bolts. (Exterior door molding has been removed.)

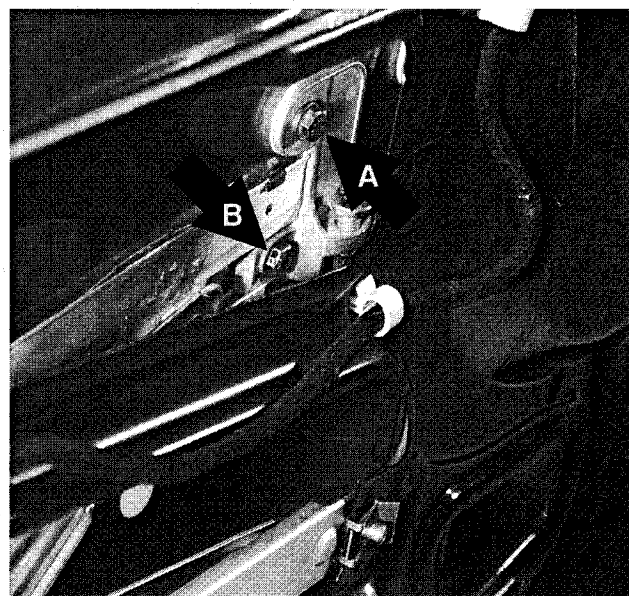
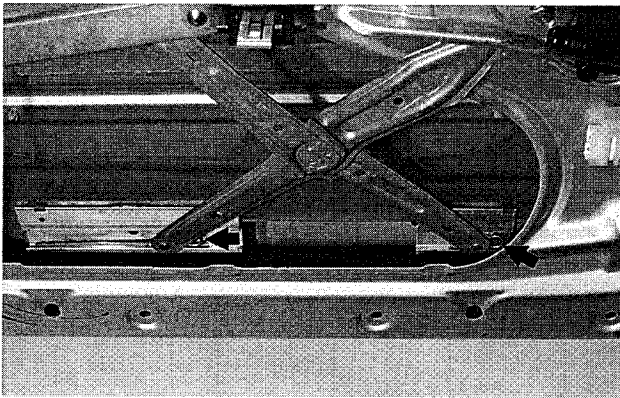


Fig. 12. To remove rear window limit stop bracket, remove bolt **A** and loosen clamping bolt **B**.

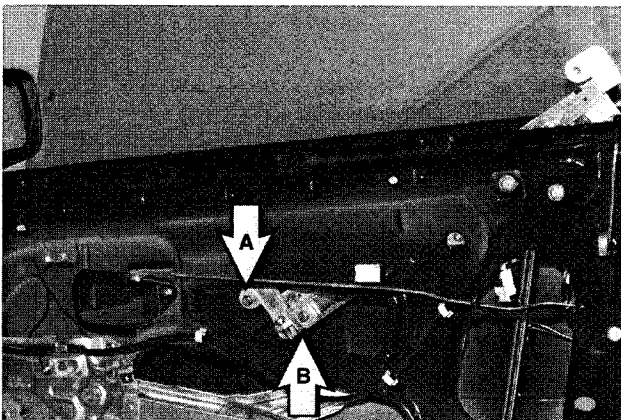
11. Lower window about 4½ in. (110 mm). If necessary, temporarily reconnect battery cable. While supporting window, remove retaining clips from window slides and disconnect lifting arms from slides. See Fig. 13.



0011696

Fig. 13. Lifting arm retaining clips (arrows) at window slides.

12. Tip window so rear of glass is up out of door. While supporting window, remove window front limit stop bracket. See Fig. 14.



0013067

Fig. 14. With window glass shown partially tipped out of door, remove bolt **A** and loosen bolt **B** in order to remove front window limit stop bracket.

13. Take glass fully out of door.

14. Installation is reverse of removal, noting the following:

- Guide front of window into front guide rail and rest it there while installing front window limit stop bracket.
- When installing window rear guide bracket, tighten countersunk screws in glass first (through outside of door), then install guide rail bracket.
- Insert rubber seal at top of door correctly. See Fig. 15.
- Use new mounting bolts when reinstalling the side-impact airbag to the door (where applicable). Reset SRS warning light and clear SRS fault memory using special test equipment. See **721 Airbag System (SRS)**.
- Adjust window as described later.
- Re-initialize window regulator motors as described earlier.



0013068

Fig. 15. Correct installation of door top rubber seal.

Tightening Torques

- Rear guide bracket to window 6 Nm (53 in-lb)
- Rear guide bracket to roller guide 9 Nm (7 ft-lb)

Front door window, adjusting (2-door models)

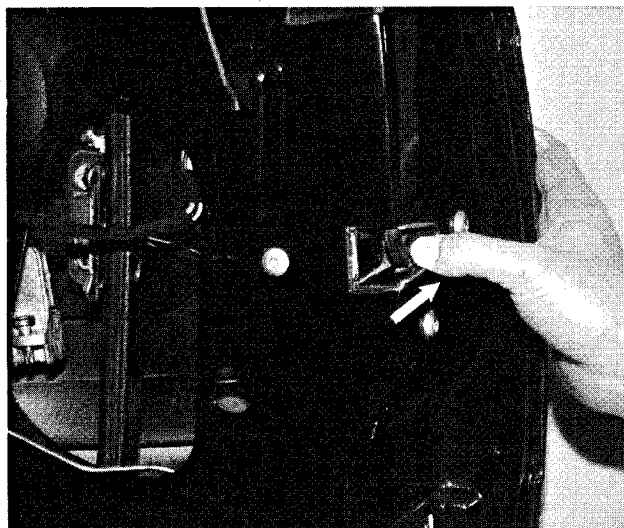
The "close with door shut" feature of 2-door cars, as well as the frameless window, makes window adjustment critical.

WARNING —

- Some 1997 and all 1998 2-door cars are fitted with side-impact airbags in the front doors. When servicing the door windows on cars with front side-impact airbags, always disconnect the negative (–) battery cable. See **721 Airbag System (SRS)** for cautions and procedures relating to the airbag system.
- Adjusting the front window requires that the battery cable be reconnected with the side-impact airbag disconnected. This will set a fault code in the SRS control module, turn on the SRS warning light, and disable the SRS system until the fault memory is cleared using special SRS test equipment.
- There is risk of window glass breakage if correct adjustment procedures are not used. If in doubt, this procedure should be left to a trained BMW technician.

NOTE —

To achieve an accurate window adjustment in 2-door models with "close with door shut" feature, simulate a closed door as follows: On early cars, manually turn the latch on the door to the closed position. See Fig. 16. On later cars, insert a wedge of wood into the striker on the body to close the striker switch. Be sure to open the rotary latch (by pulling up on the door handle) or remove the wedge before closing the door.



0013066

Fig. 16. To manually close door latch, push rotary latch in direction of arrow.

CAUTION —

Do not close the door with the rotary latch in closed position, or with a wedge in the striker.

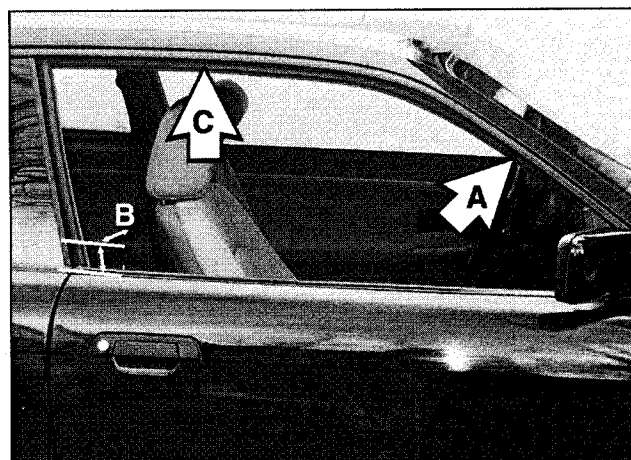
When making adjustments to the front door window, see Fig. 17.

1. On cars with side-impact airbags, disconnect negative (–) cable from battery.

CAUTION —

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

2. Remove interior door panel and vapor barrier. See 411 Doors.
3. Where applicable, remove side-impact airbag from door. See 721 Airbag System (SRS).



- A Window insertion depth at A-pillar
- B B-pillar preload gap (measure gap at 20 mm from top of door)
- C Window insertion depth at roof line/window parallelism (make measurement at 3.5 in. and 16 in. from B-pillar edge)

0013076

Fig. 17. 2-door window adjustment positions.

NOTE —

In some models covered in this manual, it is not essential to remove the side-impact airbag to access internal door components. However, the procedure is recommended for safety reasons.

After each adjustment step, fully lower and raise window and check adjustment before going on to the next step.

If parts of the front window mechanism were replaced, make sure initial adjustments are in the center of their travel range. Once the glass is installed, position glass to the rear guide rail as shown in Fig. 18.

4. To set window preload B (See Fig. 19.):

- Measure up 20 mm (0.75 in.) from top of door and mark position on glass.
- Close door just until top of glass contacts seal.
- Measure gap between glass (at 20 mm mark) and window seal.
- If adjustment is necessary, move bottom of window guide in or out to correct. See Fig. 20.
- If further adjustment is needed, move bottom of window in or out by sliding guide bracket. Refer to Fig. 18.

Preload Gap

- B (Refer to Fig. 19.)

Coupe	.8 mm (0.32 in.)
Convertible	.3 mm (0.12 in.)

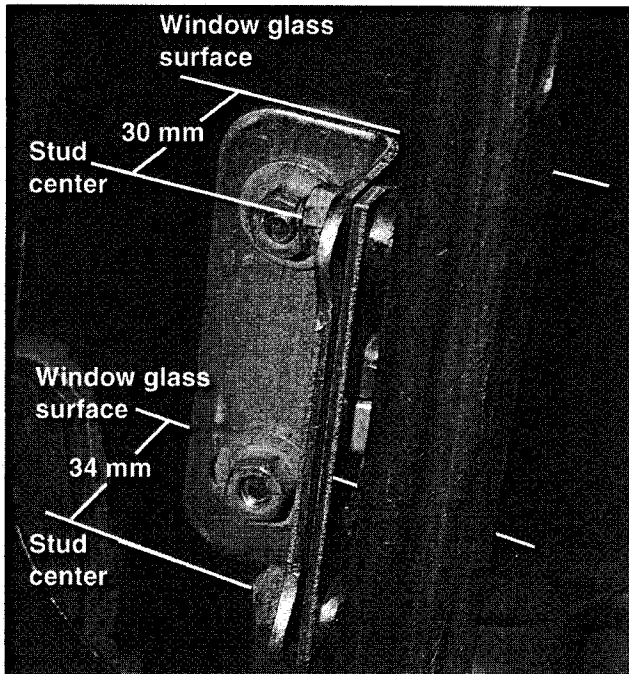


Fig. 18. Rear guide rail to rear guide bracket initial adjustment. Top should be set at 30 mm (1.2 in.) from glass to stud center; bottom should be set at 34 mm (1.3 in.) from glass to stud center.

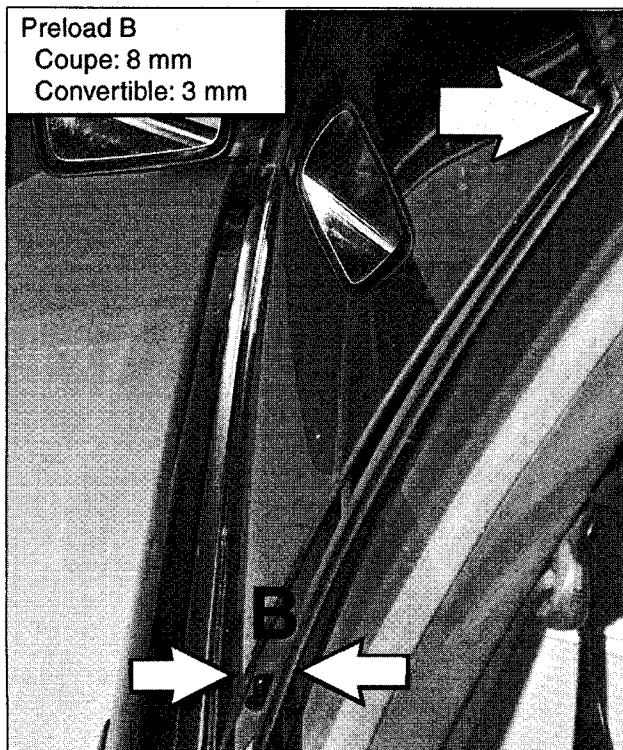


Fig. 19. With top of glass against door seal (**top arrow**), measure preload **B** at 20 mm (0.75 in.) above top of door.

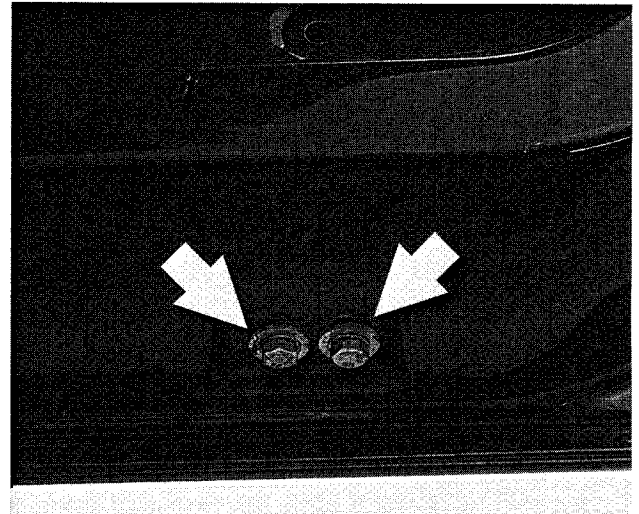


Fig. 20. Rear guide rail lower mounting bolts in bottom of door (**arrows**).

5. To set insertion depth **A** (Refer to Fig. 17.):

- Lower window about 10 in. to access window bracket at rear guide. If necessary, temporarily reconnect battery cable.
- Loosen guide rail bracket and/or rear guide rail mounting bolts and reposition window left to right. See Fig. 21. or Fig. 22.
- Fully close and align window. Check that glass enters window seal to the specification listed.
- When adjustment is correct, tighten loosened fasteners.

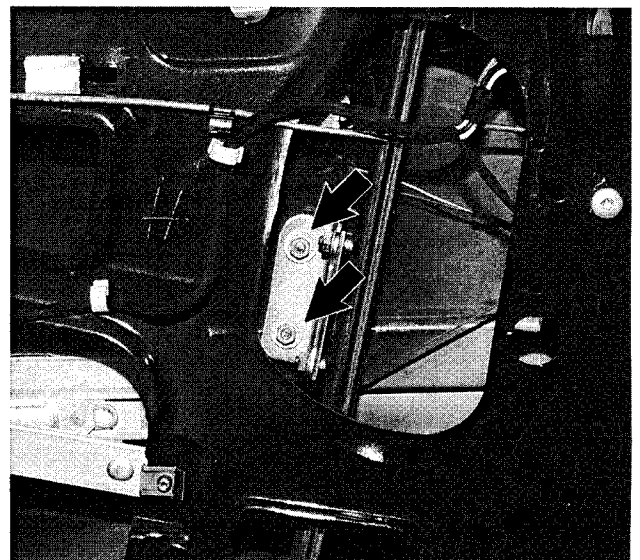
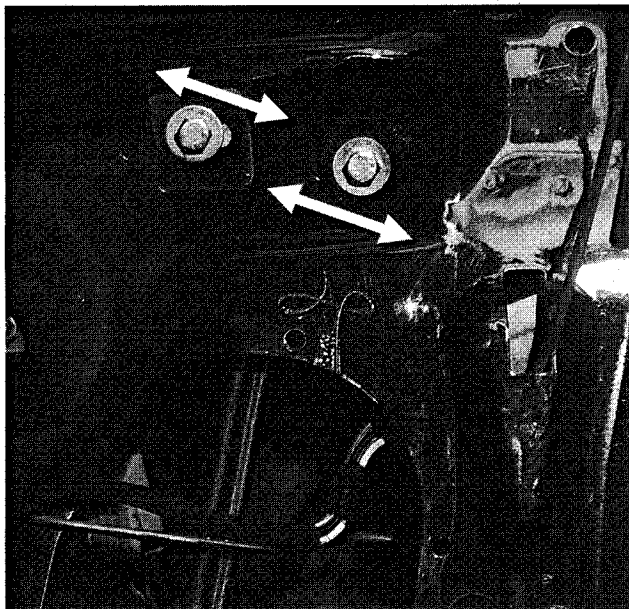


Fig. 21. Loosen nuts on rear guide bracket (**arrows**) and reposition glass fore/aft. Holes in bracket are elongated to allow for small amounts of adjustment.



0013078

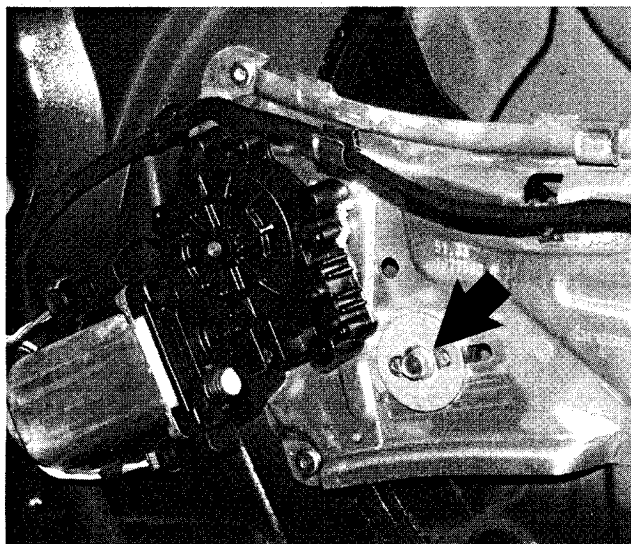
Fig. 22. Move window fore/aft at rear guide rail top mounting bolts (arrows).

Insertion Depth

- **A** (See Fig. 17.) 1-1.5 mm (0.04-0.6 in.)

6. To set insertion depth **C** (Refer to Fig. 17.):

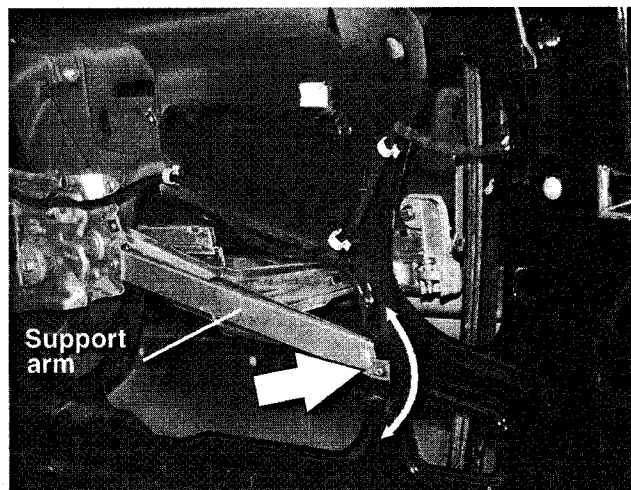
- Lower window slightly. Loosen stop at window regulator motor. See Fig. 23.



0013075

Fig. 23. Window regulator stop (arrow).

- Raise window. Loosen rear bolt at regulator support arm (5mm Allen wrench). See Fig. 24. Align window parallel to roof line by moving support arm up or down. Tighten arm bolt.
- Lower window and remove rubber plugs at bottom of door. If necessary, temporarily reconnect battery cable.
- Adjust front and rear limit stops so that window retracts into window seal as specified. See Fig. 25.
- Raise window to check adjustment.
- Push regulator stop fully forward and tighten bolt.
- Close door and check window operation.



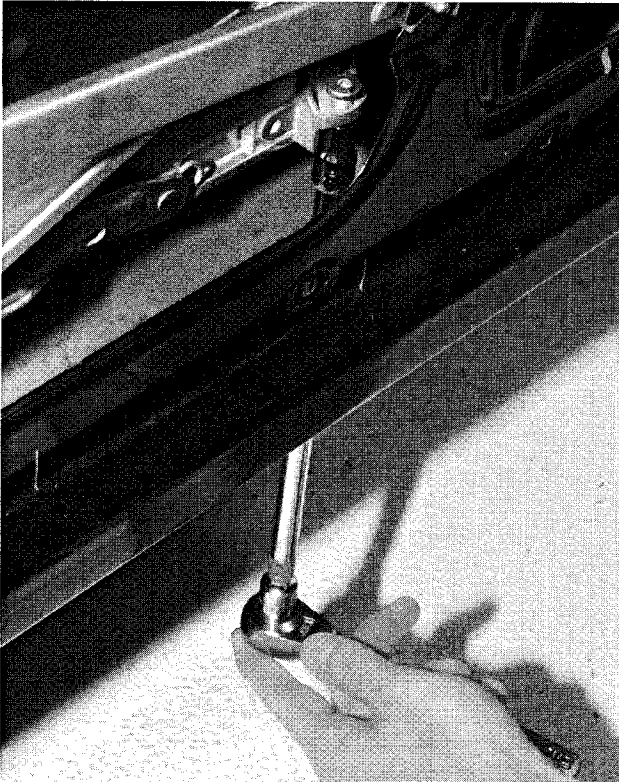
0013077

Fig. 24. Use 5mm Allen socket to loosen mounting bolt at support bracket (arrow) and slide bracket up or down to adjust window position at roof line. (Allen bolt head faces outside of door.)

CAUTION —

- Recheck preload gap **B** (step 4). Excessive preload could cause window to shatter.
- The fully closed window must not contact the rain gutter when opening the door (in the event the "close with door shut" feature is faulty or the battery is dead).

7. Use new mounting bolts when reinstalling the side-impact airbag to the door (where applicable). Reset SRS warning light and clear SRS fault memory using special test equipment. See **721 Airbag System (SRS)**.
8. Replace door panel, rubber door plugs and outside door molding.
9. Re-initialize window regulator motors as described earlier.

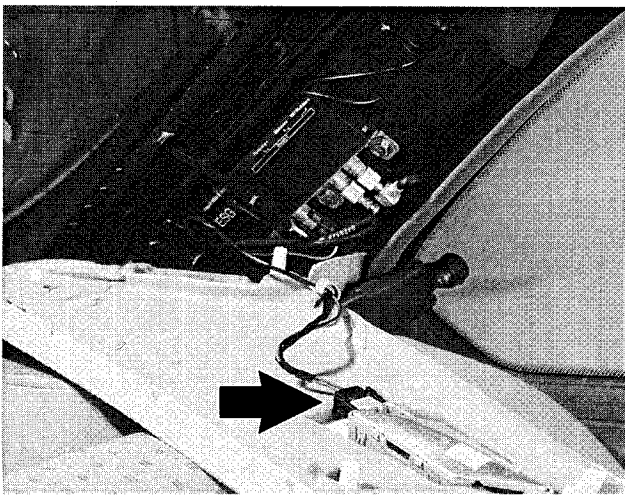


0013080

Fig. 25. Reach through door bottom to adjust window limit stops. Rear stop being adjusted.

Rear vent window or vent latch, replacing (2-door models)

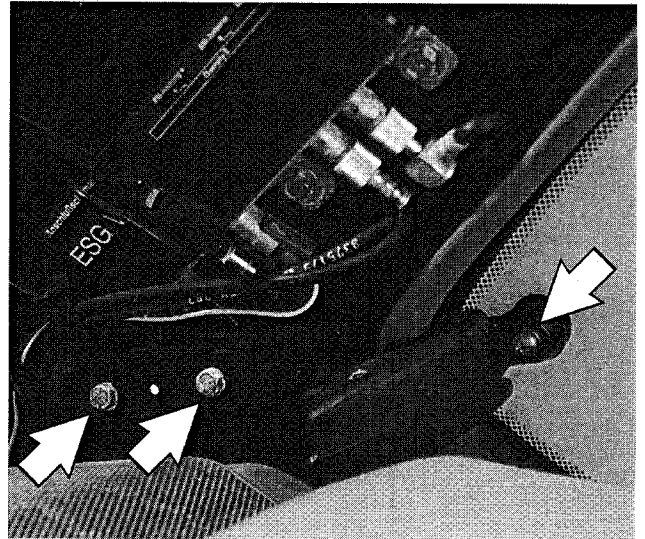
1. Remove C-pillar (rear roof pillar) trim. See Fig. 26.



0013069

Fig. 26. C-pillar trim shown removed. Peel off window sealing trim and then unclip pillar trim piece. Unplug interior light socket (arrow).

2. Remove window latch screws at C-pillar. See Fig. 27.



0013070

Fig. 27. Rear vent latch screws on C-pillar and on window (arrows).

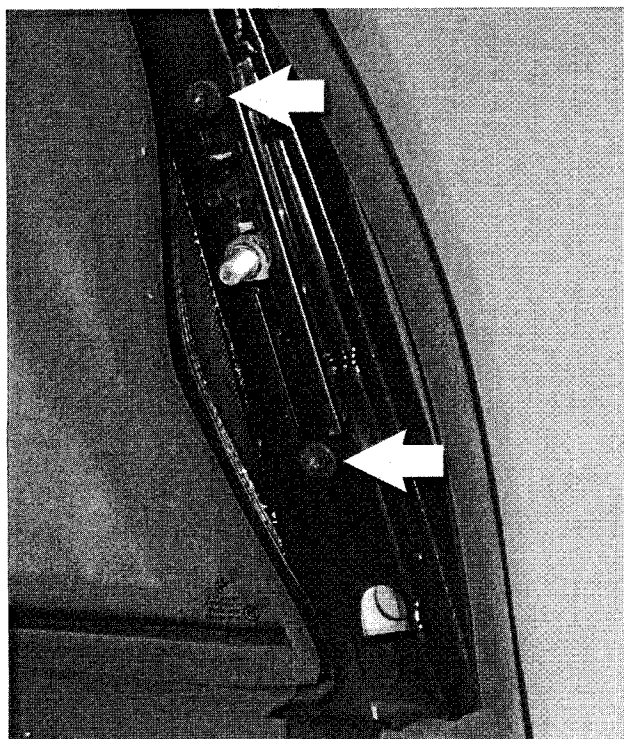
3. Remove front seat belt sliding anchor trim at B-pillar (door post), and remove anchor nut. See Fig. 28.



0012672

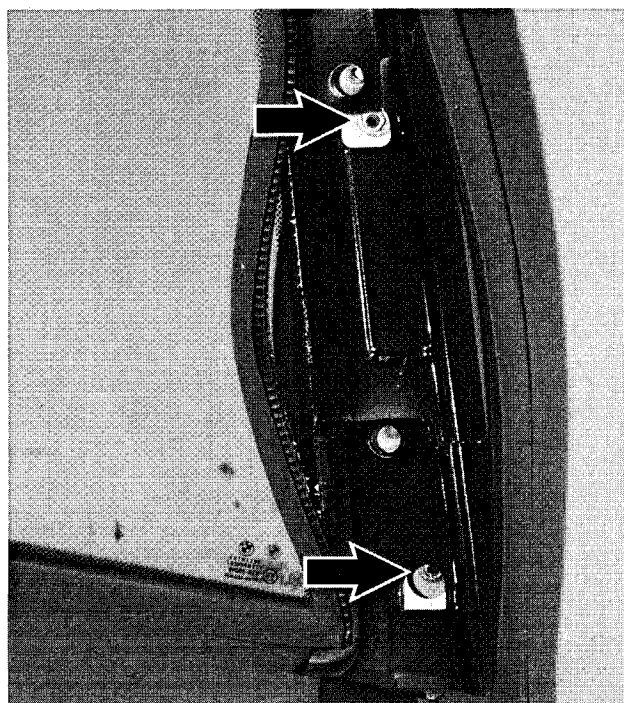
Fig. 28. B-pillar seat belt anchor trim (arrow).

4. Pull off sliding anchor adjusting knob. Partially pull away door edge and vent window trim strips and remove top B-pillar plastic trim.
5. Remove seat belt sliding anchor. See Fig. 29.
6. While supporting window, remove its B-pillar mounting fasteners. See Fig. 30.
7. Installation is reverse of removal. Keep in mind the following:
 - Plastic sealing washers must be installed between glass and body on forward glass mounting studs.
 - Reinstall sealing washers on both sides of glass at rear latch attachment.



0013071

Fig. 29. Seat belt sliding anchor mounting bolts on B-pillar (arrows). Note door post and vent window trim strips peeled away.



0013072

Fig. 30. Vent window mounting nuts on B-pillar (arrows).

Tightening Torques

- Latch to vent window (M5 screw) 6 Nm (53 in-lb)
- Seat belt anchor nut 31 Nm (23 ft-lb)
- Seat belt sliding anchor mounting bolts 24 Nm (17 ft-lb)
- Vent window to body (M6 nut) 6.2 Nm (55 in-lb)

WINDOW REGULATOR SERVICE

Door window regulator and motor, removing and installing

This procedure applies to front or rear door windows.

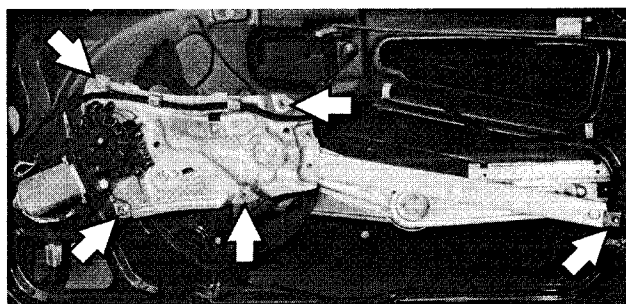
1. Remove door panel and vapor barrier as described in 411 Doors.

WARNING —

• Some 1997 and all 1998 model year cars are equipped with front side-impact airbags in the front doors. Whenever servicing the doors or windows on cars with front side-impact airbags, always disconnect the negative (–) battery cable. See 721 Airbag System (SRS) for cautions and procedures relating to the airbag system.

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

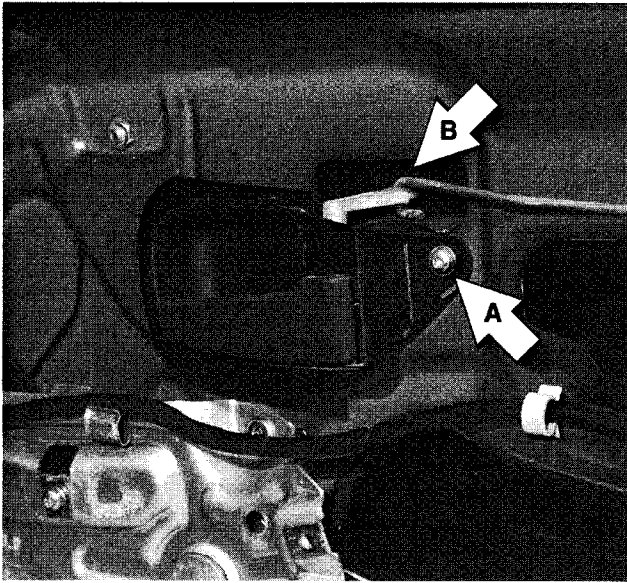
2. Remove door glass as described earlier in this section.
3. Remove inside door handle. See Fig. 31.
4. Disconnect wiring connector to power window motor.
5. Remove regulator mounting bolts or drill out rivets. See Fig. 32.



0013193

Fig. 32. Front window regulator mounting fasteners (arrows).

6. Remove regulator assembly from door.



0013073

Fig. 31. Inside door handle. Remove screw **A**, then unhook from rod **B**.

7. Unbolt power window motor from rear of regulator.

NOTE —

Some of the window regulators are mounted to the doors with rivets. The rivets must be drilled out. During installation, M6 x 10 bolts and self-locking nuts can be substituted.

8. Installation is reverse of removal.

- Adjust door window as described earlier.
- Re-initialize window regulators as described earlier.

Tightening Torques

- Window regulator to door. 9 Nm (7 ft-lb)
 - Window motor to regulator. 5 Nm (4 ft-lb)
-



513 Interior Trim

GENERAL	513-1
CENTER CONSOLE	513-1
Center console, removing and installing	513-1

DASHBOARD	513-2
Glove compartment, removing and installing.	513-2
Lower left dash panel, removing and installing	513-2
Dashboard, removing and installing	513-3

GENERAL

This repair group covers interior trim removal and installation procedures. For removal and installation of interior switches, including interior lighting equipment, see **612 Switches and Electrical Accessories**.

Most of the interior trim and finish panels are clipped or screwed into place. Many of the trim retaining clips are designed to be used only once. When removing trim that is held in place with clips, it is a good idea to have spares on hand before beginning the job.

CENTER CONSOLE

The front section center console houses the Multi-Information Display (MID) module, the front ashtray and cigarette lighter, shifter lever, power window switches and the hazard warning switch. The rear center console section houses the ashtray(s) and covers the emergency brake cable ends.

Center console, removing and installing

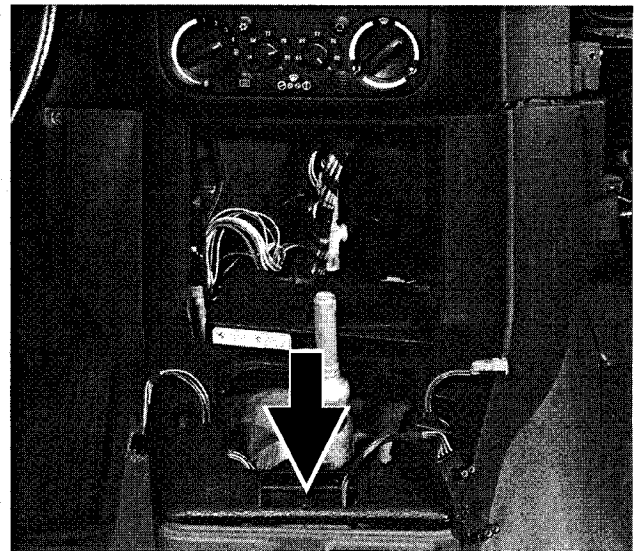
1. Disconnect negative (-) cable from battery and cover terminal with insulating material.

CAUTION —

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

2. Remove shifter boot or selector lever cover. See **250 Gearshift Linkage**.
3. Remove rear ashtray retaining screws to take out ashtray. Remove rear console retaining screw under ashtray.

4. Remove Multi-Information Display module. See **620 Instruments**.
5. Remove hazard warning switch and power window switches by pushing up and out from below.
6. Remove lower left dashboard panel and glove compartment as described later in this repair group.
7. Remove retaining screw under hazard light switch. Pull rear console back and remove retaining nut at back of front console. See Fig. 1.



0013154

Fig. 1. Console retaining screw.

8. Take out rear console first, then front console.

DASHBOARD

Dashboard removal is a complex operation, involving disconnection and dismantling of a number of electrical and dash structural components.

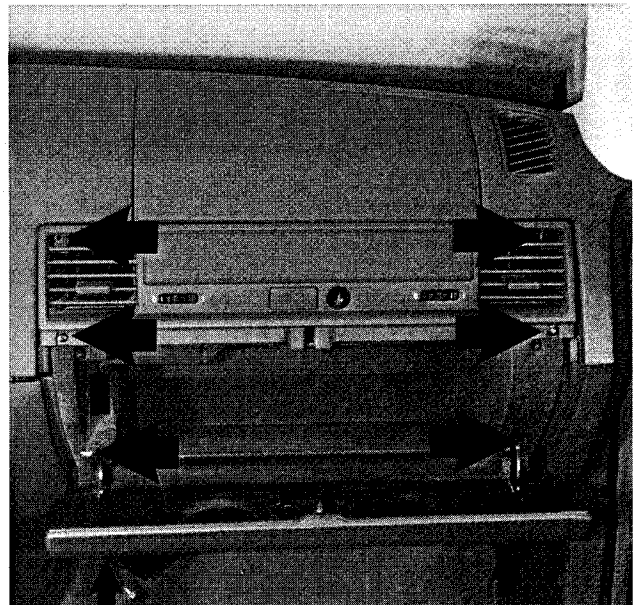
The BMW E36 is equipped with SRS airbags mounted in the steering wheel, in the dashboard (1994 and later) on the passenger side, and in the front doors (1997 and later). Airbags units are pyrotechnic devices and should be treated with extreme caution. Improper handling of the airbags could cause serious injury.

WARNING —

- The BMW Supplemental Restraint System (SRS) is complex and special precautions must be observed when servicing. Serious injury may result if system service is attempted by persons unfamiliar with the BMW SRS and its approved service procedures. BMW specifies that all inspection and service should be performed by an authorized BMW dealer.
- Before performing any work involving the steering wheel or interior trim in the vicinity of the airbags, disconnect the negative (-) battery cable. See 721 Airbag System (SRS).
- SRS contains a back-up power supply within the SRS control module. A 10 minute discharge period should be allowed after the battery cable has been disconnected.

Glove compartment, removing and installing

1. Open glove compartment door.
2. Remove glove compartment mounting screws. See Fig. 2.
3. Pull glove compartment out, disconnecting electrical harness connectors as necessary.
4. Installation is reverse of removal.

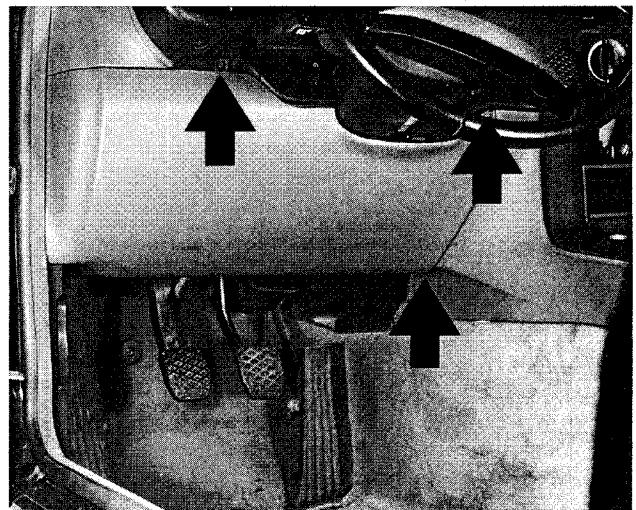


0013107

Fig. 2. Glove compartment mounting screws (arrows).

Lower left dash panel, removing and installing

1. Remove lower dash panel retaining screws. See Fig. 3.



0013155

Fig. 3. Lower left dash panel retaining screws (arrows).

2. Pull lower dash panel left and back to disengage from driver's footwell retaining clips.
3. Installation is reverse of removal.

Dashboard, removing and installing

1. Disconnect negative (–) cable from battery and cover 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 center console as described earlier.
3. Remove glove compartment as described earlier.
4. Remove lower left dash trim piece as described above. Remove lower right dash trim panel. See Fig. 4.

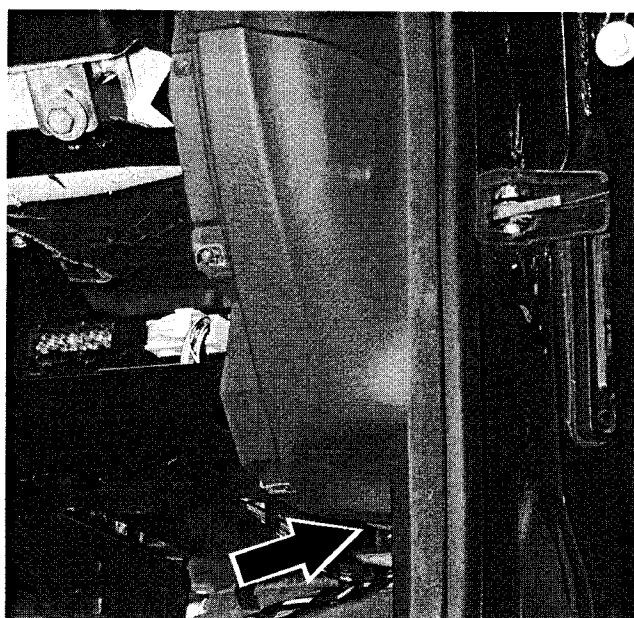


Fig. 4. Lower right dash trim piece retaining screw (arrow).

5. Remove driver and passenger airbags. See 721 Air-bag System (SRS).

WARNING —

Store the removed airbags in a safe place. Position the airbags facing up.

6. Remove steering wheel. See 320 Steering and Wheel Alignment.
7. Remove driver side knee bolster. See Fig. 5.
8. Remove instrument cluster. See 620 Instruments.

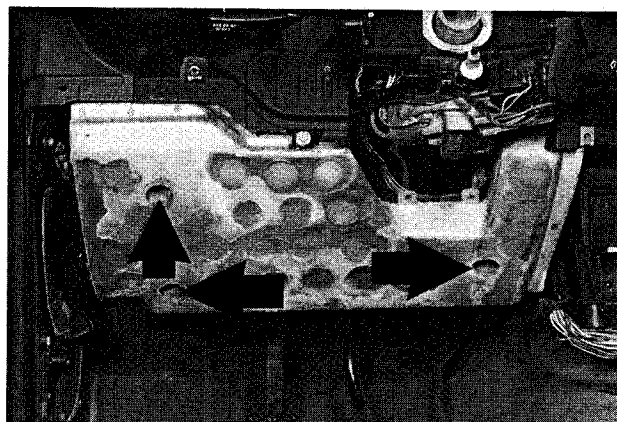


Fig. 5. Driver side knee bolster mounting bolts (arrows).

9. Remove headlight switch. Remove turn signal and windshield wiper/washer stalk switches. See 612 Switches and Electrical Accessories.
10. Remove A/C control head and module. See 640 Heating and Air Conditioning.
11. Remove radio. See 650 Radio.
12. Remove A-pillar (windshield pillar) trim on left and right sides. See Fig. 6.

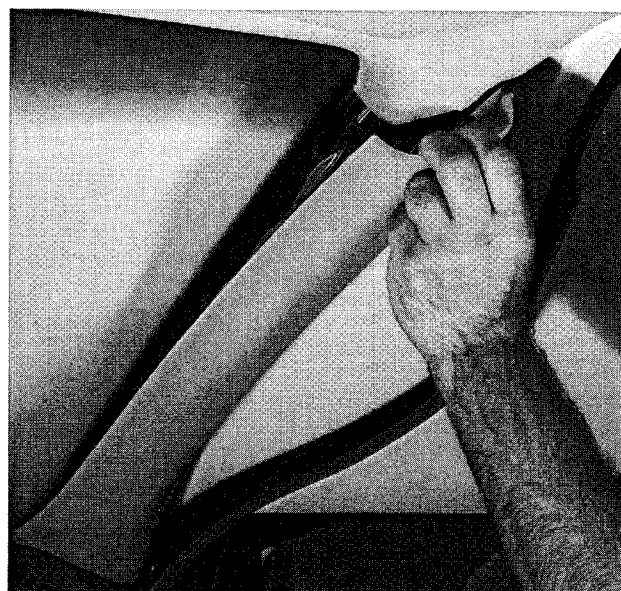


Fig. 6. A-pillar (windshield pillar) trim removal. Right side shown, left is similar.

513-4 INTERIOR TRIM

13. Remove reinforcement bar below steering column and remove steering column shear bolts. Lower steering only slightly and support steering column. See Fig. 7.

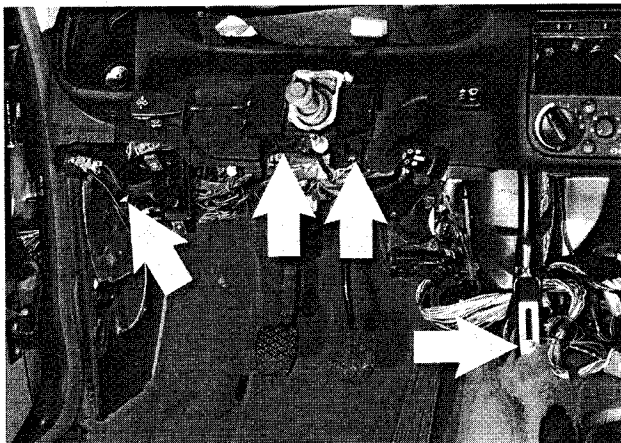


Fig. 7. Reinforcement bar bolts (arrows). Shear (headless) bolts at steering column will have to be drilled out and replaced during reinstallation.

WARNING —

Lower steering column only enough to facilitate removal of the dashboard. The steering column supports and swivel spindles can be damaged if the column is lowered too much.

14. Remove glove compartment support frame. See Fig. 8.

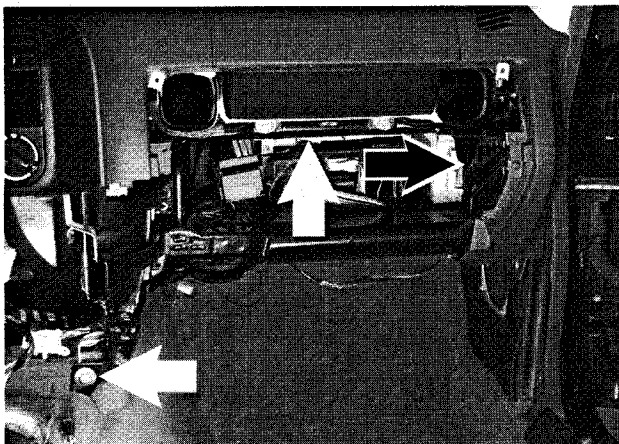


Fig. 8. Glove compartment support frame bolts (arrows).

15. Carefully pry out defroster outlets (left and right sides) at base of windshield. Remove screw below each outlet. See Fig. 9.

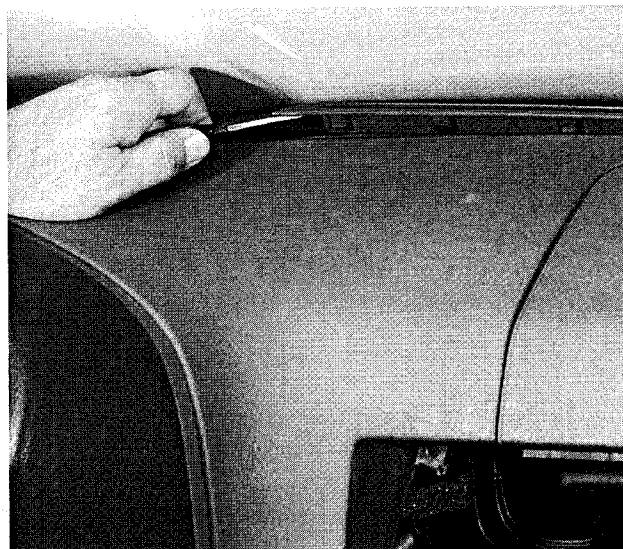


Fig. 9. Windshield defroster outlet being lifted off (arrow).

16. Remove mounting bolts on left and right ends of dashboard. See Fig. 10.



Fig. 10. Dashboard mounting bolt (arrows). Left side shown, right is similar. Some models may have two bolts on each side.

17. Lift instrument panel off slowly, making sure all harness connectors and wiring are disconnected.

18. Installation is reverse of removal.



515 Central Locking and Anti-Theft

GENERAL	515-1	Luggage compartment locking actuator, removing and installing	515-6
DOOR HANDLES AND LOCKS	515-1	LOCKING SYSTEM AND ELECTRONIC IMMOBILIZATION	515-7
Front door lock, removing and installing	515-1	Central Locking System (ZVM)	515-7
Front door handle, removing and installing ...	515-3	Central Body Electronics (ZKE IV)	515-8
Rear door lock, removing and installing	515-4	Electronic Immobilization System (EWS)	515-8
Rear door handle, removing and installing ...	515-5	EWS II control module, replacing	515-10
Door striker, replacing	515-6	Ring antenna, replacing	515-10
LOCKING ACTUATORS	515-6	EWS II transmitter/receiver module, replacing	515-11
Door Locking Actuator	515-6		

GENERAL

This section covers repair information for the central locking and the anti-theft systems. Keep in mind that E36 cars are equipped with sophisticated and self-diagnostic electrical systems. When experiencing malfunctions relating to the central locking or the anti-theft system, it is recommended that the system be diagnosed using the BMW service tester (DIS). This advanced diagnostic tool can usually pinpoint electrical faults quickly and safely. Consult an authorized BMW dealer.

NOTE —

Additional general electrical information can be found in **610 Electrical Component Locations and Electrical Wiring Diagrams**.

DOOR HANDLES AND LOCKS

Front door lock, removing and installing

1. Remove front door panel and vapor barrier as described in **411 Doors**.

WARNING —

Some 1997 and all 1998 cars are fitted with side-impact airbags in the front doors. When servicing the door locks on cars with front side-impact airbags, always disconnect the negative (–) battery terminal. See **721 Airbag System (SRS)** for cautions and procedures relating to the airbag system.

2. Raise door window completely.

3. On cars with side-impact airbags, disconnect negative (–) cable from battery, then remove airbag module.

CAUTION —

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

NOTE —

In some models covered in this manual, it is not essential to remove the side-impact airbag to access internal door components. However, the procedure is recommended for safety reasons.

4. Disconnect harness connector from window motor to prevent accidental operation.
5. On 4-door cars: Peel back rubber window guide from rear guide rail. Remove guide rail mounting bolt at bottom. Unclip any wiring from guide rail and pull guide rail downward and remove from door. See Fig. 1.

NOTE —

The top of the guide rail is "hooked" to the door sheet metal.

6. Remove inside door handle retaining screw. Disconnect inside handle from linkage and remove. See Fig. 2.
7. Cut wire ties and remove door lock electrical harness connector. Remove door lock mounting screws. See Fig. 3.
8. Working inside door, disconnect outside door handle and lock cylinder linkage from door lock. Remove lock from inside door. See Fig. 4.

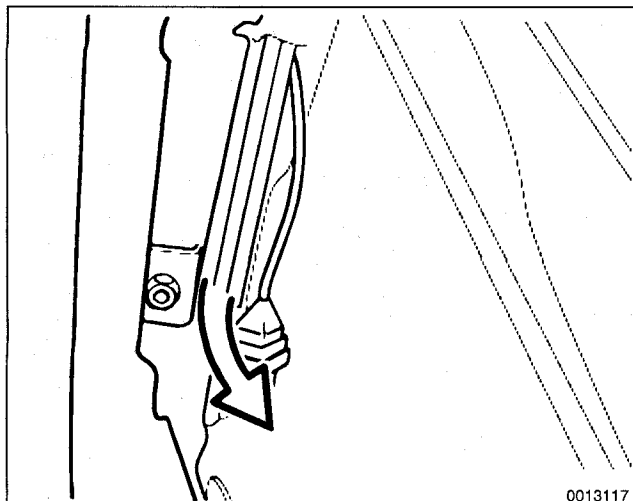


Fig. 1. 4-door cars: Remove lower retaining bolt at base of window rear guide rail and pivot rail out of door.

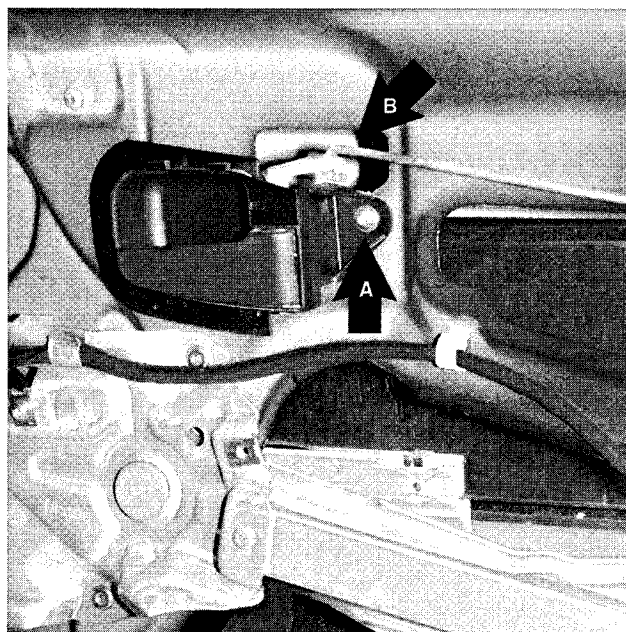


Fig. 2. Inside door handle retaining screw (A) Unhook linkage from handle at B.

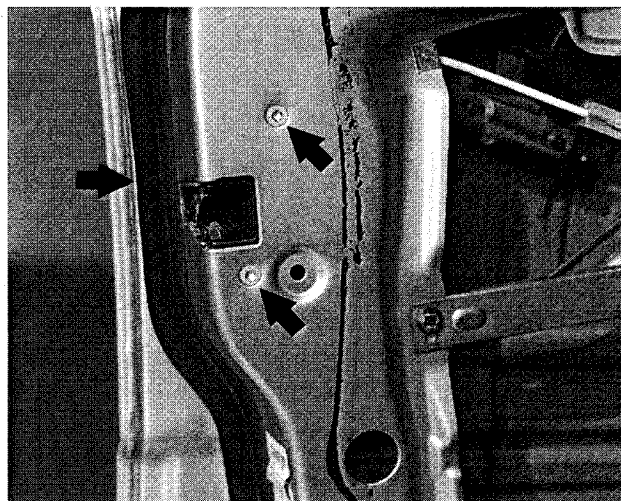


Fig. 3. Front door lock mounting screws (arrows).

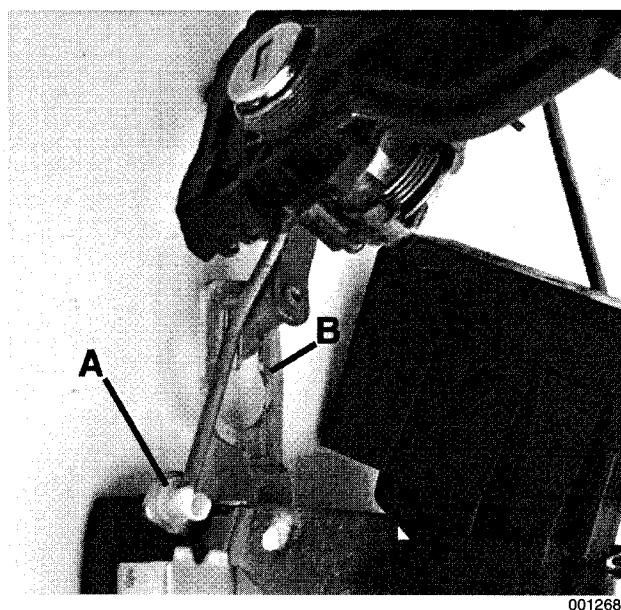


Fig. 4. Pry out lock linkage (A) from plastic retainer. Lift door lock mechanism slightly to remove latching pin from lock gate (B). Door lock mechanism shown removed from door.

9. Installation is reverse of removal, noting the following:

- Install lock mounting bolts with Loctite® 270 or equivalent thread-locker.
- Reconnect power window motor harness connector.
- Use new mounting bolts when reinstalling the side-impact airbag to the door (where applicable).
- Secure wire harnesses with wire ties.
- Check function of door lock and window mechanism before reinstalling inner door panel.

Tightening Torques

- Door lock to door 9 Nm (80 in-lb)
- Window guide to door 10 Nm (89 in-lb)

Front door handle, removing and installing

1. Close door window completely.
2. Remove front door panel and vapor barrier as described in **411 Doors**.

WARNING —

Some 1997 and all 1998 cars are fitted with side-impact airbags in the front doors. When servicing the door handles on cars with front side-impact airbags, always disconnect the negative (-) battery terminal. See **721 Airbag System (SRS)** for cautions and procedures relating to the airbag system.

3. On cars with side-impact airbags, disconnect negative (-) cable from battery, then remove airbag module.

CAUTION —

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

NOTE —

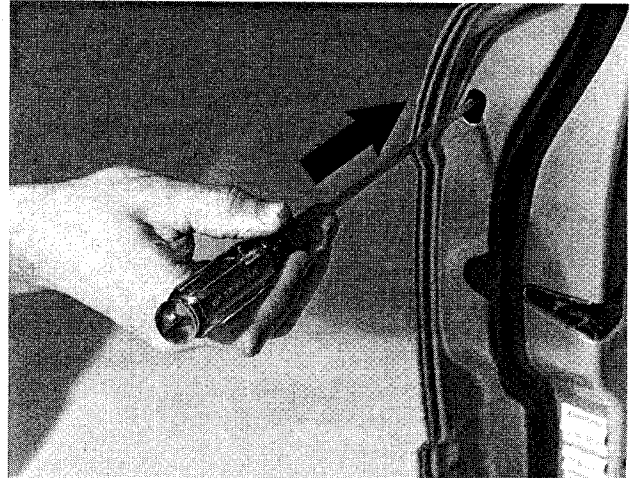
In some models covered in this manual, it is not essential to remove the side-impact airbag to access internal door components. However, the procedure is recommended for safety reasons.

4. Remove door lock as described earlier.
5. Remove window as described in **512 Door Windows**.

CAUTION —

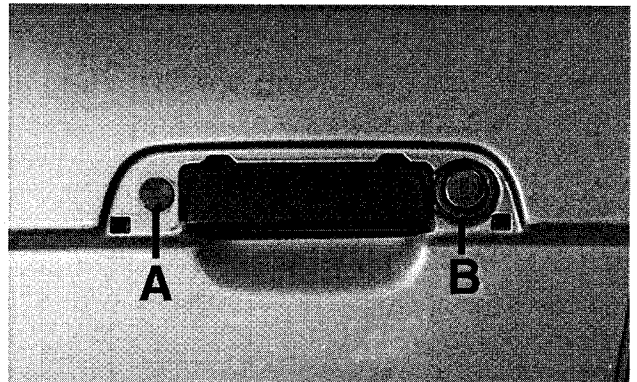
On models with side-impact airbags, removing/installing the front window requires that the battery cable be reconnected with the side-impact airbag disconnected. This will set a fault code in the SRS control module, turn on the SRS warning light, and disable the SRS system until the fault memory is cleared using special SRS test equipment.

6. Pry out access plug in end of door. Use screwdriver through access hole to slide exterior trim locking plate into released position. See Fig. 5. Remove door handle exterior trim piece.
7. Working inside door, remove locking clip for door handle retaining pin and push pin out.
8. Working inside door, disconnect electrical harness connector at door handle. Twist plastic connector bracket to remove from door handle.
9. Working at door exterior, remove handle collar nut while supporting handle. See Fig. 6.



0011681

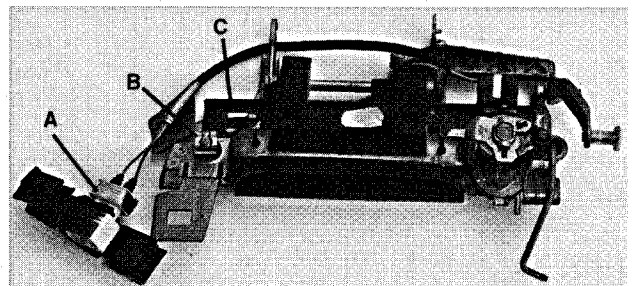
Fig. 5. Insert screwdriver into access hole and push locking plate forward (arrow) to release exterior handle trim.



0011682

Fig. 6. Door handle retaining pin (A) and lock collar nut (B). Door handle trim shown removed.

10. Remove door handle from door by angling out of door cavity. Removed door handle assembly is shown in Fig. 7.



0012684

Fig. 7. Door handle harness connector (A); retaining pin locking clip (B); exterior trim locking plate (C). Handle assembly shown removed from door.

515-4 CENTRAL LOCKING AND ANTI-THEFT

11. Installation is reverse of removal. Keep in mind the following:

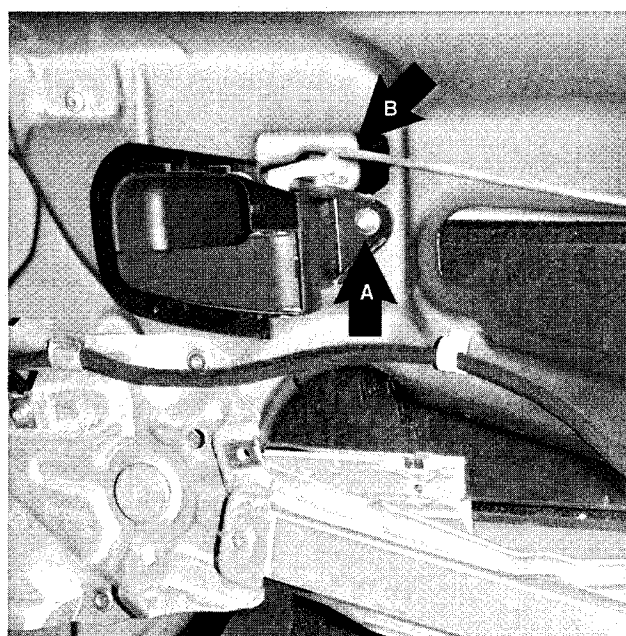
- Make sure rubber seal for handle is correctly positioned before tightening mounting fasteners.
- Install exterior trim piece and then use a hooked tool to pull locking plate into locked position. Make sure door handle trim contacts body evenly before locking trim in place.
- Use new mounting bolts when reinstalling the side-impact airbag to the door (where applicable). Reset SRS warning light and clear SRS fault memory using special test equipment. See **721 Airbag System (SRS)**.
- Reconnect all harness connectors (including power window motor) before installing door panel.
- Secure wire harnesses with wire ties.
- Adjust and reinitialize windows. See **512 Door Windows**.

Tightening Torque

- Collar nut to door handle 10 Nm (89 in-lb)

Rear door lock, removing and installing

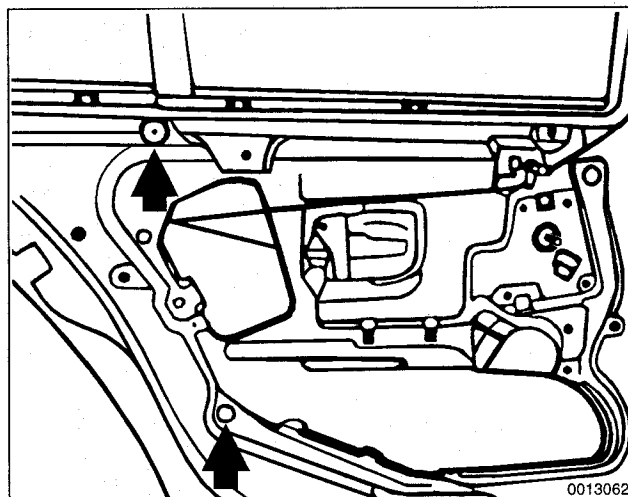
1. Remove rear door panel and vapor barrier as described in **411 Doors**.
2. Remove window from rear door as described in **512 Door Windows**.
3. Disconnect and remove inside door handle. See Fig. 8.



0013073

Fig. 8. Inside door handle retaining screw (A) Unhook linkage from handle at B.

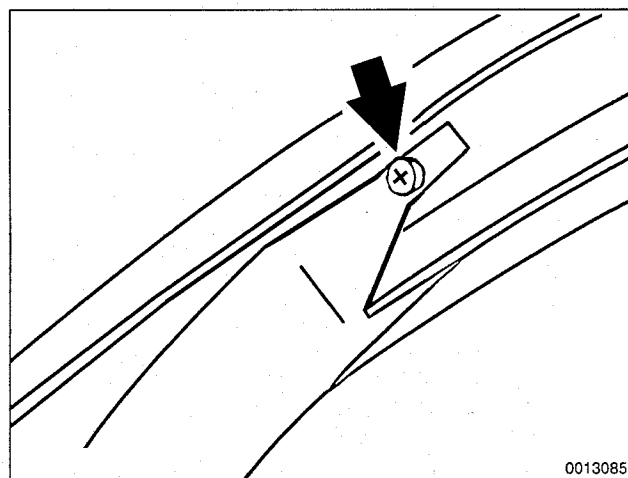
4. Remove screws mounting bottom of window rear track to door. See Fig. 9.



0013062

Fig. 9. Rear window track lower fasteners (arrows).

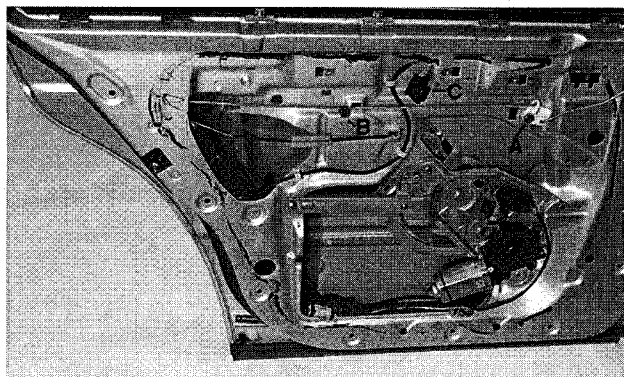
5. Remove window rear track top screw and move track aside. See Fig. 10.



0013085

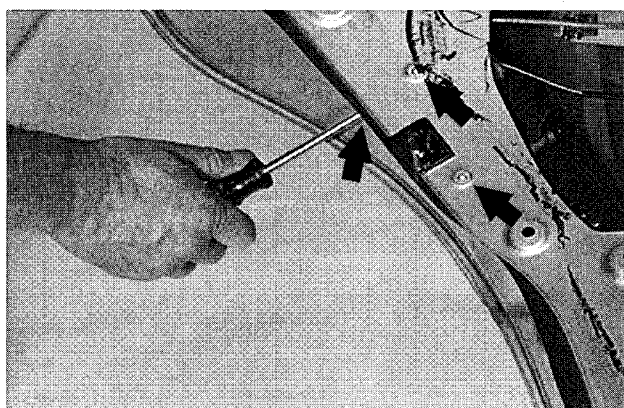
Fig. 10. Rear window track top screw (arrow).

6. Remove screw from lock button linkage rod retainer. Lift rod out of retaining clip. See Fig. 11.
7. Disconnect door lock harness connector.
8. Remove door lock screws. See Fig. 12.
9. Move lock up slightly to disengage from exterior handle linkage. Remove lock from inside door.



0011688

Fig. 11. Rear door lock button linkage rod retainer (A), rod retaining clip (B), and harness connector (C).



0011687

Fig. 12. Rear door lock mounting screws (arrows).

10. Installation is reverse of removal. Keep in mind the following:

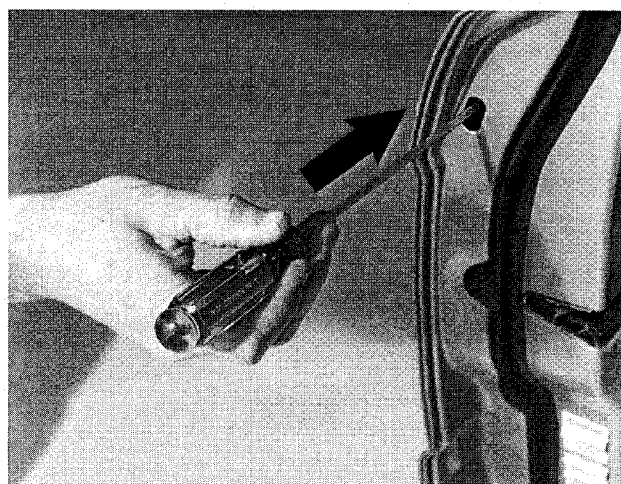
- Install lock mounting bolts with Loctite® 270 or equivalent thread-locker.
- Reconnect power window motor harness connector before installing door panel.
- Secure wire harnesses with wire ties.
- Adjust window as described in 512 Door Windows.

Tightening Torque

- Door lock to door 9 Nm (80 in-lb)

Rear door handle, removing and installing

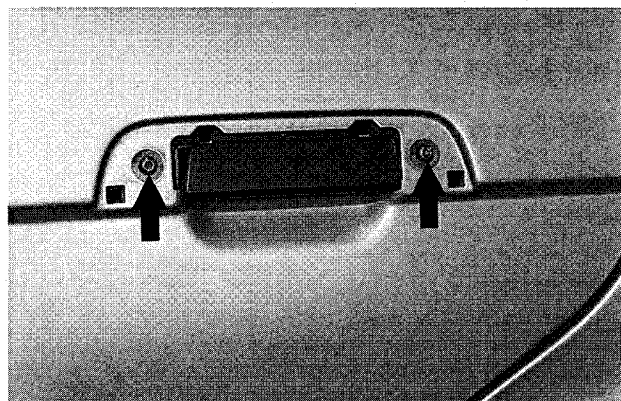
1. Remove rear door panel and vapor barrier as described in 411 Doors.
2. Remove window from rear door as described in 512 Door Windows.
3. Remove door lock as described earlier.
4. Pry out access plug in end of door. Use screwdriver through access hole to slide exterior trim locking plate into released position. See Fig. 13. Remove door handle exterior trim piece.



0011681

Fig. 13. Insert screwdriver into access hole and push locking plate forward (arrow) to release exterior handle trim.

5. Remove door handle mounting screws while supporting handle. See Fig. 14.



0011684

Fig. 14. Rear door handle mounting screws (arrows).

515-6 CENTRAL LOCKING AND ANTI-THEFT

6. Remove door handle assembly from inside door.
7. Installation is reverse of removal. Keep in mind the following:
 - Make sure rubber seal for handle is correctly positioned before tightening mounting fasteners.
 - Install exterior trim piece and then use a hooked tool to pull locking plate into locked position. Make sure door handle trim contacts body evenly before locking trim in place.
 - Reconnect all harness connectors (including power window motor) before installing door panel.
 - Secure wire harnesses with wire ties.
 - Adjust window as described in **512 Door Windows**.

Tightening Torque

- Rear door handle mounting screws . . 10 Nm (89 in-lb)

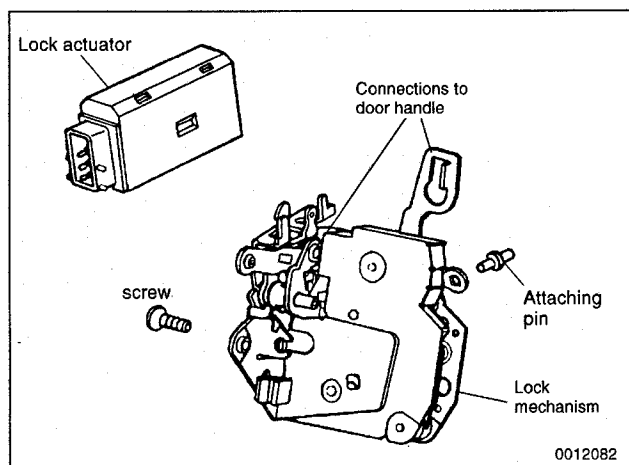


Fig. 15. Front door lock mechanism and related parts. Rear lock mechanism is similar.

Door striker, replacing

The door striker contains an electrical contact switch. If the switch is faulty, the striker must be replaced. To remove the striker, remove the mounting bolts. Disconnect the harness connector from the striker.

NOTE —

If the striker backup plate falls into the body cavity, it can be retrieved after removing the inside trim from the B-pillar (door-post pillar).

Tightening Torque

- Striker plate to body pillar. 28 Nm (20 ft-lb)

LOCKING ACTUATORS

Door Locking Actuator

The front door lock mechanism and actuator are shown in Fig. 15. The rear door lock and actuator are similar. The lock must first be removed, as described earlier, to replace the actuator.

NOTE —

- If just one of the central locking drives does not operate, the locking linkage could be frozen or stiff enough to prevent actuation of the drive. Try remove the interior door panel and lubricating the locking linkage as the first step.
- The actuator is not serviceable and must be replaced if defective.

Luggage compartment locking actuator, removing and installing

1. Raise trunk lid. Remove tool kit and trunk lid trim panel. See Fig. 16.

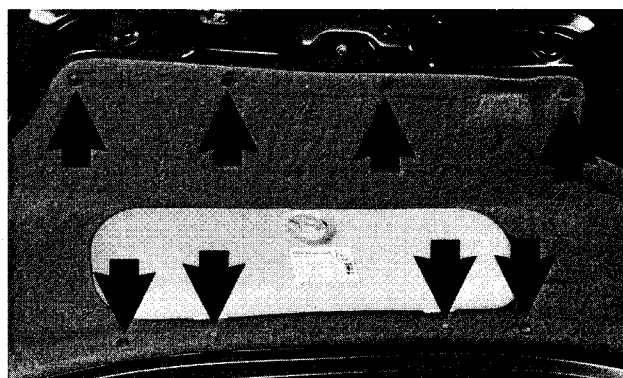


Fig. 16. Trunk lid trim and tool kit retaining screws and clips (arrows).

2. Disconnect actuating rod from lock. See Fig. 17.
3. Unplug two wiring connectors from actuator. See Fig. 18.

NOTE —

The actuator is adjustable. Matchmark the attaching screws before removal.

4. Remove actuator attaching screws. Pull actuator backwards from behind metal shield to remove.
5. Installation is reverse of removal. Align actuator screws with matchmarks during installation.

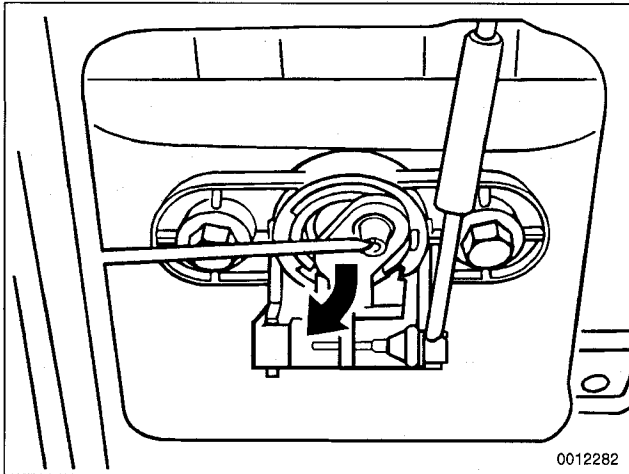


Fig. 17. Pull off luggage compartment lock actuating rod in the direction of **arrow**.

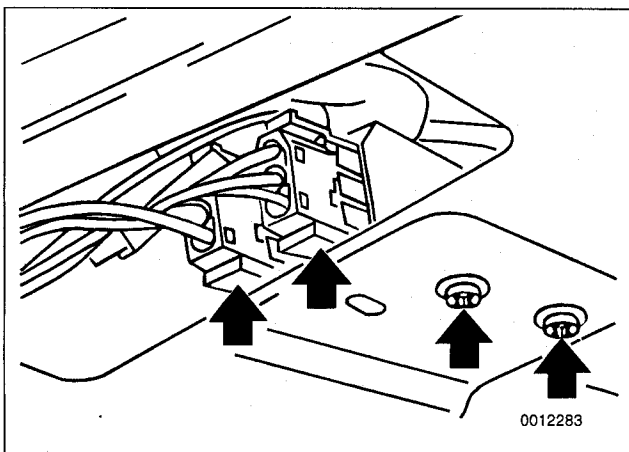


Fig. 18. Luggage compartment actuator wire connectors and attaching screws (**arrows**).

LOCKING SYSTEM AND ELECTRONIC IMMOBILIZATION

The central locking system uses electrical lock actuators at each door and at the trunk lid. The locking system can be actuated by either front door lock or by the luggage compartment lock. On some 1994 and later cars, an additional remote control key pad can also be used to activate the lock and anti-theft systems.

When the key is turned to the lock position, a micro-switch signals a central control module to lock all doors, luggage compartment, gas tank flap and, in later convertibles, the glove box lid. Where applicable, this also arms the anti-theft system.

NOTE —

The central locking system responds to accidents via an impact (inertia) switch. When this function is activated, the doors are automatically unlocked and the hazard warning lights and interior lights are turned on. The impact switches are mounted in the left and right footwells behind the speaker grilles.

Central Locking System (ZVM)

Different versions of the central locking control have been used in the E36 cars. In early production cars (model years 1992 and 1993), the locking system is controlled through the central locking module. This system is referred to as ZVM.

In this system, three microswitches are operated via the door lock cylinder at each front door. Turning the key approximately 45° (position 1) operates the door locking microswitch. Turning the key approximately 90° (position 2) actuates the double locking microswitch. Turning the key approximately 45° in the opposite direction through position 0 actuates the unlocking microswitch and deactivates the alarm system (position 3). See Fig. 19.

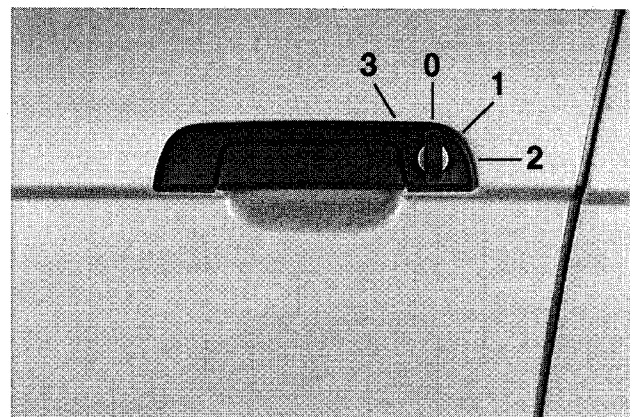


Fig. 19. ZVM door lock cylinder positions.

CAUTION —

Do not engage double locking position with passengers in the car unless the master key is available. The door cannot be opened from outside or inside without the master key.

NOTE —

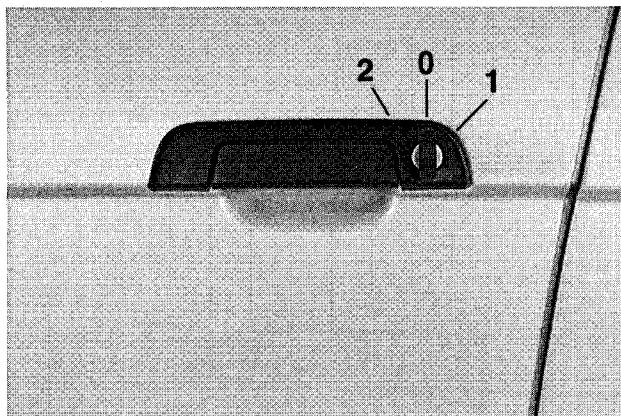
In case of a discharged battery, the car can still be locked or unlocked using the key.

Central Body Electronics (ZKE IV)

Beginning with vehicles produced 9/93 (model year 1994), the central locking system was integrated with sunroof and window closure into the Central Body Electronics (ZKE IV) (generation four) system. The control module for this system is mounted in front of the glove compartment.

In this system two microswitches are operated via the door lock cylinder at both front doors. Turning the key approximately 45° (position 1) operates the door locking microswitch and activates the alarm system. Holding the key in that position also closes any open windows and the sunroof.

Turning the key approximately 45° in the opposite direction through position 0 actuates the unlocking microswitch and deactivates the alarm system (position 2). See Fig. 20.



0011762a

Fig. 20. ZKE IV door lock cylinder positions.

Electronic Immobilization System (EWS)

The electronic anti-theft system known as EWS was first introduced in January 1994. The early version of the system uses a starting inhibition module to interrupt the ignition, the fuel injection and the starter motor. This system is activated and deactivated by the central locking system. The control module for the system is installed under the left side of the dashboard.

Starting with models built since January 1995, E36 cars come equipped with a sophisticated coded electronic immobilization system called EWS II. For a schematic of the system, refer to Fig. 21.

NOTE —

The EWS II system is also sometimes referred to as the Driveway Protection System or the electronic immobilization system.

On EWS II equipped cars, the ignition key is embedded with a computer chip and permanently encoded. A primary code is programmed into the key and into the vehicle itself. A secondary code is changed every time the vehicle is started. If the key code and EWS II control module code do not match, the engine management control module and the starter are disabled. EWS II ignition keys cannot be duplicated.

The system is designed to have up to ten keys and only an authorized BMW dealer can provide replacement keys.

NOTE —

It is possible to damage the electronic circuitry in the key, rendering it unusable. In that case, a new key should be purchased and initialized by an authorized BMW dealer.

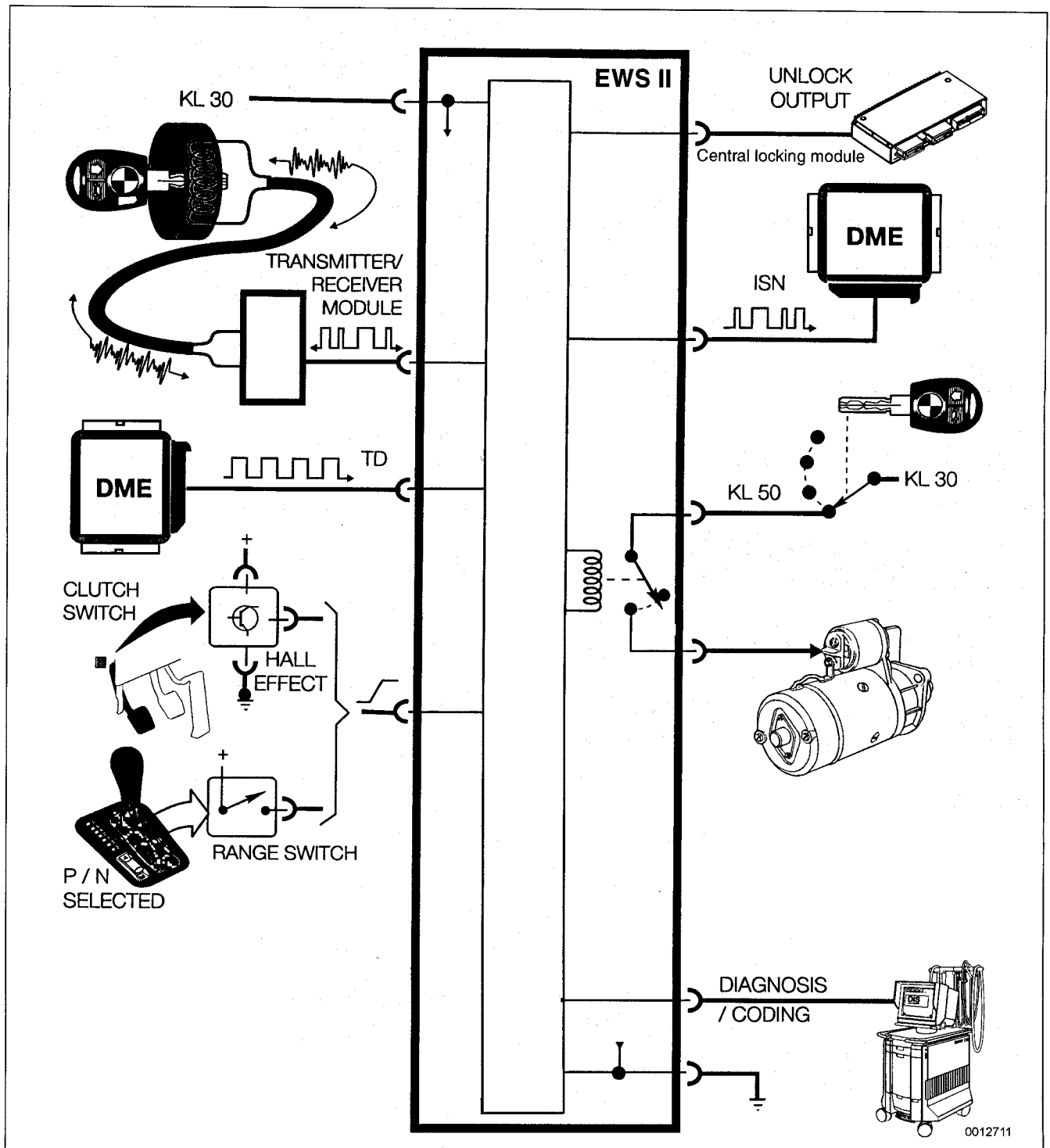


Fig. 21. EWS II system.

EWS II control module, replacing

1. Disconnect negative (-) cable from battery.

CAUTION —

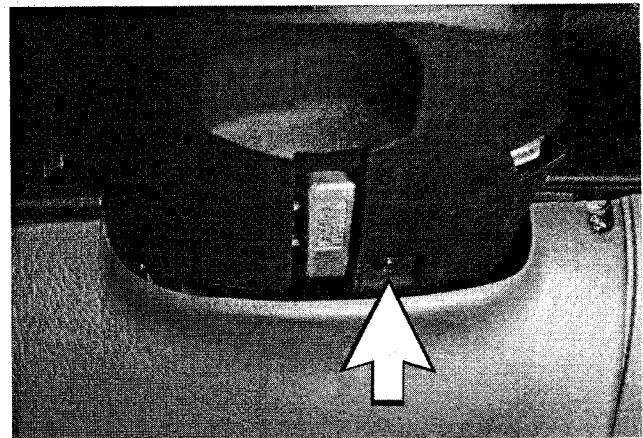
Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.

2. Remove glove compartment as described in 513 Interior Trim.
3. Remove EWS II control module harness connector. Pull module out of bracket. See Fig. 22.

NOTE —

The EWS II module should be identified with EWS II markings.

4. Installation is reverse of removal.



0012543

Fig. 23. Steering column cover retaining screw (arrow).

3. Remove lower left dash trim panel as described in 513 Interior Trim.
4. Cut off wire ties holding wiring harness to steering column.
5. Gently pry off ring antenna from ignition switch.
6. Unplug ring antenna harness from EWS II transmitter/receiver module as described below.
7. Installation is reverse of removal.

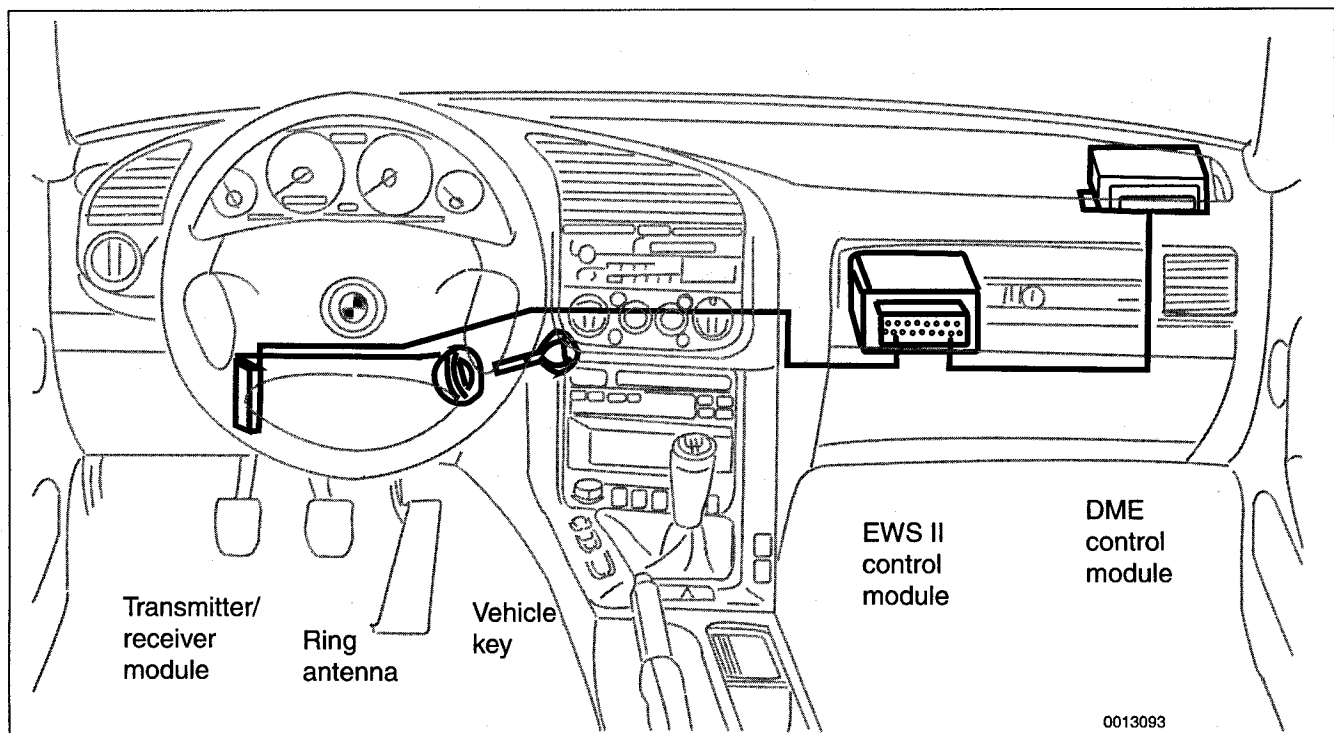
Ring antenna, replacing

1. Disconnect negative (-) cable from battery.

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 cover. See Fig. 23.



0013093

Fig. 22. Location of EWS II components.

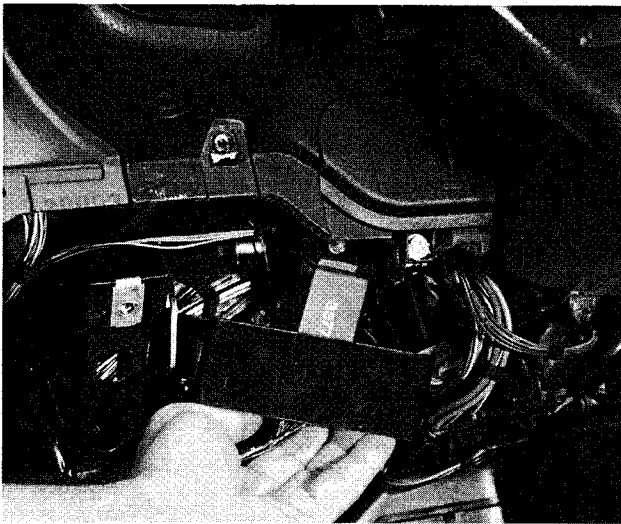
EWS II transmitter/receiver module, replacing

1. Disconnect negative (-) cable from battery.

CAUTION —

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

2. Remove lower left dash trim panel and knee bolster as described in **513 Interior Trim**.
3. Unclip auxiliary relay panel under steering column and lower it to access relays and harness connectors. See Fig. 24.



0013164

Fig. 24. Lowering the left side auxiliary relay panel.

4. Disconnect harness connector from transmitter/receiver module. Unclip module from panel. See Fig. 25.

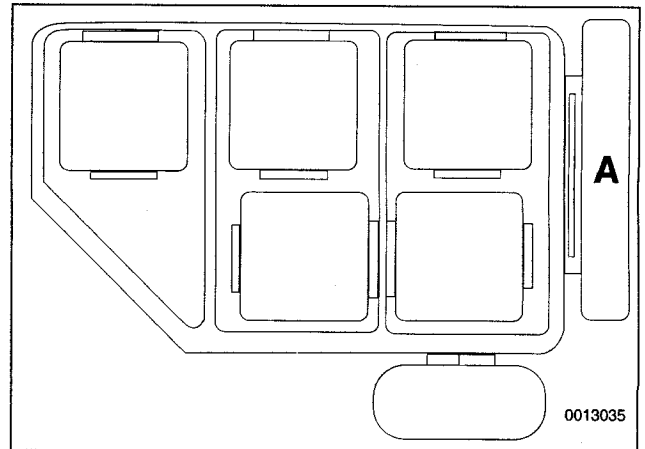


Fig. 25. Position of EWS II transmitter/receiver module (A) on left side auxiliary relay panel.

5. Installation is reverse of removal.



520 Seats

GENERAL	520-1	Rear seat cushion and backrest, removing and installing (fixed seat back models)	520-5
FRONT SEATS	520-1	Rear seat cushion and backrest, removing and installing (fold-down seat back models)	520-5
Front seat, removing and installing	520-1	Rear seat backrest side section, removing and installing (fold-down seat back models)	520-6
Manual Front Seat Assembly	520-3		
Power Front Seat Assembly	520-4		
REAR SEATS	520-5		

GENERAL

This repair group covers removal and installation of the front and rear seats.

FRONT SEATS

The front seats installed in E36 cars come in either manual or electrically powered versions. Cloth, vinyl and leather versions are offered. M3 sport seats have extra bolsters on the sides of the seat-back, a thigh support bolster, and extra controls for seat inclination.

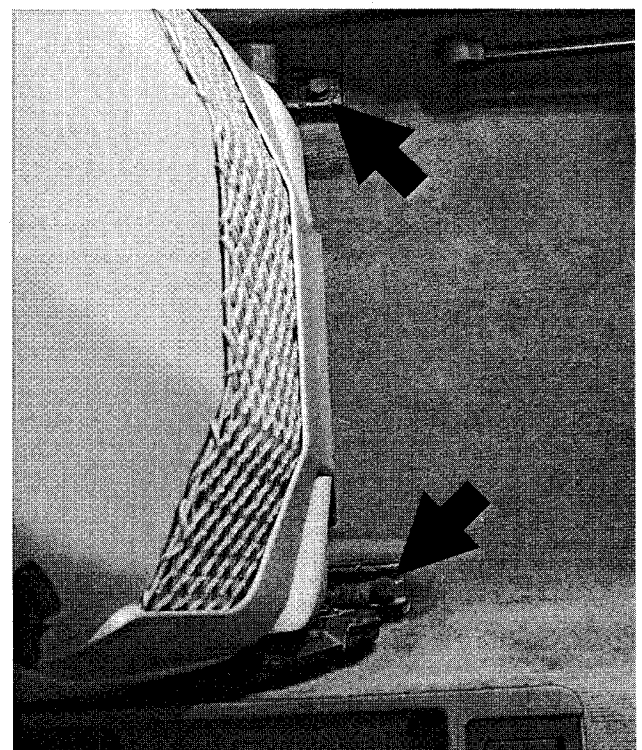
Seat removal and installation is similar for all versions. Seat disassembly differs in details among the many models of seats.

Front seat, removing and installing

1. Move seat to full forward position and raise it as far as possible. Remove two mounting bolts at rear of seat rails. See Fig. 1.
2. Move seat to full rear position, keeping it raised.
3. Disconnect negative (–) cable from battery.

CAUTION —

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



0013165

Fig. 1. Front seat rear mounting bolts (arrows).

4. Remove plastic caps from front mounting nuts, and then remove mounting nuts. See Fig. 2.

WARNING —

Deactivate front seat belt lock tensioners before proceeding to next step. See **720 Seat Belts**.

NOTE —

Use a blanket to protect door sill from scuffing by seat rail during seat removal.

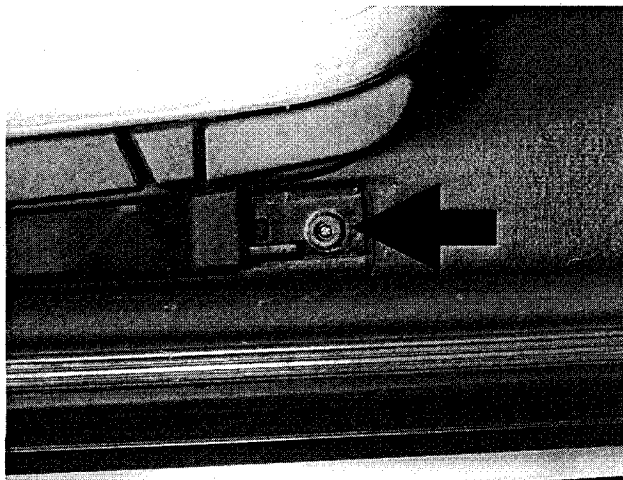


Fig. 2. Front seat front mounting nut (arrow).

5. On 2-door cars: unhook seat belt from guide on seat back.
6. Tilt seat back to access and unplug electrical harness connectors. Cut or untwist wire ties as necessary.
7. On 4-door cars: Unbolt seat belt from seat frame. See Fig. 3.
8. Remove seat from car.

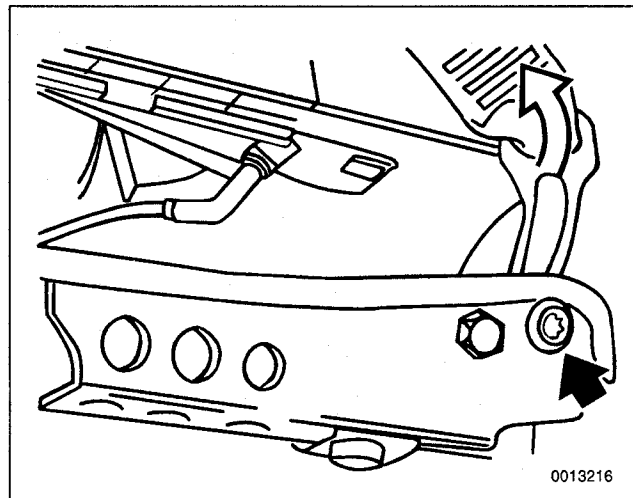


Fig. 3. Seat belt mounting bolt (arrow).

9. Installation is reverse of removal. Keep the following in mind:
 - Use wire ties or equivalent means to keep seat harness wiring from being exposed to fraying.
 - Reactivate front seat belt locks.
 - Start all seat mounting bolts.
 - Tighten seat mounting fasteners in this sequence: inner front; outer front; inner rear, outer rear.

Tightening Torque

- Front seat to floor 55 Nm (41 ft-lb)

Manual Front Seat Assembly

The non-power seat in E36 cars is shown disassembled in Fig. 4. Component replacement is possible once the seat has been removed from the vehicle as described earlier.

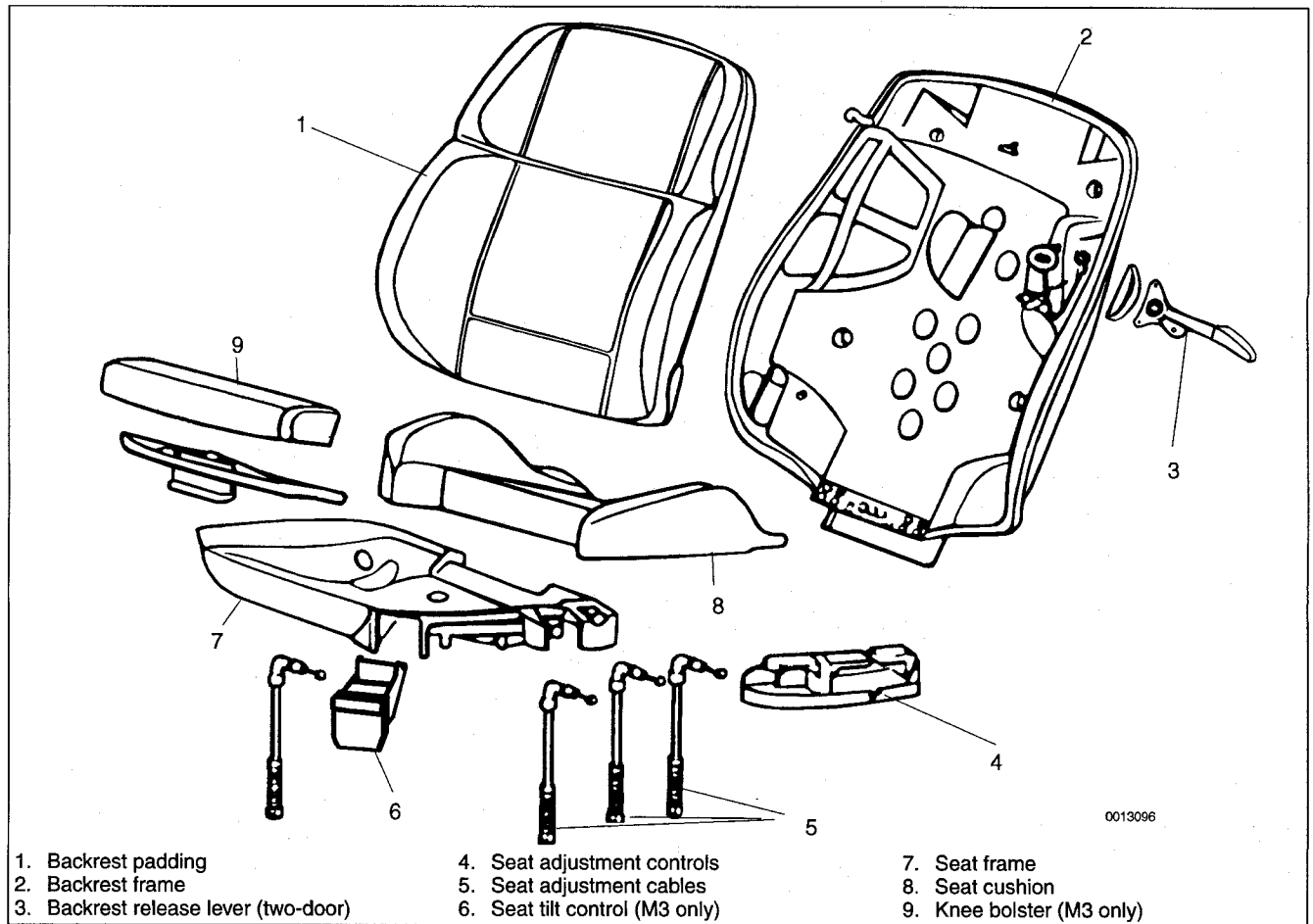


Fig. 4. Construction of non-power front seat.

Power Front Seat Assembly

The power seat in E36 cars is shown disassembled in Fig. 5. Component, actuator and drive cable replacement is possible once the seat has been removed from the vehicle as described earlier.

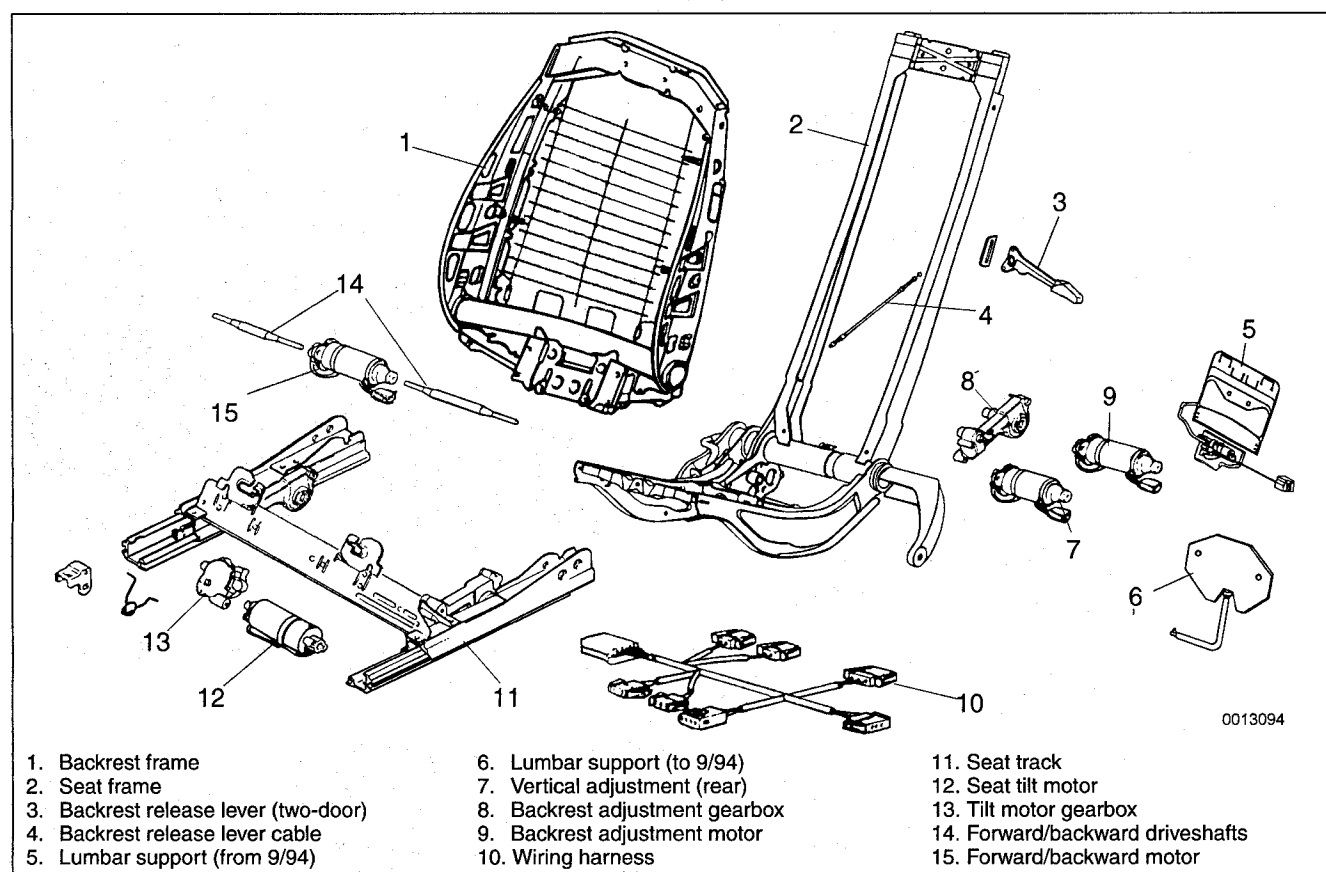


Fig. 5. Construction of power front seat.

REAR SEATS

Rear seat cushion and backrest, removing and installing (fixed seat back models)

1. Pull front of bottom cushion up and out of clips.

NOTE —

Remove rear headrests, if equipped.

2. Fold down center armrest and remove bolts from behind arm rest.
3. Slide seat back up off holders. Then slide to side to clear seat belts. See Fig. 6.

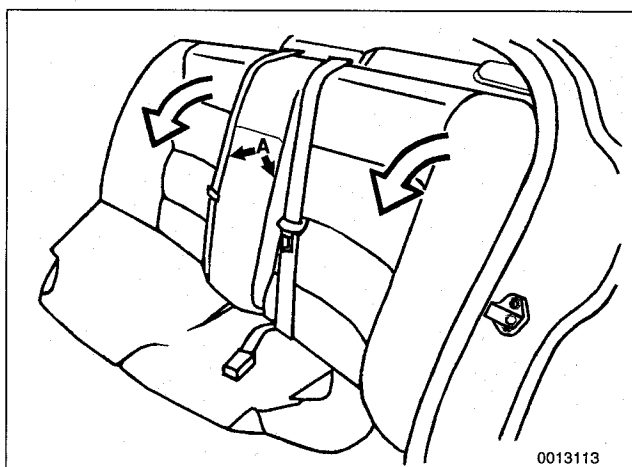


Fig. 6. To remove rear seat, remove bottom cushion. Remove bolts (A) behind center armrest. Slide seat back up off holders, then forward.

Rear seat cushion and backrest, removing and installing (fold-down seat back models)

1. Pull front of bottom cushion up and out of clips.

NOTE —

Remove rear headrests, if equipped.

2. Remove bottom seat belt anchor bolts. See Fig. 7.

NOTE —

Be sure to note relative positions of metal belt-end anchors in order to reassemble correctly.

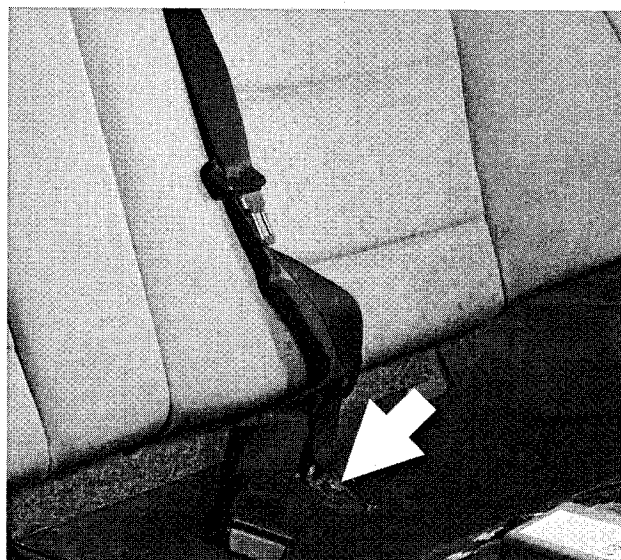


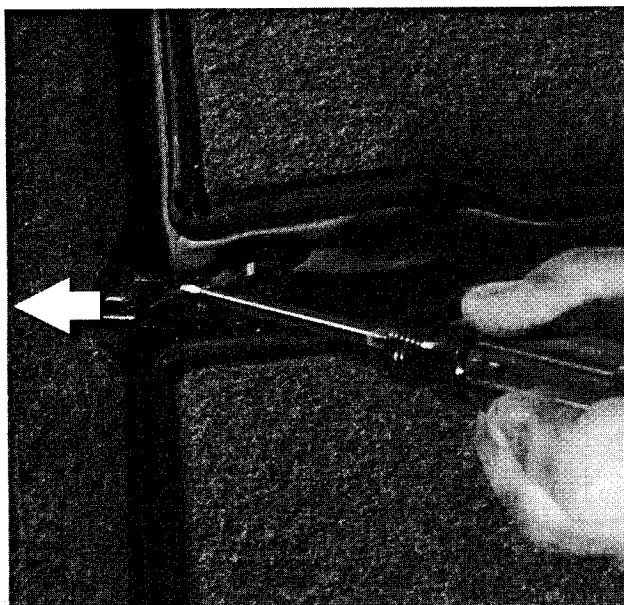
Fig. 7. Rear seat belt anchor bolt under rear seat cushion (arrow).

3. Tilt backrests forward and unclip plastic cover. See Fig. 8.



Fig. 8. Rear seat back mounting cover plate at base of seat back.

4. Push spring-loaded lock back and unclip seat back.
See Fig. 9.



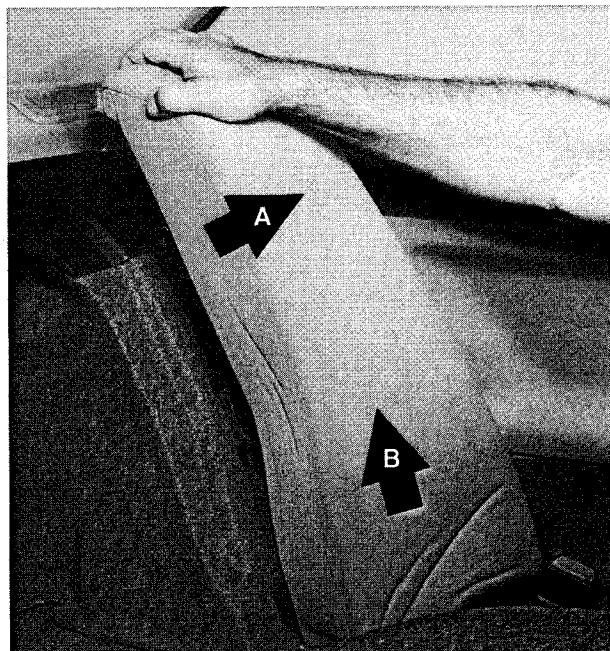
0013177

Fig. 9. Push spring-loaded clip back (arrow).

5. Installation is reverse of removal. Make sure backrest locks at top seat belt connection.

Rear seat backrest side section, removing and installing (fold-down seat back models)

1. Pull front of cushion up and out of clips.
2. Fold down rear seat backrest.
3. Lift backrest side section up and out. See Fig. 10.



0013175

Fig. 10. Remove backrest side section by lifting out (A) and up (B).

4. Installation is reverse of removal.



540 Sunroof

GENERAL 540-1

SLIDE-TILT SUNROOF 540-2

Sunroof panel, emergency closing 540-2

Sunroof panel, adjusting 540-2

Sunroof motor, removing and installing 540-3

GENERAL

The electrically-operated slide-tilt sunroof is controlled by a set of cables that move the sunroof panel along guide rails when the motor is operated. The sunroof can be adjusted without removing it from the car. Replacement of the sunroof liner or components such as the cable assembly require that the sunroof panel be removed.

The components of the slide-tilt sunroof are shown in Fig. 1.

NOTE —

- Be sure to check the drains in the front corners of the sunroof carrier if water is entering the car through the headliner.
- Removal and repair of the sunroof and other components inside the roof cavity is beyond the scope of this manual.

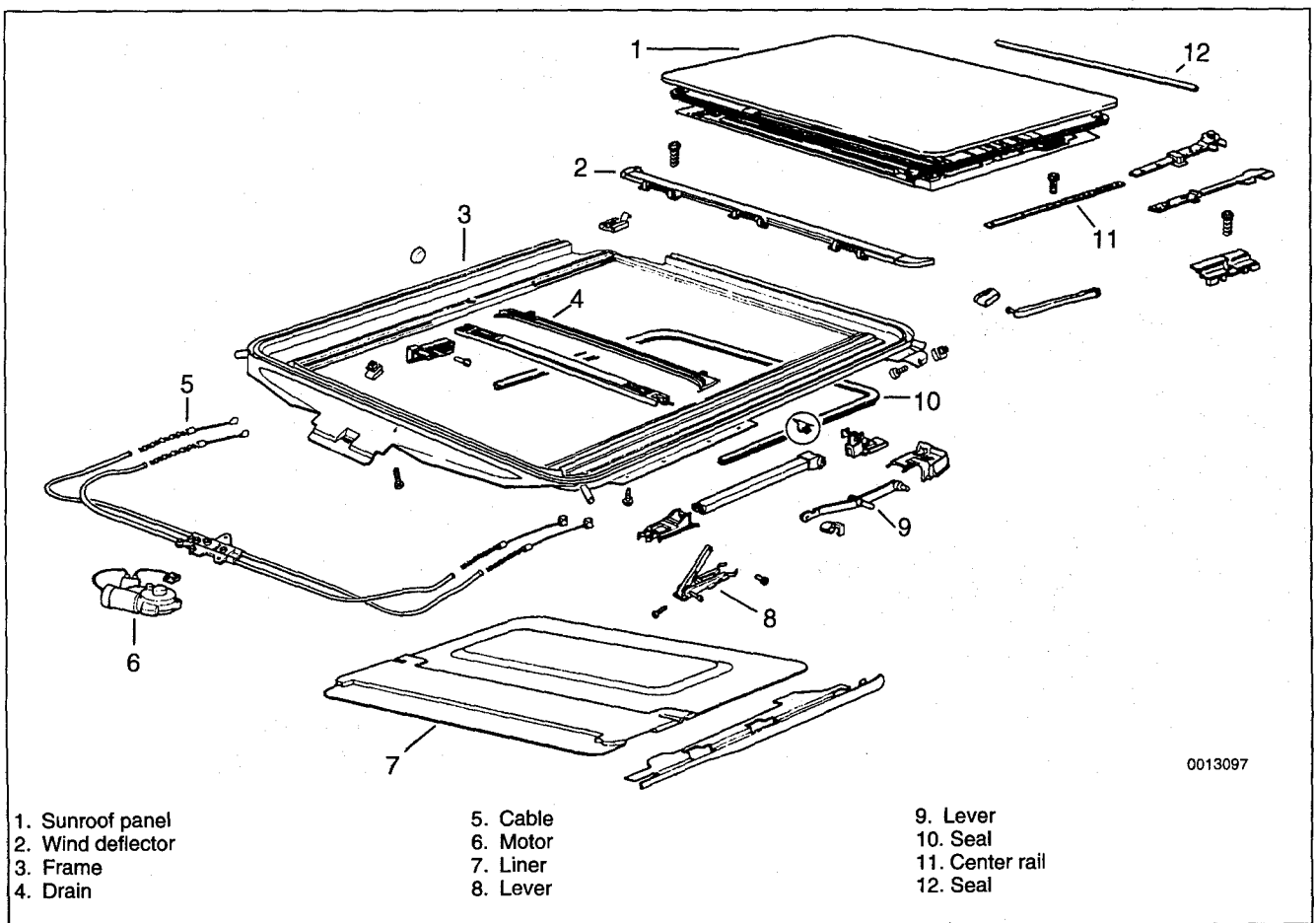
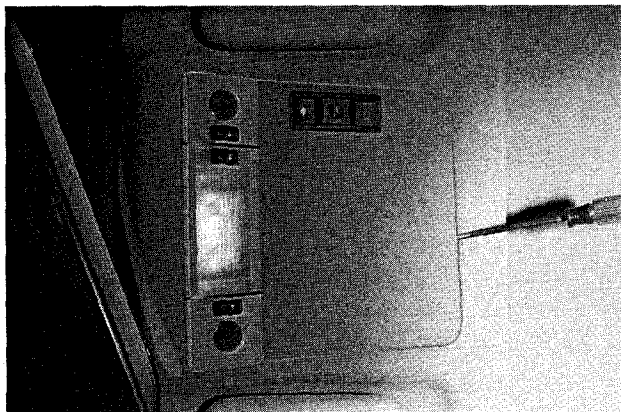


Fig. 1. Slide-tilt sunroof assembly.

SLIDE-TILT SUNROOF

Sunroof panel, emergency closing

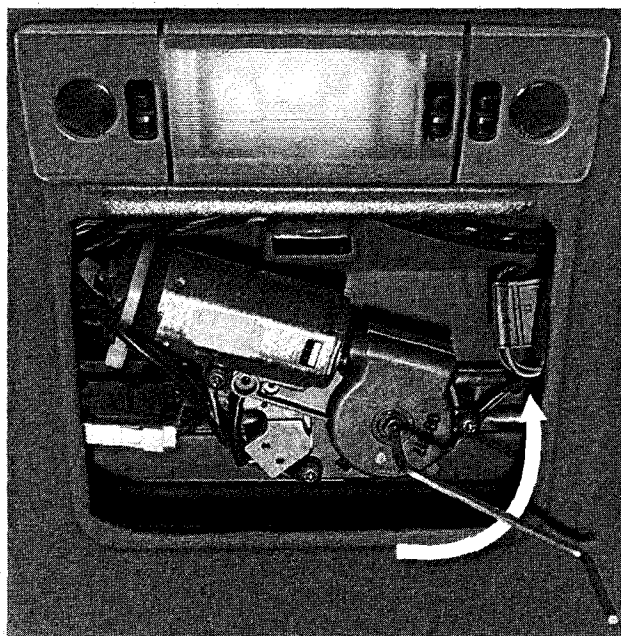
1. Remove access panel from below sunroof motor. See Fig. 2.



0011816

Fig. 2. Sunroof motor access cover being pried off.

2. Insert hex key into drive in sunroof motor and turn hex key to close panel. See Fig. 3.



0011817

Fig. 3. Use hex key to manually close sunroof. Turn hex key to manually close sunroof.

NOTE —

The hex key for manually (emergency) closing the sunroof can be found in the tool kit located in the luggage compartment.

Sunroof panel, adjusting

The sunroof panel should be adjusted whenever the top of the closed sunroof becomes misaligned with the roof of the car, if it does not close squarely, if there are wind noises at speed, if there are water leaks, or if the sunroof has been removed.

1. Open sunroof slightly. Rear of sunroof should be 2 to 3 mm below surface of roof.
2. Slide sunroof liner slowly and carefully back into roof cavity as far as possible. See Fig. 4.



0013109

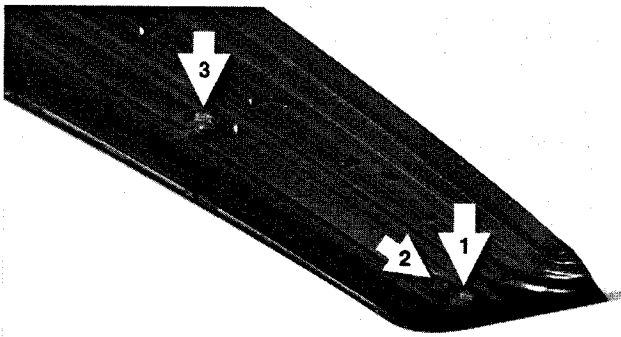
Fig. 4. Slide sunroof liner back into roof cavity.

3. Shut sunroof fully.

CAUTION —

Do not open sunroof with liner in this position. Damage to sunroof mechanism could result.

4. Rear adjustment: Loosen rear adjusting wedges and push in or out until rear of sunroof is aligned correctly with roof-top. See Fig. 5.



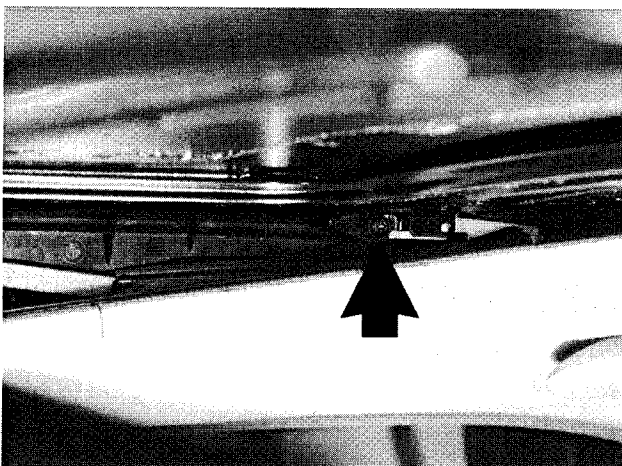
0013103

Fig. 5. Adjust rear of sunroof by loosening nuts **1** and **3**. Push adjusting wedges **2** in or out to achieve correct height.

NOTE —

- Push sunroof forward before retightening wedge fasteners.
- Use Loctite® 270 or an equivalent thread sealing compound when reinstalling the retaining fasteners. Alternatively, install new fasteners.

5. Front adjustment: Loosen retaining screws, then push front of sunroof panel up or down until it is aligned correctly with roof-top. Retighten screws. See Fig. 6.



0013170

Fig. 6. Adjust front of sunroof by loosening screw (arrow). Push sunroof up or down to achieve correct height.

NOTE —

Use Loctite® 270 or an equivalent thread sealing compound when reinstalling the retaining screws. Alternatively, install new screws.

6. Open sunroof slightly. Rear of sunroof should be 2 to 3 mm below surface of roof.
7. Slide sunroof liner slowly and carefully forward out of roof cavity as far as possible.

Sunroof Height Adjustment Specifications

- Rear flush/1 mm higher than roof top
- Front flush/1 mm lower than roof top

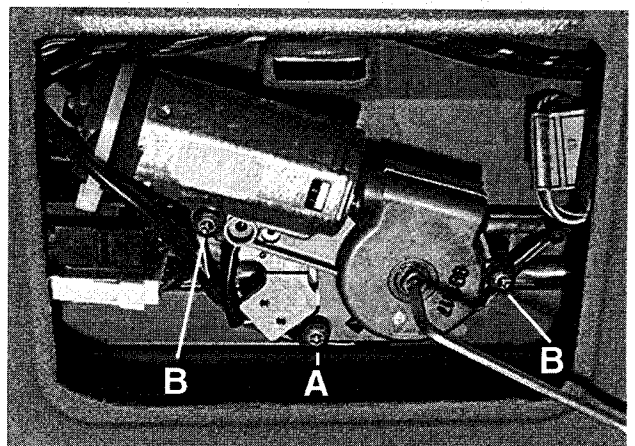
Tightening Torque

- Front or rear adjusting fasteners. 6 Nm (53 in-lb)

Sunroof motor, removing and installing

The sunroof should be in the closed position before removing or installing the sunroof motor. If necessary, manually close the sunroof panel as described under **Sunroof panel, emergency closing**.

1. With ignition switch off, remove access panel from below sunroof motor. Refer to Fig. 2.
2. Remove sunroof motor mounting screws. See Fig. 7.



0011825

Fig. 7. Sunroof motor mounting screws (**A** and **B**). Screw at **A** is longer than screws at **B**.

540-4 SUNROOF

3. Disconnect harness connector from motor and remove motor.
4. Installation is reverse of removal. Be sure the motor is in the "closed" position before installing it to the sunroof carrier. See Fig. 8.

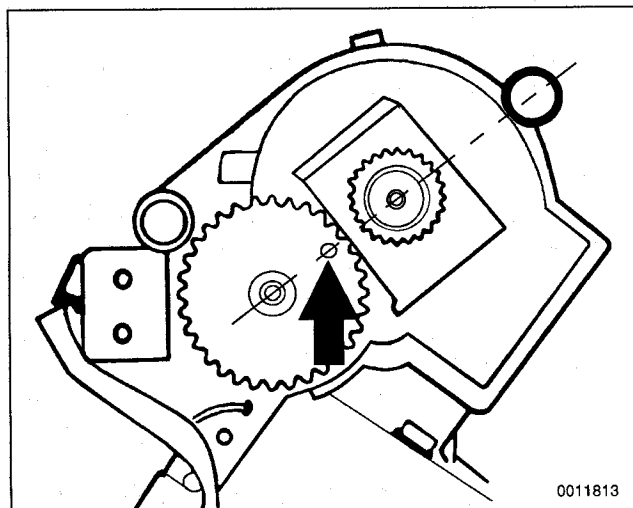


Fig. 8. Sunroof motor in "closed" position. Hole (arrow) in large gear aligns with shafts on both gears (to mid-1994).

NOTE —

On cars manufactured from mid-1994, the sunroof motor gear assembly is encased and cannot be seen. Before installing the motor in the roof, connect electrical harness connector, operate switch to rear until motor stops, then to front until motor stops. Then install motor in roof.

Tightening Torque

- Sunroof motor to motor carrier 2.8 Nm (25 in-lb)



541 Convertible Top

GENERAL	541-1	Visor Latch Plate	541-4
MANUAL CONVERTIBLE TOP	541-1	Visor Latch	541-4
Visor Latch Plate	541-1	Visor Latch Motor	541-5
Visor Latch	541-1	Convertible top and frame, replacing	541-5
Convertible Top Lid Release Mechanism	541-2	Convertible top drive motor, replacing	541-7
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POWER CONVERTIBLE TOP	541-2	Convertible Top Lid	541-9
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GENERAL

The convertible top comes in three versions: a manually operated top, a semi-automatic power top and a fully automatic power top.

NOTE —

The convertible top control module (CVM) is located behind the left rear side trim panel. For the location of other convertible top electric components see 610 Electrical Component Locations.

The rear window in the convertible models is made of a strong, flexible vinyl which is available separately. Replacement of the rear window is not covered in this manual.

BMW has designed a special battery tray for the convertible which, in conjunction with the mass of the battery in the luggage compartment, serves to dampen convertible body flexing and vibration.

CAUTION —

The E36 convertible requires a special battery which is designed for constant vibration. A battery not designed for this will fail much earlier.

MANUAL CONVERTIBLE TOP

Visor Latch Plate

The left and right visor latch plates can be accessed by removing the trim and moldings around the sides and top of the windshield. Each latch is secured to the top of the windshield using three bolts. Latch position is adjusted as follows:

- Loosen bolts
- Latch top
- Align top
- Retighten bolts. See Fig. 1.

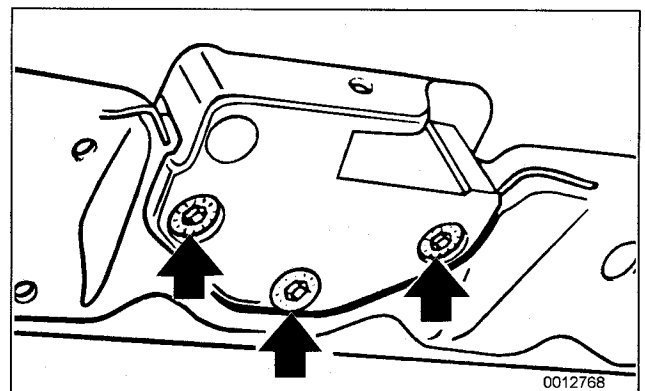


Fig. 1. Visor latch plate is held to top of windshield with three bolts (arrows).

Visor Latch

Check for ease of release and locking of convertible top front latches. Height of a latch can be changed by using the adjusting screw. To change latch tension, it is necessary to remove the trim on the front bow of the top. The ball-joint pull-rod length can then be adjusted. Lubricate latch if necessary. See Fig. 2.

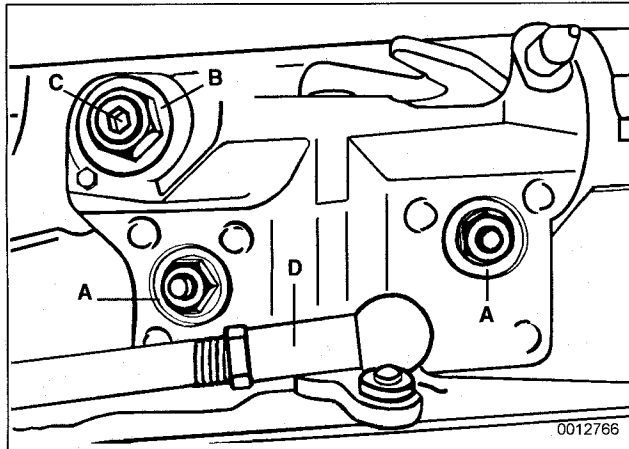


Fig. 2. Manually operated front latch. Loosen mounting nuts (A) and locknut (B), then adjust latch height with hex-bolt (C). (Fully automatic front latch height adjuster is similar.) Latch tension is adjusted at rod ball-joint end (D).

Convertible Top Lid Release Mechanism

The convertible lid release handle is situated in the trim panel behind the driver's seat. To remove the handle, pull its plastic insert forward and remove the trim insert. The handle is mounted with a single screw.

A bowden cable is routed from the handle to the left lid latch. Another cable is routed from the left to the right latch inside the luggage compartment. It is accessed by pulling down the trim lining off the front wall of the compartment.

Convertible top and frame, replacing

1. Open convertible top partially. Open convertible top lid. Open back windows.
2. Remove fasteners in compartments behind door posts and lift out complete top. Count number of shims on horizontal mounting bolts. See Fig. 3.
3. Installation is reverse of removal. Be sure to replace U-shaped shims on horizontal mounting bolts. See Fig. 4.
4. To adjust position and fit of top, remove or add U-shaped shims until top is properly aligned. Tighten nuts and screws.

POWER CONVERTIBLE TOP

The semi-automatic top, installed in 1996 convertibles, must first be manually released from the visor latch plates and pushed back past the "tension point," whereupon, the automatic retracting motor and linkage take over and pull it into the storage compartment behind the back seat.

POWER CONVERTIBLE TOP

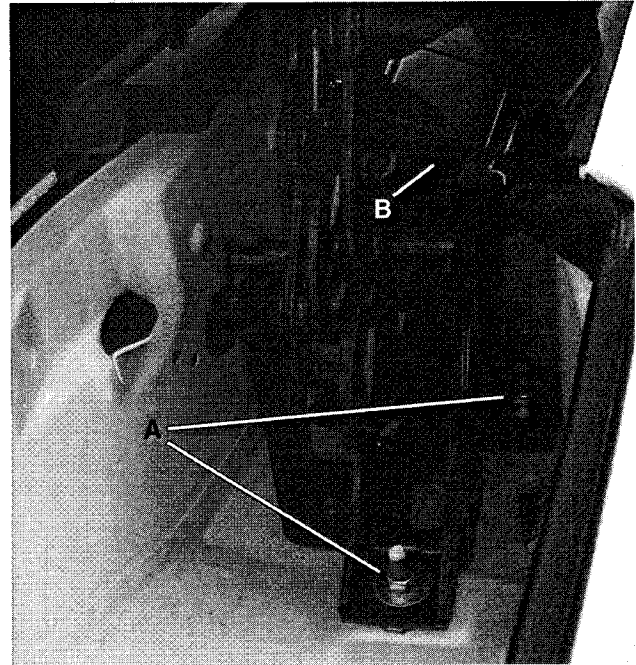


Fig. 3. Mounting nuts (A) for convertible top (two on each side). There is also a horizontal bolt with spacers on each side (B).

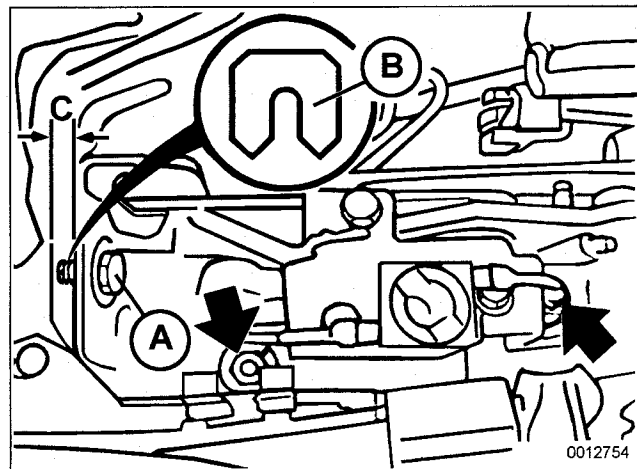
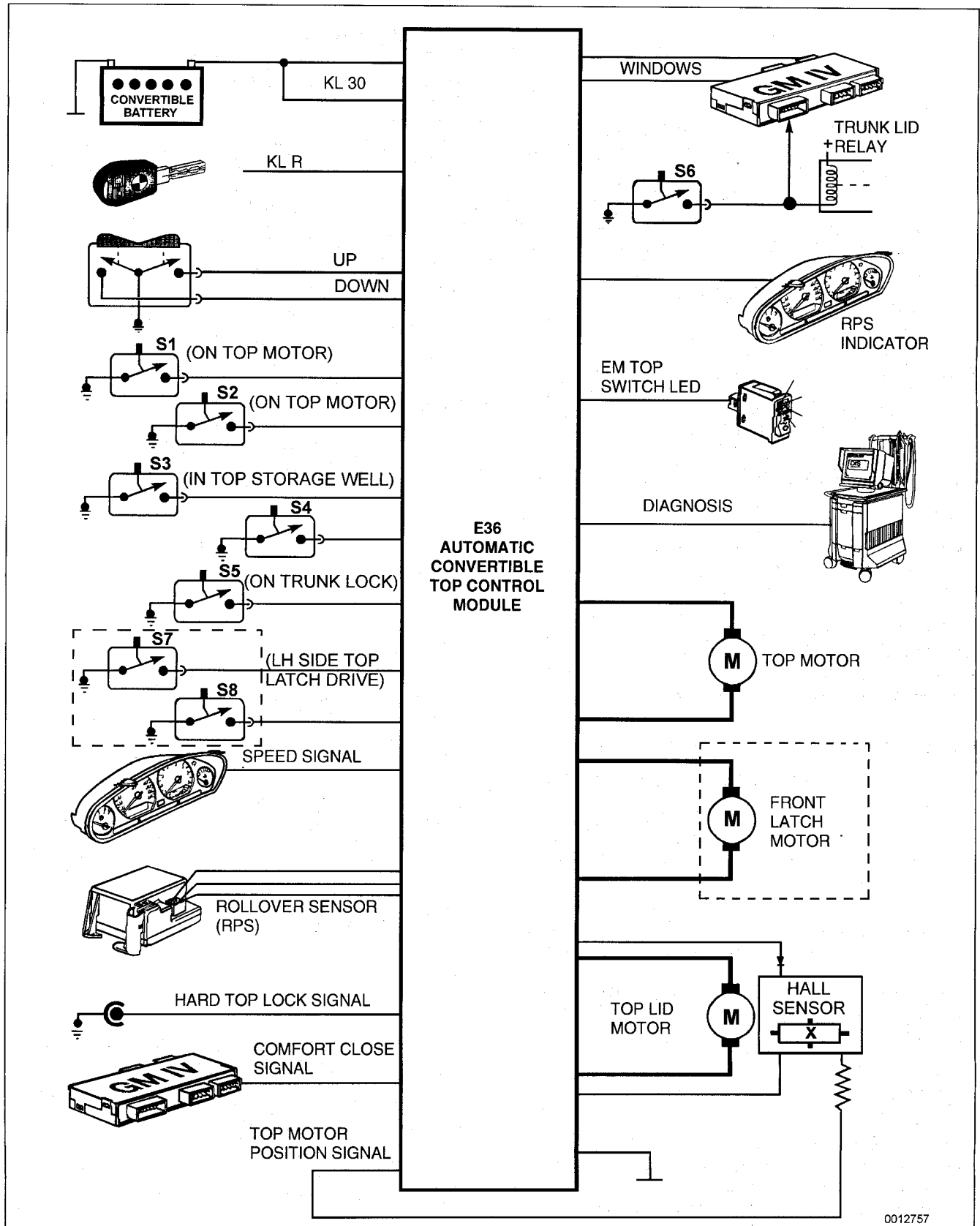


Fig. 4. Horizontal positioning bolt (A) and U-shaped adjusting shims (B) for convertible top. One of two main mounting nuts (arrows) also visible.

The fully automatic top, standard on 1997 and later convertibles, allows complete operation of the top, from fully open to fully closed, with the push of a toggle switch on the console.

The top switch incorporates a "top unlatched" warning LED.

A schematic representation of the fully automatic convertible top is shown in Fig. 5.



0012757

Fig. 5. Semi-automatic and fully automatic convertible top system. Main additional components in fully automatic top shown inside dashed lines.

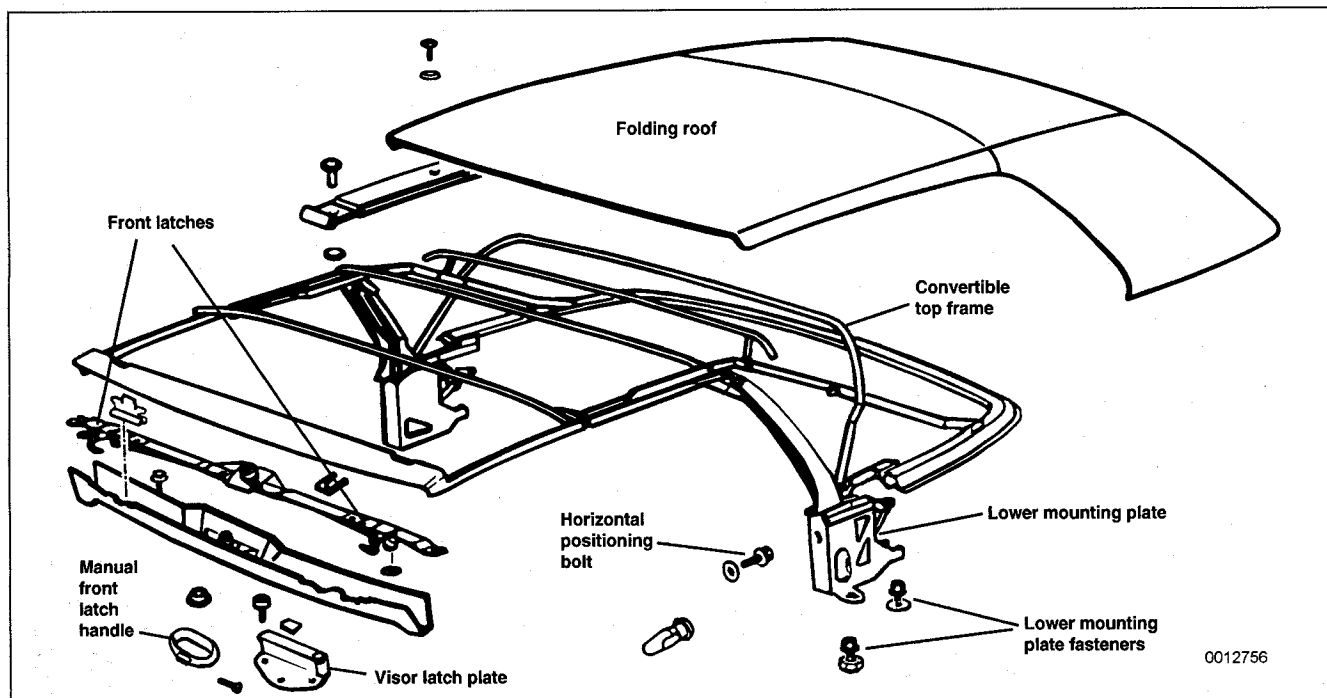


Fig. 6. Mechanical components of E36 convertible top. Manual, semi-automatic, and fully automatic tops have similar mechanical construction.

NOTE —

The electronic circuits used to control convertible top operation are complex. Diagnosis of the convertible top and the Rollover Protection System are beyond the scope of this book. Your authorized BMW dealer has the proper diagnostic equipment and tools to carry out these tasks.

Front Latching Mechanism

A close, tight fit between the front bow of the convertible roof and the top of the windshield is critical for preventing moisture and wind noise from intruding into the passenger compartment.

Visor Latch Plate

The left and right visor latch plates can be accessed by removing the trim and moldings around the sides and top of the windshield. Each latch is attached to the top of the windshield using three bolts. Latch position is adjusted as follows:

- Loosen bolts
- Latch top
- Align top
- Retighten bolts. See Fig. 7.

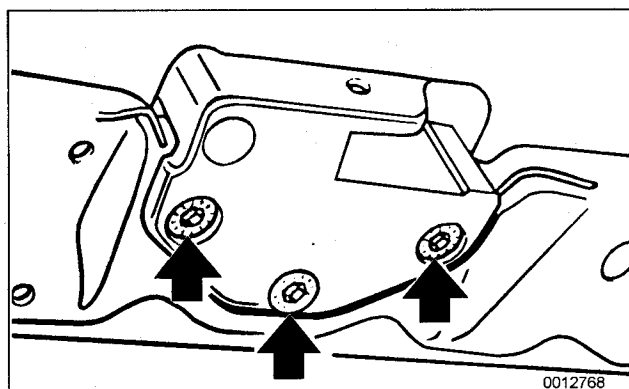


Fig. 7. Visor latch plate is held to top of windshield with three bolts (arrows).

Visor Latch

The semi-automatic and the fully automatic top front latches are of similar design. For the automatic latching mechanism an additional motor has been installed in the front bow of the convertible top. This releases the top from the visor latch plates and pulls it back far enough for the main retracting mechanism to complete the job.

The latches and the motor can be accessed by removing the front cover trim from the convertible top.

The left latch in the fully automatic version has two microswitches (S7 and S8) which signal open, closed and latched states. See Fig. 8.

The length of the dead center point rod is critical to correct opening and latching of the convertible top. See Fig. 9.

Dead Center Point Rod

- Dimension A 205.5 ± 1 mm (8.09 ± 0.04 in)

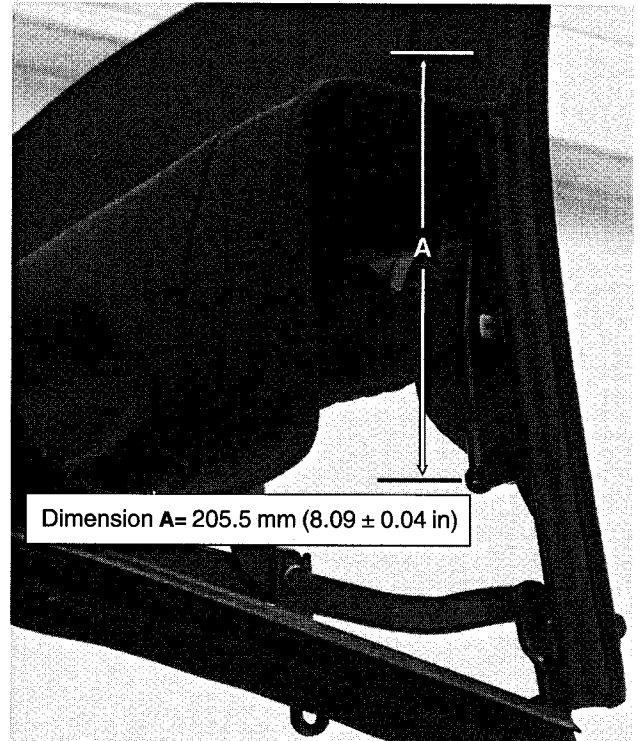
Visor Latch Motor

The fully automatic convertible top is latched and unlatched by one electric motor installed in the front roof bow. To replace, remove front cover trim from the roof. Remove electrical harness connectors from motor, and remove mounting screws. Slide the motor off the output shafts to the left and right latches.

During reinstallation, the output shafts must be turned until the S8 microswitch in the left latch is tripped.

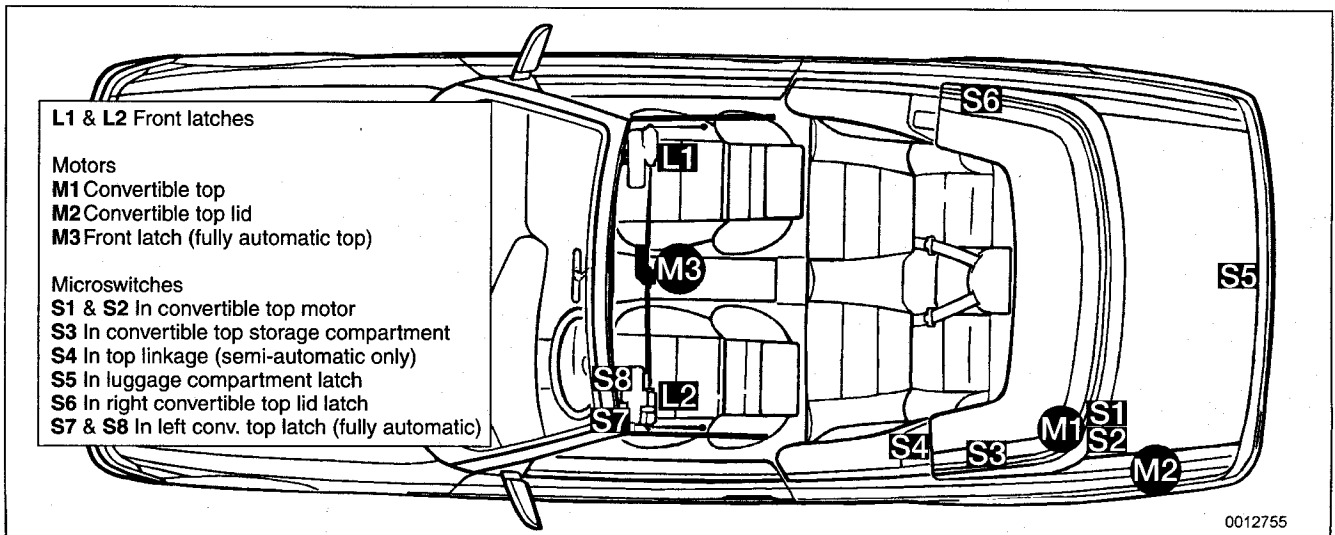
Convertible top and frame, replacing

1. Open convertible top partially. Open convertible top lid. Open back windows.
2. Fully automatic power convertible top: Remove front cover trim from top. Disconnect electrical harness connectors from front latch motor. Disconnect connectors from S7 and S8 microswitches at left latch.



0012746

Fig. 9. Preset length of dead center point rod.



0012755

Fig. 8. Location of automatic and semi-automatic convertible latch mechanisms, motors and microswitches.

541-6 CONVERTIBLE TOP

3. Remove headliner, starting from front and working backward. Note arrangement and lacing of tensioning cable so it can be reinstalled in its original configuration. See Fig. 10.

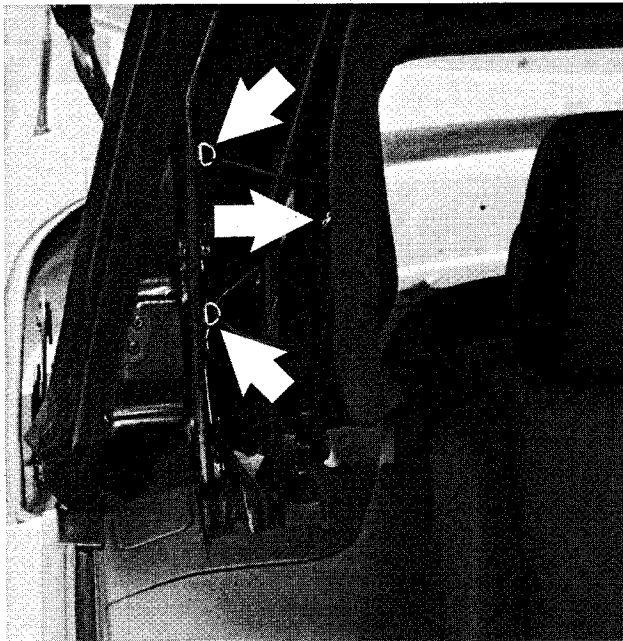


Fig. 10. Headliner tensioning cable and some of its retaining eyelets (arrows).

4. Disconnect electrical harness connector from S4 microswitch in middle linkage of convertible top.
5. Disconnect electric motor linkage rods in convertible top storage compartment behind left rear seat. See Fig. 11.

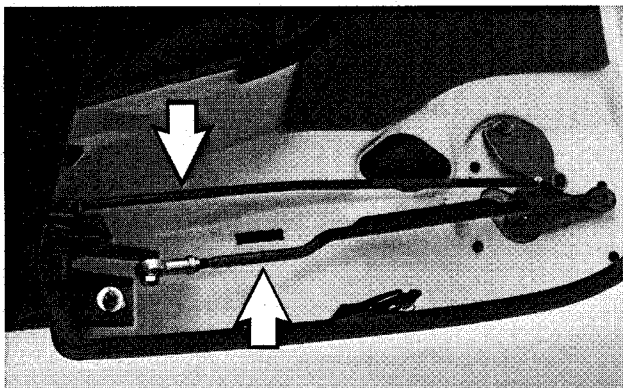


Fig. 11. Convertible top linkage rods (arrows) in compartment behind left rear seat.

6. Pull electrical harness through to disengage from top.

7. Remove fasteners in bottom of storage compartments behind door posts and lift out complete top. Note number of shims on horizontal mounting bolt. See Fig. 12.

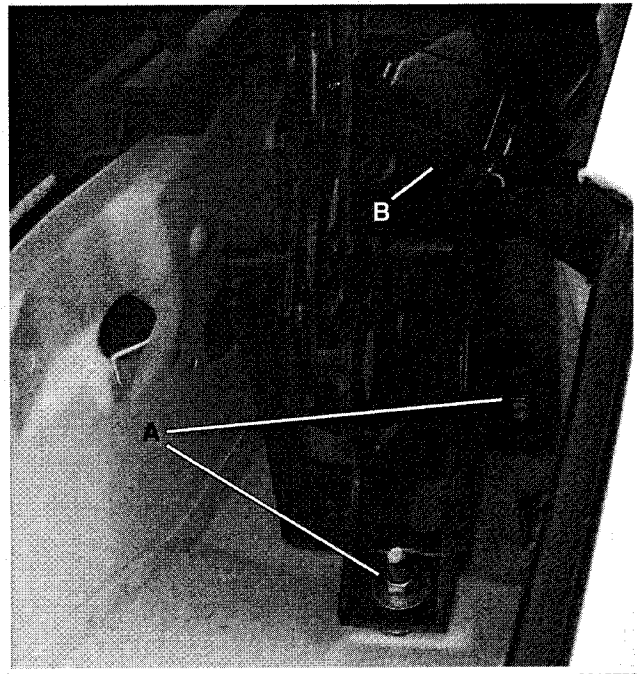


Fig. 12. Mounting nuts (A) for convertible top (two on each side). There is also a horizontal bolt with spacers on each side (B).

8. Installation is reverse of removal. Be sure to replace U-shaped shims on horizontal mounting bolts. See Fig. 13.

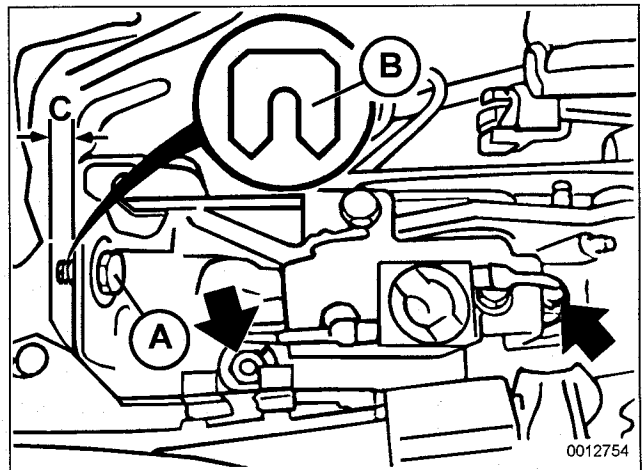
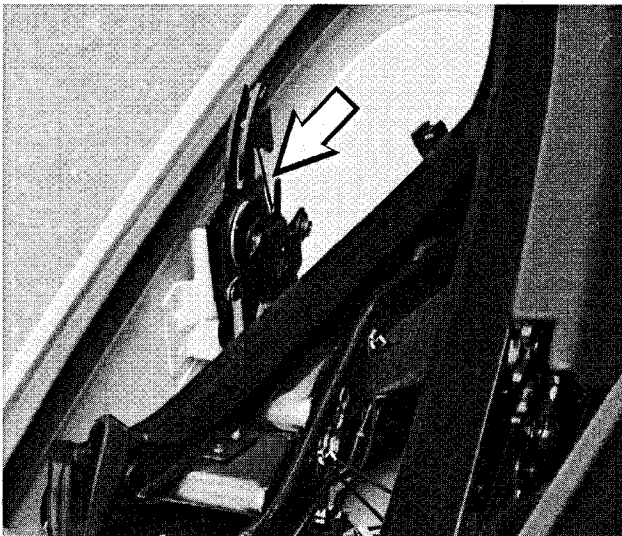


Fig. 13. Horizontal positioning bolt (A) and U-shaped adjusting shims (B) for convertible top. One of two main mounting nuts (arrows) also visible.

9. To adjust position and fit of top, remove or add U-shaped shims until top is properly aligned. Tighten nuts and screws.

Convertible top drive motor, replacing

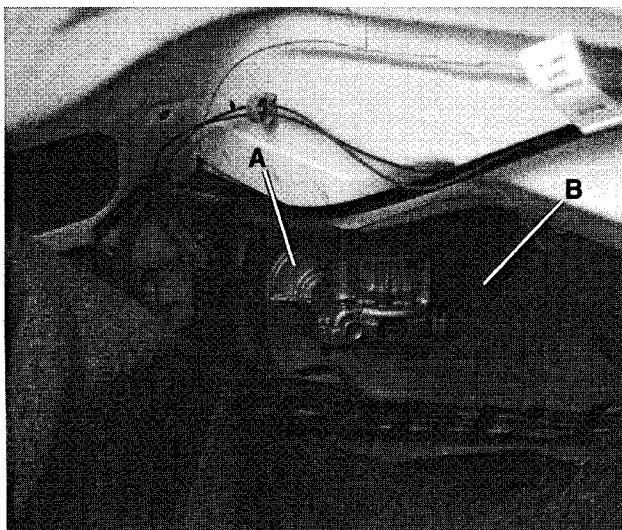
1. Open convertible top partially, stopping when convertible top lid is fully open. Remove lid.
2. Release luggage compartment lock-out by pressing on microswitch in right convertible top lid latch. See Fig. 14.



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Fig. 14. Right side convertible top lid latch. **Arrow** points to location of luggage compartment lock-out microswitch.

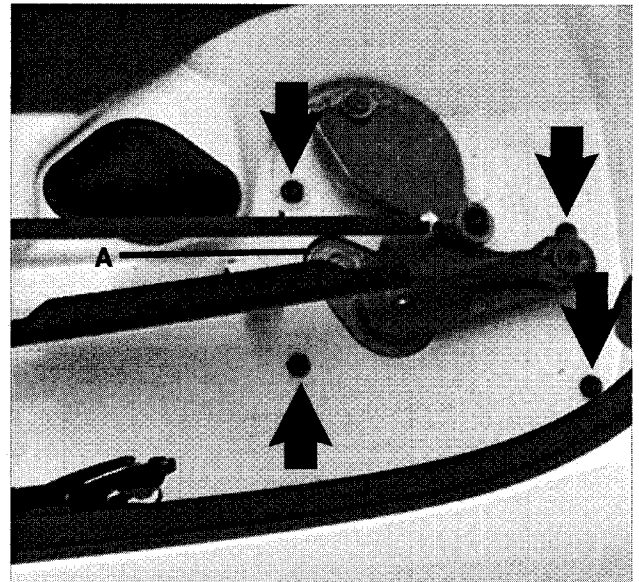
3. Open luggage compartment. Remove trim and inner lining from left side of compartment.
4. Disconnect electrical harness connectors at top motor. Release emergency release cable from lever. Push lever up to release motor. See Fig. 15.



0012759

Fig. 15. Convertible top motor (A) and release lever (B) in luggage compartment.

5. Working in convertible top storage compartment behind driver's seat, remove convertible top linkage rods from top of motor. Refer to Fig. 11.
6. Remove four fasteners holding motor to body and remove motor through luggage compartment. See Fig. 16.



0012761

Fig. 16. Convertible top motor mounting screws (arrows). Gasket (A) must be renewed when motor is replaced.

7. Installation is reverse of removal. Keep the following in mind:
 - Replace sealing gasket between top of motor and body.
 - Secure motor mounting screws with Locktite® 270 or equivalent.

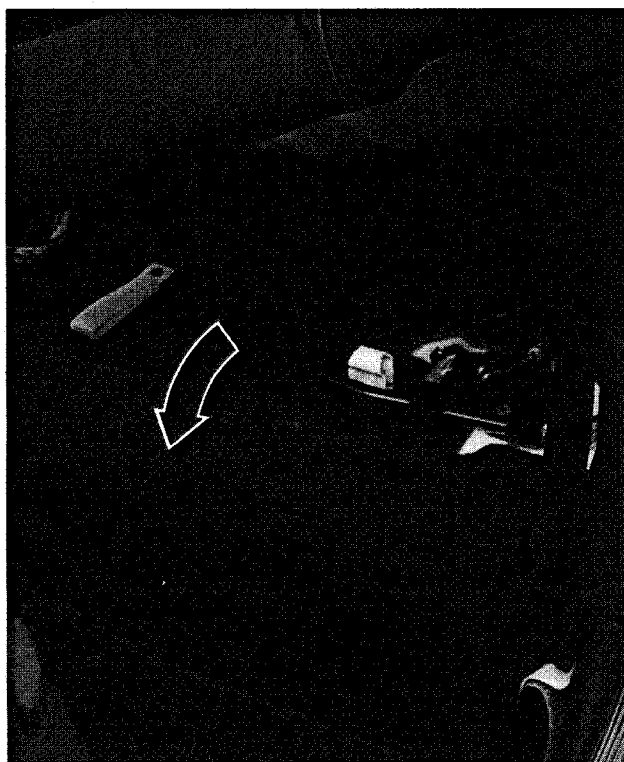
Tightening Torque

- Convertible top motor to body mounting screws. 10 Nm (7.5 ft-lb)

Convertible Top Emergency Operation

A malfunction in the electrical system or another fault in the convertible top mechanism can cause the automatic or semi-automatic top to be stuck in open, shut, or intermediate position. The following general procedures are suggested in order to close the top in an emergency situation. Resetting procedures for convertible top synchronization after emergency closure are beyond the scope of this manual.

Main Motor. To release the top linkage from the motor, lift the left corner of the rear seat to access emergency release handle. See Fig. 17.



0012764

Fig. 17. Convertible top motor emergency release handle under rear seat. Pull in direction of **arrow** to release top.

CAUTION —

In case of failure of the automatic or semi-automatic convertible top function, only use the emergency procedure to close the top, never to open it. An authorized BMW dealer should then be consulted.

It is then possible to push the top manually to a near closed position. In the case of the semi-automatic top, simply attach and lock the front latches.

Front Latches. Once the fully automatic convertible top has been released from the motor and manually pushed to near-closure, emergency latching of the top is possible by using the S-shaped hex key provided in the emergency tool kit.

First, remove the plastic cover over the latch motor in the front bow of the convertible top. See Fig. 18.

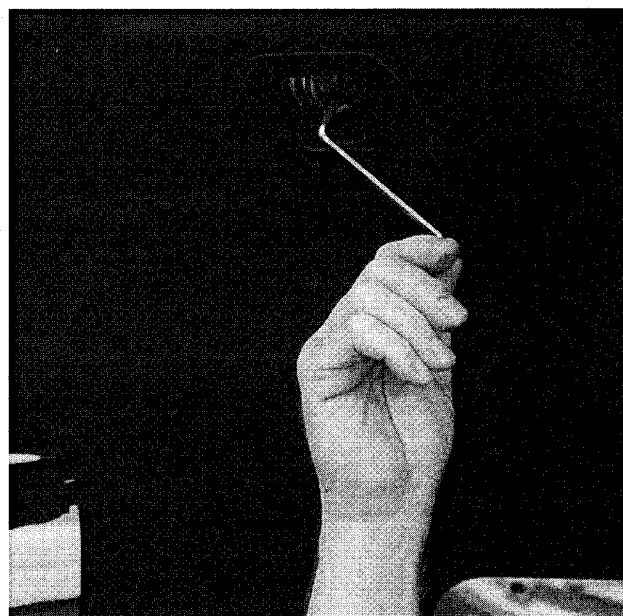
Next, use the hex key from tool box to crank the front latches shut. See Fig. 19.

Luggage Compartment Cover. A microswitch in the right convertible top lid latch prevents the luggage compartment from being opened while the lid is up. This lockout can be overridden by pressing on the microswitch. Refer to Fig. 14.



0012762

Fig. 18. Remove plastic cover from center of convertible roof front bow to access latching motor drive.



0012763

Fig. 19. Using emergency hex key to move front part of convertible top.

CAUTION —

The convertible top lid and the luggage compartment cover interfere with each other and cannot be open at the same time. To avoid damage to painted surfaces, an assistant should keep the lid down until the luggage compartment cover can be closed.

Convertible Top Lid

The components of the convertible top lid are shown in Fig. 20.

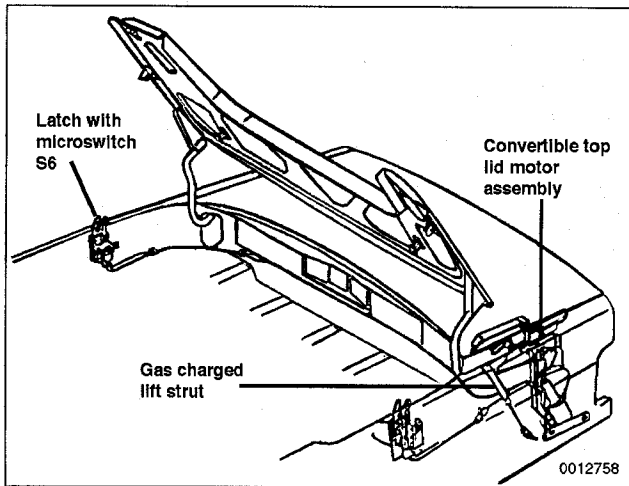


Fig. 20. Components of the convertible top lid.

The lid latches are cable operated by a drive motor located in the left side of the luggage compartment, behind the trim liner. The same motor is used to raise and lower the lid during automatic convertible top operation.

The latch cables must be adjusted so that the lid fits snugly against the body when locked.

The lid drive motor can be removed and replaced from the luggage compartment.

ROLLOVER PROTECTION SYSTEM

Two spring-loaded cassettes are mounted behind the rear seat. A single rollover sensor, mounted on the left cassette, signals the convertible top module (CVM) of an imminent rollover, whereupon the module triggers both cassettes within 3/10th of a second. See Fig. 21.

Once the car's ignition has been switched on, the rollover sensor performs a self-test lasting 6 seconds. During this time a yellow warning light is lit on the dashboard. If the warning light fails to go out after 6 seconds, this means that a fault has been detected in the system. The fault is stored in the CVM. Faults can be retrieved and diagnosed by special diagnostic equipment.

NOTE —

Diagnosis of the convertible top and the Rollover Protection System are beyond the scope of this book. Your authorized BMW dealer has the proper diagnostic equipment and tools to carry out these tasks.

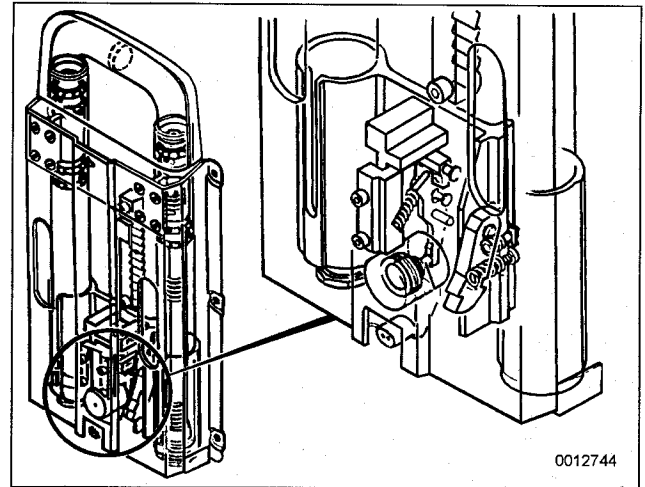


Fig. 21. Construction of the rollover protection cassette.

After deployment, the detent pawl in a rollover protection cassette can be retracted using the special tool in the tool kit, fitted to the screwdriver handle. The rear seat headrest needs to be raised for this procedure.

WARNING —

Ensure that the area above and adjacent to the roll-over bars remains clear and unobstructed at all times.

CAUTION —

- It is not possible to close the convertible top with the rollover bars extended.
- If a hardtop is mounted, be sure to install the protective rollover bar covers provided with the hardtop to prevent damaging the rear window in case of deployment.



