

General

This section covers replacement of electrical switches at the steering wheel, steering column, dashboard, pedal cluster, center console and other locations.

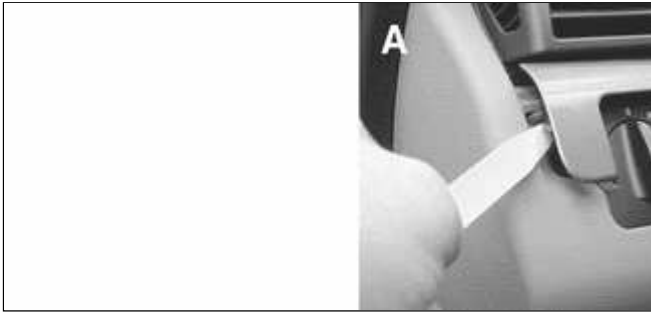
See also the following sections:

- ◆ ⇒ [119 Lubrication System](#) for information on testing the oil pressure switch
- ◆ ⇒ [250 Gearshift Linkage](#) for information about the gearshift lever
- ◆ ⇒ [515 Central Locking and Anti-theft](#) for information about the electronic immobilization system (EWS 3.3)
- ◆ ⇒ [520 Seats](#) for information about power seat controls
- ◆ ⇒ [540 Sunroof](#)
- ◆ ⇒ [541 Convertible Top](#)
- ◆ ⇒ [610 Electrical Component Locations](#)
- ◆ ⇒ [630 Lights](#)
- ◆ Electrical Wiring Diagrams.

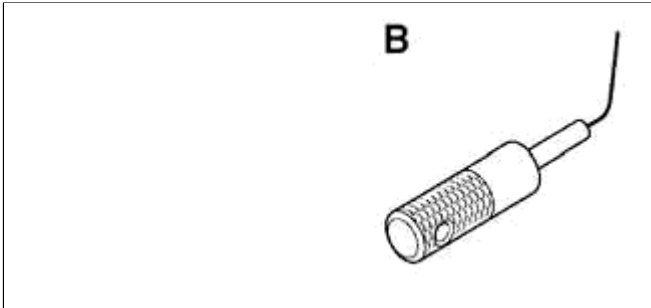
Special tools

A few special tools are necessary for

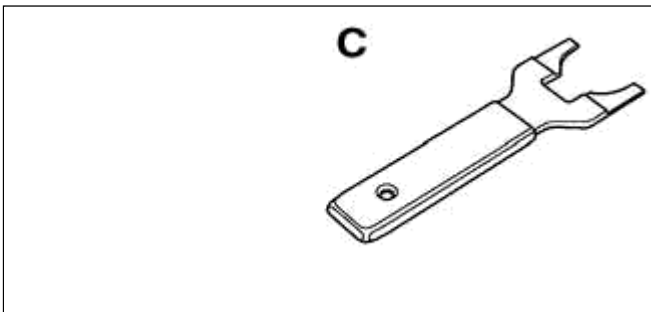
the repairs detailed in this section.



- ◀ Plastic prying tool BMW 00 9 321



- ◀ Ignition cylinder removal tool BMW 32 3 110



- ◀ Ring antenna removal tool BMW 61 3 300

CAUTION!

- ♦ *When working on electrical switches or lights, always disconnect the negative (-) cable from the battery and insulate the cable end to prevent accidental reconnection.*
- ♦ *Prior to disconnecting the battery, read the battery disconnection cautions given at the front of this manual on page viii.*
- ♦ *To prevent marring the trim when working on interior components, work with plastic prying tools or wrap the tips of screwdrivers and pliers with tape before prying out switches or electrical accessories.*

Steering Wheel Switches

E46 vehicles are equipped with either the multi-function (MFL) steering wheel or the sports steering wheel. Incorporated into each steering wheel are an SRS airbag, horn contacts, selected cellular phone and radio controls and cruise control buttons.

To replace the steering wheel switches, remove the airbag first. See ⇒ [721 Airbag System \(SRS\)](#).

WARNING!

Improper handling of the airbag could cause serious injury. Store the airbag with the horn pad facing up. If stored facing down, accidental deployment could propel it violently into the air, causing injury.

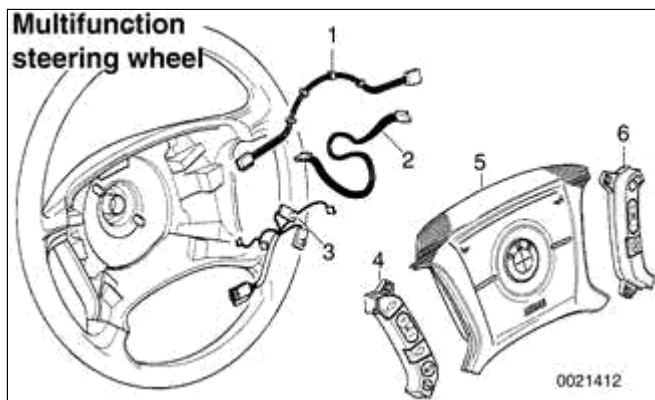
CAUTION!

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

Multi-function (MFL) steering wheel switches, accessing



Remove airbag.



- ✦ Detach electrical harness connectors
 - 1 - Cruise control/radio/telephone electrical harness
 - 2 - Horn button electrical harness
 - 3 - Airbag electrical harness
 - 4 - Radio/telephone control switch set
 - 5 - Airbag
 - 6 - Cruise control switch set

- Remove small screws on back side of airbag pad to release left or right switch set.

Note:

BMW does not provide the horn contact switch as a separate part.

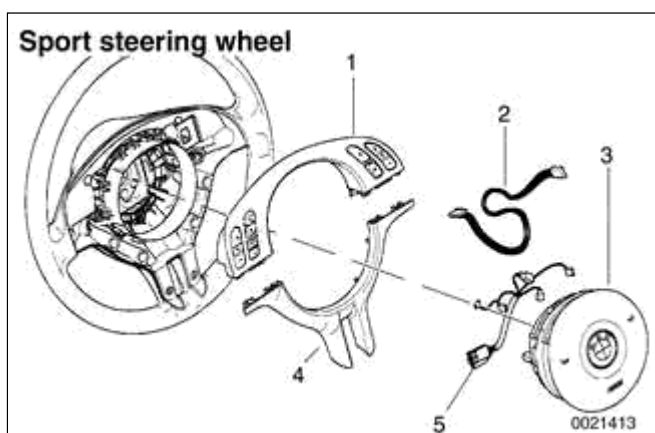
Sport steering wheel switches, accessing



- ✦ Remove airbag.

Note:

There is a special procedure for detaching the airbag from the sport steering wheel. See ⇒ [721 Airbag System \(SRS\)](#).



- ✦ Remove screws mounting switch carrier to steering wheel.
 - 1 - Switch carrier
 - 2 - Steering wheel switch set electrical harness
 - 3 - Airbag
 - 4 - Lower cover

5 - Horn button and airbag electrical harness

- Pull switch carrier and trim down to detach from steering wheel. Remove electrical harness connector.
- Separate bottom trim piece from switch carrier.

Note:

BMW does not provide the horn contact switch as a separate part.

Steering Column Switches

To remove any of the steering column switches, it is necessary to first remove the upper and lower column trim pieces. See ⇒ [513 Interior Trim](#).

CAUTION!

To prevent marring interior trim, work with plastic prying tools or wrap the tips of screwdrivers and pliers with tape before prying out switches or electrical accessories.

Ignition lock cylinder, removing and installing

To remove the EWS ring antenna prior to removing ignition lock cylinder, it is necessary to remove the upper and lower steering column trim. Use BMW special tool 61 3 300 to force off the ring antenna. Alternatively, remove the ignition switch key cylinder first.



With ignition key in ON position (60° from LOCKED):

- ◆ Insert a thin piece of stiff wire into opening (**arrow**) in lock cylinder and pull lock cylinder out.
- ◆ Detach ring antenna harness connector.
- ◆ Gently work ring antenna off key cylinder.
- ◆ Reinstallation is reverse of removal.

Steering column stalk switch assembly, removing and installing

To replace either the directional/headlight dimmer stalk switch or the wiper/washer stalk switch, you must first remove the entire stalk switch assembly from the steering column.

CAUTION!

To prevent marring interior trim, work with plastic prying tools or wrap the tips of screwdrivers and pliers with tape before prying out switches or electrical accessories.

- 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.

- Remove airbag unit from steering wheel. See ⇒ [721 Airbag System \(SRS\)](#). Store airbag unit in a safe place with pad facing up.

WARNING!

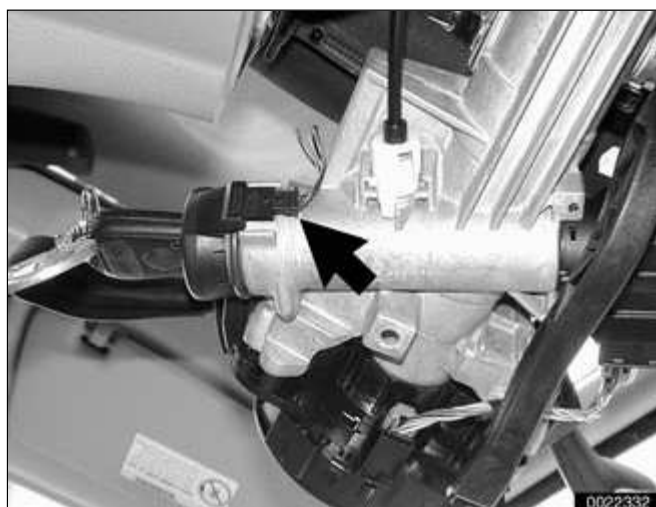
Any work involving the SRS system should only be performed by an authorized BMW dealer. Making repairs without the proper knowledge and special test equipment may cause serious personal injury. See ⇒ [721 Airbag System \(SRS\)](#)

- With front wheels pointed straight ahead, remove steering wheel.
See ⇒ [320 Steering and Wheel Alignment](#).

Note:

To help with reassembly, mark steering wheel and spindle shaft before disassembly.

- Remove steering column trim.
See ⇒ [513 Interior Trim](#).



- ✦ Detach EWS ring antenna electrical harness connector (**arrow**).



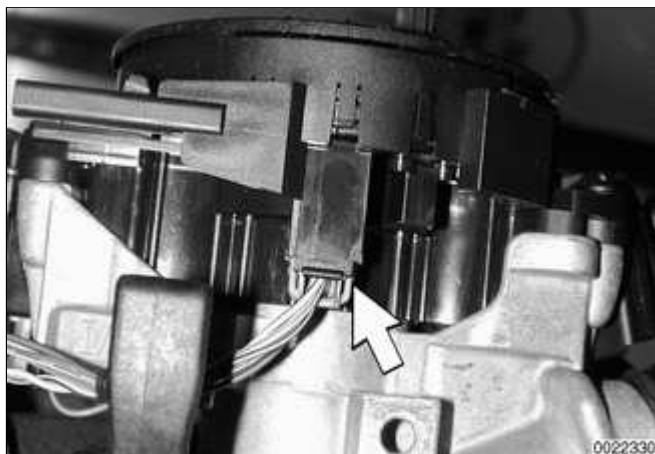
- ✦ Detach wiper/washer switch electrical harness connector (**arrow**).



- ✦ Detach turn signal/headlight dimmer switch electrical harness connector (**arrow**).



- ✦ Detach airbag electrical harness connector (**arrow**).



- ✦ Remove stalk switch housing retaining screws (**arrows**). Slide switch housing off steering column.



- Installation is reverse of removal, noting the following:
- ◆ Place turn signal indicator in center position before installing.
- ◆ Ensure that self cancelling cams on turn signal switch are not damaged during installation.

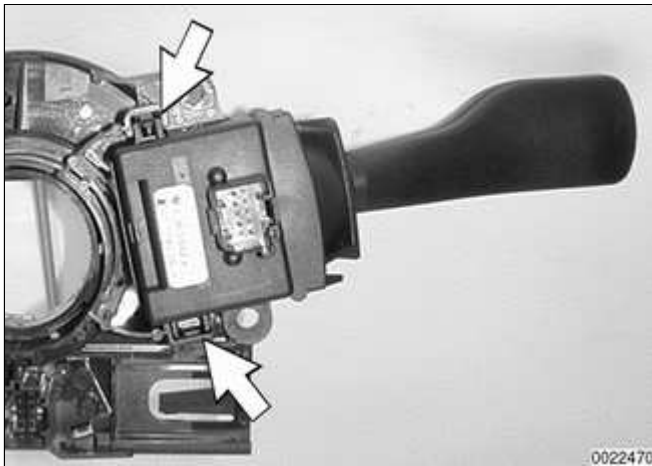
Tightening torque

Steering wheel to steering column spindle shaft	63 Nm (46 ft-lb)
---	------------------

Turn signal/headlight dimmer switch/ wiper switch removing and installing

- After removing steering column stalk switch assembly, as

described above, turn switch assembly face-down on work bench.



➤ Squeeze locking tabs (**arrows**) on sides of switch and slide switch out of assembly holder.

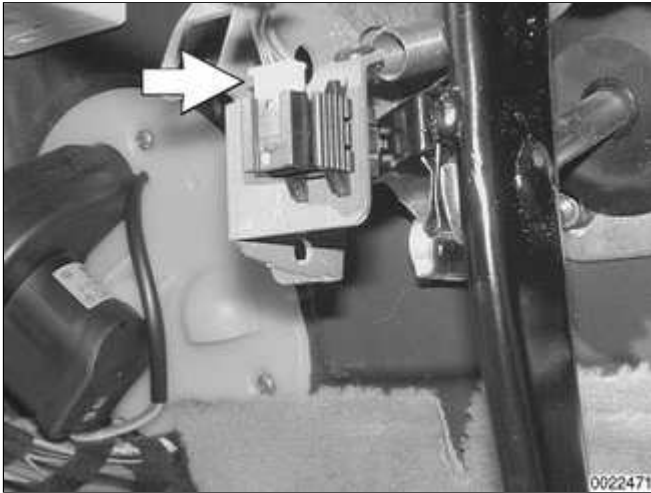
- Push in new switch until it positively snaps into switch housing.

612-4

Pedal Cluster Switches

To access either the brake pedal or the clutch pedal switch, remove the left footwell trim (above pedals). See ⇒ [513 Interior Trim](#).

Brake light switch, replacing



Working at pedal cluster:

- ◆ Detach electrical harness connector (**arrow**) from brake light switch.
- ◆ Slide switch out of holder (toward rear of car).

Note:

The brake light switch is held in place via a serrated mounting. Remove switch mounting from pedal cluster bracket.

- Push brake pedal down, install new switch, then allow brake pedal to spring back slowly, automatically adjusting switch position.

Cruise control clutch switch, replacing

- Working at pedal cluster:
 - ◆ Push clutch pedal to floor and lock in position using a pedal stop.
 - ◆ Detach electrical harness

connector from switch.

- ◆ Squeeze together retaining clips at front of switch. Slide switch out of holder (toward rear of car).
- Install new switch, then allow clutch pedal to spring back slowly, automatically adjusting switch position.

Other Interior Switches

Many of the remaining electrical switches are housed at the bottom center of the dashboard, or in the center console.

The ASC or DCS switch is ahead of the shifter console at the bottom of the center dashboard. When equipped, seat heater switches are in the same location.

The right front and right rear window switches are ganged into one unit on the right side of the shifter. The left front and left rear window switches are ganged with the child safety rear window lockout switch (sedan and Sport Wagon models) on the left side of the shifter.

The central locking switch and hazard warning switch are ganged into one unit behind the shifter mechanism.

Replacement of the above switches is covered below, noting when each switch is accessible.

The left and right electric outside rear view mirrors are controlled by one switch on the driver door armrest.

Lower dashboard/console switches, replacing

- Remove shift knob by pulling knob straight off the gearshift lever.

Note:

Removal of the shift knob will require about 90 lbs. of force. Do not twist knob or locating key can be damaged.

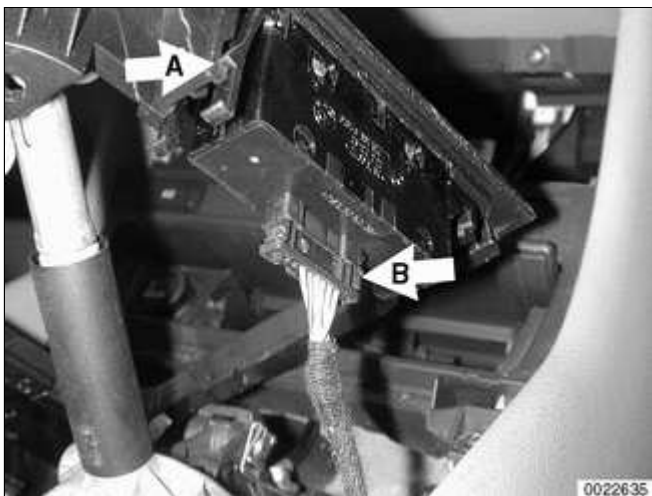
- Pry up on rear of shift boot/bezel to unclip, then remove boot from front retainers.



- Remove retaining screws (**arrows**) under transmission selector boot/trim.

Power window switches, replacing

- To remove left or right ganged window switches:
 - ◆ Shifter bezel: Lift up by prying gently.
 - ◆ Shifter boot: Unclip bottom of boot from center console trim by pushing forward. Pull boot up around shifter, but do not remove.



- Unclip switch retainer (**A**) and pull out switches from under console trim.
 - ◆ Detach electrical harness connector (**B**) from switches.
- Installation is reverse of removal.

ASC/DSC/seat heater switches, replacing

Either the ASC or DSC switch is located in the storage compartment/ash tray housing. Seat heater switches are also located here, if equipped.

This procedure can be skipped in order to access center console switches.



- ✦ Remove storage compartment below IHKA control panel:
 - ◆ Open compartment door.
 - ◆ Push upward in center of compartment, then pull out.
 - Remove retaining screws from storage compartment/ash tray housing.
 - Slide housing out and disconnect electrical harness connectors. Remove housing from lower dashboard
 - With housing removed slide switches out of housing by gently pushing from behind.
 - Installation is reverse of removal.

Central locking/hazard warning switches, replacing



- ✦ Working at rear of center console, press rolling cover of rear ashtray down. Depress cover fully to pop ashtray out of console. Remove



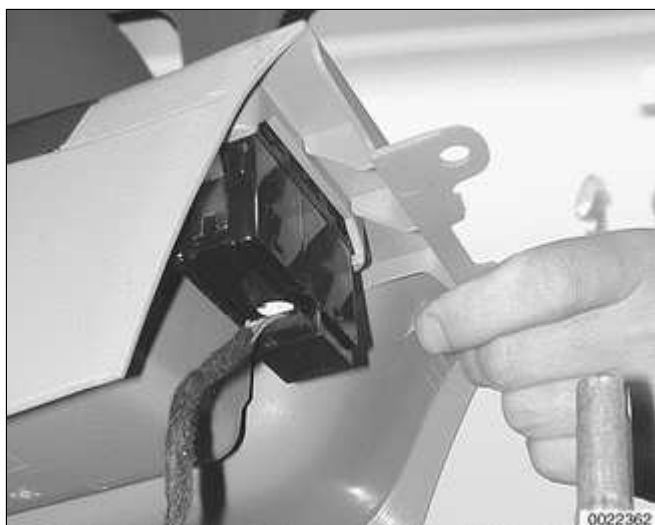
ashtray.

- Remove retaining screws and storage tray housing. Disconnect electrical harness connector for storage tray courtesy light.
- Remove screws at base of storage tray compartment in console.



- ✦ Unclip trim boot for parking brake lever and pull boot and handle forward off brake lever.

- Slide center console back from dash and lift up.



- ✦ Disconnect electrical harness protector from hazard light/central locking switch.

- To remove switch from console, depress retaining tabs on each side of switch and push switch out through surface of console trim.
- Installation is reverse of removal.

Outside mirror switch, replacing



- ✦ Carefully pry outside mirror switch from door arm rest.
- Disconnect harness connector



from switch.

- Installation is reverse of removal.