

# BMW

## 2004-05 645Ci

### PRECAUTIONS

**Warning:** Batteries produce explosive gases that may cause personal injury. Do not expose the battery to flame or sparks. Always provide adequate ventilation. Do not smoke when working near batteries. Do not place tools or any similar object on the battery.

**Warning:** Do not allow any battery acid to come into contact with eyes, the skin or clothing. Wear protective clothing, gloves and eye protection. Do not tilt the battery, or acid may leak from the vent hole.

**Warning:** If acid is splashed into the eyes, rinse them immediately for several minutes with clear water and consult a doctor immediately. Seek medical attention immediately if battery acid is accidentally swallowed. If acid is splashed onto the skin or clothing, neutralize it immediately with a soap solution and rinse with lots of water.

On vehicles equipped with Intelligent Battery Sensor (IBS), do not under any circumstances release socket-head cap screw of IBS. Do not establish any connection between the IBS and the sensor screw.

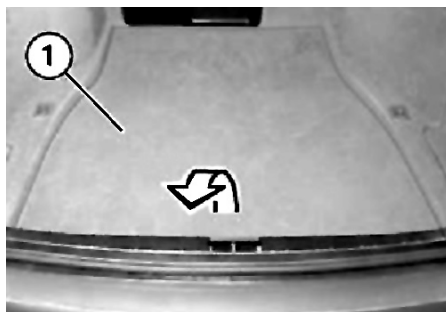
The IBS and wiring can be destroyed by mechanical strain during battery replacement. Do not use force when disconnecting the pole shoe from the battery terminal. Do not pull on the ground cable. Do not use tools under the IBS to lever off the pole shoe. Do not use IBS connections as levers.

On vehicles with radio code, the radio code must be re-entered after disconnecting the battery. Note stored stations and restore them after connecting the battery. Stored settings of the on-board computer and clock will also be lost. All available central keys must be re-coded for vehicles with first generation infrared transmitter locking systems. DTCs may be set in some control units after battery is connected.

### BATTERY

#### Removal

Disconnect battery ground cable first, followed by battery positive cable. Do not disconnect battery leads while engine is running.



**Fig. 1 Luggage compartment floor trim removal**

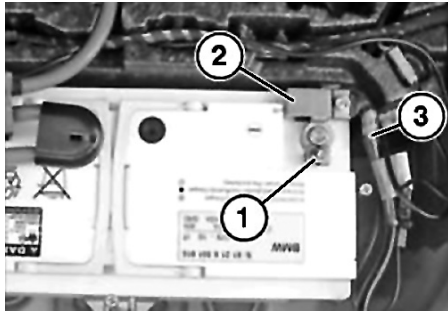
1. Verify that ignition and all other electrical loads are "OFF."
2. Remove luggage compartment floor trim (1), **Fig. 1**.
3. Loosen battery ground cable terminal nut (1), **Fig. 2**.
4. Disconnect battery ground cable terminal (3) from battery and position aside, **Fig. 2**. Do not disconnect terminal by force.
5. Loosen battery positive cable terminal nut (5), **Fig. 3**.
6. Disconnect battery positive cable terminal (4) from battery and position aside, **Fig. 3**. Do not disconnect terminal by force.
7. Remove battery holder threaded pins (1), then remove battery holders (2), **Fig. 4**.
8. Detach battery vent hose (3) in direction of arrow as illustrated in **Fig. 4**.
9. Open battery clips (4) in direction of arrows as illustrated in **Fig. 4**.
10. Pull battery towards righthand rear out of battery mounts.
11. Remove battery from vehicle.

#### Installation

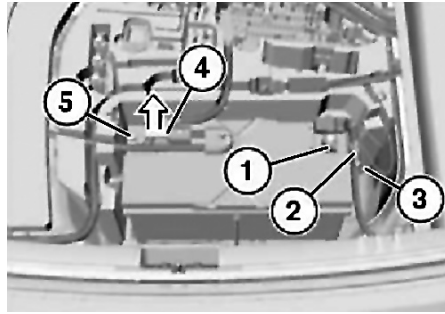
1. Install battery to vehicle. Ensure battery is properly seated in mounts.
2. Close battery clips.
3. Attach vent hose to battery.
4. Install battery holders (2) and threaded pins (1), **Fig. 4**.
5. Connect battery positive cable terminal (4) to battery, **Fig. 3**. **Torque** terminal nut (5) to 44 inch lbs.
6. Connect battery ground cable terminal to battery, **Fig. 2**. **Torque** terminal nut

(1) to 44 inch lbs.

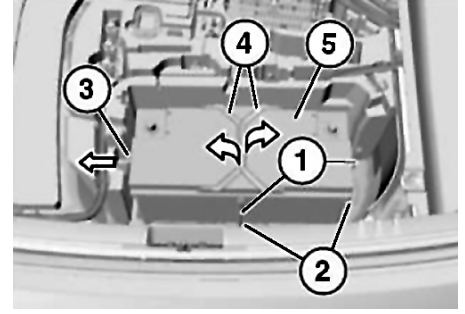
7. Install luggage compartment floor trim.
8. Initialize power windows as follows:
  - a. Close all windows.
  - b. Press and hold each window switch in one touch closed position (second switch position) for 15–25 seconds.
  - c. Verify proper one touch window operation.
9. **On models equipped with sunroof**, synchronize sunroof as follows:
  - a. Press and hold sunroof switch in "LIFT" direction.
  - b. After reaching full lift position, continue holding switch for an additional 20 seconds.
  - c. Release switch for five seconds.
  - d. Hold down switch in raising position until sunroof has made a complete opening and closing.
  - e. Verify correct sunroof operation.
10. **On models equipped with mirror compass**, calibrate compass as follows:
  - a. Refer to vehicle owner's guide for more information.
  - b. Calibrate compass in an open area away from large metal buildings.
  - c. Press and hold setting button located on bottom of mirror for six to nine seconds. Release button when "C" is indicated in display.
  - d. Safely drive vehicle two to three times in a circle at approximately 6 mph. Circle should be at least twice turning circle of vehicle.
  - e. Calibration is complete when a valid direction is displayed.
  - f. **On models equipped with convertible top or hardtop**, compass must be calibrated once with soft top or hardtop closed and once with soft top or hardtop open.
11. **On all models**, activate steering angle sensor as follows:
  - a. Start engine and allow to idle.
  - b. Turn steering wheel from lock to lock.
  - c. Turn steering wheel to center position.
  - d. Turn ignition off.
  - e. Turn ignition on, and verify AFS lamp and "Check Control" message go out.
  - f. Turn ignition off.



**Fig. 2 Battery ground cable disconnection**



**Fig. 3 Battery positive cable disconnection**



**Fig. 4 Battery removal**

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