61 25 ... Assessing the transport capability of cell block in service workshops



Warning!

High-voltage system - danger to life!

The following points must be strictly observed **prior to starting work**:

- Safety information for handling electric / hybrid vehicles.
- Visual check of the high-voltage battery unit following an accident

Initiating:

For analysis and disposal purposes, it is necessary to transport an already used cell module. These lithium-ion based cell blocks are to be classified as hazardous material according to UN 38.3, and may only be transported under particular prerequisites.

Obtaining the certified transportability between the assessment and delivery of the cell block to the disposal / transportation company is the responsibility of a qualified person. For shipping one also needs to take into account the influence of the storage requirements and other possible occurring events for the determined transportability.

The transport in the sense of the hazardous goods legislation is organised in three areas:

1. Assessment of the transportability
2. Transport preparation
3. Performing the transport

This document contains all the necessary information in order to assess the transportability of a used cell block. The transport preparation and execution is **not** an element of this document.

Further information on this can be found in the information bulletin in the ASAP.

It will be explained which measures are necessary in order to assess the transportability. How these measures are to be performed individually depends on the particular situation at the location and is not an element of this document. These procedures are to be defined according to the local regulations / laws and recorded as valid local work instructions.

Prerequisites from a security perspective:

The analysis and assessment of the cell block is to be performed by an "expert for working on HV intrinsically safe vehicles".

The certificate of the transportability is the responsibility of the qualified person.

The following specifications for work safety must also be observed:

Storage of cell blocks

For dual-cell modules, the module connector should be disconnected.

The information for this can be found in the information bulletin in the ASAP.

Note:	This document must be printed out and archived with the vehicle data.

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Assessment cell block

NAME	Date	Serial no.	VIN

Signature: ----------

The electrical assessment of the cell module takes place via the **diagnosis and test module**.

The de-energised state of the high-voltage battery unit is to be determined **before** it is removed from the vehicle.

De-energise the high-voltage system.

Transport preventing faults according to the diagnosis or the test module	Yes	No

Visual assessment:

Smoke	Yes	No
Evidence of fire damage	Yes	No
Heat development	Yes	No
Crack or opening on the housing	Yes	No
Dents on the housing, deformation, damage	Yes	No
Loose connections, loose or damaged	Yes	No
Serial number not readable	Yes	No
Suspected water damage	Yes	No

Cell module, transport capable	**No**	**Yes**

The serial number must be clearly legible. If the serial number can no longer be read, the housing of the cell block must be clearly marked with the serial number.

The electrical and visual assessment must be set down in writing!

If one or more points is/are answered with yes the following procedure must be clarified with technical support! Furthermore, the high-voltage battery unit that has been removed must be blocked off with high-voltage barrier tape. If the high-voltage battery unit is still in the vehicle, the vehicle must be made inaccessible and blocked off.

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61 25 ... Assessment of the transportability of the 12 V lithium ion starter / auxiliary battery in service workshops

Initiating:

For analysis and disposal purposes, it is necessary to transport the already used starter batteries. These lithium ion based starter batteries are to be classified as hazardous material according to UN 38.3, and may only be transported under particular prerequisites.

Obtaining the certified transportability between the assessment and delivery of the starter / auxiliary battery to the disposal/transportation company is the responsibility of a qualified person. For shipping one also needs to take into account the influence of the storage requirements and other possible occurring events for the determined transportability. If there is a possibility that previously certified transportability is no longer valid, it must be reassessed using the guideline.

The transport in the sense of the hazardous goods legislation is organised in three areas:

1. Assessment of the transportability
2. Transport preparation
3. Performing the transport

This document contains all the necessary information in order to assess the transportability of a used 12 V lithium ion starter / auxiliary battery. The transport preparation and execution is **not** an element of this document.

Further information on this can be found in the information bulletin in the ASAP.

It will be explained which measures are necessary in order to assess the transportability. How these measures are to be performed individually depends on the particular situation at the location and is not an element of this document. These procedures are to be defined according to the local regulations / laws and recorded as valid local work instructions.

Prerequisites from a security perspective:

It should be noted that working on the open battery is prohibited.

The analysis , assessment and certification of the transportability of the 12 V lithium ion starter / auxiliary battery is the responsibility of a qualified person.

The following specifications for work safety must also be observed:

Storage of the lithium ion starter / auxiliary battery

The following points should be noted for reasons work safety point:

The battery must always protected against short circuit (cover the terminals).

The information for this can be found in the information bulletin in the ASAP.

Note: For better traceability, this document must be printed out and archived with the vehicle data.

Assessment of the 12 V lithium ion starter / auxiliary battery

NAME	Date	Serial no.	VIN

Signature: ----------

The electrical assessment of the 12 V lithium ion starter / auxiliary battery takes place via the diagnosis and test module.

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Transport preventing faults according to the diagnosis or the test module	Yes	No

Visual assessment:

Smoke	Yes	No
Evidence of fire damage	Yes	No
Heat development	Yes	No
Deformations, changes (scratches up to 0.5 mm deep or 5 cm long are permitted)	Yes	No
Cracked or broken housing	Yes	No
Electrolyte odour	Yes	No
Noise generation	Yes	No
Loose connections, loose or damaged	Yes	No
Serial number/label safety information cannot be read	Yes	No
DMC code is not readable or no functional LIN communication can be established	Yes	No
Suspected water damage	Yes	No

The serial number must be clearly legible. If the type plate can no longer be read, the housing of the 12 V lithium ion starter / auxiliary battery must be clearly marked with the serial number.

The label of the safety information must be replaced if it is illegible.

The electrical and visual assessment must be set down in writing!

If one or more points is/are answered with yes the following procedure must be clarified by technical support! Furthermore, the removed 12 V lithium ion starter / auxiliary battery must be blocked off with high-voltage barrier tapes. If a 12 V lithium ion starter / auxiliary battery is still located in the vehicle, the vehicle must be parked in the open.

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61 00 ... Battery charging calendar

Battery charging calendar 2016 (PDF file)

Battery charging calendar 2017 (PDF file)

Battery charging calendar 2018 (PDF file)

Battery charging calendar 2019 (PDF file)

Information for the battery charging calendar

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61 25 ... Notes on repair of high-voltage battery unit

1. Prerequisite

Various organisational prerequisites need to be fulfilled before the repair of a high-voltage battery unit is permitted and can be carried out in an expedient way. These prerequisites concern both, the commercial company and the service employee.

The repair of a high-voltage battery unit is intended to be carried out exclusively by commercial companies featuring the service format BMW i Service Extended Battery or BMW i Service Full.

A commercial company featuring the service format BMW i Service Basic is able to remove and install a high-voltage battery unit but cannot perform any repair work on or in the high-voltage battery unit. If a repair is required according to the test schedule in the diagnosis system, the vehicle or the high-voltage battery unit must be transported to a commercial company featuring the service format BMW i Service Extended Battery or BMW i Service Full. The repair is to be carried out in such a workshop.

The commercial company must make available the required special tools and a suitable workbay for the repair.

The most important special tools are the following:

- Mobile lift table MHT 1200 + set of adapters to remove and install the high-voltage battery unit
- Charger for cell blocks of high-voltage battery unit
- Diagnosis system for the repaired high-voltage battery unit
- Lifting tackle to remove and install cell blocks
- Panel wedges made of plastic to remove clips within the high-voltage battery unit
- Lifting traverse for the complete high-voltage battery unit
- High-voltage barrier tape
- Yellow cones relating to high-voltage recommended

Sourcing reference:

See Aftersales Assistance Portal (ASAP) - Service/Technical - Workshop Equipment (Start BMW) - Shop Workshop Equipment or at www.bmwgroup.com

Only service employees being qualified for the repair of the high-voltage battery unit may carry out this procedure.

This includes training for "experts for work on high-voltage-intrinsically safe vehicles".

Before removing and opening the high-voltage battery unit, troubleshooting is to be carried out by means of the relative diagnosis system. Only if determined by the test schedule and if the prerequisite „no mechanical damage on the outside“ is satisfied, the high-voltage battery unit may be opened and the faulty component identified by the test schedule can be replaced. No other repair work relating to the high-voltage battery unit than the replacement of faulty components is planned.

It is essential to observe the operational steps specified in the repair instructions very precisely in order to carry out the replacement of a faulty component. The use of the special tools listed therein is absolutely essential as well.

2. Safety rules

- The first step after opening the housing cover to repair the high-voltage battery unit is a visual inspection for mechanical damage.
- A thorough visual inspection of the components inside the working area is required during and/or before and after every operation. When removing one component, all other involved components being accessible need to be checked for damages. If the housing or other internal high-voltage components are damaged, a qualified electrician or Technical Support must be contacted. All repair works relating to the high-voltage battery unit must be stopped immediately for safety reasons
- Check the correct latch mechanism of the connector of the insulation monitoring line at the control unit of the high-voltage battery unit. If this is not fully locked, an isolation fault may not have been detected.
- The separation of the high-voltage cable between the two cell modules mounted on the inside of the housing (across from the connection side of the high-voltage battery unit) is to be always carried out before working on the opened high-voltage battery unit. This procedure ensures the interrupt of the series connection (additional safety)
- The workbay required for the repair of the high-voltage battery unit must be clean (free of grease, dirt and

swarf), dry (no leaking fluid) and free of flying sparks. Therefore, avoid close vicinity to areas intended for cleaning of vehicles and to workbays intended for repair work relating to the body. Use movable walls for separation, if needed

- High-voltage barrier tape is required to secure the workbay against unauthorised access (insufficient qualification, customers, visitors, etc.). It is also required in case the high-voltage intrinsic safety is not established or the status is not determined yet. Placing yellow cones with lightning bolt to indicate high-voltage when leaving the working area is recommended
- Do not use tools or other objects with pointed and sharp blades/edges when working on high-voltage components or high-voltage cables and/or in their close vicinity. Diagonal cutting pliers, knives etc. are prohibited. Cable straps inside the low-voltage wiring harness may be opened by means of diagonal cutting pliers
  Allowed: Plastic wedges
- Cable straps relating to high-voltage cable may not be cut open. Damaged clips remain on the high-voltage cable. The remaining, damaged clip must be pushed to a position on the high-voltage line where the clip can not rub. A new clip must then be installed
- Defective or damaged high-voltage cables must be made unusable to ensure they are not reused
- No tools must be forgotten inside the high-voltage battery unit. Check whether all tools are present in the tool box before closing the housing cover
- It is absolutely essential to remove all small parts/screws that fell into the high-voltage battery unit. The use of magnetized screws is generally recommended in order not to lose any screws in the high-voltage battery unit during the repair
- When interruptions of work occur: Secure housing cover against unintended opening by screwing in several screws. Enclose the working area by means of high-voltage barrier tape
- Due to the very slim construction of the radiator, the risk of damage during disassembly and installation is high. Careful handling is absolutely necessary as the cooling of the cell blocks may not be guaranteed when the radiator is damaged (bent, dented). The consequence is a major loss of the electrical range and of the power of the vehicle. In extreme cases, even a breakdown may occur
- Very careful handling is necessary when disconnecting and connecting the insulation detector line at the control unit of the high-voltage battery unit (safety box coming) since high-voltage is present in the thin orange lines. Do not pull on the lines (e.g. to unplug the connector etc.)! The connector must be locked securely when plugged in
- Make sure the plastic lids of the modules are not removed when working on the cell modules (loosing screws, raising and lifting, ...). The live cell contacting system is located thereunder. Continuing to work with the lid being removed is not permitted. A qualified electrician or Technical Support must be contacted
- A schematic diagram with limiting sample examples in the training is necessary to get to know the limits. These show when the further work for the "experts for intrinsically safe vehicles" is no longer possible due to absent intrinsic safety, and the Technical Support or a qualified electrician must be contacted
- Remove residual moisture and coarse contamination around the lid of the high-voltage battery unit before beginning the disassembly
- Clean gaskets and sealing surfaces (venting unit, high-voltage connector, signal connector, radiator connection) with a specified cleaning agent before reassembly
- If contamination is present in the high-voltage battery unit, check the cause and carefully clean the affected areas
  Approved cleaning agent:
  - Spirit
  - Windscreen cleaner
  - Glass cleaner
  - Distilled water
  - Vacuum cleaner with plastic top
- Visual inspection for contamination and damage of housing as well as of connections and degassing unit when installed (underfloor). A damaged diaphragm within the venting unit may indicate damaged storage cells. In this case, special carefulness is required when checking and opening the high-voltage battery unit
- Electrolyte
  The majority of the electrolyte is a mixture of lithium-nickel-manganese-cobalt oxide in bound state The quantity of free electrolyte in the high-voltage battery unit is very small. It is a noxious and irritant fluid. Absolutely avoid direct contact of skin with leaking fluid as acid burns may occur. In case of contact with eyes or skin, flush with plenty of clear water and consult a doctor immediately. Burning or evaporating electrolyte is also hazardous. CAREFUL: do not inhale! Ensure sufficient fresh air supply. If breathing ceases, apply artificial respiration and immediately consult a doctor. Notify fire brigade in case of fire. Clear the area immediately and make accident scene safe. Attempt to extinguish the fire without putting persons in danger and use suitable extinguishant, e.g. water

3. Repairing removed high-voltage battery units

- The high-voltage battery unit is a component of large dimensions and heavy weight. Only the combination of the housing and the cell blocks mounted therein provides the high-voltage battery unit with complete stability (rigidity), as required for driving. Therefore, it is necessary to ensure that the housing is positioned on the relative mounting/adapter of the lifting table during replacement and fixation of cell blocks. In this way, one can prevent the housing from bracing during the repair work and ensure the high-voltage battery unit is not installed in the BMW I01 in this condition
- It is extremely important to enter the serial numbers and the installation positions of the replaced components in the SME via the testing device, as well as to carry out the transmission into the diagnosis system. Otherwise, the new installation position will be assigned automatically by the SME. The consequence is an incorrect location data, as the SME does not set correct positions. For a renewed repair of the high-voltage battery unit, the diagnosed faults for the incorrect installation position will be displayed. The consequence is that replacement is done at the wrong location
- In diagnosis, it is not possible to enter the serial numbers of the cell supervision circuits. The serial numbers are transmitted from the cell supervision circuit to the SME using the CAN bus. The SME then sets a corresponding position assignment. This assignment is not always fault-free. That is why the serial number and installation position of the exchanged cell supervision circuit must be checked in the diagnosis after completed repair. If the positions do not match, a position change can be performed with diagnosis. A new serial number of a cell supervision circuit is not entered
- Attention: Do not use powered wrenches as the screws/threads located in the high-voltage battery unit may break due to the low torques!
- The seal must be renewed every time the housing cover is removed to guarantee tightness of the high-voltage battery unit
- The screws are thread-tapping, so pre-insert them manually before tightening them with a tool. Otherwise, the threads of the lower housing section may be damaged!

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61 00 ... Safety information on handling hybrid cars

1. *Qualification:*
   All repair work on high-voltage components may **only be performed by specially trained personnel** (qualification: Work on high-voltage inherently save vehicles) must be performed by qualified technicians. Each hybrid car requires additional vehicle specific training with training achievement controls.
   Required training is offered by the BMW Training Academy.
2. *Identification:*
   Observe **warning notices** on high-voltage components. When replacing individual high-voltage components, check if warning stickers are present. Independently attaching warnings is only allowed on the locations provided for them. Use only approved and appropriately identified original new parts.
3. *Rules of conduct/protective measures:*
   - Note operating instructions for handling high-voltage battery units.
   - Do not under any circumstances touch open high-voltage cables and high-voltage components on damaged vehicle before shutting down the high-voltage electrical system.
   - In the event of damage (mechanical, thermal) transition metal oxides, carbon, electrolyte solvents and their products of decomposition may be released.
     Suitable acid-resistant protective clothing/equipment must therefore be used when handling the vehicle!
     - Hand protection: Gloves
     - Eye protection: Safety goggles

     Damaged high-voltage battery units must be stored in an acid-resistant pan in a location in the open that is protected against the weather (sun, rain) and secured against unauthorised access. Do not inhale escaping gasses.
   - Prevent escaping substances from entering drains, pits and the sewer system.
   - Collect any material that is discharged and have it disposed of according to the work instruction, wear acid-resistant protective clothing when doing so.
   - Notify the fire brigade if fire breaks out, clear the area immediately and make accident scene safe. Attempt to extinguish the fire without putting persons in danger (suitable extinguishant: water and water foam).
   - A cut 2nd emergency separation point must be repaired with a butt connector.
4. *Measures before starting work:*
   - Each job on the vehicle must be assigned by appropriately trained personnel. Before work is started, this electrician must place the vehicle in the operating condition required to perform the relevant activity. The qualified personnel's instructions and directions absolutely must be followed. **No work may be carried out without this qualified personnel being consulted first.**
   - It is **not** permitted to work on the high voltage system or on high voltage components while the engine is running.
   - The readiness to drive must be ended before shutting off the voltage of the high-voltage system. The readiness to drive is ended when the driver is absent only under the following conditions:
     1. seat belt buckle unlocked **and**
     2. the driver's door is open **and**
     3. no brake activated **and**
     4. the accelerator pedal is not activated **and**
     5. speed < 3 km/h (2 mph)
   - Work on live high-voltage components is expressly prohibited. Before each operation on the high-voltage system, the system must be isolated from the power supply by qualified personnel (high-voltage safety connector Off) and secured against unauthorised recommissioning (padlock).
   - After each deactivation of the high-voltage system, it is essential to observe a **waiting period** of at least **10 seconds** prior to further work.
   - Before beginning work, it is mandatory to check that the equipment is de-energised and is protected against being energised again.
     Work is only permitted to begin if:
     1. Corresponding display in the KOMBI **High-voltage system deactivated** or

     When a high-voltage warning is active (indicator light, Check Control, etc.), it is essential to determine and eliminate the cause of this warning via the diagnosis system before continuing with any other work.
     If it cannot be definitively established that the equipment is de-energised, work is not permitted to begin. **Danger to life!** Before work begins, a qualified electrician (1000 V AC) must verify that the

system is de-energised using appropriate measuring devices and procedures.
=> In this case, Technical Support must be contacted!

- Do not perform any work on the vehicle while it is charging. Before starting work, disconnect the charging cable from the vehicle.
  Battery charging may result in heating of the high-voltage battery unit. This heating may lead to sporadic launches of the electric fan (switch-on request from the electric fan). Therefore, work in the vicinity of the electric fan during the charging procedure is prohibited. Ensure freedom of movement of the battery charge lines in the vicinity of the electric fan.

5. *Measures during/after activities:*
   - Identifiable mechanical damage to or tampering with high-voltage components must be reported immediately to the qualified personnel in charge.
   - When carrying out any work on the high-voltage system, it is prohibited to drive externally all the drivetrain components (wheels, gearbox, drive shafts, etc.).
   - *E72 only:* When the "Power Electronic Box Cover" is removed, the high-voltage system is not permitted to be activated. The high-voltage service disconnect must only be used when the "Power Electronics Box Cover" is completely installed.
   - High-voltage cables (orange coating) and their connectors and stop parts **may not** be repaired. If damaged, a cable must always be replaced completely.
   - When working in the vicinity of high-voltage components (identified accordingly with warning stickers and orange-coloured coating), protect these components against damage.
   - The specified work steps in the repair instructions must be adhered to exactly.
   - High-voltage components and their holders must be screwed/bolted to the defined tightening torque. Tightening torques and tightening specifications must be observed.
   - Connecting high-voltage components to body ground is crucial to safety for reasons of equipotential bonding. For this reason, it is prohibited to operate any high-voltage components without them being correctly connected to body ground. The measurements (insulation/potential equalisation measurement) are performed automatically by the vehicle. Manual measurement is not therefore necessary.
     For a correct earthing connection, the retaining elements of high-voltage components must not be painted. Follow further painting notes.
   - Removed high-boltage battery units must be stored in a manner that protects them from misuse and damage.
   - Damaged or warning stickers that are no longer legible on high-voltage components must always be replaced.
6. *Potential compensation:*
   Equipotential bonding lines, high-voltage cables and the battery negative lead to the EME are fitted with safety screws.
   - Clean contact faces and have then checked by a second person.
   - Tighten down screws/bolts to specified torque.
   - Have tightening torque checked by a second person.
   - Both persons must document that the work has been carried out correctly in the vehicle records.

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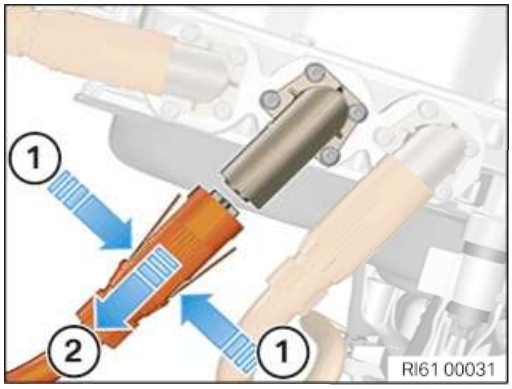
61 13 ... Unlocking and disconnecting various plug connections in electrical and hybrid vehicles



Attention!

Observe the following instructions for handling high-voltage plug connections:

- Damaged high-voltage plug connections must be replaced completely. Repair is not permitted.
- Dirt contamination must be removed before opening the plug connection.



Disconnect the Hirschmann high-voltage connector:

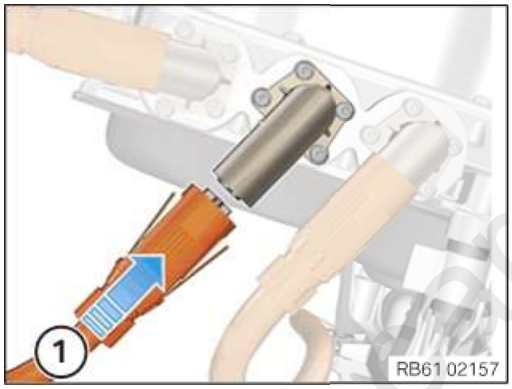
Press the lock (1) on the left and right on the connector in the direction of the arrow.

Pull off connector (2) in direction of arrow.

Attention!

Connector (2) is difficult to pull off.

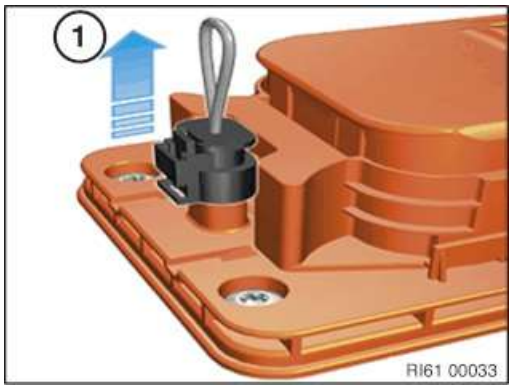
In the event of damage to high-voltage connector (2), the complete high-voltage cable must be replaced!



Connect the Hirschmann high-voltage connectors:

Slide the connector (1) on in the direction of the arrow.

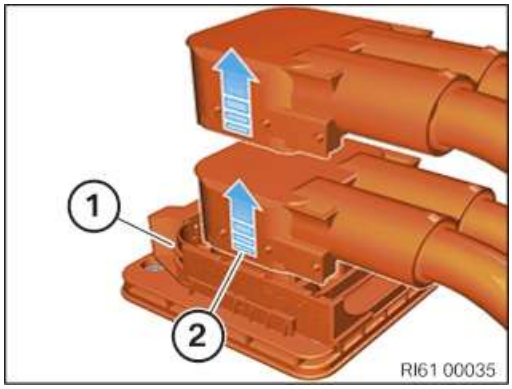
Note:
Connector (2) must lock audibly.



Disconnect the Kostal high-voltage connector:

Unlock and disconnect high-voltage interlock loop (1).

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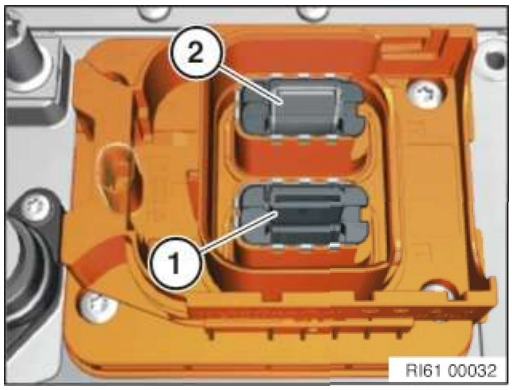
Push the lock (1) fully to the front.

Lift the connector (2) and remove it entirely.

Attention!

Plug connection (3) is difficult to pull off.

The connector (2) must be completely pulled off the opposite housing in one step. Damage may be caused to contact protection if connector is only partly pulled off and then closed again!



Check the Kostal high-voltage connector and connection for damage:

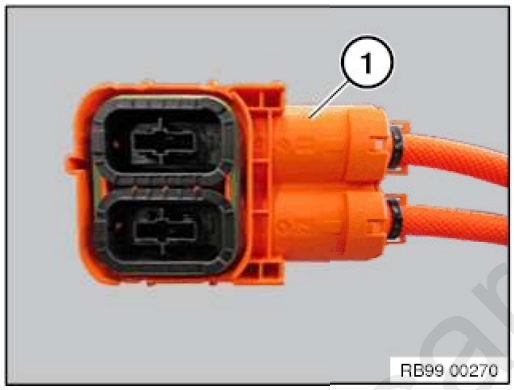
Check the touch protection for damage and correct positioning (1).

Warning!

Do not touch unprotected connector (2)!

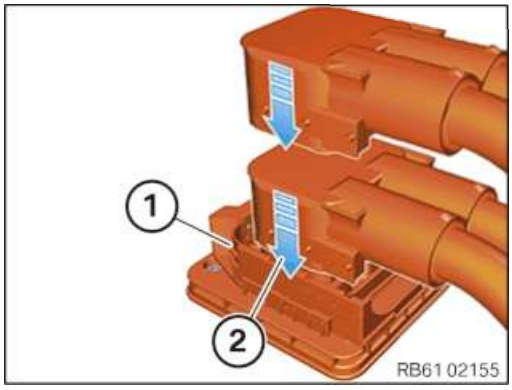
If the contact protection (1) has been pushed to the bottom (2), the high-voltage connector must be refitted.

If contact protection (1) remains in bottom position (2) after reinstallation, the contact protection is faulty and the component must be replaced!



Check the high-voltage connector (1) for damage.**Warning!**

In the event of damage to the high-voltage connector (1), the complete high-voltage cable must be replaced!



Connect the Kostal high-voltage connector:

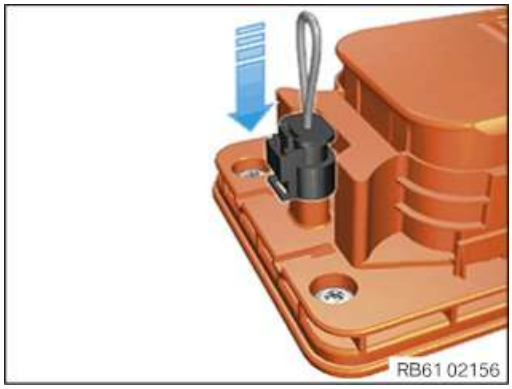
Connect the connector (2) in one single movement to the counter-housing.

Push the lock (1) fully to the rear.

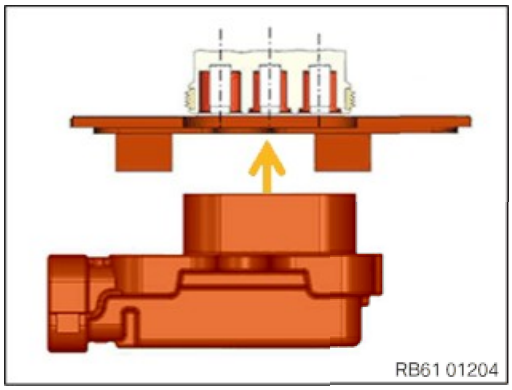
Attention!

Plug connection (3) must be correctly locked by lock (2), otherwise there is a risk of damage.

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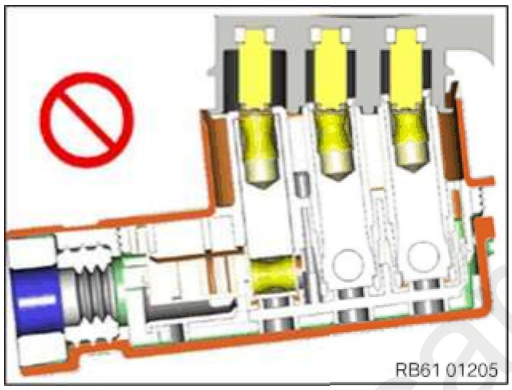


Connect the connector for the high-voltage interlock.



Three-phase high-voltage connector:

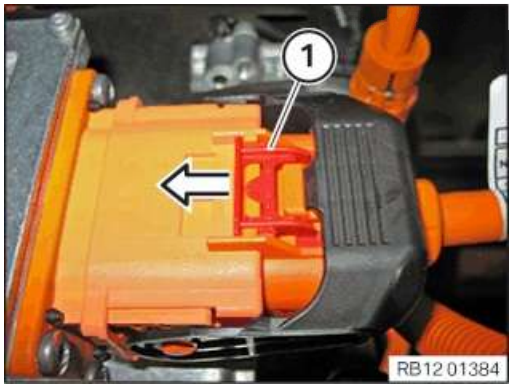
Connect and disconnect the connector straight.



Attention!

The system is designed to only offer limited protection against damage caused by connectors that are inserted at an angle.

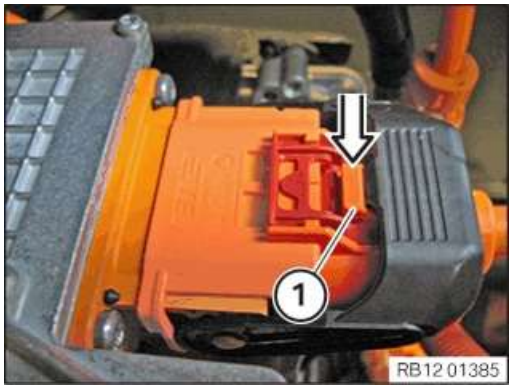
Increased tilted connections will increase the connecting force and the risk of danger.



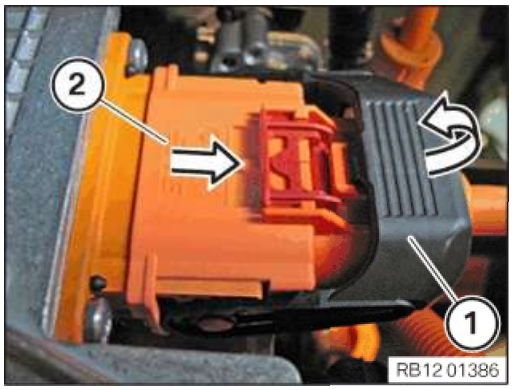
Disconnect the high-voltage connector from the high-voltage connection of the KLE:

Slide lock (1) in direction of arrow up to stop.

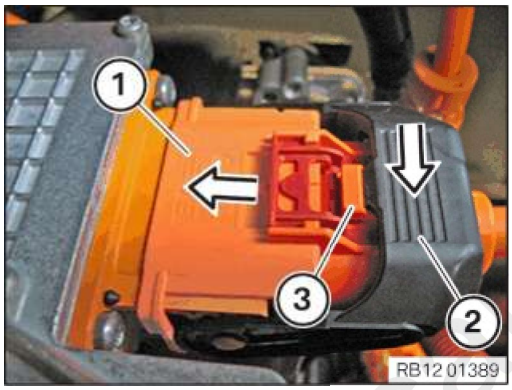
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Press lock (1).



Open the lock (1) completely and disconnect the connector (2).



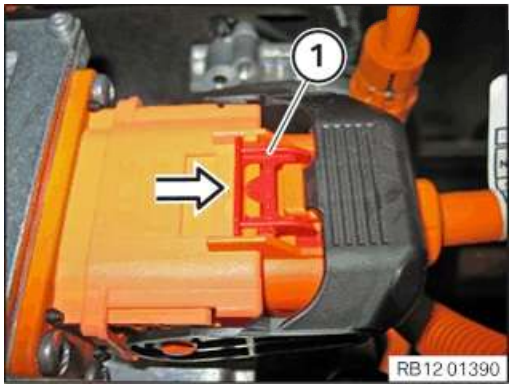
Connect the high-voltage connector to the high-voltage connection of the KLE:

Connect the connector (1) to the limit position and close the lock (2).

Attention!

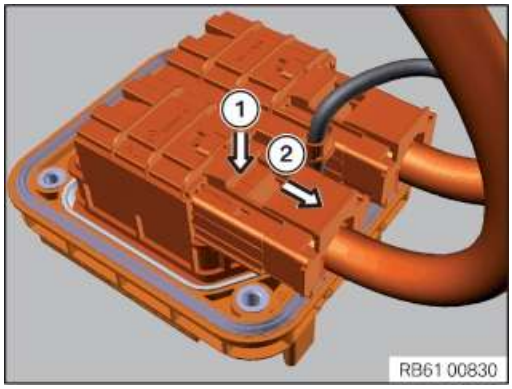
Lock (2) must snap audibly into place.

The retaining lug of the lock (2) must be positioned completely under the lock (2).



Slide the lock (1) on to the stop in the direction of the arrow.

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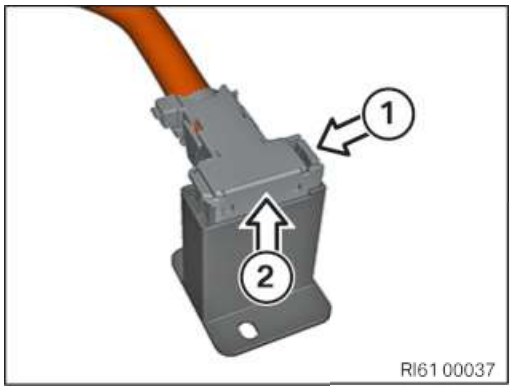
High-voltage connector on the high-voltage connection of the high-voltage battery unit:

Press down unlocking (1) in direction of arrow and pull off connector in direction of arrow (2).

Attention!

Contact protection is no longer provided in the event of a damaged connector housing.

In this case, contact technical support.



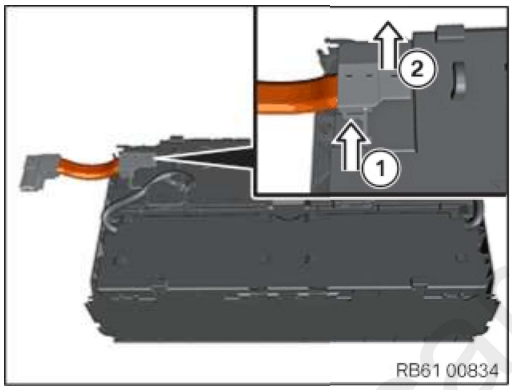
High-voltage connector on the cell module I01:

Press unlocking device (1) together and pull off connector upwards (2).

Attention!

Contact protection is no longer provided in the event of a damaged connector housing.

In this case, contact technical support.



High-voltage connector on the cell module (cell module connecting line):

Press unlocking (1) in direction of arrow and pull off connector in direction of arrow (2).

Attention!

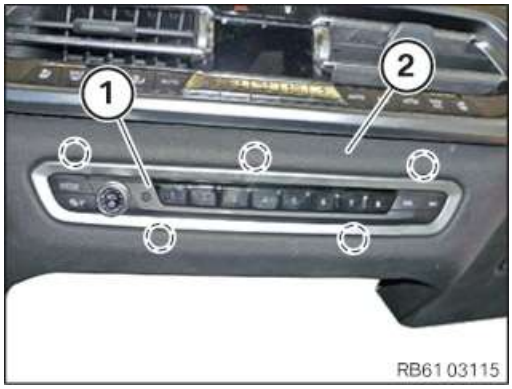
Contact protection is no longer provided in the event of a damaged connector housing.

In this case, contact technical support.

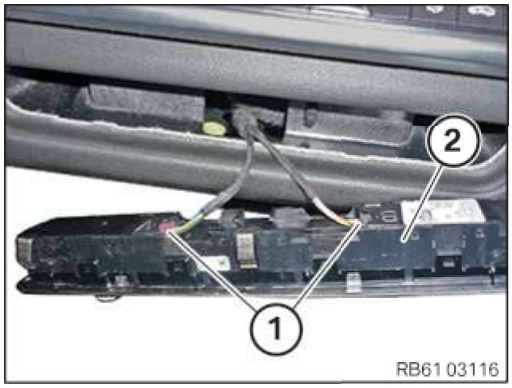
cardiagn.com

61 31 251 Rem. & install audio operating facility

1 – Remove the audio operating unit

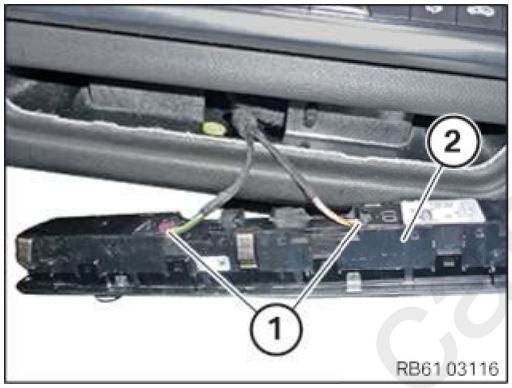


- Unclip the audio operating unit (1) from the instrument panel (2) at the points marked using special tool 0 496 571 (00 9 327).

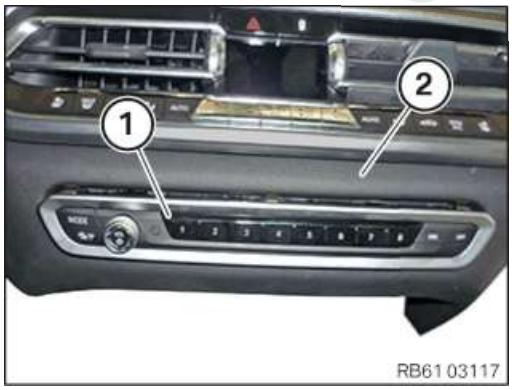


- Disconnect plug connections (1) and remove the audio operating unit (2).

2 – Install the audio operating unit



- Connect the connector (1) to the audio operating unit (2).



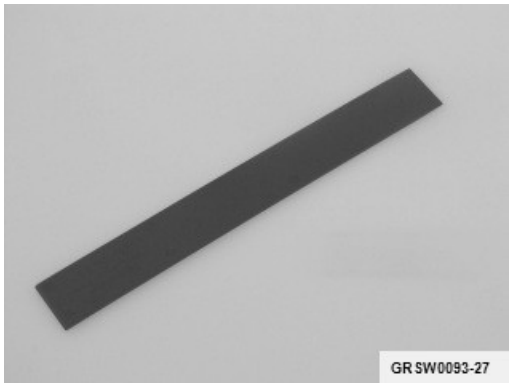
- Correctly position the audio operating unit (1) and install in the instrument panel(2).

Additional Information

Overview of Special Tools

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0 496 571 (00 9 327) Wedge



Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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61 31 021 Remove and install/replace ring aerial

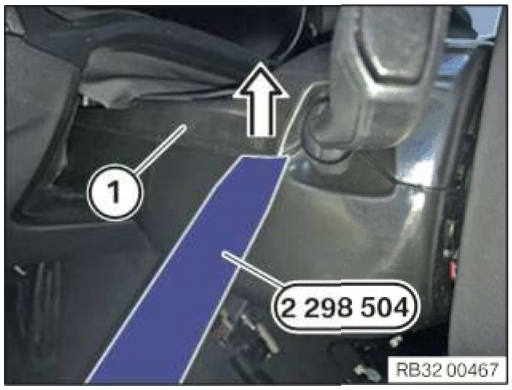
PRELIMINARY WORK

1 – Adjust the steering column position



- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

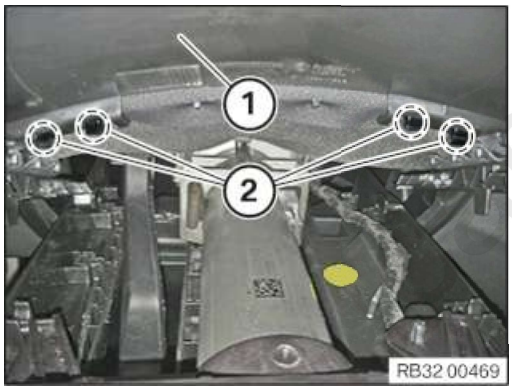
2 – Removing steering column shroud upper section



NOTICE

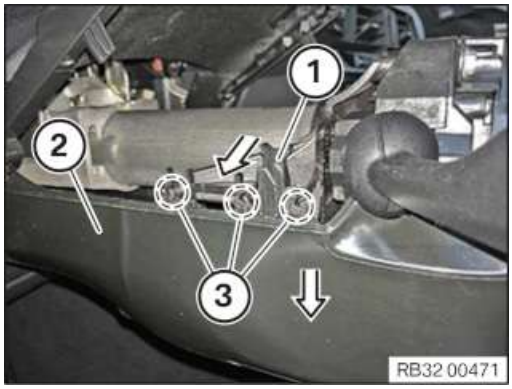
Perform the operations on the left and right side.

- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.



- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

3 – Removing steering column shroud lower section



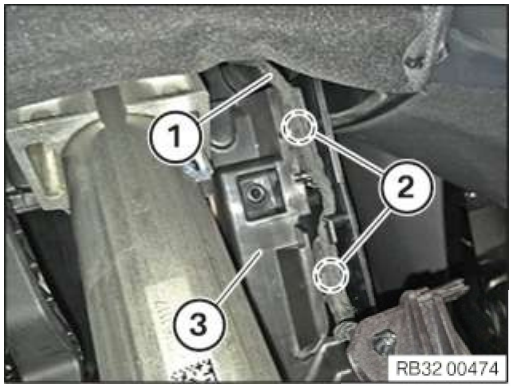
NOTICE

Perform the operations on the left and right side.

- Push the retaining lug (1) to the outside in the direction of the arrow and unclip the steering column shroud lower section (2) from the holders (3) in the direction of the arrow to the bottom at the same time.



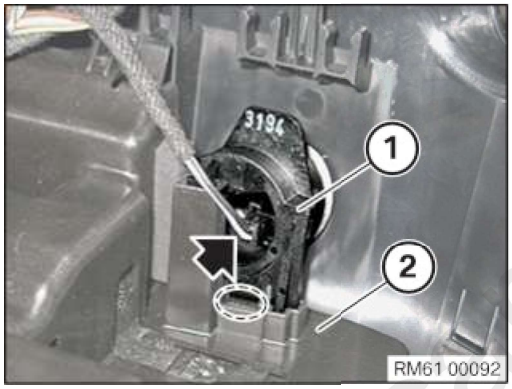
- Fold the steering column shroud lower section down.
- Unlock and disconnect connector (1).



- Detach the cable (1) from the brackets (2).
- Remove the steering column shroud lower section (3).

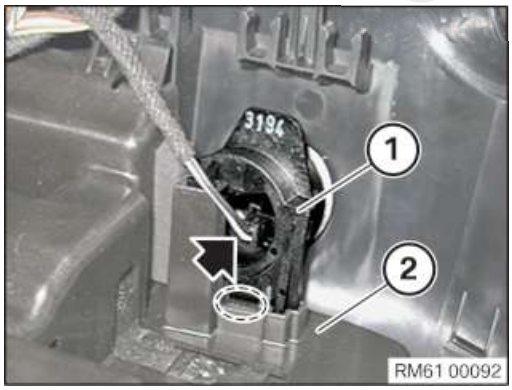
MAIN WORK

4 – Removing the ring aerial



- Unlock connector (arrow) and disconnect.
- Pull ring aerial (1) out of the lower section of the steering column shroud (2).

5 – Installing the ring aerial

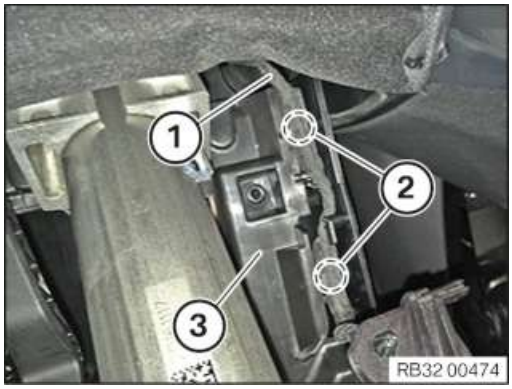


- Join the ring aerial (1) into the steering column shroud lower section (2).
- Connect the connector (arrow).

POSTPROCESSES

6 – Install steering column shroud lower section

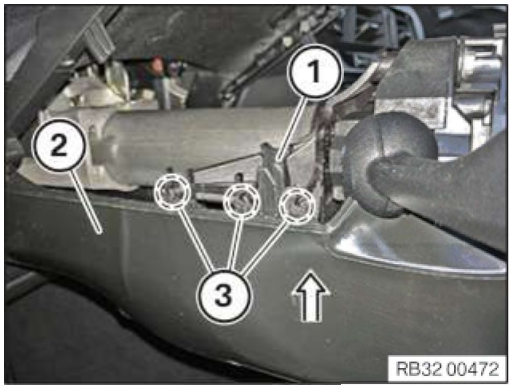
cardiagn.com



- Position the steering column shroud lower section (3).
- Secure the line (1) on the brackets (2).



- Connect the connector (1).

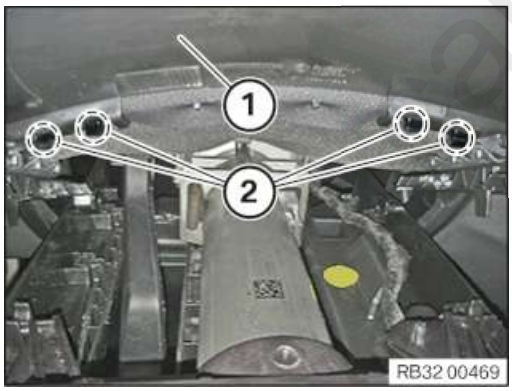


NOTICE

Perform the operations on the left and right side.

- Align the steering column shroud lower section (2) to the steering column using the retaining lug (1).
- Push the steering column shroud lower section (2) up in the direction of the arrow until the brackets (3) engage.

7 – Fit steering column shroud upper section



- Clip in the steering column shroud upper section (1) at the brackets (2).



NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).

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NOTICE

Perform the operations on the left and right side.

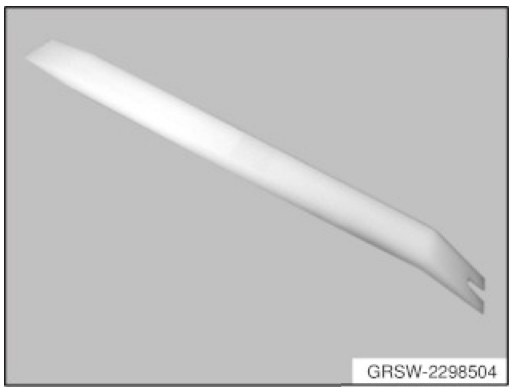
- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

  The upper section of the steering column shroud must engage audibly and perceptibly.

Additional Information

Overview of Special Tools

2 298 504 Wedge



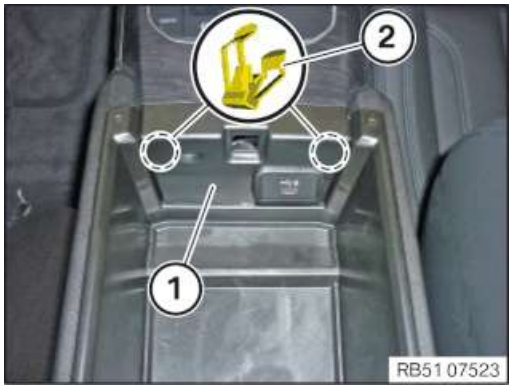
Common	Used in step 2
Usage	Wedge with angled lug
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

cardiagn.com

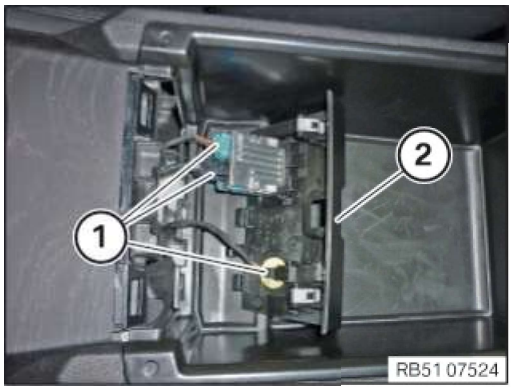
61 31 195 Removing and installing front controller

PRELIMINARY WORK

1 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

2 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

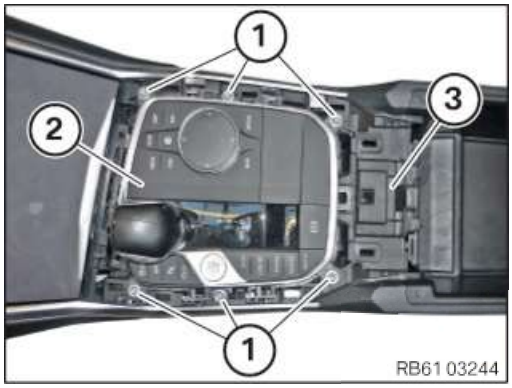
3 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**

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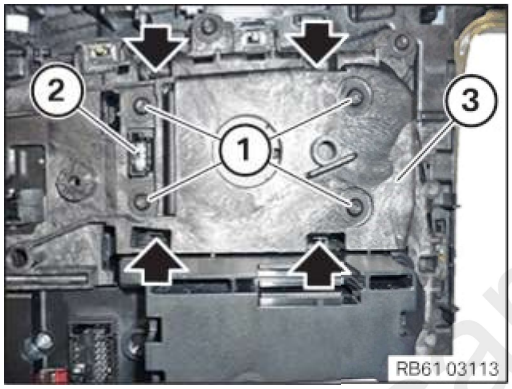
- See additional information.



- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

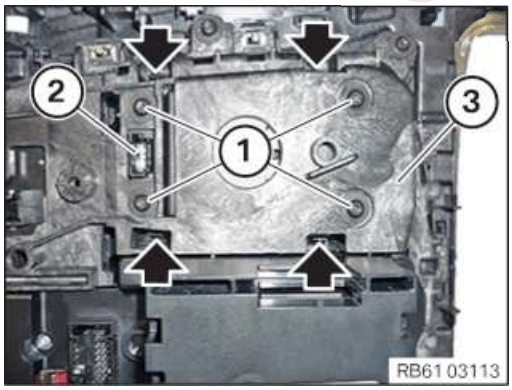
MAIN WORK

4 – Remove controller



- Loosen screws (1).
- Release the latch mechanisms (arrows).
- Remove controller (2) from the gear selector switch(GWS) (3).

5 – Install controller



- Position the controller (2) on gear selector switch (GWS) (3) and engage in the latch mechanisms (arrow).
- Tighten the screws (1).

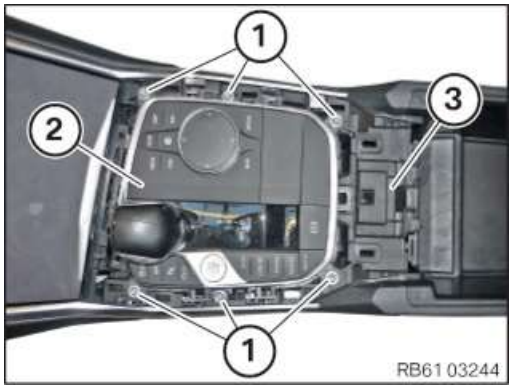
Controller to gear selector switch

Screw		Tightening torque	1,8 Nm

POSTPROCESSES

6 – Install the operating facility in the centre console

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- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

▶ **Disconnecting all battery earth leads**



- See additional information.

7 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



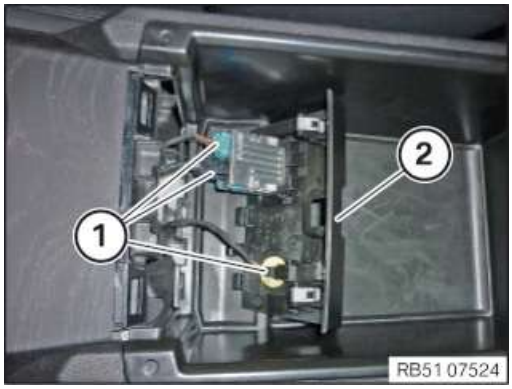
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



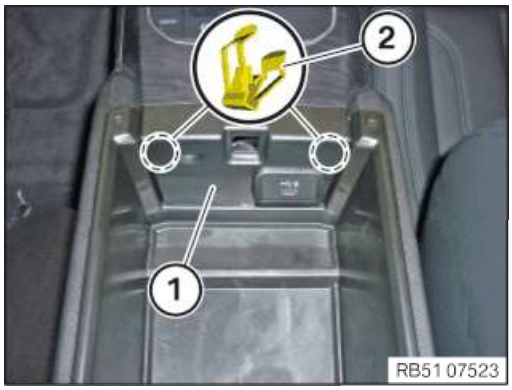
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

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8 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

Additional Information

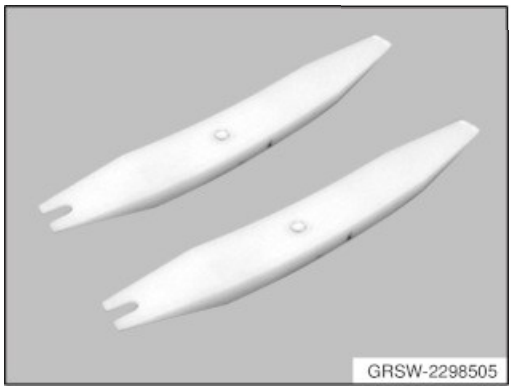
Overview of Tightening Torques

Controller to gear selector switch			Used in step 5
Screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim			Used in step 6
Screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common	Used in step 12
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36

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61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
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61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36

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61 31 197 Removing and installing operating facility for centre console

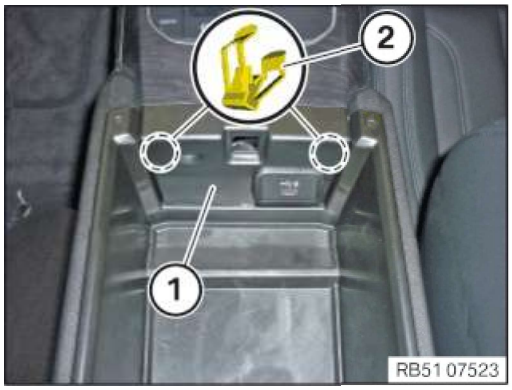
PRELIMINARY WORK

1 – Disconnecting all battery earth leads

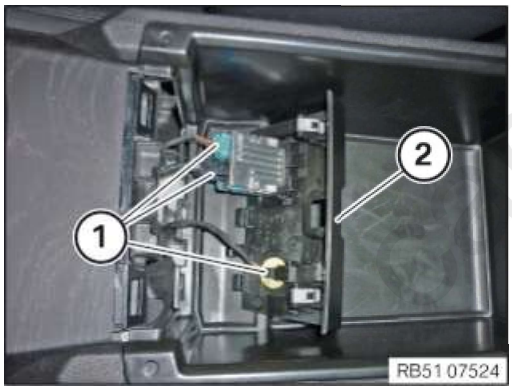


- See additional information.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

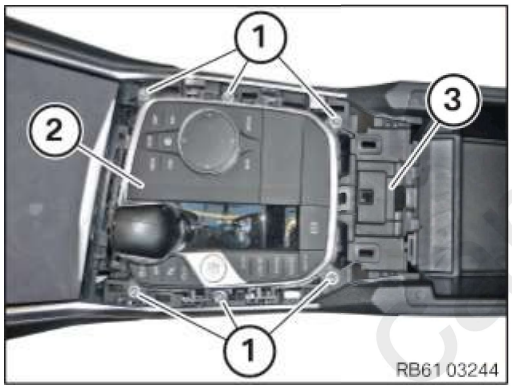
MAIN WORK

4 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**

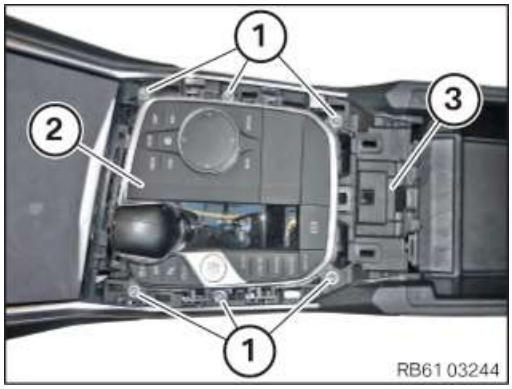


- See additional information.



- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

5 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

▸ **Disconnecting all battery earth leads**

carfdiagn.com



- See additional information.

POSTPROCESSES

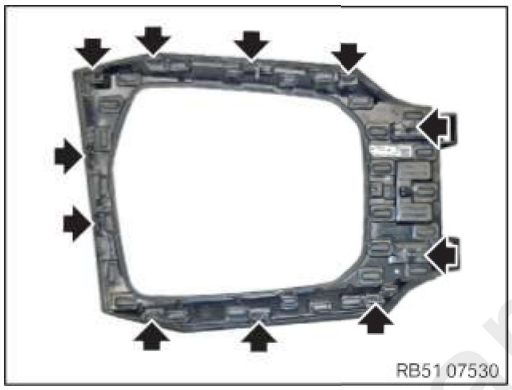
6 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

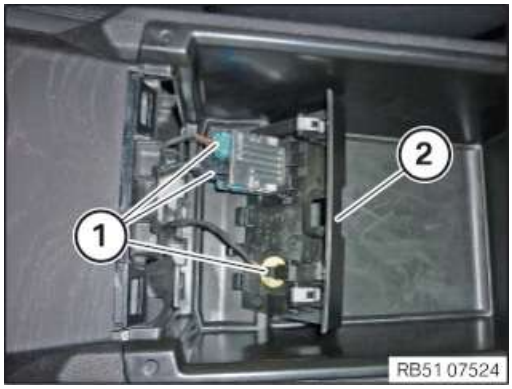


- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

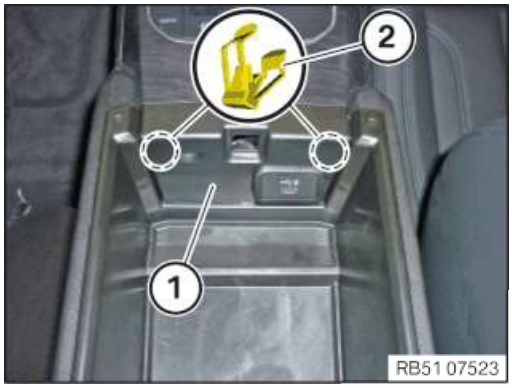


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

7 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

8 – Disconnecting all battery earth leads



- See additional information.

Additional Information

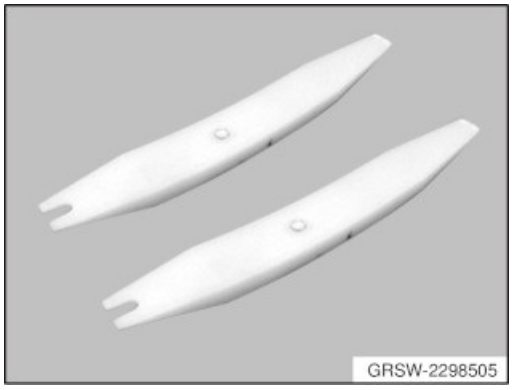
Overview of Tightening Torques

Gear selector switch to centre console trim Used in step 5

Screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common Used in step 23

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

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Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1458
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1458
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting battery earth lead	1458
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61 20 900 Disconnecting and connecting battery earth lead	1458
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1458
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61 20 900 Disconnecting and connecting battery earth lead	1458

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61 31 008 Removing and installing steering column switch cluster

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

TECHNICAL INFORMATION

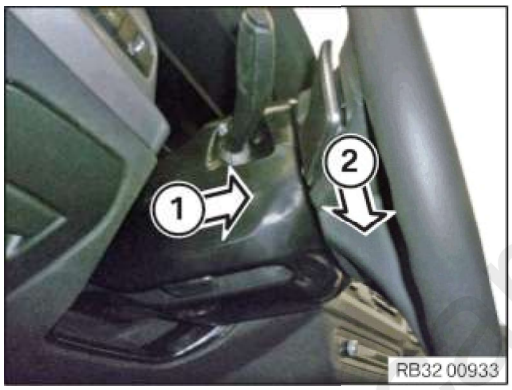
Steering wheel must be replaced if airbag unit has been deployed.

Only with M Sport steering wheel: Impact plate must be replaced if airbag unit has been deployed.

For additional information see: 72 12 ... Procedure after airbag deployment as result of an accident

PRELIMINARY WORK

1 – Adjust the steering column position



- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

2 – Disconnecting all battery earth leads



- See additional information.

3 – Removing the airbag unit

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WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

RISK OF DAMAGE

Damage to the steering wheel.

Incorrect handling of the tool may damage the steering wheel.

- Ensure the tool is positioned correctly (angle and inclination).
- When unlocking, do not use "levering" action. Instead, press in the Torx screwdriver toward the centre of steering wheel only.

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Removing the airbag unit (sports steering wheel)**



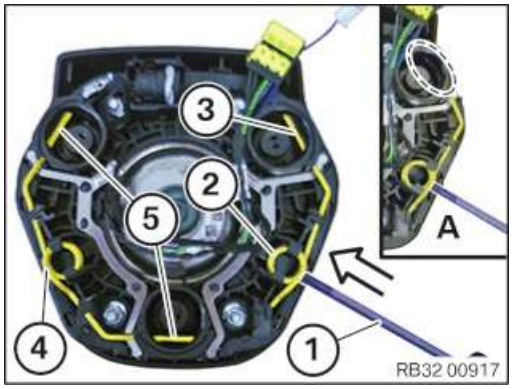
- Insert Torx screwdriver T25 (1) diagonally upwards in the hidden opening (2) on the rear side of the steering wheel until a spring resistance is felt.



NOTICE

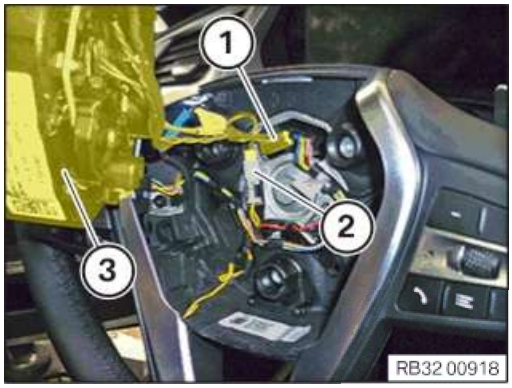
To provide a better overview: Diagram with airbag unit removed.

- To unlock the airbag unit, press Torx screwdriver T25 (1) diagonally upwards in the direction of the arrow to the centre of the steering wheel.



- Press the airbag unit over a large area of the steering wheel.
- Use Torx screwdriver T25 (1) to press wire spring clip (2) in the direction of the arrow towards the centre of the steering wheel and release lock (3).

  (A): Wire spring clip (2) is unlocked.
- Then use Torx screwdriver T25 (1) to press wire spring clip (4) in the direction of the arrow towards the centre of the steering wheel and release locks (5).
- Carefully raise the airbag unit.

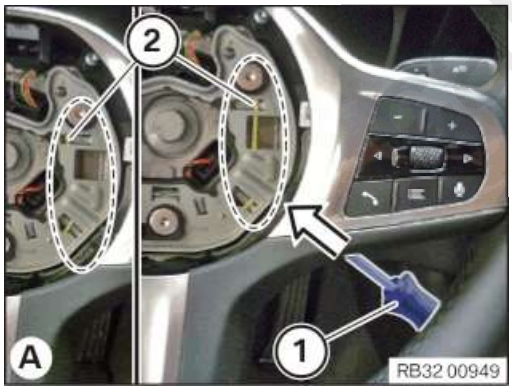


- Unlock and disconnect the plug connections (1) and (2).
- Remove airbag unit (3).

▸ **Version B: Removing airbag unit (M Sport steering wheel)**



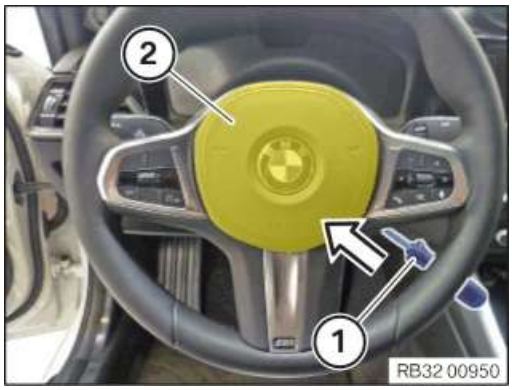
- Locate the pre-punched bore hole (1) on the rear side of the steering wheel by touch.
- Insert the Torx screwdriver T27 (2) diagonally upwards in the pre-punched bore hole (1) on the rear side of the steering wheel until a springing kind of resistance can be felt.



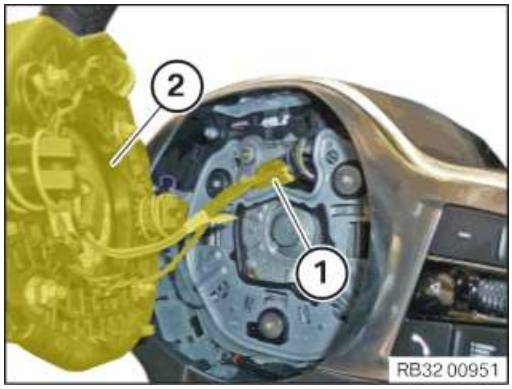
NOTICE

To provide a better overview: Diagram with airbag unit removed.

- Press in Torx screwdriver T27(1) straight in direction of arrow towards the centre of the steering wheel in order to unlock the wire spring clip (2) or to unlock the airbag unit (A).

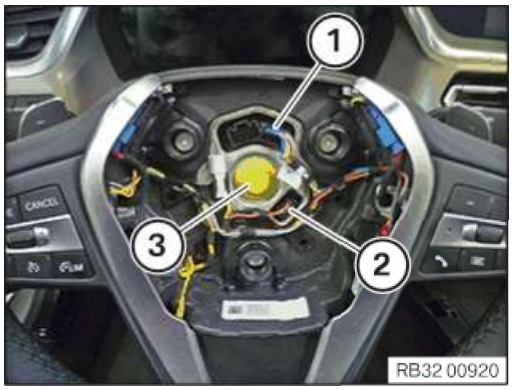


- Press in Torx screwdriver T27 (1) straight in direction of arrow towards the centre of the steering wheel and lift airbag unit (2) on the unlocked side.
- Repeat procedure on left side and carefully remove airbag unit (2) in direction of arrow off the steering wheel.



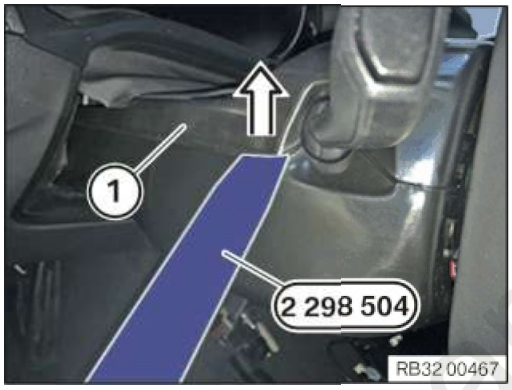
- Unlock and disconnect plug connection (1) and remove the airbag unit (2).

4 – Removing the steering wheel (sports steering wheel)



- Move the steering wheel and wheels to the straight-ahead position.
- Unlock plug connection (1) and disconnect.
- If installed: Unlock plug connection (2) and disconnect.
- Release the screw (3) and pull off and remove the steering wheel.

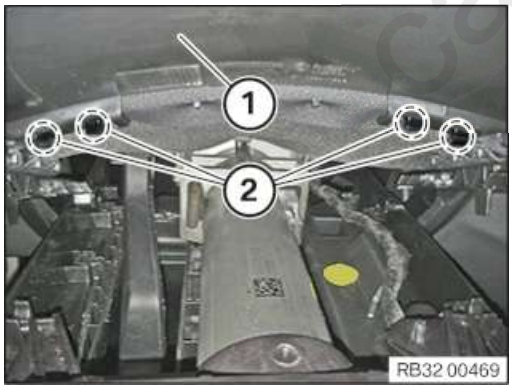
5 – Removing steering column shroud upper section



NOTICE

Perform the operations on the left and right side.

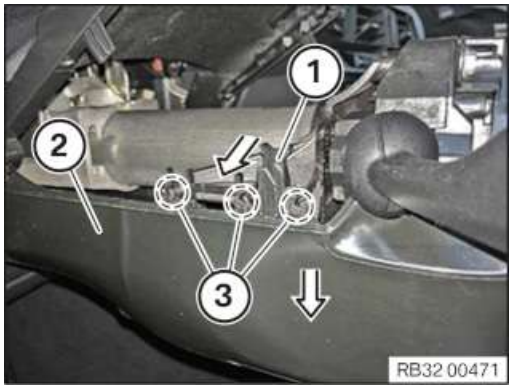
- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.



- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

6 – Removing steering column shroud lower section

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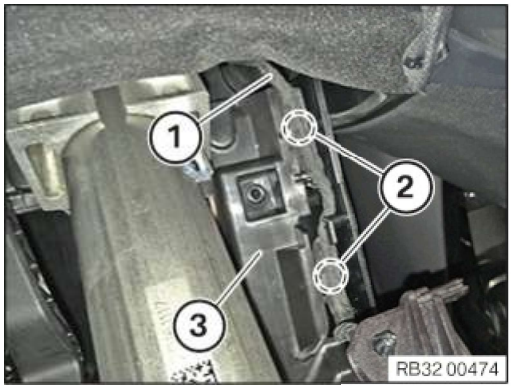
NOTICE

Perform the operations on the left and right side.

- Push the retaining lug (1) to the outside in the direction of the arrow and unclip the steering column shroud lower section (2) from the holders (3) in the direction of the arrow to the bottom at the same time.



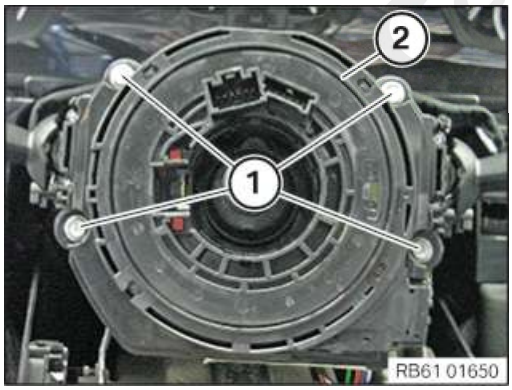
- Fold the steering column shroud lower section down.
- Unlock and disconnect connector (1).



- Detach the cable (1) from the brackets (2).
- Remove the steering column shroud lower section (3).

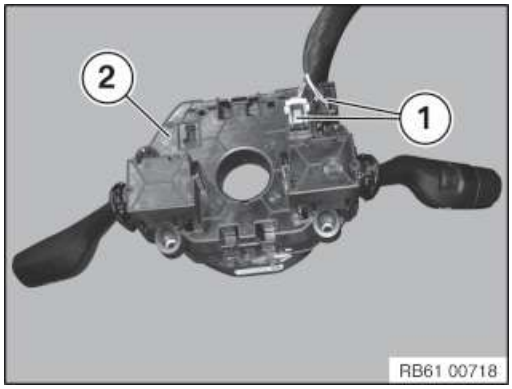
MAIN WORK

7 – Removing the steering column switch cluster (SZL)



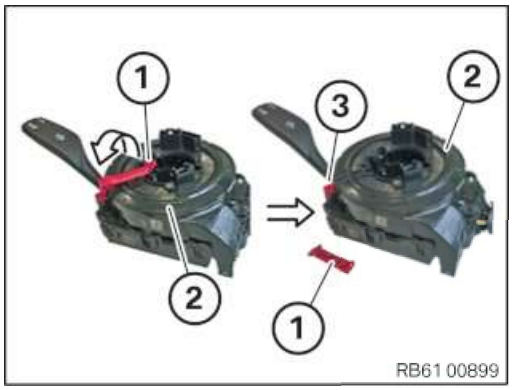
- Loosen screws (1).
- Remove the steering column switch cluster (SZL) (2).

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- Unlock and disconnect the connector (1) on the steering column switch cluster (SZL) (2).

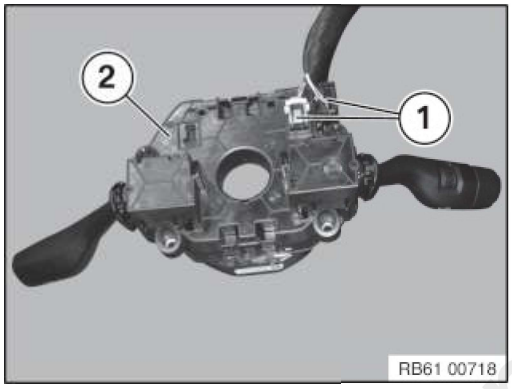
8 – Installing the steering column switch cluster (SZL)



- **Replacement:**

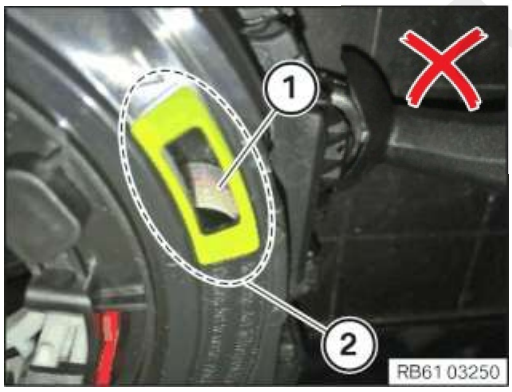
  Break off the transportation retainer (1) on the steering column switch cluster (SZL) (2) in direction of arrow.

  The broken off piece (3) of the transportation retainer (1) remains in the steering column switch cluster (SZL) (2).



- Connect the connector (1) with the steering column switch cluster (SZL) (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

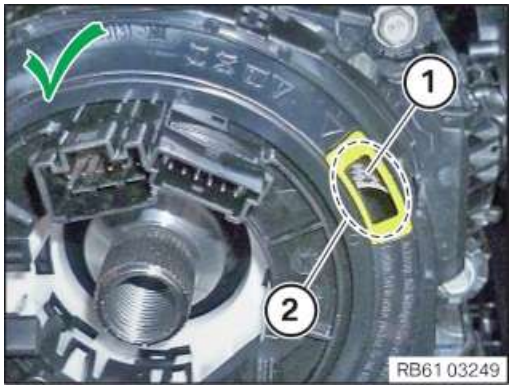
Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

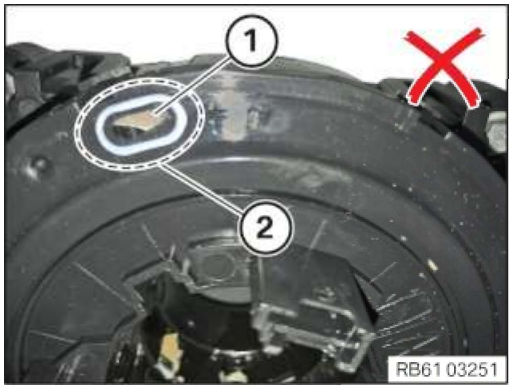
Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

Check



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

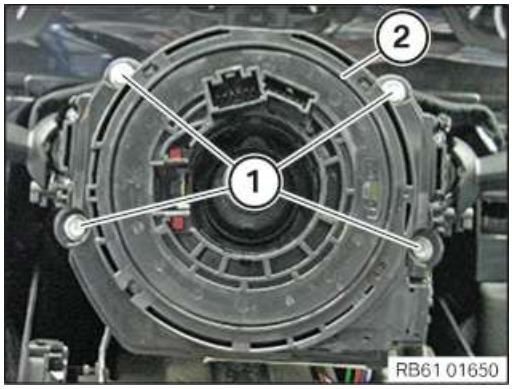
Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

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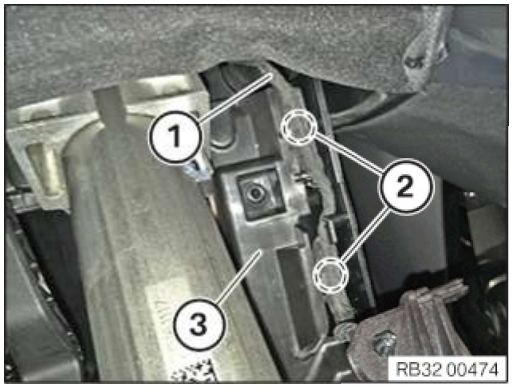
- Position the steering column switch cluster (SZL) (2).
- Tighten the screws (1).

Steering column switch cluster (SZL) on the steering column

Screw TS5x20		Tightening torque	3 Nm

POSTPROCESSES

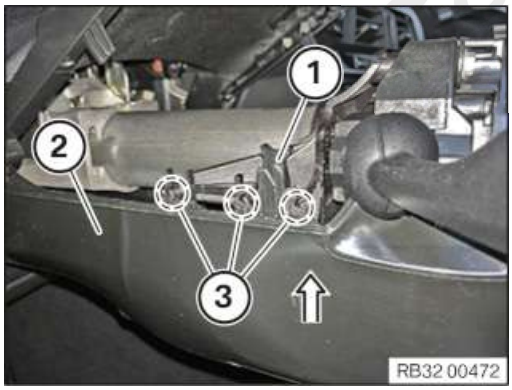
9 – Install steering column shroud lower section



- Position the steering column shroud lower section (3).
- Secure the line (1) on the brackets (2).



- Connect the connector (1).



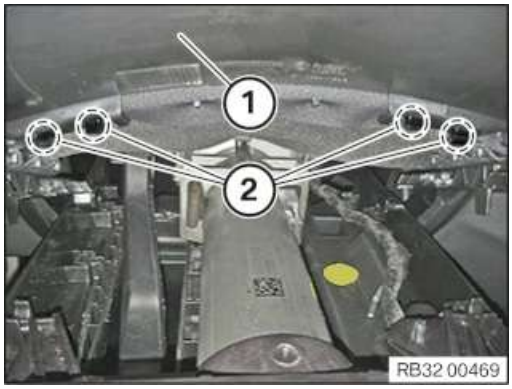
NOTICE

Perform the operations on the left and right side.

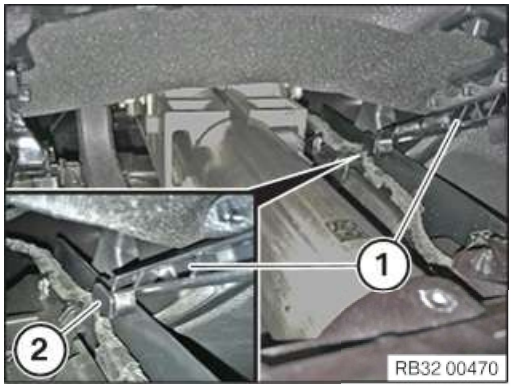
- Align the steering column shroud lower section (2) to the steering column using the retaining lug (1).
- Push the steering column shroud lower section (2) up in the direction of the arrow until the brackets (3) engage.

10 – Fit steering column shroud upper section

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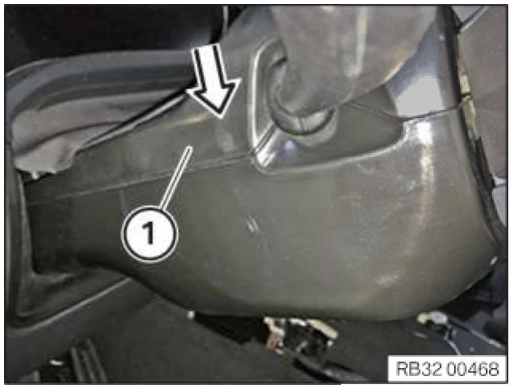
- Clip in the steering column shroud upper section (1) at the brackets (2).



NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).



NOTICE

Perform the operations on the left and right side.

- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

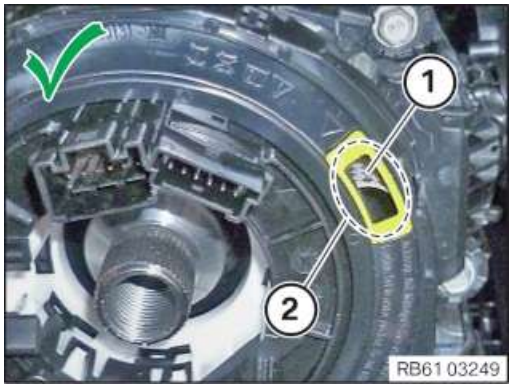
  The upper section of the steering column shroud must engage audibly and perceptibly.

11 – Installing the steering wheel (sports steering wheel)

▶ **Check the neutral position of the clock spring**

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



Check

- **Version A:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

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Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).

Check



- **Version B:**

  Check the mark (1) on the coil spring in the inspection glass (2).

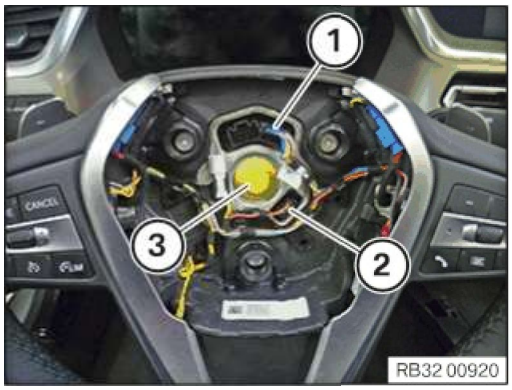
Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).

Check



- A micro-encapsulated screw (3) may be fitted.
- Check the screw connection.

Result

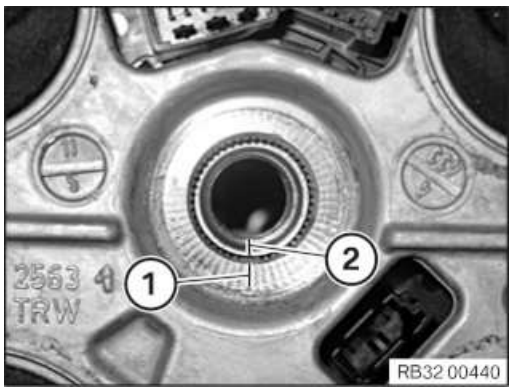
» Screw is (3) micro-encapsulated.

Measure

- Clean thread in the steering column.

  Renew the screw (3).

  Parts: Screw



- Align mark (1) on steering wheel to mark (2) on steering column.
- Connect steering wheel.

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- Connect connectors (1) and lock.
- If installed: Connect connectors (2) and lock.
- Tighten screw (3) .

Steering wheel to steering column

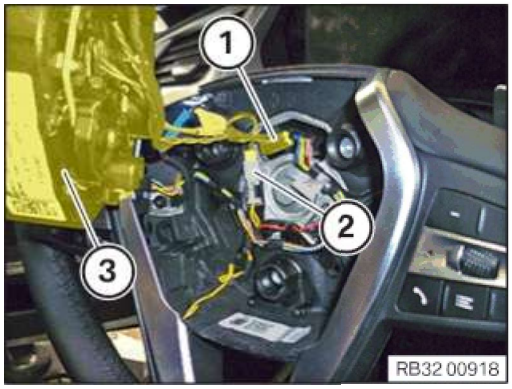
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

12 – Installing the airbag unit

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Installing the airbag unit (sports steering wheel)**



- Position airbag unit (3).
- Connect connectors (1) and (2) lock.



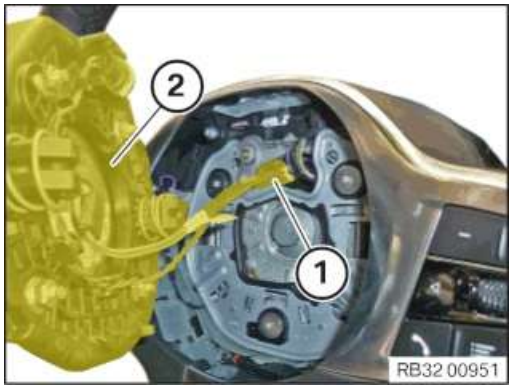
- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

▸ **Version B: Installing the airbag unit (M Sport steering wheel)**

TECHNICAL INFORMATION

After replacing the airbag unit (M-sports steering wheel) or after a possible conversion of standard steering wheel and airbag unit to M-sports steering wheel, a software update or a programming/encoding via ISTA must be performed!



- Connect and lock connector (1) of the airbag unit (2).



- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

13 – Disconnecting all battery earth leads



- See additional information.

14 – Checking the airbag for function

Check

- Turn steering wheel in both directions to the limit position.

Result

» The airbag indicator light lights up.

Measure

- Renew the coil spring cassette.

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Additional Information

Overview of Tightening Torques

Steering column switch cluster (SZL) on the steering column — Used in step 8

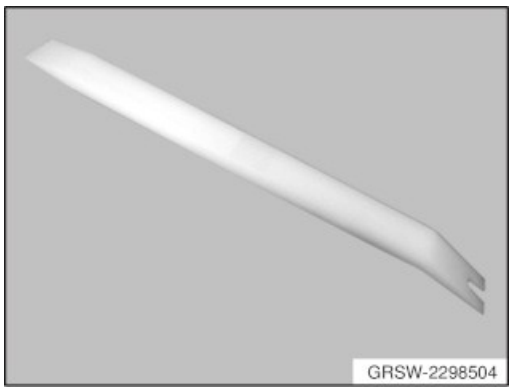
Screw TS5x20		Tightening torque	3 Nm

Steering wheel to steering column — Used in step 11

M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

Overview of Special Tools

2 298 504 Wedge



Common		Used in step 5
Usage	Wedge with angled lug	
Included in the tool or work		
Storage location	C34	
Replaced by		
In connection with		
SI-Number	01 03 12 (792)	

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	3

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	213
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	213
61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	213
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	213
61 20 900 Disconnecting and connecting battery earth lead	213
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	213
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61 20 900 Disconnecting and connecting battery earth lead	213
61 20 900 Disconnecting and connecting battery earth lead	213

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61 31 043 Removing and installing the FZD

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

RISK OF DAMAGE

Electrostatic discharge.

Damage to or destruction of electrical components.

- Leave electrical components in original packaging until just before they are installed. Use the original packaging only for any return shipments. Always package removed components straight away.
- Read and comply with user information on using the associated special tool 12 7 060.
- Only touch the housings of electrical components. Do not touch pins or multi-pin connectors directly.
- Wear electrically conductive clothing and antistatic shoes (with ESD symbol).
- For additional information see: 61 35 Information on electrostatic discharge (ESD) protection.

TECHNICAL INFORMATION

With the optional equipment SA6UA, the camera for gesture control is integrated in the roof control module. Separate exchange of this camera in the event of a fault is not possible.

1 – Removing the roof function centre (FZD)



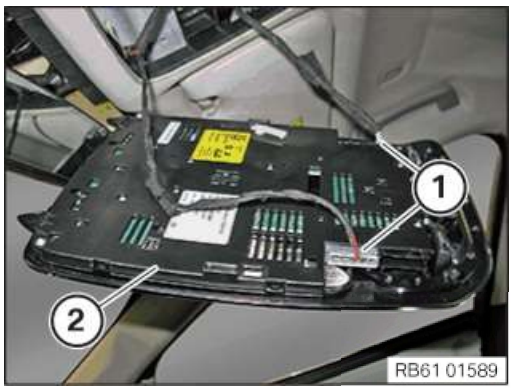
- Unclip the cover (1).



- Loosen screws (1).

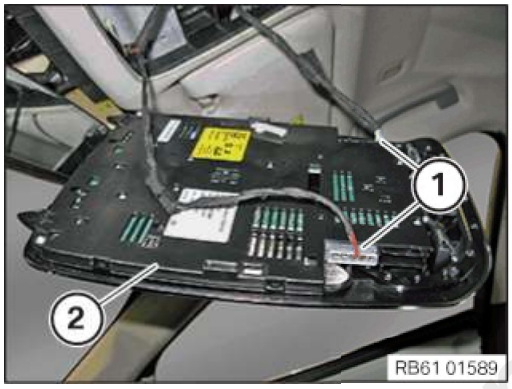


- Unclip the roof function centre (FZD) (1) from the clamps (2).
- Thread the roof function centre (FZD) (1) out of the guides (3).

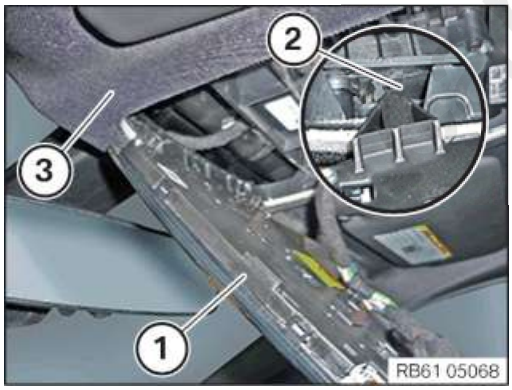


- Unlock and disconnect plug connections (1).
- Unclip the cable for the roof function centre (FZD) (2) from the cable clip.

2 – Installing roof function centre (FZD)



- Connect connectors (1) and lock.
- Clip in the cable for the roof function centre (FZD) (2) in the cable clip.



- Thread the roof function centre (FZD) (1) as shown at a steep angle into the two guides (2) on the headlining (3).

  Make sure the headlining is not deformed during this operation.



- Clip the roof function centre (FZD) (1) upwards into the clamps (2).

rdiagn.com



- Pass through the FZD frame and headlining with the special tool 2 298 505 and adjust the headlining correctly.



- Tighten the screws (1).

Roof function centre

	Tightening torque	1,2 Nm



- Clip in the cover (1).

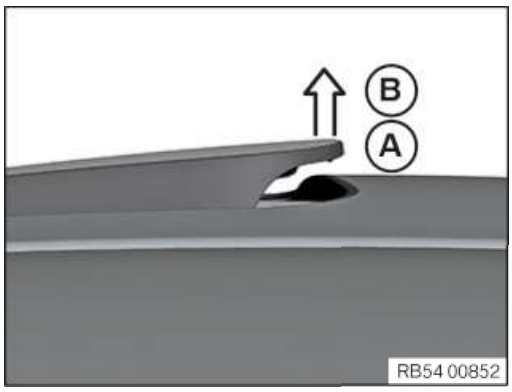
cardiagn.com

3 – Initialising the glass slide/tilt sunroof panel



- Press and hold the switch in the "Vent Position" direction.

  The glass slide/tilt sunroof moves to vent position.
- In the event of a delayed start or sudden stop of the glass slide/tilt sunroof, continue operating the switch in the "Vent Position" direction.



- Continue to operate the switch during the entire ABL.
- After having reached the vent position (A) continue to operate the switch for approximately 30 s (initialisation starts).
  - The glass slide/tilt sunroof moves from vent position (A) toward position (B).
  - Screen (sliding headliner) fully closes.
  - Screen (sliding headliner) fully opens.
  - Glass slide/tilt sunroof moves to "closed" position.
  - The glass slide/tilt sunroof moves to the "Open" position and immediately returns to the "Closed" position.
  - After a brief pause, the screen fully closes.

  The initialisation is completed once the glass slide/tilt sunroof and the screen have completely closed.
- Release the switch.

TECHNICAL INFORMATION

If the switch is released in the meantime, the initialisation must be repeated. Following successful initialisation, the corresponding messages in the Check Control and on the control display go out.

- Carry out function check (one-touch function, anti-trapping protection and, if necessary, comfort function).

carlogn.com

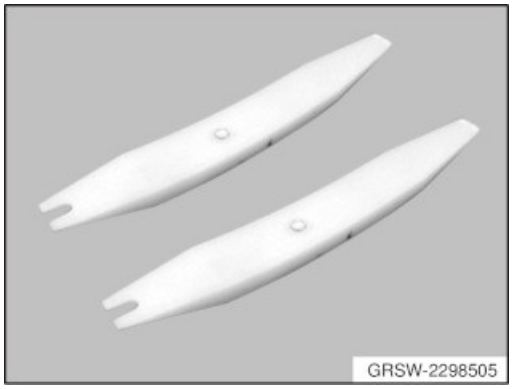
Additional Information

Overview of Tightening Torques

Roof function centre		Used in step 2
	Tightening torque	1,2 Nm

Overview of Special Tools

2 298 505 Wedge



Common		Used in step 2
Usage	Set (delivery of 2 pieces)	
Included in the tool or work		
Storage location	C34	
Replaced by		
In connection with		
SI-Number	01 03 12 (792)	

Links

Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	

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61 31 362 Removing and installing the radio remote control receiver

PRELIMINARY WORK

1 – Removing seat bench



- Disengage the seat bench (1) in area (2) in an upward direction.
- Feed out the seat belt buckle (3) from the seat bench.

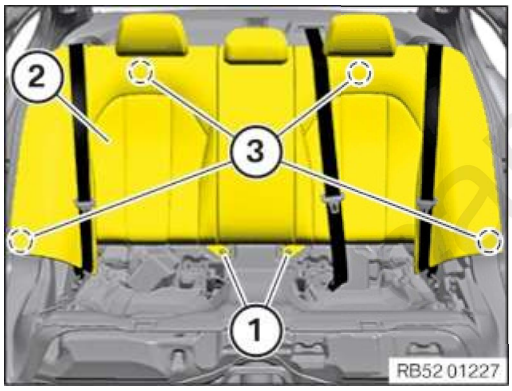


- Pull the seat bench (1) further forward.
- Release screw (2) on the end fitting and guide out belt (3).

Note: If there is a belt lock on the belt, the screw on the end fitting must not be released.

- If necessary, disconnect the present plug connections.
- Lift the seat bench (1) out of the vehicle.

2 – Remove rear seat backrest



- Loosen screws (1).
- Detach the rear seat backrest (2) upwards out of the guides (3).
- Guide the rear seat backrest (2) out of the seat belts and remove it.

3 – Remove both C-pillar trim panels

NOTICE

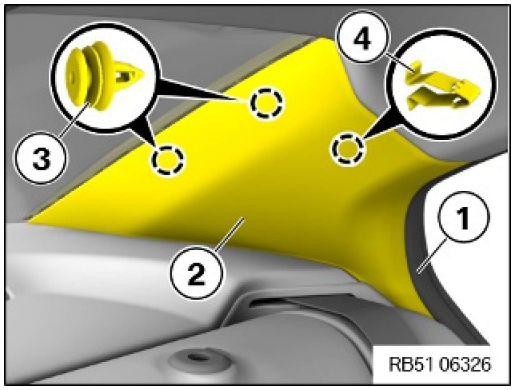
Description is for left component only. Procedure on the right side is identical.

▸ **Remove C-pillar trim panel**

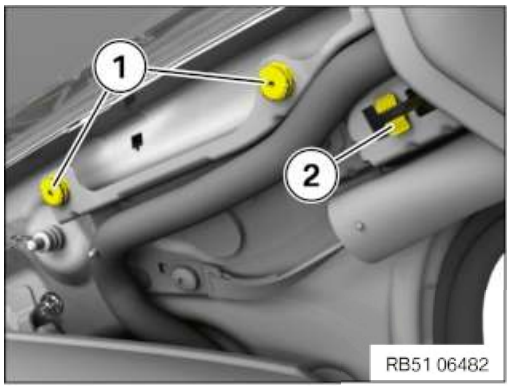
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

erdiagn.com

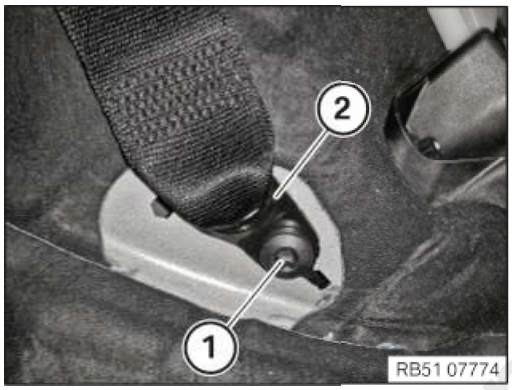


- Unclip clamp (4).
- Unclip clips (3).
- Feed out C-pillar trim panel (2) from the guides to the front.
- Thread out C-pillar trim panel (2) from the lip of edge protection (1).



- If required, remove the clips (1) and the clamp (2) and connect it to the trim panel.

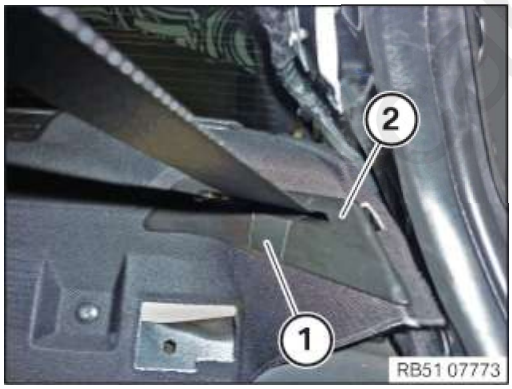
4 – Remove the trim panel for the storage shelf



NOTICE

Perform the operations on the left and right side.

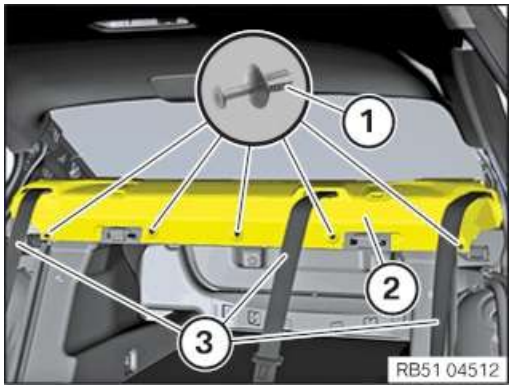
- Release screws (1) on end fitting (2) at rear left and right.
- Feed out the end fitting (2) from the body at rear left and right.



NOTICE

The description is for one component only. The procedure is identical for all further components.

- Unclip the cover (1) forwards.
- Unclip the outer belt feed trim (2) starting from front and feed it out.

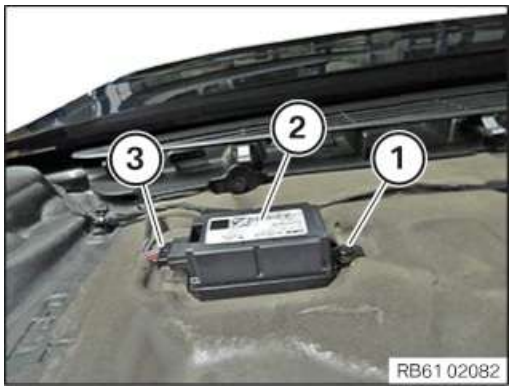


- Loosen the expanding rivet (1).
- Lift the trim panel for the storage shelf (2) a little and disconnect the underlying plug connections.
- Remove the trim panel for the storage shelf (2) to the front and feed out the seat belt (3).

.com

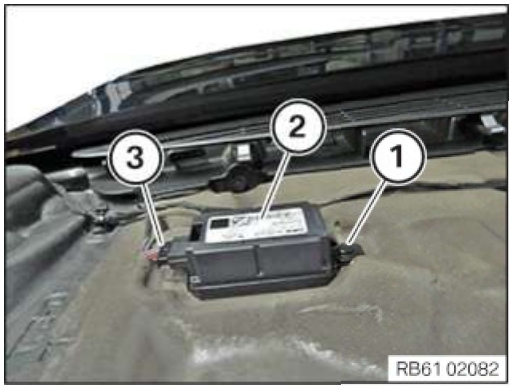
MAIN WORK

5 – Remove the remote control receiver



- Loosen expanding rivet (1).
- Remove the remote control receiver (2).
- Unlock plug connection (3) and disconnect.

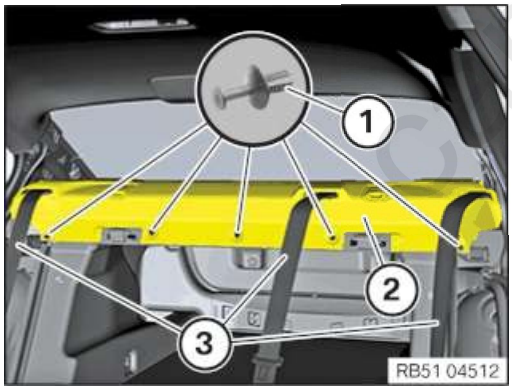
6 – Install the remote control receiver



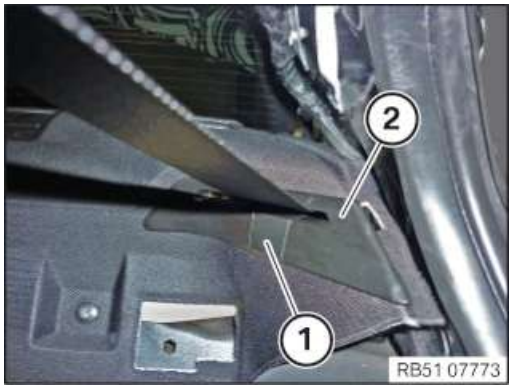
- Connect connector (3).
- Position remote control receiver (2).
- Fasten expanding rivet (1).

POSTPROCESSES

7 – Install the trim panel for the storage shelf



- Install the trim panel for the storage shelf (2) and feed in the seat belts (3).
- Lift the trim panel for the storage shelf (2) a little and connect the underlying connectors.
- Feed in the trim panel for the storage shelf (2) on the rear guide and position it correctly.
- Mount the expanding rivets (1).

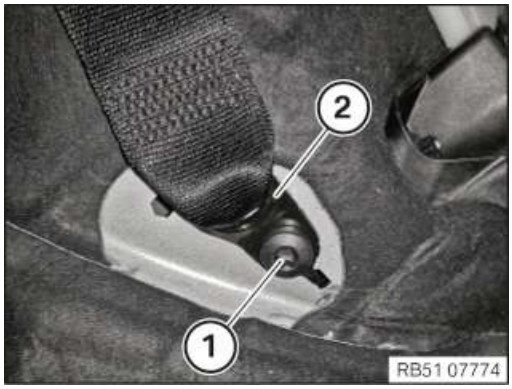


NOTICE

The description is for one component only. The procedure is identical for all further components.

- Insert the belt feed trim (2).
- Clip in the cover (1).

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NOTICE

Perform the operations on the left and right side.

- Insert the end fitting (2) on the left and right into the body.
- Renew screws (1).

  Parts: Bolts
- Tighten screws (1) on left and right.

End fitting to body

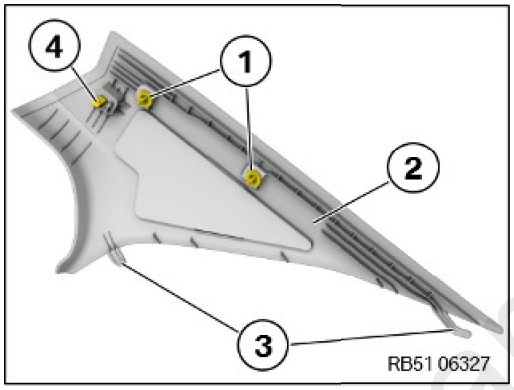
M10	Renew screw.		42 Nm

8 – Install both C-pillar trim panels

NOTICE

Description is for left component only. Procedure on the right side is identical.

▸ **Installing C-pillar trim panel**



Check

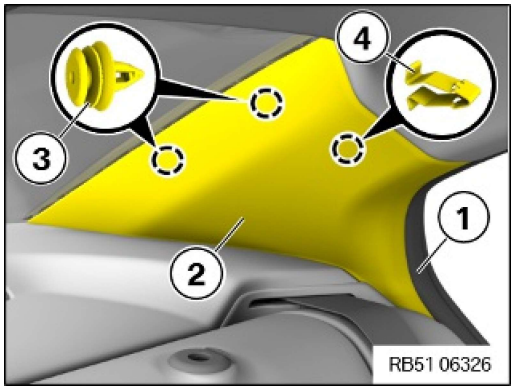
- Check clips (1) and clamp (4) for damage, renew if necessary.
- Check the guides (3) for damage.

Result

» Guide is damaged.

Measure

- Renew the C-pillar trim panel .



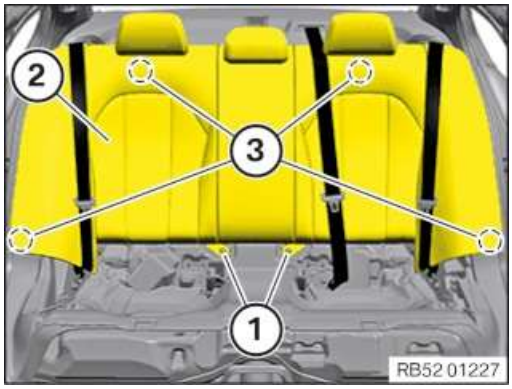
NOTICE

Schematic diagram is for example purposes. Some parts may differ in certain details.

- Feed C-pillar trim panel (2) into guides towards the rear.
- Clip in clips (3).
- Clip in clamp (4).
- Guide in C-pillar trim panel (2) under the lip of edge protection (1).

9 – Remove rear seat backrest

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- Guide the rear seat backrest (2) into the seat belts and position it.
- Attach the rear seat backrest (2) in the guides (3) from the top.
- Renew screws (1).

  Parts: Bolts
- Tighten the screws (1).

Rear seat backrest on body

Screw	Renew screw.	Tightening torque	42 Nm

10 – Installing rear seat bench



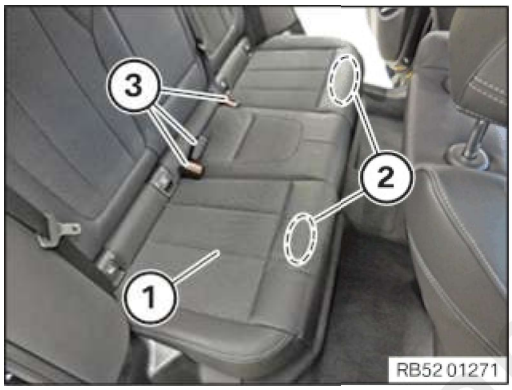
- Lift the seat bench (1) into the vehicle.
- Insert the seat belt (3).
- Renew the screw (2).

  Parts: Screw
- Tighten down screw (2).

Rear upper seat belt to bottom body

Screw	Renew screw.	Tightening torque	42 Nm

- Connect available connectors.



- Insert seat bench (1).
- Thread seat belt buckles (3) into the seat bench.
- Engage the seat bench (1) in the area (2).

Additional Information

Overview of Tightening Torques

End fitting to body — Used in step 7

M10	Renew screw.		42 Nm

Rear seat backrest on body — Used in step 9

Screw	Renew screw.	Tightening torque	42 Nm

Rear upper seat belt to bottom body — Used in step 10

Screw	Renew screw.	Tightening torque	42 Nm

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61 31 221 Removing and installing/replacing both multifunction steering wheel switches

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

TECHNICAL INFORMATION

Steering wheel must be replaced if airbag unit has been deployed.

Only with M Sport steering wheel: Impact plate must be replaced if airbag unit has been deployed.

For additional information see: 72 12 ... Procedure after airbag deployment as result of an accident

PRELIMINARY WORK

1 – Disconnecting all battery earth leads



- See additional information.

2 – Removing the airbag unit (sports steering wheel)

WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

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RISK OF DAMAGE

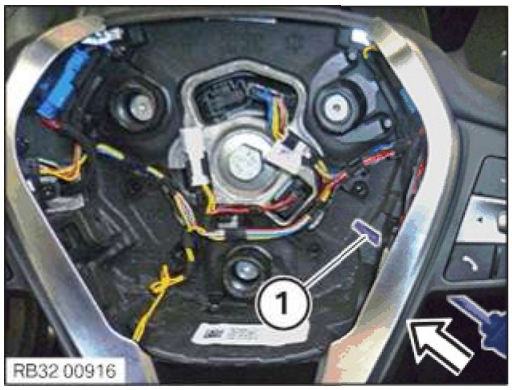
Damage to the steering wheel.

Incorrect handling of the tool may damage the steering wheel.

- Ensure the tool is positioned correctly (angle and inclination).
- When unlocking, do not use "levering" action. Instead, press in the Torx screwdriver toward the centre of steering wheel only.



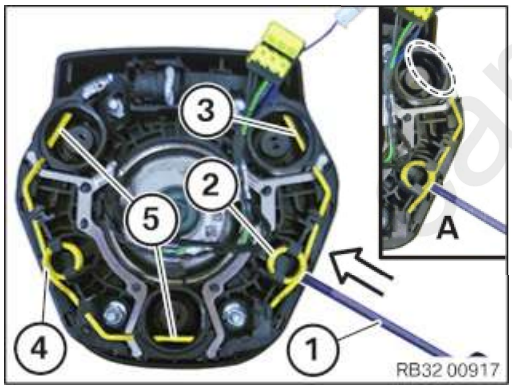
- Insert Torx screwdriver T25 (1) diagonally upwards in the hidden opening (2) on the rear side of the steering wheel until a spring resistance is felt.



NOTICE

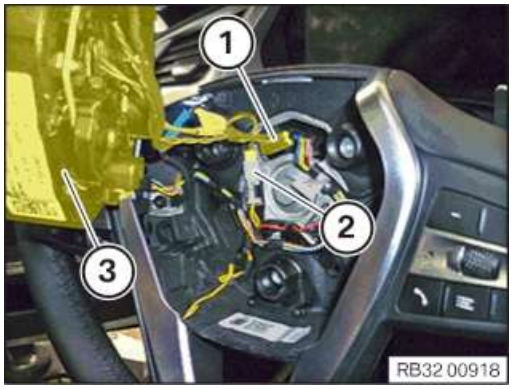
To provide a better overview: Diagram with airbag unit removed.

- To unlock the airbag unit, press Torx screwdriver T25 (1) diagonally upwards in the direction of the arrow to the centre of the steering wheel.



- Press the airbag unit over a large area of the steering wheel.
- Use Torx screwdriver T25 (1) to press wire spring clip (2) in the direction of the arrow towards the centre of the steering wheel and release lock (3).

  (A): Wire spring clip (2) is unlocked.
- Then use Torx screwdriver T25 (1) to press wire spring clip (4) in the direction of the arrow towards the centre of the steering wheel and release locks (5).
- Carefully raise the airbag unit.



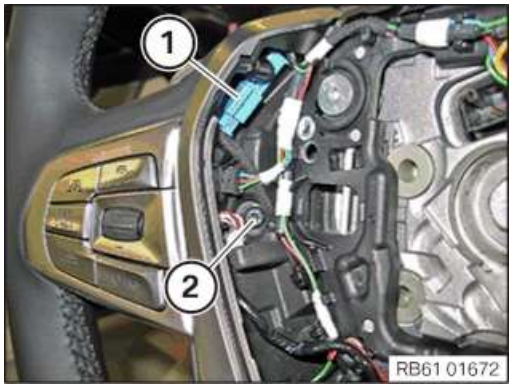
- Unlock and disconnect the plug connections (1) and (2).
- Remove airbag unit (3).

3 – Removing the shift paddle for the automatic transmission

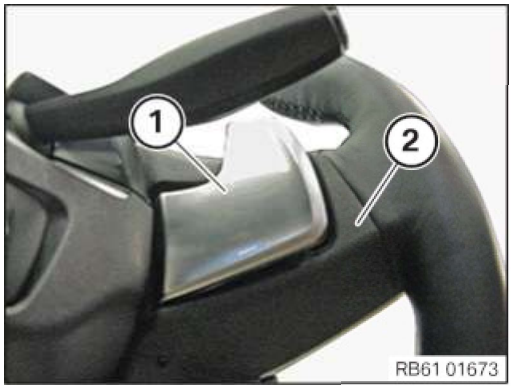
cardiag.com

NOTICE

Description is for left component only. Procedure on the right side is identical.



- Disconnect connector (1) and remove cable to shift paddle.
- Loosen screw (2).



- Remove shift paddle (1) from steering wheel (2) and remove associated access line.

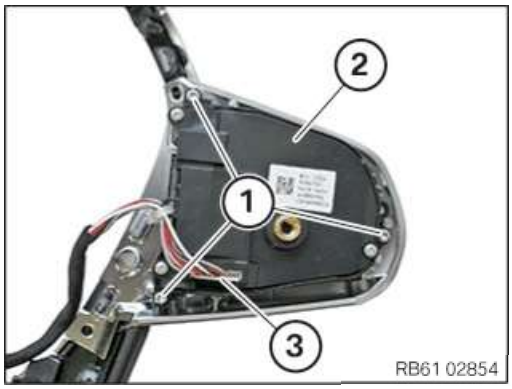
cardiagn.com

MAIN WORK

4 – Remove both leather sports steering wheel switches

NOTICE

The operations shown only for one side must be carried out on both sides.

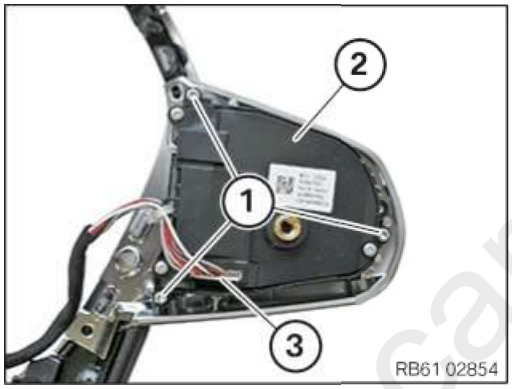


- Loosen screws (1) on the switch (2).
- Remove switch (2) from the design trim.
- Unlock plug connection (3) and disconnect.

5 – Install both sport leather steering wheel switches

NOTICE

The operations shown only for one side must be carried out on both sides.



- Position the switch (2) into design trim and tighten with screws (1).
- Connect connectors (3) and lock.

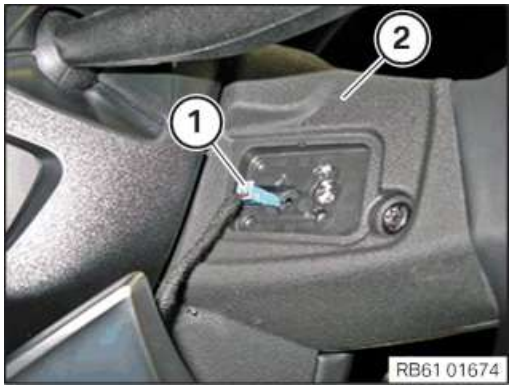
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POSTPROCESSES

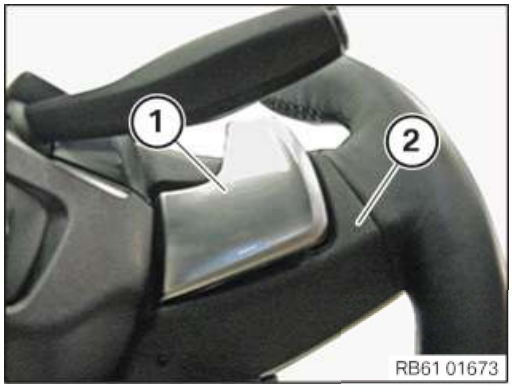
6 – Installing the shift paddle for the automatic transmission

NOTICE

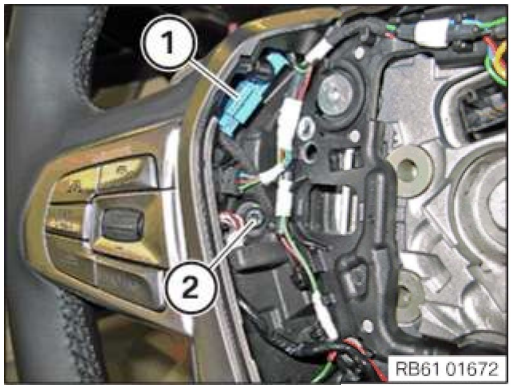
Description is for left component only. Procedure on the right side is identical.



- Insert the access line (1) into the rear of the steering wheel (2).



- Position the shift paddle (1) on the steering wheel (2).



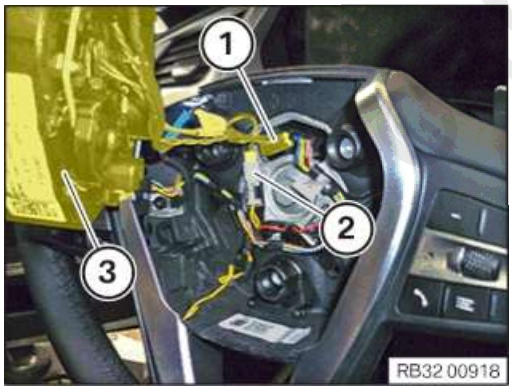
- Tighten down screw (2).

Shift paddle to steering wheel

Screw TS5x12		Tightening torque	2 Nm

- Insert the cable and connect the connector (1).

7 – Installing the airbag unit (sports steering wheel)



- Position airbag unit (3).
- Connect connectors (1) and (2) lock.



- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

8 – Disconnecting all battery earth leads

bmwdiagn.com



- See additional information.

Additional Information

Overview of Tightening Torques

Shift paddle to steering wheel			Used in step 6
Screw TS5x12		Tightening torque	2 Nm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	2
72 12 ... Procedure after airbag deployment as result of an accident	

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	18
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	18
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	18
61 20 900 Disconnecting and connecting battery earth lead	18

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61 20 900 Disconnecting and connecting battery earth lead	18
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61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18
61 20 900 Disconnecting and connecting battery earth lead	18

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61 31 011 Removing and installing/replacing coil spring cassette

WARNING

Pyrotechnic components.

Danger! Life-threatening injuries!

- All work on pyrotechnic parts may be carried out by technically experienced and appropriately trained personnel only.
- Replace any damaged part or ones that have been dropped.
- For additional information see: 72 00 Safety regulations on handling components with gas generators.

TECHNICAL INFORMATION

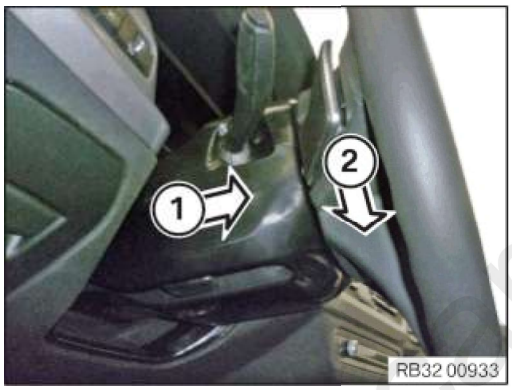
Steering wheel must be replaced if airbag unit has been deployed.

Only with M Sport steering wheel: Impact plate must be replaced if airbag unit has been deployed.

For additional information see: 72 12 ... Procedure after airbag deployment as result of an accident

PRELIMINARY WORK

1 – Adjust the steering column position



- Adjust the length of the steering column to the maximum length in the direction of arrow (1).
- Move the steering column to the lowest steering column position in the direction of arrow (2).

2 – Disconnecting all battery earth leads



- See additional information.

3 – Removing the airbag unit

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WARNING

Airbag unit.

Danger! Life-threatening injuries!

- Before performing any work on the airbag, always disconnect the battery earth lead from the battery.
- Airbag unit may only be set down with the cushion (airbag itself) facing upwards.
- For additional information see: 72 00 ... Safety regulations on handling airbag system components/gas generators

RISK OF DAMAGE

Damage to the steering wheel.

Incorrect handling of the tool may damage the steering wheel.

- Ensure the tool is positioned correctly (angle and inclination).
- When unlocking, do not use "levering" action. Instead, press in the Torx screwdriver toward the centre of steering wheel only.

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Removing the airbag unit (sports steering wheel)**



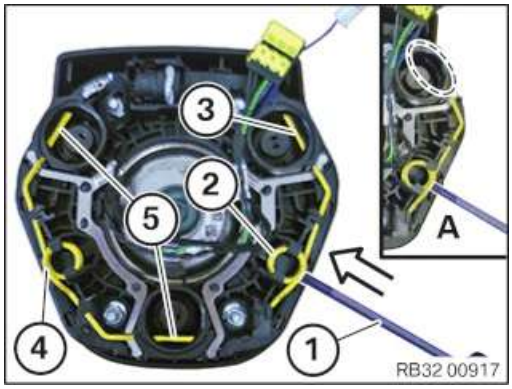
- Insert Torx screwdriver T25 (1) diagonally upwards in the hidden opening (2) on the rear side of the steering wheel until a spring resistance is felt.



NOTICE

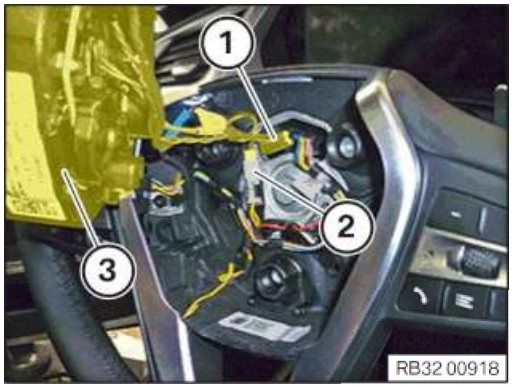
To provide a better overview: Diagram with airbag unit removed.

- To unlock the airbag unit, press Torx screwdriver T25 (1) diagonally upwards in the direction of the arrow to the centre of the steering wheel.



- Press the airbag unit over a large area of the steering wheel.
- Use Torx screwdriver T25 (1) to press wire spring clip (2) in the direction of the arrow towards the centre of the steering wheel and release lock (3).

  (A): Wire spring clip (2) is unlocked.
- Then use Torx screwdriver T25 (1) to press wire spring clip (4) in the direction of the arrow towards the centre of the steering wheel and release locks (5).
- Carefully raise the airbag unit.

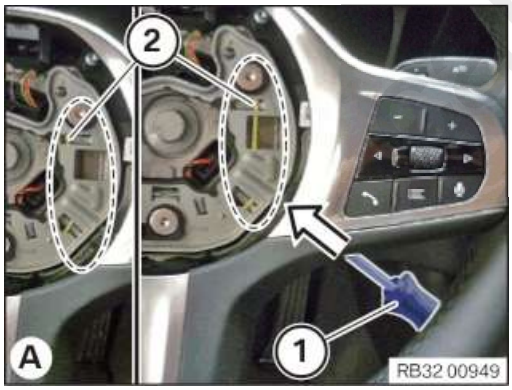


- Unlock and disconnect the plug connections (1) and (2).
- Remove airbag unit (3).

▸ **Version B: Removing airbag unit (M Sport steering wheel)**



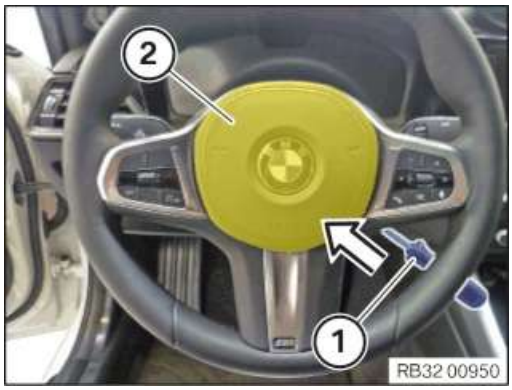
- Locate the pre-punched bore hole (1) on the rear side of the steering wheel by touch.
- Insert the Torx screwdriver T27 (2) diagonally upwards in the pre-punched bore hole (1) on the rear side of the steering wheel until a springing kind of resistance can be felt.



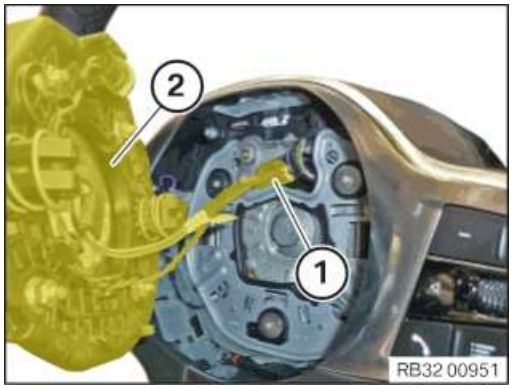
NOTICE

To provide a better overview: Diagram with airbag unit removed.

- Press in Torx screwdriver T27(1) straight in direction of arrow towards the centre of the steering wheel in order to unlock the wire spring clip (2) or to unlock the airbag unit (A).

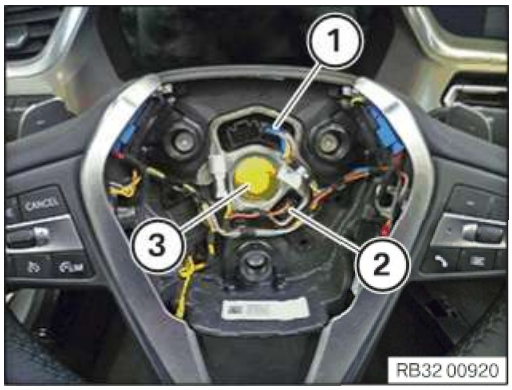


- Press in Torx screwdriver T27 (1) straight in direction of arrow towards the centre of the steering wheel and lift airbag unit (2) on the unlocked side.
- Repeat procedure on left side and carefully remove airbag unit (2) in direction of arrow off the steering wheel.



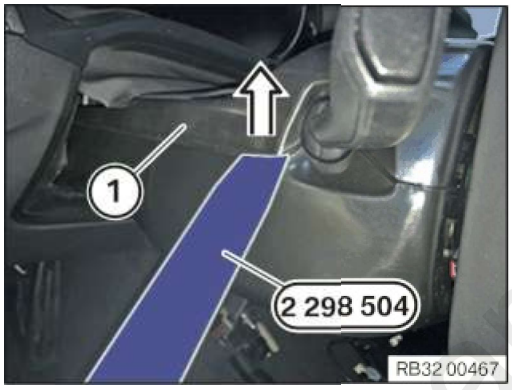
- Unlock and disconnect plug connection (1) and remove the airbag unit (2).

4 – Removing the steering wheel (sports steering wheel)



- Move the steering wheel and wheels to the straight-ahead position.
- Unlock plug connection (1) and disconnect.
- If installed: Unlock plug connection (2) and disconnect.
- Release the screw (3) and pull off and remove the steering wheel.

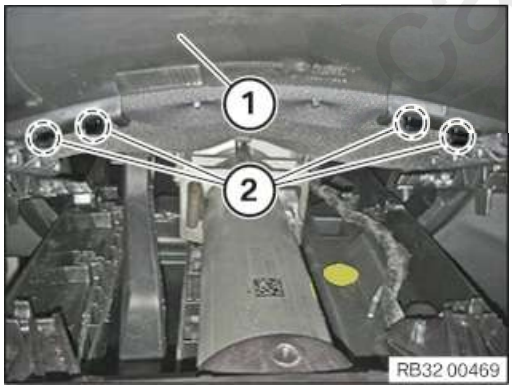
5 – Removing steering column shroud upper section



NOTICE

Perform the operations on the left and right side.

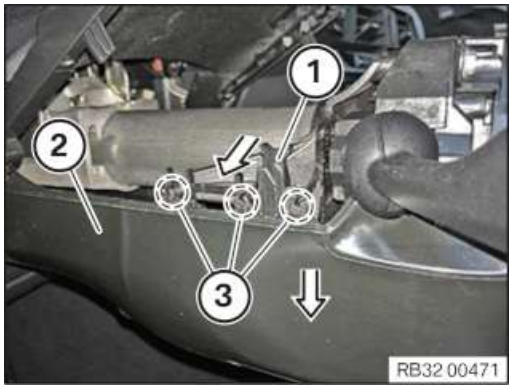
- Unlock the steering column shroud upper section (1) with the special tool 2 298 504 and fold up.



- Unclip the steering column shroud upper section (1) from the brackets (2).
- Remove the steering column shroud upper section (1).

6 – Removing steering column shroud lower section

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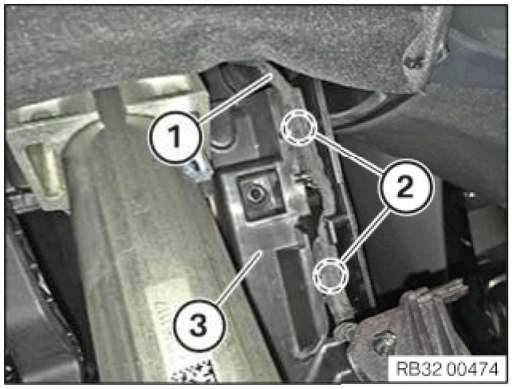
NOTICE

Perform the operations on the left and right side.

- Push the retaining lug (1) to the outside in the direction of the arrow and unclip the steering column shroud lower section (2) from the holders (3) in the direction of the arrow to the bottom at the same time.

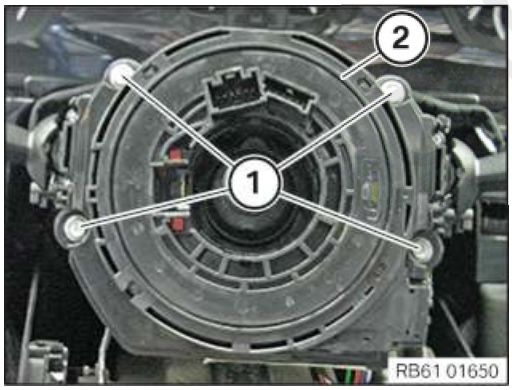


- Fold the steering column shroud lower section down.
- Unlock and disconnect connector (1).

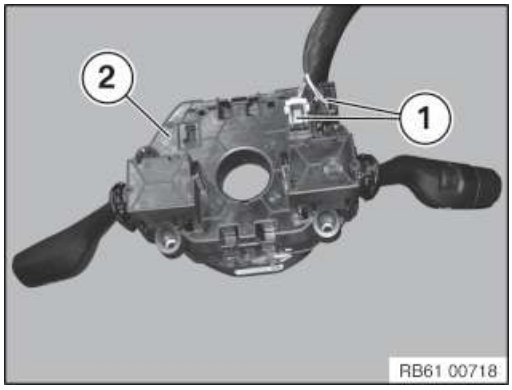


- Detach the cable (1) from the brackets (2).
- Remove the steering column shroud lower section (3).

7 – Removing the steering column switch cluster (SZL)



- Loosen screws (1).
- Remove the steering column switch cluster (SZL) (2).



- Unlock and disconnect the connector (1) on the steering column switch cluster (SZL) (2).

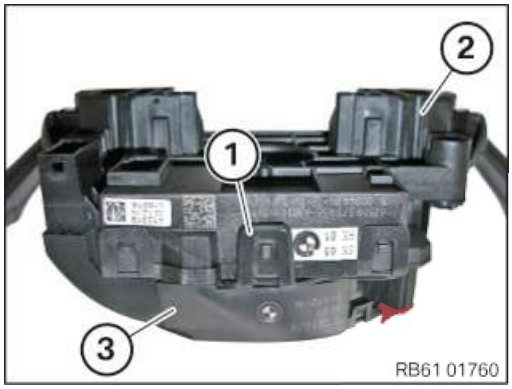
rdiagn.com

MAIN WORK

8 – Remove coil spring cassette

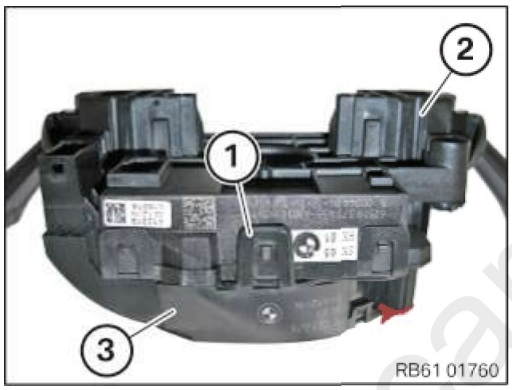


- Loosen both latch mechanisms (1) on the steering column switch cluster (2).



- Loosen the central latch mechanism (1) on the steering column switch cluster (2).
- Remove the coil spring cassette (3) from the steering column switch cluster (2).

9 – Installing the coil spring cassette



- Unclip the coil spring cassette (3) from the steering column switch cluster (sw/clsr) (2).
- Check central latch mechanism (1) on the steering column switch cluster (sw/clsr) (2).

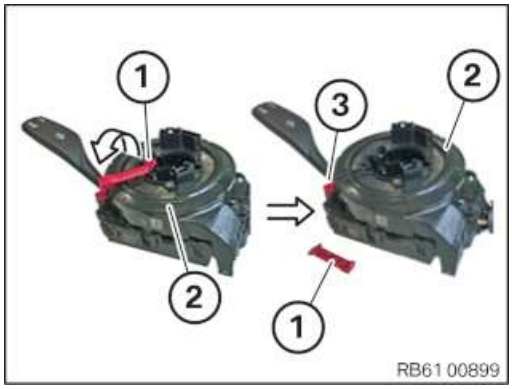


- Check both latch mechanisms (1) on the steering column switch cluster (sw/clsr) (2).

POSTPROCESSES

10 – Installing the steering column switch cluster (SZL)

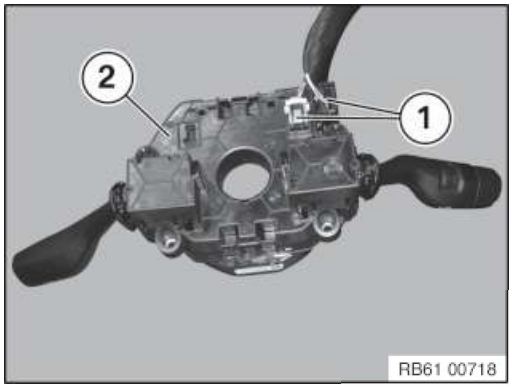
cardiagn.com



- **Replacement:**

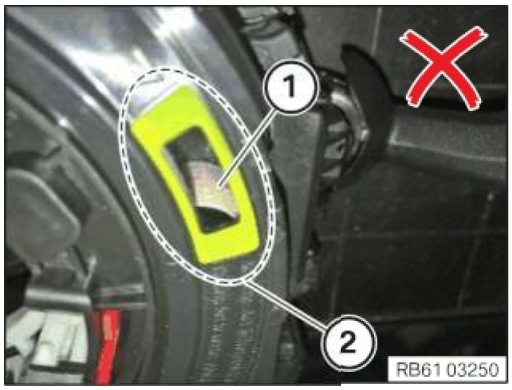
  Break off the transportation retainer (1) on the steering column switch cluster (SZL) (2) in direction of arrow.

  The broken off piece (3) of the transportation retainer (1) remains in the steering column switch cluster (SZL) (2).



- Connect the connector (1) with the steering column switch cluster (SZL) (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

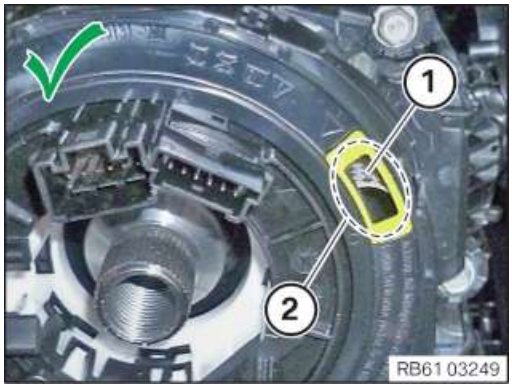
Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version A:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

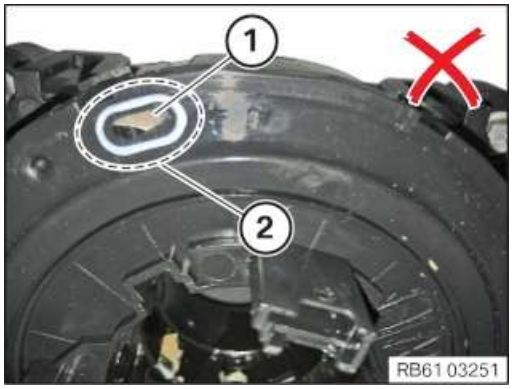
» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

Check

cardiagn.com



- **Version B:**

  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Ensure that no incorrect marking (1) is seen in inspection glass (2).

Measure

- Turn the coil spring cassette until the right mark (1) becomes visible in the inspection glass (2).

Check



- **Version B:**

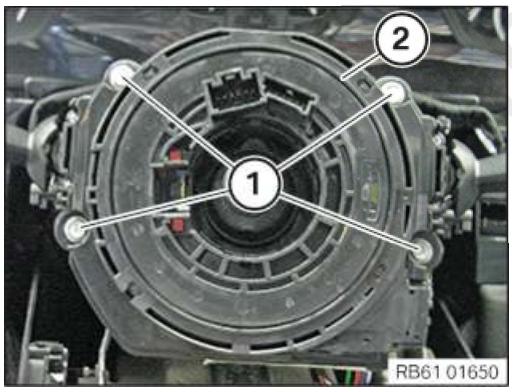
  Check whether the correct marking (1) is seen in inspection glass (2).

Result

» Correct marking (1) is seen in inspection glass (2).

Measure

- Continue with the next step.

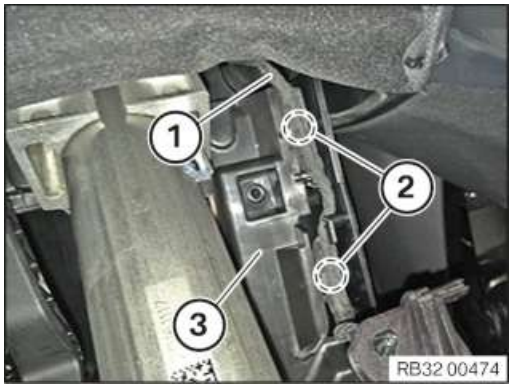


- Position the steering column switch cluster (SZL) (2).
- Tighten the screws (1).

Steering column switch cluster (SZL) on the steering column

Screw TS5x20		Tightening torque	3 Nm

11 – Install steering column shroud lower section

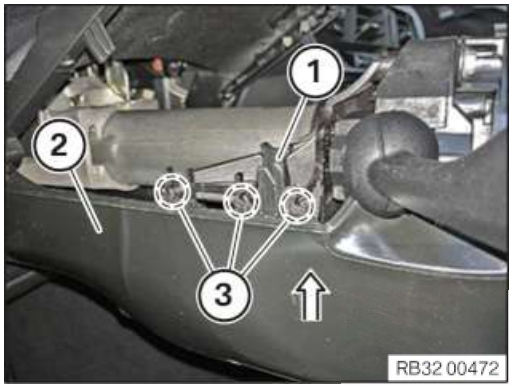


- Position the steering column shroud lower section (3).
- Secure the line (1) on the brackets (2).

vwdiagn.com



- Connect the connector (1).

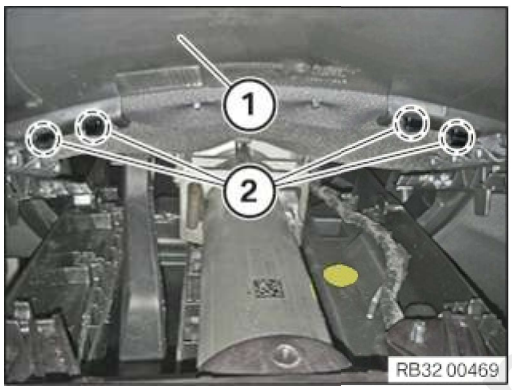


NOTICE

Perform the operations on the left and right side.

- Align the steering column shroud lower section (2) to the steering column using the retaining lug (1).
- Push the steering column shroud lower section (2) up in the direction of the arrow until the brackets (3) engage.

12 – Fit steering column shroud upper section



- Clip in the steering column shroud upper section (1) at the brackets (2).



NOTICE

Perform the operations on the left and right side.

- Clip in the steering column shroud upper section (1)into the guide (2).



NOTICE

Perform the operations on the left and right side.

- Press the upper section of the steering column shroud (1) downwards in direction of arrow.

  The upper section of the steering column shroud must engage audibly and perceptibly.

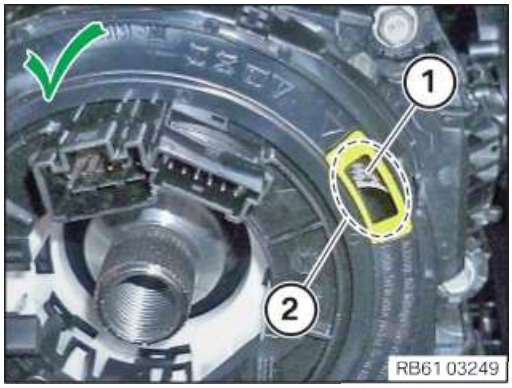
13 – Installing the steering wheel (sports steering wheel)

diag.com

▸ **Check the neutral position of the clock spring**

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.



Check

- **Version A:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- **Version B:**

  Check the mark (1) on the coil spring in the inspection glass (2).

Result

» The mark (1) on the coil spring is not visible.

Measure

- Turn the coil spring cassette until the mark (1) on the coil spring becomes visible in the inspection glass (2).



Check

- A micro-encapsulated screw (3) may be fitted.
- Check the screw connection.

Result

» Screw is (3) micro-encapsulated.

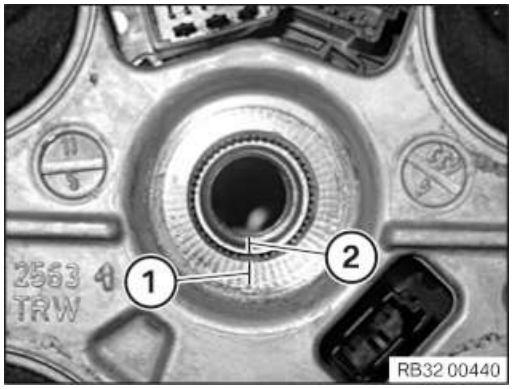
cardiagn.com

Measure

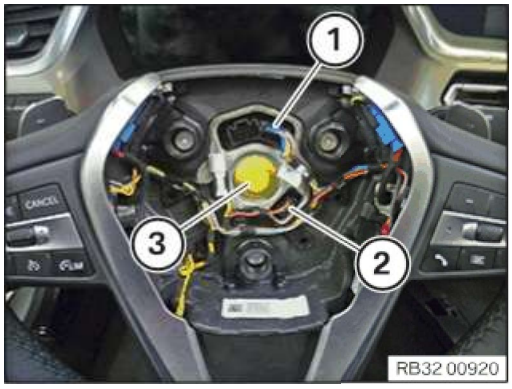
- Clean thread in the steering column.

  Renew the screw (3).

  Parts: Screw



- Align mark (1) on steering wheel to mark (2) on steering column.
- Connect steering wheel.



- Connect connectors (1) and lock.
- If installed: Connect connectors (2) and lock.
- Tighten screw (3) .

Steering wheel to steering column

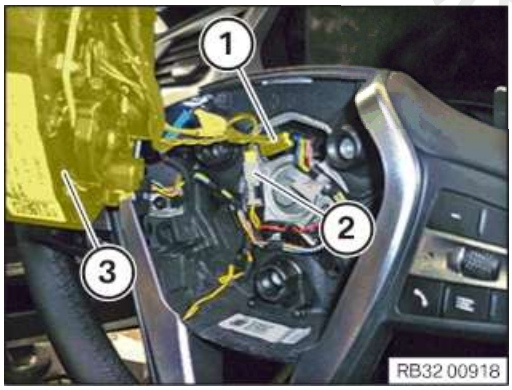
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

14 – Installing the airbag unit

TECHNICAL INFORMATION

Different variants may be installed depending on the vehicle equipment.

▸ **Version A: Installing the airbag unit (sports steering wheel)**



- Position airbag unit (3).
- Connect connectors (1) and (2) lock.



- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

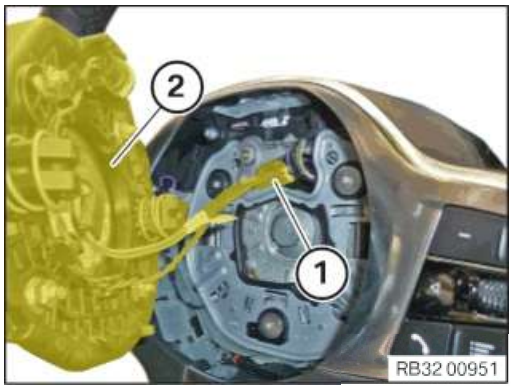
  The airbag unit (1) must engage audibly and perceptibly.

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▸ **Version B: Installing the airbag unit (M Sport steering wheel)**

TECHNICAL INFORMATION

After replacing the airbag unit (M-sports steering wheel) or after a possible conversion of standard steering wheel and airbag unit to M-sports steering wheel, a software update or a programming/encoding via ISTA must be performed!



- Connect and lock connector (1) of the airbag unit (2).



- Press the airbag unit (1) with even pressure in the direction of the arrow into the steering wheel.

  The airbag unit (1) must engage audibly and perceptibly.

15 – Disconnecting all battery earth leads



- See additional information.

16 – Checking the airbag for function

Check

- Turn steering wheel in both directions to the limit position.

Result

» The airbag indicator light lights up.

Measure

- Renew the coil spring cassette.

Additional Information

Overview of Tightening Torques

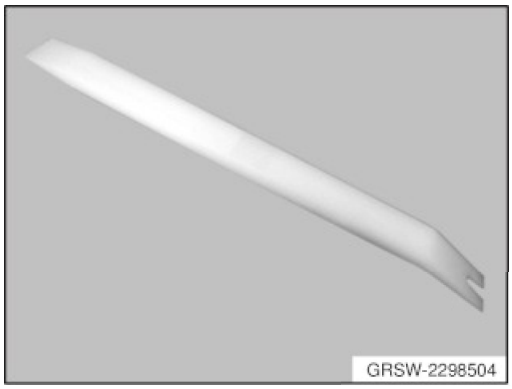
cardiagn.com

Steering column switch cluster (SZL) on the steering column			Used in step 10
Screw TS5x20		Tightening torque	3 Nm

Steering wheel to steering column			Used in step 13
M14	Only for a micro-encapsulated screw: Renew screw.	Tightening torque	62,5 Nm

Overview of Special Tools

2 298 504 Wedge



Common		Used in step 5
Usage	Wedge with angled lug	
Included in the tool or work		
Storage location	C34	
Replaced by		
In connection with		
SI-Number	01 03 12 (792)	

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	3

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	215
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	215
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting battery earth lead	215
61 20 900 Disconnecting and connecting battery earth lead	215
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61 20 900 Disconnecting and connecting battery earth lead	215

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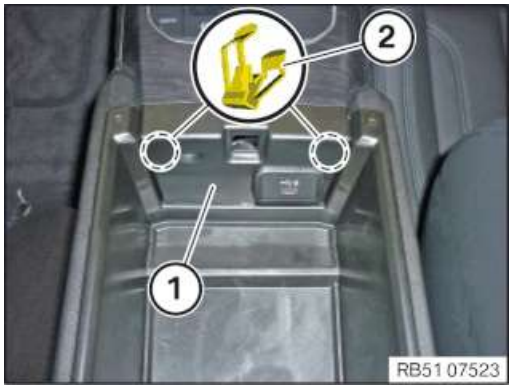
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads) 215
61 20 900 Disconnecting and connecting battery earth lead 215
61 20 900 Disconnecting and connecting battery earth lead 215
61 20 900 Disconnecting and connecting battery earth lead 215
61 20 900 Disconnecting and connecting battery earth lead 215
61 20 900 Disconnecting and connecting battery earth lead 215
61 20 900 Disconnecting and connecting battery earth lead 215
61 20 900 Disconnecting and connecting battery earth lead 215

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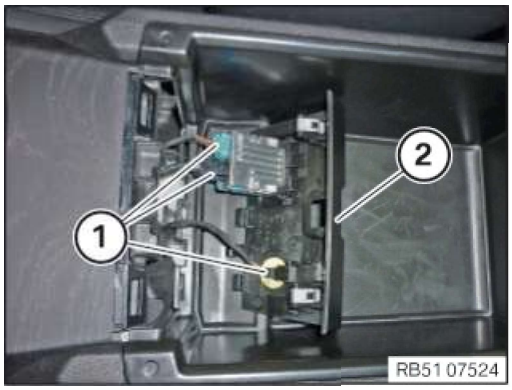
61 31 001 Removing and installing/replacing HDC button

PRELIMINARY WORK

1 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

2 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

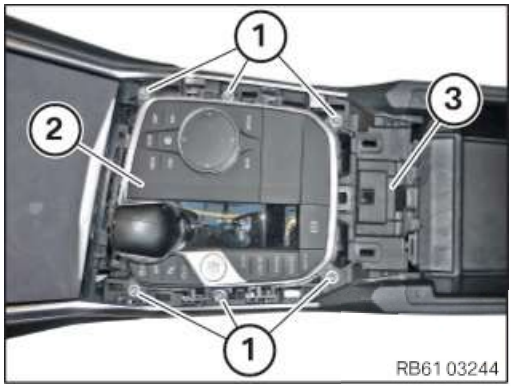
3 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**

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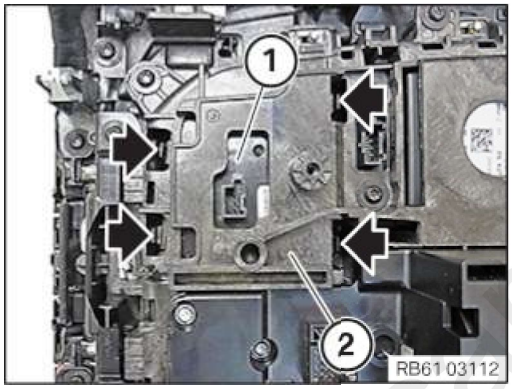
- See additional information.



- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

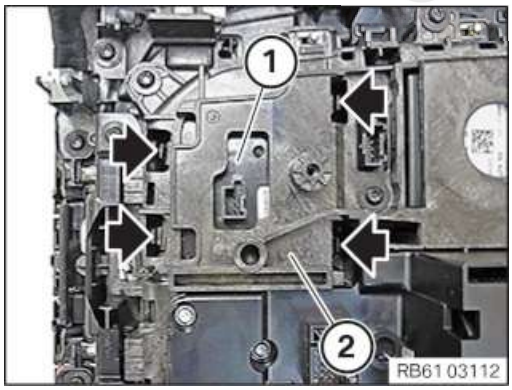
MAIN WORK

4 – Removing the HDC button



- Release the latch mechanisms (arrows).
- Remove HDC button (1) from gear selector switch (GWS) (2).

5 – Installing the HDC button



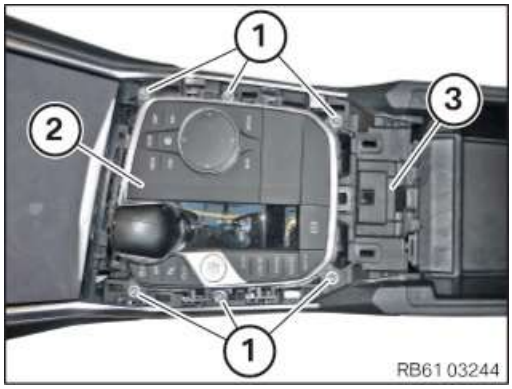
- Position HDC button (1) on gear selector switch (GWS) (2).

  The latch mechanisms (arrows) must engage audibly.

POSTPROCESSES

6 – Install the operating facility in the centre console

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- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

▶ **Disconnecting all battery earth leads**



- See additional information.

7 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



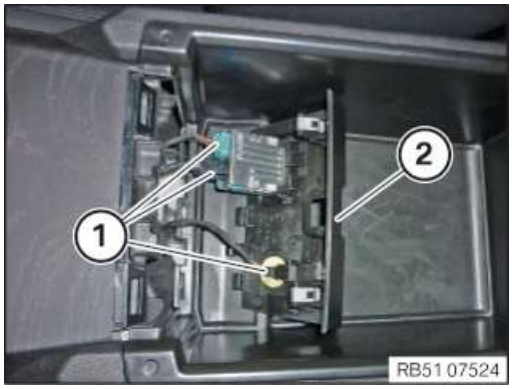
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



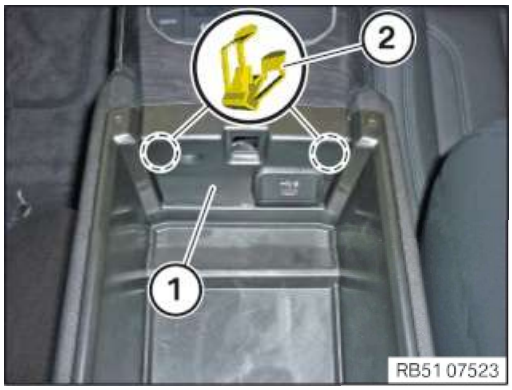
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

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8 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

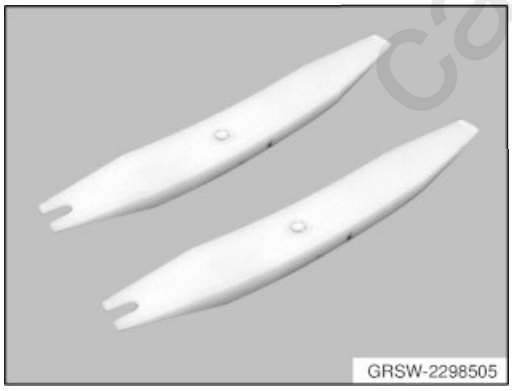
Additional Information

Overview of Tightening Torques

Gear selector switch to centre console trim			Used in step 6
Screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common		Used in step 12
Usage	Set (delivery of 2 pieces)	
Included in the tool or work		
Storage location	C34	
Replaced by		
In connection with		
SI-Number	01 03 12 (792)	

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36

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61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
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61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36

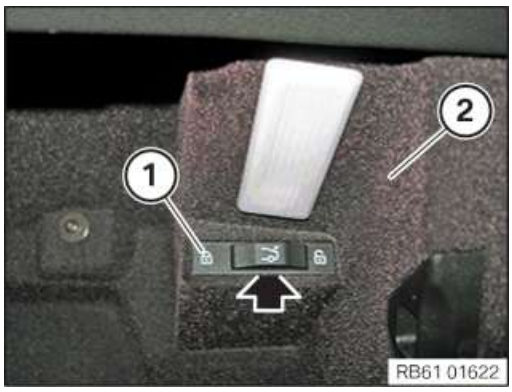
cardiagn.com

61 31 066 Removing and installing/replacing hotel position switch

Prerequisite

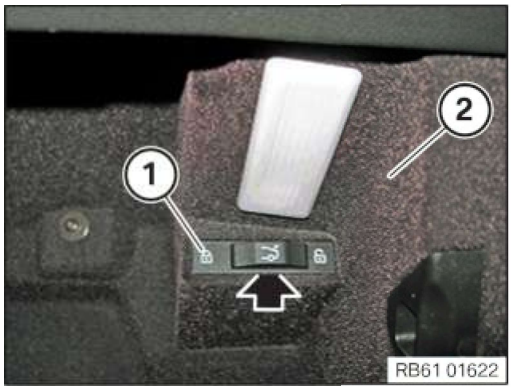
- Glove box open.

1 – Removing the hotel position switch



- Lever out the hotel position switch (1) using special tool 0 496 571 (00 9 327) from the housing (2) in the indicated area.
- Disconnect associated connector.

2 – Installing the hotel position switch

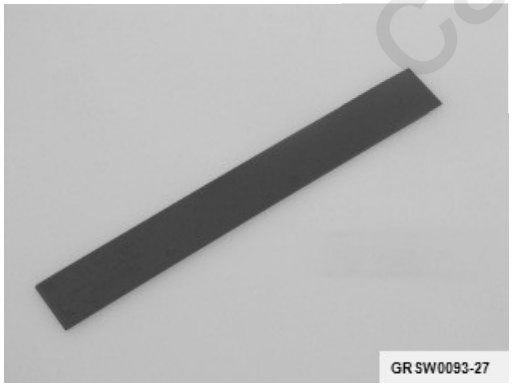


- Connect associated connector with the hotel position switch (1).
- Install hotel position switch (1) in the housing (2).

Additional Information

Overview of Special Tools

0 496 571 (00 9 327) Wedge



Common	Used in step 1
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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61 31 037 Removing and installing/replacing light control unit

RISK OF DAMAGE

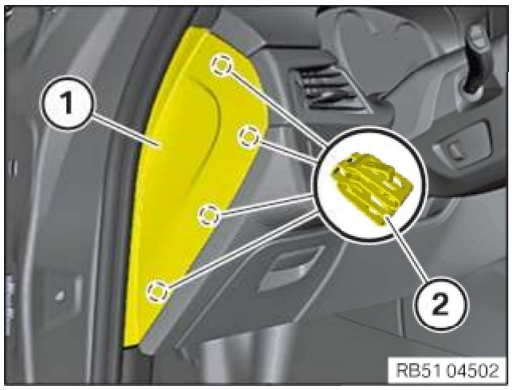
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

1 – Remove the side panel on the left instrument panel



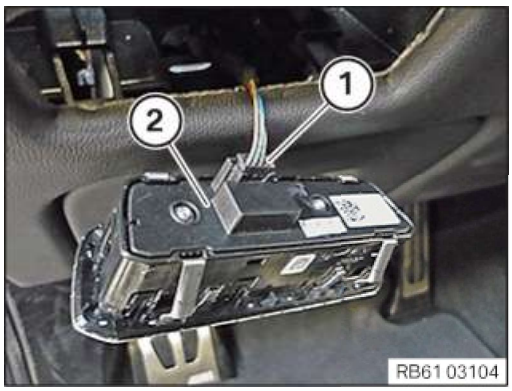
- Unclip and remove the side panel (1) towards the outside from the clamps (2).

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2 – Removing the light operating unit

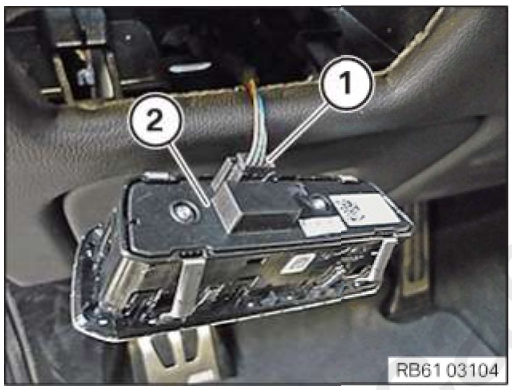


- Unclip light operating unit (1) at the marked positions of the rear.



- Unlock the plug connection (1) on the light operating unit (2) and disconnect it.

3 – Installing the light operating unit



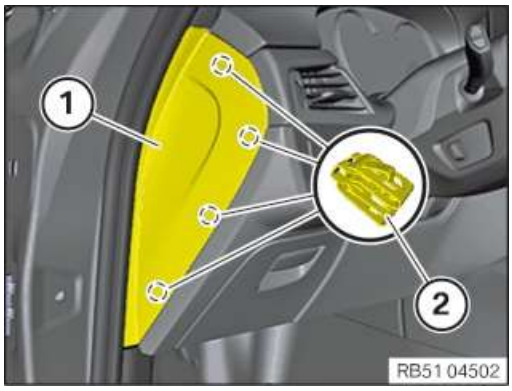
- Connect the connector (1) to the light operating unit (2).



- Correctly position the light operating unit (1) and clip in at the marked points.

rdiag.com

4 – Install the side panel on left instrument panel



- Feed in the side panel (1) and clip it in at the clamps (2).

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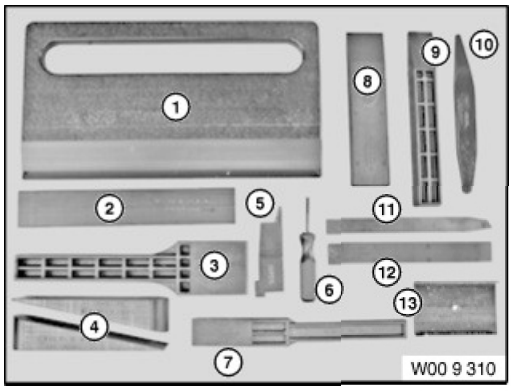
61 31 118 Removing and installing/replacing power window switch on passenger's side

NOTICE

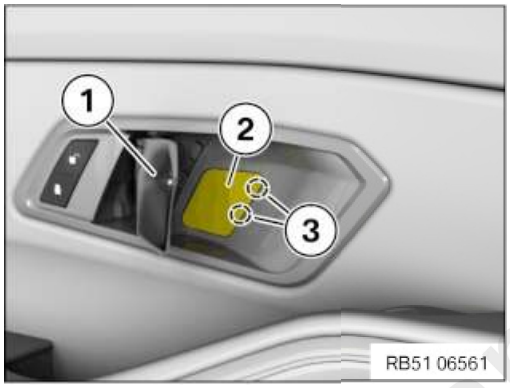
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

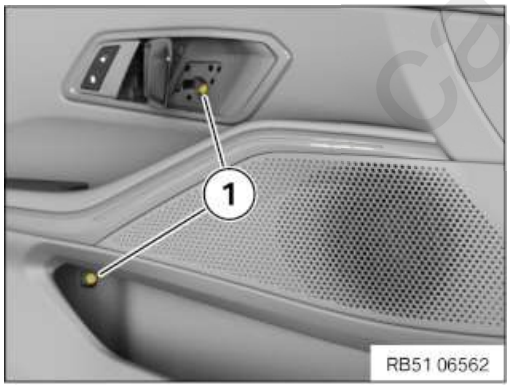
1 – Remove door trim panel



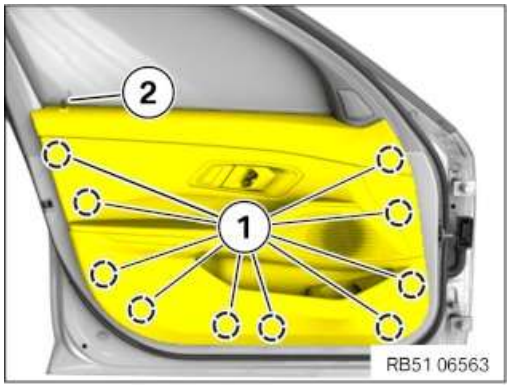
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

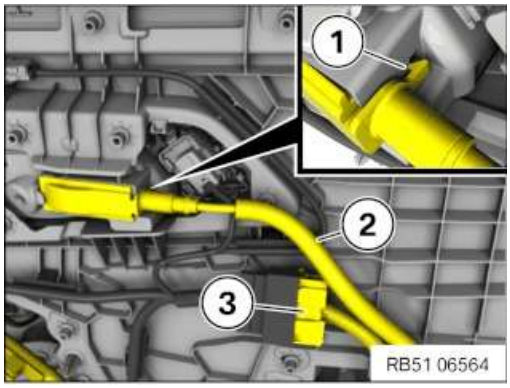


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

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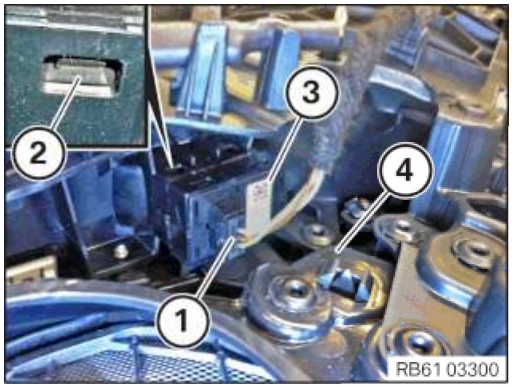


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

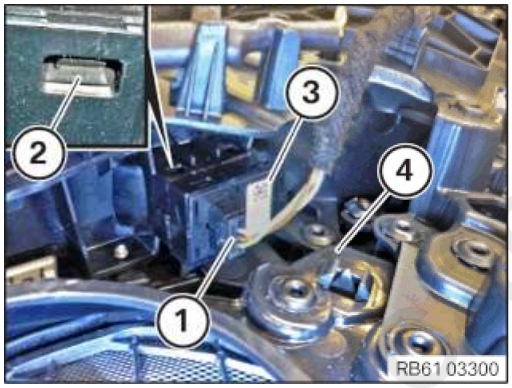
MAIN WORK

2 – Removing the power window switch on the passenger's side



- Disconnect the connector (1) .
- Release latch mechanisms (2) and remove the power window switch (3) from the door trim panel (4).

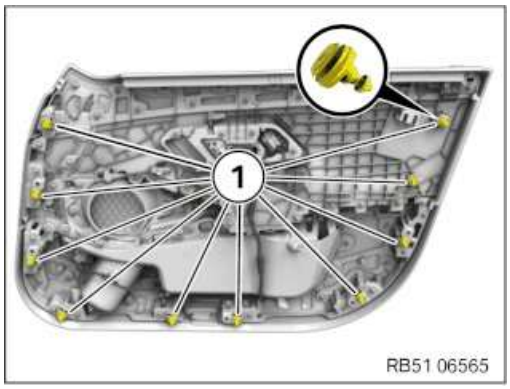
3 – Installing the power window switch on the passenger's side



- Position power window switch (3) on the door trim panel (4) and engage in the latch mechanisms (2).
- Connect connector (1).

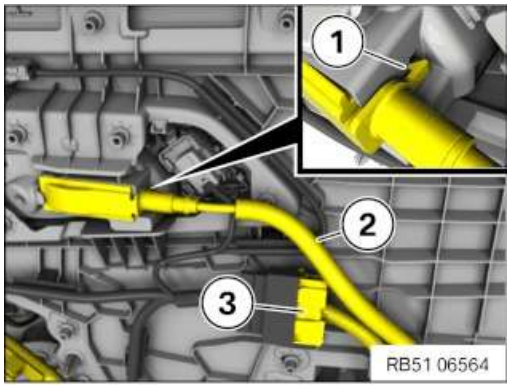
POSTPROCESSES

4 – Install door trim panel

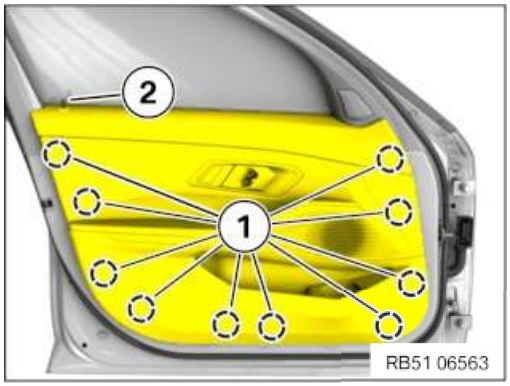


- Renew the clips (1).

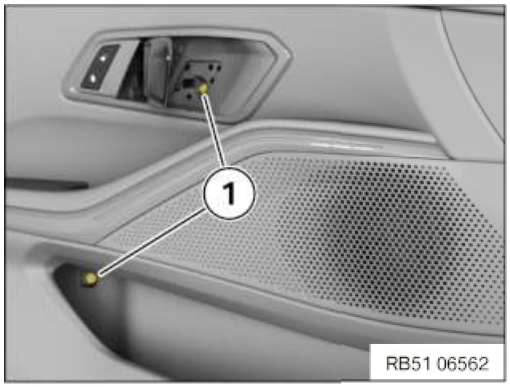
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



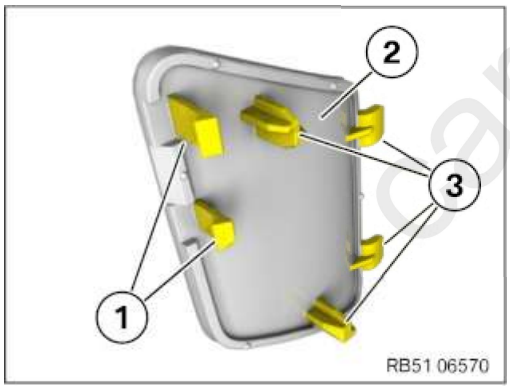
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



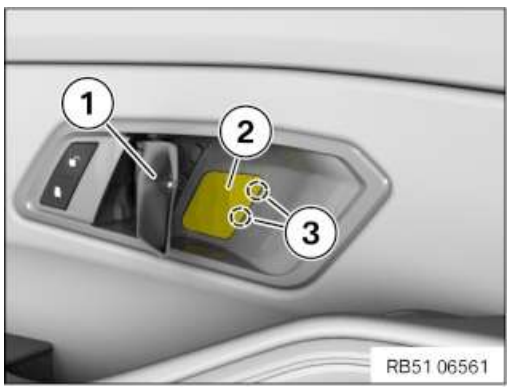
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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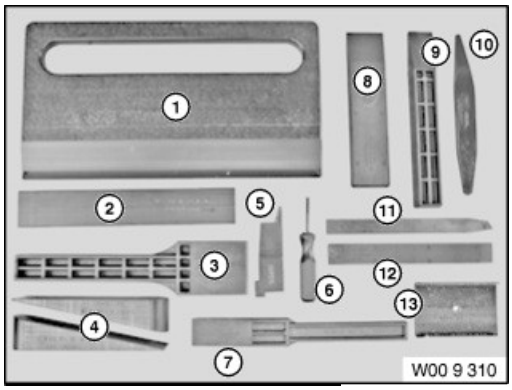
Overview of Tightening Torques

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

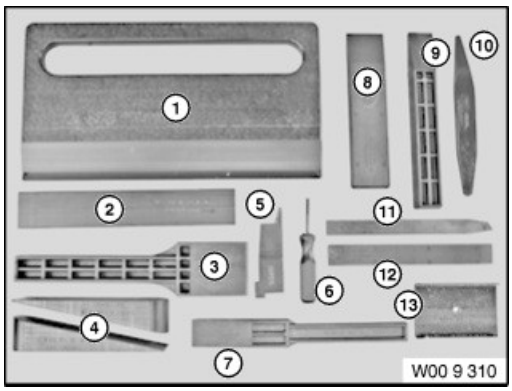
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

cardiagn.com

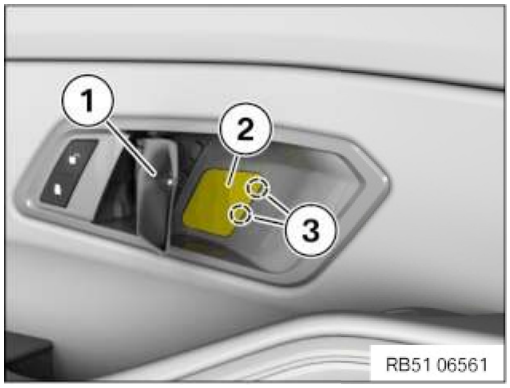
61 31 117 Removing and installing/replacing power window switch, driver's side

PRELIMINARY WORK

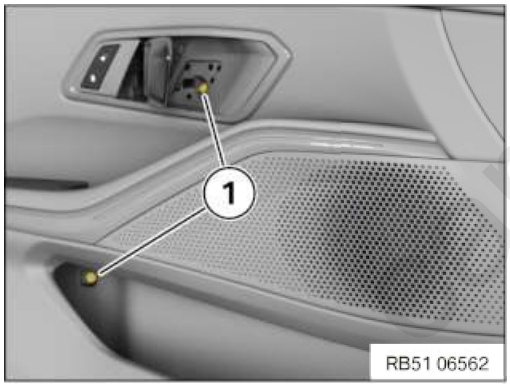
1 – Remove door trim panel



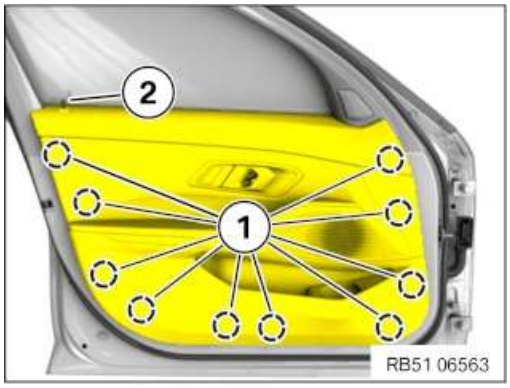
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

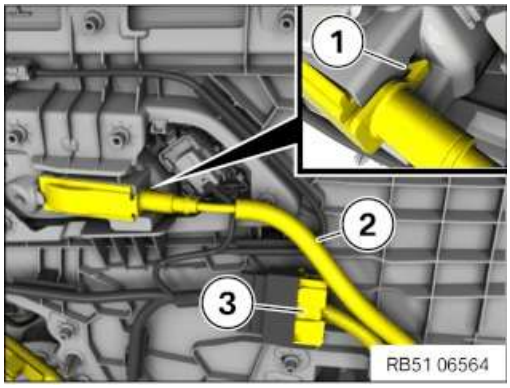


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

partdiagn.com

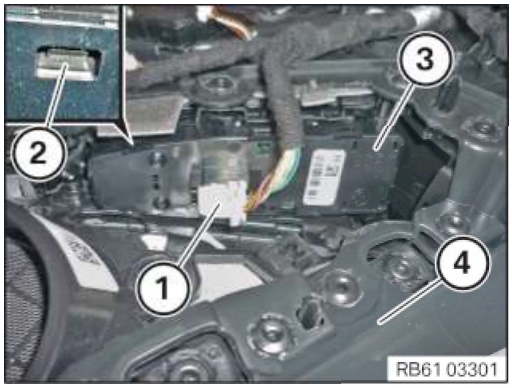


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

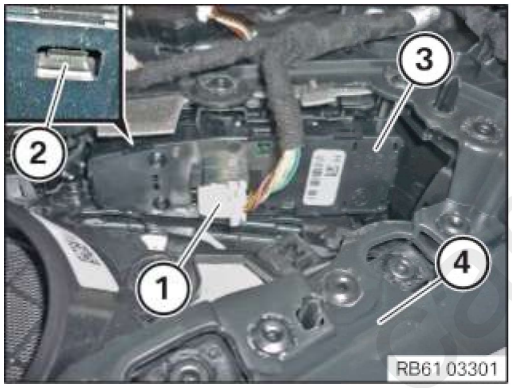
MAIN WORK

2 – Removing power window switch on the driver's side



- Unlock and disconnect connector (1).
- Release latch mechanisms (2) and remove the power window switch (3) from the door trim panel (4).

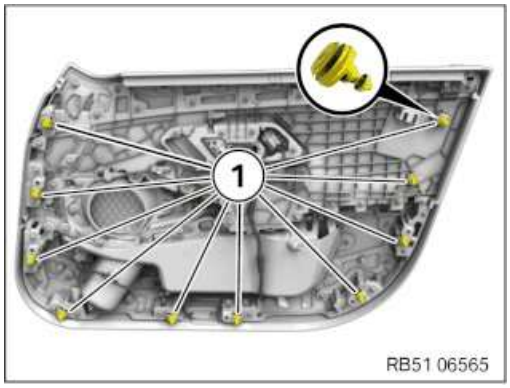
3 – Install the power window switch on the driver's side



- Position power-window switch (3) on the door trim panel (4) and engage in all the latch mechanisms (2).
- Connect connectors (1) and lock.

POSTPROCESSES

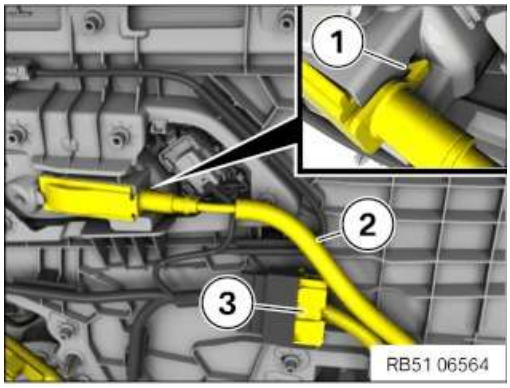
4 – Install door trim panel



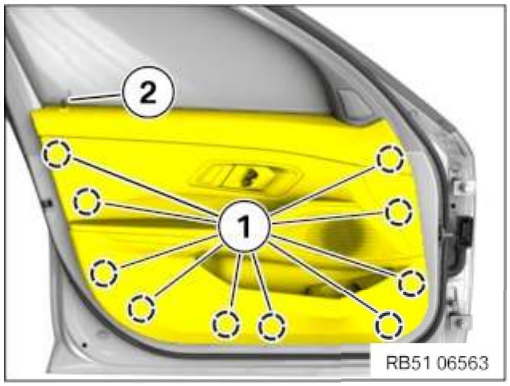
- Renew the clips (1).

  Parts: Clips

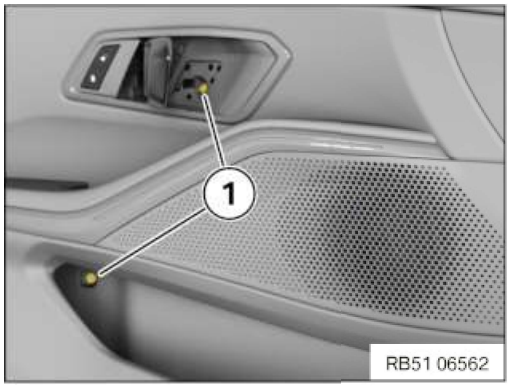
cardiagn.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



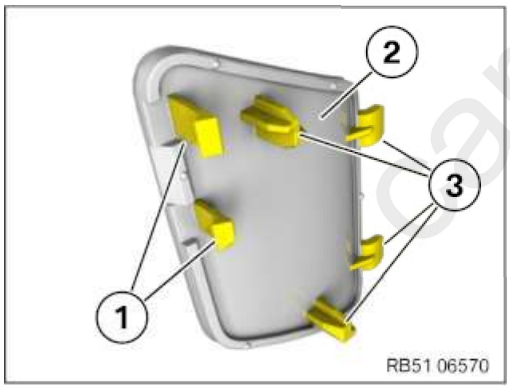
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



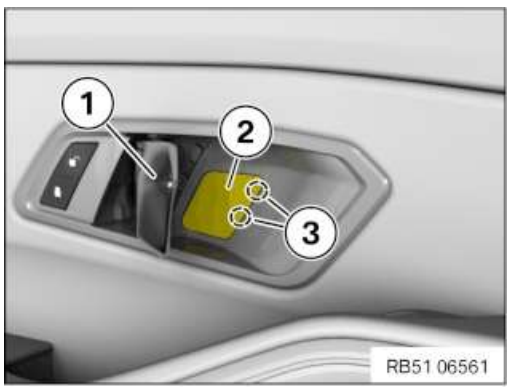
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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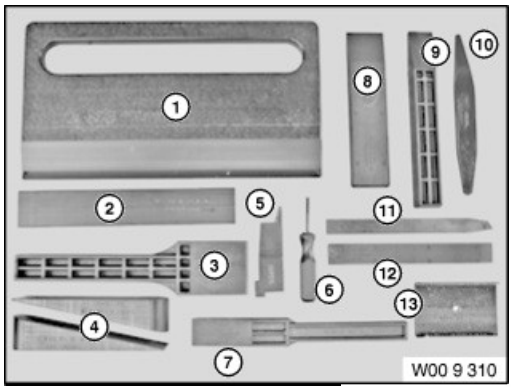
Overview of Tightening Torques

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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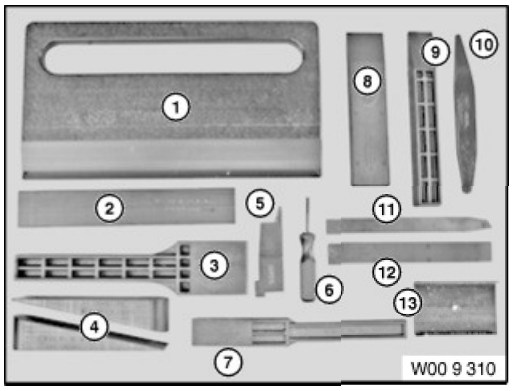
61 31 082 Removing and installing/replacing switch for central locking system

NOTICE

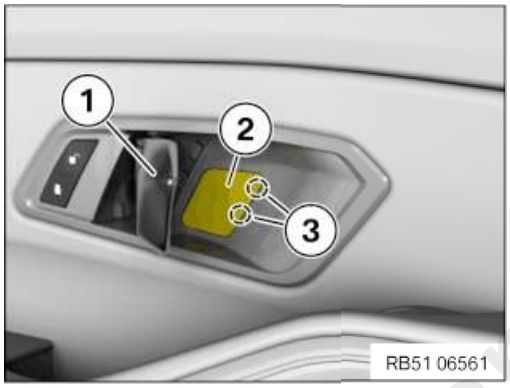
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

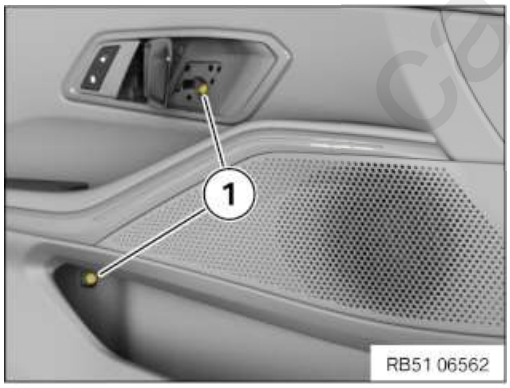
1 – Remove door trim panel



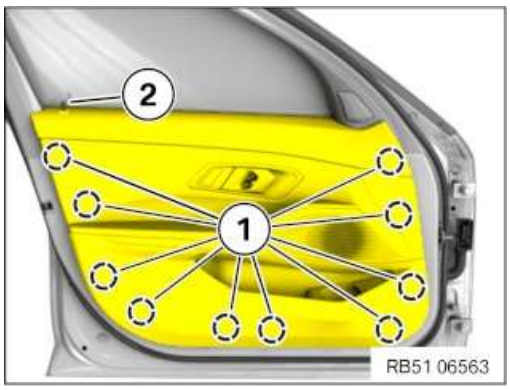
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

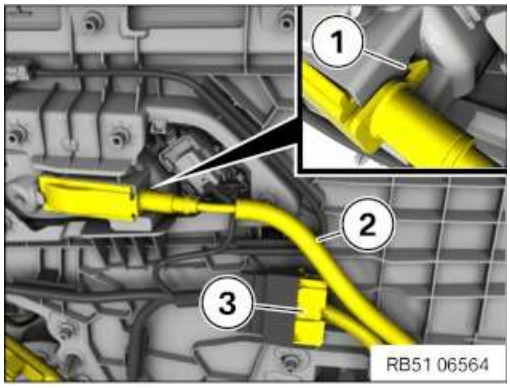


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

cardiagn.com

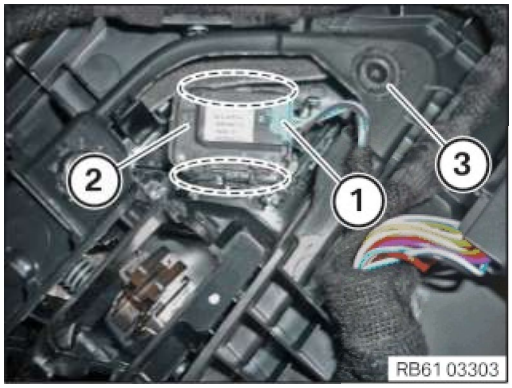


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

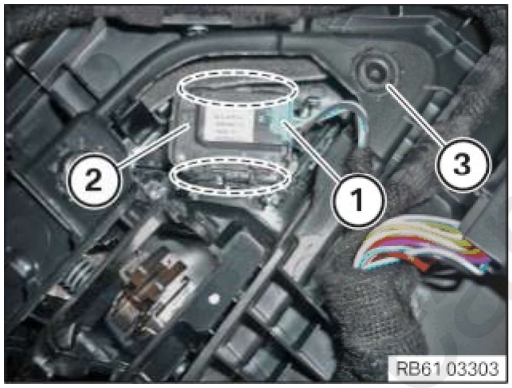
MAIN WORK

2 – Remove the central locking button



- Disconnect the connector (1) .
- Release latch mechanisms in the marked area.
- Remove the central locking button (2)from door trim panel (3).

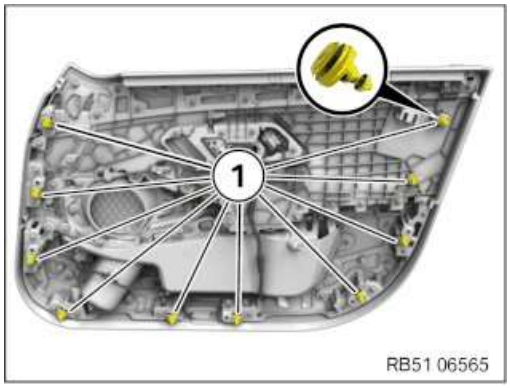
3 – Install the central locking button



- Position central locking button (2) on door trim panel (3) and clip it in the latch mechanisms in the marked area.
- Connect connector (1).

POSTPROCESSES

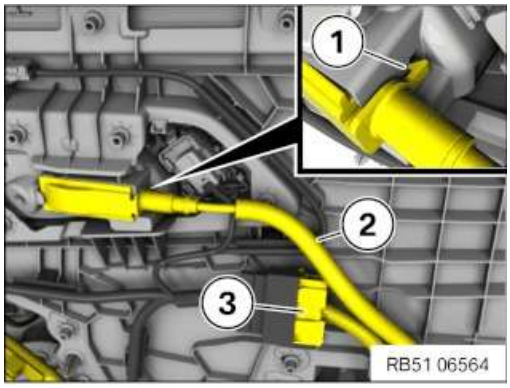
4 – Install door trim panel



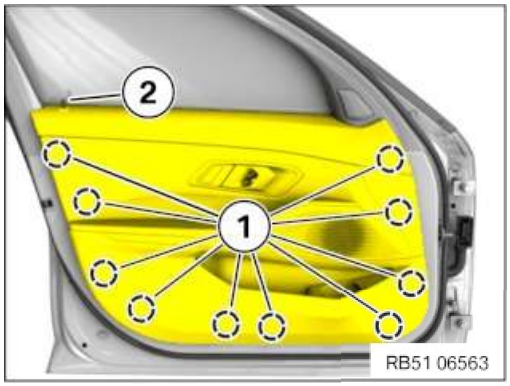
- Renew the clips (1).

  Parts: Clips

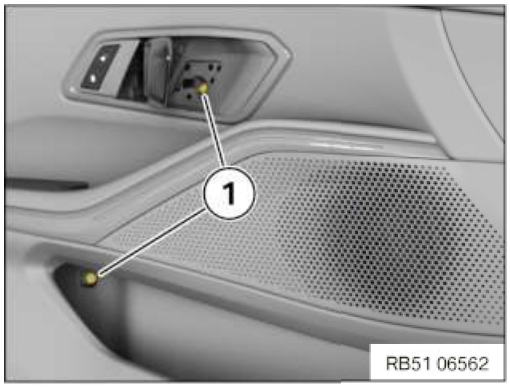
carfdiagn.com



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



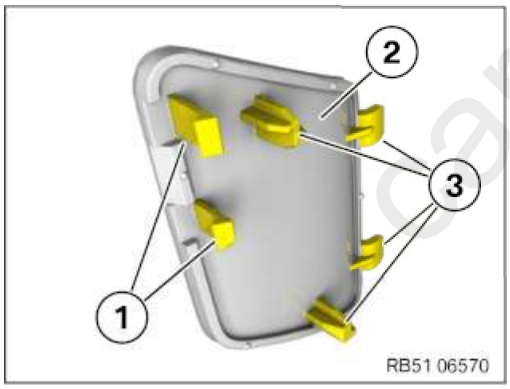
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



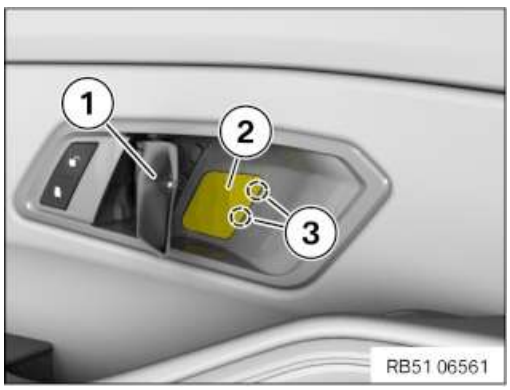
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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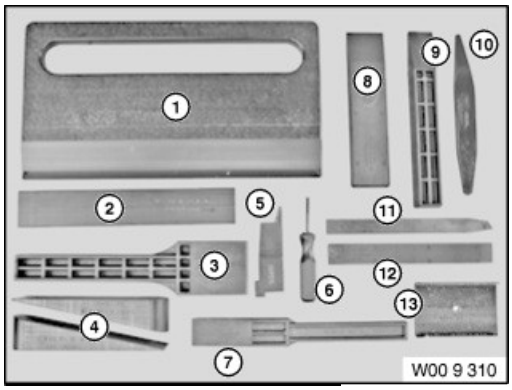
Overview of Tightening Torques

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

cardiagn.com

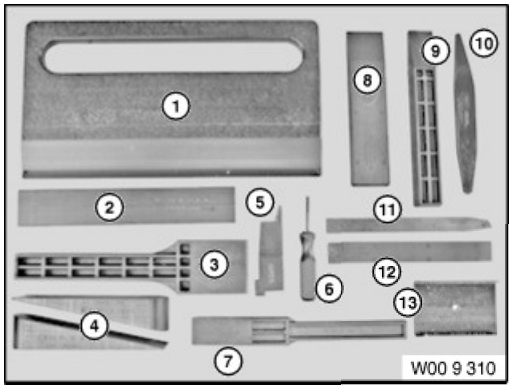
61 31 083 Removing and installing/replacing switch for unlocking tailgate

NOTICE

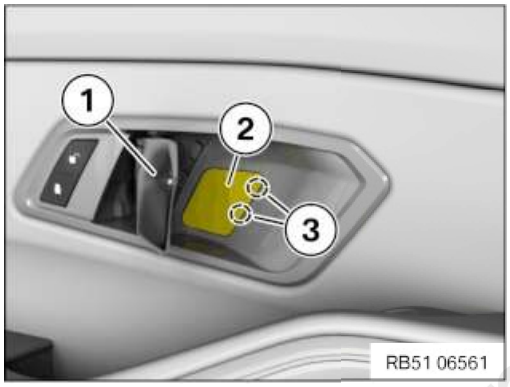
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

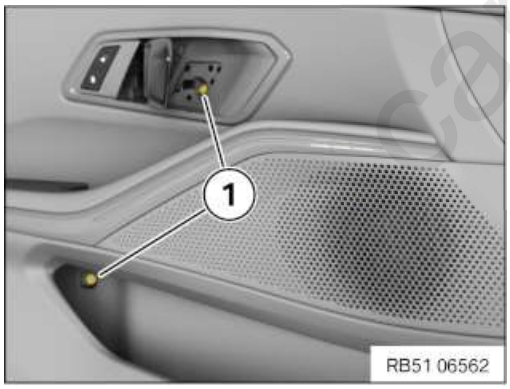
1 – Remove door trim panel



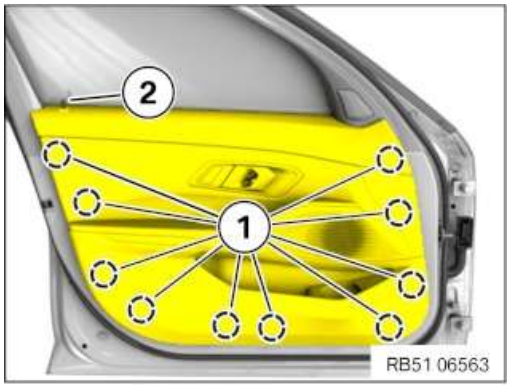
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

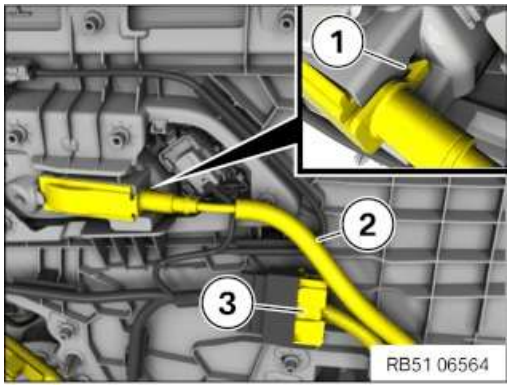


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

cardiagn.com

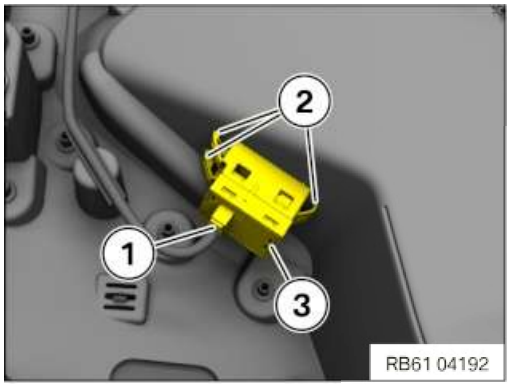


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

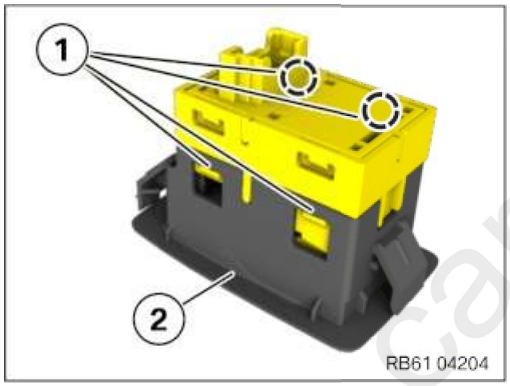
MAIN WORK

2 – Removing the tailgate release switch

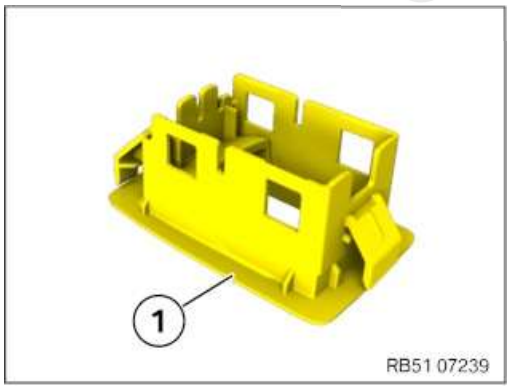


- Unlock plug connection (1) and disconnect.
- Release latch mechanisms (2) and remove the tailgate release switch (3) out of the front door trim panel.

3 – Replacement: Tailgate release switch

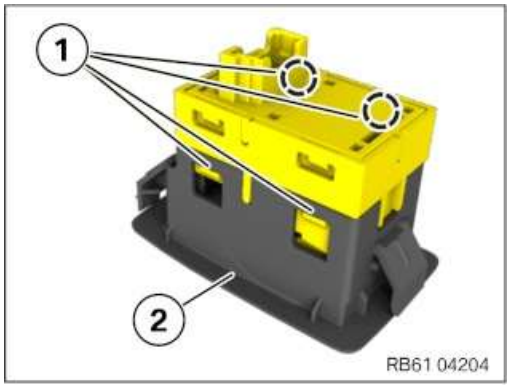


- Unclip clips (1) and remove the rear lid unlocking switches from the tailgate release switch cover (2).



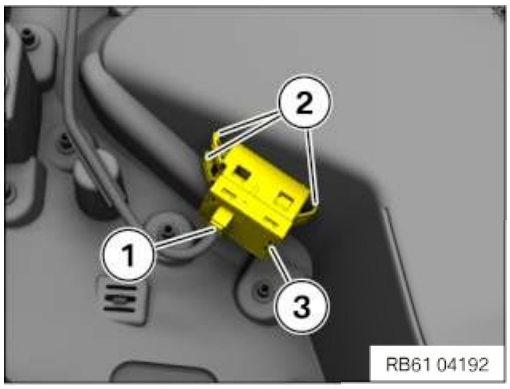
- Check tailgate release switch cover (1) for damage and renew if necessary.

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- Install tailgate release switch in the rear lid unlocking switch cover (2) and clip into the clips (1).

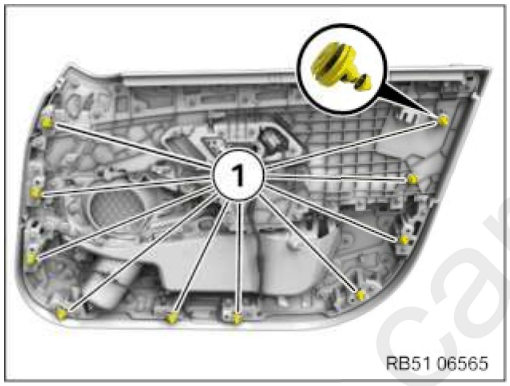
4 – Installing the tailgate release switch



- Install switch for tailgate release (3) in the front door trim panel and clip in using latch mechanisms (2).
- Connect connectors (1) and lock.

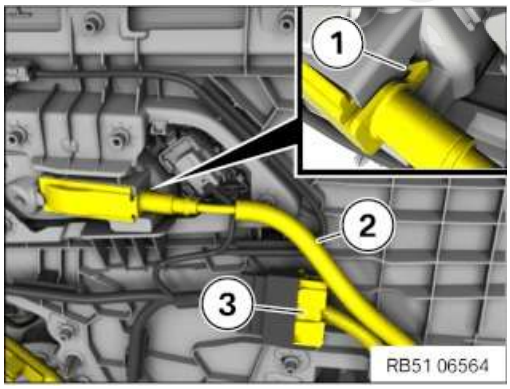
POSTPROCESSES

5 – Install door trim panel



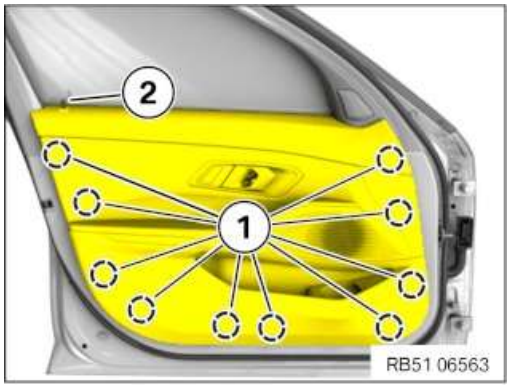
- Renew the clips (1).

  Parts: Clips

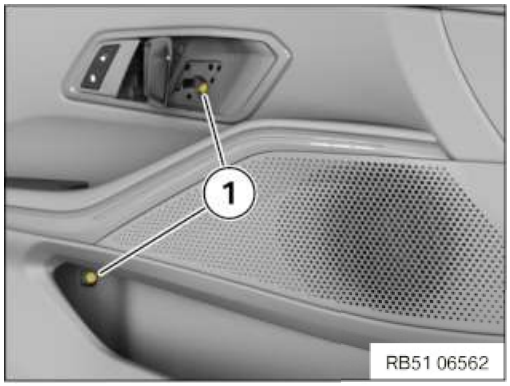


- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.

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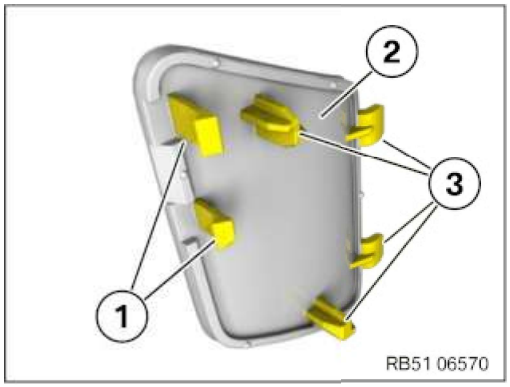
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



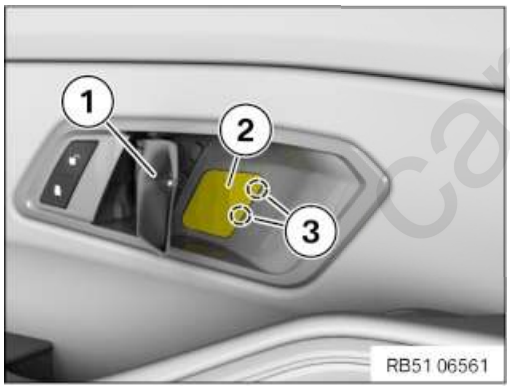
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

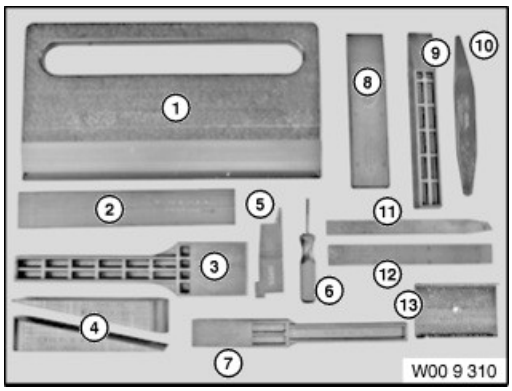
Door trim panel to door Used in step 5

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

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0 493 752 (00 9 329) Case



Common	Used in step 1
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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61 31 327 Removing and installing/replacing the shift knob of gear selector switch

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

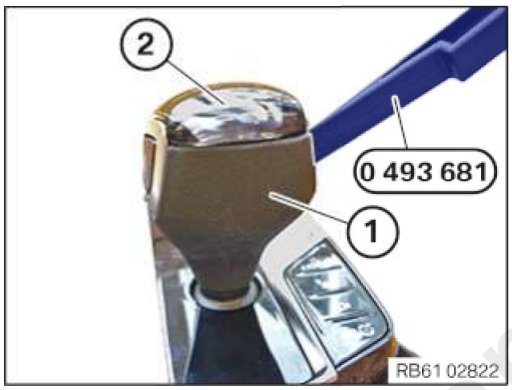
1 – Remove gearshift lever knob

RISK OF DAMAGE

Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

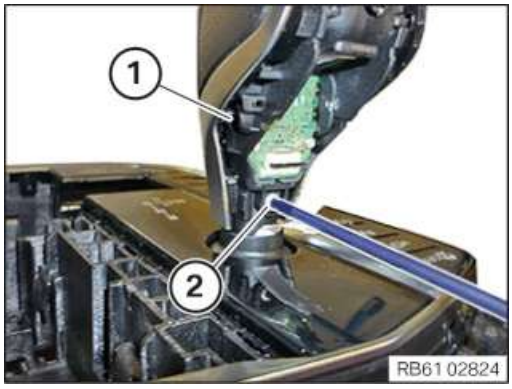
- Protect surfaces from damage.



- Lever the trim (1) with the special tool 0 493 681 (64 1 020) out of the gearshift lever knob (2) on both sides.



- Unlock the connector (1) in the direction of the arrow.
- Thread out the ribbon cable (2).

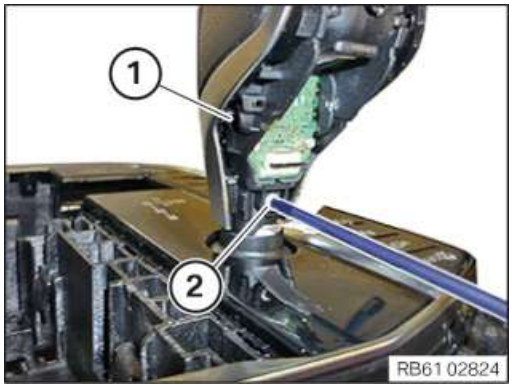


- Loosen screw (2).
- Remove the shift knob (1) upwards.

2 – Installing gearshift lever knob

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2 – Installing gearshift lever knob

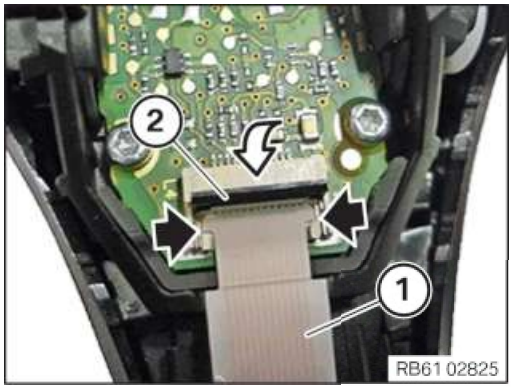


- Position the gearshift lever knob (1).
- Replace the screw of the gearshift lever knob.

  Parts: Screw
- Tighten down screw (2).

Gearshift lever knob

Screw	Renew screw.	Tightening torque	0,8 Nm



- Position ribbon cable (1) correctly on the gearshift lever knob (arrow).
- Lock the connector (2) in the direction of the arrow.



- Position and lock the trim (1) to the gearshift lever knob (2).

  Parts: Gearshift lever knob trim

  Retaining lugs must audibly snap into place.

Additional Information

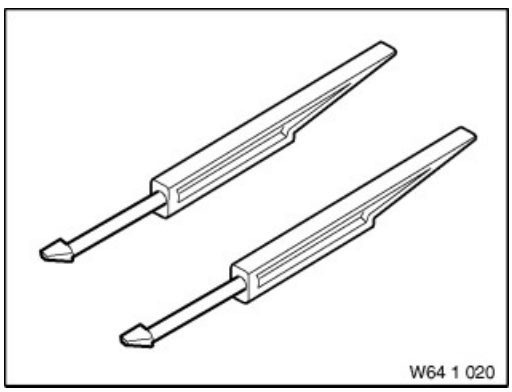
Overview of Tightening Torques

Gearshift lever knob Used in step 2

Screw	Renew screw.	Tightening torque	0,8 Nm

Overview of Special Tools

0 493 681 (64 1 020) Hook



Common Used in step 1

Usage	(release hook) For releasing and removing fresh air grille. For removing various covers.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

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61 31 068 Removing and installing/replacing the switch for front passenger airbag deactivation

RISK OF DAMAGE

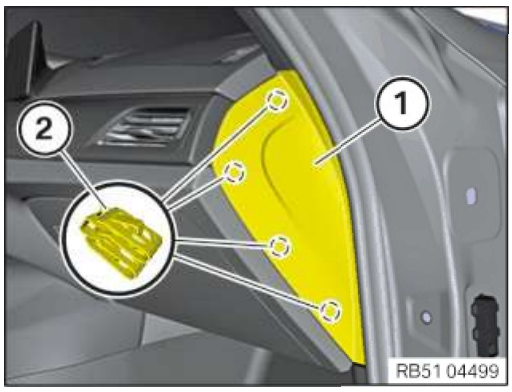
Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

PRELIMINARY WORK

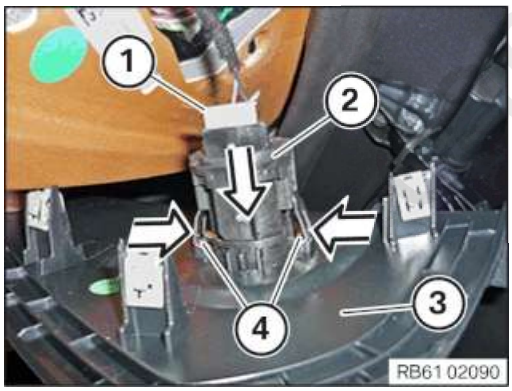
1 – Remove the side panel on the right instrument panel



- Unclip and remove the side panel (1) towards the outside from the clamps (2).
- If necessary, unlock associated plug connection and disconnect.

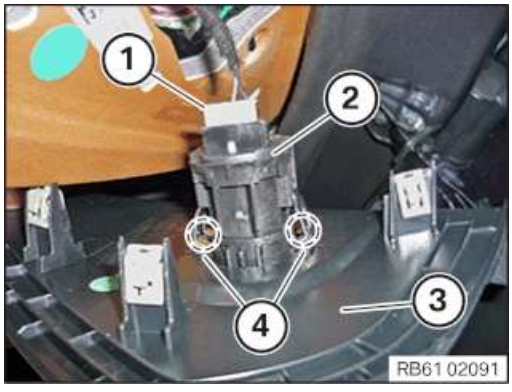
MAIN WORK

2 – Removing the switch for front passenger airbag deactivation



- Disconnect plug connection (1).
- Unlock the latch mechanism (4) in the direction of the arrow.
- Feed the switch for front passenger airbag deactivation (2) out of the cover (3) in the direction of the arrow.

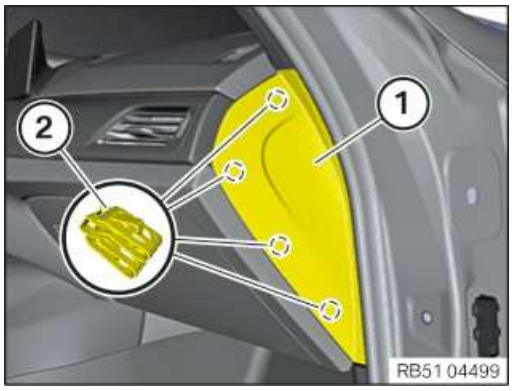
3 – Installing the switch for front passenger airbag deactivation



- Install the switch for front passenger airbag deactivation (2) in the side panel of the instrument panel (3).

  The latch mechanism (4) must engage audibly.
- Connect the connector (1) with the switch for front passenger airbag deactivation.

4 – Install the side panel on instrument panel on the right

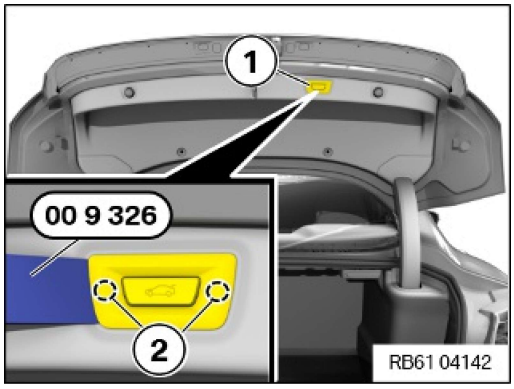


- If required, connect the associated connector.
- Feed in the side panel (1) and clip it in at the clamps (2).

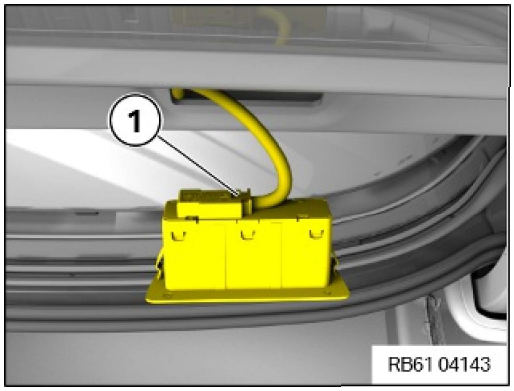
cardiagn.com

61 31 084 Removing and installing/replacing the switch for the automatic operation of tailgate

1 – Removing the tailgate lift switch

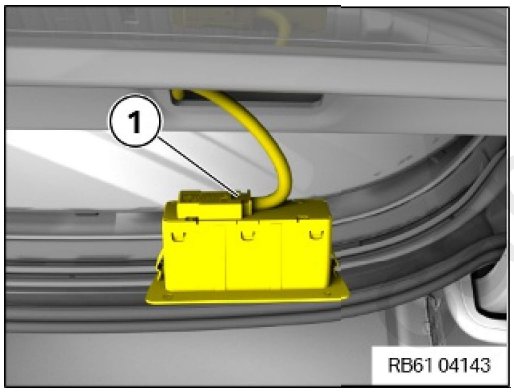


- Unclip the switch for the automatic tailgate operation (1) using special tool 0 496 570 (00 9 326) at the lateral latch mechanisms (2).

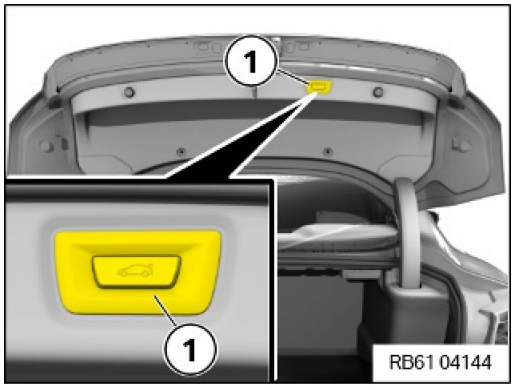


- Unlock plug connection (1) and disconnect.

2 – Install the tailgate lift switch



- Connect connectors (1) and lock.

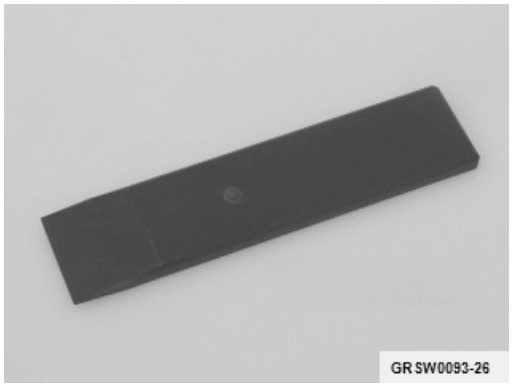


- Clip in the switch for automatic tailgate operation (1).

Additional Information

Overview of Special Tools

0 496 570 (00 9 326) Wedge



Common	Used in step 1
Usage	(Universal wedge) From 11/2008 this special tool replaces panel wedge 00 9 318 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

cardiagn.com

61 31 349 Replace the cap for the electromechanical parking brake and cover below the gear selector switch

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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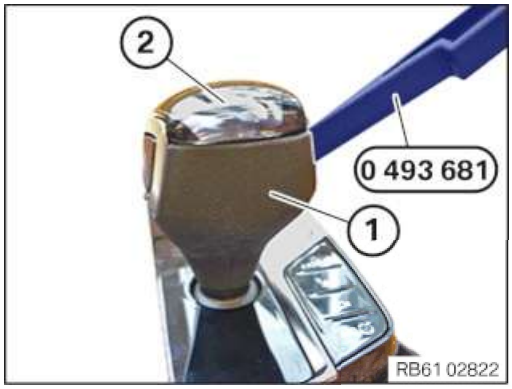
1 – Remove gearshift lever knob

RISK OF DAMAGE

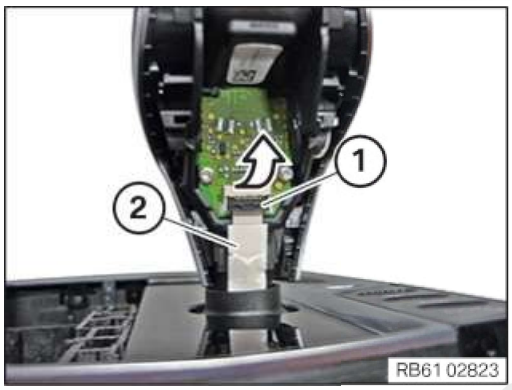
Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

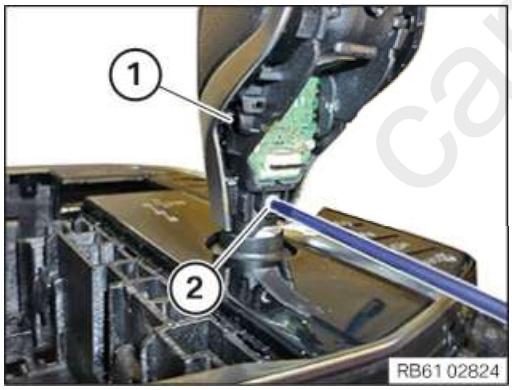
- Protect surfaces from damage.



- Lever the trim (1) with the special tool 0 493 681 (64 1 020) out of the gearshift lever knob (2) on both sides.



- Unlock the connector (1) in the direction of the arrow.
- Thread out the ribbon cable (2).



- Loosen screw (2).
- Remove the shift knob (1) upwards.

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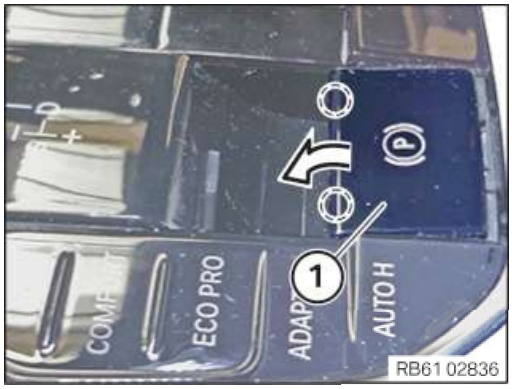
2 – Removing cover on the operating unit in the centre console

RISK OF DAMAGE

Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

- Protect surfaces from damage.



- Press the parking brake button cover (1) forwards and downwards in the direction of the arrow.

Note: The parking brake button cover can be loosened by pressing strongly out of the catch mechanisms.



- Lever out the cover (1) on the operating facility in the centre console using the special tool 0 493 681 (64 1 020) in the marked area.

3 – Installing trim on the operating facility in the centre console



- Feed out and renew swivel (1).

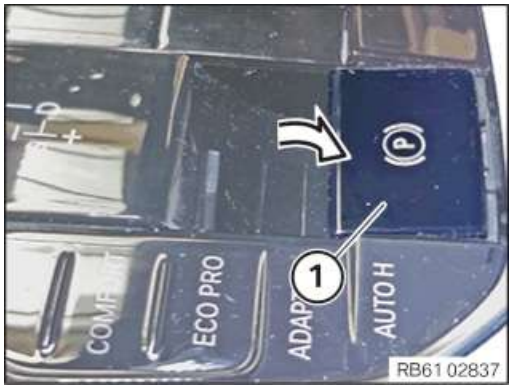
  Parts: Swivel

- Position ribbon cable (2) correctly through swivel (1).



- Feed in trim (1) on the operating facility in the centre console in the marked area.
- Clip in trim (1) on the operating facility in the centre console in direction of arrow.

  Trim (1) on the operating facility in the centre console must engage audibly.

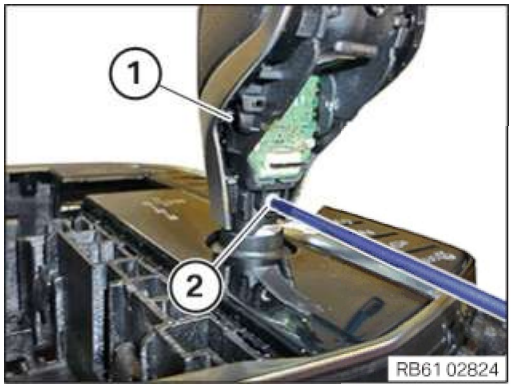


- Position parking brake button cover (1) and snap into place in the direction of the arrow.

  The parking brake button cover (1) must engage audibly.

POSTPROCESSES

4 – Installing gearshift lever knob

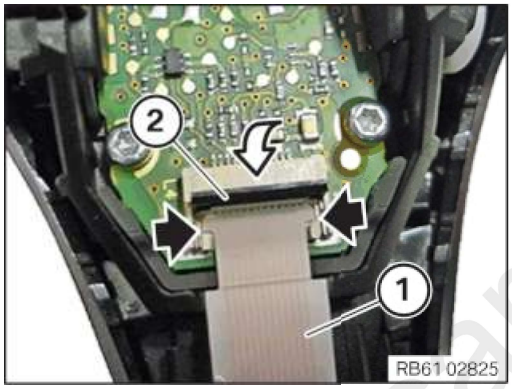


- Position the gearshift lever knob (1).
- Replace the screw of the gearshift lever knob.

  Parts: Screw
- Tighten down screw (2).

Gearshift lever knob

Screw	Renew screw.	Tightening torque	0,8 Nm



- Position ribbon cable (1) correctly on the gearshift lever knob (arrow).
- Lock the connector (2) in the direction of the arrow.



- Position and lock the trim (1) to the gearshift lever knob (2).

  Parts: Gearshift lever knob trim

  Retaining lugs must audibly snap into place.

Additional Information

Overview of Tightening Torques

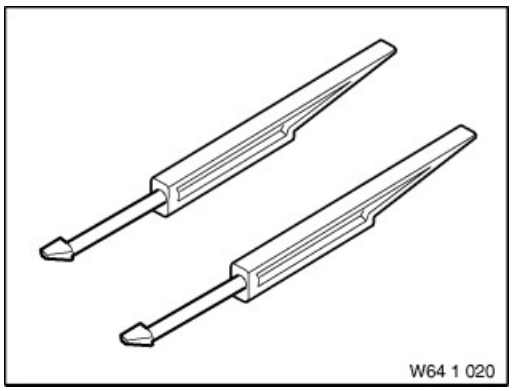
Gearshift lever knob Used in step 4

Screw	Renew screw.	Tightening torque	0,8 Nm

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Overview of Special Tools

0 493 681 (64 1 020) Hook



Common Used in step 12

Usage	(release hook) For releasing and removing fresh air grille. For removing various covers.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

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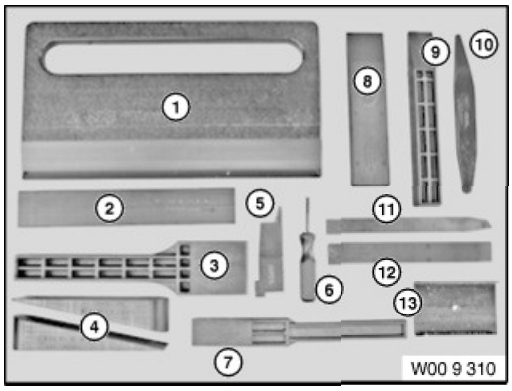
61 31 676 Replace the operating facility for the front left or right additional seat function

NOTICE

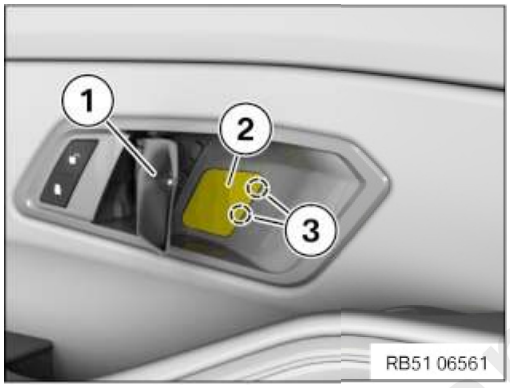
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

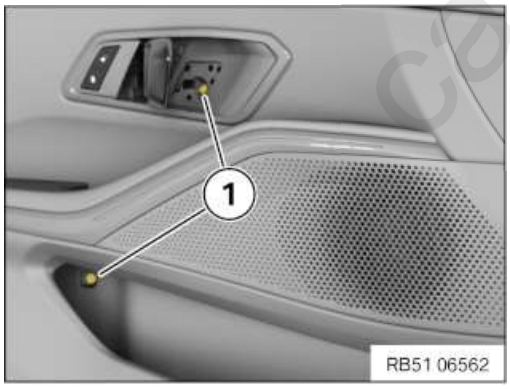
1 – Remove door trim panel



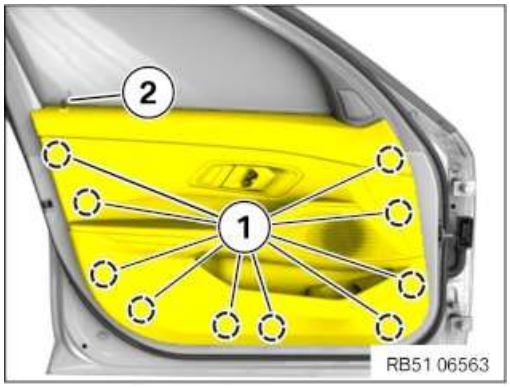
- Have the set of special tools 0 493 752 (00 9 329) ready.



- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable special tool.
- Remove trim (2).

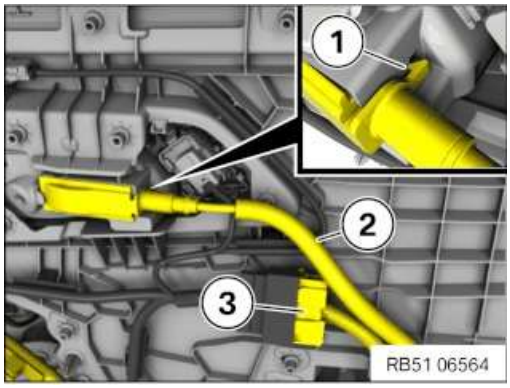


- Loosen screws (1).



- Unclip the door trim panel at the clips (1) using a suitable special tool.
- Guide the door trim panel upwards out of the front inner weather strip and the operating rod (2).

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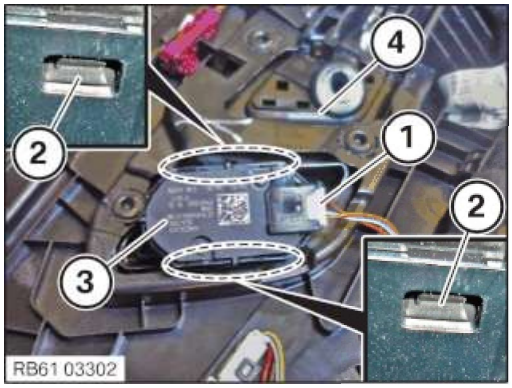


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock plug connection (3), disconnect it and remove the door trim panel.

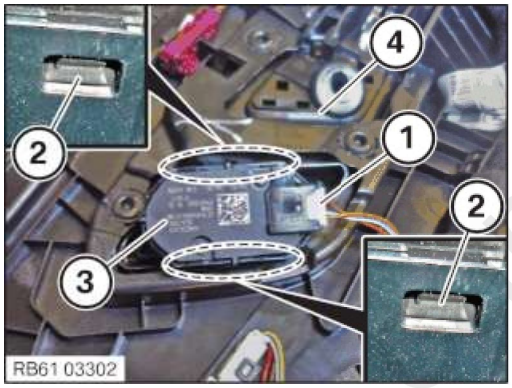
MAIN WORK

2 – Removing operating facility for the additional seat function



- Disconnect the connector (1) .
- Release latch mechanism (2) in the marked area.
- Remove operating unit (3) from the door trim panel (4).

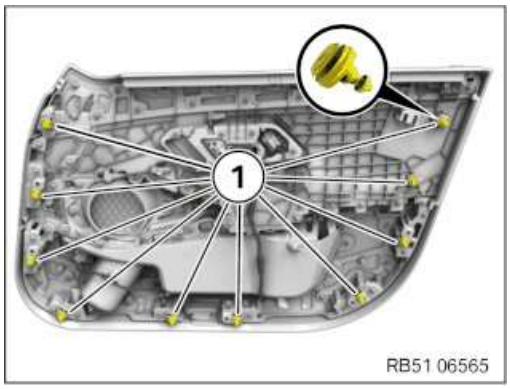
3 – Installing the operating facility for the additional seat function



- Position the operating unit (3) correctly on the door trim panel (4).
- Clip in the operating unit (3) in the latch mechanisms (2) in the marked area.
- Connect connector (1).

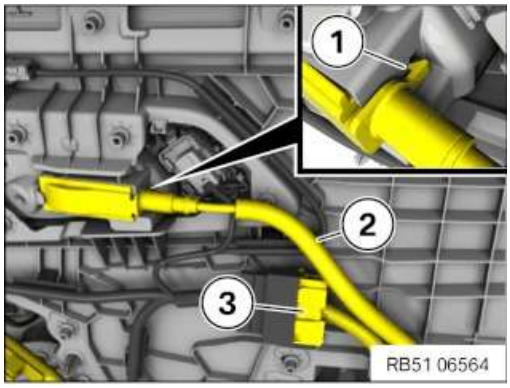
POSTPROCESSES

4 – Install door trim panel

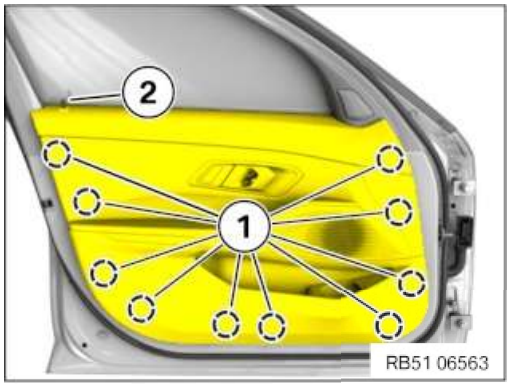


- Renew the clips (1).

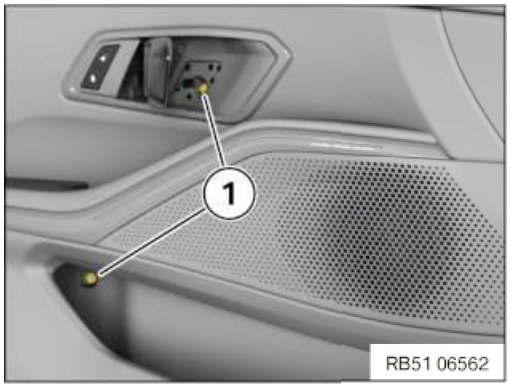
  Parts: Clips



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door opener (2) and clip in the latch mechanism (1).
- Connect connectors (3) and lock.



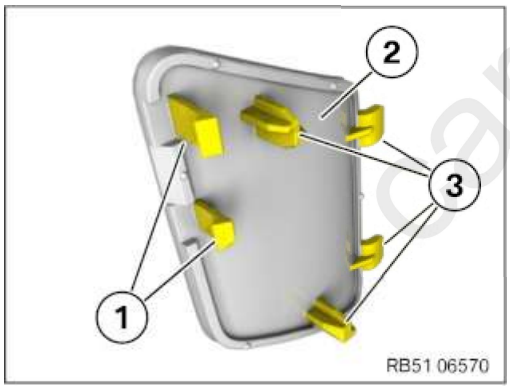
- Feed door trim panel from the top via the operating rod (2) into the inner front weather strip.
- Clip in the door trim panel with the clips (1).



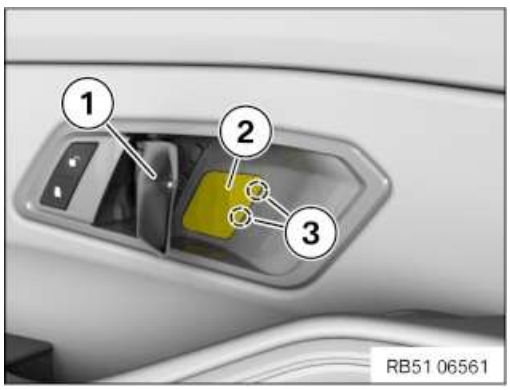
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

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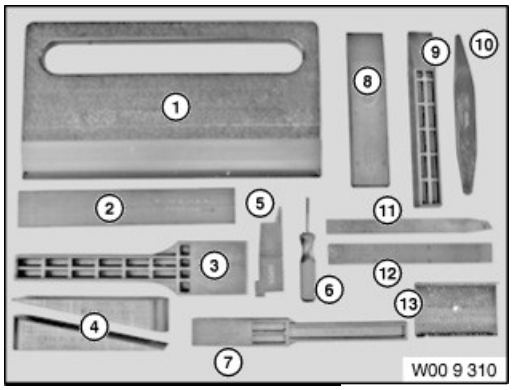
Overview of Tightening Torques

Door trim panel to door — Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

0 493 752 (00 9 329) Case



Common — Used in step 1

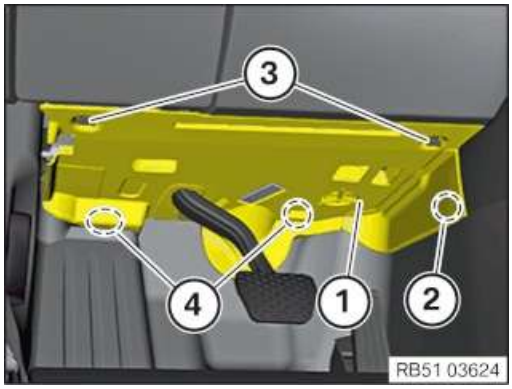
Usage	(Case) with insert not incl. panel wedges
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 09 (530)

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61 31 310 Replacing brake light switch

PRELIMINARY WORK

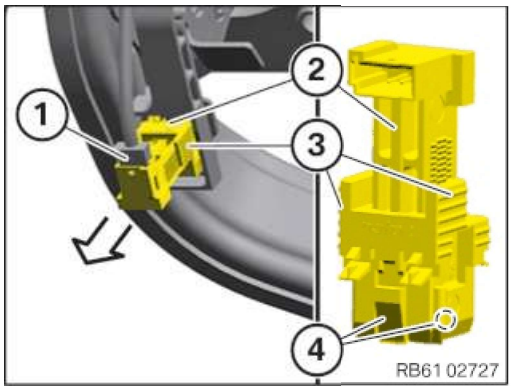
1 – Removing the trim panel for pedal mechanism



- Unclip the trim panel for the pedal mechanism (1) towards the inside in this area (2).
- Turn the locks (3) by 90°.
- Detach the trim panel for the pedal mechanism (1) inwards out of the guides (4).
- Unlock associated plug connection and disconnect.

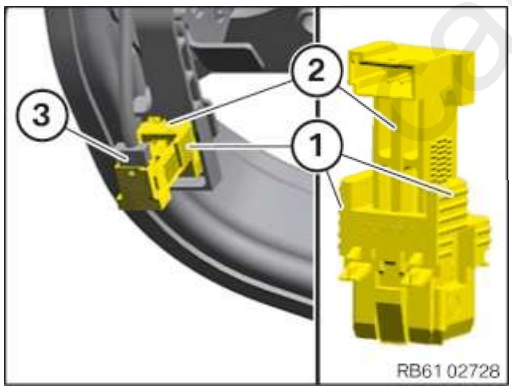
MAIN WORK

2 – Remove the brake light switch



- Unlock and disconnect connector (1).
- Operate and hold brake pedal.
- Pull the brake light switch (2) from the holder for the brake light switch (3) in the direction of the arrow.
- Press together the latch mechanisms (4) and unclip the holder for the brake light switch (3) from the brake pedal.

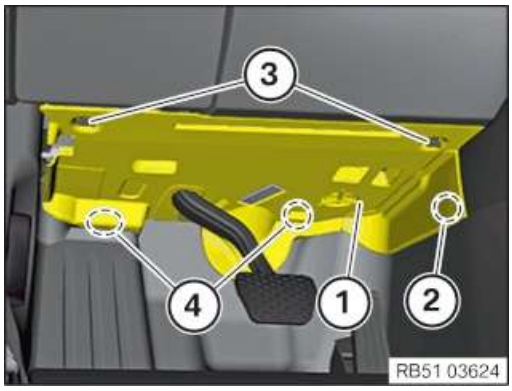
3 – Install brake light switch



- Clip the holder for the brake light switch (1) into the brake pedal.
- Press brake pedal.
- Push the brake light switch (2) in the opposite direction to the arrow into the holder for the brake light switch (1) up to the limit position.
- Counter support the holder for the brake light switch (1) and move back the brake pedal slowly to the initial position at the same time.
- Slowly pull brake pedal back to limit position.
- Connect connector (3).

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4 – Installing the trim panel for the pedal mechanism



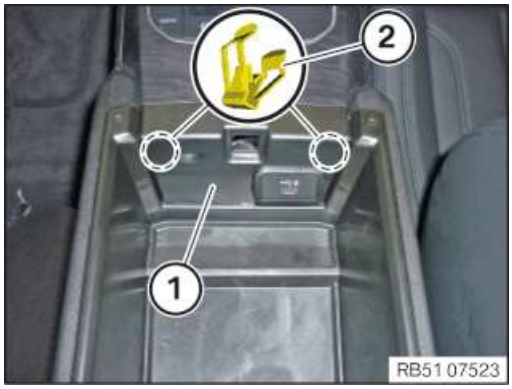
- Connect associated connector.
- Attach the trim panel for the pedal mechanism (1) in the guides (4) and fold it up.
- Clip the trim panel for the pedal mechanism (1) into the centre console in this area (2).
- Insert locks (3) correctly and turn 90°.

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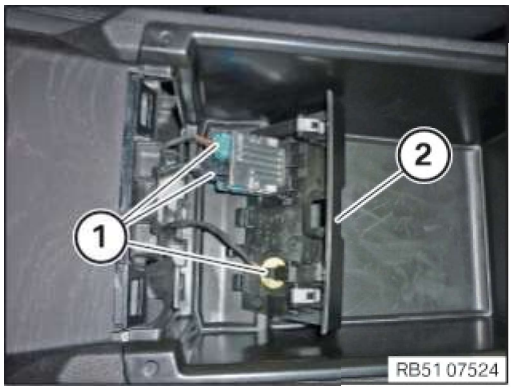
61 31 696 Replacing front controller

PRELIMINARY WORK

1 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

2 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

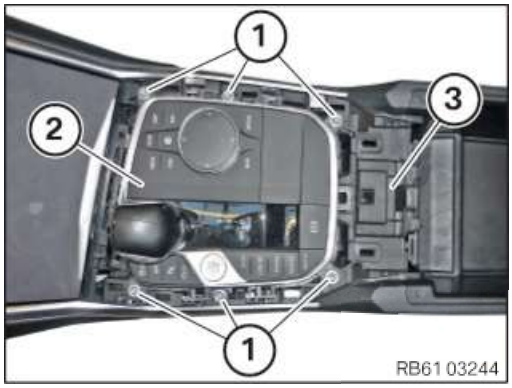
3 – Remove the operating facility in the centre console

▸ **Disconnecting all battery earth leads**

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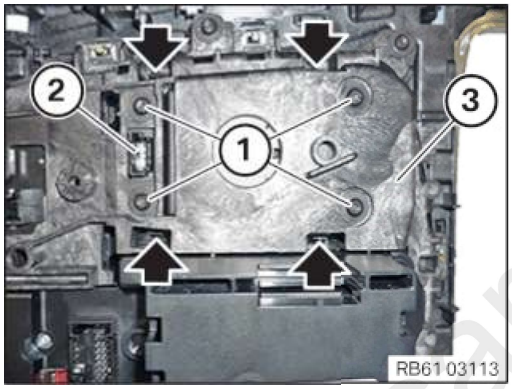
- See additional information.



- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

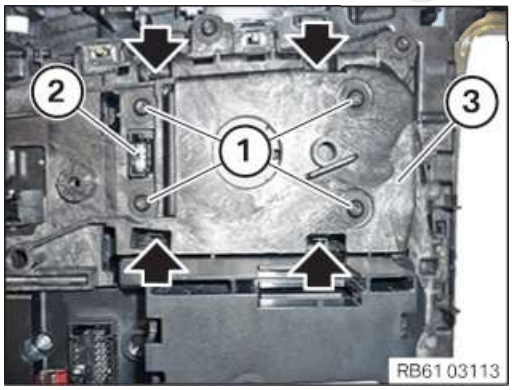
MAIN WORK

4 – Remove controller



- Loosen screws (1).
- Release the latch mechanisms (arrows).
- Remove controller (2) from the gear selector switch(GWS) (3).

5 – Install controller



- Position the controller (2) on gear selector switch (GWS) (3) and engage in the latch mechanisms (arrow).
- Tighten the screws (1).

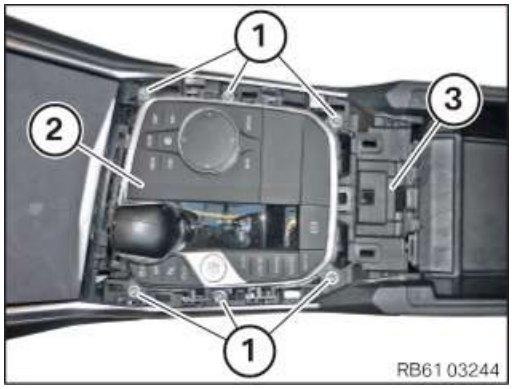
Controller to gear selector switch

Screw		Tightening torque	1,8 Nm

POSTPROCESSES

6 – Install the operating facility in the centre console

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- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

▶ **Disconnecting all battery earth leads**



- See additional information.

7 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



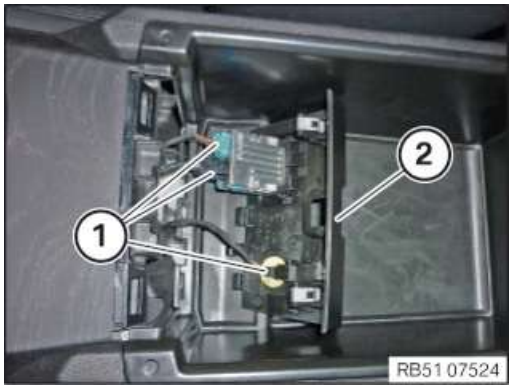
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .



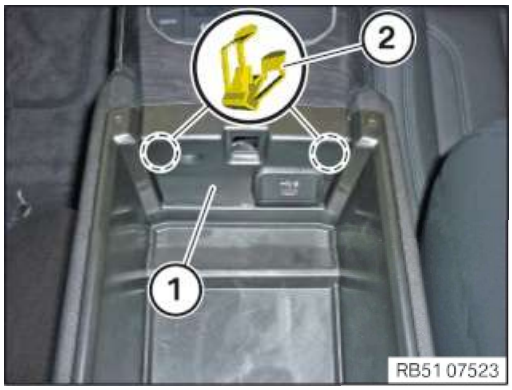
- Correctly position the centre console trim (1) and engage at the latch mechanisms.

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8 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

9 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

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- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

Additional Information

Overview of Tightening Torques

Controller to gear selector switch — Used in step 5

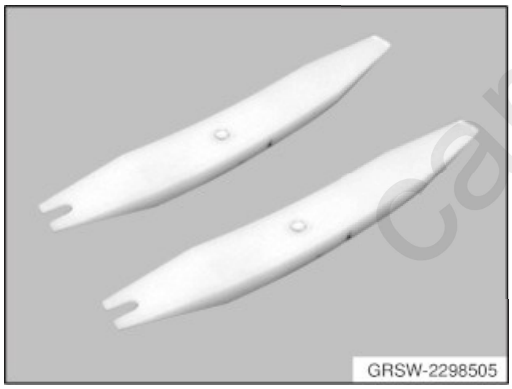
Screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim — Used in step 6

Screw		Tightening torque	1,8 Nm

Overview of Special Tools

2 298 505 Wedge



Common — Used in step 12

Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36

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61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
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61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36
61 20 900 Disconnecting and connecting battery earth lead	36

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61 31 204 Replacing operating unit for seat adjustment

Prerequisite

- Move front seat completely towards the front top.

NOTICE

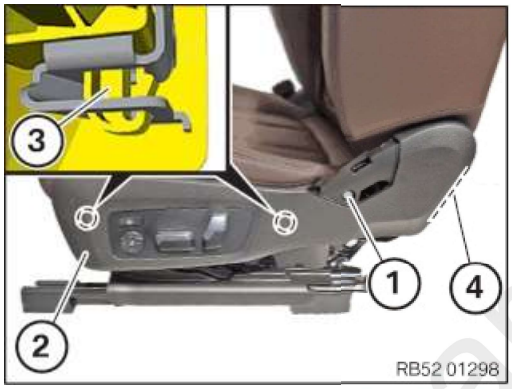
For a better overview the removed condition is shown here.

PRELIMINARY WORK

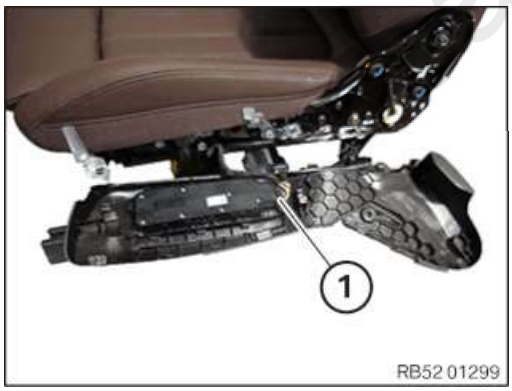
1 – Remove outer cover on front seat



- Unclip the cover (1).



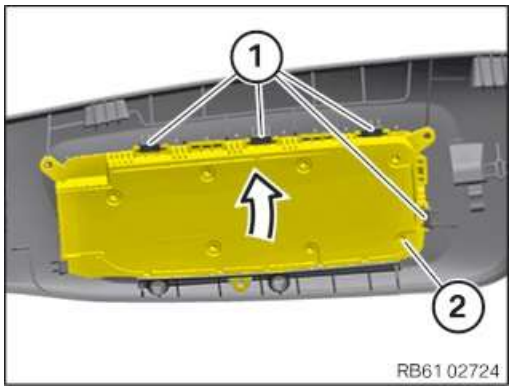
- Loosen screw (1).
- Disengage the cover (2) at the latch mechanisms (3) toward the top.
- Guide out and remove the cover (2) in the area (4).



- Disconnect plug connection (1) and, if necessary, unclip the cable clip.

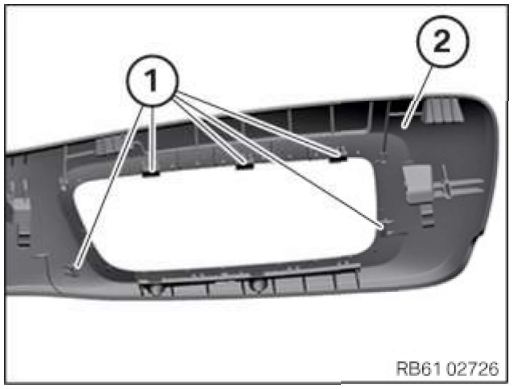
erdiagn.com

2 – Removing operating unit for seat adjustment

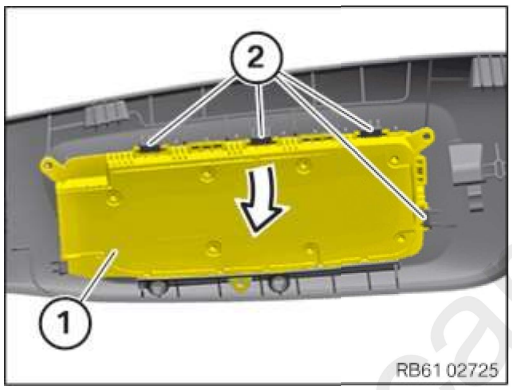


- Loosen latch mechanism (1).
- Remove the operating unit (2) in the direction of the arrow.

3 – Install the operating unit for the seat adjustment



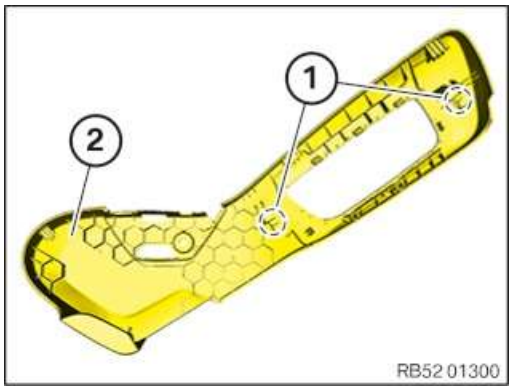
- Check the retaining lugs (1) for damage and renew the seat trim (2) if necessary.



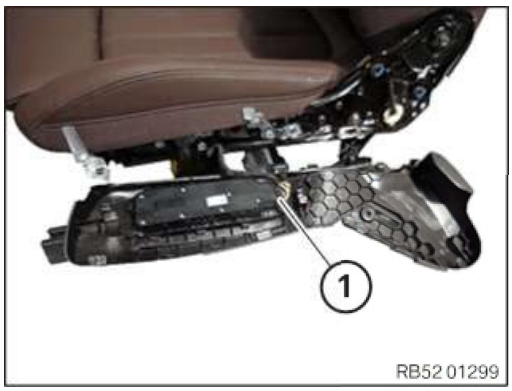
- Install the operating unit (1) in the direction of the arrow.
- Check the latch mechanism (2) is fitted correctly.

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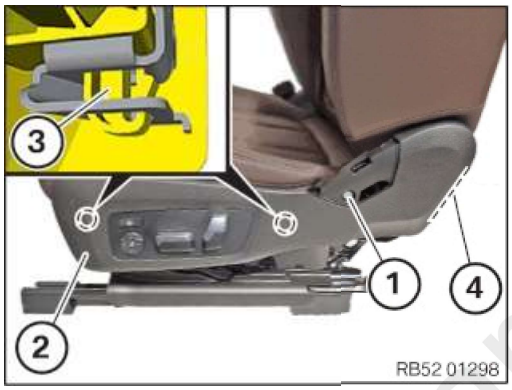
4 – Install outer cover on front seat



- Check the locking units (1) for damages, and replace the cover if necessary (2).



- Connect the connector (1) and if necessary clip the cable holder in.



- Insert the cover (2) in the area (4) and position it.
- Engage the cover (2) at the latch mechanisms (3).
- Tighten down screw (1).

Seat trim to seat frame

Sheet metal screw		Tightening torque	2.5 Nm



- Clip in the cover (1).

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Additional Information

Overview of Tightening Torques

Seat trim to seat frame Used in step 4

Sheet metal screw		Tightening torque	2.5 Nm

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61 31 329 Replacing START-STOP button cover

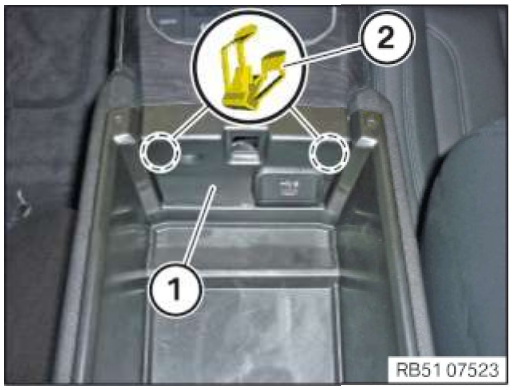
PRELIMINARY WORK

1 – Disconnecting all battery earth leads

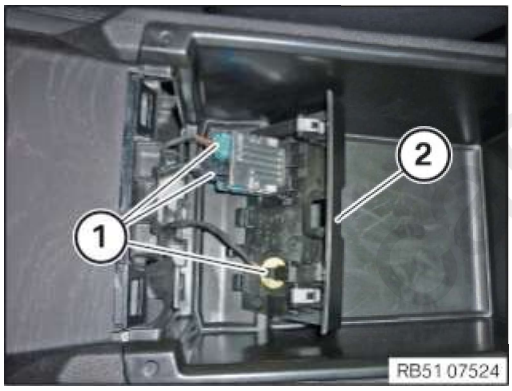


- See additional information.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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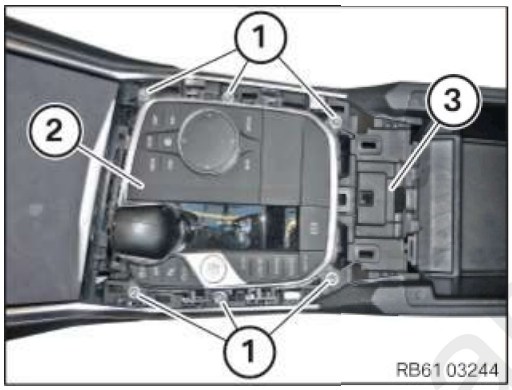
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

4 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**

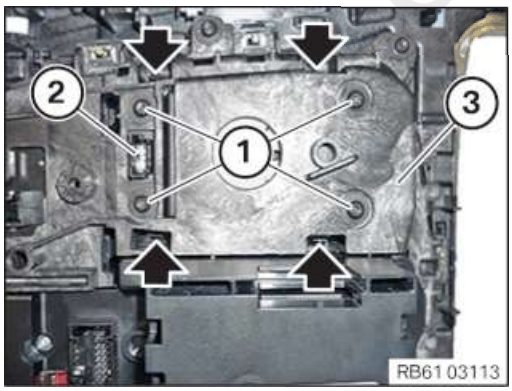


- See additional information.



- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

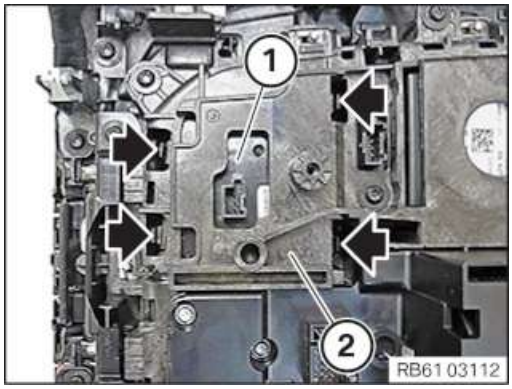
5 – Remove controller



- Loosen screws (1).
- Release the latch mechanisms (arrows).
- Remove controller (2) from the gear selector switch(GWS) (3).

6 – Removing the HDC button

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- Release the latch mechanisms (arrows).
- Remove HDC button (1) from gear selector switch (GWS) (2).

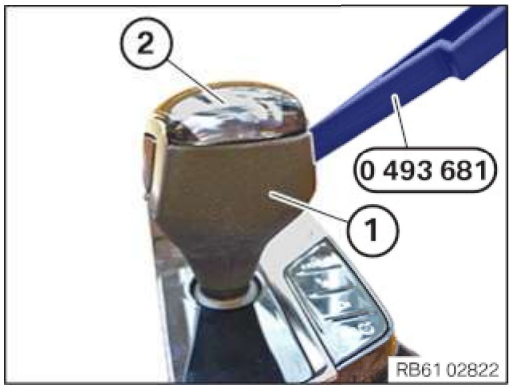
7 – Remove gearshift lever knob

RISK OF DAMAGE

Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

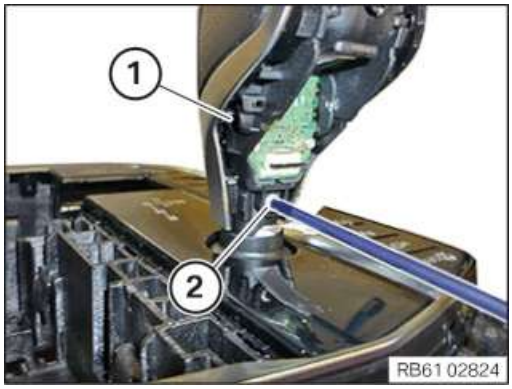
- Protect surfaces from damage.



- Lever the trim (1) with the special tool 0 493 681 (64 1 020) out of the gearshift lever knob (2) on both sides.



- Unlock the connector (1) in the direction of the arrow.
- Thread out the ribbon cable (2).



- Loosen screw (2).
- Remove the shift knob (1) upwards.

8 – Remove covers on the operating unit in the centre console

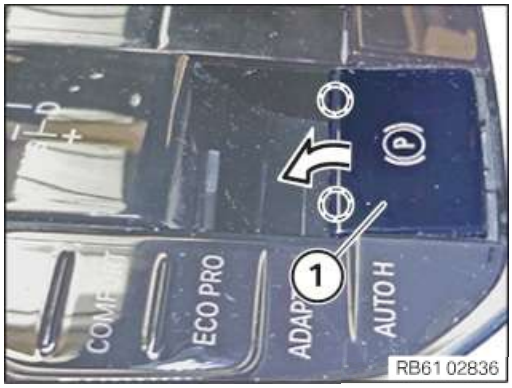
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RISK OF DAMAGE

Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

- Protect surfaces from damage.

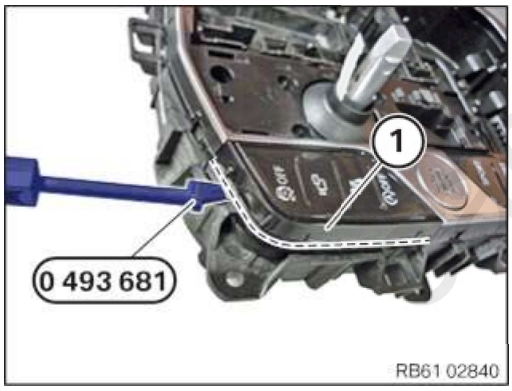


- Press the parking brake button cover (1) forwards and downwards in the direction of the arrow.

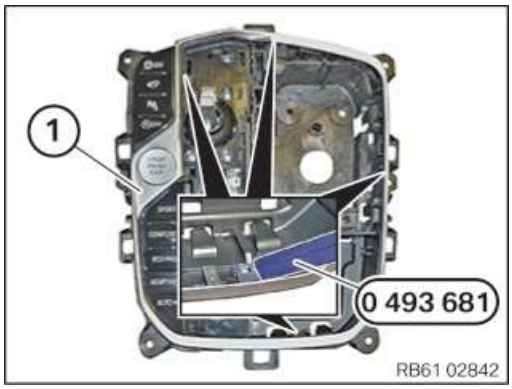
Note: The parking brake button cover can be loosened by pressing strongly out of the catch mechanisms.



- Lever the cover (1) out on the operating unit in the centre console (2) using the special tool 0 493 681 (64 1 020).



- Unclip the trim (1) using special tool 0 493 681 (64 1 020).



- Unclip cover (1) using the special tool 0 493 681 (64 1 020) at the locations marked.

MAIN WORK

9 – Replacing the START-STOP button trim

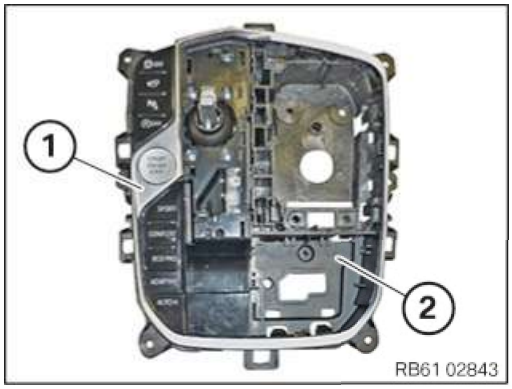
10 – Installing trims on the operating facility in the centre console

RISK OF DAMAGE

Damage of high-quality surfaces.

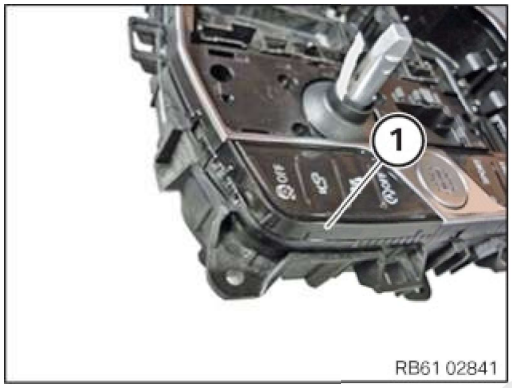
Plastic wedges can damage high-quality surfaces.

- Protect surfaces from damage.



- Position cover (1) on the operating unit in the centre console (2) and clip into place.

  All retaining lugs must engage audibly.

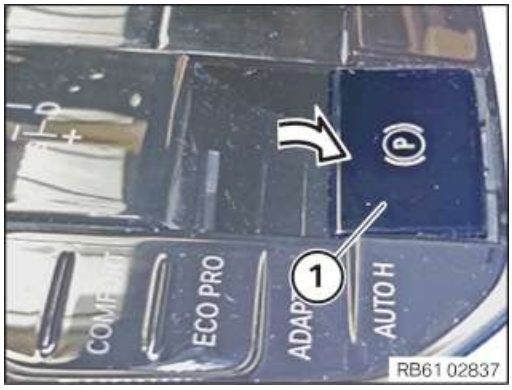


- Position and clip in trim (1).



- Position cover (1) on the operating unit in the centre console (2) and clip into place.

  All retaining lugs must engage audibly.

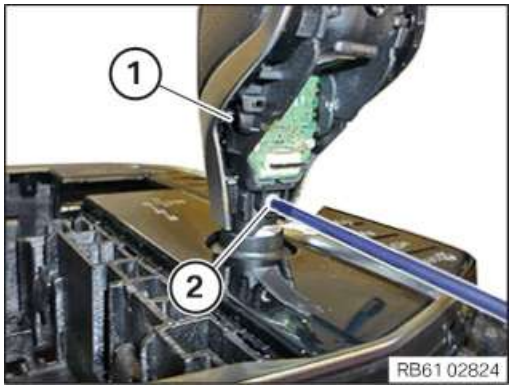


- Position parking brake button cover (1) and snap into place in the direction of the arrow.

  The parking brake button cover (1) must engage audibly.

11 – Installing gearshift lever knob

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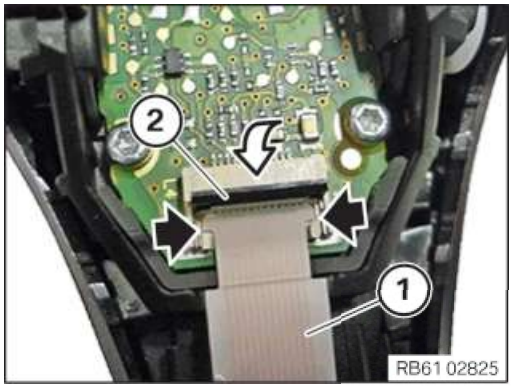


- Position the gearshift lever knob (1).
- Replace the screw of the gearshift lever knob.

  Parts: Screw
- Tighten down screw (2).

Gearshift lever knob

Screw	Renew screw.	Tightening torque	0,8 Nm



- Position ribbon cable (1) correctly on the gearshift lever knob (arrow).
- Lock the connector (2) in the direction of the arrow.

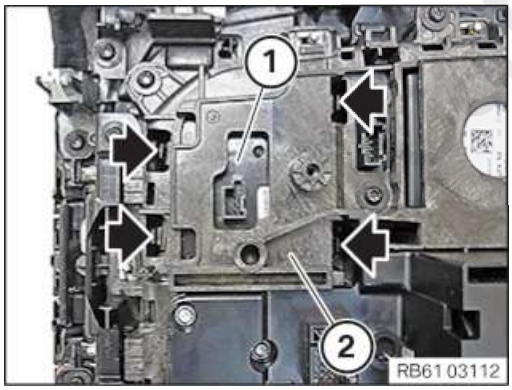


- Position and lock the trim (1) to the gearshift lever knob (2).

  Parts: Gearshift lever knob trim

  Retaining lugs must audibly snap into place.

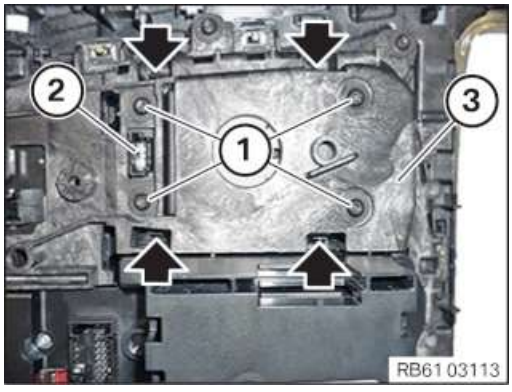
12 – Installing the HDC button



- Position HDC button (1) on gear selector switch (GWS) (2).

  The latch mechanisms (arrows) must engage audibly.

13 – Install controller



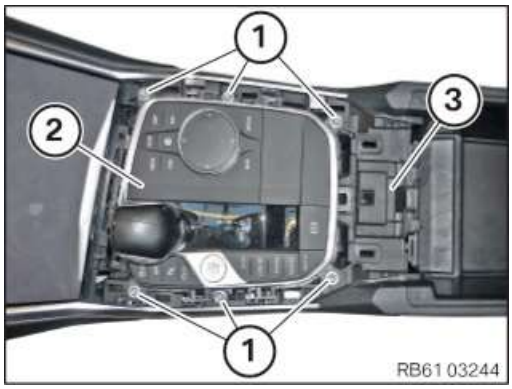
- Position the controller (2) on gear selector switch (GWS) (3) and engage in the latch mechanisms (arrow).
- Tighten the screws (1).

Controller to gear selector switch

Screw		Tightening torque	1,8 Nm

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14 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

▶ **Disconnecting all battery earth leads**



- See additional information.

15 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



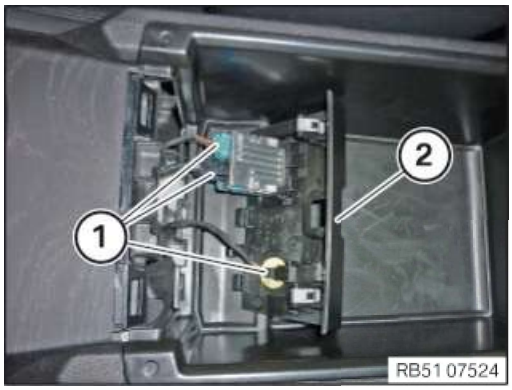
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

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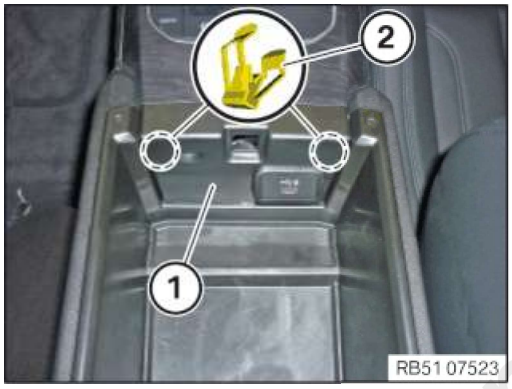


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

16 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

17 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

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- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

18 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Gearshift lever knob — Used in step 11

Screw	Renew screw.	Tightening torque	0,8 Nm

Controller to gear selector switch — Used in step 13

Screw		Tightening torque	1,8 Nm

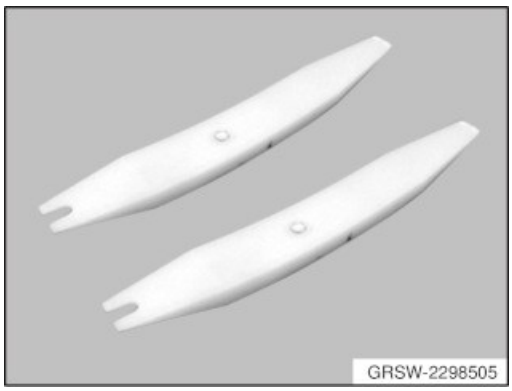
Gear selector switch to centre console trim — Used in step 14

Screw		Tightening torque	1,8 Nm

Overview of Special Tools

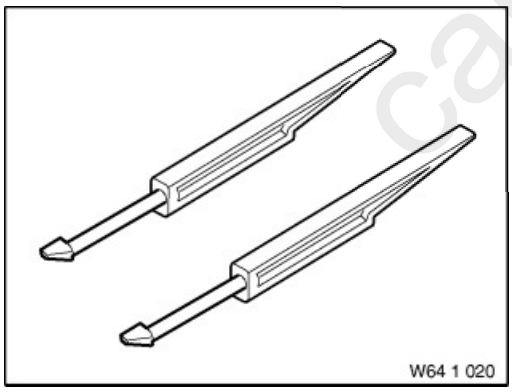
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2 298 505 Wedge



Common	Used in step 23
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 493 681 (64 1 020) Hook



Common	Used in step 78
Usage	(release hook) For releasing and removing fresh air grille. For removing various covers.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418

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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141418
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141418
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
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61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
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61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418
61 20 900 Disconnecting and connecting battery earth lead	141418

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61 31 704 Replacing the centre console operating facility

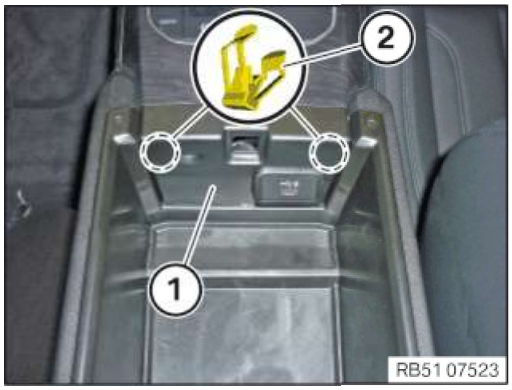
PRELIMINARY WORK

1 – Disconnecting all battery earth leads

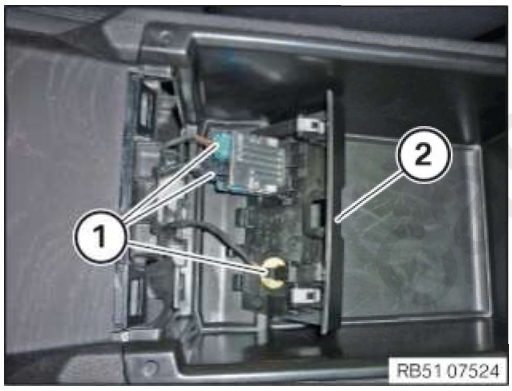


- See additional information.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

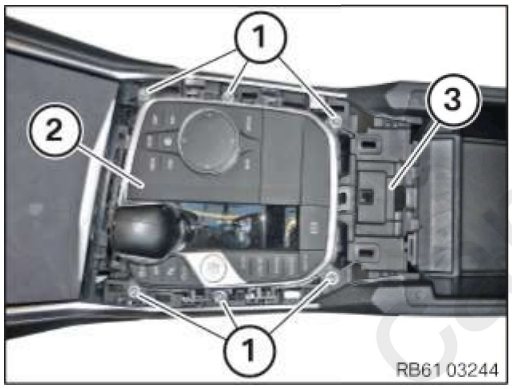
MAIN WORK

4 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**

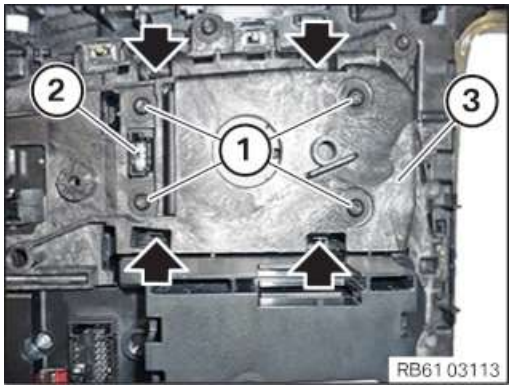


- See additional information.



- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

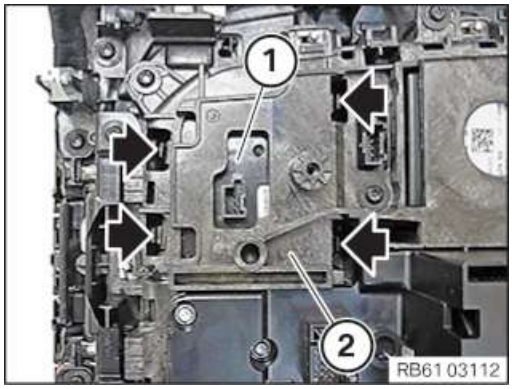
5 – Remove controller



- Loosen screws (1).
- Release the latch mechanisms (arrows).
- Remove controller (2) from the gear selector switch(GWS) (3).

6 – Removing the HDC button

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- Release the latch mechanisms (arrows).
- Remove HDC button (1) from gear selector switch (GWS) (2).

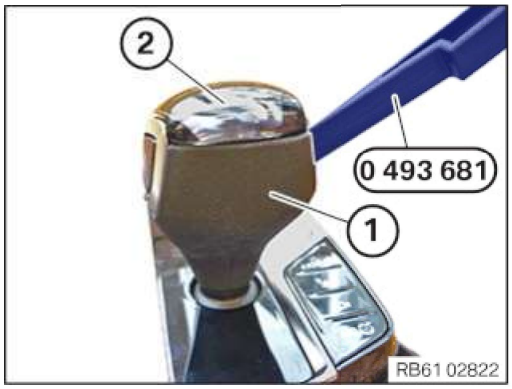
7 – Remove gearshift lever knob

RISK OF DAMAGE

Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

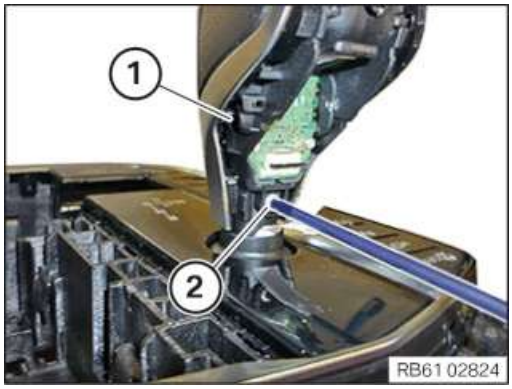
- Protect surfaces from damage.



- Lever the trim (1) with the special tool 0 493 681 (64 1 020) out of the gearshift lever knob (2) on both sides.



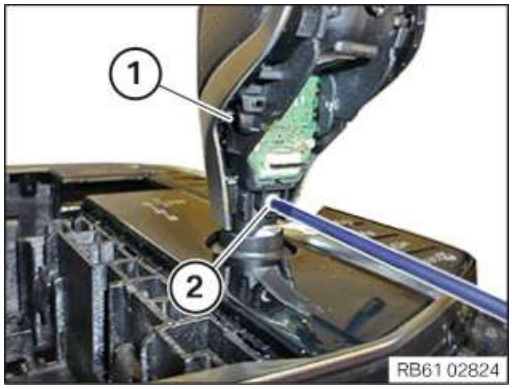
- Unlock the connector (1) in the direction of the arrow.
- Thread out the ribbon cable (2).



- Loosen screw (2).
- Remove the shift knob (1) upwards.

8 – Installing gearshift lever knob

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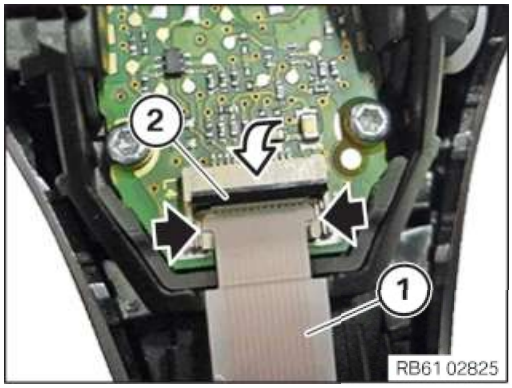


- Position the gearshift lever knob (1).
- Replace the screw of the gearshift lever knob.

  Parts: Screw
- Tighten down screw (2).

Gearshift lever knob

Screw	Renew screw.	Tightening torque	0,8 Nm



- Position ribbon cable (1) correctly on the gearshift lever knob (arrow).
- Lock the connector (2) in the direction of the arrow.

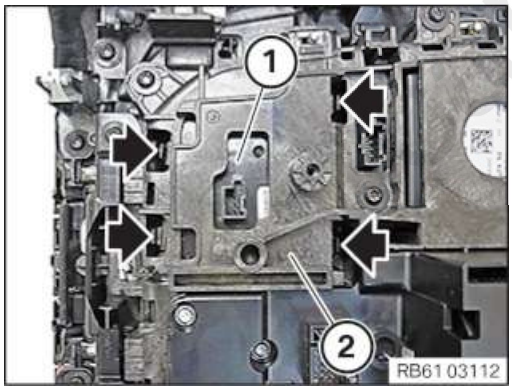


- Position and lock the trim (1) to the gearshift lever knob (2).

  Parts: Gearshift lever knob trim

  Retaining lugs must audibly snap into place.

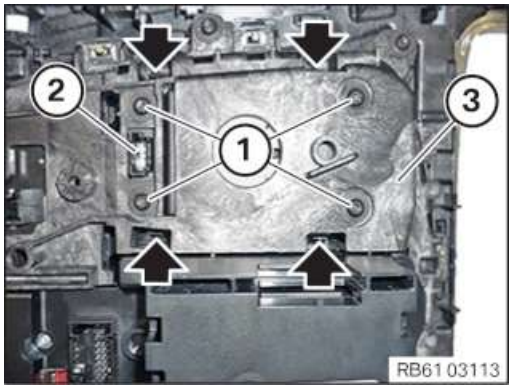
9 – Installing the HDC button



- Position HDC button (1) on gear selector switch (GWS) (2).

  The latch mechanisms (arrows) must engage audibly.

10 – Install controller



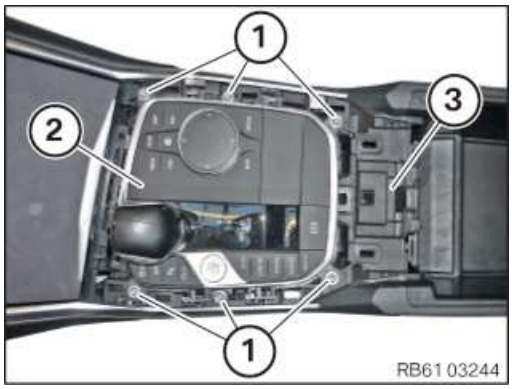
- Position the controller (2) on gear selector switch (GWS) (3) and engage in the latch mechanisms (arrow).
- Tighten the screws (1).

Controller to gear selector switch

Screw		Tightening torque	1,8 Nm

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11 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

▸ **Disconnecting all battery earth leads**



- See additional information.

POSTPROCESSES

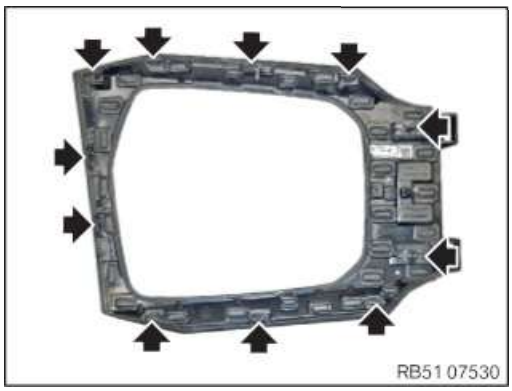
12 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



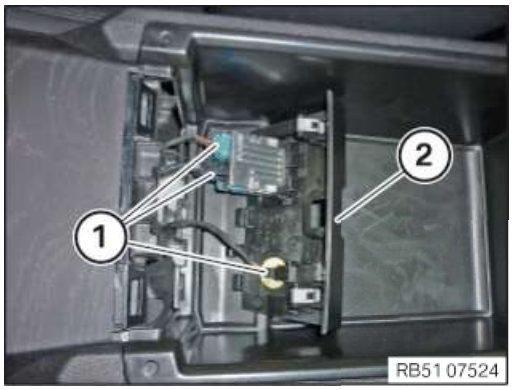
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

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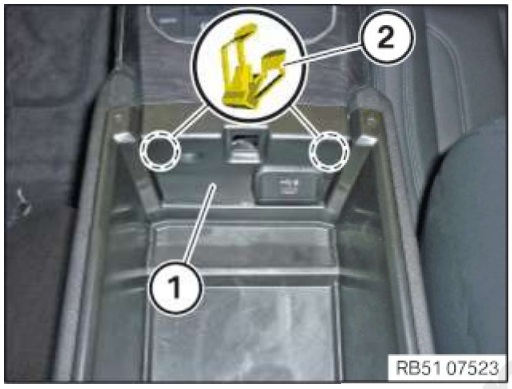


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

13 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

14 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

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- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

15 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Gearshift lever knob — Used in step 8

Screw	Renew screw.	Tightening torque	0,8 Nm

Controller to gear selector switch — Used in step 10

Screw		Tightening torque	1,8 Nm

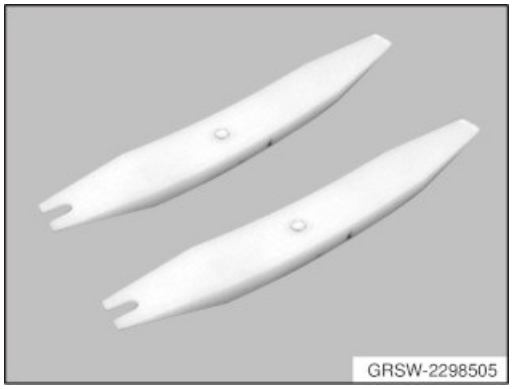
Gear selector switch to centre console trim — Used in step 11

Screw		Tightening torque	1,8 Nm

Overview of Special Tools

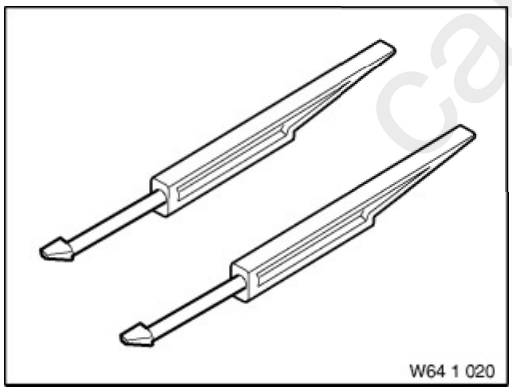
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2 298 505 Wedge



Common	Used in step 23
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 493 681 (64 1 020) Hook



Common	Used in step 7
Usage	(release hook) For releasing and removing fresh air grille. For removing various covers.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115

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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141115
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141115
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
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61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
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61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115
61 20 900 Disconnecting and connecting battery earth lead	141115

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61 31 116 Replacing the rocker switch for side window operation

RISK OF DAMAGE

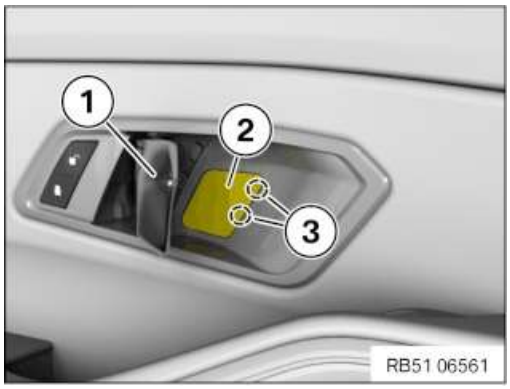
Scratches.

Tools and sharp-edged components can cause scratches.

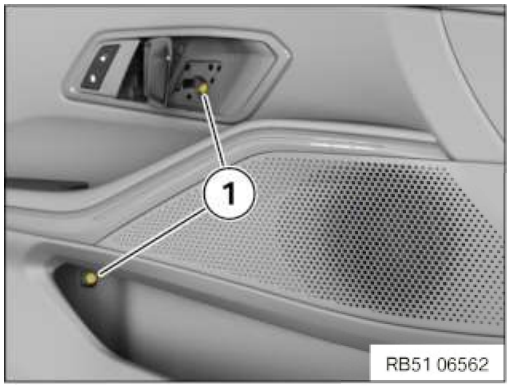
- Protect working area.
- Handle tools and components carefully.

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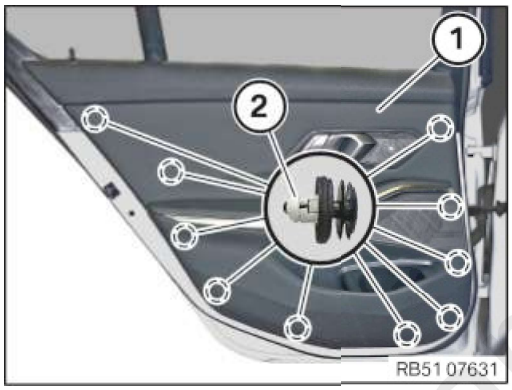
1 – Remove rear door trim



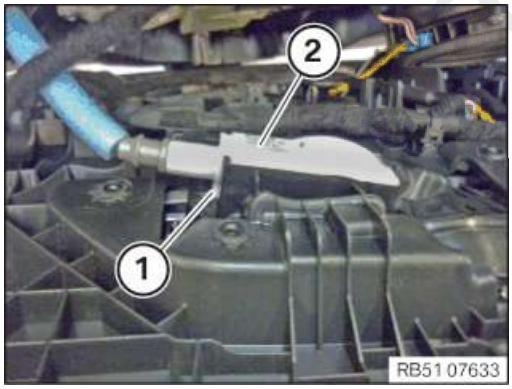
- Pull door opener (1).
- Release latch mechanisms (3) of the trim (2) with suitable tool.
- Remove trim (2).



- Loosen screws (1).



- Unclip the door trim panel (1) with the special tool 0 496 569 (00 9 325) at the clips (2).
- Guide the door trim panel (1) upwards out of the weather strip.

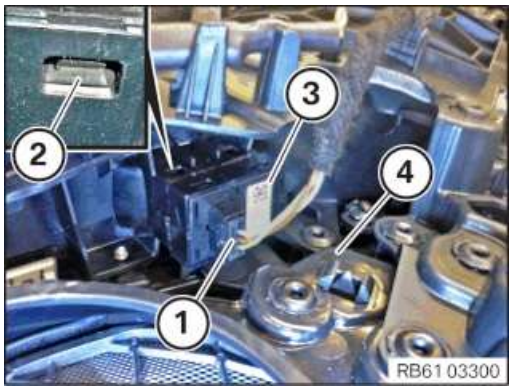


- Release latch mechanism (1) and feed out the Bowden cable for the inner door opener (2).

  In doing so, the Bowden cable for the inner door opener (2) is guided out of the door opener.
- Unlock available plug connections and disconnect.
- Remove door trim panel.

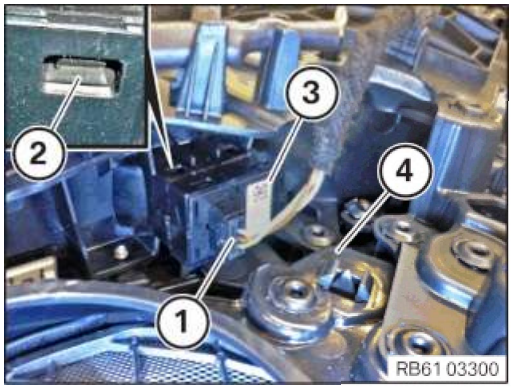
MAIN WORK

2 – Removing the rear power window switch



- Disconnect the connector (1) .
- Release latch mechanisms (2) and remove the power window switch (3) from the door trim panel (4).

3 – Installing the rear power window switch

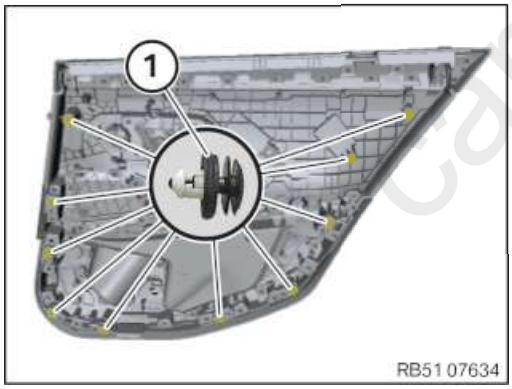


- Position power window switch (3) on the door trim panel (4) and engage in the latch mechanisms (2).
- Connect connector (1).

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POSTPROCESSES

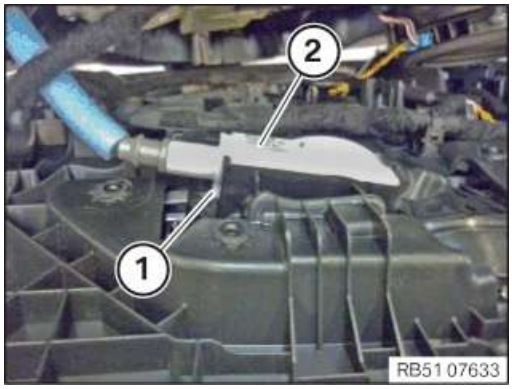
4 – Installing rear door trim panel



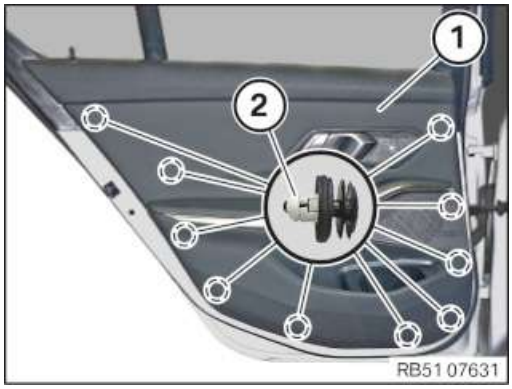
- Renew the clips (1).

  Parts: Clips

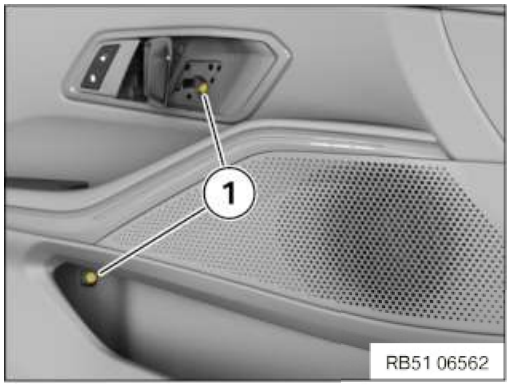
  The clips (1) **must not be engaged. The disengaged state is shown.**



- Push the inner door opener in closed direction.
- Feed in Bowden cable for the inner door handle (2) and clip in to the latch mechanism (1).
- Connect existing connectors and lock.



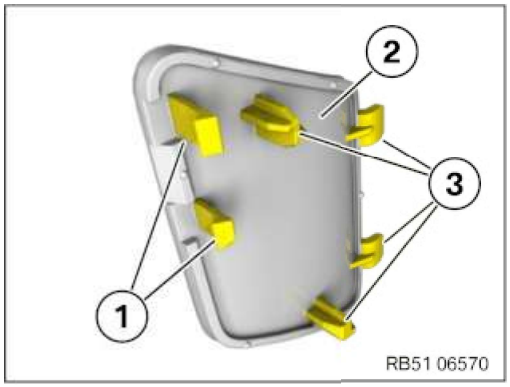
- Feed door trim panel from the top into the inner window recess finisher strip.
- Carefully clip in the door trim panel onto the clips (1).



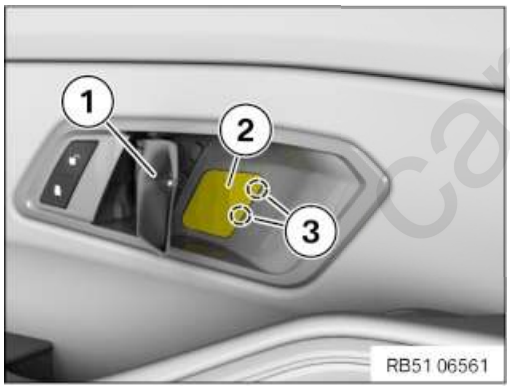
- Tighten the screws (1).

Door trim panel to door

Screw TS5x20		Tightening torque	2,6 Nm



- Check latch mechanisms (1) for damage, if necessary renew the trim (2).
- Check guides (3) for damage, if necessary renew the trim (2).



- Pull door opener (1).
- Position trim (2) and clip in using the latch mechanisms (3).

Additional Information

Overview of Tightening Torques

Door trim panel to door Used in step 4

Screw TS5x20		Tightening torque	2,6 Nm

Overview of Special Tools

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0 496 569 (00 9 325) Wedge



Common	Used in step 1
Usage	(Panel wedge) From 11/2008 this special tool replaces panel wedge 00 9 317 (different material)
Included in the tool or work	0 490 527
Storage location	Individual
Replaced by	
In connection with	
SI-Number	41 01 09 (507)

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61 31 346 Replacing trim on gear selector switch and all trim of the operating facility in the centre console

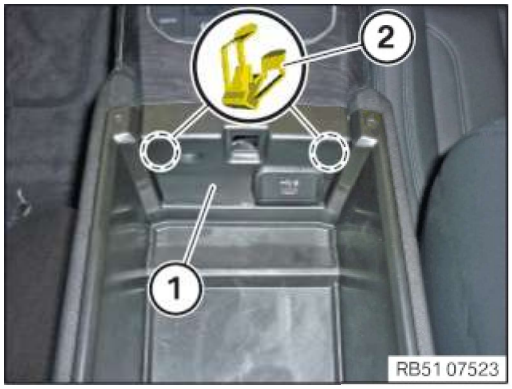
PRELIMINARY WORK

1 – Disconnecting all battery earth leads

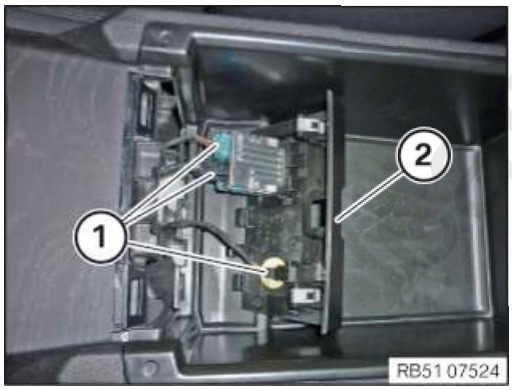


- See additional information.

2 – Removing the trim in the storage compartment on the centre armrest



- Lever out the trim (1) with the special tool (2) toward the rear from the clamps 2 298 505.



- Unlock and disconnect the plug connections (1) and remove the trim (2) .

3 – Remove the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.

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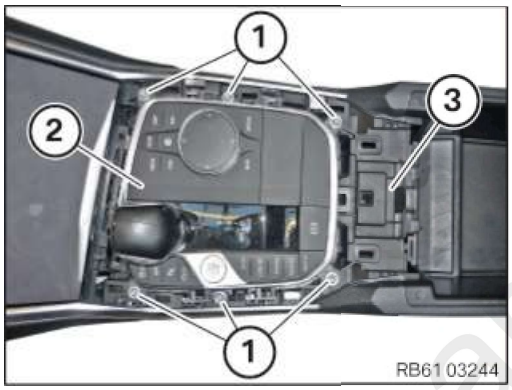
- Release and remove the centre console trim upwards (1) as shown using the special tool 2 298 505 from the latch mechanisms.

4 – Remove the operating facility in the centre console

► **Disconnecting all battery earth leads**

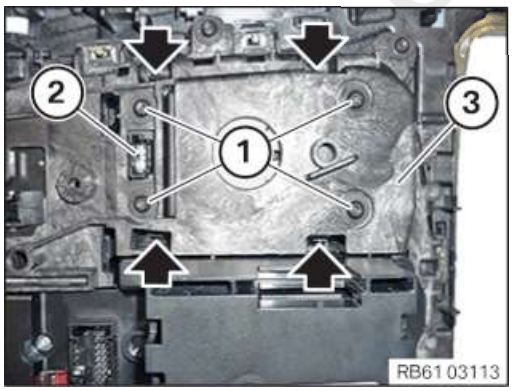


- See additional information.



- Loosen screws (1).
- Remove the operating facility in the centre console (2) from the centre console (3).

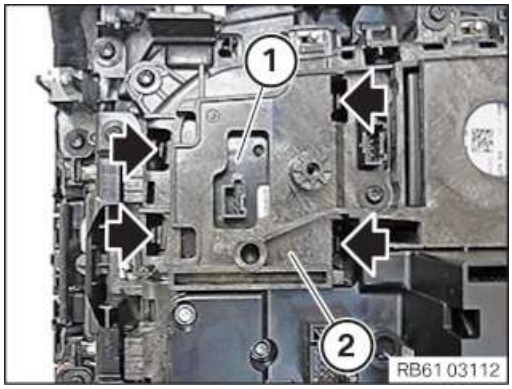
5 – Remove controller



- Loosen screws (1).
- Release the latch mechanisms (arrows).
- Remove controller (2) from the gear selector switch(GWS) (3).

6 – Removing the HDC button

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- Release the latch mechanisms (arrows).
- Remove HDC button (1) from gear selector switch (GWS) (2).

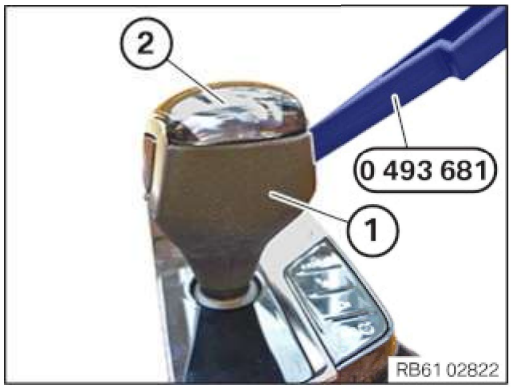
7 – Remove gearshift lever knob

RISK OF DAMAGE

Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

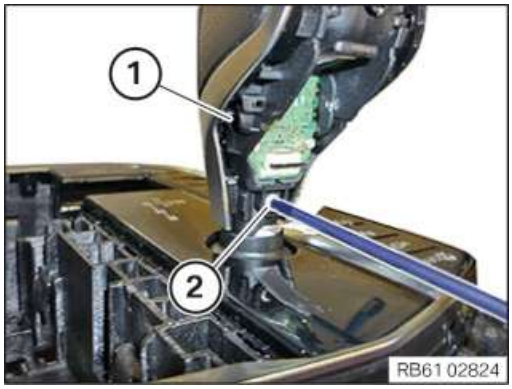
- Protect surfaces from damage.



- Lever the trim (1) with the special tool 0 493 681 (64 1 020) out of the gearshift lever knob (2) on both sides.



- Unlock the connector (1) in the direction of the arrow.
- Thread out the ribbon cable (2).



- Loosen screw (2).
- Remove the shift knob (1) upwards.

MAIN WORK

8 – Replacing the trims on the gearshift lever knob

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– Replacing the trims on the gearshift lever knob

▸ **Remove dazzle from gearshift lever knob**

RISK OF DAMAGE

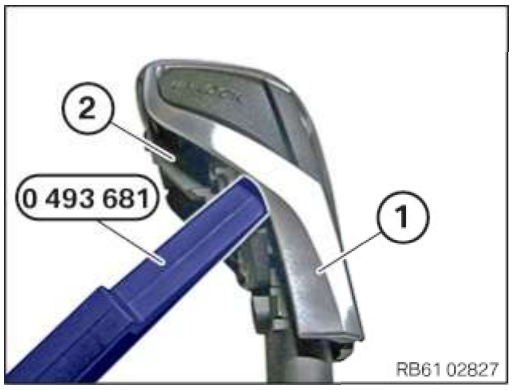
Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

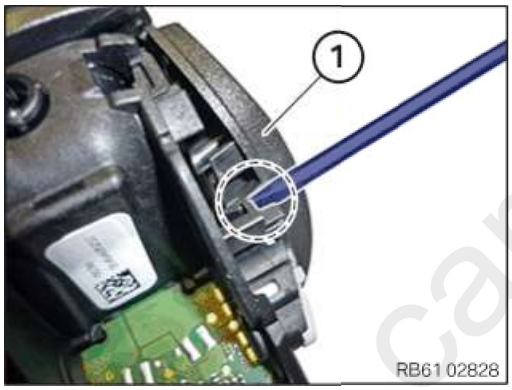
- Protect surfaces from damage.

NOTICE

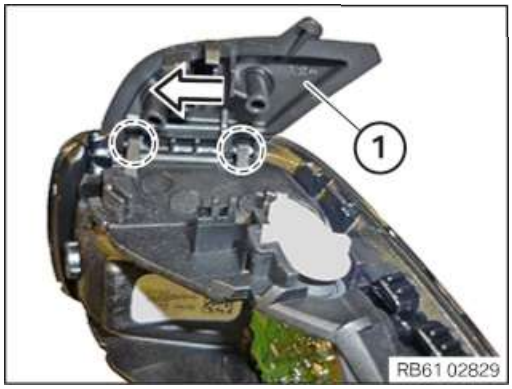
The operations shown only for one side must be carried out on both sides.



- Lever the chrome clasp (1) with the special tool 0 493 681 (64 1 020) out of the gearshift lever knob (2).



- Lever out button (1) with a flat-head screwdriver in the marked area.



- Slightly lift the button (1) and remove it in the direction of the arrow.

▸ **Install the covers on the shift knob**

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RISK OF DAMAGE

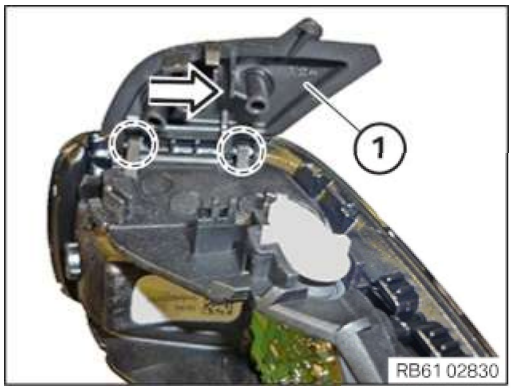
Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

- Protect surfaces from damage.

NOTICE

The operations shown only for one side must be carried out on both sides.



- Insert unlock button (1) in the area marked in the direction of the arrow.



- Fold down unlock button (1) and clip into place in the area marked.



- Position chrome bar (1) on the shift knob (2) and clip into place.

9 – Replacing trims on the operating facility in the centre console

▸ **Remove covers on the operating unit in the centre console**

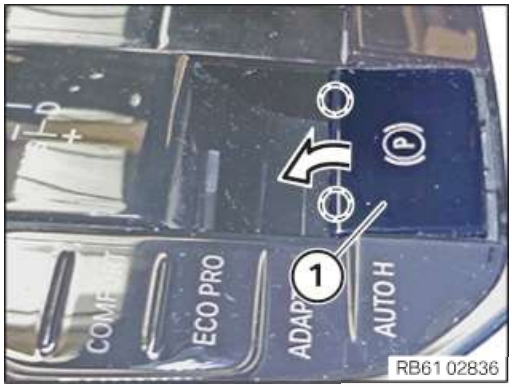
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RISK OF DAMAGE

Damage of high-quality surfaces.

Plastic wedges can damage high-quality surfaces.

- Protect surfaces from damage.

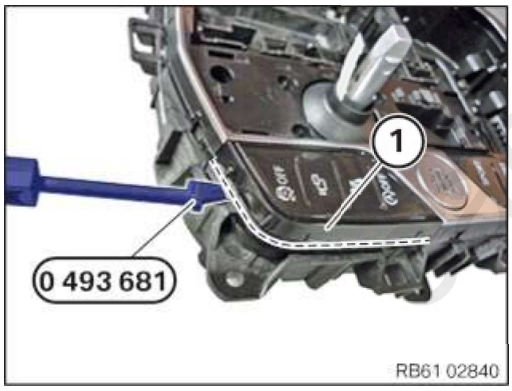


- Press the parking brake button cover (1) forwards and downwards in the direction of the arrow.

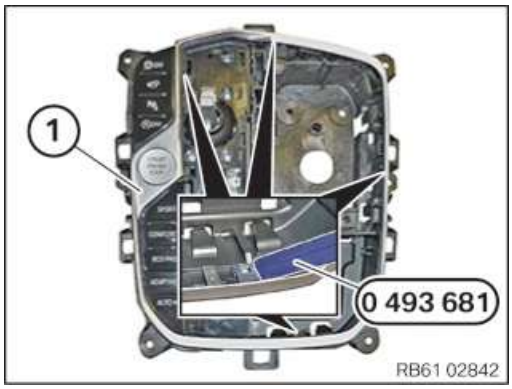
Note: The parking brake button cover can be loosened by pressing strongly out of the catch mechanisms.



- Lever the cover (1) out on the operating unit in the centre console (2) using the special tool 0 493 681 (64 1 020).



- Unclip the trim (1) using special tool 0 493 681 (64 1 020).



- Unclip cover (1) using the special tool 0 493 681 (64 1 020) at the locations marked.

▸ **Installing trims on the operating facility in the centre console**

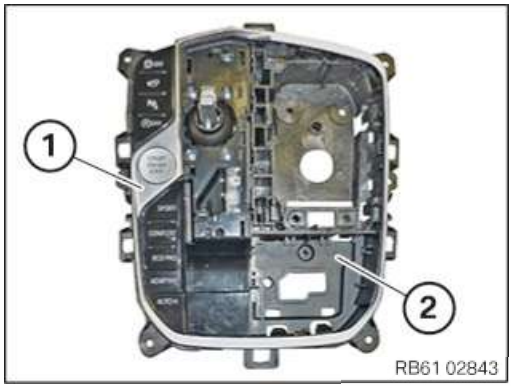
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RISK OF DAMAGE

Damage of high-quality surfaces.

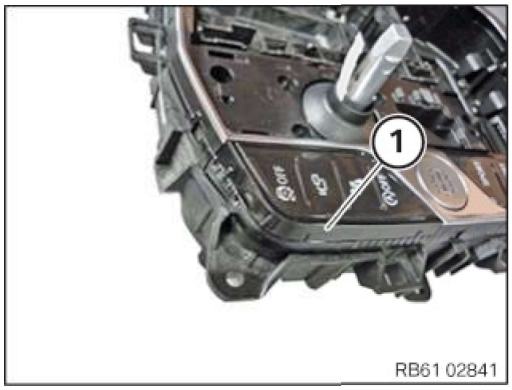
Plastic wedges can damage high-quality surfaces.

- Protect surfaces from damage.



- Position cover (1) on the operating unit in the centre console (2) and clip into place.

  All retaining lugs must engage audibly.

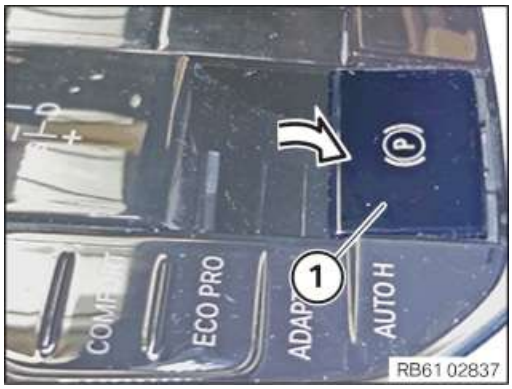


- Position and clip in trim (1).



- Position cover (1) on the operating unit in the centre console (2) and clip into place.

  All retaining lugs must engage audibly.

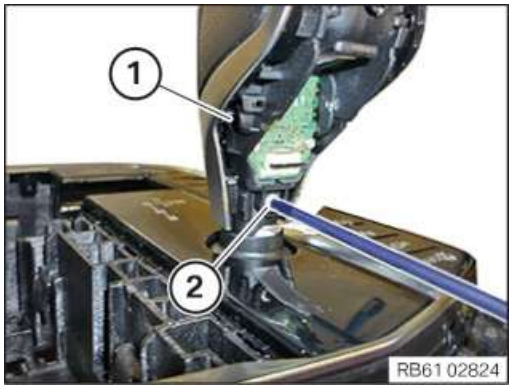


- Position parking brake button cover (1) and snap into place in the direction of the arrow.

  The parking brake button cover (1) must engage audibly.

POSTPROCESSES

10 – Installing gearshift lever knob

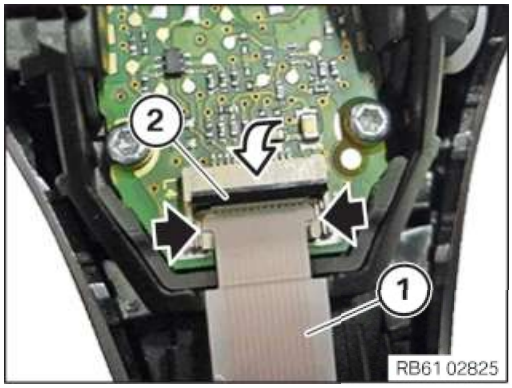


- Position the gearshift lever knob (1).
- Replace the screw of the gearshift lever knob.

  Parts: Screw
- Tighten down screw (2).

Gearshift lever knob

Screw	Renew screw.	Tightening torque	0,8 Nm



- Position ribbon cable (1) correctly on the gearshift lever knob (arrow).
- Lock the connector (2) in the direction of the arrow.

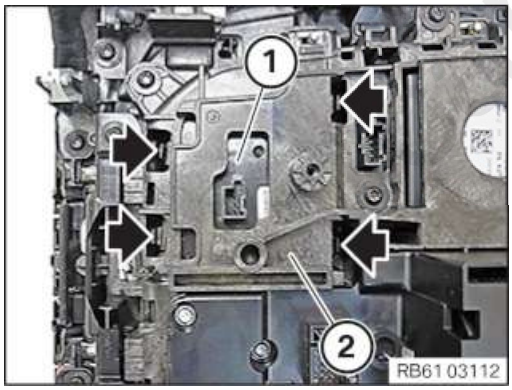


- Position and lock the trim (1) to the gearshift lever knob (2).

  Parts: Gearshift lever knob trim

  Retaining lugs must audibly snap into place.

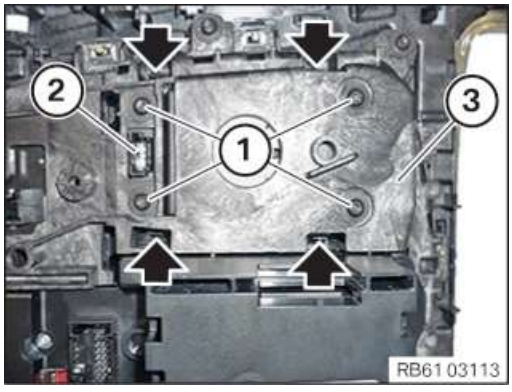
11 – Installing the HDC button



- Position HDC button (1) on gear selector switch (GWS) (2).

  The latch mechanisms (arrows) must engage audibly.

12 – Install controller



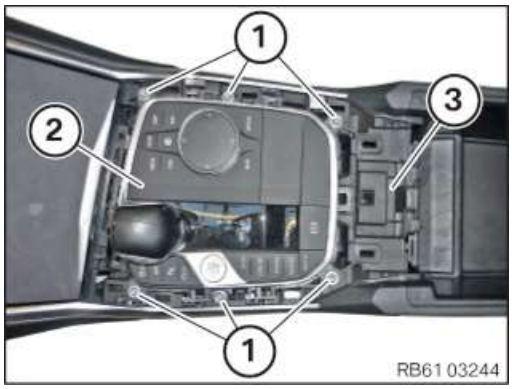
- Position the controller (2) on gear selector switch (GWS) (3) and engage in the latch mechanisms (arrow).
- Tighten the screws (1).

Controller to gear selector switch

Screw		Tightening torque	1,8 Nm

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13 – Install the operating facility in the centre console



- Position operating facility (2) in the centre console (3).
- Tighten the screws (1).

Gear selector switch to centre console trim

Screw		Tightening torque	1,8 Nm

▶ **Disconnecting all battery earth leads**



- See additional information.

14 – Installing the centre console trim

RISK OF DAMAGE

Scratches.

Tools and sharp-edged components can cause scratches.

- Protect working area.
- Handle tools and components carefully.



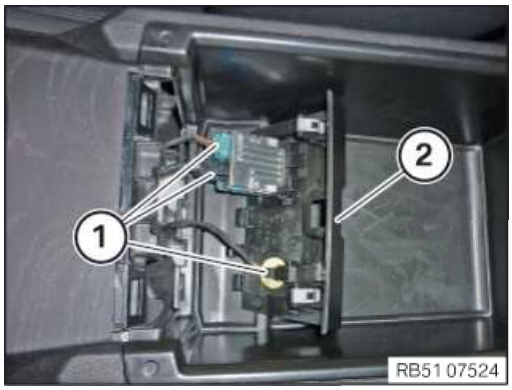
- Check all the latch mechanisms or clamps (arrows).
- In case the latch mechanisms or the clamps (arrows) are faulty, renew the centre console trim .

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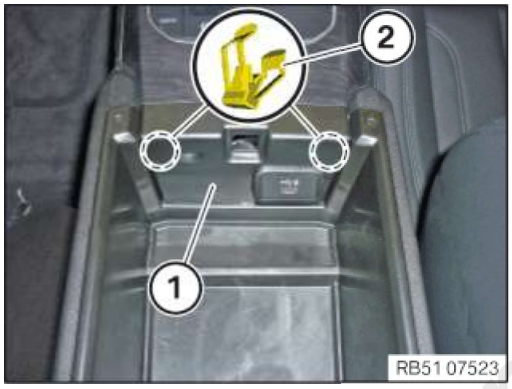


- Correctly position the centre console trim (1) and engage at the latch mechanisms.

15 – Installing the trim in the storage compartment of the centre armrest



- Mount the trim (2) and connect connector (1) and lock.



- Correctly position trim (1) and snap into the clamps (2).

16 – Encode/program control unit(s)

Prerequisite

Replacement of component.

TECHNICAL INFORMATION

Use the most recent software version to prevent faults during programming/encoding.
The battery voltage must not fall below 13.0 V during programming.
Use only chargers for a low volt-vehicle electrical system that are recommended by BMW.

TECHNICAL INFORMATION

No high-voltage switch off is required in electric vehicles or hybrid vehicles for programming/encoding.
The high-voltage system will be automatically switched off by the programming system.

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- Connect the battery charger to the vehicle.
- Connect the programming system with the vehicle.
- Determine the action plan.
- Accept and fully process the measures plan.
- If applicable, connect the workshop system to the vehicle, depending on the reworking list.
- Carry out vehicle test.
- Delete the fault memory.
- The information about programming the workshop system and the corresponding notes in the user documentation must be observed.
- Wait until programming/encoding has been completed.
- Disconnect the programming system from the vehicle.
- Disconnect the battery charger from the vehicle.

17 – Disconnecting all battery earth leads



- See additional information.

Additional Information

Overview of Tightening Torques

Gearshift lever knob			Used in step 10
Screw	Renew screw.	Tightening torque	0,8 Nm

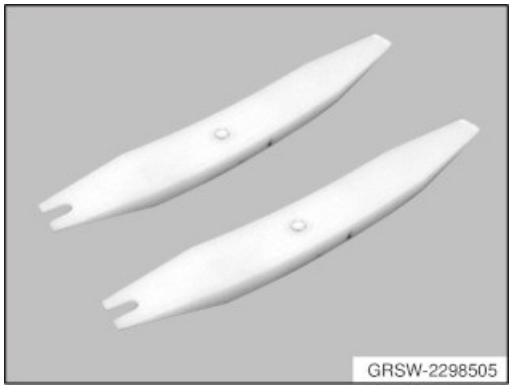
Controller to gear selector switch			Used in step 12
Screw		Tightening torque	1,8 Nm

Gear selector switch to centre console trim			Used in step 13
Screw		Tightening torque	1,8 Nm

Overview of Special Tools

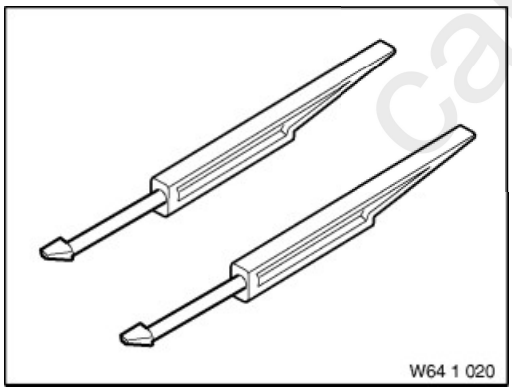
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2 298 505 Wedge



Common	Used in step 23
Usage	Set (delivery of 2 pieces)
Included in the tool or work	
Storage location	C34
Replaced by	
In connection with	
SI-Number	01 03 12 (792)

0 493 681 (64 1 020) Hook



Common	Used in step 789
Usage	(release hook) For releasing and removing fresh air grille. For removing various covers.
Included in the tool or work	
Storage location	C2
Replaced by	
In connection with	
SI-Number	01 15 99 (483)

Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317

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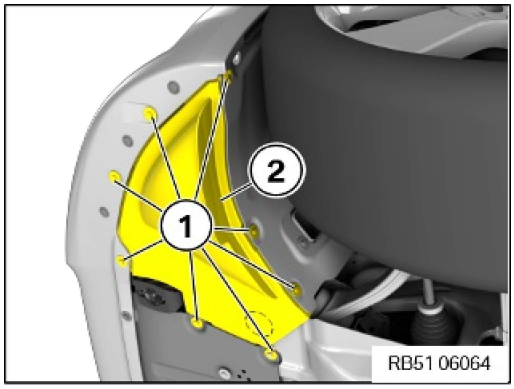
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141317
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141317
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	141317
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61 20 900 Disconnecting and connecting battery earth lead	141317
61 20 900 Disconnecting and connecting battery earth lead	141317

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61 33 050 Removing and installing/replacing left fanfare horn

PRELIMINARY WORK

1 – Removing the lower front cover at the side



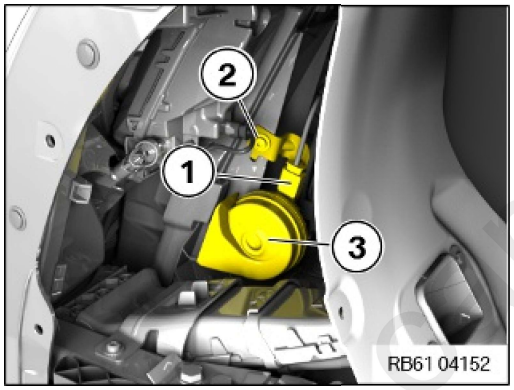
- Loosen screws (1).
- Removing the lower front cover at the side (2).

MAIN WORK

2 – Removing the fanfare on the left

TECHNICAL INFORMATION

Replace the fanfare only complete with the holder.

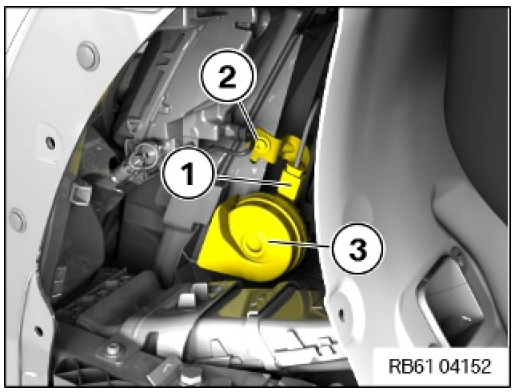


- Unlock plug connection (1) and disconnect.
- Release the screw (2) and remove the left fanfare horn (3) with the bracket.

3 – Installing the fanfare on the left

TECHNICAL INFORMATION

Replace the fanfare only complete with the holder.



- Correctly position the left fanfare horn (3) and tighten screw(2) .

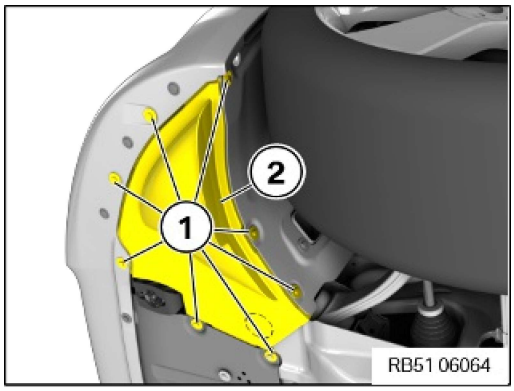
Fanfare to support for bumper panel

M6x20 screw		Tightening torque	8,8 Nm

- Connect connectors (1) and lock.

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4 – Install the lower front cover at the side



- Install front bottom side cover(2).
- Tighten the screws (1).

Cover, front bottom on side

Hexagon screw for thermoplastic		Tightening torque	3 Nm

Additional Information

Overview of Tightening Torques

Fanfare to support for bumper panel — Used in step 3

M6x20 screw		Tightening torque	8,8 Nm

Cover, front bottom on side — Used in step 4

Hexagon screw for thermoplastic		Tightening torque	3 Nm

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