

61 12 ... Information on intelligent battery sensor (IBS)

Notice! Do not connect the charger to the 12 V charging socket

The 12 V charging socket is supplied with voltage by the rear power distribution box via relay. This relay drops out after terminal 15 OFF. This means that a trickle charger connected at the 12 V charging socket will be disconnected from the battery. Only charge the battery via the jump start terminal point. Only then can the voltage supply be registered by the vehicle.

Warning! Danger of destruction in event of mechanical strain

- Do not introduce any additional connections at the battery negative terminal.
- Do not modify the grounding cable. The ground cable also serves heat dissipation.
- Do not establish any connection between the IBS and the sensor screw.
- Do not use force when disconnecting the pole shoe from the battery terminal:
 - Do not pull on the ground cable.
 - Do not place any tools under the IBS to lever off the pole shoe.
- Do not use IBS connections as levers.
- Use a torque wrench and set tightening torque in accordance with repair instructions.
- Do not release or tighten down sensor screw (Torx screw).
- Avoid contact between IBS and ground.

Warning! Danger of destruction to IBS and wiring upon battery replacement

- The IBS and wiring can be destroyed by mechanical strain upon battery replacement. Therefore avoid mechanical strain.
- The size (capacity) of the battery required for the car is coded in the Car Access System (CAS).
- Use the battery size (capacity) installed as standard upon battery replacement.
- Recode the Car Access System (CAS) when installing a battery with a different capacity.
- Register battery replacement via Service functions in diagnosis system.
- Delete fault code entries in the Digital Engine Electronics (DME) associated with battery replacement.
- Always proceed in accordance with the repair instructions.

Note: Battery draining possible in spite of the intelligent battery sensor IBS being fault-free.

- A battery can be drained (e.g. with lights or radio switched on) even when the IBS functions perfectly in conjunction with power management.
- **For this reason, only exchange the IBS when there is a corresponding fault code entry!**





Read and comply with notes on handling wiring harnesses and cables.

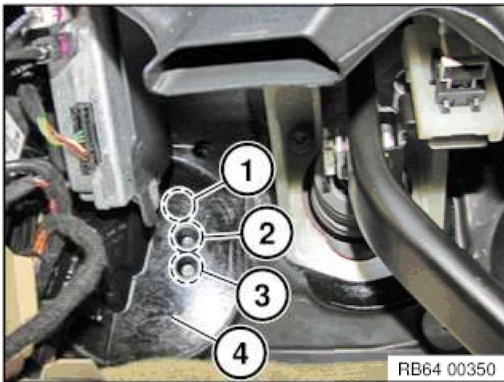


Note:

Work is shown on the F30 by way of example. There may be differences in detail in the case of other vehicle types and equipment specifications.

Necessary preliminary work:

- Remove wheel arch cover front section, front left
- Remove the cover in the left engine compartment
- Remove trim panel for pedal mechanism



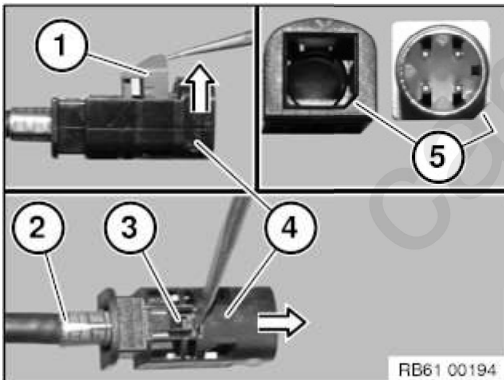
Break through the driver's footwell opening (2) in rubber grommet (4) using a suitable tool.



Note:

If the opening (2) is used, use opening (3).

If both openings (2, 3) are used, break through at position (1).



Unlock the lock (1) in direction of arrow with suitable tool.



Important!

Risk of damage!

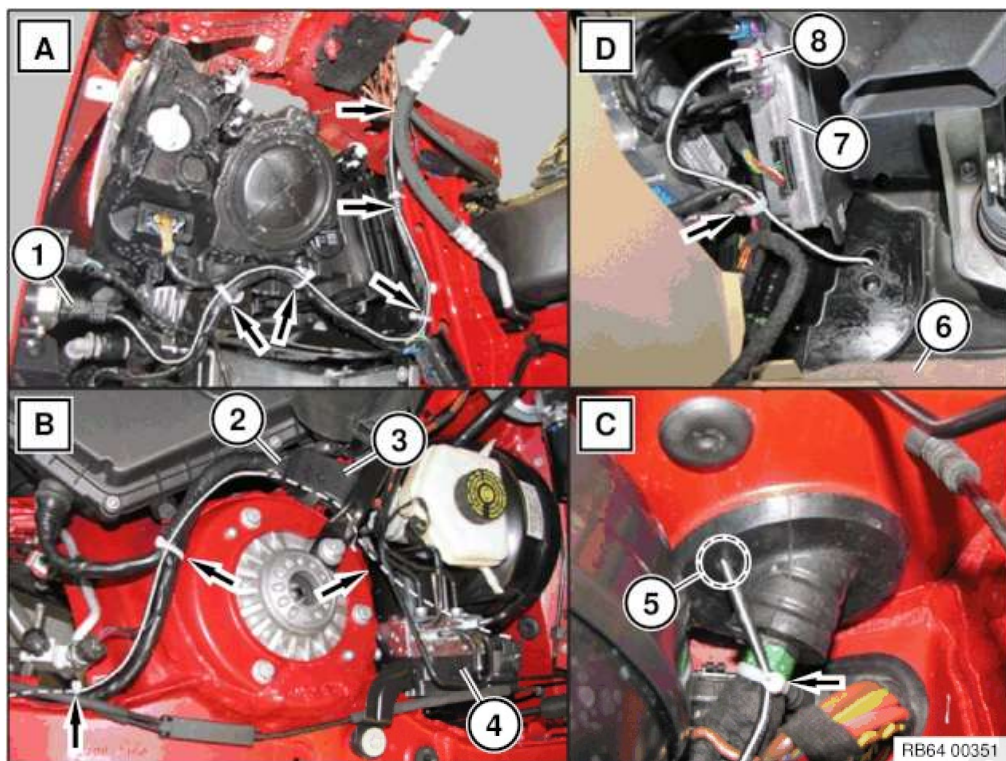
Unlock the lock (3) carefully with a suitable tool. Pull connector housing (4) of line (2) in direction of arrow.



Installation note:

Pay attention to encoding (5)!





Connect the repair cable (shown in white) to the Side View camera (1). Leave approx. 10 cm overlength in the area of Side View camera (1) (Figure A).

Route repair cable in direction of arrow along the vehicle wiring harness and attach at locations marked with arrow (Figure A, B, C, D).

Remove adhesive tape in position (2). Feed the repair cable through the cable channel (3) and underneath the DSC hydraulic unit (4) (Figure B).

Feed the repair cable through at point (5) in driver's footwell (Figure C).

Assemble repair cable. Connect repair cable to connector (8) of all-round vision camera control unit (7) (Figure D).



Installation note:

Tape off the point (2) with suitable adhesive tape.



Important!

To prevent moisture from entering the passenger compartment, seal opening (5) on the outside, using suitable means!



Note:

Route any repair cable overlength under the carpet (6).

After successful completion of function check, detach start and end of faulty cable at first mounting point.



61 11 ... Installing repair cable for reversing camera

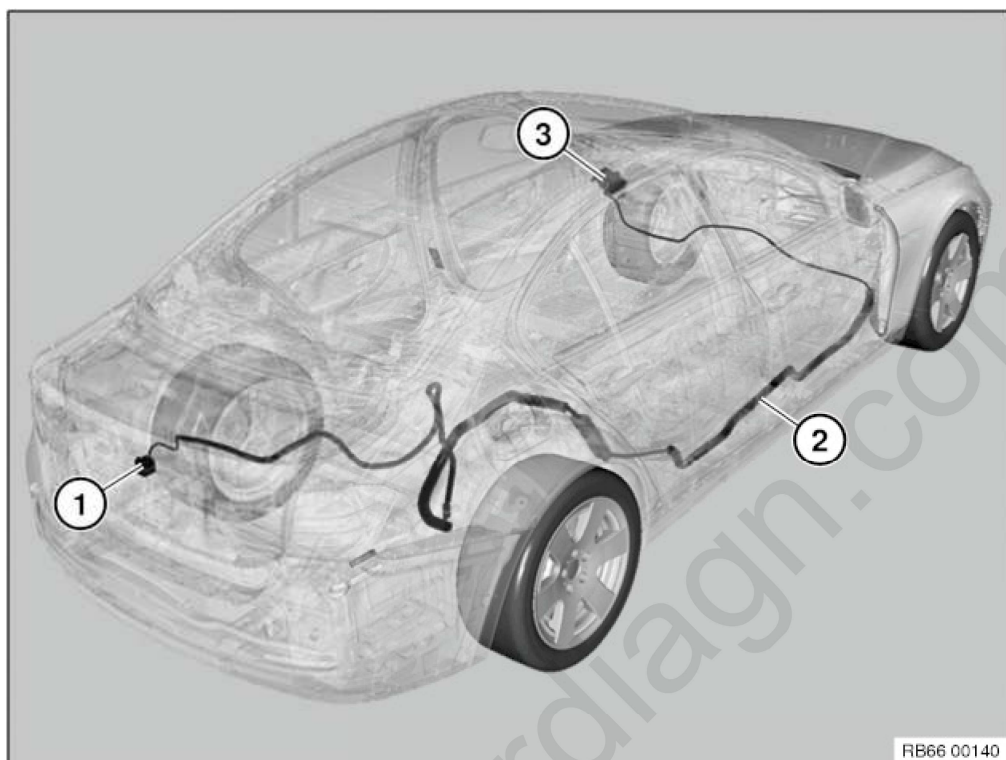


Read and comply with notes on handling wiring harnesses and cables.



Note:

Work is shown by way of example. There may be differences in detail in the case of other vehicle types and equipment specifications.



Remove trim panels.

Lay repair cable from reversing camera (1) along wiring harness (2) up to TRSVC control unit (3, middle slot) and secure sufficiently.

Lay any repair cable overlength under carpet.

After successful completion of function check, detach start and end of faulty cable at first mounting point.





Read and comply with notes on handling wiring harnesses and wiring.

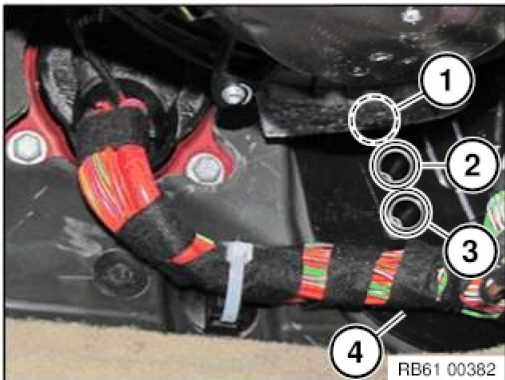


Note:

Work is shown on the F30 by way of example. There may be differences in detail in the case of other vehicle types and equipment specifications.

Necessary preliminary work:

- Remove the front right wheel arch cover front section
- Remove the right cover in the engine compartment
- Remove instrument panel trim, bottom left
- Remove trim panel for pedal assembly



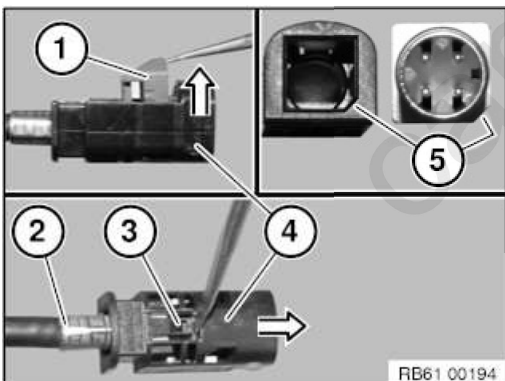
Break through the passenger footwell opening (2) in rubber grommet (4) using a suitable tool.



Note:

If the opening (2) is used, use opening (3).

If both openings (2, 3) are used, break through at position (1).



Unlock the lock (1) in direction of arrow with suitable tool.



Important!

Risk of damage!

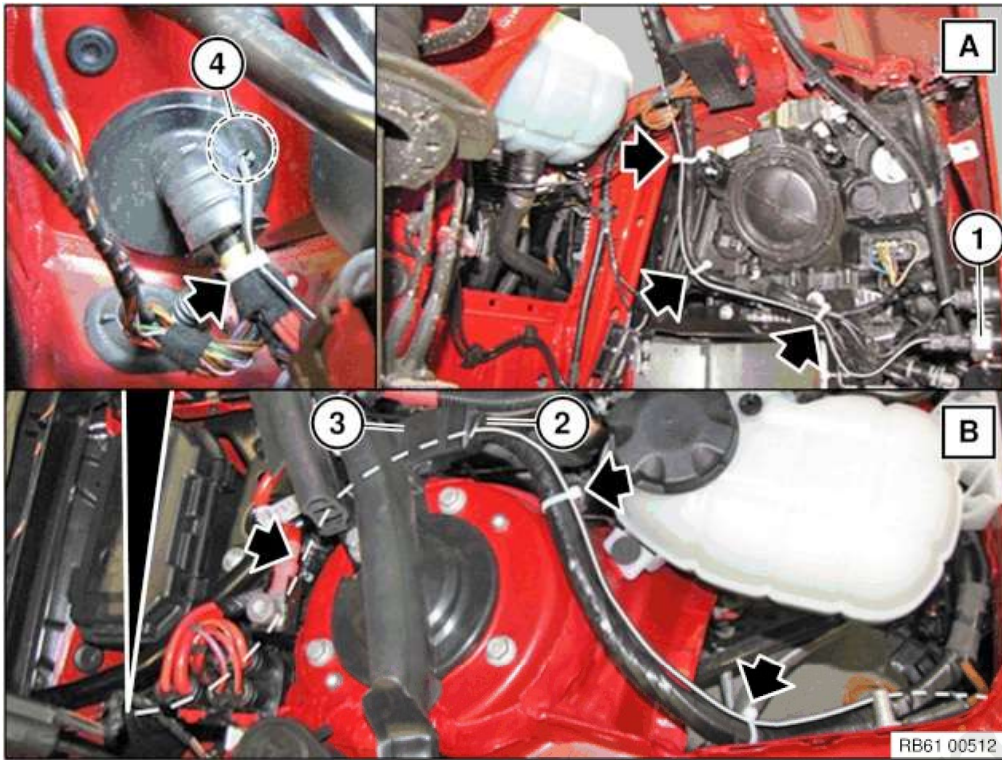
Unlock the lock (3) carefully with a suitable tool. Pull connector housing (4) of line (2) in direction of arrow.



Installation note:

Pay attention to encoding (5)!





Connect the repair cable (shown in white) to the Side View camera (1).

Leave approx. 10 cm overlength in the area of Side View camera (1) (Figure A).

Route repair cable in direction of arrow along the vehicle wiring harness and attach at locations marked with arrow (Figure A, B).

Remove adhesive tape at point (2). Feed through repair cable through cable channel (3) (graphic B).

Feed through repair cable at point (4) in passenger footwell (graphic B).



Installation note:

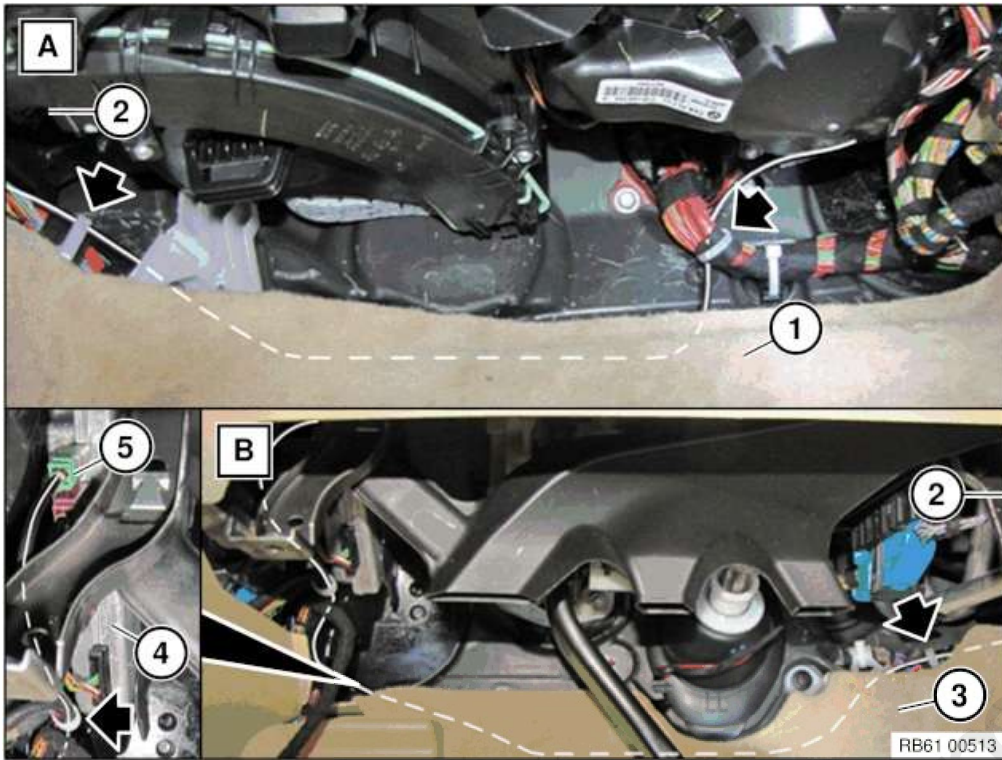
Tape off the point (2) with suitable adhesive tape.



Important!

To prevent moisture from entering the passenger compartment, seal opening (4) on the outside, using suitable means!





Route repair cable in passenger footwell (graphic A)/driver's footwell (graphic B) under carpet (1, 3) as illustrated up to TRSCV control unit (4).

Secure repair cable at points marked with an arrow.

Route the repair cable from the passenger footwell under the heating and air-conditioning unit (2) in the driver's footwell (Figure A, B).

Complete the repair cable and connect at slot (5) of the TRSCV control unit (4) (Figure B).



Note:

Route any repair cable overlength under the carpet (3).

After successful completion of function check, detach start and end of faulty cable at first mounting point.



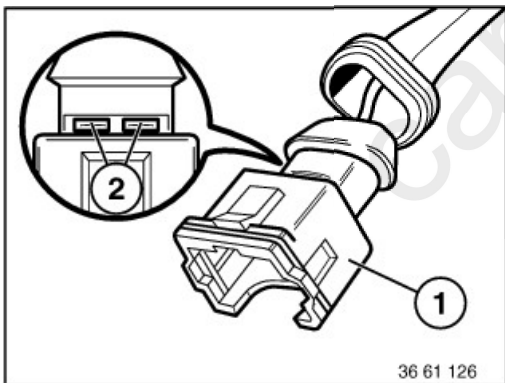


Special tools required:

- 61 0 300
- 61 0 400
- 61 1 100

Abbreviations of contacts and what they mean:

ELA	Strand seal
D 1.5 / 2.5 / 3.5	Round contacts with 1.5 mm, 2.5 mm or 3.5 mm diameter
MDK	Miniature double flat spring contact
JPT	Junior Power timer
DFK	Double flat spring contacts
Elo	Electronic contacts
Elo Power	Electronic contacts for heavy load
MQS	Micro Quadlock system
MPQ	Micro Power Quadlock
MLK	Mini laminated contact
SLK	Sensor laminated contact
LSK	Load current contact
MLK	Mini laminated contact
Mcon	Multi contact



Important!

The contacts can be changed on ultrasonically welded connectors (1).

Ultrasonically welded connectors (1) must be replaced completely.

Ultrasonic-welded connectors (1) can be identified by the welds (2) on their longitudinal side.



Note:

Special tools referred to in the repair instructions below are contained in the following special tool sets:

- Unlocking and pressing-off tool 61 1 150
is replaced as of 09/2005 by 61 0 300 (BMW) and 61 0 400 (MINI)
- Release and pressing-off tool 61 1 100 (engine)



Repair instructions for opening connector housings and removing contacts of different connector systems:

Connector system D 1.5/D 2.5:

- Circular connectors, 7- or 8-pin, system D 2.5
- Circular connectors, 13-pin, system D 2.5
- Circular connectors, 20-pin, system D 2.5
- Circular connectors, 4-, 7-, 10-, 12- or 25-pin, system D 1.5/D 2.5
- In-line connectors, 15-pin, system D 2.5
- In-line connectors, 8-, 12-pin, system D 2.5
- In-line connectors, 30-pin, system D 2.5
- In-line connectors, 20-pin, system D 2.5

Connector system JPT/MDK/DFK:

- In-line connectors, 2-pin, System JPT ELA
- In-line plugs, 2-pin, System MDK 3 plus 2.8
- In-line plugs, 4-pin, System DFK ELA

Connector system Elo/Elo Power:

- Inline plugs, 4-, 10-pin, System Elo
- In-line connectors, 6- to 50-pin, System Elo
- Inline plugs, 3-, 6-pin, System Elo-Power 2.8

Connector system LSK:

- Connector housing LSK contact

Connector system MQS/MPQ:

- Inline connectors, 6-, 8-pin, System MQS
- Inline plugs, 2-pin, System MPQ 2.8
- Control unit connectors, 25-, 35-, 55-, 83-, 88-pin
- In-line plugs, 24-pin, Hybrid System MQS/MPQ
- Socket housing 42-, 43-pin, Hybrid System MQS / MPQ
- Socket housings 2x21-, 2x27-pin, Hybrid System MQS/MPQ, Elo/Elo Power
- In-line connectors, 30-pin, Hybrid System MQS/MPQ
- Socket housings, 5-, 8-pin, System MQS/MPQ
- Socket housing (radio connector), Hybrid System MQS/MPQ

For connector contact systems not listed, refer to Service Information:

SI 2 05 05 217

SI 2 05 06 294

SI 2 03 08 440

SI 2 08 06 312

SI 2 02 08 439

SI 2 01 08 438



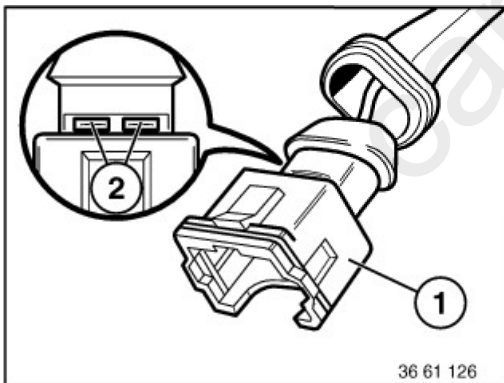


Special tools required:

- 61 0 300
- 61 0 400
- 61 1 100
- 61 1 150

Abbreviations of contacts and what they mean:

ELA	Strand seal
D 1.5 / 2.5 / 3.5	Round contacts with 1.5 mm, 2.5 mm or 3.5 mm diameter
MDK	Miniature double flat spring contact
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DFK	Double flat spring contacts
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Elo Power	Electronic contacts for heavy load
MQS	Micro Quadlock system
MPQ	Micro Power Quadlock
MLK	Mini laminated contact
SLK	Sensor laminated contact
MLK	Mini laminated contact
Mcon	Multi contact



Important!

The contacts can be changed on ultrasonically welded plugs (1).
Ultrasonically welded plugs (1) must be replaced completely.
Ultrasonic-welded connectors (1) can be identified by the welds (2) on their longitudinal side.



Note:

Special tools referred to in the repair instructions below are contained in the following special tool kits:

- Release and press-out tool 61 1 150
is replaced from 09/2005 by 61 0 300 (BMW) and 61 0 400 (MINI)
- Release and press-out tool 61 1 100 (engine)



Repair instructions for opening plug housings and removing contacts of different plug systems:

Plug system D 1.5/D 2.5:

- Circular plugs, 7-, 8-pin, System D 2.5
- Circular plugs, 13-pin, System D 2.5
- Circular plugs, 20-pin, System D 2.5
- Circular plugs, 4-, 7-, 10-, 12-, 25-pin, System D 1.5/D 2.5
- In-line plugs, 15-pin, System D 2.5
- In-line plugs, 8-, 12-pin, System D 2.5
- In-line plugs, 30-pin, System D 2.5
- In-line plugs, 20-pin, System D 2.5

Plug system JPT/MDK/DFK:

- In-line plugs, 2-pin, System JPT ELA
- In-line plugs, 2-pin, System MDK 3plus 2.8
- In-line plugs, 4-pin, System DFK ELA

Plug system Elo/Elo-Power:

- In-line plugs, 4-, 10-pin, System Elo
- In-line plugs, 6- to 50-pin, System Elo
- In-line plugs, 3-, 6-pin, System Elo-Power 2.8

Plug system MQS/MPQ:

- In-line plugs, 6-, 8-pin, System MQS
- In-line plugs, 2-pin, System MPQ 2.8
- Control unit plugs, 25-, 35-, 55-, 83-, 88-pin
- In-line plugs, 24-pin, Hybrid System MQS/MPQ
- Socket housing 42-, 43-pin, Hybrid System MQS / MPQ
- Socket housings 2x21-, 2x27-pin, Hybrid System MQS/MPQ, Elo/Elo-Power
- In-line plugs, 30-pin, Hybrid System MQS/MPQ
- Socket housings, 5-, 8-pin, System MQS/MPQ
- Socket housing (radio plug), Hybrid System MQS/MPQ

For plug contact systems not listed, refer to Service Information:

SI 2 05 05 217

SI 2 05 06 294

SI 2 03 08 440

SI 2 08 06 312

SI 2 02 08 439

SI 2 01 08 438



61 12 ... Removing and installing / replacing positive battery cable at partition seal (engine compartment)



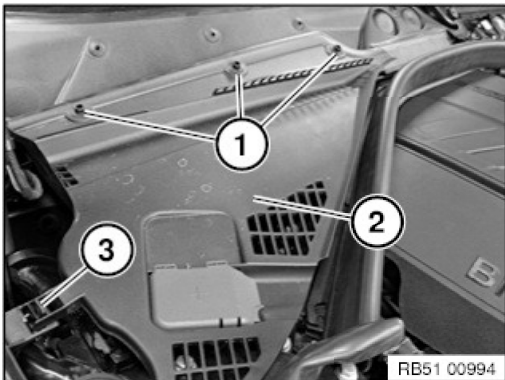
Warning!

Observe safety informations for handling vehicle battery.



Necessary preliminary tasks:

- Clamp off battery lead from negative connection point



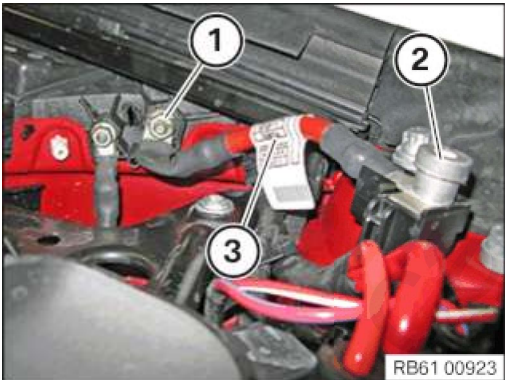
Note:

Graphics shown on the F20 by way of example, deviations in detail are possible in other models.

Turn locks (1) 90° counterclockwise.

Unlock catch (3).

Remove cover (2).



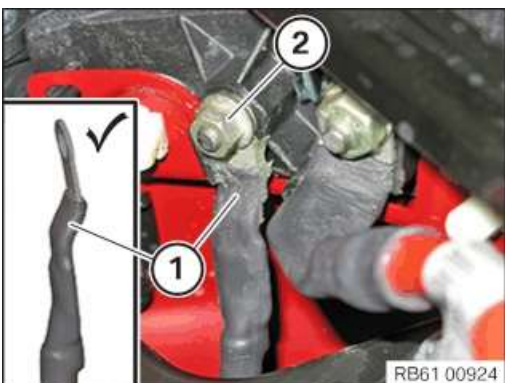
Slacken nut (1).

Tightening torque 61 21 4AZ.

Slacken nut (2).

Tightening torque 61 21 4AZ.

Remove positive battery cable (3).



Check that the positive battery cable subsurface (1) is correctly positioned.

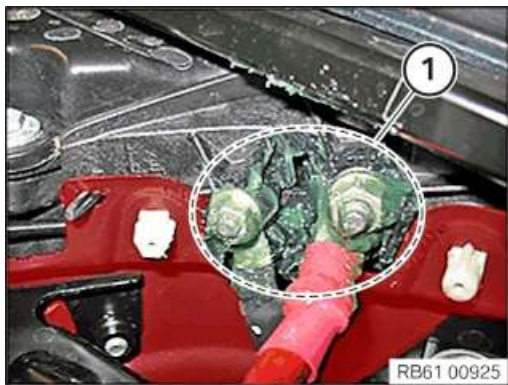
Positive battery cable subsurface (1) must face away from partition seal as shown.

In case of incorrect installation position:

Release nut (2) and correct installation position of positive battery cable subsurface (1).

Tightening torque 61 21 7AZ.





Installation note:

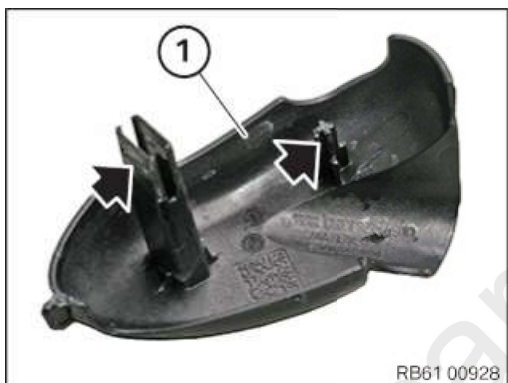
Coat positive battery cables (1) at partition seal with contact protection grease.

(Contact protection grease BMW part number 83 19 2 295 229.)

Use a standard flat brush with a width of approx. 2.5 cm to apply the grease.



Unclip cover (1).



Installation note:

Guide and retaining lugs on cover (1) must not be damaged or missing.



Installation note:

Coat positive battery cables (1) at partition seal with contact protection grease.

(Contact protection grease BMW part number 83 19 2 295 229.)

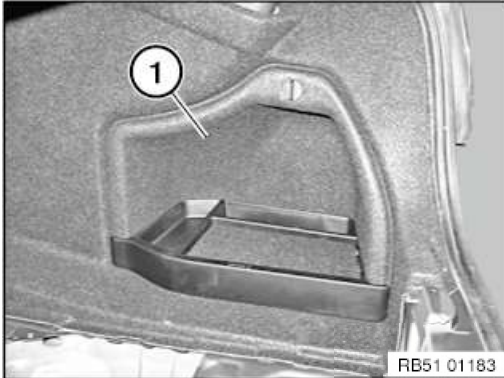
Use a standard flat brush with a width of approx. 2.5 cm to apply the grease.



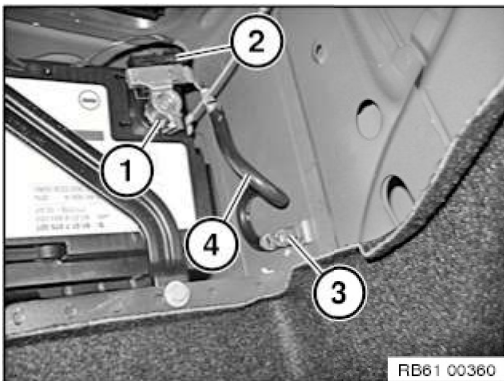
**Warning!**

Observe safety information for handling vehicle battery.

Read and comply with notes and notes on intelligent battery sensor.



Remove flap (1).



Slacken nut (1) on negative battery terminal.

Tightening torque 61 21 1AZ.

Important!

Do not under any circumstances use force to pull off negative terminal.

Detach battery earth lead with intelligent battery sensor (IBS) in upward direction, lay to one side and secure.

Disconnect plug connection (2).

Release nut (3) and battery earth lead (4).

Tightening torque 61 21 6AZ.



61 12 002 Replacing positive battery cable (from battery to luggage compartment cable connector)



Warning!

Observe safety instructions for handling vehicle battery.
Follow instructions on intelligent battery sensor (IBS).



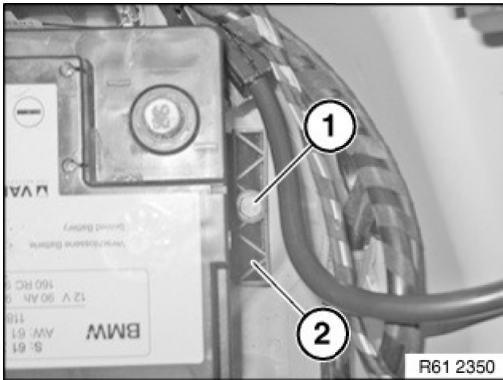
Important!

Do not under any circumstances use force to pull or lever off safety battery terminal.



Necessary preliminary tasks:

- Clamp off battery lead from negative connection point



Note:

Work shown on the F30 by way of example, deviations in detail are possible in other models.

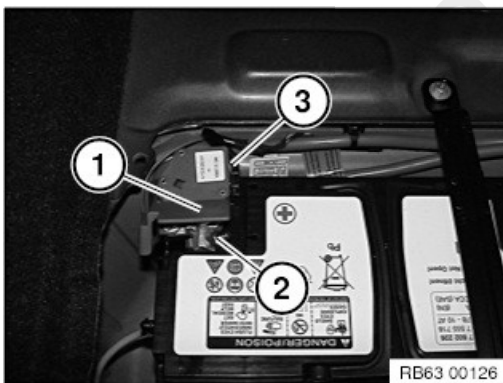
Release screw (1) and remove holder (2).

Tightening torque 61 21 5AZ.

Slide battery fully towards rear.

Installation note:

Make sure battery is correctly fitted.



Open cover (1) and release nut (2) below it.

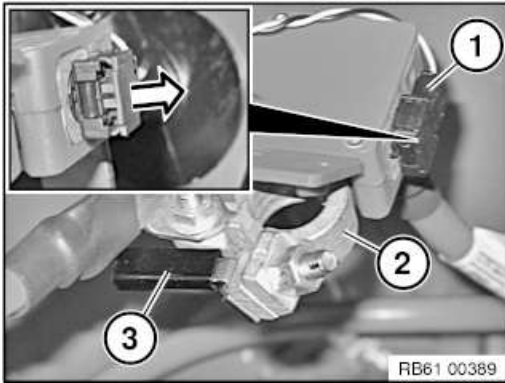
Tightening torque 61 21 1AZ.

Important!

Do not under any circumstances pull or lever off safety battery terminal (3) by force.

Remove safety battery terminal (3) towards top.

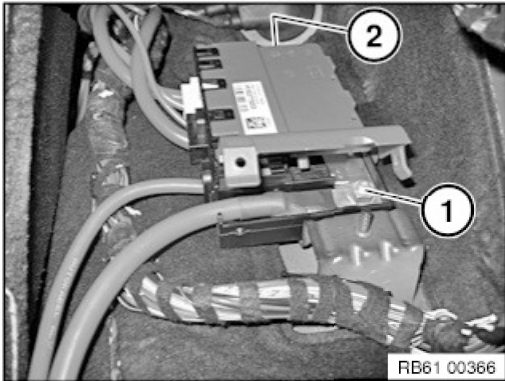




Release lock of plug connection (1) in direction of arrow with a suitable tool.

Remove plug connection (1) from safety battery terminal (2) in direction of arrow.

Pull off plug connection (3) from safety battery terminal (2).

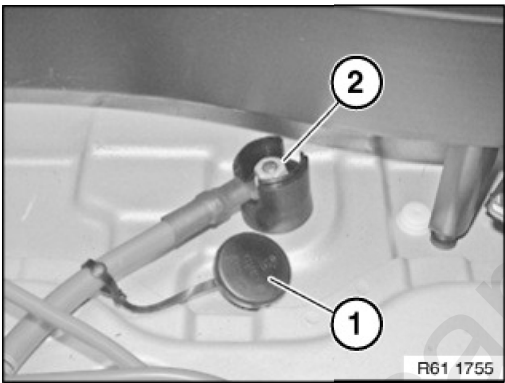


Open cover on power distribution box (2) and release nut (1) underneath.

Tightening torque 61 21 4AZ.

Remove positive battery cable from power distribution box (2).

Installation note:
Risk of short circuits!
 Make sure positive battery cable is correctly fitted.



Remove cover (1) and release nut (2) below it.

Tightening torque 61 21 4AZ.

Remove complete positive battery cable from vehicle.

Installation note:
Risk of short circuits!
 Make sure positive battery cable is correctly fitted.

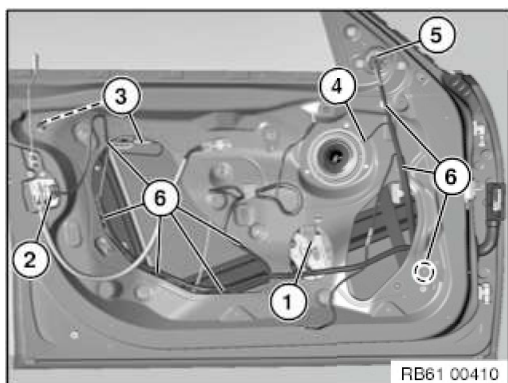


**Important!**

Read and comply with notes on handling wiring harnesses and cables.

**Necessary preliminary tasks:**

- Close front side window completely
- Remove front sound insulation
- Remove corner cover for mirror mount.

**Note:**

Work shown on the F30 by way of example, deviations in detail are possible in other models.

Release and disconnect plug connection (1) at power window regulator.

Unlock plug connection (2) on door lock and disconnect.

Unlock and disconnect plug connection (3) on outside door handle light.

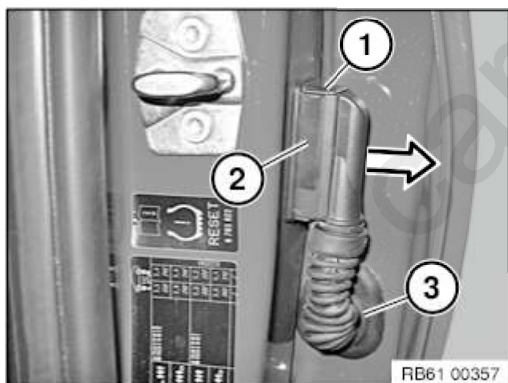
Unlock and disconnect plug connection (4) on speaker.

Unlock and disconnect plug connection (5) on outside door mirror.

Unclip door wiring harness at associated points (6).

Installation note:

Make sure wiring harness for the door wiring harness is routed correctly.



Loosen lock (1) in upward direction with suitable tool.

Disconnect connector (2) and detach in direction of arrow to thereby disconnect the plug connection.

Pull rubber grommet (3) forward out of door.

Feed the door wiring harness out toward the front and remove.

Installation note:

Make sure connector (2) is properly locked.

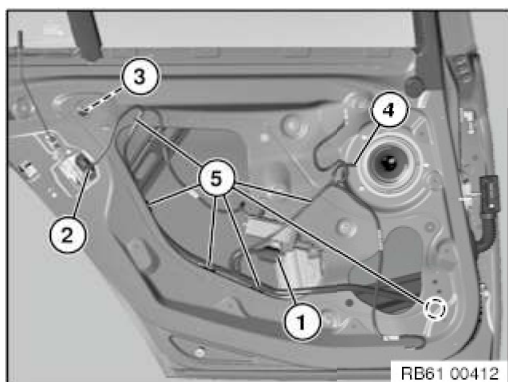


**Important!**

Read and comply with notes on handling wiring harnesses and wiring.

**Necessary preliminary tasks:**

- Close rear side window completely
- Remove rear sound insulation

*Note:*

Work shown on the F30 by way of example, deviations in detail are possible in other models.

Release and disconnect plug connection (1) at power window regulator.

Unlock plug connection (2) on door lock and disconnect.

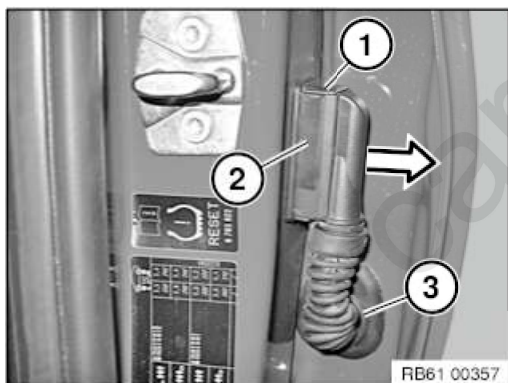
Unlock and disconnect plug connection (3) on outside door handle light.

Unlock and disconnect plug connection (4) on speaker.

Unclip door wiring harness at associated points (5).

Installation note:

Make sure wiring harness for the door wiring harness is routed correctly.



Loosen lock (1) in upward direction with suitable tool.

Disconnect connector (2) and detach in direction of arrow to thereby disconnect the plug connection.

Pull rubber grommet (3) forward out of door.

Feed the door wiring harness out toward the front and remove.

Installation note:

Make sure connector (2) is properly locked.

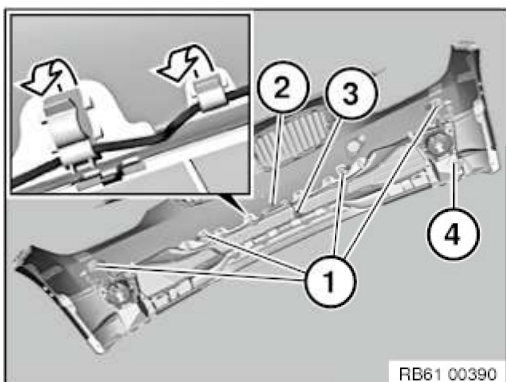


**Important!**

Read and comply with notes on handling wiring harnesses and cables.

**Necessary preliminary tasks:**

- Remove front bumper panel

**Note:**

Graphic shows the F30 by way of example, deviations in detail are possible in other models.

Depending on equipment specifications following sensors can be installed:

- (1) Ultrasonic sensors.
- (2) Pedestrian protection sensor.
- (3) ACC sensor.

Unlock associated plug connections and disconnect.

Unclip wiring harness from bumper panel in direction of arrow.

Release central connector (4) from latch mechanism and remove wiring harness.

Installation note:

Make sure wiring harness is correctly laid.

Make sure central connector is fitted correctly (4) on bumper panel.



61 12 265 Replacing wiring harness on left or right front seat



NOTICE

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

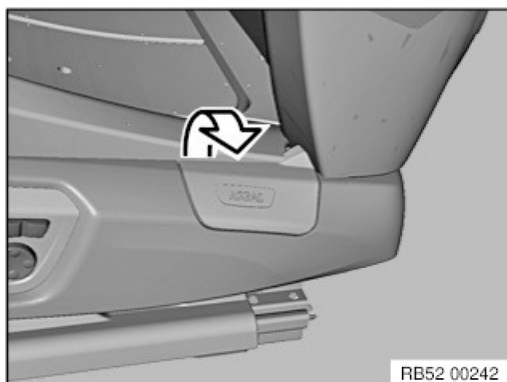


NOTICE

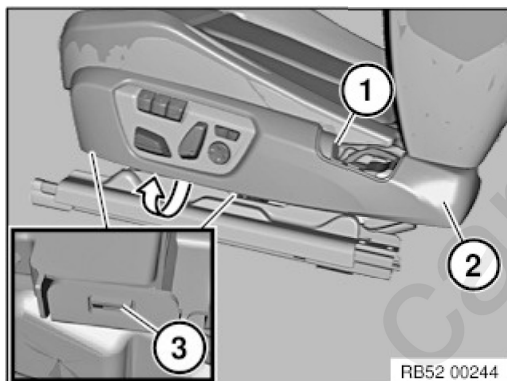
Description is for left component only. Procedure on the right side is identical.

PRELIMINARY WORK

1 – Remove outer cover on front seat



- Move backrest to full rearward position.
- Grip end fitting cover centrally between seat belt strap and cover and unclip in direction of arrow.



- Loosen screw (1).
- Lever latch mechanism (3) of the cover (2) out of seat mechanism.
- Remove cover (2) in direction of arrow from seat mechanism.
- Unlock associated plug connections of the operating unit and disconnect.

2 – Partially remove the front seat



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



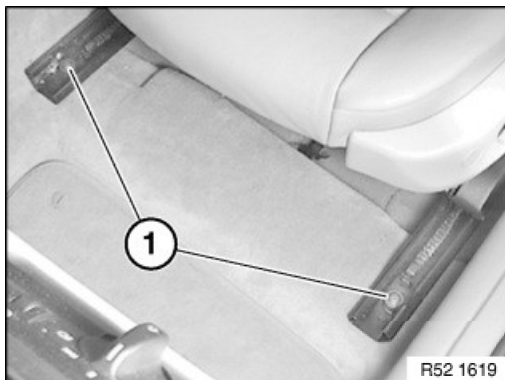


RISK OF DAMAGE

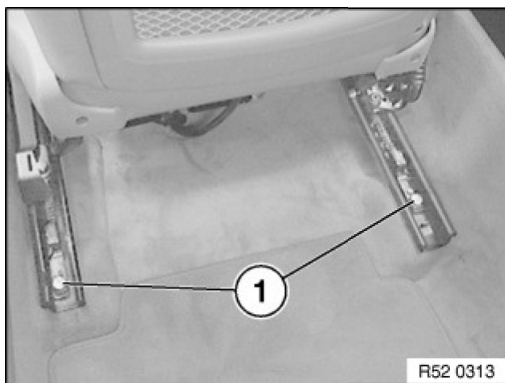
Scratches.

Tools and sharp-edged components can cause scratches.

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



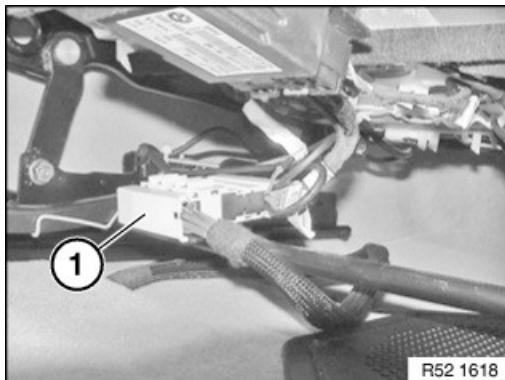
- Move seat to upper back position.
- Loosen screws (1).



- Adjust the seat to the front top.
- Loosen screws (1).

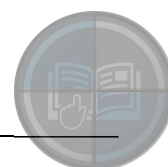
► Disconnecting all battery earth leads

- See additional information.



- Place the front seat to the rear.
- Unlock plug connection (1) and disconnect.

MAIN WORK

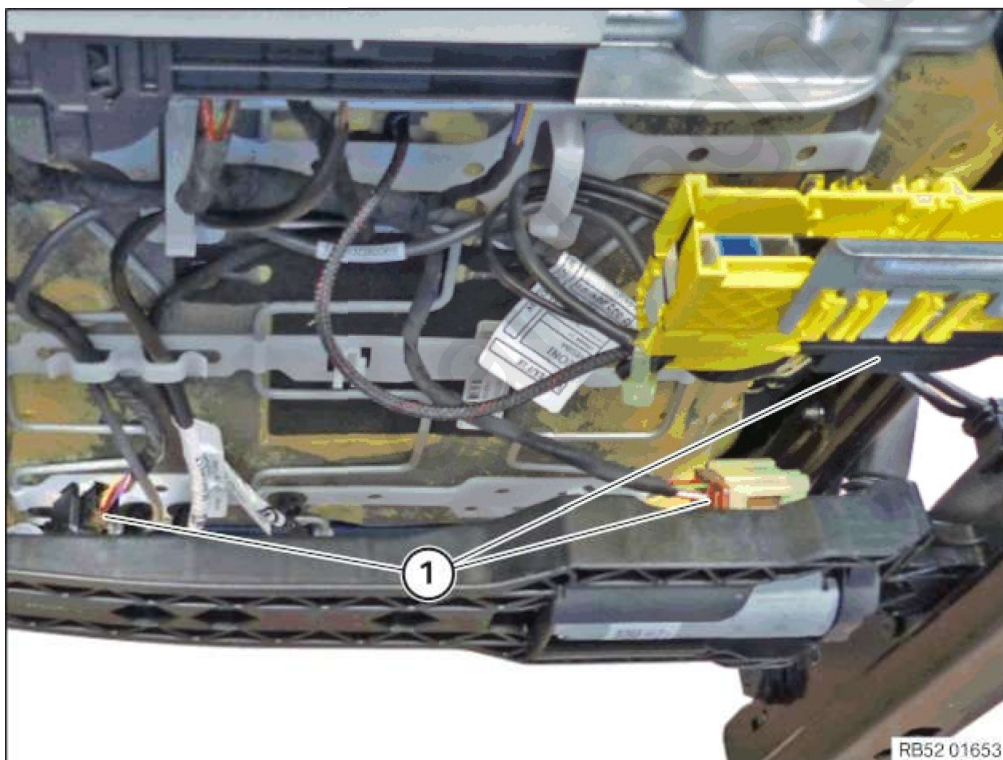


3 – Replacing wiring harness for front seat

Overview of seat wiring harness

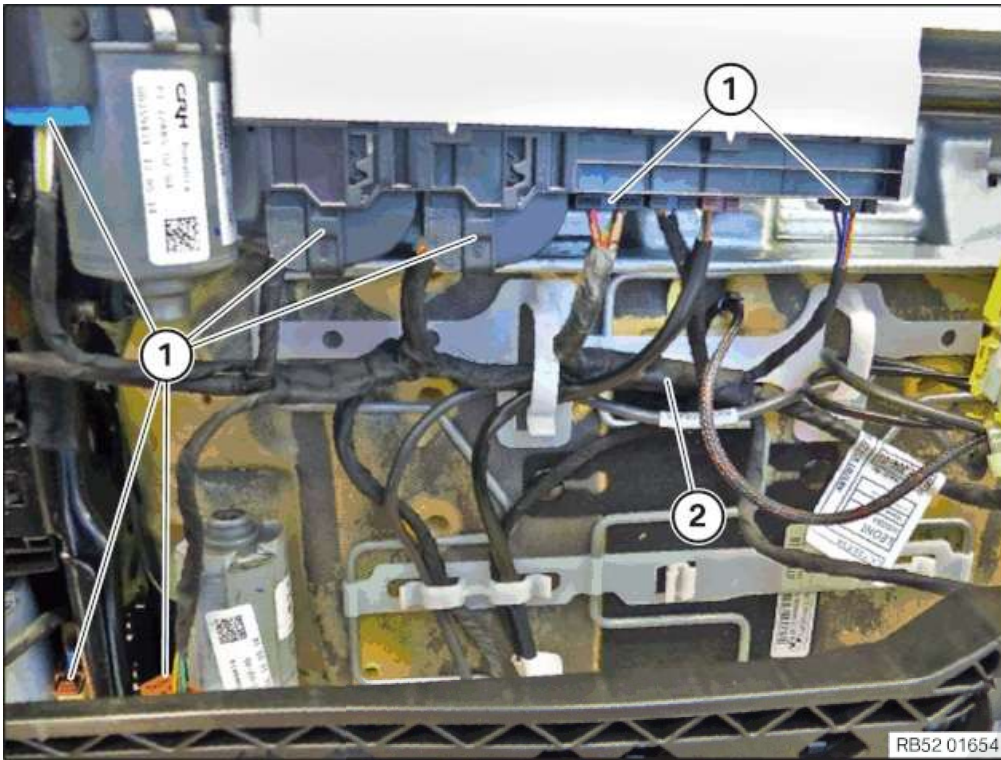


1 Seat wiring harness

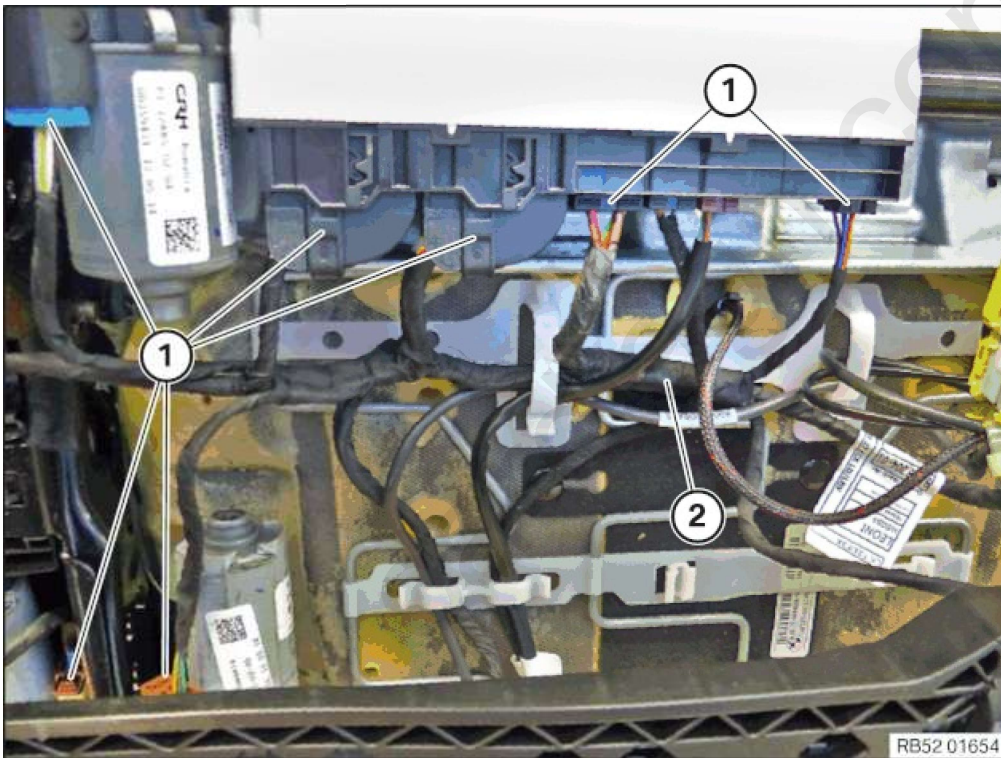


- Unlock and disconnect connector (1).



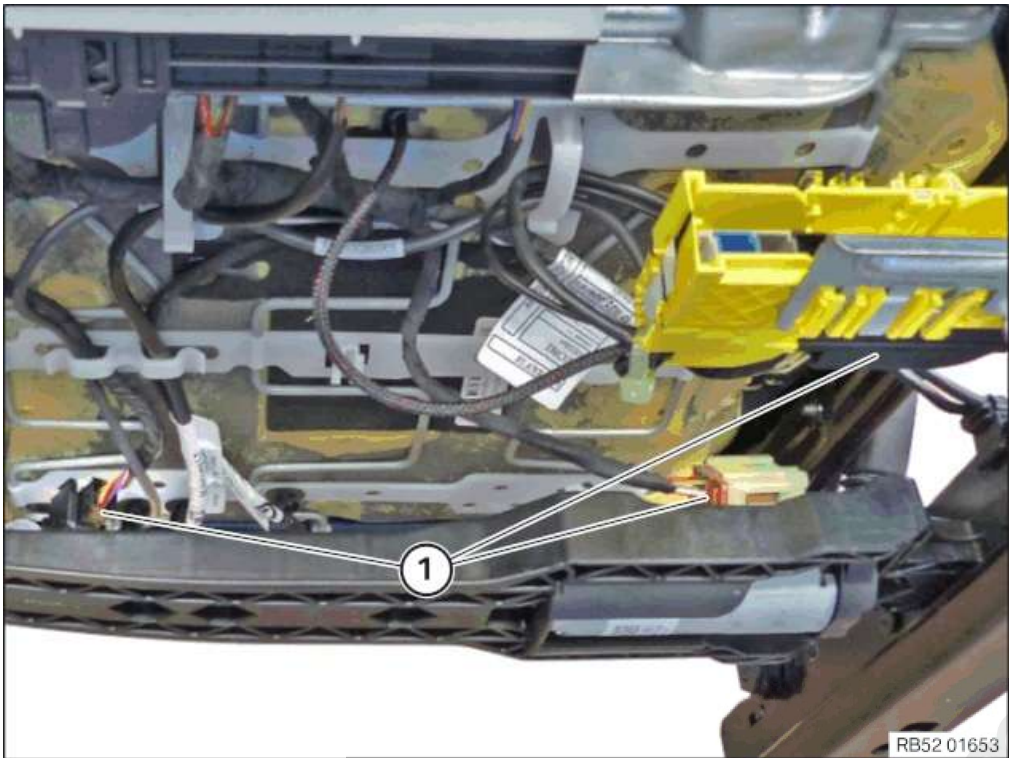


- Unlock and disconnect connector (1).
- Remove the wiring harness (2).



- Replace wiring harness (2).
- Parts:** Wiring harness
- Insert the wiring harness (2).
 - Connect connectors (1) and lock.





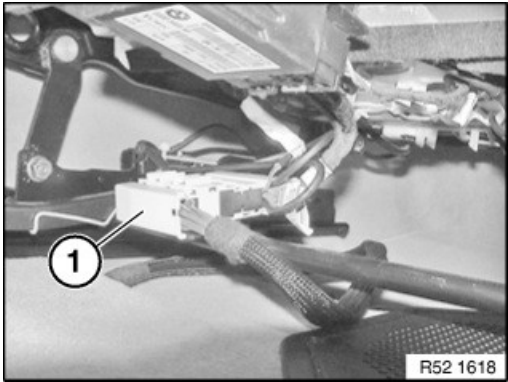
- Connect connectors (1) and lock.



- Check if the wiring harness (1) and the cable are correctly fed into the marked areas.

POSTPROCESSES

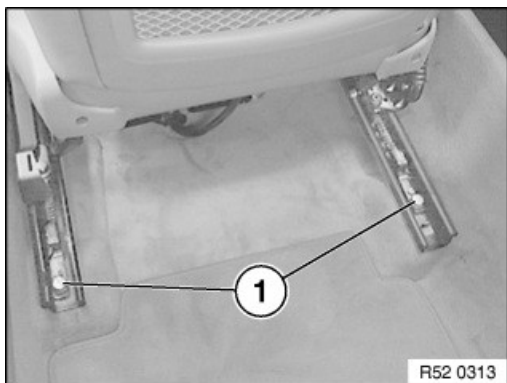
4 – Install front seat (partially removed)



- Connect connectors (1) and lock.
- Position front seat.

The seat rails must be in direct contact with the floor panel.





- Renew screws (1).

Parts: Bolts

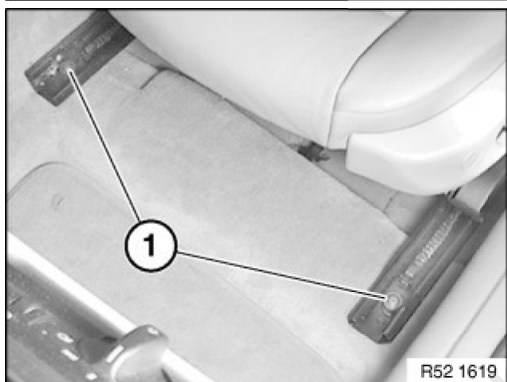
- Tighten the screws (1).

Front seat to body

Screw	Renew screw.	Tightening torque	42 Nm
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► Disconnecting all battery earth leads

- See additional information.



- Move seat to upper back position.

- Renew screws (1).

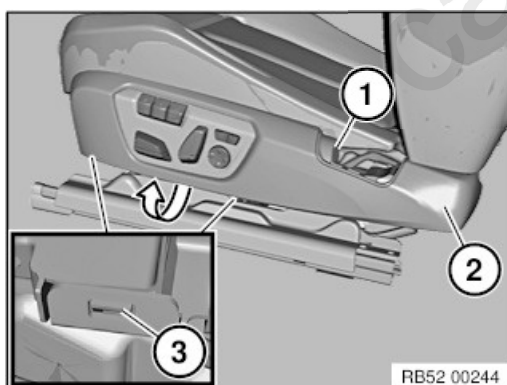
Parts: Bolts

- Tighten the screws (1).

Front seat to body

Screw	Renew screw.	Tightening torque	42 Nm
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5 – Installing the outer cover on the front seat



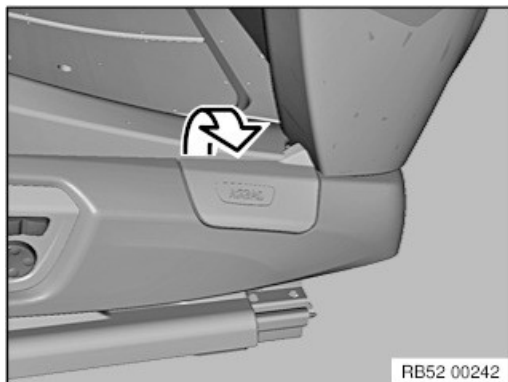
- Check cover (2) for damage and replace if required.
- Connect associated plug connections of the operating unit.
- Install the cover (2).
- Tighten down screw (1).

Outer cover to front seat

Screw		Tightening torque	1,5 Nm
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- Check whether the latch mechanism (3) of the cover (2) is engaged correctly on the seat mechanism.





- Clip in the trim end fitting.

6 – Delete fault memory



- Delete the fault memory.

Additional Information

Overview of Tightening Torques

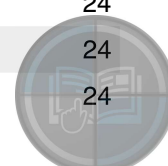
Front seat to body			Used in step
Screw	Renew screw.	Tightening torque	42 Nm

Outer cover to front seat			Used in step
Screw		Tightening torque	1,5 Nm

Links

General repair instructions	Used in step
72 00 ... Safety regulations for handling components with gas generators	2

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	24
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	24
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	24
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	24
61 20 900 Disconnecting and connecting battery earth lead	24
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61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	24
61 20 900 Disconnecting and connecting battery earth lead	24
61 20 900 Disconnecting and connecting battery earth lead	24
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61 20 900 Disconnecting and connecting battery earth lead	24
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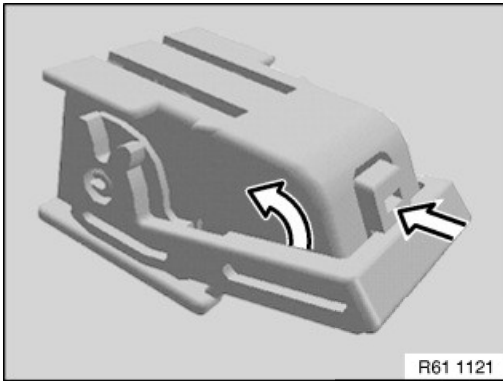
cardiagn.com



**Note:**

The document describes unlocking and disconnecting different types of plug connections.

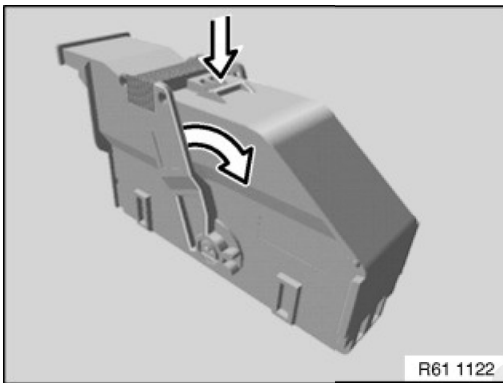
Differences in the details of the size and shape of the plug connections are possible.



1.

Press lock and open release clip in direction of arrow.

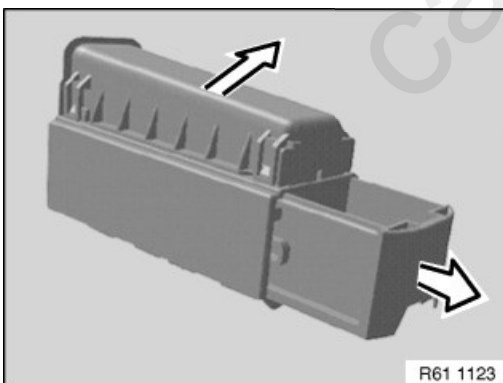
Disconnect plug connection.



2.

Press lock and open release clip in direction of arrow.

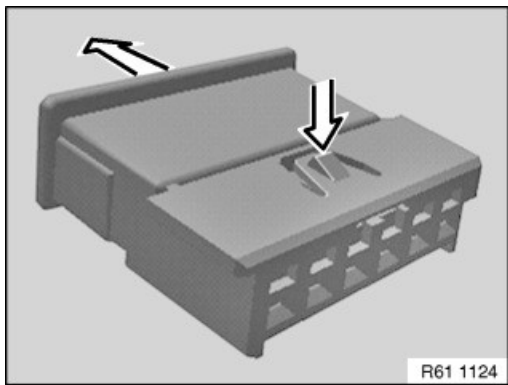
Disconnect plug connection.



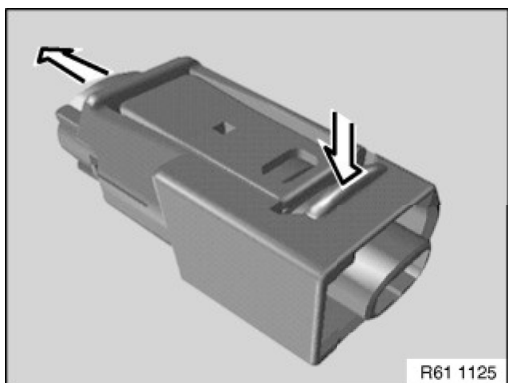
3.

Open release clip in direction of arrow and disconnect plug connection in direction of arrow.

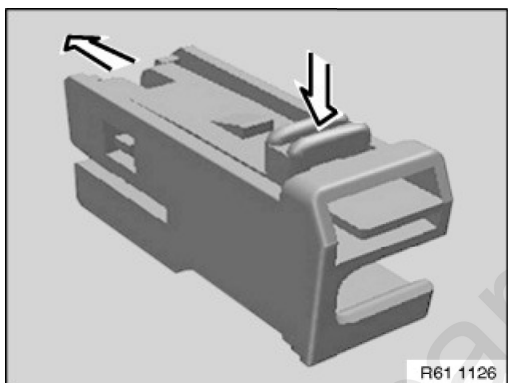




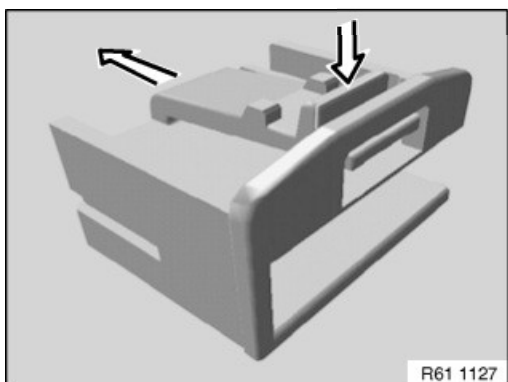
4.
Press lock and disconnect plug connection in direction of arrow.



5.
Press lock and disconnect plug connection in direction of arrow.

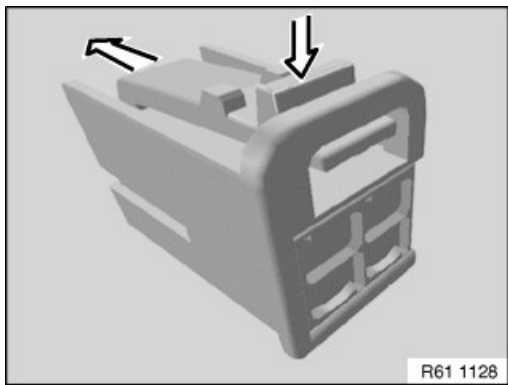


6.
Press lock and disconnect plug connection in direction of arrow.

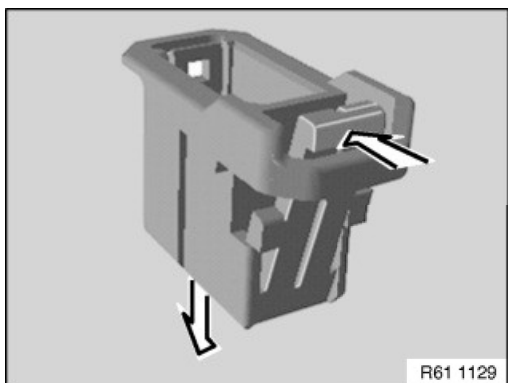


7.
Press lock and disconnect plug connection in direction of arrow.

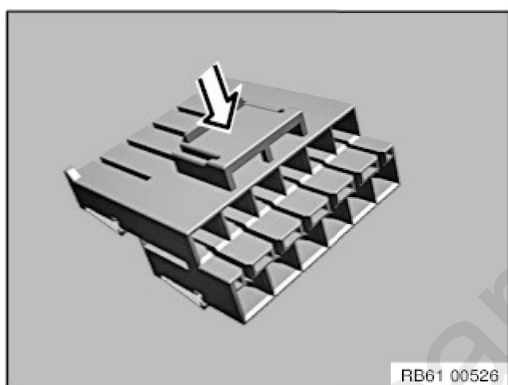




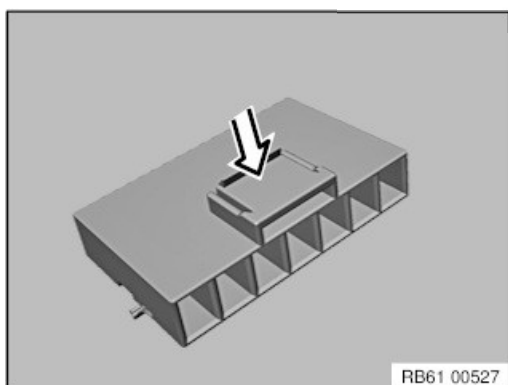
8.
Press lock and disconnect plug connection in direction of arrow.



9.
Press lock and disconnect plug connection in direction of arrow.

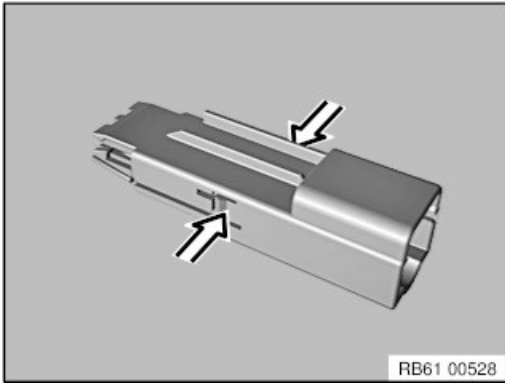


10.
Press the lock and detach plug connection.



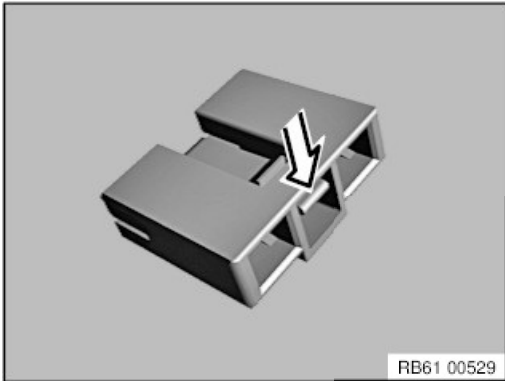
11.
Press the lock and detach plug connection.





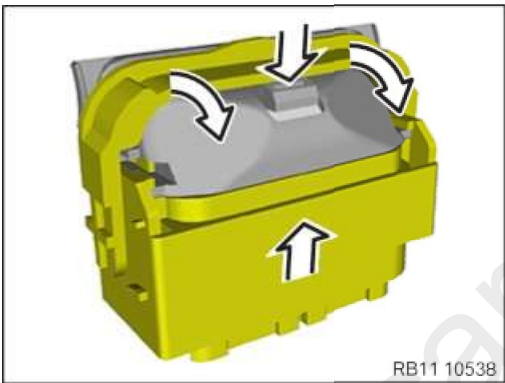
12.

Press the lock on both sides and detach plug connection.



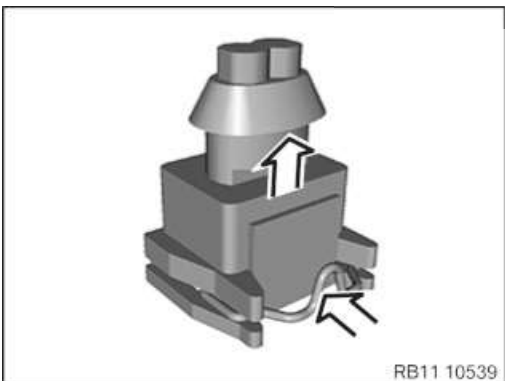
13.

Press the lock and detach plug connection.



14.

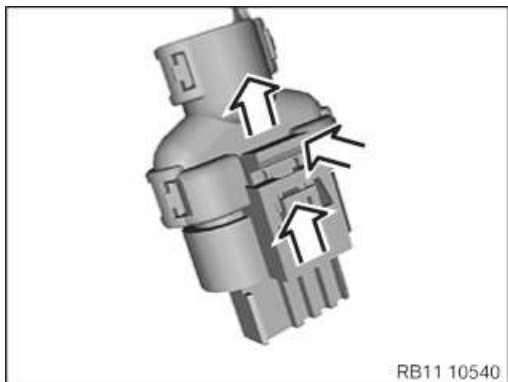
Press lock and open release clip in direction of arrow.
Disconnect plug connection.



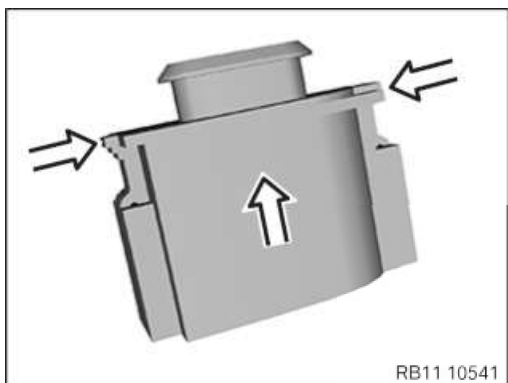
15.

Press the lock and detach plug connection.

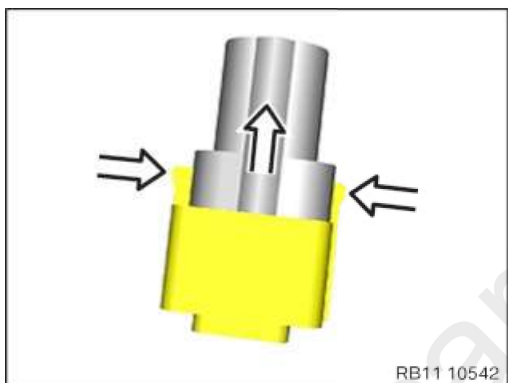




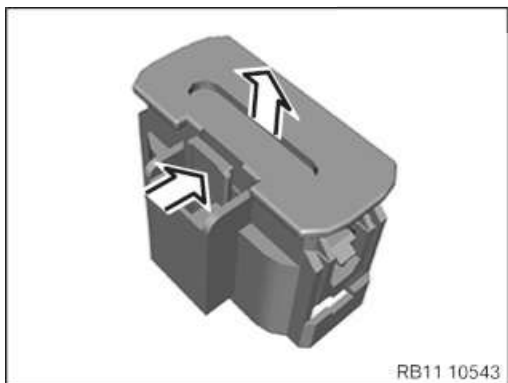
16.
Pull out lock and press.
Disconnect plug connection.



17.
Press the lock and detach plug connection.

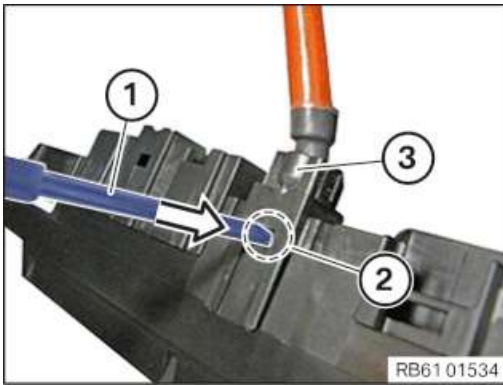


18.
Press the lock and detach plug connection.



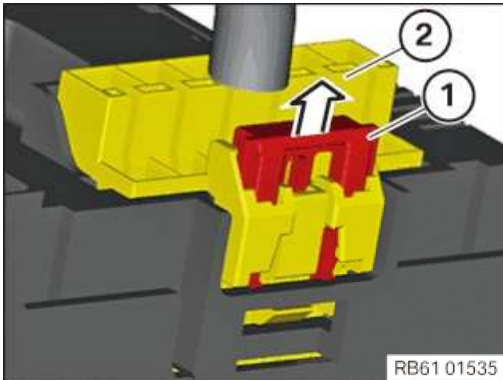
19.
Press the lock and detach plug connection.





20.

Plug connection, e.g. on the power distribution box:
Press into the opening (2) using a suitable tool (1).
Pull off plug connection (3) upwards.



21.

Plug connection, e.g. on the power distribution box:
Lift lock (1) with a suitable tool.
Pull off plug connection (2) upwards.



22.

Vibration resistant high power engine contacts:

Caution!

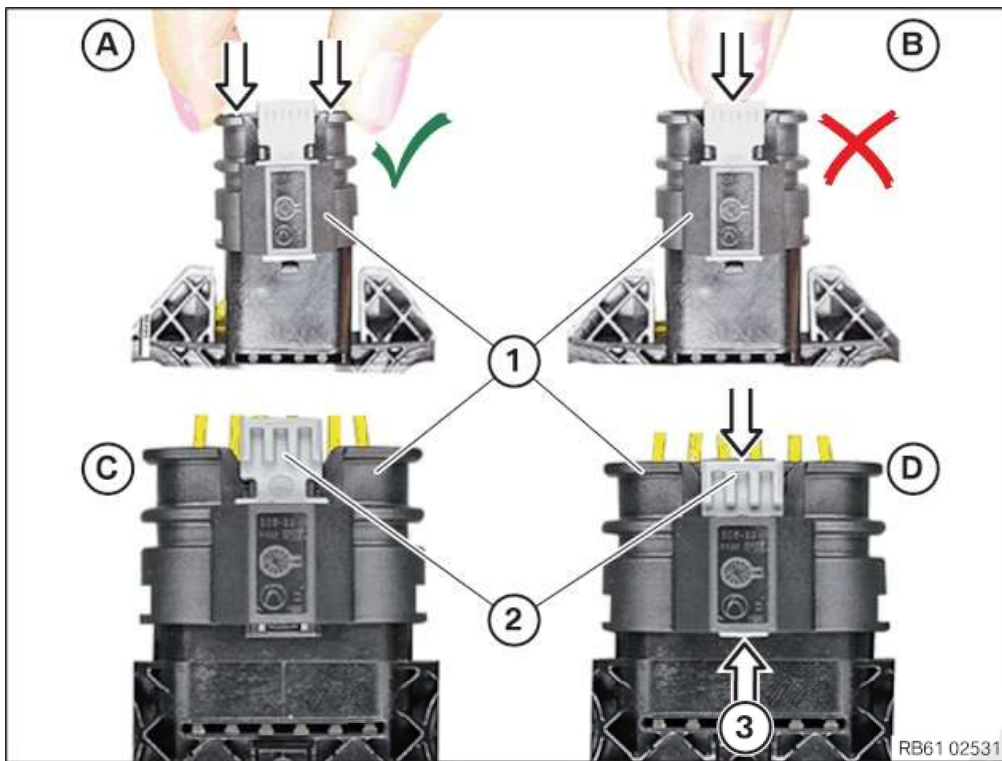
For this connector type, increased forces come into play when disconnecting and closing.

Disconnect:

Pull out lock (1) downward in direction of arrow first.

Then press lock (1) down in direction of arrow and pull off connector.



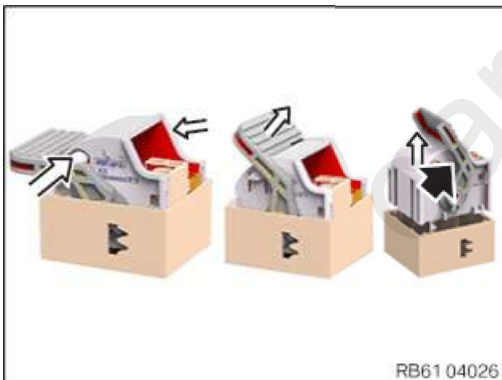


23.

Close:

- A. Press the connector (1) down at the points indicated by the arrow **until it reaches the end position**
- B. **Do not** press the connector (1) further than the lock
- C. Connector (1) is in the end position, but lock (2) is not yet locked
- D. Press lock (2) down in the direction of the arrow until the tip of lock (2) is visible at point (3)

Unlock / lock front light combination plug connection & replace housing after damage :

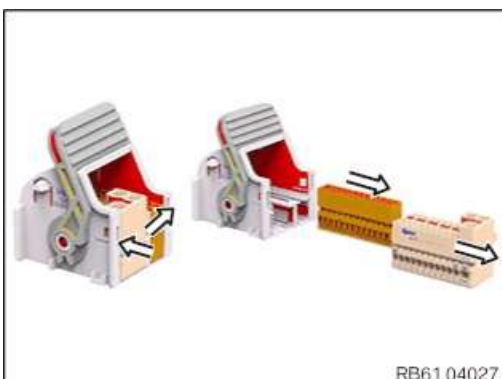


24.

Press in locking lever at both sides until the lever is unlocked and can be moved.

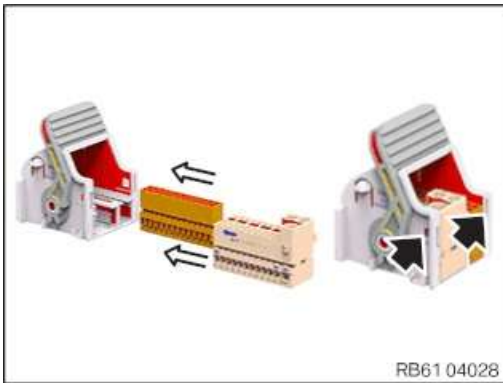
Move lever upwards until it latches into place in the end position.

Once the lever is locked in the end position, remove plug connection upwards.

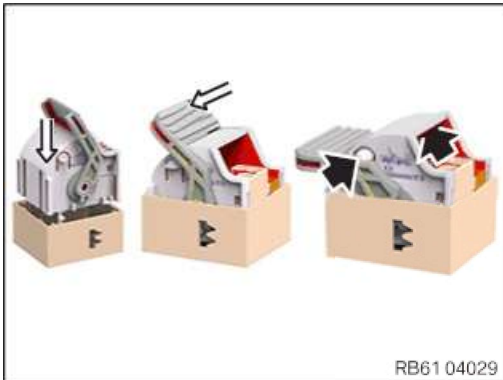


Unlock socket housing by lifting up each of the locking tabs.
Slide out after unlocking the socket housing.

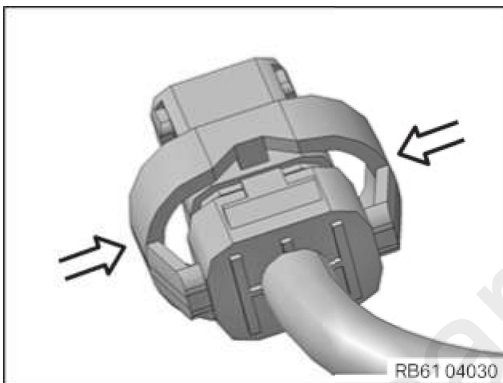




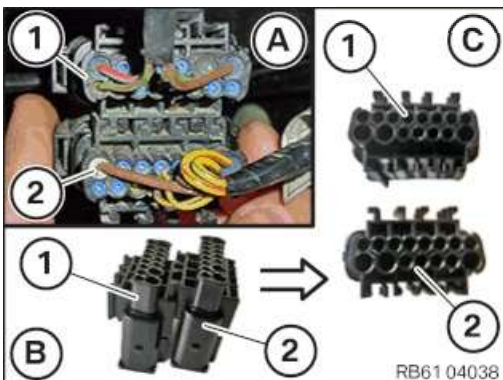
Slide in socket housing up to limit position.
Lock socket housing into place in end position.



Sliding in up to limit position.
Activate plug-in procedure by moving lever downwards.
IMPORTANT: the latch mechanism on both sides only works for a completed plug-in procedure.



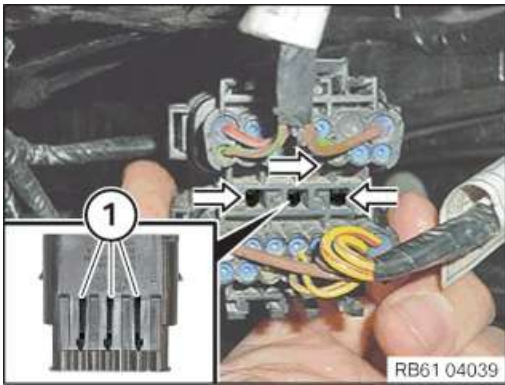
25.
Rosenberger D4S20G-400A5-Y
Press to unlock on both sides.



26.
Pin housing, 15-pinMLK1

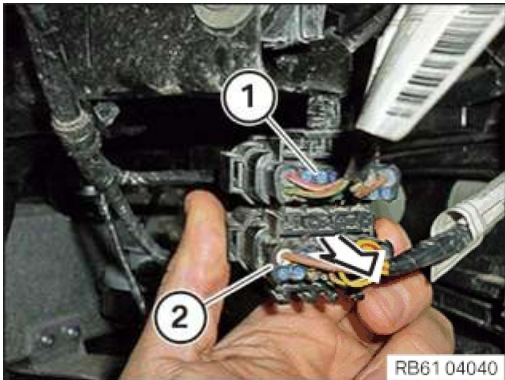
- A & B. To avoid any damage to individual connectors, the given connector assembly consisting of several individual connectors (1) & (2) must be released before disconnecting the plug connection.
- C: released connector assembly





Disconnecting connector assembly:

Release retaining hooks (1) in direction of arrow (detail image shows retaining hooks of individual connector).



Release connector (2) in direction of arrow from connector (1).

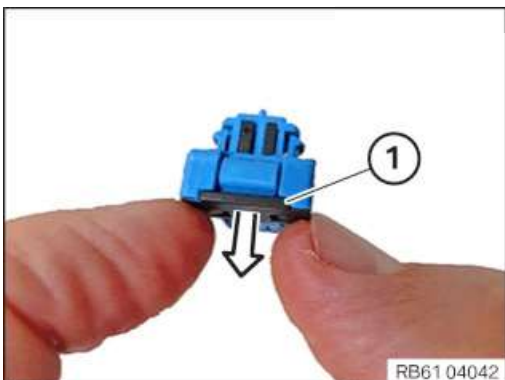


27.

Airbag ignition circuit connector

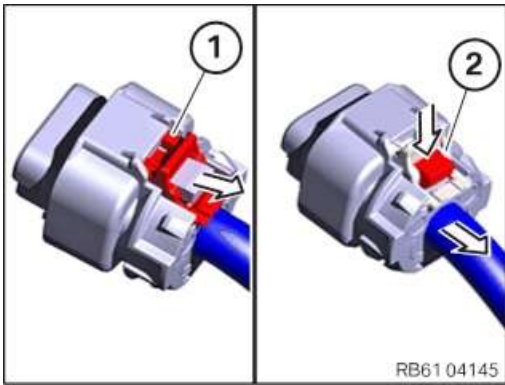
Warning!

Note the safety information for working on vehicles with airbag systems prior to disconnecting the plug connection.



Pull the cap (1) in the direction of the arrow to unlock



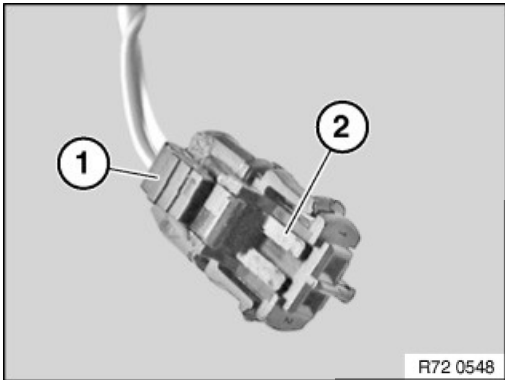


28.

Connector e.g. on front and rear lighting unit

Open safety catch (1) in direction of arrow using appropriate tool.

Push safety catch (2) in direction of arrow and disconnect plug connection.



29.

Plug, e.g. in airbag ignition circuits

Press the lock (1) and pull out the connector (2) up to initial engagement position.

Pull off connector (2).

