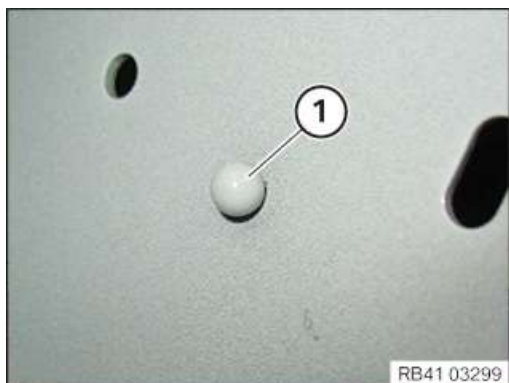


72 11 ... Checklist for front seat

Event		Check	Action
Has at least one belt tensioner and/or one side airbag been activated?	Yes	Check 1 (when installed): Check all seat adjustment options of both front seats. There must be no stiff movement, sticking or other functional problems or noises across the entire adjustment range of all the seat adjustment options. Check head restraints for damage. Check crash-active headrest for activation. Only 2-door model: Check backrest lock. Backrest must unlock and lock easily without any great physical effort. Check 2 (when dismantled): Check for deformation/damage on the following components: 1. All seat cross members on the body 2. Threaded support sleeves in the seat cross members 3. End fittings on the seat mechanism. Check for visible damage or deformation.	If components are OK with regard to checks 1 and 2, only replace activated belt tensioner or side airbag. Otherwise, replace faulty parts on the seat/body. Replace belt tensioner, seat belt and, if necessary, side airbag.
	No	Check all adjustment options of the head restraints. Check crash-active headrest for activation.	Replace faulty parts.
Only seat with integrated seat belt:			
Does the backrest indicator light turn on when the backrest is locked and also when the backrest is shaken?	Yes	Check microswitch of backrest lock and renew if necessary. Check electrical lines and repair if necessary.	If there is still a fault, replace the entire seat
	No	No further action necessary.	



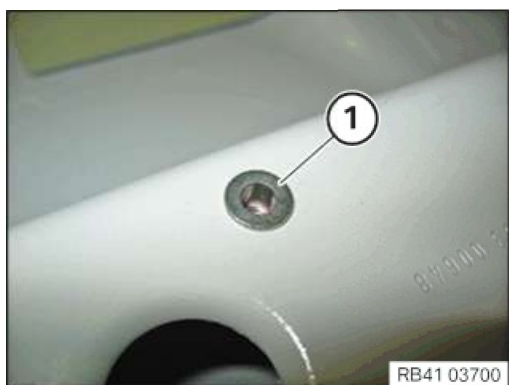
Note: On BMW and MINI bodies, various welded and pushed in bolts are being used.



Single ball/double ball (version 1):

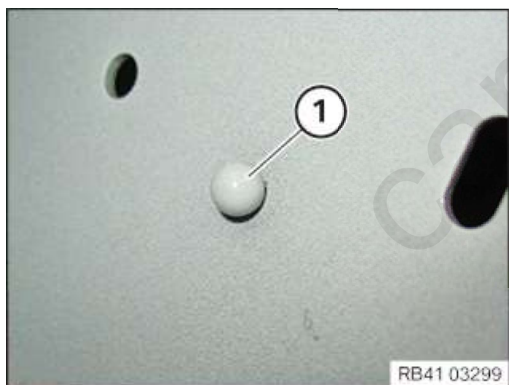
Grind off any residues of the single ball (1), if applicable.

Drill hole with diameter 7 mm.



Set blind rivet nut (1).

Screw in single ball with thread until a height of 5 mm (double ball 10 mm) is reached.



Single ball/double ball (version 2):

Grind off any residues of the single ball (1), if applicable.

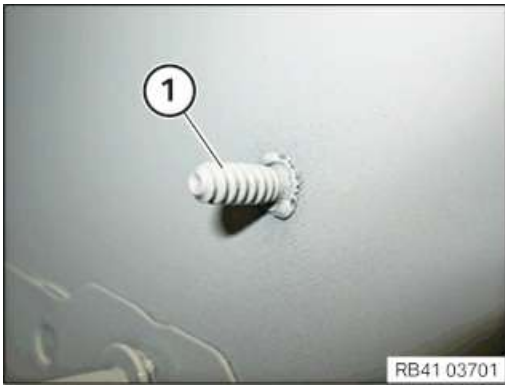
Clean area with solvent cleaner R1.



Clean bonding surface of repair element single ball (1) with solvent cleaner R1.

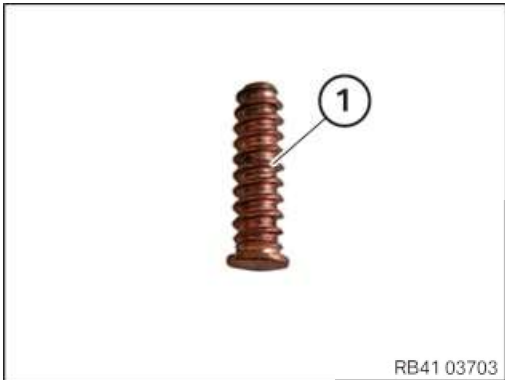
Bond repair element optionally with adhesive K1, K5 or window pane adhesive at the same position.



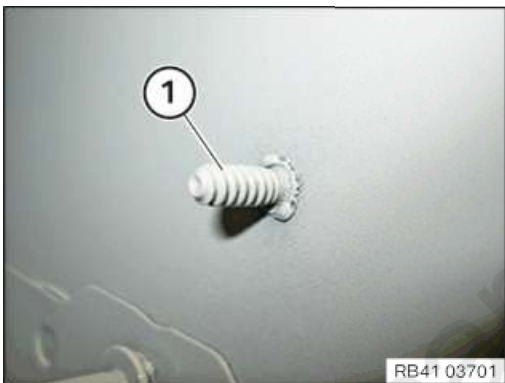


Coarse threaded bolt (version 1):

Grind off any residues of the coarse threaded bolt (1), if applicable.



Spot weld coarse threaded bolt to same position.



Coarse threaded bolt (version 2):

Grind off any residues of the coarse threaded bolt (1), if applicable.

Drill hole with diameter 7 mm.

Set blind rivet coarse threaded bolt using riveting pliers.



41 00 ... Replacing blind rivets



Special tools required:

- 2 348 128
- 72 1 210

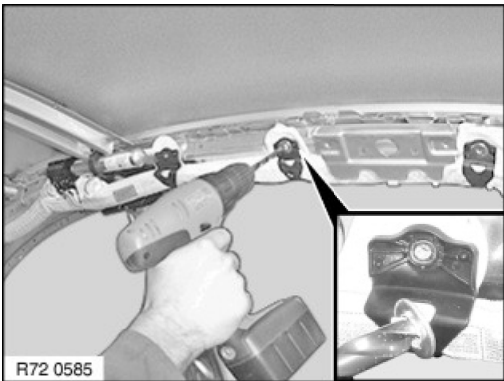


Important!

Lay out protective mats to protect the interior equipment against swarf from the drilled-out rivets and damage.

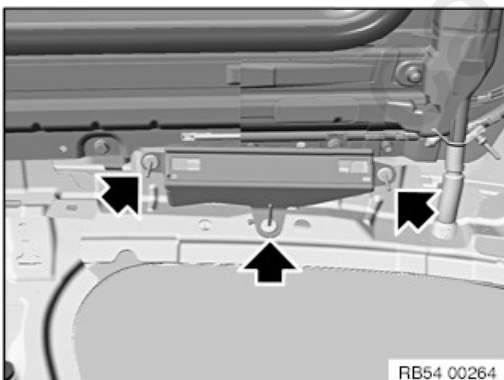
Lay out protective mats in the relevant working area:

- Instrument panel
- Entrance area
- Passenger compartment



Schematic diagram of folding pack holder for head airbag:

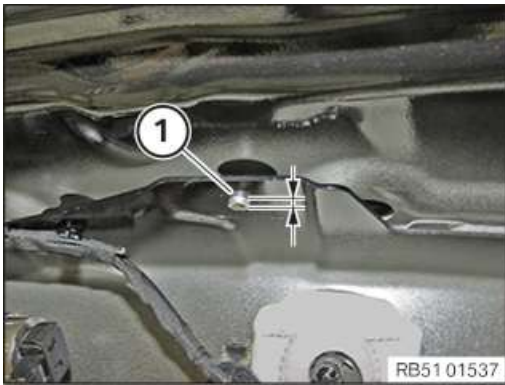
Drill off rivet plate down to rivet shank with a 10 mm twist drill bit.



Described for grab handle holder:

Drill off rivet plate down to rivet shank with a 10 mm twist drill bit.





Drill out all blind rivet protrusions (1) up to the body.



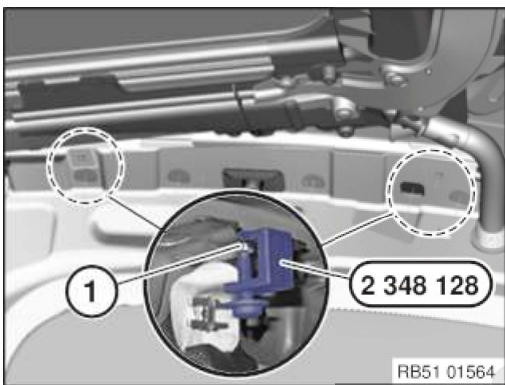
Installation note:

Apply primer to paintwork damages on side frame.

Note:

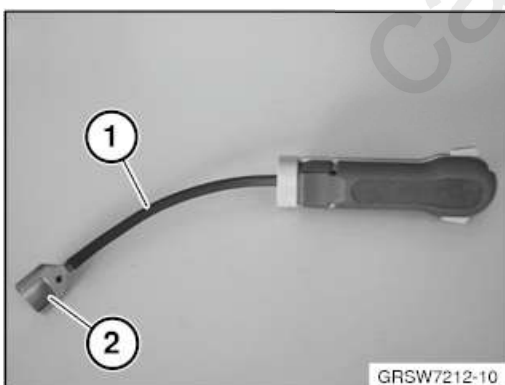
Depending on accessibility, the rivet heads will have to be removed using special tool 2 348 128 or 72 1 210.

In areas that cannot be reached using special tools, cavity foam HS3 must first be applied around the rivet head before the rivet head is then punched out immediately..



Removal of rivet head with special tool 2 348 128:

Press off rivet heads (1) using special tool 2 348 128 and remove.



Removal of rivet head with special tool 72 1 210:

Shank (1) of special tool 72 1 210 is flexible and can be adapted to the relevant body contours.

Note:

Insert butyl in the collecting tray (2) to secure rivet heads and prevent them from falling out.





Insert special tool 72 1 210 through bore hole in body next to attachment points.

Position special tool from rear on rivet head in cavity.

Note:

A second person will be needed to help hold the special tool on the rivet head during the driving-out operation.

Make sure collecting tray is correctly fitted on rivet head.

Drive out stem with hammer and 6 mm punch.

Carefully feed special tool out of body so that rivet head does not fall out of collecting tray.



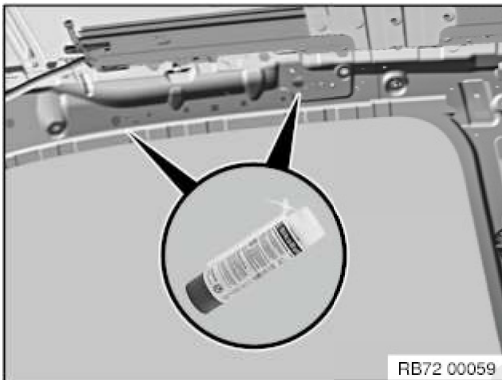
Note:

If the rivet falls out of the collecting tray into the side frame when the special tool is fed out, this area must be generously filled with foam.

For details of procedure for filling cavities with foam, see further operations.

Use cavity preservation (refer to BMW Group Parts) for foam filling.

Cavity foam (refer to BMW Group Parts) may also be used if required.



Fit tube to foam can.

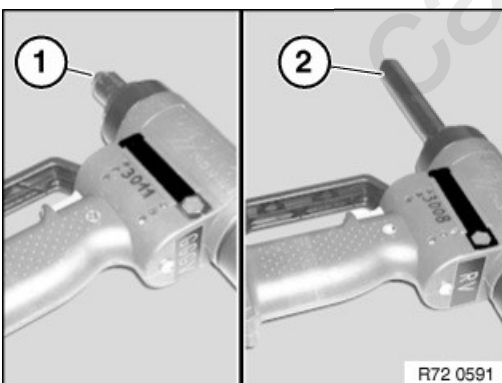
Push the hose in through the pillar holes.

Fill cavity with a filling material.

Warning!

Empty foam can completely onto cardboard and after hardening dispose of foam and can in residual waste.

Can may burst if not completely emptied.



Overview of rivet gun:

Riveting of gas generator housing and holders for folding pack with rivet gun (refer to BMW Workshop Catalogue).

The interchangeable head is changed for the different work operations.

Riveting of gas generator housing with:

1.) 17/36 nosepiece and short shank

Riveting of holders for folding pack:

2.) 17/40 nosepiece and long shank



72 00 ... Replacing the seat belt clip



Special tools required:

- 00 5 040



Note:

If the position of the seat belt clip (1) cannot be identified, the position of the seat belt clip on the opposite side of the vehicle is used.

Insert the seat belt clip (1) in the previous position on the seat belt (2).



Mount the counterpiece (1).

Press the seat belt clip with special tool 00 5 040 .

Check that the seat belt clip and counterpiece (1) are firmly seated.

Note:

If the seat belt clip is pressed too firmly, the counterpiece may loosen (1).



72 Safety information and general information

Notes on safety

- > Safety regulations for handling airbag modules and pyrotechnic belt tensioners
- > Notes on scrapping vehicles with gas generators

Handling electrical system and electronics

- > Unlocking/locking airbag plug connections
- > Repairing airbag lines
- > Handling optical fibres

Check

- > Check seat belt
- > Checklist for seat belt

Airbag system

- > See diagnosis system for FUB and check
- > Deactivating airbags
- > Procedure after airbag deployment .

Active pedestrian protection

- > Procedure after actuator triggering



72 00 ... Safety regulations for handling components with gas generators

It is essential to comply with the regulations as specified in the law relating to the use of explosives when working on airbag units and seat belt tensioners.

Airbags, seat belt tensioners etc. are pyrotechnical objects. Pyrotechnical objects are assigned to different danger classes on the basis of the quantity of propellant that they contain. The assignment can be ascertained from the identification marking on the product:

Attention!

Failure to comply with the warning notices and repair instructions for gas generator components can cause accidental deployment and result in injury and vehicle damage!

This applies in particular to the following components:

- Airbag modules (driver's/front passenger airbags, side airbags)
- Seat belt tensioner
- Head airbag
- Active knee protection
- Active head restraint
- Safety battery terminal

1. Regulations

The regulations quoted in the following refer to the Federal Republic of Germany.

In all other countries, the relevant legislation and regulations must be observed in each case. Country-specific legal regulations that go beyond this information or court decisions based thereon must be followed in each case or given precedence over these regulations.

- Pyrotechnical restraint systems are subject to danger class PT1
- Gas generators are pyrotechnical objects belonging to danger class T1

Handling, transporting and storing non-fired gas generators are subject to the "Explosive Materials Act" (law relating to the use of explosives dated 13/09/1976).

The relevant trade supervisory authority must be notified at least 2 weeks before pyrotechnical objects are handled for the first time. In this process, notify the person responsible at the relevant authority (e.g. dealership owner, holder of general power of attorney, technical supervisor) in writing. A certificate of qualification, i.e. specific training, is not required for the person responsible.

2. Dismantling and installation

- Checking and installation work must be carried out by professionally trained personnel only.
- Work on airbag system components must only ever be carried out with a disconnected vehicle battery, covered negative terminal and disconnected plug connection of the cable leading to the gas generator. Observe the specified waiting period if merely the vehicle battery is disconnected:
 - 30 min. for vehicles up to 9/93
 - 1 min. for vehicles from 9/93 onward
- In the event of breaks in work, a component with a gas generator that has been removed must be secured against access by other persons.
- Individual components must never be repaired. Instead, always replace them.
- Do not treat airbag system components with cleaning agents or grease.
- Components of the airbag system must not be exposed to temperatures in excess of 75 °C.
- Airbag system components, including electronic diagnostic components, which have been dropped from heights in excess of 0.5 m must not be reinstalled in the vehicles.
- Do not remove components of the airbag system from the original packaging until immediately before they are to be installed in the vehicle.



- Before installing, subject components such as housing, connector pins ,etc. of the airbag system (including diagnosis electronics) to a visual inspection for damage and replace if necessary.
- Airbag system components may only be electrically tested while they are installed and only with the diagnosis system.
- **Danger of injury:** The airbag module may only be set down with the airbag itself facing *upwards*. Otherwise the gas generator may be propelled upwards upon potential ignition of the gas generator.
- Do not point the ignition squib of a gas generator at other persons.
- Components with gas generators must not be fired while they are removed. They must be disposed of by special disposal companies or returned in the packaging of the new parts.
- When carrying out straightening and welding work with an electric welder:
 - Disconnect the vehicle battery
 - Cover negative terminal (post)
- Avoid all contact with the skin when removing a fired airbag module - wear gloves. Wash with water after contact with the skin.

3. Transport

- Components with gas generators must be sent off in the packaging of the new components.

4. Storage

- Observe the regulations of the relevant trade supervisory authority and the applicable national regulations.



72 11 ... Check list for automatic seat belt

Was the automatic seat belt with lower strap replaced after an accident, e.g. frontal and/or oblique collision in which the impact absorbers/deformation elements were permanently deformed? (only while seat belt was fastened)	No	Replace complete automatic seat belt The following must also be checked and replaced, if necessary: seatbelt mounts on the vehicle body seatbelt mounts on the seat seat rails.
Yes		
Does seat belt lock when pulled out suddenly?	No	Replace automatic seat belt (upper seat belt).
Does the automatic reel eliminate the belt slack?	No	Replace automatic seat belt (upper seat belt).
Yes		
Yes		
Can the seat belt strap be pulled out without jamming?	No	Automatic reel is loose - tighten reel. If fault persists: Return spring broken - replace automatic seat belt (upper seat belt).
Yes		
Does the strap on the front seat belts retract automatically? Does the strap on the rear seat belts retract automatically, a small remaining loop is acceptable if this remaining loop is fully retracted when the seat belt strap is readjusted.	No	Automatic reel is loose - tighten reel. Excessive friction in belt guides - replace automatic seat belt (upper strap). Return spring broken - replace automatic seat belt (upper seat belt).
Yes		
Does automatic reel make a squeaking noise when belt is fastened or unfastened?	Yes	Excessive friction in belt guides - replace automatic seat belt (upper strap). Automatic reel is loose - tighten reel. Return spring broken - replace automatic seat belt (upper seat belt).
No		

Is the plastic casing on the belt tongue free from damage in the area of the belt opening?	No	Replace complete automatic seat belt
Yes		



Is the fully extended seat belt strap free from pinches, burn marks, tears and cuts, creasing and unravelling?	No	Replace complete automatic seat belt
Yes		
When the seat belt is fastened, is the belt tongue ejected by spring pressure from the buckle when the "red button" is pressed?	No	Replace complete automatic seat belt
Yes		
Does fastened seat belt lock during emergency braking on a dry roadway at double walking speed?	No	Replace complete automatic seat belt
Yes		
Is fully pulled-out seat belt strap free of serious dirt and other marks?	No	If dirt and marks cannot be removed with commercially available mild detergent, the automatic seat belt (upper seat belt) must be replaced.
Yes		
In the case of seat-integrated seat belts, is front tongue of reclining mechanism or seat rail free of deformation?	No	Replace both damaged parts and complete automatic-reel seat belt. The following must also be checked and replaced, if necessary: seatbelt mounts on the vehicle body seatbelt mounts on the seat seat rails.
Yes		
The automatic seat belt is OK!		



72 11 ... Check the 3-point automatic-reel belt

General considerations when checking seat belts:

1. After replacing the EMA/REMA* automatic reel

* EMA = electromotive automatic (seat belt) reel

*REMA = reversible electromotive reel

Check the additional functions for function when replacing the EMA/REMA automatic reel after programming / encoding the vehicle.

For the EMA/REMA automatic reel functional check, it is sufficient to check that the belt slack* has been eliminated.

* Belt slack is seat belt play when the seat belt is fastened. When the seat belt is fastened, it does not immediately lie taut against the body.

Check if belt slack was eliminated for **EMA to 07/12:**

- Get in, close the doors and latch the left seat belt buckle contact
- EMA eliminates belt slack

If belt slack was not eliminated, the procedure described below must be followed:

- Allow vehicle to assume complete sleep mode and repeat the functional check.
- All doors must be closed!
- EMA, left, must be installed and connected correctly.
- Work through all fault code entries before the repeating the functional check

Check if belt slack was eliminated for **REMA from 07/12 onwards:**

- Lock left seat belt buckle contact and perform function check with diagnosis system.
- Alternatively, take a test drive at a speed of > 10 km/h

The automatic reel is completely maintenance-free and must not be opened.

2. After an accident

The seat belts must be checked after an accident.

At the beginning of the check, attempt to obtain information about the occupation of the seats in the vehicle that was involved in an accident. If this is not possible, check all of the seat belts in the vehicle and replace them if necessary.

In the event of deformations on the vehicle, you must subject the components of the restraint system affected in this area such as e.g.

- Seat belt
- Anchor fitting tensioner
- Seat belt height adjustment
- Seat belt tensioner
- Impact sensor
- etc.

to a function check and a visual inspection.

If you are in any doubt as to the unimpaired operability of restraint system components, these components must be replaced in the interests of safety!

If a seat belt has to be replaced following an accident (e.g. in the event of a frontal and/or oblique collision with permanently deformed impact absorbers/deformation elements or cross-members), the complete seat belt must be replaced! The complete seat belt comprises:

- Upper seat belt
- Lower strap
- Anchor fitting tensioner



- Seat belt buckle (belt tensioner)
- Seat belt height adjustment
- Mounting bolts of all components

The following must also be checked and replaced, if applicable:

- Belt coding on the body
- Belt coding on the seat
- seat rails.
- Seat structure (frame, etc.)

Alignment tests on the seat and the seat rails are not permitted!

The following explanations and the check list for the 3-point automatic-reel seat belt may be helpful.

An unusable seat belt or a seat belt worn in a serious accident should be destroyed immediately after removal to guarantee that it can not be used again.

Check the automatic reel and seat belt strap:

The automatic reel has two independent activation systems for seat-belt locking.

The first activation system locks the automatic reel when driving quickly around curves, driving in tight curves, on extreme inclinations (vehicle rolls over) and during sharp braking or crash.

To check, the backrest must be placed in the upright position and both hands held in a supporting position close to the steering wheel. The brakes are then operated with full intensity while driving on a dry roadway and at double walking speed.

The seat belt must lock.

The second activation system provides additional safety and is controlled by inertia mass.

If the reel locks when the seat belt strap is pulled out suddenly, this system is also OK.

In addition, the automatic reel (EMA/REMA) must eliminate belt slack.

Check whether an attempt was made to eliminate belt slack:

- Get in, close the doors and latch the left seat belt buckle contact
- EMA/REMA eliminates belt slack

If belt slack was not eliminated, the procedure described below must be followed:

- Allow vehicle to assume complete sleep mode and repeat the functional check.
- All doors must be closed!
- EM/REMA must be installed and connected correctly
- Work through all fault entries before the functional check is carried out again.

Replace the faulty or activated automatic reel.

The automatic reel is completely maintenance-free and must not be opened.

Precondition for complete, problem-free retraction of seat belt straps:

- The seat belt straps must not be twisted!
- The seat belt straps must not be damaged!

When placed to one side, the seat belt straps of the front seats must retract fully.

With the seat belt straps in the seat bench, a small remaining loop in the seat belt strap is acceptable due to increased friction between the seat belt strap and the seat bench cover if:

- this remaining loop is fully retracted when the seat belt strap is re-guided.

The seat belt strap should only be cleaned with a lukewarm soap solution or a commercial mild detergent.

Seat belt strap must never be cleaned chemically or dyed.

The automatic reel and seat belt strap must be replaced in the event of:



1. creasing
2. unravelling
3. pinches
4. cracks and tears
5. traces of melting
6. Traces of wear on the coating of the buckle tongue or on the seat belt guide loop.

Check the lower strap (belt tensioner):

To fasten a seat belt, the buckle tongue should insert easily and engage in the seat belt buckle with an audible click.

When the "Red button" is pressed, the buckle tongue must be ejected from the seat belt buckle under spring pressure.

If the seat belt buckle cover is missing or damaged, the lower strap must be replaced.

Replace the activated belt tensioner including the complete seat belt with seat belt height adjustment and mounting bolts and check the

- Belt coding on the body
- Belt coding on the seat
- seat rails.
- Seat structure

Criteria for an activated mechanical belt tensioner:

- very low position of seat belt buckle (comparisons with new part).

Criteria for an activated pyrotechnic belt tensioner:

- very low position of seat belt buckle (comparisons with new part).
- Airbag indicator light permanently lit: read out airbag system fault memory.

The belt tensioners can be activated under certain circumstances even when the seat is not occupied. If it is definite that the seat belt system was not used (seat was not occupied), there is no need to replace the following components after a check.

- Upper seat belt
- Add-on parts (seat belt height adjustment, screws)
- Belt coding on the body
- Belt coding on the seat
- seat rails.

Checking end fitting pretensioner:

Replace the triggered end fitting pretensioner including the complete seat belt with seat belt height adjustment, lower strap and mounting bolts and check the

- Belt coding on the body
- Belt coding on the seat
- seat rails.
- Seat structure

Criteria for a triggered end fitting pretensioner:

- A triggered end fitting pretensioner can be recognised from the wrapped seat belt strap around the shaft.
- Airbag indicator light permanently lit: read out airbag system fault memory.



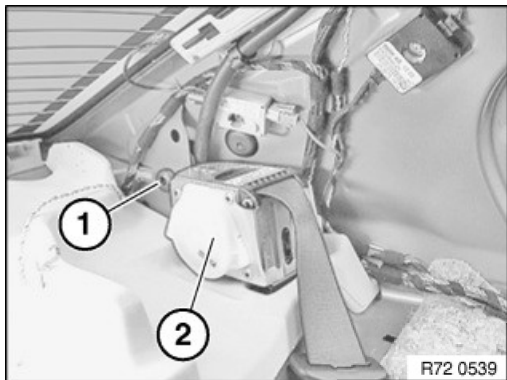
72 11 ... Checklist for front seat

Event		Check	Action
Has at least one belt tensioner and/or one side airbag been activated?	Yes	Check 1 (when installed): Check all seat adjustment options of both front seats. There must be no stiff movement, sticking or other functional problems or noises across the entire adjustment range of all the seat adjustment options. Check head restraints for damage. Check crash-active headrest for activation. Only 2-door model: Check backrest lock. Backrest must unlock and lock easily without any great physical effort. Check 2 (when dismantled): Check for deformation/damage on the following components: 1. All seat cross members on the body 2. Threaded support sleeves in the seat cross members 3. End fittings on the seat mechanism. Check for visible damage or deformation.	If components are OK with regard to checks 1 and 2, only replace activated belt tensioner or side airbag. Otherwise, replace faulty parts on the seat/body. Replace belt tensioner, seat belt and, if necessary, side airbag.
	No	Check all adjustment options of the head restraints. Check crash-active headrest for activation.	Replace faulty parts.
Only seat with integrated seat belt:			
Does the backrest indicator light turn on when the backrest is locked and also when the backrest is shaken?	Yes	Check microswitch of backrest lock and renew if necessary. Check electrical lines and repair if necessary.	If there is still a fault, replace the entire seat
	No	No further action necessary.	



**Necessary preliminary tasks:**

- Remove storage shelf
- Remove rear seat

Removing left or right automatic reel:

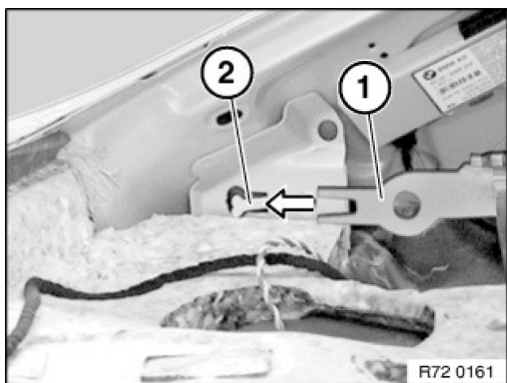
Undo screw (1) from inertia reel unit (2).

Installation note:

Renew screw (1).

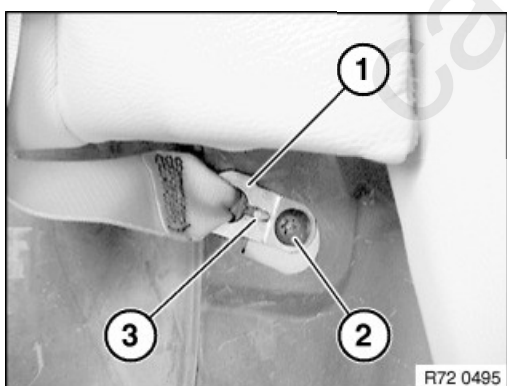
Tightening torque 72 11 20AZ .

Remove inertia reel unit (2).

*Installation note:*

Note encoding.

Push inertia reel (1) onto body tab (2).



Release screw (2).

Installation note:

Replace screw (2).

Tightening torques 72 11 22AZ.

Remove seat belt (1).

Installation note:

Pin (3) determines the installation position and prevents the end fitting from turning.

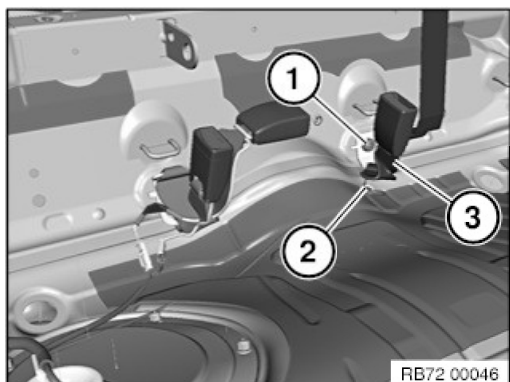


**Warning!**

Read and comply with safety instructions for handling airbag modules and pyrotechnical belt tensioners.

**Necessary preliminary tasks:**

- Remove rear seat

Removal of left lower strap:

Release screw (1).

Installation note:

Renew screw (1).

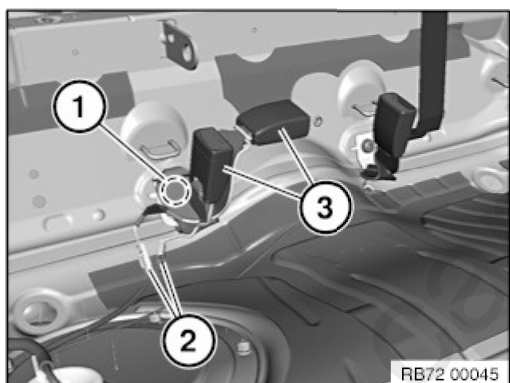
Tightening torque 72 11 23AZ.

Unfasten plug connection (2) and disconnect.

Remove lower strap (3).

Installation note:

Lower strap is coded against incorrect assembly.

Removal of right and middle lower strap:

Note:

Remove the middle lower strap only in combination with the right lower strap.

Release screw (1).

Installation note:

Renew screw (1).

Tightening torque 72 11 23AZ.

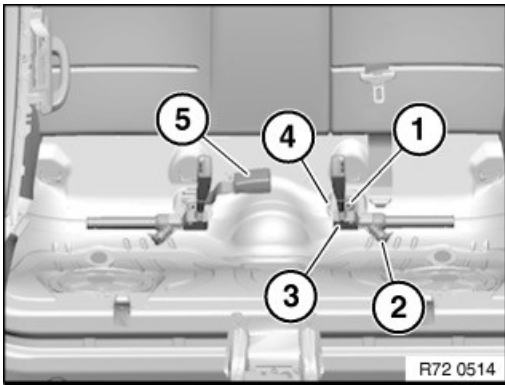
Unlock plug connections (2) and disconnect.

Remove lower strap (3).

Installation note:

Lower strap is encoded against incorrect assembly (3).





Lower strap with belt tensioner:

Removal is depicted for the left lower strap; the right strap is removed in the same manner.

Unfasten plug connection (2) and disconnect.

Release screw (1).

Tightening torque 72 11 23AZ.

Remove lower strap (3).

Installation note:

Encoding (4) determines the mounting orientation and prevents the lower strap (3) from twisting.

Note:

Middle lower strap (5) can only be removed in conjunction with right lower strap.

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Operations are described in:

- Remove seat belt, rear left and right

Only for 5 seater:

- Remove rear centre seat belt

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Operations are described in:

- Remove seat belt, rear left and right
- Remove rear centre seat belt

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Operations are described in:

- Remove lower strap (belt tensioner) on driver's seat
- Remove lower strap (belt tensioner) on front passenger seat

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Operations are described in:

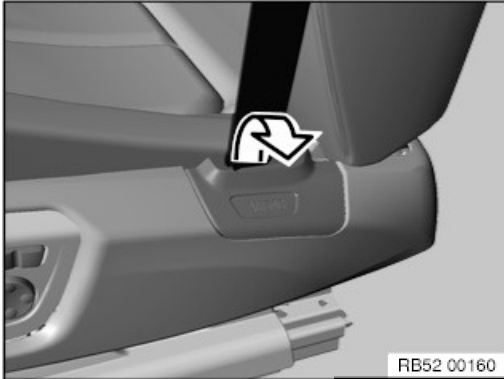
- Remove seat belt, front left and right

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**Necessary preliminary work:**

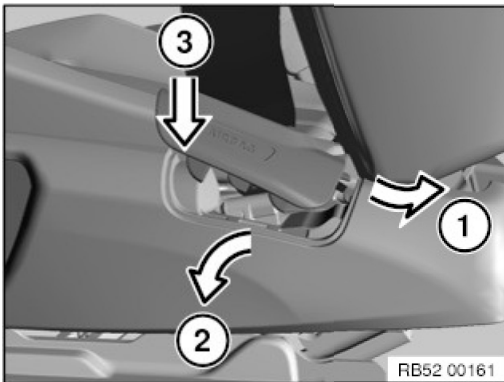
- Remove panel for door post

For electrical front seat version:

Move backrest to full rearward position.

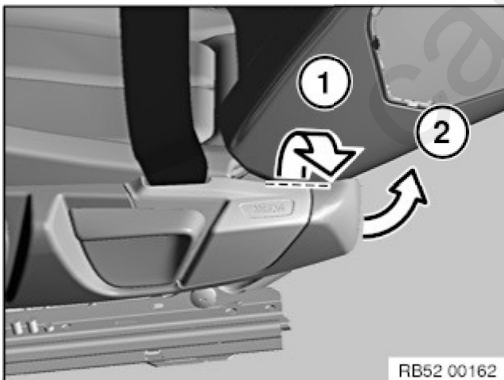
Grip end fitting cover centrally between seat belt strap and cover.

Unclip end fitting trim in direction of arrow.

*Installation note:*

Install end fitting cover as follows:

1. Insert cover with rear guide in covering.
2. Insert cover in direction of arrow downwards in covering
3. Engage top left of cover in covering.

For manual front seat version:

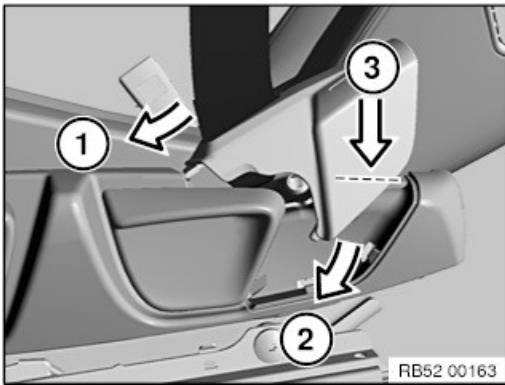
Move backrest to full rearward position.

Grip end fitting cover in marked area between cushion and cover.

Unclip the end fitting trim in direction of arrow (1).

Feed out end fitting cover (2) in direction of arrow.

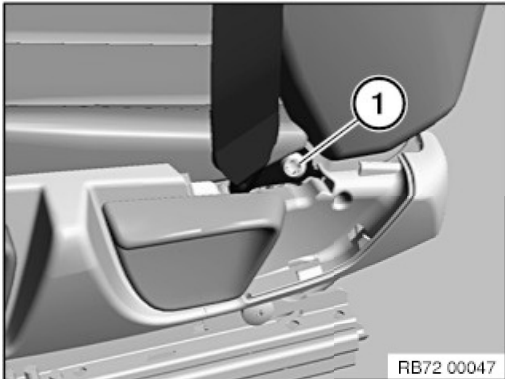




Installation note:

Install end fitting cover as follows:

1. Insert cover with front guide in cover
2. Insert cover in direction of arrow downwards in covering
3. Engage top cover in marked area in covering.



Release screw (1).

Installation note:

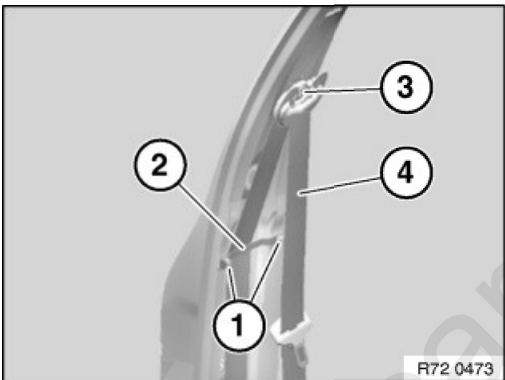
Renew screw (1).

Tightening torque 72 11 2AZ.

Remove end fitting.

Installation note:

End fitting is coded against incorrect assembly.



Release screws (1).

Tightening torque 72 11 4AZ.

Remove slide bar (2).

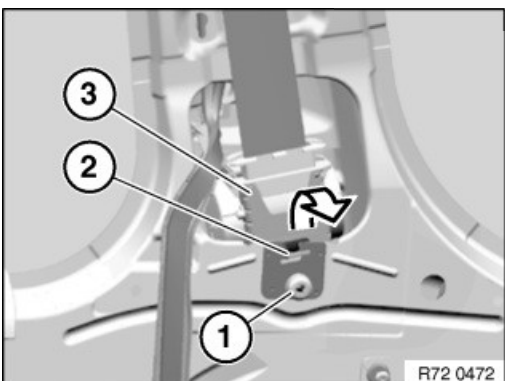
Release screw (3).

Installation note:

Replace screw (3).

Tightening torque 72 11 3AZ.

Put seat belt guide loop with seat belt (4) away.



Basic version of seat belt:

Release screw (1).

Installation note:

Renew screw (1).

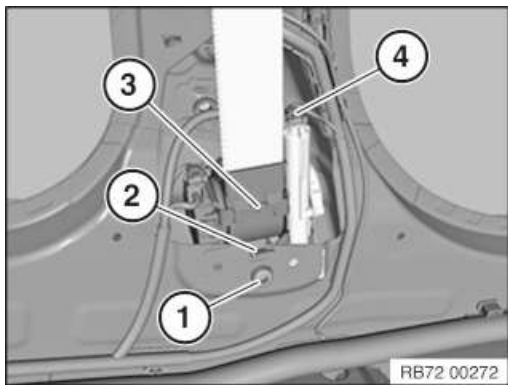
Tightening torque 72 11 1AZ.

Remove inertia reel mechanism (3).

Installation note:

The encoding (2) of the automatic reel must be positioned in the body recess.





US version only:

Unlock plug connection (4) and disconnect.

Release screw (1).

Installation note:

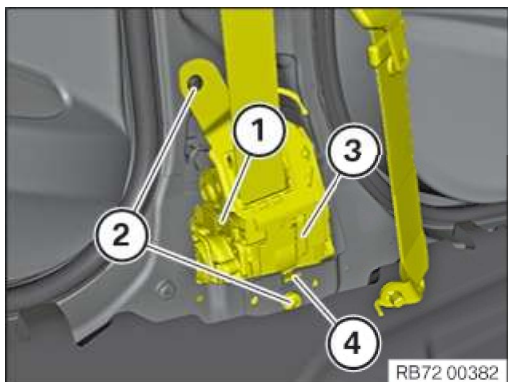
Renew screw (1).

Tightening torque 72 11 1AZ.

Remove inertia reel mechanism (3).

Installation note:

The encoding (2) of the automatic reel must be positioned in the body recess.



Version REMA* seat belt / SA5AL Active Protection:

Note:

*REMA = reversible electromotive inertia reel

REMA seat belt can be identified through the two attachment points (2).

Unfasten plug connection (1) and disconnect.

Unfasten screws (2).

Installation note:

Replace screws (2).

Tightening torque 72 11 1AZ.

Remove automatic reel (3) and detach remaining plug connection.

Installation note:

The encoding (4) of the automatic reel (3) must be positioned in the body recess.



During replacement with version REMA seat belt / SA5AL Active Protection:

Carry out programming/encoding.



Installation note:

Carry out function check.



72 11 070 Removing and installing/replacing front lower strap fitting (belt tensioner), driver's seat



Note:

Only F30 and F35 from Chinese production:

On these vehicles, the following part numbers must be installed when replacing the lower strap:

Production date	Optional equipment SA5AL (Active Protection)	Faulty part		Required new part	
		Part number	Parts	Part number	Parts
until 09/2013	not fitted	7 292 029	Lower strap, left	7 388 505	New part kit with lower strap and seat belt*
until 09/2013	not fitted	7 292 030	Lower strap, right	7 388 506	New part kit with lower strap and seat belt*
until 09/2013	Installed as optional equipment	7 292 029	Lower strap, left	7 259 387	Lower strap, left
until 09/2013	Installed as optional equipment	7 292 030	Lower strap, right	7 259 388	Lower strap, right
from 09/2013	Installed after series production	7 292 029	Lower strap, left	7 259 387	Lower strap, left
from 09/2013	Installed after series production	7 292 030	Lower strap, right	7 259 388	Lower strap, right

***When a new part is installed, the seat belt must also be replaced on vehicles with production date before 09/2013 without optional equipment SA5AL (Active Protection)!**

(Seat belt is included in the new part kit.)



Necessary preliminary work:

- Remove driver's seat.





Warning!

Read and comply with safety regulations for handling airbag modules and pyrotechnical belt tensioners.

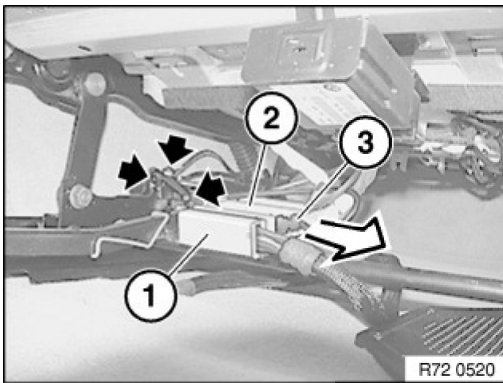
Improper handling can lead to triggering of the pyrotechnical seat belt tensioner or side airbag, resulting in injuries.

Switch off the ignition!



Installation note:

- Microencapsulated screws must be replaced and may not be reused
- Screw connection must be completed within 20 min. (start of hardening)
- Microencapsulated screws must not be retightened
- If the nut is used on more than one occasion, first clean the thread



Unfasten plug connection (1) and disconnect.

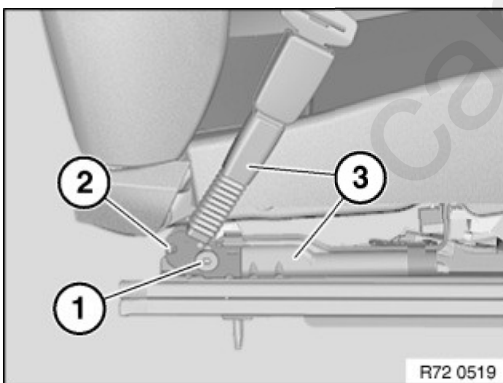
Unlock plug connection (3) and pull all connectors out of connector housing (2).

Disconnect all cable straps.

Removing wiring harness.

Installation note:

- Replace cable strap.
- Cables must not be under tension
- Plugs are coded and must be reinstalled in the correct sequence in the connector housing



Release screw (1).

Tightening torque 72 11 05AZ.

Remove belt pretensioner (3).

Installation note:

Replace screw (1).

Belt tensioner (3) is secured through recess (2) on retaining bracket.



72 11 071 Removing and installing/replacing front lower strap fitting (belt tensioner), front passenger seat



Note:

Only F30 and F35 from Chinese production:

On these vehicles, the following part numbers must be installed when replacing the lower strap:

Production date	Optional equipment SA5AL (Active Protection)	Faulty part		Required new part	
		Part number	Parts	Part number	Parts
until 09/2013	not fitted	7 292 029	Lower strap, left	7 388 505	New part kit with lower strap and seat belt*
until 09/2013	not fitted	7 292 030	Lower strap, right	7 388 506	New part kit with lower strap and seat belt*
until 09/2013	Installed as optional equipment	7 292 029	Lower strap, left	7 259 387	Lower strap, left
until 09/2013	Installed as optional equipment	7 292 030	Lower strap, right	7 259 388	Lower strap, right
from 09/2013	Installed after series production	7 292 029	Lower strap, left	7 259 387	Lower strap, left
from 09/2013	Installed after series production	7 292 030	Lower strap, right	7 259 388	Lower strap, right

***When a new part is installed, the seat belt must also be replaced on vehicles with production date before 09/2013 without optional equipment SA5AL (Active Protection)!**

(Seat belt is included in the new part kit.)



Necessary preliminary work:

- Remove front passenger seat





Warning!

Read and comply with safety regulations for handling airbag modules and pyrotechnical belt tensioners.

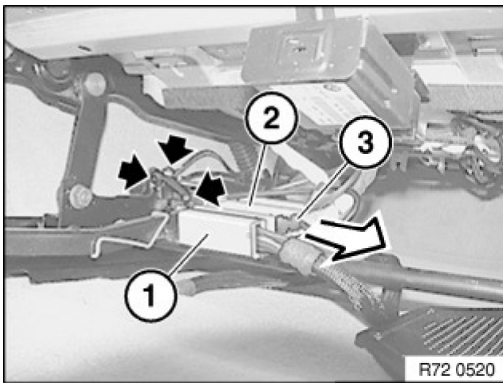
Improper handling can lead to triggering of the pyrotechnical seat belt tensioner or side airbag, resulting in injuries.

Switch off the ignition!



Installation note:

- Microencapsulated screws must be replaced and may not be reused
- Screw connection must be completed within 20 min. (start of hardening)
- Microencapsulated screws must not be retightened
- If the nut is used on more than one occasion, first clean the thread



Unfasten plug connection (1) and disconnect.

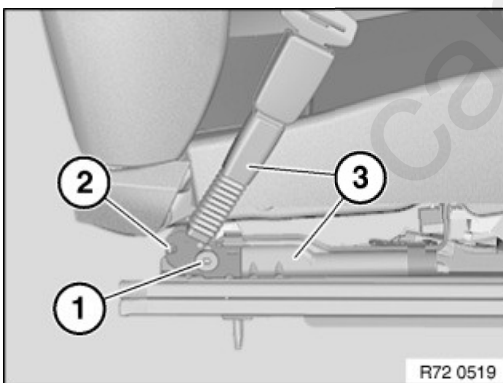
Unlock plug connection (3) and pull all connectors out of connector housing (2).

Disconnect all cable straps.

Removing wiring harness.

Installation note:

- Replace cable strap.
- Cables must not be under tension
- Plugs are coded and must be reinstalled in the correct sequence in the connector housing



Release screw (1).

Tightening torque 72 11 05AZ.

Remove belt pretensioner (3).

Installation note:

Replace screw (1).

Belt tensioner (3) is secured through recess (2) on retaining bracket.

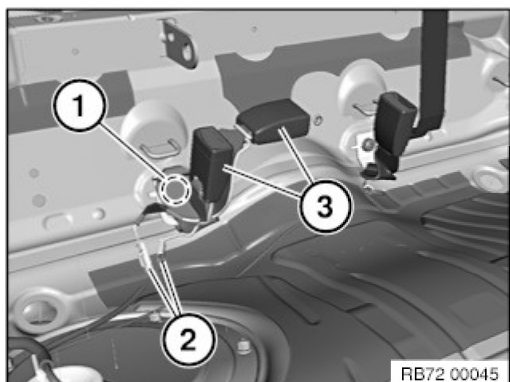


**Warning!**

Read and comply with safety instructions for handling airbag modules and pyrotechnical belt tensioners.

**Necessary preliminary tasks:**

- Remove rear seat

Removal of middle lower strap:*Note:*

Remove the middle lower strap only in combination with the right lower strap.

Release screw (1).

Installation note:

Renew screw (1).

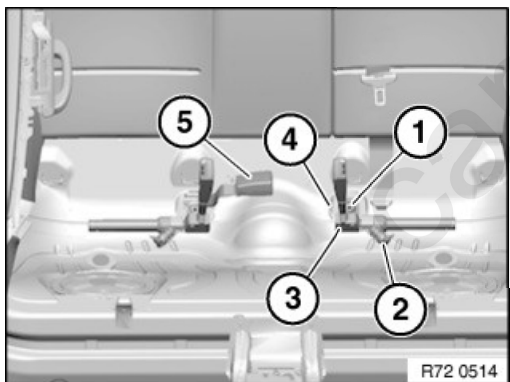
Tightening torque 72 11 23AZ.

Unlock plug connections (2) and disconnect.

Remove lower strap (3).

Installation note:

Lower strap is encoded against incorrect assembly (3).

Lower strap with belt tensioner:*Note:*

Middle lower strap (5) can only be removed in conjunction with right lower strap.

Removal is depicted for the left lower strap; the right strap is removed in the same manner.

Unfasten plug connection (2) and disconnect.

Release screw (1).

Installation note:

Renew screw (1).

Tightening torque 72 11 23AZ.

Remove lower strap (3).

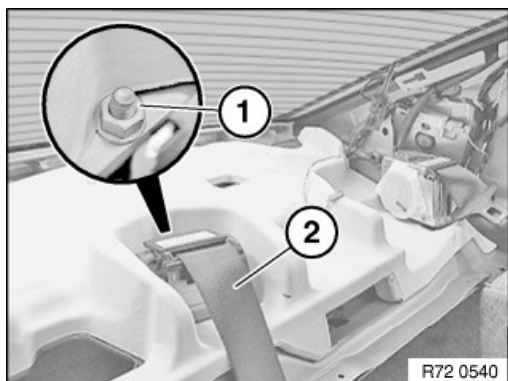
Installation note:

Encoding (4) determines the mounting orientation and prevents the lower strap (3) from twisting.



**Necessary preliminary tasks:**

- Remove rear seat
- Remove storage shelf



Slacken nut (1).

Installation note:

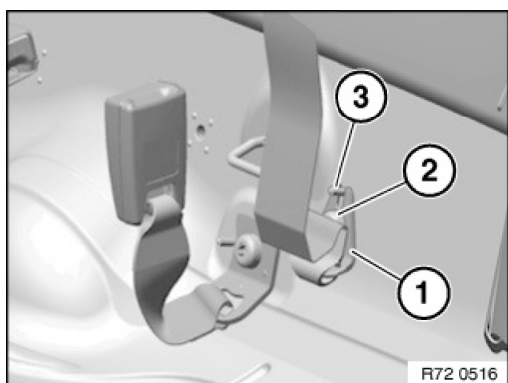
Replace nut (1).

Tightening torque 72 11 20AZ .

Remove inertia reel unit (2).

Installation note:

Note encoding.



Release screw (2) on centre end fitting of seat belt.

Tightening torque 72 11 22AZ .

Installation note:

Replace screw (2).

Bolt (3) determines the installation position and prevents the end fitting (1) from turning.

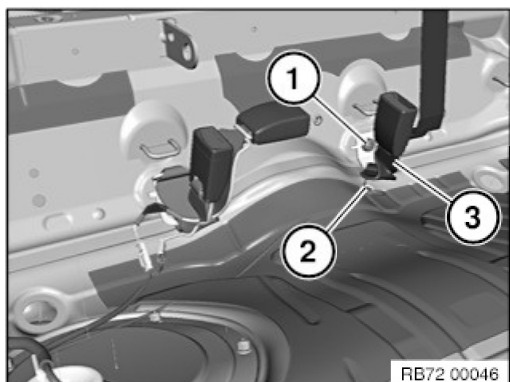


**Warning!**

Read and comply with safety instructions for handling airbag modules and pyrotechnical belt tensioners.

**Necessary preliminary tasks:**

- Remove rear seat

Removal of left lower strap:

Release screw (1).

Installation note:

Renew screw (1).

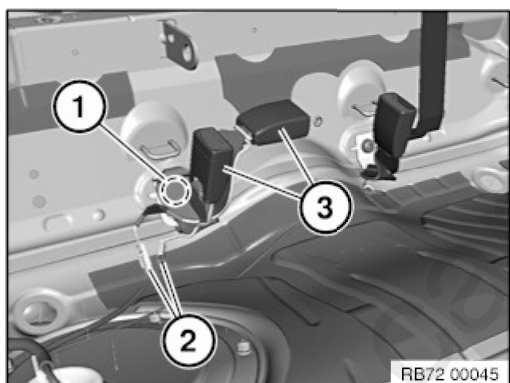
Tightening torque 72 11 23AZ.

Unfasten plug connection (2) and disconnect.

Remove lower strap (3).

Installation note:

Lower strap is coded against incorrect assembly.

Removal of right lower strap:*Note:*

Remove the middle lower strap only in combination with the right lower strap.

Release screw (1).

Installation note:

Renew screw (1).

Tightening torque 72 11 23AZ.

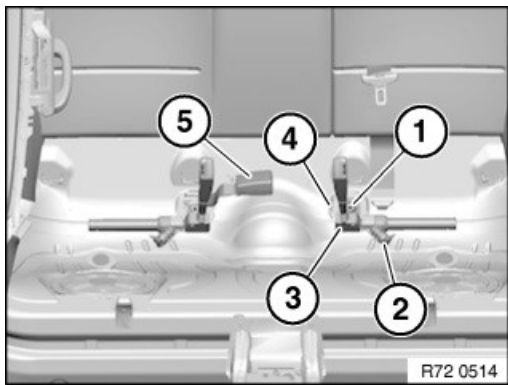
Unlock plug connections (2) and disconnect.

Remove lower strap (3).

Installation note:

Lower strap is encoded against incorrect assembly (3).





Lower strap with belt tensioner:

Removal is depicted for the left lower strap; the right strap is removed in the same manner.

Unfasten plug connection (2) and disconnect.

Release screw (1).

Installation note:

Renew screw (1).

Tightening torque 72 11 23AZ.

Remove lower strap (3).

Installation note:

Encoding (4) determines the mounting orientation and prevents the lower strap (3) from twisting.

Note:

Only remove the right lower strap (5) in combination with the middle lower strap.

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72 Safety information and general information

Notes on safety

- > Safety regulations for handling airbag modules and pyrotechnic belt tensioners
- > Notes on scrapping vehicles with gas generators

Handling electrical system and electronics

- > Unlocking/locking airbag plug connections
- > Repairing airbag lines
- > Handling optical fibres

Check

- > Check seat belt
- > Checklist for seat belt

Airbag system

- > See diagnosis system for FUB and check
- > Deactivating airbags
- > Procedure after airbag deployment .

Active pedestrian protection

- > Procedure after actuator triggering



**Warning!**

The responsibility for deactivation/activation rests with the customer.

When a child restraint system is used on the front passenger seat, the front passenger airbags must be deactivated, otherwise there is an increased risk of injury for the child in the event of airbag deployment even with a child restraint system.



The front passenger airbag can only be deactivated in accordance with the following instructions if the vehicle is equipped with a suitable key switch!



The following airbags are deactivated simultaneously with the key switch (1):

- Front passenger airbag
- Side airbag (passenger's side)
- If necessary, knee airbag in US version (passenger's side)

The airbags can only be deactivated/reactivated while the vehicle is stationary and with the door open.

Attention!

The head airbag remains active.

**Deactivation**

- A Turn key switch with integrated key (1) from the remote key to the "OFF" position.

Deactivatable airbags on passenger's side out of operation.

Head airbag on passenger's side remains active.

All airbags on driver's side remain active.

Activate

- B Turn key switch with integrated key (1) from the remote key to the "ON" position.

All the airbags in the vehicle are activated and are triggered in appropriate situations.

**Indicator light**

When the ignition key is turned in the ignition lock, the function of the airbag system is checked and the indicator light lights up for several seconds.

- A The indicator light is continuously ON when the front passenger airbags are deactivated
- B The indicator light goes out after a few seconds when the front passenger airbags are activated



72 12 ... Notes on scrapping vehicles with gas generators (airbag system)

The gas generator is a pyrotechnic component and is for the most part permanently mounted on the following components:

- Airbag module
 - Driver's/ front passenger airbag
 - Side airbag
 - Head airbag
 - Knee airbag
- Electromotive automatic reel
- Belt end fitting tensioner
- Seat belt tensioner
- Safety battery terminal
- Active head restraint

In accordance with accident prevention regulations and specific national regulations, gas generators must be rendered unusable before they are scrapped. This is necessary because pyrotechnical objects can cause injury if improperly activated (e.g. scrapping with flame cutters).

In vehicles intended for scrapping it is paramount prior to draining and further stripping work to ensure that all gas generators **in the vehicle** have been activated. The fired gas generators can then be scrapped together with the vehicle.

Gas generators that have not fired constitute a hazard (also to the environment)!

Ignition failure:

If correct ignition is not possible, the relevant components must be removed and disposed of by special waste disposal companies!

Comply with safety regulations **for handling airbag system components**.

If an ignition has failed:

- Disconnect the igniter from the vehicle battery and
- Wait a few minutes before approaching the vehicle

The components of an airbag system must always be disposed of. Such components must not be sold on as used parts.

ignition:

Ignition of the gas generators may only be carried out by expert personnel and under the supervision of a responsible person. Other standard accident prevention regulations (safety goggles, ear defenders etc.) must also be observed.

The gas generators must be fired from the outside in this vehicle which has been earmarked for scrapping. In this process

- the doors must be closed
- the tailgate must be open
- the side windows must be open and
- Slide/tilt sunroof open

Use igniters with the appropriate cables to activate the gas generators.

Warning!

Once gas generators have been fired, observe a ventilation period of 10 minutes with the doors opened. Only then is it permitted to continue work inside the vehicle.

Wear protective goggles and protective gloves when handling a fired gas generator!



The burning of solid propellant will heat up the airbag unit - danger of burns!

Wash skin with water after contact with fired gas generators!

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72 12 ... Procedure after airbag deployment as result of an accident

Replace all components that were affected by the accident and check all others!

Check and/or replace following components after airbag deployment:

- Components
 - Safety battery terminal
 - Sensor B-pillar (left/right)
 - Sensor front door (left/right)
 - Sensor seat, Driver-/passenger's side
 - Airbag control unit, vehicle interior
 - Pedestrian protection sensor
 - Front sensor (engine compartment)
- Procedure
 - Inspect visually for mechanical damage (housing, plug connections). Replace damaged components
 - Connect diagnosis system
 - Read fault memory
 - Disconnect the vehicle battery and adhere to the waiting period (at least 30 seconds)
 - Inspect visually for mechanical damage
 - Rectify faults
 - Reconnect the vehicle battery and adhere to the waiting period (at least 10 seconds)
 - Delete fault memory
 - Switch off ignition and wait at least 2 minutes (no consumers may be switched on during this period such as interior light, radio, etc.)
 - Switch the ignition on (wait for at least 10 seconds)
 - Delete fault memory
 - If you cannot delete the fault memory: Replace the component that is causing the fault

Replace the airbag control unit in the following cases only:

- In the case of visible external damage
- In the case of a corresponding fault memory entry (airbag indicator light is illuminated)

Cables and connectors

- Components and procedure
 - Check cables and connectors for damage, replace if necessary.
(e. g. corrosion, correct engagement, bent pin)

Seat belt system

- Components
 - Automatic reel
 - Seat belt tensioner
 - Seat belt height adjustment
 - End fitting pretensioner
 - Seat belt buckle
- Procedure
 - Check components, replace if necessary
 - Additional door lock: Check for foreign body, remove it if necessary

Seats

- Components
 - Seat
 - Airbag module
 - Active head restraint
- Procedure
 - Check seats (functional check of seat mechanism), replace if necessary



- Check seat connection
- Replace gas generator of active head restraint

If the severity of the crash has not caused any other damage to the seat, only the triggered gas generator needs to be replaced

External feature: The triggered head restraint is folded forwards and engaged

The repair work can be carried out in the vehicle with the rear panel removed. The entire system can be pushed back into its original position and the new gas generator installed

The gas generator can be replaced up to 5 times

- Replace airbag module and seat cover with upholstery
- **I01 only:** If one of the following criteria is met, the backrest frame must be replaced
(Part number of backrest frame: 52 10 7 388 646)
 - Activated belt tensioner
 - Activated end fitting pretensioner
 - Outer cover unclipped by a side collision
 - Outer cover ripped off by a side collision
 - Faulty clip connection on outer cover caused by a side collision

Driver's airbag

- Components
 - Airbag module
 - Steering wheel
 - Steering column (if damaged)
- Procedure
 - Check components, replace if necessary
 - Replace steering wheel

Front passenger airbag

- Components
 - Airbag module
 - Dashboard trim panel (must be replaced!)
 - Supporting tube (if damaged)
- Procedure
 - Check components, replace if necessary

Side airbag, front/rear

- Components
 - Airbag module
 - Door trim panel
 - Door in white
 - Seat
- Procedure
 - Check components; replace if necessary

Head airbag

- Components
 - Airbag module
 - A-pillar trim panel
 - Roofliner
 - B-pillar trim panel (if damaged)
 - C-pillar trim panel (if damaged)
 - Connection/mount (on side frame)
- Procedure
 - Check components, replace if necessary



Knee airbag

- Components
 - Trim panel (driver's side)
 - Lower section of glove box
 - Knee protection(Driver- and passenger's side)
- Procedure
 - Check components, replace if necessary

Knee protection

- Components
 - Trim panel (driver's side)
 - Glove box incl. knee protection (passenger's side)
- Procedure
 - Check components for damage, replace if necessary
 - Check retaining elements

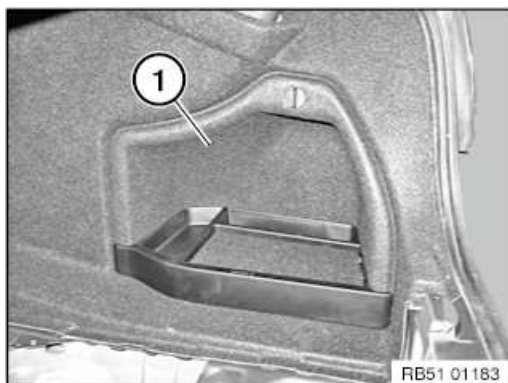
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72 12 004 Remove and install / replace the airbag module for driver's knee protection \PREMIUM

PRELIMINARY WORK

1 – Remove right luggage compartment trim panel



- Remove right luggage compartment trim panel (1).

2 – Disconnecting the battery earth lead

Prerequisite

Ignition is switched off.



TECHNICAL INFORMATION

For additional information see:

- 61 00 ... Safety information on handling the vehicle battery
- 61 00 / 12 00 ... Notes on disconnecting and connecting the vehicle battery
- 61 12 ... Notes on the intelligent battery sensor (IBS)



RISK OF DAMAGE

Damage to battery terminal, the safety battery terminal or the intelligent battery sensor (IBS).

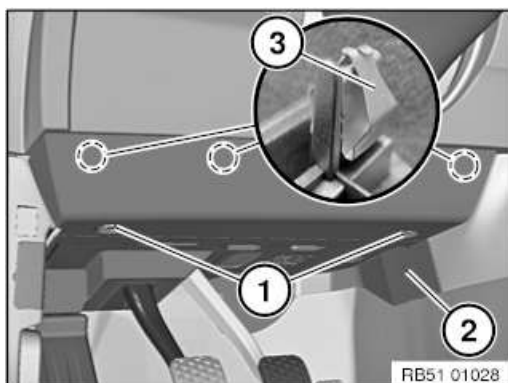
Damaged battery terminals can lead to malfunctions or vehicle electrical system faults.

- Pull off battery terminal from battery pole by carefully moving to and fro. Do not pry off using a tool.

- Slacken nut (1).
- Pull off the battery earth lead including intelligent battery sensor (IBS) (2) upwards, put to one side and secure the components.

3 – Removing the trim panel for pedal mechanism





- Loosen screws (1).
- Unclip the pedal mechanism trim panel (2) from the clips (3).
- Slightly lower the pedal mechanism trim panel (2) and disconnect the plug connection behind it.
- Remove the pedal mechanism panel trim (2) and set it aside.

MAIN WORK

4 – Removing the airbag module for the driver's knee protection

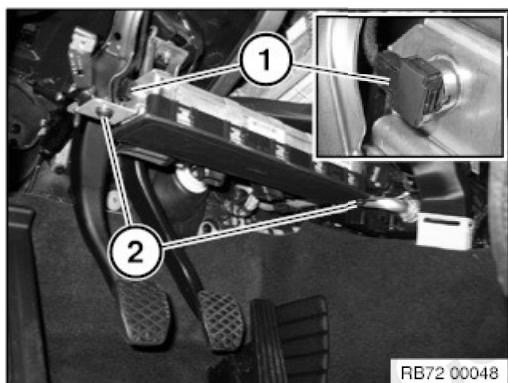


WARNING

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.



- Unlock plug connection (1) and disconnect.
- Loosen the screws (2) and remove the airbag module for the driver's knee protection.

5 – Installing airbag module for the driver's knee protection



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.

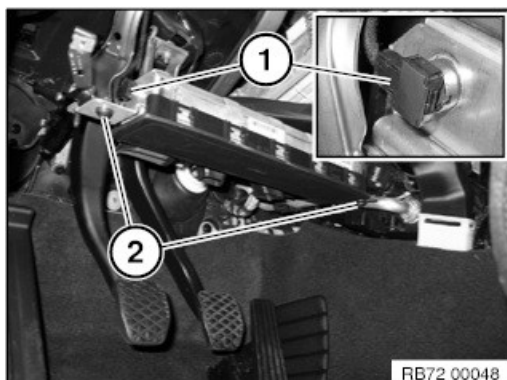


TECHNICAL INFORMATION

Microencapsulated screws must be replaced and may not be reused.

The screw fitting must be completed within 10 minutes, as the hardening begins after this time period.

Microencapsulated screws must not be retightened.



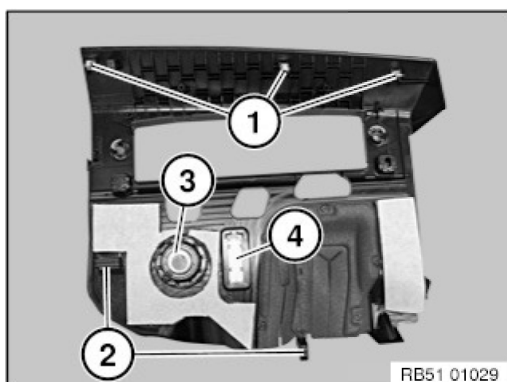
- Insert and lock airbag module for the driver's knee protection and connect and lock the connector (1).
- Renew screws (2) and tighten.

Airbag module for driver knee protection to carrier support

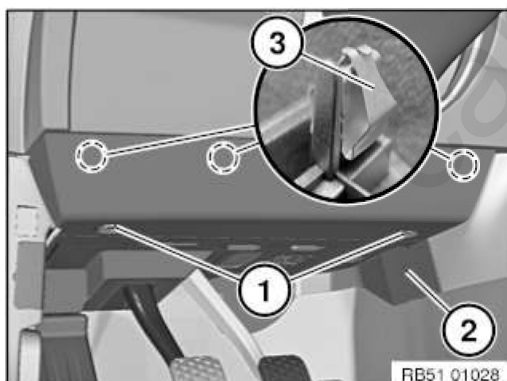
Renew screw.			8 Nm
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POSTPROCESSES

6 – Installing the trim panel for the pedal mechanism



- Check the clips (1) and the guides (2) for damage and replace if necessary.
- Check the speakers (3) and the footwell light (4) and replace if necessary.
- Insert the guides (2) into the corresponding holder on the vehicle.



- Insert the trim panel for the pedal mechanism (2) toward the top and clip the clips (3) into the instrument panel.
- Tighten the screws (1).

Trim panel for the pedal mechanism on the support for the instrument panel

		4,6 Nm
--	--	--------

7 – Connecting the battery earth lead

TECHNICAL INFORMATION

For additional information see:

61 00 ... Safety information on handling the vehicle battery

61 00 / 12 00 ... Notes on disconnecting and connecting the vehicle battery

61 12 ... Notes on the intelligent battery sensor (IBS)



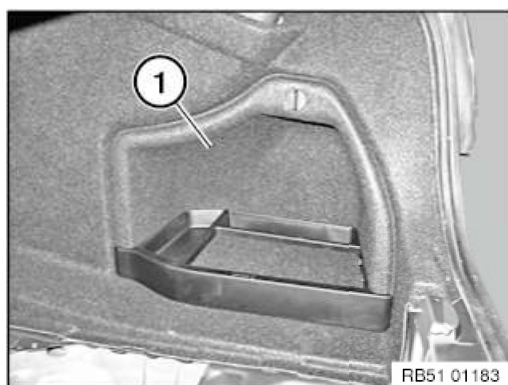


- Connect battery earth lead with intelligent battery sensor (IBS) (2) to negative battery terminal.
- Tighten nut (1).

Battery cable on the battery

M6			5 Nm
----	--	--	------

8 – Install right luggage compartment trim panel



- Insert right luggage compartment trim panel (1).

Additional Information

Overview of Tightening Torques

Airbag module for driver knee protection to carrier support			Used in step	5
Renew screw.				8 Nm
Trim panel for the pedal mechanism on the support for the instrument panel			Used in step	6
				4,6 Nm
Battery cable on the battery			Used in step	7
M6				5 Nm

Links

General repair instructions	Used in step
61 20 ... Notes on AGM battery	27
61 12 ... Notes on intelligent battery sensor (IBS)	27
61 00 ... Notes for disconnecting and connecting battery	27
72 00 ... Safety regulations for handling components with gas generators	45



72 12 000 Removing and installing or replacing airbag module on passenger's side



Important!

Operations on pyrotechnical devices may only be carried out by authorised experts.

Improper, unauthorised operations may result in serious dangers.

Unauthorized persons are strictly prohibited from performing any operations on this system.



Warning!

Read and comply with safety instructions for handling airbag modules and pyrotechnical belt tensioners.

Incorrect handling can activate airbag and cause injury.

A damaged airbag must be replaced because its protective function is compromised or, in an extreme situation, it can no longer execute its protective function.



Necessary preliminary tasks:

- Remove dashboard



Release all screws on airbag module.

Tightening torque 72 12 01AZ.

Remove airbag module from dashboard.



**Special tools required:**

- 2 230 142

**Important!**

Operations on pyrotechnical devices may only be carried out by authorised experts.

Improper, unauthorised operations may result in serious dangers.

Unauthorized persons are strictly prohibited from performing any operations on this system.

**Warning!**

Read and comply with safety instructions for handling airbag modules and pyrotechnical belt tensioners.

Incorrect handling can activate airbag and cause injury.

A damaged head airbag must be replaced.

A damaged head airbag exhibits an impaired protective function and in extreme cases loses its protective function altogether.

**Necessary preliminary tasks:**

- Disconnect negative battery cable
- Remove headlining
- Remove rear grab handle holders
- Follow notes for unlocking and locking airbag connector connection

**Important!**

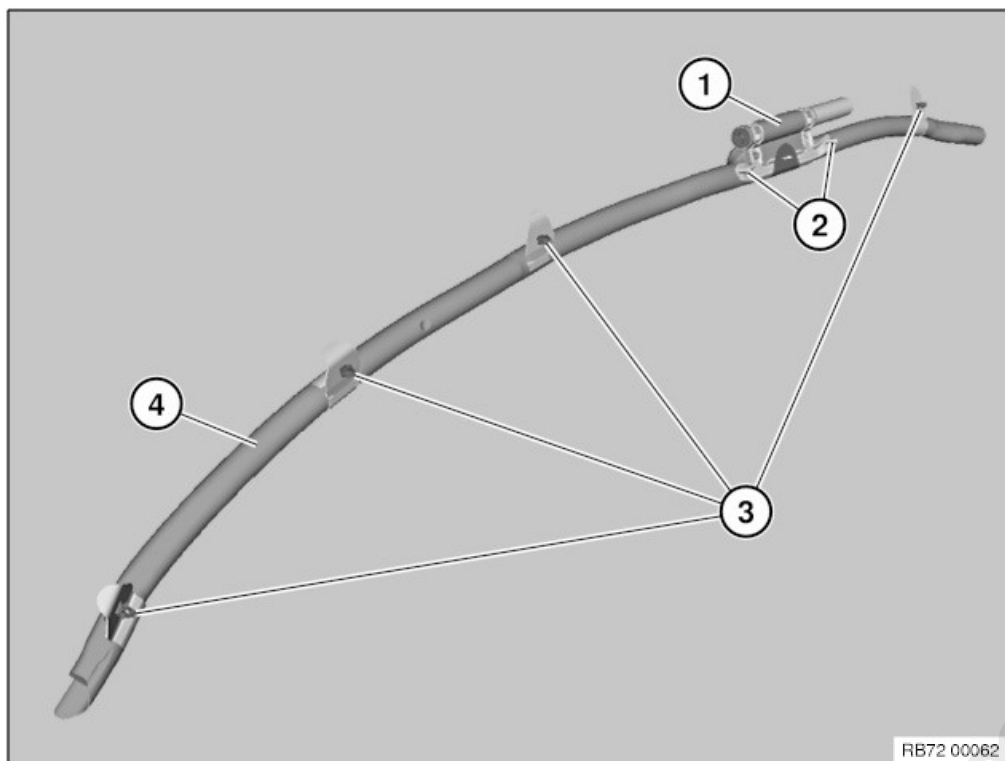
Lay out protective mats to protect the interior equipment against swarf from the drilled-out rivets and damage.

Lay out protective mats in the relevant working area:

- Instrument panel
- Entrance area
- Passenger compartment

Installation overview, retaining elements, head airbag:





- | | |
|--------------------------------|------------------------------------|
| 1 Gas generator | 3 Retaining clips for folding pack |
| 2 Mounting bolt, gas generator | 4 Folding pack, head airbag |



Important!

When removing head airbag, do not damage

- Head airbag
- Retaining clips
- Trim panels

Do not damage!



To unlock the retaining clips, use special tool 2 230 142 .

Unlock and remove retaining clips.

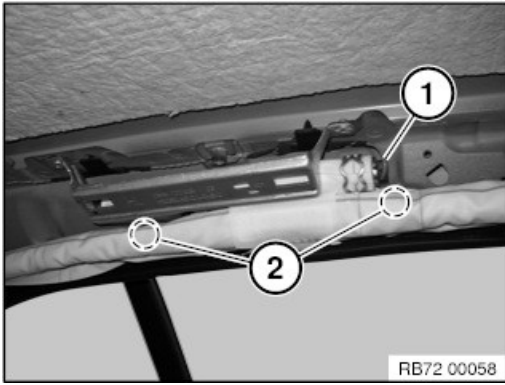
Installation note:

Mounting clips of folding pack must not be damaged.

Replace faulty retaining clips.

Replace retaining clips after airbag deployment.





Unlock plug connection(1) for gas generator and disconnect.

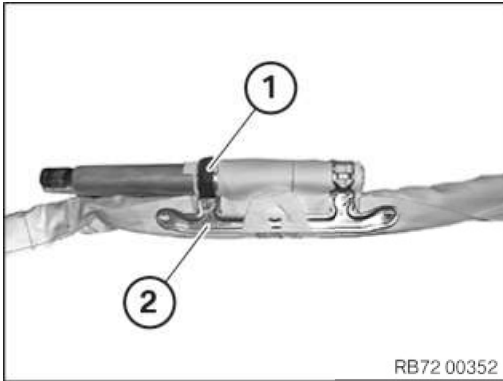
Drill out rivet heads in marked area (2).

Note instructions for the removal of rivets.

Remove the gas generator with the folding pack.

Installation note:

Gas generator is coded against incorrect assembly.



Installation note:

Only F30 US and F80 US:

Felt (1) must be bonded to gas generator holder (2).

If necessary, cut felt from felt set and bond.

Dimensions in mm: 15 x 50 x 1





Warning!

Observe safety regulations for handling airbag modules and pyrotechnical seat belt tensioners.

Incorrect handling can cause airbags to trigger, resulting in serious injuries.



Attention!

Operations on pyrotechnical devices may only be carried out by authorised experts.

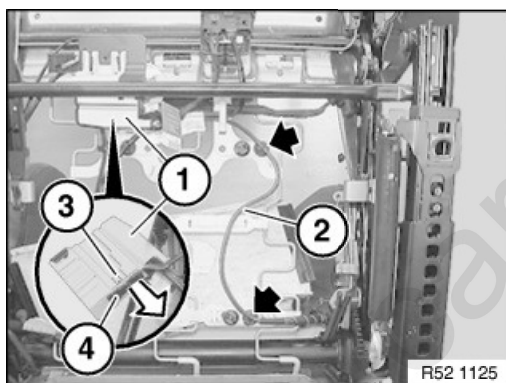
Improper, unauthorised operations may result in serious dangers.

Unauthorized persons are strictly prohibited from performing any operations on this system.



Necessary preliminary work:

- Disconnect negative battery cable
- Remove front seat
- Partially detach backrest cover



Attention!

Make sure airbag wiring harness is exactly routed when installed.

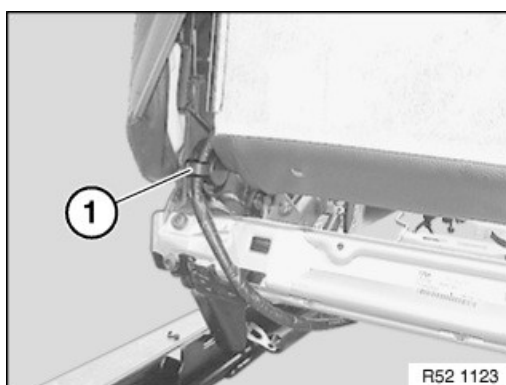
Detach cable strap.

Release airbag wiring harness (2) from cable clips on seat mechanism.

Raise release clip (3) and pull connector (4) out of connector housing (1).

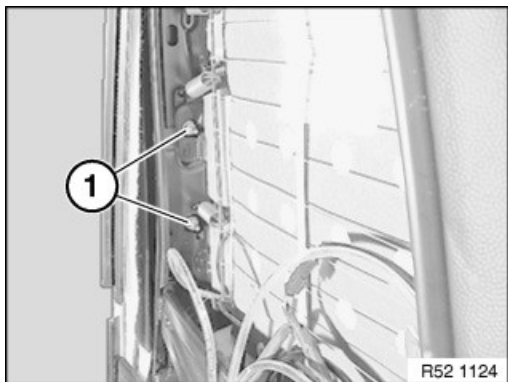
Note:

If necessary, release yellow connector housing (1) from holder on seat mechanism.



Unclick the omega cable clip (1) from the seat mechanism.





Unscrew nuts (1). *Installation note:*

Replace nuts (1).

Tightening torques 72 12 03AZ.



Attention!

Feed the wiring harness carefully through the seat and backrest mechanism as the edges of the frame can be sharp.

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Warning!

Read and comply with safety regulations for handling airbag modules and pyrotechnical belt tensioners.

Incorrect handling can activate airbag and cause injury.



Important!

Operations on pyrotechnical devices may only be carried out by authorised experts.

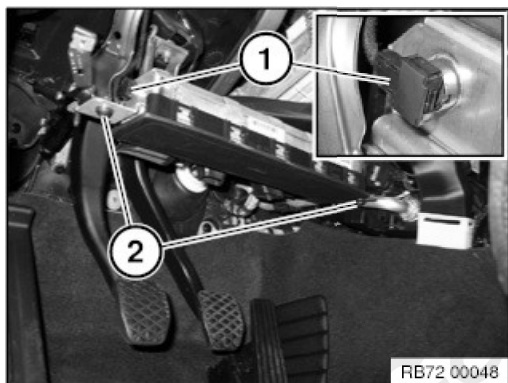
Improper, unauthorised operations may result in serious dangers.

Unauthorized persons are strictly prohibited from performing any operations on this system.



Necessary preliminary tasks:

- Clamp off battery earth lead
- Remove trim panel for pedal mechanism



Unfasten plug connection (1) and disconnect.

Unfasten screws (2).

Tightening torque 72 12 02AZ.



72 12 006 Removing and installing/replacing airbag module for passenger knee protection



Warning!

Read and comply with safety regulations for handling airbag modules and pyrotechnical belt tensioners.

Incorrect handling can activate airbag and cause injury.



Important!

Operations on pyrotechnical devices may only be carried out by authorised experts.

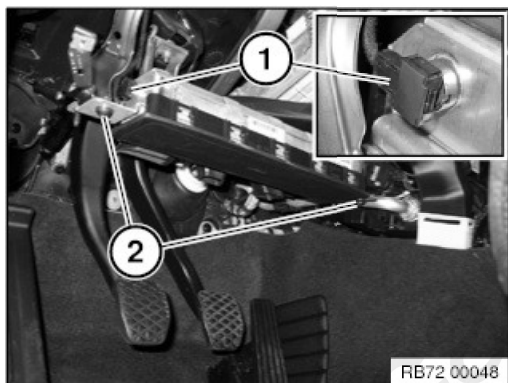
Improper, unauthorised operations may result in serious dangers.

Unauthorized persons are strictly prohibited from performing any operations on this system.



Necessary preliminary tasks:

- Clamp off battery lead from negative connection point
- Remove lower instrument panel trim



Note:

The passenger's side is identical to the driver's side shown here!

Unfasten plug connection (1) and disconnect.

Unfasten screws (2).

Tightening torque 72 12 02AZ.



72 12 061 Removing and installing/replacing left or right head airbag (version with slide/tilt sunroof)



Important!

Operations on pyrotechnical devices may only be carried out by authorised experts.

Improper, unauthorised operations may result in serious dangers.

Unauthorized persons are strictly prohibited from performing any operations on this system.



Warning!

Read and comply with safety instructions for handling airbag modules and pyrotechnical belt tensioners.

Incorrect handling can activate airbag and cause injury.

A damaged head airbag must be replaced.

A damaged head airbag exhibits an impaired protective function and in extreme cases loses its protective function altogether.



Note:

Except for the operations for Removing headlining, this task is identical to:

- Removing and installing/replacing left or right head airbag (version without slide/tilt sunroof)



61 00 ... Repairing airbag cables

Important!

Only repair those cables which show visible signs of damage. In the event of visible damage, make sure there is only one cable repair in effect after the repair work. If no visible damage can be identified, the entire cable must be replaced. When carrying out repairs to the airbag wiring harness, you must use the spare parts offered in the Electronic Parts Catalogue (EPC).

Safety regulations for handling components of airbag system.

Instructions for disconnecting and connecting battery.

In event of non-visible damage to wiring harness:

Disconnect plug connection on airbag module or on adapter plug. It is absolutely vital to disconnect the contacts in succession as there is a risk of mixing up (similar parts)! Cut through one cable after the other at an appropriate position, do not under any circumstances cut through both cables at the same time. Insulate cables remaining in wiring harness with insulating tape. Now disconnect plug connection on airbag control unit. Unpin contacts. Cut through one cable after the other at an appropriate position and insulate with insulating tape, do not under any circumstances cut through both cables at the same time. Pin contacts of repair cable for airbag control unit in control unit plug, assignment of repair cables is relevant. Lay repair cable in vehicle parallel to existing airbag lead. Now pin in contacts for airbag control unit or contacts of adapter plug, assignment of repair cables is relevant. Cut off excess length of repair cable in proximity (visible area) of airbag module or of adapter plug. Twist open cables. With the butt connectors and heat-shrink tubings in the Electronic Parts Catalogue (EPC), reconnect the cables with the same cable colours. Twist cables again, open length (twist) must not exceed 40 mm. Secure interface (heat-shrink tubing) with insulating tape to prevent cables from twisting open.

Instructions for cutting off, insulating, crimping cables, installing and removing contacts:

Cutting off and insulating cables.

Repairing a plug connection using butt connectors.

Installing and removing contacts.

In event of visible damage:

Expose cable at damaged areas. Cut through one cable after the other at an appropriate position and insulate cables no longer required in wiring harness with insulating tape, do not under any circumstances cut through both cables at the same time. Now, depending on the scope of work, unpin contacts either on airbag control unit/airbag module or on adapter plug. Cut off unpinned cables. Insulate cables remaining in wiring harness with insulating tape. Now pin in contacts of repair cable, assignment of repair cables is relevant. Lay repair cable in vehicle parallel to existing airbag lead up to separation point. Cut off excess length of repair cable. Twist open cables. Connect cables with butt connectors and heat-shrink tubings in Electronic Parts Catalogue (EPC), assignment of repair cables is relevant. Twist cables again, open length (twist) must not exceed 40 mm. Secure interface (heat-shrink tubing) with insulating tape to prevent cables from twisting open.

Instructions for cutting off, insulating, crimping cables, installing and removing contacts:

Cutting off and insulating cables.

Repairing a plug connection using connectors.

Installing and removing contacts.



72 Safety information and general information

Notes on safety

- > Safety regulations for handling airbag modules and pyrotechnic belt tensioners
- > Notes on scrapping vehicles with gas generators

Handling electrical system and electronics

- > Unlocking/locking airbag plug connections
- > Repairing airbag lines
- > Handling optical fibres

Check

- > Check seat belt
- > Checklist for seat belt

Airbag system

- > See diagnosis system for FUB and check
- > Deactivating airbags
- > Procedure after airbag deployment .

Active pedestrian protection

- > Procedure after actuator triggering



72 00 ... Safety regulations for handling components with gas generators

It is essential to comply with the regulations as specified in the law relating to the use of explosives when working on airbag units and seat belt tensioners.

Airbags, seat belt tensioners etc. are pyrotechnical objects. Pyrotechnical objects are assigned to different danger classes on the basis of the quantity of propellant that they contain. The assignment can be ascertained from the identification marking on the product:

Attention!

Failure to comply with the warning notices and repair instructions for gas generator components can cause accidental deployment and result in injury and vehicle damage!

This applies in particular to the following components:

- Airbag modules (driver's/front passenger airbags, side airbags)
- Seat belt tensioner
- Head airbag
- Active knee protection
- Active head restraint
- Safety battery terminal

1. Regulations

The regulations quoted in the following refer to the Federal Republic of Germany.

In all other countries, the relevant legislation and regulations must be observed in each case. Country-specific legal regulations that go beyond this information or court decisions based thereon must be followed in each case or given precedence over these regulations.

- Pyrotechnical restraint systems are subject to danger class PT1
- Gas generators are pyrotechnical objects belonging to danger class T1

Handling, transporting and storing non-fired gas generators are subject to the "Explosive Materials Act" (law relating to the use of explosives dated 13/09/1976).

The relevant trade supervisory authority must be notified at least 2 weeks before pyrotechnical objects are handled for the first time. In this process, notify the person responsible at the relevant authority (e.g. dealership owner, holder of general power of attorney, technical supervisor) in writing. A certificate of qualification, i.e. specific training, is not required for the person responsible.

2. Dismantling and installation

- Checking and installation work must be carried out by professionally trained personnel only.
- Work on airbag system components must only ever be carried out with a disconnected vehicle battery, covered negative terminal and disconnected plug connection of the cable leading to the gas generator. Observe the specified waiting period if merely the vehicle battery is disconnected:
 - 30 min. for vehicles up to 9/93
 - 1 min. for vehicles from 9/93 onward
- In the event of breaks in work, a component with a gas generator that has been removed must be secured against access by other persons.
- Individual components must never be repaired. Instead, always replace them.
- Do not treat airbag system components with cleaning agents or grease.
- Components of the airbag system must not be exposed to temperatures in excess of 75 °C.
- Airbag system components, including electronic diagnostic components, which have been dropped from heights in excess of 0.5 m must not be reinstalled in the vehicles.
- Do not remove components of the airbag system from the original packaging until immediately before they are to be installed in the vehicle.



- Before installing, subject components such as housing, connector pins ,etc. of the airbag system (including diagnosis electronics) to a visual inspection for damage and replace if necessary.
- Airbag system components may only be electrically tested while they are installed and only with the diagnosis system.
- **Danger of injury:** The airbag module may only be set down with the airbag itself facing *upwards*. Otherwise the gas generator may be propelled upwards upon potential ignition of the gas generator.
- Do not point the ignition squib of a gas generator at other persons.
- Components with gas generators must not be fired while they are removed. They must be disposed of by special disposal companies or returned in the packaging of the new parts.
- When carrying out straightening and welding work with an electric welder:
 - Disconnect the vehicle battery
 - Cover negative terminal (post)
- Avoid all contact with the skin when removing a fired airbag module - wear gloves. Wash with water after contact with the skin.

3. Transport

- Components with gas generators must be sent off in the packaging of the new components.

4. Storage

- Observe the regulations of the relevant trade supervisory authority and the applicable national regulations.



**Warning!**

Read and comply with safety regulations for handling airbag modules and pyrotechnical belt tensioners.

**Attention!**

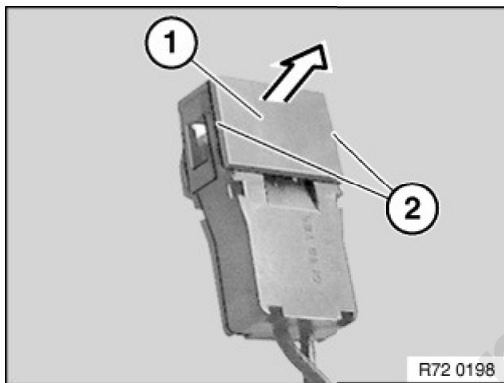
An airbag plug connection must be replaced if it is damaged.

Sourcing reference for airbag repair instructions (with plug connection), see Electronic Parts Catalogue.



Following versions of plug connections on airbag module/gas generator are possible:

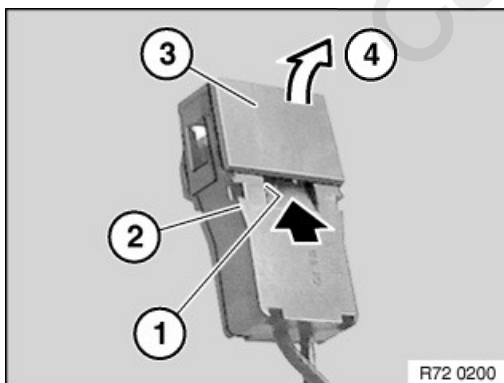
- Airbag plug connection on gas generator/airbag module is offset by 90°
- Airbag plug connection on gas generator/airbag module is straight (3 versions)

**Airbag plug connection on gas generator/airbag module offset by 90°:**

There are two ways of unlocking this airbag plug connection on the gas generator/airbag module:

Method 1:

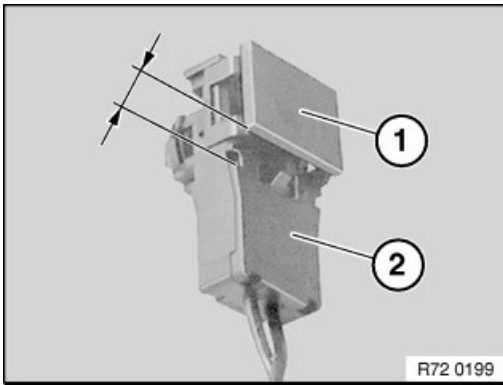
Simultaneously pull cover (1) upwards at lugs on left and right (2).

Method 2:

Insert a narrow screwdriver into recess (1) in housing (2).

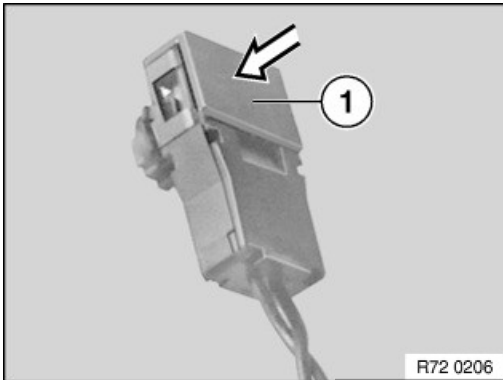
Carefully prise cover (3) off (4).





Cover (1) is not positioned higher than housing (2).

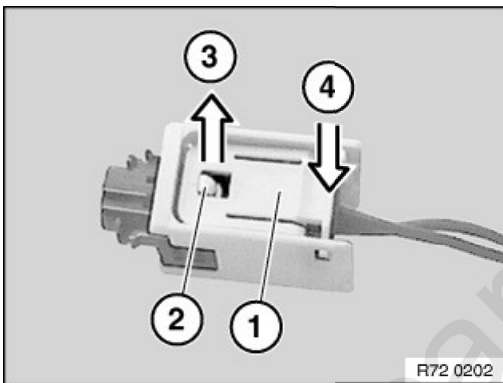
The airbag plug connection is unlocked and can now be detached from the gas generator/airbag module.



Installation note:

After attaching airbag plug connection to gas generator/airbag module, press cover (1) downwards until it rests flat on housing.

Check that it catches properly.



Airbag plug connection on gas generator/airbag module is straight (2 versions)

Version 1:

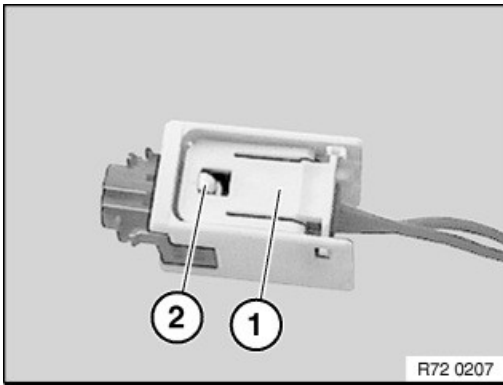
Press locking/unlocking plate (1) at edge (4).

Locking/unlocking plate (1) snaps upwards at opposite edge (3) and releases detent lug (2).



The airbag plug connection is unlocked and can now be detached from the gas generator/airbag module.

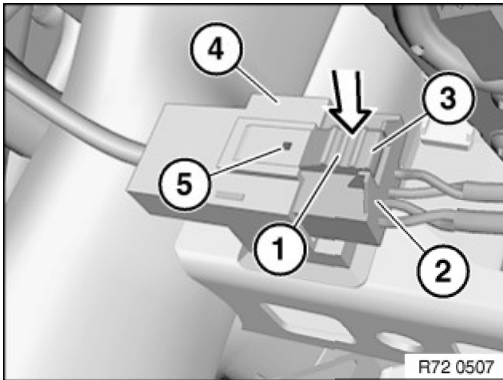




Installation note:

After attaching airbag plug connection to gas generator/airbag module, check whether detent lug (2) is visible in opening of locking/unlocking plate (1).

Only if the detent lug (2) is visible will the airbag plug connection gas generator/airbag module be correctly engaged.

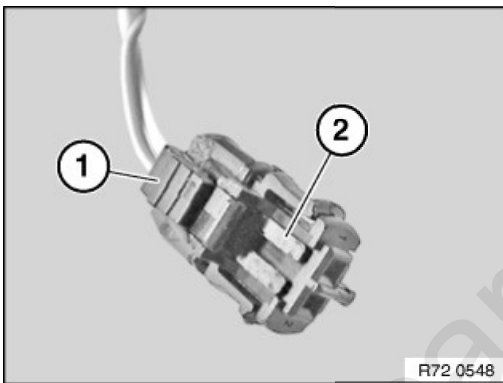


Version 2:

Press locking/unlocking plate (1) on edge (3) and pull plug (2) out of plug housing (4).

Installation note:

Only if the detent lug is visible in opening (5) will the gas generator/airbag module plug connection be correctly engaged.



Version 3:

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

Detach connector (2) from firing pellet.

Installation note:

Insert plug connection in initial engagement position in gas generator/airbag module and engage in final engagement position.

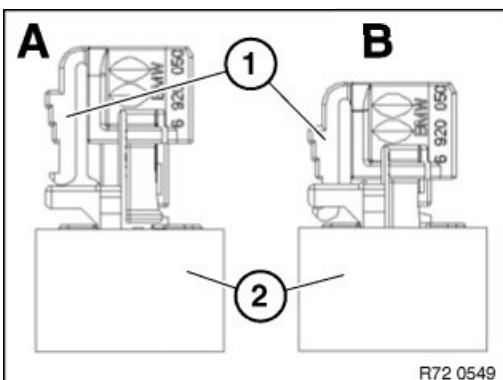
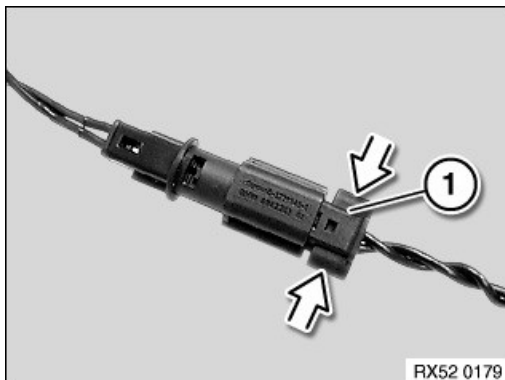


Illustration of version 3 with gas generator:

- A. Initial engagement position
- B. Final engagement position
- 1. Lock
- 2. Gas generator





Version 4 - crash-active headrest:

Press locking clip at edge and disconnect plug (1).

Installation note:

Check for correct engagement.

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Screw securing adhesive is a means of preventing a screwed connection from being loosened by external influences.

Once the screw has been coated with adhesive, the adhesive remains inactive until such time that it is activated by the encapsulation breaking when the screw is inserted and then cures (hardens) at room temperature.



Installation note:

- Screw connection must be completed within 20 mins. (start of curing)
- Microencapsulated screws must not be retightened
- Thread of nut must be cleaned beforehand in event of repeated use

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