

22 11 011 Replacing left engine mount



WARNING

Vehicle may slip off the vehicle hoist if the vehicle hoist is handled incorrectly.

Danger! Life-threatening injuries!

- Observe safety information on raising the vehicle using a vehicle hoist.
- For additional information see: 00 ... Raise the vehicle using a vehicle lift.



TECHNICAL INFORMATION

Check and assess engine mount in accordance with the test module "Engine mount: Mechanical check". If the condition of the engine mount is deficient, it is recommended for reasons of customer satisfaction to replace both engine mounts in order to avoid a repeat repair.

PRELIMINARY WORK

1 – Bring front compartment lid in the service position

Prerequisite

Engine compartment lid is open.

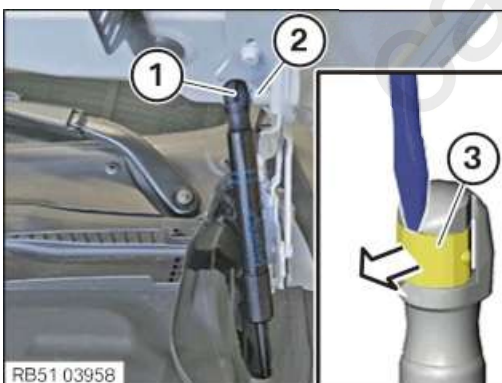


CAUTION

Shutting bonnet or tailgate.

Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.



- Lift clamp (3) slightly using a screwdriver, in the direction of the arrow.
- Lift off ball socket (1) from ball pin (2).
- Repeat the operation on the other side of vehicle.



TECHNICAL INFORMATION

Conduct the following operation with the assistance of a second person.

- Remove the bonnet support and open the bonnet further.
- Pull special tool or (3) over gas pressure spring (1).
- Place special tool on the ball pin (2) and engage using force.
- Repeat the operation on the other side of vehicle.

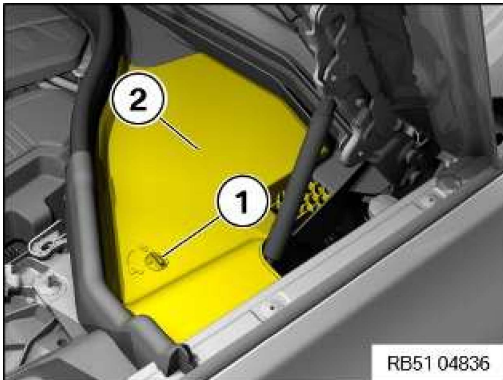


2 – Disconnecting all battery earth leads



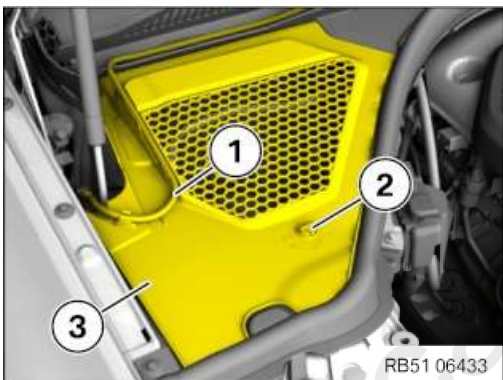
- See additional information.

3 – Remove the cover of the engine compartment at the rear left



- Loosen the lock (1).
- Remove the cover (2) of the rear left engine compartment.

4 – Remove the cover of the rear right engine compartment



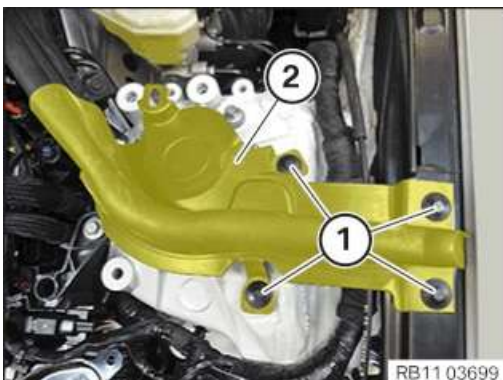
- Release washer fluid hose (1) from the guides.
- Loosen the lock (2).
- Remove the cover (3) of the rear right engine compartment.

5 – Removing side bonnet gaskets



NOTICE

Perform the operations on the left and right side.



- Loosen the rivet (1).
- Remove side bonnet seal (2) from spring strut dome.

6 – Removing the acoustic cover





RISK OF DAMAGE

Damage to the acoustic cover/design cover.

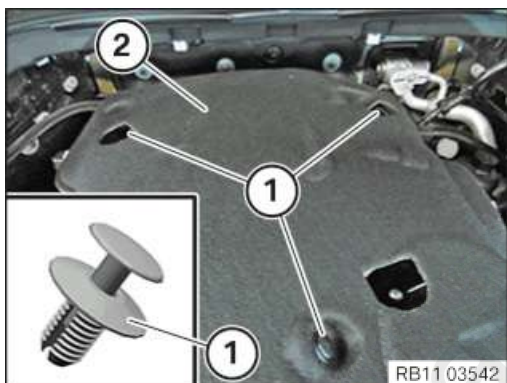
Jerky movements during disassembly and excessive application of force during installation may result in breakage of the acoustic cover/design cover.

- Disassemble or mount the acoustic cover/design cover carefully.
- Disassemble or mount snap-lock couplings of the ball pivots one after the other.
- Disassemble or mount acoustic cover/design cover only at temperatures $>20^{\circ}\text{C}$.
- Use only distilled water as an auxiliary material during installation, no lubricants.



- Unclip the acoustic cover (1) from the holders in the indicated area towards the top.

7 – Remove the acoustic cover for the injectors



- **If installed:** Release the expanding rivet (1).
- Guide the acoustic cover (2) out and remove.

8 – Remove DDE control unit



RISK OF DAMAGE



Electrostatic discharge.

Damage to or destruction of electrical components.

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





TECHNICAL INFORMATION

In a warranty case, you must always provide a fault memory printout with the defective part, even if the fault memory does not contain an entry.



TECHNICAL INFORMATION

Follow instructions for removing and installing control units.

For additional information see: 12 00 ... Notes on removal and installation of control units



TECHNICAL INFORMATION

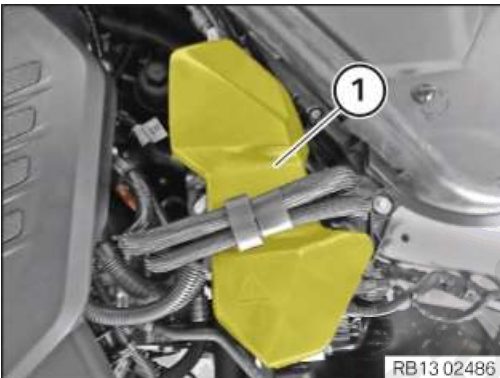
Disconnecting control units may cause fault code entries and functional limitations. Fault code entries must be read out and deleted if necessary.



TECHNICAL INFORMATION

Control unit must be programmed after it is replaced.

For additional information see: 61 00 ... Programming/encoding control unit(s)

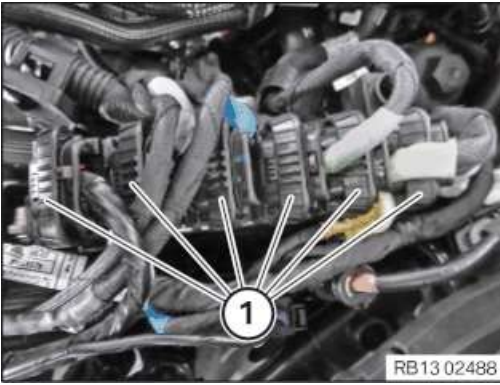


- Pull off cover (1) upwards, feed out and remove.



- Unlock plug connection (1) and disconnect.





- Unlock and disconnect plug connections (1).



- Release the latch mechanisms (arrows).
- Thread out and remove DDE control unit (1).

9 – Removing integrated supply module (PDM)



RISK OF DAMAGE



Electrostatic discharge.

Damage to or destruction of electrical components.

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



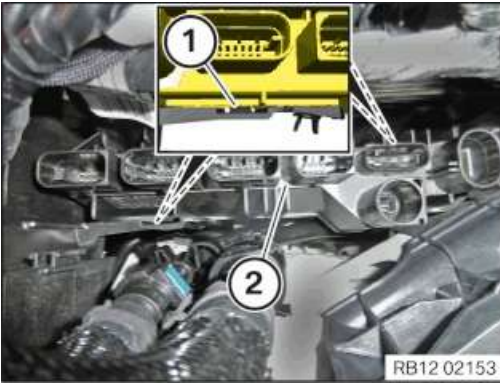
TECHNICAL INFORMATION

The number of connectors on the described component may vary depending on the equipment specification.
If necessary, unlock all other connectors and disconnect or connect and lock respectively.



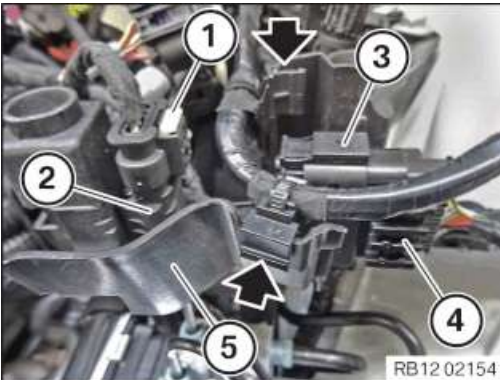
- Unlock and disconnect plug connections (1).



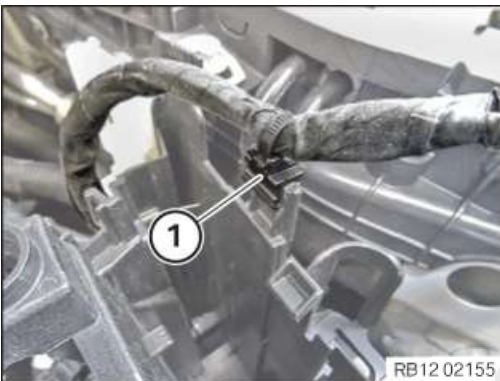


- Loosen the latch mechanisms (1).
- Feed out and remove the integrated supply module (PDM) (2) upwards.

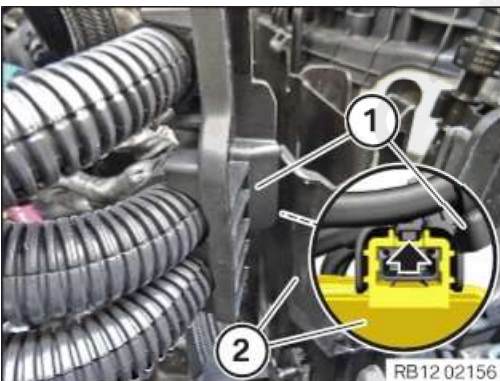
10 – Removing the control unit holder



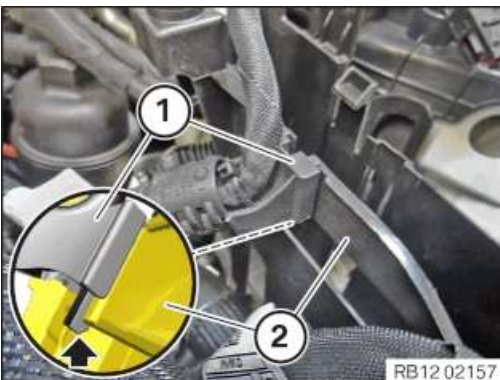
- Unlock plug connection (1) and disconnect.
- Unlock connector (2) and disconnect from the control unit holder (5).
- Unlock plug connection (3) and disconnect.
- Unlock connector (4) and disconnect from the control unit holder (5).
- Release the clamps (arrows).



- Loosen clamp (1).

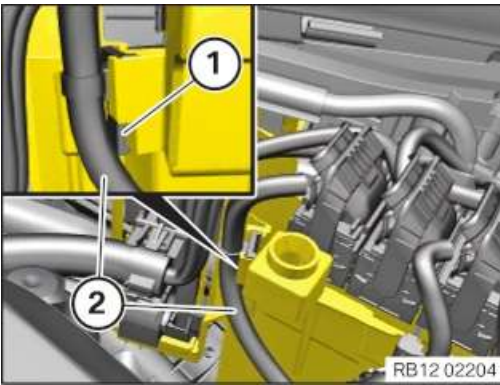


- Unlock the lock (arrow).
- Disconnect cable clip (1) from the control unit holder (2) to the top.

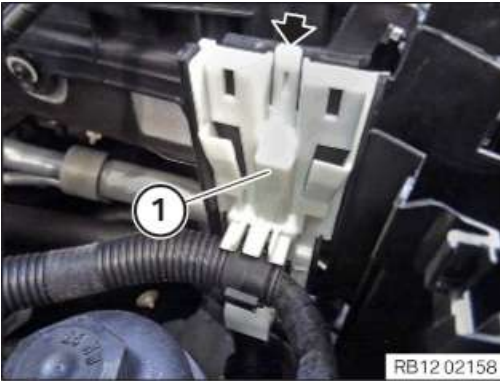


- Unlock the lock (arrow).
- Disconnect cable clip (1) from the control unit holder (2) to the top.





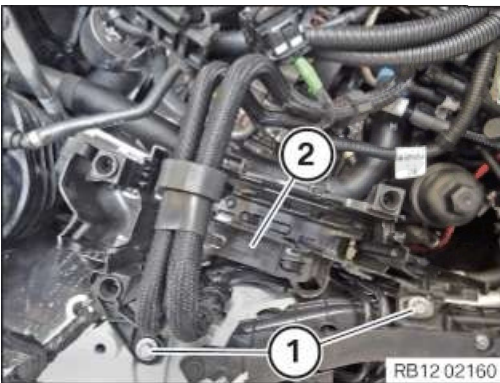
- Unlock and loosen the cable clip (1).
- Remove the wiring harness section (2) and put to one side.



- Unlock the lock (arrow).
- Feed out the cable clip (1) to the top and set it aside.

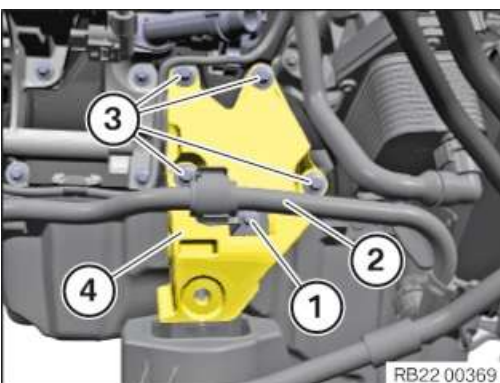


- Unlock holder (1), feed out coolant line (2) and place to one side.



- Loosen screws (1).
- Guide out and remove the control unit holder (2).

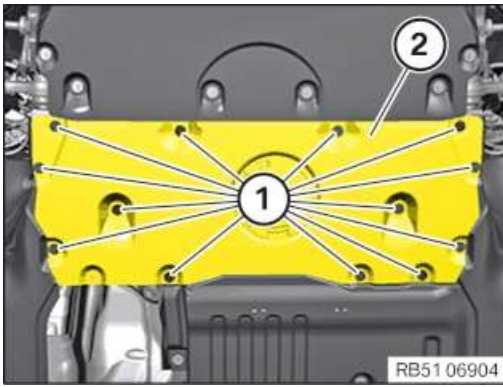
11 – Removing engine mounting bracket, left



- Release screw (1) on holder.
- Place the line (2) with holder to one side.
- Loosen screws (3).
- Remove engine mounting bracket (4).

12 – Removing the centre underbody protection

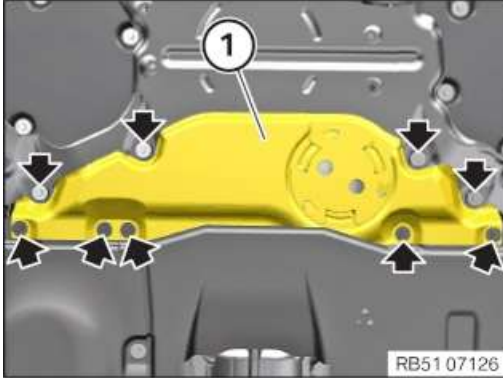




- **Variant with rear wheel drive:**

Loosen screws (1).

Remove centre underbody protection (2) .



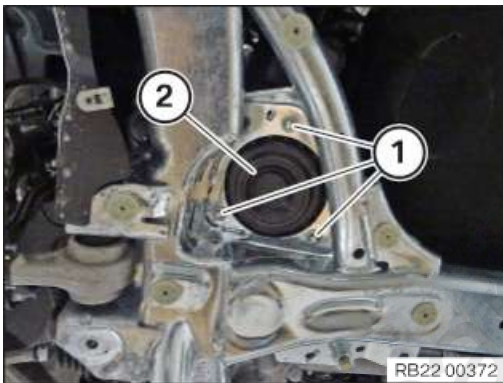
- **Version with all-wheel drive:**

Remove screws (arrows).

Feed out and remove the centre underbody protection (1).

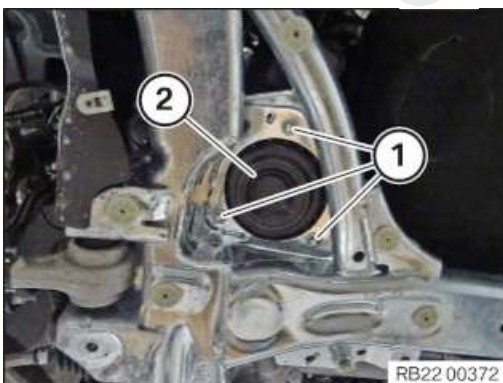
MAIN WORK

13 – Remove left engine mount



- Loosen screws (1).
- Remove engine mount (2).

14 – Installing the engine mount on the left



- Install the engine mount (2).
- Tighten the screws (1).

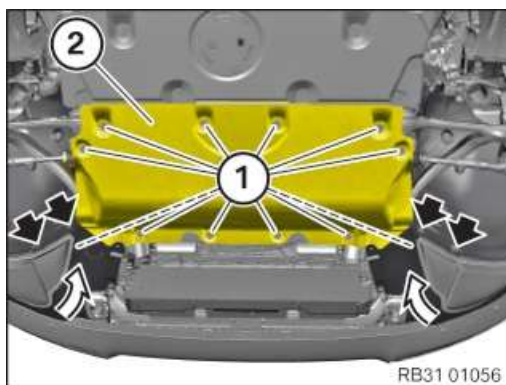
Engine mount to front axle support

Engine mount to front axle support		Tightening torque	19 Nm
M8			

POSTPROCESSES

15 – Install the underbody protection of the steering gear





• **Version A:**

Position the underbody protection (2) of the steering gear.

Tighten the screws (1).

Underbody protection of the steering gear

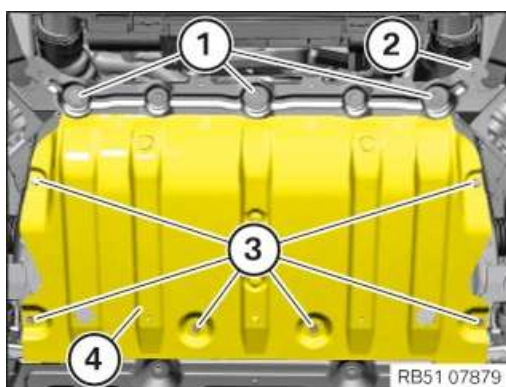
Hexagon screw for thermoplastic		Tightening torque	2.6 Nm
Hexagon bolt M6x20		Tightening torque	8 Nm

- Position the bottom wheel arch cover.

Tighten the screws (arrows) of the lower wheel arch cover on the wheel arch cover.

Wheel arch trim panel, front

Thermoplastic hexagon screw		Tightening torque	2,6 Nm
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• **Version B:**

Feed in the underbody protection (4) of steering gear and install it.

Tighten the screws (3).

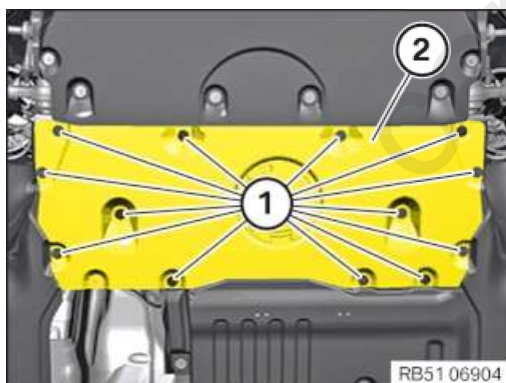
Underbody protection of the steering gear

Hexagon screw for thermoplastic		Tightening torque	2.6 Nm
Hexagon bolt M6x20		Tightening torque	8 Nm

- Position the holder (2) for the underride protection.

Tighten the screws (1).

16 – Installing the centre underbody protection



• **Variant with rear wheel drive:**

Position central underbody protection (2).

Tighten the screws (1).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
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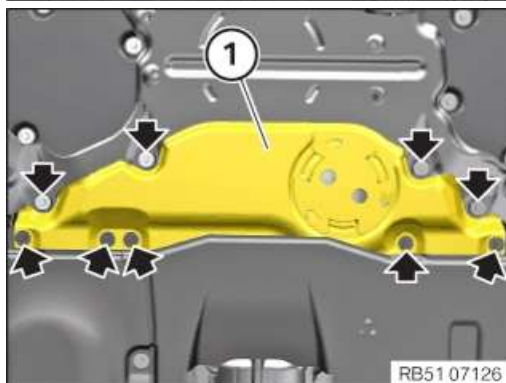
• **Version with all-wheel drive:**

Guide in centre underbody protection (1) and install.

Tighten screws (arrows).

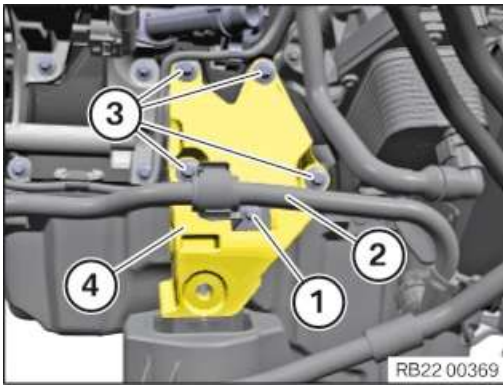
Underbody protection

Hexagon screw		Tightening torque	3 Nm
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17 – Installing left engine mounting bracket





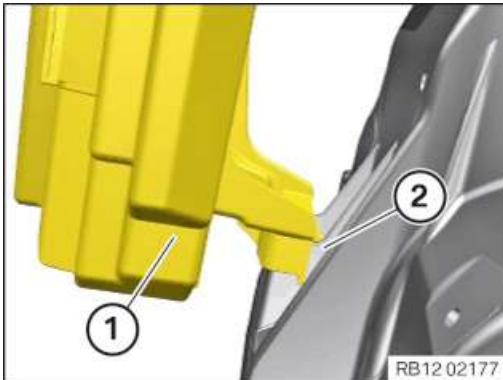
- Install engine mounting bracket (4).
- Tighten the screws (3).

Engine mounting bracket on engine

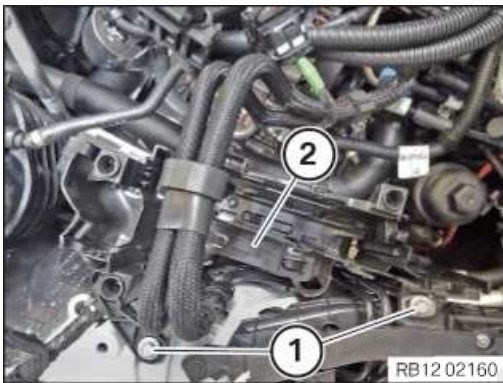
M10		Tightening torque	38 Nm
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- Install line (2) with holder.
- Tighten screw (1) on holder.

18 – Installing the control unit holder



- Make sure the bottom control unit holder (1) is inserted correctly into the fixture (2).



- Guide in and install control unit holder (2).
- Tighten the screws (1).

Control unit holder

M6		Tightening torque	8 Nm
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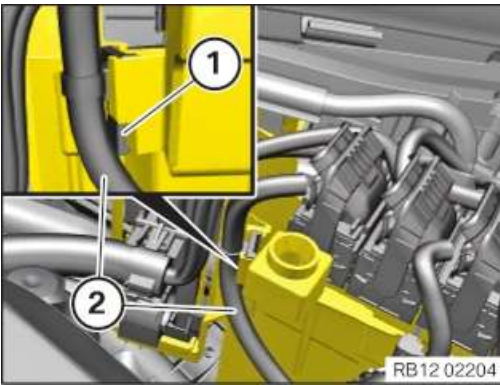


- Feed in and install coolant line (2).
 - Lock holder (1).
- The holder (1) must engage audibly.

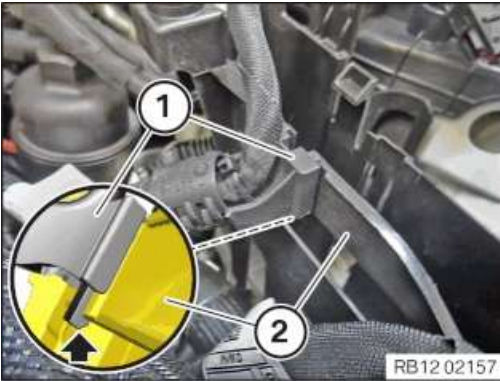


- Feed in and install the cable clip (1).
- Lock (arrow) must audibly engage.

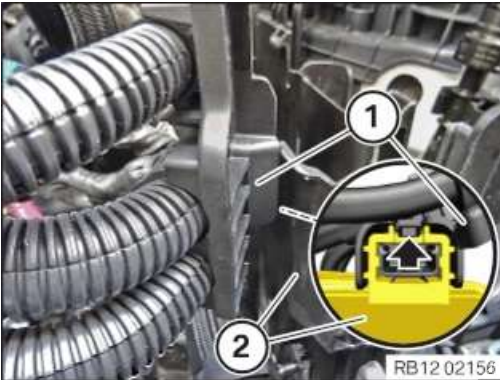




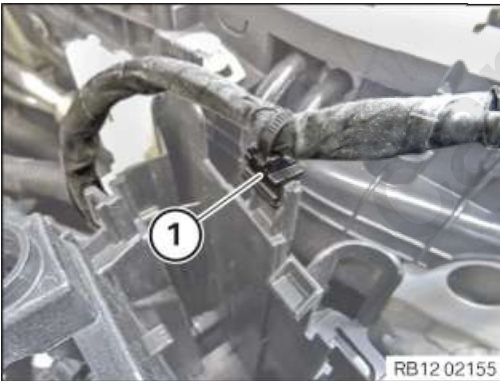
- Guide in the wiring harness section (2) and install.
- Connect and lock the cable clip (1).



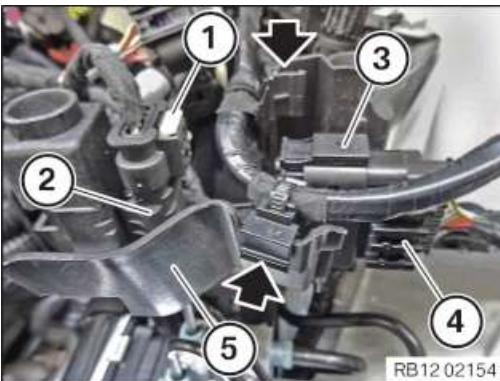
- Connect the cable clip (1) with the control unit holder (2) and lock. Lock (arrow) must audibly engage.



- Connect the cable clip (1) with the control unit holder (2) and lock. Lock (arrow) must audibly engage.



- Secure clamps (1).



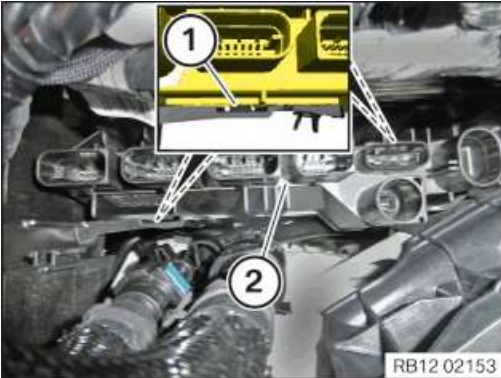
- Connect and lock the connector (4) with the control unit holder (5). The connector (4) must engage audibly.
- Connect connectors (3) and lock. The connector (3) must engage audibly.
- Connect and lock the connector (2) with the control unit holder (5). The connector (2) must engage audibly.
- Connect connectors (1) and lock. The connector (1) must engage audibly.
- Secure the clamps (arrows).





TECHNICAL INFORMATION

The number of connectors on the described component may vary depending on the equipment specification.
If necessary, unlock all other connectors and disconnect or connect and lock respectively.



- Insert and install the integrated supply module (PDM) (2).
The latch mechanisms (1) must engage audibly.



- Connect connectors (1) and lock.
The connectors (1) must engage audibly.

20 – Install DDE control unit



TECHNICAL INFORMATION

If the DDE control unit or an injector has been replaced, it will also be necessary to carry out injection quantity compensation. The adjustment value (7-position letter/number code) is engraved on each injector.



TECHNICAL INFORMATION

Follow instructions for removing and installing control units.
For additional information see: 12 00 ... Notes on removal and installation of control units



TECHNICAL INFORMATION

Control unit must be programmed after it is replaced.
For additional information see: 61 00 ... Programming/encoding control unit(s)



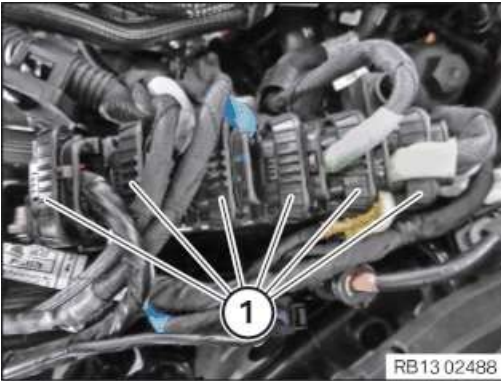
TECHNICAL INFORMATION

Disconnecting control units may cause fault code entries and functional limitations. Fault code entries must be read out and deleted if necessary.





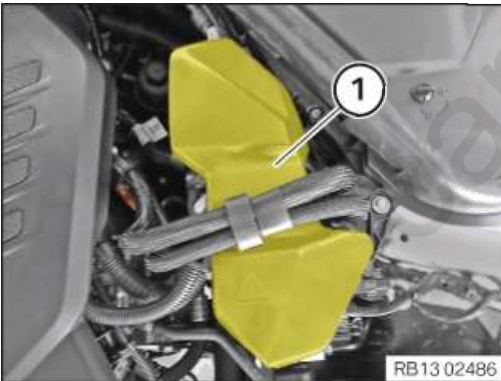
- Install DDE control unit(1).
The latch mechanisms (arrows) must engage audibly.



- Connect connectors (1) and lock.
The connectors (1) must engage audibly.

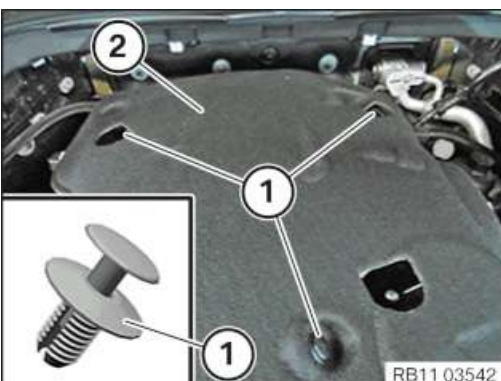


- Connect connectors (1) and lock.
The connector (1) must engage audibly.



- Insert and install cover (1) into guides.

21 – Install the acoustic cover for the injectors



- Feed the acoustic cover (2) in and install.
- **If installed:** Secure the acoustic cover (2) with the expanding rivets (1) .

22 – Install acoustic cover



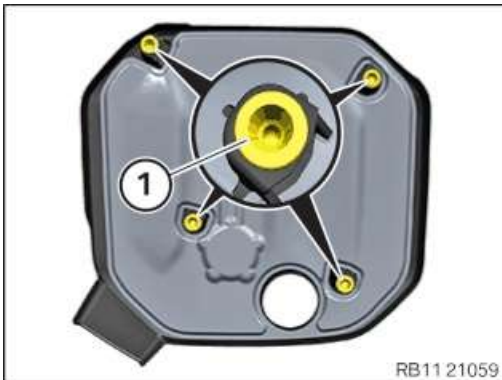


RISK OF DAMAGE

Damage to the acoustic cover/design cover.

Jerky movements during disassembly and excessive application of force during installation may result in breakage of the acoustic cover/design cover.

- Disassemble or mount the acoustic cover/design cover carefully.
- Disassemble or mount snap-lock couplings of the ball pivots one after the other.
- Disassemble or mount acoustic cover/design cover only at temperatures $>20^{\circ}\text{C}$.
- Use only distilled water as an auxiliary material during installation, no lubricants.



- Check the acoustic cover for correct fit of the rubber mounts (1).



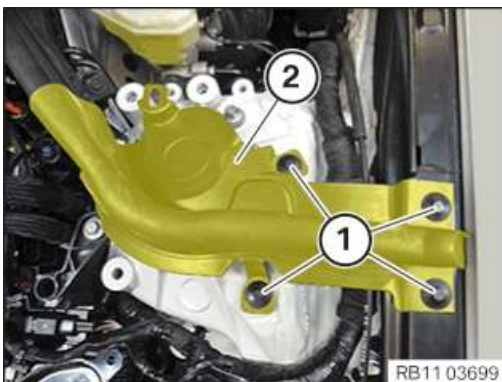
- Clip in the acoustic cover (1) into the holders in the indicated areas.

23 – Install side bonnet seals



NOTICE

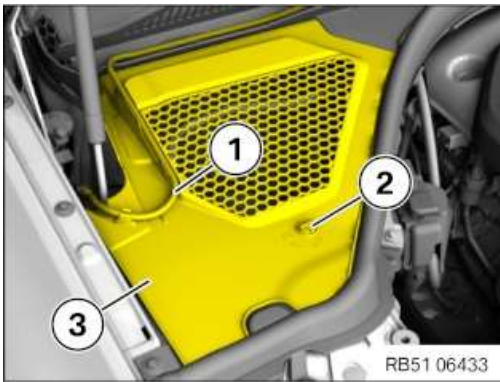
Perform the operations on the left and right side.



- Position the side bonnet seal (2) on the spring strut dome.
- Secure the rivet (1).

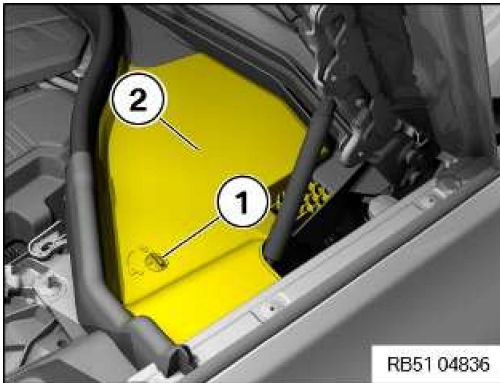
24 – Install the rear right engine compartment cover





- Position the cover of the engine compartment on the rear right (3).
- Close lock (2).
- Insert washer fluid hose (1) into the guides.

25 – Install the cover of the engine compartment on the rear left



- Position the engine compartment cover at the rear left (2) .
- Close lock (1).

26 – Connecting all battery earth leads



- See additional information.

27 – Take bonnet out of the service position



CAUTION

Shutting bonnet or tailgate.

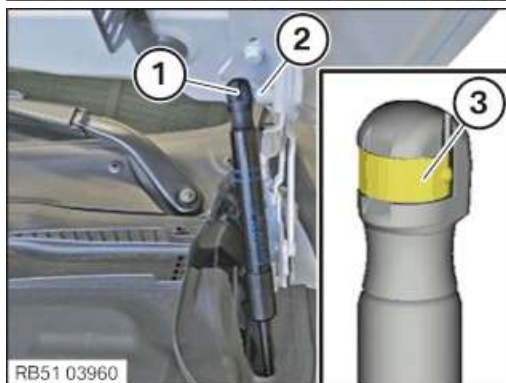
Danger of injury!

- Support bonnet/tailgate in fully open position with the aid of a suitable device.





- Support the bonnet by hand.
- Remove the special tool (3) from the ball pin (2).
- Pull off the special tool (3) from the gas pressure spring (1).
- Continue to support the bonnet and repeat the operation on the other side of vehicle.



- Check the clamp (3) is fitted correctly.
- Connect ball socket (1) to ball pin (2).
- Continue to support the bonnet and repeat the operation on the other side of vehicle.

Additional Information

Overview of Tightening Torques

Engine mount to front axle support

Used in step 14

M8		Tightening torque	19 Nm
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Underbody protection of the steering gear

Used in step 15

Hexagon screw for thermoplastic		Tightening torque	2.6 Nm
Hexagon bolt M6x20		Tightening torque	8 Nm

Wheel arch trim panel, front

Used in step 15

Thermoplastic hexagon screw		Tightening torque	2,6 Nm
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Underbody protection

Used in step 16

Hexagon screw		Tightening torque	3 Nm
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Engine mounting bracket on engine

Used in step 17

M10		Tightening torque	38 Nm
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Control unit holder

Used in step 18

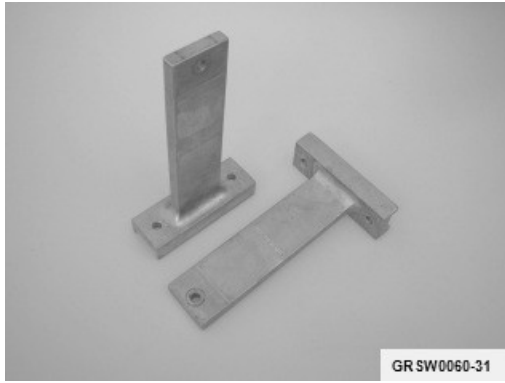
M6		Tightening torque	8 Nm
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Overview of Special Tools

Replacement tools:



2 318 635 Adapter



Common

Used in step

Usage	Set consisting of 2 pieces. Replaces the SWZ 00 6 031 (Classic SWZ)
Included in the tool or work	0 496 422
Storage location	
Replaced by	
In connection with	
SI-Number	01 17 10 (659)

Links

General repair instructions

Used in step

12 00 ... Instructions for removal and replacement of control units	820
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Repair instructions

Used in step

61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	226
61 20 900 Disconnecting and connecting battery earth lead	226
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	226
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	226
61 20 900 Disconnecting and connecting battery earth lead	226



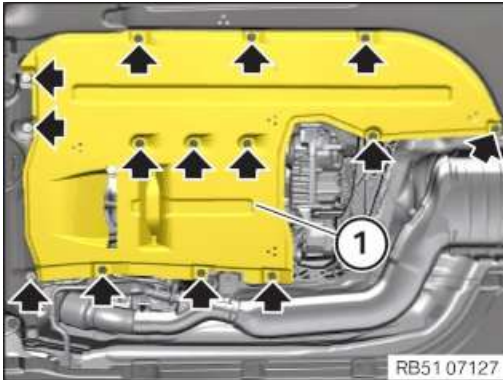
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	226
61 20 900 Disconnecting and connecting battery earth lead (Plug-in Hybrid Electric Vehicle)	226
61 20 900 Disconnecting and connecting battery earth lead	226
61 20 900 Disconnecting and connecting battery earth lead	226
61 20 900 Disconnecting and connecting battery earth lead	226
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61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	226
61 20 900 Disconnecting and connecting battery earth lead	226
61 20 900 Disconnecting and connecting battery earth lead	226
61 20 900 Disconnecting and connecting battery earth lead	226
61 35 ... Notes on ESD protection (Electro Static Discharge)	89
61 35 ... Notes on ESD protection (Electro Static Discharge)	89
61 00 730 Encode/program control unit(s) (after vehicle test)	20
00 ... Raising the vehicle using a vehicle hoist	



22 32 055 Removing and installing/replacing transmission bearing block

PRELIMINARY WORK

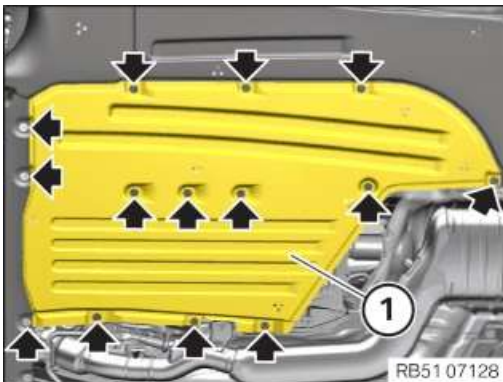
1 – Remove rear underbody protection



- **Version A:**

Remove screws (arrows).

Feed out the rear underbody protection (1).



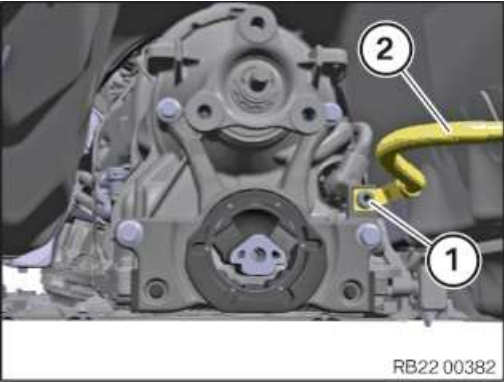
- **Version B:**

Remove screws (arrows).

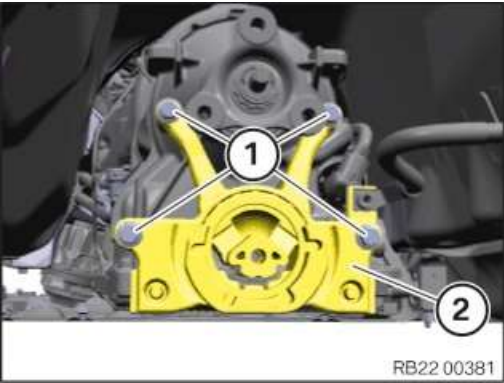
Guide out rear underbody protection (1) and remove it.



2 – Remove transmission bearing block

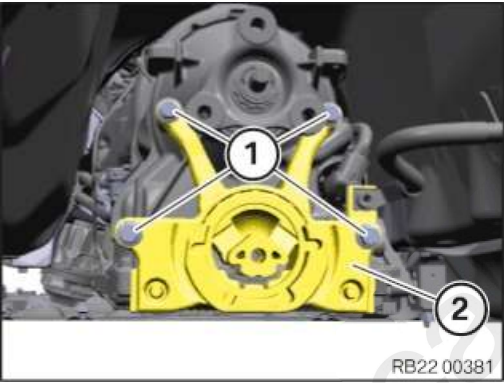


- Loosen the screw(1) from the ground strap (2).



- Loosen screws (1).
- Remove transmission mounting bracket (2).

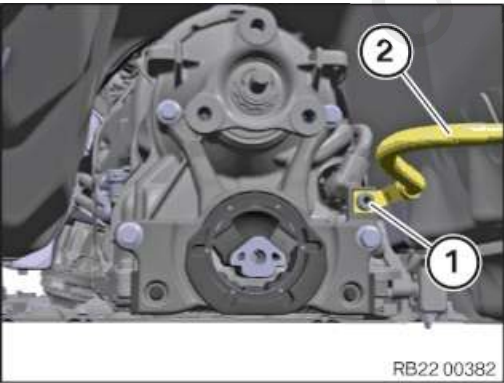
3 – Install the transmission mounting bracket



- Install transmission mounting bracket (2).
- Tighten the screws (1).

Transmission mounting bracket to transmission

M10		Tightening torque	48 Nm
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- Install the ground strap (2).
- Tighten down screw (1).

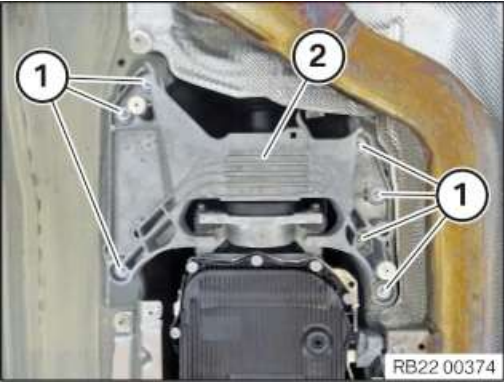
Ground strap to transmission or body

M8		Tightening torque	19 Nm
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-



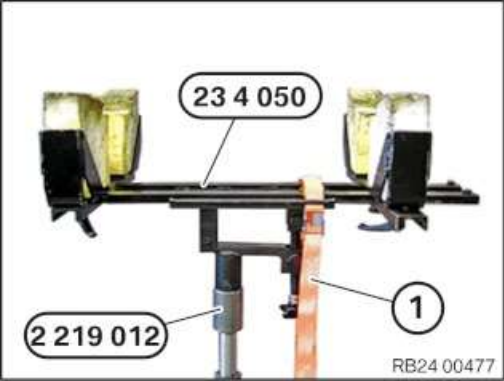
4 – Install transmission cross member.



- Install the transmission cross member (2).
- Tighten the screws (1).

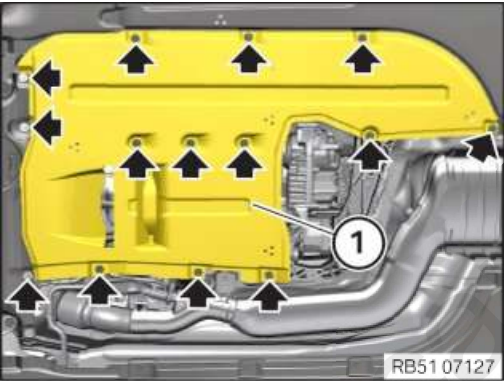
Transmission cross member to body

M8		Tightening torque	19 Nm
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- Loosen the tensioning strap (1) from the transmission.
- Remove the special tools [0 495 498 \(23 4 050\)](#) and [2 219 012](#) from the transmission.

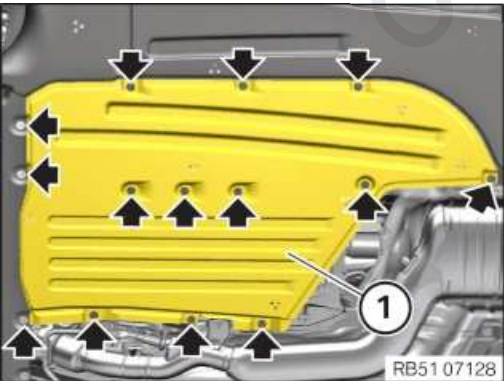
5 – Installing underbody protection at rear



- **Version A:**
Insert and install the rear underbody protection (1).
Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
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- **Version B:**
Insert and install the rear underbody protection (1).
Tighten screws (arrows).

Underbody protection

Hexagon screw		Tightening torque	3 Nm
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Additional Information

Overview of Tightening Torques



Transmission mounting bracket to transmission

Used in step 3

M10		Tightening torque	48 Nm
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Ground strap to transmission or body

Used in step 3

M8		Tightening torque	19 Nm
----	--	-------------------	-------

Transmission cross member to body

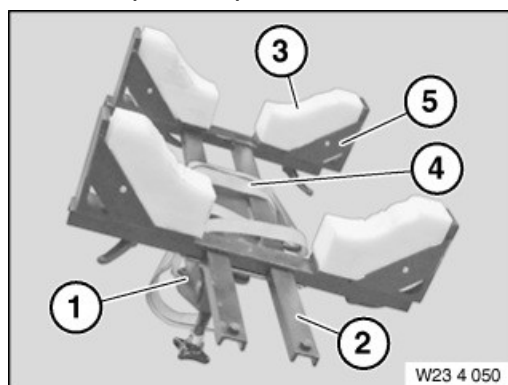
Used in step 4

M8		Tightening torque	19 Nm
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Underbody protection

Used in step 5

Hexagon screw		Tightening torque	3 Nm
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Overview of Special Tools**0 495 498 (23 4 050) Fixture****Common**

Used in step 4

Usage	(universal gearbox holder) Support for removing and installing manual gearboxes and automatic transmissions for BMW & RR.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 07 06 (256)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
3	0 495 549 (23 4 053)		Insert (foam inserts (1 set = 4 pcs.))	
1	0 495 547 (23 4 051)		Joint Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
2	0 495 548 (23 4 052)		Frame (Basic frame) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
4	0 495 550 (23 4 054)		Belt (Tensioning strap) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
5	0 496 018 (23 4 055)		Fixture (Fixture for foam insert) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	



2 219 012 Hydraulic lifter



Common		Used in step 4
Usage	For raising and lowering various vehicle components.	
Included in the tool or work		
Storage location		
Replaced by		
In connection with		
SI-Number	01 05 90 (207)	

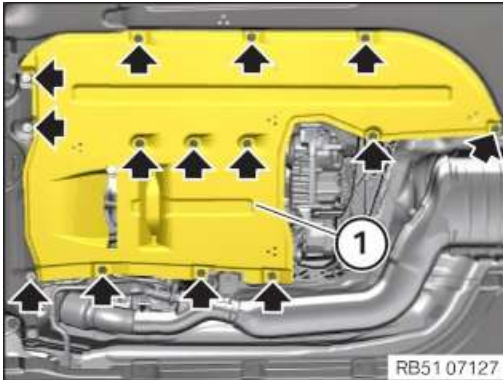
cardiagn.com



22 32 050 Replacing cross member for transmission mounting

PRELIMINARY WORK

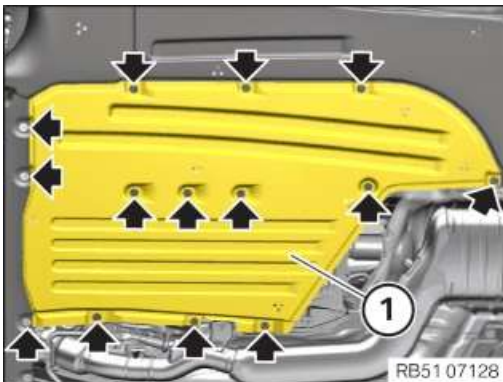
1 – Remove rear underbody protection



- **Version A:**

Remove screws (arrows).

Feed out the rear underbody protection (1).



- **Version B:**

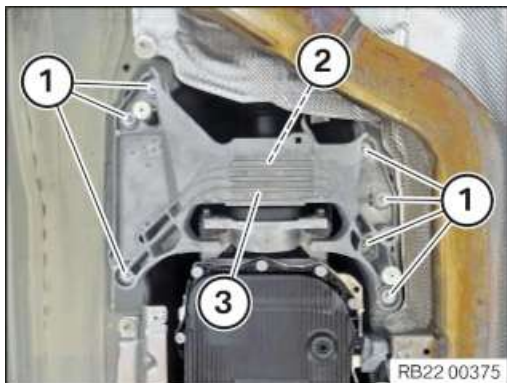
Remove screws (arrows).

Guide out rear underbody protection (1) and remove it.



MAIN WORK

2 – Install transmission cross member.



- Install the transmission cross member (3).
- Insert screw (2) and tighten until hand-tight.
- Tighten the screws (1).

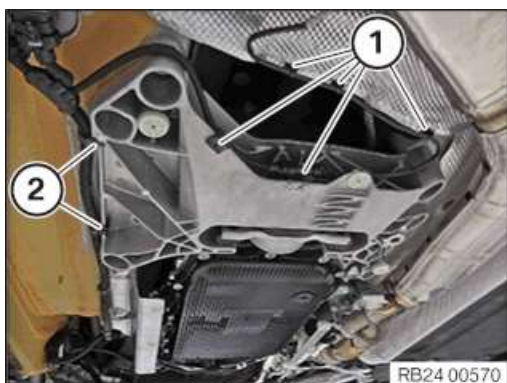
Transmission cross member to body

M8		Tightening torque	19 Nm
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- Tighten down screw (2).

Transmission cross member to rubber mounts

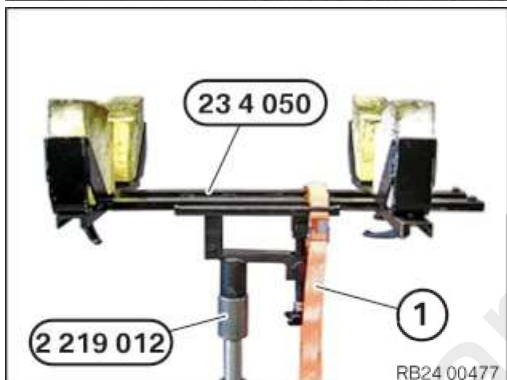
M12		Tightening torque	100 Nm
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Only B47 and B57:

Install the cable.

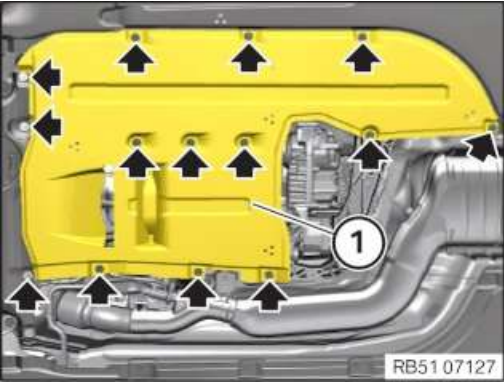
Fasten the cable with clamps (1) and (2).



- Loosen the tensioning strap (1) from the transmission.
- Remove the special tools [0 495 498 \(23 4 050\)](#) and [2 219 012](#) from the transmission.

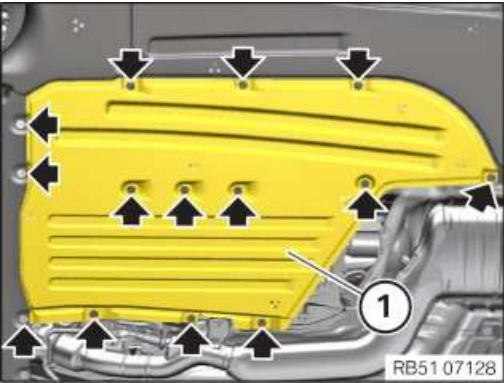


3 – Installing underbody protection at rear



- **Version A:**
Insert and install the rear underbody protection (1).
Tighten screws (arrows).

Underbody protection			
Hexagon screw		Tightening torque	3 Nm



- **Version B:**
Insert and install the rear underbody protection (1).
Tighten screws (arrows).

Underbody protection			
Hexagon screw		Tightening torque	3 Nm

Additional Information

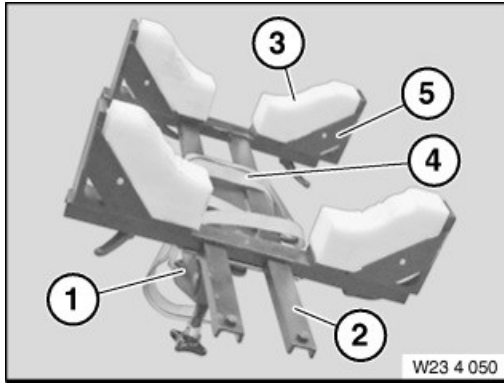
Overview of Tightening Torques

Transmission cross member to body			Used in step 2
M8		Tightening torque	19 Nm
Transmission cross member to rubber mounts			Used in step 2
M12		Tightening torque	100 Nm
Underbody protection			Used in step 3
Hexagon screw		Tightening torque	3 Nm

Overview of Special Tools



0 495 498 (23 4 050) Fixture



Common

Used in step 2

Usage (universal gearbox holder) Support for removing and installing manual gearboxes and automatic transmissions for BMW & RR.

Included in the tool or work

Storage location Individual

Replaced by

In connection with

SI-Number 01 07 06 (256)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
3	0 495 549 (23 4 053)		Insert (foam inserts (1 set = 4 pcs.))	
1	0 495 547 (23 4 051)		Joint Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
2	0 495 548 (23 4 052)		Frame (Basic frame) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
4	0 495 550 (23 4 054)		Belt (Tensioning strap) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	
5	0 496 018 (23 4 055)		Fixture (Fixture for foam insert) Available only as a complete tool set 23 4 050 (83 30 0 495 498) - as of 16.07.12.	



2 219 012 Hydraulic lifter



Common

Used in step 2

Usage	For raising and lowering various vehicle components.
Included in the tool or work	
Storage location	
Replaced by	
In connection with	
SI-Number	01 05 90 (207)

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