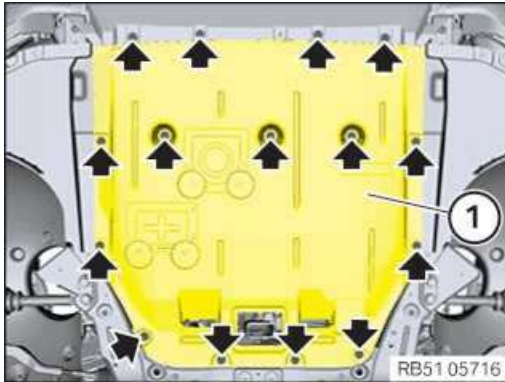


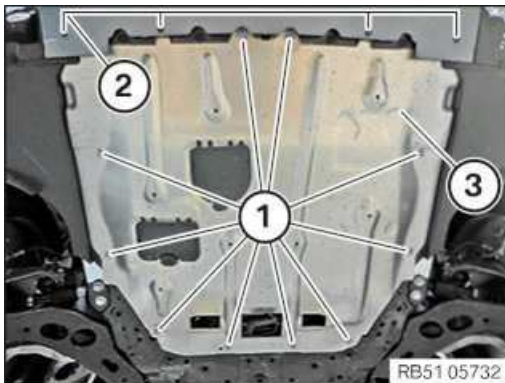
22 11 095 Remove and install/ replace the holder with rubber mount

PRELIMINARY WORK

1 – Removing the front underbody protection



- Remove screws (arrows).
- Thread out and remove the front underbody protection (1) from the bumper panel.



- **Equipment specification with metal underride protection:**
- Loosen screws (1) and (2).
- Thread out and remove the underride protection (3).

2 – Remove bracket with rubber mount

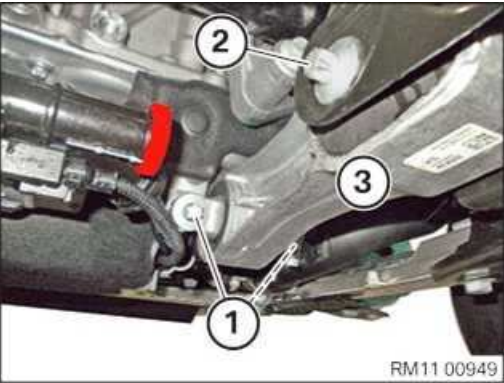


WARNING

Motor vehicle may slip off the vehicle hoist where components are supported.

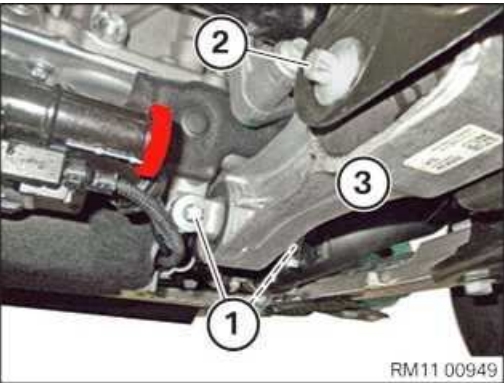
Danger! Life-threatening injuries!

- Secure the vehicle hoist against lowering and lifting.



- Support the engine with the jack at a suitable point.
- Loosen screws (1) and (2).
- Guide out and remove holder (3).

3 – Install the holder with the rubber mount



- Insert and install the holder (3).
- Tighten the screws (1) and (2) hand-tight.
- Release jack.
- Tighten down screw (2).

Holder to front axle support

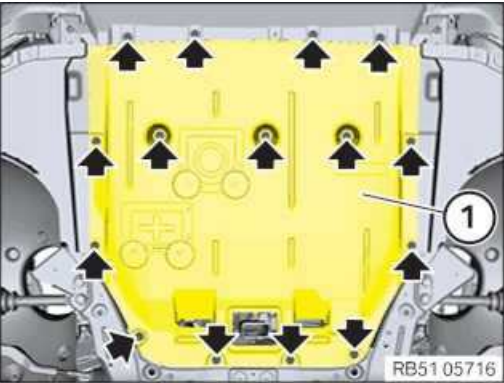
M12		Tightening torque	100 Nm
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- Tighten the screws (1).

Bracket to oil sump

M12		Tightening torque	100 Nm
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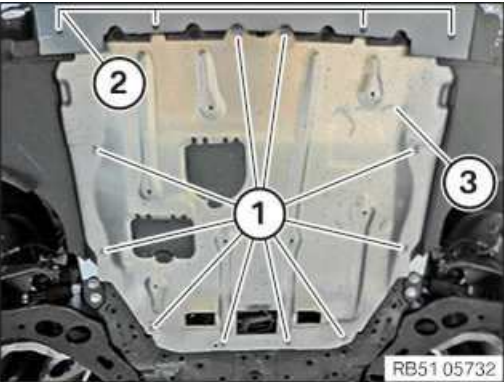
4 – Installing the front underbody protection



- Guide the front underbody protection (1) in under the bumper panel and position it at the screw points.
- Tighten screws (arrows).

Underbody protection front

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm



- **Equipment specification with metal underride guard:**
- Guide in and attach the underride guard (3).
- Tighten down screws (1) and (2).

Underbody protection front

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

Additional Information

Overview of Tightening Torques

Holder to front axle support Used in step 3

M12		Tightening torque	100 Nm
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Bracket to oil sump Used in step 3

M12		Tightening torque	100 Nm
-----	--	-------------------	--------

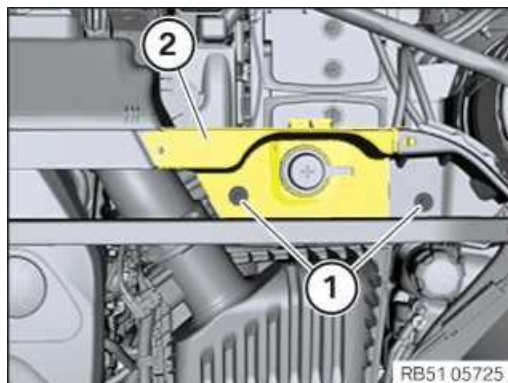
Underbody protection front Used in step 4

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

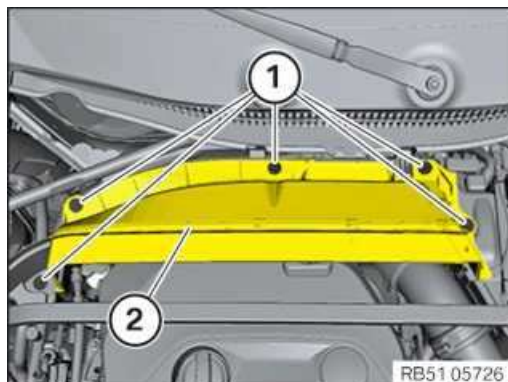
22 11 001 Replacing right engine mount

PRELIMINARY WORK

1 – Removing the upper bulkhead cover



- Loosen screws (1).
- Guide out and remove the cover (2).



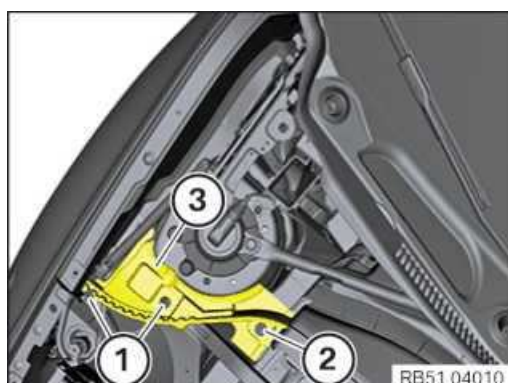
- Loosen screws (1).
- Feed out and remove the upper bulkhead cover (2).

2 – Remove suspension cross-brace



TECHNICAL INFORMATION

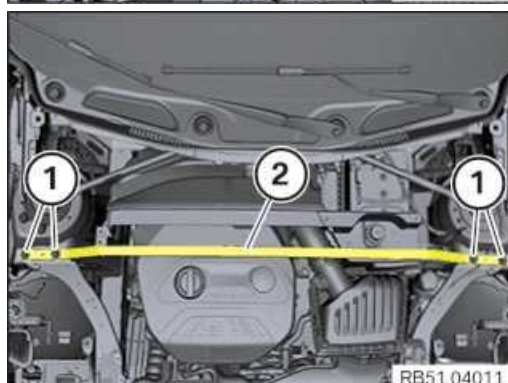
Driving without the strut brace/front end or tension strut is not permitted.



NOTICE

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

- Loosen expanding rivet (1).
- Loosen screw (2).
- Remove the cover (3).
- Loosen screws (1).
- Remove strut brace (2).



3 – Drawing off the air conditioning

Prerequisite

The engine is switched off.



CAUTION

Refrigerant circuit under high pressure.

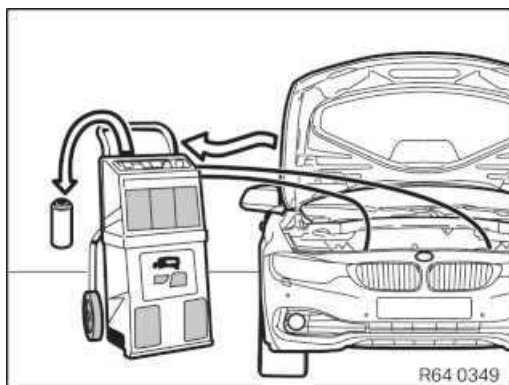
Danger of injury!

- Note and follow safety information on containers.
- Avoid contact with refrigerant; wear safety goggles and protective gloves.
- For more information see: 64 50 Handling refrigerant and 6450 Notes on repair work on air conditioning



TECHNICAL INFORMATION

If the A/C service station for the R1234yf refrigerant identifies contaminated refrigerant in the refrigerant circuit of the vehicle before evacuation, then a special procedure to draw off and dispose of this refrigerant must be followed (see additional information).

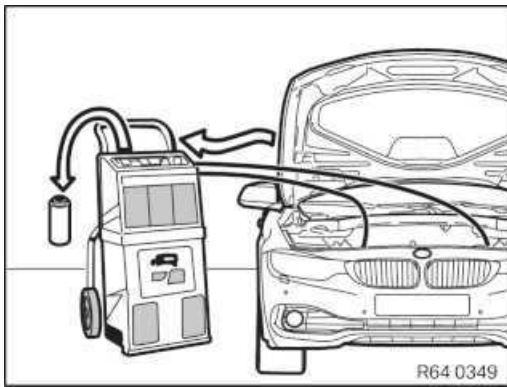


- Let the engine run for a few minutes at a low engine speed (800-1200 rpm) and with the heating and air conditioning system switched on.
- Stop engine.
- Remove the sealing caps from the refrigerant filler necks.
- Connect the high pressure line of the A/C service station with the vehicle's high-pressure connection (red).
- Connect the low-pressure line of the A/C service station with the vehicle's low-pressure connection (blue).
- Start the evacuation on the A/C service station.
- During evacuation, allow the blower of the heating and air-conditioning unit to run at middle blower speed.
- Record the amount of evacuated refrigerant and amount of refrigerant oil after having completed evacuation.
- Keep the sheet with the recorded quantities as the values are once again required when filling.
- Disconnect the high pressure line and low pressure line.
- Drain the high pressure line and low pressure line.
- Close the sealing cap of the coolant filler neck.
- Correctly dispose of the drained refrigerant oil.

4 – Evacuating the air conditioning

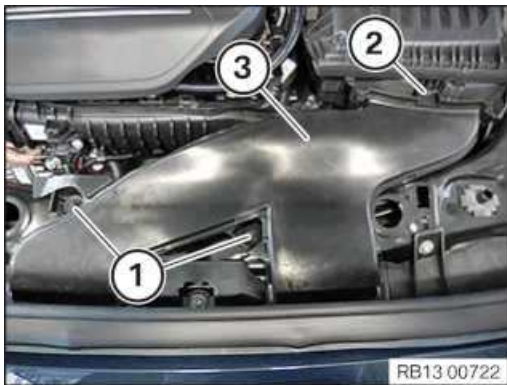
Prerequisite

The engine is switched off.



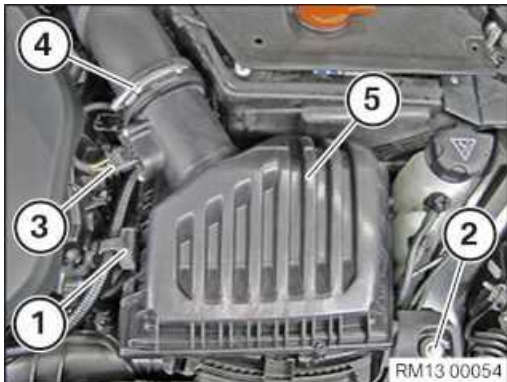
- Remove the sealing caps from the refrigerant filler necks.
- Connect the high pressure line of the A/C service station with the vehicle's high-pressure connection (red).
- Connect the low-pressure line of the A/C service station with the vehicle's low-pressure connection (blue).
- Start the evacuation on the A/C service station.
- Adhere to an evacuation time of **at least** 30 min .
- During evacuation, allow the blower of the heating and air-conditioning unit to run at middle blower speed.
- If the vacuum does not remain stable during evacuation:
 - Run the ABL for leaks in the refrigerant circuit.
 - Rectify leaks in the refrigerant circuit.

5 – Remove the intake neck for intake silencer housing



- Loosen nuts (1).
- Loosen the lock (2).
- Guide the intake neck (3) out and remove it.

6 – Removing intake silencer housing



- Loosen the holder (1).
- Loosen screw (2).
- Unlock and loosen connector (3).
- Unfasten clamp (4).
- Pull out and remove the intake silencer housing (5) from the rubber mounts towards the top.

7 – Remove front right wheel



TECHNICAL INFORMATION

The wheel can be balanced electronically at the vehicle. In this case, it is important not to change the position of the wheel relative to the wheel hub.



TECHNICAL INFORMATION

Strictly observe the specified procedure to prevent clamping errors and imbalance.



- Turn the wheel so that the valve (arrow) points down.
- If several wheels are removed simultaneously: Use a piece of chalk to mark on each tyre the axle and side on which the corresponding wheel is fitted.
- Mark the alignment of the wheel with respect to the wheel hub.
- Mark the position of the lockable wheel bolt (arrow).
- Unscrew the wheel bolts and remove the wheel.

Use the matching adapter from tool set (wheel bolt adapter set) to loosen and tighten down the wheel bolt with security code.

8 – Removing the front right wheel arch cover

► Remove the front wheel arch trim



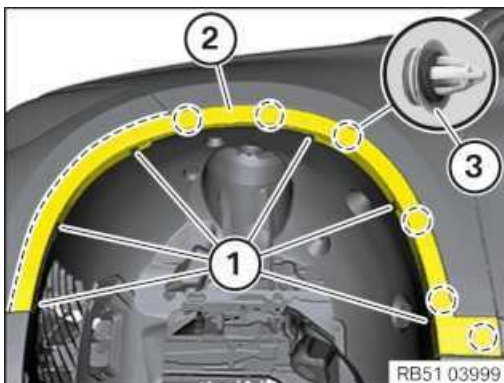
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.

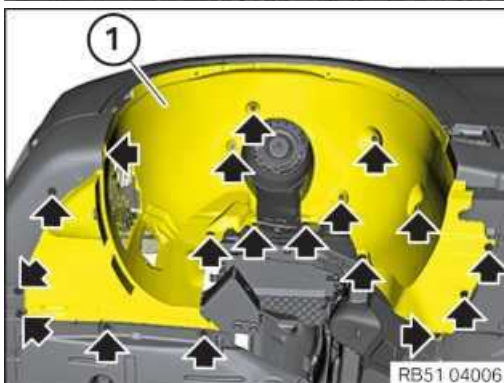


NOTICE

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



- Remove the blind rivets (1).
- Release the wheel arch trim (2) in the area of the side panel from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

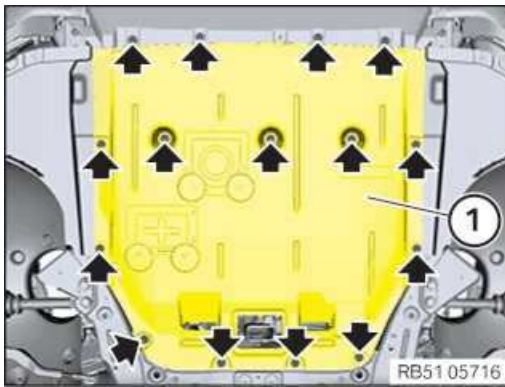


NOTICE

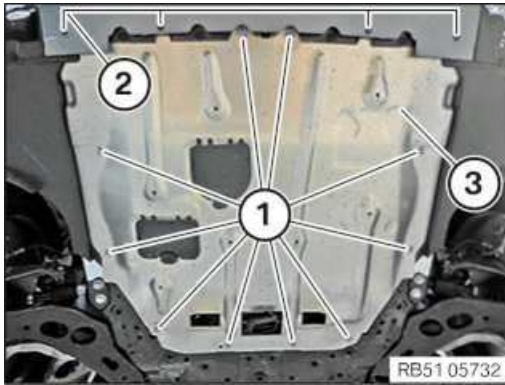
Description is for left component only. Procedure on the right side is identical.

- Unscrew all bolts and nuts (arrows).
- Guide the wheel arch cover (1) out.

9 – Removing the front underbody protection



- Remove screws (arrows).
- Thread out and remove the front underbody protection (1) from the bumper panel.



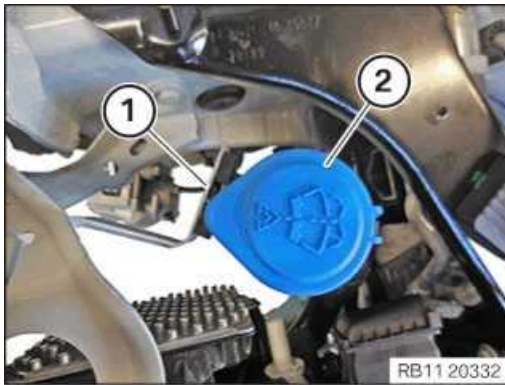
- **Equipment specification with metal underride protection:**
- Loosen screws (1) and (2).
- Thread out and remove the underride protection (3).

10 – Removing the filler hose of the washer fluid reservoir

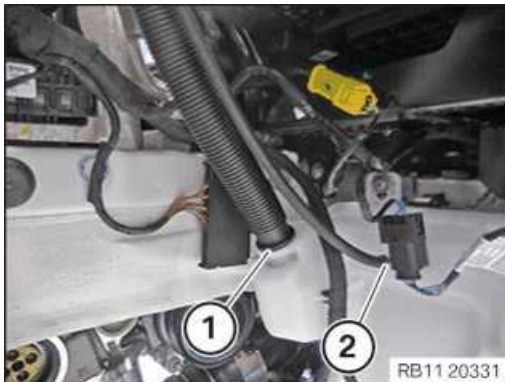


TECHNICAL INFORMATION

Collect and dispose of emerging fluids. Observe country-specific waste disposal regulations.



- Unlock the lock (1).
- Guide in the filler hose (2) and place to one side.



- Guide out and remove the filler hose (1) and vent hose (2).
- Collect and dispose of any emerging washer fluid.

MAIN WORK

11 – Removing the right engine mount

Prerequisite

Heating and air conditioning system has been drawn off.

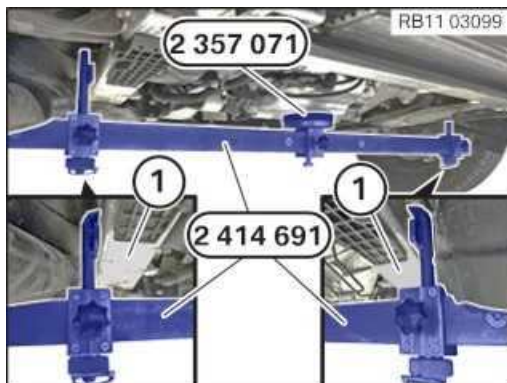


CAUTION

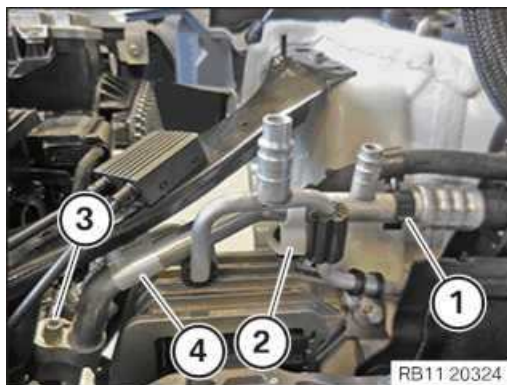
Residual pressure in the air conditioning.

Danger of injury!

- Wear safety goggles and protective gloves when disconnecting the refrigerant line.
- Seal refrigerant lines with seal plugs.



- Prepare special tool together with the special tool **2 357 071**.
- Attach special tool to front axle support and align special tool **2 357 071** correctly under the oil sump and then tighten.
- Turn special tool at adjusting screw uniformly upwards, until the special tool **2 357 071** makes contact with the oil sump.
- Tighten all adjusting screws of special tools and **2 357 071**.



CAUTION

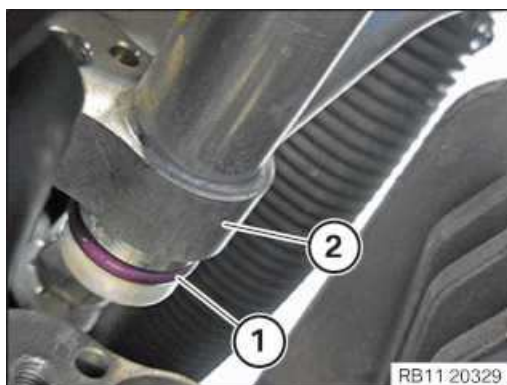
Residual pressure in the air conditioning.

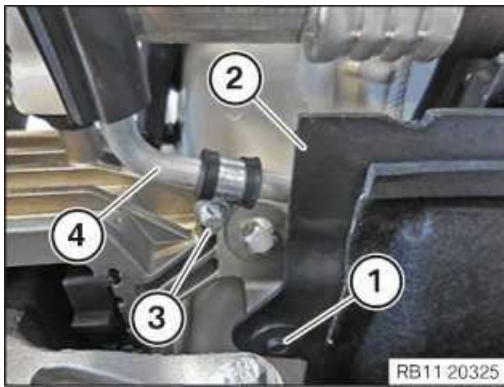
Danger of injury!

- Wear safety goggles and protective gloves when disconnecting the refrigerant line.
- Seal refrigerant lines with seal plugs.

- Thread out holder (1) and set aside.
- Unlock and loosen holder (2).
- Loosen screw (3).
- Feed out the refrigerant line (4) and put to one side.
- Seal refrigerant line (4) using commercially-available seal plug.
- Renew the sealing ring (1) on the refrigerant line (2).

Parts: Sealing ring

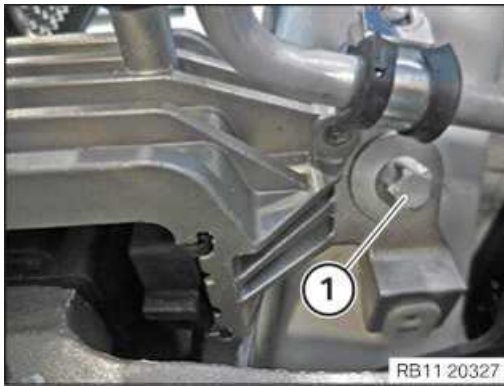




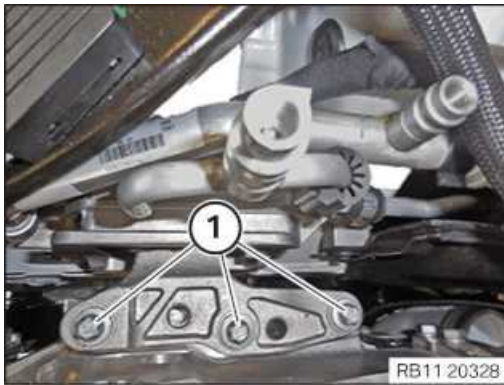
- Loosen screw (1).
- Thread out partition wall (2) and place to one side.
- Loosen screw (3).
- Feed out the refrigerant line (4) and put to one side.



- Unlock and loosen holder (1).
- Feed out the refrigerant line (2) and put to one side.
- Loosen screw (3).



- Loosen screw (1).



- Loosen screws (1).

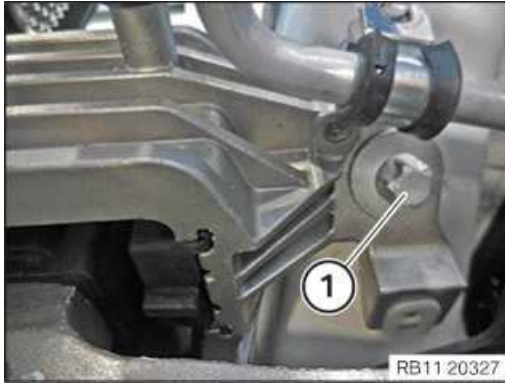


- Turn engine mount (1) in direction of arrow and remove upwards.

12 – Installing the right engine mount



- Thread in engine mount (1) in direction of arrow then install.



- Tighten down screw (1).

Right engine mount to side member

M12		Tightening torque	100 Nm
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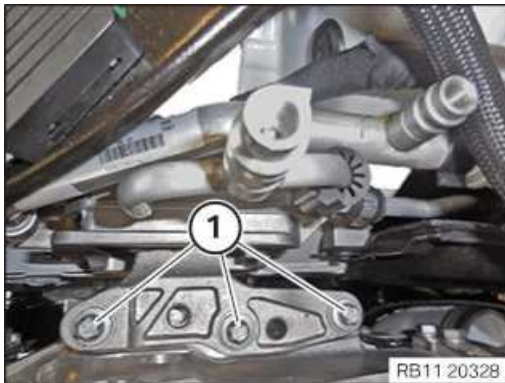


- Tighten down screw (3).

Right engine mount to side member

M12		Tightening torque	100 Nm
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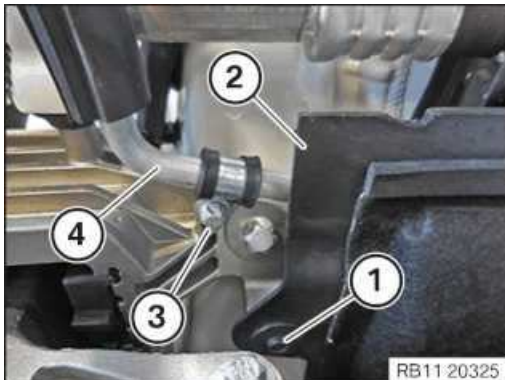
- Feed in and install the refrigerant line (2).
- Lock holder (1).
- Make sure the bracket (1) engages audibly.



- Tighten the screws (1).

Right engine mount to cylinder head

M10	Renew screws.	Jointing torque	40 Nm
		Angle of rotation	90 °



- Feed in and install the refrigerant line (4).
- Tighten down screw (3).

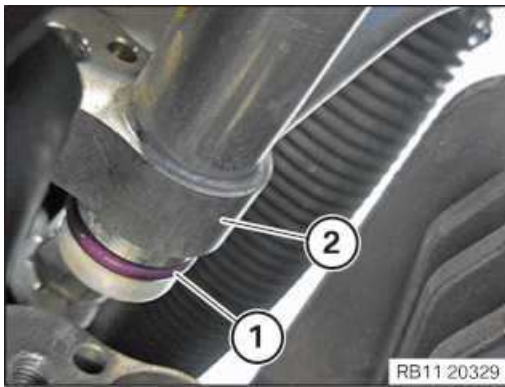
Refrigerant line to engine mount

M6		Tightening torque	8 Nm
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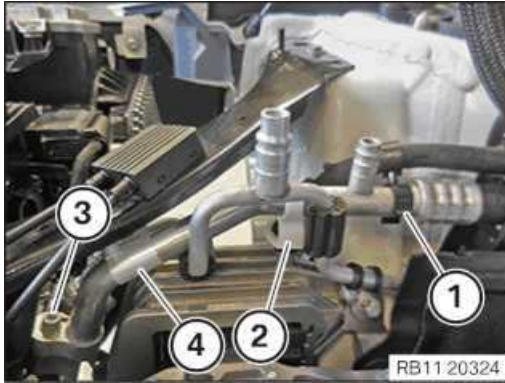
- Thread in partition wall (2) then install.
- Tighten down screw (1).

Partition wall to engine mount

Screw		Tightening torque	3 Nm
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- Thread in new sealing ring (1) on refrigerant line (2) then install.

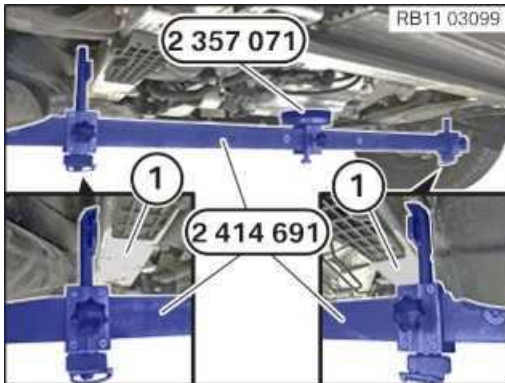


- Feed in and install the refrigerant line (4).
- Tighten down screw (3).

Connection point of intake pipe T1 to intake pipe T2

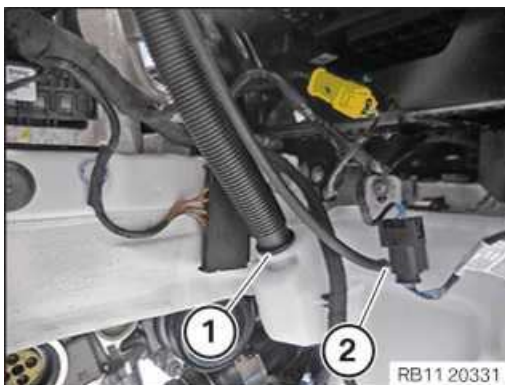
M6X25		Tightening torque	8 Nm
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- Lock holder (2).
- Make sure the bracket (2) engages audibly.
- Fasten bracket (1) to refrigerant line (4).
- Disassemble special tool using special tool **2 357 071**.

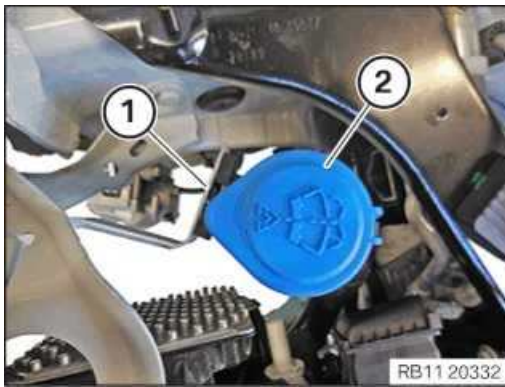


POSTPROCESSES

13 – Installing the filler hose of the washer fluid reservoir

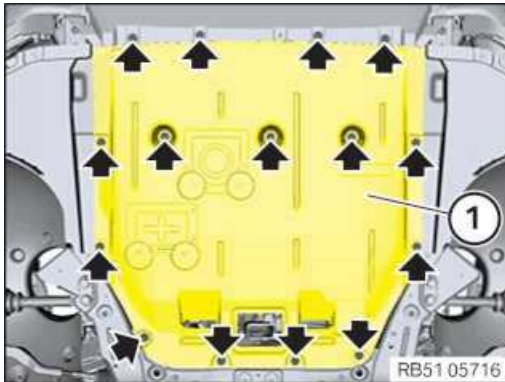


- Guide in and install the filler hose (1).
- Guide in and install the vent hose (2).



- Guide in and install the filler hose (2).
 - Lock (1) must engage audibly.
- Note:** Top up the washer fluid reservoir.

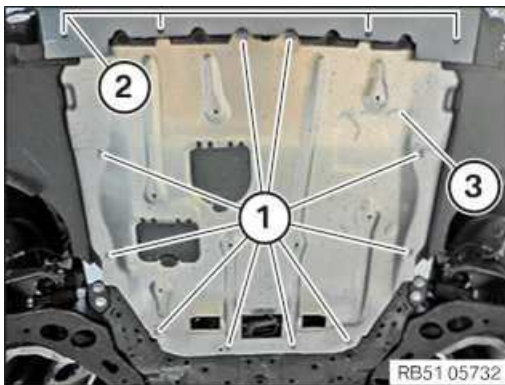
14 – Installing the front underbody protection



- Guide the front underbody protection (1) in under the bumper panel and position it at the screw points.
- Tighten screws (arrows).

Underbody protection front

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm



- **Equipment specification with metal underride guard:**
- Guide in and attach the underride guard (3).
- Tighten down screws (1) and (2).

Underbody protection front

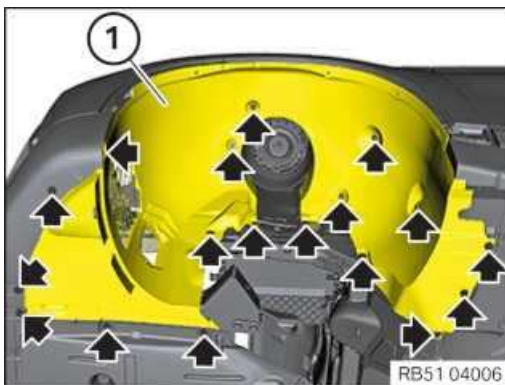
Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

15 – Installing the front right wheel arch cover



NOTICE

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



- Guide the wheel arch cover (1) in.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Screw		Tightening torque	2,5 Nm
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Wheel arch cover to body

Plastic nut		Tightening torque	3 Nm
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► Installing front wheel arch trim



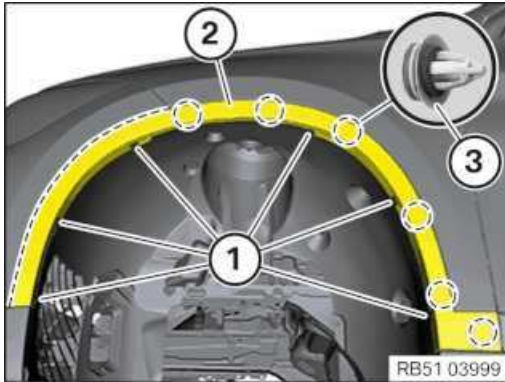
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



NOTICE

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



- Check the clips (3) for damage and renew where required.
The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage wheel arch trim (2) into the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

16 – Installing the front right wheel



► Clean the contact surfaces between the brake disc and the wheel rim

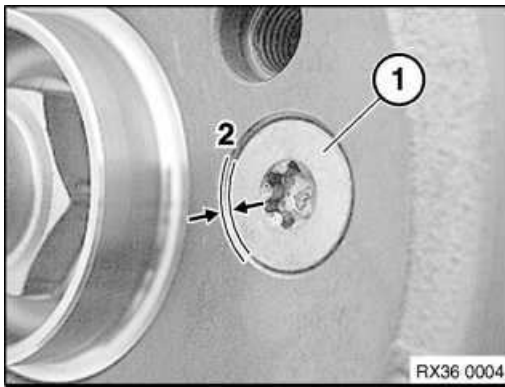


TECHNICAL INFORMATION

The contact surface between the brake disc and the wheel rim must be clean and free from oil and grease. There is otherwise a risk of the wheel becoming loose at a later time.

- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.
Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).
- In the event of grease residue around the wheel bolt holes: remove and clean the brake disc.
- Remove dirt, grease residues and corrosion from the contact surface with a drill and the special tool **2 344 011**.
Do not operate special tool **2 344 011** with an impact screwdriver.
- Degrease the contact surfaces with the universal cleaner (see BMW Group Parts).

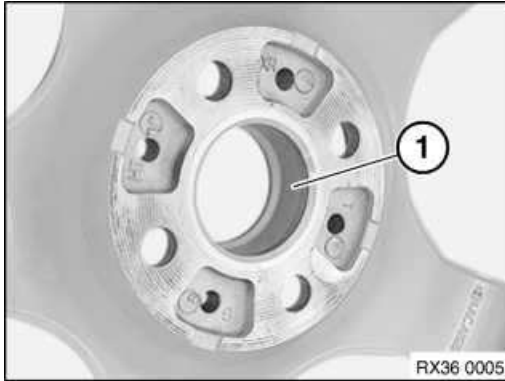




- Check the mounting bolt for the brake disc (1) for secure fit.
The mounting bolt for the brake disc (1) must not protrude under any circumstances on the contact surface (2) between the brake disc and the wheel rim.

Brake disc to front wheel hub

M8	Renew screw.		16 Nm
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- Lightly grease the wheel centring (1) in the wheel rim; refer to additional information for grease for the wheel centring.



i

TECHNICAL INFORMATION

Never use impact screwdrivers or electric screwdrivers to screw in and tighten the wheel bolts.

The wheel rim must rest uniformly against the brake disc.

In the case of non-original BMW wheel bolts/wheel rims, it may be necessary to retighten the wheel bolts on account of setting properties (refer to the documentation from the manufacturer).

Do not apply oil to new wheel bolts.

- Renew corroded wheel bolts.

Parts: Wheel bolts

- Clean the wheel bolts and check the threads for damage. Renew the wheel bolts as needed.
- Mount wheel bolts and tighten.

Wheel bolts

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim. Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence. Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.	Tightening torque	140 Nm
		Check	140 Nm

17 – Filling the air conditioning

Prerequisite

The engine is switched off.

Heating and air conditioning system is switched off.

The refrigerant circuit is evacuated and tight.

Vehicle must be positioned on the ground.



CAUTION

Refrigerant circuit under high pressure.

Danger of injury!

- Note and follow safety information on containers.
- Avoid contact with refrigerant; wear safety goggles and protective gloves.
- For more information see: 64 50 Handling refrigerant and 6450 Notes on repair work on air conditioning



TECHNICAL INFORMATION

Filling a raised vehicle will result in insufficient filling levels.



TECHNICAL INFORMATION

In some cases, Sanden SP-A2 refrigerant oil must be injected into the refrigerant circuit. See further information.

- Determine the quantities of **new** refrigerant oil to be refilled:

In addition to the drawn off and recorded amount of refrigerant oil, add the following quantities (if applicable):

- *Top up the refrigerant oil losses over time as per the table:*

Table 1 indicates the permitted loss of refrigerant after a specific period of time. There is **no** leak. Refrigerant oil must **not** be topped up.

Table 2 indicates the amount of refrigerant oil which must be **topped up** after a specific period of time with an **impermissible** loss of refrigerant due to a leak.

Case 1: Refrigerant loss is **not exceeded** as per Table 1:

- Top up missing refrigerant
- It is **not permitted** to top up the refrigerant oil

Case 2: Refrigerant loss is **exceeded** as per Table 1:

- Top up missing refrigerant
- Refrigerant oil must be **topped up additionally** as per Table 2

Table 1/case 1					
Number of years since last filling	0-1	1-2	2-3	3-4	4-5
Permissible loss [g] --> Do not top up refrigerant oil	≤ 30	≤ 60	≤ 90	≤ 120	≤ 150

Table 2/case 2		
Number of years since last filling	Loss of refrigerant [g]	Top up quantity refrigerant oil
0-1	< 120	0
0-1	120-150	10
0-1	> 150	20
1-2	< 180	0
1-2	180-210	10
1-2	> 210	20
2-3	< 240	0
2-3	240-270	10
2-3	> 270	20
3-4	< 300	0
3-4	300-330	10
3-4	> 330	20
4-5	< 360	10
4-5	> 360	20

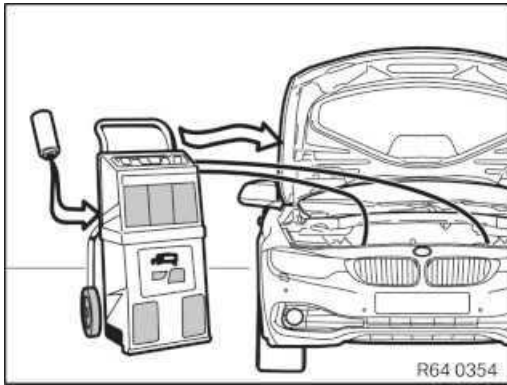
- Add refrigerant oil as per the table if parts of the refrigerant circuit have been replaced:

Case 1: Part exchange as preliminary work for additional work and part exchange due to **slow leakage** (minor leak, e.g. hairline crack)

Case 2: Part exchange due to **sudden leakage** (major leak, e.g. line disconnection caused by accident)

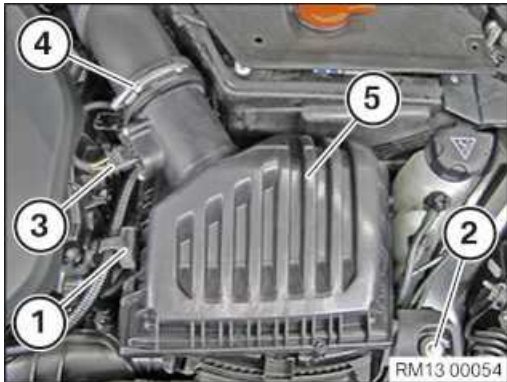
	Case 1	Case 2
Air conditioning compressor*	*	*
Evaporator	10 ml	35 ml
Air conditioning condenser without integrated desiccant insert	20 ml	35 ml
Air conditioning condenser with integrated desiccant insert	40 ml	55 ml
Desiccant insert/dryer flask	20 ml	55 ml
Per replaced refrigerant line	10 ml	35 ml
Safety pressure switch, gaskets	0 ml	0 ml

*Air conditioning compressor: see 6452 lubricating the air conditioning compressor



- Top up determined amount of refrigerant oil into the refrigerant circuit.
- Fill the amount of refrigerant as per the type plate into the refrigerant circuit.
- Disconnect the high pressure line and low pressure line on the vehicle.
- Drain the high pressure line and low pressure line.
- Once again close the refrigerant filler neck on the vehicle with the sealing caps.

18 – Installing intake silencer housing



- Insert the intake silencer housing (5) into the rubber mounts and install it. Intake filter housing (5) must engage audibly.
- Tighten down screw (2).

Intake silencer housing to lock bridge

M6X30		Tightening torque	8 Nm
-------	--	-------------------	------

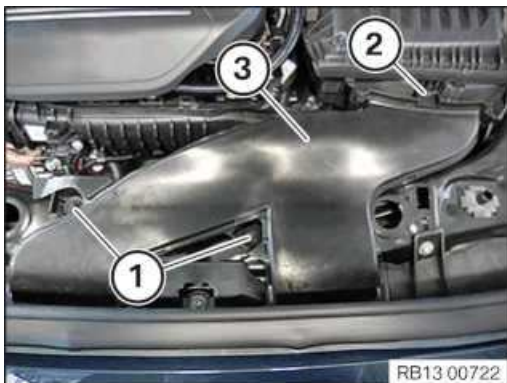
- Tighten clamp (4).

Clean air pipe to intake silencer housing

Clamp		Tightening torque	3 Nm
-------	--	-------------------	------

- Connect and lock the connector (3). The connector (3) must engage audibly.
- Insert and install the holder (1).

19 – Install the intake neck for the intake filter housing

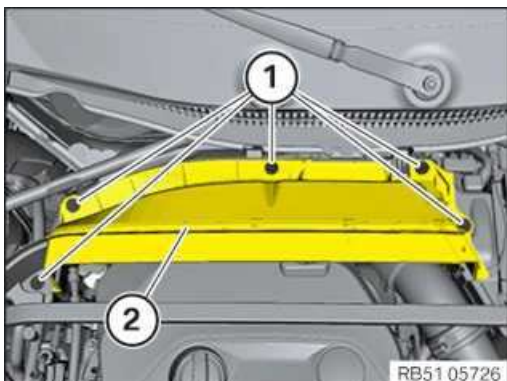


- Insert and install the intake neck (3). The lock (2) must audibly engage.
- Tighten nuts (1).

Intake neck to cross connection

M6		Tightening torque	8 Nm
----	--	-------------------	------

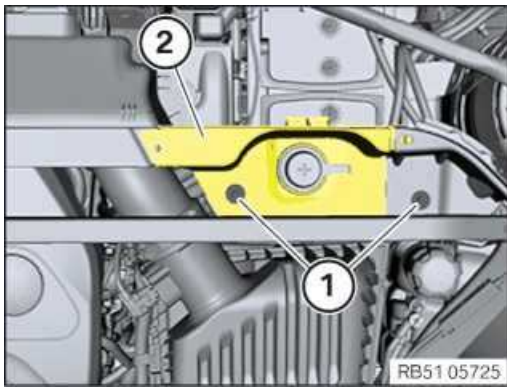
20 – Installing the upper bulkhead cover



- Feed in and install cover (2) of the bulkhead at the top.
- Tighten the screws (1).

Cover of top bulkhead

Screw		Tightening torque	2,6 Nm
-------	--	-------------------	--------



- Guide in and install cover (2).
- Tighten down screw (1).

Cover of remote positive terminal

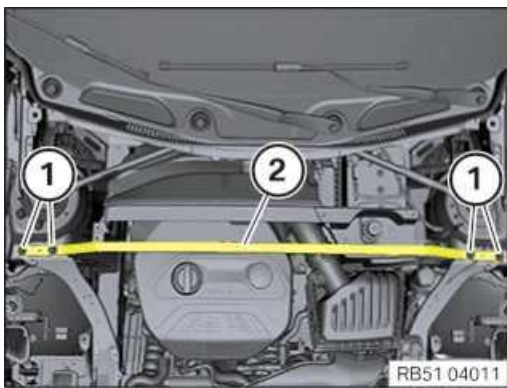
Screw		Tightening torque	2,6 Nm
-------	--	-------------------	--------

21 – Install strut brace



TECHNICAL INFORMATION

Driving without the strut brace/front end or tension strut is not permitted.



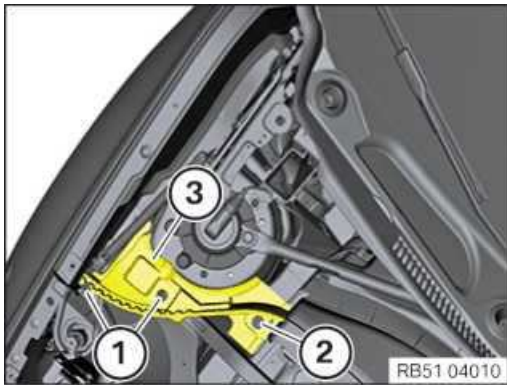
- Install the strut brace (2).
- Renew screws (1).

Parts: Bolts

- Tighten the screws (1).

Cross-brace to spring strut dome

	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °



- Install the cover (3).
- Tighten down screw (2).

Cover on body

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------

- Install the expanding rivet (1).



NOTICE

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

Additional Information

Overview of Tightening Torques

Right engine mount to side member

Used in step 12

M12		Tightening torque	100 Nm
-----	--	-------------------	--------

Right engine mount to cylinder head

Used in step 12

M10	Renew screws.	Jointing torque	40 Nm
		Angle of rotation	90 °

Refrigerant line to engine mount

Used in step 12

M6		Tightening torque	8 Nm
----	--	-------------------	------

Partition wall to engine mount

Used in step 12

Screw		Tightening torque	3 Nm
-------	--	-------------------	------

Connection point of intake pipe T1 to intake pipe T2

Used in step 12

M6X25		Tightening torque	8 Nm
-------	--	-------------------	------

Underbody protection front

Used in step 14

Screw for thermoplastic plastic		Tightening torque	2,6 Nm
Hexagon screw M6x20		Tightening torque	8 Nm

Wheel arch cover to body

Used in step 15

Screw		Tightening torque	2,5 Nm
-------	--	-------------------	--------

Wheel arch cover to body

Used in step 15

Plastic nut		Tightening torque	3 Nm
-------------	--	-------------------	------

Brake disc to front wheel hub

Used in step 16

M8	Renew screw.		16 Nm
----	--------------	--	-------

Wheel bolts

Used in step 16

M 14/AF 17	Screw in wheel bolts and evenly tighten crosswise by hand in order to centre the wheel rim.	Tightening torque	140 Nm
	Tighten wheel bolts to the prescribed tightening torque with a calibrated torque wrench in a crosswise sequence.	Check	140 Nm
	Check all the wheel bolts in the same order or retighten to the prescribed tightening torque again.		

Intake silencer housing to lock bridge

Used in step 18

M6X30		Tightening torque	8 Nm
-------	--	-------------------	------

Clean air pipe to intake silencer housing

Used in step 18

Clamp		Tightening torque	3 Nm
-------	--	-------------------	------

Intake neck to cross connection

Used in step 19

M6		Tightening torque	8 Nm
----	--	-------------------	------

Cover of top bulkhead

Used in step 20

Screw		Tightening torque	2,6 Nm
-------	--	-------------------	--------

Cover of remote positive terminal

Used in step 20

Screw		Tightening torque	2,6 Nm
-------	--	-------------------	--------

Cross-brace to spring strut dome

Used in step 21

	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °

Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------

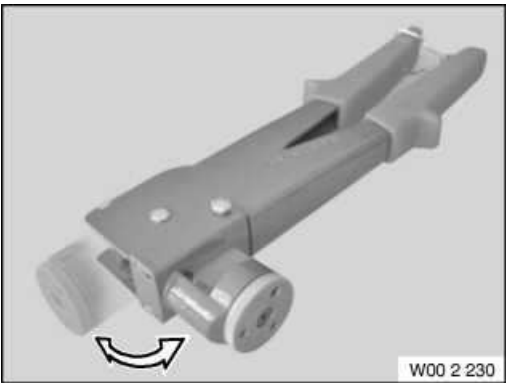
Overview of Special Tools

2 357 071 Panel



Common		Used in step	11	12
Usage	Additional mounting plate for lifting table MHT 1200. Delivery quantity: 1 piece. During the course of the changeover from BMWi to iPerformance, a tool changeover also takes place from campaign to warehouse.			
Included in the tool or work				
Storage location				
Replaced by				
In connection with	Table lift MHT 1200 81222184136			
SI-Number	01 21 13 (987)			

0 496 521 (00 2 230) Pliers



Common		Used in step	15
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm		
Included in the tool or work			
Storage location	C25		
Replaced by			
In connection with			
SI-Number	01 17 08 (478)		

2 344 011 Tool



Common		Used in step	16
Usage	Tool (wheel hub grinder) for cleaning the connection of the wheel rim (wheel contact face) to the wheel hub.		
Included in the tool or work			
Storage location			
Replaced by			
In connection with			
SI-Number	08 08 12 (872)		

Replacement tools:

0 495 221 (36 1 323) Wheel stud



Common		Used in step	7
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

0 495 224 (36 1 326) Wheel stud



Common		Used in step	7
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

0 495 225 (36 1 327) Wheel stud



Common		Used in step	7
Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

0 495 226 (36 1 328) Wheel stud



Common		Used in step	7
Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

0 495 227 (36 1 329) Wheel stud



Common		Used in step	7
Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

0 495 228 (36 1 331) Wheel stud



Common		Used in step	7
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

0 495 229 (36 1 332) Wheel stud



Common		Used in step	7
Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

0 495 230 (36 1 333) Wheel stud



Common		Used in step	7
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344		
Included in the tool or work	0 492 518		
Storage location			
Replaced by			
In connection with			
SI-Number			

Overview Technical Data

Links

Repair instructions (PRE)	Used in step
Draw off the contaminated R1234yf refrigerant and dispose of it	3
General repair instructions	Used in step
61 00 ... Notes for disconnecting and connecting battery	
64 52 ... Instructions for opening and part exchange in refrigerant circuit	17
Repair instructions	Used in step
64 50 ... Safety information for handling tetrafluorethane refrigerant R134a	3 4
64 50 ... Notice of repair work on air conditioning	3 4 17
64 50 ... Notes regarding refrigerant (R134a, R1234yf) and refrigerant oil (Sanden SP-A2)	3
61 35 ... Notes on ESD protection (Electro Static Discharge)	
64 50 ... Filling refrigerant oil by means of injection	17
Operating materials	Used in step
2.0 Grease for wheel centring	16

Parts

Parts required

Designation	Used in step
-------------	--------------

22 32 001 Replacing rubber mount for transmission mounting

PRELIMINARY WORK

1 – Bring front compartment lid in the service position

Prerequisite

Engine compartment lid is open.

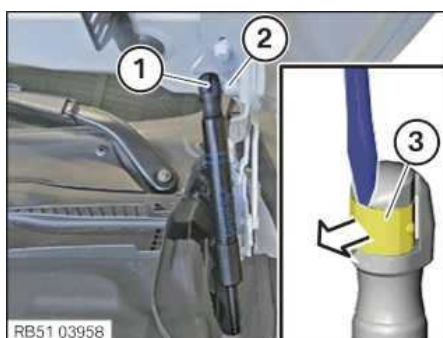


CAUTION

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.

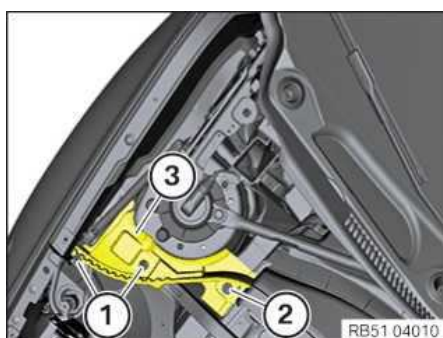
- Remove the bonnet support and open the bonnet further.
- Push special tool (3) over gas pressure spring (1).
- Place special tool on the ball pin (2) and engage using force.
- Repeat the operation on the other side of vehicle.

2 – Remove suspension cross-brace



TECHNICAL INFORMATION

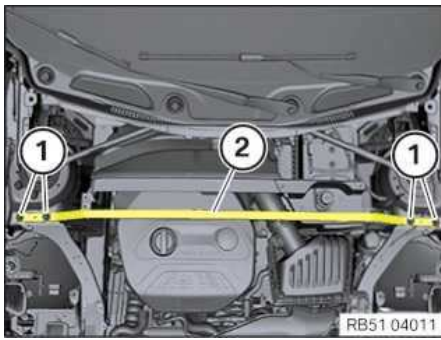
Driving without the strut brace/front end or tension strut is not permitted.



NOTICE

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

- Loosen expanding rivet (1).
- Loosen screw (2).
- Remove the cover (3).



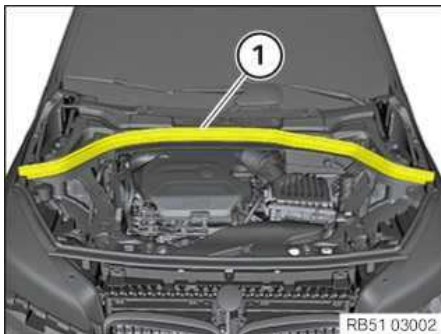
- Loosen screws (1).
- Remove strut brace (2).

3 – Remove the seal for the rear bonnet



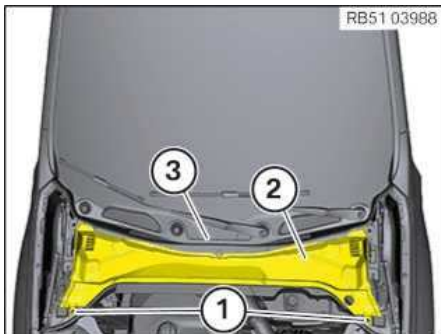
NOTICE

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



- Pull off rear bonnet seal (1) towards the top and remove.

4 – Removing front cowl panel cover



- Loosen the expanding rivet (1).
- Feed out and remove front cowl panel cover (2) from the rear cowl panel cover(3).

5 – Removing the acoustic cover



WARNING

Hot surfaces.

Risk of burning!

- Perform all work only on components that have cooled down.



RISK OF DAMAGE

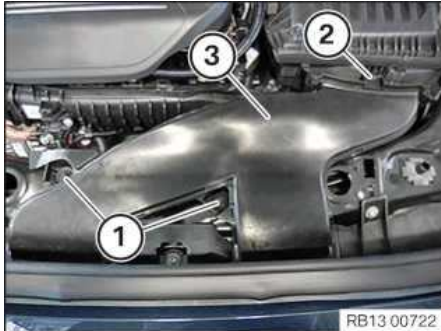
Damage to the acoustic cover.

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

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

- Unclip the acoustic cover from the marked areas towards the top.

6 – Remove the intake neck for intake silencer housing



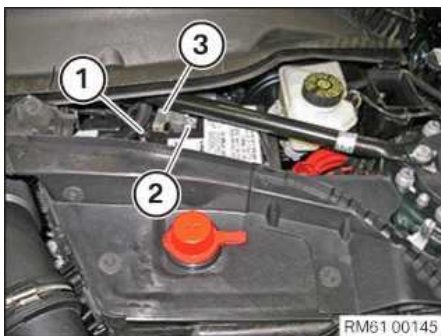
- Loosen nuts (1).
- Loosen the lock (2).
- Guide the intake neck (3) out and remove it.

7 – Removing intake silencer housing



- Loosen the holder (1).
- Loosen screw (2).
- Unlock and loosen connector (3).
- Unfasten clamp (4).
- Pull out and remove the intake silencer housing (5) from the rubber mounts towards the top.

8 – Disconnecting the battery earth lead



- Unlock plug connection (1) and disconnect.
- Unfasten nut (2).
- Remove the battery earth lead (3) and secure to one side.

9 – Remove vehicle battery

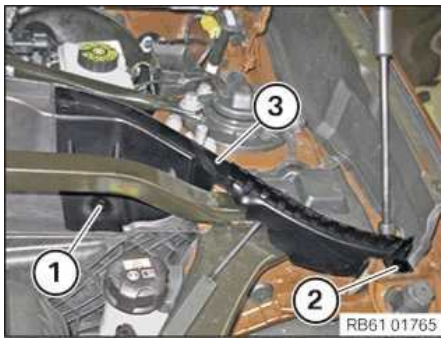


WARNING

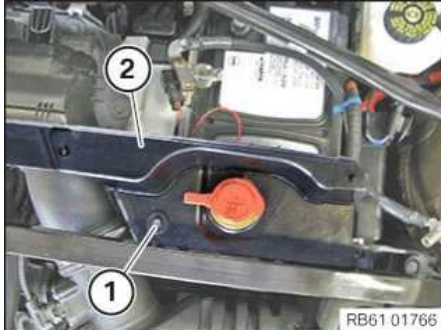
Working on 12 V vehicle electrical system.

Risk of short circuits! Risk of fire!

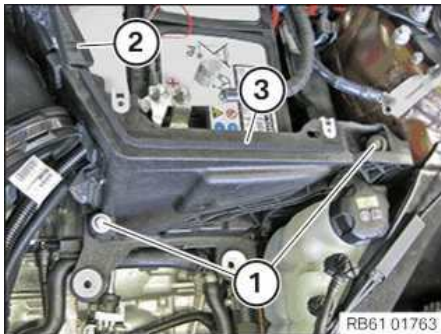
- Detach battery earth lead from battery.
- For additional batteries: Detach all battery earth leads from additional batteries.



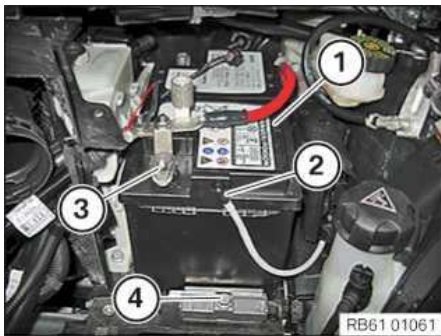
- Release the screw (1) and the expanding rivet (2).
- Remove the fixture for the gasket (3).



- Loosen screw (1).
- Remove the cover (2).



- Loosen screws (1).
- Unscrew the bolt (2) and guide the tension strut (3) out.



- Pull off the vent hose (2).
- Slacken the nut (3) on the positive battery terminal and remove the positive battery terminal.



WARNING

Unprotected battery terminals.

Risk of short circuits! Risk of fire!

- Cover the vehicle battery.

- Loosen the screw (4) and remove the holder.
- Remove vehicle battery (1).

10 – Remove electronics box

Prerequisite

Battery earth lead is disconnected.



RISK OF DAMAGE



Electrostatic discharge.

Damage to or destruction of electrical components.

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



RISK OF DAMAGE

Damage to wires when disconnecting connectors and plug connections.

Sheared wires can cause a short circuit.

- Do not pull on the wires when disconnecting connectors and plug connections.



TECHNICAL INFORMATION

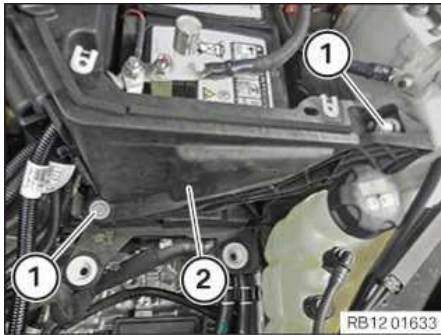
Follow instructions for removing and installing control units.

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

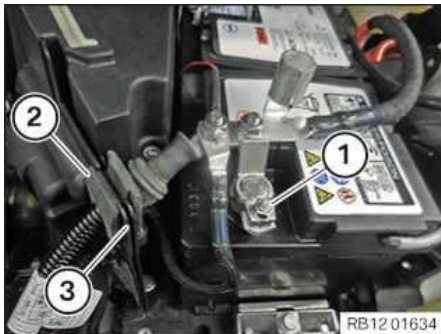


TECHNICAL INFORMATION

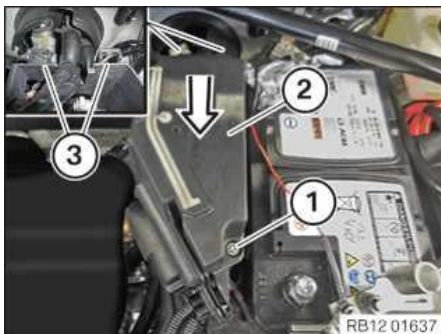
Disconnecting control units may cause fault code entries and functional limitations. Fault code entries must be read out and deleted if necessary.



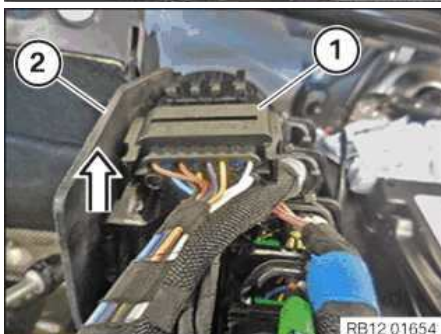
- Loosen screws (1).
- Guide out the tension strut (2) toward the top and remove it.



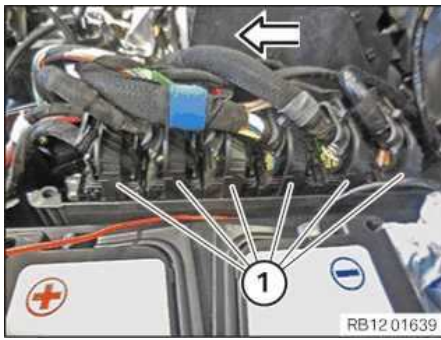
- Undo positive battery terminal (1).
- Feed out positive battery terminal (1) and set aside.
- Guide the positive battery cable (2) out of the holder (3) and lay to one side.



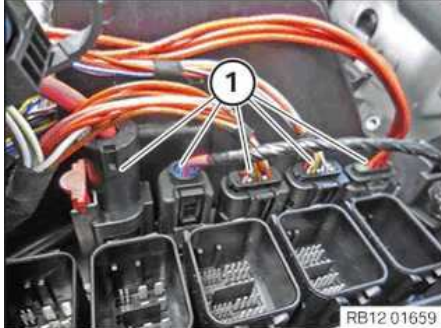
- Loosen screw (1).
- Unlock cover (2) and feed out and remove from the guides (3) in the direction of arrow.



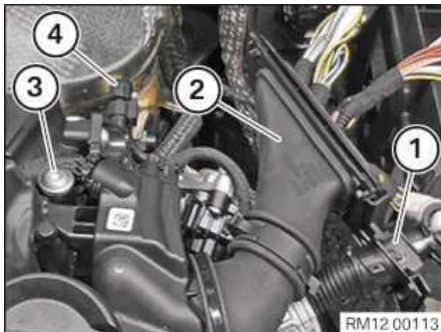
- Feed out connector (1) from the electronics box (2) and remove in the direction of arrow.
- Unlock and loosen connector (1).



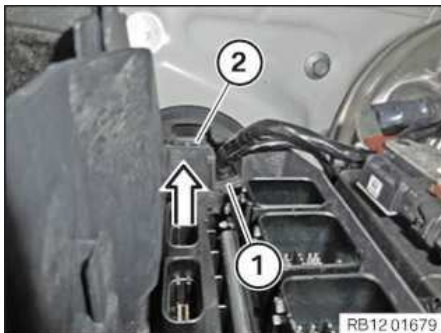
- Unlock and remove the connector (1) in the direction of the arrow.
- Feed out connector (1) and place to one side.



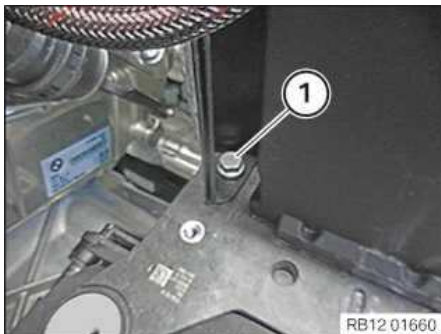
- Unlock and loosen connector (1).



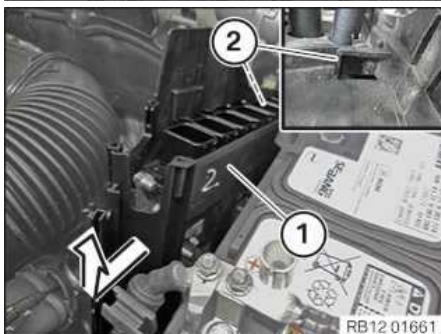
- Detach the wiring harness (1) from the electronics box.
- Detach the wiring harnesses (2) from electronics box.
- Loosen screw (3).
- Set wiring harnesses (1) and (2) aside.
- Unlock the connector (4) and disconnect it from the differential pressure sensor.



- Unlock and loosen holder (1).
- Guide the holder (1) out of the electronics box (2) in direction of arrow and set it aside.



- Loosen screw (1).



- Guide the electronics box (1) out of the guide (2) in direction of arrow and remove.



RISK OF DAMAGE



Electrostatic discharge.

Damage to or destruction of electrical components.

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

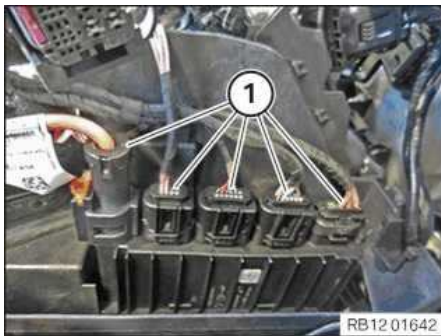


RISK OF DAMAGE

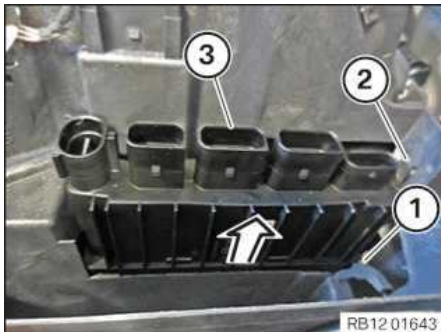
Damage to wires when disconnecting connectors and plug connections.

Sheared wires can cause a short circuit.

- Do not pull on the wires when disconnecting connectors and plug connections.

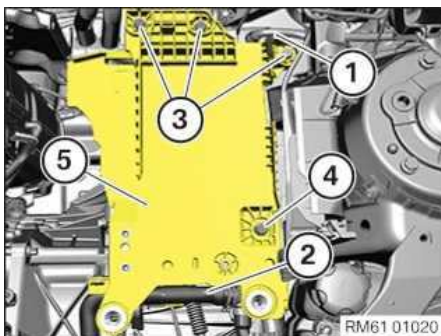


- Unlock and disconnect the plug connection (1).



- Disengage locks (1) and (2).
- Guide out and remove the integrated supply module (3) in the direction of the arrow.

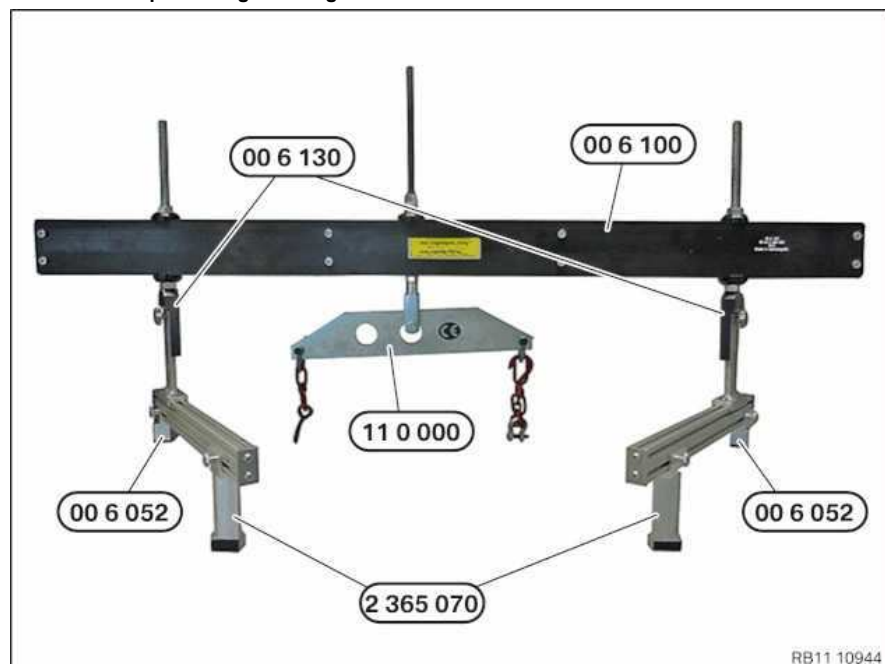
12 – Remove battery holder



- Detach the cable clip (1) from the battery holder (5).
- Detach the coolant line (2) from the battery holder (5).
- Loosen screws (3).
- Loosen screw (4).
- Thread out and remove the battery holder (5).

13 – Installing the engine bridge

Overview: Prepared engine bridge



Prerequisite

Front compartment lid is in service position.



CAUTION

Components connected to the engine joint or cross member.

Danger of injury!

- Check lifting eyes and engine mounting brackets for damage, e.g. cracks.
- Attach the component to correctly mounted engine joints or cross members only.
- Exclusively lift the component, do not move it forwards, backwards or in transverse direction.



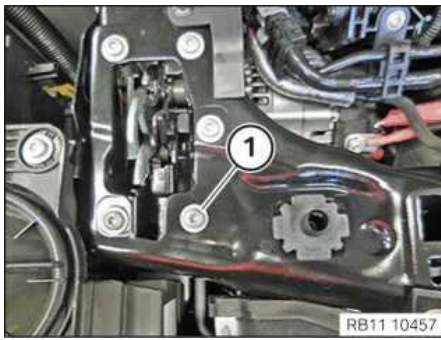
- Guide in and position special tool **2 459 012** on cylinder head.
- Tighten the screws (1) of special tool **2 459 012**.

Special tool to cylinder head

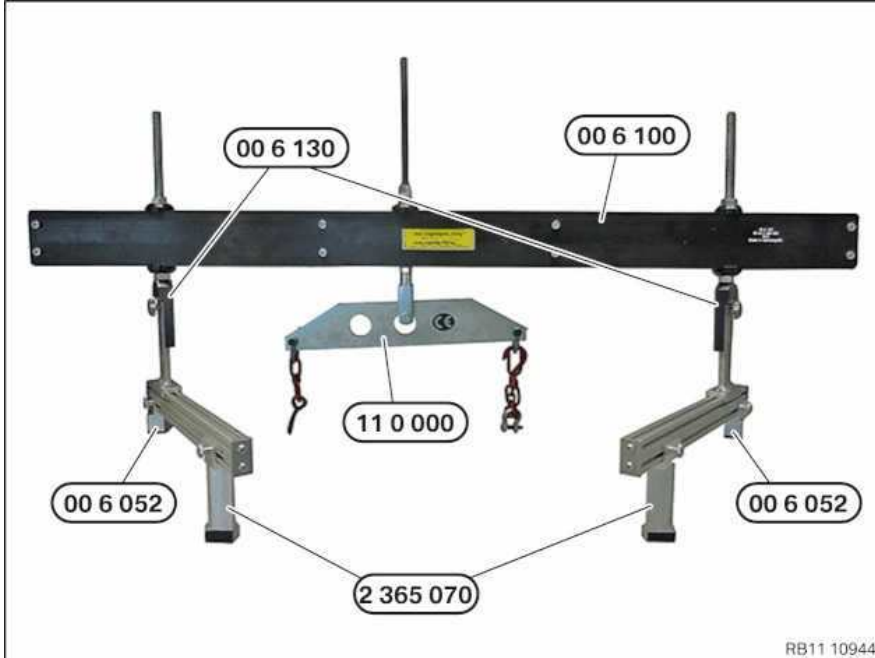
M8		Tightening torque	21,5 Nm
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- Loosen screw (1) of the left bonnet catch.



- Loosen screw (1) of the right bonnet catch.

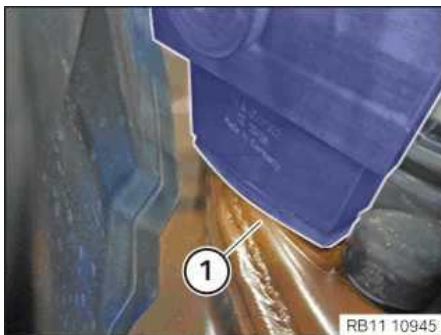


CAUTION

Heavy component.

Heavy components can lead to injury or damage.

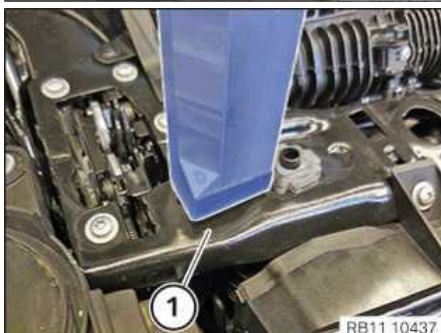
- Remove and install heavy components with the aid of another person/other persons.
- Set entire cross member **0 496 852 (00 6 100)** on the vehicle and position with the help of an auxiliary person.



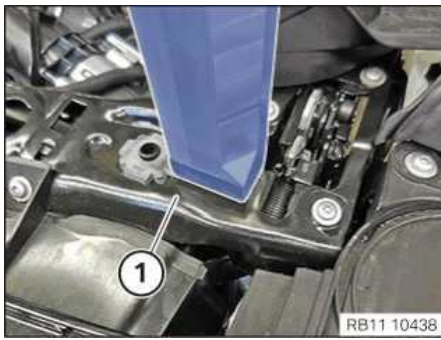
- Position the special tool at the rear mounting point (1) on the **right**.



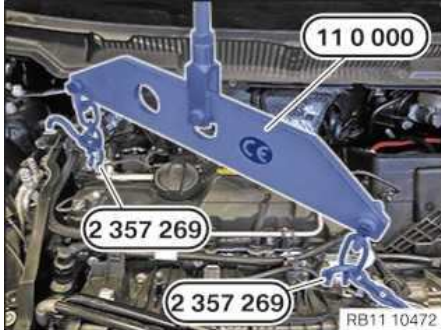
- Position the special tool at the rear mounting point (1) on the **left**.



- Position the special tool at the front mounting point (1) on the **right**.



- Position the special tool at the front mounting point (1) on the **left**.



- Position special tool **0 490 561 (11 0 000)** above the engine.
- Attach special tools to the mounting lugs of the engine.



- Tighten side screws (2) and (3).
- Slightly pretension the spindle screw (1) of the engine support beams.
- Tighten down all adjusting screws, knurled screws and nuts on cross member **0 496 852 (00 6 100)** and on special tool.

14 – Remove the front wheel arch trim



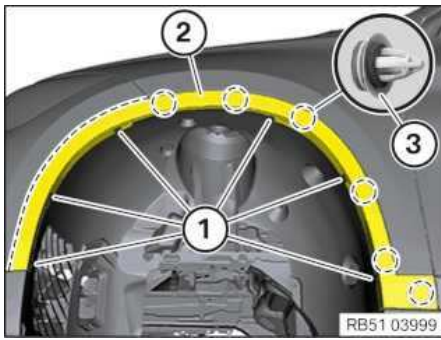
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



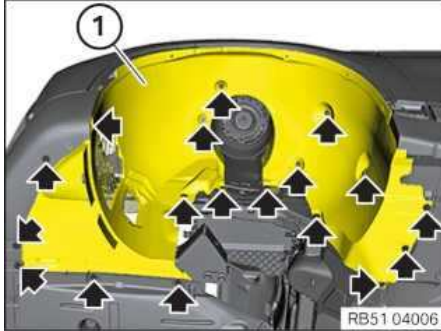
NOTICE

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



- Remove the blind rivets (1).
- Release the wheel arch trim (2) in the area of the side panel from the clips (3).
- Release the wheel arch trim (2) from the latch mechanisms on the bumper and remove.

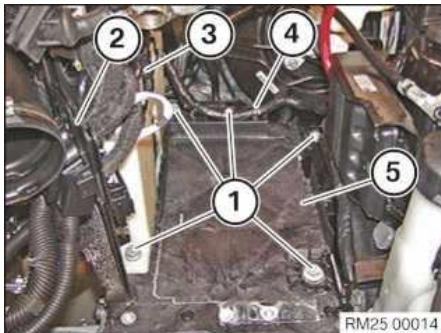
15 – Remove front wheel arch cover



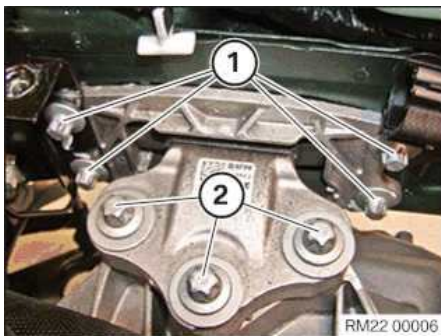
- Unscrew all bolts and nuts (arrows).
- Guide the wheel arch cover (1) out.

MAIN WORK

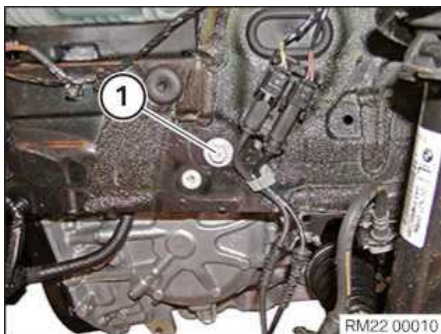
16 – Remove the rubber mounts for the transmission bearing



- Loosen screws (1).
- Release the partition wall (2) for the battery from the bracket and remove.
- Detach the control unit (3) from of the bracket.
- Detach the wiring harness (4) from the battery tray (5).
- Remove the battery tray (5).

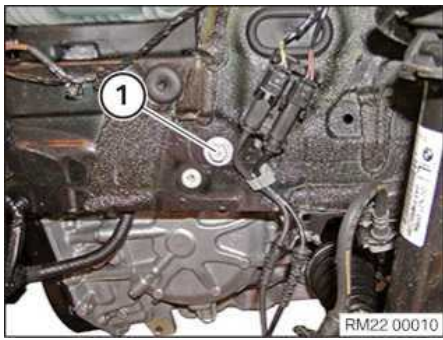


- Loosen screws (2).
- Loosen screws (1).



- Unscrew the bolt (1) in the wheel arch.
- Remove transmission mount.

17 – Install the rubber mount for the transmission bearing



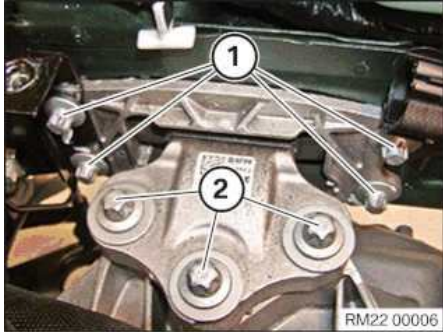
- Install transmission mount.
- Renew the screw (1).

Parts: Screw

- Tighten the bolt (1) in the wheel arch.

Transmission mount to side member, outer

M10	Renew screw	Tightening torque	28 Nm
-----	-------------	-------------------	-------



- Renew screws (1).

Parts: Bolts

- Tighten the screws (1).

Transmission mount to side member, inner

M10	Replace screws	Tightening torque	56 Nm
-----	----------------	-------------------	-------

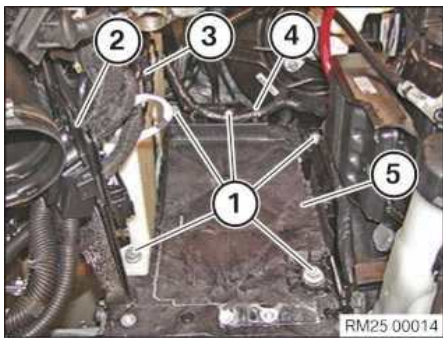
- Renew screws (2).

Parts: Bolts

- Tighten the screws (2).

Transmission mount to transmission

M10	Renew screws.	Jointing torque	40 Nm
		Angle of rotation	90 °



- Install the battery tray (5).
- Tighten the screws (1).

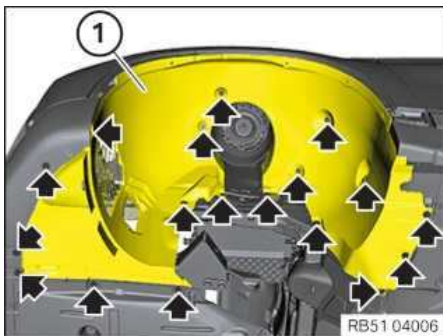
Battery carrier to body

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

- Install the wiring harness (4) on the battery tray (5).
- Insert the control unit (3) into the bracket.
- Insert partition wall (2) for the battery into the bracket.

POSTPROCESSES

18 – Installing the front wheel arch cover



- Guide the wheel arch cover (1) in.
- Tighten all bolts and nuts (arrows).

Wheel arch cover to body

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

Wheel arch cover to body

Screw		Tightening torque	2,5 Nm
-------	--	-------------------	--------

Wheel arch cover to body

Plastic nut		Tightening torque	3 Nm
-------------	--	-------------------	------

19 – Installing front wheel arch trim



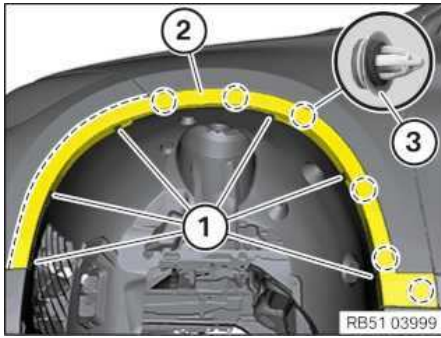
NOTICE

To provide a better overview: Schematic diagram with partially hidden components.



NOTICE

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



- Check the clips (3) for damage and renew where required.
The clips (3) must not be damaged or missing.
- Feed in wheel arch trim (2) and engage on the clips (3).
- Engage wheel arch trim (2) into the latch mechanisms on the bumper panel.
- Mount blind rivet (1) using the special tool **0 496 521 (00 2 230)**.

20 – Remove the engine bridge



CAUTION

Heavy component.

Heavy components can lead to injury or damage.

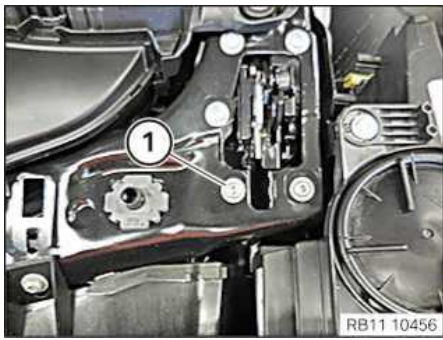
- Remove and install heavy components with the aid of another person/other persons.



- Detach the spindle screw (1) from the engine bridge.
- Unscrew the leg screws (2) and (3).
- Guide the engine bridge out of the vehicle with the help of another person and remove.



- Unscrew the bolts (1) of the special tool **2 459 012**.
- Feed out the special tool **2 459 012** at the cylinder head and remove.



- Tighten the screw (1) of the bonnet catch.

Cross connection on support for cross connection

M6x20		Tightening torque	12 Nm
-------	--	-------------------	-------

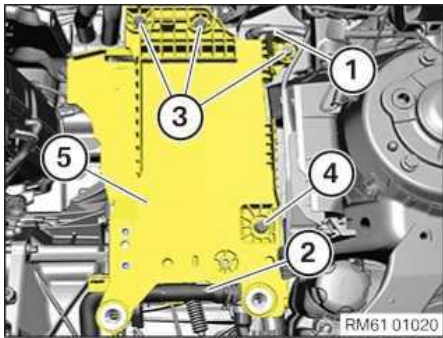


- Tighten the screw (1) of the bonnet catch.

Cross connection on support for cross connection

M6x20		Tightening torque	12 Nm
-------	--	-------------------	-------

21 – Install the battery holder



- Feed in and install the battery holder (5).
- Hand-tighten the bolt (4).
- Hand-tighten the bolts (3).
- Tighten down screw (4).

Battery holder to engine support

Hexagon screw M8x30		Tightening torque	19 Nm
------------------------	--	-------------------	-------

- Tighten down screws (3).

Battery holder to engine support

Hexagon screw M8x30		Tightening torque	19 Nm
------------------------	--	-------------------	-------

- Fasten the coolant line (2) on the battery holder (5).
- Fasten the cable clip (1) on the battery holder (5).

22 – Install electronics box

Prerequisite

Battery earth lead is disconnected.

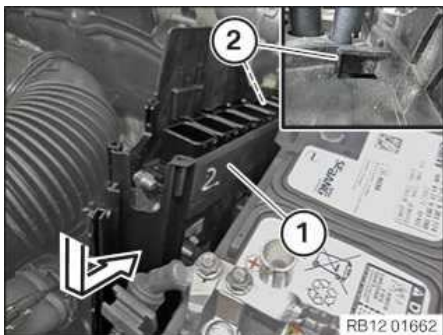


RISK OF DAMAGE

Improper routing of cables and wiring harnesses.

Trapped, crushed or damaged cables may cause short circuits and malfunctions.

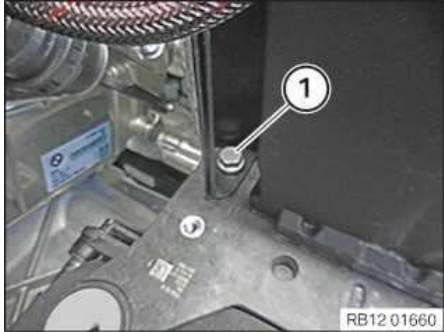
- Route all cables without abrasions, do not trap and crush.



- Guide in and install the electronics box (1) into the guide (2) in direction of arrow.



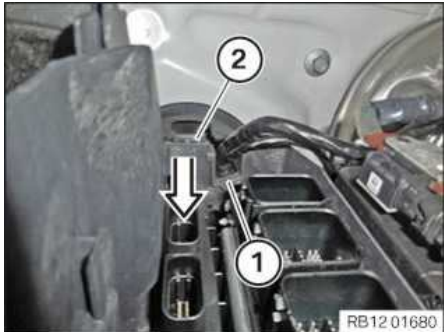
- Make sure that the electronics box (1) is positioned correctly on the bulkhead (2).



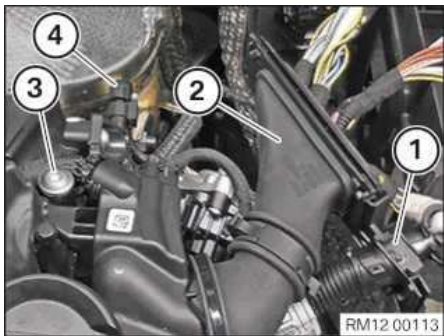
- Tighten down screw (1).

Electronics box to battery tray

M8X16		Tightening torque	15 Nm
-------	--	-------------------	-------



- Guide in and install the holder (1) in the electronics box (2) in direction of arrow.
- Make sure the bracket (1) engages audibly.

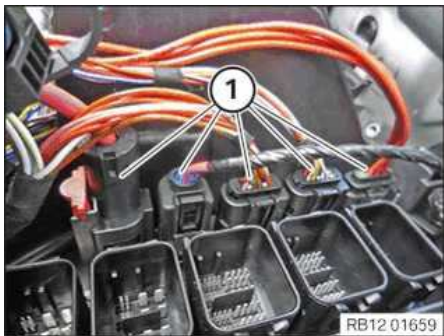


- Lay vehicle wiring harnesses (1) and (2) and mount on electronics box.
- Tighten down screw (3).

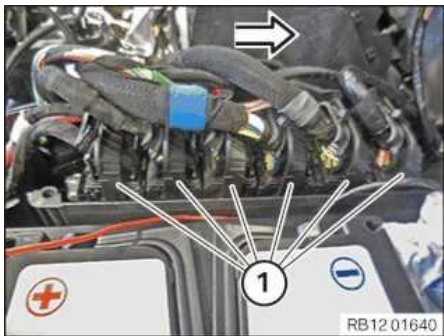
Wiring harness to cylinder head cover

TS5x20		Tightening torque	3,5 Nm
--------	--	-------------------	--------

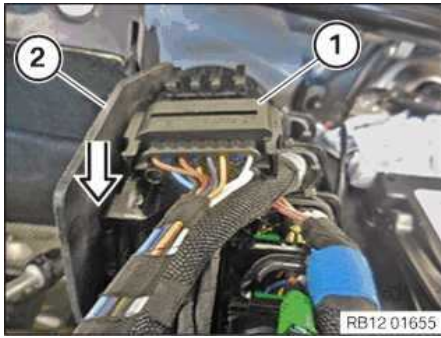
- Attach connector (4) to the differential pressure sensor and lock it audibly.



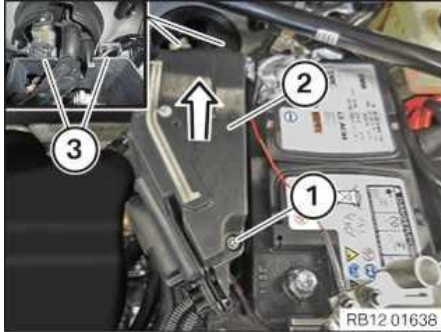
- Connect and lock the connector (1).
- Make sure the connectors (1) engage audibly.



- Connect connector (1) in direction of arrow and lock.
- Make sure the connectors (1) engage audibly.



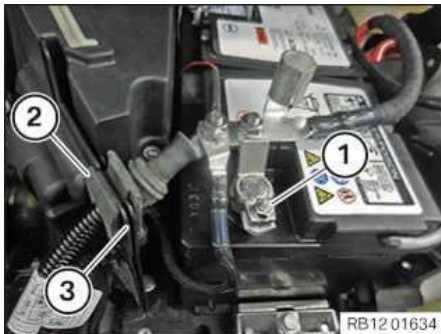
- Connect and lock the connector (1).
- Make sure the connector (1) engages audibly.
- Insert the connector (1) in the direction of arrow at the electronics box (2) and install.



- Insert the cover (2) into the guides (3) in the direction of arrow and install.
- Make sure the cover audibly engages (2) in the guides (3).
- Tighten down screw (1).

Cover to electronics box

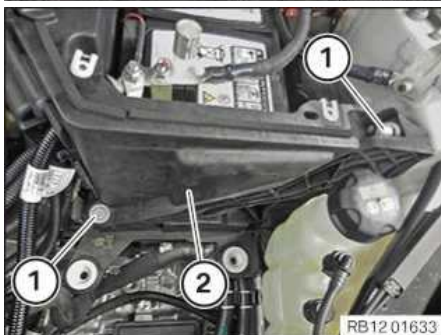
RF5x26.5		Tightening torque	2,5 Nm
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- Thread in positive battery cable (2) on holder (3) and install.
- Feed in and install positive battery terminal (1).
- Tighten positive battery terminal (1).

Positive battery terminal to battery

NutM6		Tightening torque	5 Nm
-------	--	-------------------	------



- Feed in and install tension strut (2).
- Tighten the screws (1).

Tension strut to spring strut dome/battery tray

M8		Tightening torque	19 Nm
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23 – Installing the integrated supply module (PDM)

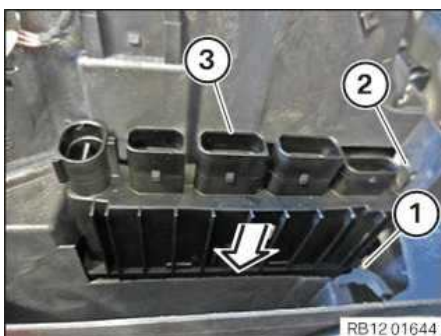


RISK OF DAMAGE

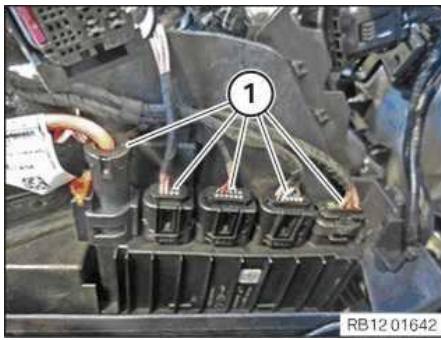
Improper routing of cables and wiring harnesses.

Trapped, crushed or damaged cables may cause short circuits and malfunctions.

- Route all cables without abrasions, do not trap and crush.

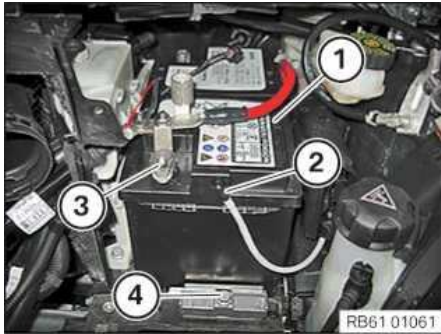


- Insert and install the integrated supply module (3) in the direction of the arrow.
- Make sure you can hear the locks (1) and (2) engage.



- Connect connectors (1) and lock.
- Make sure the connectors (1) engage audibly.

24 – Install vehicle battery



- Install vehicle battery (1).
- Position the bracket and tighten with the screw (4) .

Battery terminal rail to battery tray

M8		19 Nm
----	--	-------

- Position the vent hose (2) and clip it in.
- Position the positive battery terminal and tighten with the nut (3) .

Battery terminal with IBS positive battery terminal / negative battery terminal

NutM6		5 Nm
-------	--	------

► Check the vent holes of the battery



WARNING

Gas emission.

Danger of injury! Danger of explosion!

- Assign the vent holes correctly.
- Route the vent hose correctly.

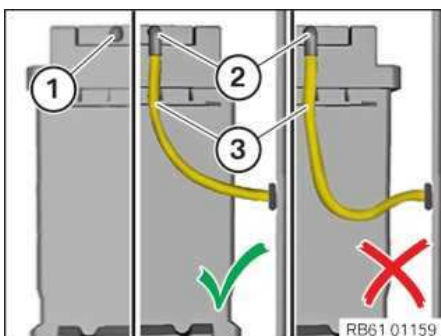


TECHNICAL INFORMATION

The battery has two vent holes, opposite:

One vent hole (1) must be closed correctly with a dummy plug.

The vent hose (3) must be correctly connected and routed at the other vent hole (2).



Check

- Check if the vent hole (1) is correctly closed with a dummy plug.

Result

» No dummy plug.

Measure

- Close the vent hole (1) correctly with a dummy plug.

Check

- Check if the vent hole (2) has a correctly connected vent hose (3).

Result

» The vent hose (3) is not correctly connected.

Measure

- At the vent hole (2), connect the vent hose (3) correctly.

Check

- Check if the vent hose (3) is routed to the outside with a downhill gradient (**no siphon formation!**).

Result

» The vent hose (3) is not correctly routed as shown in the image on the right.

Measure

- Route the vent hose (3) correctly as shown in the centre image.

- Insert tension strut (3) and tighten with screws (1).

Trailing link

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

- Tighten down screw (2).

Battery cover

M8			2,8 Nm
----	--	--	--------

- Position the cover (2).
- Tighten down screw (1).

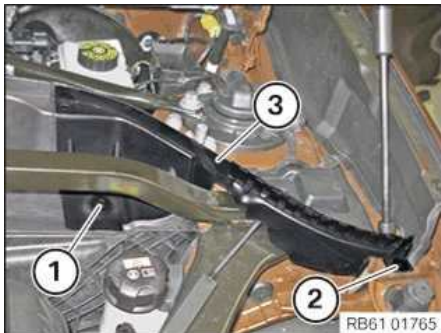
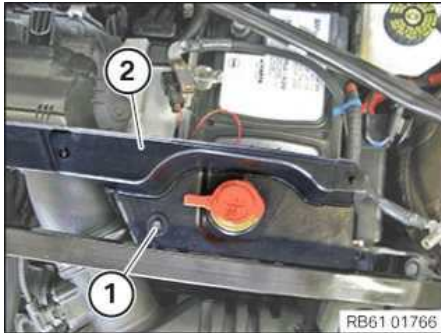
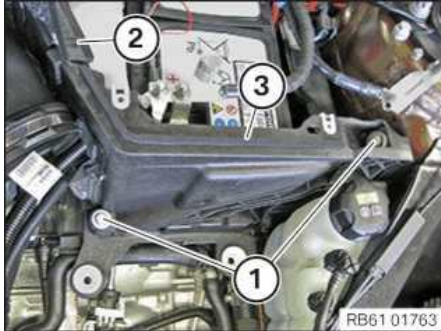
Battery cover

M8			2,8 Nm
----	--	--	--------

- Position the fixture for the gasket (3) and secure with the expanding rivet (2).
- Tighten down screw (1).

Battery cover

M8			2,8 Nm
----	--	--	--------



25 – 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)



- Remove the protective cover of the positive battery terminal.
- Position the battery earth lead (2).
- Tighten nut (1).

Battery terminal with IBS positive battery terminal / negative battery terminal

NutM6			5 Nm
-------	--	--	------

- If required, connect the connector (3).

26 – Installing intake silencer housing



- Insert the intake silencer housing (5) into the rubber mounts and install it.
Intake filter housing (5) must engage audibly.
- Tighten down screw (2).

Intake silencer housing to lock bridge

M6X30		Tightening torque	8 Nm
-------	--	-------------------	------

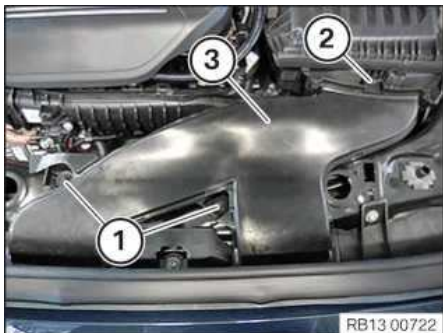
- Tighten clamp (4).

Clean air pipe to intake silencer housing

Clamp		Tightening torque	3 Nm
-------	--	-------------------	------

- Connect and lock the connector (3).
The connector (3) must engage audibly.
- Insert and install the holder (1).

27 – Install the intake neck for the intake filter housing



- Insert and install the intake neck (3).
The lock (2) must engage audibly.
- Tighten nuts (1).

Intake neck to cross connection

M6		Tightening torque	8 Nm
----	--	-------------------	------

28 – Install acoustic cover



RISK OF DAMAGE

Damage to the acoustic cover.

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

- Disassemble or mount the acoustic cover carefully.
- Disassemble or mount snap-lock couplings of the ball pivots one after the other.
- Disassemble or mount acoustic cover only at temperatures >20 °C.
- Use only distilled water as an auxiliary material during installation, no lubricants.

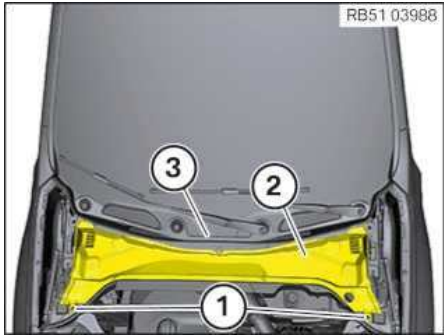


- Check for correct installation of all rubber mounts in the acoustic cover (1).



- Clip in the acoustic cover into the holders in the indicated areas.
- Make sure that the acoustic cover engages audibly.

29 – Installing front cowl panel cover



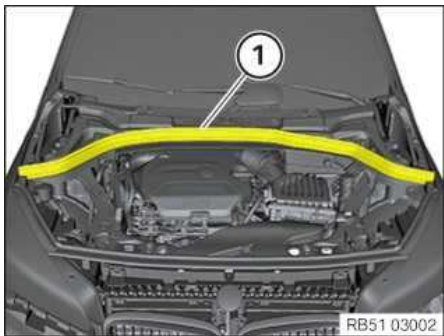
- Insert and install cowl panel cover at front (2) into cowl panel cover at rear (3).
- Check cowl panel cover at front is correctly seated (2).
- Secure expanding rivet (1).

30 – Install the seal for the bonnet



NOTICE

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



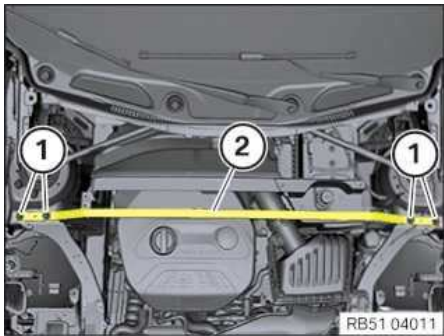
- Install bonnet seal at rear (1).
- Ensure that the rear bonnet seal (1) is fitted correctly.

31 – Install strut brace



TECHNICAL INFORMATION

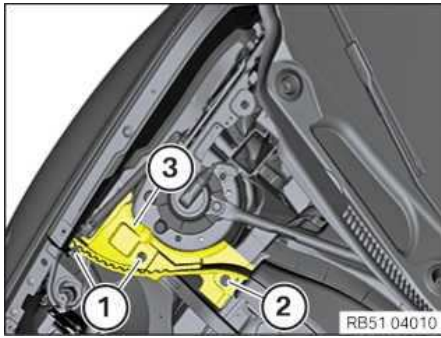
Driving without the strut brace/front end or tension strut is not permitted.



- Install the strut brace (2).
 - Renew screws (1).
- Parts:** Bolts
- Tighten the screws (1).

Cross-brace to spring strut dome

	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °



NOTICE

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

- Install the cover (3).
- Tighten down screw (2).

Cover on body

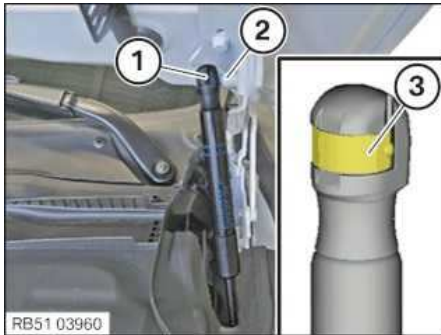
Hexagon screw		Tightening torque	3 Nm
---------------	--	-------------------	------

- Install the expanding rivet (1).

32 – Take bonnet out of the service position



- 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.



CAUTION

Shutting bonnet or tailgate.

Danger of injury!

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

Special tool to cylinder head

Used in step 13

M8		Tightening torque	21,5 Nm
----	--	-------------------	---------

Transmission mount to side member, outer

Used in step 17

M10	Renew screw	Tightening torque	28 Nm
-----	-------------	-------------------	-------

Transmission mount to side member, inner

Used in step 17

M10	Replace screws	Tightening torque	56 Nm
-----	----------------	-------------------	-------

Transmission mount to transmission

Used in step 17

M10	Renew screws.	Jointing torque	40 Nm
		Angle of rotation	90 °

Battery carrier to body

Used in step 17

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

Wheel arch cover to body

Used in step 18

Plastic nut		Tightening torque	2,6 Nm
Screw		Tightening torque	2,6 Nm

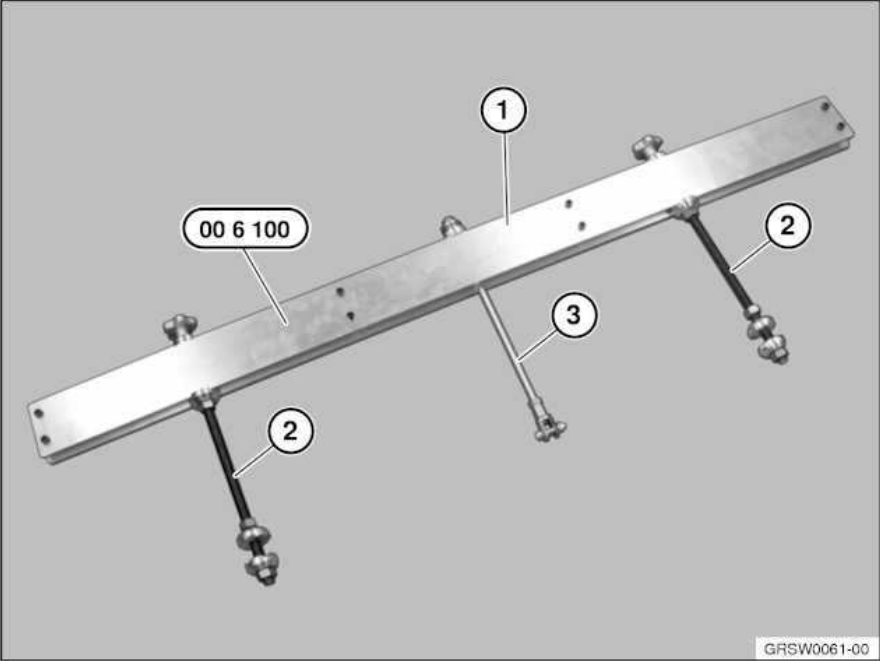
Wheel arch cover to body			Used in step 18
Screw		Tightening torque	2,5 Nm
Wheel arch cover to body			Used in step 18
Plastic nut		Tightening torque	3 Nm
Cross connection on support for cross connection			Used in step 20
M6x20		Tightening torque	12 Nm
Battery holder to engine support			Used in step 21
Hexagon screw M8x30		Tightening torque	19 Nm
Electronics box to battery tray			Used in step 22
M8X16		Tightening torque	15 Nm
Wiring harness to cylinder head cover			Used in step 22
TS5x20		Tightening torque	3,5 Nm
Cover to electronics box			Used in step 22
RF5x26.5		Tightening torque	2,5 Nm
Positive battery terminal to battery			Used in step 22
NutM6		Tightening torque	5 Nm
Tension strut to spring strut dome/battery tray			Used in step 22
M8		Tightening torque	19 Nm
Battery terminal rail to battery tray			Used in step 24
M8			19 Nm
Battery terminal with IBS positive battery terminal / negative battery terminal			Used in step 24 25
NutM6			5 Nm
Trailing link			Used in step 24
M8		Tightening torque	19 Nm
Battery cover			Used in step 24
M8			2,8 Nm
Intake silencer housing to lock bridge			Used in step 26
M6X30		Tightening torque	8 Nm
Clean air pipe to intake silencer housing			Used in step 26
Clamp		Tightening torque	3 Nm
Intake neck to cross connection			Used in step 27
M6		Tightening torque	8 Nm
Cross-brace to spring strut dome			Used in step 31
	Renew screw.	Jointing torque	28 Nm
		Angle of rotation	180 °
Cover on body			Used in step 31
Hexagon screw		Tightening torque	3 Nm

Overview of Special Tools

2 459 012 Holder



Common		Used in step	13	20
Usage	For removing and installing the cylinder head. Contour-graphic silhouette foil is included in the delivery specification.			
Included in the tool or work				
Storage location	A58			
Replaced by				
In connection with				
SI-Number	01 07 17 (487)			



Common Used in step [13](#)

Usage Engine bridge (device) 006000

Included in the tool or work

Storage location Individual

Replaced by

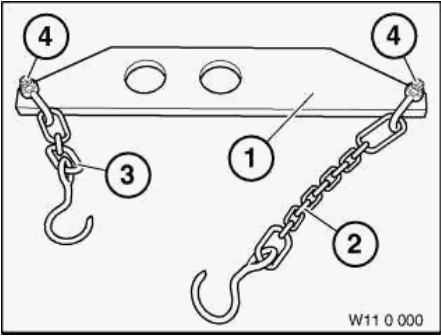
In connection with

SI-Number 01 17 10 (659)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
2	2 361 507 (00 6 102)		Spindle Set (2 pieces) in connection with 00 6 100.	
3	2 361 506 (00 6 103)		Spindle Spindle (central spindle) for Traverse 00 6 100.	

0 490 561 (11 0 000) Lifting gear

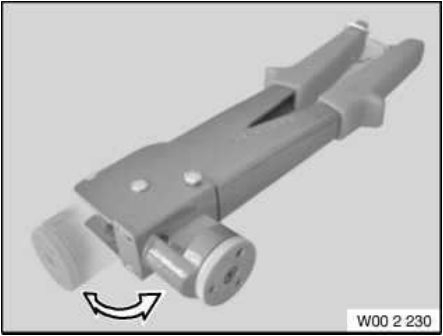


Common	
Usage	(Hoisting gear) For removing and installing engines. As of 08/2011 only available as a complete set. Delivered with TÜV inspection certificate and operating instructions. No delivery of separate parts.
Included in the tool or work	
Storage location	Individual
Replaced by	
In connection with	
SI-Number	01 13 94 (888)

Consisting of

Pos	BMW Order number	Replaced by	Designation	In Connection with
4	0 490 565 (11 0 009)		Shackle (Shackle) 2 pieces. As of 08/2001, only available as a complete set via 11 0 000 = 0490561. Delivered with TÜV inspection certificate and operating instructions.	
1	0 490 562 (11 0 001)		Lifting gear (Cross member) As of 08/2001, only available as a complete set via 11 0 000 = 0490561. Delivered with TÜV inspection certificate and operating instructions.	
2	0 490 563 (11 0 002)		Chain (Chain) Version: long As of 08/2001, only available as a complete set via 11 0 000 = 0490561. Delivered with TÜV inspection certificate and operating instructions.	
3	0 490 564 (11 0 003)		Chain (Chain) Version: short As of 08/2001, only available as a complete set via 11 0 000 = 0490561. Delivered with TÜV inspection certificate and operating instructions.	

0 496 521 (00 2 230) Pliers



Common		Used in step 19
Usage	(Blind rivet pliers for plastic rivets) For shaft diameters of 3.5 mm, 3.9 mm and 4.5 mm	
Included in the tool or work		
Storage location	C25	
Replaced by		
In connection with		
SI-Number	01 17 08 (478)	

Replacement tools:
0 495 221 (36 1 323) Wheel stud

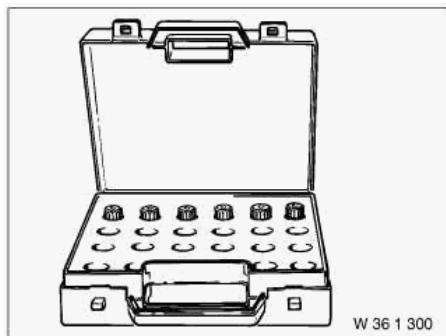


Common		Used in step
Usage	(Code 30) Code 39 available separately, (see EPC) under 36 13 1 181 259	
Included in the tool or work	0 492 518	
Storage location		
Replaced by		
In connection with		
SI-Number		

0 495 224 (36 1 326) Wheel stud



Common		Used in step
Usage	(Code 33) With centring bore available separately, (see EPC) under 36 13 6 765 546	
Included in the tool or work	0 492 518	
Storage location		
Replaced by		
In connection with		
SI-Number		

0 495 225 (36 1 327) Wheel stud**Common**

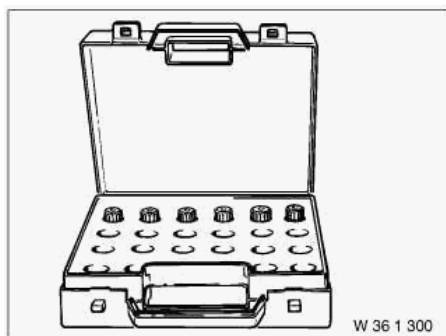
Used in step

Usage	(Code 34) With centring bore available separately (see EPC) under 36 13 6 765 547
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 226 (36 1 328) Wheel stud**Common**

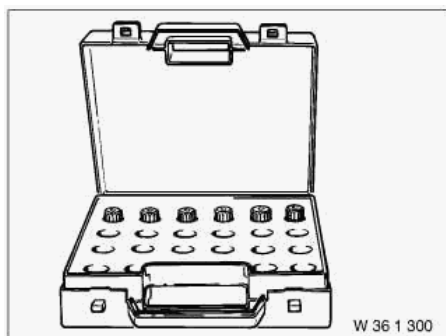
Used in step

Usage	(Code 35) With centring bore available separately, (see EPC) under 36 13 6 762 340
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 227 (36 1 329) Wheel stud**Common**

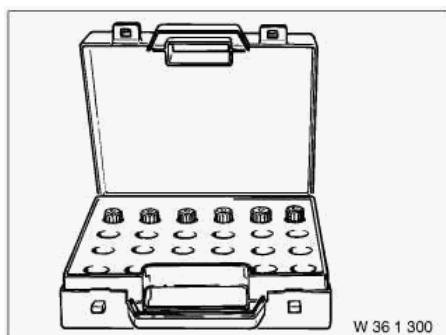
Used in step

Usage	(Code 36) With centring bore available separately (see EPC) under 36 13 6 762 341
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 228 (36 1 331) Wheel stud**Common**

Used in step

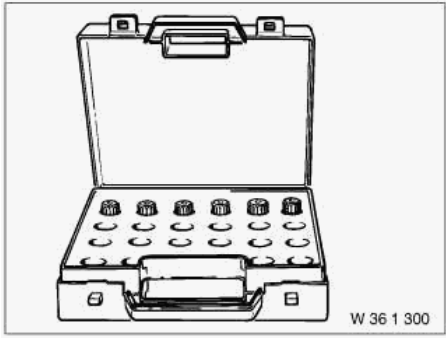
Usage	(Code 37) With centring bore available separately (see EPC) under 36 13 6 762 342
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 229 (36 1 332) Wheel stud**Common**

Used in step

Usage	(Code 38) With centring bore available separately (see EPC) under 36 13 6 762 343
Included in the tool or work	0 492 518
Storage location	
Replaced by	
In connection with	
SI-Number	

0 495 230 (36 1 333) Wheel stud



Common		Used in step
Usage	(Code 40) With centring bore available separately (see EPC) under 36 13 6 762 344	
Included in the tool or work	0 492 518	
Storage location		
Replaced by		
In connection with		
SI-Number		

Links

General repair instructions	Used in step
61 20 ... Notes on AGM battery	25
61 12 ... Notes on intelligent battery sensor (IBS)	25
61 00 ... Notes for disconnecting and connecting battery	25
Repair instructions	Used in step
61 35 ... Notes on ESD protection (Electro Static Discharge)	10 11 23
61 13 ... Unlocking and disconnecting different plug connections	11 23
Operating materials	Used in step
2.0 Grease for wheel centring	