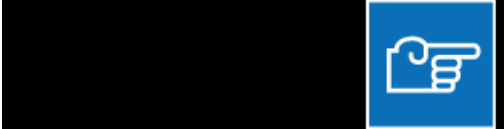


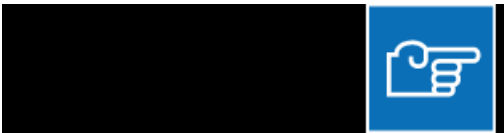
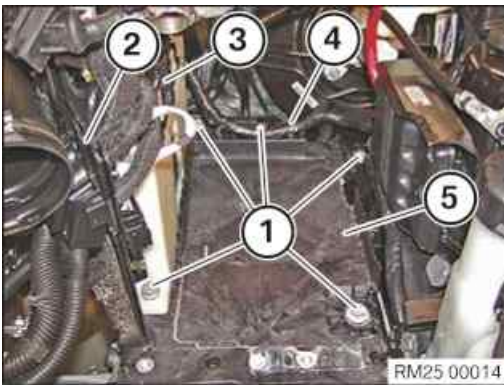
**Necessary preliminary work:**

- Remove [vehicle battery](#).
- Remove [exhaust system](#).
- Remove [gearshift lever knob](#) with gaiter.
- Remove [centre console](#).

**Note:**

F45/46: On motor vehicles up to 07/2016, when exchanging the gearshift bracket, the [shifting unit](#) must also be exchanged.

See hereto also the Electronic Parts Catalogue.

**Removal:**

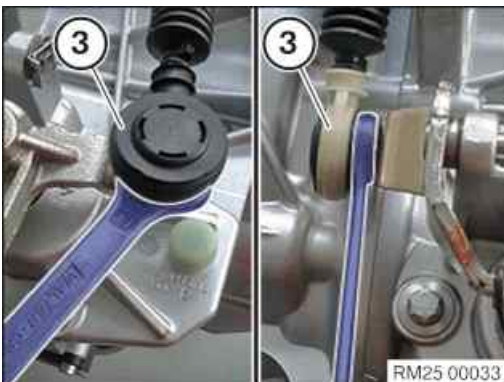
Release screws (1).

Release the vehicle battery housing (2) from the bracket and remove.

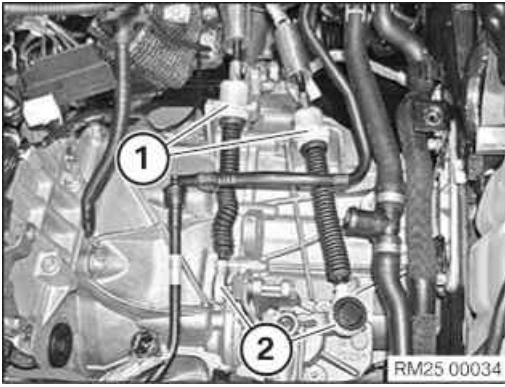
Release control unit (3) from bracket.

Detach wiring harness (4) from battery tray (5).

Remove battery tray (5).



Lever the insert fixtures (3) of the selector lever cables from the ball joints with the open-end spanner SW13.

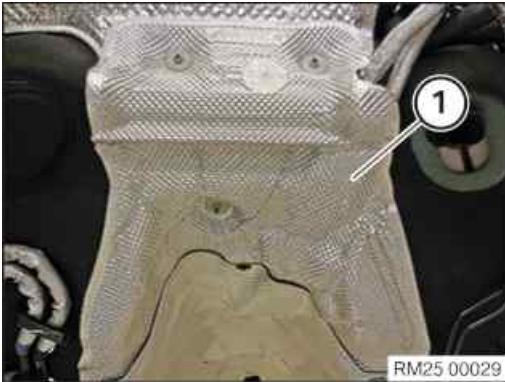


Disengage the clip on the limit position / holder (1), while doing so slightly bend away the tabs from the limit position / holder (1).

Detach the shift cables (2) at the ball joints.

Attention!

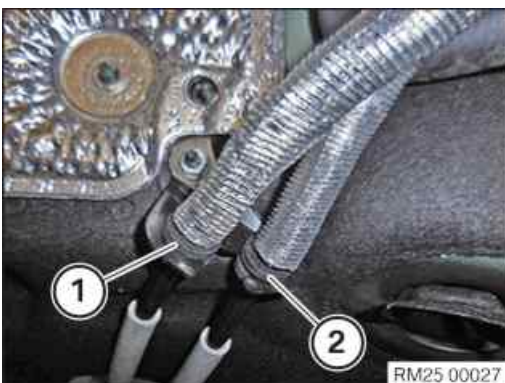
Do not tilt the selector lever cables in the limit position / holder during removal.



Remove heat shield (1).



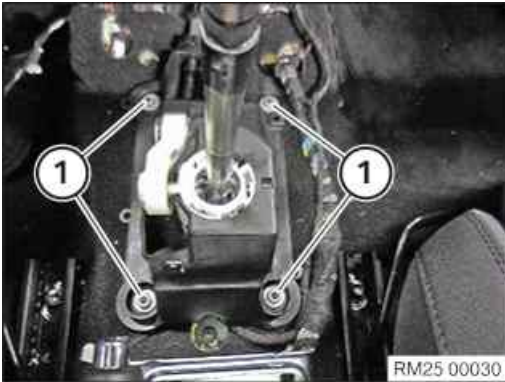
Remove heat shield (1).



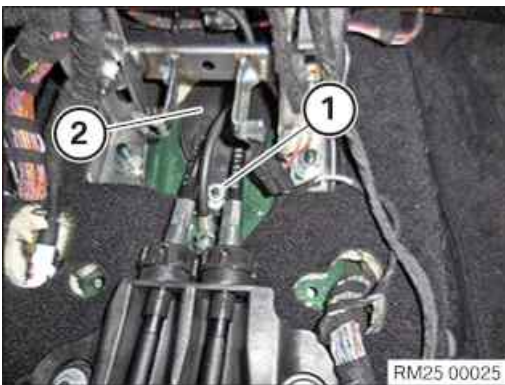
Detach the gear selector cable (1) and (2) on the underbody.



Detach the gear selector cables (1) from the vehicle underbody.

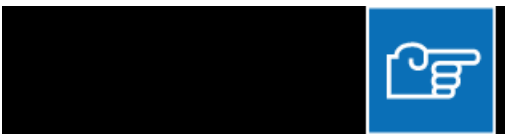


Release nuts (1) and remove the gearshift bracket.

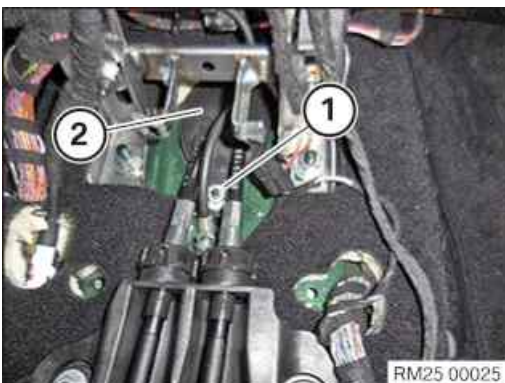


Release the nut (1) and pull out the gear selector cable with the cable grommet (2). **Attention!**

Make sure that the sealing plate with the lower retaining lugs is not damaged when pulling out the tunnel sealing (2).

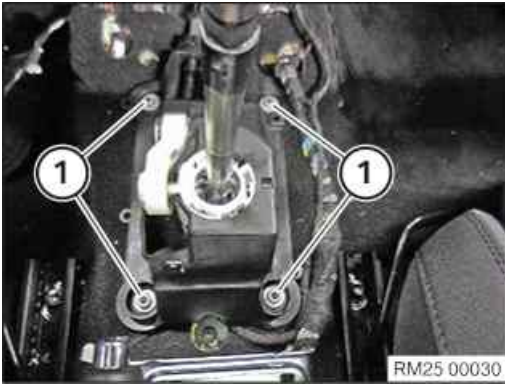


Installation:



Guide the gear selector cables through the opening and tighten the cable grommet (2) with the nut (1).

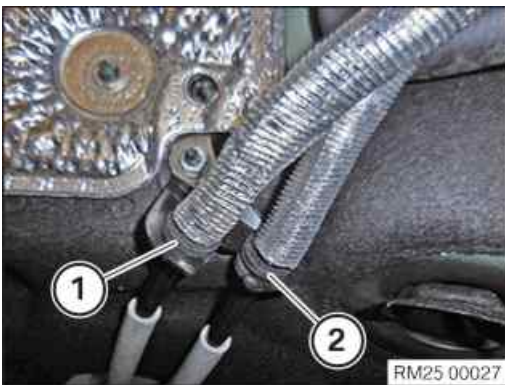
Tightening torque [25 11 1AZ](#).



Install the gearshift bracket and tighten the nuts (1).
Tightening torque [25 11 2AZ](#).



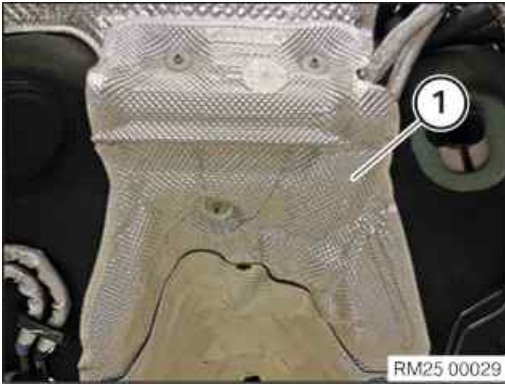
Attach gear selector cable (1) to underbody.



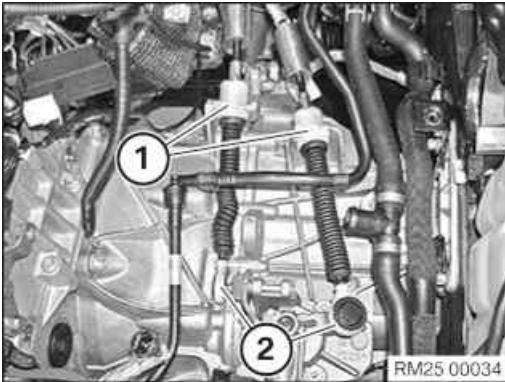
Attach the gear selector cable (1) and gearshift cable (2) on the underbody. *Installation note:*
The gearshift cable (2) is marked with "top" and must run towards the bulkhead holder in direction of the gearshift dome above the gear selector cable (1).



Install heat shield (1).



Install heat shield (1).



Attention!

Check if the clip on the limit position / holder (1) are undamaged.

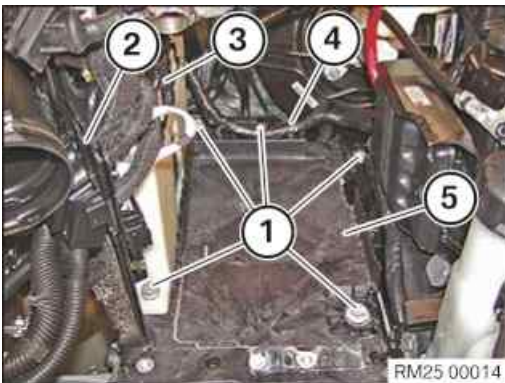
Check if the insert fixtures on the ends of the selector lever cables (2) are undamaged.

Manually insert the clip on the limit position / holder (1), without twisting the selector lever cable.

Attention!

Make sure that the clips audibly lock. Afterwards, manually check for a tight fit.

Press the insert fixtures (2) of the selector lever cables onto the ball joints, without twisting the selector lever cables.



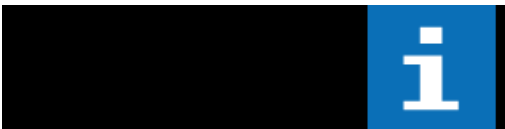
Install battery tray (5).

Tighten down screws (1).

Install wiring harness (4) on battery tray (5).

Insert control unit (3) in bracket.

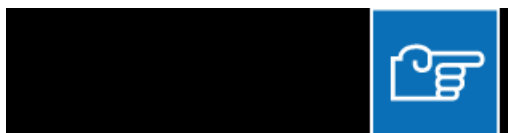
Insert vehicle battery housing (2) in the bracket.



Required follow-up work:

- Install [centre console](#).
- Install [gearshift lever knob](#) with gaiter.
- Install [exhaust system](#).
- Install [vehicle battery](#).

25 11 081 Replacing gearshift lever cover



Removal:



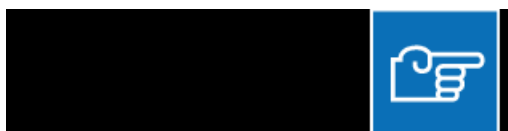
Unclip gaiter (1) and remove in an upward direction.



Important!

- The pull rod must not be bent or damaged!
- Do not twist knob during removal as this would cause the anti-twist lock in the knob to shear off.

Tug firmly in a vertical direction to remove gearshift lever knob.



Installation:



Important!

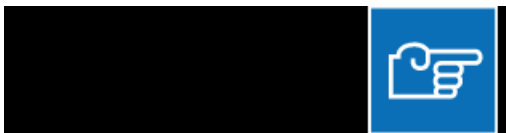
Do not bend the tie rod of the gearshift lever during installation!

Connect gearshift lever knob onto the gearshift lever and align in the direction of travel by gently pressing on it (until the anti-twist lock engages)!

Press the gearshift lever knob with the palm of the hand until it can be felt to engage.

Clip in gaiter.

25 11 071 Replacing gearshift lever knob



Removal:



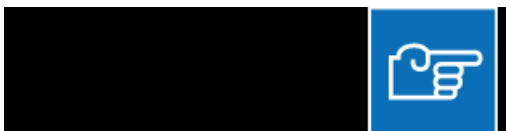
Unclip gaiter (1) and remove in an upward direction.



Important!

- The pull rod must not be bent or damaged!
- Do not twist knob during removal as this would cause the anti-twist lock in the knob to shear off.

Tug firmly in a vertical direction to remove gearshift lever knob.



Installation:



Important!

Do not bend the tie rod of the gearshift lever during installation!

Connect gearshift lever knob onto the gearshift lever and align in the direction of travel by gently pressing on it (until the anti-twist lock engages)!

Press the gearshift lever knob with the palm of the hand until it can be felt to engage.

Clip in gaiter.

61 31 342 Removing and installing gear selector switch

PRELIMINARY WORK

1 – Disconnecting all battery earth leads



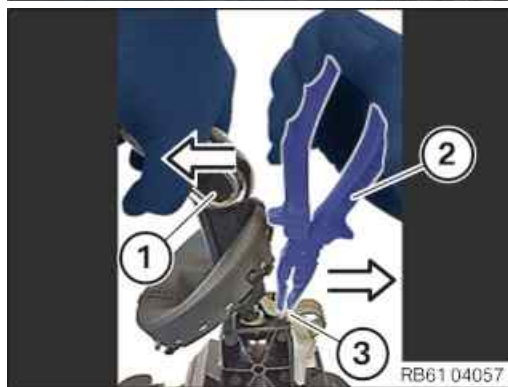
- See additional information.

MAIN WORK

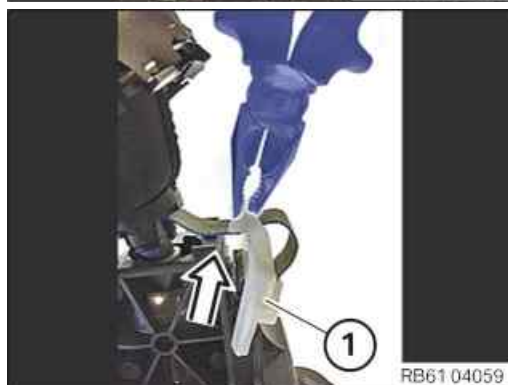
2 – Removing the gear selector switch (GWS)



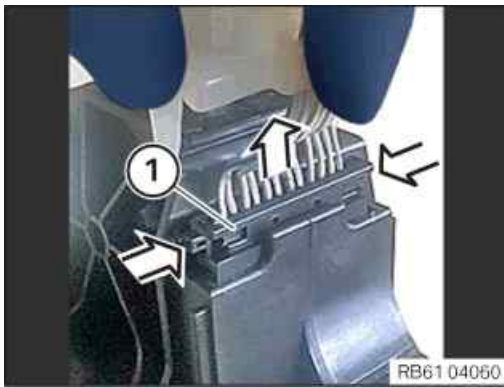
- Lever out the gaiter (1) from all around the trim panel with the special tool **0 496 571 (00 9 327)**.



- Move the gear selector switch (GWS) (1) fully forwards.
- Using pliers (2), grip the plastic guide of the connector (3) at the top. The wiring harness must not be pinched or damaged in the process.
- Release the plastic guide of the connector (3) from of the latch mechanism towards the rear.



- Carefully pull the plastic guide of the connector (1) upwards out of the latch mechanism using gentle back and forth motions. The plastic guide remains on the wiring harness.

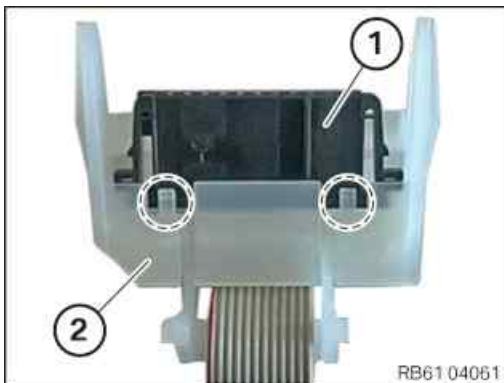


- Unlock plug connection (1) and disconnect.

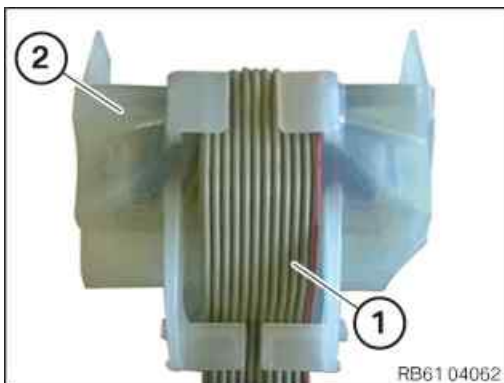


- Pull the gear selector switch (GWS) (1) vertically upwards with a forceful jerk.
- Make sure that the gear selector switch (GWS) (1) does not turn when it is pulled off.

3 – Installing the gear selector switch (GWS)



- Clip the connector (1) into the plastic guide (2).



- Make sure that the wiring harness (1) is correctly installed in the plastic guide (2).



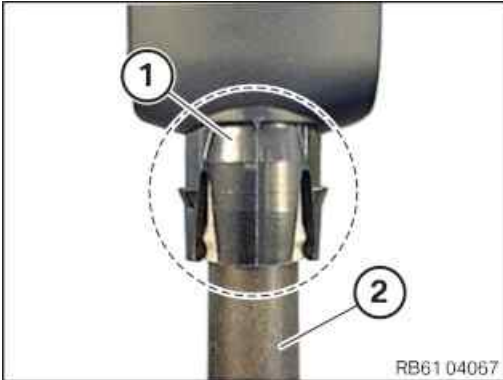
- Put the gear selector switch (GWS) on the gearshift rod.
 - Position the anti-twist lock (mark) by turning it slightly.
- The gear selector switch (GWS) must still not lock with the gearshift rod.



- Connect and lock the connector with the plastic guide (1) with the switching box.



- Push the plastic guide forwards into the upper 2 latch mechanisms. It should be possible to hear the latch mechanisms snap into place.



- Carefully push the gear selector switch (GWS) (1) vertically downwards. The gear selector switch (GWS) must audibly engage at the gearshift rod (2).



- Position the gaiter (1) and clip it in.

4 – Disconnecting all battery earth leads

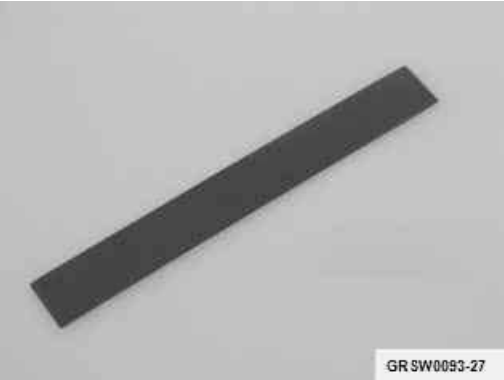


- See additional information.

Additional Information

Overview of Special Tools

0 496 571 (00 9 327) Wedge

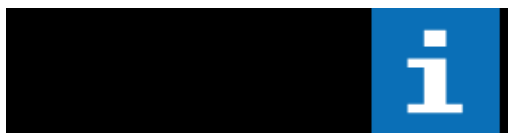


Common		Used in step	2
Usage	(Cleaning wedge) From 11/2008 this special tool replaces panel wedge 00 9 323 (different material)		
Included in the tool or work	0 490 527		
Storage location	Individual		
Replaced by			
In connection with			
SI-Number	01 07 09 (530)		

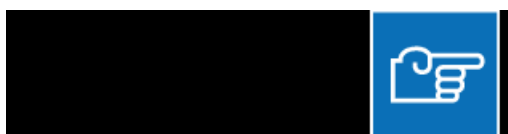
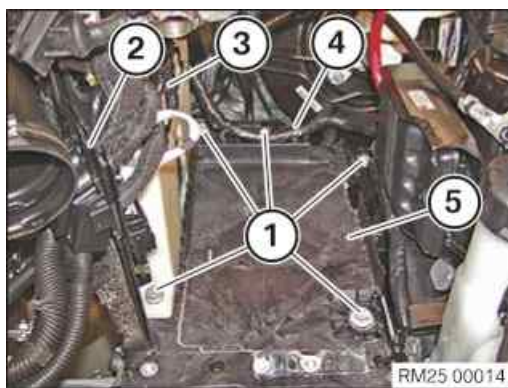
Links

Repair instructions	Used in step
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4

61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4
61 20 900 Disconnect and connect battery earth lead (Plug-in Hybrid Electric Vehicle)	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
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61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting the battery earth lead (all battery earth leads)	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4
61 20 900 Disconnecting and connecting battery earth lead	1 4

**Necessary preliminary work:**

- Move selector lever into "P" position
- Remove [selector](#) lever grip
- Remove [centre console](#).
- Disconnect [battery negative cable](#)
- Remove [battery](#)
- Remove [intake filter housing](#)
- Remove [exhaust system](#)

**Removal:**

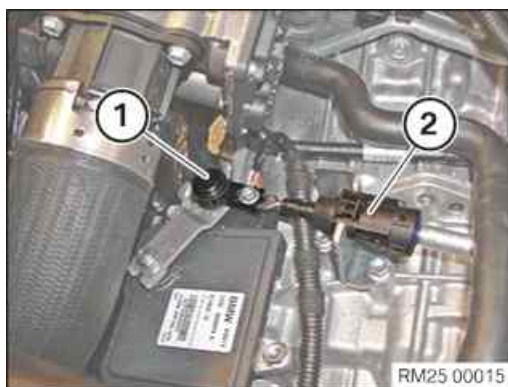
Release screws (1).

Release battery housing (2) from the bracket and remove.

Release control unit (3) from the bracket.

Detach wiring harness (4) from battery tray (5).

Remove battery tray (5).

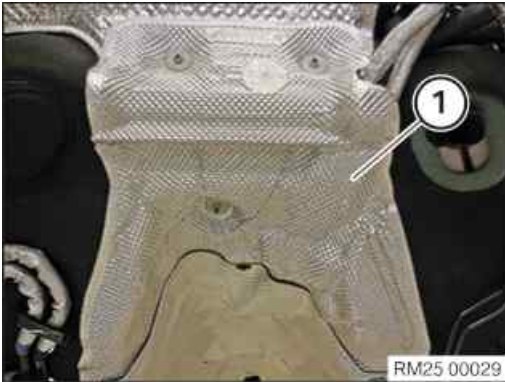


Release ball socket (1) from ball stud.

Release cable (2) from support angle.



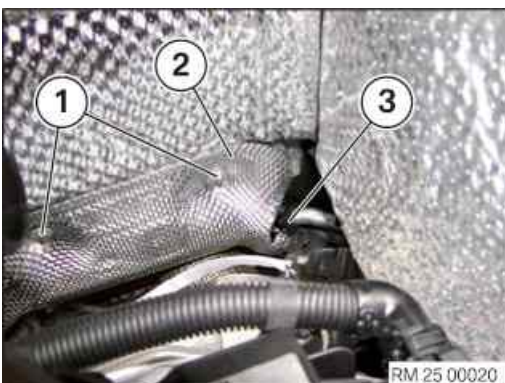
Remove intake hose (1).



Remove heat shield (1).



Remove heat shield (1).



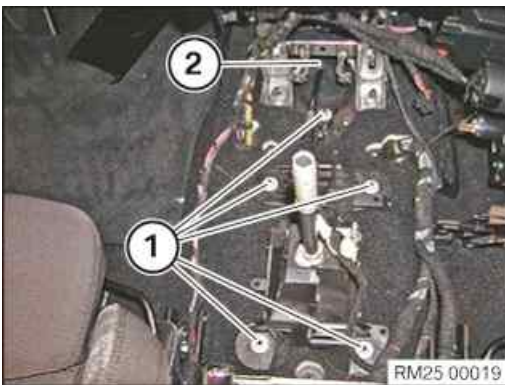
Unscrew nuts (1).
Release heat shield (2) from bulkhead.
Release cable (3) from bracket.



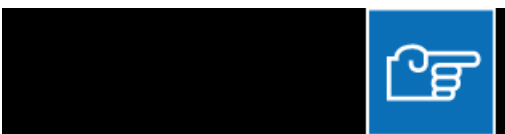
Release cable (1) from bracket.
Feed out cable downwards.



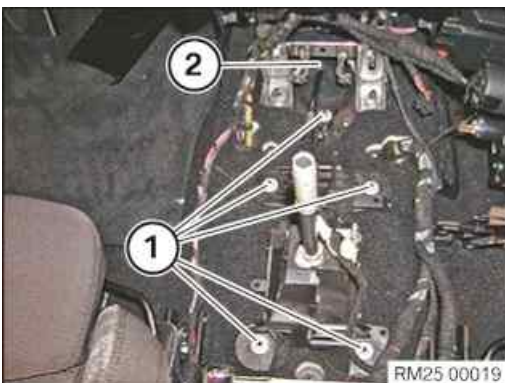
Unlock and disconnect plugs (1).
Release cable on left and right of gearshift bracket.



Unscrew nuts (1).
Pull cable duct (2) with gearshift bracket out of vehicle underbody.



Installation:



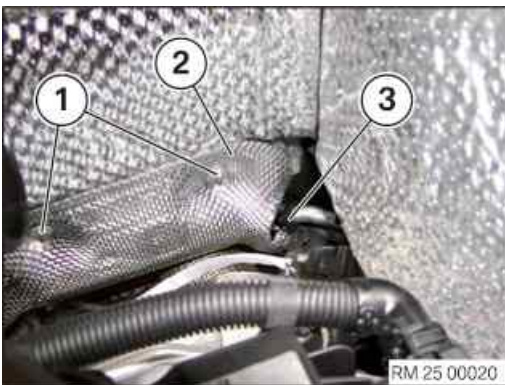
Slide cable duct (2) through vehicle underbody.
Screw nuts (1).
Tightening torque [25 16 1AZ](#).



Install and lock connector (1).
Secure cable on left and right of gearshift bracket.



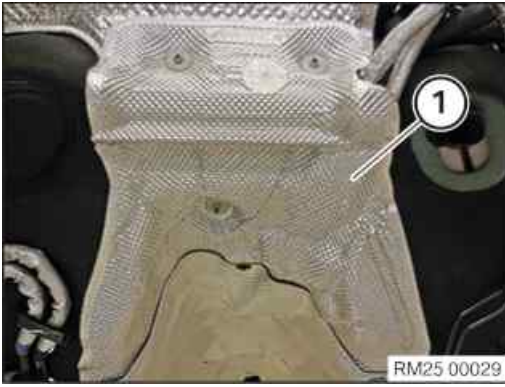
Slide cable on bulkhead upwards.
Secure cable (1) in bracket.



Secure cable (3) in bracket.
Secure heat shield with nuts (1) to bulkhead (2).



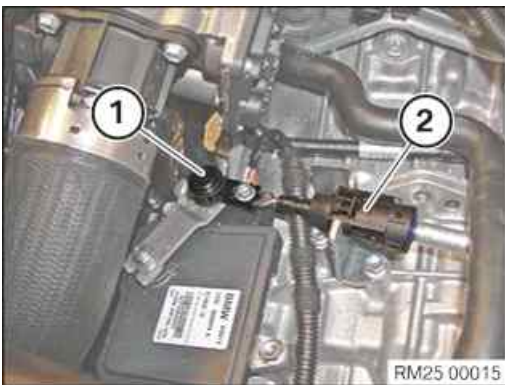
Install heat shield (1).



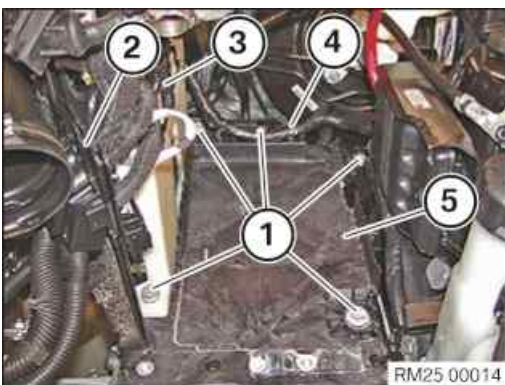
Install heat shield (1).



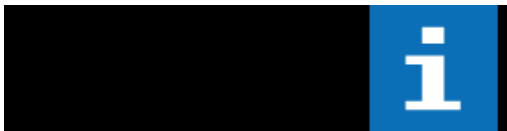
Install air intake hose (1).



Press in cable (2) into support angle.
Ensure cable counter support audibly engages.
Press on ball socket (1) onto ball stud.



Install battery tray (5).
Tighten screws (1).
Tightening torque [12 90 1AZ](#).
Install wiring harness (4) on the battery tray (5).
Insert control unit (3) into the bracket.
Insert battery housing (2) into the bracket.



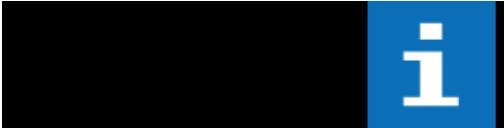
Required follow-up work:

- Install [exhaust system](#)
- Install [centre console](#)
- Install [selector lever grip](#)
- Adjust [selector lever](#)
- Install [intake silencer housing](#)
- Install [battery](#)
- Connect [battery earth lead](#)

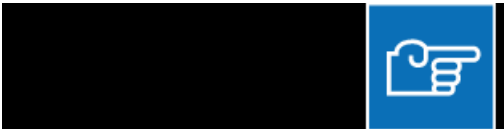
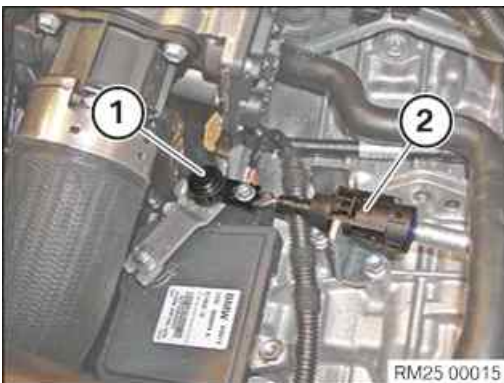


Caution!

An incorrectly adjusted gearshift mechanism can result in tooth meshing noise being transmitted to the passenger compartment.

**Necessary preliminary work:**

- Move selector lever into "P" position
- Remove [selector lever grip](#)
- Remove [centre console](#).
- Disconnect [battery negative cable](#)
- Remove [intake filter housing](#)
- Remove [exhaust system](#)

**Removal:**

Release ball socket (1) from ball stud.
Release cable (2) from support angle.



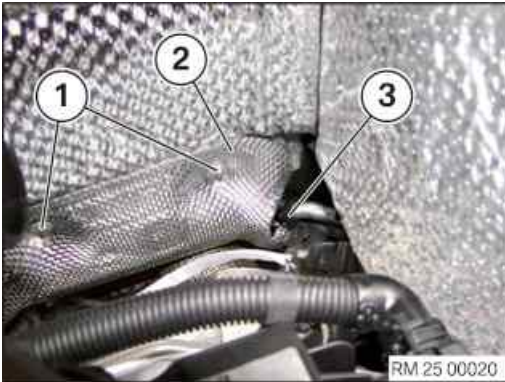
Remove intake hose (1).



Remove heat shield (1).



Remove heat shield (1).



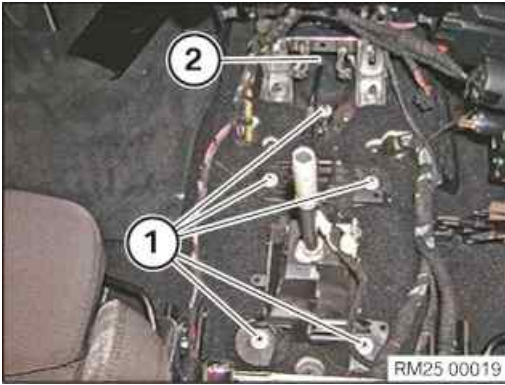
Unscrew nuts (1).
Release heat shield (2) from bulkhead.
Release cable (3) from bracket.



Release cable (1) from bracket.
Feed out cable downwards.

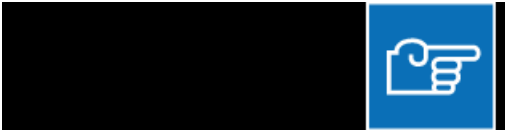


Unlock and disconnect plugs (1).
Release cable on left and right of gearshift bracket.

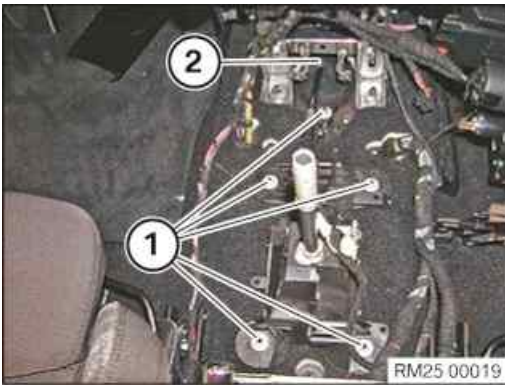


Unscrew nuts (1).

Pull cable duct (2) with gearshift bracket out of vehicle underbody.



Installation:



Slide cable duct (2) through vehicle underbody.

Screw nuts (1).

Tightening torque [25 16 1AZ](#).



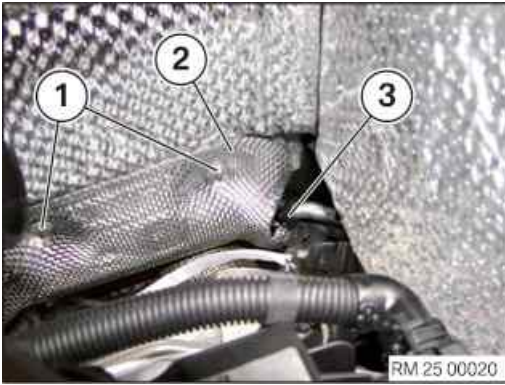
Install and lock connector (1).

Secure cable on left and right of gearshift bracket.



Slide cable on bulkhead upwards.

Secure cable (1) in bracket.



Secure cable (3) in bracket.
Secure heat shield with nuts (1) to bulkhead (2).



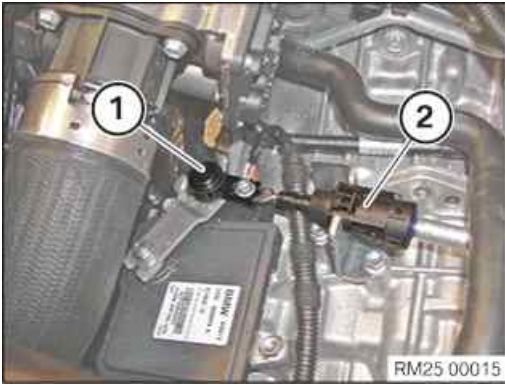
Install heat shield (1).



Install heat shield (1).



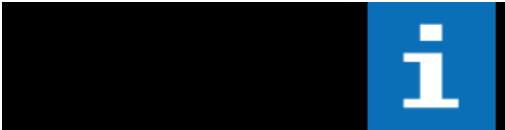
Install air intake hose (1).



Press in cable (2) into support angle.

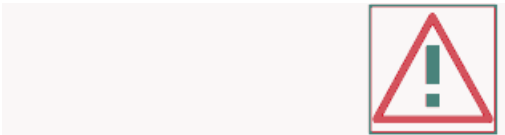
Ensure cable counter support audibly engages.

Press on ball socket (1) onto ball stud.



Required follow-up work:

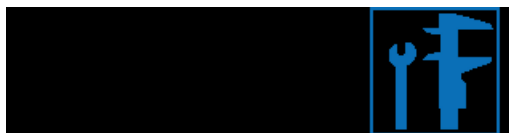
- Install [exhaust system](#)
- Install [centre console](#)
- Install [selector lever grip](#)
- Adjust [selector lever](#)
- Install [intake silencer housing](#)
- Connect [battery earth lead](#)



Attention!

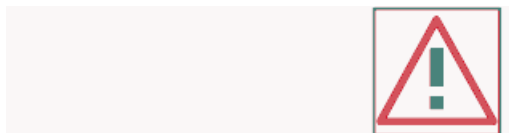
An incorrectly adjusted gearshift mechanism can result in tooth meshing noise being transmitted to the passenger compartment.

24 11 041 Removing and installing/replacing transmission oil cooler (AISIN F21FT/F22AW)



Special tools required:

- [16 1 070](#)



Important!

After completion of work, check [gearbox oil level](#).

Use only the approved [transmission oil](#).

Failure to comply with this requirement will result in serious damage to the automatic transmission!

Important!

No dirt is allowed to enter the oil circuit.

Failure to comply with this requirement will result in serious damage to the automatic transmission!



Necessary preliminary tasks:

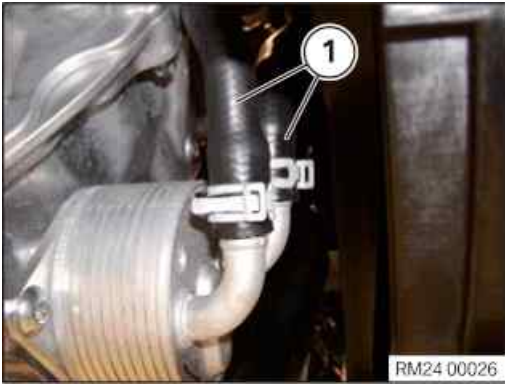
- Remove front [underbody protection](#).
- Remove [intake silencer housing](#).
- Drain off [transmission oil](#).



Removal:



Unscrew sealing cap (1) on coolant expansion tank.



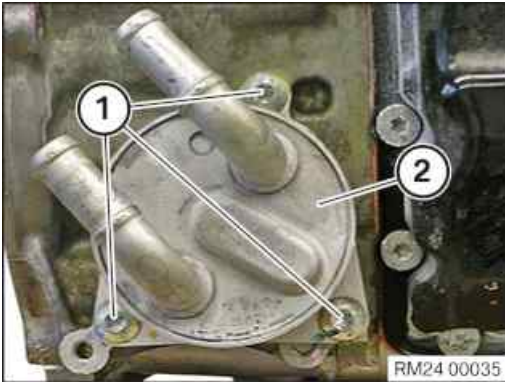
Important!

[Follow notes for carrying out repair work on the cooling system.](#)

Unfasten hose clamps.

Disconnect the coolant hoses (1) from the transmission oil cooler.

Catch the emerging coolant.



Release screw (1).

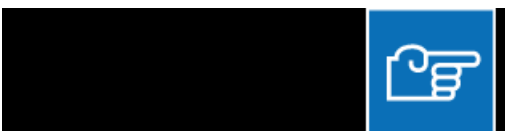
Remove transmission oil cooler (2).



Shut the openings on the transmission oil cooler using special tool [16 1 070](#).



Shut the openings on the transmission using special tool [16 1 070](#).



Installation:



Remove the special tool [16 1 070](#) from the openings in the transmission.



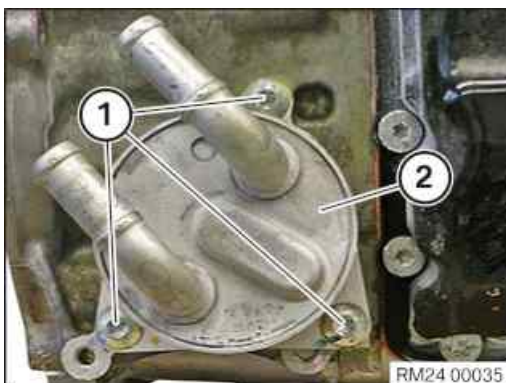
Remove special tool [16 1 070](#) from the openings on the transmission oil cooler.



Parts: Replace sealing rings (1).

Clean contact surfaces.

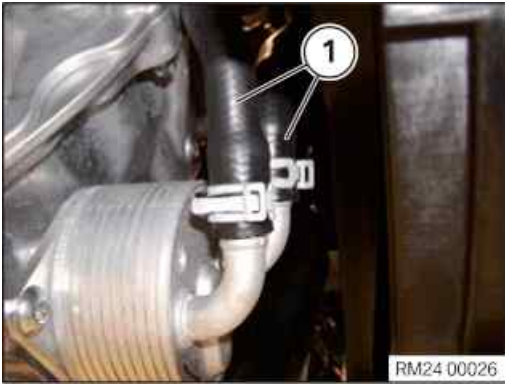
Coat sealing rings (1) with clean transmission oil.



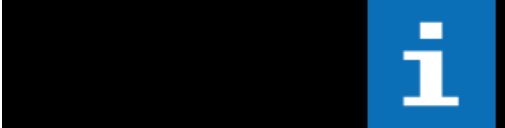
Install the transmission oil cooler (2).

Tighten screw (1).

Tightening torque [24 11 4AZ](#).

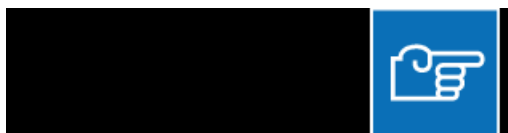


Slide the coolant hoses (1) onto the transmission oil cooler.
Secure hose clamps.



Required follow-up work:

- Top up [coolant](#).
- Add [transmission fluid](#).
- Install [intake filter housing](#)
- Install front [underbody protection](#).
- Carry out vehicle test

**Removal:**

Pull gaiter (1) towards the top.



Unlock connector (1).

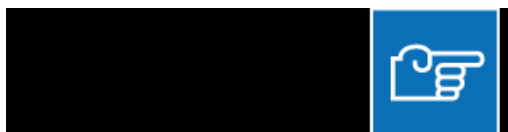
**Important!**

- The pull rod must not be bent or damaged!
- Do not twist knob during removal as this would cause the anti-twist lock in the knob to shear off.

Bring the selector lever into driving position "N"

Operate and hold down the UNLOCK button.

Tug firmly in a vertical direction to remove selector lever knob upwards.

**Installation:**



Lock connector (1).



Important!

Do not bend the tie rod of the selector lever during installation!

Connect the selector lever knob to the gearshift lever, and align in direction of travel by slightly pressing (until the anti-twist lock catches)!

Press the selector lever knob with the palm of the hand until it can be felt to engage.

Clip in gaiter.

Important!

- After the installation the UNLOCK button must easily and completely rebound into its original position!

- **Safety related check:**

If the selector lever can be moved into the "R" position **without operation** of the UNLOCK button, the selector lever is not correctly locked!



Note:

Troubleshooting with BMW diagnosis system.



Note:

Troubleshooting with BMW diagnosis system.