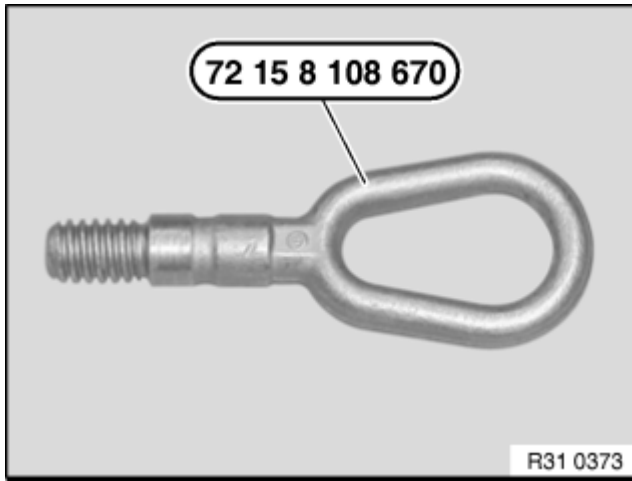


**Special tools required:**

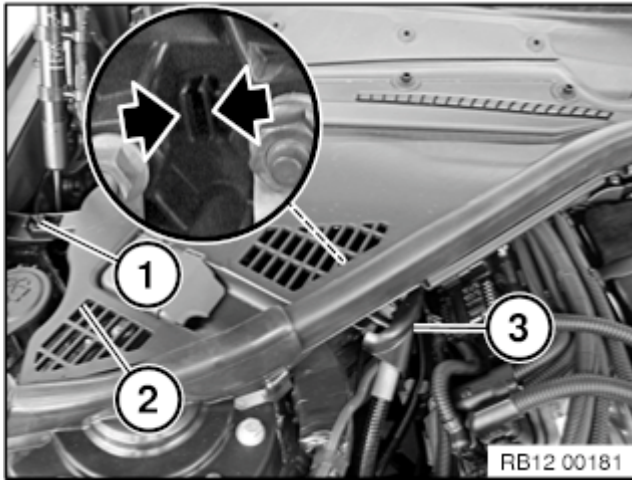
- [11 0 000](#)
- [11 7 310](#)
- [11 8 680](#)
- [13 5 281](#)
- [13 5 282](#)

***Necessary preliminary tasks:***

- Disconnect [negative battery lead](#).
- Move [engine compartment lid](#) into service position.
- Remove [intake plenum](#).
- Remove cowl panel [cover](#).
- Remove [clean air pipe](#).
- [Remove left charge air duct](#).
- Remove right [charge-air duct](#).
- Remove [expansion tank](#).
- Remove [thermostat](#).
- Remove rear [ignition coil cover](#).
- Remove [air conditioning compressor](#).
- Remove the [catalytic converter](#).
- Remove [transmission](#).
- Remove front output shaft (all-wheel drive vehicles only).
- Remove [radiator](#).
- Detach all coolant hoses from engine.
- Detach vacuum line from brake booster.

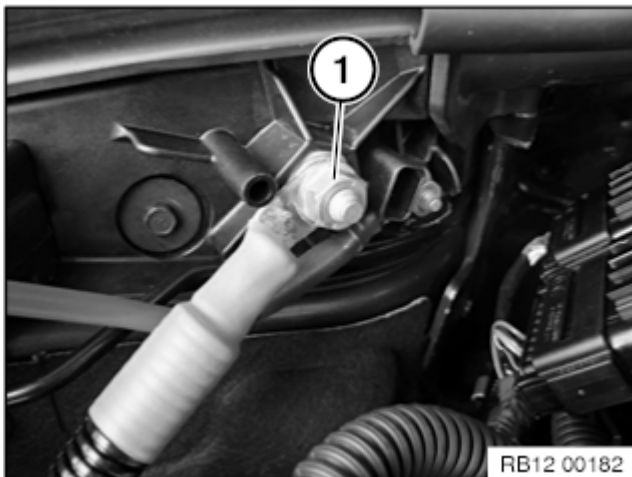


To remove or install the engine, the towing hook 72 15 8 108 670 is required.



Pull off rubber mount (1) and slightly raise service cover (2) until lock of cover (3) is accessible.

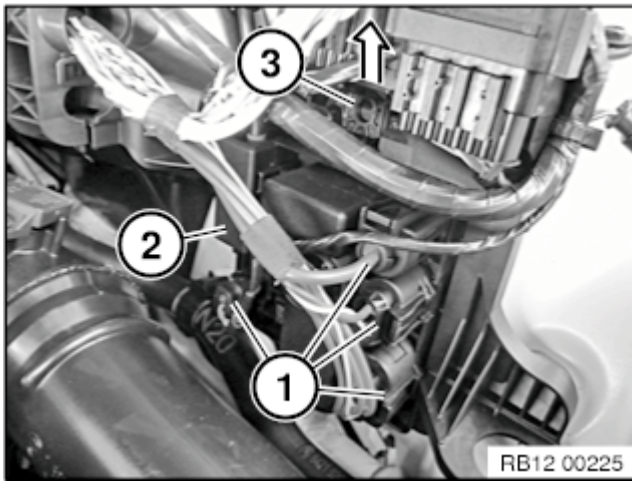
Unlock lock and remove cover (3).



Slacken nut (1).

Tightening torque [12 42 3AZ](#).

Remove positive battery cable from positive battery connection point.



Unlock and pull off all connectors (1) from power distribution module.

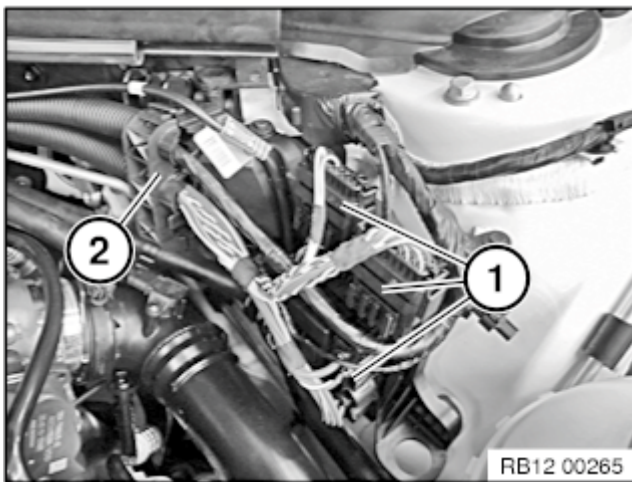
Remove cover (2).

Release nut beneath it and set positive battery cable aside.

Tightening torque [12 52 7AZ](#).

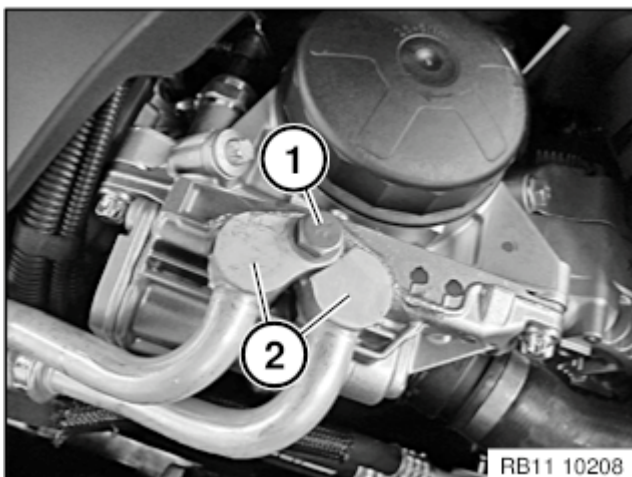
Release lock (3) in direction of arrow.

Feed out and remove power distribution module.



Unlock and pull off the connector (1) from the power distribution module and cable holders.

Release the clamp (2) and expose the wiring harnesses.



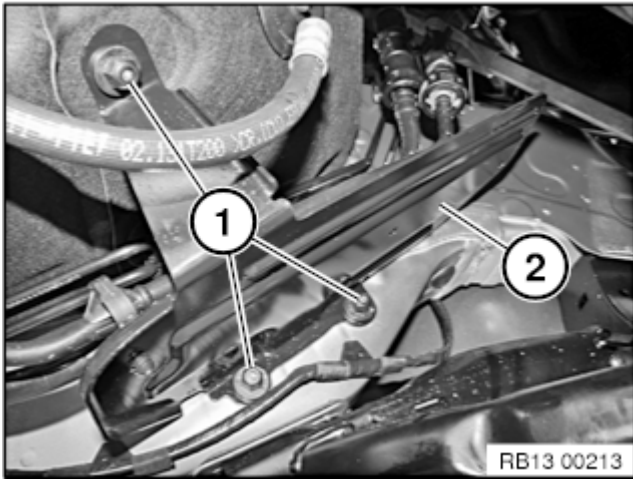
*Note:*

Hot-climate version

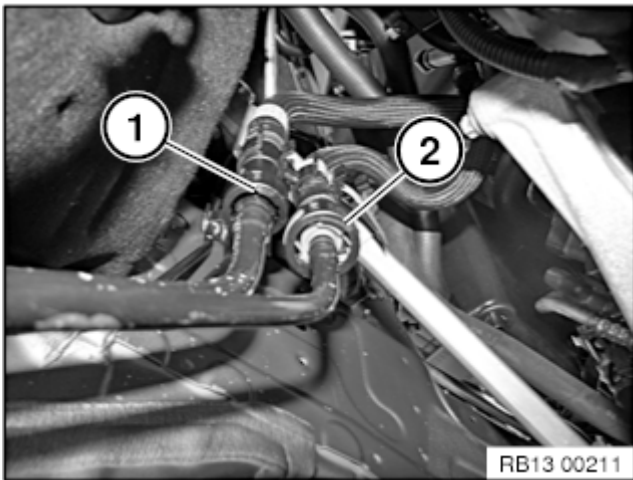
Loosen screw (1).

Remove oil pipes (2) from oil filter unit.

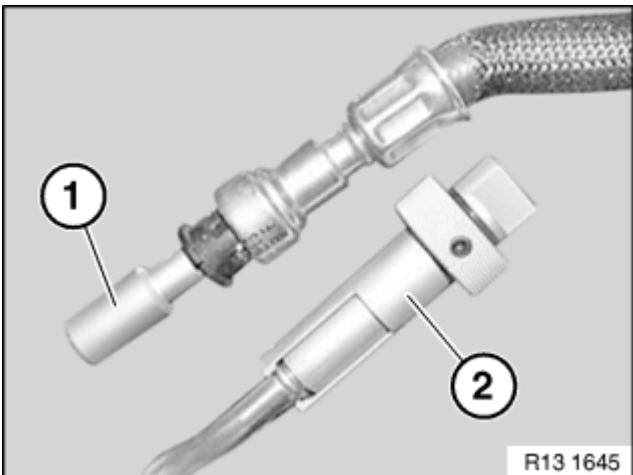
Release oil lines on cylinder head cover.



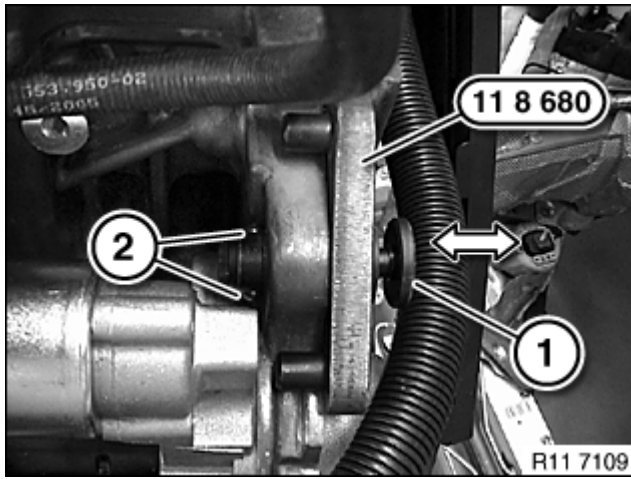
Unscrew nuts (1).  
Remove power protective plate (2).  
Release fuel lines from protective plate.



Unlock and disconnect fuel tank ventilation line (1).  
Unlock and disconnect fuel delivery line (2).



Close off fuel line (3) with special tool [13 5 281](#) .  
Close off fuel line (2) with special tool [13 5 282](#) .



Installation of special tool [11 8 680](#) on rear lifting eye (transmission side).

Position special tool [11 8 680](#) in the lifting eye with ball lock pin (1) pressed.

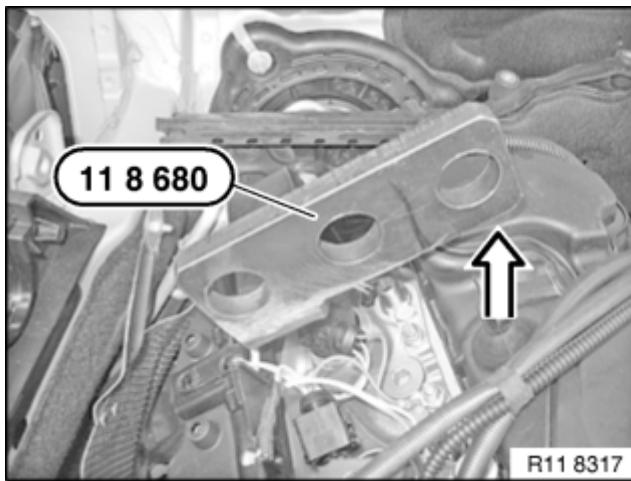
Pull ball lock pin (1) toward the rear until both balls (2) are pushed outward.

*Installation note:*

Checking the correct installation of special tool [11 8 680](#) .

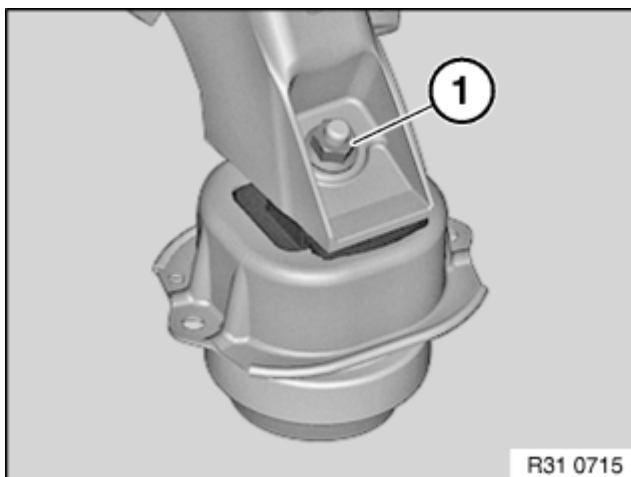
There must be a 6.5 mm gap between ball lock pin (1) and ball lock pin housing.

The gap dimension can be checked using a 6.5 mm drill.



Attach special tool [11 0 000](#) to engine crane.

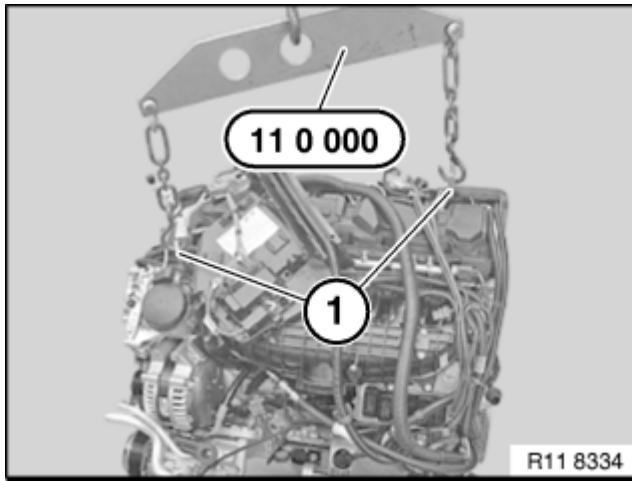
Suspend special tool [11 0 000](#) from the designated mounting eyelets of special tool [11 8 680](#) only (see arrow).



Release nut (1) on engine mount on left and right. *Installation note:*

Replace self-locking nuts.

Tightening torque [22 11 2AZ](#).



Screw towing eye into cylinder head.

Tightening torque [11 12 5AZ](#).

Suspend special tool [11 0 000](#) from the designated mounting eyelets (1) only.

Lift engine out with engine crane.



Assemble engine.

Check function of DME.

**Special tools required:**

- [23 4 050](#)
- [2 219 012](#)
- [21 2 240](#)

**Attention!**

To prevent heavy damage to the engine block, the protruding thread of the transmission bolts absolutely must be checked for damage and corrosion **before removal**.

If there are signs of corrosion, the rust must be removed and the threads must be cleaned **before removal**.

Replace rusted, damaged screws.

Failure to comply with this instruction will result in serious damage to the engine block and transmission.

**Attention!**

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

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

Failure to comply with this requirement will result in serious damage to the manual gearbox.



### Necessary preliminary tasks:

- Remove underbody protection at front and rear.
- Remove [stiffening plate](#)
- Remove complete [exhaust system](#).
- Partially remove [propeller shaft](#).
  - Disconnect propeller shaft at transmission.
  - Release centre mount.
  - Tie up the propeller shaft to the vehicle underbody.

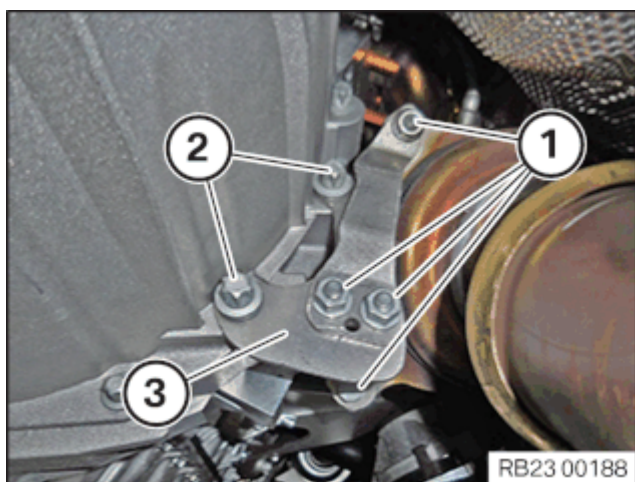
#### **Note:**

Bending the propeller shaft by an excessive angle can cause premature damage to the joint/propeller shaft!

- Support engine with lifter when removing transmission.



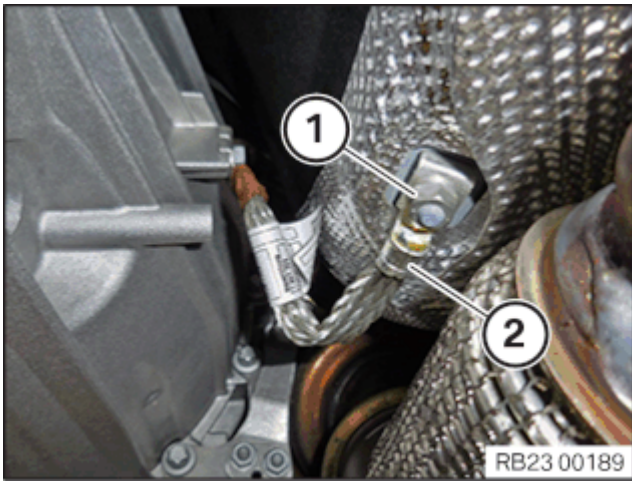
### Removal:



Release screw and nuts (1).

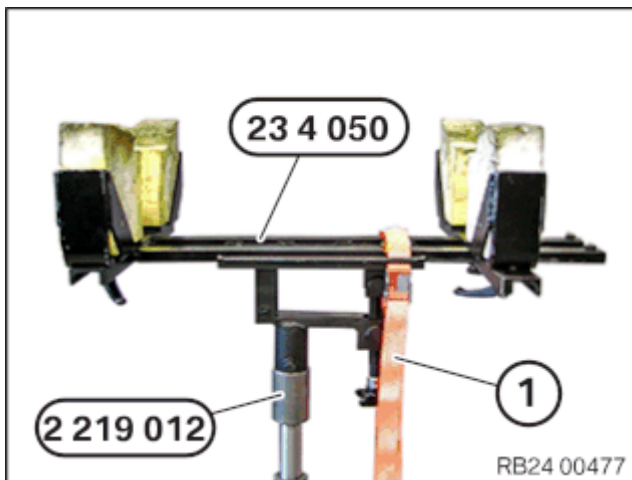
Loosen screws (2).

Remove the holder (3).



Slacken nut (1).

Release ground cable (2) from body.

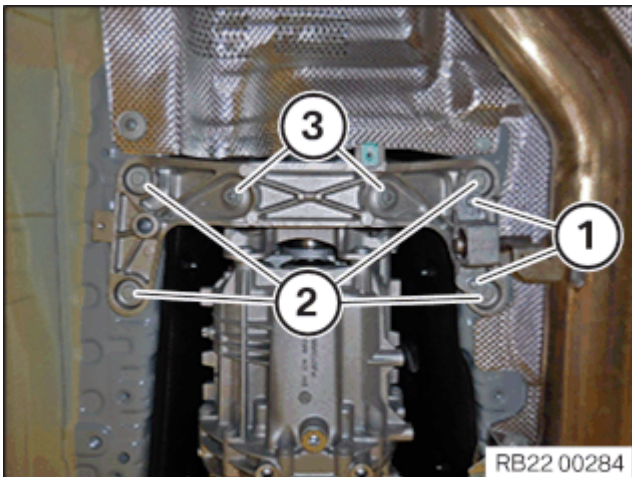


### Supporting transmission:

Support transmission with special tools [23 4 050](#) , [2 219 012](#) .

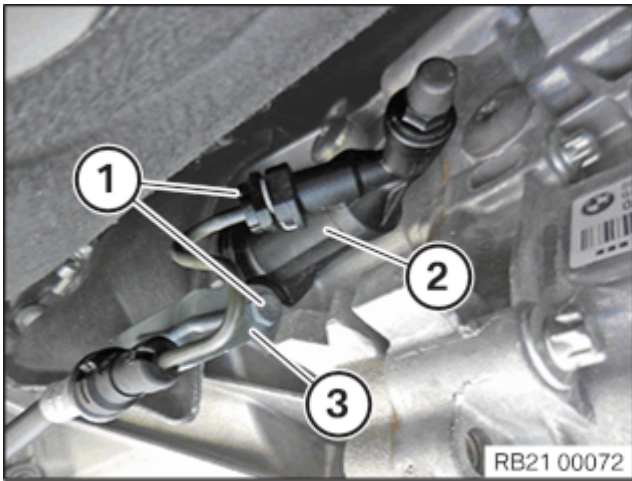
Secure transmission to mounting with tensioning strap (1).

Tasks are described in [Gearbox holder](#).



Loosen screws (1).

Loosen screws (2).

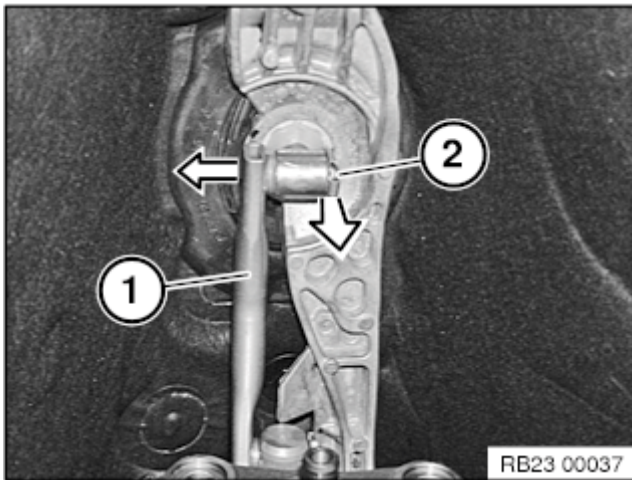


*Note:*  
Pressure line of clutch slave cylinder remains connected.

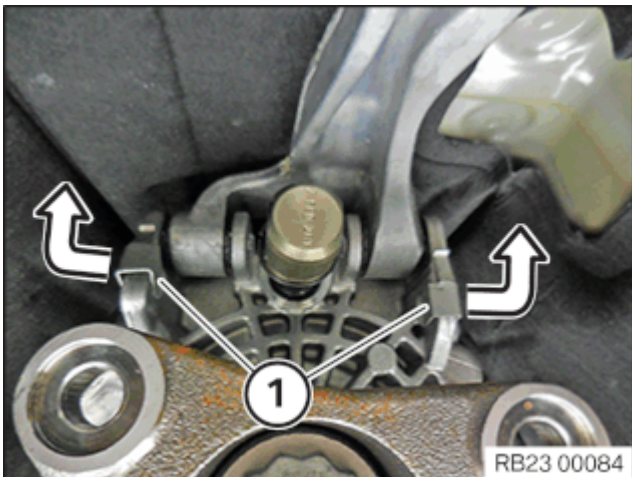
**Attention!**

Relieve tension on clutch slave cylinder slowly; otherwise air will be drawn in through sealing cup.

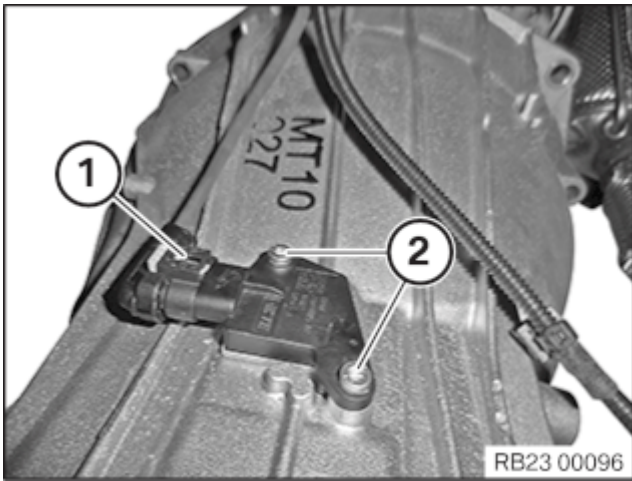
Remove bolts (1) and remove clutch slave cylinder (2) with holder (3).



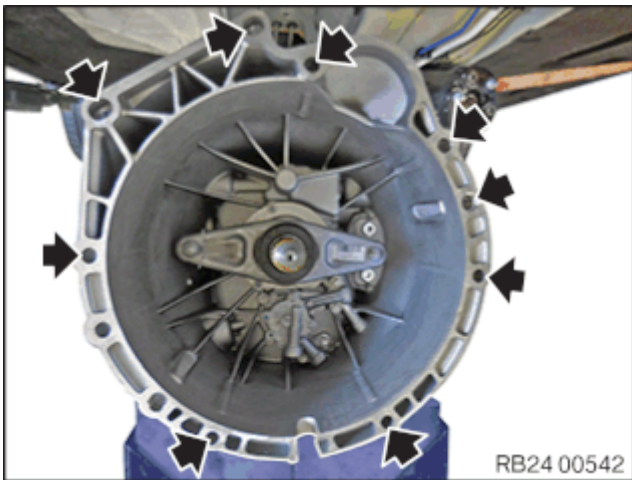
Remove retainer (2).  
Detach gearshift rod (1).



Unlock bearing journal (1) in direction of arrow and remove.  
Lift out gearshift arm.



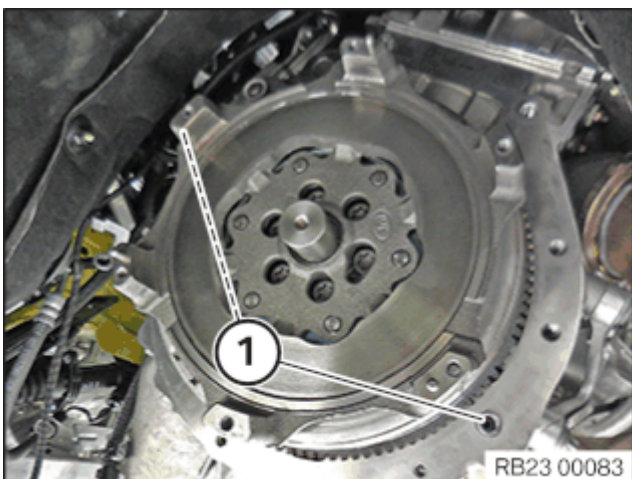
Disconnect plug connection (1) of gear sensor.



Release remaining screws. **Attention!**  
Do not allow transmission to hang on transmission input shaft when removing, as the clutch disc will be deformed. Pull transmission downwards and remove.

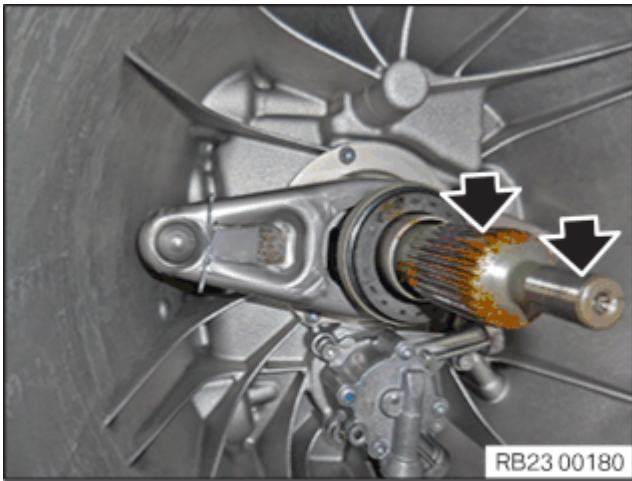


**Installation:**



*Installation note:*  
Check that fitting sleeves (1) are correctly seated.

Replace damaged fitting sleeves (1).

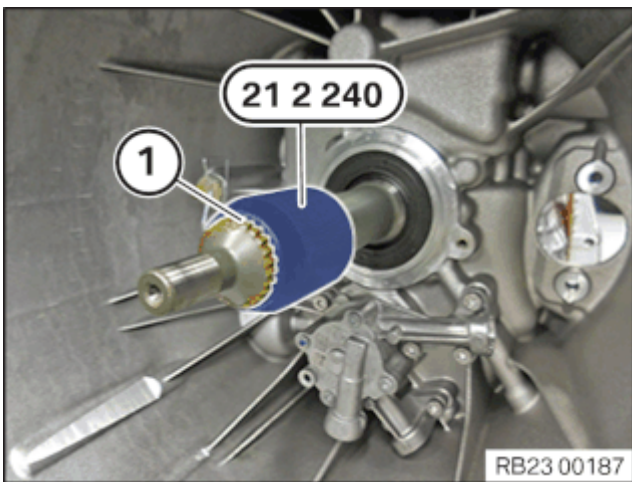


*Installation note:*

Check lubrication of transmission input shaft for sticky consistency. If the grease is sticky, clean drive shaft and check to make sure the clutch disc is free of grease, [replace clutch disc](#) if necessary.

Check clutch disc for frictional corrosion in gearing and [replace if necessary](#).

Remove any grease and lining abrasion from gearing of clutch disc by mechanical means (with a cloth).



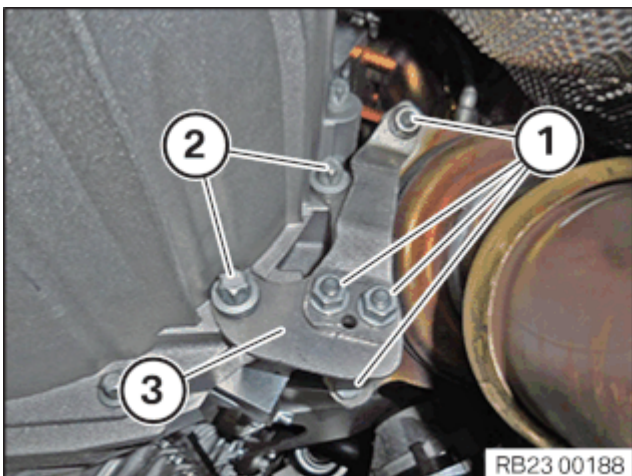
*Installation note:*

Greasing specification:

- Remove and clean [release bearing and release lever](#).
- Push on grease scraper ring [21 2 240](#) to the limit position.
- Grease gearing (1) of input shaft with a brush.

Grease, [refer to BMW Service Operating Fluids](#).

- Detach grease scraper ring.
- [Install release lever and release bearing](#).

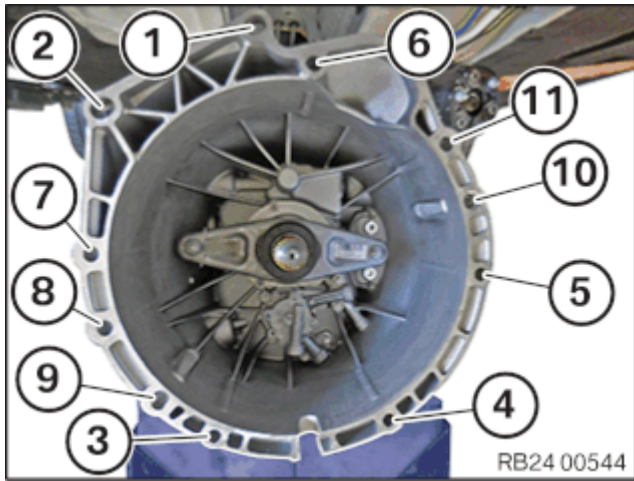


Install the holder (3).

Tighten nuts and screw (1).

Tightening torque [18 20 1AZ](#).

Lightly tighten the screws (2) on the transmission.



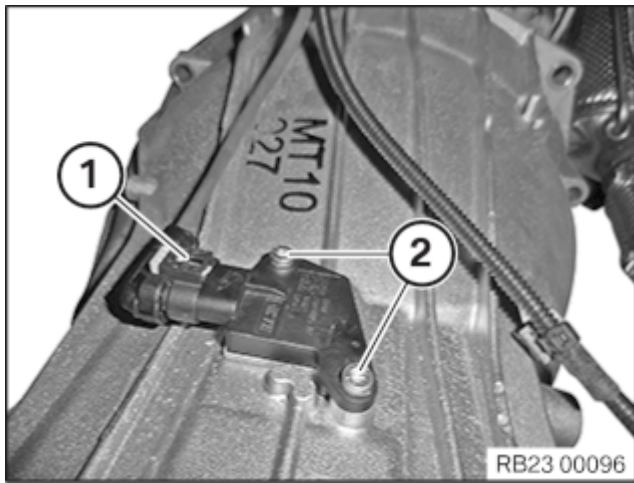
Lightly tighten the remaining screws on the transmission.

Tighten the screws in the specified screwing sequence.

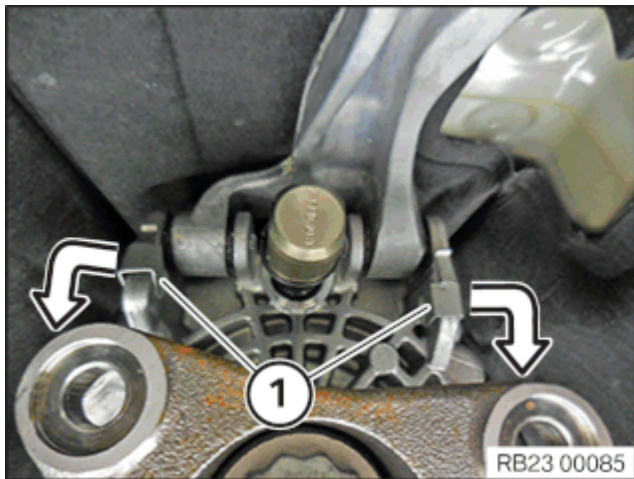
Tightening torque [23 00 1AZ](#).

**Attention!**

Do not allow transmission to hang on transmission input shaft when installing, as the clutch disc will be deformed.



Insert and engage plug connection (1) of gear sensor.



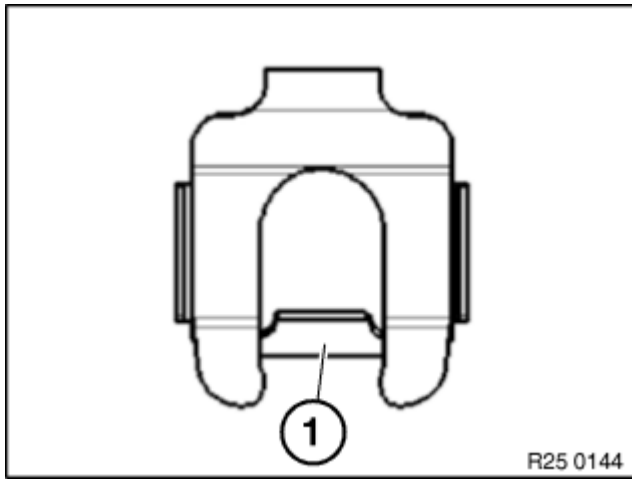
Insert gearshift arm from top.

Install bearing journals (1) and lock in direction of arrow.

*Installation note:*

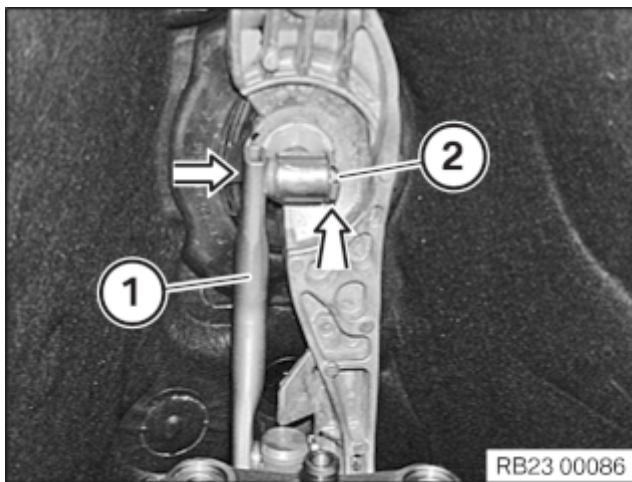
Grease bearing journals (1).

Grease, refer to [BMW Service Operating Fluids](#).



**Attention!**

Retaining clip must interlock captively with retaining web (1) **behind** the gearshift rod pin.



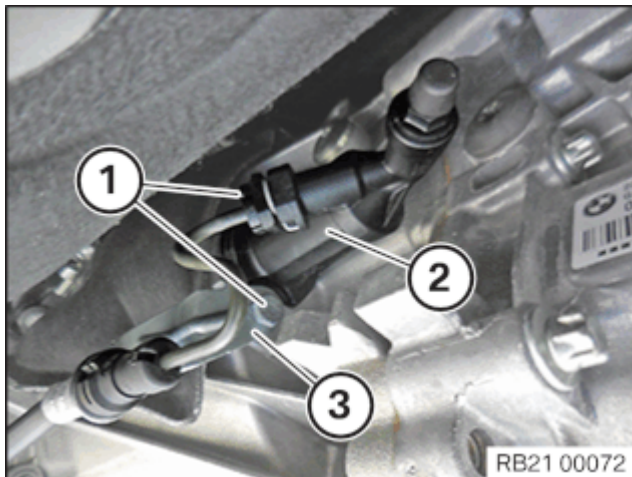
Attach gearshift rod (1).

Insert fuse (2).

*Installation note:*

Grease gearshift rod.

Grease, refer to [BMW Service Operating Fluids](#).

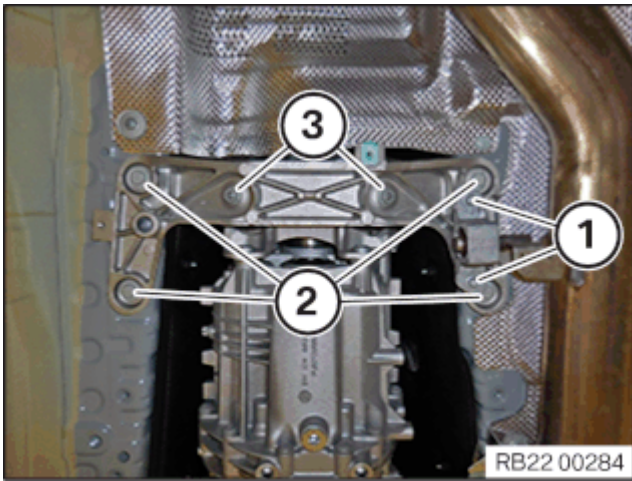


**Part:** Renew screws.

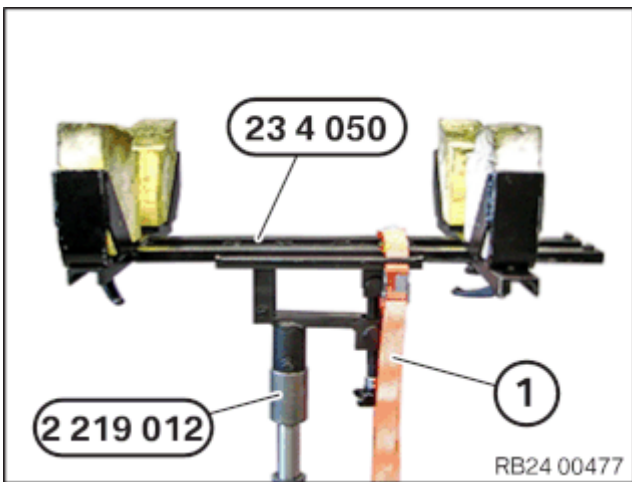
Install clutch slave cylinder (2) with holder (3).

Tighten down screws (1).

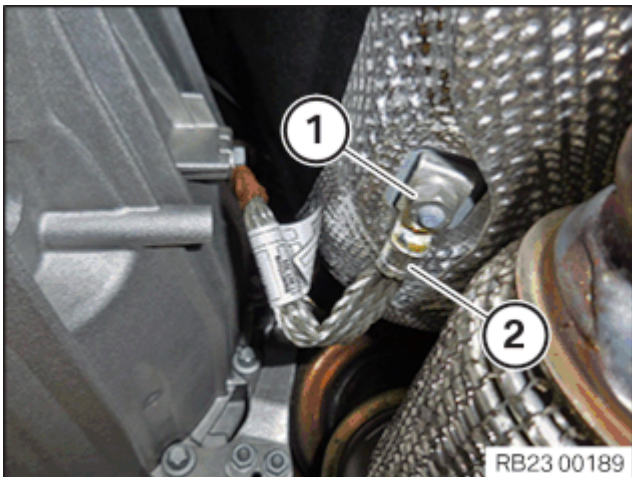
Tightening torque [21 52 1AZ](#).



Tighten down screws (2).  
Tightening torque [22 32 3AZ](#).  
Tighten down screws (3).  
Tightening torque [22 32 2AZ](#).  
Tighten down screws (1).  
Tightening torque [18 20 2AZ](#).



Remove transmission jack.



Attach ground cable (2) to body.  
Tighten nut (1).  
Tightening torque [23 11 8AZ](#).



#### Required follow-up work:

- Support engine with jack when installing transmission
- Install [propeller shaft](#).
- Completely install the [exhaust system](#).
- Install [stiffening plate](#).
- Install [front and rear underbody protection](#).