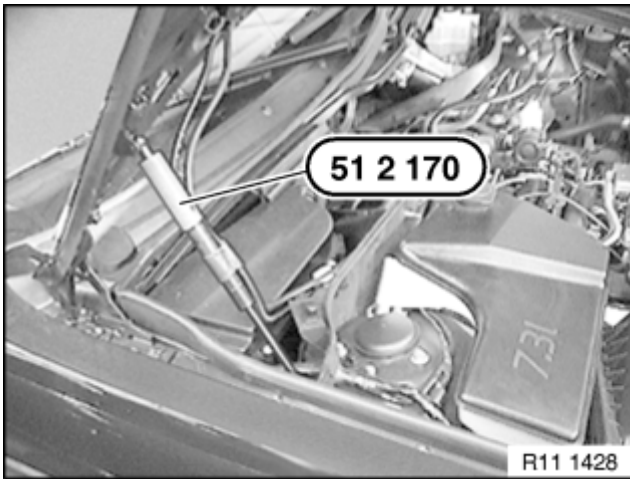


**Special tools required:**

- [11 0 020](#)
- [51 2 170](#)

[Instructions for disconnecting and connecting battery.](#)

Disconnect negative battery lead.



Moving engine hood into assembly position:

**Note:**

The following work must be carried out with a second person assisting. Work instruction applies to left and right sides.

Raise locking clips slightly and at same time push upwards.

Hold engine hood, disconnect dampers on hood.

Open engine hood fully and reattach dampers with special tool [51 2 170](#) to hood.

[Remove radiator.](#)

Detach water hoses.

**Installation:**

[Refer to general instructions for work on cooling system.](#)

[Remove intake air manifold.](#)

Detach engine wiring harness at electronics box and lay to one side.

(Refer also to [Replacing wiring harness section for engine.](#))

Remove vane pump for power steering and tie to one side.

**Note:**

Lines remain connected.

Detach vacuum reservoir from body.

*Note:*

Lines remain connected.

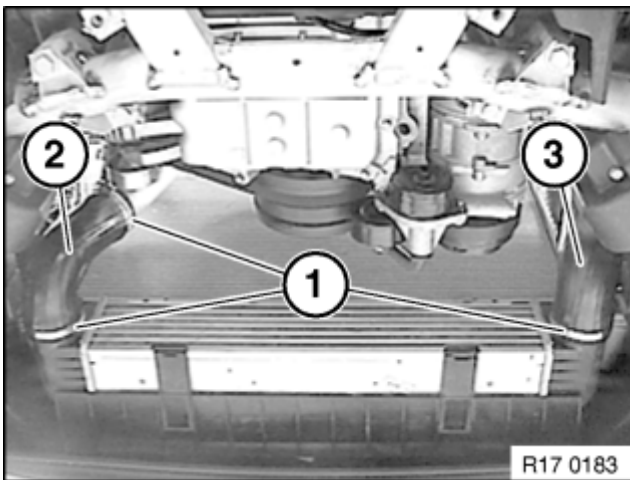
Detach fuel line from H.P. pump.

Detach vacuum line from brake booster.

Remove underbody paneling.

Remove underhood shields.

Remove engine underguard at front.



Release hose clamps (1).

[Tightening torque, 11 65 10AZ.](#)

Detach complete charge air hoses (2 and 3) complete with charge air tubes.

**Caution!**

Fit charge air hoses without grease and dry.



[Remove transmission.](#)

(Refer to: Removing automatic transmission/Removing reinforcement plate).

**Caution!**

The section "Removing and installing reinforcement plate" contains important installation instructions.

[Remove output shafts.](#)

[Remove alternator drive belt.](#)

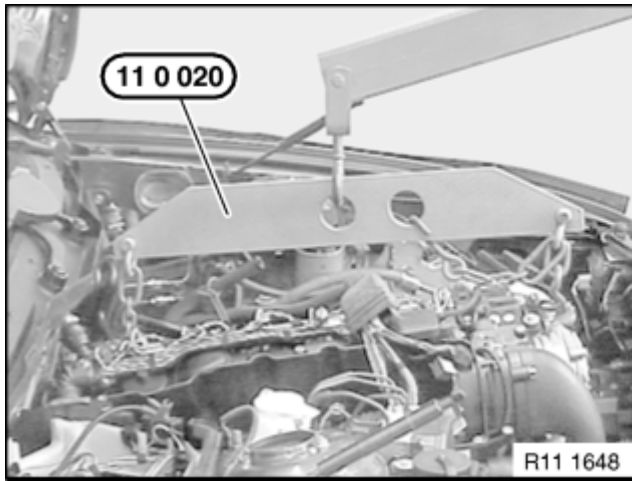
Remove A/C compressor from bearing block and tie to one side.

**Note:**

Lines remain connected.

Detach vacuum line on engine mount.

Detach grounding strap from engine.



Suspend special tool [11 0 020](#) from hoisting crane.

Hang chains at same length and attach to designated engine lifting eyes.

Raise engine until chains are slightly tensioned.

Release nuts on grounding cable and on engine support arms on right and left.

*Installation:*

Nuts must be screwed and tightened down immediately after installation of engine.

**Caution!**

Failure to comply with this procedure may result in the engine slipping out of the engine mounts when the transmission is attached!

Carefully lift out engine.



**Special tools required:**

- [00 2 030](#)
- [23 0 130](#)
- [23 0 131](#)
- [23 0 132](#)
- [23 0 134](#)



**Note:**

After completion of work, check transmission oil level.



**Important!**

Use only the [approved gear oil](#) in this manual transmission.

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



[Disconnect battery](#), battery positive lead from battery connection point.

Remove exhaust system.

Remove heat shield at front right.

Remove heat shield at rear.



**Important!**

The section "[Removing and installing reinforcement plate](#)" contains important installation instructions.

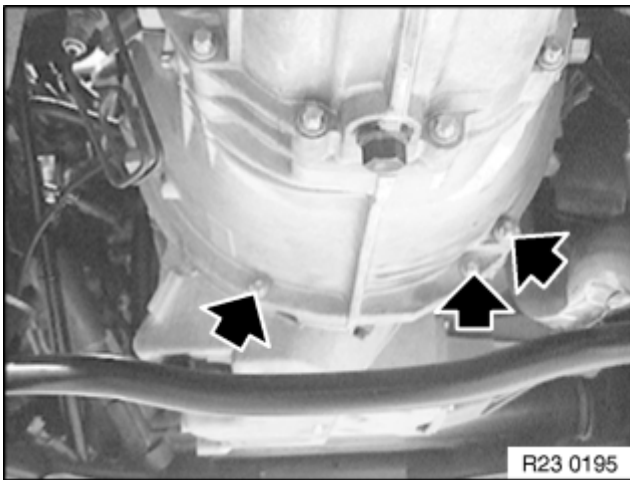


Remove reinforcement plate.  
Remove engine underguard at front.  
Remove engine underguard at rear.



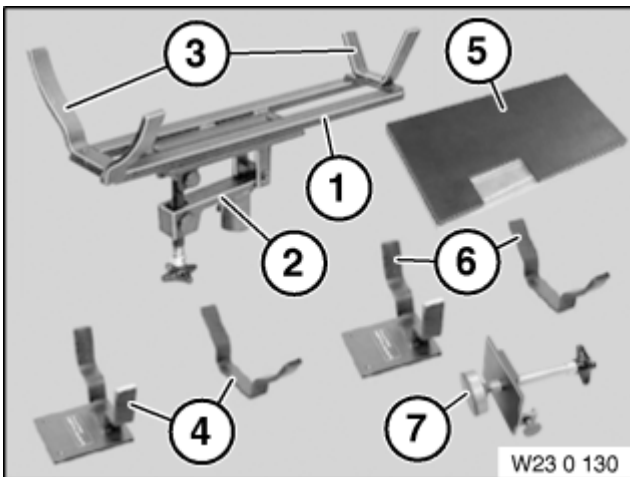
Detach stabilizer bar and slide forwards. This operation is described in the section "[Removing and installing stabilizer bar](#)".

[Remove and install front propeller shaft.](#)



Release screws.

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

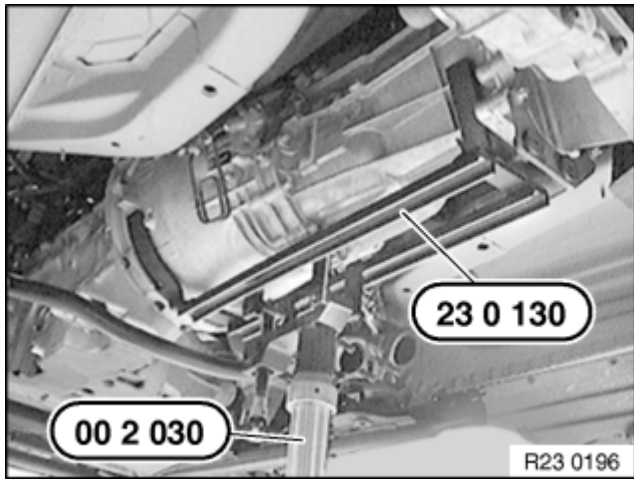


Preparing transmission mount, special tool [23 0 130](#) :

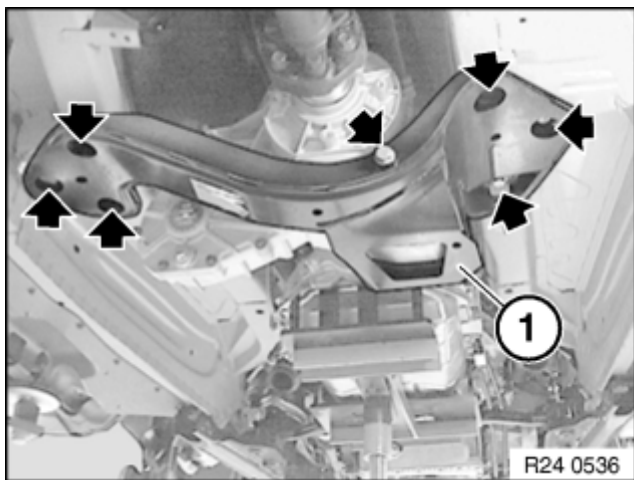
To do so, screw special tool [23 0 134](#) (3) onto special tools [23 0 131](#) (1) and [23 0 132](#) (2).

*Note:*

Pay attention to markings.

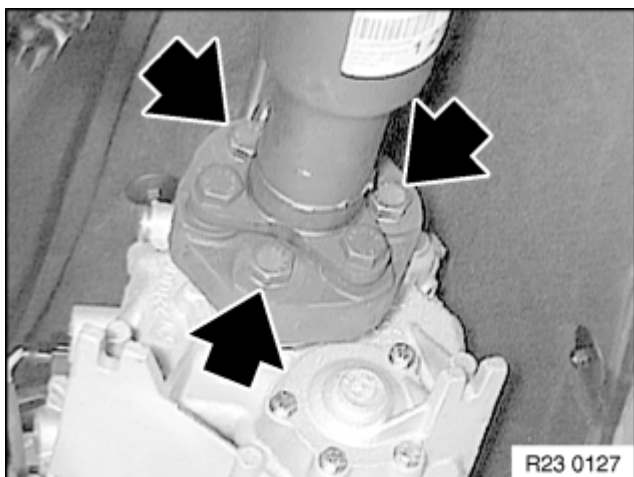


Support transmission and transfer box with special tool [00 2 030](#) and [23 0 130](#) .



Release screws and remove cross-member (1).

[Tightening torque 27 00 10AZ](#).



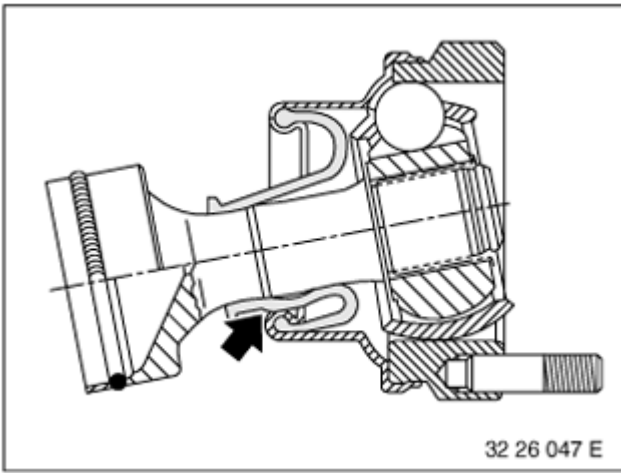
Release screws.

[Tightening torque 26 11 1AZ](#).

**Installation:**

Replace self-locking nuts.

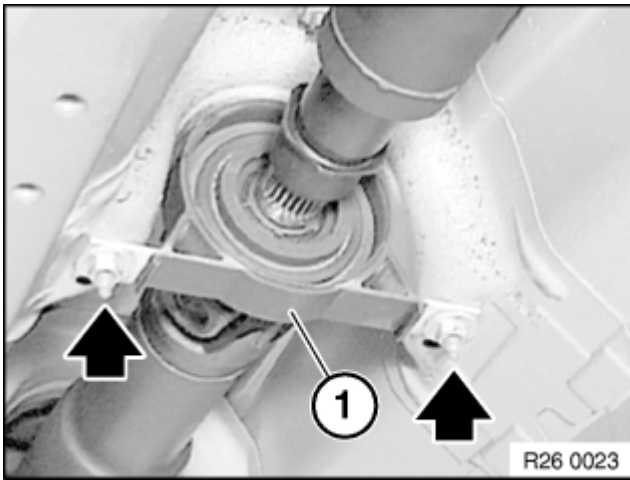
When tightening screws down: Grip each screw and tighten down nut. This prevents the flexible disk from being subjected to torsion stress.



**Important!**

Do not let propeller shaft fall into joints.

Joints and rubber sleeve can be damaged on constant-velocity joint.



Grip propeller shaft and release nuts.

Bend propeller shaft downwards at center bearing (1).

Detach propeller shaft from transmission output flange and tie back to side on vehicle underbody.

**Installation:**

[Tightening torque 26 11 6AZ.](#)

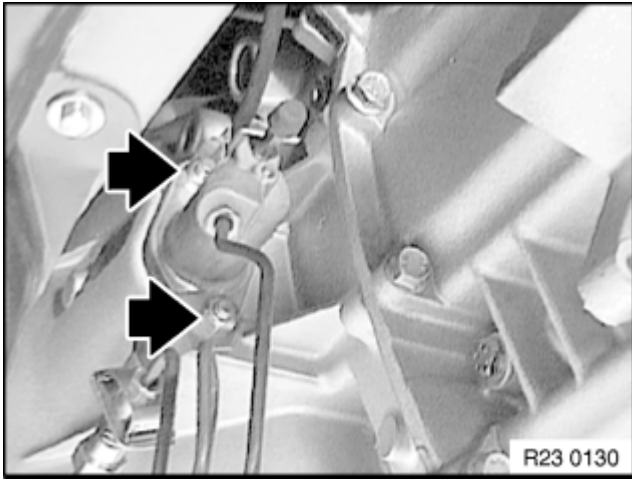


**Caution!**

Front pipe must not rest on stabilizer.



Lower transmission.

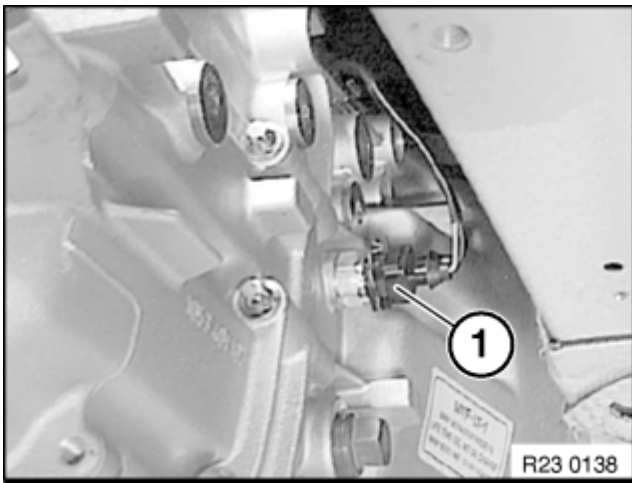


**Important!**

Slowly relieve tension on clutch slave cylinder during removal as otherwise air will be drawn in through sealing sleeve.

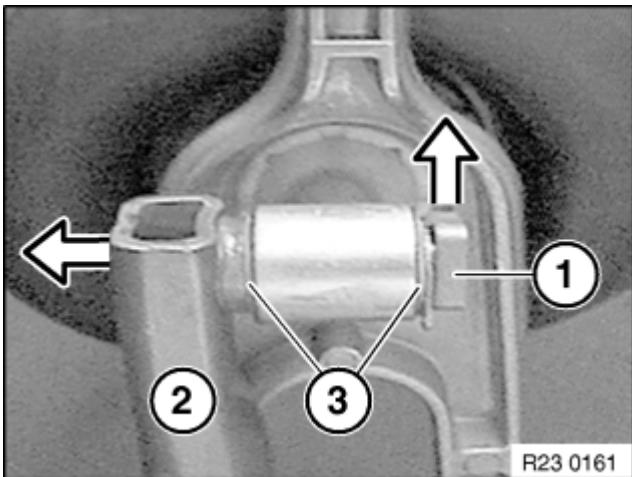
Release nuts and remove clutch slave cylinder. Pressure line remains connected.

[Tightening torque 21 52 5AZ.](#)



Detach cable plug (1) from reverse gear switch.

Unclip cable from fixtures.



Detach retaining clip (1).

Withdraw selector rod (2) from joint and remove washers (3).

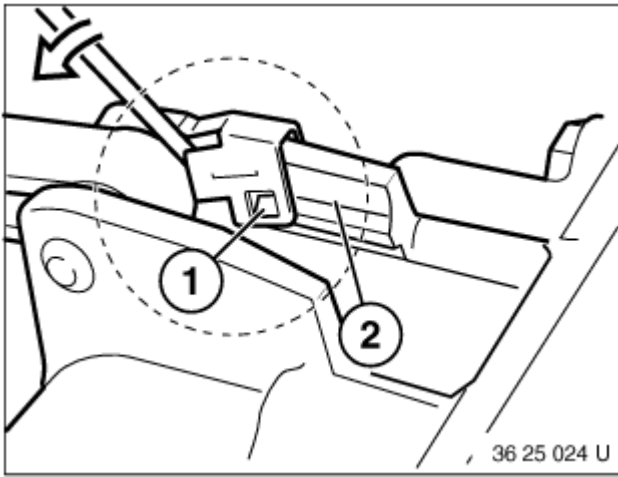
*Installation:*

Pay attention to installation position of washers (3).

Grease selector rod.

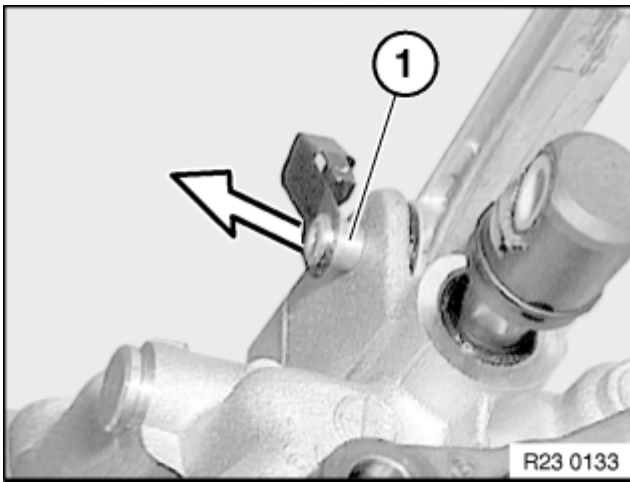
Grease,

[Refer to BMW Service Operating Fluids.](#)



Lever out spring (1) with a screwdriver from lug (2) on housing.

Tilt spring (1) upwards.

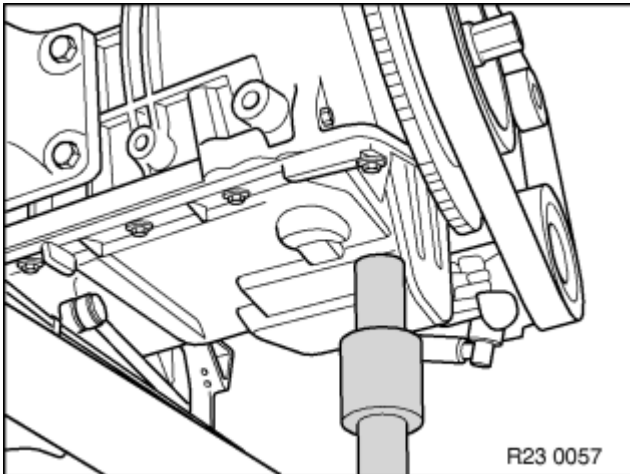


Remove bearing pin (1). **Installation:**

Grease bearing pin (1).

Grease,

[Refer to BMW Service Operating Fluids.](#)

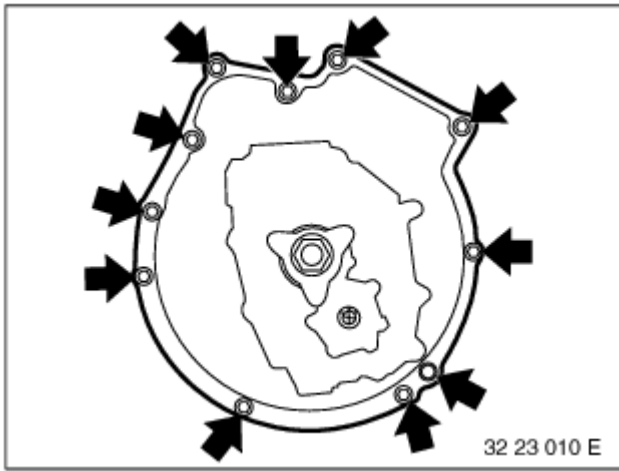


Support engine at front with a hydraulic lifter.



**Important!**

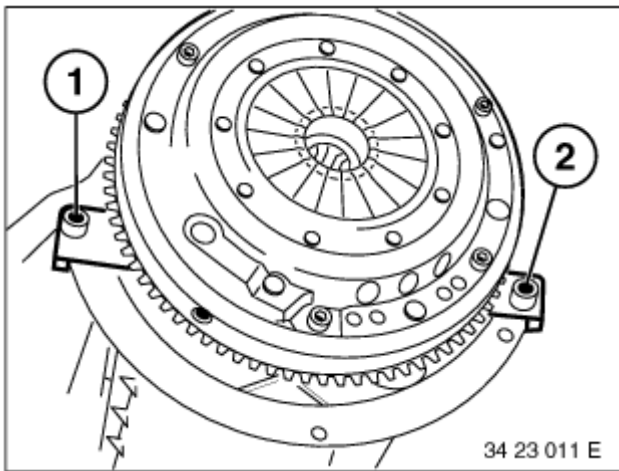
Do not allow the transmission to hang off from the transmission input shaft as this will deform the clutch plate.



Release screws.

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

Pull out transmission towards rear as far as possible, turn approx. 10° counterclockwise and remove.



**Installation:**

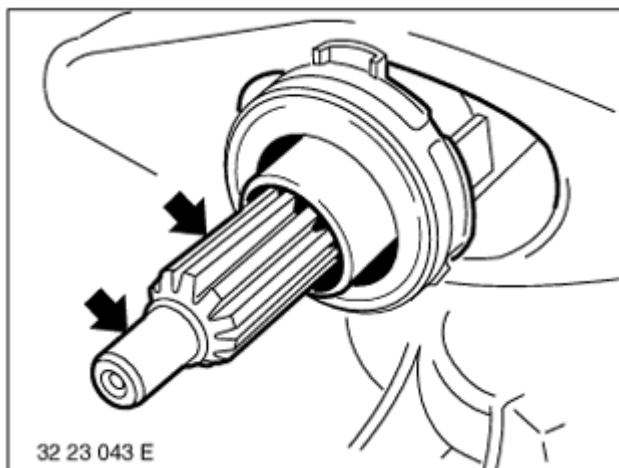
Pay attention to adapter sleeves (1 ... 2), replace if necessary.

Ensure correct position of cover plate.



**Installation:**

Remove [release unit and release lever](#), clean and apply grease to relevant points.



**Installation:**

Check lubrication of transmission input shaft for sticky consistency. If grease is sticky, [replace clutch plate](#).

Check clutch plate for friction rust in taper splines and [replace if necessary](#).

Mechanically remove old grease and lining abrasion from the taper splines of the clutch disc (with a cloth).

Then use a brush to apply a thin even coating of [grease for lubricating taper splines](#) over the entire area. Also in taper groove and on guide pin.



## Special tools required:

- [00 2 030](#)
- [24 1 110](#)
- [24 2 390](#)
- [24 5 301](#)
- [24 5 307](#)



## Important!

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

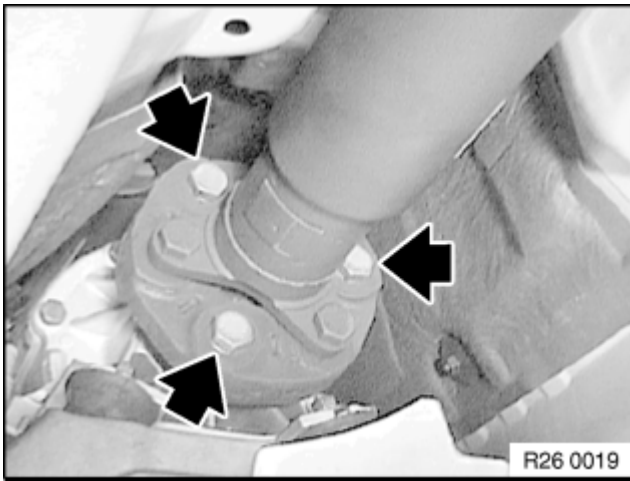
Use only the approved [transmission oil](#).

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

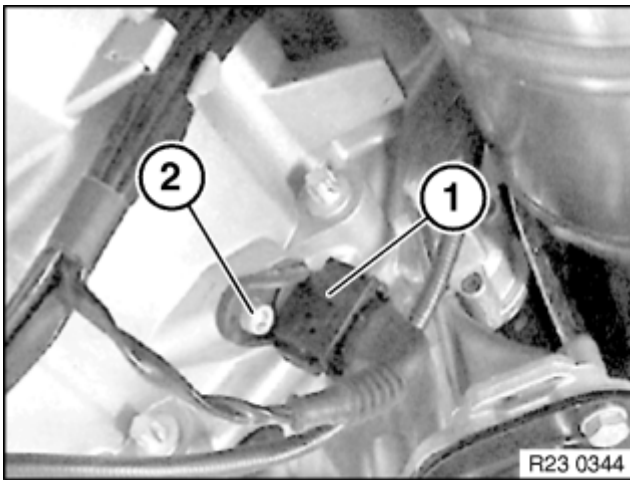


## Necessary preliminary tasks:

- Clamp off [battery](#).
  - Remove front underbody protection.
  - Remove [reinforcement plate](#).
- Important notes on installation are described in this work step.
- Completely remove [exhaust system](#). (M57TU only)
  - Remove [centre silencer](#). (N62 only).
  - Remove heat shield at front and rear.
  - Loosen the [anti-roll bar on the anti-roll bar link right and left](#) and slide forward.
  - Remove [propeller shaft from front axle differential](#).

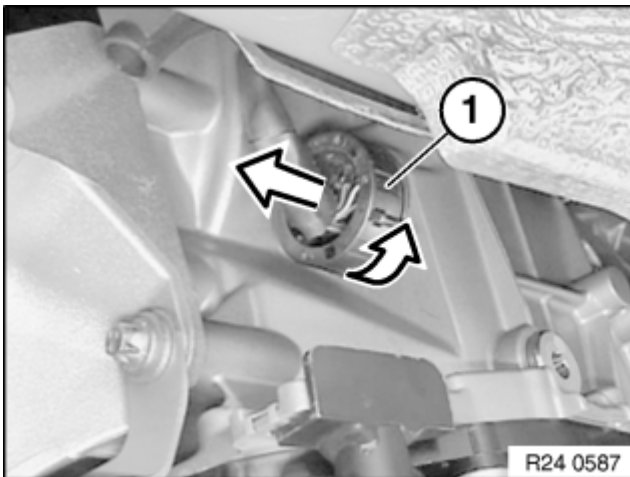


- [Remove](#) propeller shaft from transmission.
- Release centre mount.
- **Important:**
- Bending the propeller shaft by an excessive angle can cause premature damage to the joint/propeller shaft!
- Tie up propeller shaft to underbody.
- Support engine with lifter when removing transmission.



*Note:*  
N62 only:

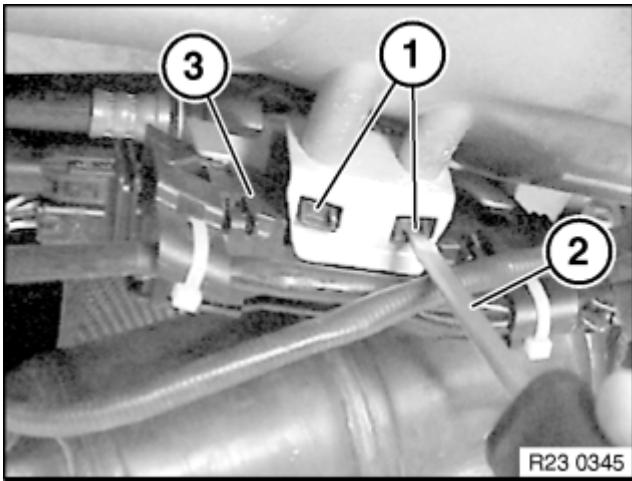
Detach plug (1) from speed sensor.  
Release screw (2) and remove speed sensor.



- Unlock and disconnect connector (1) by turning.
- Release cable from brackets.
- Insert special tool [24 2 390](#) in sealing cup.

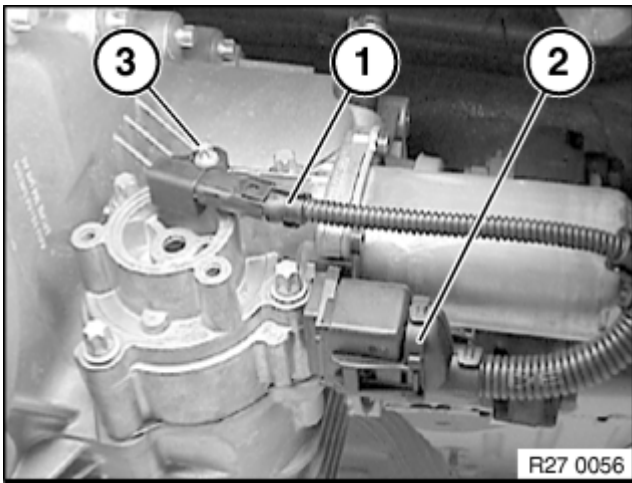
These tasks are described in [Notes on mechatronics](#).

(Important: Observe important note)

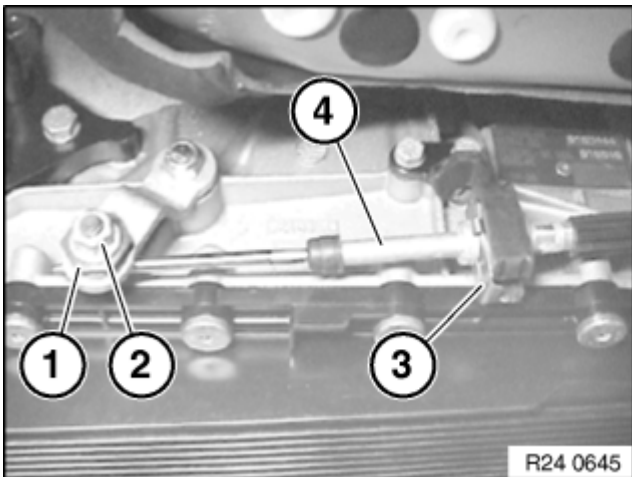


N62/ N62S only!

Press in retaining lugs (1) with screwdriver (2) and remove cable channel (3) and tie to the side.



Unlock and detach connectors (1) and (2).



Grip clamping bush (1).

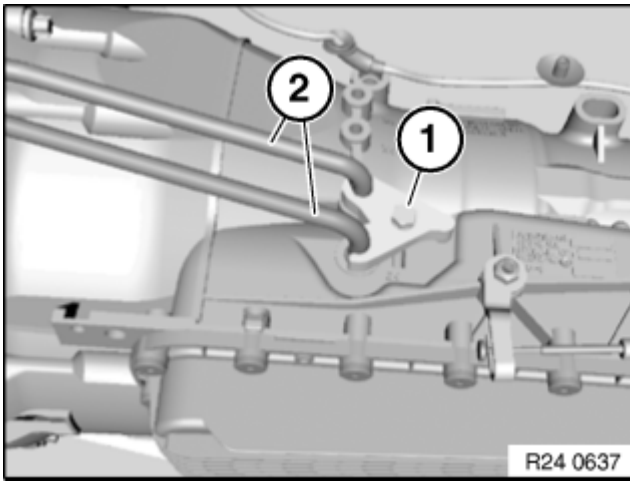
Slacken nut (2).

Detach clamp (3) towards bottom using a screwdriver.

Pull cable (4) out of holder.

*Installation note:*

[Adjust selector lever.](#)



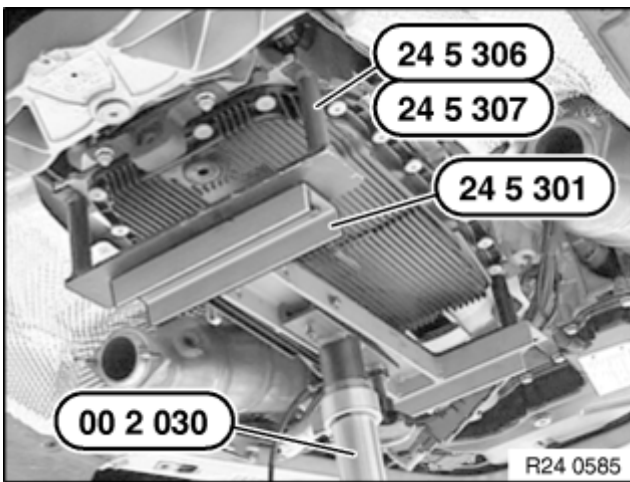
Release screw (1).

Tightening torque

Disconnect hydraulic lines (2) to transmission oil cooler.

*Installation note:*

Replace sealing rings.



### Supporting transmission:

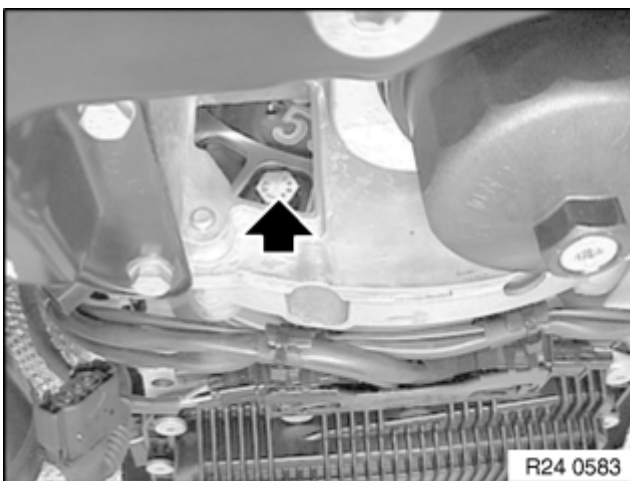
Support transmission with special tools [24 5 307](#) , [24 5 301](#) and [00 2 030](#) .

Set up special tool [24 5 307](#) :

- Supports 1,2 and 3 to "B".
- Support 4 to "A".
- Supports 3 and 4 are at rear of transmission.
- Support labelling points forwards.



Remove [transfer box](#).

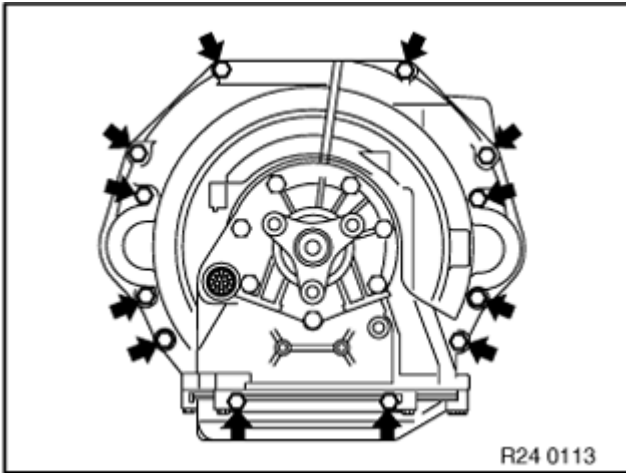


Crank engine at vibration damper in direction of rotation until screw is visible in recess.

Release all bolts of torque converter with special tool [24 1 110](#) .

Crank engine further and release remaining 3 bolts.

Tightening torque [24 40 1AZ](#).



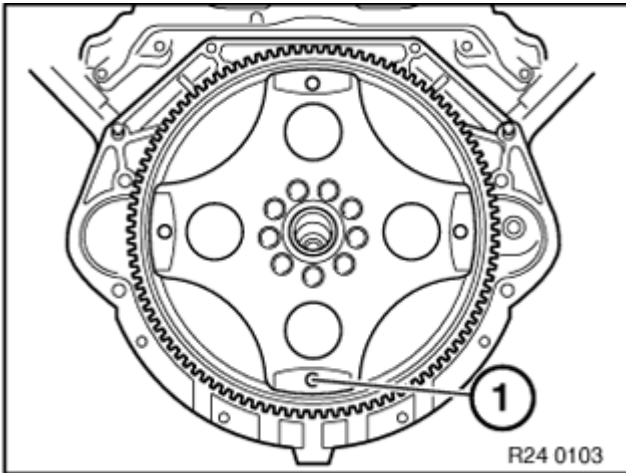
Release screws.

Tightening torque [24 00 1AZ](#).

Unflange transmission.

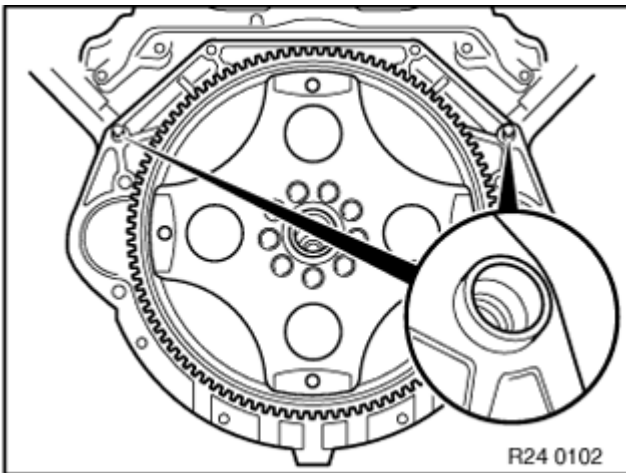
**Important!**

Protect torque converter from slipping out.



*Installation note:*

Bore hole (1) of driving plate must be accessible from recess on engine oil sump.



Check that fitting sleeves are correctly fitted.

Replace damaged fitting sleeves.



*Installation note:*

Rotate torque converter until bore hole in torque converter is flush with bore hole in driving plate.

Flange automatic transmission to engine.